Quantitative systematic review of short term associations between ambient air pollution (particulate matter, ozone, nitrogen dioxide, sulphur dioxide and carbon monoxide), and mortality and morbidity.

Contract number: 0020017

Report to Department of Health revised following first review

June 2007

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Abstract

All peer-reviewed papers with quantitative results from time series and panel studies of ambient air pollution published up to 2006 were obtained. Estimates of effects were extracted and standardized for meta-analysis. Meta-analyses were done for all pollutant/outcome/diagnosis/age groups for which there were 4 or more estimates. The pollutants were particulate matter (PM) (PM_{10}, $PM_{2.5}$, $PM_{2.5-10}$, BS, SO_4^{2-} and TSP), nitrogen dioxide (NO_2), ozone (O_3), sulphur dioxide (SO_2) and carbon monoxide (CO). For time series studies 176 meta-analyses were done, based on 2657 individual estimates. 96% of estimates were in an adverse direction and 74% were both adverse and statistically convincing. None of the estimates in a protective direction were statistically convincing. There was considerable heterogeneity and publication bias. While the evidence was fairly similar for the various pollutants, there were some variations in the level of evidence between them and between various outcomes. For panel studies 33 meta-analyses were done based on 720 individual estimates. 30% were in an adverse direction and 12% were both adverse and statistically convincing. 70% were in a protective direction and 18% were both protective and statistically convincing. Overall, we consider that our results largely support the position that ambient air pollution is a hazard to health. However, the inconsistencies and difficulties in interpreting the evidence must also be acknowledged. We have not been able to implicate one pollutant more than another. In the case of PM, there was nothing major to distinguish the 6 different metrics.

Chapter 1: Executive Summary

BACKGROUND

There is a large amount of evidence about the short term associations between ambient concentrations of air pollutants and health or health related outcomes. This is based on regression analyses of time series of daily data on air pollution and health outcomes, including mortality, hospital admissions, emergency room attendance, primary care consultations, lung function, symptoms and use of medications for respiratory problems. Time series studies can be divided into population time series studies which use registry data such as mortality (usually referred to as "time series studies") and individual-level time series studies of panels of subjects observed regularly over a number of days (usually referred to as "panel studies"). The statistical methods are complex, with particular emphasis on controlling for time related confounding factors such as long term trends, season, day of the week and weather factors such temperature. Exposure data are usually obtained from fixed monitoring stations situated so as to measure background concentrations of ambient air pollutants. The studies have considerable statistical power to investigate small effects.

The influence of these studies has been substantial. They are largely responsible for showing that air pollution is associated with health effects at concentrations well below guideline levels and that there is no identifiable threshold. Although the relative risks observed are typically small, the consistency with which positive associations has been observed in different places and by different investigators is an important argument in favour of a causal relationship. The exposure response relationships are often used for quantifying health effects for policy purposes. For this reason, the size and precision of estimates from time series studies is also important.

Reviewing the evidence of time series and panel studies has become increasingly difficult because of the large number of studies, complexity of the analyses and lack of standardization of presentation and/or methods. Also, in recent years it has been recognized that reviewing evidence requires a high degree of rigour to ensure lack of bias and transparency. Many past reviews were not comprehensive and some were merely qualitative. For these reasons, the Department of Health set up the Air Pollution Epidemiology Database (APED) with the task of assembling results from all peer reviewed short term effect studies in a form that would facilitate systematic review including quantitative meta-analysis. This was achieved and the database has already provided important results for research and policy. The data base continues to evolve by periodic updating and improvements in database management and analysis.

The present research was designed to build on this work by conducting a quantitative meta-analysis of all pollutant/diagnostic/age groupings with four or more estimates. Previous quantitative meta-analyses had generally addressed a limited number of pollutants and outcomes, and many had not been systematic. Remarkably, none had formally examined the data for publication bias, a phenomenon that is generally widespread and would be expected in a rapidly expanding field where there is sensitivity of the result to the statistical methods used and the choice of lag.

The unique aspects of this study are that it is comprehensive in scope and transparent in its methods. We expect that the results will be important for influencing thinking about the evidence for air pollution as a health hazard and for providing sound data for policy analysis.

METHODS

All time series studies (population time series and panel), were ascertained by standard bibliographic methods, with language translation if required. All studies with estimates were included, subject to minimum quality criteria. No panel studies were excluded. Data were extracted into an Access relational database. Estimates were standardized to the same units and pollutant increment and expressed as a percentage change. Summary estimates were considered to show convincing evidence of an association if the 95% confidence limits did not include 0%. 5 pollutants were analysed: particulate matter (PM), nitrogen dioxide (NO_2), ozone (O_3), sulphur dioxide (SO_2) and carbon monoxide (CO). There were 6 categories of PM, all having a 24 hr averaging time; PM_{10}, $PM_{2.5}$, $PM_{2.5-10}$, Black Smoke (BS), sulphate (SO_4^{2-}) and Total Suspended Particulates (TSP). For the gases, the averaging times were: NO_2, 1 hr maximum and 24 hr; O_3, 1 hr maximum, 8 hr (maximum or fixed hours) and 24 hr; SO_2, 24 hr; and CO, 1hr maximum, 8 hr and 24 hr. In total, 15 pollution categories were analysed. The time series studies reported a range of outcomes which were categorized into 13 groups, of which mortality and hospital admissions were by far the most frequent. The various diagnoses, usually reported as ICD codes, were grouped into 15 categories. The various age groups were grouped into 7 categories, of which all-ages, children, adults and elderly were the most frequent. The very wide range of symptoms reported by panel studies was collapsed into 5 categories. Panels were also divided into child and adult studies, and then by whether the panels comprised the general population or subjects with respiratory symptoms. For both time series and panel studies one lag was chosen for meta-analysis. This was the lag highlighted by the author and if this was not clear, we chose that with the highest statistical significance, irrespective of the direction of the effect. Where there was more than one estimate per city, we chose the one that was part of a multicity study if that was the case, or else the most recent. If only an average of several days' lag was reported, this was used. For each pollutant/outcome/diagnosis/age combination with more than 4 estimates, quantitative meta-analysis was done to obtain fixed and random effects summary estimates, a test of heterogeneity, a parametric and non parametric test of publication bias (strictly speaking a test of small study bias) and summary estimate adjusted for publication bias. Precision was assessed using 95% confidence intervals. Some papers reported summary estimates from multicity studies and these are presented separately. These multicity studies, to a varying extent, also contribute single city estimates to the single city meta-analyses. We also obtained and present multipollutant and seasonal results from multicity studies where available.

OVERVIEW OF TIME SERIES RESULTS

A qualitative overview of the time series meta-analyses is shown in Table 1.1. This shows, for each of the five pollutant groups, the number of summary estimates, the number of individual estimates underlying them, the number of random effects estimates in a positive or negative direction, the numbers of these with 95% confidence limits which exclude zero and numbers with heterogeneity. The table also shows the numbers of summary estimates with evidence of publication bias and numbers substantially affected by adjustment for this. From the potentially very large number of possible combinations of pollutant, outcome, diagnosis and age, 176 groupings with 4 or more estimates were identified and these were subjected to meta-analysis. These meta-analyses were based on a total of 2,657 individual estimates. Each city was included no more than once in any individual meta-analysis. 96% of summary effect estimates were in an adverse (positive) direction, and 74% were both positive and had 95% confidence limits that excluded zero, indicating that a null effect was unlikely. None of the 8 estimates in a negative direction had confidence limits that excluded zero, indicating that these estimates were consistent with no effect of pollution on the outcome. Thus, not one of the 176 summary estimates showed convincing evidence of an association in a protective direction. Heterogeneity was detected in 64% of meta-analyses. 22% showed evidence of publication bias and adjustment for this reduced 33% of estimates by more than 20%, an arbitrary level chosen to indicate potentially important bias. While these reductions were often small in absolute terms, relative reductions can nevertheless be of public health importance.

There were 79 summary estimates for mortality and 97 for hospital admissions, reflecting the larger range of age/diagnostic/age groups in the latter outcome. The number of individual estimates was, however, higher for mortality (1963) than for morbidity (694), possibly reflecting the lesser availability of hospital admissions data. Overall, the evidence for consistent results in an adverse direction was high for both mortality (100%) and morbidity (92%). Mortality summary estimates that were positive were more likely than morbidity estimates to have confidence limits that did not include zero (85% vs 65%). The proportions with evidence of heterogeneity were similar (66% and 62% respectively). Mortality showed considerably more publication bias than morbidity (35% vs 10%) and a higher proportion showed a reduction of more than 20% after trim and fill adjustment (39% vs 28%).

OVERVIEW OF PANEL RESULTS

For the panel studies most associations were in a protective direction and most were likely to be explained by chance. Of 33 meta-analyses comprising 720 individual estimates, 30% were in an adverse direction and only 12% were both in an adverse direction and had confidence intervals which excluded zero. The majority (70%) had estimates which were in a protective direction and 18% were both in a protective direction and had confidence intervals which excluded zero. 52% showed evidence of heterogeneity but publication bias was minimal. The clearest evidence of an adverse association was for ozone for which all 4 meta-analyses showed adverse effects that were unlikely to be explained by chance.

CONCLUSIONS

1. Taken as a whole, the large body of evidence from time series studies shows very consistent positive associations between measures of ambient air pollution and a wide range of mortality and morbidity outcomes. This is true both for meta-analyses of single cities and for multicity studies.

2. There are, however, several areas where the evidence of time series studies is null or less convincing. A notable example was the lack of association between ozone and hospital admissions for cardiac disease.

3. The evidence from panel studies for adverse effects is convincing only for O_3.

4. There is evidence of substantial heterogeneity.

5. There is considerable evidence of small study effects/publication bias. A preliminary analysis of PM_{10} and all-cause mortality suggests that this bias is also present in multicity studies.

6. Use of the summary estimates for health impact assessment should take account of the statistical uncertainty inherent in the formal meta-analytic method. It may also be appropriate to supplement this with an assessment of uncertainty arising from other factors e.g. residual confounding and information bias. It should be noted that the effect of pollution on daily health events is likely to be the cumulation of several prior days of exposure so that estimates based on single day lags, as were most of those in the present report, may have underestimated the effects of air pollution. Another possible source of downward bias is exposure misclassification.

7. These results provide evidence for and against the causality of the short term associations between air pollution and health. In favour is the almost universal finding of positive findings in the time series studies. On the other hand other aspects of the evidence are less persuasive. Firstly, there is the small size of effects compared with other sources of daily variation, and the lack of statistically convincing associations for a substantial minority of the summary estimates. Secondly, there is a remarkable lack of specificity for pollutant or outcome. Thirdly, on the basis of our results, there is a lack of coherence between the time series and panel evidence.

8. It is important to recognize that our study is based on a protocol-driven, systematic and objective quantitative approach. It does not encompass the whole richness of information contained in time-series and panel studies, much of which requires subjective assessment. The aim was essentially descriptive. One of the next major steps is to use the database to understand the causes of the observed heterogeneity in many of the meta-analyses.

Chapter 2: Introduction

By the 1980's, it was generally thought that the levels of air pollution observed in most cities of the developed world were "safe". In the United Kingdom for example, ambient concentrations were below the currently promulgated WHO Guidelines (WHO 1987). Population studies had previously shown the adverse health effects of high levels of air pollution during episodes and in highly polluted cities, but lower levels were of little concern. It had been observed as early as the 1950's that daily deaths in London were related to air pollution concentrations in non-episode conditions but the formidable problems of dealing with serial correlation of data and of controlling for confounding influences of factors such as season and temperature could not be adequately addressed with statistical techniques then available.

By the 1980's, there had been important advances in the computing and statistical techniques for time series analysis which could be used to study the short term temporal associations between air pollution and health outcomes. These were applied to daily data on air pollution and health related events (deaths, hospital admissions), which were also becoming more readily available, and to purpose designed "panel" studies in which a cohort of individuals was assessed day by day over a period of time to construct a daily time series of health related outcomes (e.g. symptoms, medication use and lung function) and air pollution exposure. The custom, which we shall also adopt, is to use the term “time series studies” for studies of routine data at the population level, and the term “panel studies” for studies at the individual level. Both however investigate short term temporal associations using time series techniques.

The relative ease with which time series studies could be done led to a rapid increase in such studies. Based on our literature searches up until the beginning of 2006, there had been 524 and 186 papers reporting the results of time series and panel studies respectively (Figure 2.1). Because each study could potentially report estimates for a number of pollutants, outcomes, lags and statistical approaches, the number of estimates was much greater. Figures 2.2 and 2.3 show the number of estimates for various outcomes, by pollutant, for time series studies published up to the beginning of 2006. These data were obtained from the Air Pollution Epidemiology Database (APED) which is described later. There were 14,013 estimates for population time series studies and 7,170 for panel studies. The number of estimates reported in the papers was in fact larger since not all estimates are recorded in the database from each study.

The concept of systematic review is now accepted in the evaluation of randomized controlled clinical trials. The Cochrane collaboration has demonstrated that this approach leads to less biased estimates of effects of interventions and to the earlier establishment of guidelines as to the advisability or not of using a particular treatment (Dickersin & Manheimer 1998). Systematic review of observational studies is also accepted as the best approach but has been slower to develop than in the area of randomized controlled trials. Possible reasons for this include the more heterogeneous nature of such evidence and greater variation in quality and detail with respect to such matters as control for confounding. This is especially true in air pollution epidemiology where the study design is further complicated by the ecological nature of the exposure measurement. The evaluation of epidemiological evidence for environmental risk assessment was examined in a larger international workshop organized by WHO (WHO 2000). This created a new benchmark for evaluating epidemiological evidence in which protocol-led ascertainment and meta-analysis were paramount. Around the same time, editors of scientific journals were developing proposals for standards of reporting of meta-analyses (Stroup et al. 2000). The WHO approach was applied in subsequent evaluations of the health effects of air pollution by WHO for Europe and Global Guidelines (WHO 2003; WHO 2006).

The implications of the above developments for the UK processes for using science to inform policy were considerable for both hazard assessment and risk characterization. One of the authors of this report (HRA) had played a part in reviewing the epidemiological evidence for a series of DH reports on air pollution and health. These reports brought together the available mechanistic and population evidence and were essentially concerned with hazard assessment, that is, evaluating whether air pollution was hazardous to health at current ambient levels. The time series evidence was an important component of these reviews. By the time of the WHO workshop, it was clear that the approach used to review time series evidence was both flawed and unsustainable. It was flawed because the customary narrative approach, with or without a summary table of undigested results was very susceptible to subjective differences in interpretation and in some cases was based on an incomplete, if not biased, sample of the evidence. It was not sustainable because of the sheer size of the literature, much of which was very complex in its detail. It became clear that a more structured and systematic approach was needed to assist reviewers in interpreting this literature.

Around this time, there were increasing demands by government for estimates of health effects that could be used for estimating the health impact for standard setting in policy appraisals, including cost-benefit analysis. This raised a new set of issues and was the subject of another WHO report (WHO 2001). These included the applicability of estimates to the UK situation, the precision of estimates and how to deal with heterogeneity. Estimates derived from the world-wide literature may not be the best for application to local or national risk assessment. Estimates used for health impact assessment would need to be derived in a very transparent way.

Against this background, HRA, then a member of the DH Committee on Medical Effects of Air Pollutants (COMEAP), proposed that a database of time series studies be developed to aid the committee in reviewing this growing literature for purposes of hazard characterization and health impact assessment. Funding was secured from the Department of Health to set up the database in what is now the Division of Community Health Sciences (formerly Department of Public Health Sciences) at what is now St George's, University of London (formerly St George's Hospital Medical School). This became known as the Air Pollution Epidemiology Database (APED). This was under the immediate direction of RWA and overall direction of HRA. APED has supported various reviews by COMEAP including one on cardiovascular effects (Department of Health Committee on Medical Effects of Air Pollutants 2006) and an ongoing review of ozone effects, as well as for WHO (Cohen et al. 2004;Health Effects Institute 2004;WHO 2003;WHO 2004a;WHO 2006) and the US Health Effects Institute (Health Effects Institute 2004). Based on the APED database, our group was the first to publish an investigation of publication bias in time series studies (Anderson et al. 2005).

This work was directed at supporting the above policy related activities rather than publishing research papers. When the DH called for research applications for air pollution studies in 2001, we therefore applied for funding to prepare a series of papers for publication. This would be an important new contribution to the literature and enable the results of quantitative meta-analysis to be reported widely in accessible form, rather than be buried in reports. Delivery of the report was delayed by agreement on account of competing projects for the DH and WHO and because we decided to upgrade the database infrastructure. This had the additional advantage of enabling several more years of publications to be included.

The aim of this study is to systematically ascertain all published daily time series studies of air pollution and health and to carry out quantitative meta-analysis to summarize the estimates of health effects. The pollutants of interest are particles (PM_{10}, $PM_{2.5}$, $PM_{2.5-10}$, BS, SO_4^{2-}, TSP), NO_2, O_3, SO_2 and CO. The main purposes are: 1) to assesses the strength of evidence with particular emphasis on consistency, statistical significance, heterogeneity and publication bias and 2) to provide coefficients for health impact assessment. This project did not plan to investigate reasons for any heterogeneity that might be observed.

Chapter 3: Methods

DATA COLLECTION FOR APED

APED comprises two Reference Manager databases (one for time series studies and one for panel studies) and two Access databases (also one for each study design). The process of adding data to these databases involves three steps: 1) systematic searching of the medical peer reviewed literature to identify potential studies for inclusion in the databases and an assessment of their suitability for inclusion in APED; 2) data extraction and 3) data entry (into Access) and subsequent standardization of effect estimates.

Step 1 - Systematic ascertainment of relevant papers

Medline, Embase and Web of Science databases were used to identify, without constraint on language or publication date, all peer-reviewed time series and panel papers published up to January 2006. The search strings used are shown in Table 3.1. Where appropriate, these results are supplemented with papers identified by colleagues (especially useful with foreign language journals), citations and published reviews.

The full reference and abstract for each paper identified were downloaded into the appropriate Reference Manager database (Reference Manager, ISI Researchsoft, Carlsbad, CA). A multilevel sifting process was then applied to identify those studies suitable for inclusion in APED. This began with a review of the abstracts to identify those that might contain time series or panel results and to obtain the entire paper. These papers were then assessed to identify studies with sufficient quantitative information to enable the calculation of standardized effect estimates (for example, the change in pollutant to which the estimate relates is not always given, some results are quoted as correlation coefficients and, in other cases, only the statistical significance of the result is given). Studies that did not provide sufficient information or contained key weaknesses were retained in the Reference Manager databases but coded appropriately. The minimum quality criteria for time series studies were: 1) minimum time period of 1 year; 2) some method of seasonal adjustment; 3) some adjustment for temperature and 4) analyses of specific cohorts were excluded. No panel studies were excluded from the database.

Figures 3.1 and 3.2 illustrate, for time series and panel studies respectively, the sifting processes. For each study design the resulting Reference Manager databases contain only valid (i.e. providing sufficient data), rejected or related studies. Keywords in the reference manager records detail the status of the papers following this process. The categories used are given in Table 3.2.

Step 2 - Extraction of data

Each 'valid' paper was then read in detail and the appropriate data recorded on data extraction forms. From these forms the data were entered into the Access databases. The forms served as a record of what data were extracted and a place to record essential information that was used in the standardization of the data.

Figure 3.3 shows copies of the data extraction forms. Each form is divided into two parts, study information and estimate information. Study information includes the Reference Manager id number, title, authors and full reference of the study. Estimate information includes details about the health outcome and pollutant being studied plus other data items required to standardize the effect estimates. Details of the variables recorded and their definitions are given in Table 3.3.

Step 3 - Data entry and standardization

Each APED Access database comprises a series of tables that hold the relevant data, together with a series of Visual Basic programs that manage and manipulate the data so that effect estimates standardized to 10µg/m^3 can be calculated. Access forms control the data entry process.

CATEGORIZATION OF OUTCOME, AGE AND POLLUTION

The published time series literature does not observe conventions for reporting results, which leads to a great variety of categorization of outcomes and age groups. In order to have a consistent approach to the classification of these outcomes for meta-analysis we assigned outcomes to outcome categories. We first listed all the outcomes (diagnoses, ICD codes, symptoms), age-groups and pollutants as reported in the studies and entered into the database. We then assigned each outcome/disease/age group to a smaller number of outcome and diagnostic categories based on a consideration of clinical coherence and numbers of estimates. This process was informed by a frequency distribution by age and diagnosis obtained from a dataset of daily mortality and hospital admissions for the West Midlands conurbation. The outcome codes are shown in Table 3.4a and the diagnosis codes are shown for ICD9 and ICD10 respectively in Table 3.5a and 3.5b.

With the exception of O_3, the panel studies literature was dominated by the PEACE study which was carried out in a European winter (Roemer et al. 1998). The panel outcomes considered in this review were lung function, respiratory symptoms and medication for respiratory problems. Lung function measures were Peak Expiratory Flow (PEF), Forced Vital Capacity (FVC) and Forced Expiratory Volume in 1 second (FEV_1). Symptoms were categorized as Lower Respiratory Symptoms (LRS) and Upper Respiratory Symptoms (URS). LRS were sub-classified into those in which there was mention of breathlessness, wheezing, asthma or other breathing discomfort (generically termed "dyspnoea")(LRS-D), and other respiratory symptoms, such as cough or phlegm (LRS-O). These panel outcome codes are shown in Tables 3.4b and 3.4c). In the event, there were sufficient studies for meta-analysis only of LRS-O. Other lung function measures, such as ΔPEFR or FEV_1/FVC, were not available in sufficient numbers to meta-analyze.

The pollutant variables could generally be analysed as reported in the papers. However, in some cases less conventional size ranges (e.g. PM_{13}) or averaging times (e.g. 6 hr ozone) were encountered and these were absorbed into the main categories, which were as follows: PM_{10}, $PM_{2.5}$, $PM_{2.5-10}$, BS, SO_4^{2-}, TSP(all particulate measures were 24 hr average), NO_2(1 hr, 24 hr), O_3(1 hr, 8 hr, 24 hr), SO_2(24 hr) and CO(1 hr, 8 hr, 24 hr).

ANALYSIS

Lag selection

It is common for time series studies to investigate the effects of pollution measured on the same day, or days prior to, the health event occurring. Studies vary in their selection of 'lags' analysed and presented. Hence the lag selected for this analysis was based upon the following algorithm: if only one lag estimate was presented (either because only one lag was examined or only one was presented in the paper) this was recorded as the author-selected lag. If estimates for more than one lag were presented, we chose the estimate mentioned by the author in the abstract or emphasized in the presentation of the results or discussion. If the author did not indicate a preference, or an a priori basis for choice of estimate, we chose one based firstly on the smallest p value, and then on the size of the estimate, irrespective of direction. We adopted this policy because most papers explicitly or implicitly select the most significant or sometimes largest association. However to avoid introducing additional bias we applied these criteria irrespective of the direction of the association.

In panel studies there is less variation in the lags analysed and/or presented. For consistency with time series studies the following selection criteria were followed where possible: where a choice of estimates was possible for lung function measurements, morning result and pollutant lagged 1 day was selected, followed by evening lag 1. Morning lag 0 was excluded, unless it was all that was reported. Symptoms were grouped into upper respiratory, lower respiratory (not dyspnoea - e.g. cough) and lower respiratory (dyspnoea – e.g. wheezing). Within each of these categories, the most significant estimate was selected where there was a choice. This meant that these meta-analyses were based on a varied mixture of cough, phlegm, wheeze and other lower respiratory symptoms, depending on which was most significant. For medication use (generally bronchodilator) lag 1 was also chosen. Symptom and medication use incidence was analysed separately from prevalence as both measures were available from the PEACE study.

City selection

It is common in time series studies for the same cities to be studied more than once, either using different or overlapping time periods or even using the same time periods but employing different statistical techniques. Therefore, it was necessary to decide whether or not to use all estimates irrespective of the city/time period studied or to select just one estimate per city for analysis. We decided, for the main analysis, to select one estimate per city in order not to overweight a meta-analysis with more than one estimate from a city. This policy required a systematic approach to the selection of estimates when two or more estimates were available from a single city. In selecting the estimate we gave priority to one from a planned multicity study because this might be less prone to publication bias and more likely to have benefited from a protocol-driven approach to analysis. Otherwise, we chose the most recent estimate on the assumption that this was more likely to have employed more advanced statistical techniques and to have used the most recently available data. The selection policy was not influenced by the direction, size or statistical significance of the chosen effect estimates.

The position for panel studies was somewhat different. Since panel studies use groups of individuals we allowed estimates from several panels from the same city so long as they were independent. Panels of subjects with chronic respiratory symptoms, clinical asthma or chronic obstructive pulmonary disease were categorized as “symptomatic”. Those based on the general population (e.g. unselected samples of school children) as “unselected”.

Where possible, estimates from the individual cities of multicity time series and panel studies were coded in APED. Hence, their estimates could be treated as individual city specific estimates. However, many multicity (time series and panel) studies did not report city specific estimates in a numerical format suitable for inclusion in a quantitative analysis, preferring to report their findings as summary estimates only or in graphical format. Summary estimates from all multicity studies (2 or more cities) are presented but not subjected to meta-analysis.

Estimation of summary effects and heterogeneity

The "meta" command as implemented in Stata Version. 9 (STB-38: sbe16; STB-42: sbe16.1: Stephen Sharp, London School of Hygiene and Tropical Medicine, UK and Jonathan Sterne, United Medical and Dental Schools, UK) was used to calculate summary fixed and random effects estimates and to estimate the heterogeneity between effect estimates. Forest plots of individual estimates were produced using the graphics facilities in Stata.

Multipollutant and seasonal models

In this report, we present multipollutant and seasonal results for multicity studies only. This ensures that comparison with single pollutant and all year results is within the same city.

Analysis of publication bias

Publication bias may manifest itself as an association between effect size and study precision. The funnel plot is a simple scatter plot of study effect against study precision (Sterne & Egger 2001). Estimates from smaller studies tend to be scattered more widely than those of larger studies due their relatively greater random variation. In the absence of bias the plot resembles an inverted symmetrical funnel. An asymmetrical funnel plot suggests that there is an excess of small studies with estimates biased in a particular direction. Publication bias is a common reason for such a pattern, though there may be other explanations. In our presentation of funnel plots we have used the inverse of the variance rather than the standard error as a measure of precision since this increases the visual contrast between studies of higher and lower power.

The funnel plot is assessed subjectively. Two statistical tests were employed to help assess objectively the evidence for asymmetry in the plots. Egger's linear regression test regresses the standardized effect estimate against the inverse of the standard error (Egger et al. 1997). A non-zero intercept provides evidence that the funnel plot is asymmetric. Begg's test is an adjusted rank correlation method to examine the association between the study estimates and their variances (Begg & Mazumdar 1994). Sterne et al have shown that in circumstances where there are reasonable numbers of studies in the meta-analysis, including a number of large studies, the Begg's test can be too conservative. We have therefore tended towards the Egger test of asymmetry when the p values for the two tests differed considerably. We employed the trim-and-fill method to adjust the summary estimate for bias (Duval & Tweedie 2000). This method removes small studies until symmetry in the funnel plot is achieved - recalculating the centre of the funnel before the "removed" studies are replaced together with their "missing" mirror-image counterparts. A revised summary estimate is then calculated using all of the original studies, together with the hypothetical "filled" studies. This method provides an indication of the possible impact of publication bias upon the size and precision of the summary effect estimates. We applied this adjustment irrespective of whether there was evidence of bias from the Begg or Egger test.

Chapter 4: Results – Particulate matter (PM)

META-ANALYSIS OF SINGLE CITY ESTIMATES

Table 4.1 shows the numbers of papers containing estimates for particulate matter (PM), by broad outcome, WHO Region and pollutant measure. The great majority of papers related to PM_{10} (212), $PM_{2.5}$ (55), $PM_{2.5\text{-}10}$ (31), black smoke (78), sulphate (32) or TSP (76). The majority of studies were from American Region (Amr) A and European Region (Eur) A, followed by Western Pacific (Wpr) B and Amr B. The regional definitions are in a footnote to the table. The largest number of estimates was for mortality (205) followed by hospital admissions (95) and emergency room visits (37). The total number of cities was 278. Forty seven papers provided combined estimates for two or more cities (multicity studies).

The meta-analyses for all pollutant/diagnosis/age groups for which there were four or more estimates are shown in Table 4.2a for mortality and Table 4.2b for hospital admissions. The results are shown graphically in Figures 4.1a and 4.1b. The estimates are sorted by diagnostic group, then age group, then particle metric. For each group, the total number of estimates identified and the number used in the meta-analysis are shown. The latter is a lower number because only one estimate per city was selected and some estimates were not accompanied by standard errors. Random effects estimates are shown together with the p value for heterogeneity, and the results of the Begg and Egger tests for publication bias. Also shown are the random effects estimates adjusted for publication bias and the percentage change in the estimate following adjustment. Forest plots and funnel plots for each individual meta-analysis together with a table with details of the estimates and their citation are in Appendix 2. The references to the individual studies are in Appendix 1. Figures 4.1a and 4.1b show plots, for mortality and morbidity respectively, of both the fixed effects and random effects estimates before and after adjustment for publication bias.

Mortality

There were 33 summary estimates for measures of particles and mortality, categorized by particle metric, diagnosis and age group. 31 estimates were for all-cause or cardiovascular or respiratory causes and these comprised 685 individual estimates. All of these 31 summary estimates were in a positive direction, and all but 6 random effects estimates had lower confidence intervals above zero. 15 of the 31 showed a reduction of >20% after adjustment. After adjustment for publication bias all but one (black smoke and all-age respiratory mortality) remained positive though 8 of the 31 had lower confidence limits below zero. There was evidence of heterogeneity in over half of the meta-analyses. The two estimates for non all-cause and cardiorespiratory causes were also positive.

For all-cause, all-age mortality there were summary estimates for all 6 particle metrics, based on 250 individual city estimates. With two exceptions there was evidence of publication bias which, when corrected for, reduced the size of the estimates by >20% in 2 of the 6 summary estimates. The exceptions were the estimates for PM_{10} (the largest analysis, with 292 cities), and $PM_{2.5-10}$. The other 5 estimates for all-cause mortality were mainly for the elderly age group and while positive were all reduced by adjustment for publication bias by up to 70%. After adjustment 2 estimates had lower confidence intervals below zero.

All-cause, all-age mortality was the only grouping for which there were summary estimates for all 6 metrics for particulate matter. There was no obvious difference between them in the strength of qualitative evidence for adverse health effects. Because the summary estimates for different particle metrics were based on different mixes of cities, comparison of quantitative results must be cautious. The ranking of risks for an increment of 10µg/m^3 was SO_4^{2-} > $PM_{2.5}$ > $PM_{2.5-10}$ > PM_{10} > BS > TSP. Because these pollutants are not present in the same mass concentrations in the urban environment, this ranking does not reflect their respective public health effects. To do this, we applied the estimates to the 10th to 90th percentile of a real ambient atmosphere (Birmingham, for which nearly all were available). The ranking became PM_{10} (1.11%) > $PM_{2.5}$ (1.02%) > $PM_{2.5-10}$ (0.87%) > BS (0.68%) > SO_4^{2-} (0.26%) (no percentile for TSP available). These results suggest that at the population level both fine and coarse fractions of PM_{10} are important. It also appears that SO_4^{2-} contributes less to the effects of the “fine” fraction than other components.

There were 10 estimates for cardiovascular outcomes and all were convincingly positive. However, 9 were reduced by adjustment for publication bias, 5 by >20%. The pattern was a little less convincing for respiratory outcomes. One (black smoke and all-age respiratory mortality) became just negative on adjustment for publication bias and though in a positive direction, 5 of the 10 adjusted estimates had lower confidence limits below zero.

Hospital admissions

There were 31 pollutant/diagnosis/age groupings for particles and hospital admissions. These comprised 283 individual estimates. All but 2 were positive but 8 had lower confidence limits below zero. 7 estimates were reduced by more than 20% by adjustment for publication bias.

There were 12 groupings for cardiovascular admissions. All but 1 (stroke and black smoke in the elderly) were positive. One quarter showed evidence of important publication bias. 3 estimates had lower confidence limits below zero after adjustment.

There were 7 groupings of hospital admissions for all respiratory diagnoses. All but one were positive but 3 had lower confidence intervals below zero. There were 5 groupings for asthma admissions, all of which were in a positive direction. The most convincing associations were for PM_{10} all-ages and PM_{10} children's asthma admissions though that for the latter was reduced by 20% on adjustment for publication bias. The evidence for the other 3 groupings was less convincing because of publication bias and lower confidence intervals below zero. The estimate for emergency room visits for asthma and PM_{10} was large and unlikely to be explained by chance. 2 of the 3 estimates for COPD showed a positive association but the remaining estimate (for Black Smoke) was weak and reduced by adjustment for publication bias by 57%.

MULTICITY STUDIES

Single pollutant models

47 papers reporting multicity time series results were identified. These were mainly from Amr A and Eur A (Table 4.1). Most were for PM_{10} (36) or Black Smoke (16), The summary estimates reported by these studies are shown in Table 4.3 and Figure 4.2. To the extent that the multicity studies reported the results of individual cities, the single city and multi city estimates are not mutually exclusive as to the cities included. Further, a number of multicity studies included the same cities. For this reason it would not be appropriate to attempt any averaging.

PM_{10}. Table 4.3a and Figure 4.2a show the results for the 71 multicity estimates for PM_{10}. The first section of the Table and Figure shows estimates for 64 studies with diagnostic groupings that correspond to summary estimates based on single city meta-analyses (Table 4.2). 7 additional multicity studies with other diagnostic groupings for which there were too few single city studies for meta-analysis, are shown at the bottom of the table and figure. For all-cause mortality, the number of cities studied ranged from 3 (Spain) to 90 (USA). All but 1 of the 25 estimates (4 US cities) were positive and 3 had lower confidence limits below zero. Estimates ranged from -0.07 to 2.02 but the most extreme results tended to be based on small numbers of cities. For studies reporting respiratory or cardiac mortality the pattern was similar, with 15 out of 15 estimates positive and 3 out of 13 (the other 2 did not have confidence intervals) having lower confidence limits below zero. For the 28 multicity estimates for morbidity, the pattern was also consistent with all having positive estimates and 2 out of 25 having confidence limits below zero. Preliminary analysis on the 14 multicity estimates for PM_{10} and all-cause mortality showed asymmetry consistent with publication bias (results not shown).

Non-PM_{10} particle metrics. The 53 multicity estimates for other PM metrics are shown in Table 4.3b. There were 21 estimates for all-cause mortality, 4 for $PM_{2.5}$, 2 for $PM_{2.5-10}$, 2 for SO_4^{2-}, 11 for BS and 2 for TSP. All were positive and 4 had lower confidence intervals below zero. A similar pattern was observed for the 7 estimates for mortality from cardiovascular diagnoses and 10 estimates for respiratory diagnoses. 6 estimates for hospital admissions for cardiovascular diagnoses were all positive and 2 had lower confidence intervals below zero. 9 estimates for hospital admissions for respiratory diagnoses were positive with the majority having lower confidence limits below zero.

Overall, of the 124 multicity estimates of particle effects, only 3 were negative and the great majority had lower confidence intervals above zero.

Multipollutant models.

Examination of multipollutant evidence was restricted to the 14 multicity studies in which this was reported. The results are shown in Tables 4.4a and b in which the single pollutant estimate, if available, is compared with that obtained when the specified pollutant was controlled for. While it is difficult to assess these results in a systematic way, it appears that the PM_{10} estimates based on single pollutant models are often affected by inclusion of other pollutants in the model. Using a 50% or greater reduction in estimate as a guideline, the PM_{10} estimate was reduced in the majority of studies. NO_2 seemed to be the most influential though BS, CO, SO_2 also were important. The overall impression is that PM_{10} is not particularly robust and that statistically, NO_2 is the most influential.

Seasonal models

Table 4.5 shows the results from multicity studies in which the seasons are compared. Some include multipollutant models. While there are seasonal differences, there is no clear or consistent pattern.

PANEL STUDIES

92 papers reported estimates for particles based on panel studies. Most were from Amr A and Eur A and the majority had studied PM_{10}. The outcomes with sufficient studies for

meta-analysis were PEFR, FEV_1, FVC, lower respiratory symptoms, upper respiratory symptoms and use of medication. The panels were comprised either of unselected population samples or of subjects chosen on the basis of a history of chronic respiratory symptoms.

Table 4.7 presents the results of the 15 meta-analyses. All were children and all but 1 were panels of symptomatic children. The details of the individual meta-analyses are in Appendix 3 and the references in Appendix 1.

There were 3 studies of particles and PEFR and none showed convincing evidence of an association between either black smoke or PM_{10}. Among 4 studies no convincing positive associations were observed with either particle metric for either incident or prevalent medication use. In 4 meta-analyses, there was no association between black smoke and lower respiratory symptoms or PM_{10} and lower respiratory symptoms. In contrast, there were negative associations with upper respiratory symptoms and black smoke with upper confidence intervals below zero. The 2 meta-analyses of PM_{10} and upper respiratory symptoms showed negative associations with upper respiratory symptoms, 1 of which had upper confidence intervals below zero. Publication bias was important only for black smoke and upper respiratory symptoms where the estimate was increased by 32%, and PM_{10} and PEFR where the estimate was reduced by 87%.

Chapter 5: Results – Nitrogen dioxide (NO_2)

META-ANALYSIS OF SINGLE CITY ESTIMATES

Quantitative evidence for health effects of nitrogen dioxide (NO_2) comes from 176 peer reviewed time series studies (Table 1). These papers have analysed data from 181 different cities worldwide with 20 assessing the collective evidence from multiple cities in a multicity design. The majority of the 176 studies are from North America (51) and Europe (77). Mortality is the most commonly studied health endpoint and the majority of this evidence also comes from populations in North America and Europe. Both 1 hr and 24-hour measures of NO_2 have been investigated.

Table 5.2 details the results of meta-analyses of those health endpoints from which 4 or more usable estimates of the effects of NO_2 were available from the published literature. The details of the individual meta-analyses are in Appendix 2 and the references in Appendix 1.

Mortality

12 combinations of mortality and NO_2 averaging period (1 hr or 24 hr) provided sufficient numbers of estimates for inclusion in a meta-analysis. Increases in deaths from all-causes were associated with increases in NO_2 concentrations both for all-ages combined and for those over the age of 65 yrs, for both 1 hr and 24 hr measures of NO_2. Random effects estimates per 10 μg/m^3 increments in 24 hr NO_2 for the two age groups were 0.49% (95% CI: 0.38, 0.60) based upon 137 estimates and 0.86% (0.50, 1.22) for 11 estimates respectively - both summary estimates indicating significant heterogeneity amongst the two sets of estimates. Results for 1 hr. measures were lower - for all-ages the random effects summary estimate was 0.09% (-0.01, 0.20) for 15 estimates and for 65+ yrs 0.15% (0.03, 0.26) for 9 estimates, each per 10 μg/m^3 increment in NO_2. It should be noted that the range for 1 hr NO_2 measures was likely to have been greater than for the 24 hr average measures and, assuming that the health effects of NO_2 were not dependant upon the daily average used in the analysis, the size of the 1 hr effect estimates per 10 μg/m^3 would be smaller that the corresponding 24 hr estimates.

When the tests for publication bias were applied to the results for all-cause mortality only the results for all-age, 1 hr NO_2 indicated evidence for publication bias; adjustment suggested an additional 6 (on 15) estimates required to account for this bias. The resulting random effects summary estimate was reduced from 0.09% to 0.05%, a 48% reduction in the estimated effect size after adjustment for publication bias.

The main cause-specific mortality outcomes studied were cardiorespiratory, cardiovascular and respiratory diseases, the former health endpoint unique to the National Mortality, Morbidity and Air Pollution Study (NMMAPS). 59 estimates of the effect of 24 hr NO_2 on cardiorespiratory mortality were combined to give a homogeneous summary estimate of 0.18% (0.08, 0.27) - adjustment for publication bias resulting in a small (~6%) reduction in the estimate but no loss of statistical significance. For cardiovascular (CV) causes, the majority of the effect estimates were for 24 hr average measures rather than 1 hr measures, 30 compared to 9. Random effects estimates were 0.34% (0.19, 0.48) for 1 hr measures and 1.17% (0.82, 1.53) for 24 hr measures with both sets of results indicating the presence of publication bias leading to reductions of 4% and 26% on adjustment. For respiratory causes a similar pattern of associations was observed, larger 24 hr random effects summary estimates compared to 1 hr random effects estimates, both sets of results revealing evidence of publication bias leading to the addition of estimates to correct the bias. The bias-adjusted estimates per 10 $\mu g/m^3$ increments in 1 hr and 24 hr NO_2 averages were 0.37% (0.10, 0.64) and 1.72% (1.31, 2.12) respectively.

There were sufficient estimates for deaths due to cardiac disease, stroke and COPD for meta-analysis (Table 5.2) - in each case the bias adjusted estimates showing positive and statistically significant associations with increases in NO_2 concentrations. To summarize, there were twelve mortality sets, defined by disease, age and NO_2 measure, for which 4 or more estimates were available for meta-analysis. In every set, increases in NO_2 concentrations (per 10 $\mu g/m^3$) were associated with increases in daily numbers of deaths of between 0.05% and 1.72% following adjustments for publication bias.

Hospital admissions

Twenty-two sets of admissions, defined by disease, age and NO_2 measure contained 4 or more effect estimates for meta-analysis. The most common outcome was respiratory disease (8) followed by asthma (5). Cardiovascular disease sub-groups were available in 7 sets of estimates (Table 5.2).

For respiratory disease, 1 hr and 24 hr effect estimates were calculated for all-ages, children, young adults and the elderly separately (8 in total). The expected pattern of larger summary estimates for 24 hr NO_2 averages compared to 1 hr averages was observed. For 24 hr NO_2 concentrations random effects summary estimates were 1.80%

(1.15, 2.45), 0.82% (0.35, 1.29), 1.47% (0.10, 2.87) and 0.48% (-0.35, 1.31) for all-ages, children, young adults and the elderly respectively. Adjustment for publication bias was only necessary in the all-ages set leading to a 13.5% fall in the random effects summary estimate (to 1.56% (0.94, 2.17)). Results for asthma were similar – random effects estimates for 24 hr average NO_2 in all-ages and children were 1.37% (0.59, 2.15) and 2.92% (1.15, 4.72) respectively and both sets of results subject to publication bias, adjustment leading to falls in the RE summary estimates of 41% and 16%.

Of the different cardiovascular outcomes studied all effect estimates were positive, 2 sets showed evidence of publication bias and in one of these cases adjustment turned a very small positive effect estimate into a very small negative effect estimate (but a corresponding large % change in the size of the estimate). For cardiac disease, IHD and heart failure and 24 hr average NO_2 measures, associations were positive, unbiased and statistically significant based upon just 5, 8 and 4 estimates respectively. The sizes of the effect estimates were comparable to those for respiratory outcomes – 1.35%, 0.94% and 1.38% respectively.

Emergency room visits

Only a single set of results had sufficient estimates for meta-analysis – children's asthma attendances. After adjustment for publication bias, the combined random effects summary estimate was 0.78% (0.07, 1.49) per 10 $\mu g/m^3$ increment in 24 hr NO_2 concentrations.

MULTICITY STUDIES

Single pollutant models

Table 5.3 and Figure 5.2 describe the NO_2 results obtained from multicity studies. Of the 20 published multicity studies reporting NO_2 results some have used the same combinations of outcome/disease/age and NO_2 averaging period as in the review. In many cases the same estimates are used in the two sets of meta-analyses – the availability of numerical values for individual city estimates (and their standard errors) determining their inclusion (together with other estimates from the same city) in the meta-analyses conducted for this review. What is striking in examining the results from the multicity studies shown in the tables and figures is the consistently positive associations between increases in NO_2 and changes in health outcomes.

Multipollutant models

Table 5.4 details NO_2 results obtained from multipollutant models. 7 studies reported results for both single and multipollutant models and hence provide appropriate data for comparison. For both mortality and hospital admissions NO_2 summary effect estimates were consistently positive both before and after adjustment for co-pollutants and furthermore the size and precision of the estimates were not substantially reduced in almost all cases. This suggests that the observed short-term effects of NO_2 on health were unlikely to be confounded by other pollutant measures.

Seasonal models

Table 5.5 details NO_2 results obtained from seasonal models. As indicated, only one study provided an assessment of seasonal differences for an outcome included in this review – leaving little evidence on which to base an assessment of seasonal differences in the effects of NO_2 on health.

PANEL STUDIES

Quantitative evidence for health effects of nitrogen dioxide (NO_2) also comes from panel studies. 52 published, peer reviewed papers analysed data from 49 centres worldwide with 11 reporting collective evidence from multiple centres in single papers (Table 5.6). As for time series studies the majority of the evidence comes from studies conducted in North America (16) and Europe (31). Outcomes studied included PEFR, FEV_1, FVC, lower and upper respiratory symptoms and medication use. Both 1 hr and 24-hour measures of NO_2 have been investigated.

Only 7 combinations of outcome, age and NO_2 measure provided sufficient usable estimates for meta-analysis (Table 5 7). The outcomes studied were: incidence and prevalence of both lower and upper respiratory symptoms (non-dyspnoea), PEFR, and incidence and prevalence of medication use. The incidence and prevalence of both lower and upper respiratory symptoms were negatively associated with increases in NO_2 concentrations. There were no associations with PEFR.

Chapter 6: Results – Ozone (O_3)

META-ANALYSIS OF SINGLE CITY ESTIMATES

The number of papers reporting ozone estimates is shown in Table 6.1, divided by broad outcome and WHO region. 213 papers were identified covering 216 cities. About half of the papers related to cities in the American Region (110) and about one third to European cities (70). The majority of cities were from WHO “A” regions. In terms of cities, Amr A dominated with 147 cities followed by Eur A with 43. Papers with mortality outcomes were the most frequent (99), followed by hospital admissions (78) and emergency room visits (35). The “other” category included outcomes such as primary care visits and ambulance transports. Each of the three averaging times was reported by about one third of the papers, with a few reporting more than one averaging time. However, cities with results for 24 hr average were twice as frequent as maximum 8 hr or 1 hr averages, reflecting the dominance of the North American NMMAPS studies which used this metric.

The meta-analyses for all pollutant/diagnosis/age groups for which there were four or more estimates are shown in Table 6.2. For each group, the total number of estimates identified and the number used in the meta-analysis are shown. The latter is a lower number because only one estimate per city was selected and some estimates did not have standard errors (see methods). Random effects estimates are shown together with the p value for heterogeneity, and the results of the Begg and Egger tests for publication bias. Also shown are the random effects estimates adjusted for publication bias and the percentage change in the estimate following adjustment. Forest plots and funnel plots for each individual meta-analysis together with a table with details of the estimates and their citation are in Appendix 2. Figure 6.1 shows plots of both the fixed effects and random effects estimate before and after adjustment for publication bias.

Mortality

There were 13 summary estimates for ozone and mortality. All were positive, lying between 0.10% and 0.47% and all but 2 estimates for respiratory mortality had lower confidence intervals above zero. The effect of adjusting for publication bias ranged from zero to a 38% reduction in the random effects estimate, with 6 of the 13 estimates reducing by >20% after reduction. After adjustment for publication bias all remained positive though 4 now had lower confidence limits below zero. The range of estimates was similar (0.10% to 0.44).

For all-cause, all-age mortality there were 133 individual city estimates, most of which were for 24 hr average concentrations. For 1 hr and 8 hr averages there was evidence of publication bias and correcting for this led to reductions of the estimates by 38% and 34% respectively, but with confidence limits that did not include zero. Following these adjustments, the estimates for the three averaging times were similar at 0.17%, 0.15% and 0.15% respectively. The adjusted random effects estimates for all-cause mortality in the elderly were consistently higher than those for all-ages.

There were summary estimates for all three averaging times and cardiovascular mortality, based on 31 individual estimates. After adjusting for publication bias affecting the 1 hr summary estimate, it was apparent that the cardiovascular mortality summary estimates were somewhat higher than the all-cause ones. There were 31 individual estimates for respiratory mortality: after adjusting for publication bias 2 of the 3 summary estimates had lower confidence intervals less than zero. The sole summary estimate for cardiorespiratory mortality was based on 80 individual estimates and was at the low end of the range, at 0.1%.

The overall picture for ozone and mortality appears to be this: 1) all summary estimates are positive but some of the cause-specific estimates are not significant; 2) there is evidence of publication bias in over half of the summary estimates and this reduced about half of the estimates by a substantial amount; 3) summary estimates for cardiovascular mortality tend to be higher than those for all-cause mortality and 4) while tending to be positive, the evidence for respiratory mortality was the least convincing.

Hospital Admissions

The 4 meta-analyses of for cardiovascular admissions comprised 20 individual estimates grouped into 4 four diagnostic categories: cardiovascular, cardiac, ischaemic heart disease and heart failure. 3 of the 4 random effects estimates were negative and all had upper confidence intervals that included zero. There was no evidence of publication bias.

There were 5 meta-analyses for admissions for all respiratory disease based on 30 individual estimates. The size of the adjusted random effects estimates ranged from 0.19% to 0.63% and 2 had lower confidence limits below zero. One summary estimate, respiratory admissions in children, showed marked publication bias and was reduced by adjustment by 66%.

There were 4 meta-analyses for asthma, based on 21 individual estimates. The adjusted results were inconsistent both across and within age groups, ranging from -1.04% to 1.6%. Three had lower confidence limits below zero. For 8 hr O_3, adjustment for publication bias reduced the estimate by 239% to a negative association. The other 3 asthma meta-analyses showed no evidence of publication bias. There was 1 estimate for emergency room visits for asthma in children and although this was positive, it was strongly affected by publication bias and had a lower confidence interval below zero.

There was 1 summary estimate for COPD (without asthma). After adjustment for a small amount of publication bias, it remained positive with a lower confidence interval above zero.

The overall picture for hospital admissions appears to be this: 1) there is no convincing evidence for an association with cardiovascular admissions, most summary estimates being negative; 2) for admissions for all respiratory diagnoses the associations were all positive but some were consistent with chance; 3) for asthma admissions and emergency room visits the evidence was weaker, with only one of four summary estimates unlikely to be explained by chance and two affected by important degrees of publication bias.

MULTICITY STUDIES

Single pollutant models

24 papers reporting the results of multicity studies were identified. These were mainly from Amr A, Eur A and Wpr (Table 6.1). The summary estimates reported by these studies are shown in Table 6.3 and Figure 6.2. The first section of the Table and Figure shows estimates for groups that have corresponding summary estimates in Table 6.2 based on single city meta-analyses. To the extent that the multicity studies reported the results of individual cities the single city and multi city estimates are not mutually exclusive as to the cities included. The lower section of the Table and Figure shows results for groups for which there were insufficient individual city results for the single city meta-analysis.

For all-cause mortality, the number of cities studied ranged from three (Spain) to 90 (USA). All but 1 (South Korea) of the13 estimates were positive and 8 had lower confidence limits above zero. For studies reporting respiratory or cardiac mortality the pattern was similar, with all 11 estimates positive and 6 with lower confidence intervals above zero.

The single study of hospital admissions for cardiac disease (heart failure) found little evidence for an association with ozone. All but 1 of the 11 results for respiratory admissions were positive and 7 had a lower confidence limit above zero. The Taiwanese study of general practitioner visits for lower respiratory infection found no evidence of an association with ozone.

Multipollutant models

Examination of multipollutant evidence was restricted to multicity studies in which this was reported. The results are shown in Table 6.4 in which the single pollutant estimate, if available is compared with that obtained when the specified pollutant was controlled for. The great majority of results are for all-cause all-age mortality. Where the single pollutant result is available for comparison, the results are generally consistent in that the association with ozone is quite robust to the inclusion of other pollutants in the model. Most associations are positive but a substantial minority have lower confidence limits below zero. Most of the few hospital admissions results were either negative or unconvincingly positive.

Seasonal models

Table 6.5 shows the results from multicity studies in which the seasons are compared. Some include multipollutant models. Comparing the warm season or summer with the cool season or winter, there is a tendency for associations to be stronger in the former, though the extent of the difference varies considerably. The most extensive analysis is that of 23 European cities. There is a markedly lower association in the cool season than the warm season but this difference is reduced when SO_2, PM_{10}, or CO (but not NO_2) are included in the model. Most of the other studies found a smaller association in the cooler periods which was more likely to have a lower confidence interval that included zero. Overall there is good evidence for smaller and less convincing associations in the cooler period of the year.

PANEL STUDIES

57 panel study papers reported estimates for O_3. Most were from Amr A and Eur A and had used 1 hr or 8 hr averaging times (Table 6.6). The three main outcomes were measures of lung function, respiratory symptoms and asthma medication. The panels comprised either population samples or subjects chosen on the basis of a history of chronic respiratory symptoms. They are further divided into panels of children and adults.

Only four groupings met our criteria for meta-analysis. These were all studies of children with estimates for measures of lung function and 1 hr ozone (Table 6.7). There were consistent convincing associations between higher ozone concentrations and lower lung function. The effects on FEV_1 and FVC were similar, suggesting a restrictive rather than obstructive defect. There was evidence of moderate publication bias in one study.

Chapter 7: Results – Sulphur dioxide (SO_2)

META-ANALYSIS OF SINGLE CITY ESTIMATES

Health effects of sulphur dioxide (SO_2) have been quantified in 238 peer reviewed time series studies worldwide (Table 7.1). These papers have analysed data from 211 different cities with 24 assessing the collective evidence from multiple cities in a multicity design. The majority of the studies are from North America/Canada (63) and Europe (118). Mortality is the most commonly studied health endpoint and the majority of this evidence also comes from populations in North America/Canada and Europe. The majority of estimates for SO_2 health effects use 24 hr averages. A small number of studies (35 compared to 216) have used 1 hr averages.

Table 7.2 details the results of meta-analyses of those health endpoints from which 4 or more usable estimates of the effects of SO_2 were available from the published literature.

Mortality

Thirteen combinations of all-cause and cause-specific mortality and age provided sufficient numbers of SO_2 effect estimates for inclusion in a meta-analysis. Increases in all-cause mortality were associated with increases in SO_2 concentrations both for all-ages combined and for those over the age of 65 yrs - random effects random effects estimates per 10 $\mu g/m^3$ increments in 24 hr SO_2 for the two age groups were 0.45% (95% CI: 0.37, 0.54) based upon 144 estimates and 0.48% (0.17, 0.80) for 27 estimates respectively - both sets indicating significant heterogeneity amongst the estimates. In both cases there was evidence to suggest the presence of publication bias. Analyses for a further age group – not elderly, predominantly ages 15 to 64, did not suggest an association between all-cause mortality and 24 hr average SO_2 measures.

The main cause-specific mortality outcomes studied were cardiorespiratory, cardiovascular and respiratory diseases. 64 estimates of the effect of 24 hr SO_2 on cardiorespiratory mortality were combined to give a homogeneous summary estimate of 0.29% (0.17, 0.40). There was little evidence to suggest the presence of publication bias.

For cardiovascular causes, sufficient estimates were available for meta-analysis for all-ages and for the elderly – random effects summary estimates were 0.68% (0.46, 0.91) and 1.22% (0.65, 1.79) respectively, the former derived from 48 heterogeneous estimates, the latter from just 6 estimates. Despite the relatively large number of estimates for the all-age group there was some evidence of publication bias – using the trim and fill method to adjust for this potential bias led to a small reduction (9%) in the size of the summary effect estimate. There were also sufficient published studies to conduct a meta-analysis of deaths from stroke and from cardiac disease. These showed convincing positive associations with no evidence of publication bias.

For deaths from respiratory causes 44 all-age heterogeneous effect estimates gave a RE summary estimate of 0.36% (0.09, 0.62) and 6 heterogeneous effect estimates for the elderly age group gave a RE summary estimate of 2.69% (-0.33, 5.80) – evidence for the presence of publication bias found in both groups. A small number of publications examined deaths from COPD, lower respiratory infections and other respiratory causes – each one giving positive associations with increases in average SO_2 levels and each subject to publication bias.

Hospital Admissions

There were 17 combinations of age and cause of admissions with sufficient numbers of estimates for inclusion in a meta-analysis – 8 cardiovascular and 9 respiratory outcomes. All-age cardiovascular and cardiac admissions were positively associated with SO_2 concentrations, 0.96% (0.13, 1.79) and 2.26% (1.30, 3.22) per 10 $\mu g/m^3$ increase respectively – both results sensitive to adjustment for publication bias despite non-significant results for Begg and Egger tests. Unsurprisingly, results in the elderly group were similar to those for all-ages.

There was clear evidence of unbiased summary estimates (around 1%) for an effect of SO_2 upon emergency admissions from IHD.

For admissions from respiratory causes, analyses for all-ages, children, young adults and the elderly were all suggestive of a detrimental effect of SO_2: 1.51% (0.84, 2.18), 2.23% (0.84, 3.64), 0.21% (-0.42, 0.85) and 0.74 (0.35, 1.12) based upon 18, 6, 8 and 12 estimates respectively. There was strong evidence of an association between SO_2 and asthma admissions in children (less so for all-ages) – the random effects summary estimate of 4.24% (1.93, 6.60) based upon 8 individual estimates, although this estimate was highly sensitive to adjustment for publication bias, reducing to 2.88% (0.93, 4.87) on the addition of 3 (fill) estimates. Admissions for COPD were also strongly associated with SO_2.

Emergency room visits

There were three disease/age groups with sufficient numbers of estimates for meta-analysis. In each case emergency visits for respiratory complaints or asthma alone were associated with increases in SO_2 concentrations. However, there was strong evidence of publication bias in the 2 all-age estimates and when adjustment was made for this using the trim and fill technique the effect estimates were reduced substantially and the confidence intervals all included zero.

MULTICITY STUDIES

Single pollutant models

As table 7.1 indicated there were a substantial number of multicity time series studies that reported SO_2 effect estimates. The details of these studies are shown in Table 7.3. 21 report summary estimates for mortality and 14 for hospital admissions. The majority of these studies have been carried out in Europe (16) and in North America/Canada (6).

Eleven of the 12 summary estimates for all-cause all-age mortality were positive ranging from 0 to 1.5% per 10 μg/m^3 increase in 24-hour SO_2 concentrations. All of the cause-specific (4 cardiovascular and 5 respiratory) estimates (all from Europe) were positive – most with lower confidence intervals above zero.

In the five multicity studies of hospital admissions for cardiovascular disease all reported positive effect estimates ranging between 0.37 and 2.00% per 10 μg/m^3 increase in SO_2 concentrations. In the 9 studies that reported summary estimates for respiratory admissions, all except 1 were positive although in 5 the lower confidence limits were below zero.

Multipollutant models

Five multicity studies reported both single and multipollutant SO_2 effect estimates (Table 7.4). They were conducted in Korea, Canada, Spain and a number of cities across Europe. In all cases the effect estimates were affected by the inclusion of particle measures (either TSP, PM_{10}, $PM_{2.5}$ or BS) – either the size of the estimate was reduced and/or the width of the confidence intervals increased suggesting that the SO_2 effects were not robust to the inclusion of particle metrics in the statistical models.

Seasonal models

Only 2 multicity studies reported both all-year and seasonal pollutant models (Table 7.5). Although the numbers of results were small there was a clear suggestion that the effect of SO_2 on mortality and hospital admissions were greater in the warmer/summer months than in the cooler/winter months.

PANEL STUDIES

Health effects of sulphur dioxide (SO_2) have been quantified in 43 peer reviewed panel studies in 44 separate locations worldwide of which 10 are of the multicity design (Table 7.6). The majority of the studies are from Europe (28) and North America (13) and a range of outcomes have been studied including PEFR (26), LRS (35), URS (20) and medicine use (19). As for time series studies most used 24-hour average measures rather than 1 hr (36 compared to 5).

Table 7.7 details the results of meta-analyses of those health endpoints from which 4 or more usable estimates of the effects of SO_2 were available from the published literature. As for the other pollutants, only one estimate per city/location was used to prevent over-representation of specific samples in a meta-analysis. 7 categories of symptoms/measurements contributed sufficient numbers of estimates for a meta-analysis. Both the incidence and prevalence of upper and lower respiratory symptoms decreased in association with increases in SO_2 concentrations. There was no suggestion that PEFR or use of medications was associated with SO_2 concentrations.

Chapter 8: Results – Carbon monoxide (CO)

META-ANALYSIS OF SINGLE CITY ESTIMATES

134 papers from 173 cities had time-series estimates for CO. Most cities were in Amr A and Eur A (Table 8.1). The majority reported 24 hr concentrations. The single city meta-analyses are described in Table 8.2 and Figure 8.1 and the individual meta-analyses are described in Appendix 2.

Mortality

There were 11 summary estimates for mortality outcomes and these were based on from 4 to 114 individual cities. All were positive and all but 1 had lower confidence limits above zero. Adjustment for publication bias led to 2 more estimates with lower confidence limits below zero and to a greater than 20% reduction in estimate in 3. About half showed evidence of heterogeneity.

Hospital admissions

There were 5 summary estimates for admissions for cardiovascular diagnoses. All were positive and but after adjustment for publication bias, 1 (IHD) had lower confidence limits below zero. IHD was the only one affected by publication bias. There were 4 estimates for respiratory diagnoses, all were positive but after adjustment for publication bias 2 had lower confidence limits below zero.

MULTICITY STUDIES

Single pollutant models

There were 17 multicity single pollutant estimates, 8 for mortality outcomes, 5 for hospital admissions and 4 from one study of general practitioner consultations (Table 8.3 and Figure 8.2). All were positive with lower confidence limits above zero.

Multipollutant models

Three multicity studies compared single pollutant with multipollutant effects (Table 8.4). There was no consistent pattern, the CO estimate being affected by inclusion of other pollutants in one study but not in another.

PANEL STUDIES

No meta-analyses of panel studies were possible due to insufficient numbers.

Chapter 9: Overall Summary and Discussion

SUMMARY OF RESULTS

This study systematically ascertained by literature search, all peer-reviewed time series and panel studies published up to 2006. Data were extracted from each paper into a database and this was used to carry out a quantitative meta-analysis of health outcomes and five pollutants: particles (PM_{10}, $PM_{2.5}$, $PM_{2.5\text{-}10}$, BS, SO_4^{2-} and TSP), NO_2 (1 hr and 24 hr averaging times), O_3 (1 hr, 8 hr and 28 hr averaging times), SO_2 (24 hr averaging time) and CO (1 hr, 8 hr and 24 hr averaging times). The outcome categories analysed were based on clinically appropriate groupings of diagnostic codes or symptoms and these were further divided into age groups. Meta-analyses were conducted only when four or more estimates from individual cities were available. No meta-analysis used results from a city or centre more than once. The estimates from individual cities reported in multicity studies were included. The summary estimates reported in multicity studies were presented separately. Evaluation of multipollutant and seasonal effects was combined with those reported from multicity studies so that these comparisons involved the same cities.

Overview of time series results

A qualitative overview of the time series meta-analyses is shown in Table 9.1. 176 meta-analyses of time series studies were done. These were based on a total of 2657 individual estimates. Each city was included no more than once in any individual meta-analysis. 96% of summary effect estimates were in an adverse (positive) direction, and 74% were both adverse and with had 95% confidence limits that excluded zero, indicating that they were unlikely to be explained by chance. None of the 8 estimates in a negative direction had confidence limits that excluded zero, indicating that these estimates were consistent with no effect of pollution on the outcome. Heterogeneity was detected in 64% of meta-analyses. 22% showed evidence of publication bias and the trim and fill adjustment reduced 33% of estimates by more than 20%.

There were 79 summary estimates for mortality and 97 for hospital admissions, reflecting the larger range of age/diagnostic groups in the latter. The number of individual estimates was, however, higher for mortality (1963) than for morbidity (694), possibly reflecting in part the lesser availability of hospital admissions data. Overall, the evidence for consistent results in an adverse direction was high for both mortality (100%) and morbidity (92%). Mortality summary estimates were more likely than morbidity estimates to have confidence limits that did not include zero (85% vs 65%). The proportions with evidence of heterogeneity were similar (66% and 62% respectively). Mortality showed considerably more publication bias than morbidity (35% vs 10%) and a higher proportion showed a reduction of more than 20% after trim and fill adjustment (39% vs 28%).

Overview of panel results

For the panel studies overall, the results were consistent, in that few were in an adverse direction and few were likely to be explained by chance. Of 33 meta-analyses comprising 720 individual estimates, 30% were in an adverse direction and 12% were in an adverse direction and had confidence intervals which excluded zero. The majority (70%) had estimates which were in a protective direction and 18% were in a protective direction and had confidence intervals which excluded zero. The majority showed evidence of heterogeneity but publication bias was minimal. The clearest evidence for adverse effects was for ozone for which all 4 meta-analyses showed adverse effects that were unlikely to be explained by chance.

Particulate matter

For time series studies of particles 333 papers were identified covering 278 cities (Table 9.2). From these, 62 summary estimates for the range of 6 particle metrics were obtained and these were based on 968 individual city estimates. The great majority (97%) were positive but fewer (74%) were statistically convincing, with lower confidence limits above zero. There was statistical evidence of publication bias in 18% of estimates, more so for mortality, and adjustment for publication bias reduced estimates by more than 20%, in over one third of estimates. There was evidence of heterogeneity in over half of the meta-analyses. 6 metrics for particulate matter were included in the analysis and there was no obvious qualitative difference between them.

There were summary estimates for the 6 metrics for particulate matter only for all-age, all-cause mortality. There was no obvious difference between them in the strength of qualitative evidence for adverse health effects. Because the summary estimates for different particle metrics were based on different mixes of cities, comparison of quantitative results must be cautious. The ranking of risks for all-cause mortality for an increment of 10μg/m^3 were SO_4^{2-} > $PM_{2.5}$ > $PM_{2.5\text{-}10}$ > PM_{10} > BS > TSP. However when estimated for increments based on the 10th to 90th percentile of a real ambient atmosphere (Birmingham, for which concentrations of all but TSP were available), the ranking became PM_{10} (1.11%) > $PM_{2.5}$ (1.02%) > $PM_{2.5\text{-}10}$ (0.87%) > BS (0.68%) > SO_4^{2-} (0.26%). These results suggest that at the population level both fine and coarse fractions of PM_{10} are important. It also appears that SO_4^{2-} contributes less to the effects of the "fine" fraction than other components.

There were 124 multicity estimates for particles, a little over half being for PM_{10}. All but 2 were positive but about 20 of these had lower confidence limits below zero.

For the panel studies there were 15 summary estimates for lung function, symptoms and medication use and none showed evidence of an association with PM. In fact, there was more evidence of a protective than an adverse effect.

Nitrogen dioxide

Time series estimates for nitrogen dioxide were identified from 176 papers relating to 181 cities (Table 9.3). 34 summary estimates were obtained of which all but 2 were in an adverse direction. Of the 12 mortality estimates, 11 had lower confidence limits above zero. The evidence was less convincing for hospital admissions where 14 of 22 summary estimates had lower confidence limits above zero. Heterogeneity was observed in more than half the meta-analyses. There was evidence of moderate publication bias with 29% estimates being reduced by more than 20% after adjustment.

For mortality outcomes, summary effect estimates ranged from 0.09% to 1.92%. The 1 hr estimates were smaller than the 24 hr estimates for the same outcomes/age but this was expected since 1 hr concentrations tend to have greater ranges of concentrations than the 24 hr averages. The larger number of disease/ages studied for hospital admissions resulted in a wider range in the sizes of the summary effect estimates: -0.09% (asthma admissions in young adults – 6 estimates) to 2.92% (children's asthma admissions) per 10 $\mu g/m^3$ increases in NO_2 concentrations.

All but 1 of the 7 estimates from meta-analyses of panel studies were in a protective rather than adverse direction and all but 2 had confidence limits which included zero. There was considerable heterogeneity but no evidence of publication bias.

Ozone

For time series studies of ozone, 213 papers were identified covering 216 cities (Table 9.4). From these, 28 summary estimates were obtained for the three averaging times. The number of underlying single city estimates contributing to these summary estimates ranged from 4 to 99, with a total of 380.

All the 13 mortality estimates were positive and about half showed significant heterogeneity. The majority had lower confidence limits above zero, more so for all-cause mortality than for cause-specific mortality. 3 of the 13 showed evidence of publication bias and 6 of the 13 were reduced by more than 20% following trim and fill adjustment.

Of the 15 summary estimates for hospital admissions, 12 were positive and 5 of these had lower confidence intervals above zero. None of the 4 estimates for cardiovascular diagnoses was consistent with an association with ozone, three being negative in direction. In contrast to mortality, only 3 of the 15 summary estimates were reduced by >20% by adjustment for publication bias. For admissions for all respiratory diagnoses the associations were all positive but about half were consistent with chance. For asthma admissions and emergency room visits the evidence was weak, with only 1 of 4 summary estimates unlikely to be explained by chance and 2 affected by substantial publication bias.

In the 4 analyses of panel outcomes, there were consistent and statistically convincing associations between higher ozone concentrations and small decrements of lung function. The effects on FEV_1 and FVC were similar.

Sulphur dioxide

For sulphur dioxide, 238 papers were identified covering 211 cities (Table 9.5). The meta-analysis yielded 32 summary estimates for time series studies based on 511 individual estimates. All the 12 summary estimates for mortality were in an adverse direction and 10 of these had lower confidence limits above zero. 9/12 mortality estimates showed heterogeneity and 6/12 significant publication bias. Of the 20 hospital admissions summary estimates, all but 1 were in an adverse direction and of these, 13 had confidence limits above zero. 16 showed heterogeneity and 10 were reduced after adjustment for publication bias.

The larger summary effect estimates tended to come from the meta-analyses with the small number of estimates. The more powerful meta-analyses (all-age all-cause, all-age cardiorespiratory and cardiovascular and all-age respiratory studies) showed comparable effect estimates at around 0.5% per 10 $\mu g/m^3$ increases in SO_2. The larger range of disease/ages studies for hospital admissions produced a wider range in effect sizes. The largest effect was observed for children's asthma admissions – a similar finding to that for NO_2. There did not seem to be a correlation between number of estimates in the meta-analyses and effect sizes.

In the 7 summary estimates obtained from panel studies, there was no convincing evidence for an adverse association. 6 estimates were in a protective direction and only 1 estimate had confidence intervals excluding zero.

Carbon monoxide

For carbon monoxide, 134 papers were identified covering 173 cities (Table 9.4). These yielded 20 summary estimates comprising 341 individual estimates. All 11 mortality estimates were in an adverse direction and 10 of these had lower confidence limits above zero. 8/11 mortality estimates showed heterogeneity and 5/12 significant publication bias. Of the 9 hospital admissions estimates, all were in an adverse direction and of these, 8 had confidence limits above zero. 7 showed heterogeneity and only 1 was reduced by >20% after adjustment for publication bias.

No meta-analysis of panel studies was possible.

APPROACH

The strength of our approach was to use a systematic method to distil quantitative assessments from a huge and complex body of published evidence. Although other meta-analyses have been published, these were generally restricted in scope as to the pollutant, outcome or region (Bell, Dominici, & Samet 2005;Dockery & Pope, III 1994;Health Effects Institute 2004;Ito, De Leon, & Lippmann 2005;Levy, Chemerynski, & Sarnat 2005;Pope & Dockery 2006;WHO 2004b). Our analysis is by far the most comprehensive available, having world wide coverage, all of the main measured ambient pollutants, including 6 particle metrics, and a wide range of age/diagnostic outcomes. The strength of the database method should also be emphasized. After first assembling the data in a systematic manner, it then enables the results shown here to be updated as new studies are published or enriched by more data from the papers or from the cities involved.

In its widest sense, meta-analysis includes important insights from details found within individual studies that are not revealed by a crude quantitative summarization. It is for this reason that we emphasize that this is a quantitative meta-analysis and does not draw on the richness of some of the evidence which requires a more subjective approach. As a quantitative meta-analysis it has important limitations however. One of these is the exclusion of informative studies, such as those with primary care outcomes, or of certain age-groups (such as infants), because the number of available estimates for a particular outcome/age/pollutant combination did not aggregate to 4 or more, the minimum defined for meta-analysis. The usual solution to this would be to present all the studies in one forest plot or table with quantitative meta-analysis of subgroups where possible. This has been done in several of our other reports (Department of Health Committee on Medical Effects of Air Pollution 2006) and gives a more complete picture of the evidence. Furthermore, studies that did not provide sufficient data for standardisation of effect estimates have not been included – for example, where results are presented graphically rather than in tabular form. Whilst attempts were made to obtain details of these results from the papers' authors, some results have not been added to the database and hence were not included in this quantitative assessment.

By including estimates for as few as 4 studies, we inevitably obtained many summary estimates that were not precisely estimated and less suitable for analysis of publication bias. However, this policy enabled us to include a much wider variety of outcomes.

In developing a way of quantifying estimates, we made many decisions that might influence the outcome of the analysis. One was to use an author-selected lag. While it is possible that this could result in some bias, the lack of any convention for the systematic reporting of time series results made it impractical to specify a lag *a priori*. However, when there was no author-selected lag, we made our selection according to an algorithm which was applied irrespective of the direction of the association. In this way, selection bias was minimised (Anderson, Atkinson, Peacock, Sweeting, & Marston 2005). Other lags were recorded in the database but were not the same for all papers. In the future we shall investigate the sensitivity of our results to this policy.

Another important aspect of the protocol was the categorization of outcomes. As others have noted (Stieb, Judek, & Burnett 2002), studies vary considerably in the health outcomes and age-groups reported. Without further refinement, a lot of estimates would have been lost to meta-analysis because they could not be grouped with others to reach a reasonable number for quantitative summarisation (4 or more for this study). The groupings that we adopted were arrived at mainly through the application of clinical knowledge tempered by the need to categorize as many estimates as possible. Doubtless, other investigators might have adopted different criteria, but we doubt whether this would have changed the results to a material extent.

We included individual cities from multicity studies where the data were available but this was not always the case. For this reason, we included separately in our report the summary estimates reported by multicity studies as well. These were far more frequent than we had anticipated. There will be overlap between the multicity and single city results and between multicity studies that have used the same cities on more than one occasion. Most of the multicity studies used pollutant/diagnostic groupings that corresponded to the single city meta-analysis but there were some other outcomes reported and the addition of these to the multicity results increases the range of outcomes considered in this report. Originally we planned to investigate multipollutant and seasonal models in the single city analysis. However, it became clear that such comparisons would be difficult if they compared different cities. For this reason, we confined multipollutant and seasonal analyses to multicity studies. In the event, the results were not easy to understand or summarize. Future work will attempt to obtain more information from single city multipollutant results.

The statistical aspects of the study are largely those that are common to meta-analysis and only selected issues will be discussed here. In presenting the summary estimates we have preferred to concentrate on their direction and precision, as indicated by the 95% confidence interval. This is more appropriate when dealing with large numbers of small estimates. Heterogeneity is a somewhat relative concept and use of $p<0.05$ is arbitrary. Meta-analysis with larger numbers of individual estimates will have more power to show a given level of heterogeneity. For investigating publication bias we used several approaches, none of them completely satisfactory. One was to inspect funnel plots (these are in the Appendices 2 and 3) and are subjective. The Egger and Begg tests not infrequently show different results with the Egger test probably more sensitive. We noted that sometimes the trim and fill adjustment resulted in important reductions in the summary estimate in the absence of a significant Begg or Egger test, and vice versa. One possible explanation for this apparent inconsistency between the different methods is the specification of fixed or random effects model assumptions chosen for the trim and fill procedure. The later option, suggested in the original paper describing the procedure and used here, can be sensitive to the amount of heterogeneity in the estimates being analysed (for evidence of publication bias). Following substantial correspondence with the authors of the paper, the current (unpublished) recommendation involves using a combination of fixed and random effects models within the trim and fill procedure. It should be noted that these revised specifications could result in a greater or lesser change in the overall number of imputed estimates and hence a greater or lesser reduction in the size of the summary effects. Without a substantial investigation and analysis of this issue it is not possible to assess the potential impact of these detail specifications within the trim and fill procedure upon our analyses and whether or not they account for any of the observed (occasional) disagreement in the results from Begg, Egger and trim and fill methods of assessing publication bias.

It should also be noted that publication bias is not just due to publication bias in the narrow sense, but to other processes that lead to bias in the reporting of results. In the present context this could include bias on the part of the analyst when post hoc thinking determines the choice of final model and post hoc selection amongst lags. The latter has the potential to inflate the estimate by up to a factor of 2 (Anderson, Atkinson, Peacock, Sweeting & Marston 2005).

It must also be emphasised that publication bias is not the only reason for asymmetry. As discussed in a previous publication on this subject, it may also occur due to a systematic difference between small and large studies arising from, for example, differences in time, space or methods.

We also emphasize that small study bias tests do not reveal bias which occurs in large studies; these are equally open to lag selection bias.

It has been widely accepted that large multicity studies are less prone to bias because they are more likely to be protocol driven and may have a priori lag selection policies. In an exploratory analysis, we looked for asymmetry in the 14 PM_{10} and all-cause mortality (all-age/elderly) multicity results and found clear evidence for small study effects - the trim and fill analysis suggesting an additional 16 results were required in order to make the funnel plot symmetrical. The Egger and Begg tests for publication bias were also in agreement over the evidence for publication bias. It should be noted that these tests are tests for small study effects and not just for publication bias and so care must be taken when drawing conclusions from such an analysis.

Comparing pollutant effects on the basis of a 10 unit change in pollutant, while appropriate for studying relative unit toxicity is unsuitable for comparing effects in the real world. In addition, these meta-analytic estimates were based on different numbers of cities. To compare the relative effects of the particle metrics, we obtained the distribution of the various particle metrics from an urban environment (Birmingham), for which all the pollutant metrics were available (except for TSP). When this was done, it was found that the ranking of importance was $PM_{10} > PM_{2.5} > PM_{2.5\text{-}10} > BS > SO_4^{2-}$. These findings are important for informing abatement policies.

A feature of the meta-analyses of ozone and nitrogen dioxide in particular is that a range of averaging times are reported. Other meta-analyses have attempted to scale all the estimates to a single averaging time (e.g. 8 hr ozone). This avoids having separate meta-analyses for each averaging time and thus both simplifies and increases the power of the meta-analysis. We did not do this because it would have made our estimates more opaque. But should this be required we suggest using the scaling for ozone employed by other meta-analyses (e.g. (Bell, Dominici, & Samet 2005)) or the use of scaling factors based on a suitable city.

FUTURE WORK AND WORK IN PROGRESS

Further meta-analyses of panel studies

Classifying the large range of panel symptoms into categories was difficult. In the event, we found that dividing the panel outcomes into lower respiratory with dyspnoea (e.g. wheezing) and those without (e.g. cough), while justified on clinical grounds, provided too few estimates for meta-analysis. The final papers for publication will do additional analyses of lower respiratory symptoms as a whole, thus increasing the potential number of meta-analyses.

Comparison with other meta-analyses

We have not had time as yet to compare our results with a systematic review of all other published meta-analyses. This will be done to accompany the papers on each pollutant which we are preparing for publication. The great majority of published meta-analyses have concentrated on particles or ozone (Bell, Dominici, & Samet 2005;Dockery & Pope, III 1994;Ito, De Leon, & Lippmann 2005;Levy, Chemerynski, & Sarnat 2005;Pope & Dockery 2006) in relation to mortality. Only rarely has there been an attempt to cover the spectrum of regulated “criteria” pollutants (Stieb, Judek, & Burnett 2002).

Comparison with multicity results

We did not expect to find such a large number of multicity estimates and plan to look at these in more detail. It is widely accepted that large multicity studies such as APHEA and NMMAPS are a more secure basis for estimating effects than single city studies. This is because they are thought to be less affected by various biases, including publication bias. It is therefore interesting that for PM_{10}, the estimates of mortality effects were quite similar. This was also reported in one of our earlier studies (Anderson, Atkinson, Peacock, Sweeting, & Marston 2005). We recognize that there is a lot of overlap between the single city and multicity estimates and future work will address this. Preliminary analysis suggests that multicity results are also affected by publication bias and we shall investigate this further.

Heterogeneity

The aim of the current report was essentially descriptive. Having identified substantial heterogeneity, a major task for the future is to try and understand the reasons for this. Lag selection bias can reduce heterogeneity (Anderson, Atkinson, Peacock, Sweeting, & Marston 2005) but mostly we are concerned with factors that increase heterogeneity. These include methodological factors such as exposure misclassification, variations in statistical modelling, differences in the toxicity of the pollution mixture or differences in the vulnerability of the population.

As indicated, one possible source of heterogeneity in effect estimates is the choice of statistical model. For example, problems were identified with the use of generalized additive models (GAM) and non-parametric smoothers compared to earlier methods using generalized linear models (GLM). An extensive re-analysis of daily mortality and hospital admissions datasets from Europe and America found that with the exception of NMMAPS mortality results, other multicity estimates were little affected. There was variation in individual city estimates but the summary estimates were not affected to any important extent (Health Effects Institute 2003). None the less, this issue may still explain heterogeneity in some sets of (individual city) estimates.

We have, in a previous report, investigated regional differences. This involved a comparison of Asian and Western studies, which show, on the basis of relatively few Asian studies, comparable risk coefficients for particles and daily mortality (Health Effects Institute 2004). This is in spite of many Asian cities having much higher concentrations of particulates. This work will shortly be updated. In contrast, some regions such as Canada and Australasia seem to have higher coefficients. Further exploration of the reasons for these variations may give insight into the relative toxicity of pollution mixtures or vulnerability of the population.

Sensitivity analyses

We plan to investigate the sensitivity of our results to the methods used. These include the choice of lag, grouping of outcomes, selection of cities and criteria for quality. This would be a way of investigating the degree to which the PEACE study influences some of the panel results.

Multipollutant models

We recognize the importance of understanding the results of multipollutant models. This is a difficult and complex issue, even within one study, let alone in a meta-analysis. We believe that this question is best addressed systematically in multi-city studies, and that meta-analysis of individual studies, which is the approach of our study, is of limited value. However, we shall investigate this question in more depth, using the resources of the database.

WHAT DO THE RESULTS TELL US ABOUT THE CAUSALITY OF THE ASSOCIATIONS?

Classical thinking about causality in epidemiology usually starts with Bradford Hill's "viewpoints". These include temporality, consistency, strength, dose-response, coherence, specificity and experimental evidence. The consistency of positive findings from the time series studies was striking, both in the single city and multicity summary estimates. This consistency was in spite of the wide range of cities, investigators and time series techniques. The pattern of positive findings was similar for all the five pollutants and within PM the various particle metrics. While supporting causality, this consistency could also be consistent with some other factor, the most plausible contenders being an artefact of the method, or a confounding factor that is common to all environments, such as weather. Exploration of the alternative hypotheses has not, to date, disproved the pollution hypothesis. Another feature of the results is the similarity for all the pollutants. This does not help with trying to identify the culprit pollutant, but may point to fossil fuel combustion being the common link between them. Heterogeneity of estimates was also a feature of these results. This is an argument against consistency unless it can be explained. So far, we understand little about factors affecting heterogeneity (Katsouyanni et al. 2001).

In contrast the consistency of null or negative results for panel studies was convincing evidence of a lack of effects on respiratory symptoms, lung function and asthma medications. The exception was O_3 for which there was consistent evidence of an adverse effect on lung function.

Specificity for cardiorespiratory outcomes has been used to support causality. Although we did not formally compare different categories of outcome, there was no obvious difference between diagnostic categories. Perhaps the most notable deviation from the pattern was the null or negative association between ozone and cardiovascular admissions.

It has been argued that coherence of the evidence is in favour of adverse effects of air pollution (Bates 1992). One way to look at this question using the present results is to examine whether the ecological evidence from time series studies is consistent with that of panel studies. On the whole this was not the case, because there was no evidence for adverse effects of PM, NO_2 or SO_2 in the panel studies. We note however, that the evidence for effects of some of these pollutants on respiratory admissions, asthma in particular, was not strong, so perhaps there is some coherence here after all. Again, while there were convincing associations between O_3 and reduced lung function, there was little evidence for an effect on respiratory admissions, especially in children. Another example of lack of coherence was that O_3 was associated with cardiovascular mortality but not with cardiovascular admissions.

Another important viewpoint is strength of association. Time series estimates are very small by epidemiological standards, usually less than 1% increase for a 10 μg/m^3 increase in the pollutant. Single city estimates not infrequently have confidence intervals that include zero. Meta-analysis of single city estimates generally improves the precision of the estimates of association. However, a substantial minority (about one quarter) of summary estimates had lower 95% confidence limits below zero. Estimates were further reduced by adjusting for publication bias, though most remained positive with lower confidence limits above zero. The argument for causality on the grounds of strength and consistency is therefore somewhat weakened.

Overall, we consider that our results support the position that ambient air pollution is a hazard to health. However, the inconsistencies and difficulties in interpreting the evidence must also be acknowledged. We have not been able to implicate one pollutant more than another. In fact, in the case of PM, there was nothing major to distinguish the 6 different metrics.

USE OF THESE RESULTS FOR HEALTH IMPACT ASSESSMENT

Recent estimations of health impact for policy purposes have tended to rely on the evidence of the ACS cohort study. This found larger effects than time series studies and has the advantage of enabling estimation of years of life lost. However, time series evidence has a role in estimating the health impacts for pollutants for which the cohort evidence is unhelpful (e.g. O_3), and for estimating morbidity (e.g. hospital admissions, primary care consultations). Our results provide summary estimates for a wide range of outcomes and could be used to estimate effects of pollution on these or in higher aggregations of diagnoses. The summary estimates provided do not in general adjust for co-related pollutants, which means that health impact assessment will need to be aware of the potential for double counting (WHO 2001). Our results also include multicity estimates including some which had no corresponding single city meta-analysis. Some of these have important outcomes such as primary care visits. Studies with pollutant/outcome categories with less than 4 estimates were not included in this study and in some cases might be suitable.

We present random and fixed effects estimates with and without adjustment for publication bias. The random effects estimate adjusted for publication bias is probably the most conservative estimate to use in health impact assessment. In most meta-analyses reported here there was considerable heterogeneity between estimates. Some analysts argue that in the presence of significant heterogeneity it is not appropriate to calculate random effects estimates – better to investigate possible sources of heterogeneity in order to understand the causes of the variability in effect sizes (and direction). As we have already indicated, this important aspect of time series results requires further study. On the other hand, random effects estimates incorporate an element of between estimates variability both in the calculation of the point estimates and their confidence intervals. Hence, from the point of view of health impact assessment, this unknown source of variability is incorporated into the final estimate.

It can be argued that the statistical uncertainty inherent in the formal meta-analytic method should be supplemented with an assessment of uncertainty arising from other factors e.g. residual confounding and information bias. Methods, both statistical and empirical, exist to attempt to adjust estimates for these unknown potential sources. It may be appropriate that such approaches are considered prior to selecting concentration-response coefficients for health impact assessment exercises.

Acknowledgements

We wish to acknowledge our great appreciation for the large amount of painstaking work done by Mary Field-Smith in cross-checking, preparation of tables and production of the final report. We also wish to thank previous staff members, Michael Sweeting and Louise Marston, who worked on developing the database. Lastly, we wish to express our appreciation for the support and advice of Professor Robert Maynard and Dr Heather Walton at the Health Protection Agency (formerly at the Department of Health). The project was funded by the Department of Health Policy Research Programme.

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Appendices (see separate documents)

Appendix 1. Full bibliography

Appendix 2. Time series studies. Individual meta-analyses.

Appendix 3. Panel studies. Individual meta-analyses.

Tables and figures

Table 1.1. Overall qualitative summary of single city meta-anlyses of PM, NO_2, O_3, SO_2 and CO.

			No. of		RE estimates in adverse direction				RE estimates in protective direction		RE estimates with heterogenity <0.05		No. of RE estimates adj for publication bias			
Pollutant		**Outcome**	**Summary estimates**	**Individual estimates**	**No.**	**%**	**95% CL not inc. zero**	**%**	**No.**	**95% CL not inc. zero**	**No.**	**%**	**Egger/Begg <0.05**	**%**	**reduction >20%**	**%**
PM	Time series	Mortality	31	685	31	*100.0*	25	*80.6*	0		23	*74.2*	10	*32.3*	15	*48.4*
		Hospital admissions	31	283	29	*93.5*	23	*74.2*	2	0	12	*38.7*	1	*3.2*	7	*22.6*
	Panel		15	358	4	*26.7*	0	*0.0*	11	3	6	*40.0*	4	*26.7*	2	*13.3*
NO_2	Time series	Mortality	12	329	12	*100.0*	11	*91.7*	0		5	*41.7*	4	*33.3*	4	*33.3*
		Hospital admissions	22	130	20	*90.9*	14	*63.6*	2	0	13	*59.1*	4	*18.2*	6	*27.3*
	Panel		7	164	1	*14.3*	0	*0.0*	6	2	4	*57.1*	0	*0.0*	0	*0.0*
O_3	Time series	Mortality	13	299	13	*100.0*	11	*84.6*	0		7	*53.8*	3	*23.1*	6	*46.2*
		Hospital admissions	15	80	12	*80.0*	5	*33.3*	3	0	12	*80.0*	2	*13.3*	3	*20.0*
	Panel		4	32	4	*100.0*	4	*100.0*	0		3	*75.0*	0	*0.0*	0	*0.0*
SO_2	Time series	Mortality	12	371	12	*100.0*	10	*83.3*	0		9	*75.0*	6	*50.0*	3	*25.0*
		Hospital admissions	20	140	19	*95.0*	13	*65.0*	1	0	16	*80.0*	3	*15.0*	10	*50.0*
	Panel		7	166	1	*14.3*	0	*0.0*	6	1	4	*57.1*	2	*28.6*	1	*14.3*
CO	Time series	Mortality	11	279	11	*100.0*	10	*90.9*	0		8	*72.7*	5	*45.5*	3	*27.3*
		Hospital admissions	9	61	9	*100.0*	8	*88.9*	0		7	*77.8*	0	*0.0*	1	*11.1*
All	Time series	Mortality	79	1963	79	*100.0*	67	*84.8*	0	0	52	*65.8*	28	*35.4*	31	*39.2*
		Hospital admissions	97	694	89	*91.8*	63	*64.9*	8	0	60	*61.9*	10	*10.3*	27	*27.8*
		Sub total	176	2657	168	*95.5*	130	*73.9*	8	0	112	*63.6*	38	*21.6*	58	*33.0*
All	Panel		33	720	10	*30.3*	4	*12.1*	23	6	17	*51.5*	6	*18.2*	3	*9.1*
		Grand Total	**209**	**3377**	**178**	*85.2*	**134**	*64.1*	**31**	**6**	**129**	*61.7*	**44**	*21.1*	**61**	*29.2*

Table 3.1. Search strings

A search string is a sequence of words that is used to search and locate or retrieve references held in literature databases. Separate search strings for time series and panel studies were developed and tested against known literature until they were sensitive enough to pick up all relevant studies. They define the pollutants, study types and health outcomes that are of interest and are used to search three bibliographic databases: Web of Science (via Web of Knowledge), Medline and Embase. There is a slight variation between the notation used in Web of Science and the other two databases; Web of Science uses *'s as wildcard characters and Medline and Embase use ?'s. The type of symbol that defines an exact phrase is also different and details on which ones to use are given below. The search strings are as follows:

Web of Science

Time Series	(air pollution or pollution or smog or particle* or particulate* or ozone or black smoke or sulphate* or sulphur dioxide* or nitric oxide* or nitrogen dioxide* or carbon monoxide*) and (timeseries or time-series or time series or daily) and (mortality or death* or dying or hospital admission* or admission* or emergency room or visit* or attendance* or 'a&e' or 'a and e' or accident and emergency or general pract* or physician* or consultation* or emergency department*)
Panel studies	(air pollution or pollut* or smog or black smoke or smoke or partic* or particle* or ozone or sulfur dioxide or sulphur dioxide or nitrogen dioxide or nitric oxide or sulfate or sulphate or carbon monoxide) and (lung function or pulmonary function or pefr or pef or peak expiratory flow or peak flow or peak expiratory flow rate or peak expiratory flow rates or forced expiratory flow or forced expiratory flow rate or fvc or ventilatory lung function or fev or fev1 or acute effects or short-term effects or respiratory health or respiratory symptoms or chronic obstructive lung disease or copd) and (panel or panel study or panel studies or longitudinal study or longitudinal or diary or diaries)

Medline and Embase

Time series	(air pollution or pollution or smog or particle? or particulate? or ozone or black smoke or sulphate? or sulphur dioxide? or nitric oxide? or nitrogen dioxide? or carbon monoxide?) and (timeseries or time-series or time series or daily) and (mortality or death? or dying or hospital admission? or admission? or emergency room or visit? or attendance? or "a&e" or "a and e" or accident and emergency or general pract? or physician? or consultation? or emergency department?)
Panel studies	(air pollution or pollut? or smog or black smoke or smoke or partic? or particle? or ozone or sulfur dioxide or sulphur dioxide or nitrogen dioxide or nitric oxide or sulfate or sulphate or carbon monoxide) and (lung function or pulmonary function or pefr or pef or peak expiratory flow or peak flow or peak expiratory flow rate or peak expiratory flow rates or forced expiratory flow or forced expiratory flow rate or fvc or ventilatory lung function or fev or fev1 or acute effects or short-term effects or respiratory health or respiratory symptoms or chronic obstructive lung disease or copd) and (panel or panel study or panel studies or longitudinal study or longitudinal or diary or diaries)

Table 3.2. A list of codes and their definitions that are used after 'Status:' in the 'Keywords' field in reference manager.

Study design	Reference Manager Database	Status:	Definition
Time Series	ts studies	Pending	The study has not yet been read and a decision is yet to be made concerning whether or not the selection criteria have been met.
		Valid	The study meets all the selection criteria and gives a usable numerical estimate of the effect of a pollutant on a health outcome
		No Reg Est	The study meets all the selection criteria but does not give a usable numerical estimate of the effect of pollution on a health outcome e.g. a correlation coefficient is not usable.
		Reject	The study is ts but fails to meet one or more of the selection criteria.
	ts related	Pending	As above
		Abstract	Only an abstract was published, so no full article could be obtained.
		Case-Cross Over	A case-cross over design was used.
		Case Control	A case-control design was used.
		Editorial	The article was an editorial and no full article could be obtained.
		Episode	*complete*
		Erratum†	A study in 'ts studies' which has published corrections to the estimates.
		Intervention	An intervention design was used.
		Letter	A published letter, any data in the letter is ignored. *give reason why?*
		Methodological	Studies that have used existing or stimulated data to develop new or review analytical techniques.
		Review*	An article that has reviewed already published data†.
Panel	Panel_Studies	Pending	As above
		No outcome	The study is a panel study but does not give a usable numerical estimate of the effect of pollution on a health outcome e.g. a correlation coefficient is not usable.
		Non standard analysis	The analysis used in the study was not standard and were therefore not used.
		Reject	(Reasons why the two rejects were rejected… "Air pollution measures divided into quintiles, so level 1 only extracted" "Outcomes are inflammatory markers, no data extracted")
		Valid	The study is a panel study and gives a usable numerical estimate of the effect of a pollutant on a health outcome
	Panel_related	Pending	As above
		Abstract	Only an abstract was published, so no full article could be obtained.
		Meta-analysis	
		Methodological	Studies that have used existing or stimulated data to develop new or review analytical techniques.
		Other	
		Review*	An article that has reviewed already published data†.
		Sub-group analysis	The study analysed data from a sub group of the population

† Any corrections are appended to the original study's list of estimates.
*Reviews should be checked for any referenced studies that may not have been included in the APED database already, i.e. studies from other countries.

Table 3.3a. Definitions of the study information collected on the time series data extraction form.

Data collected	Explanation
Reference Manager ID	Reference Manager ID assigned by Reference Manager during the study identification process
Title	The title of the reference
Authors	All of the authors of the reference
Year of Publication	The year the reference was published
Start Page	The start page of the reference
End Page	The end page of the reference
Volume No.	The volume number in which the reference is published
Journal Name	Name of the journal the reference is published in
"Include information from this study in the 'Level 2 Information' table?"	There are two check boxes here, 'yes' and 'no'. Yes indicates that the reference meets all of the selection criteria and estimate information is to be recorded. No indicates that one or more of the selection criteria have not been met and no estimate information will be recorded.
Comments	General comments on the paper
Continent	The continent of the city or cities studied
Pollutants included in this study	Pollutants that were studied in the paper
Type of Model	The type of statistical modelling that was used in the paper.
Type of Seasonal Control	The type of seasonal control that was used to take into account the effect that the seasons have on health outcomes.

Table 3.3b. Definitions of the estimate information collected on the time series data extraction form.

Column Heading	Explanation
Reference Manager ID	
City(ies) studied:	The city or cities studied in the paper
Country	The country that the city or cities are in
WHO region	The WHO region that the country falls into
Study period/Start and End Date	The period of time studied in the paper, start and end dates are given.
Pollutants studied units of pollutant Mean/Median Pollutant Level Pollutant measured every	The pollutants that were studied in the paper are listed with the units that they were measured in, the mean/median pollutant level that was recorded for the study period and the frequency of how often the measurements of pollutant levels were taken.
Methods of analysis	The type of statistical analysis that was used in the paper to estimate the effect of pollution levels on health outcomes
**Mean number of outcome events	The mean number of outcome events that were recorded over the study period. The asterisks (**) denote that this is recorded when the method of analysis used was multiple linear regression.
Outcome	The health outcome that the estimated effect of pollutant is based on.
Diagnosis(es)	The diagnosis that has been recorded as the one which necessitated the outcome.
ICD Codes	International Classification of Disease codes
Age Group	The age group of the people studied for that particular estimate.
Pollutant	The pollutant that the effect on health is being estimated.
No. of Pollutants	The total number of pollutants in the model. Other pollutants may be included in a model so that the estimated effect of the main pollutant is controlled for the others
Other pollutants?	All of the other pollutants (if any) that are included in the model
Meas. 24/8/1 hrs	Averaging time
Method of Analysis*	The statistical method of analysis used to obtain the estimate. The * directs the extractor to the list of options on the previous page of the data extraction form.
Change in units	Each estimate is the estimated effect on a health outcome for specific increase in pollutant units.

Table 3.3b. Definitions of the estimate information collected on the time series data extraction form (cont.)

Column Heading	Explanation
Lag	The lag of the main pollutant that was used for this estimate. Please see Box 3.1 for an explanation about lags.
Season: Winter/Summer/all	The period of time the effect of pollutant on health was studied
Est. Type β/RR/%	Type of effect estimate recorded.
Estimate	The estimated effect as recorded in the paper.
SE	The standard error of the estimated effect as recorded in the paper.
Lower Confidence Limit	The lower 95% confidence limit of the estimated effect as recorded in the paper.
Selected or Other?	Indicates whether this estimate uses a selected lag or not.

Table 3.3c. Definitions of the study information collected on the panel data extraction form.

Column Heading	Explanation
Reference Manager ID	
Paper (Title, Authors, Reference)	The title, authors and journal specific details about the reference
Single/Multiple Location (SM)	Whether the paper studied a single (S) or multiple (M) location
City	The city that is studied in the paper
Country	The country that the city is in
Continent	The continent that the country is in
PS start date(s)	The start date(s) of the panel study
PS end date(s)	The end date(s) of the panel study
Type of area	This indicates whether the area that was studied in the paper was urban, rural, both or unknown. .
Type of analysis	The type of statistical analysis that was used in the paper to estimate the effect of pollution on health outcomes
Outcomes	The outcomes investigated in the paper
Subjects	The type of people studied in the paper, for example asthmatics
Ages	The age group of the people studied in the paper
Total number of subjects	The total number of subjects studied in the paper
Pollutants	Pollutants that were studied in the paper
Comments	General comments on the paper

Table 3.3d. Definitions of the estimate information collected on the panel data extraction form.

Column Heading	Explanation
Outcome	The health outcome that the estimated effect of pollutant is based on.
Patient Group	The diagnosis that has been recorded as the one which necessitated the outcome.
Am/pm/both	Time of day outcome was measured.
Age group	The age group of the people studied for that particular estimate.
Pollutant	The pollutant that the effect on health is being estimated.
Meas. 24/8/1 hrs	Averaging time
Lag	The lag of the main pollutant that was used for this estimate. Please see Box 3.1 for an explanation about lags.
Units	The units that the pollutant is measured in
Area Type	see "Type of area" in Table 3.3
mean	The mean outcome measurement for the panel being studied
S/M	Was a single, or multiple pollutants included in the statistical model that the effect estimate was taken from?
Seas w/s/a	Was the season winter, summer, or both (a = all)
Meth	Method of analysis, see "Type of analysis" in Table 3.3
Δ units	Each estimate is the estimated effect on a health outcome for specific increase in pollutant units.
Est. type β/or/%	Type of effect estimate recorded.
Estimate	The estimated effect as recorded in the paper.
SE	The standard error of the estimated effect as recorded in the paper.
LCL	The lower 95% confidence limit of the estimated effect as recorded in the paper.

Table 3.4a. Outcome codes for time series studies.

	Outcome
AC	Ambulatory care data
DS	drug sales
EPC	emergency phone call
ETR	emergency transport
EV	A&E visit
	ED visit
	ER visit
GPC	GP consultation
GPH	GP house calls
HAD	hospital admission
	ED admission
	ER admission
I	Interventions
MORT	mortality
OPV	out patient visits
PC	Primary care
SCH	school absences

Table 3.4b. Outcome codes for panel studies.

See table 3.4c on next page for more details

Outcode	Definition	examples of outcomes reported in studies
LRS-D	Lower Respiratory Symptoms – Dyspnoea	Breathlessness, discomfort,
LRS-O	Lower Respiratory Symptoms – Other	Cough etc
M	Medicines	Bronchodilator use, night medication
RS	Respiratory Symptoms	Other respiratory symptoms, GP consultation, allergic symptoms
URS	Upper Respiratory Symptoms	eye irritation, sore throat, runny nose

Age codes:
The age codes in the panel database are simply as follows; adult 15+, child 0-18, both covers child *and* adult ages eg 7-64.

Table 3.4c. Panel studies: categorisation of reported outcomes.

outcode_id	outcome	out_unit	outcode
1	10% pefr dec	n/a	n/a
2	10% pefr dec	%	n/a
3	10% pefr dec	L/min	n/a
4	20% pefr dec	n/a	n/a
5	20% pefr dec	%	n/a
6	20% pefr dec	L/min	n/a
7	allergic symptoms	n/a	RS
8	Any symptoms	n/a	n/a
9	asthma attack	n/a	LRS - D
10	asthma rating	n/a	LRS - D
11	asthma symptoms	n/a	LRS - D
12	asthma symptoms	%	LRS - D
13	avoidance of activities	n/a	n/a
14	B agonist	n/a	M
15	B2 agonist	n/a	M
16	BHR	%	n/a
17	breathing problems	n/a	LRS - D
18	bronchodilator use	n/a	M
19	bronchodilator use	doses/person/day	M
20	change bron use	n/a	M
21	change cough	n/a	LRS - O
22	change LRS	n/a	LRS - O
23	change URS	n/a	URS
24	change woken br	n/a	LRS - D
25	chest disc duration	log-days	LRS - D
26	chest discomfort	n/a	LRS - D
27	chest discomfort on exertion	n/a	n/a
28	chest symptom count	total/d	LRS - O
29	chest symptoms@night	n/a	LRS - O
30	chest tightness	n/a	LRS - D
31	colds	n/a	n/a
32	colds	%	n/a
33	composite asthma score	n/a	n/a
34	COPD exacerbations	n/a	LRS - O
35	cough	n/a	LRS - O
36	cough	%	LRS - O
37	cough	No of symptoms	LRS - O
38	cough duration	log-days	LRS - O
39	cough medication	n/a	M
40	cough/phlegm	n/a	LRS - O
41	daytime inhaler	n/a	M
42	daytime nebuliser	n/a	M
43	defib. disch. >= 1 e	n/a	n/a
44	delta % eNO	%	n/a
45	delta % FEF25-75	%	n/a
46	delta % FEV1	%	n/a
47	delta % FEV1/FVC	%	n/a
48	delta % FVC	%	n/a
49	delta % PEFR	%	n/a

Table 3.4c. Panel studies: categorisation of reported outcomes(cont.).

outcode_id	outcome	out_unit	outcode
50	delta % predicted FEV1	%	n/a
51	delta eNO	ppb	n/a
52	delta fef 0.2-1.2	L/min	n/a
53	delta fef25-75	L/min	n/a
54	delta fef25-75	mL/s	n/a
55	delta fef75	mL/s	n/a
56	delta fev1	L	n/a
57	delta fev1	mL	n/a
58	delta fev1	mL/s	n/a
59	delta fev1/fvc	%	n/a
60	delta fvc	L	n/a
61	delta fvc	mL	n/a
62	delta pefr	L/min	n/a
63	delta pefr	mL/s	n/a
64	dyspnoea	n/a	LRS - D
65	epi resp. infec	n/a	LRS - O
66	exacerbations	n/a	n/a
67	eye irritation	n/a	URS
68	eye symptoms	n/a	URS
69	eye/nose/throat	n/a	URS
70	feeling ill	n/a	n/a
71	FEF25-75	L/sec	n/a
72	FEF25-75	mL/s	n/a
73	fev 0.75	mL	n/a
74	FEV0.75/FVC	%	n/a
75	fev1	L	n/a
76	fev1	mL	n/a
77	FEV1/FVC	%	n/a
78	fever	n/a	n/a
79	fvc	L	n/a
80	fvc	mL	n/a
81	GP consultation (all)	n/a	n/a
82	GP consultation (resp,skin,eye	n/a	n/a
83	GP consultation (respiratory)	n/a	RS
84	headache	n/a	n/a
85	high freq power (log	n/a	n/a
86	inhaled steroids	n/a	M
87	low freq power (log)	n/a	n/a
88	lower symptoms	n/a	n/a
89	LRS	n/a	LRS - O
90	maintenance medicati	n/a	M
91	mean HR	beats/min	n/a
92	medication use	n/a	n/a
93	medication use 0-9 continuous	n/a	M
94	MMEF	mL/s	n/a
95	nasal symptoms	n/a	URS
96	nausea	n/a	n/a
97	night medication	n/a	M
98	nocturnal cough	n/a	LRS - O

Table 3.4c. Panel studies: categorisation of reported outcomes(cont.).

outcode_id	outcome	out_unit	outcode
99	on demand medication	n/a	M
100	pain deep inspiratio	n/a	LRS - D
101	pefr	n/a	n/a
102	pefr	L/min	n/a
103	pefr	L/sec	n/a
104	pefr	mL/s	n/a
105	pefr amplitude	n/a	n/a
106	pefr amplitude	%	n/a
107	pefr deviation	L/min	n/a
108	pefr sds	n/a	n/a
109	perceived health	n/a	n/a
110	phlegm	n/a	LRS - O
111	phlegm	%	LRS - O
112	phlegm duration	log-days	LRS - O
113	preventive medic.	n/a	M
114	pulse	beats/min	n/a
115	pulse elevated 10	n/a	n/a
116	pulse elevated 5	n/a	n/a
117	rate of B-agonist us	total/d	M
118	rescue inhaler continuous	n/a	M
119	resp inf	n/a	LRS - O
120	Resp symptoms	n/a	RS
121	r-MSSD	ms	n/a
122	runny nose	n/a	URS
123	school absence	n/a	n/a
124	SDANN	ms	n/a
125	SDNN	n/a	n/a
126	SDNN	ms	n/a
127	severe asthma symp	n/a	LRS - D
128	short breath + wheez	n/a	LRS - D
129	shortness of breath	n/a	LRS - D
130	sore throat	n/a	URS
131	sore throat duration	log-days	URS
132	Spo2	%	n/a
133	steroid use	n/a	M
134	symptom score 0-3 continuous	n/a	LRS - O
135	symptom score>1	n/a	LRS - O
136	symptom score>2	n/a	LRS - O
137	symptoms	n/a	RS
138	theophylline	n/a	M
139	throat irritation	n/a	URS
140	throat symptoms	n/a	URS
141	URS	n/a	URS
142	URS	No of symptoms	URS
143	wheeze	n/a	LRS - D
144	wheeze/cough/tight	n/a	LRS - D
145	wheeze/tight/dyspnea	n/a	LRS - D
146	wheeze@night	n/a	LRS - D
147	woken breathe proble	n/a	LRS - D
148	woken resp symptoms	n/a	LRS - O
149	start asthma episode	n/a	LRS - D

Table 3.5a. Categorisation of diagnoses (diagcodes) used in meta-analysis. Corresponding with ICD 9 codes and diagnoses reported in papers.

Diagcode	Diagnosis	Definitions as per ICD 9 codes
AC	All Cause	All or nearly all of the ICD codes. e.g. <900 or 1-799
Respiratory Diagnoses		
ASTHMA		493
COPDp	Chronic Obstructive Pulmonary Disease (including Asthma)	490-496
COPDm	Chronic obstructive pulmonary diseases (not including Asthma)	As COPDp but does not include asthma
LRI	Lower respiratory infection	466, 480-487. May not have all of these.
RESP	Respiratory	460-519. Must include main lower respiratory infections (LRI) 466, 480-87 and chronic obstructive pulmonary diseases (COPD) 490-496. A few missing is acceptable.
URD	Upper respiratory conditions	460-465 and 470-478.
Cardiovascular Diagnoses		
CAR	Cardiac	Has main cardiac codes 390-398, 410-429 but not stroke 430-438 (cardiovascular minus stroke). With or without some other codes included e.g. hypertension, peripheral disease 390-429.
CV	Cardiovascular	Must include cardiac diagnoses 390-398, 410-429 and stroke 430-438. Some missing acceptable.
DYS	Dysrhythmias	427
HF	Heart failure	428
IHD	Ischaemic heart disease	410 ± 411-414
ST	Stroke	430-438
OCV	Other Cardiovascular	Any other groups of ICD codes that fall within 390-459 but are not included in the above cardiovascular diagnoses. e.g. pulmonary heart disease ICD 416.0-416.9
Other Diagnoses		
O	Other	Any other groups of ICD codes not included in the above definitions e.g. diabetes ICD 250

Table 3.5b. Categorisation of diagnoses (diagcodes) used in meta-analysis. Corresponding with ICD 10 codes and diagnoses reported in papers.

Diagcode	Diagnosis	Definitions as per ICD 10 codes
AC	All Cause	All or nearly all of the ICD codes. e.g. A-R
Respiratory Diagnoses		
ASTHMA		J45-J46
COPDp	Chronic Obstructive Pulmonary Disease (including Asthma)	J40-J47
COPDm	Chronic obstructive pulmonary diseases (not including Asthma)	As COPDp but does not include asthma J40-J44, J47
LRI	Lower respiratory infection	J10-J18, J20-J22. May not have all of these.
RESP	Respiratory	J00-J99. Must include main lower respiratory infections (LRI) J10-J18, J20-J22 and chronic obstructive pulmonary diseases (COPD) J40-J47. A few missing is acceptable.
URD	Upper respiratory conditions	J00-J06 and J30-J39.
Cardiovascular Diagnoses		
CAR	Cardiac I00-I52	Has main cardiac codes I00-I02, I05-I09, I20-I25, I26-I28, I30-I52 but not stroke I60-I69 (cardiovascular minus stroke). With or without some other codes included e.g. hypertension, peripheral disease I00-I51.
CV	Cardiovascular I00-I99	Must include cardiac diagnoses I00-I02, I05-I09, I20-I25, I26-I28, I30-I52 and stroke I60-169. Some missing acceptable.
DYS	Dysrhythmias	I44-I49
HF	Heart failure	I50
IHD	Ischaemic heart disease	I20-I25
ST	Stroke	I60-I69
OCV	Other Cardiovascular	Any other groups of ICD codes that fall within I00-I99 but are not included in the above cardiovascular diagnoses. e.g. hypertensive renal disease I12
Other Diagnoses		
O	Other	Any other groups of ICD codes not included in the above definitions e.g. diabetes ICD 250

Table 4.1. PM: Population time-series studies. Papers containing estimates, by outcome, WHO region and pollutant measure. The number of cities contributing estimates is shown in italics in the last column.

	Total no. of papers	No. of multi-city papers	Outcome: Mortality	Outcome: Hospital admissions	Outcome: Hospital emergency visits	Outcome: Other*	*No. of cities*
All	333	47	205	95	37	17	*278*
WHO Region							
Amr A	129	22	70	43	18	3	*158*
Amr B	32	1	19	6	6	1	*5*
Emr B	1	0	0	1	0	0	*1*
Eur A	122	21	77	37	12	7	*63*
Eur B	12	7	7	0	0	0	*7*
Eur C	4	4	2	0	0	0	*1*
Sear B	2	0	2	0	0	0	*1*
Sear D	1	0	1	0	0	0	*1*
Wpr A	10	2	5	3	1	1	*19*
Wpr B	34	2	22	6	1	5	*15*
Particle Metric							
PM_{10}	212	36	123	67	23	14	*243*
$PM_{2.5}$	55	5	36	14	7	1	*42*
$PM_{2.5-10}$	31	2	16	12	5	1	*28*
BS	78	16	49	22	9	6	*51*
SO_4^{2-}	32	2	18	12	5	1	*26*
TSP	76	7	58	13	6	2	*58*

Note:
Amr = American Region, Eur = European Region, Emr = Eastern Mediterranean Region, Sear = South East Asia Region, Wpr = Western Pacific Region.
A = very low child and adult mortality, B= low child mortality and low adult mortality, C = low child mortality and high adult mortality, D = high child mortality and high adult mortality.

For PM_{10}, 1 paper was set in Eur A and Eur B; 4 were set in Eur A, Eur B and Eur C
For BS, 3 papers were set in Eur A and Eur B; 2 were set in Eur A, Eur B and Eur C
For TSP, 1 paper was set in Eur A and Eur B

***** "Other" includes primary care visits, ambulance transports

Table 4.2a. PM: Mortality. Random effects summary estimates (percentage increase for 10μg/m^3 and 95% confidence intervals) for particle metric/diagnostic/age groups with 4 or more individual city estimates. Statistical significance of Egger and Begg tests of publication bias and random effects estimates adjusted for publication bias.

					Estimate numbers			Random effects estimate and 95% CL			Publication Bias		Random effects estimate and 95% CL adjusted for publication bias					
Set no.	Outcome[1]	Diagnostic group[2]	Age group[3]	Particle metric	Total	In meta-analysis	Het.(p)[4]	Est	Lcl	Ucl	Egger(p)	Begg(p)	No. added	Adj	Lcl	Ucl	Het.(p)[4]	% change[5]
1	MORT	AC	AA	PM_{10}	292	147	<.001	0.51	0.40	0.62	0.000	0.026	0	0.51	0.40	0.62	<.001	0.0
2	MORT	AC	AA	$PM_{2.5}$	25	22	<.001	1.01	0.63	1.40	0.160	0.271	8	0.64	0.24	1.05	<.001	-36.6
3	MORT	AC	AA	$PM_{2.5\text{-}10}$	14	13	.003	0.89	0.33	1.46	0.863	0.807	0	0.89	0.33	1.46	.003	0.0
4	MORT	AC	AA	SO_4^{2-}	9	9	.15	1.97	1.04	2.92	0.340	0.532	2	1.91	1.06	2.77	.024	-3.2
5	MORT	AC	AA	BS	55	26	.002	0.46	0.31	0.60	0.124	0.082	5	0.39	0.23	0.56	<.001	-13.8
6	MORT	AC	AA	TSP	45	33	<.001	0.34	0.25	0.43	0.016	0.125	6	0.26	0.17	0.36	<.001	-22.6
7	MORT	AC	E	PM_{10}	53	43	<.001	0.47	0.35	0.58	0.000	0.254	9	0.37	0.25	0.48	<.001	-21.7
8	MORT	AC	E	$PM_{2.5}$	11	9	.002	0.93	0.10	1.76	0.053	0.022	4	0.38	-0.55	1.32	<.001	-59.0
9	MORT	AC	E	BS	16	11	.114	0.95	0.53	1.36	0.168	0.243	3	0.83	0.42	1.24	.1	-12.5
10	MORT	AC	E	TSP	14	13	<.001	0.54	0.27	0.82	0.015	0.464	1	0.49	0.21	0.77	<.001	-10.1
11	MORT	AC	NE	PM_{10}	4	4	.035	0.82	-0.17	1.83	0.168	0.174	2	0.25	-0.84	1.34	.004	-70.2
12	MORT	CR	AA	PM_{10}	184	90	.71	0.32	0.15	0.50	0.150	0.908	5	0.30	0.12	0.48	.45	-7.1
13	MORT	CV	AA	PM_{10}	60	49	<.001	0.64	0.46	0.81	0.000	0.000	19	0.31	0.12	0.50	<.001	-51.7
14	MORT	CV	AA	$PM_{2.5}$	14	13	.047	1.43	0.46	2.42	0.045	0.028	4	1.03	-0.18	2.25	.001	-28.5
15	MORT	CV	AA	$PM_{2.5\text{-}10}$	5	5	.049	1.98	0.53	3.44	0.281	1.000	0	1.98	0.53	3.44	.05	0.0
16	MORT	CV	AA	BS	32	19	.028	0.42	0.20	0.64	0.167	0.196	4	0.37	0.14	0.60	.01	-12.1
17	MORT	CV	AA	TSP	20	20	<.001	0.42	0.22	0.61	0.041	0.243	3	0.34	0.14	0.53	<.001	-19.3
18	MORT	CV	E	PM_{10}	25	21	.147	0.50	0.31	0.69	0.816	0.952	1	0.49	0.29	0.68	.1	-2.1
19	MORT	CAR	AA	PM_{10}	6	6	.156	0.90	0.48	1.32	0.017	0.091	3	0.64	0.19	1.08	.042	-29.3
20	MORT	IHD	AA	PM_{10}	4	4	.07	0.81	0.02	1.60	0.054	1.000	1	0.64	0.01	1.28	.11	-20.6
21	MORT	ST	AA	PM_{10}	10	7	.136	0.55	0.15	0.95	0.990	0.881	2	0.43	0.04	0.82	.09	-21.7
22	MORT	RESP	AA	PM_{10}	44	37	<.001	1.38	0.92	1.85	0.000	0.513	8	0.97	0.49	1.44	<.001	-30.3
23	MORT	RESP	AA	$PM_{2.5}$	9	8	.002	1.91	-0.81	4.72	0.315	0.805	0	1.91	-0.81	4.72	.002	0.0
24	MORT	RESP	AA	$PM_{2.5\text{-}10}$	4	4	.001	0.88	-4.31	6.36	0.822	1.000	0	0.88	-4.31	6.36	.001	0.0
25	MORT	RESP	AA	BS	30	18	<.001	0.41	-0.28	1.12	0.916	0.211	5	-0.02	-0.75	0.72	<.001	-104.2
26	MORT	RESP	AA	TSP	15	14	.04	0.71	0.35	1.07	0.141	0.702	1	0.69	0.35	1.04	.006	-2.4
27	MORT	RESP	E	PM_{10}	25	20	<.001	1.33	0.75	1.91	0.995	0.364	1	1.16	0.56	1.77	<.001	-12.8
28	MORT	COPDp	AA	PM_{10}	8	8	.01	0.53	-0.22	1.28	0.617	0.458	1	0.35	-0.39	1.09	.004	-33.1
29	MORT	COPDp	AA	TSP	4	4	.006	1.00	0.24	1.77	0.141	1.000	2	0.67	0.02	1.32	.008	-33.5
30	MORT	LRI	AA	PM_{10}	4	4	<.001	0.91	-0.06	1.89	0.026	0.174	2	0.26	-0.56	1.08	<.001	-72.0
31	MORT	LRI	AA	TSP	4	4	.49	1.20	0.72	1.68	0.374	0.174	1	1.09	0.48	1.70	.26	-9.2
32	MORT	O	AA	PM_{10}	10	10	.02	0.29	-0.31	0.90	0.837	0.532	1	0.26	-0.23	0.74	.04	-0.4
33	MORT	O	AA	BS	5	5	.11	0.34	-0.25	0.94	0.585	0.624	1	0.24	-0.38	0.86	.08	-30.9

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

[4] p-value from test for heterogenity

[5] percentage change in estimate after adjustment for publication bias

Table 4.2b. PM: Morbidity. Random effects summary estimates (percentage increase for 10μg/m³ and 95% confidence intervals) for particle metric/diagnostic/age groups with 4 or more individual city estimates. Statistical significance of Egger and Begg tests of publication bias and random effects estimates adjusted for publication bias.

					Estimate numbers			Random effects estimate and 95% CL			Publication Bias		Random effects estimate and 95% CL adjusted for publication bias					
Set no.	Outcome[1]	Diagnostic group[2]	Age group[3]	Particle metric	Total	In meta-analysis	Het.(p)[4]	Est	Lcl	Ucl	Egger(p)	Begg(p)	No. added	Adj	Lcl	Ucl	Het.(p)[4]	% change[5]
34	HAD	CV	AA	PM_{10}	5	4	.18	0.47	0.07	0.88	0.972	0.497	1	0.44	0.04	0.85	.20	-6.2
35	HAD	CV	E	PM_{10}	15	14	.93	0.74	0.61	0.88	0.218	0.956	0	0.74	0.61	0.88	.93	0.0
36	HAD	CAR	AA	PM_{10}	21	16	.11	0.55	0.37	0.74	0.713	0.242	1	0.52	0.31	0.73	.03	-5.9
37	HAD	CAR	AA	BS	7	6	.1	1.09	0.48	1.70	0.264	0.188	0	1.09	0.48	1.70	.10	0.0
38	HAD	CAR	E	PM_{10}	38	28	.004	0.90	0.72	1.09	0.412	0.767	1	0.89	0.71	1.08	<.001	-1.0
39	HAD	CAR	E	BS	4	4	.019	1.32	0.28	2.38	0.212	0.497	2	0.66	-0.34	1.67	<.001	-50.2
40	HAD	IHD	AA	PM_{10}	10	9	.002	0.57	0.16	0.99	0.631	0.677	0	0.57	0.16	0.99	.002	0.0
41	HAD	IHD	NE	BS	6	5	.87	0.09	-0.36	0.54	0.987	0.624	1	0.06	-0.38	0.50	.89	-36.1
42	HAD	IHD	E	PM_{10}	14	12	.12	0.77	0.44	1.11	0.059	0.131	4	0.57	0.21	0.94	.02	-25.7
43	HAD	IHD	E	BS	7	6	.4	1.10	0.68	1.53	0.959	0.573	0	1.10	0.68	1.53	.4	0.0
44	HAD	ST	E	PM_{10}	5	5	.14	0.59	0.07	1.12	0.834	0.624	0	0.59	0.07	1.12	.14	0.0
45	HAD	ST	E	BS	6	6	.22	-0.12	-0.82	0.58	0.745	0.851	0	-0.12	-0.82	0.58	.22	0.0
46	HAD	RESP	AA	PM_{10}	19	16	<.001	1.71	1.19	2.23	0.106	0.719	0	1.71	1.19	2.23	<.001	0.0
47	HAD	RESP	AA	TSP	4	4	.06	0.14	-0.24	0.53	0.594	0.174	1	0.03	-0.33	0.40	.025	-75.4
48	HAD	RESP	C	PM_{10}	11	5	.017	1.48	0.84	2.12	0.208	0.142	1	1.26	0.53	1.98	<.001	-15.1
49	HAD	RESP	YA	PM_{10}	4	4	.16	1.08	0.39	1.78	0.162	0.174	0	1.08	0.39	1.78	.16	0.0
50	HAD	RESP	YA	BS	5	4	.17	1.09	-0.45	2.65	0.844	0.497	0	1.09	-0.45	2.65	.17	0.0
51	HAD	RESP	E	PM_{10}	20	15	.002	0.97	0.57	1.38	0.359	0.805	2	0.92	0.51	1.34	.001	-4.9
52	HAD	RESP	E	BS	13	9	.13	-0.05	-0.67	0.58	0.993	0.677	0	-0.05	-0.67	0.58	.13	0.0
53	HAD	ASTHMA	AA	PM_{10}	8	7	.004	0.77	0.06	1.48	0.524	0.453	0	0.77	0.06	1.48	.004	0.0
54	HAD	ASTHMA	C	PM_{10}	18	17	.005	1.78	1.01	2.55	0.306	0.869	4	1.43	0.71	2.15	.003	-19.8
55	HAD	ASTHMA	C	BS	8	6	.34	1.58	0.44	2.73	0.015	0.039	2	1.23	-0.22	2.71	.11	-21.8
56	HAD	ASTHMA	YA	PM_{10}	11	9	.058	0.49	-0.46	1.45	0.204	0.835	1	0.44	-0.50	1.39	.07	-10.1
57	HAD	ASTHMA	YA	BS	8	6	.56	0.62	-0.38	1.63	0.625	0.573	1	0.52	-0.46	1.50	.57	-16.6
58	HAD	COPDp	E	PM_{10}	17	14	.007	1.19	0.73	1.64	0.658	0.870	1	1.06	0.58	1.54	.001	-10.7
59	HAD	COPDp	E	BS	6	5	.2	0.22	-0.73	1.18	0.659	0.624	1	0.09	-0.85	1.05	.2	-57.1
60	HAD	COPDm	E	PM_{10}	18	17	.002	1.66	0.94	2.38	0.481	0.249	4	1.28	0.48	2.07	<.001	-22.9
61	HAD	LRI	AA	PM_{10}	5	3	<.001	1.76	0.06	3.49	0.495	0.602	0	1.76	0.06	3.49	<.001	0.0
62	HAD	LRI	E	PM_{10}	24	18	.2	1.66	1.35	1.98	0.432	0.161	1	1.64	1.32	1.98	.14	-1.1
63	EV	RESP	AA	PM_{10}	4	4	.72	1.20	0.69	1.70	0.149	0.174	2	1.08	0.62	1.55	.75	-9.3
64	EV	ASTHMA	AA	PM_{10}	5	5	.002	3.26	1.04	5.53	0.130	0.327	0	3.26	1.04	5.53	.002	0.0

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

[4] p-value from test for heterogenity

[5] percentage change in estimate after adjustment for publication bias

Table 4.3a. PM_{10}: Summary estimates (percentage increase for 10µg/m^3 and 95% confidence intervals) from single pollutant models reported from multicity studies of mortality and morbidity.

Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Lag	Averaging time	Random effects estimate and 95% CL		
											Est	Lcl	Ucl
1	9	8431	Ballester	2002	3 Spanish Cities	MORT	AC	AA	lag 0-1	24 hours	0.60	-0.20	1.41
1	89	8878	Dominici	2002	90 US Cities	MORT	AC	AA	lag 1	24 hours	0.27	0.05	0.49
1	133	13888	Simpson	2005	3 Australian Cities	MORT	AC	AA		24 hours	2.02	-7.72	12.78
1	135	5767	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	24 hours	0.73	0.22	1.24
1	164	7926	Zanobetti	2002	10 European Cities	MORT	AC	AA	lag 0-1	24 hours	0.70	0.43	0.98
1	179	7680	Daniels	2000	20 US Cities	MORT	AC	AA	lag 1	24 hours	0.46	0.27	0.65
1	241	427	Katsouyanni	1997	6 European Cities	MORT	AC	AA	lag 1	24 hours	0.44	0.26	0.61
1	250	3887	Schwartz	1996	6 US Cities	MORT	AC	AA	lag 0-1	24 hours	0.80	0.50	1.10
1	1057	370	Dominici	2000	20 US Cities	MORT	AC	AA	lag 1	24 hours	0.55	0.11	0.99
1	1182	5338	Samet	2000	20 US Cities	MORT	AC	AA	lag 1	24 hours	0.46	0.27	0.65
1	1200	7097	Schwartz	2000	10 US Cities	MORT	AC	AA	lag 0-1	24 hours	0.67	0.52	0.82
1	1223	5347	Braga	2000	5 US cities	MORT	AC	AA	lag 0-1	24 hours	0.78	0.51	1.05
1	1309	8879	Samet	2000	20 US Cities	MORT	AC	AA	lag 1	24 hours	0.51	0.07	0.95
1	1333	5828	Katsouyanni	2001	29 European Cities	MORT	AC	AA	lag 0-1	24 hours	0.60	0.40	0.80
1	1337	7974	Biggeri	2001	8 Italian Cities	MORT	AC	AA	lag 0-1	24 hours	1.00	0.70	1.30
1	1388	8606	Dominici	2002	88 US cities	MORT	AC	AA	lag 1	24 hours	0.43	0.06	0.80
1	1498	11933	Aga	2003	20 European Cities	MORT	AC	AA	lag 0-1	24 hours	0.67	0.47	0.87
1	1514	13051	Dominici	2003	4 US Cities	MORT	AC	AA	lag 0-3	24 hours	-0.07	-0.40	0.26
1	1602	13793	Dominici	2004	90 US Cities	MORT	AC	AA	lag 0	n/a	0.20	0.05	0.35
1	1603	13742	Eilstein	2004	9 French Cities	MORT	AC	AA	lag 0-5	24 hours	1.00		
1	1627	14117	Dominici	2005	90 US Cities	MORT	AC	AA	lag 1	24 hours	0.21	0.06	0.36
7	1121	3192	Schwartz	2000	10 US Cities	MORT	AC	E	lag 0	24 hours	0.65	0.49	0.81
7	1333	5830	Katsouyanni	2001	29 European Cities	MORT	AC	E	lag 0-1	24 hours	0.70	0.50	0.90
7	1498	11931	Aga	2003	20 European Cities	MORT	AC	E	lag 0-1	24 hours	0.74	0.52	0.96
7	1591	12161	Zanobetti	2003	10 European Cities	MORT	AC	E	distribute	24 hours	1.84	0.92	2.77
12	179	7683	Daniels	2000	20 US Cities	MORT	CR	AA	lag 1	24 hours	0.58	0.34	0.82
12	1309	8880	Samet	2000	20 US Cities	MORT	CR	AA	lag 1	24 hours	0.68	0.20	1.16
12	1514	13056	Dominici	2003	4 US Cities	MORT	CR	AA	lag 0-3	24 hours	0.06	-0.39	0.51
13	92	12207	Ballester	2003	3 Spanish Cities	MORT	CV	AA	lag 0-1	24 hours	1.20	0.50	1.90
13	205	13708	Dominici	2004	10 US metropolitan areas	MORT	CV	AA	lag 0-1	24 hours	0.26	-0.37	0.89
13	1337	7975	Biggeri	2001	8 Italian Cities	MORT	CV	AA	lag 0-1	24 hours	1.10	0.70	1.50
13	1603	13748	Eilstein	2004	9 French Cities	MORT	CV	AA	lag 0-1	24 hours	0.30		
19	1339	7952	Braga	2001	10 US Cities	MORT	CAR	AA	lag 0	24 hours	0.60	0.40	0.80
20	1339	7954	Braga	2001	10 US Cities	MORT	IHD	AA	lag 0	24 hours	0.60	0.20	1.00
22	92	12213	Ballester	2003	3 Spanish Cities	MORT	RESP	AA	lag 0-1	24 hours	1.30	0.10	2.51
22	1337	7976	Biggeri	2001	8 Italian Cities	MORT	RESP	AA	lag 0-1	24 hours	1.50	-0.20	3.23
22	1603	13754	Eilstein	2004	9 French Cities	MORT	RESP	AA	lag 0-5	24 hours	1.90		
27	1591	12164	Zanobetti	2003	10 European Cities	MORT	RESP	E	distribute	24 hours	4.57	1.25	8.00
28	1339	7950	Braga	2001	10 US Cities	MORT	COPDp	AA	lag 0	24 hours	0.70	0.10	1.30
30	1339	7948	Braga	2001	10 US Cities	MORT	LRI	AA	lag 0	24 hours	1.40	0.20	2.61
32	1514	13061	Dominici	2003	4 US Cities	MORT	O	AA	lag 0-3	24 hours	-0.26	-0.75	0.23
35	205	13720	Dominici	2004	10 US metropolitan areas	HAD	CV	E	lag 0-1	24 hours	0.71	0.35	1.07
35	1603	13766	Eilstein	2004	9 French Cities	HAD	CV	E	lag 0-5	24 hours	0.70		
36	134	13934	Simpson	2005	3 Australian Cities	HAD	CAR	AA	lag 0-1	24 hours	2.40	1.50	3.31
36	1337	7977	Biggeri	2001	8 Italian Cities	HAD	CAR	AA	lag 0-1	24 hours	0.70	0.40	1.00
36	1464	8639	Le Tertre	2002	8 European Cities	HAD	CAR	AA	lag 0-1	24 hours	0.50	0.20	0.80
38	93	7065	Zanobetti	2000	10 US Cities	HAD	CAR	E	distribute	24 hours	1.27	1.05	1.49
38	375	1548	Schwartz	1999	8 US cities	HAD	CAR	E	lag 0	24 hours	0.98	0.72	1.25
38	1182	4952	Samet	2000	14 US cities	HAD	CAR	E	lag 0	24 hours	1.07	0.93	1.21
38	1464	8640	Le Tertre	2002	8 European Cities	HAD	CAR	E	lag 0-1	24 hours	0.70	0.40	1.00
42	1464	8642	Le Tertre	2002	8 European Cities	HAD	IHD	E	lag 0-1	24 hours	0.80	0.30	1.30
44	1464	8643	Le Tertre	2002	8 European Cities	HAD	ST	E	lag 0-1	24 hours	0.00	-0.30	0.30
46	1337	7978	Biggeri	2001	8 Italian Cities	HAD	RESP	AA	lag 0-1	24 hours	1.30	0.80	1.80
48	1603	13772	Eilstein	2004	9 French Cities	HAD	RESP	C	lag 0-5	24 hours	1.70		
51	134	13936	Simpson	2005	3 Australian Cities	HAD	RESP	E	lag 0-1	24 hours	2.90	1.30	4.53
51	168	8165	Atkinson	2001	8 European Cities	HAD	RESP	E	lag 0-1	24 hours	0.90	0.60	1.20
51	1603	13778	Eilstein	2004	9 French Cities	HAD	RESP	E	lag 0-5	24 hours	1.40		
54	168	8162	Atkinson	2001	8 European Cities	HAD	ASTHMA	C	lag 0-1	24 hours	1.20	0.20	2.21
56	168	8163	Atkinson	2001	8 European Cities	HAD	ASTHMA	YA	lag 0-1	24 hours	1.10	0.30	1.91
58	168	8164	Atkinson	2001	8 European Cities	HAD	COPDp	E	lag 0-1	24 hours	1.00	0.40	1.60
60	93	7059	Zanobetti	2000	10 US Cities	HAD	COPDm	E	distribute	24 hours	2.54	1.82	3.26
60	1182	4956	Samet	2000	14 US cities	HAD	COPDm	E	lag 1	24 hours	1.46	1.03	1.89
62	93	7062	Zanobetti	2000	10 US Cities	HAD	LRI	E	distribute	24 hours	1.95	1.49	2.41
62	1182	4958	Samet	2000	14 US cities	HAD	LRI	E	lag 0	24 hours	1.57	1.27	1.87
*	1633	14005	Peng	2005	100 US Cities	MORT	AC	AA	lag 1	4 hours	0.19	0.10	0.28
*	1591	12163	Zanobetti	2003	10 European Cities	MORT	CAR	E	distribute	24 hours	2.35	1.42	3.29
*	1464	8641	Le Tertre	2002	8 European Cities	HAD	IHD	NE	lag 0-1	24 hours	0.30	-0.20	0.80
*	1350	8006	Hwang	2002	50 Taiwanese townships	GPC	LRI	AA	lag 0	24 hours	0.85	0.34	1.36
*	1350	8000	Hwang	2002	50 Taiwanese townships	GPC	LRI	C	lag 0	24 hours	0.85	0.34	1.36
*	1350	8002	Hwang	2002	50 Taiwanese townships	GPC	LRI	YA	lag 0	24 hours	1.02	0.34	1.70
*	1350	8004	Hwang	2002	50 Taiwanese townships	GPC	LRI	E	lag 0	24 hours	1.36	0.68	2.05

[*] published estimates for diagnostic groups for which no single city meta-analytic estimates are available (Table 4.2a/b)

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits, GPC=General practitioner consultation

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Table 4.3b. $PM_{2.5}$, $PM_{2.5\text{-}10}$, BS, SO_4^{2-}, TSP: Summary estimates (percentage increase for 10µg/m^3 and 95% confidence intervals) from single pollutant models reported from multicity studies of mortality and morbidity.

												Random effects estimate and 95% CL		
Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Particle metric	Lag	Averaging time	Est	Lcl	Ucl
2	133	13889	Simpson	2005	3 Australian Cities	MORT	AC	AA	$PM_{2.5}$		24 hours	9.37	-6.78	28.33
2	250	3822	Schwartz	1996	6 US Cities	MORT	AC	AA	$PM_{2.5}$	lag 0-1	24 hours	1.50	1.10	1.90
2	135	5763	Burnett	2000	8 Canadian Cities	MORT	AC	AA	$PM_{2.5}$	lag 1	24 hours	1.20	0.44	1.97
3	135	5765	Burnett	2000	8 Canadian Cities	MORT	AC	AA	$PM_{2.5\text{-}10}$	lag 1	24 hours	0.71	-0.28	1.72
3	250	3880	Schwartz	1996	6 US Cities	MORT	AC	AA	$PM_{2.5\text{-}10}$	lag 0-1	24 hours	0.40	-0.10	0.90
4	135	5777	Burnett	2000	8 Canadian Cities	MORT	AC	AA	SO_4^{2-}	lag 1	24 hours	4.69	2.04	7.42
4	250	3888	Schwartz	1996	6 US Cities	MORT	AC	AA	SO_4^{2-}	lag 0-1	24 hours	2.22	1.29	3.16
5	1465	8746	Le Tertre	2002	9 French Cities	MORT	AC	AA	BS	lag 0-1	24 hours	0.57	0.26	0.89
5	1310	6835	Samoli	2001	4 East European Cities	MORT	AC	AA	BS		24 hours	0.44	0.28	0.59
5	92	12202	Ballester	2003	9 Spanish Cities	MORT	AC	AA	BS	lag 0-1	24 hours	0.80	0.40	1.20
5	18	7264	Saez	2001	3 Spanish Cities	MORT	AC	AA	BS	lag 1	24 hours	1.45	0.21	2.71
5	1498	11934	Aga	2003	14 European Cities	MORT	AC	AA	BS	lag 0-1	24 hours	0.58	0.32	0.84
5	241	425	Katsouyanni	1997	8 European Cities	MORT	AC	AA	BS	lag 1	24 hours	0.26	0.18	0.34
5	1310	6834	Samoli	2001	4 West European Cities	MORT	AC	AA	BS		24 hours	0.61	0.48	0.75
5	1333	5829	Katsouyanni	2001	29 European Cities	MORT	AC	AA	BS	lag 0-1	24 hours	0.60	0.30	0.90
5	1366	7927	Schwartz	2001	8 Spanish Cities	MORT	AC	AA	BS	lag 0	24 hours	0.88	0.56	1.20
6	92	12203	Ballester	2003	5 Spanish Cities	MORT	AC	AA	TSP	lag 0-1	24 hours	0.40	-0.30	1.10
6	1207	5973	Lee	2000	7 Korean Cities	MORT	AC	AA	TSP	lag 0-1	24 hours	0.22	0.12	0.32
8	250	3892	Schwartz	1996	6 US Cities	MORT	AC	E	$PM_{2.5}$	lag 0-1	24 hours	1.70	1.20	2.20
9	1498	11932	Aga	2003	14 European Cities	MORT	AC	E	BS	lag 0-1	24 hours	0.68	0.43	0.93
9	1333	5831	Katsouyanni	2001	29 European Cities	MORT	AC	E	BS	lag 0-1	24 hours	0.70	0.40	1.00
16	92	12208	Ballester	2003	9 Spanish Cities	MORT	CV	AA	BS	lag 0-1	24 hours	0.30	-0.20	0.80
16	1465	8747	Le Tertre	2002	9 French Cities	MORT	CV	AA	BS	lag 0-1	24 hours	0.61	0.10	1.13
18	92	12209	Ballester	2003	5 Spanish Cities	MORT	CV	AA	TSP	lag 0-1	24 hours	0.70	0.10	1.30
25	92	12214	Ballester	2003	9 Spanish Cities	MORT	RESP	AA	BS	lag 0-1	24 hours	1.10	0.40	1.80
25	222	2580	Zmirou	1998	4 European Cities	MORT	RESP	AA	BS	single	24 hours	0.79	0.40	1.18
25	1465	8748	Le Tertre	2002	9 French Cities	MORT	RESP	AA	BS	lag 0-1	24 hours	0.53	-0.53	1.61
25	222	2590	Zmirou	1998	4 Polish Cities	MORT	RESP	AA	BS	single	24 hours	-0.40	-1.44	0.65
26	92	12215	Ballester	2003	5 Spanish Cities	MORT	RESP	AA	TSP	lag 0-1	24 hours	1.20	0.00	2.41
26	222	2583	Zmirou	1998	2 European Cities	MORT	RESP	AA	TSP	cum	24 hours	0.98	-0.81	2.81
26	9	8445	Ballester	2002	5 Spanish Cities	MORT	RESP	AA	TSP	lag 0-1	24 hours	1.30	0.10	2.51
26	222	2582	Zmirou	1998	2 European Cities	MORT	RESP	AA	TSP	single	24 hours	0.59	-0.40	1.60
37	1464	8644	Le Tertre	2002	8 European Cities	HAD	CAR	AA	BS	lag 0-1	24 hours	1.10	0.40	1.80
39	1464	8645	Le Tertre	2002	8 European Cities	HAD	CAR	E	BS	lag 0-1	24 hours	1.30	0.40	2.21
41	1464	8646	Le Tertre	2002	8 European Cities	HAD	IHD	NE	BS	lag 0-1	24 hours	0.10	-0.40	0.60
43	1464	8647	Le Tertre	2002	8 European Cities	HAD	IHD	E	BS	lag 0-1	24 hours	1.10	0.60	1.60
45	1464	8648	Le Tertre	2002	8 European Cities	HAD	ST	E	BS	lag 0-1	24 hours	0.00	-0.70	0.70
50	229	4228	Spix	1998	4 European Cities	HAD	RESP	YA	BS	single	24 hours	0.55	0.12	0.99
52	229	4229	Spix	1998	4 European Cities	HAD	RESP	E	BS	single	24 hours	0.40	-0.08	0.88
55	398	1655	Sunyer	1997	3 European Cities	HAD	ASTHMA	C	BS	single	24 hours	0.59	-0.42	1.62
57	398	1692	Sunyer	1997	4 European Cities	HAD	ASTHMA	YA	BS	lag 1	24 hours	0.14	-0.57	0.85
*	222	2574	Zmirou	1998	4 Polish Cities	MORT	CAR	AA	BS	single	24 hours	0.00	-0.20	0.20
*	222	2566	Zmirou	1998	2 European Cities	MORT	CAR	AA	TSP	single	24 hours	0.20	0.00	0.40
*	222	1942	Zmirou	1998	4 European Cities	MORT	CAR	AA	BS	single	24 hours	0.40	0.20	0.59
*	250	3893	Schwartz	1996	6 US Cities	MORT	IHD	AA	$PM_{2.5}$	lag 0-1	24 hours	2.10	1.40	2.80
*	250	3894	Schwartz	1996	6 US Cities	MORT	COPDp	AA	$PM_{2.5}$	lag 0-1	24 hours	3.30	1.00	5.65
*	250	3895	Schwartz	1996	6 US Cities	MORT	LRI	AA	$PM_{2.5}$	lag 0-1	24 hours	4.00	1.80	6.25
*	134	13935	Simpson	2005	3 Australian Cities	HAD	CAR	AA	$PM_{2.5}$	lag 0-1	24 hours	5.10	3.50	6.72
*	229	4297	Spix	1998	3 European Cities	HAD	RESP	YA	TSP	single	24 hours	0.20	-0.22	0.62
*	229	4675	Spix	1998	3 European Cities	HAD	RESP	E	TSP	single	24 hours	0.32	-0.12	0.76
*	404	2008	Anderson	1997	5 European Cities	HAD	COPDm	AA	BS	single	24 hours	0.69	0.20	1.18
*	404	2199	Anderson	1997	4 European Cities	HAD	COPDm	AA	TSP	single	24 hours	0.44	-0.04	0.91
*	890	3093	Schwartz	1991	5 German Cities	EV	LRI	C	TSP	lag 0	24 hours	3.95	2.01	5.92

* published estimates for diagnostic groups for which no single city meta-analytic estimates are available (Table 4.2a/b)

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits
[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes
[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Table 4.4a. PM_{10}: Summary estimates (percentage increase for 10µg/m[3] and 95% confidence intervals) from multipollutant models reported from multicity studies of mortality and morbidity.

													Random effects estimate and 95% CL		
Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Lag	Selected	Averaging time	Co-Pollutant	Est	Lcl	Ucl
1	9	8431	Ballester	2002	3 Spanish Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	Single pollutant	0.60	-0.20	1.41
1	9	8432	Ballester	2002	3 Spanish Cities	MORT	AC	AA	lag 0-1	Other	24 hours	SO_2	1.30	0.60	2.00
1	66	13721	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	SO_2	0.28	-0.37	0.94
1	66	13724	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	O_3	0.35	-0.05	0.75
1	66	13723	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	CO	0.14	-0.26	0.54
1	66	13722	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	NO_2	0.16	-0.22	0.54
1	135	5767	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Selected	24 hours	Single pollutant	0.73	0.22	1.24
1	135	5827	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Other	24 hours	SO_2	0.58	0.01	1.14
1	135	5791	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Other	24 hours	O_3	0.65	0.12	1.19
1	135	5815	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Other	24 hours	CO	0.58	0.01	1.14
1	135	5803	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Other	24 hours	NO_2	0.27	-0.32	0.86
1	1200	7097	Schwartz	2000	10 US Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	Single pollutant	0.67	0.52	0.82
1	1200	7100	Schwartz	2000	10 US Cities	MORT	AC	AA	lag 0-1	Other	24 hours	SO_2	0.57	0.25	0.89
1	1200	7102	Schwartz	2000	10 US Cities	MORT	AC	AA	lag 0-1	Other	24 hours	O_3	0.69	0.53	0.85
1	1200	7101	Schwartz	2000	10 US Cities	MORT	AC	AA	lag 0-1	Other	24 hours	CO	0.90	0.42	1.38
1	1333	5828	Katsouyanni	2001	29 European Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	Single pollutant	0.60	0.40	0.80
1	1333	5832	Katsouyanni	2001	29 European Cities	MORT	AC	AA	lag 0-1	Other	24 hours	SO_2	0.50	0.30	0.70
1	1333	5833	Katsouyanni	2001	29 European Cities	MORT	AC	AA	lag 0-1	Other	24 hours	O_3	0.73	0.50	0.96
1	1333	5834	Katsouyanni	2001	29 European Cities	MORT	AC	AA	lag 0-1	Other	24 hours	NO_2	0.41	0.20	0.62
13	9	8439	Ballester	2002	3 Spanish Cities	MORT	CV	AA	lag 0-1	Selected	24 hours	Single pollutant	1.20	0.50	1.90
13	9	8440	Ballester	2002	3 Spanish Cities	MORT	CV	AA	lag 0-1	Other	24 hours	SO_2	2.40	0.10	4.75
22	9	8447	Ballester	2002	3 Spanish Cities	MORT	RESP	AA	lag 0-1	Selected	24 hours	Single pollutant	1.30	0.10	2.51
22	9	8448	Ballester	2002	3 Spanish Cities	MORT	RESP	AA	lag 0-1	Other	24 hours	SO_2	0.30	-1.70	2.34
36	1464	8639	Le Tertre	2002	8 European Cities	HAD	CAR	AA	lag 0-1	Selected	24 hours	Single pollutant	0.50	0.20	0.80
36	1464	8650	Le Tertre	2002	8 European Cities	HAD	CAR	AA	lag 0-1	Other	24 hours	O_3	0.50	0.20	0.80
36	1464	8649	Le Tertre	2002	8 European Cities	HAD	CAR	AA	lag 0-1	Other	24 hours	SO_2	0.50	-0.90	1.92
36	1464	11609	Le Tertre	2002	8 European Cities	HAD	CAR	AA	lag 0-1	Other	24 hours	NO_2	0.20	-0.50	0.90
36	1464	8652	Le Tertre	2002	8 European Cities	HAD	CAR	AA	lag 0-1	Other	24 hours	BS	-0.20	-1.20	0.81
36	1464	8651	Le Tertre	2002	8 European Cities	HAD	CAR	AA	lag 0-1	Other	24 hours	CO	0.20	-0.30	0.70
38	1464	8640	Le Tertre	2002	8 European Cities	HAD	CAR	E	lag 0-1	Selected	24 hours	Single pollutant	0.70	0.40	1.00
38	1464	11610	Le Tertre	2002	8 European Cities	HAD	CAR	E	lag 0-1	Other	24 hours	O_3	0.70	0.40	1.00
38	1464	8653	Le Tertre	2002	8 European Cities	HAD	CAR	E	lag 0-1	Other	24 hours	SO_2	0.90	-1.10	2.94
38	1464	8655	Le Tertre	2002	8 European Cities	HAD	CAR	E	lag 0-1	Other	24 hours	BS	0.10	-0.40	0.60
38	1464	11611	Le Tertre	2002	8 European Cities	HAD	CAR	E	lag 0-1	Other	24 hours	NO_2	-0.20	-0.50	0.10
38	1464	8654	Le Tertre	2002	8 European Cities	HAD	CAR	E	lag 0-1	Other	24 hours	CO	0.50	-0.60	1.61
42	1464	8642	Le Tertre	2002	8 European Cities	HAD	IHD	E	lag 0-1	Selected	24 hours	Single pollutant	0.80	0.30	1.30
42	1464	8656	Le Tertre	2002	8 European Cities	HAD	IHD	E	lag 0-1	Other	24 hours	SO_2	1.30	-1.80	4.50
42	1464	8657	Le Tertre	2002	8 European Cities	HAD	IHD	E	lag 0-1	Other	24 hours	O_3	0.90	-0.10	1.91
42	1464	8658	Le Tertre	2002	8 European Cities	HAD	IHD	E	lag 0-1	Other	24 hours	NO_2	0.30	-1.10	1.72
42	1464	8659	Le Tertre	2002	8 European Cities	HAD	IHD	E	lag 0-1	Other	24 hours	CO	0.50	-0.70	1.71
42	1464	8660	Le Tertre	2002	8 European Cities	HAD	IHD	E	lag 0-1	Other	24 hours	BS	0.20	-0.90	1.31
51	168	8165	Atkinson	2001	8 European Cities	HAD	RESP	E	lag 0-1	Selected	24 hours	Single pollutant	0.90	0.60	1.20
51	168	8177	Atkinson	2001	7 European Cities	HAD	RESP	E	lag 0-1	Other	24 hours	SO_2	1.10	0.70	1.50
51	168	8169	Atkinson	2001	8 European Cities	HAD	RESP	E	lag 0-1	Other	24 hours	NO_2	0.70	-0.30	1.71
51	168	8181	Atkinson	2001	7 European Cities	HAD	RESP	E	lag 0-1	Other	24 hours	CO	1.00	0.70	1.30
54	168	8162	Atkinson	2001	8 European Cities	HAD	ASTHMA	C	lag 0-1	Selected	24 hours	Single pollutant	1.20	0.20	2.21
54	168	8174	Atkinson	2001	7 European Cities	HAD	ASTHMA	C	lag 0-1	Other	24 hours	SO_2	0.80	-3.70	5.51
54	168	8166	Atkinson	2001	8 European Cities	HAD	ASTHMA	C	lag 0-1	Other	24 hours	NO_2	0.10	-0.80	1.01
54	168	8170	Atkinson	2001	8 European Cities	HAD	ASTHMA	C	lag 0-1	Other	24 hours	O_3	1.30	0.10	2.51
54	168	8178	Atkinson	2001	7 European Cities	HAD	ASTHMA	C	lag 0-1	Other	24 hours	CO	0.70	-0.30	1.71
56	168	8163	Atkinson	2001	8 European Cities	HAD	ASTHMA	YA	lag 0-1	Selected	24 hours	Single pollutant	1.10	0.30	1.91
56	168	8171	Atkinson	2001	8 European Cities	HAD	ASTHMA	YA	lag 0-1	Other	24 hours	O_3	1.10	0.10	2.11
56	168	8175	Atkinson	2001	7 European Cities	HAD	ASTHMA	YA	lag 0-1	Other	24 hours	SO_2	1.60	0.60	2.61
56	168	8167	Atkinson	2001	8 European Cities	HAD	ASTHMA	YA	lag 0-1	Other	24 hours	NO_2	0.40	-0.50	1.31
56	168	8179	Atkinson	2001	7 European Cities	HAD	ASTHMA	YA	lag 0-1	Other	24 hours	CO	0.80	0.20	1.40
58	168	8164	Atkinson	2001	8 European Cities	HAD	COPDp	E	lag 0-1	Selected	24 hours	Single pollutant	1.00	0.40	1.60
58	168	8172	Atkinson	2001	8 European Cities	HAD	COPDp	E	lag 0-1	Other	24 hours	O_3	0.40	-1.50	2.34
58	168	8176	Atkinson	2001	7 European Cities	HAD	COPDp	E	lag 0-1	Other	24 hours	SO_2	1.30	0.70	1.90
58	168	8180	Atkinson	2001	7 European Cities	HAD	COPDp	E	lag 0-1	Other	24 hours	CO	1.00	0.40	1.60
58	168	8168	Atkinson	2001	8 European Cities	HAD	COPDp	E	lag 0-1	Other	24 hours	NO_2	0.80	-0.60	2.22
*	1580	13070	Sunyer	2003	7 European Cities	HAD	IHD	E	lag 0-1	Other	24 hours	Single pollutant	0.70	0.30	1.10
*	1580	13067	Sunyer	2003	7 European Cities	HAD	IHD	NE	lag 0-1	Other	24 hours	Single pollutant	0.20	-0.20	0.60
*	1580	13072	Sunyer	2003	7 European Cities	HAD	IHD	E	lag 0-1	Other	24 hours	SO_2	1.30	-1.80	4.50
*	1580	13069	Sunyer	2003	7 European Cities	HAD	IHD	NE	lag 0-1	Other	24 hours	SO_2	0.00	-0.40	0.40

[*] published estimates for diagnostic groups for which no single city meta-analytic estimates are available (Table 4.2a/b)

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Table 4.4b. $PM_{2.5}$, $PM_{2.5\text{-}10}$, BS, TSP: Summary estimates (percentage increase for 10μg/m^3 and 95% confidence intervals) from multipollutant models reported from multicity studies of mortality and morbidity.

Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Particle metric	Lag	Selected	Averaging time	Co- Pollutant	Random effects estimate and 95% CL: Est	Lcl	Ucl
2	135	5762	Burnett	2000	8 Canadian Cities	MORT	AC	AA	$PM_{2.5}$	lag 0	Other	24 hours	Single Pollutant	0.90	0.13	1.68
2	135	5807	Burnett	2000	8 Canadian Cities	MORT	AC	AA	$PM_{2.5}$	lag 0	Other	24 hours	CO	1.05	0.19	1.92
2	135	5795	Burnett	2000	8 Canadian Cities	MORT	AC	AA	$PM_{2.5}$	lag 0	Other	24 hours	NO_2	0.98	-0.03	1.99
2	135	5783	Burnett	2000	8 Canadian Cities	MORT	AC	AA	$PM_{2.5}$	lag 0	Other	24 hours	O_3	0.45	-0.28	1.19
2	135	5819	Burnett	2000	8 Canadian Cities	MORT	AC	AA	$PM_{2.5}$	lag 0	Other	24 hours	SO_2	0.90	0.13	1.68
8	250	3892	Schwartz	1996	6 US Cities	MORT	AC	E	$PM_{2.5}$	lag 0-1	Selected	24 hours	Single Pollutant	1.70	1.20	2.20
8	250	3890	Schwartz	1996	6 US Cities	MORT	AC	AA	$PM_{2.5}$	lag 0-1	Other	24 hours	$PM_{2.5\text{-}10}$	0.13	0.10	0.17
3	135	5765	Burnett	2000	8 Canadian Cities	MORT	AC	AA	$PM_{2.5\text{-}10}$	lag 1	Selected	24 hours	Single Pollutant	0.71	-0.28	1.72
3	135	5826	Burnett	2000	8 Canadian Cities	MORT	AC	AA	$PM_{2.5\text{-}10}$	lag 1	Other	24 hours	SO_2	0.56	-0.53	1.65
3	135	5814	Burnett	2000	8 Canadian Cities	MORT	AC	AA	$PM_{2.5\text{-}10}$	lag 1	Other	24 hours	CO	0.40	-0.57	1.38
3	135	5790	Burnett	2000	8 Canadian Cities	MORT	AC	AA	$PM_{2.5\text{-}10}$	lag 1	Other	24 hours	O_3	0.56	-0.43	1.55
3	135	5802	Burnett	2000	8 Canadian Cities	MORT	AC	AA	$PM_{2.5\text{-}10}$	lag 1	Other	24 hours	NO_2	0.08	-0.70	0.86
3	250	3880	Schwartz	1996	6 US Cities	MORT	AC	AA	$PM_{2.5\text{-}10}$	lag 0-1	Selected	24 hours	Single Pollutant	0.40	-0.10	0.90
3	250	3891	Schwartz	1996	6 US Cities	MORT	AC	AA	$PM_{2.5\text{-}10}$	lag 0-1	Other	24 hours	$PM_{2.5}$	-0.21	-0.76	0.35
5	9	8427	Ballester	2002	7 Spanish Cities	MORT	AC	AA	BS	lag 0-1	Selected	24 hours	Single Pollutant	0.80	0.40	1.20
5	9	8428	Ballester	2002	7 Spanish Cities	MORT	AC	AA	BS	lag 0-1	Other	24 hours	SO_2	0.80	0.30	1.30
5	1333	5829	Katsouyanni	2001	29 European Cities	MORT	AC	AA	BS	lag 0-1	Selected	24 hours	Single Pollutant	0.60	0.30	0.90
5	1333	5836	Katsouyanni	2001	29 European Cities	MORT	AC	AA	BS	lag 0-1	Other	24 hours	O_3	0.88	0.50	1.26
5	1333	5835	Katsouyanni	2001	29 European Cities	MORT	AC	AA	BS	lag 0-1	Other	24 hours	SO_2	0.57	0.10	1.04
5	1333	5837	Katsouyanni	2001	29 European Cities	MORT	AC	AA	BS	lag 0-1	Other	24 hours	NO_2	0.26	0.00	0.52
16	9	8435	Ballester	2002	7 Spanish Cities	MORT	CV	AA	BS	lag 0-1	Selected	24 hours	Single Pollutant	0.30	-0.20	0.80
16	9	8436	Ballester	2002	7 Spanish Cities	MORT	CV	AA	BS	lag 0-1	Other	24 hours	SO_2	0.50	-0.50	1.51
25	9	8443	Ballester	2002	7 Spanish Cities	MORT	RESP	AA	BS	lag 0-1	Selected	24 hours	Single Pollutant	1.10	0.40	1.80
25	9	8444	Ballester	2002	7 Spanish Cities	MORT	RESP	AA	BS	lag 0-1	Other	24 hours	SO_2	1.00	0.10	1.91
37	1464	8644	Le Tertre	2002	8 European Cities	HAD	CAR	AA	BS	lag 0-1	Selected	24 hours	Single Pollutant	1.10	0.40	1.80
37	1464	8661	Le Tertre	2002	8 European Cities	HAD	CAR	AA	BS	lag 0-1	Other	24 hours	SO_2	0.60	0.20	1.00
37	1464	8664	Le Tertre	2002	8 European Cities	HAD	CAR	AA	BS	lag 0-1	Other	24 hours	PM_{10}	1.60	-0.30	3.54
37	1464	8663	Le Tertre	2002	8 European Cities	HAD	CAR	AA	BS	lag 0-1	Other	24 hours	NO_2	0.70	-1.00	2.43
37	1464	8662	Le Tertre	2002	8 European Cities	HAD	CAR	AA	BS	lag 0-1	Other	24 hours	O_3	1.10	0.40	1.80
39	1464	8645	Le Tertre	2002	8 European Cities	HAD	CAR	E	BS	lag 0-1	Selected	24 hours	Single Pollutant	1.30	0.40	2.21
39	1464	8666	Le Tertre	2002	8 European Cities	HAD	CAR	E	BS	lag 0-1	Other	24 hours	O_3	1.30	-0.10	2.72
39	1464	11612	Le Tertre	2002	8 European Cities	HAD	CAR	E	BS	lag 0-1	Other	24 hours	CO	1.20	0.50	1.90
39	1464	8668	Le Tertre	2002	8 European Cities	HAD	CAR	E	BS	lag 0-1	Other	24 hours	PM_{10}	1.50	0.30	2.71
39	1464	8667	Le Tertre	2002	8 European Cities	HAD	CAR	E	BS	lag 0-1	Other	24 hours	NO_2	0.50	-1.60	2.64
39	1464	8665	Le Tertre	2002	8 European Cities	HAD	CAR	E	BS	lag 0-1	Other	24 hours	SO_2	1.20	-1.10	3.55
41	1580	13073	Sunyer	2003	4 European Cities	HAD	IHD	NE	BS	lag 0-1	Other	24 hours	Single Pollutant	0.10	-0.30	0.50
41	1580	13075	Sunyer	2003	4 European Cities	HAD	IHD	NE	BS	lag 0-1	Other	24 hours	SO_2	-0.30	-0.90	0.30
43	1464	8647	Le Tertre	2002	8 European Cities	HAD	IHD	E	BS	lag 0-1	Selected	24 hours	Single Pollutant	1.10	0.60	1.60
43	1464	8669	Le Tertre	2002	8 European Cities	HAD	IHD	E	BS	lag 0-1	Other	24 hours	PM_{10}	0.80	-1.10	2.74
43	1464	11615	Le Tertre	2002	8 European Cities	HAD	IHD	E	BS	lag 0-1	Other	24 hours	CO	0.90	0.30	1.50
43	1464	11614	Le Tertre	2002	8 European Cities	HAD	IHD	E	BS	lag 0-1	Other	24 hours	NO_2	0.30	-0.20	0.80
43	1464	11613	Le Tertre	2002	8 European Cities	HAD	IHD	E	BS	lag 0-1	Other	24 hours	O_3	1.10	0.70	1.50
43	1580	13076	Sunyer	2003	4 European Cities	HAD	IHD	E	BS	lag 0-1	Other	24 hours	Single Pollutant	1.10	0.70	1.50
43	1580	13078	Sunyer	2003	4 European Cities	HAD	IHD	E	BS	lag 0-1	Other	24 hours	SO_2	0.80	0.30	1.30
55	398	1655	Sunyer	1997	3 European Cities	HAD	ASTHMA	C	BS	single	Selected	24 hours	Single Pollutant	0.59	-0.42	1.62
55	398	1689	Sunyer	1997	3 European Cities	HAD	ASTHMA	C	BS	single	Other	24 hours	NO_2	0.73	-0.71	2.19
55	398	1687	Sunyer	1997	3 European Cities	HAD	ASTHMA	C	BS	single	Other	24 hours	SO_2	-0.53	-2.02	0.99
57	398	1692	Sunyer	1997	4 European Cities	HAD	ASTHMA	YA	BS	lag 1	Selected	24 hours	Single Pollutant	0.14	-0.57	0.85
57	398	1683	Sunyer	1997	3 European Cities	HAD	ASTHMA	YA	BS	single	Other	24 hours	NO_2	-0.02	-0.98	0.95
6	9	8429	Ballester	2002	5 Spanish Cities	MORT	AC	AA	TSP	lag 0-1	Selected	24 hours	Single Pollutant	0.40	-0.30	1.10
6	9	8430	Ballester	2002	5 Spanish Cities	MORT	AC	AA	TSP	lag 0-1	Other	24 hours	SO_2	0.60	-0.30	1.51
6	1207	5973	Lee	2000	7 Korean Cities	MORT	AC	AA	TSP	lag 0-1	Selected	24 hours	Single Pollutant	0.22	0.12	0.32
6	1207	5975	Lee	2000	7 Korean Cities	MORT	AC	AA	TSP	lag 0-1	Other	24 hours	O_3+SO_2	0.09	-0.02	0.20
17	9	8437	Ballester	2002	5 Spanish Cities	MORT	CV	AA	TSP	lag 0-1	Selected	24 hours	Single Pollutant	0.70	0.10	1.30
17	9	8438	Ballester	2002	5 Spanish Cities	MORT	CV	AA	TSP	lag 0-1	Other	24 hours	SO_2	1.00	0.00	2.01
26	9	8445	Ballester	2002	5 Spanish Cities	MORT	RESP	AA	TSP	lag 0-1	Selected	24 hours	Single Pollutant	1.30	0.10	2.51
26	9	8446	Ballester	2002	5 Spanish Cities	MORT	RESP	AA	TSP	lag 0-1	Other	24 hours	SO_2	1.90	-0.30	4.15

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Tables 4.5. PM: Summary estimates (percentage increase for 10μg/m ^{3} and 95% confidence intervals) from seasonal models reported from multicity studies of mortality and morbidity.

Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Particle Metric	Lag	Selected	Season	Averaging time	Co-pollutant	Random effects estimate and 95% CL Est	Lcl	Ucl
1	1200	7098	Schwartz	2000	10 US Cities	MORT	AC	AA	PM10	lag 0-1	Other	summer	24 hours	single	0.67	0.48	0.86
1	1200	7099	Schwartz	2000	10 US Cities	MORT	AC	AA	PM10	lag 0-1	Other	winter	24 hours	single	0.66	0.45	0.87
1	1633	14029	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Other	autumn	4 hours	O_3	-0.01	-0.34	0.32
1	1633	14030	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Other	autumn	4 hours	NO_2	0.13	-0.12	0.38
1	1633	14028	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Other	autumn	4 hours	SO_2	0.08	-0.25	0.41
1	1633	14023	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Other	spring	4 hours	O_3	0.19	-0.18	0.56
1	1633	14024	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Other	spring	4 hours	NO_2	0.19	-0.17	0.55
1	1633	14022	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Other	spring	4 hours	SO_2	0.10	-0.30	0.50
1	1633	14026	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Other	summer	4 hours	O_3	0.28	-0.13	0.69
1	1633	14027	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Other	summer	4 hours	NO_2	0.34	0.01	0.67
1	1633	14025	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Other	summer	4 hours	SO_2	0.33	-0.14	0.80
1	1633	14020	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Other	winter	4 hours	O_3	0.13	-0.24	0.50
1	1633	14021	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Other	winter	4 hours	NO_2	0.21	-0.18	0.60
1	1633	14019	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Other	winter	4 hours	SO_2	0.18	-0.16	0.52
*	1633	14038	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Selected	winter	4 hours	single	0.15	-0.16	0.46
*	1633	14040	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Selected	summer	4 hours	single	0.30	-0.10	0.70
*	1633	14039	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Selected	spring	4 hours	single	0.13	-0.21	0.47
*	1633	14041	Peng	2005	45 US Cities	MORT	AC	AA	PM10	lag 1	Selected	autumn	4 hours	single	0.07	-0.23	0.37
25	222	2604	Zmirou	1998	4 European Cities	MORT	RESP	AA	BS	single	Other	cool	24 hours	Single	0.79	0.00	1.58
25	222	2605	Zmirou	1998	4 European Cities	MORT	RESP	AA	BS	single	Other	warm	24 hours	Single	0.98	-0.20	2.18
25	222	2606	Zmirou	1998	4 Polish Cities	MORT	RESP	AA	BS	single	Other	cool	24 hours	Single	0.00	-0.40	0.40
25	222	2607	Zmirou	1998	4 Polish Cities	MORT	RESP	AA	BS	single	Other	warm	24 hours	Single	-0.40	-1.44	0.65
50	229	4689	Spix	1998	4 European Cities	HAD	RESP	YA	BS	single	Other	winter	24 hours	Single	0.79	0.40	1.18
50	229	4688	Spix	1998	4 European Cities	HAD	RESP	YA	BS	single	Other	summer	24 hours	Single	-0.20	-2.09	1.72
52	229	4691	Spix	1998	4 European Cities	HAD	RESP	E	BS	single	Other	winter	24 hours	Single	0.00	-1.02	1.03
52	229	4690	Spix	1998	4 European Cities	HAD	RESP	E	BS	single	Other	summer	24 hours	Single	1.36	0.00	2.74
*	222	2596	Zmirou	1998	4 European Cities	MORT	CAR	AA	BS	single	Other	cool	24 hours	Single	0.79	0.20	1.38
*	222	2597	Zmirou	1998	4 European Cities	MORT	CAR	AA	BS	single	Other	warm	24 hours	Single	0.98	0.20	1.77
*	404	2017	Anderson	1997	5 European Cities	HAD	COPDm	AA	BS	single	Other	cool	24 hours	Single	0.59	0.00	1.19
*	404	2018	Anderson	1997	5 European Cities	HAD	COPDm	AA	BS	single	Other	warm	24 hours	Single	0.98	-0.40	2.38
*	229	4692	Spix	1998	3 European Cities	HAD	RESP	YA	TSP	single	Other	summer	24 hours	Single	0.59	0.00	1.19
*	229	4693	Spix	1998	3 European Cities	HAD	RESP	YA	TSP	single	Other	winter	24 hours	Single	-0.61	-1.44	0.23
*	229	4694	Spix	1998	3 European Cities	HAD	RESP	E	TSP	single	Other	summer	24 hours	Single	0.20	-0.40	0.81
*	229	4695	Spix	1998	3 European Cities	HAD	RESP	E	TSP	single	Other	winter	24 hours	Single	0.40	0.00	0.80
*	404	2020	Anderson	1997	4 European Cities	HAD	COPDm	AA	TSP	single	Other	warm	24 hours	Single	0.20	-0.40	0.81
*	404	2019	Anderson	1997	4 European Cities	HAD	COPDm	AA	TSP	single	Other	cool	24 hours	Single	0.79	-0.20	1.79
*	890	3090	Schwartz	1991	5 German Cities	EV	LRI	C	TSP	lag 0	Selected	winter	24 hours	Single	3.98	1.77	6.24

* published estimates for diagnostic groups for which no single city meta-analytic estimates are available (Table 4.2a/b)

1 MORT=mortality, HAD=hospital admissions, EV=emergency room visits, GPC= General practitioner consultation
2 AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory,
3 AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Table 4.6. PM: Panel Studies. Papers containing estimates by outcome, WHO region and pollutant measure. The number of centres is shown in italics in the last column

	Total no. of papers	No. of multi-centre papers	Outcome* PEFR	FEV_1	FVC	LRS	URS	Asthma medication	other	*No. of centres*
All	92	15	46	10	10	55	29	26	41	*83*
WHO region										
Amr A	43	2	15	7	6	19	6	5	21	*33*
Amr B	3	0	2	0	0	3	0	0	1	*1*
Eur A	37	10	23	3	4	28	19	17	16	*37*
Eur B	2	2	2	0	0	2	2	2	0	*4*
Eur C	2	1	2	0	0	1	1	1	0	*2*
Sear B	1	0	0	0	0	1	1	0	0	*1*
Sear D	1	0	0	0	0	0	0	0	1	*1*
Wpr A	3	0	1	0	0	1	0	1	1	*3*
Wpr B	1	0	1	0	0	0	0	0	1	*1*
Particle metric										
PM_{10}	71	13	40	7	7	46	27	24	28	*68*
$PM_{2.5}$	27	0	10	3	2	12	3	2	13	*22*
$PM_{2.5\text{-}10}$	11	0	5	2	2	4	2	2	4	*11*
BS	28	13	22	2	2	22	19	17	8	*33*
SO_4^{2-}	13	0	6	0	0	8	5	3	7	*13*
TSP	7	1	2	1	1	3	2	1	5	*13*

Note:
Amr = American Region, Eur = European Region, Emr = Eastern Mediterranean Region, Sear = South East Asia Region, Wpr = Western Pacific Region.
A = very low child and adult mortality, B= low child mortality and low adult mortality, C = low child mortality and high adult mortality, D = high child mortality and high adult mortality.

* PEFR = peak expiratory flow rate, FEV_1 = forced expiratory volume in one second, FVC = forced vital capacity, LRS = lower respiratory symptoms,
URS = upper respiratory symptoms, other = various, including dyspnoea, decrements or other lung function measurements, e.g.maximum mid expiratory flow

Table 4.7. PM: Panel Studies. Random effects summary estimates (percentage increase for 10µg/m^3 and 95% confidence intervals) for various outcomes with 4 or more individual city estimates. Statistical significance of Egger and Begg tests of publication bias and random effects estimates adjusted for publication bias.

				Estimate numbers			Random effects estimate and 95% CL			Publication Bias		Random effects estimate and 95% CL adjusted for publication bias					
Set no.	Panel Group[1]	Outcome[2]	Particle metric	Total	In meta-analysis	Het.(p)[3]	Est	Lcl	Ucl	Egger(p)	Begg(p)	No. added	Adj	Lcl	Ucl	Het.(p)[3]	% change[4]
1	symptomatic	iLRS(O)	BS	174	24	.006	-2.33	-5.50	0.94	0.098	0.092	0	-2.33	-5.50	0.94	.006	0.0
2	symptomatic	pLRS(O)	BS	172	28	<.001	0.15	-1.04	1.36	0.957	0.813	0	0.15	-1.04	1.36	<.001	0.0
3	symptomatic	iM	BS	49	18	.32	-2.22	-7.92	3.83	0.041	0.075	0	-2.22	-7.92	3.83	.32	0.0
4	symptomatic	pM	BS	57	25	.33	-0.46	-1.28	0.37	0.485	0.484	0	-0.46	-1.28	0.37	.33	0.0
5	symptomatic	PEFR (l/m)	BS	155	26	.61	0.02	-0.05	0.08	0.605	0.708	0	0.02	-0.05	0.08	.61	0.0
6	symptomatic	iURS	BS	49	24	.18	-3.31	-5.68	-0.88	0.011	0.298	0	-3.31	-5.68	-0.88	.02	0.0
7	symptomatic	pURS	BS	58	28	.54	-0.68	-1.11	-0.25	0.139	0.553	6	-0.90	-1.43	-0.37	.12	32.2
8	symptomatic	iLRS(O)	PM_{10}	183	25	<.001	-0.56	-3.09	2.03	0.681	0.400	0	-0.56	-3.09	2.03	<.001	0.0
9	symptomatic	pLRS(O)	PM_{10}	184	29	<.001	0.44	-0.47	1.36	0.907	0.851	0	0.44	-0.47	1.36	<.001	0.0
10	symptomatic	iM	PM_{10}	48	18	.7	0.35	-3.28	4.11	0.053	0.161	0	0.35	-3.28	4.11	.7	0.0
11	symptomatic	pM	PM_{10}	68	28	.02	-0.33	-1.11	0.45	0.044	0.014	0	-0.33	-1.11	0.45	.02	0.0
12	symptomatic	PEFR (l/m)	PM_{10}	162	28	.73	0.00	0.00	0.01	0.793	0.968	0	0.00	0.00	0.01	.73	0.0
13	symptomatic	iURS	PM_{10}	52	25	.22	-1.17	-2.55	0.23	0.040	0.102	0	-1.17	-2.55	0.23	.22	0.0
14	symptomatic	pURS	PM_{10}	57	27	.86	-0.37	-0.71	-0.02	0.690	0.786	1	-0.38	-0.72	-0.04	.83	3.5
15	unselected	PEFR (l/m)	PM_{10}	10	5	.02	-0.08	-0.25	0.09	0.510	0.327	1	-0.10	-0.27	0.07	.02	-86.8

[1] unselected = mixture of healthy/not healthy children

[2] PEFR = peak expiratory flow rate, FEV_1 = forced expiratory volume in one second, FVC = forced vital capacity, LRS(O) = lower respiratory symptoms (not dyspnoea), URS = upper respiratory symptoms, M = medication use (bronchodilator). The i/p prefix refers to incident or prevalent outcomes.

[3] p-value from test for heterogenity

[4] percentage change in estimate after adjustment for publication bias

Table 5.1. NO_2: Population time series studies. Papers containing estimates by outcome, WHO region and pollutant measure. The number of cities contributing estimates is shown in italics in the last column.

	Total no. of papers	No. of multi-city papers	Outcome: Mortality	Outcome: Hospital admissions	Outcome: Hospital emergency visits	Outcome: Other*	*No. of cities*
All	176	20	92	61	24	13	*181*
WHO Region							
Amr A	51	6	26	18	8	0	*116*
Amr B	17	0	8	4	5	2	*4*
Emr B	1	0	0	1	0	0	*1*
Eur A	77	11	42	26	11	7	*47*
Wpr A	10	2	4	5	0	1	*5*
Wpr B	14	1	8	4	0	2	*9*
Sear D	8	0	4	3	0	1	*2*
NO_2							
1hr	52		23	21	10	1	*162*
8hr	1		1	0	0	0	*1*
24hr	147		52	24	11	6	*152*

Note:
Amr = American Region, Eur = European Region, Emr = Eastern Mediterranean Region, Sear = South East Asia Region, Wpr = Western Pacific Region.
A = very low child and adult mortality, B= low child mortality and low adult mortality, C = low child mortality and high adult mortality, D = high child mortality and high adult mortality.

176 papers (2 papers cover 2 WHO regions, hence 178 papers by WHO region)
1 paper (1603) does not have measure recorded

***** "Other" includes primary care visits, ambulance transports

Table 5.2. NO_2: Random effects summary estimates (percentage increase for 10µg/m^3 and 95% confidence intervals) for pollutant averaging time/diagnostic/age groups with 4 or more individual city estimates. Statistical significance of Egger and Begg tests of publication bias and random effects estimates adjusted for publication bias.

					Estimate numbers			Random effects estimate and 95% CL			Publication Bias		Random effects estimate and 95% CL adjusted for publication bias					
Set no.	Outcome[1]	Diagnostic group[2]	Age group[3]	Averaging time	Total	In meta-analysis	Het.(p)[4]	Est	Lcl	Ucl	Egger(p)	Begg(p)	No. added	Adj	Lcl	Ucl	Het.(p)[4]	% change[5]
1	MORT	AC	AA	1 hour	18	15	.005	0.09	-0.01	0.20	0.003	0.208	6	0.05	-0.05	0.15	.005	-47.7
2	MORT	AC	AA	24 hours	162	137	<.001	0.49	0.38	0.60	0.949	0.334	1	0.49	0.38	0.60	<.001	-0.2
3	MORT	AC	E	1 hour	12	9	.22	0.15	0.03	0.26	0.598	0.835	0	0.15	0.03	0.26	.22	0.0
4	MORT	AC	E	24 hours	14	11	<.001	0.86	0.50	1.22	0.431	0.392	0	0.86	0.50	1.22	<.001	0.0
5	MORT	CR	AA	24 hours	60	59	.76	0.18	0.08	0.27	0.441	0.476	3	0.17	0.07	0.26	.69	-5.8
6	MORT	CV	AA	1 hour	12	9	.37	0.34	0.19	0.48	0.014	0.037	2	0.33	0.13	0.52	.14	-4.1
7	MORT	CV	AA	24 hours	51	30	<.001	1.17	0.82	1.53	0.000	0.656	9	0.87	0.53	1.21	<.001	-26.2
8	MORT	CAR	AA	24 hours	6	6	.38	0.66	0.49	0.84	0.479	0.851	0	0.66	0.49	0.84	.38	0.0
9	MORT	ST	AA	24 hours	9	7	.05	0.94	0.34	1.55	0.282	0.176	2	0.75	0.15	1.36	.035	-20.0
10	MORT	RESP	AA	1 hour	14	11	.49	0.45	0.21	0.69	0.481	0.312	3	0.37	0.10	0.64	.27	-18.3
11	MORT	RESP	AA	24 hours	47	29	.92	1.76	1.35	2.17	0.105	0.499	3	1.72	1.31	2.12	.89	-2.5
12	MORT	COPDp	AA	24 hours	6	6	.03	1.92	1.07	2.78	0.061	0.348	3	1.24	0.37	2.11	<.001	-35.6
13	HAD	CV	AA	1 hour	4	4	.02	0.04	-0.32	0.41	0.637	0.497	1	-0.06	-0.44	0.32	.007	-255.5
14	HAD	CAR	AA	1 hour	12	11	<.001	1.31	0.84	1.78	0.191	0.312	1	1.24	0.78	1.70	<.001	-5.7
15	HAD	CAR	E	24 hours	5	5	.12	1.35	1.10	1.61	0.634	0.624	0	1.35	1.10	1.61	.19	0.0
16	HAD	IHD	AA	24 hours	12	8	<.001	0.94	0.51	1.38	0.725	0.805	0	0.94	0.51	1.38	<.001	0.0
17	HAD	HF	AA	24 hours	4	4	<.001	1.38	0.19	2.58	0.147	0.174	0	1.38	0.19	2.58	<.001	0.0
18	HAD	HF	E	1 hour	8	7	.074	0.37	0.17	0.58	0.111	0.453	0	0.37	0.17	0.58	.07	0.0
19	HAD	ST	AA	24 hours	7	6	<.001	0.40	-0.41	1.22	0.602	0.851	0	0.40	-0.41	1.22	<.001	0.0
20	HAD	RESP	AA	1 hour	4	4	.091	0.15	-0.08	0.38	0.377	0.497	1	0.08	-0.14	0.31	.05	-44.6
21	HAD	RESP	AA	24 hours	19	15	<.001	1.80	1.15	2.45	0.003	0.805	2	1.56	0.94	2.17	<.001	-13.5
22	HAD	RESP	C	1 hour	5	5	.53	0.24	0.08	0.40	0.727	0.624	0	0.24	0.08	0.40	.53	0.0
23	HAD	RESP	C	24 hours	10	7	<.001	0.82	0.35	1.29	0.456	0.881	0	0.82	0.35	1.29	<.001	0.0
24	HAD	RESP	YA	1 hour	4	4	.033	-0.08	-0.66	0.50	0.451	0.497	1	-0.22	-0.76	0.34	.01	157.3
25	HAD	RESP	YA	24 hours	4	4	<.001	1.47	0.10	2.87	0.136	1.000	0	1.47	0.10	2.87	<.001	0.0
26	HAD	RESP	E	1 hour	4	4	.42	0.33	0.09	0.56	0.817	1.000	0	0.33	0.09	0.56	.42	0.0
27	HAD	RESP	E	24 hours	9	6	<.001	0.48	-0.35	1.31	0.224	0.348	0	0.48	-0.35	1.31	<.001	0.0
28	HAD	ASTHMA	AA	1 hour	4	4	.005	0.06	-0.72	0.84	0.495	0.497	1	-0.34	-1.30	0.62	<.001	-681.5
29	HAD	ASTHMA	AA	24 hours	6	5	.012	1.37	0.59	2.15	0.017	0.142	2	0.81	-0.03	1.67	<.001	-40.6
30	HAD	ASTHMA	C	1 hour	10	7	.063	0.09	-1.05	1.24	0.381	0.652	0	0.26	-0.44	0.97	.09	0.0
31	HAD	ASTHMA	C	24 hours	10	6	<.001	2.92	1.15	4.72	0.048	0.348	1	2.44	0.75	4.16	<.001	-16.4
32	HAD	ASTHMA	YA	1 hour	6	5	.195	-0.09	-1.07	0.91	0.066	0.117	0	0.29	-0.37	0.96	.18	0.0
33	HAD	COPDp	E	24 hours	4	4	.14	1.12	0.87	1.38	0.162	0.497	1	1.10	0.83	1.38	.13	-1.9
34	EV	ASTHMA	C	24 hours	6	5	.35	1.00	0.37	1.63	0.010	0.050	3	0.78	0.07	1.49	.23	-22.0

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

[4] p-value from test for heterogenity

[5] percentage change in estimate after adjustment for publication bias

Table 5.3. NO_2: Summary estimates (percentage increase for 10µg/m^3 and 95% confidence intervals) from single pollutant models reported from multicity studies of mortality and morbidity.

Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Lag	Selected	Averaging time	Random effects estimate and 95% CL		
												Est	Lcl	Ucl
1	133	13847	Simpson	2005	4 Australian Cities	MORT	AC	AA	lag 0-1	Selected	1 hour	0.58	0.21	0.94
1	240	1211	Touloumi	1997	6 European Cities	MORT	AC	AA	single	Selected	1 hour	0.26	0.18	0.34
2	92	12205	Ballester	2003	8 Spanish Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	0.60	0.30	0.90
2	135	5771	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Selected	24 hours	0.94	0.43	1.45
2	225	470	Burnett	1998	11 Canadian Cities	MORT	AC	AA		Selected	24 hours	1.16	0.78	1.54
2	1337	7964	Biggeri	2001	8 Italian Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	1.00	0.90	1.10
2	1416	8362	Saez	2002	7 Spanish Cities	MORT	AC	AA	single	Selected	24 hours	0.67	0.42	0.93
2	1465	8752	Le Tertre	2002	9 French Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	0.75	0.40	1.10
7	92	12211	Ballester	2003	8 Spanish Cities	MORT	CV	AA	lag 0-1	Selected	24 hours	0.80	0.30	1.30
7	1337	7965	Biggeri	2001	8 Italian Cities	MORT	CV	AA	lag 0-1	Selected	24 hours	1.20	0.90	1.50
7	1416	8386	Saez	2002	7 Spanish Cities	MORT	CV	AA	single	Selected	24 hours	1.13	-0.06	2.33
7	1465	8753	Le Tertre	2002	9 French Cities	MORT	CV	AA	lag 0-1	Selected	24 hours	0.90	0.30	1.51
8	222	2569	Zmirou	1998	4 European Cities	MORT	CAR	AA	single	Other	24 hours	0.20	0.00	0.40
10	133	13855	Simpson	2005	4 Australian Cities	MORT	RESP	AA	lag 1	Selected	1 hour	2.00	0.89	3.13
10	222	2584	Zmirou	1998	4 European Cities	MORT	RESP	AA	single	Selected	1 hour	-0.20	-0.40	0.00
11	92	12217	Ballester	2003	8 Spanish Cities	MORT	RESP	AA	lag 0-1	Selected	24 hours	1.20	0.30	2.11
11	222	2585	Zmirou	1998	4 European Cities	MORT	RESP	AA	single	Other	24 hours	0.00	-0.40	0.40
11	1337	7966	Biggeri	2001	8 Italian Cities	MORT	RESP	AA	lag 0-1	Selected	24 hours	1.60	0.80	2.41
11	1416	8410	Saez	2002	7 Spanish Cities	MORT	RESP	AA	single	Selected	24 hours	1.82	-8.74	13.61
11	1465	8754	Le Tertre	2002	9 French Cities	MORT	RESP	AA	lag 0-1	Selected	24 hours	0.79	-0.44	2.03
14	134	13893	Simpson	2005	4 Australian Cities	HAD	CAR	AA	lag 0-1	Selected	1 hour	1.21	0.84	1.58
15	134	13903	Simpson	2005	4 Australian Cities	HAD	CAR	E	lag 0-1	Selected	1 hour	1.58	1.16	2.00
18	409	1447	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 1	Selected	1 hour	0.73	0.13	1.34
18	409	1445	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 0	Selected	1 hour	0.79	0.27	1.30
21	1337	7968	Biggeri	2001	8 Italian Cities	HAD	RESP	AA	lag 0-1	Selected	24 hours	1.50	0.90	2.10
24	229	4678	Spix	1998	4 European Cities	HAD	RESP	YA	single	Selected	1 hour	0.08	-0.08	0.24
25	229	4676	Spix	1998	4 European Cities	HAD	RESP	YA	single	Other	24 hours	0.20	-0.30	0.70
26	134	13922	Simpson	2005	4 Australian Cities	HAD	RESP	E	lag 0-1	Selected	1 hour	1.47	0.79	2.16
26	229	4679	Spix	1998	4 European Cities	HAD	RESP	E	single	Selected	1 hour	0.10	-0.46	0.67
27	229	4677	Spix	1998	4 European Cities	HAD	RESP	E	single	Other	24 hours	0.38	-0.36	1.12
30	398	1657	Sunyer	1997	3 European Cities	HAD	ASTHMA	C	single	Selected	1 hour	0.22	-0.02	0.46
31	398	1658	Sunyer	1997	3 European Cities	HAD	ASTHMA	C	single	Selected	24 hours	0.51	0.12	0.91
32	398	2068	Sunyer	1997	4 European Cities	HAD	ASTHMA	YA	single	Selected	1 hour	0.24	-0.02	0.50
*	222	2568	Zmirou	1998	4 European Cities	MORT	CAR	AA	single	Selected	1 hour	0.20	0.00	0.40
*	133	13866	Simpson	2005	4 Australian Cities	MORT	OCV	AA	lag 1	Other	1 hour	0.84	0.31	1.37
*	133	13867	Simpson	2005	4 Australian Cities	MORT	OCV	AA	lag 3	Selected	1 hour	0.94	0.42	1.47
*	1337	7967	Biggeri	2001	8 Italian Cities	HAD	CAR	AA	lag 0-1	Selected	24 hours	1.30	0.70	1.90
*	134	13911	Simpson	2005	4 Australian Cities	HAD	OCV	AA	lag 0-1	Selected	1 hour	1.05	0.52	1.58
*	409	1446	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 0	Selected	24 hours	1.63	0.69	2.59
*	134	13933	Simpson	2005	4 Australian Cities	HAD	LRI	E	lag 0-1	Selected	1 hour	1.58	0.58	2.59
*	134	13917	Simpson	2005	4 Australian Cities	HAD	OCV	E	lag 0-1	Selected	1 hour	1.16	0.58	1.74
*	398	2069	Sunyer	1997	4 European Cities	HAD	ASTHMA	YA	single	Selected	24 hours	0.57	0.06	1.09
*	134	13899	Simpson	2005	4 Australian Cities	HAD	CAR	YA	lag 3	Other	1 hour	0.47	0.05	0.89
*	404	2202	Anderson	1997	5 European Cities	HAD	COPDm	AA	cum	Selected	24 hours	0.51	0.08	0.95
*	404	2201	Anderson	1997	5 European Cities	HAD	COPDm	AA	single	Other	24 hours	0.38	0.04	0.72
*	134	13932	Simpson	2005	4 Australian Cities	HAD	LRI	E	lag 1	Other	1 hour	1.10	0.31	1.90
*	890	3091	Schwartz	1991	5 German Cities	EV	LRI	C	lag 0	Selected	24 hours	4.25	1.11	7.48
*	1350	7988	Hwang	2002	50 Taiwanese townships	GPC	LRI	E	lag 0	Selected	24 hours	3.96	3.07	4.86
*	1350	7985	Hwang	2002	50 Taiwanese townships	GPC	LRI	C	lag 1	Other	24 hours	1.31	0.65	1.97
*	1350	7986	Hwang	2002	50 Taiwanese townships	GPC	LRI	YA	lag 0	Selected	24 hours	3.30	2.85	3.74
*	1350	7984	Hwang	2002	50 Taiwanese townships	GPC	LRI	C	lag 0	Selected	24 hours	2.85	2.19	3.52

*published estimates for diagnostic groups for which no single city meta-analytic estimates are available (Table 5.2)

1 MORT=mortality, HAD=hospital admissions, EV=emergency room visits, GPC=general practitioner consultation

2 AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

3 AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Table 5.4. NO_2: Summary estimates (percentage increase for 10µg/m^3 and 95% confidence intervals) from multipollutant models reported from multicity studies of mortality and morbidity.

Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Lag	Selected	Averaging time	Co-Pollutant	Random effects estimate and 95% CL Est	Lcl	Ucl
1	133	13847	Simpson	2005	4 Australian Cities	MORT	AC	AA	lag 0-1	Selected	1 hour	Single pollutant	0.58	0.21	0.94
1	133	13884	Simpson	2005	4 Australian Cities	MORT	AC	AA	lag 0-1	Other	1 hour	other	1.00	0.52	0.05
1	133	13885	Simpson	2005	4 Australian Cities	MORT	AC	AA	lag 0-1	Other	1 hour	O_3	1.05	0.63	0.21
1	240	1211	Touloumi	1997	6 European Cities	MORT	AC	AA	single	Selected	1 hour	Single pollutant	0.26	0.18	0.34
1	240	1215	Touloumi	1997	6 European Cities	MORT	AC	AA	single	Other	1 hour	O_3	0.42	0.30	0.18
1	240	1216	Touloumi	1997	6 European Cities	MORT	AC	AA	single	Other	1 hour	BS	0.24	0.12	0.00
2	66	13729	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	PM_{10}	0.07	0.02	-0.03
2	66	13730	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	SO_2	0.07	0.00	-0.07
2	66	13731	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	CO	0.01	0.00	-0.02
2	66	13732	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	O_3	0.03	-0.01	-0.05
2	135	5771	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Selected	24 hours	Single pollutant	0.94	0.43	1.45
2	135	5798	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Other	24 hours	$PM_{2.5}$	1.33	0.73	0.13
2	135	5799	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Other	24 hours	$PM_{2.5\text{-}10}$	1.46	0.91	0.37
2	135	5800	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Other	24 hours	PM_{10}	1.39	0.77	0.17
2	1416	8362	Saez	2002	7 Spanish Cities	MORT	AC	AA	single	Selected	24 hours	Single pollutant	0.67	0.42	0.93
2	1416	8374	Saez	2002	7 Spanish Cities	MORT	AC	AA	single	Other	24 hours	$CO+SO_2+O_3$+other	0.86	0.43	0.00
7	1416	8386	Saez	2002	7 Spanish Cities	MORT	CV	AA	single	Selected	24 hours	Single pollutant	1.13	-0.06	2.33
7	1416	8398	Saez	2002	7 Spanish Cities	MORT	CV	AA	single	Other	24 hours	$CO+SO_2+O_3$+other	1.85	1.04	0.24
11	1416	8410	Saez	2002	7 Spanish Cities	MORT	RESP	AA	single	Selected	24 hours	Single pollutant	1.82	-8.74	13.61
11	1416	8422	Saez	2002	7 Spanish Cities	MORT	RESP	AA	single	Other	24 hours	$CO+SO_2+O_3$+other	2.64	1.07	-0.48
14	134	13893	Simpson	2005	4 Australian Cities	HAD	CAR	AA	lag 0-1	Selected	1 hour	Single pollutant	1.21	0.84	1.58
14	134	13939	Simpson	2005	4 Australian Cities	HAD	CAR	AA	lag 0-1	Other	1 hour	other	1.16	0.73	0.31
14	134	13940	Simpson	2005	4 Australian Cities	HAD	CAR	AA	lag 0-1	Other	1 hour	O_3	2.11	1.68	1.26
26	134	13922	Simpson	2005	4 Australian Cities	HAD	RESP	E	lag 0-1	Selected	1 hour	Single pollutant	1.47	0.79	2.16
26	134	13945	Simpson	2005	4 Australian Cities	HAD	RESP	E	lag 0-1	Other	1 hour	other	1.95	1.21	0.47
26	134	13946	Simpson	2005	4 Australian Cities	HAD	RESP	E	lag 0-1	Other	1 hour	O_3	2.11	1.47	0.84
31	398	1658	Sunyer	1997	3 European Cities	HAD	ASTHMA	C	single	Selected	24 hours	Single pollutant	0.51	0.12	0.91
31	398	1688	Sunyer	1997	3 European Cities	HAD	ASTHMA	C	single	Other	24 hours	BS	2.34	0.71	-0.90
31	398	1691	Sunyer	1997	3 European Cities	HAD	ASTHMA	C	single	Other	24 hours	SO_2	1.59	0.67	-0.24
*	409	1446	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 0	Selected	24 hours	Single pollutant	1.63	0.69	2.59
*	409	3299	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 0	Selected	24 hours	Single pollutant	0.93	0.41	1.45
*	409	1458	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 0	Selected	24 hours	$CO+SO_2+O_3$+other	1.60	0.89	0.19
*	398	2070	Sunyer	1997	4 European Cities	HAD	ASTHMA	YA	cum	Other	24 hours	Single pollutant	0.75	0.16	1.34
*	398	1693	Sunyer	1997	4 European Cities	HAD	ASTHMA	YA	lag 0-1	Other	24 hours	Single pollutant	0.67	0.18	1.16
*	398	2069	Sunyer	1997	4 European Cities	HAD	ASTHMA	YA	single	Selected	24 hours	Single pollutant	0.57	0.06	1.09
*	398	1682	Sunyer	1997	3 European Cities	HAD	ASTHMA	YA	single	Other	24 hours	BS	2.06	1.08	0.10
*	398	1684	Sunyer	1997	3 European Cities	HAD	ASTHMA	YA	cum	Other	24 hours	BS	2.92	1.70	0.50

* published estimates for diagnostic groups for which no single city meta-analytic estimates are available (Table 5.2)

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Tables 5.5. NO_2: Summary estimates (percentage increase for 10µg/m^3 and 95% confidence intervals) from seasonal models reported from multicity studies of mortality and morbidity.

Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Lag	Selected	Season	Averaging time	Co-Pollutant	Random effects estimate and 95% CL Est	Lcl	Ucl
24	229	4700	Spix	1998	4 European Cities	HAD	RESP	YA	single	Other	summer	1 hour	single	0.00	-0.20	0.20
24	229	4701	Spix	1998	4 European Cities	HAD	RESP	YA	single	Other	winter	1 hour	single	0.00	-0.40	0.40
25	229	4696	Spix	1998	4 European Cities	HAD	RESP	YA	single	Other	summer	24 hours	single	0.00	-0.81	0.82
25	229	4697	Spix	1998	4 European Cities	HAD	RESP	YA	single	Other	winter	24 hours	single	0.20	-0.40	0.81
26	229	4703	Spix	1998	4 European Cities	HAD	RESP	E	single	Other	winter	1 hour	single	0.00	-0.40	0.40
26	229	4702	Spix	1998	4 European Cities	HAD	RESP	E	single	Other	summer	1 hour	single	0.00	-0.40	0.40
27	229	4698	Spix	1998	4 European Cities	HAD	RESP	E	single	Other	summer	24 hours	single	0.40	-0.20	1.00
27	229	4699	Spix	1998	4 European Cities	HAD	RESP	E	single	Other	winter	24 hours	single	0.00	-0.40	0.40
*	404	2021	Anderson	1997	5 European Cities	HAD	COPDm	AA	single	Other	cool	24 hours	single	0.20	-0.20	0.60
*	404	2022	Anderson	1997	5 European Cities	HAD	COPDm	AA	single	Other	warm	24 hours	single	0.59	0.00	1.19
*	404	2024	Anderson	1997	5 European Cities	HAD	COPDm	AA	single	Other	warm	1 hour	single	0.40	0.00	0.80
*	404	2023	Anderson	1997	5 European Cities	HAD	COPDm	AA	single	Other	cool	1 hour	single	0.40	-0.20	1.00

* published estimates for diagnostic groups for which no single city meta-analytic estimates are available (Table 5.2)

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits, GPC= General practitioner consultation

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Table 5.6. NO_2: Panel Studies. Papers containing estimates by outcome, WHO region and pollutant measure. The number of centres is shown in italics in the last column

	Total no. of papers	No. of multi-centre papers	Outcome*							*No. of centres*
			PEFR	FEV_1	FVC	LRS	URS	Asthma medication	other	
All	52	11	25	6	6	32	20	18	19	*49*
WHO region										
Amr A	16	0	2	4	3	6	3	0	7	*9*
Eur A	31	9	19	2	4	23	15	15	12	*33*
Eur B	1	1	1	0	0	1	1	1	0	*2*
Eur C	1	1	1	0	0	1	1	1	0	*2*
Wpr A	3	0	1	0	0	1	0	1	2	*3*
Wpr B	1	0	1	0	0	0	0	0	1	*1*
NO_2										
1hr	10	0	1	0	1	6	1	0	4	*7*
24hr	43	11	23	6	6	27	19	18	16	*45*
other	7	0	3	0	0	3	0	0	2	*6*

Note:
Amr = American Region, Eur = European Region, Emr = Eastern Mediterranean Region, Sear = South East Asia Region, Wpr = Western Pacific Region.
A = very low child and adult mortality, B= low child mortality and low adult mortality, C = low child mortality and high adult mortality, D = high child mortality and high adult mortality.

* PEFR = peak expiratory flow rate, FEV_1 = forced expiratory volume in one second, FVC = forced vital capacity, LRS = lower respiratory symptoms,

Table 5.7. NO_2: Panel Studies. Random effects summary estimates (percentage increase for 10µg/m^3 and 95% confidence intervals) for various outcomes with 4 or more individual city estimates. Statistical significance of Egger and Begg tests of publication bias and random effects estimates adjusted for publication bias.

			Estimate numbers			Random effects estimate and 95% CL			Publication Bias		Random effects estimate and 95% CL adjusted for publication bias					
Set no.	Panel Group[1]	Outcome[2]	Total	In meta-analysis	Het.(p)[3]	Est	Lcl	Ucl	Egger(p)	Begg(p)	No. added	Adj	Lcl	Ucl	Het.(p)[3]	% change[4]
1	symptomatic	iLRS(O)	146	24	.002	-6.56	-10.25	-2.71	0.155	0.298	0	-6.56	-10.25	-2.71	.002	0.0
2	symptomatic	pLRS(O)	153	26	<.001	-0.35	-1.72	1.03	0.595	0.708	0	-0.35	-1.72	1.03	<.001	0.0
3	symptomatic	iM	33	16	.07	-5.11	-15.36	6.39	0.103	0.105	0	-5.11	-15.36	6.39	.07	0.0
4	symptomatic	pM	50	25	.02	0.31	-1.08	1.72	0.442	0.779	0	0.31	-1.08	1.72	.02	0.0
5	symptomatic	PEFR (l/m)	122	25	.01	0.04	-0.10	0.18	0.216	0.191	0	0.04	-0.10	0.18	.01	0.0
6	symptomatic	iURS	49	23	.71	-3.44	-5.55	-1.27	0.721	0.731	0	-3.44	-5.55	-1.27	.71	0.0
7	symptomatic	pURS	52	25	.33	-0.24	-0.86	0.38	0.986	0.726	1	-0.26	-0.86	0.36	.35	5.7

[1] unselected = mixture of healthy/not healthy children
[2] PEFR = peak expiratory flow rate, FEV_1 = forced expiratory volume in one second, FVC = forced vital capacity, LRS(O) = lower respiratory symptoms (not dyspnoea), URS = upper respiratory symptoms, M = medication use (bronchodilator). The i/p prefix refers to incident or prevalent outcomes.
[3] p-value from test for heterogenity
[4] percentage change in estimate after adjustment for publication bias

Table 6.1. O_3: Population time series studies. Papers containing estimates by outcome, WHO region and pollutant measure. The number of cities contributing estimates is shown in italics in the last column.

	Total no. of papers	No. of multi-city papers	Outcome: Mortality	Hospital admissions	Hospital emergency visits	Other*	*No. of cities*
All	213	24	99	78	35	12	*216*
WHO Region							
Amr A	82	10	26	31	18	1	*147*
Amr B	28	0	15	6	7	1	*4*
Emr B	1	0	0	1	0	0	*1*
Eur A	68	10	44	30	9	6	*43*
Eur B	1	1	1	0	0	0	*1*
Eur C	1	1	1	0	0	0	*1*
Wpr A	10	2	3	3	1	1	*5*
Wpr B	20	2	10	6	0	2	*5*
Ozone							
1hr	81	12	34	33	14	0	*79*
8hr	70	9	32	24	10	6	*69*
24hr	81	9	34	30	13	4	*154*

Note:
Amr = American Region, Eur = European Region, Emr = Eastern Mediterranean Region, Sear = South East Asia Region, Wpr = Western Pacific Region.
A = very low child and adult mortality, B= low child mortality and low adult mortality, C = low child mortality and high adult mortality, D = high child mortality and high adult mortality.

1 multi-city paper was set in Eur A and Eur B
1 multi-city paper was set in Eur A, Eur B and Eur C

***** "Other" includes primary care visits, ambulance transports

Table 6.2. O_3: Random effects summary estimates (percentage increase for 10µg/m^3 and 95% confidence intervals) for pollutant averaging time/diagnostic/age groups with 4 or more individual city estimates. Statistical significance of Egger and Begg tests of publication bias and random effects estimates adjusted for publication bias.

					Estimate numbers			Random effects estimate and 95% CL			Publication Bias		Random effects estimate and 95% CL adjusted for publication bias					
Set no.	Outcome[1]	Diagnostic group[2]	Age group[3]	Averaging time	Total	In meta-analysis	Het.(p)[4]	Est	Lcl	Ucl	Egger(p)	Begg(p)	No. added	Adj	Lcl	Ucl	Het.(p)[4]	% change[5]
1	MORT	AC	AA	1 hour	21	14	<.001	0.25	0.15	0.35	0.012	0.250	5	0.15	0.05	0.26	<.001	-37.9
2	MORT	AC	AA	8 hours	30	20	<.001	0.22	0.09	0.35	0.199	0.016	6	0.15	0.01	0.28	<.001	-33.8
3	MORT	AC	AA	24 hours	109	99	<.001	0.17	0.07	0.27	0.876	0.580	0	0.17	0.07	0.27	<.001	0.0
4	MORT	AC	E	1 hour	9	7	.15	0.27	0.13	0.41	0.305	0.293	2	0.23	0.08	0.38	.10	-14.5
5	MORT	AC	E	8 hours	10	8	<.01	0.43	0.18	0.69	0.429	0.216	3	0.28	-0.05	0.62	<.001	-34.7
6	MORT	AC	E	24 hours	10	9	.02	0.47	0.18	0.76	0.035	0.677	1	0.44	0.16	0.73	.03	-6.2
7	MORT	CR	AA	24 hours	81	80	.8	0.10	0.00	0.19	0.342	0.816	0	0.10	0.00	0.19	.8	0.0
8	MORT	CV	AA	1 hour	6	5	.08	0.25	0.02	0.49	0.877	0.624	1	0.20	-0.03	0.42	.05	-22.3
9	MORT	CV	AA	8 hours	26	17	.56	0.38	0.27	0.49	0.256	0.742	2	0.38	0.25	0.51	.38	-0.3
10	MORT	CV	AA	24 hours	9	9	<.01	0.34	0.06	0.62	0.770	0.677	0	0.34	0.06	0.62	<.001	0.0
11	MORT	RESP	AA	1 hour	9	8	.23	0.38	0.04	0.73	0.299	0.621	0	0.38	0.04	0.73	.23	0.0
12	MORT	RESP	AA	8 hours	28	17	.07	0.41	-0.02	0.84	0.334	0.410	3	0.24	-0.23	0.72	.01	-41.0
13	MORT	RESP	AA	24 hours	6	6	.02	0.36	-0.61	1.34	0.730	0.573	1	0.24	-0.69	1.18	.02	-35.1
14	HAD	CV	AA	8 hours	6	5	.006	0.19	-0.41	0.79	0.642	0.327	0	0.19	-0.41	0.79	.006	0.0
15	HAD	CAR	AA	8 hours	4	4	<.01	-0.18	-1.01	0.65	0.755	0.497	0	-0.18	-1.01	0.65	<.001	0.0
16	HAD	IHD	AA	8 hours	8	4	<.01	-0.55	-1.35	0.25	0.490	0.174	0	-0.55	-1.35	0.25	<.001	0.0
17	HAD	HF	E	1 hour	9	7	.02	-0.10	-0.35	0.16	0.213	0.881	0	-0.10	-0.35	0.16	.02	0.0
18	HAD	RESP	AA	8 hours	7	7	<.01	0.63	0.09	1.18	0.406	0.453	0	0.63	0.09	1.18	<.001	0.0
19	HAD	RESP	AA	24 hours	7	5	.21	0.45	0.09	0.80	0.704	0.624	0	0.45	0.09	0.80	.21	0.0
20	HAD	RESP	C	8 hours	5	4	<.01	0.56	-0.89	2.03	0.414	0.497	1	0.19	-1.14	1.54	<.001	-66.0
21	HAD	RESP	YA	8 hours	7	6	<.01	0.49	-0.43	1.42	0.131	0.091	0	0.49	-0.43	1.42	<.001	0.0
22	HAD	RESP	E	8 hours	11	8	.13	0.61	0.20	1.03	0.544	1.000	0	0.61	0.20	1.03	.13	0.0
23	HAD	ASTHMA	AA	8 hours	8	7	<.01	1.60	-0.08	3.30	0.043	0.453	0	1.60	-0.08	3.30	<.001	0.0
24	HAD	ASTHMA	C	1 hour	6	5	.009	1.34	0.12	2.58	0.303	0.327	0	1.34	0.12	2.58	.009	0.0
25	HAD	ASTHMA	C	8 hours	6	5	<.01	0.75	-1.72	3.28	0.164	0.327	2	-1.04	-3.57	1.55	<.001	-239.4
26	HAD	ASTHMA	YA	8 hours	6	4	<.01	0.90	-0.84	2.66	0.325	0.174	0	0.90	-0.84	2.66	<.001	0.0
27	HAD	COPDm	AA	8 hours	4	4	.63	0.73	0.08	1.39	0.290	0.042	1	0.63	0.01	1.25	.62	-14.4
28	EV	ASTHMA	C	8 hours	5	5	.04	1.37	-0.90	3.69	0.113	1.000	2	0.27	-1.72	2.29	.02	-80.6

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits
[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes
[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children
[4] p-value from test for heterogenity
[5] percentage change in estimate after adjustment for publication bias

Table 6.3. O_3: Summary estimates (percentage increase for 10µg/m^3 and 95% confidence intervals) from single pollutant models reported from multicity studies of mortality and morbidity.

Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Lag	Selected	Averaging time	Random effects estimate and 95% CL Est	Lcl	Ucl
1	114	13517	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Selected	1 hour	0.10	-0.11	0.31
1	133	13850	Simpson	2005	4 Australian Cities	MORT	AC	AA	lag 0	Selected	1 hour	0.20	-0.05	0.45
1	135	5768	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 0	Selected	1 hour	0.63	0.34	0.93
1	240	1213	Touloumi	1997	4 European Cities	MORT	AC	AA	single	Selected	1 hour	0.57	0.20	0.95
1	1207	11930	Lee	2000	7 Korean Cities	MORT	AC	AA	lag 0-1	Selected	1 hour	-0.13	-0.29	0.03
2	114	13518	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Selected	8 hours	0.03	-0.18	0.24
2	1416	8366	Saez	2002	3 Spanish Cities	MORT	AC	AA	single	Selected	8 hours	0.23	-0.14	0.61
2	1465	8755	Le Tertre	2002	9 French Cities	MORT	AC	AA	lag 0-1	Selected	8 hours	0.53	0.26	0.81
3	119	13955	Ito	2005	6 US Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	0.25	0.00	0.50
3	122	13696	Bell	2004	90 US Cities	MORT	AC	AA	distribute	Selected	24 hours	0.32	0.15	0.48
3	225	477	Burnett	1998	11 Canadian Cities	MORT	AC	AA		Selected	24 hours	0.43	0.17	0.69
6	122	13694	Bell	2004	90 US Cities	MORT	AC	E	distribute	Selected	24 hours	0.35	0.14	0.56
11	133	13861	Simpson	2005	4 Australian Cities	MORT	RESP	AA	lag 0-1	Selected	1 hour	1.10	0.10	2.12
11	222	2586	Zmirou	1998	4 European Cities	MORT	RESP	AA	single	Selected	1 hour	0.79	0.40	1.18
12	222	2587	Zmirou	1998	4 European Cities	MORT	RESP	AA	single	Selected	8 hours	0.98	0.40	1.57
12	1416	8414	Saez	2002	3 Spanish Cities	MORT	RESP	AA	single	Selected	8 hours	0.29	-0.05	0.63
12	1465	8757	Le Tertre	2002	9 French Cities	MORT	RESP	AA	lag 0-1	Selected	8 hours	0.16	-0.98	1.31
14	1416	8390	Saez	2002	3 Spanish Cities	MORT	CV	AA	single	Selected	8 hours	0.60	0.08	1.13
14	1465	8756	Le Tertre	2002	9 French Cities	MORT	CV	AA	lag 0-1	Selected	8 hours	0.48	-0.06	1.01
17	409	1455	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 1	Selected	1 hour	0.35	-0.11	0.81
17	409	3301	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 2	Selected	24 hours	1.11	-0.10	2.32
21	229	4680	Spix	1998	4 European Cities	HAD	RESP	YA	single	Selected	8 hours	0.61	0.26	0.97
22	229	4681	Spix	1998	4 European Cities	HAD	RESP	E	single	Selected	8 hours	0.75	0.36	1.14
24	398	1660	Sunyer	1997	3 European Cities	HAD	ASTHMA	C	single	Selected	1 hour	0.12	-0.48	0.73
25	398	1661	Sunyer	1997	3 European Cities	HAD	ASTHMA	C	single	Selected	8 hours	-0.22	-1.21	0.78
26	398	2072	Sunyer	1997	4 European Cities	HAD	ASTHMA	YA	single	Selected	8 hours	0.69	-1.29	2.71
27	404	2010	Anderson	1997	5 European Cities	HAD	COPDm	AA	cum	Selected	8 hours	1.10	0.53	1.66
*	122	13693	Bell	2004	90 US Cities	MORT	AC	NE	distribute	Selected	24 hours	0.25	0.05	0.45
*	222	2570	Zmirou	1998	4 European Cities	MORT	CAR	AA	single	Selected	1 hour	0.40	0.20	0.59
*	222	2571	Zmirou	1998	4 European Cities	MORT	CAR	AA	single	Selected	8 hours	0.40	0.00	0.80
*	133	13870	Simpson	2005	4 Australian Cities	MORT	OCV	AA	lag 0	Selected	1 hour	0.30	-0.05	0.65
*	133	13880	Simpson	2005	4 Australian Cities	MORT	OCV	E	lag 0	Selected	1 hour	0.30	-0.10	0.70
*	229	4682	Spix	1998	4 European Cities	HAD	RESP	YA	single	Selected	1 hour	0.38	0.10	0.66
*	229	4683	Spix	1998	4 European Cities	HAD	RESP	E	single	Selected	1 hour	0.61	0.30	0.93
*	398	2071	Sunyer	1997	4 European Cities	HAD	ASTHMA	YA	single	Selected	1 hour	0.30	-0.92	1.53
*	404	2012	Anderson	1997	5 European Cities	HAD	COPDm	AA	cum	Selected	1 hour	0.96	0.48	1.45
*	134	13926	Simpson	2005	4 Australian Cities	HAD	COPDp	E	lag 3	Selected	1 hour	0.60	0.05	1.16
*	1350	8014	Hwang	2002	50 Taiwanese townships	GPC	LRI	AA	lag 0	Selected	24 hours	0.00	-0.19	0.19
*	1350	8008	Hwang	2002	50 Taiwanese townships	GPC	LRI	C	lag 0	Selected	24 hours	0.00	-0.19	0.19
*	1350	8010	Hwang	2002	50 Taiwanese townships	GPC	LRI	YA	lag 0	Selected	24 hours	0.09	-0.19	0.37
*	1350	8012	Hwang	2002	50 Taiwanese townships	GPC	LRI	E	lag 0	Selected	24 hours	0.19	-0.19	0.56

[*] published estimates for diagnostic groups for which no single city meta-analytic estimates are available (Table 6.2)

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits, GPC=general practitioner consultation

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Table 6.4. O_3: Summary estimates (percentage increase for 10µg/m^3 and 95% confidence intervals) from multipollutant models reported from multicity studies of mortality and morbidity.

Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Lag	Selected	Season	Averaging time	Co-Pollutant	Random effects estimate and 95% CL		
														Est	Lcl	Ucl
1	133	13850	Simpson	2005	4 Australian Cities	MORT	AC	AA	lag 0	Selected	all	1 hour	Single pollutant	0.20	-0.05	0.45
1	133	13887	Simpson	2005	4 Australian Cities	MORT	AC	AA	lag 0-1	Other	all	1 hour	NO_2	-0.10	-0.40	0.20
1	133	13886	Simpson	2005	4 Australian Cities	MORT	AC	AA	lag 0-1	Other	all	1 hour	other	0.00	-0.30	0.30
1	135	5768	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 0	Selected	all	1 hour	Single pollutant	0.63	0.34	0.93
1	135	5781	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 0	Other	all	1 hour	$PM_{2.5-10}$	0.62	0.32	0.92
1	135	5782	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 0	Other	all	1 hour	PM_{10}	0.59	0.28	0.90
1	135	5780	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 0	Other	all	1 hour	$PM_{2.5}$	0.57	0.26	0.88
1	240	1213	Touloumi	1997	4 European Cities	MORT	AC	AA	single	Selected	all	1 hour	Single pollutant	0.57	0.20	0.95
1	240	1218	Touloumi	1997	4 European Cities	MORT	AC	AA	single	Other	all	1 hour	BS	0.55	0.10	1.01
1	240	1217	Touloumi	1997	4 European Cities	MORT	AC	AA	single	Other	all	1 hour	NO_2	0.63	-0.06	1.33
1	1207	11930	Lee	2000	7 Korean Cities	MORT	AC	AA	lag 0-1	Selected	all	1 hour	Single pollutant	-0.13	-0.29	0.03
1	1207	5977	Lee	2000	7 Korean Cities	MORT	AC	AA	lag 0-1	Other	all	1 hour	SO_2+TSP	-0.08	-0.25	0.09
2	1416	8366	Saez	2002	3 Spanish Cities	MORT	AC	AA	single	Selected	all	8 hours	Single pollutant	0.23	-0.14	0.61
2	1416	8378	Saez	2002	3 Spanish Cities	MORT	AC	AA	single	Other	all	8 hours	CO+NO_2+SO_2+other	0.24	-0.02	0.51
3	66	13739	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	all	24 hours	NO_2	0.00	0.00	0.00
3	66	13737	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	all	24 hours	PM_{10}	0.00	0.00	0.00
3	66	13738	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	all	24 hours	SO_2	0.00	-0.01	0.01
3	66	13740	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	all	24 hours	CO	0.00	0.00	0.00
3	122	13692	Bell	2004	90 US Cities	MORT	AC	AA	distribute	Selected	all	24 hours	Single pollutant	0.26	0.13	0.38
3	122	13696	Bell	2004	90 US Cities	MORT	AC	AA	distribute	Selected	all	24 hours	Single pollutant	0.32	0.15	0.48
3	225	477	Burnett	1998	11 Canadian Cities	MORT	AC	AA		Selected	all	24 hours	Single pollutant	0.43	0.17	0.69
3	225	3292	Burnett	1998	11 Canadian Cities	MORT	AC	AA		Selected	all	24 hours	CO+NO_2+SO_2+other	0.55	0.33	0.78
3	1630	14054	Huang	2005	19 US Cities	MORT	AC	AA	lag 0	Other	summer	24 hours	CO	0.34	0.10	0.59
3	1630	14049	Huang	2005	19 US Cities	MORT	AC	AA	lag 0	Selected	summer	24 hours	Single pollutant	0.36	0.13	0.59
3	1630	14052	Huang	2005	19 US Cities	MORT	AC	AA	lag 0	Other	summer	24 hours	NO_2	0.30	0.05	0.54
3	1630	14051	Huang	2005	19 US Cities	MORT	AC	AA	lag 0	Other	summer	24 hours	PM_{10}	0.37	-0.17	0.91
3	1630	14053	Huang	2005	19 US Cities	MORT	AC	AA	lag 0	Other	summer	24 hours	SO_2	0.25	0.00	0.50
9	1416	8390	Saez	2002	3 Spanish Cities	MORT	CV	AA	single	Selected	all	8 hours	Single pollutant	0.60	0.08	1.13
9	1416	8402	Saez	2002	3 Spanish Cities	MORT	CV	AA	single	Other	all	8 hours	CO+NO_2+SO_2+other	0.56	0.07	1.05
12	1416	8414	Saez	2002	3 Spanish Cities	MORT	RESP	AA	single	Selected	all	8 hours	Single pollutant	0.29	-0.05	0.63
12	1416	8426	Saez	2002	3 Spanish Cities	MORT	RESP	AA	single	Other	all	8 hours	CO+NO_2+SO_2+other	0.47	-0.82	1.78
*	134	13942	Simpson	2005	4 Australian Cities	HAD	CAR	AA	lag 0-1	Other	all	1 hour	NO_2	-0.80	-1.10	-0.50
*	134	13941	Simpson	2005	4 Australian Cities	HAD	CAR	AA	lag 0-1	Other	all	1 hour	other	-0.50	-0.75	-0.25
*	134	13948	Simpson	2005	4 Australian Cities	HAD	RESP	E	lag 0-1	Other	all	1 hour	NO_2	-0.25	-0.75	0.25
*	134	13947	Simpson	2005	4 Australian Cities	HAD	RESP	E	lag 0-1	Other	all	1 hour	other	0.00	-0.50	0.50
*	409	3301	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 2	Selected	all	24 hours	Single pollutant	1.11	-0.10	2.32
*	409	1854	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 2	Other	all	24 hours	CO+NO_2+SO_2+other	1.06	0.02	2.10

[*] published estimates for diagnostic groups for which no single city meta-analytic estimates are available (Table 6.2)

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Tables 6.5. O_3: Summary estimates (percentage increase for 10μg/m^3 and 95% confidence intervals) from seasonal models reported from multicity studies of mortality and morbidity.

Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Lag	Selected	Season	Averaging time	Co- Pollutant	Random effects estimate and 95% CL Est	Lcl	Ucl
1	114	13519	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	summer	1 hour	Single pollutant	0.33	0.17	0.49
1	114	13521	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	winter	1 hour	Single pollutant	0.09	-0.25	0.43
1	114	13531	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	summer	1 hour	SO_2	0.33	0.18	0.48
1	114	13539	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	winter	1 hour	SO_2	0.23	-0.02	0.48
1	114	13533	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	summer	1 hour	NO_2	0.24	0.09	0.39
1	114	13541	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	winter	1 hour	NO_2	0.07	-0.19	0.33
1	114	13535	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	summer	1 hour	PM_{10}	0.27	0.10	0.44
1	114	13543	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	winter	1 hour	PM_{10}	0.21	-0.07	0.49
1	114	13537	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	summer	1 hour	CO	0.43	0.30	0.56
1	114	13545	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	winter	1 hour	CO	0.25	0.02	0.48
2	114	13520	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	summer	8 hours	Single pollutant	0.31	0.17	0.45
2	114	13522	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	winter	8 hours	Single pollutant	0.12	-0.12	0.36
2	114	13532	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	summer	8 hours	SO_2	0.31	0.13	0.49
2	114	13540	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	winter	8 hours	SO_2	0.29	-0.01	0.59
2	114	13534	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	summer	8 hours	NO_2	0.23	0.07	0.39
2	114	13542	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	winter	8 hours	NO_2	0.07	-0.20	0.34
2	114	13536	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	summer	8 hours	PM_{10}	0.27	0.08	0.46
2	114	13544	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	winter	8 hours	PM_{10}	0.22	-0.08	0.52
2	114	13538	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	summer	8 hours	CO	0.44	0.29	0.59
2	114	13546	Gryparis	2004	23 European Cities	MORT	AC	AA	lag 0-1	Other	winter	8 hours	CO	0.34	0.04	0.64
8	114	13527	Gryparis	2004	23 European Cities	MORT	CV	AA	lag 0-1	Other	summer	1 hour		0.45	0.22	0.68
8	114	13529	Gryparis	2004	23 European Cities	MORT	CV	AA	lag 0-1	Other	winter	1 hour		0.02	-0.28	0.32
9	114	13528	Gryparis	2004	23 European Cities	MORT	CV	AA	lag 0-1	Other	summer	8 hours		0.46	0.22	0.70
9	114	13530	Gryparis	2004	23 European Cities	MORT	CV	AA	lag 0-1	Other	winter	8 hours		0.07	-0.28	0.42
11	114	13523	Gryparis	2004	23 European Cities	MORT	RESP	AA	lag 0-1	Other	summer	1 hour		1.13	0.62	1.64
11	114	13525	Gryparis	2004	23 European Cities	MORT	RESP	AA	lag 0-1	Other	winter	1 hour		-0.16	-0.67	0.35
12	114	13524	Gryparis	2004	23 European Cities	MORT	RESP	AA	lag 0-1	Other	summer	8 hours		1.13	0.74	1.52
12	114	13526	Gryparis	2004	23 European Cities	MORT	RESP	AA	lag 0-1	Other	winter	8 hours		0.26	-0.50	1.03
21	229	4704	Spix	1998	4 European Cities	HAD	RESP	YA	single	Other	summer	8 hours		0.40	-0.20	1.00
21	229	4705	Spix	1998	4 European Cities	HAD	RESP	YA	single	Other	winter	8 hours		0.59	-0.40	1.60
22	229	4706	Spix	1998	4 European Cities	HAD	RESP	E	single	Other	summer	8 hours		0.79	0.40	1.18
22	229	4707	Spix	1998	4 European Cities	HAD	RESP	E	single	Other	winter	8 hours		0.40	-0.20	1.00
27	404	2025	Anderson	1997	5 European Cities	HAD	COPDm	AA	single	Other	cool	8 hours		0.59	0.00	1.19
27	404	2026	Anderson	1997	5 European Cities	HAD	COPDm	AA	single	Other	warm	8 hours		0.79	0.40	1.18
*	411	3160	Burnett	1997	16 Canadian Cities	HAD	RESP	AA	lag 1	Selected	autumn	1 hour		0.46	-0.03	0.96
*	411	3158	Burnett	1997	16 Canadian Cities	HAD	RESP	AA	lag 1	Selected	spring	1 hour		0.69	0.20	1.18
*	411	3159	Burnett	1997	16 Canadian Cities	HAD	RESP	AA	lag 1	Selected	summer	1 hour		0.82	0.43	1.21
*	411	3157	Burnett	1997	16 Canadian Cities	HAD	RESP	AA	lag 1	Selected	winter	1 hour		-0.10	-0.61	0.41
*	229	4708	Spix	1998	4 European Cities	HAD	RESP	YA	single	Other	summer	1 hour		0.20	-0.20	0.60
*	229	4709	Spix	1998	4 European Cities	HAD	RESP	YA	single	Other	winter	1 hour		0.40	-0.20	1.00
*	411	3161	Burnett	1997	16 Canadian Cities	HAD	RESP	E	lag 1	Selected	Apr-Dec	1 hour		0.66	0.17	1.15
*	229	4710	Spix	1998	4 European Cities	HAD	RESP	E	single	Other	summer	1 hour		0.79	0.40	1.18
*	229	4711	Spix	1998	4 European Cities	HAD	RESP	E	single	Other	winter	1 hour		0.59	0.00	1.19
*	404	2027	Anderson	1997	5 European Cities	HAD	COPDm	AA	single	Other	cool	1 hour		0.20	-0.40	0.81
*	404	2028	Anderson	1997	5 European Cities	HAD	COPDm	AA	single	Other	warm	1 hour		0.59	0.20	0.99

* published estimates for diagnostic groups for which no single city meta-analytic estimates are available (Table 6.2)

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits, GPC= General practitioner consultation
[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes
[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Table 6.6. O_3: Panel Studies. Papers containing estimates by outcome, WHO region and pollutant measure. The number of centres is shown in italics in the last column

	Total no. of papers	No. of multi-centre papers	Outcome*							*No. of centres*
			PEFR	FEV_1	FVC	LRS	URS	Asthma medication	other	
All	57	3	25	16	15	25	7	6	27	*42*
WHO region										
Amr A	34	1	15	12	10	12	2	3	14	*23*
Amr B	5	0	2	1	1	5	0	0	3	*1*
Eur A	15	2	6	3	4	8	5	3	8	*15*
Wpr A	2	0	1	0	0	0	0	0	1	*2*
Wpr B	1	0	1	0	0	0	0	0	1	*1*
Ozone										
1hr	33	2	13	11	10	17	4	1	14	*23*
8hr	21	0	8	1	2	10	4	4	8	*18*
24hr	7	0	2	2	2	1	0	0	5	*6*
other	12	1	8	5	5	4	1	1	4	*13*

Note:

Amr = American Region, Eur = European Region, Emr = Eastern Mediterranean Region, Sear = South East Asia Region, Wpr = Western Pacific Region.

A = very low child and adult mortality, B= low child mortality and low adult mortality, C = low child mortality and high adult mortality, D = high child mortality and high adult mortality.

* PEFR = peak expiratory flow rate, FEV_1 = forced expiratory volume in one second, FVC = forced vital capacity, LRS = lower respiratory symptoms
URS = upper respiratory symptoms, other = various, including dyspnoea, decremenents, changes or ratios of lung function measurements, defibrillator discharge

Table 6.7. O_3: Panel Studies. Random effects summary estimates (percentage increase for 10µg/m^3 and 95% confidence intervals) for various outcomes with 4 or more individual city estimates. Statistical significance of Egger and Begg tests of publication bias and random effects estimates adjusted for publication bias.

			Estimate numbers			Random effects estimate and 95% CL			Publication Bias		Random effects estimate and 95% CL adjusted for publication bias					
Set no.	Panel Group[1]	Outcome[2]	Total	In meta-analysis	Het.(p)[3]	Est	Lcl	Ucl	Egger(p)	Begg(p)	No. added	Adj	Lcl	Ucl	Het.(p)[3]	% change[4]
1	healthy	FEV_1 (l)	14	12	<.001	0.00	0.00	0.00	0.321	0.411	1	0.00	-0.01	0.00	<.001	-17.4
2	healthy	FVC (l)	8	6	<.001	0.00	-0.01	0.00	0.575	0.573	0	0.00	-0.01	0.00	<.001	0.0
3	healthy	PEFR (l/m)	12	10	<.001	-0.52	-0.94	-0.09	0.196	0.421	0	-0.52	-0.94	-0.09	<.001	0.0
4	unselected	PEFR (l/m)	5	4	0.17	-0.95	-1.28	-0.61	0.771	1.000	0	-0.95	-1.28	-0.61	.17	0.0

[1] unselected = mixture of healthy/not healthy children

[2] PEFR = peak expiratory flow rate, FEV_1 = forced expiratory volume in one second, FVC = forced vital capacity, LRS(O) = lower respiratory symptoms (not dyspnoea), URS = upper respiratory symptoms, M = medication use (bronchodilator). The i/p prefix refers to incident or prevalent outcomes.

[3] p-value from test for heterogenity

[4] percentage change in estimate after adjustment for publication bias

Table 7.1: SO_2. Population time-series studies. Papers containing estimates by outcome, WHO region and pollutant measure. The number of cities contributing estimates is shown in italics in the last column.

	Total no. of papers	No. of multi-city papers	Outcome				
			Mortality	Hospital admissions	Hospital emergency visits	Other*	*No. of cities*
All	238	24	139	69	31	14	*211*
WHO Region							
Amr A	63	6	28	19	12	1	*127*
Amr B	22	0	13	5	5	0	*3*
Emr B	1	0	0	1	0	0	*1*
Eur A	111	16	63	28	9	7	*57*
Eur B	7	3	4	0	0	0	*6*
Wpr A	5	0	1	2	2	1	*3*
Wpr B	31	2	19	6	1	4	*15*
SO_2							
1hr	35	4	14	14	6	2	*47*
24hr	216	23	133	58	25	12	*205*

Note:
Amr = American Region, Eur = European Region, Emr = Eastern Mediterranean Region, Sear = South East Asia Region, Wpr = Western Pacific Region.
A = very low child and adult mortality, B= low child mortality and low adult mortality, C = low child mortality and high adult mortality, D = high child mortality and high adult mortality.

2 multi-city papers were set in Eur A and Eur B

***** "Other" includes primary care visits, ambulance transports

Table 7.2: SO_2. Random effects summary estimates (percentage increase for 10μg/m^3 and 95% confidence intervals) for pollutant averaging time/diagnostic/age groups with 4 or more individual city estimates. Statistical significance of Egger and Begg tests of publication bias and random effects estimates adjusted for publication bias.

					Estimate numbers			Random effects estimate and 95% CL			Publication Bias		Random effects estimate and 95% CL adjusted for publication bias					
Set no.	Outcome[1]	Diagnostic group[2]	Age group[3]	Averaging time	Total	In meta-analysis	Het.(p)[4]	Est	Lcl	Ucl	Egger(p)	Begg(p)	No. added	Adj	Lcl	Ucl	Het.(p)[4]	% change[5]
1	MORT	AC	AA	24 hours	185	144	<.001	0.45	0.37	0.54	0.000	0.874	22	0.35	0.26	0.45	<.001	-21.8
2	MORT	AC	NE	24 hours	5	5	<.001	0.04	-0.31	0.40	0.909	1.000	0	0.04	-0.31	0.40	.002	0.0
3	MORT	AC	E	24 hours	33	27	<.001	0.48	0.17	0.80	0.862	0.108	3	0.43	0.12	0.74	<.001	-11.1
4	MORT	CR	AA	24 hours	64	64	.84	0.29	0.17	0.40	0.963	0.237	3	0.28	0.17	0.39	.78	-2.1
5	MORT	CV	AA	24 hours	67	48	<.001	0.68	0.46	0.91	0.000	0.803	6	0.62	0.40	0.85	<.001	-8.6
6	MORT	CV	E	24 hours	9	6	.11	1.22	0.65	1.79	0.376	0.188	1	1.16	0.50	1.83	.48	-4.7
7	MORT	CAR	AA	24 hours	7	7	<.001	2.04	0.61	3.48	0.930	0.881	0	2.04	0.61	3.48	<.001	0.0
8	MORT	ST	AA	24 hours	9	7	<.001	2.14	0.73	3.58	0.337	0.453	0	2.14	0.73	3.58	<.001	0.0
9	MORT	RESP	AA	24 hours	63	44	<.001	0.36	0.09	0.62	0.012	0.613	8	0.31	0.03	0.59	<.001	-13.2
10	MORT	RESP	E	24 hours	8	6	<.001	2.69	-0.33	5.80	0.013	0.091	3	0.99	-2.28	4.36	<.001	-63.2
11	MORT	COPDp	AA	24 hours	9	9	<.001	2.24	1.13	3.36	0.031	0.037	3	1.49	0.26	2.73	<.001	-33.6
12	MORT	LRI	AA	24 hours	4	4	.3	2.65	1.18	4.13	0.029	0.174	2	2.29	0.45	4.16	.18	-13.6
13	MORT	O	AA	24 hours	8	8	.16	0.25	-0.37	0.86	0.173	0.322	1	0.24	-0.57	1.05	.02	-4.2
14	HAD	CV	AA	24 hours	6	5	.026	0.96	0.13	1.79	0.274	0.327	2	0.51	-0.33	1.35	.002	-47.2
15	HAD	CV	E	24 hours	4	4	.45	1.43	0.81	2.05	0.629	0.497	2	1.05	0.33	1.78	.14	-26.4
16	HAD	CAR	AA	24 hours	13	12	<.001	2.26	1.30	3.22	0.129	0.273	2	1.68	0.66	2.71	<.001	-25.5
17	HAD	CAR	E	24 hours	5	5	<.001	2.90	0.91	4.92	0.787	0.624	0	2.90	0.91	4.92	<.001	0.0
18	HAD	IHD	AA	24 hours	11	7	<.001	1.13	0.09	2.18	0.745	0.881	0	1.13	0.09	2.18	<.001	0.0
19	HAD	IHD	E	24 hours	4	4	.008	1.14	-1.40	3.73	0.952	1.000	1	0.00	-2.82	2.90	<.001	-100.0
20	HAD	HF	E	1 hour	9	7	<.001	0.75	0.22	1.28	0.168	0.099	0	0.75	0.22	1.28	<.001	0.0
21	HAD	ST	AA	24 hours	4	4	.21	-0.05	-0.48	0.38	0.918	1.000	1	-0.10	-0.59	0.39	.17	90.0
22	HAD	RESP	AA	24 hours	23	18	<.001	1.51	0.84	2.18	0.000	0.006	5	1.03	0.31	1.76	<.001	-31.3
23	HAD	RESP	C	24 hours	14	6	<.001	2.23	0.84	3.64	0.671	0.348	0	2.23	0.84	3.64	<.001	0.0
24	HAD	RESP	YA	24 hours	9	8	.05	0.21	-0.42	0.85	0.581	0.458	2	0.11	-0.58	0.80	.021	-48.7
25	HAD	RESP	E	24 hours	15	12	.004	0.74	0.35	1.12	0.708	0.681	0	0.74	0.35	1.12	.004	0.0
26	HAD	ASTHMA	AA	24 hours	10	8	<.001	0.48	-0.54	1.52	0.968	0.621	1	0.42	-0.59	1.44	<.001	-13.6
27	HAD	ASTHMA	C	24 hours	10	8	<.001	4.24	1.93	6.60	0.005	0.805	3	2.88	0.93	4.87	<.001	-32.1
28	HAD	ASTHMA	YA	24 hours	8	5	.16	0.98	-1.60	3.62	0.833	0.624	0	0.98	-1.60	3.62	.016	0.0
29	HAD	COPDp	AA	24 hours	5	5	.017	0.08	-0.74	0.90	0.951	0.327	0	0.08	-0.74	0.90	.017	0.0
30	HAD	COPDp	E	24 hours	5	5	<.001	2.33	0.31	4.40	0.651	0.327	0	2.33	0.31	4.40	<.001	0.0
31	EV	RESP	AA	24 hours	5	5	<.001	1.38	0.58	2.19	0.011	0.023	2	0.61	-0.19	1.42	<.001	-55.8
32	EV	ASTHMA	AA	24 hours	6	6	.001	1.02	-0.01	2.07	0.104	0.348	2	0.37	-0.65	1.40	<.001	-63.7
33	EV	ASTHMA	C	24 hours	10	6	.03	2.65	0.39	4.96	0.152	0.188	0	2.65	0.39	4.96	<.03	0.0

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=an other groups of ICD codes eg diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

[4] p-value from test for heterogenity

[5] percentage change in estimate after adjustment for publication bias

Table 7.3: SO_2. Summary estimates (percentage increase for 10μg/m[3] and 95% confidence intervals) from single pollutant models reported from multicity studies of mortality and morbidity.

												Random effects estimate and 95% CL		
Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Lag	Selected	Averaging time	Est	Lcl	Ucl
1	18	7265	Saez	2001	3 Spanish Cities	MORT	AC	AA	lag 1	Selected	24 hours	-0.23	-1.00	0.55
1	92	12204	Ballester	2003	13 Spanish Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	0.50	0.10	0.90
1	135	5775	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Selected	24 hours	0.00	0.00	0.00
1	225	471	Burnett	1998	11 Canadian Cities	MORT	AC	AA		Selected	24 hours	1.23	0.75	1.72
1	241	426	Katsouyanni	1997	12 European Cities	MORT	AC	AA	lag 1	Selected	24 hours	0.40	0.30	0.50
1	1207	5974	Lee	2000	7 Korean Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	0.37	0.20	0.53
1	1310	6832	Samoli	2001	5 East European Cities	MORT	AC	AA		Selected	24 hours	0.38	0.16	0.60
1	1310	6831	Samoli	2001	7 West European Cities	MORT	AC	AA		Selected	24 hours	0.98	0.57	1.39
1	1310	6830	Samoli	2001	12 European Cities	MORT	AC	AA		Selected	24 hours	0.61	0.53	0.69
1	1337	7959	Biggeri	2001	8 Italian Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	1.50	1.10	1.90
1	1366	7928	Schwartz	2001	8 Spanish Cities	MORT	AC	AA	lag 0	Selected	24 hours	0.27	0.18	0.36
1	1465	8749	Le Tertre	2002	9 French Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	0.71	0.42	1.00
5	92	12210	Ballester	2003	13 Spanish Cities	MORT	CV	AA	lag 0-1	Selected	24 hours	0.60	-0.10	1.30
5	1337	7960	Biggeri	2001	8 Italian Cities	MORT	CV	AA	lag 0-1	Selected	24 hours	1.40	0.90	1.90
5	1465	8750	Le Tertre	2002	9 French Cities	MORT	CV	AA	lag 0-1	Selected	24 hours	1.04	0.51	1.56
7	222	1940	Zmirou	1998	5 European Cities	MORT	CAR	AA	single	Selected	24 hours	0.79	0.20	1.38
9	92	12216	Ballester	2003	13 Spanish Cities	MORT	RESP	AA	lag 0-1	Selected	24 hours	1.20	0.30	2.11
9	222	2578	Zmirou	1998	5 European Cities	MORT	RESP	AA	single	Selected	24 hours	0.98	0.59	1.37
9	222	2588	Zmirou	1998	4 Polish Cities	MORT	RESP	AA	single	Selected	24 hours	0.20	-0.40	0.81
9	1337	7961	Biggeri	2001	8 Italian Cities	MORT	RESP	AA	lag 0-1	Selected	24 hours	2.70	1.30	4.12
9	1465	8751	Le Tertre	2002	9 French Cities	MORT	RESP	AA	lag 0-1	Selected	24 hours	1.10	0.04	2.16
16	1337	7962	Biggeri	2001	8 Italian Cities	HAD	CAR	AA	lag 0-1	Selected	24 hours	2.00	0.50	3.52
16	1580	13062	Sunyer	2003	7 European Cities	HAD	CAR	AA	lag 0-1	Selected	24 hours	0.70	0.30	1.10
17	1580	13063	Sunyer	2003	7 European Cities	HAD	CAR	E	lag 0-1	Selected	24 hours	0.70	0.30	1.10
19	1580	13065	Sunyer	2003	7 European Cities	HAD	IHD	E	lag 0-1	Selected	24 hours	1.20	0.80	1.60
20	409	3023	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 0	Selected	1 hour	0.37	-0.08	0.83
22	1337	7963	Biggeri	2001	8 Italian Cities	HAD	RESP	AA	lag 0-1	Selected	24 hours	1.70	0.70	2.71
24	229	4298	Spix	1998	5 European Cities	HAD	RESP	YA	single	Selected	24 hours	0.18	-0.16	0.52
25	229	4299	Spix	1998	5 European Cities	HAD	RESP	E	single	Selected	24 hours	0.40	0.10	0.69
25	1579	11938	Sunyer	2003	7 European Cities	HAD	RESP	E	lag 0-1	Selected	24 hours	0.40	-0.40	1.21
27	398	1653	Sunyer	1997	3 European Cities	HAD	ASTHMA	C	single	Selected	24 hours	1.46	0.51	2.41
27	1579	11935	Sunyer	2003	7 European Cities	HAD	ASTHMA	C	lag 0-1	Selected	24 hours	1.30	0.40	2.21
28	398	2064	Sunyer	1997	4 European Cities	HAD	ASTHMA	YA	single	Selected	24 hours	-0.06	-0.79	0.68
28	1579	11936	Sunyer	2003	7 European Cities	HAD	ASTHMA	YA	lag 0-1	Selected	24 hours	0.00	-0.90	0.91
30	1579	11937	Sunyer	2003	7 European Cities	HAD	COPDp	E	lag 0-1	Selected	24 hours	0.40	-0.60	1.41
*	222	2576	Zmirou	1998	3 European Cities	MORT	CAR	AA	single	Other	1 hour	0.40	0.20	0.59
*	222	2577	Zmirou	1998	3 European Cities	MORT	RESP	AA	single	Other	1 hour	0.40	0.20	0.59
*	1580	13064	Sunyer	2003	7 European Cities	HAD	IHD	NE	lag 0-1	Selected	24 hours	0.60	0.20	1.00
*	409	3300	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 0	Selected	24 hours	1.81	0.66	2.98
*	1580	13066	Sunyer	2003	7 European Cities	HAD	ST	E	lag 0-1	Selected	24 hours	0.00	-0.50	0.50
*	404	2007	Anderson	1997	4 European Cities	HAD	COPDm	AA	cum	Selected	1 hour	0.30	0.06	0.54
*	404	2197	Anderson	1997	6 European Cities	HAD	COPDm	AA	single	Other	24 hours	0.44	-0.38	1.26
*	890	3092	Schwartz	1991	5 German Cities	EV	LRI	C	lag 0	Selected	24 hours	0.83	0.14	1.53
*	1350	7998	Hwang	2002	50 Taiwanese townships	GPC	LRI	AA	lag 0	Selected	24 hours	3.76	3.00	4.52
*	1350	7992	Hwang	2002	50 Taiwanese townships	GPC	LRI	C	lag 0	Selected	24 hours	3.76	2.24	5.30
*	1350	7994	Hwang	2002	50 Taiwanese townships	GPC	LRI	YA	lag 0	Selected	24 hours	5.29	3.76	6.85
*	1350	7996	Hwang	2002	50 Taiwanese townships	GPC	LRI	E	lag 0	Selected	24 hours	6.07	4.52	7.64

*published estimates for diagnostic groups for which no single city meta-analytic estimates are available (Table 7.2)

1 MORT=mortality, HAD=hospital admissions, EV=emergency room visits, GPC=general practitioner consultation

2 AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

3 AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Table 7.4: SO_2. Summary estimates (percentage increase for 10μg/m^3 and 95% confidence intervals) from multipollutant models reported from multicity studies of mortality and morbidity.

Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Lag	Selected	Season	Averaging time	Co-Pollutant	Random effects estimate and 95% CL Est	Lcl	Ucl
1	9	8433	Ballester	2002	13 Spanish Cities	MORT	AC	AA	lag 0-1	Selected	all	24 hours	Single Pollutant	0.50	0.10	0.90
1	9	8434	Ballester	2002	13 Spanish Cities	MORT	AC	AA	lag 0-1	Other	all	24 hours	TSP+PM_{10}+BS	0.20	-0.40	0.80
1	66	13725	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	all	24 hours	PM_{10}	0.42	-0.05	0.89
1	66	13726	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	all	24 hours	NO_2	-0.11	-0.50	0.29
1	66	13727	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	all	24 hours	CO	0.24	-0.11	0.59
1	66	13728	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	all	24 hours	O_3	-0.28	-0.65	0.09
1	135	5775	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Selected	all	24 hours	Single Pollutant	0.0009	0.0000	0.0017
1	135	5822	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Other	all	24 hours	$PM_{2.5}$	0.0005	0.0004	0.0006
1	135	5823	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Other	all	24 hours	$PM_{2.5-10}$	0.0008	-0.0001	0.0017
1	135	5824	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Other	all	24 hours	PM_{10}	0.0005	-0.0005	0.0014
1	225	471	Burnett	1998	11 Canadian Cities	MORT	AC	AA		Selected	all	24 hours	Single Pollutant	1.23	0.75	1.72
1	225	3291	Burnett	1998	11 Canadian Cities	MORT	AC	AA		Selected	all	24 hours	NO_2+CO+O_3	0.96	0.47	1.44
1	1207	5974	Lee	2000	7 Korean Cities	MORT	AC	AA	lag 0-1	Selected	all	24 hours	Single Pollutant	0.37	0.20	0.53
1	1207	5976	Lee	2000	7 Korean Cities	MORT	AC	AA	lag 0-1	Other	all	24 hours	TSP+O_3	0.21	0.09	0.34
5	9	8441	Ballester	2002	13 Spanish Cities	MORT	CV	AA	lag 0-1	Selected	all	24 hours	Single Pollutant	0.50	-0.20	1.20
5	9	8442	Ballester	2002	13 Spanish Cities	MORT	CV	AA	lag 0-1	Other	all	24 hours	TSP+PM_{10}+BS	0.00	-1.00	1.01
9	9	8449	Ballester	2002	13 Spanish Cities	MORT	RESP	AA	lag 0-1	Selected	all	24 hours	Single Pollutant	1.20	0.30	2.11
9	9	8450	Ballester	2002	13 Spanish Cities	MORT	RESP	AA	lag 0-1	Other	all	24 hours	TSP+PM_{10}+BS	0.30	-0.80	1.41
19	1580	13065	Sunyer	2003	7 European Cities	HAD	IHD	E	lag 0-1	Selected	all	24 hours	Single Pollutant	1.20	0.80	1.60
19	1580	13071	Sunyer	2003	7 European Cities	HAD	IHD	E	lag 0-1	Other	all	24 hours	PM_{10}	-1.40	-8.00	5.67
19	1580	13077	Sunyer	2003	4 European Cities	HAD	IHD	E	lag 0-1	Other	all	24 hours	BS	0.60	-0.10	1.30
27	398	1653	Sunyer	1997	3 European Cities	HAD	ASTHMA	C	single	Selected	all	24 hours	Single Pollutant	1.46	0.51	2.41
27	398	1686	Sunyer	1997	3 European Cities	HAD	ASTHMA	C	single	Other	all	24 hours	BS	1.78	0.61	2.95
27	398	1690	Sunyer	1997	3 European Cities	HAD	ASTHMA	C	single	Other	all	24 hours	NO_2	1.46	0.38	2.55
*	1580	13068	Sunyer	2003	7 European Cities	HAD	IHD	NE	lag 0-1	Other	all	24 hours	PM_{10}	0.70	0.10	1.30
*	1580	13074	Sunyer	2003	4 European Cities	HAD	IHD	NE	lag 0-1	Other	all	24 hours	BS	0.90	0.10	1.71

[*] published estimates for diagnostic groups for which no single city meta-analytic estimates are available (Table 7.2)

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Tables 7.5: SO_2. Summary estimates (percentage increase for 10µg/m³ and 95% confidence intervals) from seasonal models reported from multicity studies of mortality and morbidity.

Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Lag	Selected	Season	Averaging time	Co- Pollutant	Random effects estimate and 95% CL Est	Lcl	Ucl
16	222	2594	Zmirou	1998	4 Polish Cities	MORT	CAR	AA	single	Other	cool	24 hours	Single pollutant	0.40	0.20	0.59
16	222	2595	Zmirou	1998	4 Polish Cities	MORT	CAR	AA	single	Other	warm	24 hours	Single pollutant	0.98	-0.40	2.38
16	222	2592	Zmirou	1998	5 European Cities	MORT	CAR	AA	single	Other	cool	24 hours	Single pollutant	0.59	0.20	0.99
16	222	2593	Zmirou	1998	4 European Cities	MORT	CAR	AA	single	Other	warm	24 hours	Single pollutant	0.98	0.00	1.97
22	222	2602	Zmirou	1998	4 Polish Cities	MORT	RESP	AA	single	Other	cool	24 hours	Single pollutant	0.40	-0.20	1.00
22	222	2603	Zmirou	1998	4 Polish Cities	MORT	RESP	AA	single	Other	warm	24 hours	Single pollutant	1.36	-2.30	5.17
22	222	2600	Zmirou	1998	5 European Cities	MORT	RESP	AA	single	Other	cool	24 hours	Single pollutant	0.98	0.40	1.57
22	222	2601	Zmirou	1998	5 European Cities	MORT	RESP	AA	single	Other	warm	24 hours	Single pollutant	1.74	0.98	2.50
24	229	4685	Spix	1998	5 European Cities	HAD	RESP	YA	single	Other	winter	24 hours	Single pollutant	0.20	-0.61	1.01
24	229	4684	Spix	1998	5 European Cities	HAD	RESP	YA	single	Other	summer	24 hours	Single pollutant	0.20	-0.40	0.81
25	229	4687	Spix	1998	5 European Cities	HAD	RESP	E	single	Other	winter	24 hours	Single pollutant	0.40	-0.20	1.00
25	229	4686	Spix	1998	5 European Cities	HAD	RESP	E	single	Other	summer	24 hours	Single pollutant	1.17	0.20	2.15
*	404	2013	Anderson	1997	6 European Cities	HAD	COPDm	AA	single	Other	cool	24 hours	Single pollutant	0.40	-0.40	1.20
*	404	2014	Anderson	1997	6 European Cities	HAD	COPDm	AA	single	Other	warm	24 hours	Single pollutant	0.98	0.20	1.77
*	404	2015	Anderson	1997	4 European Cities	HAD	COPDm	AA	single	Other	cool	1 hour	Single pollutant	0.20	-0.20	0.60
*	404	2016	Anderson	1997	4 European Cities	HAD	COPDm	AA	single	Other	warm	1 hour	Single pollutant	0.40	0.00	0.80

* published estimates for diagnostic groups for which no single city meta-analytic estimates are available (Table 7.2)

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits, GPC= general practitioner consultation

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Table 7.6: SO_2. Panel Studies. Papers containing estimates by outcome, WHO region and pollutant measure. The number of centres is shown in italics in the last column.

	Total no. of papers	No. of multi-centre papers	Outcome* PEFR	FEV_1	FVC	LRS	URS	Asthma medication	other	*No. of centres*
All	43	10	26	2	1	35	20	19	14	*44*
WHO region										
Amr A	13	0	4	1	0	10	2	0	4	*10*
Eur A	24	7	18	1	1	21	15	15	8	*26*
Eur B	2	2	2	0	0	2	2	2	0	*4*
Eur C	2	1	2	0	0	1	1	1	0	*2*
Sear D	1	0	0	0	0	0	0	0	1	*1*
Wpr A	1	0	0	0	0	1	0	1	1	*1*
SO_2										
1hr	5	0	1	0	0	4	1	0	1	*3*
24hr	36	10	23	2	1	28	19	19	10	*40*
other	5	0	2	0	0	5	0	0	1	*4*

Note:
Amr = American Region, Eur = European Region, Emr = Eastern Mediterranean Region, Sear = South East Asia Region, Wpr = Western Pacific Region.
A = very low child and adult mortality, B= low child mortality and low adult mortality, C = low child mortality and high adult mortality, D = high child mortality and high adult mortality.

* PEFR = peak expiratory flow rate, FEV_1 = forced expiratory volume in one second, FVC = forced vital capacity, LRS = lower respiratory symptoms
URS = upper respiratory symptoms, other = various, including dyspnoea, decremenents, changes or ratios of lung function measurements, school absences, exacerbations

Table 7.7: SO_2. Panel Studies. Random effects summary estimates (percentage increase for 10µg/m^3 and 95% confidence intervals) for various outcomes with 4 or more individual city estimates. Statistical significance of Egger and Begg tests of publication bias and random effects estimates adjusted for publication bias.

			Estimate numbers			Random effects estimate and 95% CL			Publication Bias		Random effects estimate and 95% CL adjusted for publication bias					
Set no.	Panel Group[1]	Outcome[2]	Total	In meta-analysis	Het.(p)[3]	Est	Lcl	Ucl	Egger(p)	Begg(p)	No. added	Adj	Lcl	Ucl	Het.(p)[3]	% change[4]
1	symptomatic	iLRS(O)	147	24	.032	-0.86	-3.60	1.97	0.791	0.487	0	-0.86	-3.60	1.97	.03	0.0
2	symptomatic	pLRS(O)	157	27	.005	-0.18	-0.88	0.54	0.541	0.983	0	-0.18	-0.88	0.54	.005	0.0
3	symptomatic	iM	36	17	.53	0.58	-0.60	1.78	0.323	0.026	0	0.58	-0.60	1.78	.5	0.0
4	symptomatic	pM	52	24	.02	-0.45	-1.38	0.49	0.604	0.804	2	-0.47	-1.40	0.46	.03	-7.0
5	symptomatic	PEFR (l/m)	109	25	.49	0.01	-0.03	0.04	0.021	0.168	6	0.01	-0.05	0.07	.2	72.8
6	symptomatic	iURS	48	23	.002	-2.29	-4.48	-0.04	0.784	0.256	0	-2.29	-4.48	-0.04	.002	0.0
7	symptomatic	pURS	54	26	.53	-0.37	-0.75	0.01	0.157	0.321	0	-0.37	-0.75	0.01	.53	0.0

[1] unselected = mixture of healthy/not healthy children

[2] PEFR = peak expiratory flow rate, FEV_1 = forced expiratory volume in one second, FVC = forced vital capacity, LRS(O) = lower respiratory symptoms (not dyspnoea), URS = upper respiratory symptoms, M = medication use (bronchodilator). The i/p prefix refers to incident or prevalent outcomes.

[3] p-value from test for heterogenity

[4] percentage change in estimate after adjustment for publication bias

Table 8.1. CO: Population time series studies. Papers containing estimates by outcome, WHO region and pollutant measure. The number of cities contributing estimates is shown in italics in the last column.

	Total no. of papers	No. of multi-city papers	Outcome				
			Mortality	**Hospital admissions**	**Hospital emergency visits**	**Other***	***No. of cities***
All	134	11	73	47	18	7	*173*
WHO Region							
Amr A	50	7	22	20	10	0	*125*
Amr B	17	8	10	4	4	0	*3*
Emr B	1	0	0	1	0	0	*1*
Eur A	46	3	28	16	3	4	*38*
Wpr A	2	0	1	0	0	1	*2*
Wpr B	12	1	7	3	1	1	*7*
CO							
1hr	26	3	7	15	4	0	*38*
8hr	16	2	9	8	2	0	*24*
24hr	88	7	52	24	11	6	*152*

Note:
Amr = American Region, Eur = European Region, Emr = Eastern Mediterranean Region, Sear = South East Asia Region, Wpr = Western Pacific Region.
A = very low child and adult mortality, B= low child mortality and low adult mortality, C = low child mortality and high adult mortality, D = high child mortality and high adult mortality.

***** "Other" includes primary care visits, ambulance transports

Table 8.2. CO: Random effects summary estimates (percentage increase for 10µg/m[3] and 95% confidence intervals) for pollutant averaging time/diagnostic/age groups with 4 or more individual city estimates. Statistical significance of Egger and Begg tests of publication bias and random effects estimates adjusted for publication bias.

					Estimate numbers			Random effects estimate and 95% CL			Publication Bias		Random effects estimate and 95% CL adjusted for publication bias					
Set no.	Outcome[1]	Diagnostic group[2]	Age group[3]	Averaging time	Total	In meta-analysis	Het.(p)[4]	Est	Lcl	Ucl	Egger(p)	Begg(p)	No. added	Adj	Lcl	Ucl	Het.(p)[4]	% change[5]
1	MORT	AC	AA	8 hours	11	10	<.001	1.31	0.73	1.89	0.005	0.128	0	1.31	0.73	1.89	<.001	0.0
2	MORT	AC	AA	24 hours	120	114	<.001	0.73	0.50	0.96	0.049	0.095	0	0.73	0.50	0.96	<.001	0.0
3	MORT	AC	E	24 hours	16	14	<.001	1.56	-0.37	3.52	0.688	0.125	0	1.56	-0.37	3.52	<.001	0.0
4	MORT	CR	AA	24 hours	82	82	.44	0.47	0.23	0.71	0.010	0.188	0	0.47	0.23	0.71	.44	0.0
5	MORT	CV	AA	8 hours	10	9	<.001	1.53	0.47	2.60	0.976	0.677	2	1.01	-0.03	2.07	<.001	-33.7
6	MORT	CV	AA	24 hours	18	16	<.001	1.11	0.48	1.74	0.042	0.787	2	1.07	0.43	1.72	<.001	-3.1
7	MORT	CAR	AA	24 hours	4	4	.085	2.80	1.90	3.71	0.460	0.497	1	2.40	1.24	3.56	<.001	-14.6
8	MORT	ST	AA	24 hours	6	5	.01	3.90	1.72	6.13	0.118	0.050	2	3.27	0.68	5.92	<.001	-16.2
9	MORT	RESP	AA	8 hours	10	9	.33	2.65	1.27	4.05	0.539	0.677	2	2.06	0.39	3.76	.1	62.3
10	MORT	RESP	AA	24 hours	12	12	<.001	1.81	0.51	3.12	0.027	0.681	4	0.79	-0.49	2.09	<.001	-56.2
11	MORT	COPDp	AA	24 hours	4	4	.02	5.36	2.64	8.16	0.529	0.497	0	5.36	2.64	8.16	.02	0.0
12	HAD	CAR	E	1 hour	9	8	0.22	1.18	0.84	1.52	0.816	0.458	0	1.18	0.84	1.52	.22	0.0
13	HAD	CAR	AA	8 hours	8	8	<.001	2.37	1.17	3.58	0.242	0.621	0	2.37	1.17	3.58	<.001	0.0
14	HAD	CAR	E	24 hours	5	5	<.001	2.93	2.10	3.77	0.140	0.050	0	2.93	2.10	3.77	<.001	0.0
15	HAD	IHD	AA	24 hours	9	7	<.001	2.06	0.32	3.82	0.404	0.652	2	1.30	-0.32	2.95	<.001	-36.9
16	HAD	HF	E	1 hour	9	7	<.001	1.58	0.96	2.20	0.738	0.652	0	1.58	0.96	2.20	<.001	0.0
17	HAD	RESP	AA	8 hours	9	9	<.001	3.63	2.39	4.89	0.256	1.000	0	3.63	2.39	4.89	<.011	0.0
18	HAD	RESP	AA	24 hours	8	7	.001	0.04	0.00	0.08	0.092	0.652	2	0.04	-0.01	0.09	<.001	0.0
19	HAD	RESP	E	24 hours	4	4	.7	0.15	-0.04	0.33	0.541	0.174	0	0.15	-0.04	0.33	.7	0.0
20	HAD	COPDp	E	24 hours	6	6	.03	3.47	2.67	4.27	0.611	0.851	0	3.47	2.67	4.27	.03	0.0

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

[4] p-value from test for heterogenity

[5] percentage change in estimate after adjustment for publication bias

Table 8.3. CO: Summary estimates (percentage increase for 10μg/m^3 and 95% confidence intervals) from single pollutant models reported from multicity studies of mortality and morbidity.

Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Lag	Selected	Averaging time	Random effects estimate and 95% CL Est	Lcl	Ucl
1	1337	7969	Biggeri	2001	8 Italian Cities	MORT	AC	AA	lag 0-1	Selected	8 hours	1.30	0.80	1.80
2	92	12206	Ballester	2003	5 Spanish Cities	MORT	AC	AA	lag 0-1	Selected	24 hours	1.50	0.50	2.51
2	135	5773	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Selected	24 hours	1.78	0.26	3.31
2	225	538	Burnett	1998	11 Canadian Cities	MORT	AC	AA		Selected	24 hours	2.00	1.38	2.61
5	1337	7970	Biggeri	2001	8 Italian Cities	MORT	CV	AA	lag 0-1	Selected	8 hours	1.60	1.00	2.20
6	92	12212	Ballester	2003	5 Spanish Cities	MORT	CV	AA	lag 0-1	Selected	24 hours	2.30	1.30	3.31
9	1337	7971	Biggeri	2001	8 Italian Cities	MORT	RESP	AA	lag 0-1	Selected	8 hours	2.80	1.10	4.53
10	92	12218	Ballester	2003	5 Spanish Cities	MORT	RESP	AA	lag 0-1	Selected	24 hours	3.20	1.40	5.03
12	375	1557	Schwartz	1999	8 US cities	HAD	CAR	E	lag 0	Selected	1 hour	1.24	0.86	1.63
13	1337	7972	Biggeri	2001	8 Italian Cities	HAD	CAR	AA	lag 0-1	Selected	8 hours	2.00	1.40	2.60
16	409	3298	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 0	Selected	1 hour	2.02	1.19	2.86
17	1337	7973	Biggeri	2001	8 Italian Cities	HAD	RESP	AA	lag 0-1	Selected	8 hours	2.20	1.70	2.70
*	409	3020	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 0	Selected	8 hours	2.91	1.54	4.30
*	1350	8022	Hwang	2002	50 Taiwanese townships	GPC	LRI	AA	lag 0	Selected	24 hours	6.58	4.90	8.29
*	1350	8016	Hwang	2002	50 Taiwanese townships	GPC	LRI	C	lag 0	Selected	24 hours	5.74	4.07	7.43
*	1350	8018	Hwang	2002	50 Taiwanese townships	GPC	LRI	YA	lag 0	Selected	24 hours	7.43	4.90	10.02
*	1350	8020	Hwang	2002	50 Taiwanese townships	GPC	LRI	E	lag 0	Selected	24 hours	9.15	6.58	11.77

*published estimates for diagnostic groups for which no single city meta-analytic estimates are available (Table 8.2)

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits, GPC=general practitioner consultation

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Table 8.4. CO: Summary estimates (percentage increase for 10μg/m[3] and 95% confidence intervals) from multipollutant models reported from multicity studies of mortality and morbidity.

Set no.	Ref Man id	Access id	1st Author	Year	Cities	Outcome[1]	Diagnostic group[2]	Age group[3]	Lag	Selected	Season	Averaging time	Co-Pollutant	Random effects estimate and 95% CL Est	Lcl	Ucl
2	66	13733	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	all	24 hours	PM_{10}	0.63	-0.16	1.42
2	66	13734	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	all	24 hours	SO_2	0.69	0.27	1.11
2	66	13735	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	all	24 hours	NO_2	0.26	-0.53	1.05
2	66	13736	Zeka	2004	90 US Cities	MORT	AC	AA	lag 0-1	Selected	all	24 hours	O_3	-0.14	-0.97	0.69
2	135	5773	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Selected	all	24 hours	Single pollutant	1.78	0.26	3.31
2	135	5810	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Other	all	24 hours	$PM_{2.5}$	0.98	-0.76	2.74
2	135	5811	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Other	all	24 hours	$PM_{2.5\text{-}10}$	1.60	0.11	3.11
2	135	5812	Burnett	2000	8 Canadian Cities	MORT	AC	AA	lag 1	Other	all	24 hours	PM_{10}	1.07	-0.54	2.69
2	225	538	Burnett	1998	11 Canadian Cities	MORT	AC	AA		Selected	all	24 hours	Single pollutant	2.00	1.38	2.61
2	225	3284	Burnett	1998	11 Canadian Cities	MORT	AC	AA		Selected	all	24 hours	$NO_2+SO_2+O_3$	0.72	-0.02	1.47
16	409	3298	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 0	Selected	all	1 hour	Single pollutant	2.02	1.19	2.86
16	409	1457	Burnett	1997	10 Canadian Cities	HAD	HF	E	lag 0	Selected	all	1 hour	$NO_2+SO_2+O_3$+other	2.00	0.87	3.13

[1] MORT=mortality, HAD=hospital admissions, EV=emergency room visits

[2] AC=all cause, ASTHMA=asthma, COPDp=chronic obstructive pulmonary disease (inc.asthma), COPDm=chronic obstructive pulmonary disease (not inc.asthma), LRI=lower respiratory infection, RESP=respiratory, URD=upper respiratory conditions, CAR=cardiac, CV=cardiovascular, DYS=dysrhythmias, HF=heart failure, IHD=ischaemic heart disease, ST=stroke, OCV=other cardiovascular, O=any other groups of ICD codes eg diabetes

[3] AA=all ages, E=elderly, NE=not elderly, YA=young adult, C=children

Table 8.6. CO: Panel Studies. Papers containing estimates by outcome, WHO region and pollutant measure. The number of centres is shown in italics in the last column

	Total no. of papers	No. of multi-centre papers	Outcome* PEFR	FEV_1	FVC	LRS	URS	Asthma medication	other	*No. of centres*
All	12	0	4	3	2	6	0	3	5	*8*
WHO region										
Amr A	8	0	2	2	1	4	0	1	3	*4*
Eur A	3	0	2	1	1	1	0	1	1	*3*
Wpr A	1	0	0	0	0	1	0	1	1	*1*
CO										
1hr	4	0	0	0	0	3	0	1	2	*2*
8hr	2	0	1	0	0	2	0	0	0	*7*
24hr	8	0	3	3	2	3	0	2	3	*1*

Note:
Amr = American Region, Eur = European Region, Emr = Eastern Mediterranean Region, Sear = South East Asia Region, Wpr = Western Pacific Region.
A = very low child and adult mortality, B= low child mortality and low adult mortality, C = low child mortality and high adult mortality, D = high child mortality and high adult mortality.

* PEFR = peak expiratory flow rate, FEV_1 = forced expiratory volume in one second, FVC = forced vital capacity, LRS = lower respiratory symptoms
URS = upper respiratory symptoms, other = various, including MMEF, headache, defibrillator discharge

Table 9.1. Overall qualitative summary of single city meta-anlyses of PM, NO_2, O_3, SO_2 and CO.

			No. of		RE estimates in adverse direction				RE estimates in protective direction		RE estimates with heterogenity <0.05		No. of RE estimates adj for publication bias			
Pollutant		**Outcome**	**Summary estimates**	**Individual estimates**	**No.**	**%**	**95% CL not inc. zero**	**%**	**No.**	**95% CL not inc. zero**	**No.**	**%**	**Egger/Begg <0.05**	**%**	**reduction >20%**	**%**
PM	Time series	Mortality	31	685	31	*100.0*	25	*80.6*	0		23	*74.2*	10	*32.3*	15	*48.4*
		Hospital admissions	31	283	29	*93.5*	23	*74.2*	2	0	12	*38.7*	1	*3.2*	7	*22.6*
	Panel		15	358	4	*26.7*	0	*0.0*	11	3	6	*40.0*	4	*26.7*	2	*13.3*
NO_2	Time series	Mortality	12	329	12	*100.0*	11	*91.7*	0		5	*41.7*	4	*33.3*	4	*33.3*
		Hospital admissions	22	130	20	*90.9*	14	*63.6*	2	0	13	*59.1*	4	*18.2*	6	*27.3*
	Panel		7	164	1	*14.3*	0	*0.0*	6	2	4	*57.1*	0	*0.0*	0	*0.0*
O_3	Time series	Mortality	13	299	13	*100.0*	11	*84.6*	0		7	*53.8*	3	*23.1*	6	*46.2*
		Hospital admissions	15	80	12	*80.0*	5	*33.3*	3	0	12	*80.0*	2	*13.3*	3	*20.0*
	Panel		4	32	4	*100.0*	4	*100.0*	0		3	*75.0*	0	*0.0*	0	*0.0*
SO_2	Time series	Mortality	12	371	12	*100.0*	10	*83.3*	0		9	*75.0*	6	*50.0*	3	*25.0*
		Hospital admissions	20	140	19	*95.0*	13	*65.0*	1	0	16	*80.0*	3	*15.0*	10	*50.0*
	Panel		7	166	1	*14.3*	0	*0.0*	6	1	4	*57.1*	2	*28.6*	1	*14.3*
CO	Time series	Mortality	11	279	11	*100.0*	10	*90.9*	0		8	*72.7*	5	*45.5*	3	*27.3*
		Hospital admissions	9	61	9	*100.0*	8	*88.9*	0		7	*77.8*	0	*0.0*	1	*11.1*
All	Time series	Mortality	79	1963	79	*100.0*	67	*84.8*	0	0	52	*65.8*	28	*35.4*	31	*39.2*
		Hospital admissions	97	694	89	*91.8*	63	*64.9*	8	0	60	*61.9*	10	*10.3*	27	*27.8*
		Sub total	176	2657	168	*95.5*	130	*73.9*	8	0	112	*63.6*	38	*21.6*	58	*33.0*
All	Panel		33	720	10	*30.3*	4	*12.1*	23	6	17	*51.5*	6	*18.2*	3	*9.1*
		Grand Total	**209**	**3377**	**178**	*85.2*	**134**	*64.1*	**31**	**6**	**129**	*61.7*	**44**	*21.1*	**61**	*29.2*

Table 9.2. PM: qualitative summary of results of meta-analysis of single city studies.

Outcome		Particle measure	No. of Summary estimates	No. of Individual estimates	No. of RE estimates in adverse direction	No. of RE estimates in adverse direction: 95% CL not inc. zero	No. of RE estimates in protective direction	No. of RE estimates in protective direction: 95% CL not inc. zero	No. of RE estimates with heterogenity <0.05	No. of RE estimates adj for publication bias: Egger/Begg <0.05	No. of RE estimates adj for publication bias: reduction >20%
Time-series											
Mortality	all cause	PM_{10}	3	194	3	2	0		3	2	2
		$PM_{2.5}$	2	31	2	2	0		2	1	2
		$PM_{2.5-10}$	1	13	1	1	0		1	0	0
		BS	2	37	2	2	0		1	0	0
		TSP	2	46	2	2	0		2	2	1
		SO_4^{2-}	1	9	1	1	0		0	0	0
Mortality	cardiovascular inc.cardiorespiratory	PM_{10}	6	177	6	6	0		1	2	4
		$PM_{2.5}$	1	13	1	1	0		1	1	1
		$PM_{2.5-10}$	1	5	1	1	0		1	0	0
		BS	1	19	1	1	0		1	0	0
		TSP	1	20	1	1	0		1	0	0
Mortality	respiratory	PM_{10}	4	69	4	2	0		4	2	3
		$PM_{2.5}$	1	8	1	0	0		1	0	0
		$PM_{2.5-10}$	1	4	1	0	0		1	0	0
		BS	1	18	1	0	0		1	0	1
		TSP	3	22	3	3	0		2	0	1
Mortality, total estimates			**31**	**685**	**31**	**25**	**0**		**23**	**10**	**15**
Hospital admissions	cardiovascular	PM_{10}	7	88	7	7	0		2	0	1
		BS	5	27	4	3	1	0	1	0	2
Hospital admissions inc emergency visits	respiratory	PM_{10}	13	134	13	12	0		9	0	1
		BS	5	30	4	1	1	0	0	1	2
		TSP	1	4	1	0	0		0	0	1
Hospital admissions, total estimates			**31**	**283**	**29**	**23**	**2**	**0**	**12**	**1**	**7**
Time-series - total estimates			**62**	**968**	**60**	**48**	**2**	**0**	**35**	**11**	**22**
Panel studies											
Lung function		PM_{10}	2	33	1	0	1	0	1	0	1
		BS	1	26	0		1	0	0	0	0
Symptoms		PM_{10}	4	106	1	0	3	1	2	1	0
		BS	4	104	1	0	3	2	2	1	1
Medication Use		PM_{10}	2	46	1	0	1	0	1	1	0
		BS	2	43	0		2	0	0	1	0
Panel studies - total estimates			**15**	**358**	**4**	**0**	**11**	**3**	**6**	**4**	**2**

Table 9.3. NO_2: qualitative summary of results of meta-analysis of single city studies.

Outcome		No. of Summary estimates	No. of Individual estimates	No. of RE estimates in adverse direction	Adverse: 95% CL not inc. zero	No. of RE estimates in protective direction	Protective: 95% CL not inc. zero	No. of RE estimates with heterogenity <0.05	No. of RE estimates adj for publication bias: Egger/Begg <0.05	No. of RE estimates adj for publication bias: reduction >20%
Time-series										
Mortality	all cause	4	172	4	3	0		3	1	1
Mortality	cardiovascular inc.cardiorespiratory	5	111	5	5	0		1	2	2
Mortality	respiratory	3	46	3	3	0		1	1	1
Mortality, total estimates		**12**	**329**	**12**	**11**	**0**		**5**	**4**	**4**
Hospital admissions	cardiovascular	7	45	7	5	0		5	0	1
Hospital admissions inc emergency visits	respiratory	15	85	13	9	2	0	8	4	5
Hospital admissions, total estimates		**22**	**130**	**20**	**14**	**2**	**0**	**13**	**4**	**6**
Time-series - total estimates		**34**	**459**	**32**	**25**	**2**	**0**	**18**	**8**	**10**
Panel Studies										
Lung function		1	25	0		1	0	1	0	0
Symptoms		4	98	0	0	4	2	2	0	0
Medication Use		2	41	1	0	1	0	1	0	0
Panel studies - total estimates		**7**	**164**	**1**	**0**	**6**	**2**	**4**	**0**	**0**

Table 9.4. O_3: qualitative summary of results of meta-analysis of single city studies.

Outcome		No. of: Summary estimates	No. of: Individual estimates	No. of RE estimates in adverse direction	No. of RE estimates in adverse direction: 95% CL not inc. zero	No. of RE estimates in protective direction	No. of RE estimates in protective direction: 95% CL not inc. zero	No. of RE estimates with heterogenity <0.05	No. of RE estimates adj for publication bias: Egger/Begg <0.05	No. of RE estimates adj for publication bias: reduction >20%
Time-series studies										
Mortality	all cause	6	157	6	6	0		5	3	3
Mortality	cardiovascular inc.cardiorespiratory	4	111	4	4	0		1	0	1
Mortality	respiratory	3	31	3	1	0		1	0	2
Mortality, total estimates		**13**	**299**	**13**	**11**	**0**		**7**	**3**	**6**
Hospital admissions	cardiovascular	4	20	1	0	3	0	4	0	0
Hospital admissions inc emergency room visits	respiratory	11	60	11	5	0		8	2	3
Hospital admissions, total estimates		**15**	**80**	**12**	**5**	**3**	**0**	**12**	**2**	**3**
Time-series - total estimates		**28**	**379**	**25**	**16**	**3**	**0**	**19**	**5**	**9**
Panel studies - total estimates	lung function	**4**	**32**	**4**	**4**	**0**		**3**	**0**	**0**

Table 9.5. SO_2. qualitative summary of results of meta-analysis of single city studies.

Outcome		No. of Summary estimates	No. of Individual estimates	No. of RE estimates in adverse direction	Adverse direction: 95% CL not inc. zero	No. of RE estimates in protective direction	Protective direction: 95% CL not inc. zero	No. of RE estimates with heterogenity <0.05	No. of RE estimates adj for publication bias: Egger/Begg <0.05	No. of RE estimates adj for publication bias: reduction >20%
Time-series studies										
Mortality	all cause	3	176	3	2	0		3	1	1
Mortality	cardiovascular inc.cardiorespiratory	5	132	5	5	0		3	1	0
Mortality	respiratory	4	63	4	3	0		3	4	2
Mortality, total estimates		**12**	**371**	**12**	**10**	**0**		**9**	**6**	**3**
Hospital admissions	cardiovascular	8	48	7	6	1	0	6	0	5
Hospital admissions inc emergency visits	respiratory	12	92	12	7	0		10	3	5
Hospital admissions, total estimates		**20**	**140**	**19**	**13**	**1**	**0**	**16**	**3**	**10**
Time-series - total estimates		**32**	**511**	**31**	**23**	**1**	**0**	**25**	**9**	**13**
Panel Studies										
Lung function		1	25	0		1	0	0	1	0
Symptoms		4	100	0		4	1	3	0	1
Medication Use		2	41	1	0	1	0	1	1	0
Panel studies - total estimates		**7**	**166**	**1**	**0**	**6**	**1**	**4**	**2**	**1**

Table 9.6. CO: qualitative summary of results of meta-analysis of single city studies.

Outcome		No. of Summary estimates	No. of Individual estimates	No. of RE estimates in adverse direction	No. of RE estimates in adverse direction: 95% CL not inc. zero	No. of RE estimates in protective direction	No. of RE estimates in protective direction: 95% CL not inc. zero	No. of RE estimates with heterogenity <0.05	No. of RE estimates adj for publication bias: Egger/Begg <0.05	No. of RE estimates adj for publication bias: reduction >20%
Time-series studies										
Mortality	all cause	3	138	3	2	0		3	2	0
Mortality	cardiovascular inc.cardiorespiratory	5	116	5	5	0		3	2	1
Mortality	respiratory	3	25	3	3	0		2	1	2
Mortality, total estimates		**11**	**279**	**11**	**10**	**0**		**8**	**5**	**3**
Hospital admissions	cardiovascular	5	35	5	4	0		4	0	1
Hospital admissions	respiratory	4	26	4	3	0		3	0	0
Hospital admissions, total estimates		**9**	**61**	**9**	**8**	**0**		**7**	**0**	**1**
Time-series - total estimates		**20**	**340**	**20**	**18**	**0**		**15**	**5**	**4**

Figure 2.1. APED database: Published time-series and panel studies of air pollution up to 2006

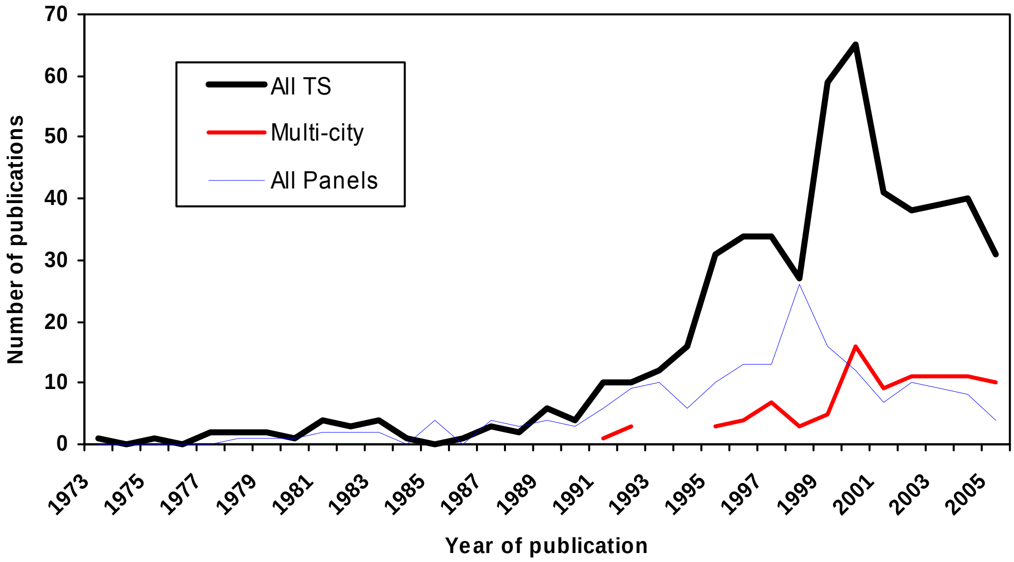


Figure 2.2. APED database: Daily time-series studies. Estimates to 2006, by pollutant and outcome

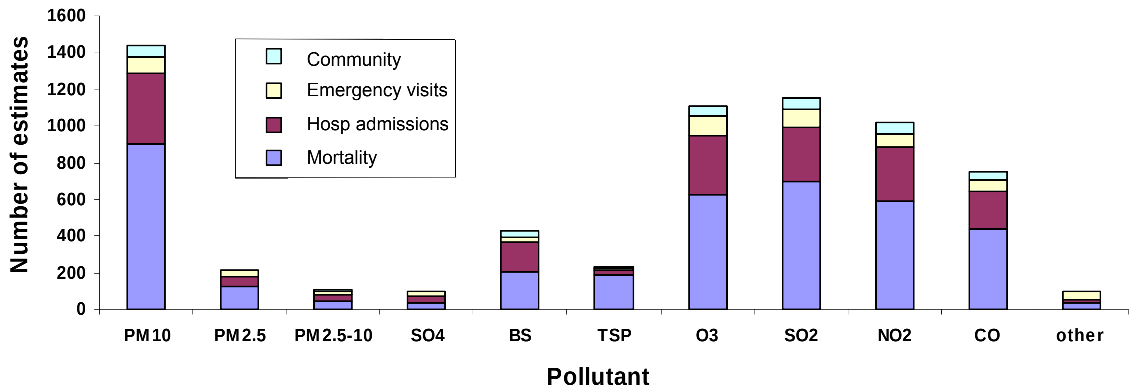


Figure 2.3. APED database: Panel studies. Estimates to 2006, by pollutant and outcome

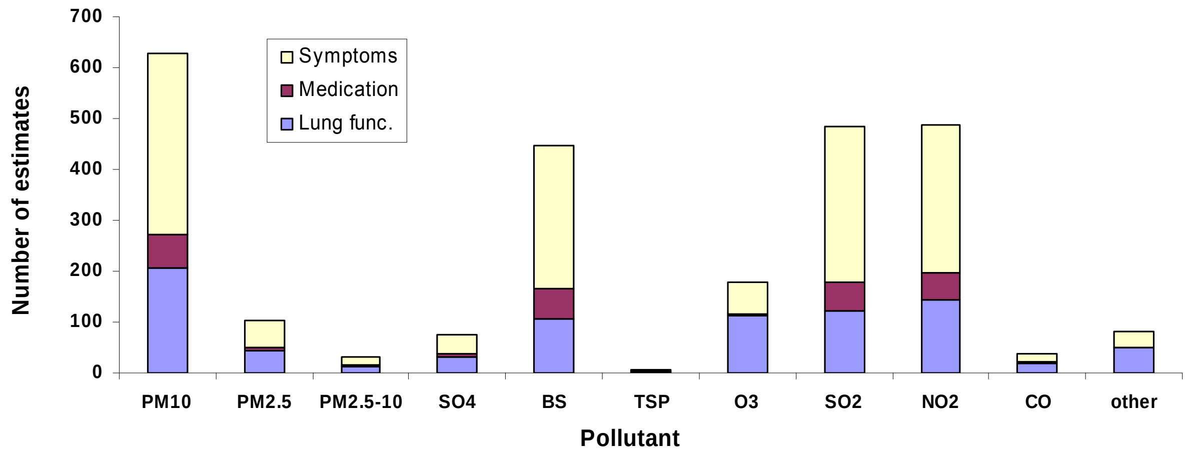


Figure 3.1. Schematic of process for identifying and selecting time series studies

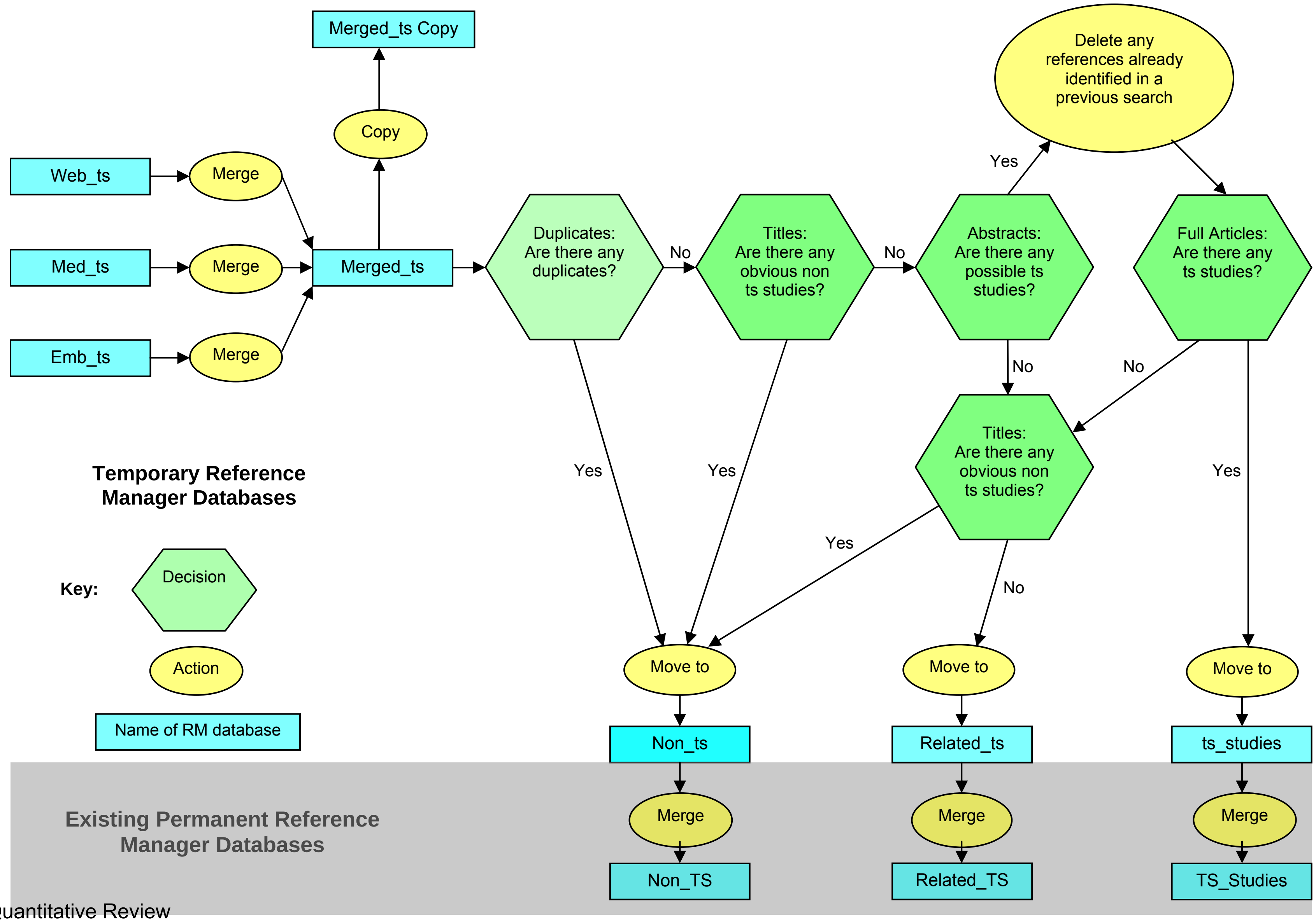


Figure 3.2. Schematic of process for identifying and selecting panel studies

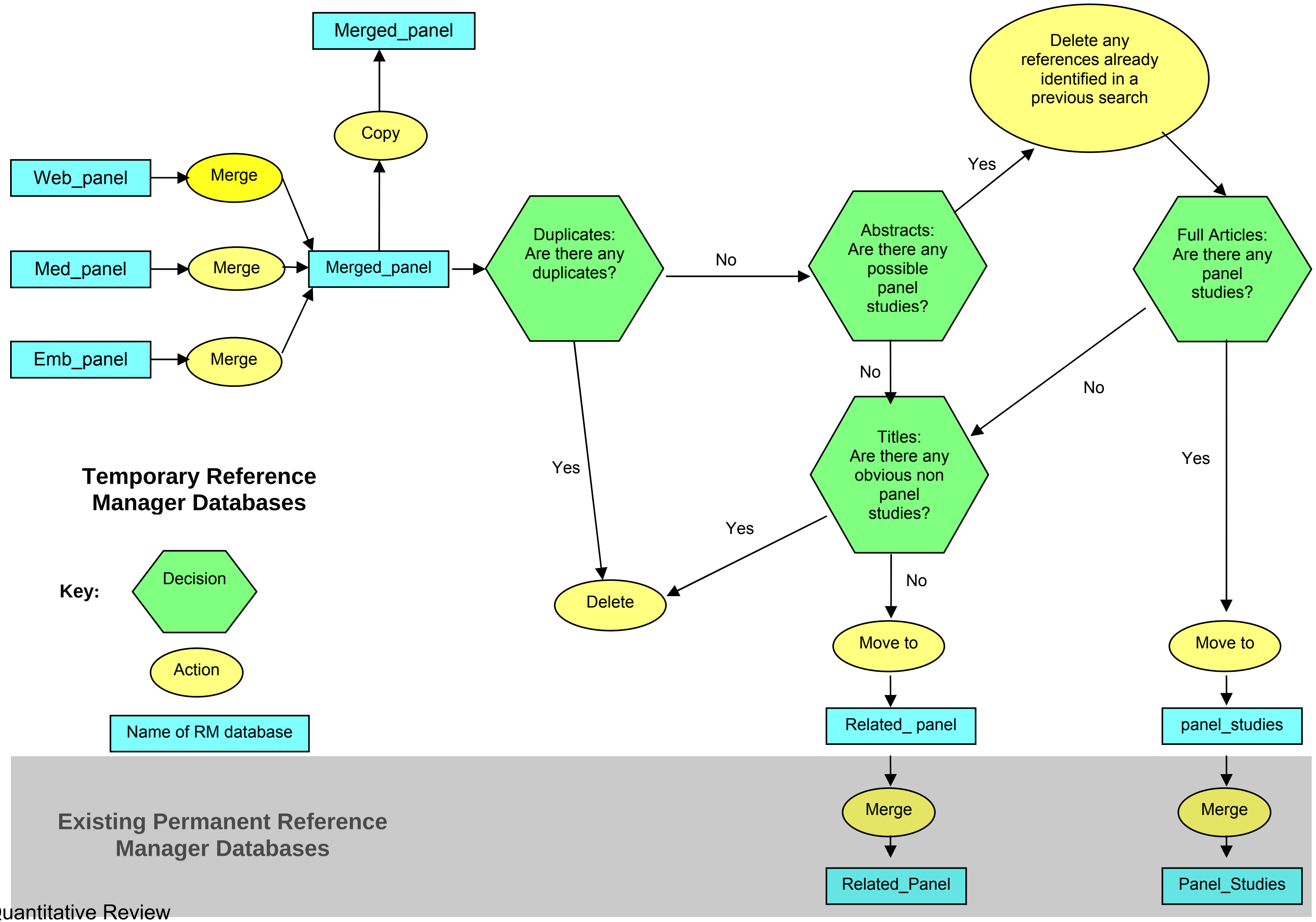


Figure 3.3. Time series data extraction form

LEVEL 1 INFORMATION

Reference Manager ID: **Date Reviewed: / /**

Basic Information

Title:

Authors:

Year of Publication: Start Page: End Page: Volume No.:

Journal Name:

Include information from this study in the 'Level 2 Information' table? Yes [ ] No [ ]

Comments:

Continent:	Africa	[ ]
	Asia	[ ]
	Asia and Europe	[ ]
	Australasia	[ ]
	Europe	[ ]
	North America	[ ]
	South America	[ ]

Pollutants included in this study:

PM_{10} [ ] BS [ ] NO_2 [ ] O_3 [ ] SO_2 [ ] CO [ ]

Other:

Type of seasonal control**:**

ARIMA	[ ]
Dummy	[ ]
Filtered	[ ]
GAM	[ ]
GLM	[ ]
Other	[ ]
Polynomial	[ ]
Seasonal	[ ]
Sinusoidal	[ ]
Splines	[ ]

Figure 3.3. Time series data extraction form (cont.)

LEVEL 2 INFORMATION

Reference Manager ID:

City(ies) studied:

Country:

WHO region:

Afr D [ ]
Afr E [ ]
Amr A [ ]
Amr B [ ]
Amr D [ ]
Emr B [ ]
Emr D [ ]
Eur A [ ]
Eur B [ ]
Eur C [ ]
Sear B [ ]
Sear D [ ]
Wpr A [ ]
Wpr B [ ]

Study Period/Start and End Date: **/ /** to **/ /**

Pollutants Studied	Units of Pollutant	Mean/Median Pollutant level	Pollutant measured every

Methods of analysis:

ARIMA[1]
Log Linear
Logistic Regression
MCMC[2]
Multiple Linear Regression**
Poisson Regression

****Mean number of outcome events:**

Figure 3.3. Time series data extraction form (cont.)

LEVEL 2 INFORMATION

Reference Manager ID:

Outcome	Diagnosis(ses)	ICD Codes	Age Group	Pollutant	No. of Pollutants	Other Pollutants?	Meas. 24/8/1 hrs	Method of Analysis*	Change in units	Lag	Season: Winter/ Summer/ all	Est. Type β/RR/%	Estimate	SE	Lower Confidence Limit	Selected or Other?

*See previous page for a list of possible methods

Figure 3.3. Panel data extraction form

LEVEL 1 INFORMATION

Paper (Title, Authors, Reference) Date Reviewed: / /

Basic Information

Single/Multiple Location (S/M) [ ]

City: Country Continent

PS Start date(s) PS Finish date(s)

Type of area

Urban [ ] rural [ ] both [ ] not known [ ]

Type of analysis

2-stage [ ] GEE [ ] Logistic Regression [ ] GLM [ ]
Time series [ ] Other:

Outcome Measures

Outcomes: PEFR [ ] FEV1 [ ] FVC [ ] Symptoms [ ]
Other:

Subjects:

Healthy	[ ]	Asthmatic	[ ]
Cross-sectional	[ ]	COPD	[ ]
Other	[ ]		

Ages:

5-11	[ ]	16-64	[ ]
11-16	[ ]	Adults (16+)	[ ]
Children (0-15)	[ ]	65+	[ ]
Other:			

Total number of subjects:

Pollutants

PM10 [ ] BS [ ] NO2 [ ] O3 [ ] SO2 [ ] CO [ ]
S04 [ ] TSP [ ] Other:

Comments:

Figure 3.3. Panel data extraction form (cont.)

LEVEL 2 INFORMATION

Paper (Title, Authors, Reference)
Date Reviewed: / /

Comments:

Outcome	Patient Group	Am/pm/ both	outcome units	Age Group	pollutant	Meas 24/8/1	Lag	Units	Area type	mean	S/M	Seas w/s/a	Meth	Δ units	Est. type b/or/%	Estimate	SE	LCL

Figure 4.1a: PM. Mortality. Forest plots of summary estimates from meta-analyses of single city estimates (fixed effects, random effects, trimmed fixed effects, trimmed random effects). (See footnote to Table 4.2a for abbreviations used, [n] = number of cities)

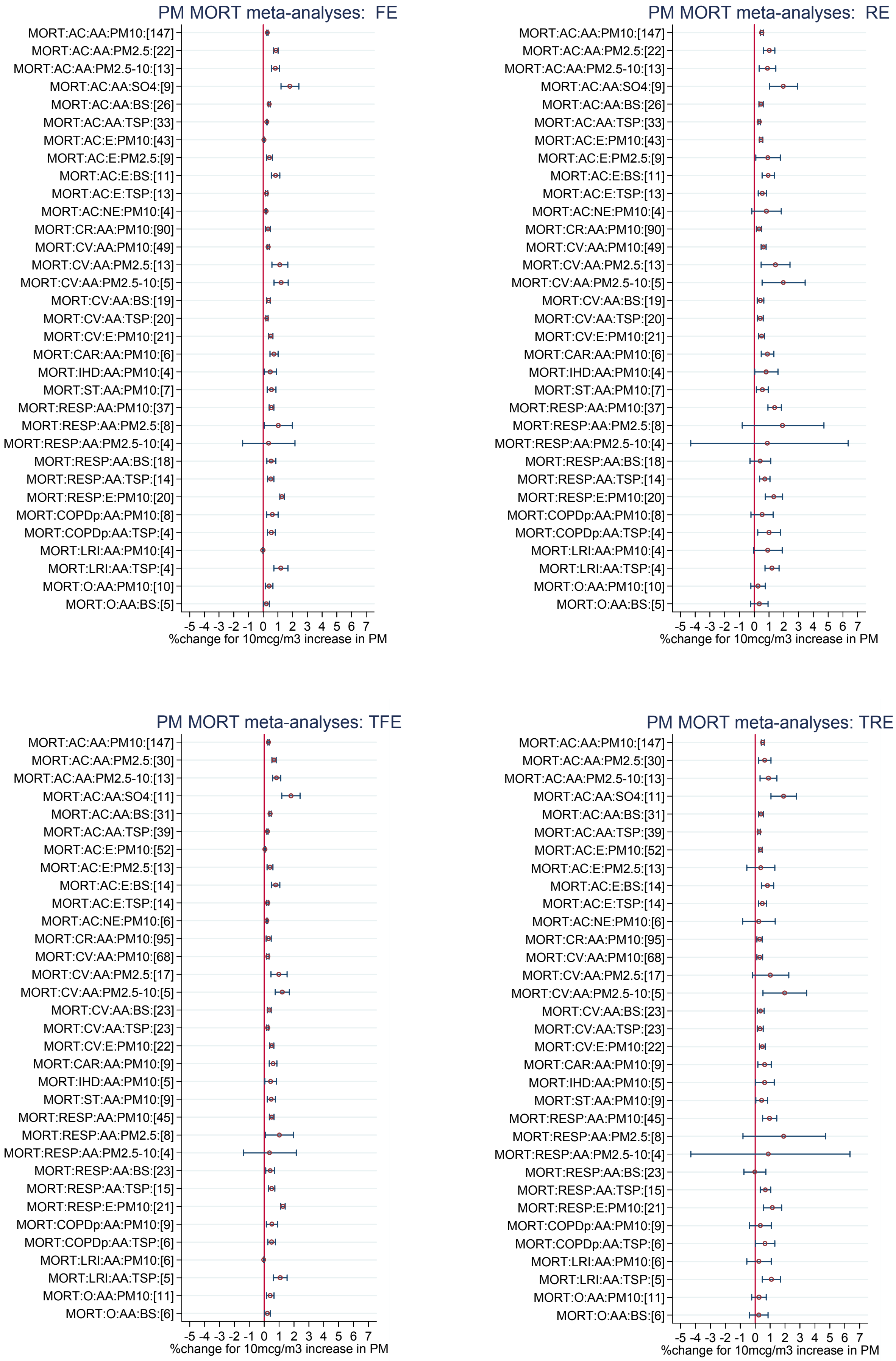
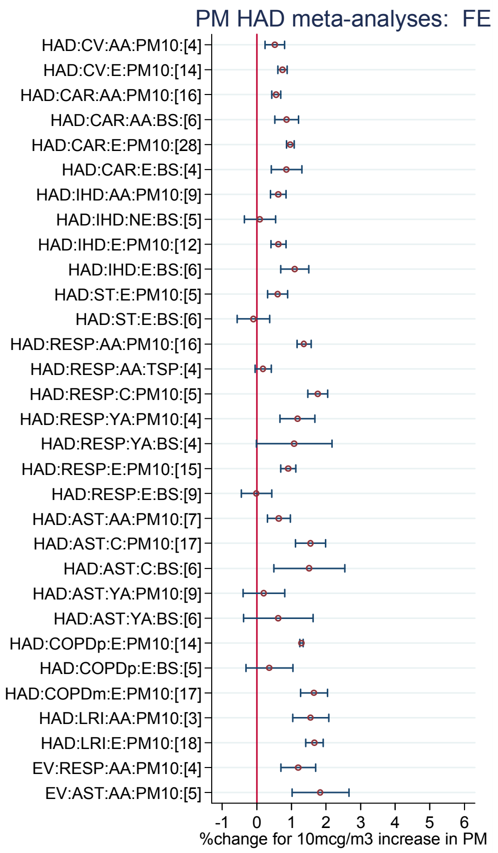
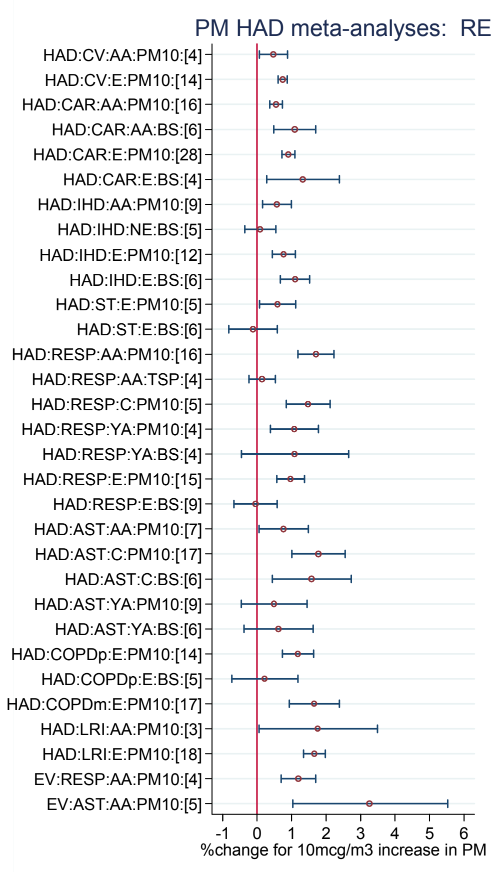
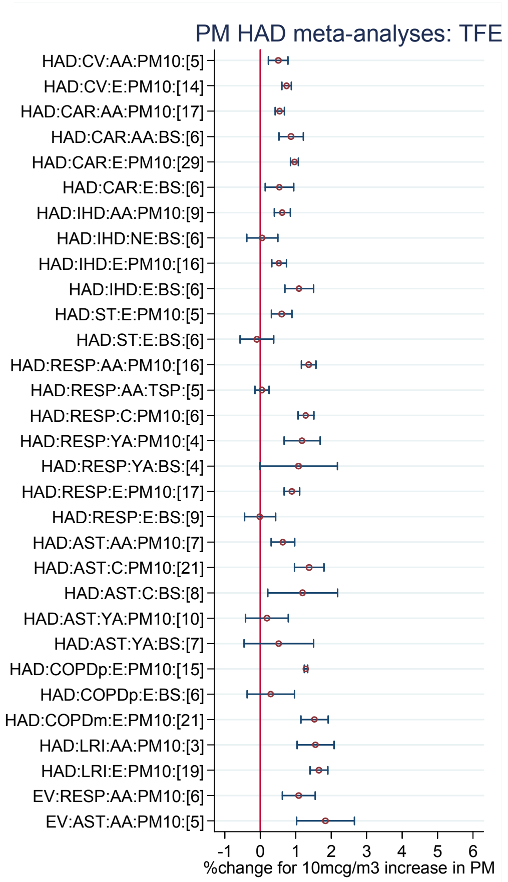


Figure 4.1b: PM. Morbidity. Forest plots of summary estimates from meta-analyses of single city estimates (fixed effects, random effects, trimmed fixed effects, trimmed random effects). (See footnote to Table 4.2b for abbreviations used, [n] = number of cities)







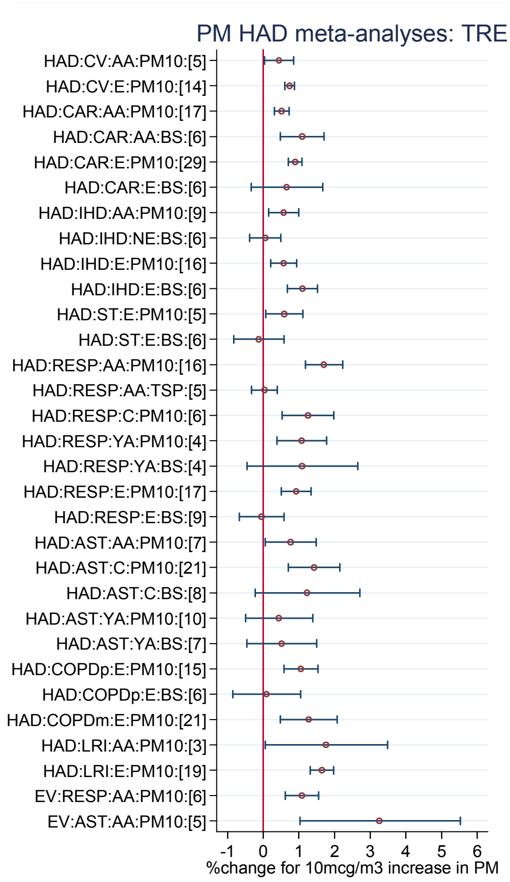


Figure 4.2a: PM_{10} . Forest plot of summary estimates for single pollutant analyses from multicity studies of mortality and morbidity.
(See footnote to Table 4.3a for abbreviations used, [n] = number of cities)

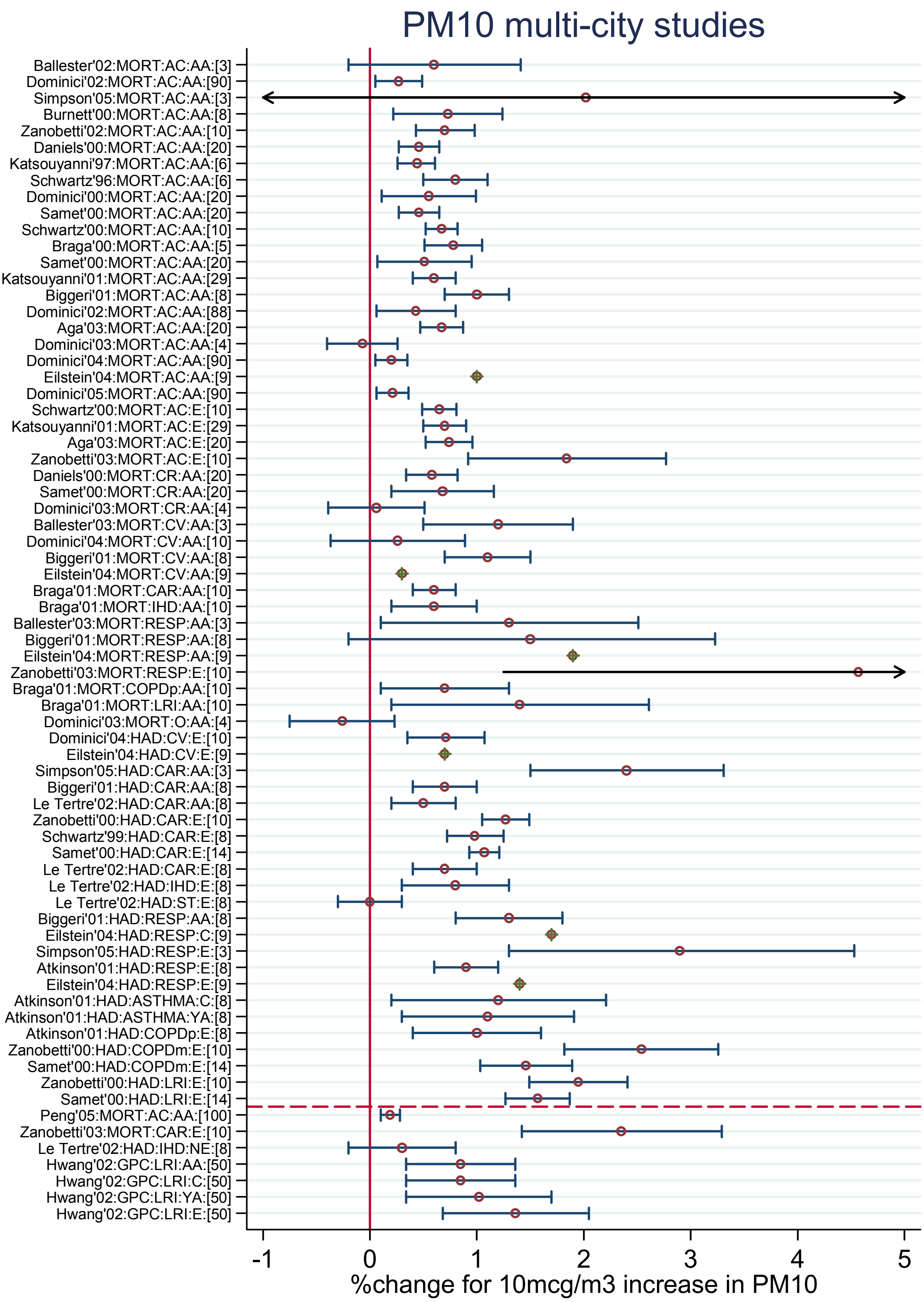


Figure 4.2b: $PM_{2.5}$, $PM_{2.5-10}$, BS, SO_4^{2-}, TSP. Forest plot of summary estimates for single pollutant analyses from multicity studies of mortality and morbidity.
(See footnote to Table 4.3b for abbreviations used, [n] = number of cities)

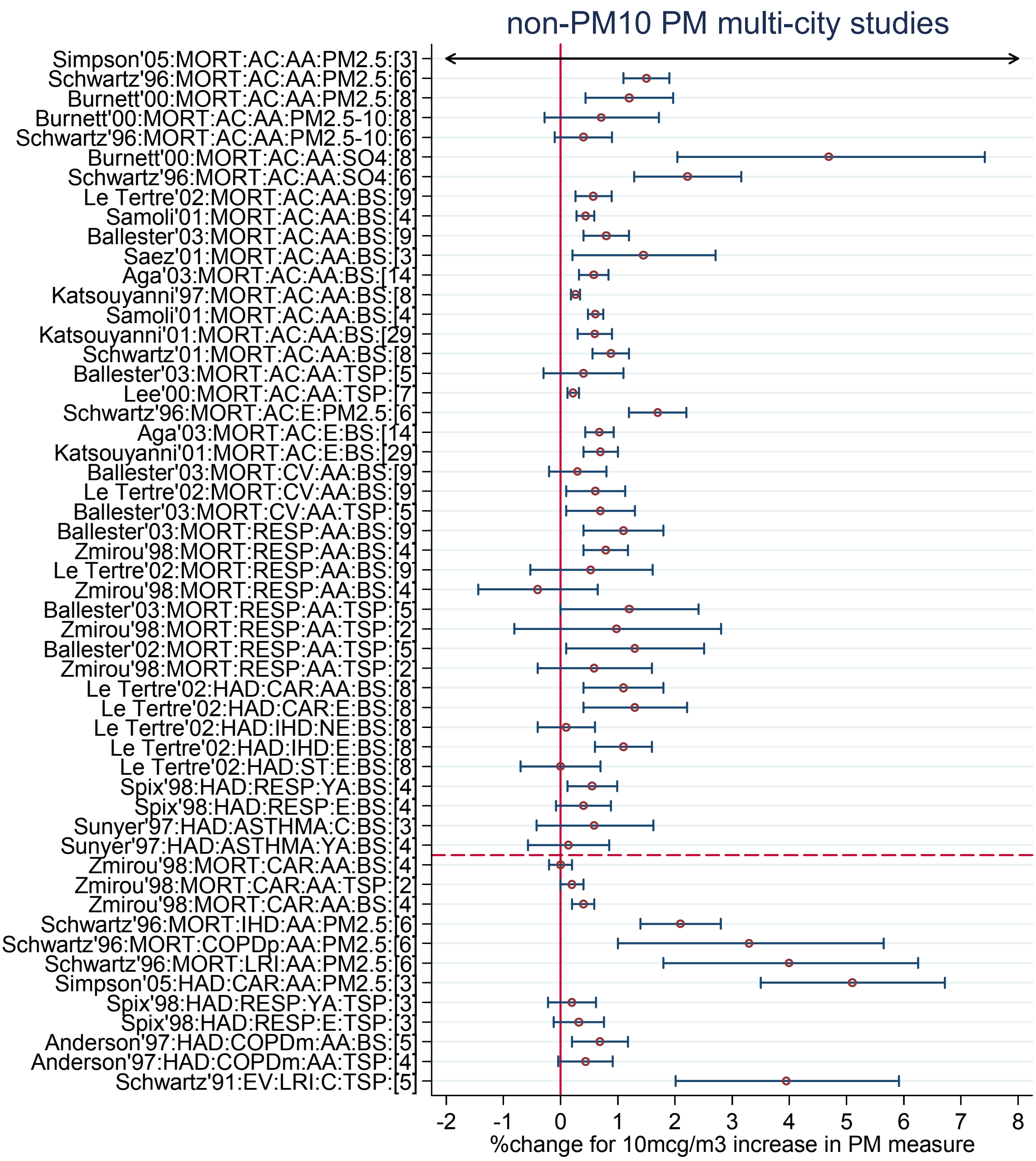


Figure 5.1: NO_2. Forest plots of summary estimates from meta-analyses of single city estimates (fixed effects, random effects, trimmed fixed effects, trimmed random effects). (See footnote to Table 5.2 for abbreviations used, [n] = number of cities)

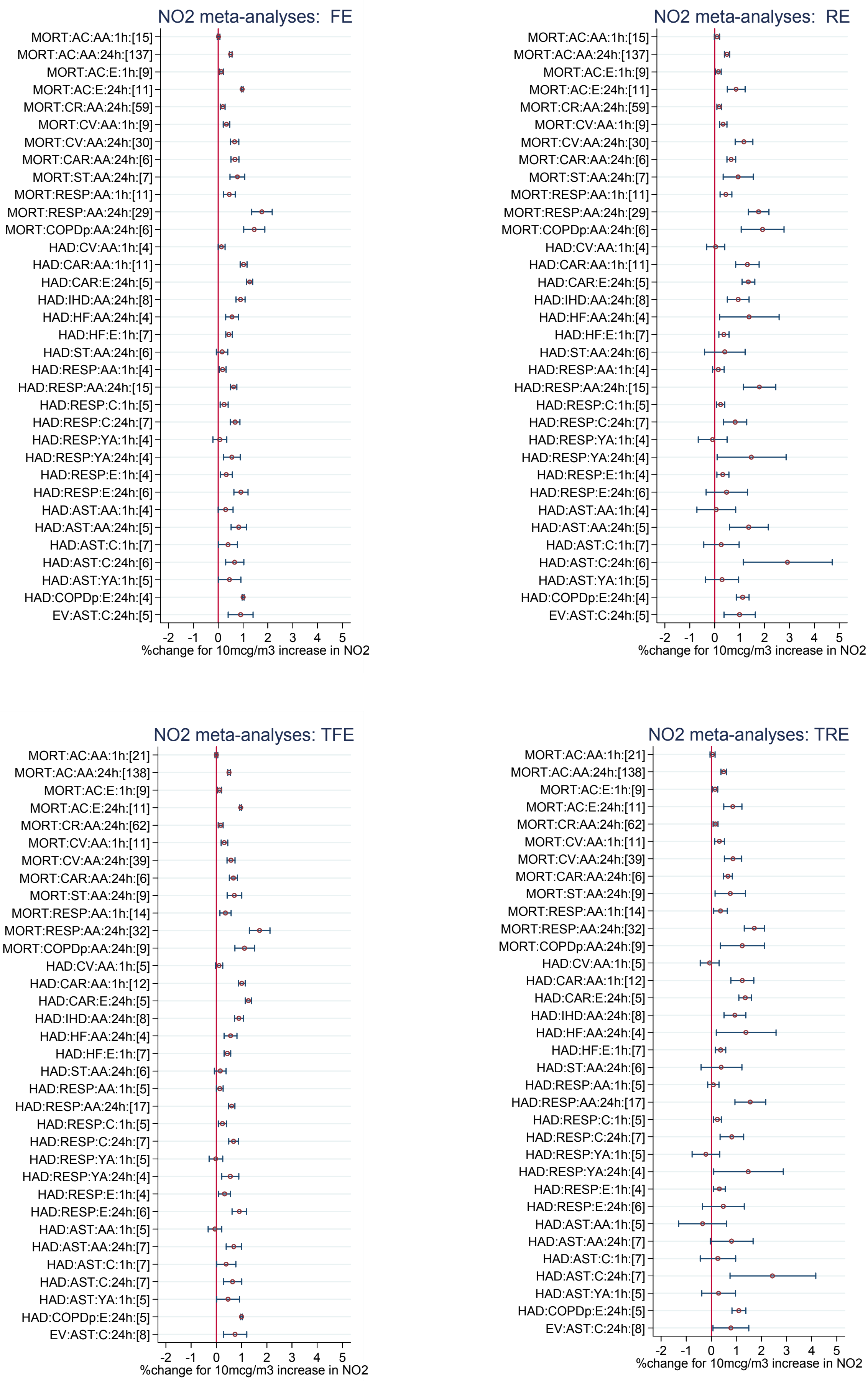


Figure 5.2: NO_2. Forest plot of summary estimates for single pollutant analyses from multicity studies of mortality and morbidity.
(See footnote to Table 5.3 for abbreviations used, [n] = number of cities)

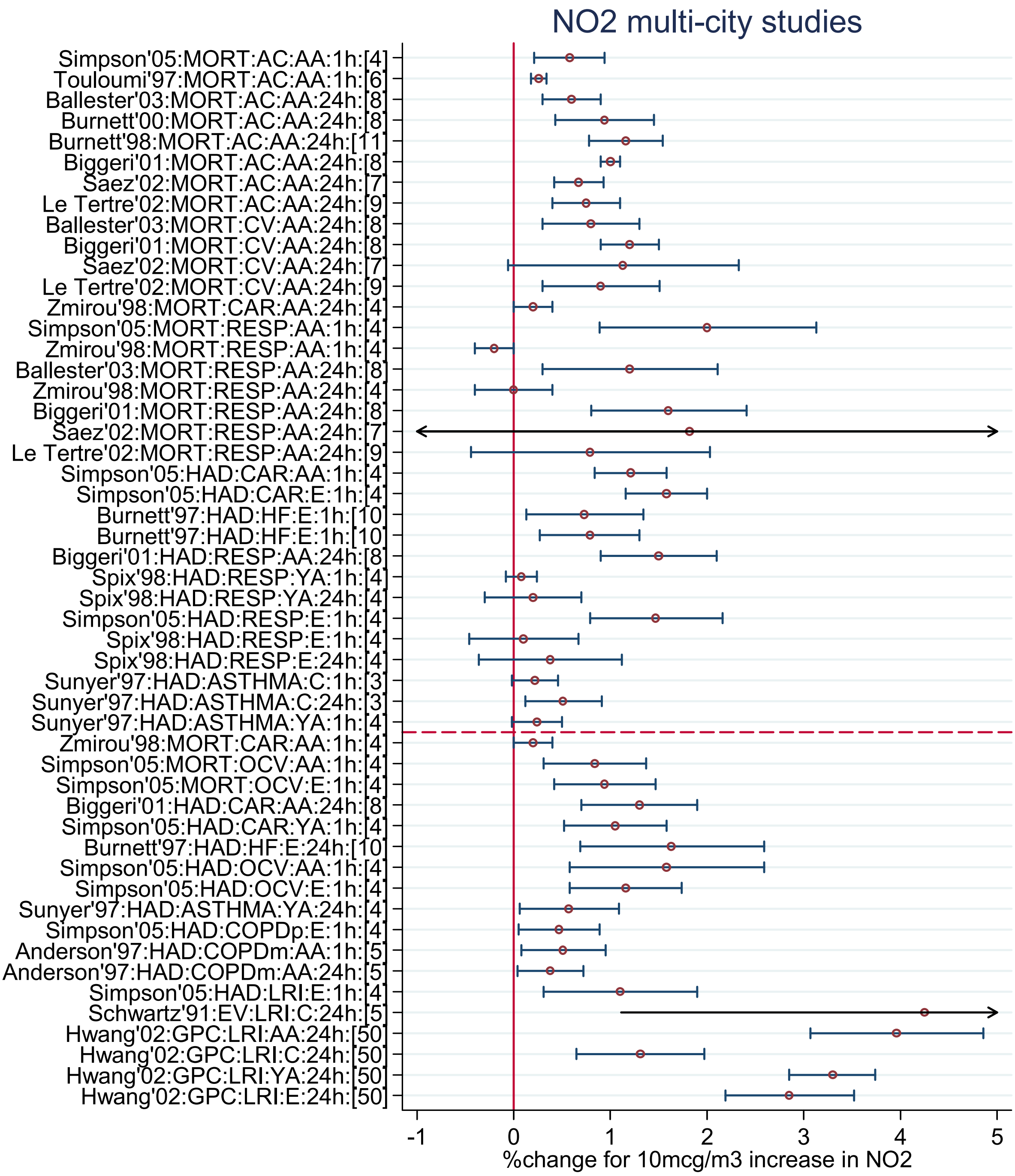


Figure 6.1: O_3. Forest plots of summary estimates from meta-analyses of single city estimates (fixed effects, random effects, trimmed fixed effects, trimmed random effects). (See footnote to Table 6.2 for abbreviations used, [n] = number of cities)

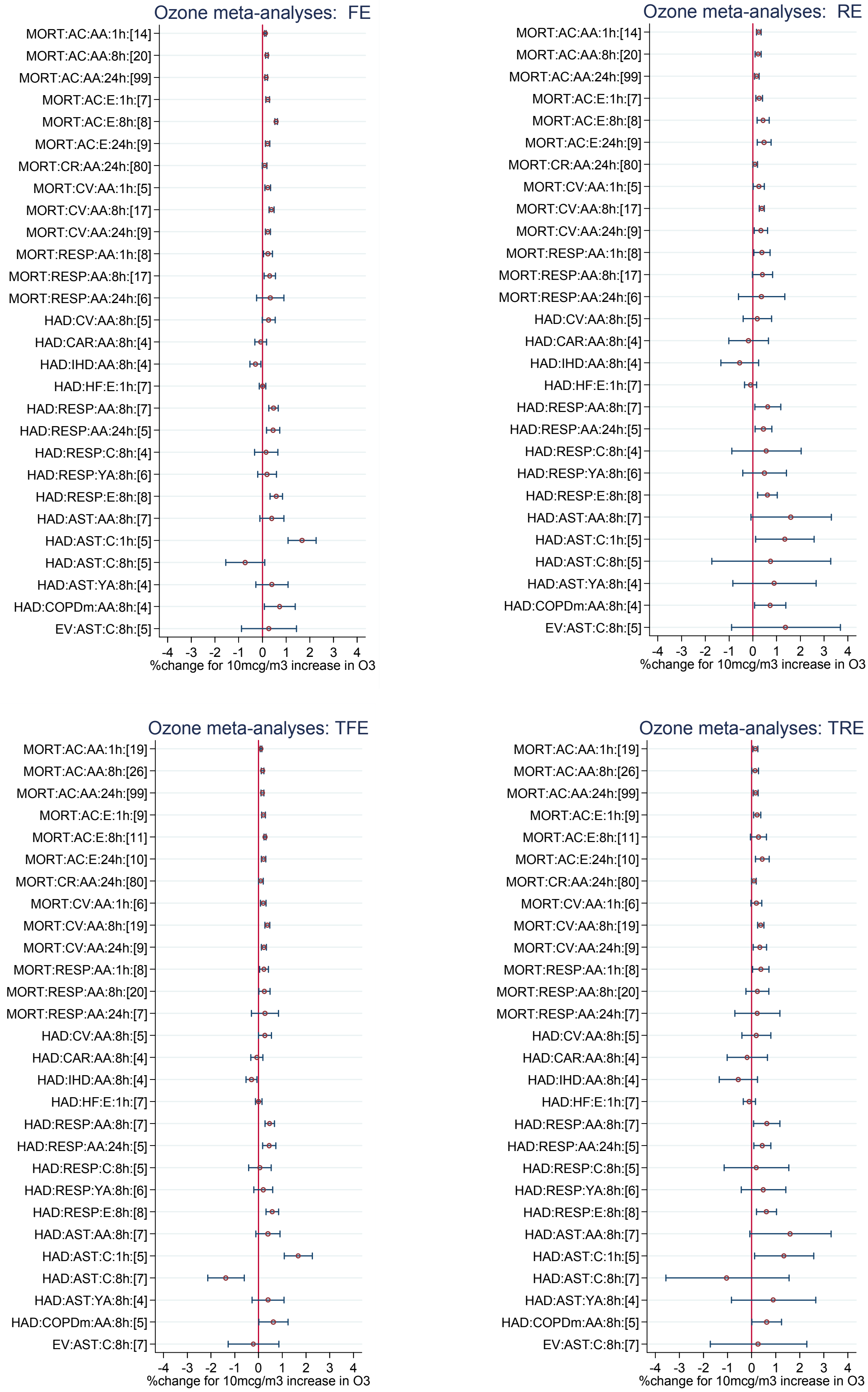


Figure 6.2: O_3. Forest plot of summary estimates for single pollutant analyses from multicity studies of mortality and morbidity.
(See footnote to Table 6.3 for abbreviations used, [n] = number of cities)

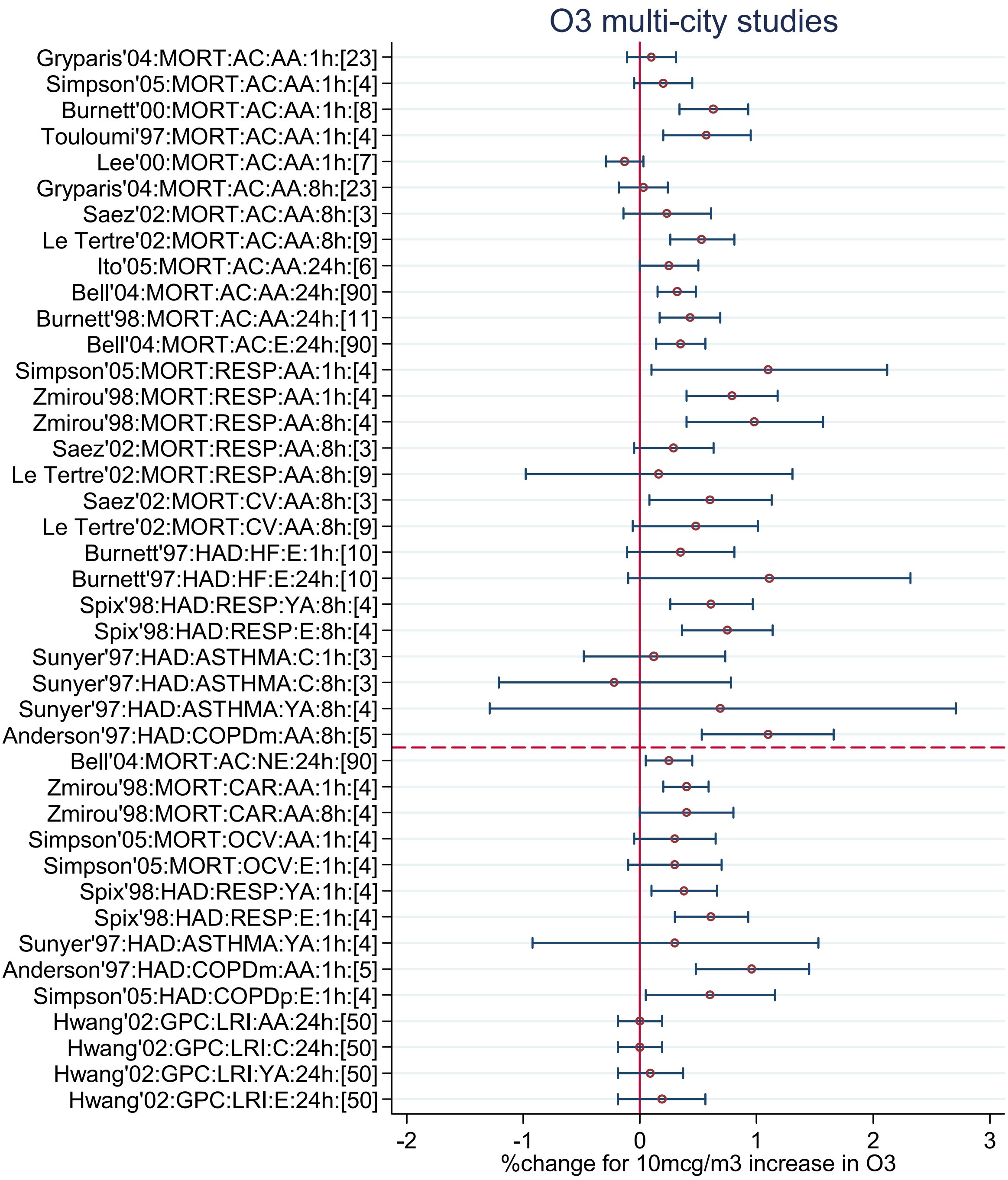


Figure 7.1: SO_2. Forest plots of summary estimates from meta-analyses of single city estimates (fixed effects, random effects, trimmed fixed effects, trimmed random effects). (See footnote to Table 7.2 for abbreviations used, [n] = number of cities)

Figure 7.2: SO_2. Forest plot of summary estimates for single pollutant analyses from multicity studies of mortality and morbidity.
(See footnote to Table 7.3 for abbreviations used, [n] = number of cities)

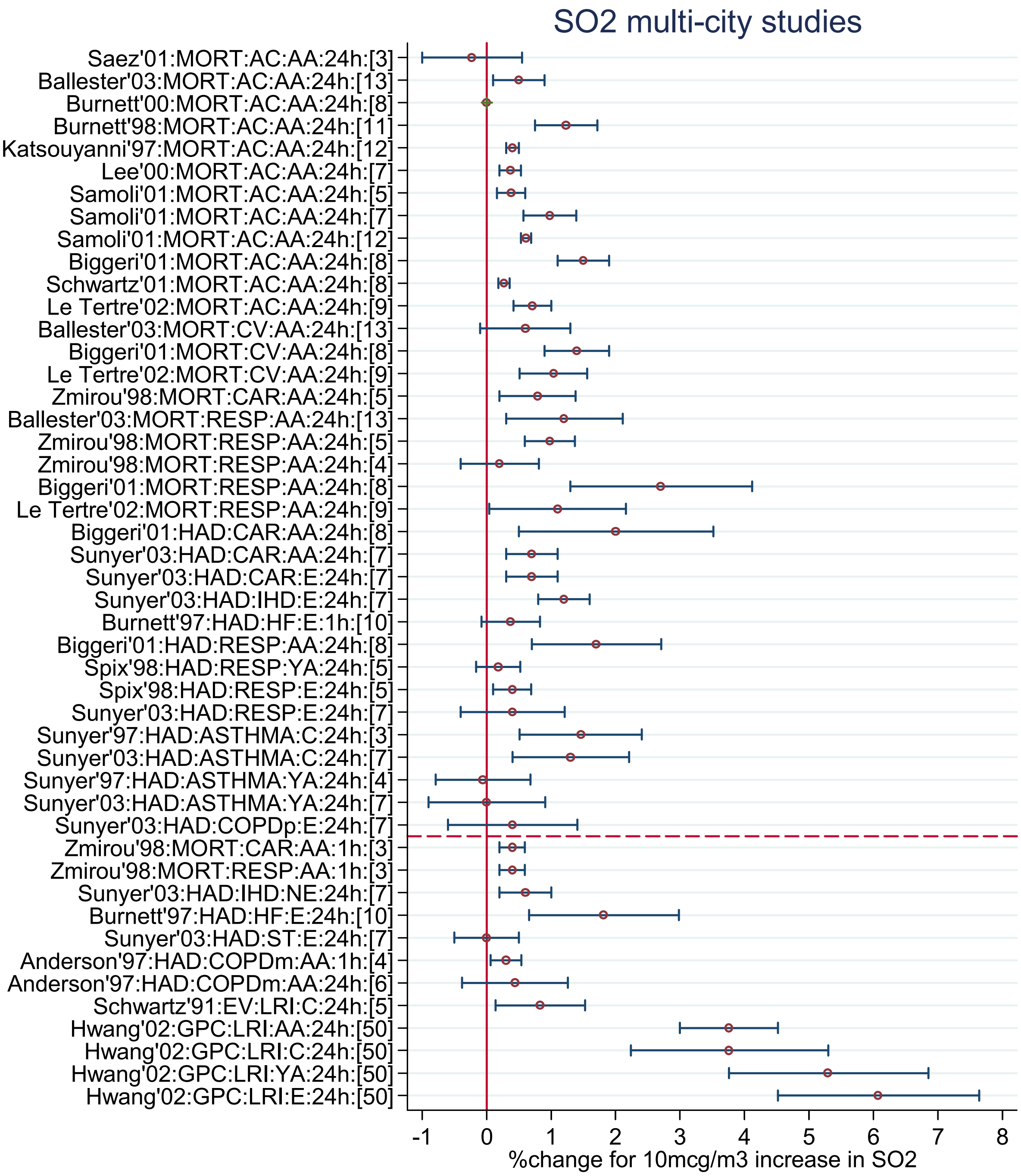


Figure 8.1: CO. Forest plots of summary estimates from meta-analyses of single city estimates(fixed effects, random effects, trimmed fixed effects, trimmed random effects). (See footnote to Table 8.2 for abbreviations used, [n] = number of cities)

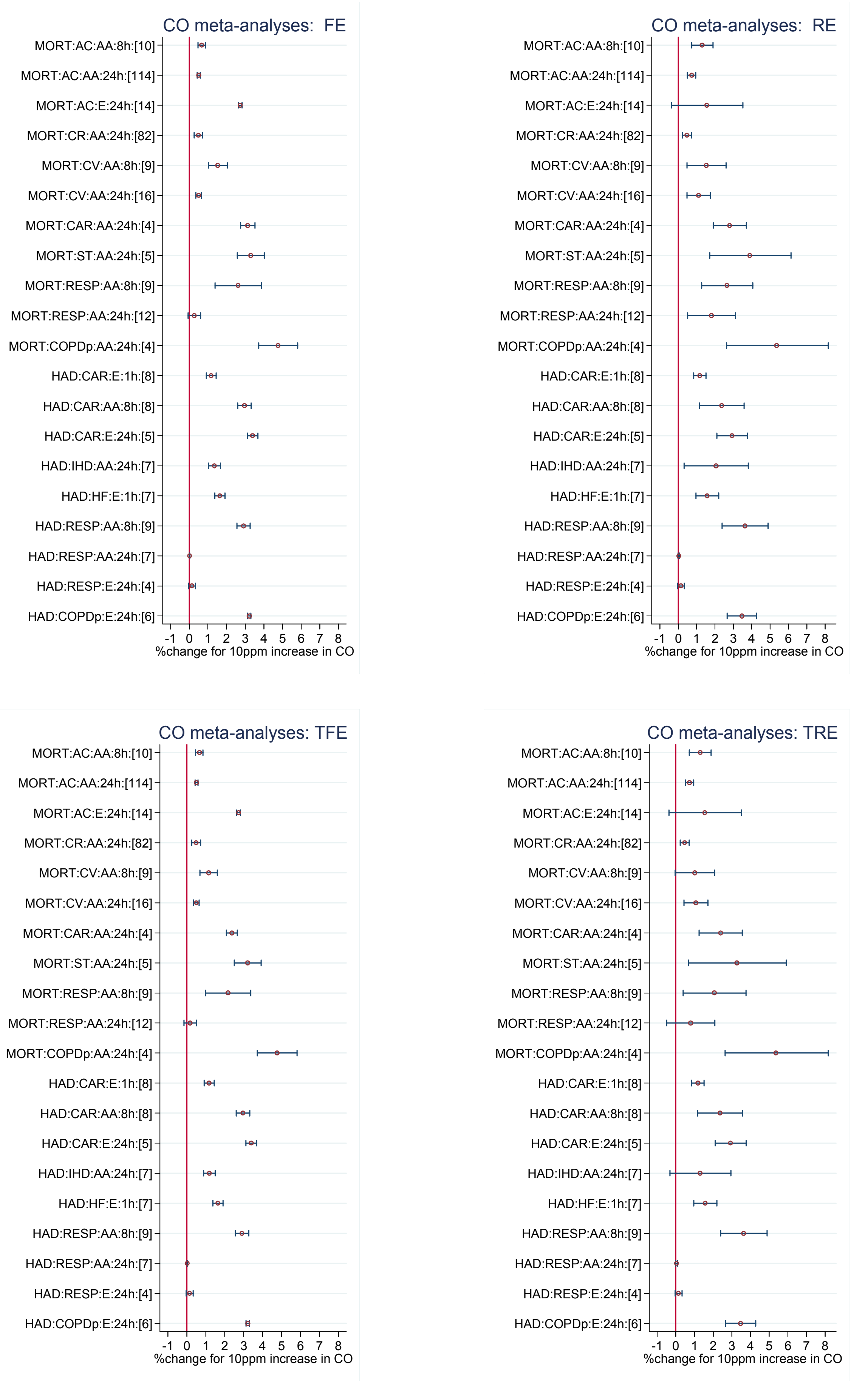
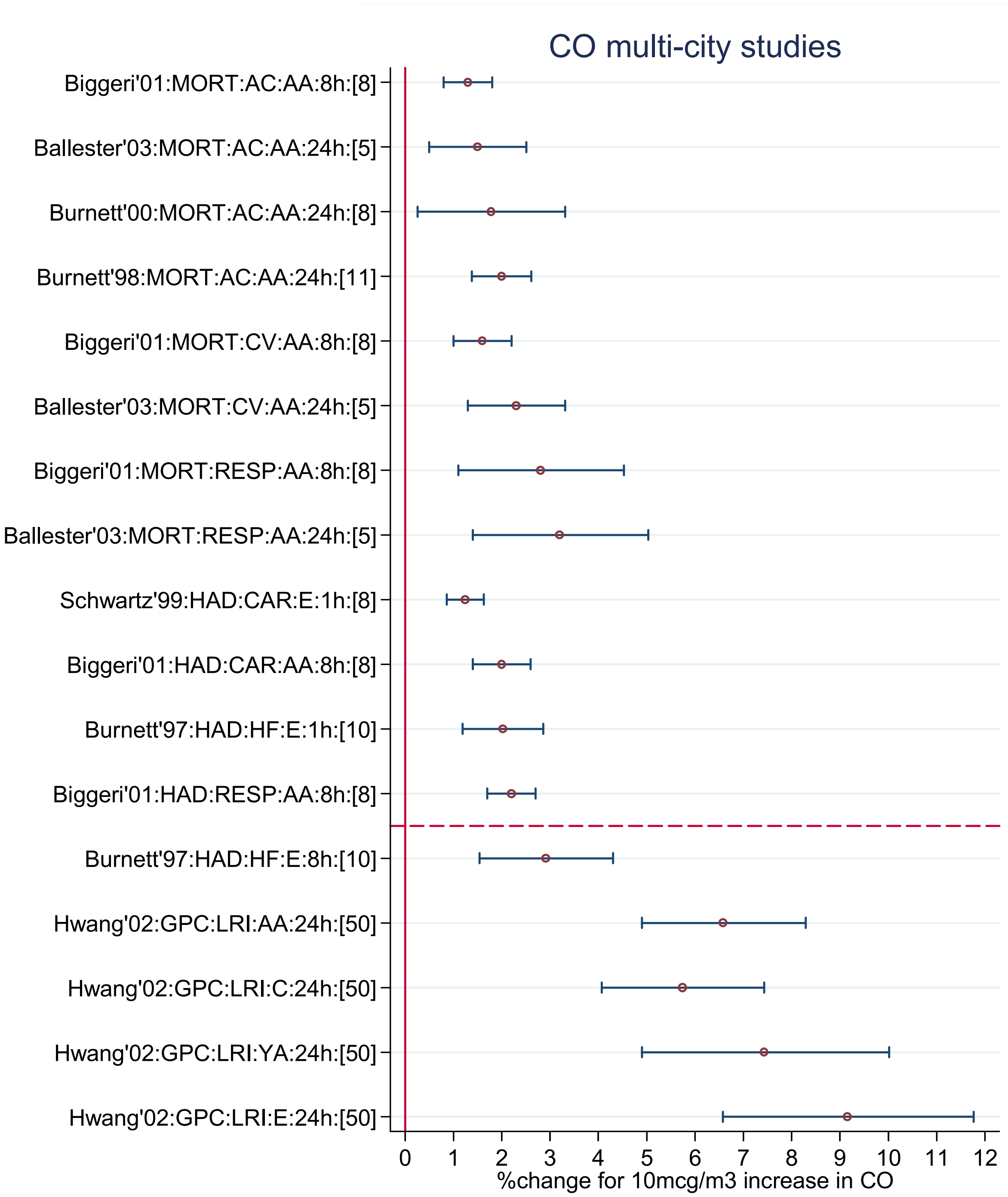


Figure 8.2: CO. Forest plot of summary estimates for single pollutant analyses from multicity studies of mortality and morbidity.
(See footnote to Table 8.3 for abbreviations used, [n] = number of cities)



Quantitative systematic review of short term associations between ambient air pollution (particulate matter, ozone, nitrogen dioxide, sulphur dioxide and carbon monoxide), and mortality and morbidity.

Appendix 1

Bibliographies for Time Series and Panel Studies papers, in alphabetical order of first author, including Reference manager ID number.

Tables in numerical Reference Manager ID order are included to enable first author to be looked up from ID number.

Time Series Studies

Panel Studies

Appendix 1. Time Series Studies: Refman ID to first author lookup

Refman id	1st Author	Year	Refman id	1st Author	Year	Refman id	1st Author	Year
1	Diaz	1999	93	Zanobetti	2000	191	Aguinaga	1999
2	Ostro	1999	94	Metzger	2004	192	Galan	1999
3	Ostro	1999	96	Ito	1996	193	Daponte	1999
4	Ilabaca	1999	103	Lin	2002	194	Bellido Blasco	1999
5	Kassomenos	2001	104	Martins	2004	195	Guillen Perez	1999
6	Conceicao	2001	106	Styer	1995	196	Cambra	1999
7	Hughes Sinclair	2004	107	Omori	2003	197	Saurina	1999
9	Ballester	2002	110	Wichmann	1995	198	Canada	1999
11	Fauroux	2000	112	Hong	2002	203	Lin	2003
14	Ballester	2002	114	Gryparis	2004	204	Pope III	1999
15	Buchdahl	2000	116	O'Neill	2004	205	Dominici	2004
16	Yamamoto	1993	117	Touloumi	1994	206	Morgan	1998
17	Goldberg	2001	118	Xu	1994	207	Gouveia	2000
18	Saez	2001	119	Ito	2005	208	De Leon	2003
19	Goldberg	2001	122	Bell	2004	210	Loomis	1999
21	Peters	1997	123	Galan	2003	212	Peters	2000
23	Richards	1981	127	Spix	1993	213	Ostro	1999
24	Rossi	1993	130	Kan	2003	214	Borja-Aburto	1998
26	Lee	1999	133	Simpson	2005	215	Alberdi	1998
28	Ye	2001	134	Simpson	2005	216	Prescott	1998
29	Diaz	2001	135	Burnett	2000	219	Michelozzi	1998
31	Tobias	1999	136	Moolgavkar	2000	220	Dales	2003
32	Pavlovic	1997	142	Hautemaniere	2000	222	Zmirou	1998
36	Fung	2005	143	Roberts	2004	224	Burnett	1998
39	Nutman	1998	144	Ostro	2000	225	Burnett	1998
40	Leduc	1997	145	McDonnell	2000	226	Ponka	1998
46	Rosas	1998	146	Tolbert	2000	228	Pereira	1998
49	Petroeschevsky	2001	148	Simpson	2000	229	Spix	1998
50	Roberts	2005	150	Kan	2004	230	Slaughter	2005
51	Goldberg	2001	151	Zanobetti	2000	232	Hoek	1997
53	Llorca	2005	153	Wong	2002	233	Simpson	1997
54	Hefflin	1994	154	Fairley	1990	235	Farhat	2005
55	Maddison	2005	158	Derriennic	1989	236	Kelsall	1997
57	Burnett	2001	160	Schwartz	2000	237	Medina	1997
59	Parodi	2005	161	Penttinen	2004	240	Touloumi	1997
63	Modrak	1997	162	Moolgavkar	2003	241	Katsouyanni	1997
64	Poloniecki	1997	163	Moolgavkar	2000	242	Braga	2001
65	Smith	1999	164	Zanobetti	2002	245	Borja-Aburto	1997
66	Zeka	2004	165	Holtmann	1987	246	Verhoeff	1996
67	Sawaguchi	1997	168	Atkinson	2001	247	Rahlenbeck	1996
68	Sunyer	2002	171	Sagiv	2005	249	Loomis	1996
69	Anderson	2001	174	Smith	2000	250	Schwartz	1996
70	Thompson	2001	175	Hoek	2000	253	Dab	1996
73	Chen	2005	176	Klemm	2000	256	Ostro	1996
75	Goodman	2004	177	Chock	2000	258	Zmirou	1996
76	Kan	2003	178	Lipfert	2000	262	Kontos	1999
78	Ballester	1996	179	Daniels	2000	263	Ponka	1996
83	Wietlisbach	1996	181	Rossi	1999	264	Spix	1996
84	Pope III	1996	182	Bremner	1999	265	Touloumi	1996
85	Sunyer	1996	183	Tobias	1998	266	Bacharova	1996
86	Vigotti	1996	184	Diaz	1998	268	Anderson	1996
88	Keiding	1995	186	Arribas	1999	271	Ostro	1995
89	Dominici	2002	187	Perez	1999	273	Moolgavkar	1995
91	Wojtyniak	1996	188	Taracido	1999	274	Salinas	1995
92	Ballester	2003	190	Ocana-Riola	1999	277	Knobel	1995

Refman id	1st Author	Year	Refman id	1st Author	Year	Refman id	1st Author	Year
281	Vigotti	1995	408	Delfino	1997	706	Xu	1995
285	Saldiva	1995	409	Burnett	1997	707	Ito	1995
286	Schwartz	1995	411	Burnett	1997	709	Lipfert	1995
288	Kesten	1995	414	Ponka	1996	711	Lyon	1995
294	Schwartz	1994	415	Wong	2002	717	Saez	1995
297	Saldiva	1994	417	De Leon	1996	727	Lippmann	1995
300	Gao	1993	423	Jorgensen	1996	728	Thurston	1995
306	Ito	1993	425	Dales	1996	729	Kinney	1995
307	Katsouyanni	1993	426	Schwartz	1996	730	Li	1995
308	Mackenbach	1993	428	Castellsague	1995	731	Moolgavkar	1995
309	Schwartz	1993	432	Burnett	1995	768	Madrigal	1994
310	Schwartz	1993	434	Xu	1995	772	Ransom	1992
311	Kunst	1993	437	Delfino	1994	775	Rennick	1992
312	Dockery	1992	438	Schwartz	1994	801	Cassino	1999
314	Pope III	1992	439	Schwartz	1994	813	Zidek	1998
316	Schwartz	1992	441	Thurston	1994	828	Delfino	1998
317	Schwartz	1992	442	Ponka	1994	836	LeRoux	1997
320	Krzyzanowski	1991	443	Burnett	1994	842	Stieb	1996
321	Kalkstein	1991	444	Schwartz	1994	877	Jones	1995
322	Schwartz	1991	445	Walters	1994	881	Borgers	1982
324	Kinney	1991	448	Sunyer	1993	887	Burnett	1994
327	Erbas	2005	450	Lipfert	1992	889	Fairley	1999
329	Schwartz	1990	451	Sunyer	1991	890	Schwartz	1991
335	Thurston	1989	452	Bates	1990	978	Kotesovec	2000
337	Shumway	1988	456	Bates	1989	988	Holmen	1997
345	Hatzakis	1986	457	Bates	1987	995	Zmirou	1999
349	Haidong	2006	459	Bates	1983	1006	Lin	1999
352	Loewenstein	1983	460	Samet	1981	1010	Jamason	1997
353	Loewenstein	1983	461	Namekata	1980	1013	Cody	1992
355	Mazumdar	1983	472	Schwartz	1997	1019	Ponka	1991
356	Mazumdar	1982	474	Wordley	1997	1021	Pope III	1991
360	Goldstein	1978	476	Smith	1996	1023	Romieu	1995
361	Macfarlane	1977	480	Schouten	1996	1033	Yang	1988
363	Lebowitz	1973	484	Morris	1995	1034	Zeghnoun	1999
364	Wong	1999	486	Schwartz	1995	1044	Buchdahl	1996
365	Saez	1999	491	Thurston	1992	1053	Atkinson	1999
366	Wong	1999	495	Strahilevitz	1979	1057	Dominici	2000
368	Burnett	1999	496	Levy	1977	1059	Hajat	1999
369	Donoghue	1999	501	Hong	1999	1063	Cakmak	1999
372	Garty	1998	504	McGregor	1999	1065	Tobias	1999
373	Morgan	1998	521	Ballester	1997	1070	Hong	1999
374	Sheppard	1999	524	Chew	1999	1071	Hagen	2000
375	Schwartz	1999	530	Sanhueza	1999	1073	Gwynn	2000
376	Morris	1998	539	Damia	1999	1075	Castillejos	2000
378	Voigt	1998	540	Sartor	1997	1079	Garcia-Aymerich	2000
380	Anderson	1998	542	Atkinson	1999	1094	Cadum	1999
382	Tenias	1998	548	Pitard	1997	1102	Norris	2000
392	Kan	2005	565	Le Tertre	1998	1105	Linn	2000
393	Upshur;	1999	569	Vedal	1998	1116	Xu	2000
394	Kim	2005	594	Samet	1998	1117	Chen	2000
395	Jacobs	1997	608	Sartor	1995	1120	Mar	2000
396	Koop	2004	616	Choudhury	1997	1121	Schwartz	2000
398	Sunyer	1997	619	Yang	1997	1126	Szafraniec	1999
399	Burnett	1997	635	Moolgavkar	1997	1128	Hales	2000
403	Peel	2005	664	Ricci	1996	1134	Chailleux	1990
404	Anderson	1997	689	Gordian	1996	1139	Norris	1999
405	Lipsett	1997	695	Pantazopoulou	1995	1140	Tenias Burillo	1999

Refman id	1st Author	Year	Refman id	1st Author	Year	Refman id	1st Author	Year
1152	Cifuentes	2000	1474	Park	2002	1630	Huang	2005
1180	Tellez-Rojo	2000	1481	Schwartz	2002	1631	Issever	2005
1181	Lippmann	2000	1486	Tenias	2002	1632	Luginaah	2005
1182	Samet	2000	1494	Samet	2003	1633	Peng	2005
1184	Ballester	2001	1495	Ha	2003	1634	Roberts	2005
1185	Cho	2000	1496	Cropper	1997	1636	Staniswallis	2005
1187	Gouveia	2000	1497	Venners	2003	1637	Vegni	2005
1196	Moolgavkar	2000	1498	Aga	2003	1638	Yang	2005
1200	Schwartz	2000	1503	Berhane	2002	1639	Shinkura	1999
1201	Schwartz	2001	1506	Chen	2004	1640	Vajanapoom	2002
1203	Stieb	2000	1514	Dominici	2003	1641	Zhou	1997
1205	Wichmann	2000	1516	Filleul	2003	1642	Haixia	2004
1206	Zanobetti	2000	1517	Fischer	2003			
1207	Lee	2000	1520	Goldberg	2003			
1208	Hernandez-Cadena	2000	1527	Jaffe	2003			
1209	Tellez-Rojo	1997	1529	Jerrett	2004			
1213	Alberdi	1998	1535	Kim	2003			
1223	Braga	2000	1536	Kim	2004			
1244	Dales	2000	1537	Koken	2003			
1253	Eilstein	2001	1547	Mann	2002			
1265	Fusco	2001	1555	O'Neill	2004			
1269	Gonzalez	2001	1556	Oftedal	2003			
1272	Hajat	2001	1560	Pattenden	2003			
1275	Hoek	2001	1579	Sunyer	2003			
1289	Lieberman	1999	1580	Sunyer	2003			
1299	Michelozzi	2000	1585	Vedal	2003			
1309	Samet	2000	1587	Villeneuve	2003			
1310	Samoli	2001	1591	Zanobetti	2003			
1327	Wong	2001	1592	Zhu	2003			
1328	Wong	2001	1593	Anderson	2003			
1332	Zeghnoun	2001	1595	Chang	2003			
1333	Katsouyanni	2001	1596	Chang	2004			
1335	Arribas-Monzon	2001	1598	Bakonyi	2004			
1337	Biggeri	2001	1599	Bartzokas	2004			
1339	Braga	2001	1600	Dales	2004			
1342	Chen	2001	1601	Diaz	2004			
1347	Goldberg	2001	1602	Dominici	2004			
1350	Hwang	2002	1603	Eilstein	2004			
1354	Kwon	2001	1605	Erbas	2005			
1360	Roemer	2001	1607	Holloman	2004			
1366	Schwartz	2001	1608	Karpati	2004			
1374	Zeghnoun	2001	1609	Kim	2004			
1388	Dominici	2002	1610	Klemm	2004			
1397	Hajat	2002	1612	Lin	2004			
1406	Martins	2002	1613	Neuberger	2004			
1408	McGowan	2002	1614	Romero-Placeres	2004			
1410	Nafstad	2001	1615	Samoli	2005			
1416	Saez	2002	1617	Sharosvsky	2004			
1427	Tobias	2001	1619	Vegni	2004			
1429	Wong	2002	1621	Wilson	2005			
1432	Botter	2002	1622	Lee	2003			
1437	Chiogna	2002	1623	Yanong	1997			
1448	Hong	2002	1624	Chen	2004			
1464	Le Tertre	2002	1626	Pitard	2004			
1465	Le Tertre	2002	1627	Dominici	2005			
1466	Lee	2002	1628	Frankenberg	2005			
1467	Martins	2002	1629	Hosseinpoor	2005			

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Appendix 1. Panel Studies: Refman ID to first author lookup

Refman id	1st Author	Year	Refman id	1st Author	Year	Refman id	1st Author	Year
10	Roemer	1999	486	Clench-Aas	1998	768	Penttinen	2001
12	Hoek	1999	487	Timonen	1998	773	Brauer	1996
19	Rabinovitch	2004	488	Nielsen	1998	777	Grievink	1998
22	Mar	2004	489	Forsberg	1998	778	Korrick	1998
38	Brunekreef	1993	493	Romieu	1997	779	Krzyzanowski	1992
39	Forsberg	1998	581	Lebowitz	1985	783	Koenig	1993
41	Boezen	1998	593	Linn	1999	784	Ostro	1993
42	Ranzi	2004	603	Tiittanen	1999	785	Ostro	1991
43	Delfino	1998	605	Pope	1999	786	Awasthi	1996
44	Delfino	2004	614	Segala	1998	792	Zhang H	2000
52	Ebelt	2005	672	Pope	1992	1189	Hwang	2000
55	Newhouse	2004	688	Peters	1997	1228	Howel	2001
58	Hoek	1998	689	Kinney	1996	1229	Just	2002
64	Avol	1998	692	Gold	1999	1231	von Klot	2002
67	Hiltermann	1998	694	Boezen	1999	1236	Mortimer	2002
69	Chan	2005	697	Naeher	1999	1241	Vichit-Vadakan	2001
71	Vedal	1998	698	Neas	1999	1270	Fischer	2002
77	Harre	1997	699	Neukirch	1998	1289	Ward	2002
81	Agocs	1997	700	Pekkanen	1997	1291	Peacock	2003
89	Delfino	1997	701	Pope	1993	1292	Schlink	2002
92	Peters	1997	702	Pope	1999	1293	Desqueyroux	2002
103	Ulmer	1997	703	Thurston	1997	1297	Slaughter	2003
104	Gielen	1997	705	Pope	1991	1298	Delfino	2003
120	Linn	1996	707	Higgins	1990	1303	Delfino	2003
125	Scarlett	1996	708	Cuijpers	1995	1305	Desqueyroux	2002
138	Peters	1996	709	Braunfahrlander	1994	1306	Ross	2002
141	Romieu	1996	710	Ostro	1995	1307	de Hartog	2003
158	Dusseldorp	1995	711	van der Zee	1999	1314	Adamkiewicz	2004
176	Studnicka	1995	716	Peters	2000	1316	Delfino	2002
177	Neas	1995	720	Lippmann	1983	1317	Selwyn	1985
178	Hoek	1995	724	van der Zee	2000	1318	Boezen	2005
190	Schwartz	1994	727	Hoek	1993			
212	Hoek	1994	728	Castillejos	1995			
223	Forsberg	1993	730	Berry	1991			
228	Hoek	1993	731	Kinney	1989			
239	Roemer	1993	733	Taggart	1996			
244	Hackney	1992	735	Brunekreef	1994			
256	Schwartz	1992	736	Lioy	1985			
258	Silverman	1992	737	Spektor	1988			
260	Braun-Fahrlander	1992	738	Spektor	1988			
261	Quackenboss	1991	739	Spektor	1991			
305	Schwartz	1990	740	Higgins	1995			
345	Vedal	1987	741	Castillejos	1992			
402	Whittemore	1980	742	Hoek	1993			
458	Lee	1999	744	Liao	1999			
476	Kalandidi	1998	746	Neas	1996			
477	Baldini	1998	747	Jalaludin	2000			
478	Rudnai	1998	756	Timonen	1997			
479	Haluszka	1998	758	Mortimer	2000			
480	Niepsuj	1998	759	Mukala	2000			
481	Vondra	1998	760	Steerenberg	2001			
482	Kotesovec	1998	761	Yu	2000			
483	Beyer	1998	762	Ostro	2001			
484	Englert	1998	763	Rutherford	2000			
485	van der Zee	1998	764	Declercq	2000			

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Quantitative systematic review of short term associations between ambient air pollution (particulate matter, ozone, nitrogen dioxide, sulphur dioxide and carbon monoxide), and mortality and morbidity.

Appendix 2

Time Series Studies

Sets of chosen estimates and forest and funnel plots relating to the individual single city meta-analyses for each pollutant

Table of Contents

See Table 3.4b for explanation of codes

The naming convention is:

- pollutant_(averaging.time)_patient.group_outcome_age.group_season [number of cities]

- all = all estimates
  meta = chosen subset of estimates, together with fixed & random effects
  funnel = funnel plot
  trimfill = trimmed & filled funnel

- (averaging.time) is not included in the names for PM analyses as it is always 24hrs

Time Series: PM

Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
1	1642	14235	Shanghai, Haixia	MORT	AC	AA	24 hours	lag 1	5.96	2.40	9.64
	1337	11813	Palermo, Biggeri 2001	MORT	AC	AA	24 hours	lag 0-1	3.30	2.20	4.41
	1494	10168	Topeka, Samet 2003	MORT	AC	AA	24 hours	lag 1	3.03	-3.44	9.93
	1494	10144	Colorado Springs, Samet 2003	MORT	AC	AA	24 hours	lag 1	2.69	-1.60	7.16
	1494	10116	Worcester, Samet 2003	MORT	AC	AA	24 hours	lag 1	2.63	-0.24	5.58
	193	3866	Huelva, Daponte 1999	MORT	AC	AA	24 hours	lag 0	2.49	-0.21	5.26
	1494	10152	Shreveport, Samet 2003	MORT	AC	AA	24 hours	lag 1	2.42	-1.80	6.81
	1494	10141	Toledo, Samet 2003	MORT	AC	AA	24 hours	lag 1	2.38	-0.67	5.53
	204	3948	Ogden, Pope III 1999	MORT	AC	AA	24 hours	lag 0	2.30	0.88	3.73
	1494	10133	Charlotte, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.90	-1.25	5.15
	1075	4521	Mexico City, Castillejos 2000	MORT	AC	AA	24 hours	lag 1-5	1.83	0.98	2.69
	176	6285	Georgia, Klemm 2000	MORT	AC	AA	24 hours	lag 0	1.68	-1.07	4.51
	1494	10121	Boston, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.68	-0.41	3.81
	164	7916	Athens, Zanobetti 2002	MORT	AC	AA	24 hours	lag 0-1	1.65	1.08	2.23
	1494	10096	Oakland, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.64	0.16	3.13
	1063	7677	Toronto, Cakmak 1999	MORT	AC	AA	24 hours	lag 0-1	1.60	0.91	2.30
	1494	10164	Kingston, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.59	-5.07	8.73
	1494	10115	Rochester, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.57	-1.32	4.54
	312	521	Tennessee eastern, Dockery 1992	MORT	AC	AA	24 hours	lag 2	1.55	-1.31	4.50
	164	7922	Rome, Zanobetti 2002	MORT	AC	AA	24 hours	lag 0-1	1.52	0.99	2.06
	1494	10109	Tampa, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.52	-0.99	4.09
	1494	10106	St. Petersburg, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.51	-0.93	4.01
	314	431	Utah County, Pope III 1992	MORT	AC	AA	24 hours	lag 0	1.48	0.87	2.10
	1494	10108	Honolulu, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.41	-6.12	9.53
	1333	6476	Lyon, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	1.36	0.31	2.42
	1494	10120	Louisville, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.35	-0.76	3.52
	84	2242	Utah Valley, Pope III 1996	MORT	AC	AA	24 hours	lag 0-4	1.33	0.42	2.25
	1494	10122	Birmingham, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.22	-0.29	2.74
	1494	10162	Richmond, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.21	-3.12	5.73
	1494	10125	Providence, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.19	-0.87	3.30
	1333	6478	Milan, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	1.17	0.79	1.54
	1333	6479	Torino, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	1.05	0.72	1.39
	1494	10128	Austin, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.02	-2.04	4.18
	1494	10165	Evansville, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.01	-3.43	5.66
	2	4138	Bangkok, Ostro 1999	MORT	AC	AA	24 hours	lag 3	1.01	0.41	1.60
	1128	3904	Christchurch, Hales 2000	MORT	AC	AA	24 hours	lag 1	1.00	0.20	1.82
	1337	11772	Florence, Biggeri 2001	MORT	AC	AA	24 hours	lag 0-1	1.00	-0.30	2.32
	212	7177	Czech Republic (coal basin), Peters 2000	MORT	AC	AA	24 hours	lag 1	0.94	0.07	1.82
	1333	6480	Barcelona, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	0.93	0.57	1.30
	1337	11684	Turin, Biggeri 2001	MORT	AC	AA	24 hours	lag 0-1	0.90	0.40	1.40
	1337	11747	Bologna, Biggeri 2001	MORT	AC	AA	24 hours	lag 0-1	0.90	-0.10	1.91
	250	3884	Steubenville, Schwartz 1996	MORT	AC	AA	24 hours	lag 0-1	0.90	0.10	1.71
	1494	10084	San Diego, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.87	-0.22	1.97
	1181	4737	Wayne County, Lippmann 2000	MORT	AC	AA	24 hours	lag 1	0.85	-0.22	1.92
	1494	10080	New York, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.80	0.12	1.49
	1494	10111	Indianapolis, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.79	-0.36	1.95
	1374	7833	Le Havre, Zeghnoun 2001	MORT	AC	AA	24 hours	lag 1	0.79	-0.34	1.93
	1494	10135	Tulsa, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.78	-2.02	3.65
	1494	10110	Memphis, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.78	-1.50	3.11
	1494	10158	Huntsville, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.77	-1.99	3.61
	1494	10102	St. Louis, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.76	-2.01	3.60
	1494	10113	Baltimore, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.75	-0.13	1.64
	1494	10089	Philadelphia, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.71	-0.41	1.84
	1494	10167	Olympia, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.70	-1.59	3.05
	1333	6481	London, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	0.69	0.35	1.04
	1494	10127	Tacoma, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.69	-1.23	2.65
	1494	10088	Miami, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.68	-1.05	2.44
	164	7924	Tel Aviv, Zanobetti 2002	MORT	AC	AA	24 hours	lag 0-1	0.67	0.16	1.19
	256	495	Santiago, Ostro 1996	MORT	AC	AA	24 hours	lag 0	0.67	0.51	0.84
	19	6574	Montreal, Goldberg 2001	MORT	AC	AA	24 hours	lag 0	0.67	-0.16	1.50
	1494	10119	Fresno, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.65	-0.67	1.99
	1333	6482	Teplice, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	0.64	-0.03	1.32
	1494	10131	Bakersfield, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.64	-0.45	1.74
	1494	10112	Newark, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.61	-0.96	2.21
	1494	10099	Riverside, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.60	-0.44	1.66
	162	12738	Los Angeles County, Moolgavkar 2003	MORT	AC	AA	24 hours	lag 2	0.60	0.29	0.91
	1332	7528	Strasbourg, Zeghnoun 2001	MORT	AC	AA	24 hours	lag 2	0.60	-0.50	1.71
	164	7925	Lodz, Zanobetti 2002	MORT	AC	AA	24 hours	lag 0-1	0.59	-0.23	1.42
	1494	10130	Jersey City, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.56	-0.66	1.80
	1494	10104	Columbus, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.55	-0.48	1.59
	1494	10140	Syracuse, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.55	-2.19	3.37
	164	7919	Madrid, Zanobetti 2002	MORT	AC	AA	24 hours	lag 0-1	0.52	0.05	1.00
	1494	10100	Denver, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.51	-0.65	1.68
	1609	13371	Seoul, Kim 2004	MORT	AC	AA	24 hours	lag 0	0.51	0.21	0.81
	1494	10085	Santa Ana/Anaheim, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.48	-0.71	1.70
	1494	10124	Oklahoma City, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.48	-1.93	2.95
	1333	6486	Zurich, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	0.43	-0.30	1.16
	164	7920	Paris, Zanobetti 2002	MORT	AC	AA	24 hours	lag 0-1	0.42	-0.03	0.87
	1333	6487	Basel, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	0.41	-0.44	1.28
	1494	10166	Kansas, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.41	-2.36	3.25
	144	7079	Coachella Valley, Ostro 2000	MORT	AC	AA	24 hours	lag 0	0.41	-0.41	1.22
	162	12718	Cook County, Moolgavkar 2003	MORT	AC	AA	24 hours	lag 0	0.40	0.21	0.59
	204	3950	Provo/Orem, Pope III 1999	MORT	AC	AA	24 hours	lag 0	0.37	-0.43	1.18
	1327	5980	Hong Kong, Wong 2001	MORT	AC	AA	24 hours	lag 1	0.36	0.00	0.73
	264	383	Koln, Spix 1996	MORT	AC	AA	24 hours	lag 1	0.36	-0.02	0.75
	164	7923	Stockholm, Zanobetti 2002	MORT	AC	AA	24 hours	lag 0-1	0.36	-1.36	2.11
	1494	10087	Detroit, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.35	-0.08	0.79
	1333	6489	Helsinki, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	0.32	-0.51	1.17
	1494	10107	Kansas, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.32	-1.83	2.52
	148	5596	Melbourne, Simpson 2000	MORT	AC	AA	24 hours	lag 0	0.30	-0.60	1.21
	1333	6491	Birmingham, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	0.28	-0.23	0.80
	164	7917	Budapest, Zanobetti 2002	MORT	AC	AA	24 hours	lag 0-1	0.28	-0.62	1.19
	1360	7815	Amsterdam, Roemer 2001	MORT	AC	AA	24 hours	lag 1	0.27	-0.13	0.67
	1332	7525	Rouen, Zeghnoun 2001	MORT	AC	AA	24 hours	lag 1	0.24	-0.54	1.03
	1494	10083	Houston, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.23	-0.49	0.96

Time Series: PM

Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
1	1494	10139	Albuquerque, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.19	-2.68	3.14
	175	5491	Netherlands, Hoek 2000	MORT	AC	AA	24 hours	lag 1	0.18	0.03	0.33
	1636	14075	El Paso, Staniswallis	MORT	AC	AA	24 hours	lag 3	0.17	-0.03	0.37
	1494	10148	Spokane, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.16	-0.31	0.63
	1333	6492	Cracow, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	0.13	-0.54	0.82
	164	7921	Prague, Zanobetti 2002	MORT	AC	AA	24 hours	lag 0-1	0.11	-0.24	0.46
	1187	5421	Sao Paulo, Gouveia 2000	MORT	AC	AA	24 hours	lag 0	0.11	-0.22	0.44
	1494	10086	Phoenix, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.10	-1.21	1.44
	1514	13047	Pittsburgh, Dominici 2003	MORT	AC	AA	24 hours	lag 0-3	0.09	-0.57	0.75
	69	7684	West Midlands, Anderson 2001	MORT	AC	AA	24 hours	lag 0-1	0.08	-0.74	0.91
	1494	10145	Baton Rouge, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.07	-3.67	3.96
	1070	3473	Inchon, Hong 1999	MORT	AC	AA	24 hours	lag 1	0.07	0.01	0.13
	1494	10118	Jacksonville, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.07	-2.27	2.46
	1494	10092	San Jose, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.06	-0.77	0.91
	1514	13050	Seattle, Dominici 2003	MORT	AC	AA	24 hours	lag 0-3	0.02	-2.30	2.40
	1494	10160	Lexington, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.02	-3.92	4.12
	1494	10147	Madison, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.02	-5.32	5.57
	1494	10105	Cincinnati, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.02	-0.84	0.80
	1514	13049	Chicago, Dominici 2003	MORT	AC	AA	24 hours	lag 0-3	-0.06	-0.47	0.35
	1333	6494	Geneva, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	-0.10	-1.01	0.82
	1494	10103	Buffalo, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.12	-2.16	1.96
	1494	10093	Cleveland, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.15	-0.64	0.34
	1494	10094	San Bernadino, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.17	-1.85	1.53
	1494	10117	Orlando, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.17	-3.91	3.70
	1494	10123	Washington, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.20	-2.43	2.07
	1494	10132	Akron, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.24	-1.83	1.37
	1494	10142	Raleigh, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.36	-5.05	4.57
	1494	10082	Dallas/Fort Worth, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.38	-1.75	1.01
	1494	10154	Fort Wayne, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.39	-5.21	4.68
	1494	10137	New Orleans, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.40	-2.38	1.61
	1494	10114	Salt Lake City, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.50	-1.40	0.41
	1494	10159	Anchorage, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.54	-2.19	1.13
	1333	6495	Erfurt, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	-0.56	-1.33	0.21
	1494	10151	Knoxville, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.59	-3.20	2.08
	1494	10097	Atlanta, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.62	-2.68	1.49
	1494	10134	Nashville, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.64	-1.69	0.43
	1514	13048	Minneapolis, Dominici 2003	MORT	AC	AA	24 hours	lag 0-3	-0.67	-1.86	0.53
	1494	10129	Dayton, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.71	-3.33	1.98
	1494	10136	Grand Rapids, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.75	-3.15	1.71
	1494	10101	Sacramento, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.88	-2.29	0.56
	1494	10161	Lubbock, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.90	-2.56	0.79
	1494	10153	Des Moines, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.06	-2.39	0.29
	1494	10155	Corpus Christi, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.09	-5.01	2.99
	1494	10138	Stockton, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.26	-3.33	0.85
	1494	10156	Norfolk, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.54	-5.65	2.74
	1494	10150	Greensboro, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.63	-5.09	1.95
	1494	10146	Modesto, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.64	-4.25	1.06
	1494	10163	Arlington, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.74	-10.37	7.72
	190	1028	Seville, Ocana-Riola 1999	MORT	AC	AA	24 hours	lag 5	-1.99	-3.23	-0.74
	1494	10157	Jackson, Samet 2003	MORT	AC	AA	24 hours	lag 1	-2.02	-6.20	2.35
	1494	10143	Wichita, Samet 2003	MORT	AC	AA	24 hours	lag 1	-2.07	-6.28	2.33
	1494	10149	Little Rock, Samet 2003	MORT	AC	AA	24 hours	lag 1	-3.46	-6.71	-0.09
2	1642	14236	Shanghai, Haixia	MORT	AC	AA	24 hours	lag 1	17.20	6.13	29.41
	144	7081	Coachella Valley, Ostro 2000	MORT	AC	AA	24 hours	lag 4	4.45	0.00	9.11
	176	6280	Georgia, Klemm 2000	MORT	AC	AA	24 hours	lag 1	2.54	-0.70	5.89
	312	523	Tennessee eastern, Dockery 1992	MORT	AC	AA	24 hours	lag 1	2.31	-1.36	6.10
	250	3816	Boston, Schwartz 1996	MORT	AC	AA	24 hours	lag 0-1	2.20	1.50	2.90
	224	3211	Toronto, Burnett 1998	MORT	AC	AA	24 hours	lag 0-1	1.89	1.31	2.47
	206	1731	Sydney, Morgan 1998	MORT	AC	AA	24 hours	lag 0	1.54	0.35	2.74
	1075	4522	Mexico City, Castillejos 2000	MORT	AC	AA	24 hours	lag 1-5	1.48	-0.01	2.99
	250	3817	Knoxville, Schwartz 1996	MORT	AC	AA	24 hours	lag 0-1	1.40	0.20	2.61
	1181	4727	Wayne County, Lippmann 2000	MORT	AC	AA	24 hours	lag 3	1.23	-0.25	2.73
	250	3820	Madison, Schwartz 1996	MORT	AC	AA	24 hours	lag 0-1	1.20	-0.30	2.72
	19	6577	Montreal, Goldberg 2001	MORT	AC	AA	24 hours	lag 1	1.16	-0.03	2.36
	250	3818	St. Louis, Schwartz 1996	MORT	AC	AA	24 hours	lag 0-1	1.10	0.40	1.80
	250	3819	Steubenville, Schwartz 1996	MORT	AC	AA	24 hours	lag 0-1	1.00	-0.10	2.11
	148	5595	Melbourne, Simpson 2000	MORT	AC	AA	24 hours	lag 0	0.80	-0.90	2.53
	250	3821	Topeka, Schwartz 1996	MORT	AC	AA	24 hours	lag 0-1	0.80	-2.00	3.68
	1152	5893	Santiago, Cifuentes 2000	MORT	AC	AA	24 hours	lag 1-2	0.71	0.50	0.92
	162	12739	Los Angeles County, Moolgavkar 2003	MORT	AC	AA	24 hours	lag 0	0.70	0.13	1.28
	212	7179	Czech Republic (coal basin), Peters 2000	MORT	AC	AA	24 hours	lag 1	0.57	-0.20	1.36
	69	7685	West Midlands, Anderson 2001	MORT	AC	AA	24 hours	lag 0-1	0.34	-0.85	1.54
	1497	11843	Chongqing, Venners 2003	MORT	AC	AA	24 hours	lag 3	-0.40	-1.06	0.27
	1205	7476	Erfurt, Wichmann 2000	MORT	AC	AA	24 hours	lag 3	-1.63	-3.23	-0.01

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Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
3	1075	4523	Mexico City, Castillejos 2000	MORT	AC	AA	24 hours	lag 1-5	4.07	2.49	5.67
	250	3877	Steubenville, Schwartz 1996	MORT	AC	AA	24 hours	lag 0-1	2.40	0.50	4.34
	1181	4732	Wayne County, Lippmann 2000	MORT	AC	AA	24 hours	lag 1	1.57	-0.50	3.68
	1120	4134	Phoenix, Mar 2000	MORT	AC	AA	24 hours	lag 0	1.18	-0.20	2.57
	250	3875	Knoxville, Schwartz 1996	MORT	AC	AA	24 hours	lag 0-1	1.00	-0.60	2.63
	1152	5896	Santiago, Cifuentes 2000	MORT	AC	AA	24 hours	lag 1-2	0.91	0.55	1.28
	176	6286	Georgia, Klemm 2000	MORT	AC	AA	24 hours	lag 0	0.57	-4.67	6.10
	144	7080	Coachella Valley, Ostro 2000	MORT	AC	AA	24 hours	lag 0	0.51	-0.51	1.54
	250	3878	Madison, Schwartz 1996	MORT	AC	AA	24 hours	lag 0-1	0.50	-1.20	2.23
	250	3874	Boston, Schwartz 1996	MORT	AC	AA	24 hours	lag 0-1	0.20	-0.60	1.01
	250	3876	St. Louis, Schwartz 1996	MORT	AC	AA	24 hours	lag 0-1	0.20	-0.70	1.11
	69	7686	West Midlands, Anderson 2001	MORT	AC	AA	24 hours	lag 0-1	-0.53	-3.73	2.77
	250	3879	Topeka, Schwartz 1996	MORT	AC	AA	24 hours	lag 0-1	-1.30	-3.30	0.74
4	312	524	Tennessee eastern, Dockery 1992	MORT	AC	AA	24 hours	lag 1	8.33	-14.38	37.05
	312	461	St. Louis, Dockery 1992	MORT	AC	AA	24 hours	lag 1	6.27	-5.09	18.99
	19	6580	Montreal, Goldberg 2001	MORT	AC	AA	24 hours	lag 0-2	5.26	2.75	7.83
	176	6291	Georgia, Klemm 2000	MORT	AC	AA	24 hours	lag 0	5.19	-5.28	16.82
	1073	4348	Buffalo, Gwynn 2000	MORT	AC	AA	24 hours	lag 1	2.30	0.48	4.15
	224	3207	Toronto, Burnett 1998	MORT	AC	AA	24 hours	lag 0	1.80	0.83	2.78
	1181	4747	Wayne County, Lippmann 2000	MORT	AC	AA	24 hours	lag 1	1.51	-1.20	4.30
	175	5495	Netherlands, Hoek 2000	MORT	AC	AA	24 hours	lag 1	1.27	0.24	2.31
	69	7688	West Midlands, Anderson 2001	MORT	AC	AA	24 hours	lag 0-1	-0.69	-3.93	2.66
5	1360	7813	Amsterdam, Roemer 2001	MORT	AC	AA	24 hours	lag 1	3.30	1.43	5.19
	191	3241	Pamplona, Aguinaga 1999	MORT	AC	AA	24 hours	lag 0	2.99	-1.88	8.09
	14	12219	Valencia, Ballester 2002	MORT	AC	AA	24 hours	lag 1	1.80	0.90	2.71
	1465	8695	Bordeaux, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	1.53	0.00	3.09
	194	1006	Castellon, Bellido Blasco 1999	MORT	AC	AA	24 hours	lag 2	1.51	-0.50	3.56
	1465	8701	Marseille, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	1.17	0.46	1.89
	1333	6501	Bilbao, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	0.82	-0.67	2.32
	1560	12174	London, Pattenden 2003	MORT	AC	AA	24 hours	lag 0	0.80	-6.50	8.68
	18	7258	Barcelona, Saez 2001	MORT	AC	AA	24 hours	lag 1	0.69	0.14	1.25
	18	7260	Vigo, Saez 2001	MORT	AC	AA	24 hours	lag 1	0.68	0.09	1.28
	1333	6502	Athens, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	0.66	0.43	0.89
	187	958	Vitoria-Gasteiz, Perez 1999	MORT	AC	AA	24 hours	lag 1	0.63	-0.32	1.59
	1333	6503	Poznan, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	0.63	0.16	1.10
	75	13030	Dublin, Goodman 2004	MORT	AC	AA	24 hours	lag 1-3	0.40	0.30	0.50
	175	5493	Netherlands, Hoek 2000	MORT	AC	AA	24 hours	lag 1	0.40	0.20	0.59
	1465	8704	Paris, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	0.40	0.04	0.75
	1335	8853	Zaragoza, Arribas-Monzon 2001	MORT	AC	AA	24 hours	lag 5	0.36	-0.39	1.12
	69	7687	West Midlands, Anderson 2001	MORT	AC	AA	24 hours	lag 0-1	0.36	-0.90	1.63
	1333	6505	Birmingham, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	0.34	-0.59	1.28
	1333	6506	Wroclaw, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	0.28	-0.16	0.73
	91	469	Krakow, Wojtyniak 1996	MORT	AC	AA	24 hours	lag 2	0.25	0.02	0.48
	1465	8698	Le Havre, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	0.24	-1.46	1.97
	1465	8707	Rouen, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	0.14	-1.00	1.29
	1333	6507	Lodz, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	-0.06	-0.47	0.36
	1333	6508	Ljubljana, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	-0.09	-1.27	1.11
	1333	6509	Cracow, Katsouyanni 2001	MORT	AC	AA	24 hours	lag 0-1	-0.21	-0.62	0.21
6	83	7270	Basel, Wietlisbach 1996	MORT	AC	AA	24 hours	lag 3	1.47	0.92	2.03
	160	7103	Philadelphia, Schwartz 2000	MORT	AC	AA	24 hours	lag 0	0.87	0.58	1.15
	196	909	Bilbao, Cambra 1999	MORT	AC	AA	24 hours	lag 1	0.83	0.30	1.36
	1094	5476	Turin, Cadum 1999	MORT	AC	AA	24 hours	lag 1	0.75	0.51	0.98
	1205	7478	Erfurt, Wichmann 2000	MORT	AC	AA	24 hours	lag 1	0.69	-0.58	1.97
	19	6572	Montreal, Goldberg 2001	MORT	AC	AA	24 hours	lag 0	0.65	0.00	1.30
	1560	12173	Sofia, Pattenden 2003	MORT	AC	AA	24 hours	lag 0	0.60	0.30	0.90
	198	4350	Gijon, Canada 1999	MORT	AC	AA	24 hours	lag 0	0.60	-0.15	1.36
	294	1101	Cincinnati, Schwartz 1994	MORT	AC	AA	24 hours	lag 0	0.58	0.30	0.87
	322	1126	Detroit, Schwartz 1991	MORT	AC	AA	24 hours	lag 1	0.55	0.26	0.83
	245	397	Mexico City, Borja-Aburto 1997	MORT	AC	AA	24 hours	lag 0	0.49	0.30	0.68
	1299	7319	Rome, Michelozzi 2000	MORT	AC	AA	24 hours	lag 0	0.40	0.10	0.70
	83	7266	Zurich, Wietlisbach 1996	MORT	AC	AA	24 hours	lag 3	0.38	-0.01	0.77
	1207	5967	Taejeon, Lee 2000	MORT	AC	AA	24 hours	lag 0-1	0.37	-0.13	0.88
	212	7175	Czech Republic (coal basin), Peters 2000	MORT	AC	AA	24 hours	lag 2	0.37	0.08	0.67
	978	5840	Northern Bohemia, Kotesovec 2000	MORT	AC	AA	24 hours	lag 2	0.33	0.05	0.62
	1207	5971	Ulsan, Lee 2000	MORT	AC	AA	24 hours	lag 0-1	0.31	-0.27	0.89
	731	1702	Steubenville, Moolgavkar 1995	MORT	AC	AA	24 hours	lag 1	0.29	0.07	0.50
	1207	5969	Taegu, Lee 2000	MORT	AC	AA	24 hours	lag 0-1	0.29	0.05	0.52
	1207	5965	Seoul, Lee 2000	MORT	AC	AA	24 hours	lag 0-1	0.27	0.14	0.39
	1206	7056	Milan, Zanobetti 2000	MORT	AC	AA	24 hours	lag 0	0.25	0.16	0.35
	1496	11884	Dehli, Cropper 1997	MORT	AC	AA	24 hours	lag 2	0.23	0.03	0.43
	224	3208	Toronto, Burnett 1998	MORT	AC	AA	24 hours	lag 0	0.23	0.08	0.37
	264	382	Koln, Spix 1996	MORT	AC	AA	24 hours	lag 1	0.21	-0.14	0.57
	118	2185	Beijing, Xu 1994	MORT	AC	AA	24 hours	lag 0	0.18	-0.10	0.46
	1116	3897	Shenyang, Xu 2000	MORT	AC	AA	24 hours	lag 0-3	0.17	0.07	0.28
	212	7195	Germany (rural), Peters 2000	MORT	AC	AA	24 hours	lag 0	0.16	-0.11	0.43
	1207	5963	Pusan, Lee 2000	MORT	AC	AA	24 hours	lag 0-1	0.11	-0.10	0.32
	1207	5961	Kwangju, Lee 2000	MORT	AC	AA	24 hours	lag 0-1	0.07	-0.27	0.41
	1207	5959	Inchon, Lee 2000	MORT	AC	AA	24 hours	lag 0-1	0.05	-0.21	0.31
	266	391	Bratislava, Bacharova 1996	MORT	AC	AA	24 hours	lag 0	0.00	-0.39	0.39
	195	937	Cartagena, Guillen Perez 1999	MORT	AC	AA	24 hours	lag 2	-0.09	-0.20	0.02
	198	3393	Oviedo, Canada 1999	MORT	AC	AA	24 hours	lag 0	-0.63	-1.65	0.40

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7	1642	14243	Shanghai, Haixia	MORT	AC	E	24 hours	lag 1	6.36	2.02	10.89
	193	3779	Huelva, Daponte 1999	MORT	AC	E	24 hours	lag 0	2.82	-0.49	6.24
	1075	4362	Mexico City, Castillejos 2000	MORT	AC	E	24 hours	lag 1-5	2.01	0.86	3.17
	1121	3186	Canton, Schwartz 2000	MORT	AC	E	24 hours	lag 0	1.75	0.12	3.40
	1587	12456	Vancouver, Villeneuve 2003	MORT	AC	E	24 hours	lag 1	1.75	-0.46	3.99
	1121	3188	Minneapolis, Schwartz 2000	MORT	AC	E	24 hours	lag 0	1.43	0.84	2.02
	1640	14227	Bangkok, Vajanapoom	MORT	AC	E	24 hours	lag 0-4	1.38	0.66	2.10
	1640	14231	Bangkok, Vajanapoom	MORT	AC	E	24 hours	lag 0-4	1.28	0.70	1.88
	1205	7508	Erfurt, Wichmann 2000	MORT	AC	E	24 hours	lag 0	1.18	-0.51	2.89
	107	12646	Hiroshima, Omori 2003	MORT	AC	E	24 hours	lag 1	1.13	0.26	2.01
	1128	3905	Christchurch, Hales 2000	MORT	AC	E	24 hours	lag 1	1.00	0.20	1.82
	1121	3187	Chicago, Schwartz 2000	MORT	AC	E	24 hours	lag 0	0.85	0.52	1.18
	107	12642	Nagoya, Omori 2003	MORT	AC	E	24 hours	lag 1	0.75	0.33	1.17
	1121	3191	Seattle, Schwartz 2000	MORT	AC	E	24 hours	lag 0	0.70	0.25	1.15
	107	12637	Sendai, Omori 2003	MORT	AC	E	24 hours	lag 1	0.69	-0.43	1.82
	246	3204	Amsterdam, Verhoeff 1996	MORT	AC	E	24 hours	lag 0	0.68	-0.20	1.57
	1121	3185	Detroit, Schwartz 2000	MORT	AC	E	24 hours	lag 0	0.66	0.29	1.03
	1121	3182	New Haven, Schwartz 2000	MORT	AC	E	24 hours	lag 0	0.62	-0.20	1.45
	107	12641	Kawasaki, Omori 2003	MORT	AC	E	24 hours	lag 1	0.58	0.16	1.00
	1121	3184	Pittsburgh, Schwartz 2000	MORT	AC	E	24 hours	lag 0	0.58	0.21	0.95
	107	12639	Tokyo, Omori 2003	MORT	AC	E	24 hours	lag 1	0.57	0.41	0.73
	107	12648	Fukuoka, Omori 2003	MORT	AC	E	24 hours	lag 1	0.55	-0.22	1.33
	107	12644	Osaka, Omori 2003	MORT	AC	E	24 hours	lag 1	0.54	0.18	0.90
	530	4416	Santiago, Sanhueza 1999	MORT	AC	E	24 hours		0.51	0.32	0.70
	1187	5426	Sao Paulo, Gouveia 2000	MORT	AC	E	24 hours	lag 0	0.51	0.09	0.92
	1640	14223	Bangkok, Vajanapoom	MORT	AC	E	24 hours	lag 0-4	0.50	-0.27	1.27
	107	12638	Chiba, Omori 2003	MORT	AC	E	24 hours	lag 1	0.41	-0.18	1.00
	1126	4412	Krakow, Szafraniec 1999	MORT	AC	E	24 hours	lag 0	0.39	-0.20	0.99
	107	12647	Kitqkyushu, Omori 2003	MORT	AC	E	24 hours	lag 1	0.38	-0.31	1.07
	107	12645	Kobe, Omori 2003	MORT	AC	E	24 hours	lag 1	0.35	-0.24	0.94
	1121	3190	Spokane, Schwartz 2000	MORT	AC	E	24 hours	lag 0	0.34	-0.25	0.93
	107	12643	Kyoto, Omori 2003	MORT	AC	E	24 hours	lag 1	0.25	-0.31	0.81
	107	12640	Yokohama, Omori 2003	MORT	AC	E	24 hours	lag 1	0.24	-0.05	0.53
	182	742	London, Bremner 1999	MORT	AC	E	24 hours	lag 0	0.23	-0.29	0.75
	1121	3189	Colorado Springs, Schwartz 2000	MORT	AC	E	24 hours	lag 0	0.16	-1.37	1.71
	50	14045	Allegheny County, Roberts	MORT	AC	E	24 hours	lag 0	0.03	-0.01	0.08
	50	14042	Cook County, Roberts	MORT	AC	E	24 hours	lag 0	0.01	-0.02	0.03
	148	5598	Melbourne, Simpson 2000	MORT	AC	E	24 hours	lag 0	0.00	-1.00	1.01
	106	1189	Salt Lake City, Styer 1995	MORT	AC	E	24 hours	lag 0-2	-0.25	-1.09	0.59
	1121	3183	Birmingham, Schwartz 2000	MORT	AC	E	24 hours	lag 0	-0.45	-1.06	0.16
	192	3251	Madrid, Galan 1999	MORT	AC	E	24 hours	lag 4	-0.50	-1.04	0.04
	190	1037	Seville, Ocana-Riola 1999	MORT	AC	E	24 hours	lag 2	-1.25	-2.80	0.33
	107	12636	Sapporo, Omori 2003	MORT	AC	E	24 hours	lag 1	-1.79	-2.86	-0.71
8	1642	14244	Shanghai, Haixia	MORT	AC	E	24 hours	lag 1	23.04	10.91	36.51
	1610	13503	Atlanta, Klemm 2004	MORT	AC	E	24 hours	lag 0-1	5.59	1.85	9.47
	176	6282	Georgia, Klemm 2000	MORT	AC	E	24 hours	lag 0	3.15	-0.80	7.26
	1075	4370	Mexico City, Castillejos 2000	MORT	AC	E	24 hours	lag 1-5	1.35	-0.64	3.38
	177	6381	Pittsburgh, Chock 2000	MORT	AC	E	24 hours	lag 0	0.59	-1.24	2.46
	1587	12464	Vancouver, Villeneuve 2003	MORT	AC	E	24 hours	lag 2	0.56	-3.66	4.96
	530	4419	Santiago, Sanhueza 1999	MORT	AC	E	24 hours		0.40	0.19	0.62
	271	488	Los Angeles, Ostro 1995	MORT	AC	E	24 hours	lag 0	0.28	-0.28	0.84
	148	5597	Melbourne, Simpson 2000	MORT	AC	E	24 hours	lag 0	0.20	-1.69	2.12
9	191	3242	Pamplona, Aguinaga 1999	MORT	AC	E	24 hours	lag 0	2.55	-2.31	7.66
	246	1713	Amsterdam, Verhoeff 1996	MORT	AC	E	24 hours	lag 0	2.34	0.68	4.02
	194	1009	Castellon, Bellido Blasco 1999	MORT	AC	E	24 hours	lag 2	1.83	-0.50	4.21
	1140	4165	Valencia, Tenias Burillo 1999	MORT	AC	E	24 hours	lag 1	1.68	0.50	2.87
	1516	12404	Bordeaux, Filleul 2003	MORT	AC	E	24 hours	lag 0	1.50	0.30	2.71
	216	3194	Edinburgh, Prescott 1998	MORT	AC	E	24 hours	lag 1-3	1.50	0.50	2.51
	187	1012	Vitoria-Gasteiz, Perez 1999	MORT	AC	E	24 hours	lag 1	1.04	-0.02	2.11
	85	797	Barcelona, Sunyer 1996	MORT	AC	E	24 hours	lag 1	0.61	0.16	1.07
	182	743	London, Bremner 1999	MORT	AC	E	24 hours	lag 1	0.56	-0.25	1.37
	1335	8857	Zaragoza, Arribas-Monzon 2001	MORT	AC	E	24 hours	lag 1	0.38	-0.53	1.30
	196	933	Bilbao, Cambra 1999	MORT	AC	E	24 hours	lag 1	-0.75	-2.29	0.81
10	1587	12469	Vancouver, Villeneuve 2003	MORT	AC	E	24 hours	lag 2	2.24	0.91	3.58
	83	7271	Basel, Wietlisbach 1996	MORT	AC	E	24 hours	lag 3	1.41	0.80	2.03
	196	930	Bilbao, Cambra 1999	MORT	AC	E	24 hours	lag 0	0.99	0.33	1.65
	316	1095	Philadelphia, Schwartz 1992	MORT	AC	E	24 hours	lag 0-1	0.91	0.60	1.23
	294	1133	Cincinnati, Schwartz 1994	MORT	AC	E	24 hours	lag 0	0.87	0.49	1.24
	198	1878	Gijon, Canada 1999	MORT	AC	E	24 hours	lag 0	0.62	-0.25	1.50
	249	4319	Mexico City, Loomis 1996	MORT	AC	E	24 hours	lag 0	0.57	0.33	0.81
	83	7267	Zurich, Wietlisbach 1996	MORT	AC	E	24 hours	lag 3	0.51	0.08	0.95
	1299	7325	Rome, Michelozzi 2000	MORT	AC	E	24 hours	lag 0	0.40	0.10	0.70
	300	4037	Beijing, Gao 1993	MORT	AC	E	24 hours	lag 0	0.25	-0.09	0.59
	1496	11898	Dehli, Cropper 1997	MORT	AC	E	24 hours	lag 2	0.08	-0.10	0.26
	195	965	Cartagena, Guillen Perez 1999	MORT	AC	E	24 hours	lag 2	-0.13	-0.26	0.00
	198	3399	Oviedo, Canada 1999	MORT	AC	E	24 hours	lag 5	-1.04	-2.29	0.23
11	226	824	Helsinki, Ponka 1998	MORT	AC	NE	24 hours	lag 4	3.45	1.08	5.88
	1642	14245	Shanghai, Haixia	MORT	AC	NE	24 hours	lag 1	1.85	-1.30	5.09
	182	736	London, Bremner 1999	MORT	AC	NE	24 hours	lag 1	0.42	-0.56	1.41
	1495	11855	Seoul, Ha 2003	MORT	AC	NE	24 hours	lag 0	0.19	0.14	0.23

Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
12	1494	10438	Topeka, Samet 2003	MORT	CR	AA	24 hours	lag 1	7.64	-1.83	18.02
	1494	10411	Toledo, Samet 2003	MORT	CR	AA	24 hours	lag 1	4.38	0.14	8.80
	1494	10387	Orlando, Samet 2003	MORT	CR	AA	24 hours	lag 1	4.04	-1.42	9.79
	1494	10405	Tulsa, Samet 2003	MORT	CR	AA	24 hours	lag 1	3.95	0.27	7.77
	1494	10386	Worcester, Samet 2003	MORT	CR	AA	24 hours	lag 1	3.42	-0.43	7.43
	1494	10376	St. Petersburg, Samet 2003	MORT	CR	AA	24 hours	lag 1	3.34	0.21	6.57
	1494	10434	Kingston, Samet 2003	MORT	CR	AA	24 hours	lag 1	3.23	-6.17	13.58
	1494	10392	Birmingham, Samet 2003	MORT	CR	AA	24 hours	lag 1	2.42	0.34	4.54
	1494	10415	Baton Rouge, Samet 2003	MORT	CR	AA	24 hours	lag 1	2.37	-3.02	8.05
	1494	10391	Boston, Samet 2003	MORT	CR	AA	24 hours	lag 1	2.23	-0.59	5.14
	1494	10358	Miami, Samet 2003	MORT	CR	AA	24 hours	lag 1	2.19	-0.22	4.66
	1494	10368	San Antonio, Samet 2003	MORT	CR	AA	24 hours	lag 1	2.07	-0.54	4.74
	1494	10422	Shreveport, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.88	-3.98	8.11
	1494	10397	Tacoma, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.82	-0.74	4.46
	1494	10366	Oakland, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.78	-0.11	3.70
	1494	10437	Olympia, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.63	-1.60	4.97
	1494	10379	Tampa, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.57	-2.01	5.29
	1494	10395	Providence, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.56	-1.20	4.40
	1494	10412	Raleigh, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.51	-5.36	8.88
	1494	10400	Jersey City, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.50	-0.20	3.23
	1494	10390	Louisville, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.42	-1.57	4.50
	1494	10381	Indianapolis, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.42	-0.16	3.02
	1494	10424	Fort Wayne, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.41	-5.04	8.29
	1494	10382	Newark, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.36	-0.94	3.72
	1494	10372	St. Louis, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.26	-2.31	4.95
	1494	10359	Philadelphia, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.19	-0.36	2.76
	1494	10394	Oklahoma City, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.17	-2.04	4.48
	1494	10436	Kansas, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.16	-2.73	5.20
	1494	10393	Washington, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.09	-2.25	4.54
	1494	10396	El Paso, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.95	0.03	1.88
	1494	10378	Honolulu, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.92	-9.04	11.98
	161	13260	Helsinki, Penttinen 2004	MORT	CR	AA	24 hours	lag 1	0.88	-0.32	2.09
	1494	10364	San Bernadino, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.82	-1.34	3.03
	1494	10383	Baltimore, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.77	-0.47	2.03
	1494	10354	San Diego, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.70	-0.74	2.17
	1494	10350	New York, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.70	-0.18	1.59
	1494	10414	Colorado Springs, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.69	-5.17	6.91
	1494	10353	Houston, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.56	-0.45	1.57
	1494	10410	Syracuse, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.53	-3.19	4.39
	1494	10370	Denver, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.48	-1.07	2.05
	1494	10357	Detroit, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.47	-0.10	1.04
	1494	10388	Jacksonville, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.45	-2.84	3.85
	1494	10369	Riverside, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.40	-0.94	1.75
	1494	10356	Phoenix, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.39	-1.37	2.19
	1494	10374	Columbus, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.38	-1.06	1.84
	1494	10389	Fresno, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.36	-1.46	2.20
	1494	10355	Santa Ana/Anaheim, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.35	-1.21	1.94
	1494	10401	Bakersfield, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.29	-1.11	1.71
	1514	13052	Pittsburgh, Dominici 2003	MORT	CR	AA	24 hours	lag 0-3	0.23	-0.65	1.12
	1494	10432	Richmond, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.23	-5.81	6.65
	1494	10402	Akron, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.22	-1.94	2.43
	1514	13055	Seattle, Dominici 2003	MORT	CR	AA	24 hours	lag 0-3	0.22	-2.99	3.54
	1494	10409	Albuquerque, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.21	-3.86	4.45
	1494	10418	Spokane, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.16	-0.47	0.80
	1494	10426	Norfolk, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.15	-5.65	6.30
	1494	10413	Wichita, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.13	-5.70	6.31
	1494	10429	Anchorage, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.08	-2.77	3.01
	1494	10373	Buffalo, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.06	-2.58	2.78
	1514	13054	Chicago, Dominici 2003	MORT	CR	AA	24 hours	lag 0-3	0.05	-0.51	0.61
	1494	10380	Memphis, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.04	-3.02	3.20
	1494	10349	Los Angeles, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.04	-0.54	0.61
	1494	10375	Cincinnati, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.03	-1.08	1.15
	1494	10362	San Jose, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.05	-1.14	1.06
	1494	10363	Cleveland, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.23	-0.89	0.43
	1494	10398	Austin, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.25	-4.59	4.29
	1494	10367	Atlanta, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.26	-3.26	2.83
	1494	10377	Kansas, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.35	-3.28	2.68
	1494	10352	Dallas/Fort Worth, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.42	-2.23	1.42
	1494	10430	Lexington, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.42	-6.23	5.74
	1514	13053	Minneapolis, Dominici 2003	MORT	CR	AA	24 hours	lag 0-3	-0.48	-2.13	1.20
	1494	10371	Sacramento, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.50	-2.34	1.39
	1494	10421	Knoxville, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.54	-4.11	3.17
	1494	10435	Evansville, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.58	-6.85	6.10
	1494	10406	Grand Rapids, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.63	-3.97	2.83
	1494	10419	Little Rock, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.69	-5.30	4.14
	1494	10385	Rochester, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.86	-4.55	2.97
	1494	10407	New Orleans, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.96	-3.86	2.03
	1494	10403	Charlotte, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.21	-5.68	3.46
	1494	10428	Huntsville, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.30	-5.02	2.58
	1494	10431	Lubbock, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.32	-3.51	0.92
	1494	10423	Des Moines, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.38	-3.14	0.41
	1494	10425	Corpus Christi, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.65	-7.15	4.19
	1494	10404	Nashville, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.71	-3.12	-0.27
	1494	10420	Greensboro, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.71	-6.48	3.30
	1494	10433	Arlington, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.95	-14.06	11.87
	1494	10399	Dayton, Samet 2003	MORT	CR	AA	24 hours	lag 1	-2.15	-5.69	1.53
	1494	10416	Modesto, Samet 2003	MORT	CR	AA	24 hours	lag 1	-2.18	-5.67	1.44
	1494	10427	Jackson, Samet 2003	MORT	CR	AA	24 hours	lag 1	-2.29	-7.99	3.76
	1494	10417	Madison, Samet 2003	MORT	CR	AA	24 hours	lag 1	-2.77	-9.71	4.70
	1494	10408	Stockton, Samet 2003	MORT	CR	AA	24 hours	lag 1	-2.79	-5.47	-0.04

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13	1642	14237	Shanghai, Haixia	MORT	CV	AA	24 hours	lag 1	12.34	3.63	21.78
	204	2159	Ogden, Pope III 1999	MORT	CV	AA	24 hours	lag 0-4	3.98	2.66	5.31
	1337	11797	Palermo, Biggeri 2001	MORT	CV	AA	24 hours	lag 0-1	3.50	1.80	5.23
	193	3783	Huelva, Daponte 1999	MORT	CV	AA	24 hours	lag 5	3.05	-1.15	7.43
	1374	7843	Le Havre, Zeghnoun 2001	MORT	CV	AA	24 hours	lag 1	2.55	0.04	5.12
	1332	7532	Strasbourg, Zeghnoun 2001	MORT	CV	AA	24 hours	lag 3	2.37	0.25	4.54
	1075	4359	Mexico City, Castillejos 2000	MORT	CV	AA	24 hours	lag 1-5	2.00	0.39	3.64
	84	2244	Utah Valley, Pope III 1996	MORT	CV	AA	24 hours	lag 0-4	1.90	0.57	3.24
	1120	3764	Phoenix, Mar 2000	MORT	CV	AA	24 hours	lag 0	1.90	0.38	3.44
	314	433	Utah County, Pope III 1992	MORT	CV	AA	24 hours	lag 0	1.81	0.38	3.25
	1337	11777	Rome, Biggeri 2001	MORT	CV	AA	24 hours	lag 0-1	1.80	0.70	2.91
	204	2161	Provo/Orem, Pope III 1999	MORT	CV	AA	24 hours	lag 0-4	1.67	0.49	2.88
	1337	11752	Florence, Biggeri 2001	MORT	CV	AA	24 hours	lag 0-1	1.50	-0.50	3.54
	1181	4762	Wayne County, Lippmann 2000	MORT	CV	AA	24 hours	lag 1	1.34	-0.26	2.95
	1337	11727	Bologna, Biggeri 2001	MORT	CV	AA	24 hours	lag 0-1	1.30	-0.30	2.93
	144	7085	Coachella Valley, Ostro 2000	MORT	CV	AA	24 hours	lag 0	1.21	0.41	2.02
	1374	7858	Rouen, Zeghnoun 2001	MORT	CV	AA	24 hours	lag 1	1.06	-0.29	2.43
	1332	7529	Rouen, Zeghnoun 2001	MORT	CV	AA	24 hours	lag 1	1.06	-0.29	2.43
	1347	7935	Montreal, Goldberg 2001	MORT	CV	AA	24 hours	lag 1	0.90	-0.33	2.14
	1332	7531	Paris, Zeghnoun 2001	MORT	CV	AA	24 hours	lag 2	0.86	0.13	1.60
	204	2160	Salt Lake City, Pope III 1999	MORT	CV	AA	24 hours	lag 0-4	0.80	0.07	1.54
	192	4079	Madrid, Galan 1999	MORT	CV	AA	24 hours	lag 0	0.80	-0.56	2.18
	1205	7509	Erfurt, Wichmann 2000	MORT	CV	AA	24 hours	lag 0	0.79	-0.69	2.29
	1337	11663	Turin, Biggeri 2001	MORT	CV	AA	24 hours	lag 0-1	0.70	0.00	1.40
	1535	12430	Seoul, Kim 2003	MORT	CV	AA	24 hours	lag 2	0.67	0.02	1.31
	205	13702	Spokane, Dominici 2004	MORT	CV	AA	24 hours	lag 0-1	0.56	-0.19	1.32
	182	674	London, Bremner 1999	MORT	CV	AA	24 hours	lag 1	0.55	-0.07	1.17
	205	13707	New York, Dominici 2004	MORT	CV	AA	24 hours	lag 0-1	0.52	-0.10	1.14
	162	12892	Los Angeles County, Moolgavkar 2003	MORT	CV	AA	24 hours	lag 4	0.50	0.05	0.95
	69	7693	West Midlands, Anderson 2001	MORT	CV	AA	24 hours	lag 0-1	0.41	-0.78	1.61
	1337	11689	Milan, Biggeri 2001	MORT	CV	AA	24 hours	lag 0-1	0.40	-0.70	1.51
	162	12872	Cook County, Moolgavkar 2003	MORT	CV	AA	24 hours	lag 3	0.40	0.07	0.73
	205	13704	Detroit, Dominici 2004	MORT	CV	AA	24 hours	lag 0-1	0.36	-0.12	0.84
	205	13699	Colorado Springs, Dominici 2004	MORT	CV	AA	24 hours	lag 0-1	0.35	-0.09	0.79
	205	13701	Seattle, Dominici 2004	MORT	CV	AA	24 hours	lag 0-1	0.33	-0.10	0.76
	205	13698	Canton, Dominici 2004	MORT	CV	AA	24 hours	lag 0-1	0.31	-0.72	1.35
	153	8061	Hong Kong, Wong 2002	MORT	CV	AA	24 hours	lag 2	0.30	-0.20	0.80
	205	13705	New Haven, Dominici 2004	MORT	CV	AA	24 hours	lag 0-1	0.30	-0.22	0.82
	1640	14220	Bangkok, Vajanapoom	MORT	CV	AA	24 hours	lag 0-4	0.27	-0.30	0.84
	530	2915	Santiago, Sanhueza 1999	MORT	CV	AA	24 hours	lag 0	0.25	0.05	0.44
	205	13700	Minneapolis/St. Paul, Dominici 2004	MORT	CV	AA	24 hours	lag 0-1	0.23	-0.80	1.27
	205	13703	Chicago, Dominici 2004	MORT	CV	AA	24 hours	lag 0-1	0.23	-0.62	1.09
	205	13697	Birmingham, Dominici 2004	MORT	CV	AA	24 hours	lag 0-1	0.17	-0.57	0.92
	1275	6673	Netherlands, Hoek 2001	MORT	CV	AA	24 hours	lag 0-6	0.15	-0.20	0.50
	1070	3805	Inchon, Hong 1999	MORT	CV	AA	24 hours	lag 1	0.07	-0.07	0.21
	205	13706	Pittsburgh, Dominici 2004	MORT	CV	AA	24 hours	lag 0-1	0.07	-0.66	0.81
	148	5604	Melbourne, Simpson 2000	MORT	CV	AA	24 hours	lag 0	-0.10	-1.39	1.21
	161	13277	Helsinki, Penttinen 2004	MORT	CV	AA	24 hours	lag 0	-1.22	-3.00	0.59
	190	1046	Seville, Ocana-Riola 1999	MORT	CV	AA	24 hours	lag 5	-1.40	-3.31	0.55
14	1642	14238	Shanghai, Haixia	MORT	CV	AA	24 hours	lag 1	33.13	7.19	65.35
	1607	13379	Durham, Holloman 2004	MORT	CV	AA	24 hours	lag 2	13.20	0.00	28.14
	1120	3767	Phoenix, Mar 2000	MORT	CV	AA	24 hours	lag 1	7.09	2.25	12.16
	1607	13378	Wake, Holloman 2004	MORT	CV	AA	24 hours	lag 2	6.29	-3.05	16.53
	144	7087	Coachella Valley, Ostro 2000	MORT	CV	AA	24 hours	lag 4	3.34	-2.22	9.21
	206	1227	Sydney, Morgan 1998	MORT	CV	AA	24 hours	lag 0	1.60	-0.04	3.26
	1075	4360	Mexico City, Castillejos 2000	MORT	CV	AA	24 hours	lag 1-5	1.55	-1.25	4.43
	1347	7938	Montreal, Goldberg 2001	MORT	CV	AA	24 hours	lag 1	1.34	-0.46	3.18
	1181	4752	Wayne County, Lippmann 2000	MORT	CV	AA	24 hours	lag 1	1.26	-0.93	3.49
	162	12895	Los Angeles County, Moolgavkar 2003	MORT	CV	AA	24 hours	lag 2	0.90	0.16	1.64
	69	7694	West Midlands, Anderson 2001	MORT	CV	AA	24 hours	lag 0-1	0.51	-1.19	2.24
	148	5603	Melbourne, Simpson 2000	MORT	CV	AA	24 hours	lag 0	0.30	-2.08	2.74
	1607	13376	Guilford, Holloman 2004	MORT	CV	AA	24 hours	lag 1	-7.04	-16.31	3.25
15	1075	4361	Mexico City, Castillejos 2000	MORT	CV	AA	24 hours	lag 1-5	4.54	1.55	7.62
	1181	4757	Wayne County, Lippmann 2000	MORT	CV	AA	24 hours	lag 1	3.06	0.00	6.21
	1120	3768	Phoenix, Mar 2000	MORT	CV	AA	24 hours	lag 0	2.53	0.57	4.54
	144	7086	Coachella Valley, Ostro 2000	MORT	CV	AA	24 hours	lag 0	1.02	0.51	1.52
	69	7695	West Midlands, Anderson 2001	MORT	CV	AA	24 hours	lag 0-1	-0.71	-4.26	2.97
16	194	940	Castellon, Bellido Blasco 1999	MORT	CV	AA	24 hours	lag 2	3.48	0.50	6.55
	1465	8696	Bordeaux, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	1.76	-0.73	4.31
	14	12220	Valencia, Ballester 2002	MORT	CV	AA	24 hours	lag 1	1.50	0.10	2.92
	1465	8699	Le Havre, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	1.40	-1.61	4.50
	182	675	London, Bremner 1999	MORT	CV	AA	24 hours	lag 1	1.18	-0.12	2.49
	1079	3468	Barcelona, Garcia-Aymerich 2000	MORT	CV	AA	24 hours	lag 0-3	1.15	0.38	1.94
	1465	8708	Rouen, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	0.98	-1.06	3.07
	1465	8702	Marseille, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	0.92	-0.24	2.10
	69	7696	West Midlands, Anderson 2001	MORT	CV	AA	24 hours	lag 0-1	0.90	-0.90	2.72
	1275	6667	Netherlands, Hoek 2001	MORT	CV	AA	24 hours	lag 0-6	0.72	0.32	1.11
	1335	8863	Zaragoza, Arribas-Monzon 2001	MORT	CV	AA	24 hours	lag 1	0.66	-0.49	1.82
	75	13034	Dublin, Goodman 2004	MORT	CV	AA	24 hours	lag 1-3	0.40	0.20	0.60
	1465	8705	Paris, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	0.40	-0.24	1.04
	91	840	Krakow, Wojtyniak 1996	MORT	CV	AA	24 hours	lag 0	0.14	-0.19	0.47
	91	892	Wroclaw, Wojtyniak 1996	MORT	CV	AA	24 hours	lag 1	0.13	-0.36	0.63
	91	852	Lodz, Wojtyniak 1996	MORT	CV	AA	24 hours	lag 2	0.13	-0.20	0.45
	91	880	Poznan, Wojtyniak 1996	MORT	CV	AA	24 hours	lag 2	-0.20	-0.79	0.39
	196	926	Bilbao, Cambra 1999	MORT	CV	AA	24 hours	lag 4	-1.65	-3.64	0.38
	191	3243	Pamplona, Aguinaga 1999	MORT	CV	AA	24 hours	lag 5	-2.32	-9.94	5.93

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Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
17	501	3914	Inchon, Hong 1999	MORT	CV	AA	24 hours	lag 0-5	2.00	0.20	3.83
	83	7273	Basel, Wietlisbach 1996	MORT	CV	AA	24 hours	lag 3	1.77	0.91	2.63
	198	4355	Gijon, Canada 1999	MORT	CV	AA	24 hours	lag 5	1.37	0.10	2.66
	198	3405	Oviedo, Canada 1999	MORT	CV	AA	24 hours	lag 2	1.36	-0.35	3.10
	196	923	Bilbao, Cambra 1999	MORT	CV	AA	24 hours	lag 0	1.18	0.30	2.07
	316	1099	Philadelphia, Schwartz 1992	MORT	CV	AA	24 hours	lag 0-1	0.93	0.56	1.29
	1094	5481	Turin, Cadum 1999	MORT	CV	AA	24 hours	lag 0	0.92	0.55	1.29
	294	1135	Cincinnati, Schwartz 1994	MORT	CV	AA	24 hours	lag 0	0.77	0.30	1.25
	1347	7939	Montreal, Goldberg 2001	MORT	CV	AA	24 hours	lag 0	0.65	-0.32	1.62
	1496	11886	Dehli, Cropper 1997	MORT	CV	AA	24 hours	lag 2	0.42	-0.25	1.10
	219	1205	Rome, Michelozzi 1998	MORT	CV	AA	24 hours	lag 1	0.37	-0.07	0.81
	320	4127	Krakow, Krzyzanowski 1991	MORT	CV	AA	24 hours	lag 1-4	0.30	0.10	0.50
	83	7269	Zurich, Wietlisbach 1996	MORT	CV	AA	24 hours	lag 3	0.24	-0.33	0.81
	1116	3901	Shenyang, Xu 2000	MORT	CV	AA	24 hours	lag 0-3	0.21	0.06	0.37
	212	7206	Germany (rural), Peters 2000	MORT	CV	AA	24 hours	lag 0	0.15	-0.23	0.53
	195	969	Cartagena, Guillen Perez 1999	MORT	CV	AA	24 hours	lag 3	0.10	-0.02	0.22
	300	2802	Beijing, Gao 1993	MORT	CV	AA	24 hours	lag 0	0.00	-0.37	0.38
	212	7187	Czech Republic (coal basin), Peters 2000	MORT	CV	AA	24 hours	lag 0	-0.34	-0.73	0.07
	161	13281	Helsinki, Penttinen 2004	MORT	CV	AA	24 hours	lag 1	-0.46	-1.00	0.08
	266	867	Bratislava, Bacharova 1996	MORT	CV	AA	24 hours	lag 0	-10.47	-51.60	65.61
18	1587	12486	Vancouver, Villeneuve 2003	MORT	CV	E	24 hours	lag 0	3.28	0.00	6.67
	107	12671	Kobe, Omori 2003	MORT	CV	E	24 hours	lag 1	1.56	0.60	2.53
	107	12672	Hiroshima, Omori 2003	MORT	CV	E	24 hours	lag 1	1.30	-0.11	2.73
	1640	14228	Bangkok, Vajanapoom	MORT	CV	E	24 hours	lag 0-4	0.96	-0.23	2.16
	107	12667	Kawasaki, Omori 2003	MORT	CV	E	24 hours	lag 1	0.84	0.16	1.52
	107	12673	Kitqkyushu, Omori 2003	MORT	CV	E	24 hours	lag 1	0.76	-0.33	1.86
	107	12670	Osaka, Omori 2003	MORT	CV	E	24 hours	lag 1	0.67	0.09	1.25
	107	12665	Tokyo, Omori 2003	MORT	CV	E	24 hours	lag 1	0.62	0.37	0.87
	107	12669	Kyoto, Omori 2003	MORT	CV	E	24 hours	lag 1	0.60	-0.32	1.53
	1126	4414	Krakow, Szafraniec 1999	MORT	CV	E	24 hours	lag 0	0.58	-0.10	1.27
	1187	5437	Sao Paulo, Gouveia 2000	MORT	CV	E	24 hours	lag 0	0.58	0.02	1.15
	1640	14232	Bangkok, Vajanapoom	MORT	CV	E	24 hours	lag 0-4	0.53	-0.60	1.68
	107	12668	Nagoya, Omori 2003	MORT	CV	E	24 hours	lag 1	0.41	-0.22	1.04
	182	710	London, Bremner 1999	MORT	CV	E	24 hours	lag 0	0.39	-0.29	1.08
	107	12664	Chiba, Omori 2003	MORT	CV	E	24 hours	lag 1	0.29	-0.63	1.22
	1517	12035	Netherlands, Fischer 2003	MORT	CV	E	24 hours	lag 0-6	0.20	-0.24	0.64
	107	12666	Yokohama, Omori 2003	MORT	CV	E	24 hours	lag 1	0.16	-0.31	0.63
	107	12663	Sendai, Omori 2003	MORT	CV	E	24 hours	lag 1	-0.21	-1.99	1.60
	148	5606	Melbourne, Simpson 2000	MORT	CV	E	24 hours	lag 0	-0.30	-1.69	1.11
	107	12674	Fukuoka, Omori 2003	MORT	CV	E	24 hours	lag 1	-0.34	-1.60	0.94
	107	12662	Sapporo, Omori 2003	MORT	CV	E	24 hours	lag 1	-1.92	-3.66	-0.15
19	163	6975	Maricopa, Moolgavkar 2000	MORT	CAR	AA	24 hours	lag 1	1.75	0.51	3.00
	309	1138	Birmingham, Schwartz 1993	MORT	CAR	AA	24 hours	lag 1-3	1.58	0.39	2.79
	1073	3239	Buffalo, Gwynn 2000	MORT	CAR	AA	24 hours	lag 2	1.45	-0.16	3.09
	163	6960	Los Angeles, Moolgavkar 2000	MORT	CAR	AA	24 hours	lag 2	0.89	0.32	1.45
	258	835	Lyon, Zmirou 1996	MORT	CAR	AA	24 hours	lag 2	0.79	-0.20	1.79
	163	6944	Cook County, Moolgavkar 2000	MORT	CAR	AA	24 hours	lag 3	0.44	0.07	0.81
20	153	8062	Hong Kong, Wong 2002	MORT	IHD	AA	24 hours	lag 0-3	1.30	0.10	2.51
	1535	12431	Seoul, Kim 2003	MORT	IHD	AA	24 hours	lag 2	1.25	0.16	2.35
	1347	7942	Montreal, Goldberg 2001	MORT	IHD	AA	24 hours	lag 1	1.25	-0.35	2.87
	1275	6674	Netherlands, Hoek 2001	MORT	IHD	AA	24 hours	lag 0-6	0.06	-0.46	0.58
21	163	7047	Maricopa, Moolgavkar 2000	MORT	ST	AA	24 hours	lag 5	2.14	0.02	4.31
	349	14207	Shanghai, Haidong	MORT	ST	AA	24 hours	lag 0-1	0.80	0.00	1.61
	1535	12416	Seoul, Kim 2003	MORT	ST	AA	24 hours	lag 0	0.73	0.18	1.28
	153	8063	Hong Kong, Wong 2002	MORT	ST	AA	24 hours	lag 2	0.70	-0.20	1.61
	163	7026	Cook County, Moolgavkar 2000	MORT	ST	AA	24 hours	lag 2	0.65	-0.03	1.33
	1275	6677	Netherlands, Hoek 2001	MORT	ST	AA	24 hours	lag 0-6	0.38	-0.37	1.14
	163	7034	Los Angeles, Moolgavkar 2000	MORT	ST	AA	24 hours	lag 0	-0.82	-1.87	0.24

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22	1642	14239	Shanghai, Haixia	MORT	RESP	AA	24 hours	lag 1	14.20	4.51	24.79
	1337	11801	Palermo, Biggeri 2001	MORT	RESP	AA	24 hours	lag 0-1	8.70	5.00	12.53
	193	3787	Huelva, Daponte 1999	MORT	RESP	AA	24 hours	lag 3	7.65	-0.64	16.63
	1337	11694	Milan, Biggeri 2001	MORT	RESP	AA	24 hours	lag 0-1	4.10	1.50	6.77
	1128	3906	Christchurch, Hales 2000	MORT	RESP	AA	24 hours	lag 1	4.07	1.00	7.23
	161	13296	Helsinki, Penttinen 2004	MORT	RESP	AA	24 hours	lag 1	3.96	0.11	7.96
	1075	4524	Mexico City, Castillejos 2000	MORT	RESP	AA	24 hours	lag 1-5	3.85	1.16	6.61
	314	432	Utah County, Pope III 1992	MORT	RESP	AA	24 hours	lag 0	3.68	0.69	6.75
	204	2162	Ogden, Pope III 1999	MORT	RESP	AA	24 hours	lag 0-4	3.23	-0.46	7.06
	84	2243	Utah Valley, Pope III 1996	MORT	RESP	AA	24 hours	lag 0-4	3.12	0.37	5.94
	1337	11781	Rome, Biggeri 2001	MORT	RESP	AA	24 hours	lag 0-1	3.10	0.10	6.19
	1205	7510	Erfurt, Wichmann 2000	MORT	RESP	AA	24 hours	lag 0	2.92	0.61	5.28
	1073	4068	Buffalo, Gwynn 2000	MORT	RESP	AA	24 hours	lag 0	2.54	-0.91	6.12
	474	1958	Birmingham, Wordley 1997	MORT	RESP	AA	24 hours	lag 2	2.46	-0.57	5.49
	1332	7536	Strasbourg, Zeghnoun 2001	MORT	RESP	AA	24 hours	lag 3	2.32	-1.87	6.69
	1332	7534	Le Havre, Zeghnoun 2001	MORT	RESP	AA	24 hours	lag 2	2.02	-1.82	6.02
	1535	12411	Seoul, Kim 2003	MORT	RESP	AA	24 hours	lag 0	1.87	0.98	2.76
	1332	7533	Rouen, Zeghnoun 2001	MORT	RESP	AA	24 hours	lag 0-1	1.78	-0.58	4.20
	1640	14221	Bangkok, Vajanapoom	MORT	RESP	AA	24 hours	lag 0-4	1.67	0.20	3.17
	1181	4787	Wayne County, Lippmann 2000	MORT	RESP	AA	24 hours	lag 0	1.52	-2.13	5.31
	1337	11668	Turin, Biggeri 2001	MORT	RESP	AA	24 hours	lag 0-1	1.50	-0.20	3.23
	96	506	Cook County, Ito 1996	MORT	RESP	AA	24 hours	lag 0-1	1.32	0.39	2.25
	182	421	London, Bremner 1999	MORT	RESP	AA	24 hours	lag 3	1.29	0.29	2.29
	153	8058	Hong Kong, Wong 2002	MORT	RESP	AA	24 hours	lag 1	0.80	0.10	1.50
	192	4086	Madrid, Galan 1999	MORT	RESP	AA	24 hours	lag 1	0.80	-0.56	2.18
	204	2163	Salt Lake City, Pope III 1999	MORT	RESP	AA	24 hours	lag 0-4	0.79	-0.85	2.47
	258	831	Lyon, Zmirou 1996	MORT	RESP	AA	24 hours	lag 0	0.79	0.00	1.58
	530	4420	Santiago, Sanhueza 1999	MORT	RESP	AA	24 hours		0.59	0.17	1.02
	204	2164	Provo/Orem, Pope III 1999	MORT	RESP	AA	24 hours	lag 0-4	0.54	-1.91	3.06
	1070	4204	Inchon, Hong 1999	MORT	RESP	AA	24 hours	lag 1	0.15	-0.07	0.37
	1332	7535	Paris, Zeghnoun 2001	MORT	RESP	AA	24 hours	lag 1	0.07	-1.40	1.56
	144	7091	Coachella Valley, Ostro 2000	MORT	RESP	AA	24 hours	lag 0	-0.41	-2.48	1.71
	69	7702	West Midlands, Anderson 2001	MORT	RESP	AA	24 hours	lag 0-1	-0.58	-2.50	1.39
	148	5600	Melbourne, Simpson 2000	MORT	RESP	AA	24 hours	lag 0	-0.80	-3.83	2.33
	1337	11757	Florence, Biggeri 2001	MORT	RESP	AA	24 hours	lag 0-1	-1.20	-6.00	3.85
	190	1055	Seville, Ocana-Riola 1999	MORT	RESP	AA	24 hours	lag 2	-2.53	-6.37	1.46
	1337	11732	Bologna, Biggeri 2001	MORT	RESP	AA	24 hours	lag 0-1	-4.30	-8.00	-0.45
23	1642	14240	Shanghai, Haixia	MORT	RESP	AA	24 hours	lag 1	45.53	23.84	71.01
	1075	2944	Mexico City, Castillejos 2000	MORT	RESP	AA	24 hours	lag 1-5	3.60	-1.06	8.48
	206	1741	Sydney, Morgan 1998	MORT	RESP	AA	24 hours	lag 1	2.34	-1.27	6.08
	1181	4777	Wayne County, Lippmann 2000	MORT	RESP	AA	24 hours	lag 0	0.91	-4.26	6.35
	271	486	Los Angeles, Ostro 1995	MORT	RESP	AA	24 hours	lag 0	0.82	-0.28	1.94
	69	7703	West Midlands, Anderson 2001	MORT	RESP	AA	24 hours	lag 0-1	-0.06	-3.09	3.07
	148	5599	Melbourne, Simpson 2000	MORT	RESP	AA	24 hours	lag 0	-0.70	-6.31	5.25
	144	7093	Coachella Valley, Ostro 2000	MORT	RESP	AA	24 hours	lag 4	-5.54	-19.79	11.24
24	1075	4358	Mexico City, Castillejos 2000	MORT	RESP	AA	24 hours	lag 1-5	8.03	3.05	13.25
	1181	4782	Wayne County, Lippmann 2000	MORT	RESP	AA	24 hours	lag 2	2.90	-3.72	9.98
	144	7092	Coachella Valley, Ostro 2000	MORT	RESP	AA	24 hours	lag 0	-0.51	-2.58	1.60
	69	7704	West Midlands, Anderson 2001	MORT	RESP	AA	24 hours	lag 0-1	-6.76	-12.40	-0.74
25	191	3244	Pamplona, Aguinaga 1999	MORT	RESP	AA	24 hours	lag 1	13.36	-3.87	33.67
	194	943	Castellon, Bellido Blasco 1999	MORT	RESP	AA	24 hours	lag 4	3.64	-2.57	10.25
	196	919	Bilbao, Cambra 1999	MORT	RESP	AA	24 hours	lag 1	2.98	-1.11	7.24
	1335	8861	Zaragoza, Arribas-Monzon 2001	MORT	RESP	AA	24 hours	lag 1	2.89	0.62	5.21
	1465	8703	Marseille, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	2.64	0.18	5.16
	1465	8700	Le Havre, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	2.56	-3.31	8.80
	1465	8697	Bordeaux, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	2.00	-3.63	7.96
	182	422	London, Bremner 1999	MORT	RESP	AA	24 hours	lag 3	1.91	0.25	3.61
	1079	3294	Barcelona, Garcia-Aymerich 2000	MORT	RESP	AA	24 hours	lag 0-3	1.00	-0.51	2.53
	75	13035	Dublin, Goodman 2004	MORT	RESP	AA	24 hours	lag 1-3	0.90	0.50	1.30
	1465	8709	Rouen, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	0.67	-3.24	4.74
	69	7705	West Midlands, Anderson 2001	MORT	RESP	AA	24 hours	lag 0-1	0.06	-2.90	3.11
	91	842	Krakow, Wojtyniak 1996	MORT	RESP	AA	24 hours	lag 1	-0.21	-1.34	0.94
	1465	8706	Paris, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	-0.22	-1.50	1.08
	91	854	Lodz, Wojtyniak 1996	MORT	RESP	AA	24 hours	lag 1	-0.84	-1.89	0.21
	91	882	Poznan, Wojtyniak 1996	MORT	RESP	AA	24 hours	lag 0	-0.98	-2.76	0.83
	91	894	Wroclaw, Wojtyniak 1996	MORT	RESP	AA	24 hours	lag 1	-1.88	-3.39	-0.34
	14	12221	Valencia, Ballester 2002	MORT	RESP	AA	24 hours	lag 3	-2.10	-4.90	0.78
26	198	3411	Oviedo, Canada 1999	MORT	RESP	AA	24 hours	lag 2	1.81	-1.21	4.92
	196	916	Bilbao, Cambra 1999	MORT	RESP	AA	24 hours	lag 3	1.70	-0.01	3.44
	1094	5486	Turin, Cadum 1999	MORT	RESP	AA	24 hours	lag 2	1.63	0.57	2.69
	83	7268	Zurich, Wietlisbach 1996	MORT	RESP	AA	24 hours	lag 3	1.37	0.44	2.31
	86	1309	Milan, Vigotti 1996	MORT	RESP	AA	24 hours	lag 0	1.14	0.20	2.09
	83	7272	Basel, Wietlisbach 1996	MORT	RESP	AA	24 hours	lag 3	1.06	-0.09	2.21
	300	4039	Beijing, Gao 1993	MORT	RESP	AA	24 hours	lag 0	0.64	-0.06	1.35
	212	7191	Czech Republic (coal basin), Peters 2000	MORT	RESP	AA	24 hours	lag 2	0.61	-0.73	1.98
	161	13299	Helsinki, Penttinen 2004	MORT	RESP	AA	24 hours	lag 1	0.61	-0.66	1.90
	320	3753	Krakow, Krzyzanowski 1991	MORT	RESP	AA	24 hours	lag 1-4	0.58	-0.10	1.26
	1496	11888	Dehli, Cropper 1997	MORT	RESP	AA	24 hours	lag 2	0.31	-1.30	1.94
	1299	7329	Rome, Michelozzi 2000	MORT	RESP	AA	24 hours	lag 0	0.30	-0.90	1.51
	195	973	Cartagena, Guillen Perez 1999	MORT	RESP	AA	24 hours	lag 0	0.20	-0.10	0.50
	198	1873	Gijon, Canada 1999	MORT	RESP	AA	24 hours	lag 2	-2.16	-4.32	0.05

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27	107	12659	Hiroshima, Omori 2003	MORT	RESP	E	24 hours	lag 1	6.01	3.62	8.46
	104	13083	Sao Paulo, Martins 2004	MORT	RESP	E	24 hours	lag 0-2	5.40	2.30	8.59
	107	12660	Kitqkyushu, Omori 2003	MORT	RESP	E	24 hours	lag 1	4.76	2.87	6.68
	182	692	London, Bremner 1999	MORT	RESP	E	24 hours	lag 3	3.58	1.16	6.06
	107	12650	Sendai, Omori 2003	MORT	RESP	E	24 hours	lag 1	3.31	0.09	6.63
	1640	14233	Bangkok, Vajanapoom	MORT	RESP	E	24 hours	lag 0-4	3.29	-0.03	6.72
	107	12661	Fukuoka, Omori 2003	MORT	RESP	E	24 hours	lag 1	2.33	0.43	4.27
	1347	7929	Montreal, Goldberg 2001	MORT	RESP	E	24 hours	lag 0	1.47	-1.41	4.43
	1495	11871	Seoul, Ha 2003	MORT	RESP	E	24 hours	lag 0	1.43	1.26	1.61
	107	12655	Nagoya, Omori 2003	MORT	RESP	E	24 hours	lag 1	1.41	0.19	2.64
	107	12657	Osaka, Omori 2003	MORT	RESP	E	24 hours	lag 1	1.29	0.35	2.24
	107	12653	Yokohama, Omori 2003	MORT	RESP	E	24 hours	lag 1	0.76	-0.02	1.55
	107	12658	Kobe, Omori 2003	MORT	RESP	E	24 hours	lag 1	0.61	-1.04	2.29
	107	12652	Tokyo, Omori 2003	MORT	RESP	E	24 hours	lag 1	0.60	0.18	1.02
	107	12656	Kyoto, Omori 2003	MORT	RESP	E	24 hours	lag 1	-0.14	-1.64	1.38
	107	12651	Chiba, Omori 2003	MORT	RESP	E	24 hours	lag 1	-0.21	-1.77	1.37
	107	12654	Kawasaki, Omori 2003	MORT	RESP	E	24 hours	lag 1	-0.83	-1.93	0.28
	1587	12549	Vancouver, Villeneuve 2003	MORT	RESP	E	24 hours	lag 2	-0.85	-5.87	4.45
	148	5602	Melbourne, Simpson 2000	MORT	RESP	E	24 hours	lag 0	-1.09	-4.41	2.34
	107	12649	Sapporo, Omori 2003	MORT	RESP	E	24 hours	lag 1	-2.86	-5.55	-0.09
28	153	8059	Hong Kong, Wong 2002	MORT	COPDp	AA	24 hours	lag 0-3	1.70	0.20	3.22
	309	1137	Birmingham, Schwartz 1993	MORT	COPDp	AA	24 hours	lag 1-3	1.50	-2.58	5.74
	175	5515	Netherlands, Hoek 2000	MORT	COPDp	AA	24 hours	lag 0-6	1.15	0.17	2.14
	163	6989	Cook County, Moolgavkar 2000	MORT	COPDp	AA	24 hours	lag 2	1.07	0.05	2.10
	1535	12413	Seoul, Kim 2003	MORT	COPDp	AA	24 hours	lag 0	0.96	-0.28	2.21
	76	11971	Shanghai, Kan 2003	MORT	COPDp	AA	24 hours	lag 0	0.50	-0.10	1.10
	163	7004	Los Angeles, Moolgavkar 2000	MORT	COPDp	AA	24 hours	lag 3	-1.96	-3.44	-0.45
	163	7017	Maricopa, Moolgavkar 2000	MORT	COPDp	AA	24 hours	lag 3	-2.09	-5.09	1.00
29	316	1097	Philadelphia, Schwartz 1992	MORT	COPDp	AA	24 hours	lag 0-1	1.80	0.04	3.59
	300	2800	Beijing, Gao 1993	MORT	COPDp	AA	24 hours	lag 0	1.68	0.42	2.96
	181	2975	Milan, Rossi 1999	MORT	COPDp	AA	24 hours	lag 4	1.14	0.58	1.70
	1116	3899	Shenyang, Xu 2000	MORT	COPDp	AA	24 hours	lag 0-3	0.26	-0.06	0.57
30	175	5523	Netherlands, Hoek 2000	MORT	LRI	AA	24 hours	lag 0-6	1.95	0.71	3.21
	1535	12428	Seoul, Kim 2003	MORT	LRI	AA	24 hours	lag 2	1.74	0.18	3.31
	153	8060	Hong Kong, Wong 2002	MORT	LRI	AA	24 hours	lag 2	0.70	-0.10	1.51
	474	1962	Birmingham, Wordley 1997	MORT	LRI	AA	24 hours	lag 0	-0.03	-0.06	0.01
31	300	4041	Beijing, Gao 1993	MORT	LRI	AA	24 hours	lag 0	2.28	0.79	3.78
	294	1134	Cincinnati, Schwartz 1994	MORT	LRI	AA	24 hours	lag 0	1.50	-0.51	3.54
	181	2974	Milan, Rossi 1999	MORT	LRI	AA	24 hours	lag 0	1.05	0.49	1.61
	316	1098	Philadelphia, Schwartz 1992	MORT	LRI	AA	24 hours	lag 0-1	1.03	-0.35	2.42
32	258	871	Lyon, Zmirou 1996	MORT	O	AA	24 hours	lag 0	8.59	-23.04	53.22
	1642	14241	Shanghai, Haixia	MORT	O	AA	24 hours	lag 1	4.93	1.26	8.73
	1640	14222	Bangkok, Vajanapoom	MORT	O	AA	24 hours	lag 0-4	0.79	0.43	1.16
	309	1139	Birmingham, Schwartz 1993	MORT	O	AA	24 hours	lag 1-3	0.58	-0.62	1.80
	314	434	Utah County, Pope III 1992	MORT	O	AA	24 hours	lag 0	0.50	-1.06	2.09
	96	447	Cook County, Ito 1996	MORT	O	AA	24 hours	lag 0-1	0.10	-0.51	0.71
	1514	13057	Pittsburgh, Dominici 2003	MORT	O	AA	24 hours	lag 0-3	-0.14	-1.14	0.87
	1514	13059	Chicago, Dominici 2003	MORT	O	AA	24 hours	lag 0-3	-0.20	-0.81	0.41
	1514	13060	Seattle, Dominici 2003	MORT	O	AA	24 hours	lag 0-3	-0.45	-3.82	3.04
	1514	13058	Minneapolis, Dominici 2003	MORT	O	AA	24 hours	lag 0-3	-1.03	-2.77	0.74
33	91	884	Poznan, Wojtyniak 1996	MORT	O	AA	24 hours	lag 1	2.11	-0.25	4.53
	91	844	Krakow, Wojtyniak 1996	MORT	O	AA	24 hours	lag 1	1.14	0.16	2.13
	75	13036	Dublin, Goodman 2004	MORT	O	AA	24 hours	lag 1-3	0.20	0.00	0.40
	91	896	Wroclaw, Wojtyniak 1996	MORT	O	AA	24 hours	lag 1	-0.18	-1.79	1.47
	91	856	Lodz, Wojtyniak 1996	MORT	O	AA	24 hours	lag 1	-0.42	-1.45	0.62
34	230	13838	Spokane, Slaughter	HAD	CV	AA	24 hours	lag 1	2.00	-1.00	5.09
	1053	1352	London, Atkinson 1999	HAD	CV	AA	24 hours	lag 0	0.63	0.18	1.08
	364	2998	Hong Kong, Wong 1999	HAD	CV	AA	24 hours	lag 0-2	0.60	0.20	1.00
	69	7711	West Midlands, Anderson 2001	HAD	CV	AA	24 hours	lag 0-1	-0.25	-1.03	0.55
35	216	3835	Edinburgh, Prescott 1998	HAD	CV	E	24 hours	lag 1-3	4.80	0.90	8.85
	205	13715	Chicago, Dominici 2004	HAD	CV	E	24 hours	lag 0-1	0.87	0.32	1.42
	1593	12716	London, Anderson 2003	HAD	CV	E	24 hours	lag 0-3	0.84	0.08	1.61
	205	13711	Colorado Springs, Dominici 2004	HAD	CV	E	24 hours	lag 0-1	0.84	0.49	1.19
	205	13716	Detroit, Dominici 2004	HAD	CV	E	24 hours	lag 0-1	0.82	0.50	1.14
	364	2997	Hong Kong, Wong 1999	HAD	CV	E	24 hours	lag 0-2	0.80	0.20	1.40
	205	13717	New Haven, Dominici 2004	HAD	CV	E	24 hours	lag 0-1	0.73	0.33	1.13
	205	13712	Minneapolis/St. Paul, Dominici 2004	HAD	CV	E	24 hours	lag 0-1	0.70	0.01	1.39
	205	13710	Canton, Dominici 2004	HAD	CV	E	24 hours	lag 0-1	0.70	0.00	1.40
	205	13713	Seattle, Dominici 2004	HAD	CV	E	24 hours	lag 0-1	0.69	0.33	1.05
	205	13714	Spokane, Dominici 2004	HAD	CV	E	24 hours	lag 0-1	0.63	0.08	1.18
	205	13719	New York, Dominici 2004	HAD	CV	E	24 hours	lag 0-1	0.61	-0.33	1.56
	205	13709	Birmingham, Dominici 2004	HAD	CV	E	24 hours	lag 0-1	0.55	0.08	1.02
	205	13718	Pittsburgh, Dominici 2004	HAD	CV	E	24 hours	lag 0-1	0.54	-0.07	1.15

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Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
36	1337	11762	Florence, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	2.30	0.90	3.72
	1337	11737	Bologna, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	1.30	0.10	2.51
	1337	11805	Palermo, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	1.10	0.30	1.91
	1464	11639	London, Le Tertre 2002	HAD	CAR	AA	24 hours	lag 0-1	1.04	0.50	1.59
	1464	11643	Stockholm, Le Tertre 2002	HAD	CAR	AA	24 hours	lag 0-1	0.79	-1.07	2.67
	1105	4249	Los Angeles, Linn 2000	HAD	CAR	AA	24 hours	lag 0	0.64	0.41	0.88
	1464	11640	Milan, Le Tertre 2002	HAD	CAR	AA	24 hours	lag 0-1	0.63	0.26	1.01
	1073	3453	Buffalo, Gwynn 2000	HAD	CAR	AA	24 hours	lag 1	0.62	-0.36	1.61
	1464	11637	Barcelona, Le Tertre 2002	HAD	CAR	AA	24 hours	lag 0-1	0.50	-0.40	1.41
	1337	11719	Ravenna, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	0.50	-0.60	1.61
	1429	8232	Hong Kong, Wong 2002	HAD	CAR	AA	24 hours	lag 0	0.50	0.20	0.80
	1464	11642	Rome, Le Tertre 2002	HAD	CAR	AA	24 hours	lag 0-1	0.21	-0.46	0.89
	1464	11641	Paris, Le Tertre 2002	HAD	CAR	AA	24 hours	lag 0-1	0.20	-0.34	0.75
	1337	11674	Turin, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	0.20	-0.30	0.70
	69	7720	West Midlands, Anderson 2001	HAD	CAR	AA	24 hours	lag 0-1	0.12	-0.74	0.99
	1464	11638	Birmingham, Le Tertre 2002	HAD	CAR	AA	24 hours	lag 0-1	-0.14	-0.90	0.62
37	1464	11820	London, Le Tertre 2002	HAD	CAR	AA	24 hours	lag 0-1	2.16	1.19	3.14
	14	12225	Valencia, Ballester 2002	HAD	CAR	AA	24 hours	lag 2	1.40	-0.40	3.23
	1464	11819	Birmingham, Le Tertre 2002	HAD	CAR	AA	24 hours	lag 0-1	1.15	-0.39	2.71
	69	7723	West Midlands, Anderson 2001	HAD	CAR	AA	24 hours	lag 0-1	1.01	-0.36	2.41
	1464	11818	Barcelona, Le Tertre 2002	HAD	CAR	AA	24 hours	lag 0-1	0.67	-0.59	1.94
	1464	11821	Paris, Le Tertre 2002	HAD	CAR	AA	24 hours	lag 0-1	0.57	0.14	0.99
38	1182	4962	Boulder, Samet 2000	HAD	CAR	E	24 hours	lag 0	2.57	0.07	5.14
	1464	11651	Stockholm, Le Tertre 2002	HAD	CAR	E	24 hours	lag 0-1	2.22	0.51	3.95
	1182	4969	New Haven, Samet 2000	HAD	CAR	E	24 hours	lag 0	2.06	1.26	2.86
	1182	4974	Youngstown, Samet 2000	HAD	CAR	E	24 hours	lag 0	1.78	0.55	3.02
	375	1544	St. Paul, Schwartz 1999	HAD	CAR	E	24 hours	lag 0	1.66	0.57	2.75
	1182	4979	Colorado Springs, Samet 2000	HAD	CAR	E	24 hours	lag 1	1.34	-0.28	2.98
	1182	4972	Seattle, Samet 2000	HAD	CAR	E	24 hours	lag 0	1.31	0.81	1.81
	1182	4966	Detroit, Samet 2000	HAD	CAR	E	24 hours	lag 0	1.28	0.94	1.62
	1201	7076	Cook County, Schwartz 2001	HAD	CAR	E	24 hours	lag 0-1	1.27	0.93	1.61
	472	1964	Tucson, Schwartz 1997	HAD	CAR	E	24 hours	lag 0	1.19	0.23	2.16
	1182	4964	Chicago, Samet 2000	HAD	CAR	E	24 hours	lag 0	1.12	0.82	1.41
	1182	4967	Minneapolis/St. Paul, Samet 2000	HAD	CAR	E	24 hours	lag 0	1.09	0.41	1.76
	375	1547	Tacoma, Schwartz 1999	HAD	CAR	E	24 hours	lag 0	1.04	0.19	1.91
	1182	4970	Pittsburgh, Samet 2000	HAD	CAR	E	24 hours	lag 0	0.99	0.70	1.29
	1464	11647	London, Le Tertre 2002	HAD	CAR	E	24 hours	lag 0-1	0.96	0.32	1.61
	1464	11645	Barcelona, Le Tertre 2002	HAD	CAR	E	24 hours	lag 0-1	0.68	-0.39	1.77
	1464	11648	Milan, Le Tertre 2002	HAD	CAR	E	24 hours	lag 0-1	0.65	0.21	1.09
	1196	6847	Los Angeles, Moolgavkar 2000	HAD	CAR	E	24 hours	lag 0	0.64	0.23	1.04
	1182	4961	Birmingham, Samet 2000	HAD	CAR	E	24 hours	lag 0	0.63	0.08	1.19
	1182	4971	Provo/Orem, Samet 2000	HAD	CAR	E	24 hours	lag 0	0.60	-0.48	1.69
	1182	4973	Spokane, Samet 2000	HAD	CAR	E	24 hours	lag 0	0.55	-0.08	1.18
	1464	11649	Paris, Le Tertre 2002	HAD	CAR	E	24 hours	lag 0-1	0.53	-0.16	1.22
	1464	11650	Rome, Le Tertre 2002	HAD	CAR	E	24 hours	lag 0-1	0.49	-0.33	1.31
	1182	4963	Canton, Samet 2000	HAD	CAR	E	24 hours	lag 0	0.41	-0.98	1.82
	36	13499	Windsor, Fung 2005	HAD	CAR	E	1 hour	lag 0-2	0.32	-0.62	1.27
	1464	11646	Birmingham, Le Tertre 2002	HAD	CAR	E	24 hours	lag 0-1	0.31	-0.61	1.24
	1182	4968	Nashville, Samet 2000	HAD	CAR	E	24 hours	lag 0	-0.23	-1.38	0.93
	1196	6863	Maricopa, Moolgavkar 2000	HAD	CAR	E	24 hours	lag 2	-0.72	-1.55	0.11
39	1464	11816	London, Le Tertre 2002	HAD	CAR	E	24 hours	lag 0-1	2.30	1.16	3.45
	1464	11815	Birmingham, Le Tertre 2002	HAD	CAR	E	24 hours	lag 0-1	1.70	-0.17	3.60
	1464	11814	Barcelona, Le Tertre 2002	HAD	CAR	E	24 hours	lag 0-1	1.31	-0.17	2.82
	1464	11817	Paris, Le Tertre 2002	HAD	CAR	E	24 hours	lag 0-1	0.42	-0.11	0.95
40	368	6139	Toronto, Burnett 1999	HAD	IHD	AA	24 hours	lag 0-1	1.62	1.04	2.20
	1299	7334	Rome, Michelozzi 2000	HAD	IHD	AA	24 hours	lag 0	1.45	0.56	2.35
	1105	4252	Los Angeles, Linn 2000	HAD	IHD	AA	24 hours	lag 0	0.60	0.01	1.20
	1429	8236	Hong Kong, Wong 2002	HAD	IHD	AA	24 hours	lag 2	0.50	-0.10	1.10
	1253	6465	Strasbourg, Eilstein 2001	HAD	IHD	AA	24 hours	lag 0	0.47	-1.10	2.06
	1629	13953	Tehran, Hosseinpoor	HAD	IHD	AA	24 hours	lag 1	0.45	0.00	0.91
	1429	8252	London, Wong 2002	HAD	IHD	AA	24 hours	lag 3	0.30	-0.50	1.11
	1622	13210	Seoul, Lee 2003	HAD	IHD	AA	24 hours	lag 0-5	-0.25	-1.01	0.51
	1547	11995	California southern, Mann 2002	HAD	IHD	AA	24 hours	lag 0	-0.25	-1.23	0.74
41	1464	11837	London, Le Tertre 2002	HAD	IHD	NE	24 hours	lag 0-1	0.79	-1.35	2.98
	1464	11839	Paris, Le Tertre 2002	HAD	IHD	NE	24 hours	lag 0-1	0.25	-0.60	1.11
	1464	11835	Barcelona, Le Tertre 2002	HAD	IHD	NE	24 hours	lag 0-1	0.21	-3.00	3.53
	1464	11838	Netherlands, Le Tertre 2002	HAD	IHD	NE	24 hours	lag 0-1	0.00	-0.55	0.57
	1464	11836	Birmingham, Le Tertre 2002	HAD	IHD	NE	24 hours	lag 0-1	-1.21	-4.40	2.09
42	1464	11659	Stockholm, Le Tertre 2002	HAD	IHD	E	24 hours	lag 0-1	2.74	0.19	5.36
	1181	4862	Wayne County, Lippmann 2000	HAD	IHD	E	24 hours	lag 2	1.72	0.10	3.37
	1464	11657	Paris, Le Tertre 2002	HAD	IHD	E	24 hours	lag 0-1	1.70	0.57	2.84
	1464	11658	Rome, Le Tertre 2002	HAD	IHD	E	24 hours	lag 0-1	1.58	-0.20	3.38
	1622	13215	Seoul, Lee 2003	HAD	IHD	E	24 hours	lag 0-5	1.21	0.25	2.19
	1464	11654	London, Le Tertre 2002	HAD	IHD	E	24 hours	lag 0-1	1.04	0.08	2.01
	69	7729	West Midlands, Anderson 2001	HAD	IHD	E	24 hours	lag 0-1	0.86	-0.82	2.56
	1464	11655	Milan, Le Tertre 2002	HAD	IHD	E	24 hours	lag 0-1	0.73	-0.05	1.52
	286	2516	Detroit, Schwartz 1995	HAD	IHD	E	24 hours	lag 0	0.56	0.16	0.96
	1464	11656	Netherlands, Le Tertre 2002	HAD	IHD	E	24 hours	lag 0-1	0.36	0.02	0.71
	1464	11653	Birmingham, Le Tertre 2002	HAD	IHD	E	24 hours	lag 0-1	0.33	-1.15	1.83
	1464	11652	Barcelona, Le Tertre 2002	HAD	IHD	E	24 hours	lag 0-1	-0.87	-2.55	0.84

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Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
43	1464	11832	London, Le Tertre 2002	HAD	IHD	E	24 hours	lag 0-1	2.69	0.97	4.44
	69	7732	West Midlands, Anderson 2001	HAD	IHD	E	24 hours	lag 0-1	1.19	-1.38	3.84
	1464	11834	Paris, Le Tertre 2002	HAD	IHD	E	24 hours	lag 0-1	1.17	0.32	2.03
	1464	11833	Netherlands, Le Tertre 2002	HAD	IHD	E	24 hours	lag 0-1	1.00	0.50	1.51
	1464	11830	Barcelona, Le Tertre 2002	HAD	IHD	E	24 hours	lag 0-1	0.62	-1.71	3.00
	1464	11831	Birmingham, Le Tertre 2002	HAD	IHD	E	24 hours	lag 0-1	-0.73	-3.61	2.23
44	1196	6930	Maricopa, Moolgavkar 2000	HAD	ST	E	24 hours	lag 2	1.62	0.40	2.86
	1181	4937	Wayne County, Lippmann 2000	HAD	ST	E	24 hours	lag 1	0.94	-1.12	3.05
	1196	6902	Cook County, Moolgavkar 2000	HAD	ST	E	24 hours	lag 0	0.64	0.29	0.99
	1196	6915	Los Angeles, Moolgavkar 2000	HAD	ST	E	24 hours	lag 5	0.40	-0.20	1.00
	69	7738	West Midlands, Anderson 2001	HAD	ST	E	24 hours	lag 0-1	-1.37	-3.32	0.62
45	1464	11823	Birmingham, Le Tertre 2002	HAD	ST	E	24 hours	lag 0-1	2.11	-1.04	5.35
	1464	11827	Paris, Le Tertre 2002	HAD	ST	E	24 hours	lag 0-1	0.56	-0.37	1.50
	1464	11829	Netherlands, Le Tertre 2002	HAD	ST	E	24 hours	lag 0-1	-0.24	-0.85	0.37
	1464	11826	London, Le Tertre 2002	HAD	ST	E	24 hours	lag 0-1	-0.74	-2.58	1.14
	69	7741	West Midlands, Anderson 2001	HAD	ST	E	24 hours	lag 0-1	-1.63	-4.62	1.47
	1464	11822	Barcelona, Le Tertre 2002	HAD	ST	E	24 hours	lag 0-1	-1.73	-4.19	0.79
46	1337	11767	Florence, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	4.90	2.60	7.25
	1337	11714	Verona, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	3.60	2.20	5.02
	1337	11809	Palermo, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	2.80	1.90	3.71
	1337	11742	Bologna, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	2.50	1.10	3.92
	474	1949	Birmingham, Wordley 1997	HAD	RESP	AA	24 hours	lag 0	2.41	1.11	3.72
	1073	3461	Buffalo, Gwynn 2000	HAD	RESP	AA	24 hours	lag 0	2.10	0.75	3.48
	1337	11679	Turin, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	2.10	1.50	2.70
	1556	12619	Drammen, Oftedal 2003	HAD	RESP	AA	24 hours	lag 0	1.90	-0.91	4.79
	1337	11704	Milan, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	1.90	1.10	2.71
	364	2989	Hong Kong, Wong 1999	HAD	RESP	AA	24 hours	lag 0-3	1.60	1.00	2.20
	1337	11789	Rome, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	1.20	0.60	1.80
	1053	1766	London, Atkinson 1999	HAD	RESP	AA	24 hours	lag 1	0.96	0.34	1.58
	69	7747	West Midlands, Anderson 2001	HAD	RESP	AA	24 hours	lag 0-1	0.61	-0.29	1.52
	253	1321	Paris, Dab 1996	HAD	RESP	AA	24 hours	lag 0	0.44	0.04	0.84
	1337	11723	Ravenna, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	-0.70	-2.40	1.03
	230	13824	Spokane, Slaughter	HAD	RESP	AA	24 hours	lag 1	-1.00	-5.00	3.17
47	1185	5394	Suwon, Cho 2000	HAD	RESP	AA	24 hours	lag 0	0.39	0.00	0.79
	1185	5389	Daejeon, Cho 2000	HAD	RESP	AA	24 hours	lag 0	0.30	-0.10	0.69
	1185	5400	Ulsan, Cho 2000	HAD	RESP	AA	24 hours	lag 0	0.30	-0.41	1.00
	1265	5665	Rome, Fusco 2001	HAD	RESP	AA	24 hours	lag 1	-0.48	-1.01	0.05
48	242	5368	Sao Paulo, Braga 2001	HAD	RESP	C	24 hours	distribu	1.95	1.60	2.31
	364	4323	Hong Kong, Wong 1999	HAD	RESP	C	24 hours	lag 0-3	1.90	1.10	2.71
	69	7756	West Midlands, Anderson 2001	HAD	RESP	C	24 hours	lag 0-1	1.58	0.25	2.93
	1053	1772	London, Atkinson 1999	HAD	RESP	C	24 hours	lag 1	1.55	0.67	2.45
	1299	7356	Rome, Michelozzi 2000	HAD	RESP	C	24 hours	lag 0	-0.22	-1.39	0.97
49	364	2987	Hong Kong, Wong 1999	HAD	RESP	YA	24 hours	lag 0-3	1.70	0.90	2.51
	1053	1778	London, Atkinson 1999	HAD	RESP	YA	24 hours	lag 2	1.36	0.41	2.32
	1299	7357	Rome, Michelozzi 2000	HAD	RESP	YA	24 hours	lag 0	0.47	-0.56	1.52
	69	7765	West Midlands, Anderson 2001	HAD	RESP	YA	24 hours	lag 0-1	0.04	-1.66	1.77
50	480	2656	Rotterdam, Schouten 1996	HAD	RESP	YA	24 hours	lag 0	3.23	0.87	5.64
	69	7768	West Midlands, Anderson 2001	HAD	RESP	YA	24 hours	lag 0-1	0.72	-1.87	3.37
	1053	1779	London, Atkinson 1999	HAD	RESP	YA	24 hours	lag 3	0.65	-0.83	2.15
	480	2277	Amsterdam, Schouten 1996	HAD	RESP	YA	24 hours	lag 2	-1.39	-5.32	2.69
51	73	13957	Vancouver, Chen	HAD	RESP	E	24 hours	lag 0	5.09	1.27	9.06
	216	3843	Edinburgh, Prescott 1998	HAD	RESP	E	24 hours	lag 1-3	2.10	-3.80	8.36
	168	8113	Barcelona, Atkinson 2001	HAD	RESP	E	24 hours	lag 0-1	2.00	0.80	3.21
	486	2507	Tacoma, Schwartz 1995	HAD	RESP	E	24 hours	lag 0	1.92	0.59	3.27
	168	8161	Stockholm, Atkinson 2001	HAD	RESP	E	24 hours	lag 0-1	1.70	-1.20	4.69
	635	2035	Minneapolis/St. Paul, Moolgavkar 1997	HAD	RESP	E	24 hours	lag 1	1.69	0.90	2.48
	426	1533	Spokane, Schwartz 1996	HAD	RESP	E	24 hours	lag 0	1.64	0.71	2.59
	168	8141	Netherlands, Atkinson 2001	HAD	RESP	E	24 hours	lag 0-1	1.20	0.70	1.70
	486	1848	New Haven, Schwartz 1995	HAD	RESP	E	24 hours	lag 0	1.17	0.00	2.36
	168	8121	Birmingham, Atkinson 2001	HAD	RESP	E	24 hours	lag 0-1	0.90	-0.30	2.11
	1429	8228	Hong Kong, Wong 2002	HAD	RESP	E	24 hours	lag 0	0.70	0.30	1.10
	168	8129	London, Atkinson 2001	HAD	RESP	E	24 hours	lag 0-1	0.40	-0.30	1.10
	168	8149	Paris, Atkinson 2001	HAD	RESP	E	24 hours	lag 0-1	-0.10	-1.30	1.11
	1299	7358	Rome, Michelozzi 2000	HAD	RESP	E	24 hours	lag 0	-0.13	-0.95	0.70
	69	7774	West Midlands, Anderson 2001	HAD	RESP	E	24 hours	lag 0-1	-0.45	-1.79	0.90
52	168	8125	Birmingham, Atkinson 2001	HAD	RESP	E	24 hours	lag 0-1	2.90	0.60	5.25
	480	2620	Amsterdam, Schouten 1996	HAD	RESP	E	24 hours	lag 2	0.78	-2.75	4.44
	168	8153	Paris, Atkinson 2001	HAD	RESP	E	24 hours	lag 0-1	0.50	-0.40	1.41
	168	8145	Netherlands, Atkinson 2001	HAD	RESP	E	24 hours	lag 0-1	0.00	-0.70	0.70
	69	7777	West Midlands, Anderson 2001	HAD	RESP	E	24 hours	lag 0-1	-0.18	-2.11	1.79
	480	2642	Rotterdam, Schouten 1996	HAD	RESP	E	24 hours	lag 2	-0.31	-2.37	1.78
	168	8117	Barcelona, Atkinson 2001	HAD	RESP	E	24 hours	lag 0-1	-0.70	-2.30	0.93
	168	8133	London, Atkinson 2001	HAD	RESP	E	24 hours	lag 0-1	-1.10	-2.40	0.22
	216	3840	Edinburgh, Prescott 1998	HAD	RESP	E	24 hours	lag 1-3	-1.30	-3.40	0.85

Time Series: PM

Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
53	123	12183	Madrid, Galan 2003	HAD	ASTHMA	AA	24 hours	lag 3	3.90	1.00	6.88
	368	6134	Toronto, Burnett 1999	HAD	ASTHMA	AA	24 hours	lag 0-2	1.72	0.72	2.72
	364	3003	Hong Kong, Wong 1999	HAD	ASTHMA	AA	24 hours	lag 0-3	1.50	0.20	2.82
	1053	1790	London, Atkinson 1999	HAD	ASTHMA	AA	24 hours	lag 3	0.68	-0.37	1.74
	474	1950	Birmingham, Wordley 1997	HAD	ASTHMA	AA	24 hours	lag 2	0.61	0.15	1.08
	253	1337	Paris, Dab 1996	HAD	ASTHMA	AA	24 hours	lag 2	-0.25	-1.03	0.53
	1299	7363	Rome, Michelozzi 2000	HAD	ASTHMA	AA	24 hours	lag 0	-1.04	-2.86	0.81
54	1605	13391	Melbourne inner, Erbas 2005	HAD	ASTHMA	C	1 hour	lag 0	5.60	-2.11	13.92
	1605	13388	Melbourne inner, Erbas 2005	HAD	ASTHMA	C	1 hour	lag 0	3.62	1.11	6.20
	69	7783	West Midlands, Anderson 2001	HAD	ASTHMA	C	24 hours	lag 0-1	3.32	0.69	6.02
	1328	7401	Hong Kong, Wong 2001	HAD	ASTHMA	C	24 hours	lag 5	3.00	0.53	5.53
	1006	6712	Sao Paulo, Lin 1999	HAD	ASTHMA	C	24 hours	lag 0-4	2.90	1.30	4.53
	168	8118	Birmingham, Atkinson 2001	HAD	ASTHMA	C	24 hours	lag 0-1	2.80	0.80	4.84
	168	8110	Barcelona, Atkinson 2001	HAD	ASTHMA	C	24 hours	lag 0-1	2.70	-4.90	10.91
	70	8084	Belfast, Thompson 2001	HAD	ASTHMA	C	24 hours	lag 0	2.54	0.00	5.14
	1605	13393	Melbourne south/south eastern, Erbas 2005	HAD	ASTHMA	C	1 hour	lag 0	2.49	0.28	4.74
	1208	6510	Ciudad Juarez, Hernandez-Cadena 2000	HAD	ASTHMA	C	24 hours	lag 5	2.45	0.48	4.46
	103	8632	Toronto, Lin 2002	HAD	ASTHMA	C	24 hours	lag 5	2.02	-3.41	7.75
	168	8158	Stockholm, Atkinson 2001	HAD	ASTHMA	C	24 hours	lag 0-1	1.70	-6.00	10.03
	1466	8576	Seoul, Lee 2002	HAD	ASTHMA	C	24 hours	lag 1	1.69	0.98	2.41
	168	8146	Paris, Atkinson 2001	HAD	ASTHMA	C	24 hours	lag 0-1	0.70	-1.50	2.95
	168	8126	London, Atkinson 2001	HAD	ASTHMA	C	24 hours	lag 0-1	0.60	-0.80	2.02
	168	8138	Netherlands, Atkinson 2001	HAD	ASTHMA	C	24 hours	lag 0-1	-0.90	-2.10	0.31
	1299	7364	Rome, Michelozzi 2000	HAD	ASTHMA	C	24 hours	lag 0	-1.00	-3.67	1.74
55	168	8114	Barcelona, Atkinson 2001	HAD	ASTHMA	C	24 hours	lag 0-1	10.40	0.40	21.40
	69	7786	West Midlands, Anderson 2001	HAD	ASTHMA	C	24 hours	lag 0-1	4.37	0.42	8.47
	168	8122	Birmingham, Atkinson 2001	HAD	ASTHMA	C	24 hours	lag 0-1	2.00	-1.90	6.06
	168	8142	Netherlands, Atkinson 2001	HAD	ASTHMA	C	24 hours	lag 0-1	1.40	-0.40	3.23
	168	8130	London, Atkinson 2001	HAD	ASTHMA	C	24 hours	lag 0-1	1.10	-1.30	3.56
	168	8150	Paris, Atkinson 2001	HAD	ASTHMA	C	24 hours	lag 0-1	0.90	-0.80	2.63
56	168	8159	Stockholm, Atkinson 2001	HAD	ASTHMA	YA	24 hours	lag 0-1	5.40	-4.00	15.72
	168	8119	Birmingham, Atkinson 2001	HAD	ASTHMA	YA	24 hours	lag 0-1	2.50	0.10	4.96
	168	8127	London, Atkinson 2001	HAD	ASTHMA	YA	24 hours	lag 0-1	1.40	-0.10	2.92
	168	8147	Paris, Atkinson 2001	HAD	ASTHMA	YA	24 hours	lag 0-1	1.20	-0.70	3.14
	168	8111	Barcelona, Atkinson 2001	HAD	ASTHMA	YA	24 hours	lag 0-1	0.40	-3.50	4.46
	168	8139	Netherlands, Atkinson 2001	HAD	ASTHMA	YA	24 hours	lag 0-1	0.40	-0.90	1.72
	1299	7365	Rome, Michelozzi 2000	HAD	ASTHMA	YA	24 hours	lag 0	0.00	-2.59	2.66
	69	7792	West Midlands, Anderson 2001	HAD	ASTHMA	YA	24 hours	lag 0-1	-0.95	-4.23	2.44
	1429	8224	Hong Kong, Wong 2002	HAD	ASTHMA	YA	24 hours	lag 0	-1.10	-2.10	-0.09
57	168	8123	Birmingham, Atkinson 2001	HAD	ASTHMA	YA	24 hours	lag 0-1	2.80	-1.90	7.73
	168	8115	Barcelona, Atkinson 2001	HAD	ASTHMA	YA	24 hours	lag 0-1	2.10	-3.00	7.47
	168	8131	London, Atkinson 2001	HAD	ASTHMA	YA	24 hours	lag 0-1	1.80	-0.90	4.57
	168	8151	Paris, Atkinson 2001	HAD	ASTHMA	YA	24 hours	lag 0-1	0.80	-0.70	2.32
	168	8143	Netherlands, Atkinson 2001	HAD	ASTHMA	YA	24 hours	lag 0-1	-0.40	-2.20	1.43
	69	7795	West Midlands, Anderson 2001	HAD	ASTHMA	YA	24 hours	lag 0-1	-1.69	-6.55	3.43
58	426	1538	Spokane, Schwartz 1996	HAD	COPDp	E	24 hours	lag 0	3.21	1.53	4.91
	168	8160	Stockholm, Atkinson 2001	HAD	COPDp	E	24 hours	lag 0-1	2.70	-1.50	7.08
	168	8112	Barcelona, Atkinson 2001	HAD	COPDp	E	24 hours	lag 0-1	2.60	1.00	4.23
	444	3015	Birmingham, Schwartz 1994	HAD	COPDp	E	24 hours	lag 0	2.42	0.77	4.09
	1181	4837	Wayne County, Lippmann 2000	HAD	COPDp	E	24 hours	lag 3	1.85	-1.08	4.87
	1201	7077	Cook County, Schwartz 2001	HAD	COPDp	E	24 hours	lag 0-1	1.45	0.27	2.64
	1638	14084	Vancouver, Yang	HAD	COPDp	E	24 hours	lag 0	1.29	1.24	1.34
	136	6752	Los Angeles, Moolgavkar 2000	HAD	COPDp	E	24 hours	lag 2	1.21	0.22	2.20
	168	8140	Netherlands, Atkinson 2001	HAD	COPDp	E	24 hours	lag 0-1	1.10	0.50	1.70
	635	2043	Minneapolis/St. Paul, Moolgavkar 1997	HAD	COPDp	E	24 hours	lag 1	0.88	-0.65	2.44
	168	8120	Birmingham, Atkinson 2001	HAD	COPDp	E	24 hours	lag 0-1	0.50	-1.40	2.44
	168	8128	London, Atkinson 2001	HAD	COPDp	E	24 hours	lag 0-1	0.30	-0.80	1.41
	168	8148	Paris, Atkinson 2001	HAD	COPDp	E	24 hours	lag 0-1	-0.60	-2.50	1.34
	136	6770	Maricopa, Moolgavkar 2000	HAD	COPDp	E	24 hours	lag 2	-2.64	-4.94	-0.29
59	168	8124	Birmingham, Atkinson 2001	HAD	COPDp	E	24 hours	lag 0-1	2.20	-1.70	6.25
	168	8144	Netherlands, Atkinson 2001	HAD	COPDp	E	24 hours	lag 0-1	0.70	-0.20	1.61
	168	8132	London, Atkinson 2001	HAD	COPDp	E	24 hours	lag 0-1	0.40	-1.60	2.44
	168	8152	Paris, Atkinson 2001	HAD	COPDp	E	24 hours	lag 0-1	0.20	-1.30	1.72
	168	8116	Barcelona, Atkinson 2001	HAD	COPDp	E	24 hours	lag 0-1	-2.10	-4.30	0.15

Time Series: PM

Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl: Estimate	Lcl	Ucl
60	1506	12347	Vancouver, Chen 2004	HAD	COPDm	E	24 hours	lag 1	11.40	3.81	19.53
	1182	5060	Boulder, Samet 2000	HAD	COPDm	E	24 hours	lag 1	10.09	3.25	17.37
	1182	5053	New Haven, Samet 2000	HAD	COPDm	E	24 hours	lag 0	4.47	1.12	7.92
	1182	5061	Canton, Samet 2000	HAD	COPDm	E	24 hours	lag 1	3.17	-0.31	6.77
	1182	5051	Minneapolis/St. Paul, Samet 2000	HAD	COPDm	E	24 hours	lag 0	2.49	0.38	4.64
	1182	5049	Colorado Springs, Samet 2000	HAD	COPDm	E	24 hours	lag 0	2.21	-2.23	6.86
	1182	5057	Spokane, Samet 2000	HAD	COPDm	E	24 hours	lag 0	2.16	0.28	4.08
	1182	5064	Detroit, Samet 2000	HAD	COPDm	E	24 hours	lag 1	2.15	1.16	3.16
	151	7067	Cook County, Zanobetti 2000	HAD	COPDm	E	24 hours	lag 0	1.89	0.80	2.99
	1182	5068	Pittsburgh, Samet 2000	HAD	COPDm	E	24 hours	lag 1	1.84	1.04	2.64
	1182	5052	Nashville, Samet 2000	HAD	COPDm	E	24 hours	lag 0	1.71	-1.87	5.43
	1182	5072	Youngstown, Samet 2000	HAD	COPDm	E	24 hours	lag 1	1.51	-1.76	4.89
	1182	5062	Chicago, Samet 2000	HAD	COPDm	E	24 hours	lag 1	1.42	0.53	2.32
	1182	5056	Seattle, Samet 2000	HAD	COPDm	E	24 hours	lag 0	1.20	-0.34	2.76
	69	7801	West Midlands, Anderson 2001	HAD	COPDm	E	24 hours	lag 0-1	-0.74	-2.89	1.45
	1182	5059	Birmingham, Samet 2000	HAD	COPDm	E	24 hours	lag 1	-1.33	-3.09	0.46
	1182	5069	Provo/Orem, Samet 2000	HAD	COPDm	E	24 hours	lag 1	-2.39	-6.57	1.97
61	368	6136	Toronto, Burnett 1999	HAD	LRI	AA	24 hours	lag 0-2	2.69	1.80	3.59
	364	4278	Hong Kong, Wong 1999	HAD	LRI	AA	24 hours	lag 0-3	2.50	1.40	3.61
	1299	7359	Rome, Michelozzi 2000	HAD	LRI	AA	24 hours	lag 0	0.17	-0.61	0.96
62	1182	5004	Boulder, Samet 2000	HAD	LRI	E	24 hours	lag 0	5.59	0.82	10.59
	1181	4812	Wayne County, Lippmann 2000	HAD	LRI	E	24 hours	lag 1	3.96	1.59	6.38
	1182	5007	Colorado Springs, Samet 2000	HAD	LRI	E	24 hours	lag 0	3.55	0.61	6.58
	1182	5011	New Haven, Samet 2000	HAD	LRI	E	24 hours	lag 0	2.62	0.97	4.31
	1182	5023	Minneapolis/St. Paul, Samet 2000	HAD	LRI	E	24 hours	lag 1	2.34	1.04	3.65
	1182	5016	Youngstown, Samet 2000	HAD	LRI	E	24 hours	lag 0	2.05	-0.63	4.81
	1182	5022	Detroit, Samet 2000	HAD	LRI	E	24 hours	lag 1	2.02	1.34	2.70
	1201	7078	Cook County, Schwartz 2001	HAD	LRI	E	24 hours	lag 0-1	2.00	1.33	2.67
	1182	5012	Pittsburgh, Samet 2000	HAD	LRI	E	24 hours	lag 0	1.58	0.95	2.22
	1182	5015	Spokane, Samet 2000	HAD	LRI	E	24 hours	lag 0	1.56	0.36	2.78
	1182	5020	Chicago, Samet 2000	HAD	LRI	E	24 hours	lag 1	1.54	0.99	2.10
	1053	1346	London, Atkinson 1999	HAD	LRI	E	24 hours	lag 3	1.49	0.19	2.81
	1182	5028	Seattle, Samet 2000	HAD	LRI	E	24 hours	lag 1	1.37	0.42	2.33
	1182	5005	Canton, Samet 2000	HAD	LRI	E	24 hours	lag 0	1.31	-1.55	4.25
	1182	5010	Nashville, Samet 2000	HAD	LRI	E	24 hours	lag 0	0.93	-1.87	3.82
	1182	5013	Provo/Orem, Samet 2000	HAD	LRI	E	24 hours	lag 0	0.84	-1.07	2.80
	1182	5017	Birmingham, Samet 2000	HAD	LRI	E	24 hours	lag 1	0.48	-0.56	1.53
	1299	7362	Rome, Michelozzi 2000	HAD	LRI	E	24 hours	lag 0	0.43	-0.95	1.83
63	230	13805	Spokane, Slaughter	EV	RESP	AA	24 hours	lag 3	2.00	-1.00	5.09
	1203	7153	Saint John, Stieb 2000	EV	RESP	AA	24 hours	lag 3-7	1.71	0.36	3.08
	403	13397	Atlanta metropolitan area, Peel 2005	EV	RESP	AA	24 hours	lag 0-3	1.30	0.40	2.21
	542	2889	London, Atkinson 1999	EV	RESP	AA	24 hours	lag 1	0.96	0.27	1.65
64	616	2806	Anchorage, Choudhury 1997	EV	ASTHMA	AA	24 hours	lag 0	10.57	5.81	15.55
	1203	7643	Saint John, Stieb 2000	EV	ASTHMA	AA	24 hours	lag 4	4.50	0.55	8.60
	230	13812	Spokane, Slaughter	EV	ASTHMA	AA	24 hours	lag 1	3.00	-2.00	8.26
	542	3703	London, Atkinson 1999	EV	ASTHMA	AA	24 hours	lag 1	1.71	0.57	2.86
	403	13414	Atlanta metropolitan area, Peel 2005	EV	ASTHMA	AA	24 hours	lag 0-3	0.90	-0.40	2.22

Time series: PM

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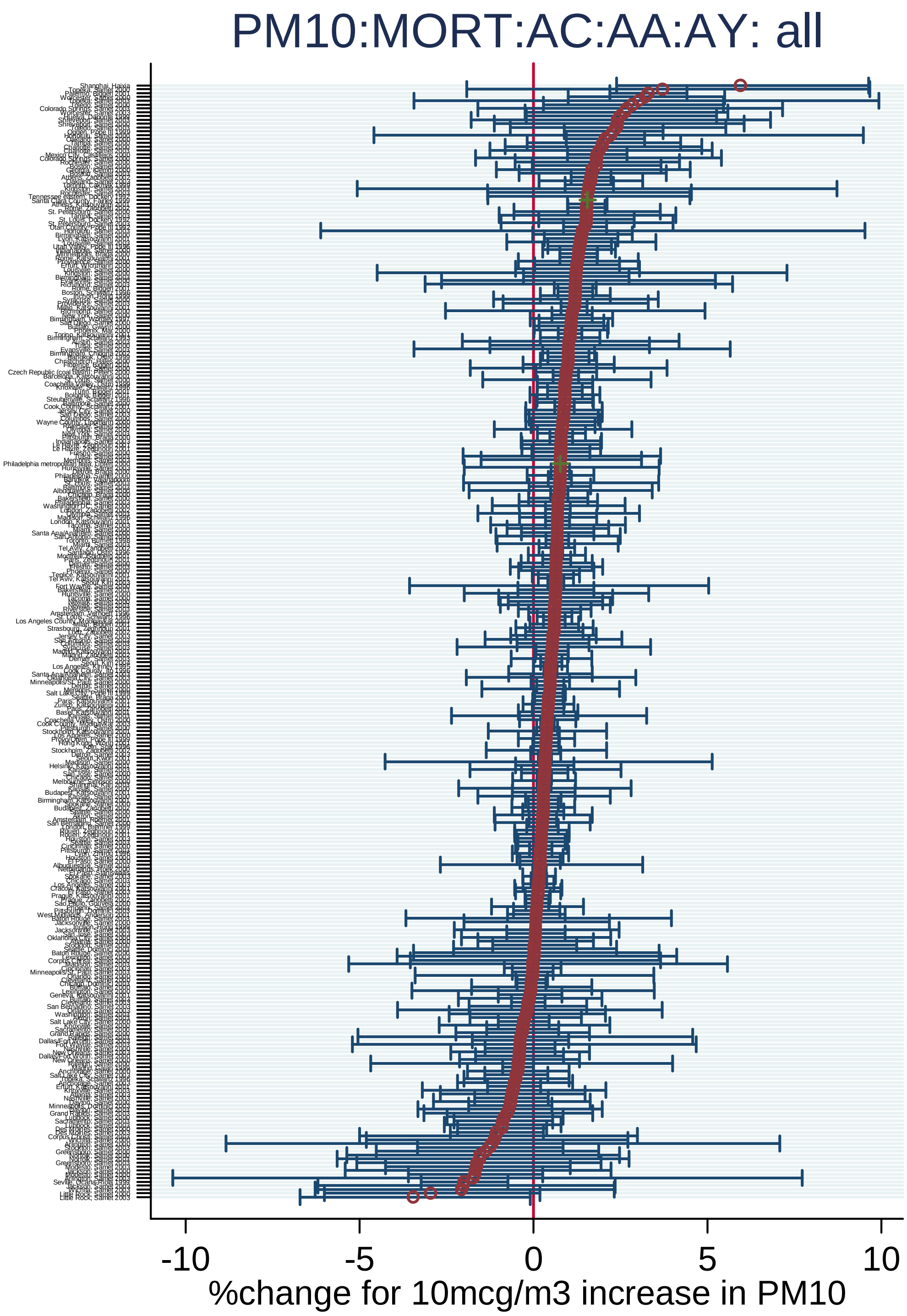

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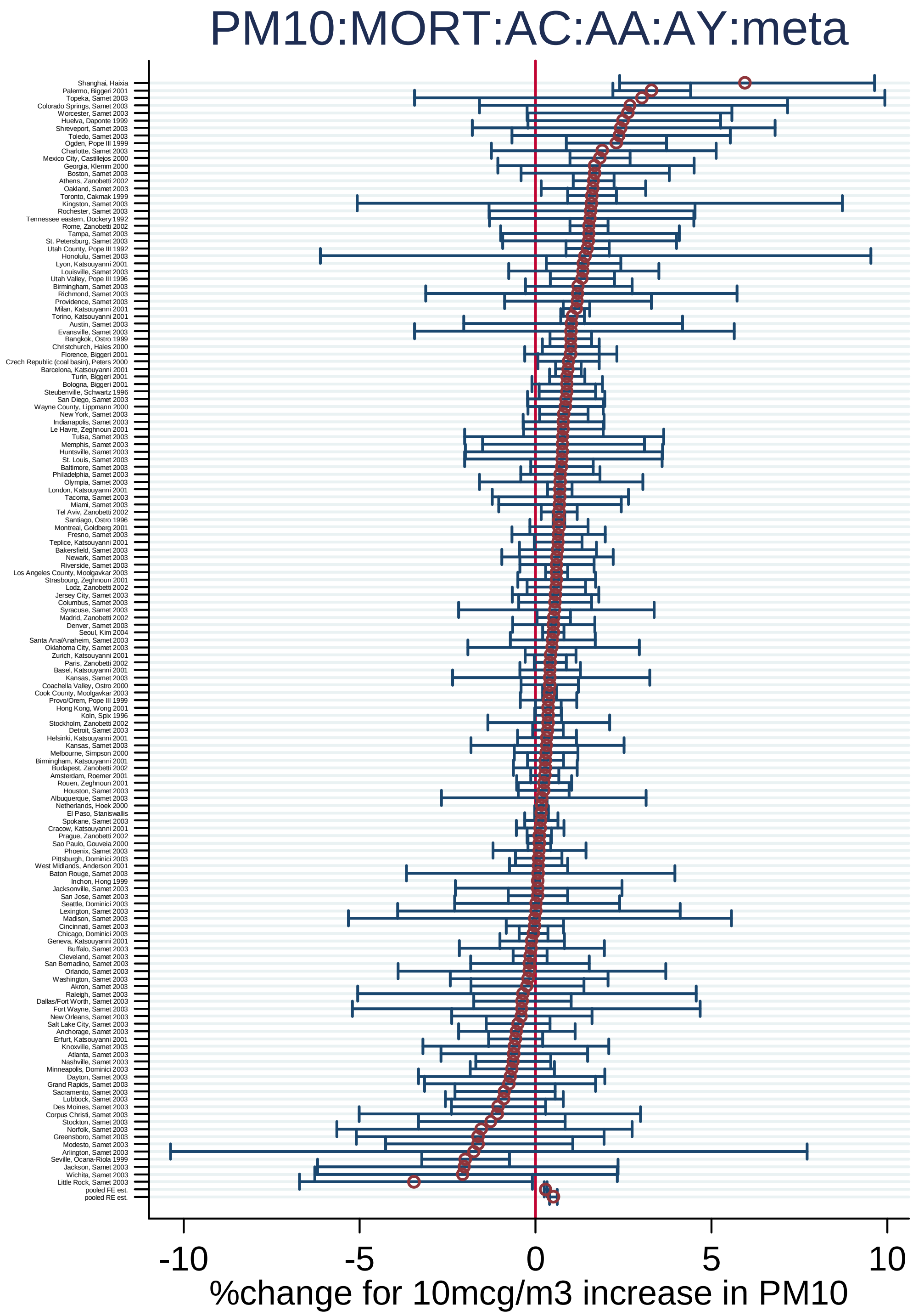

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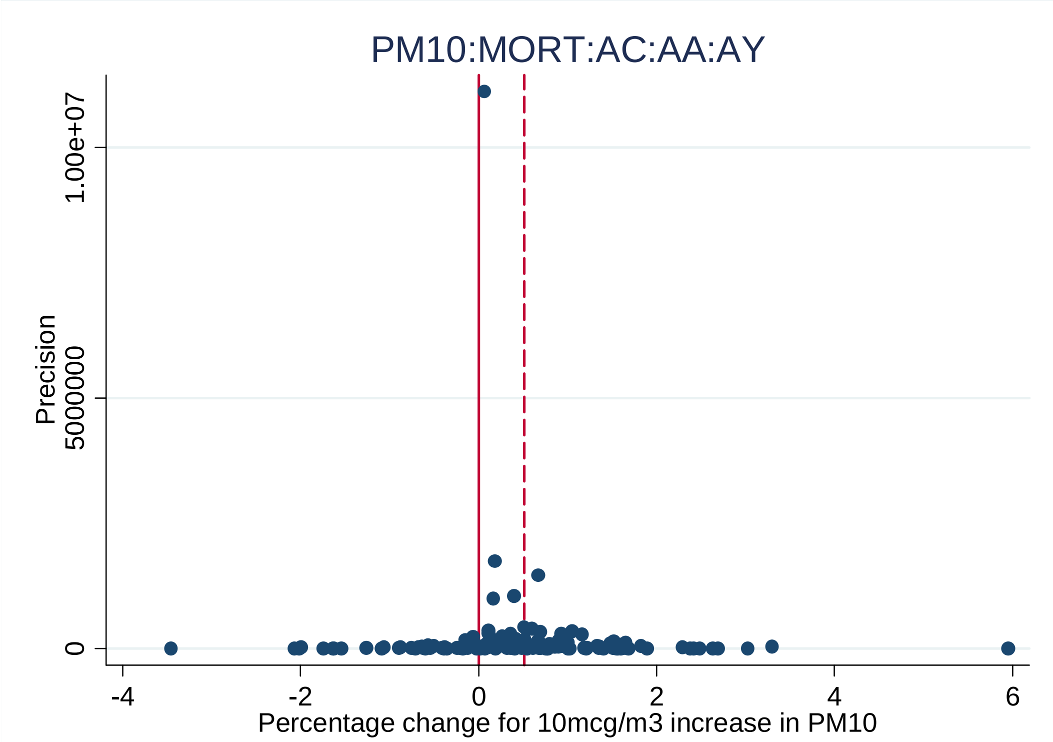

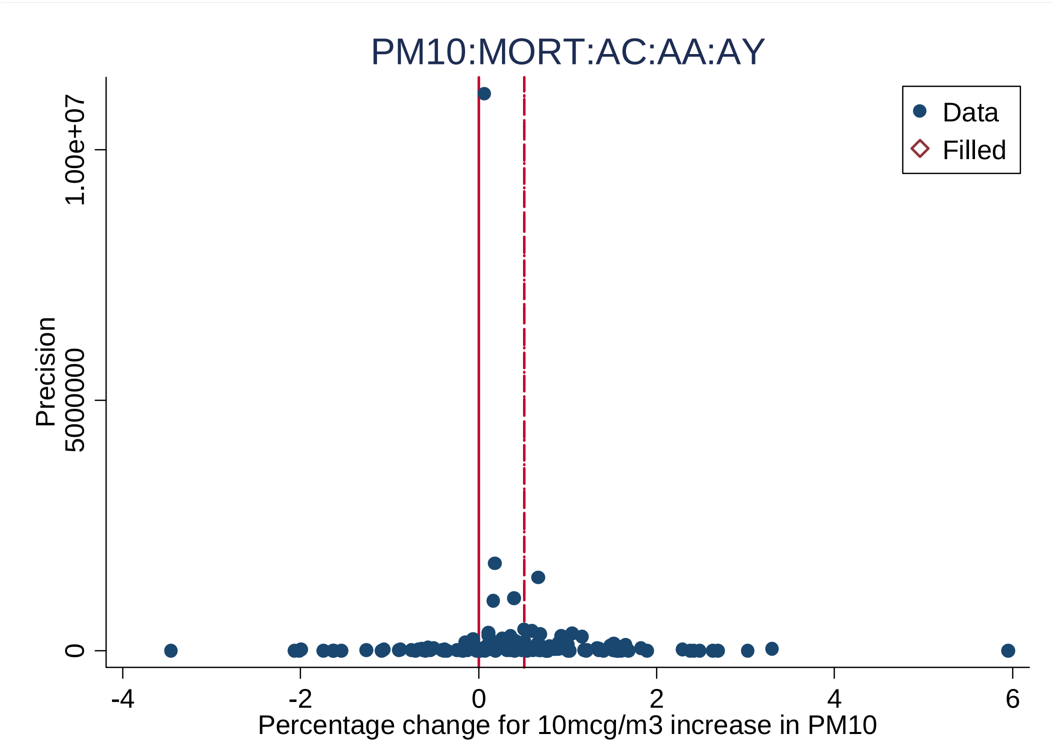

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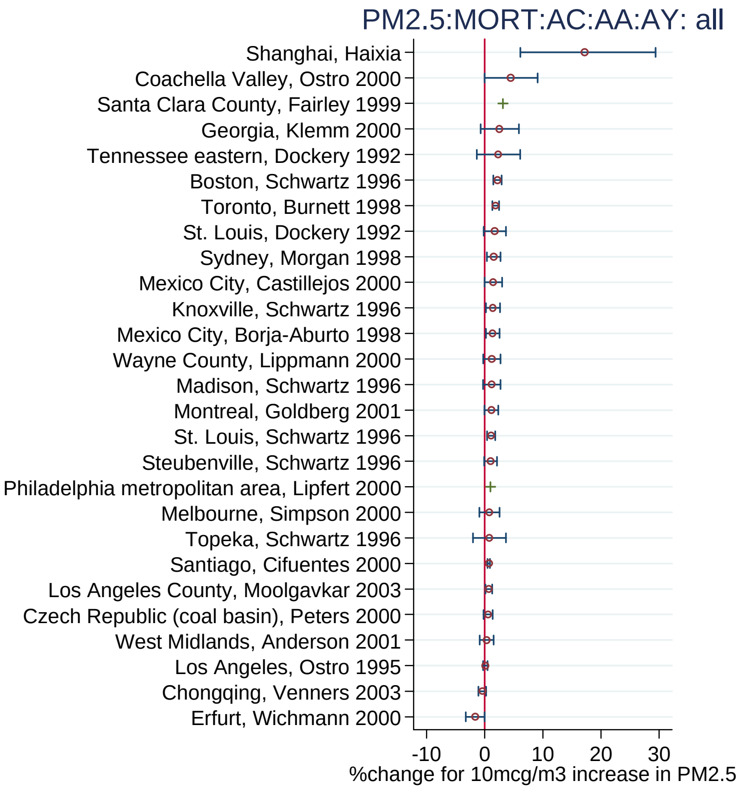

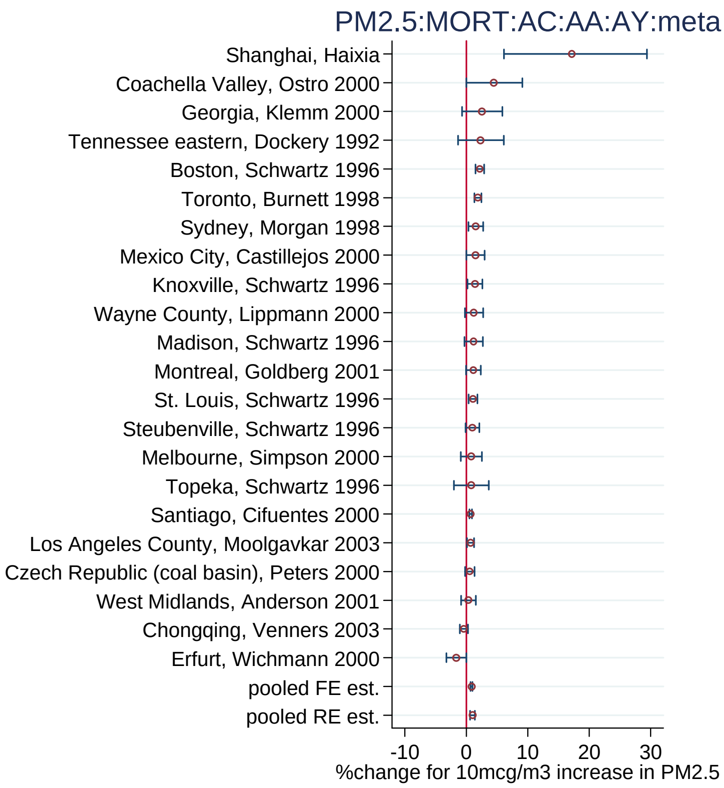

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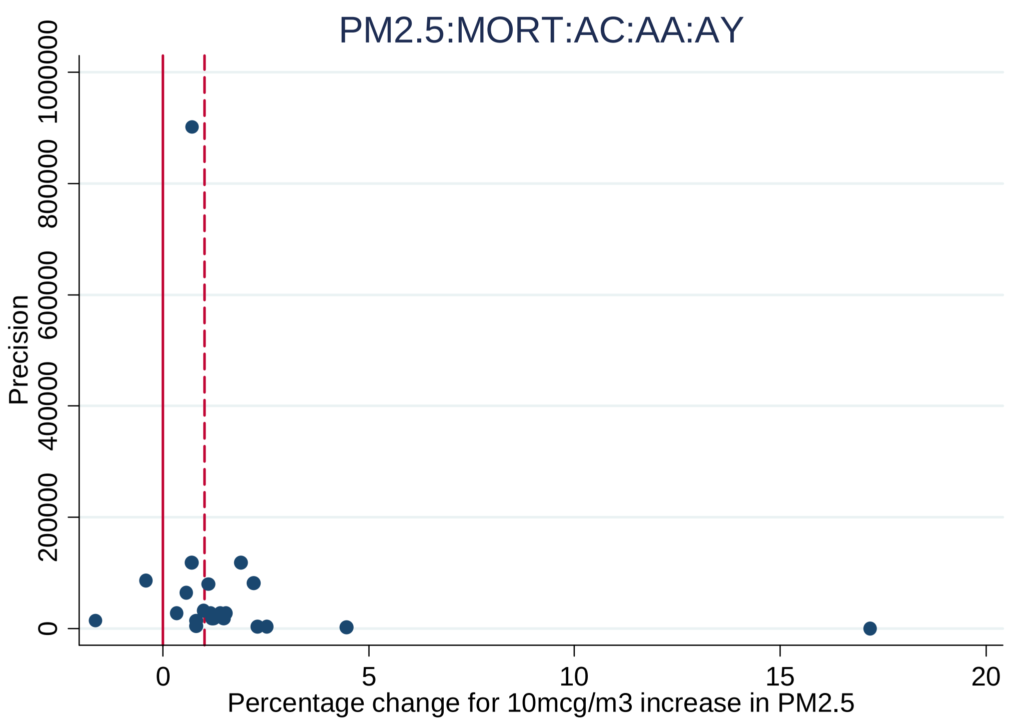

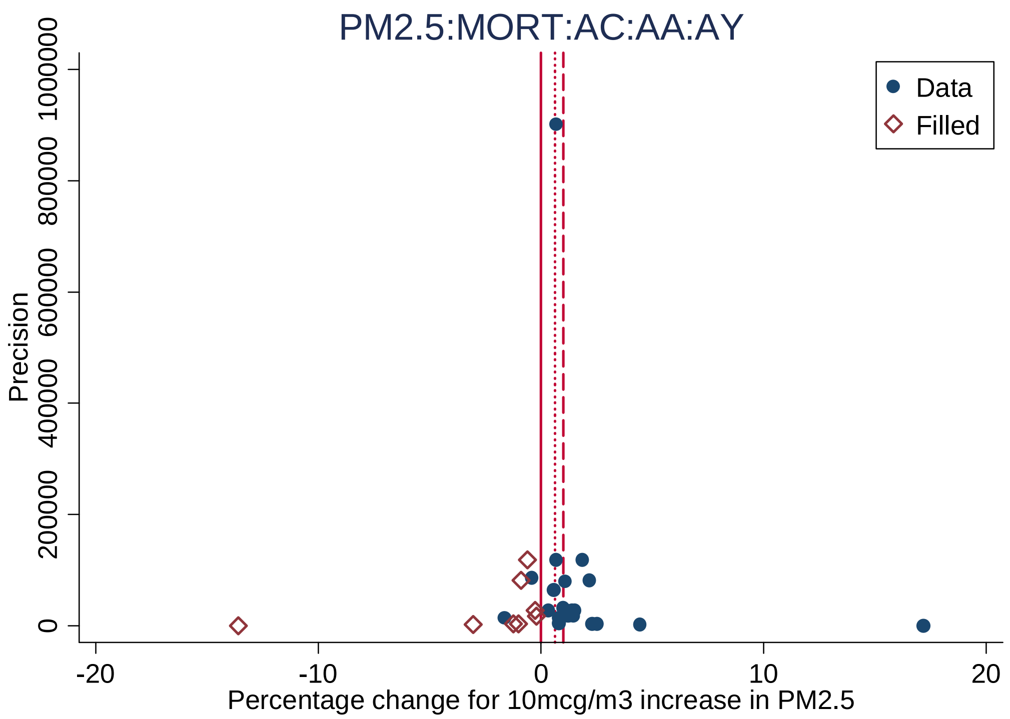

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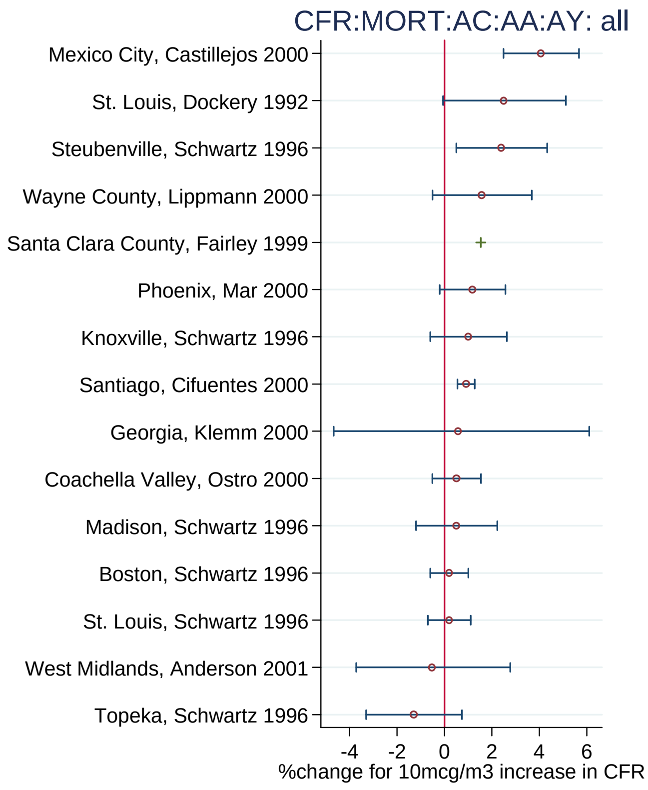

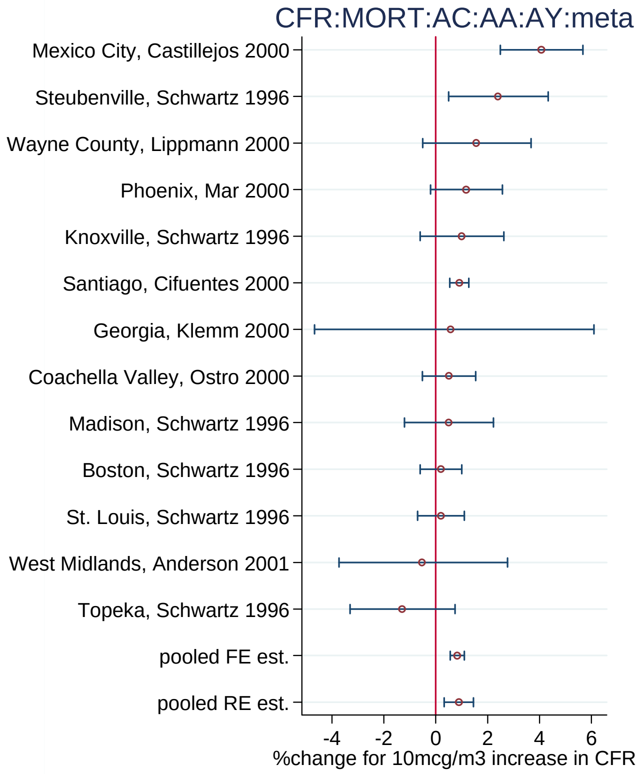

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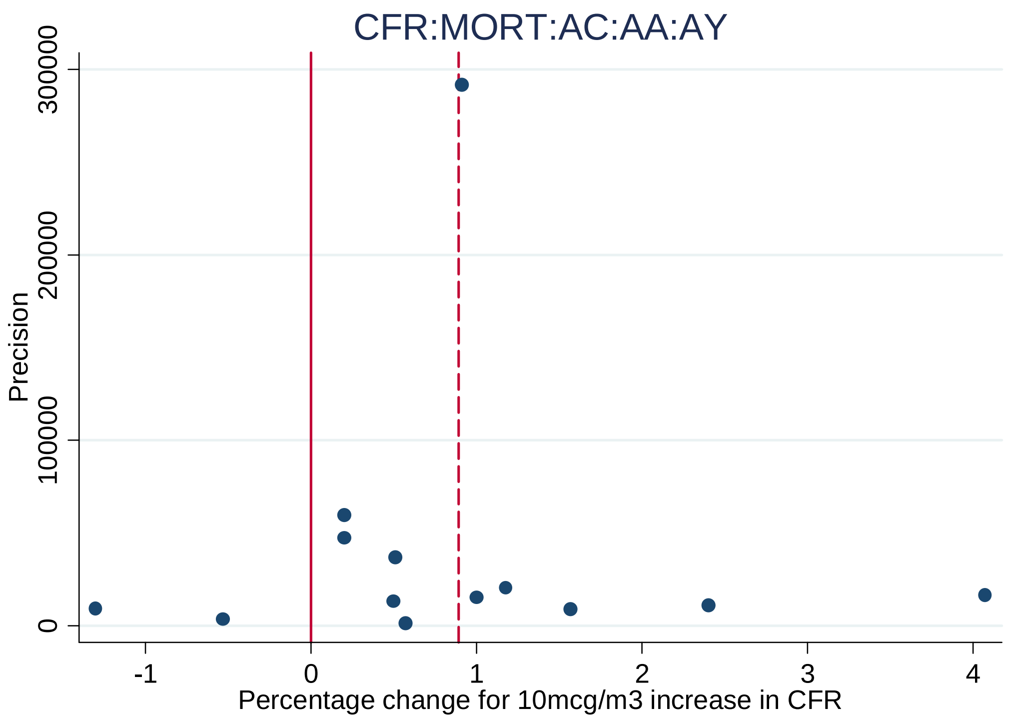

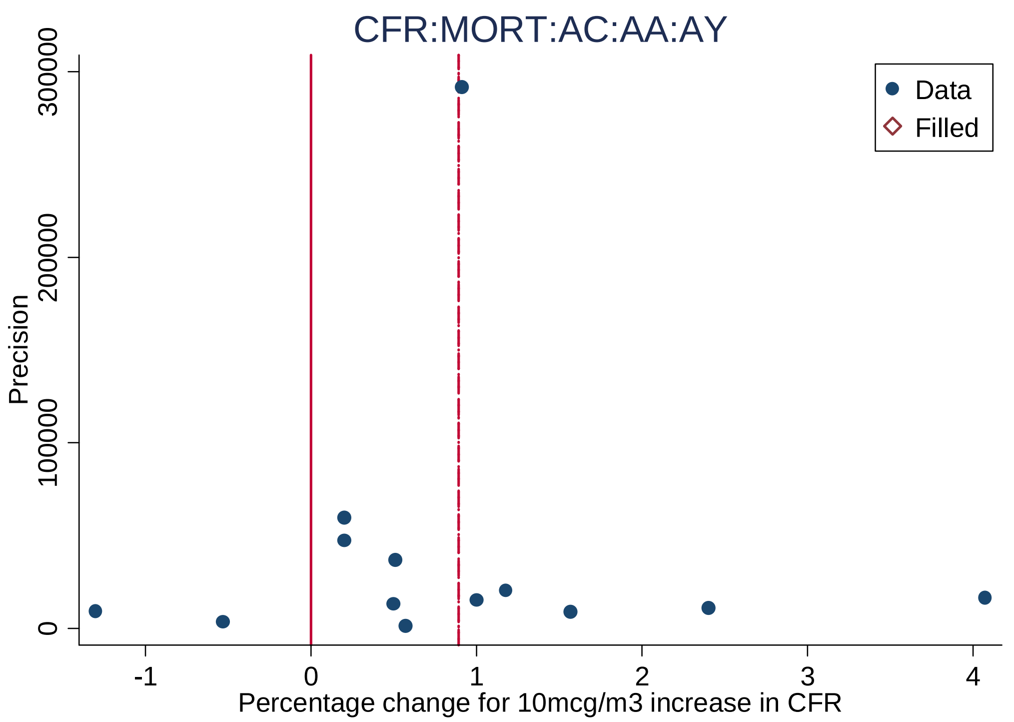

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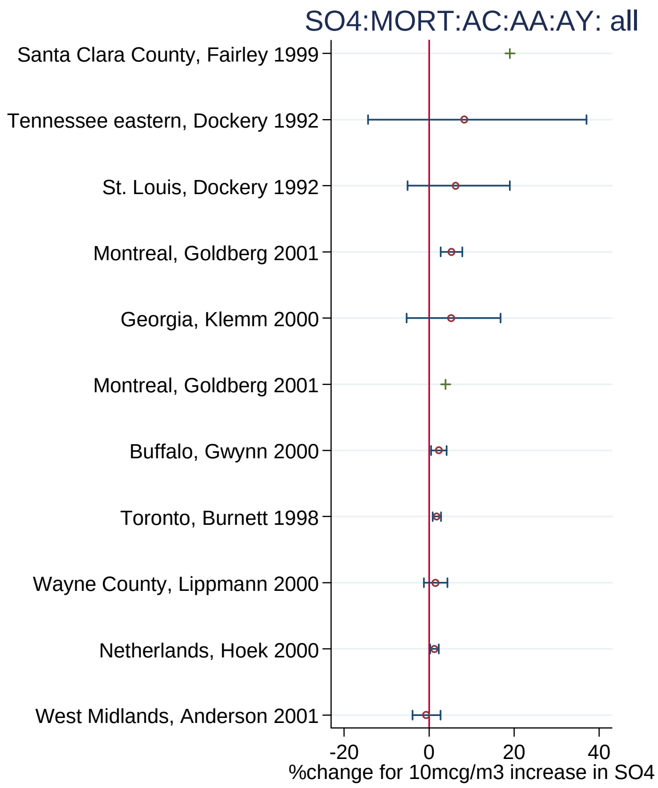

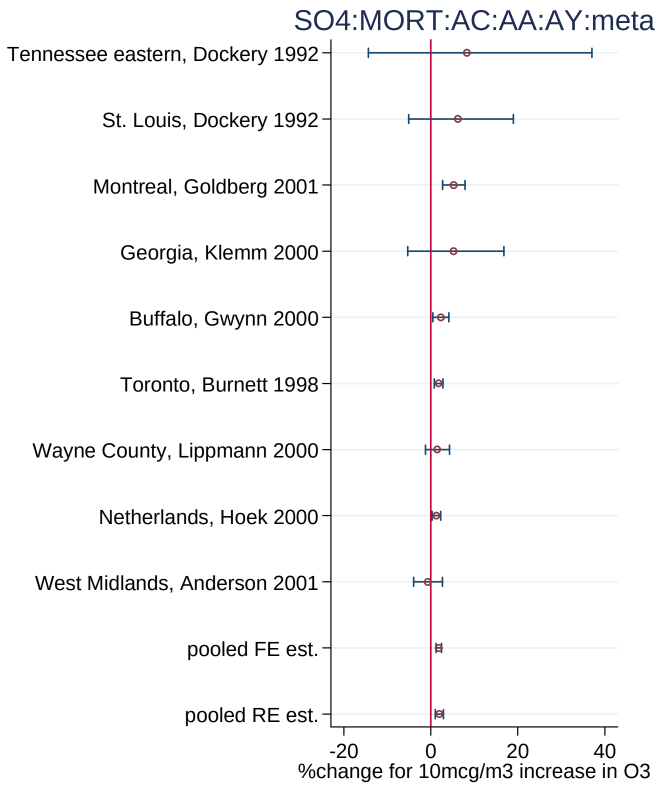

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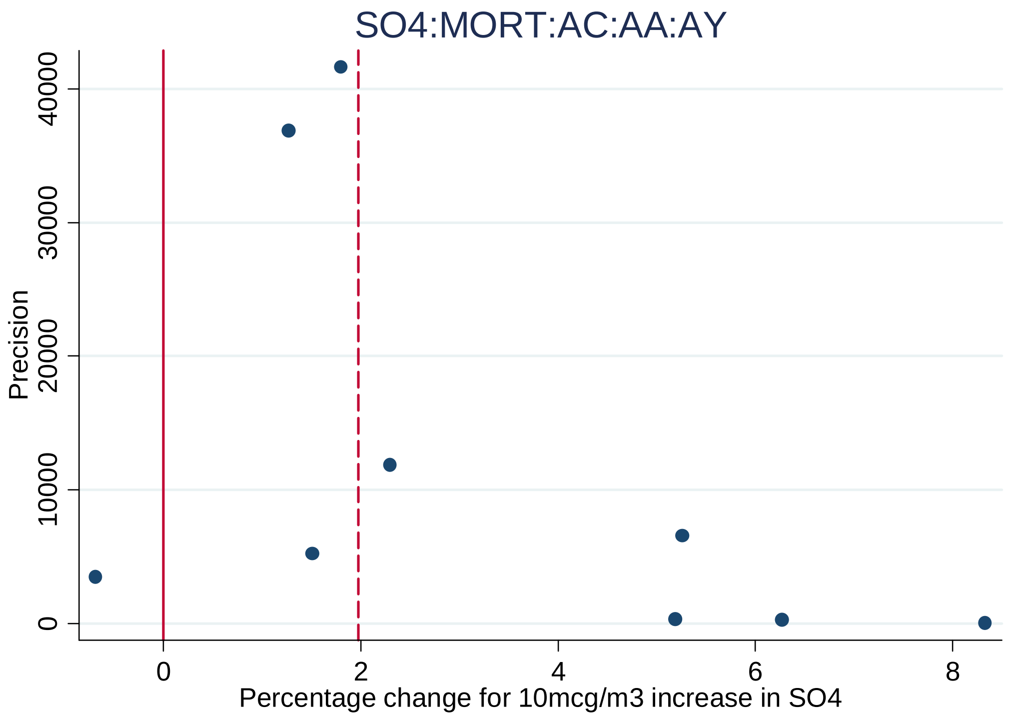

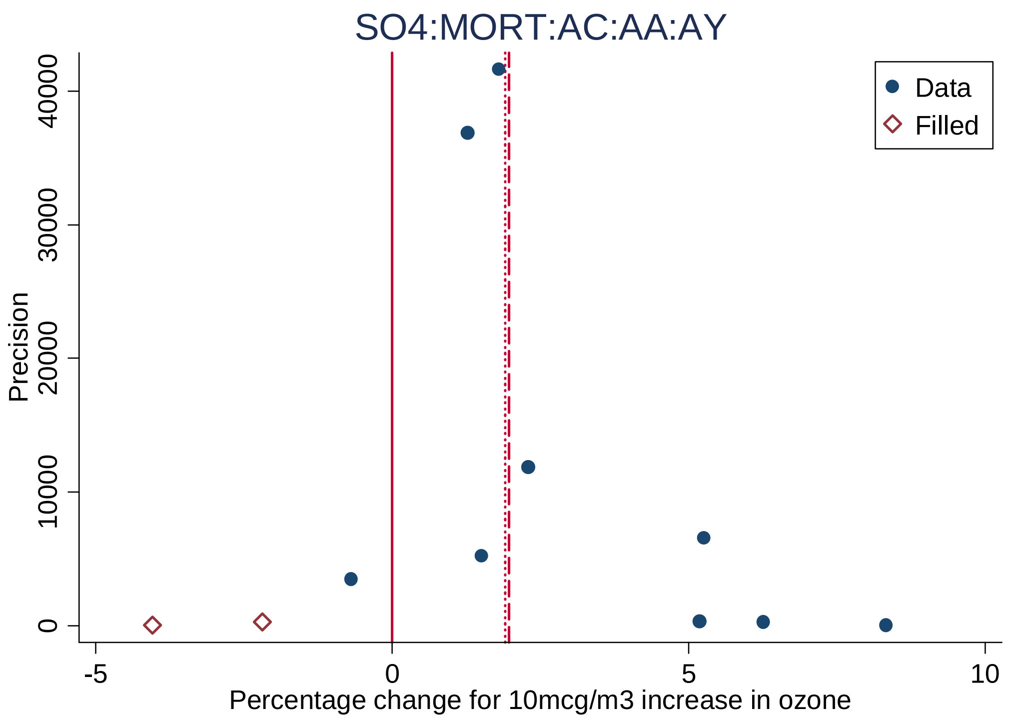

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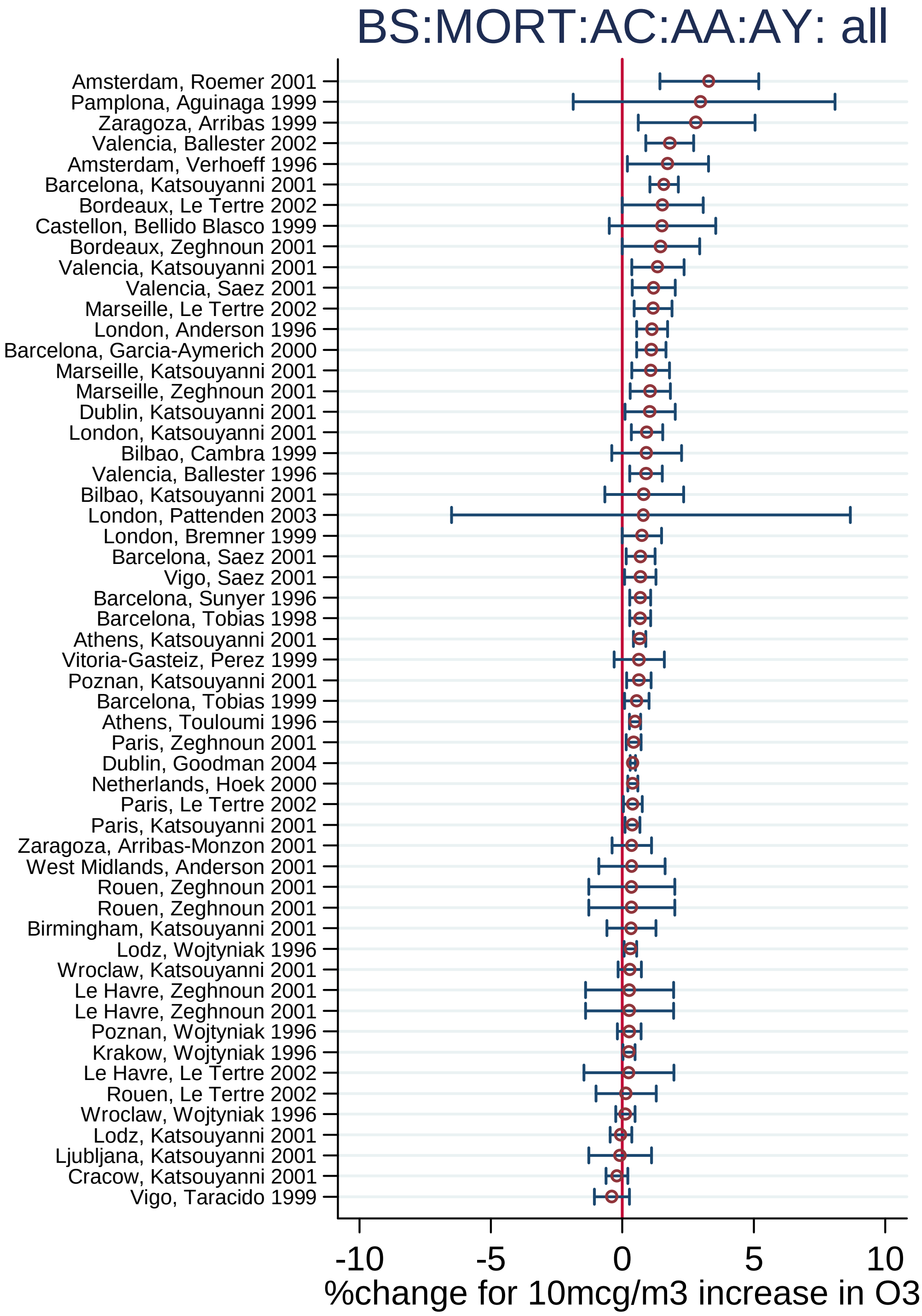

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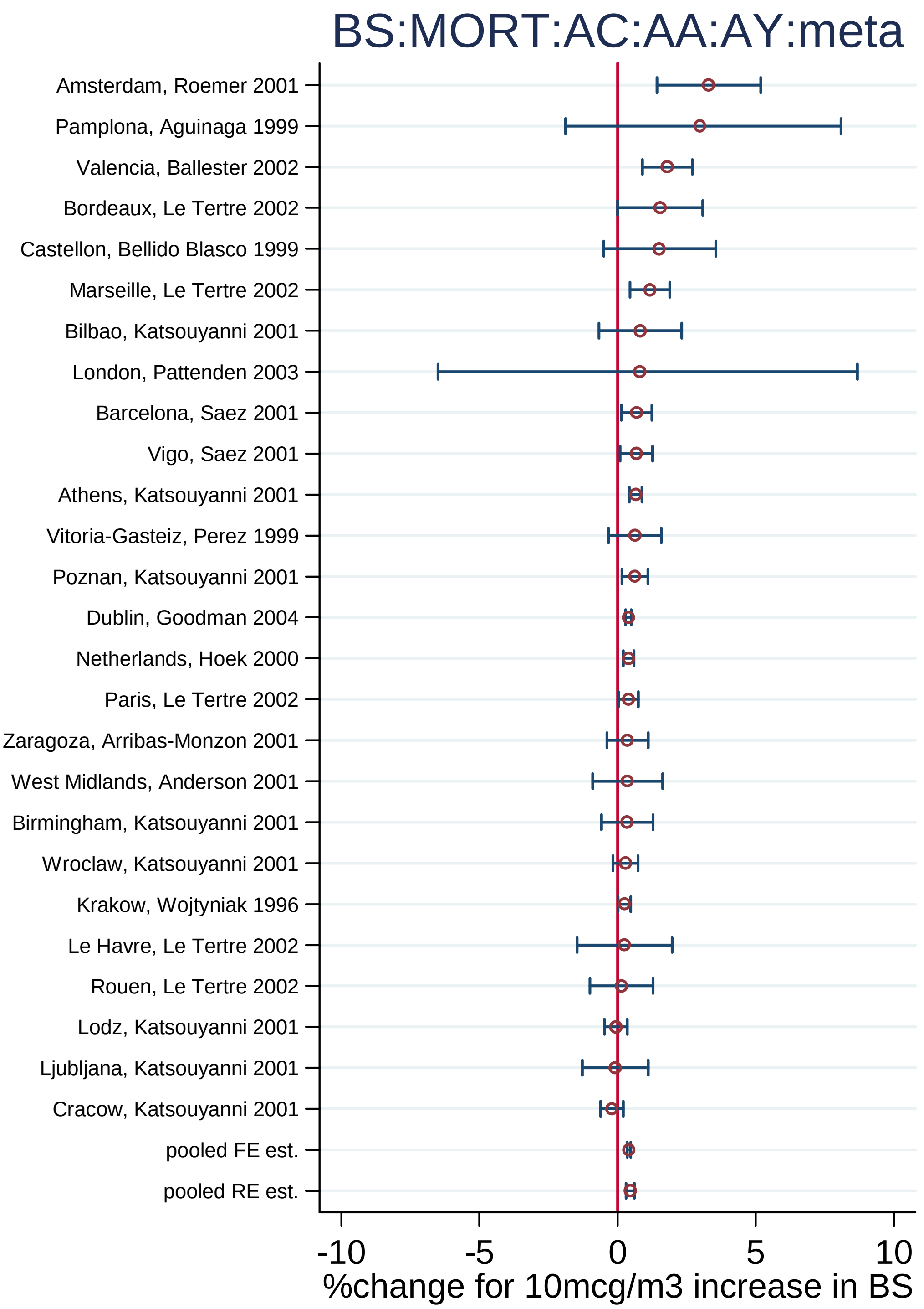

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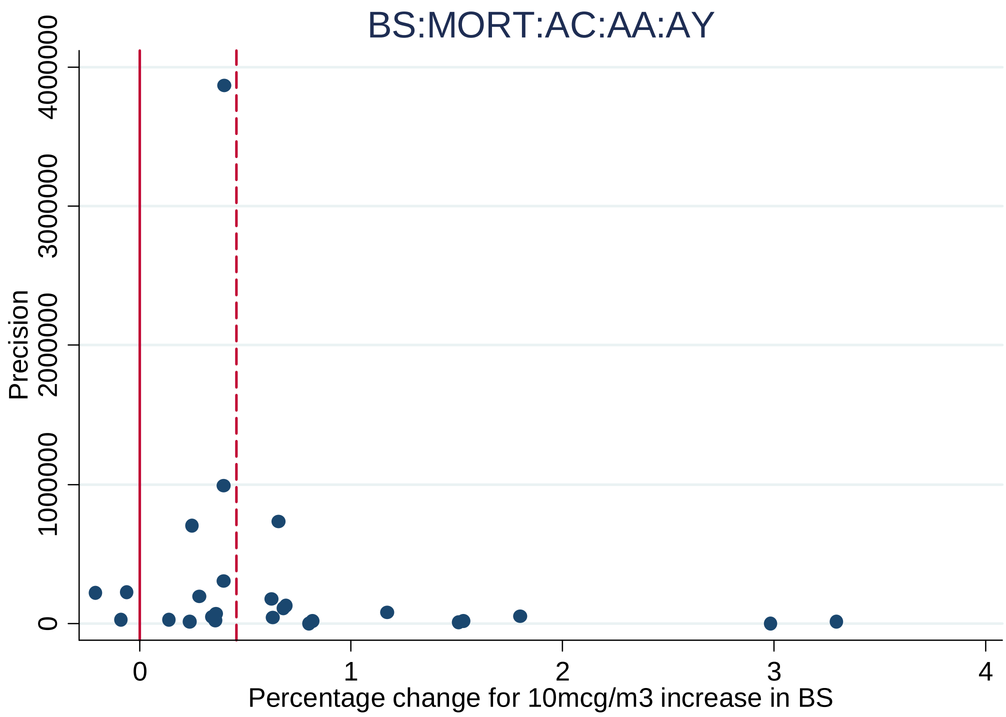

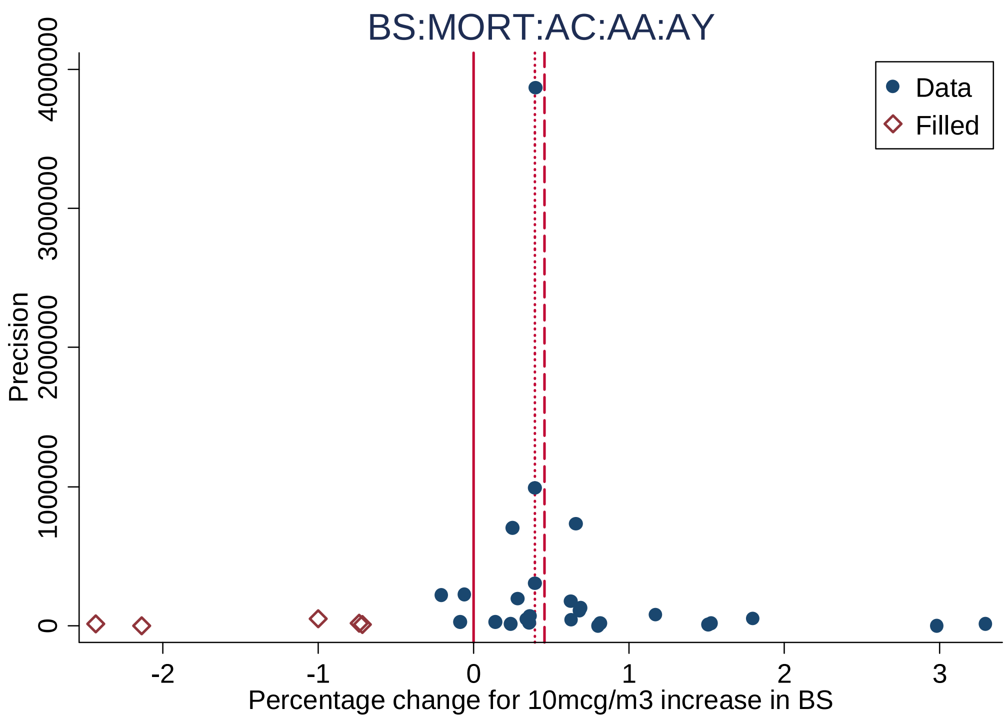

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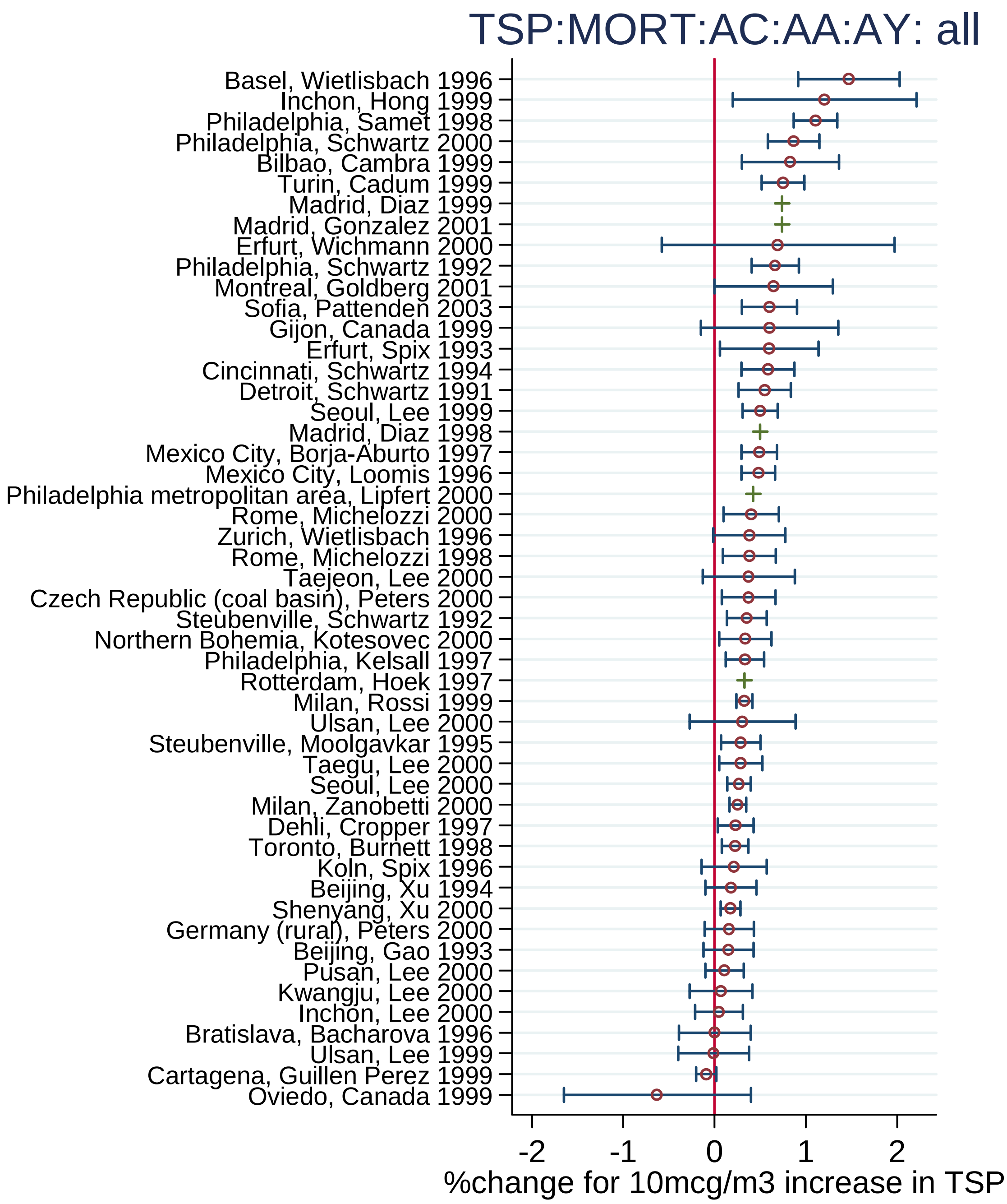

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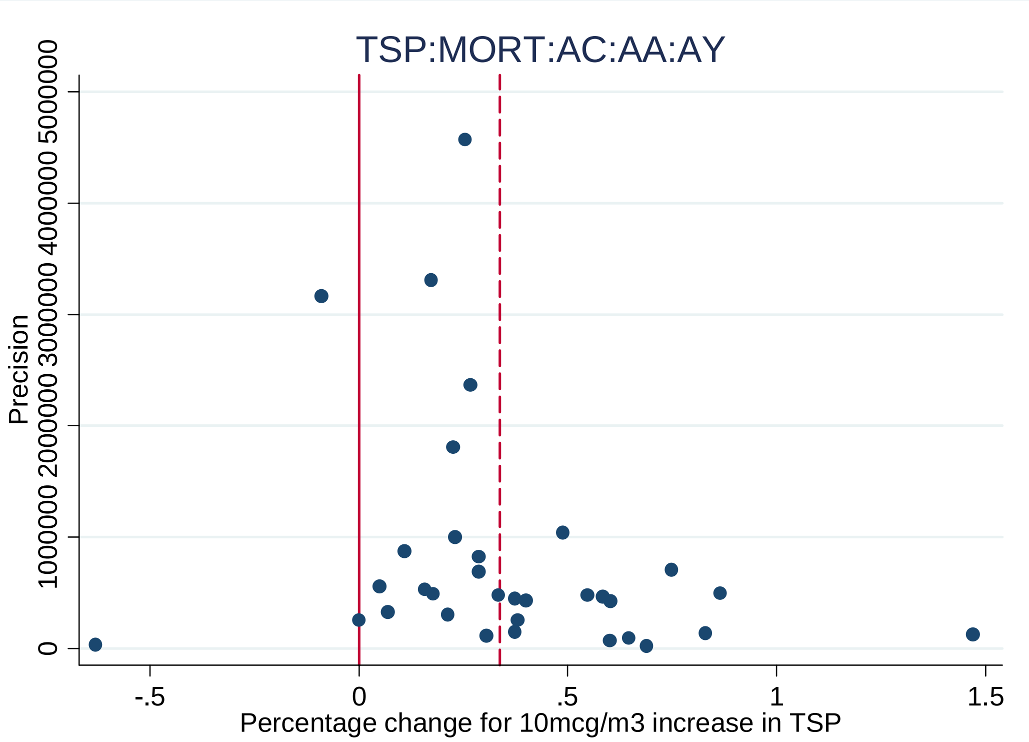

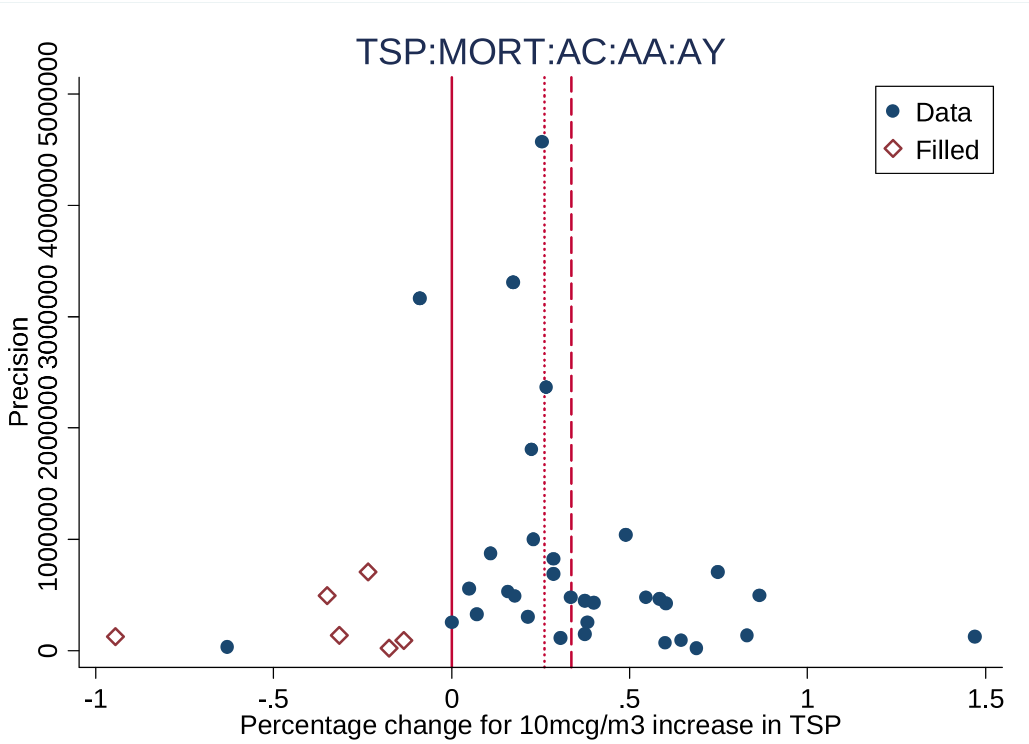

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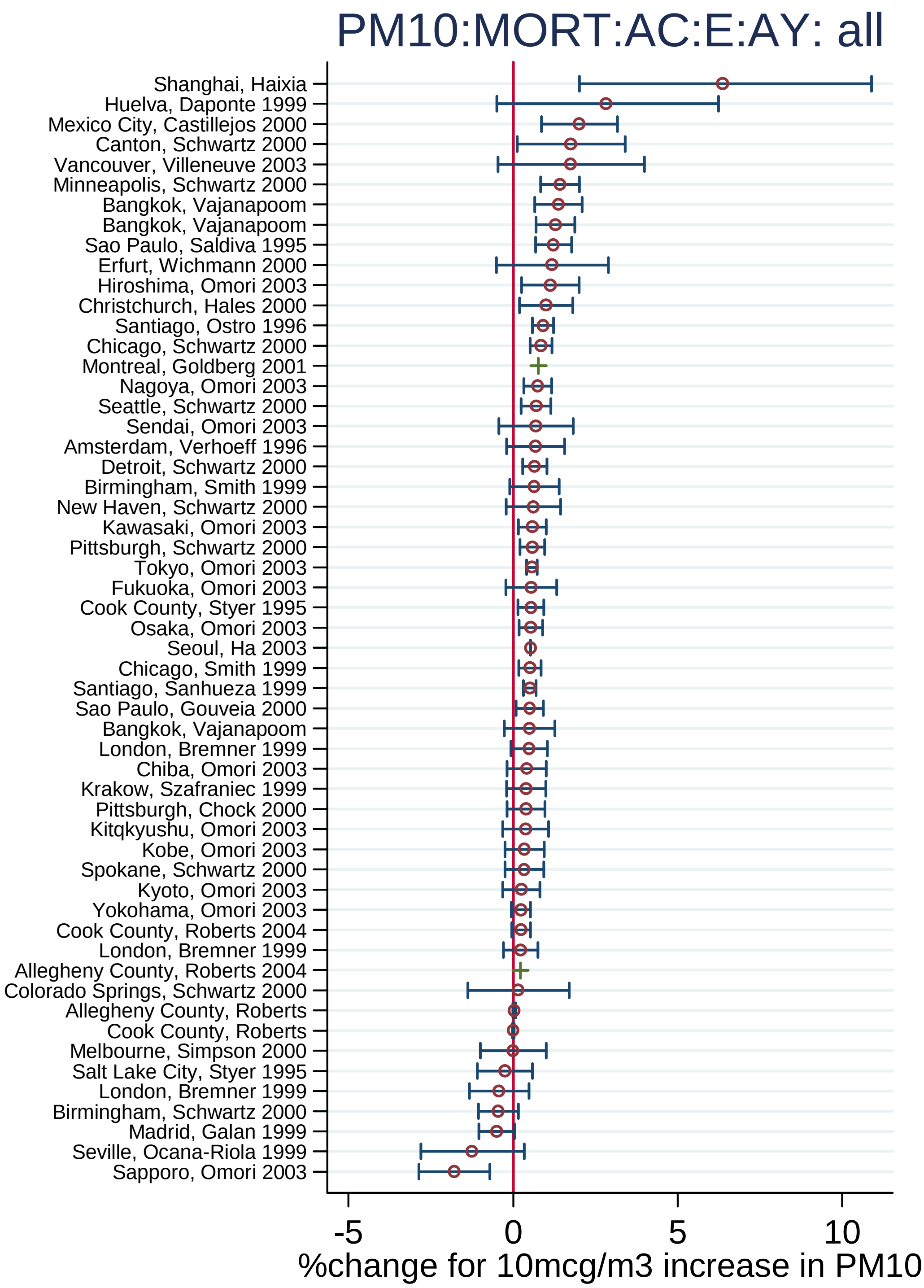

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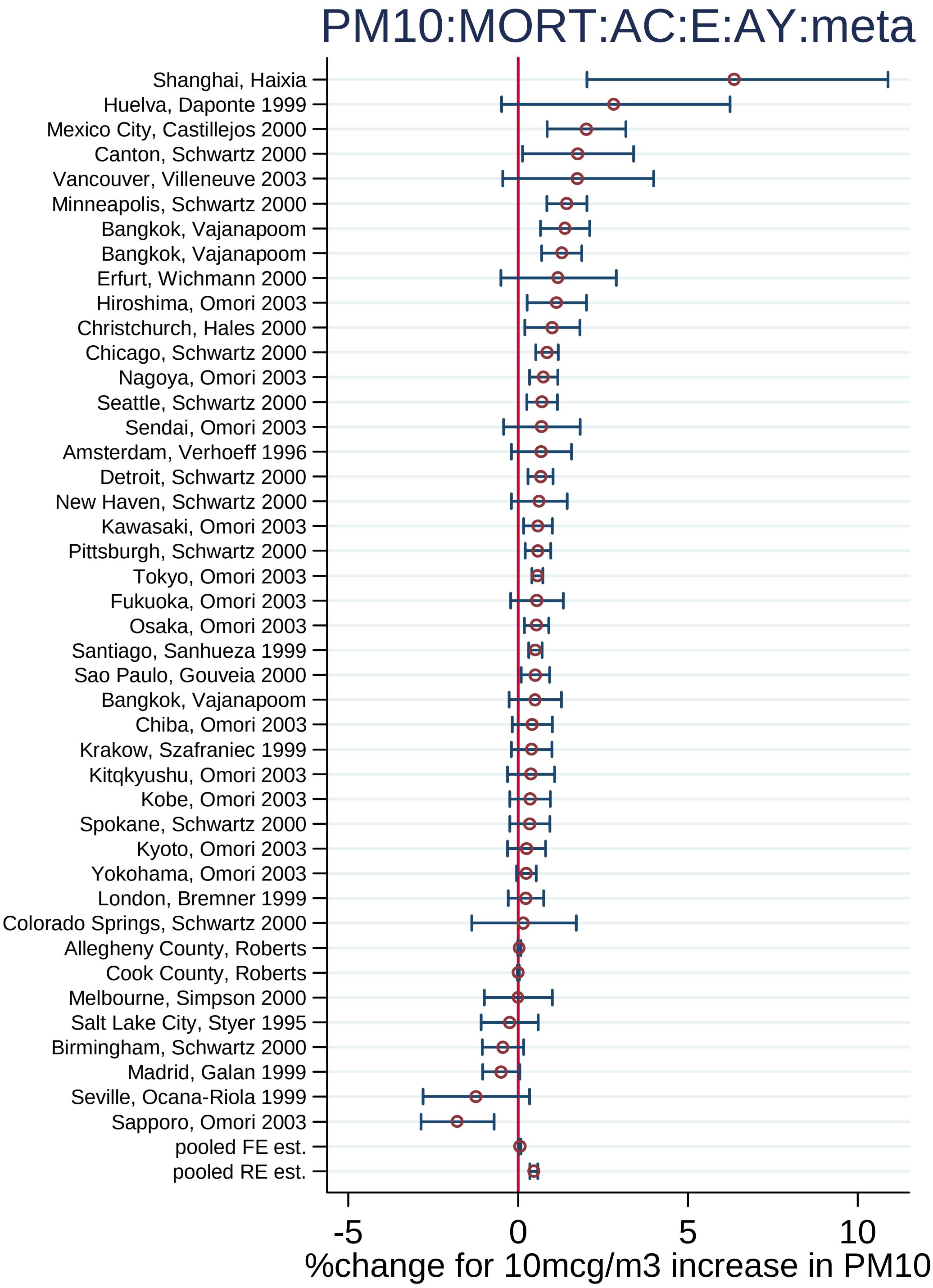

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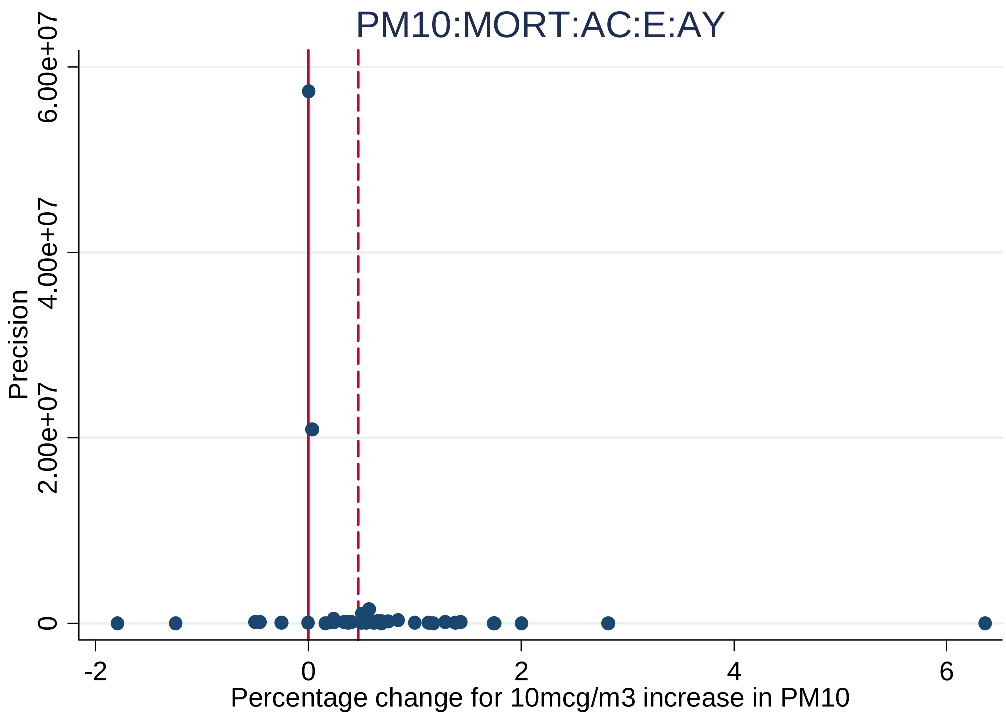

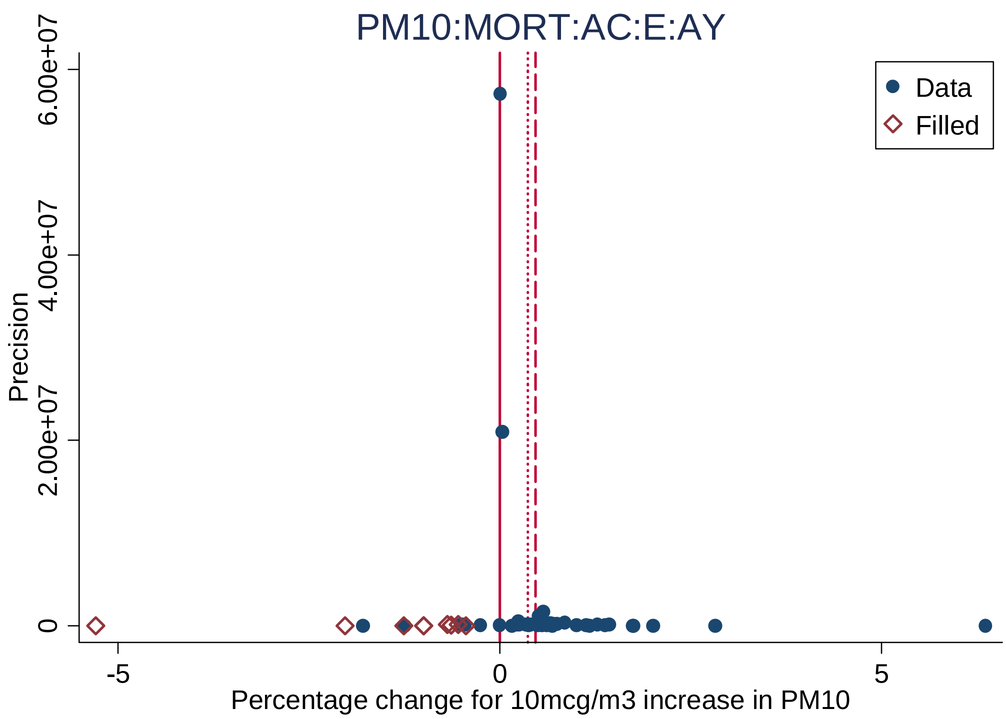

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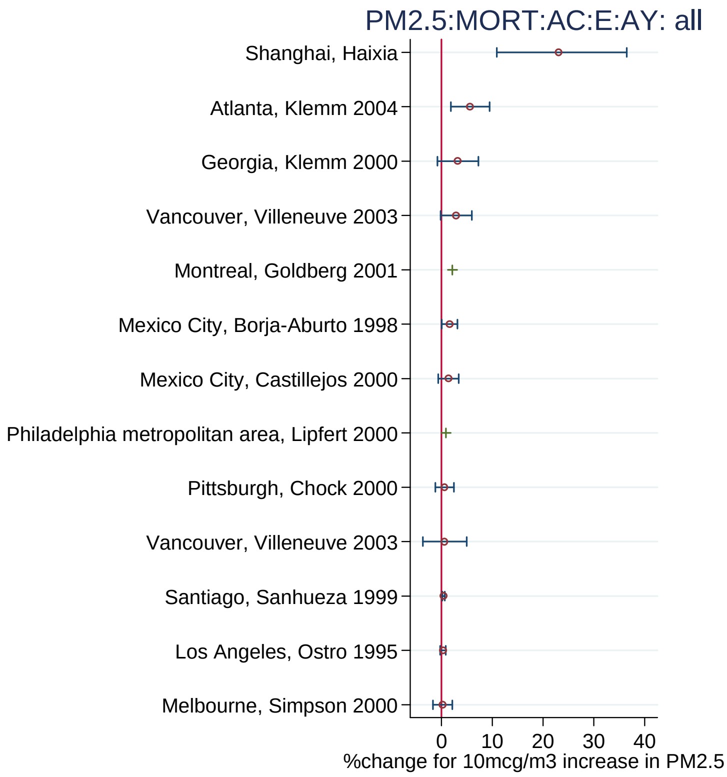

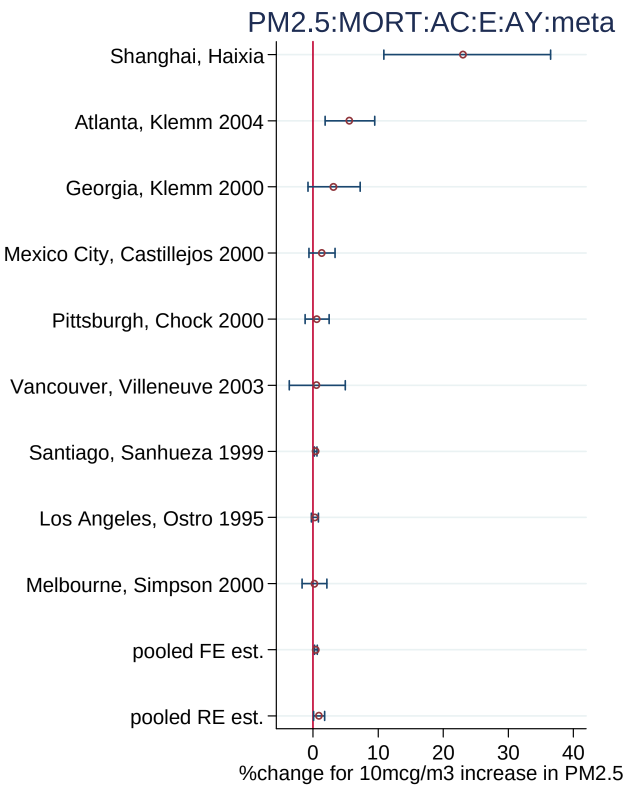

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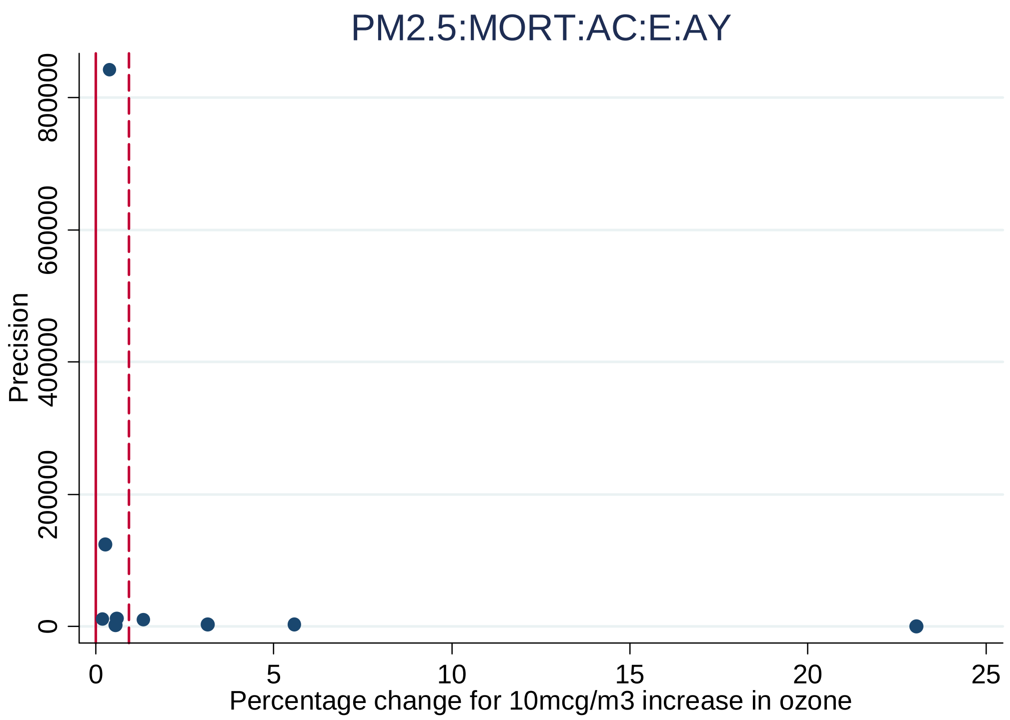

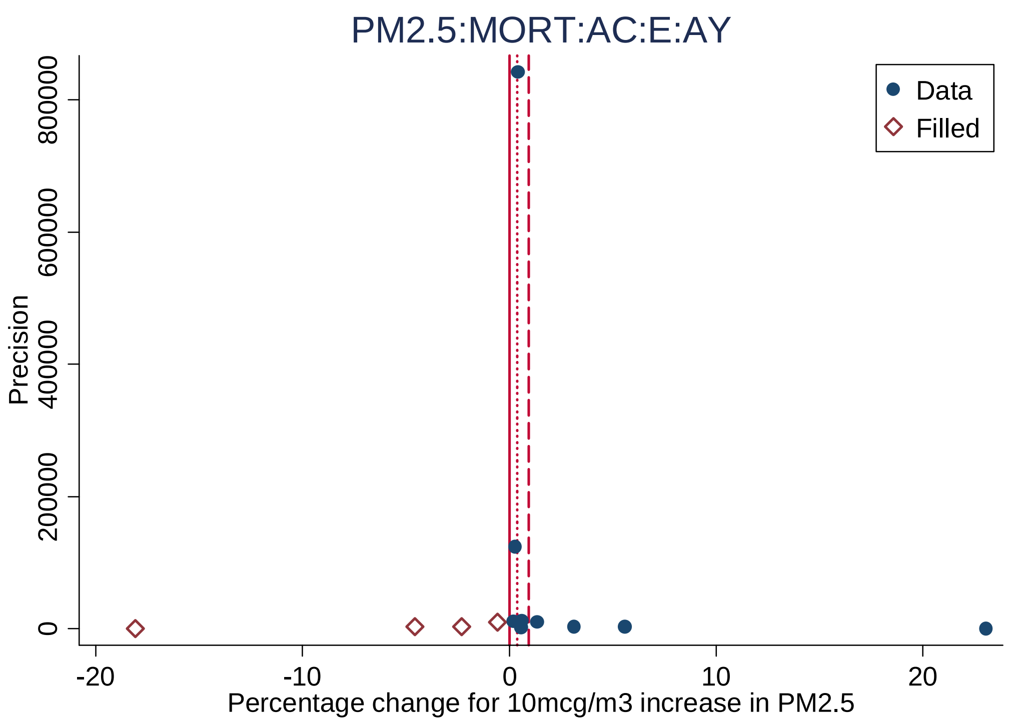

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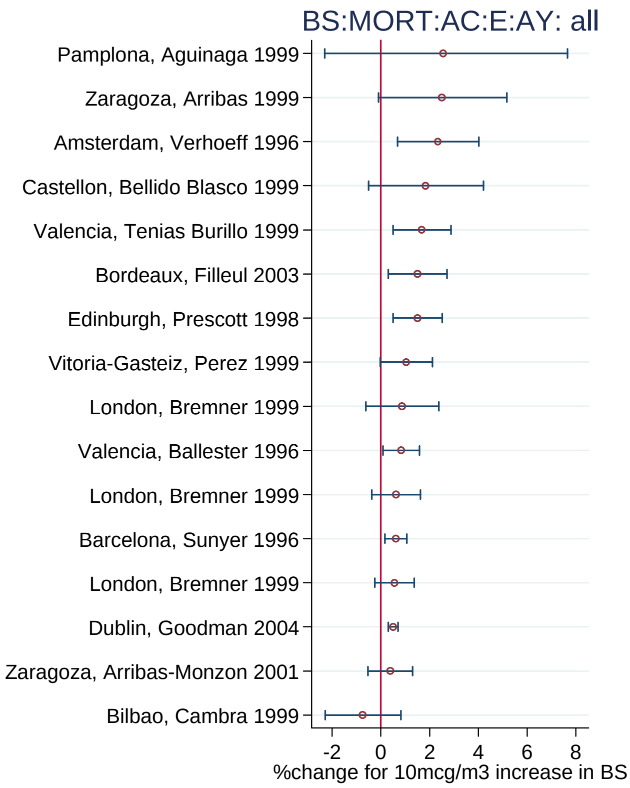

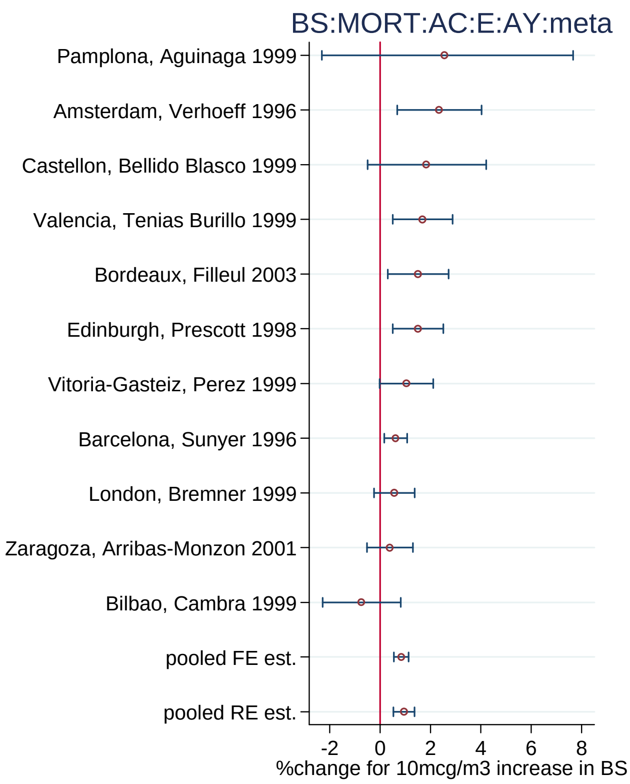

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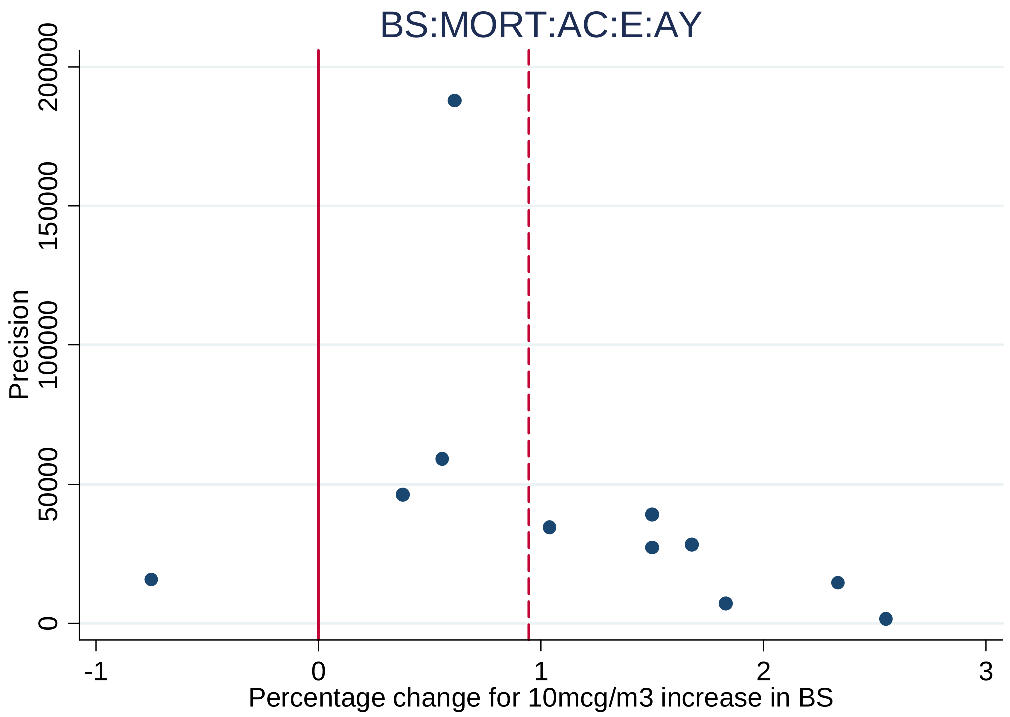

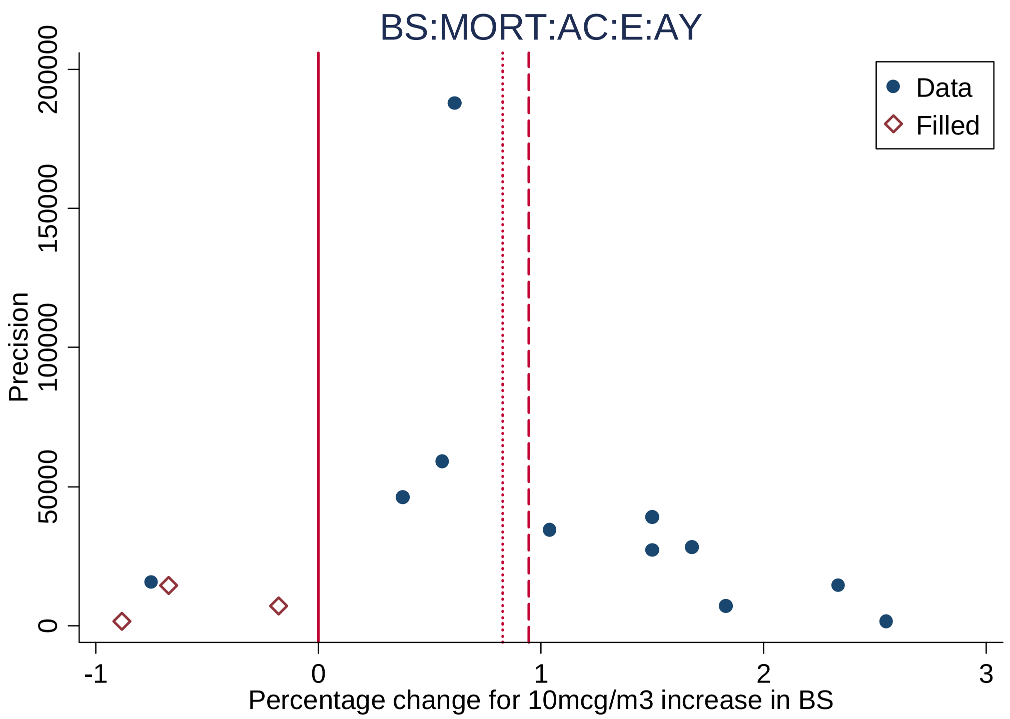

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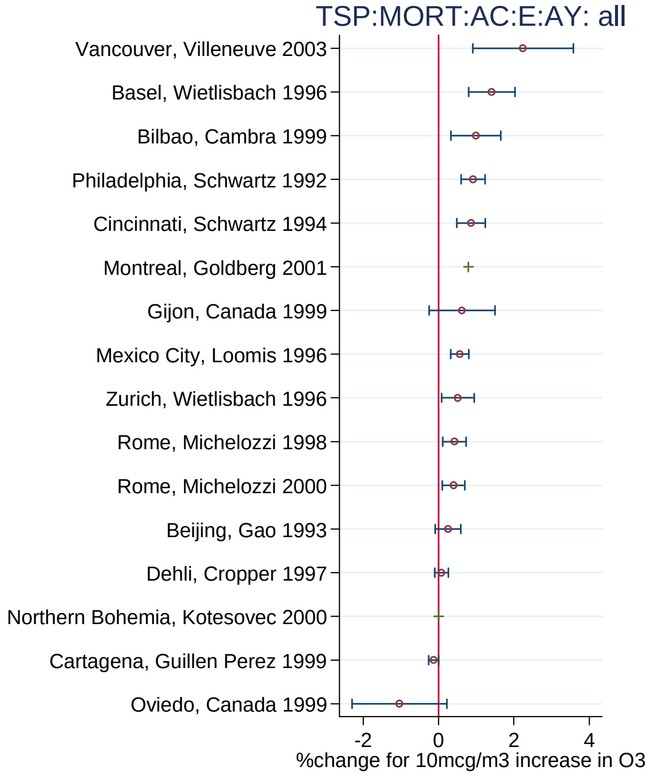

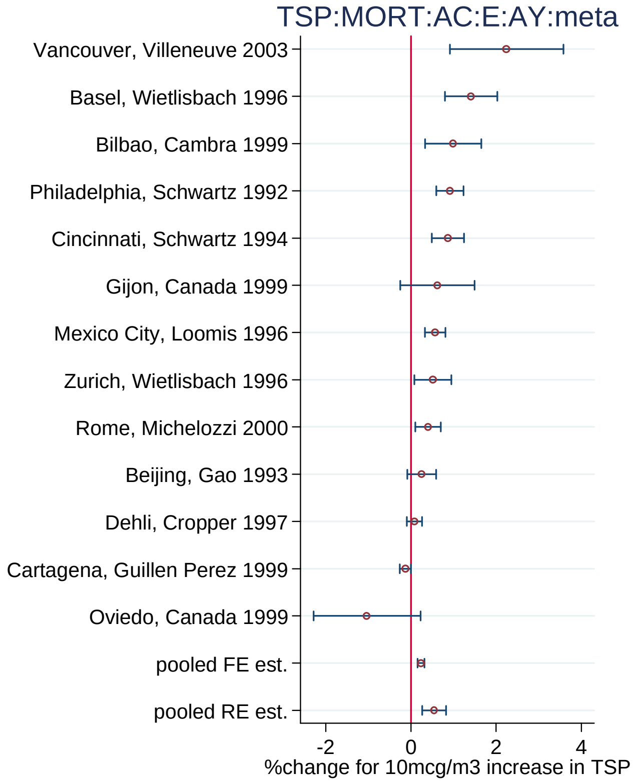

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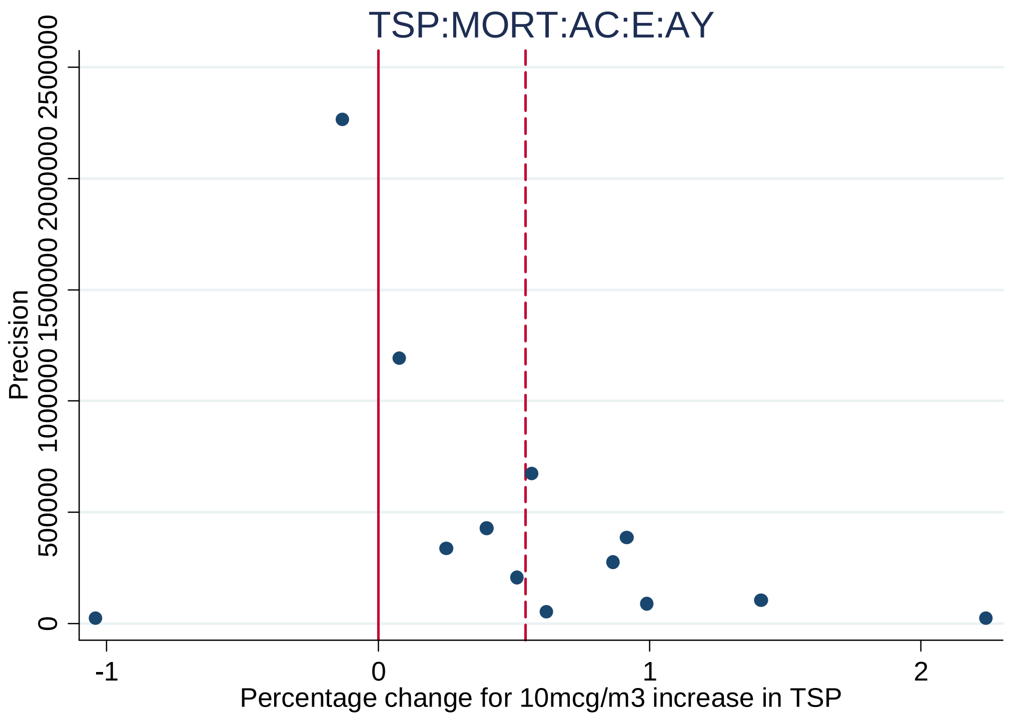

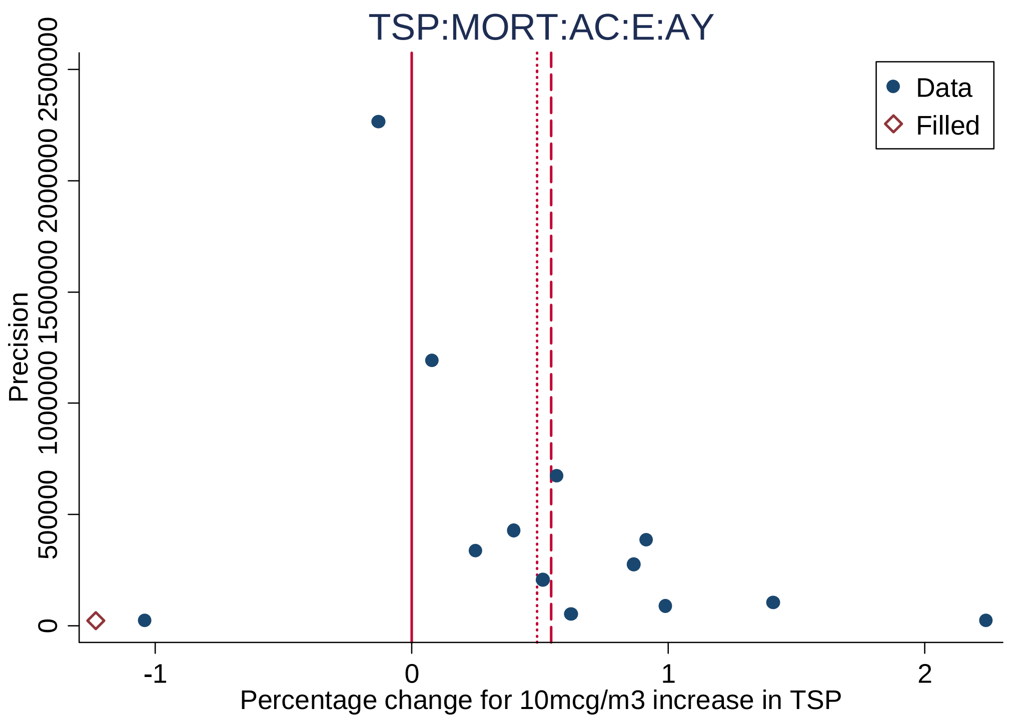

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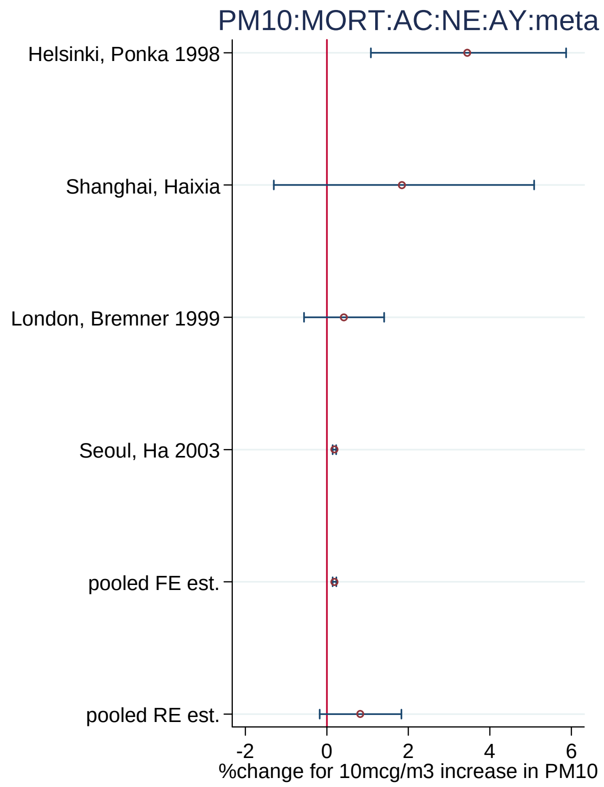

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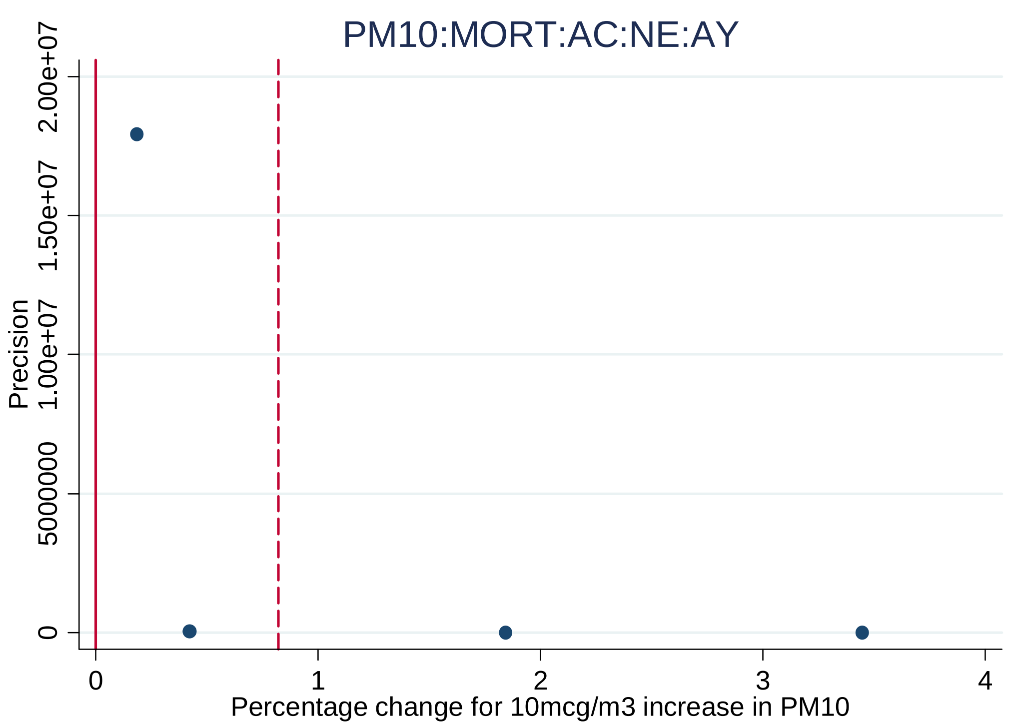

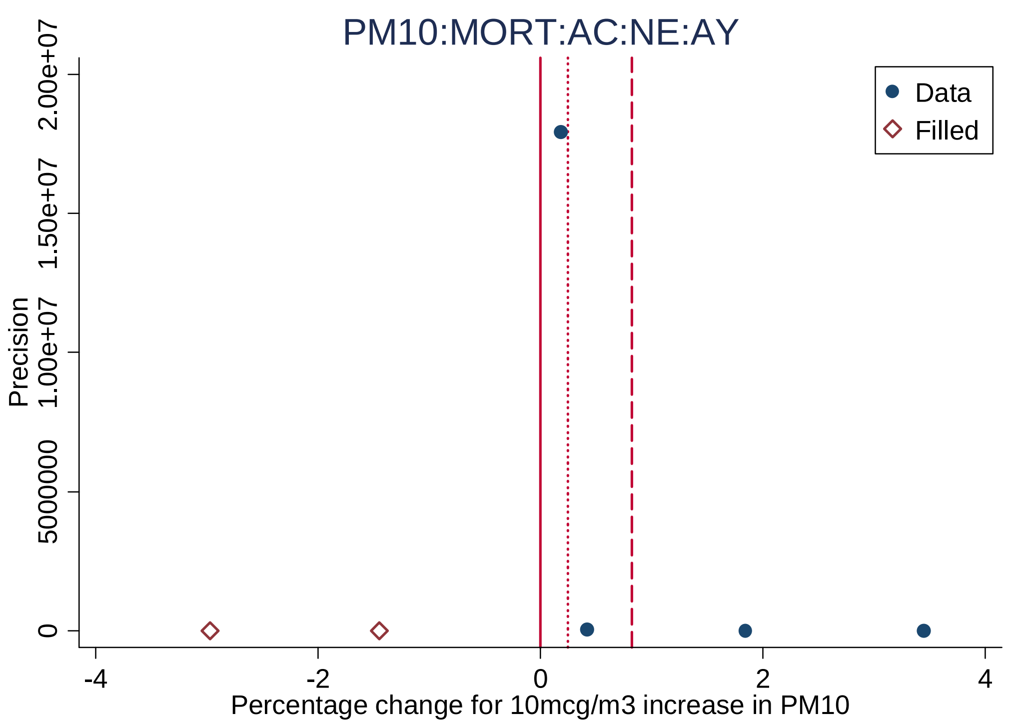

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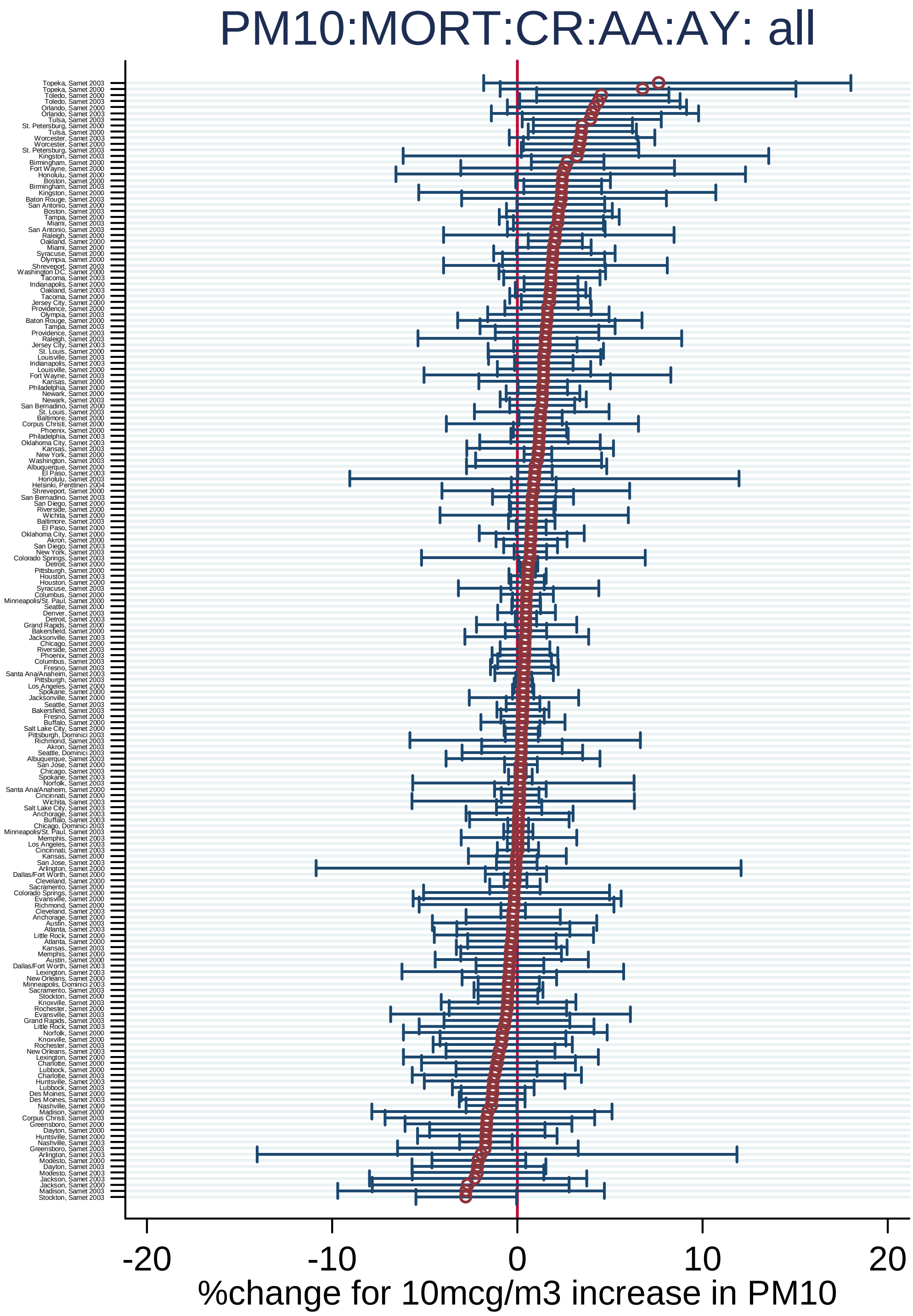

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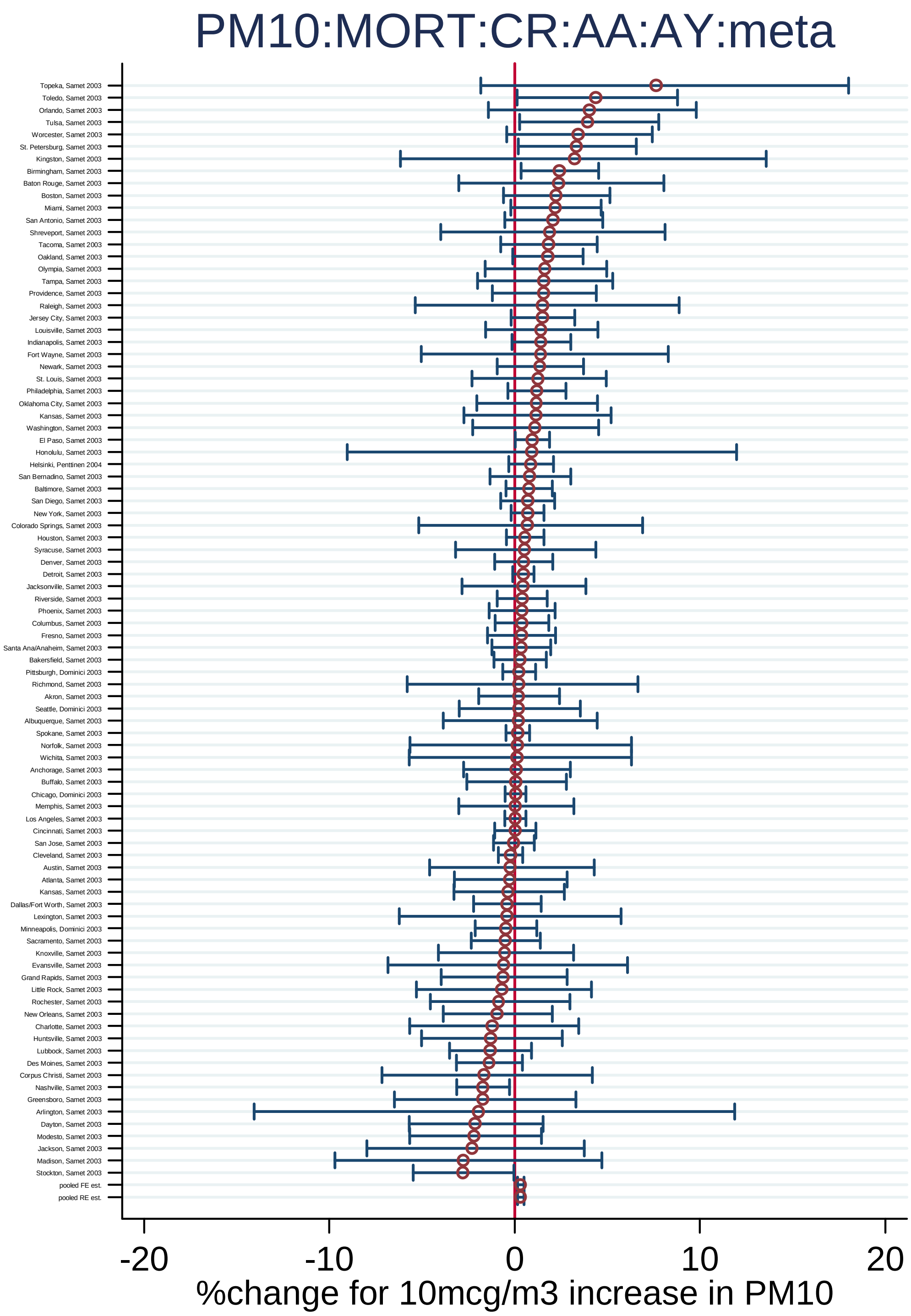

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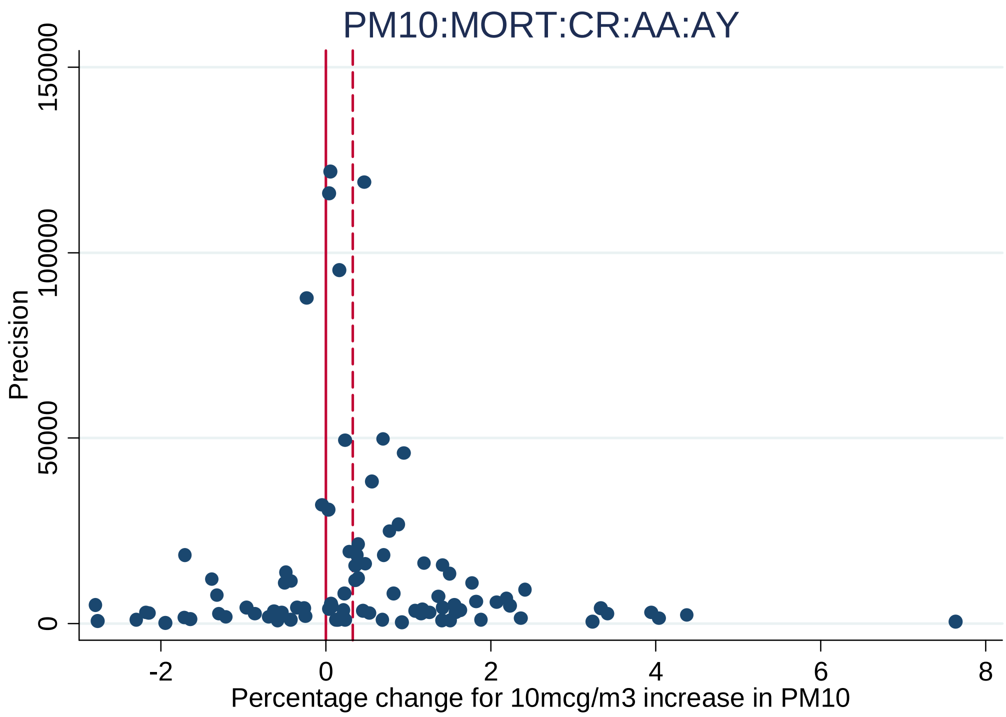

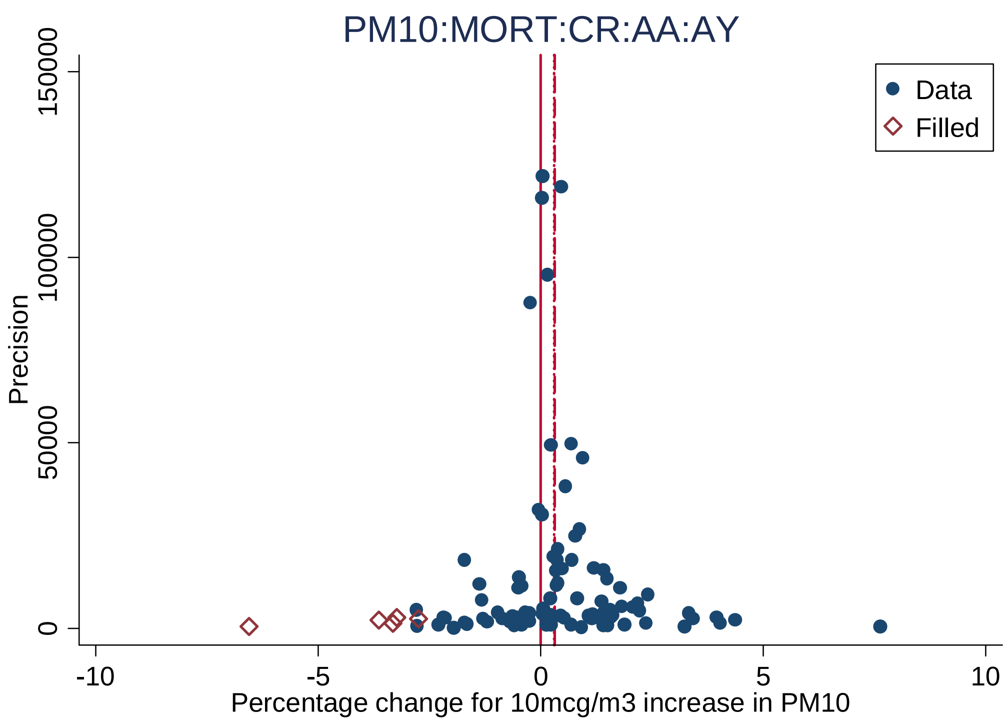

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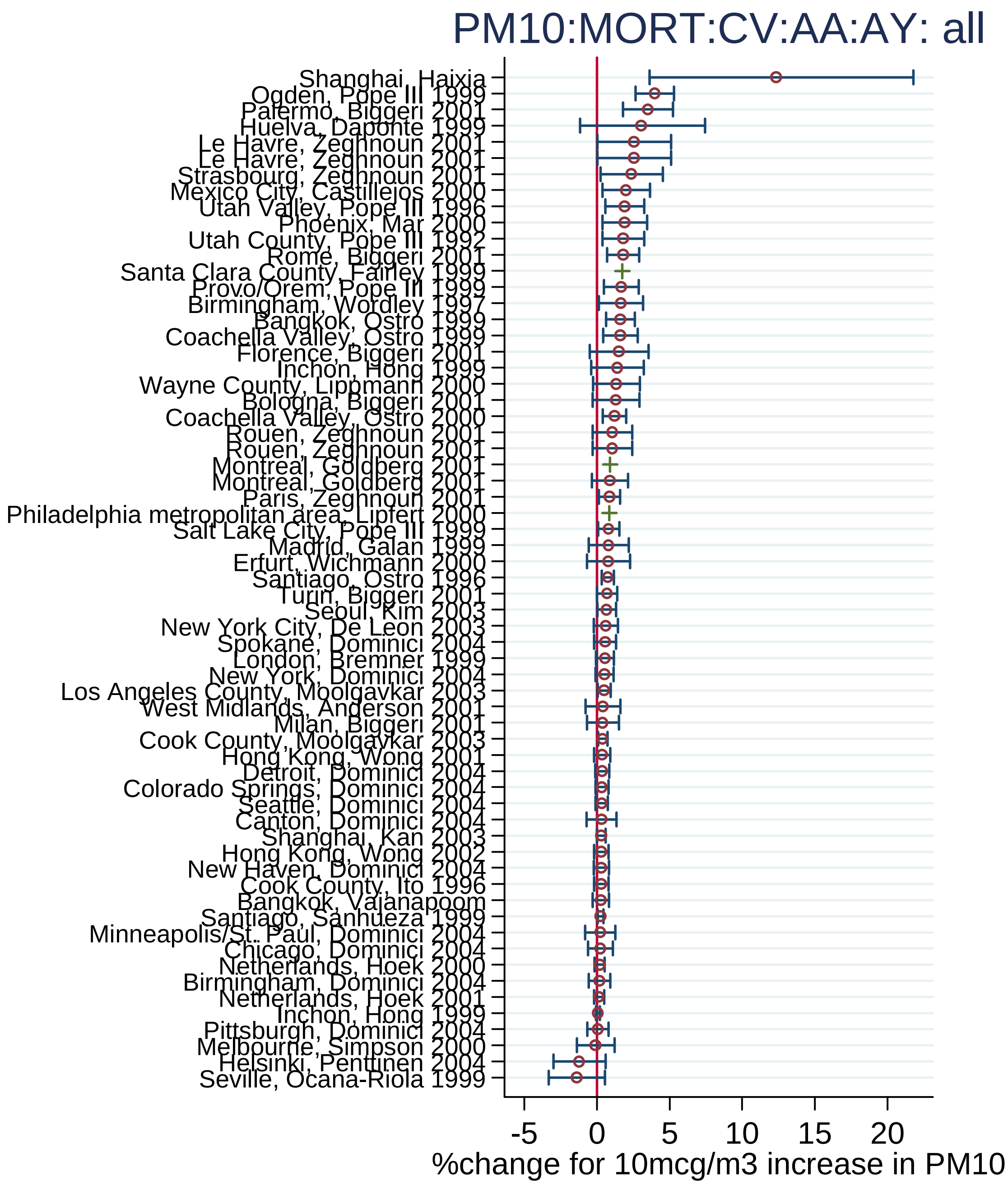

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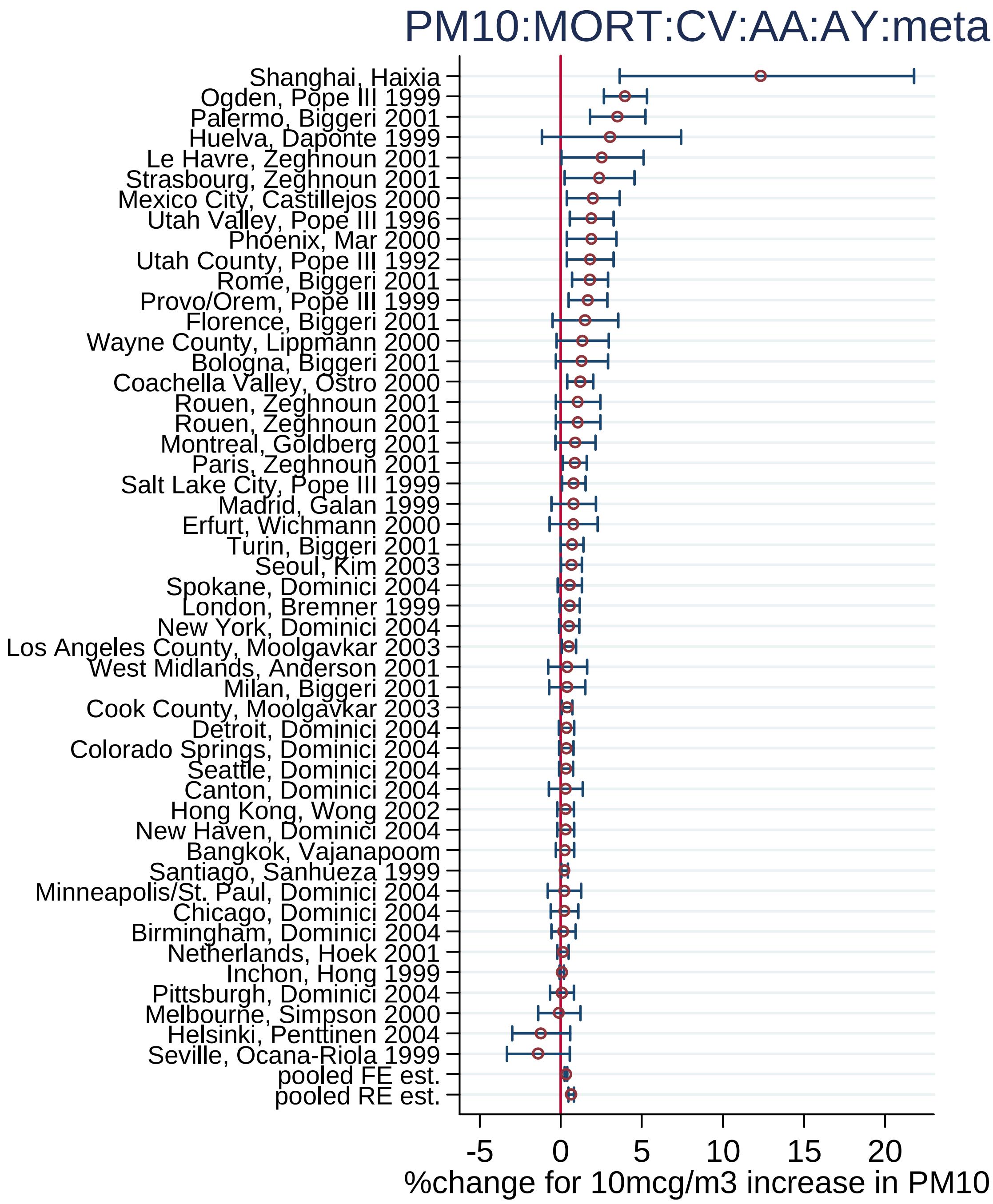

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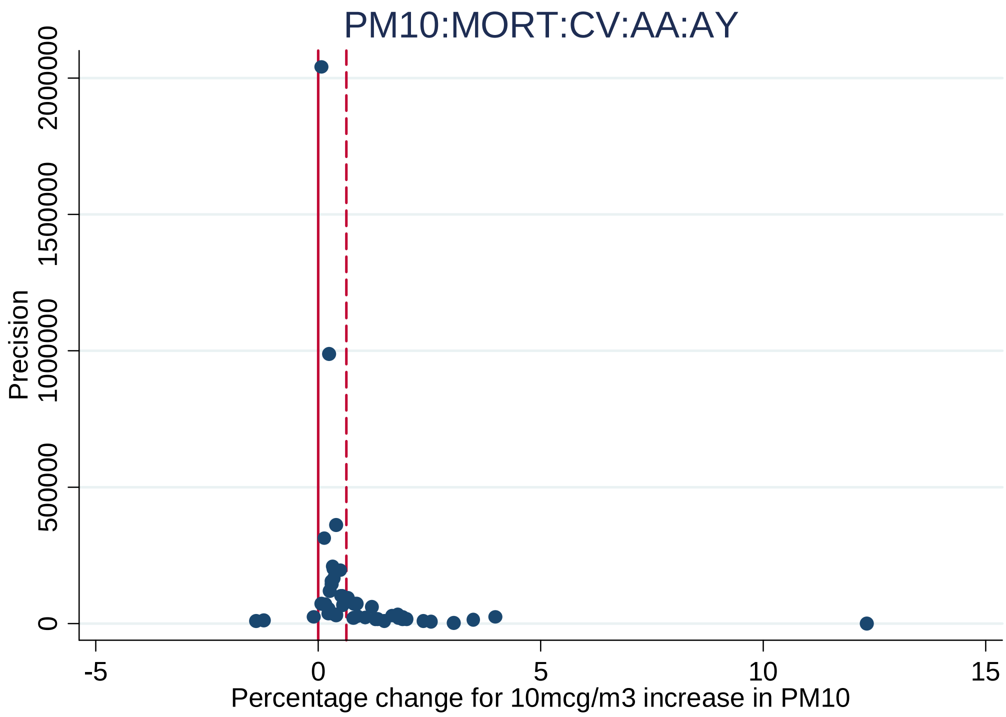

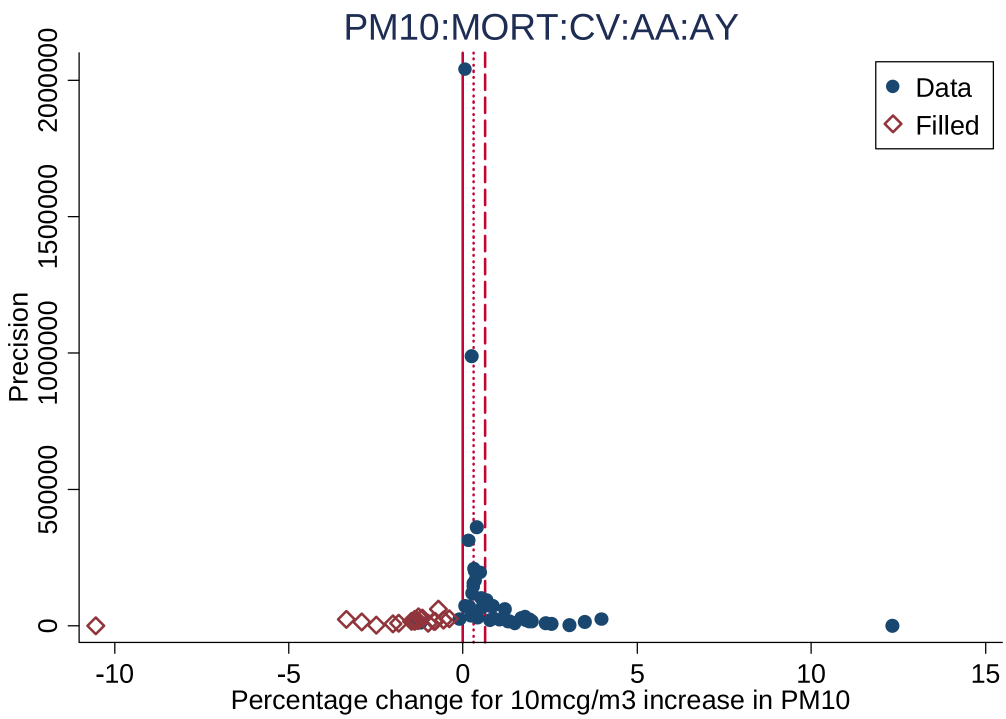

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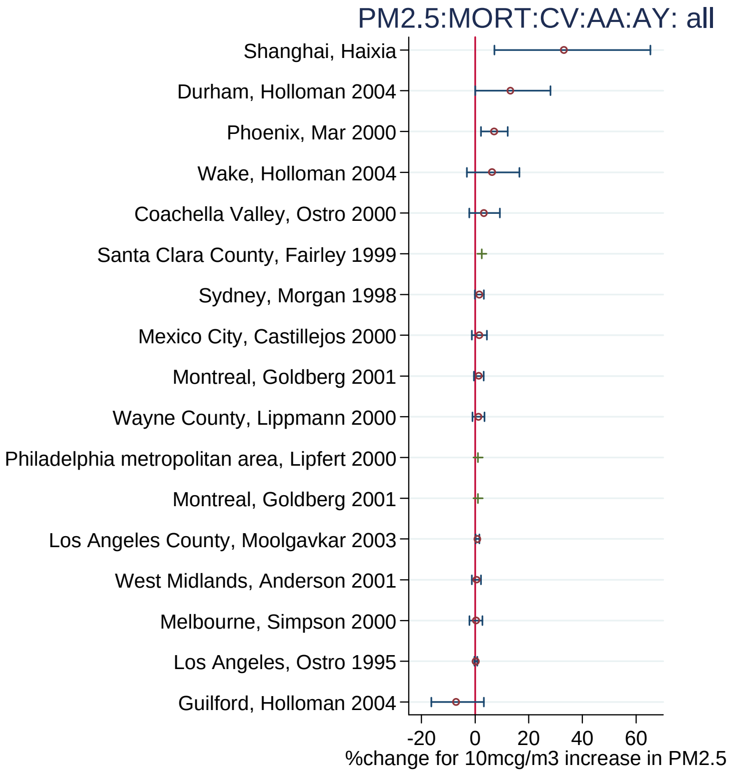

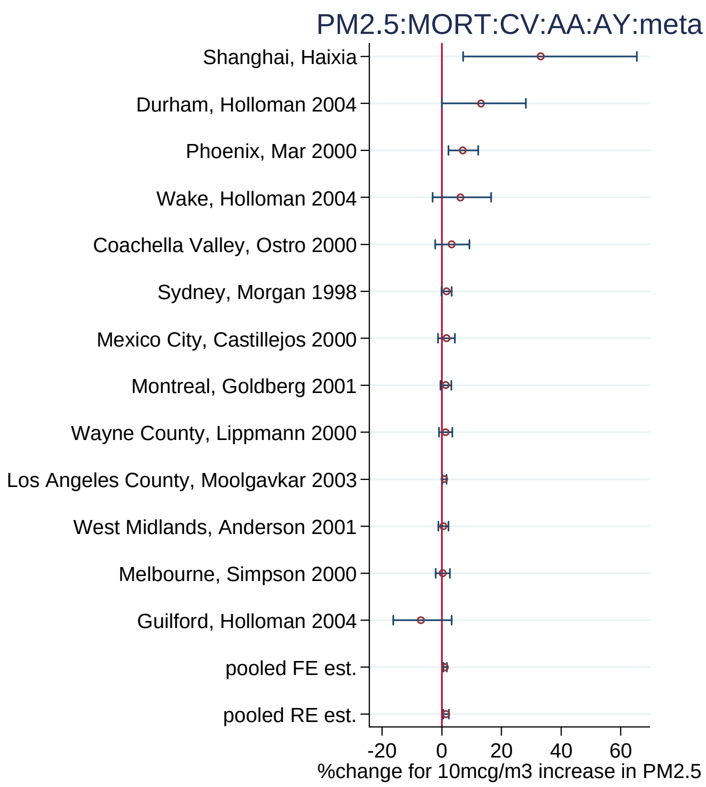

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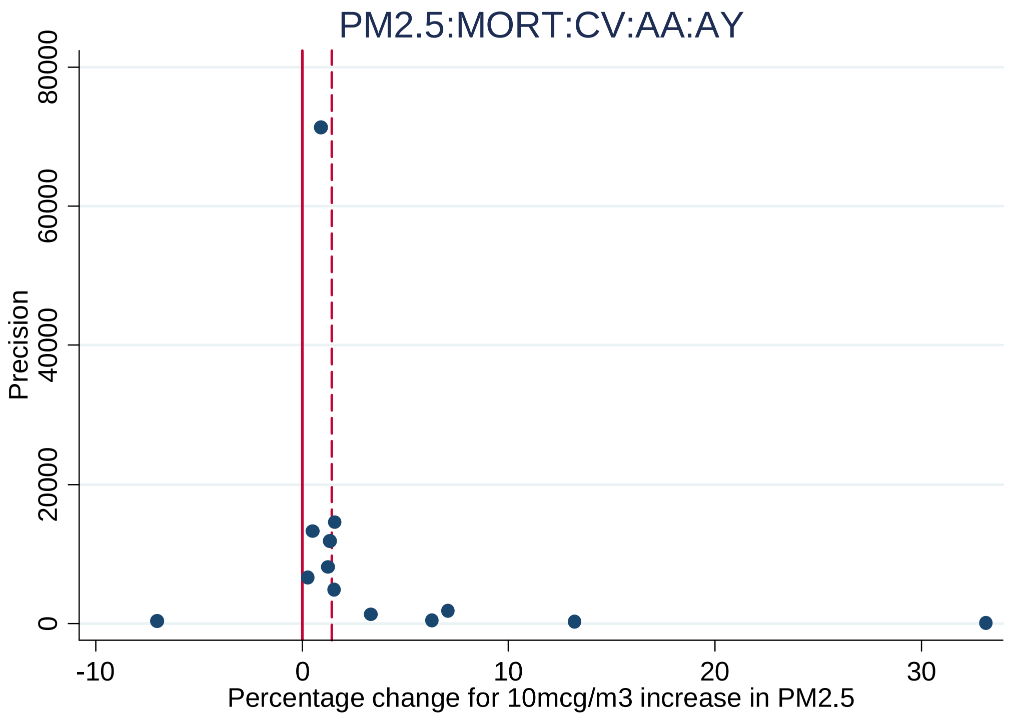

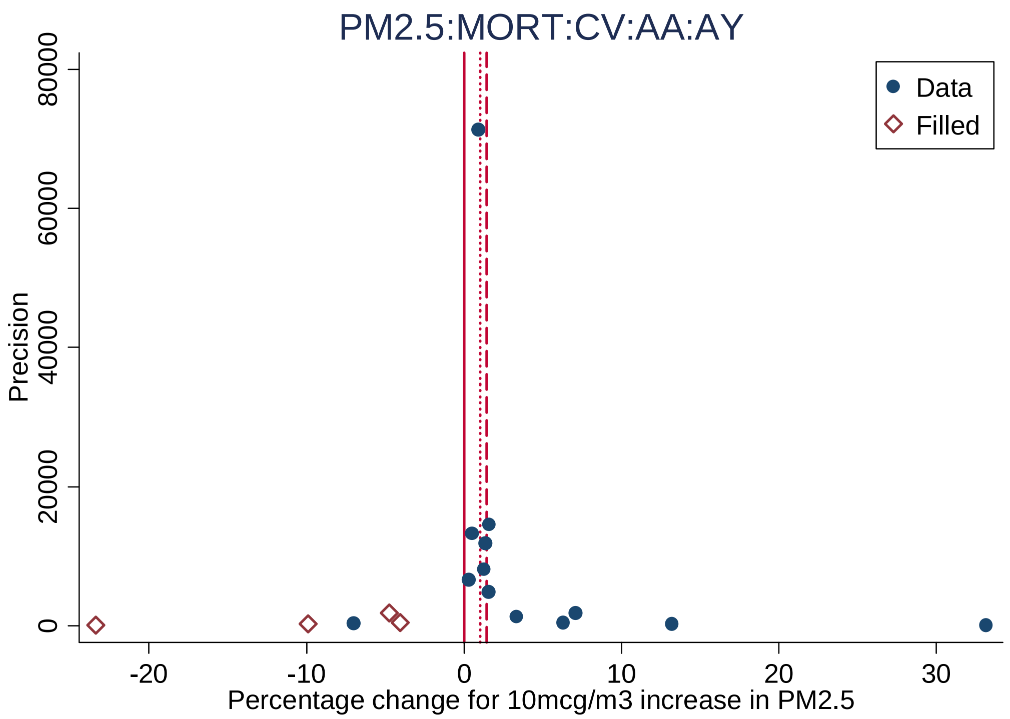

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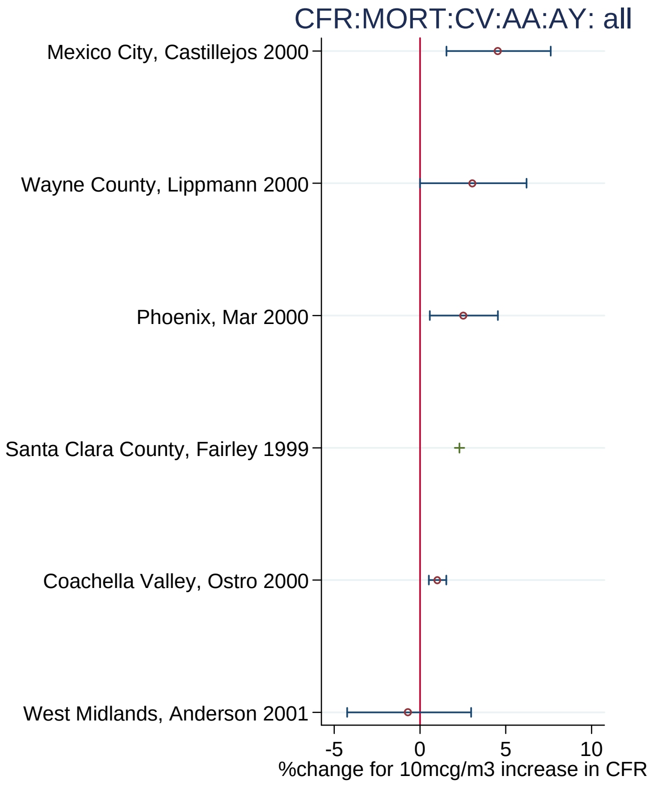

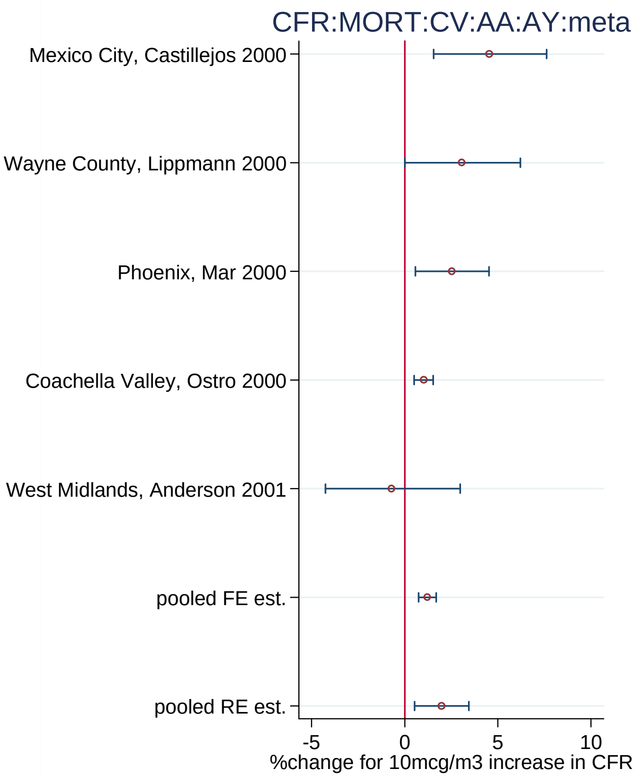

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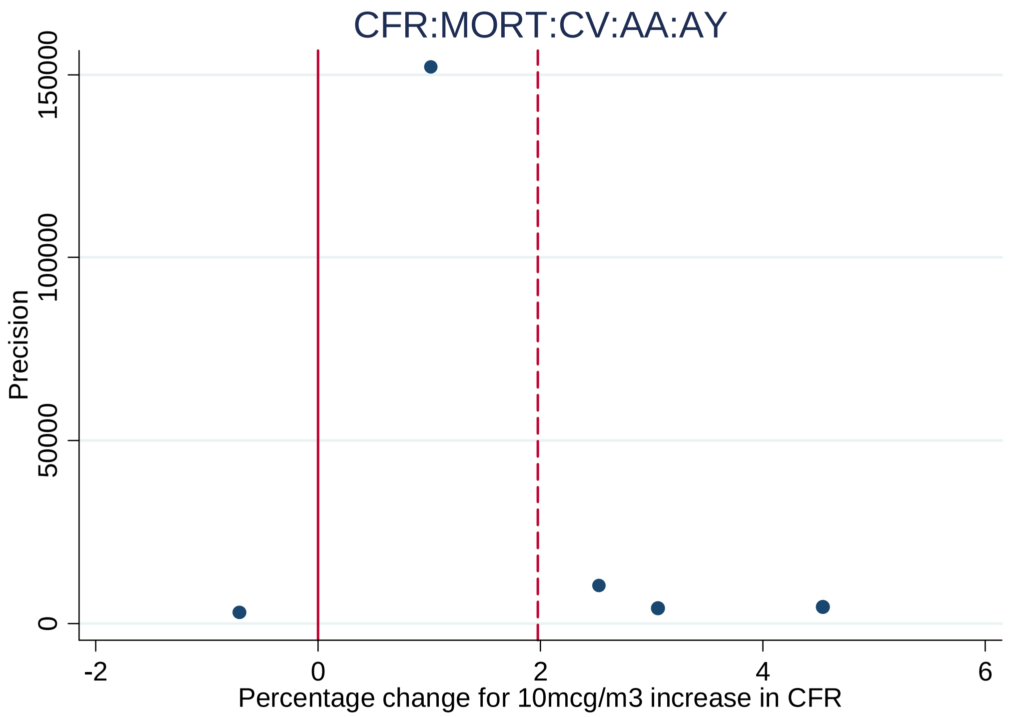

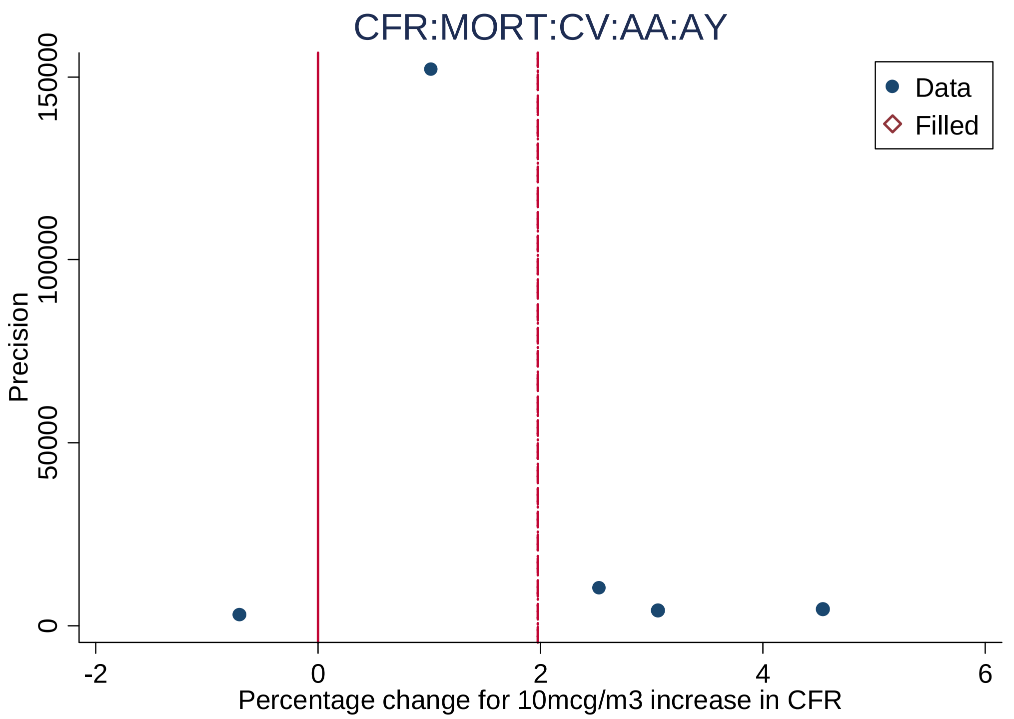

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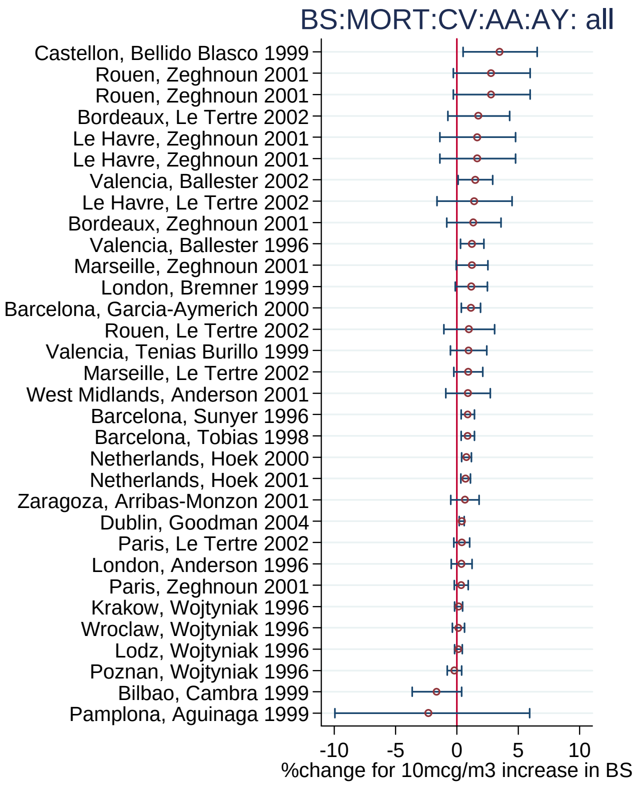

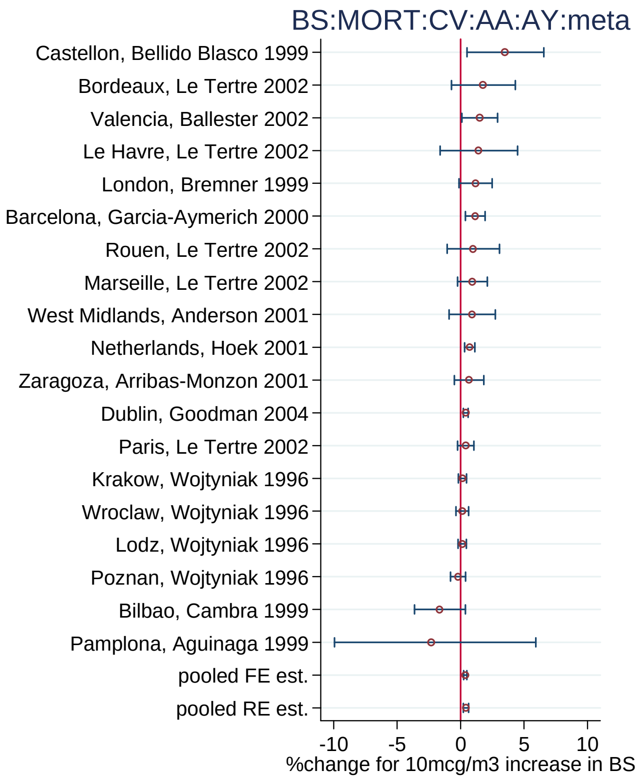

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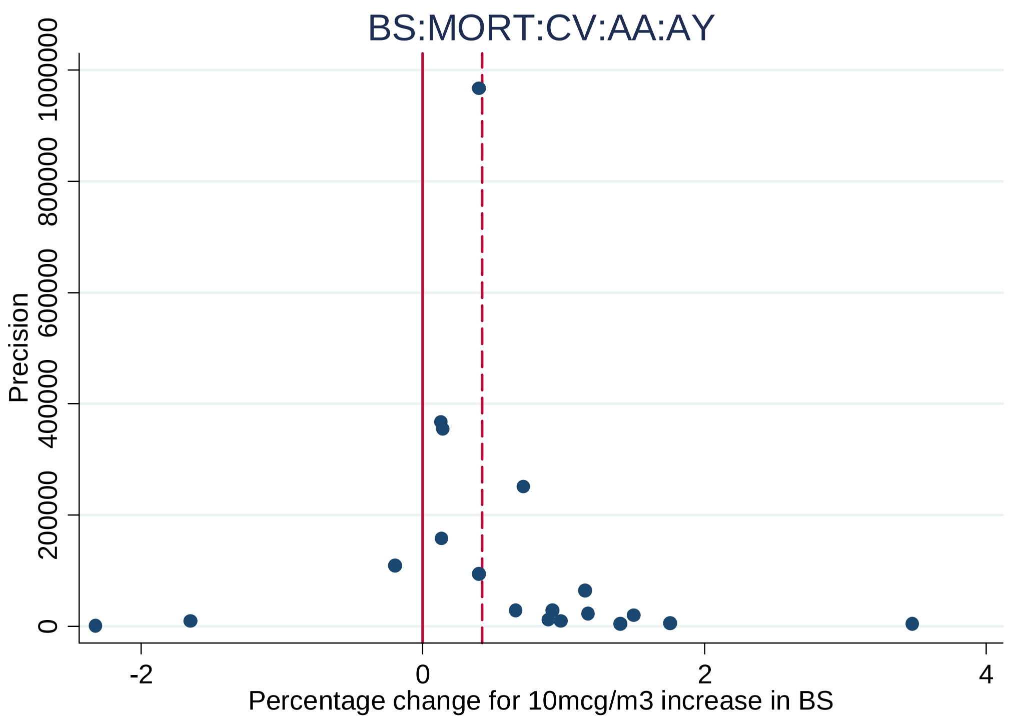

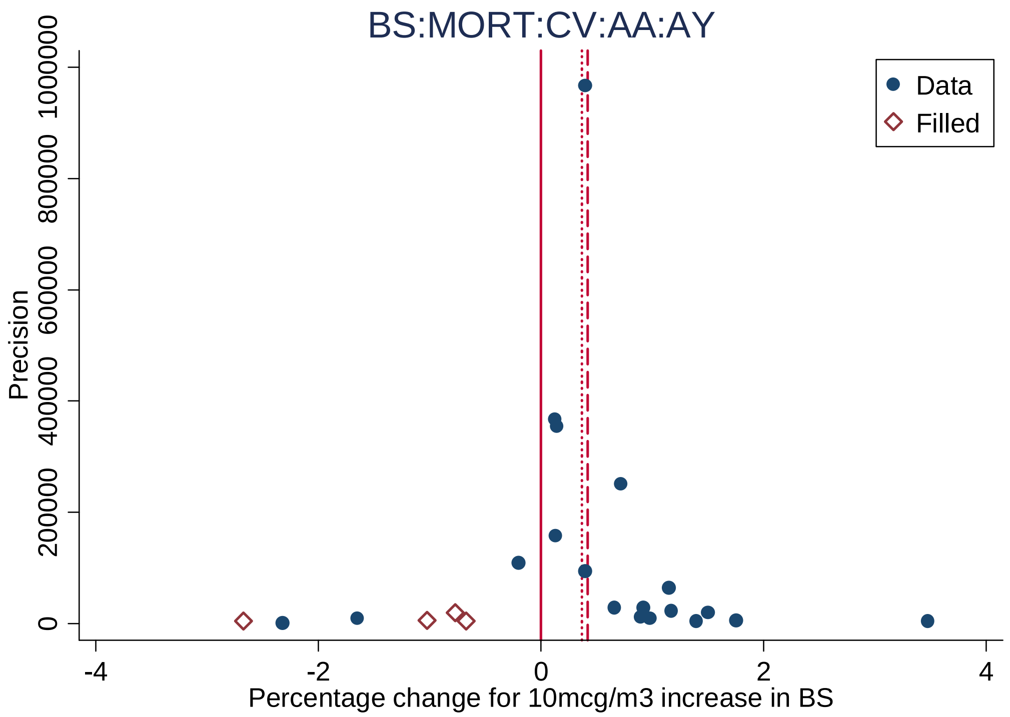

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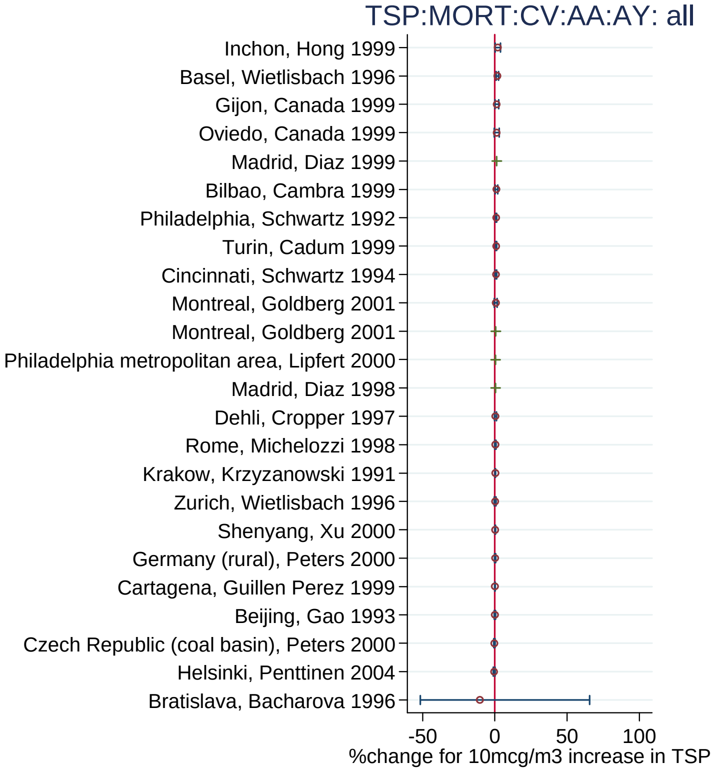

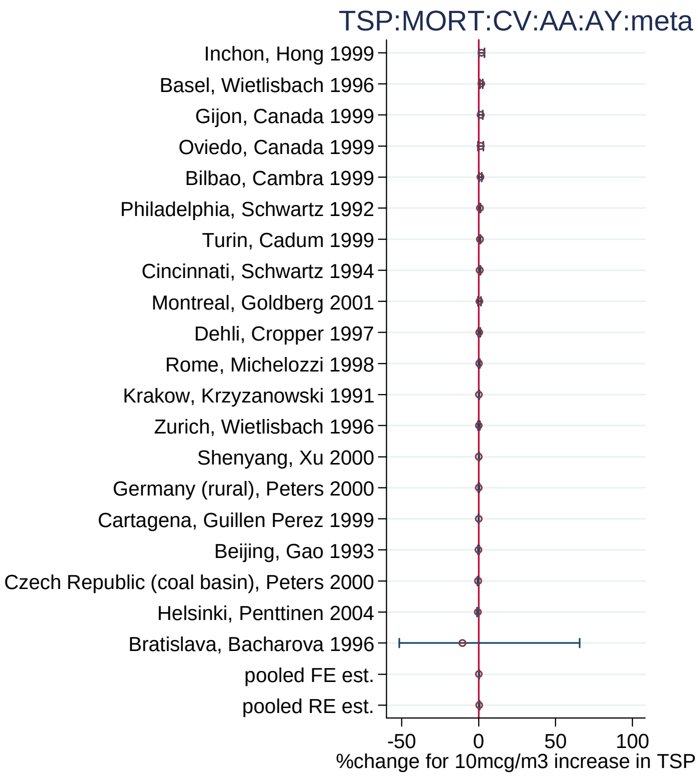

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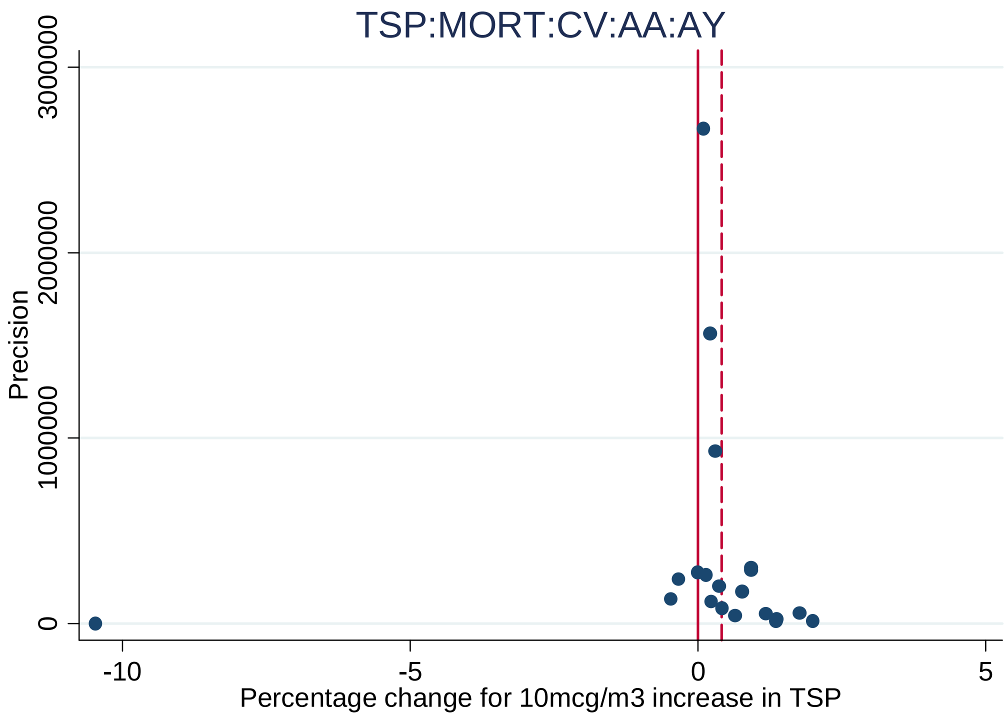

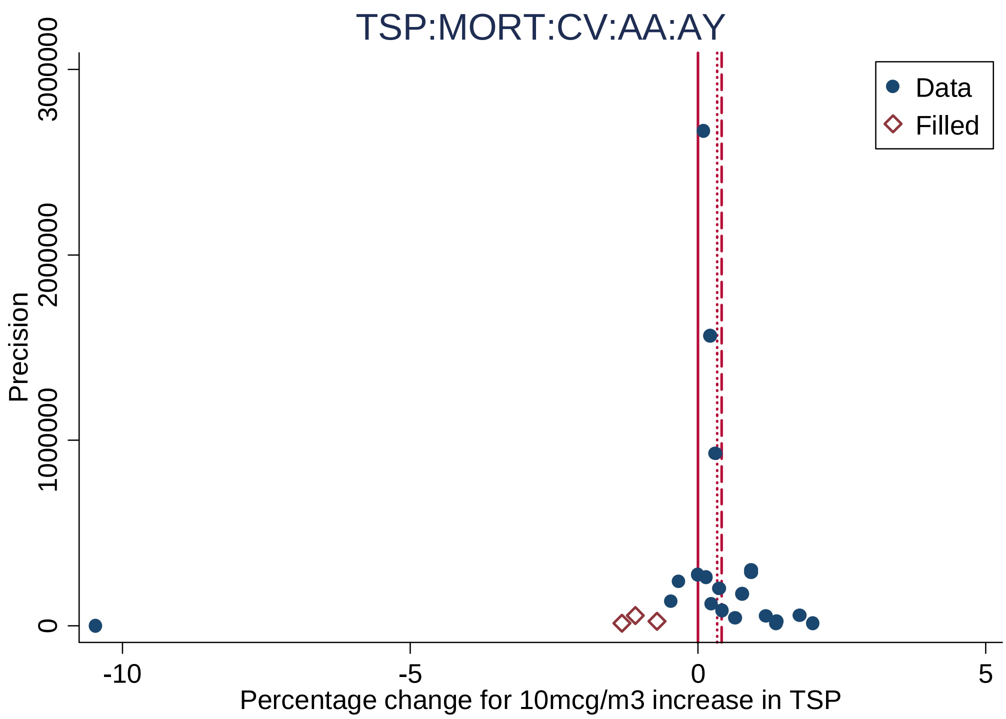

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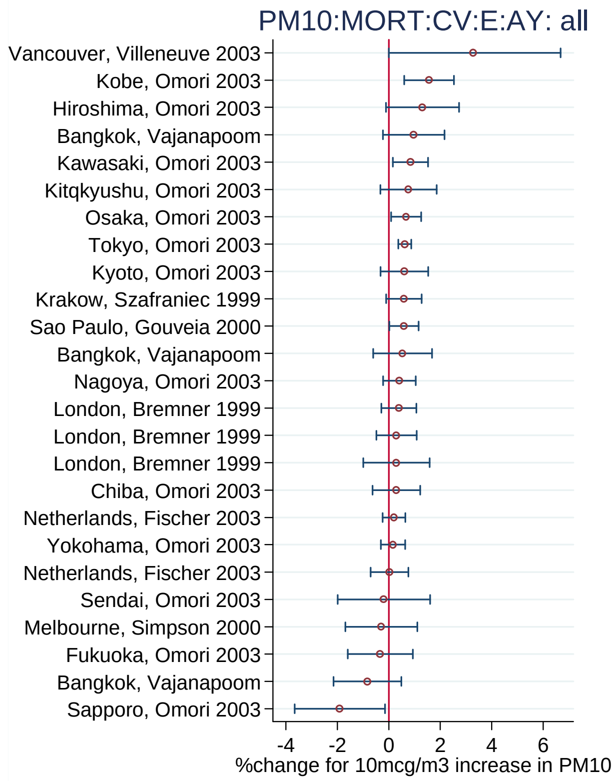

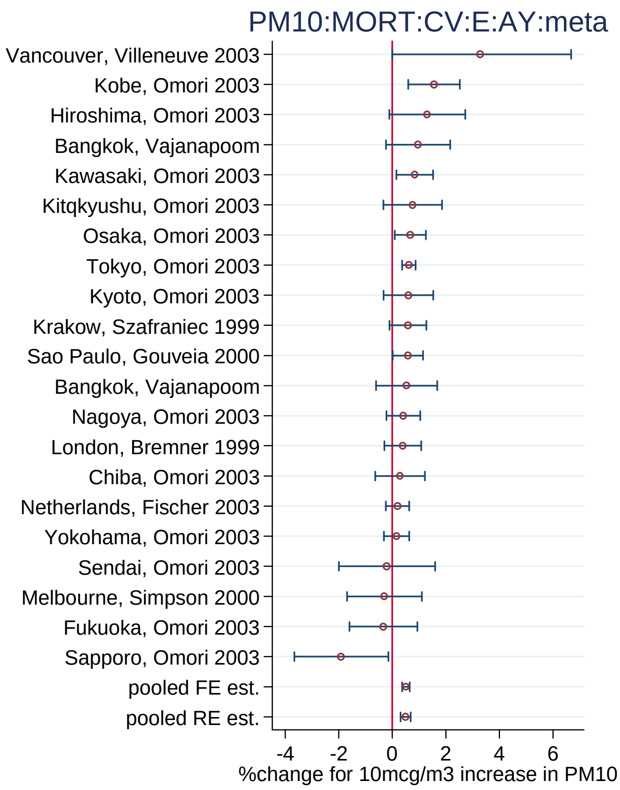

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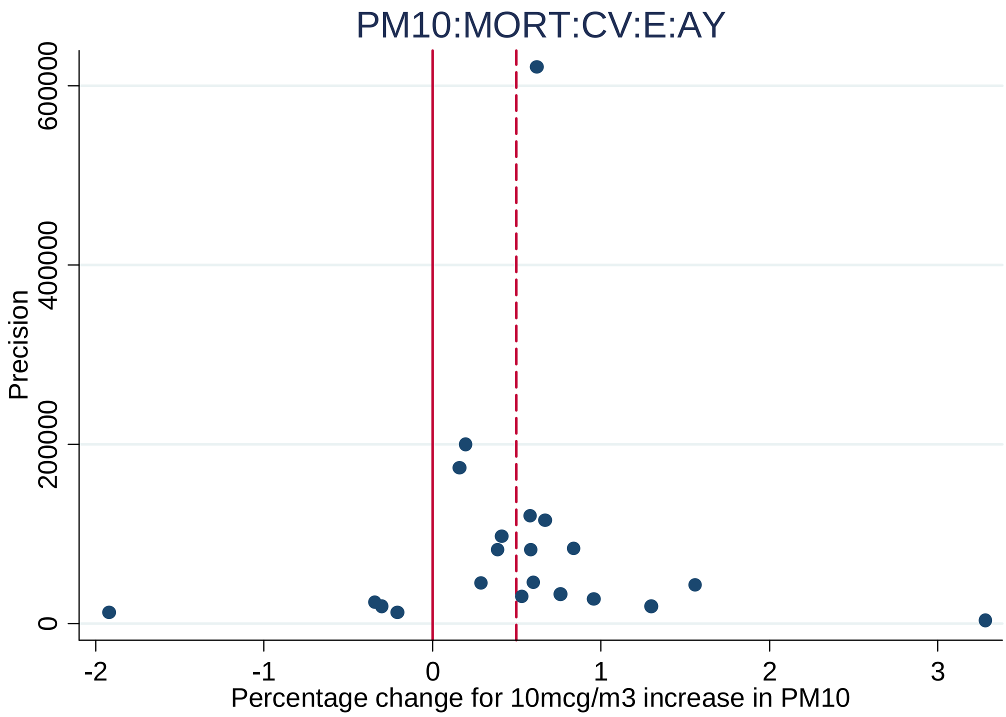

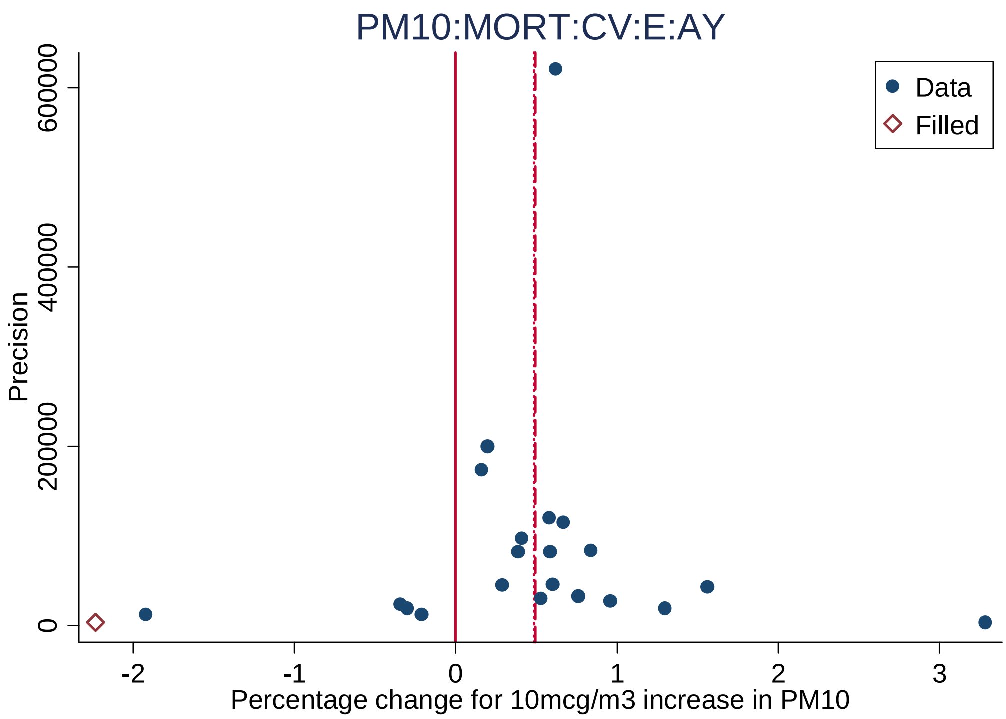

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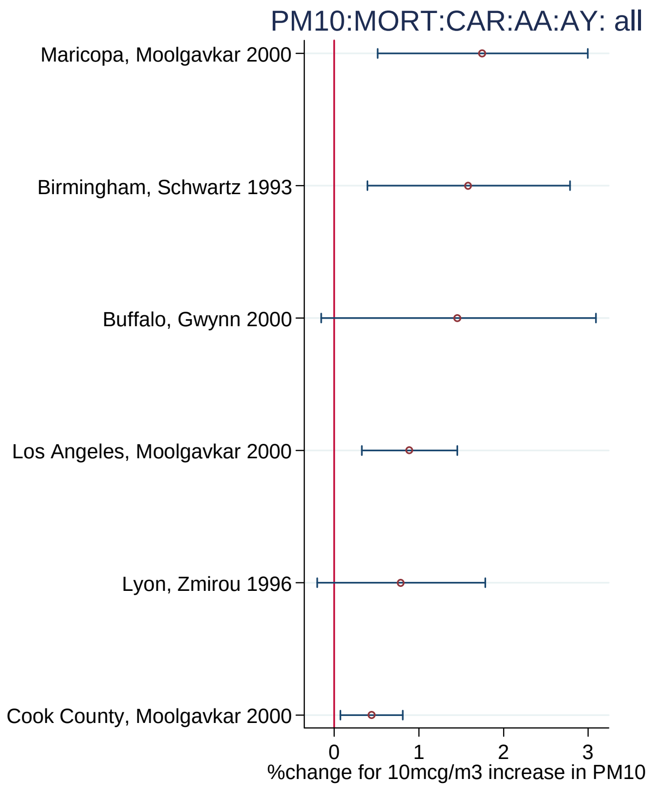

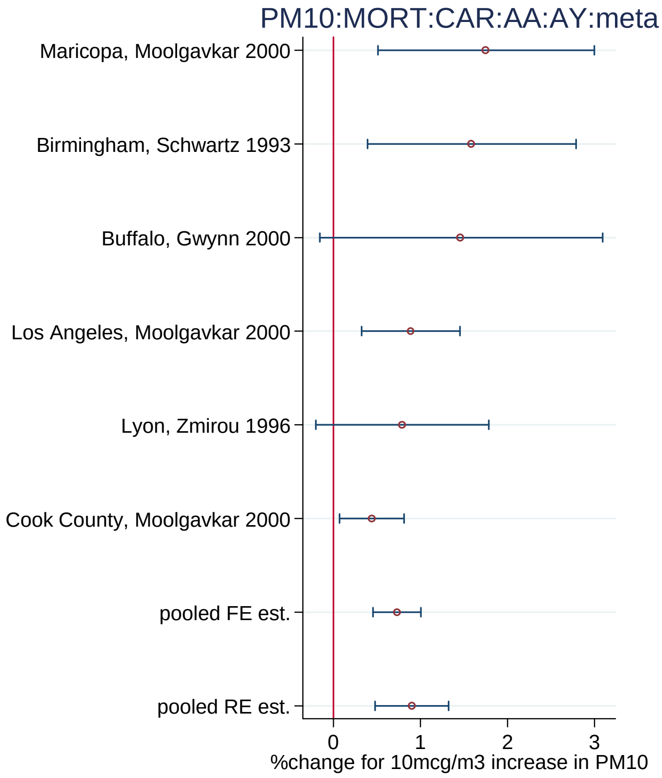

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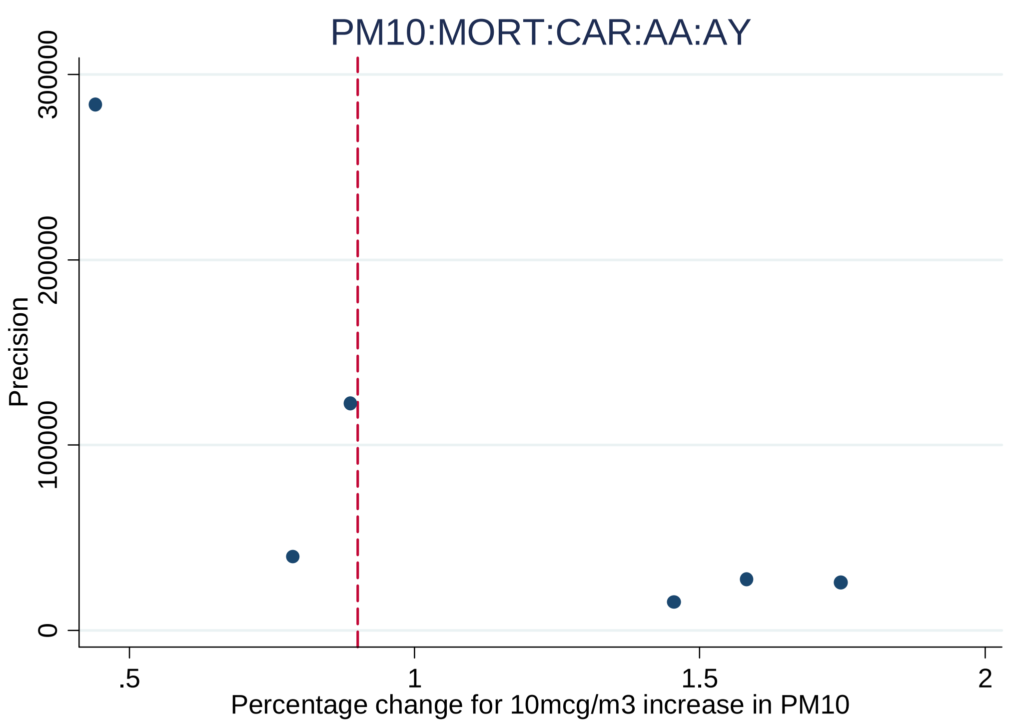

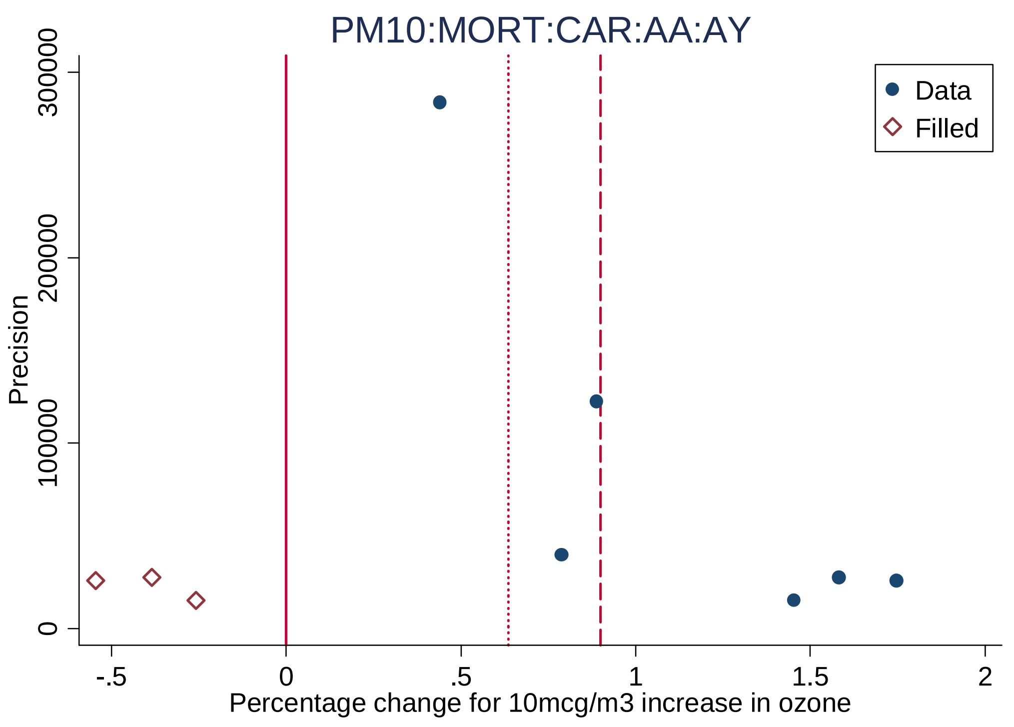

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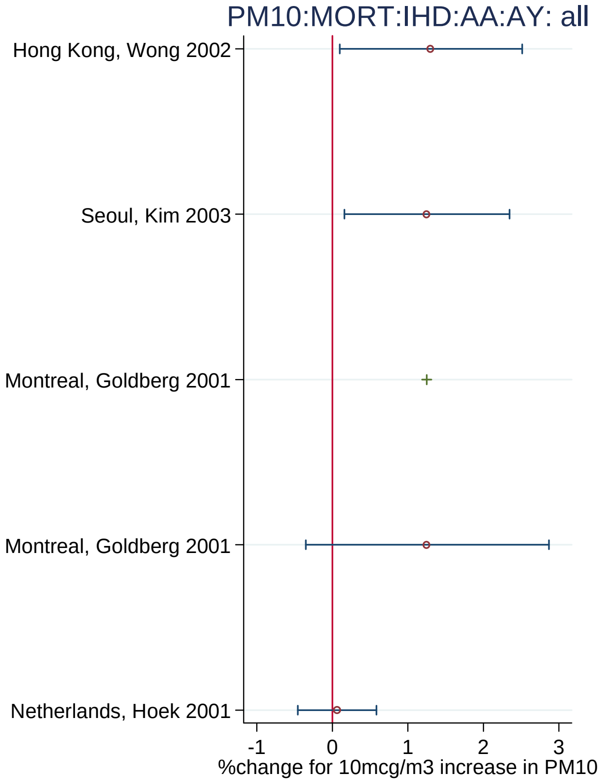

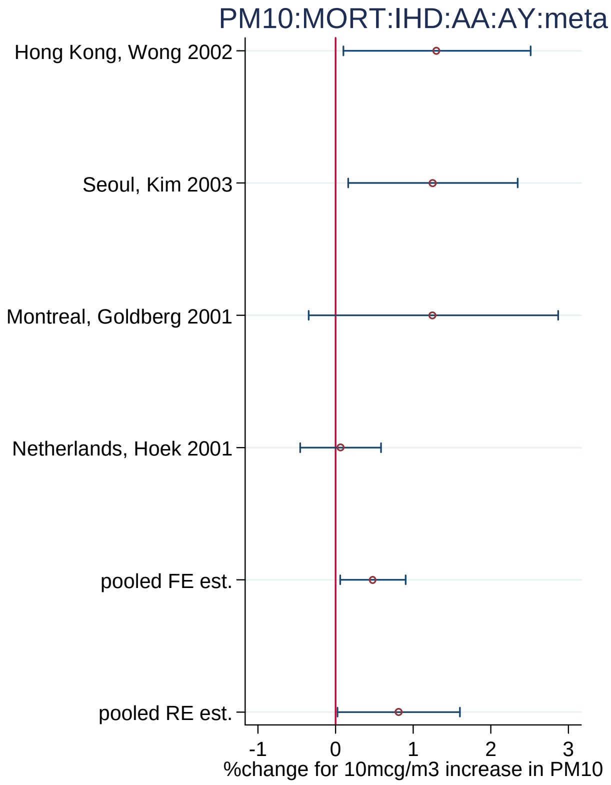

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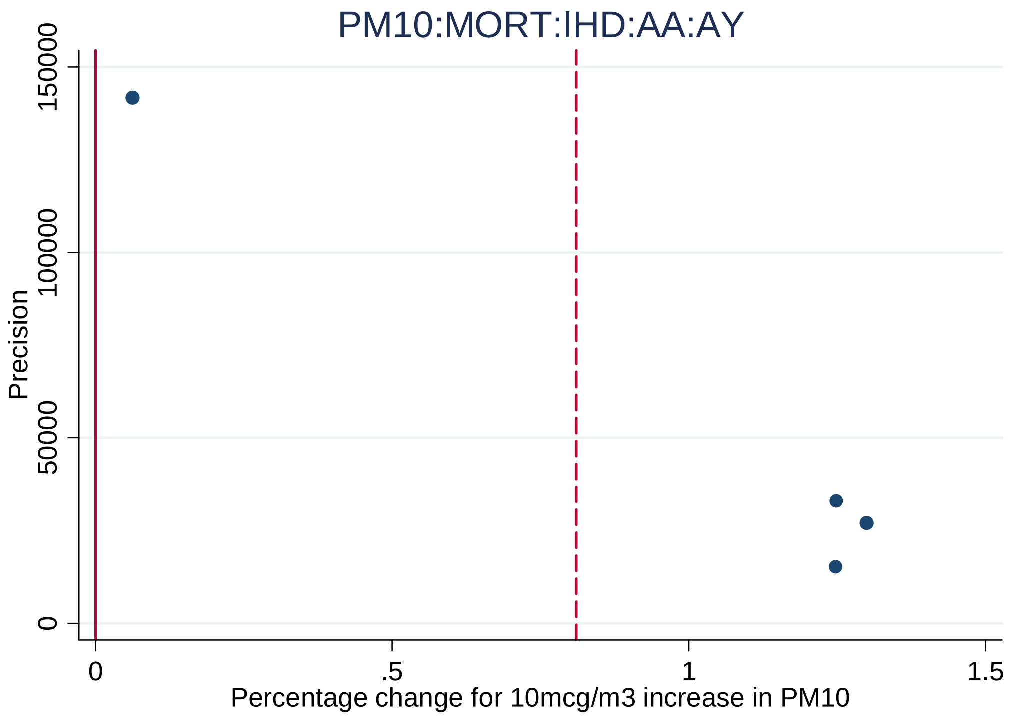

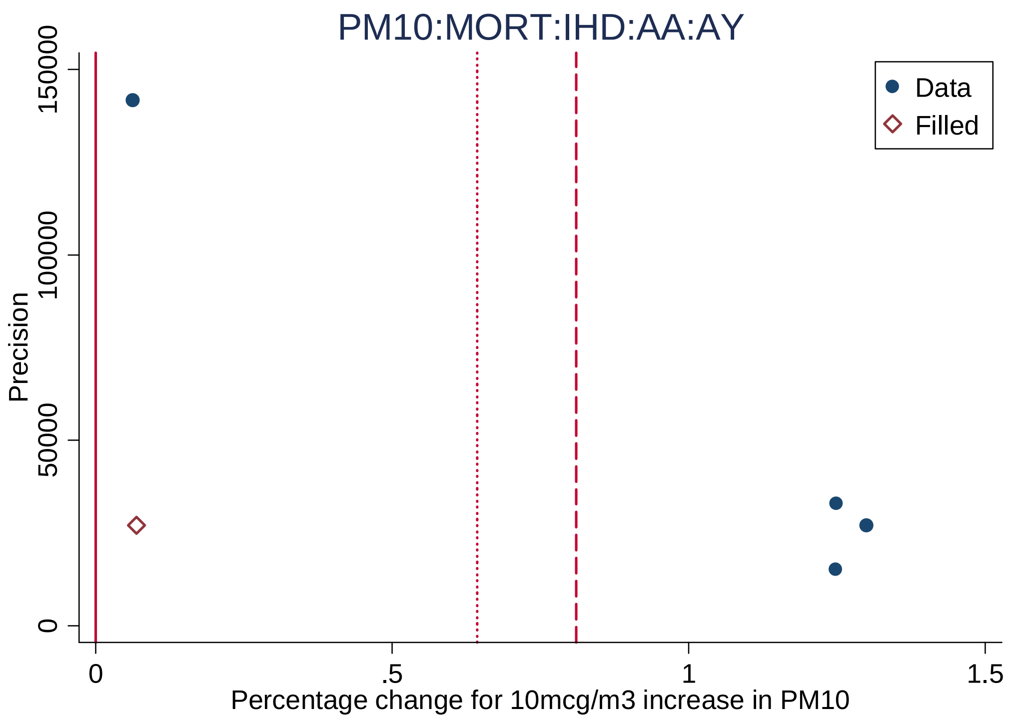

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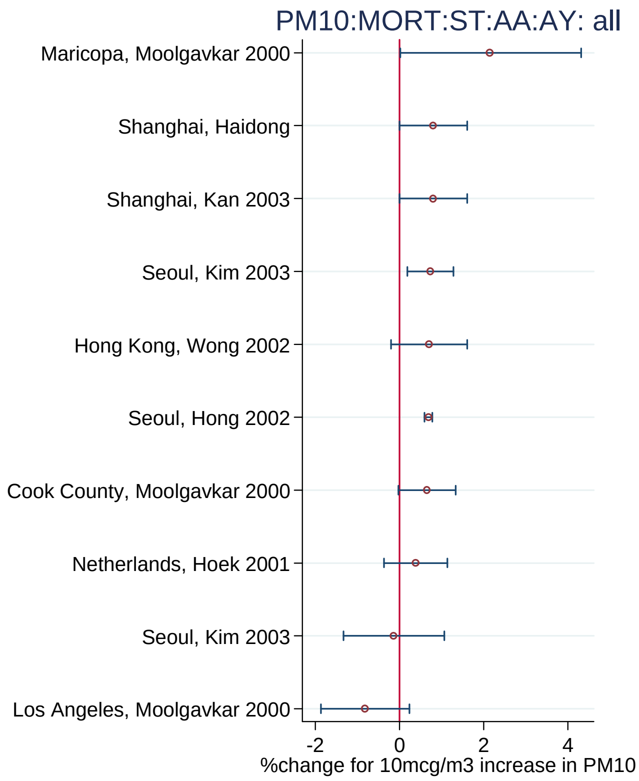

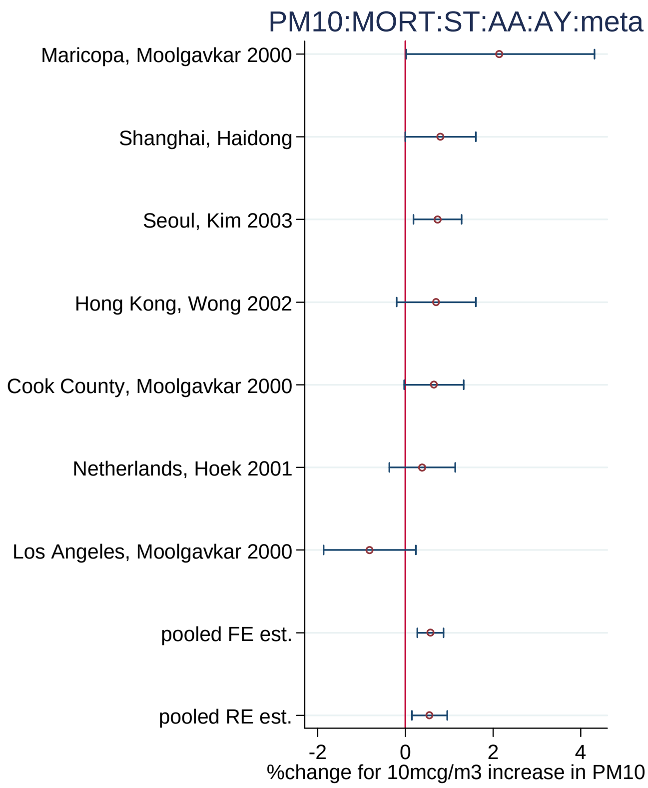

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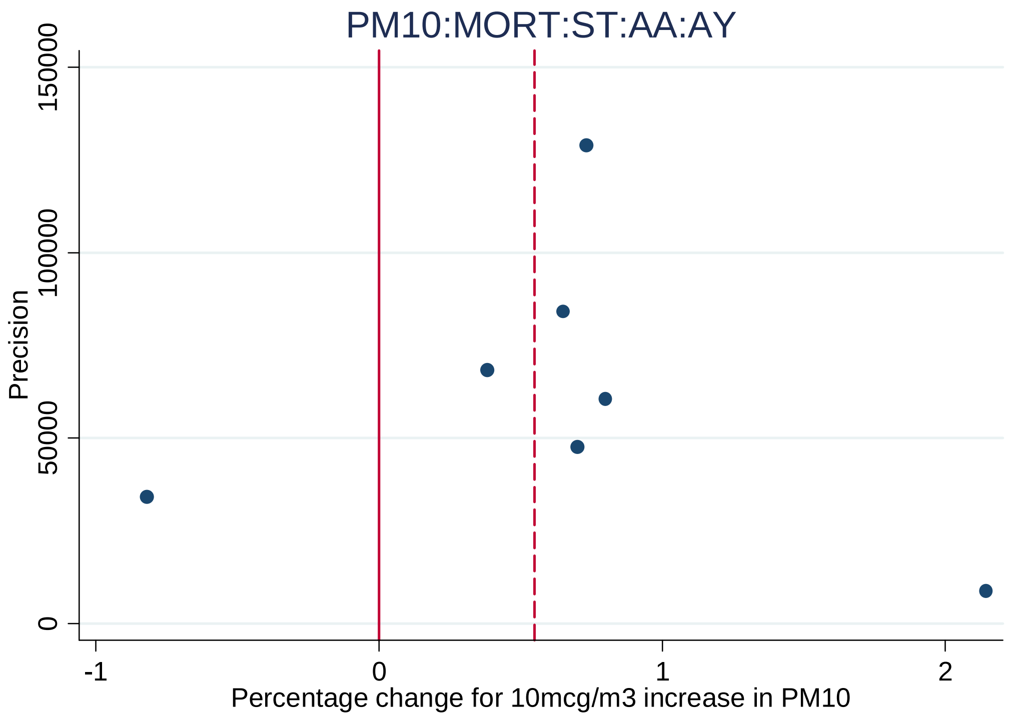

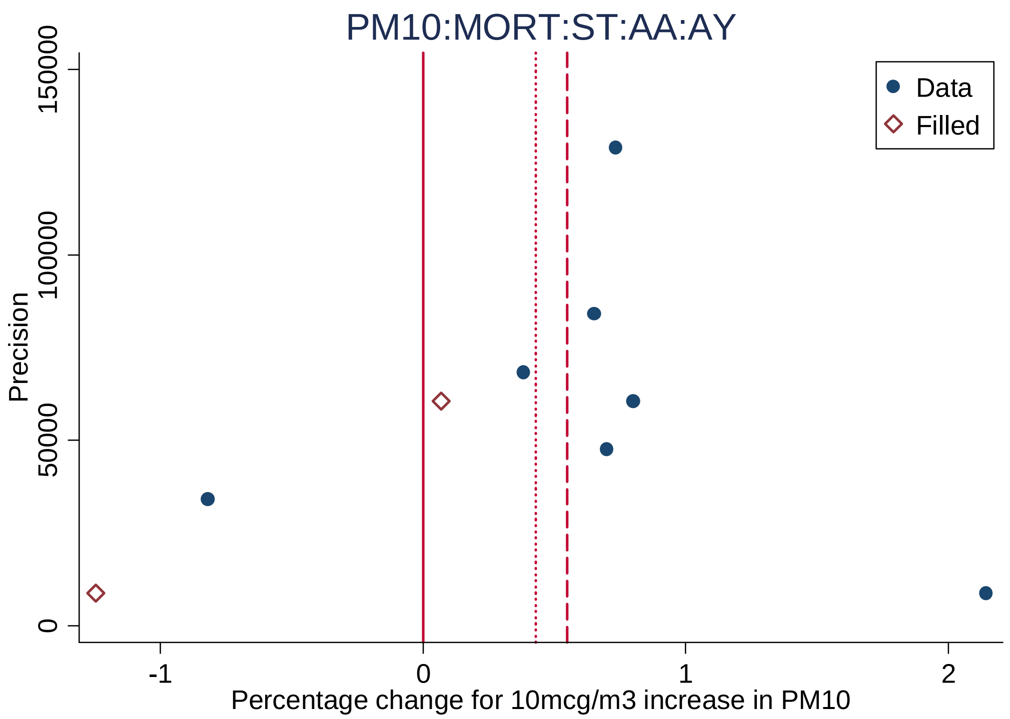

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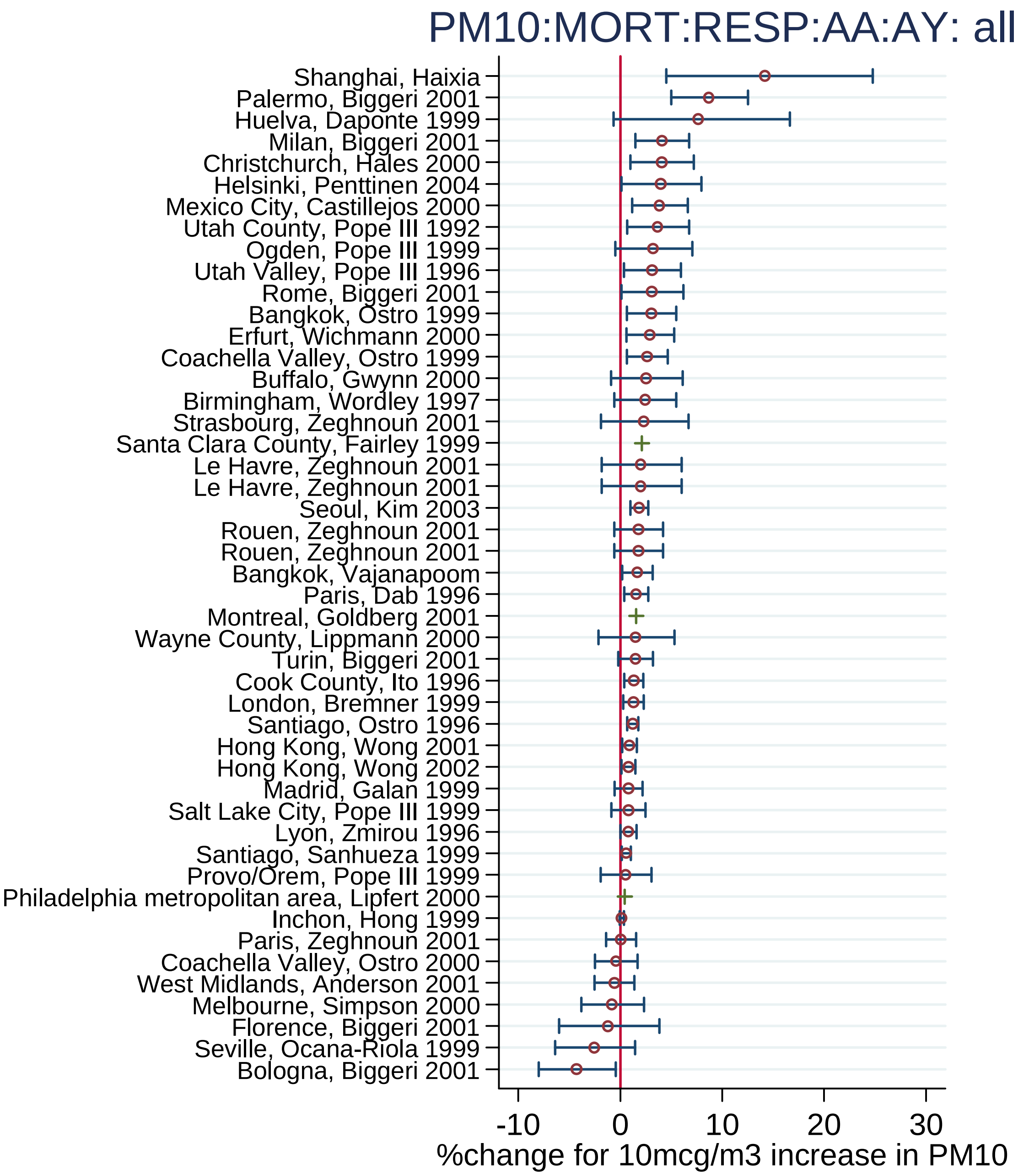

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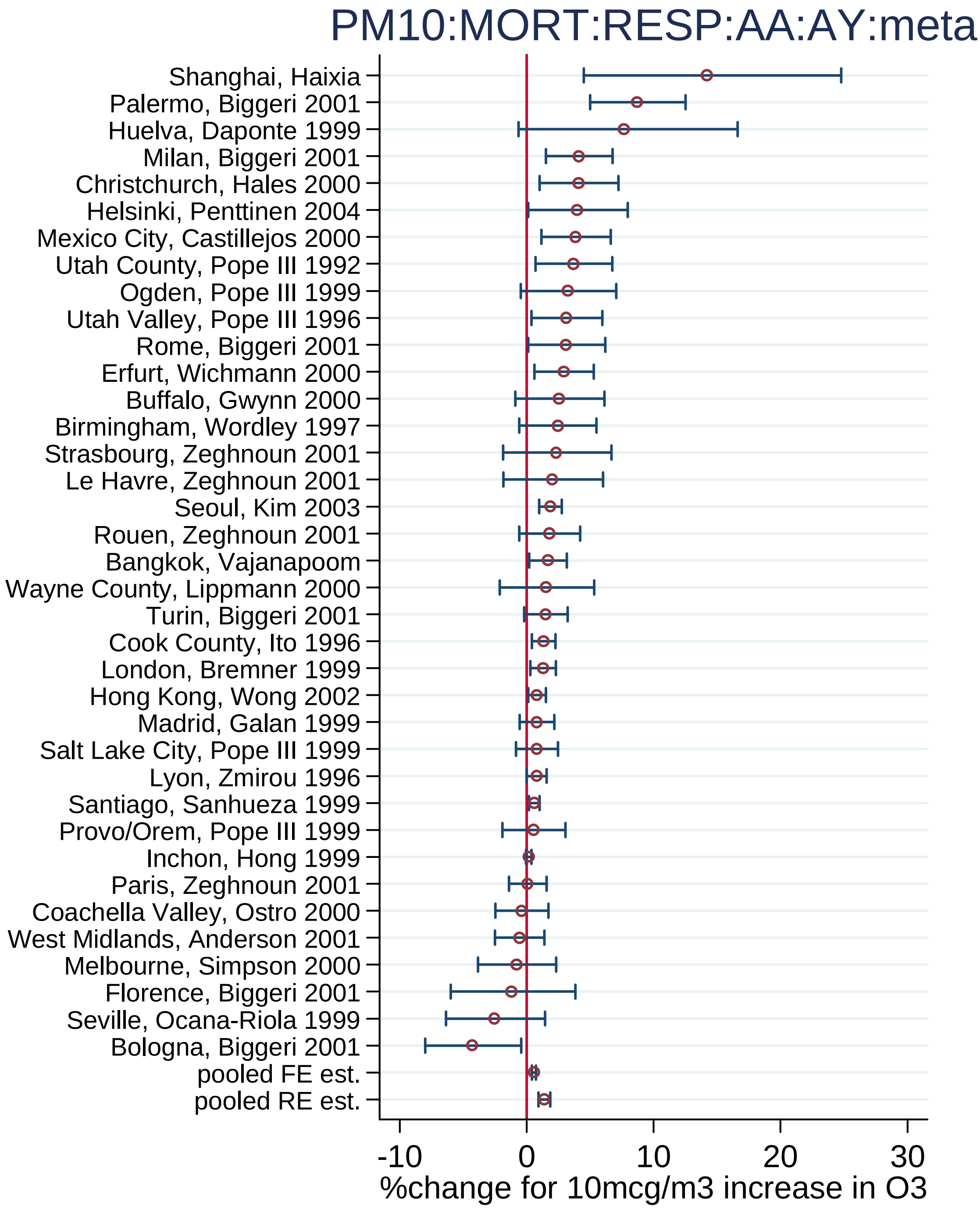

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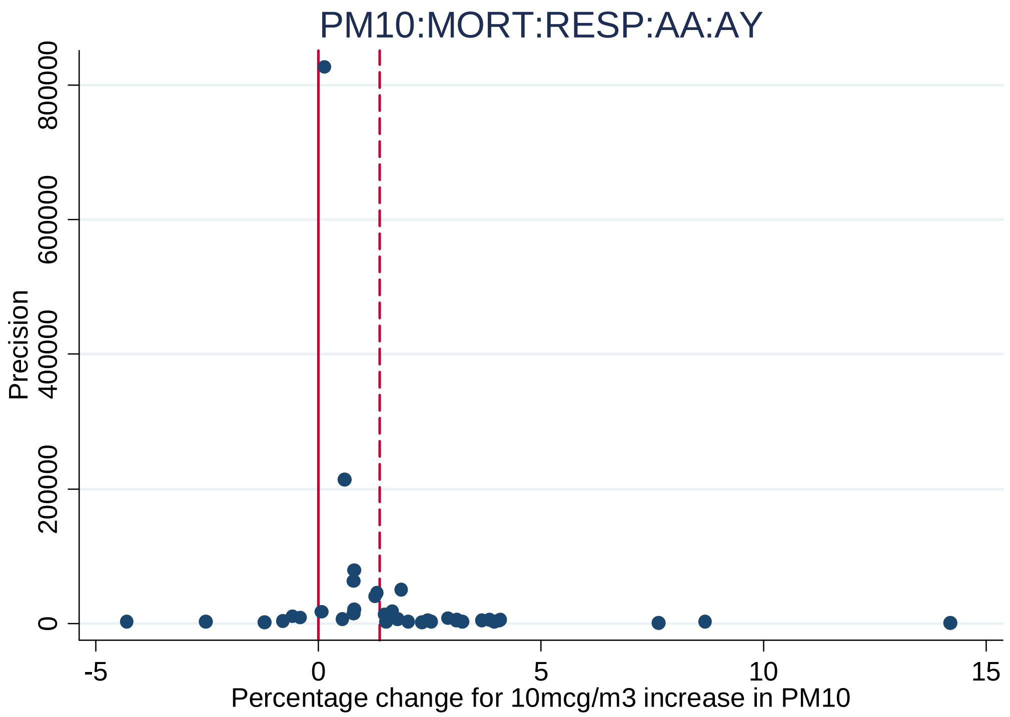

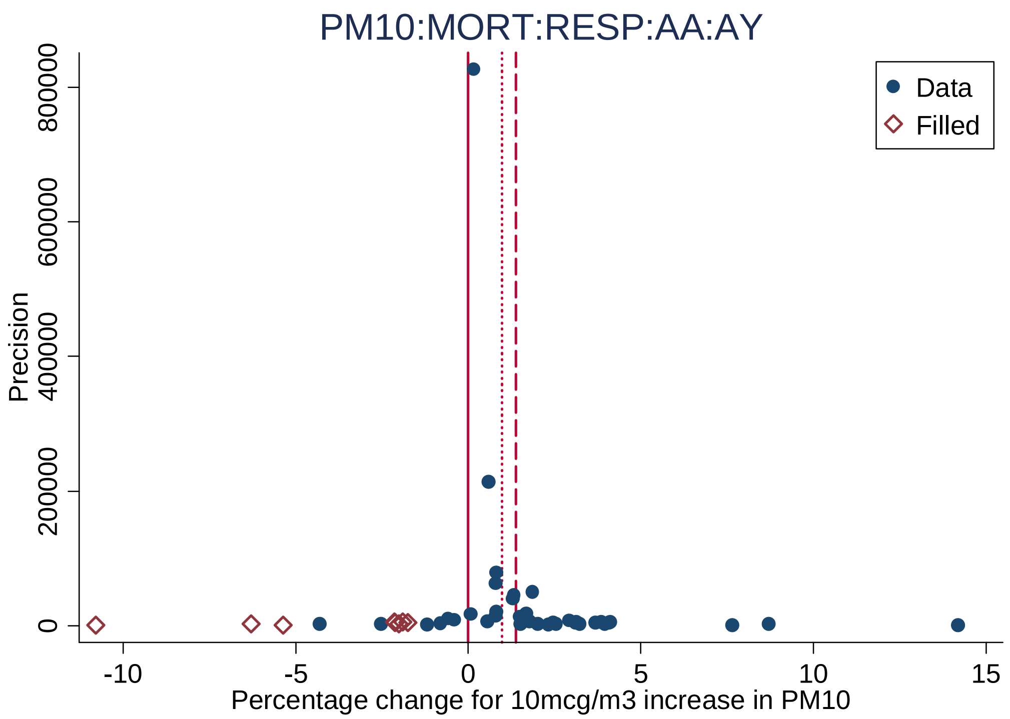

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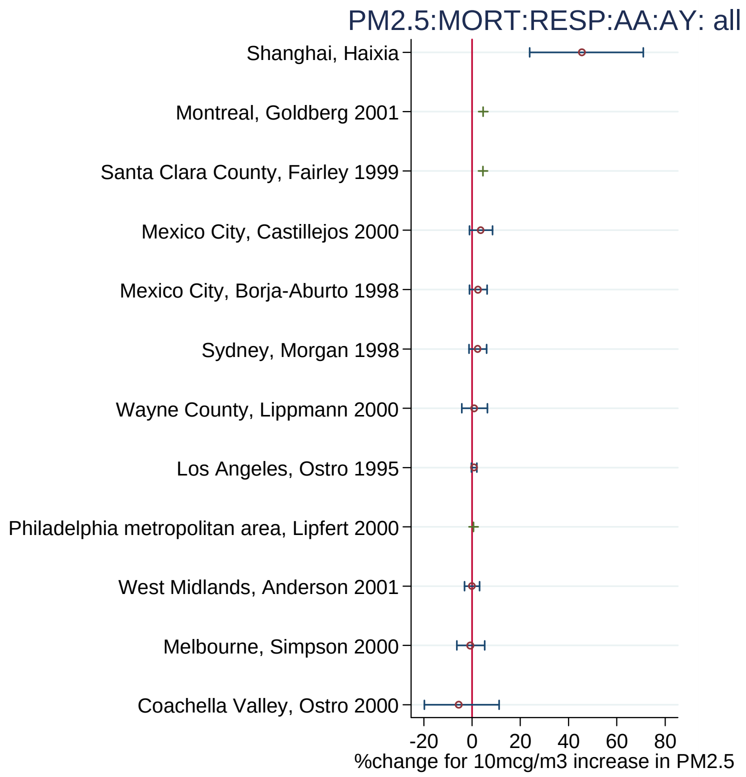

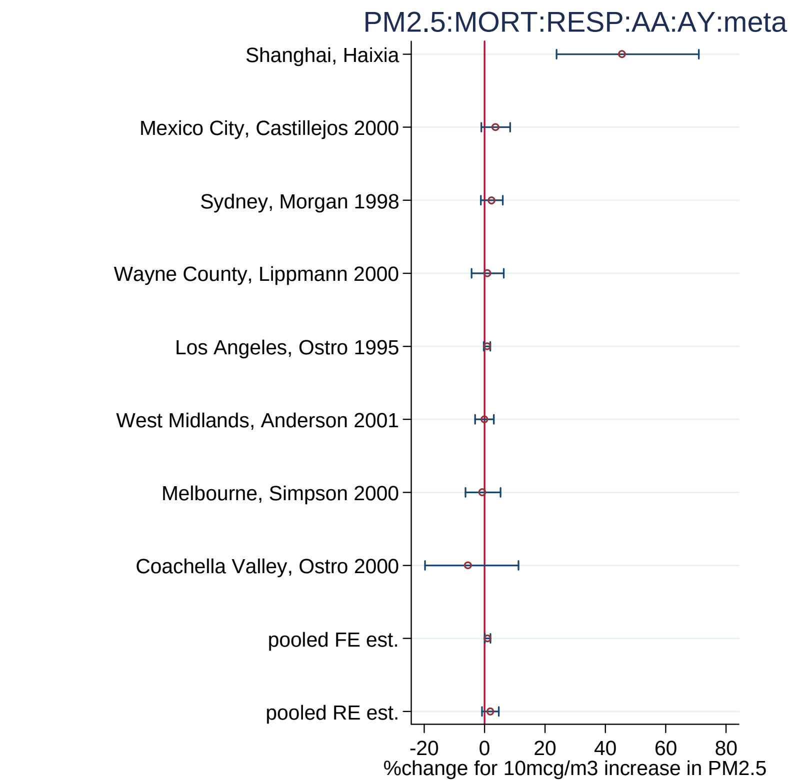

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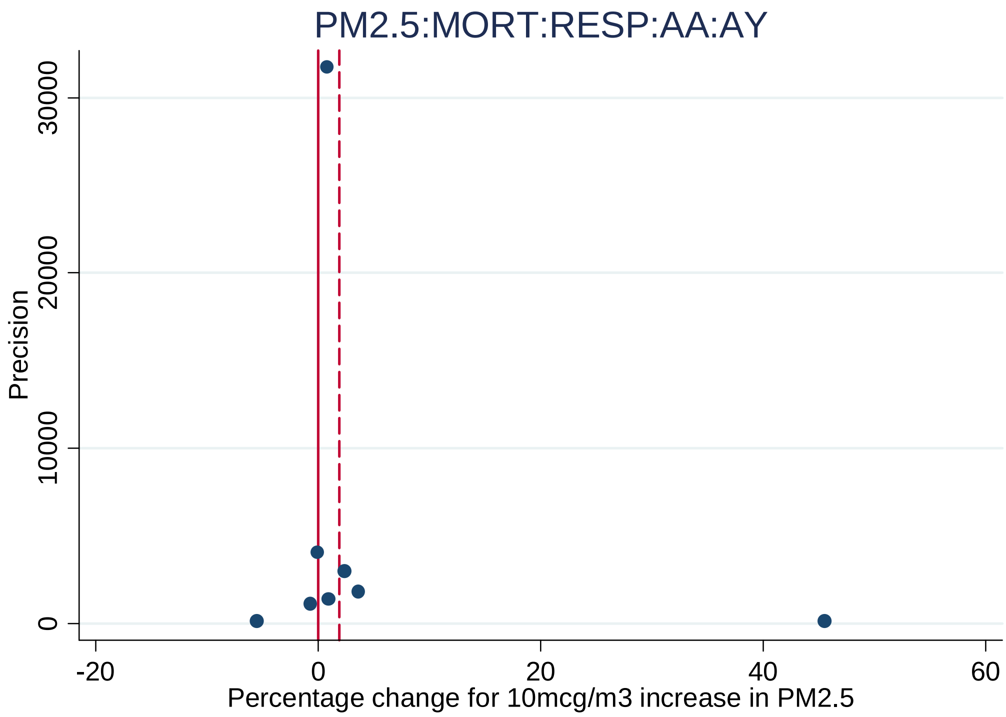

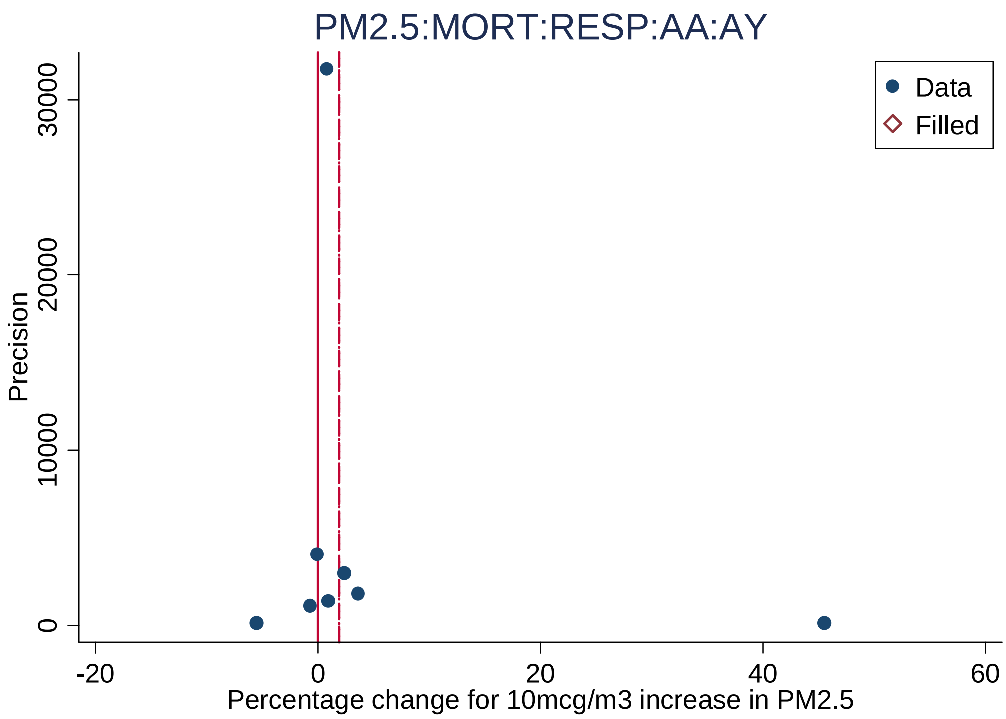

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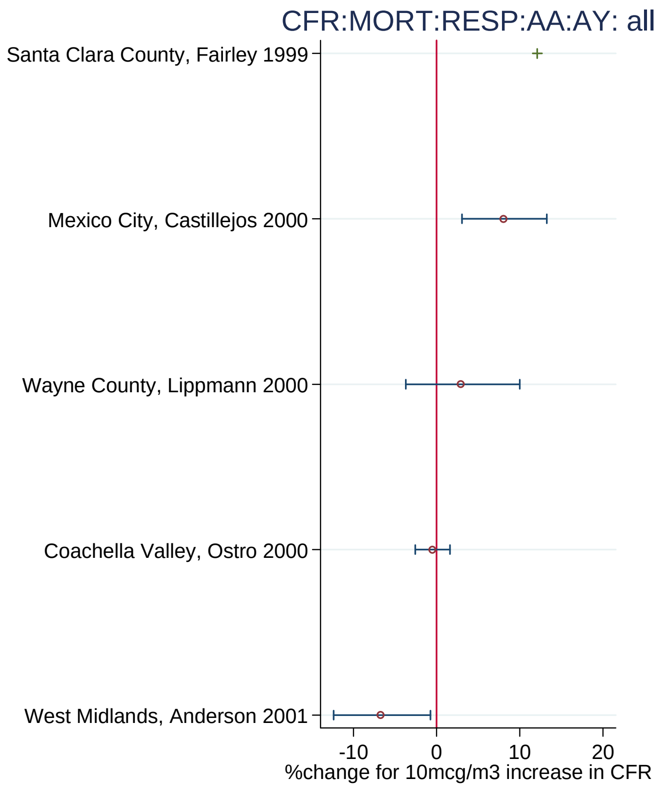

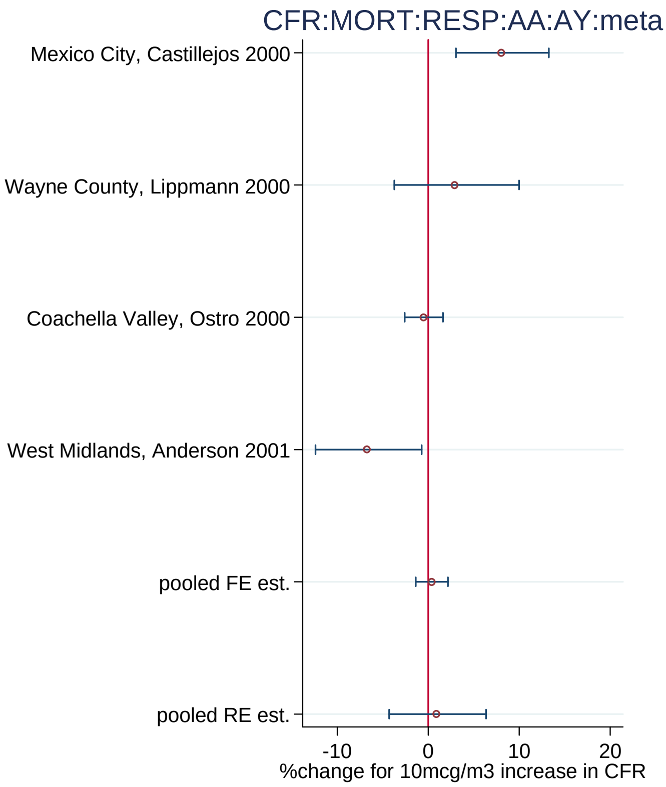

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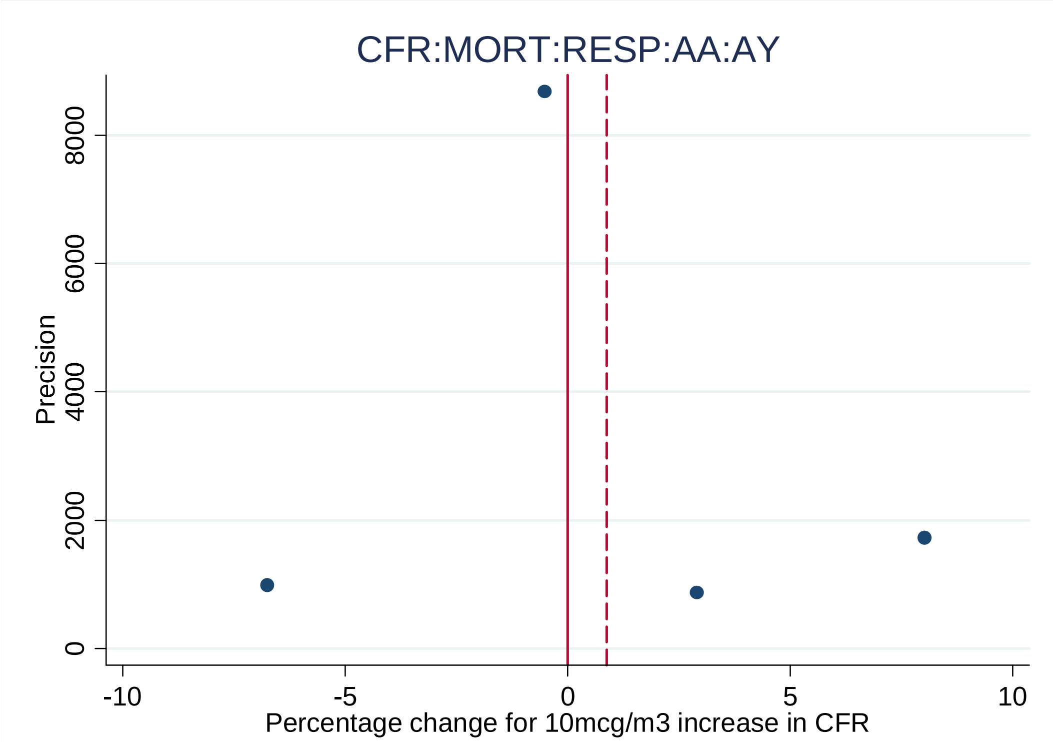

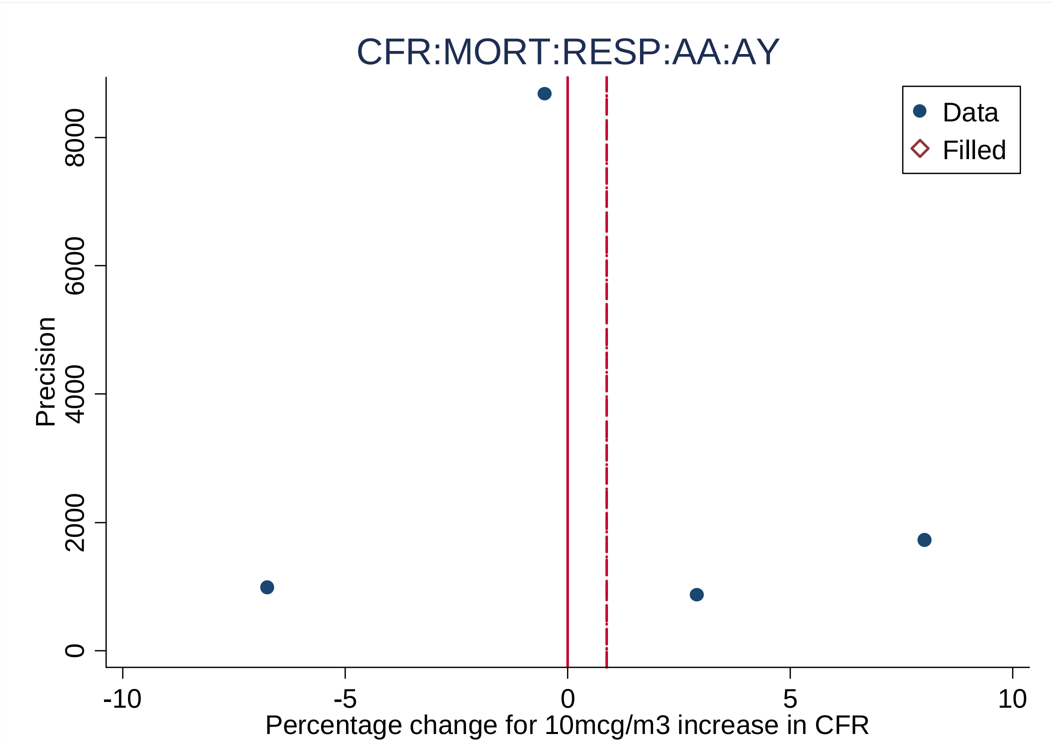

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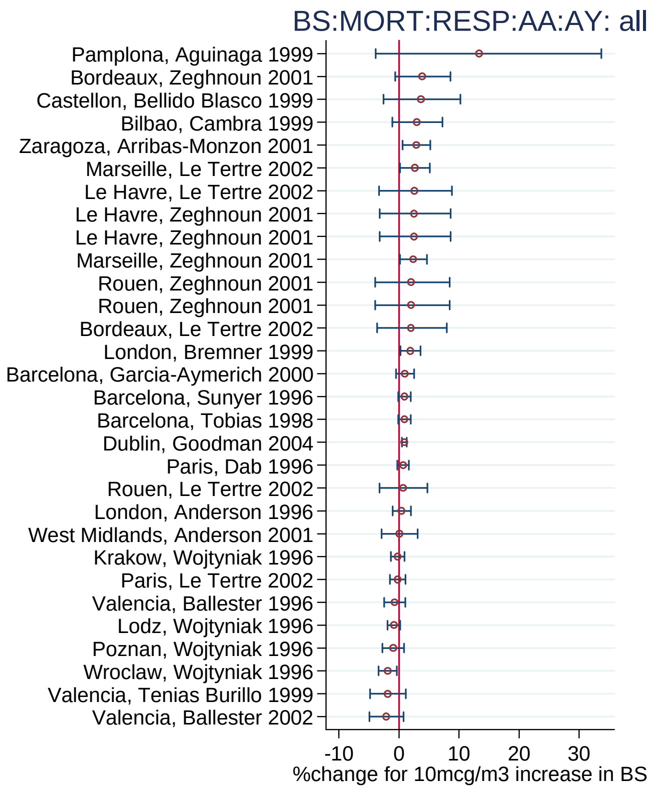

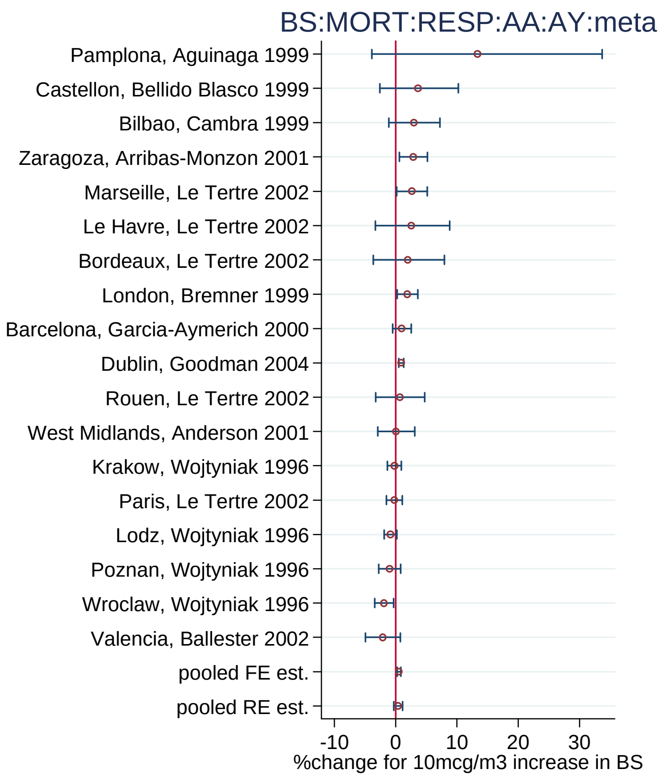

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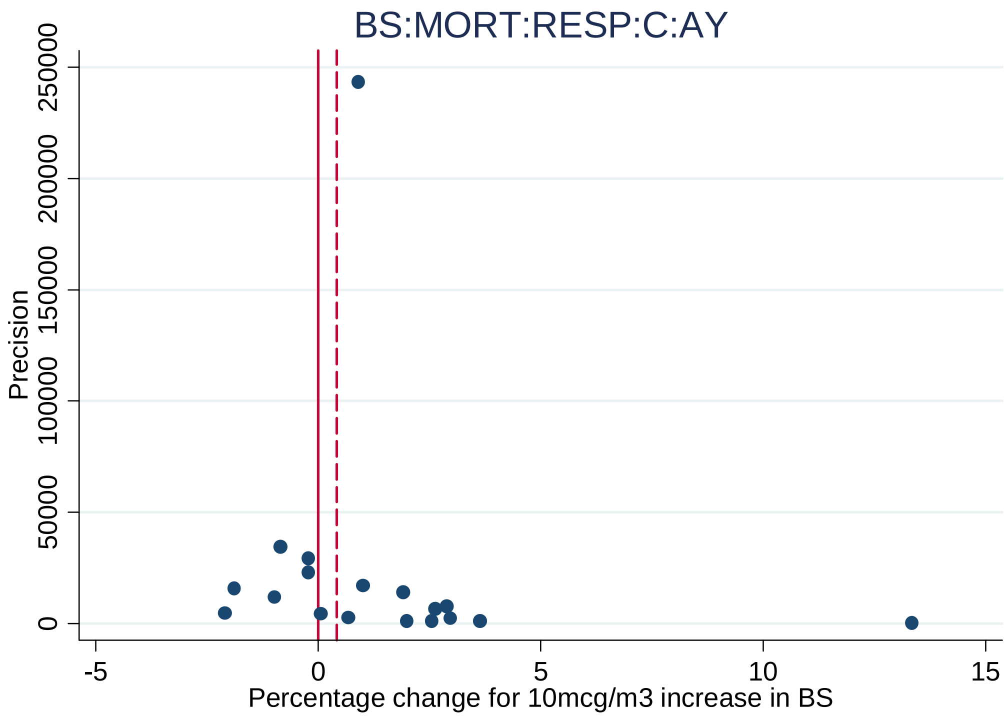

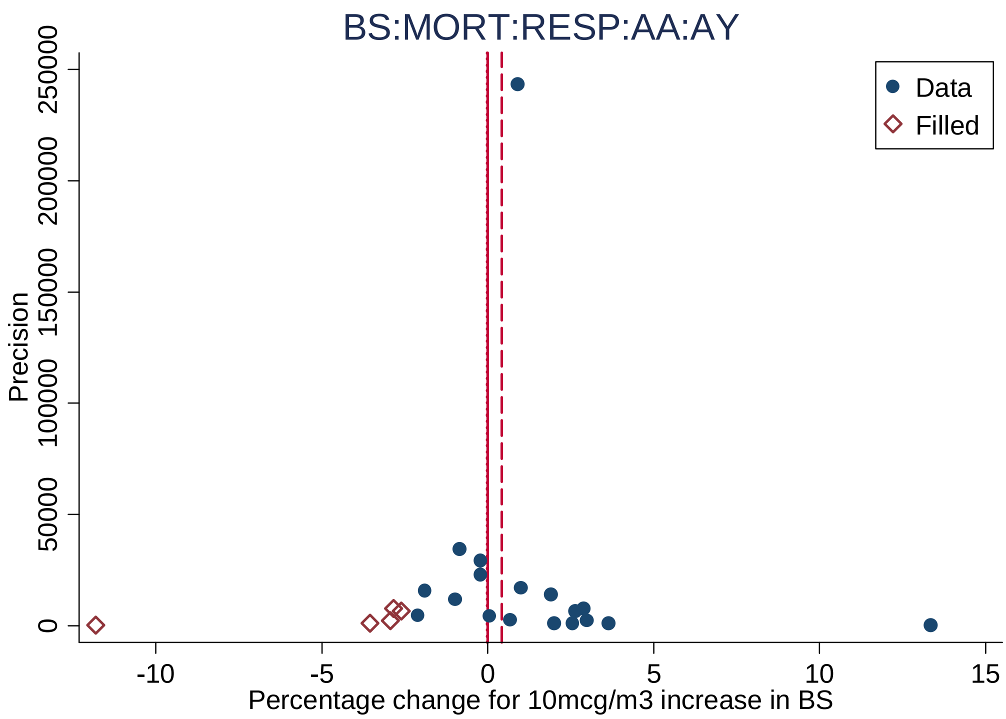

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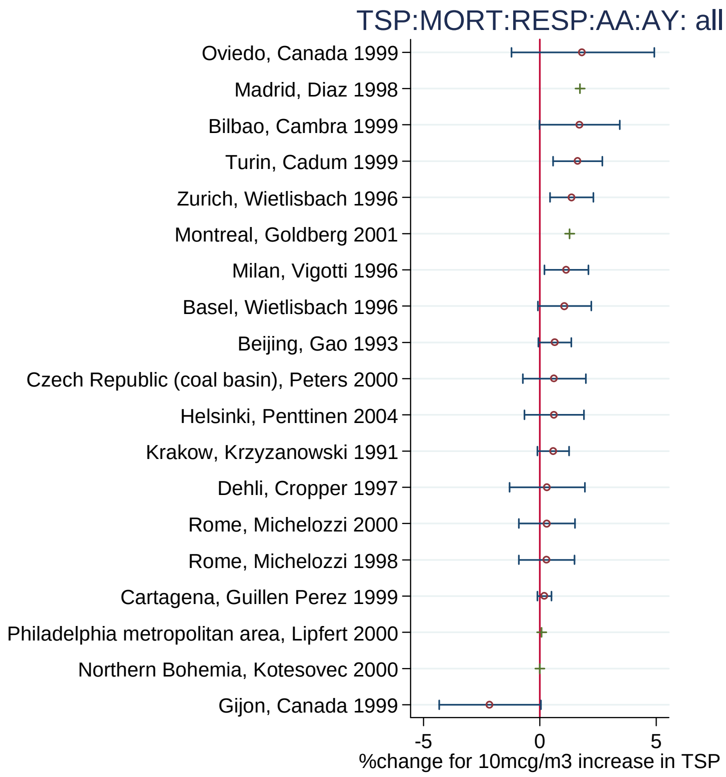

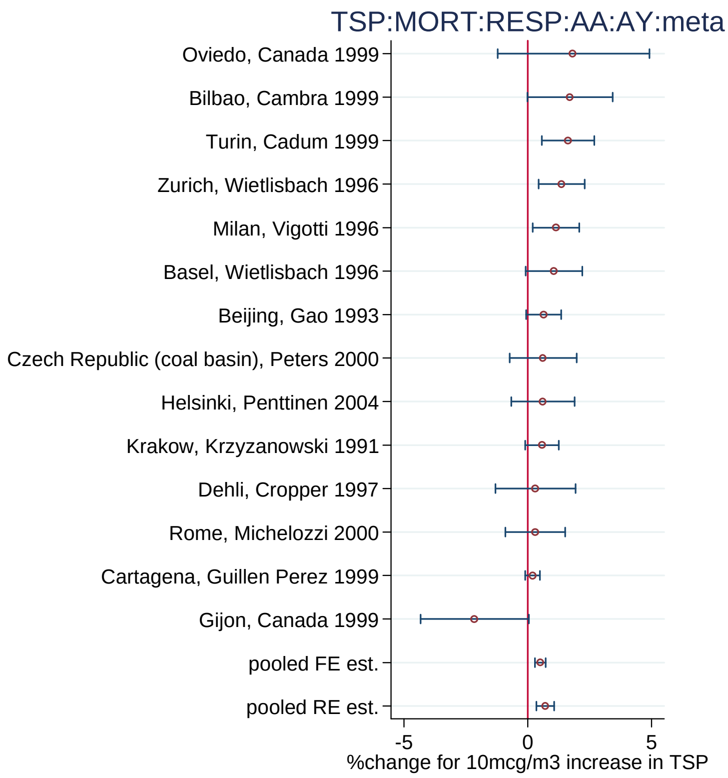

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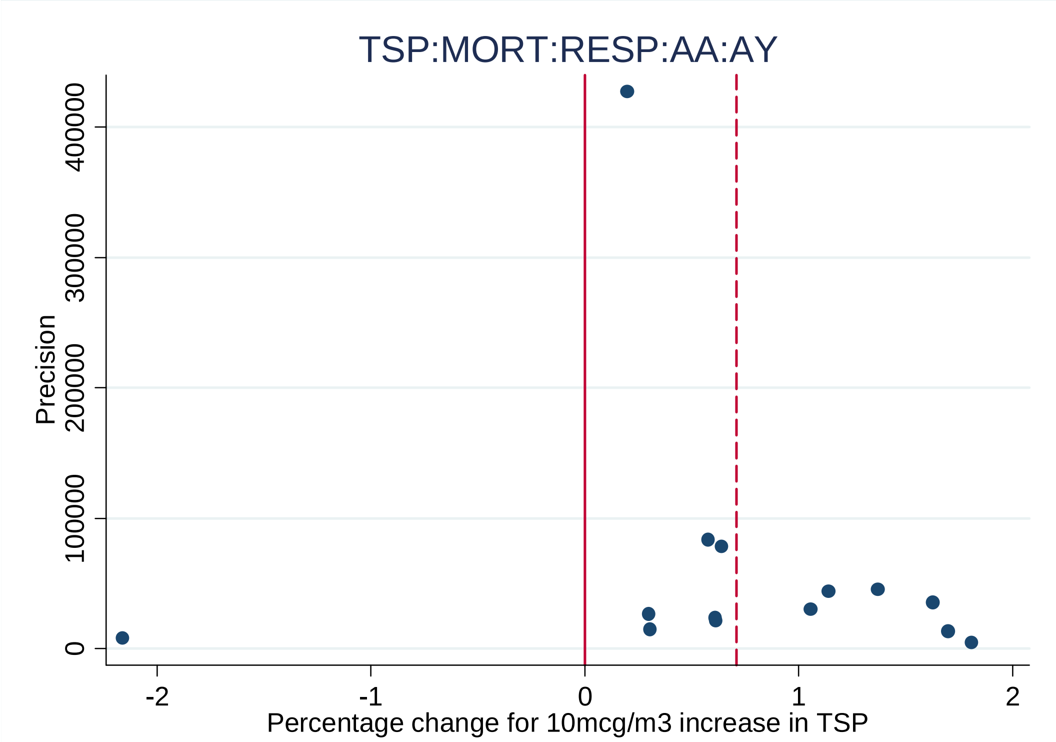

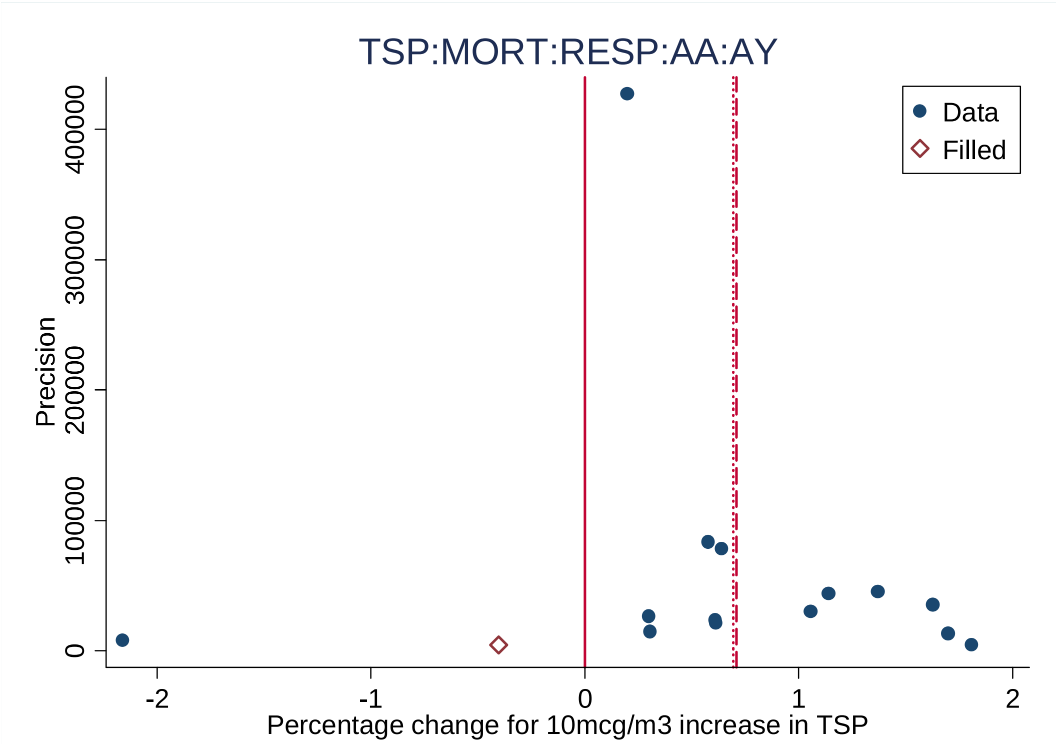

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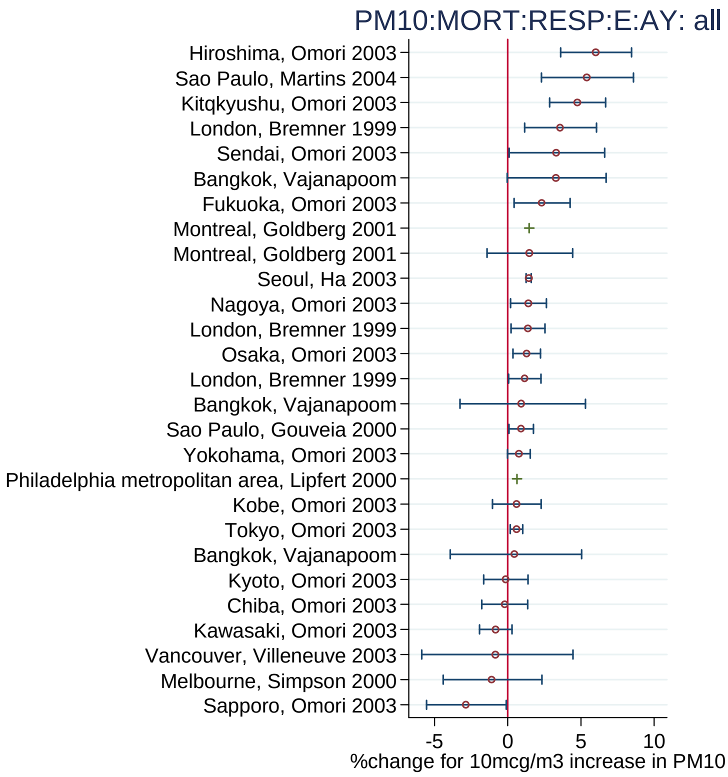

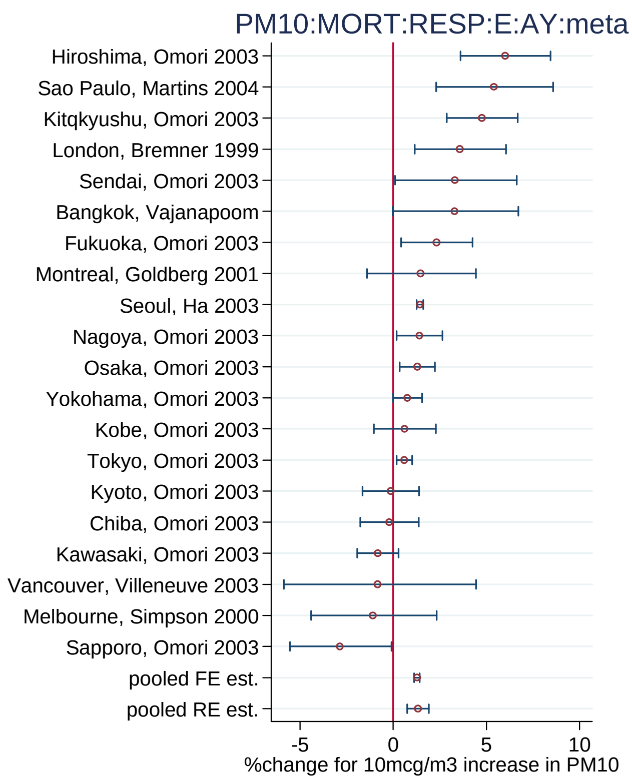

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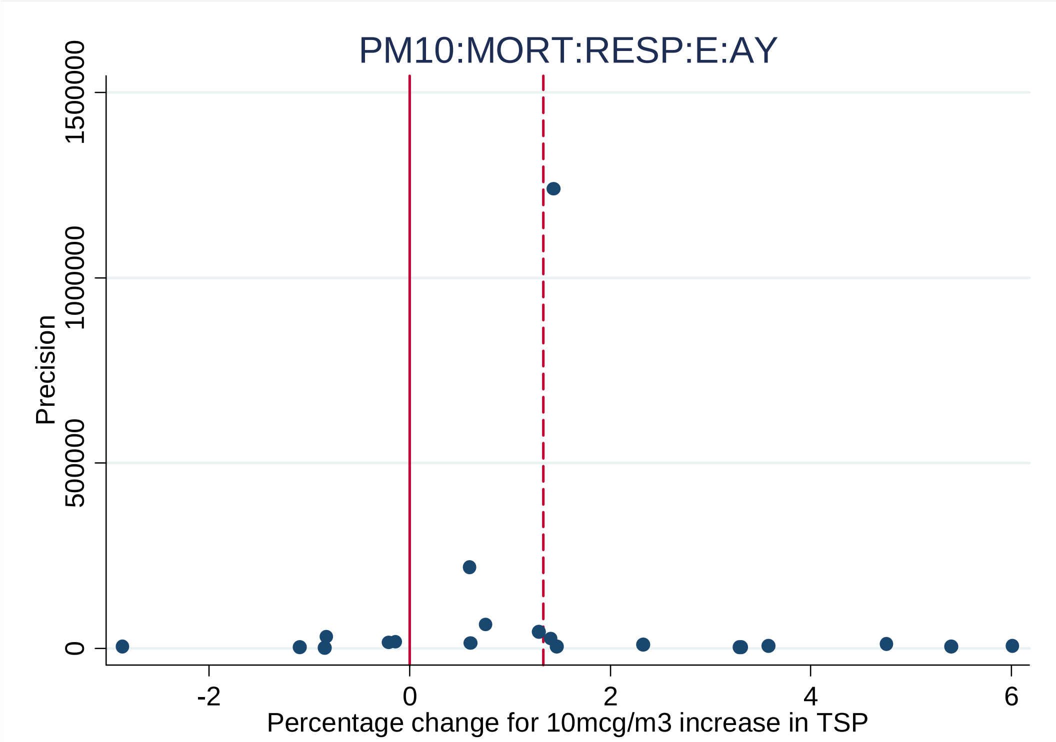

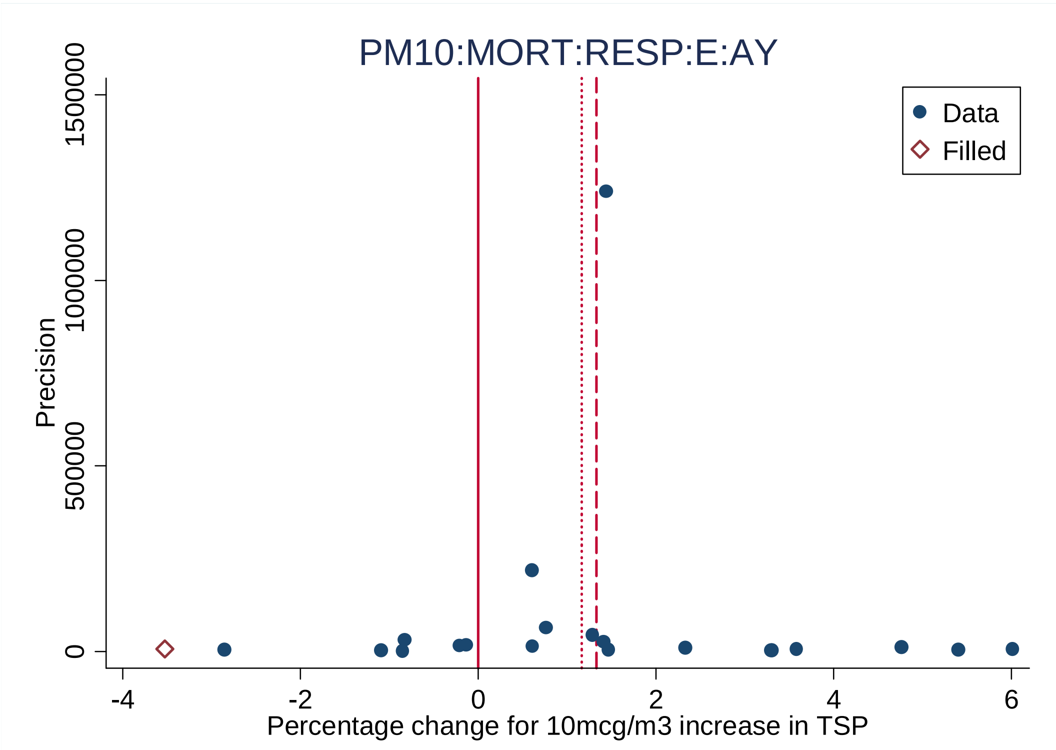

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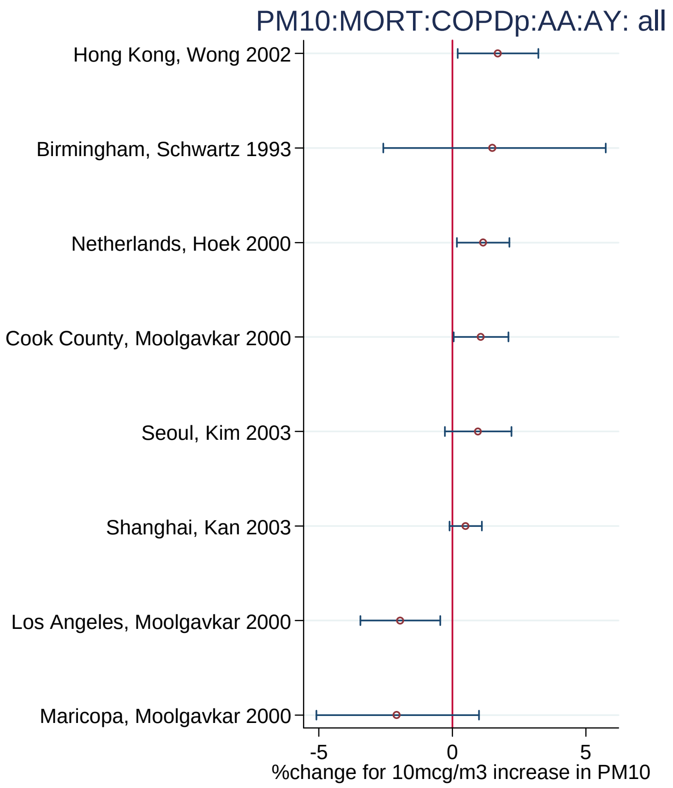

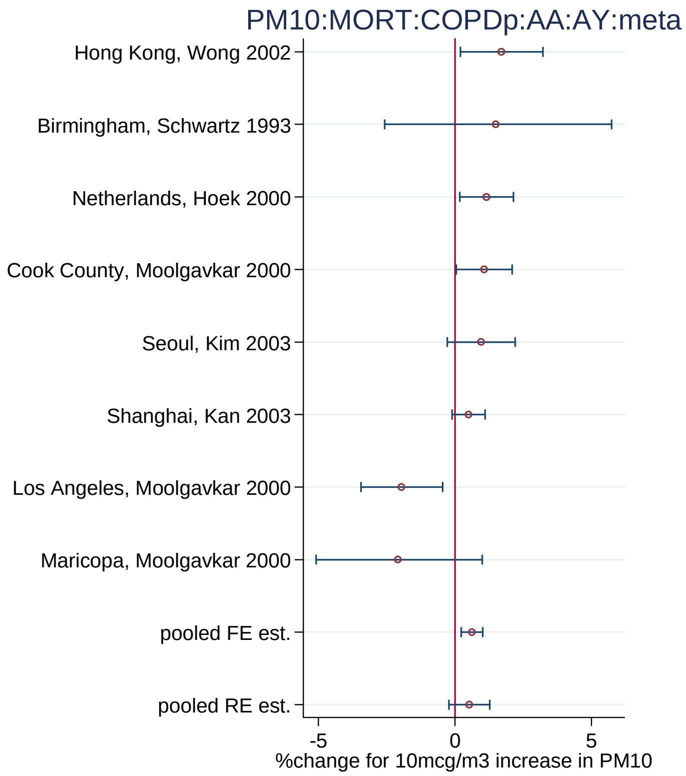

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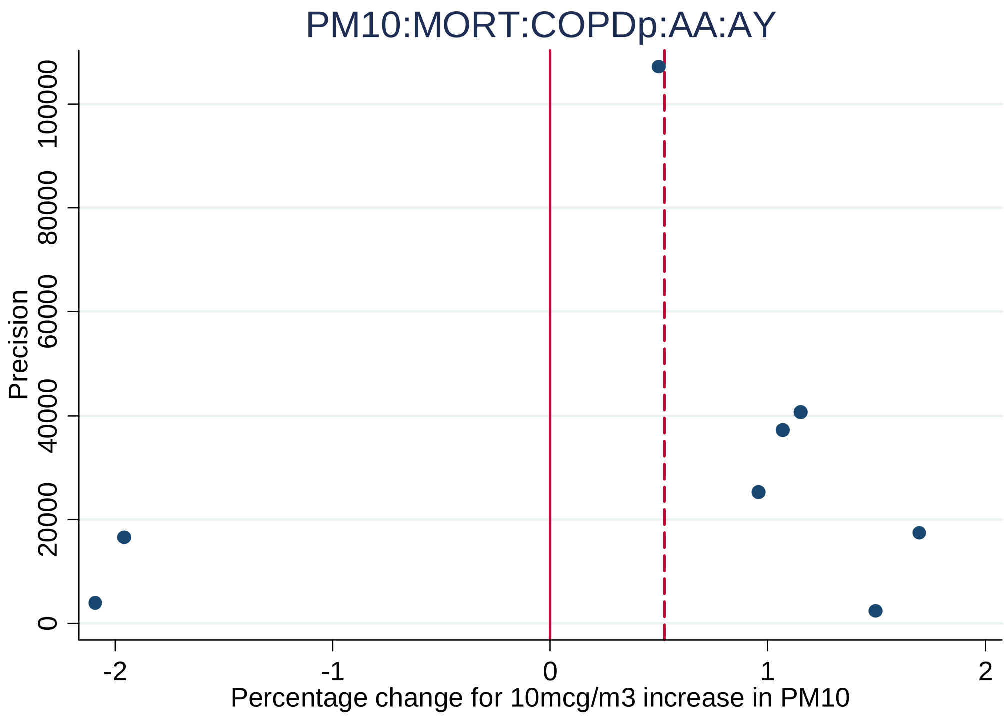

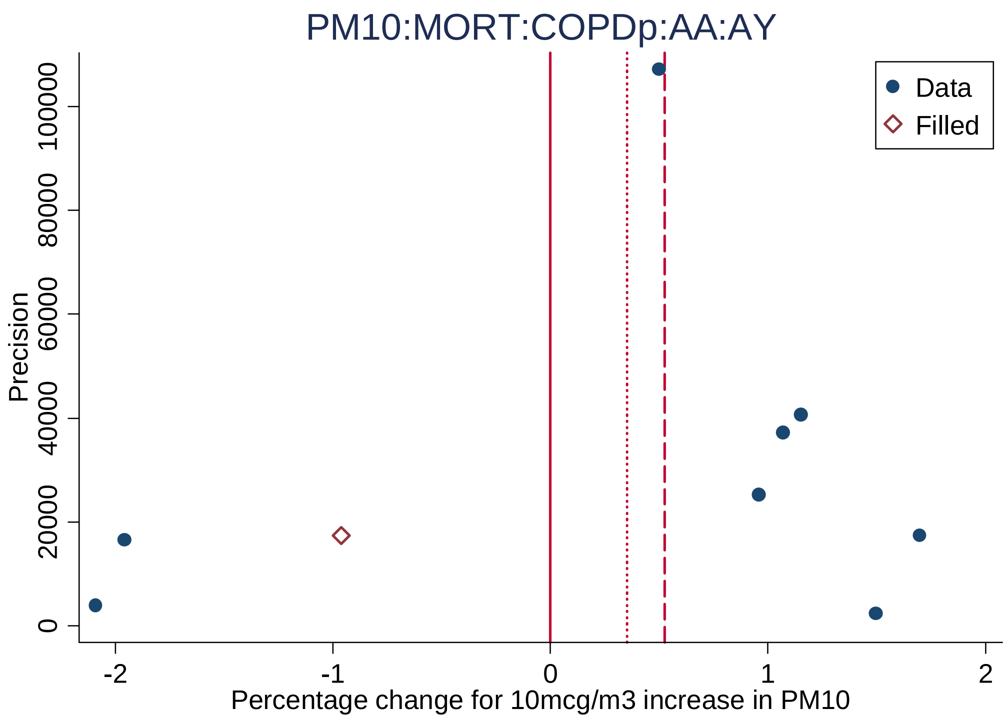

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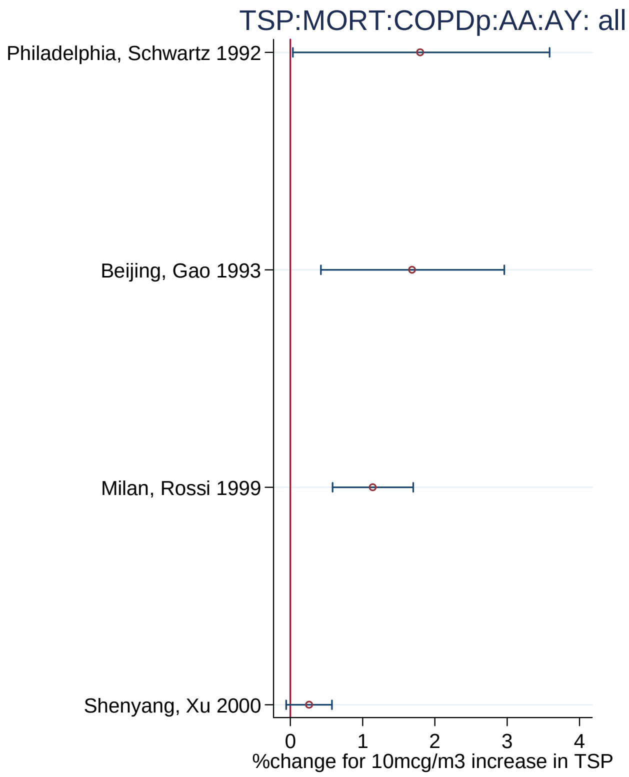

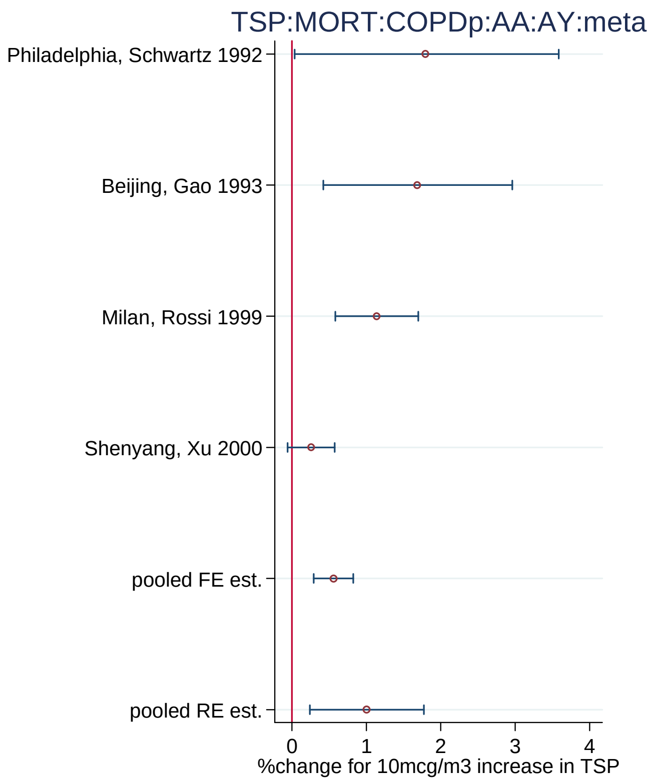

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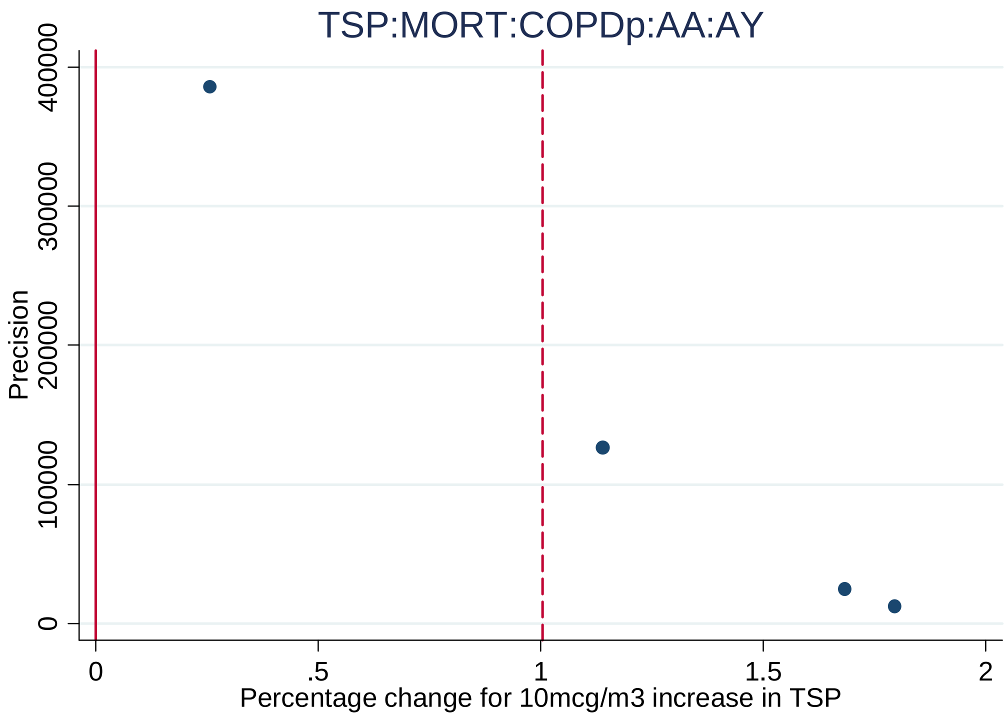

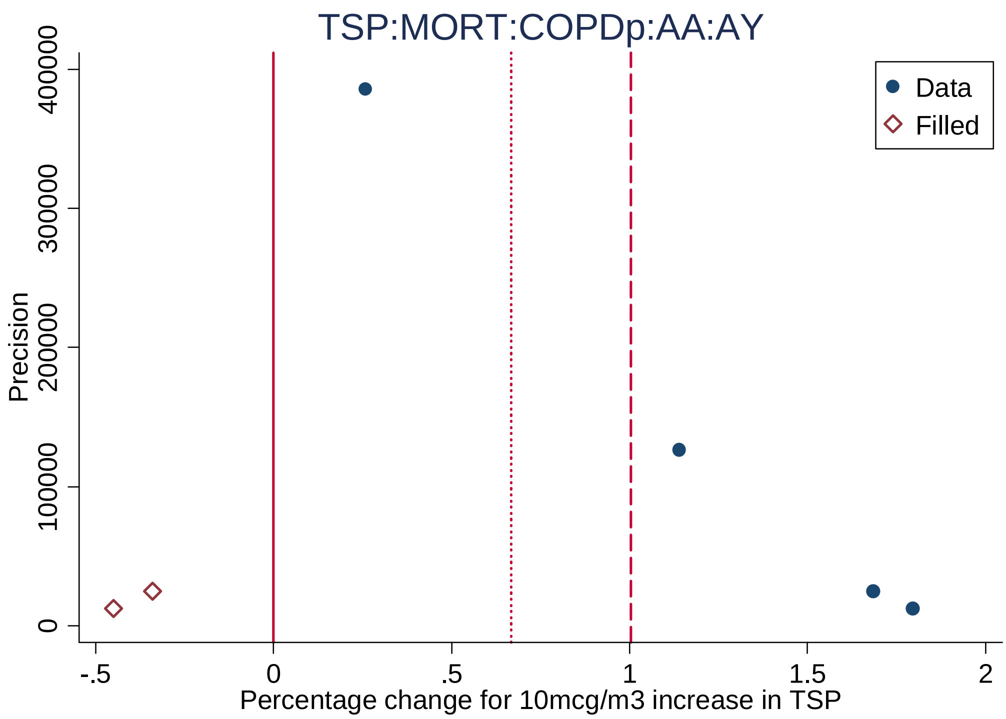

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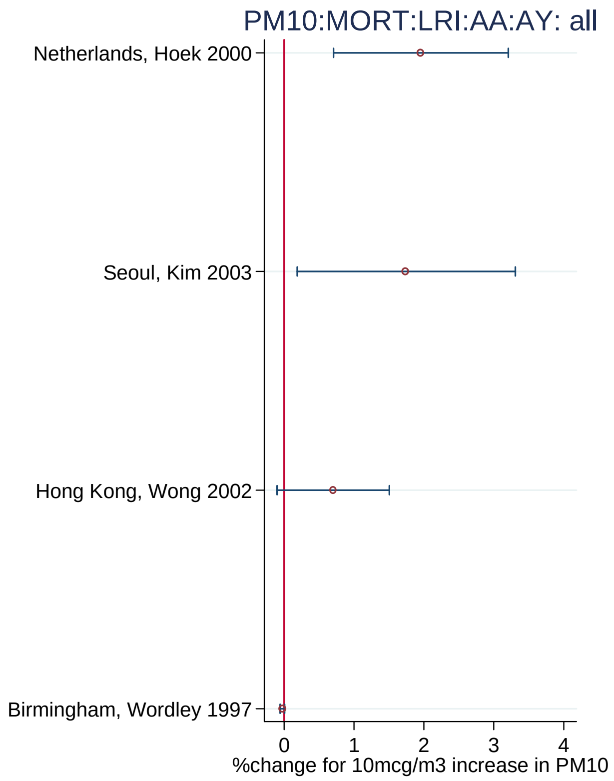

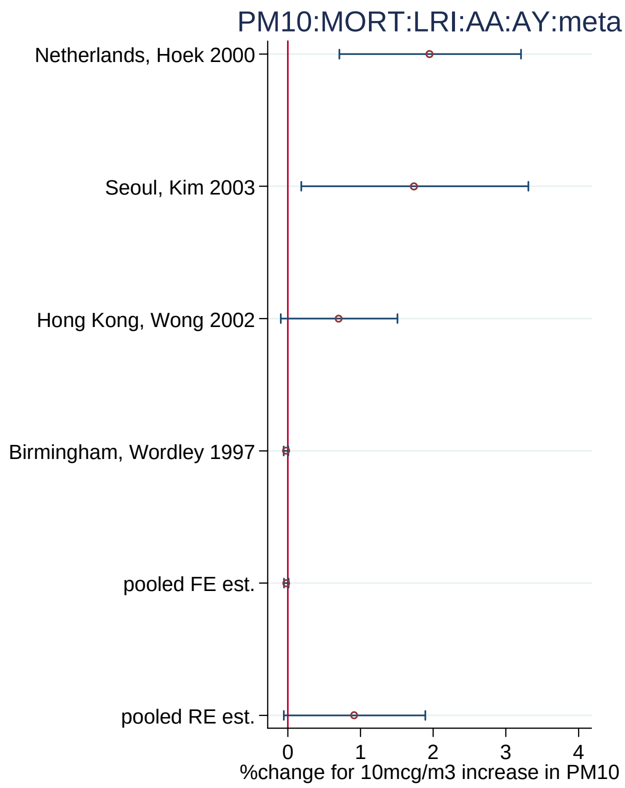

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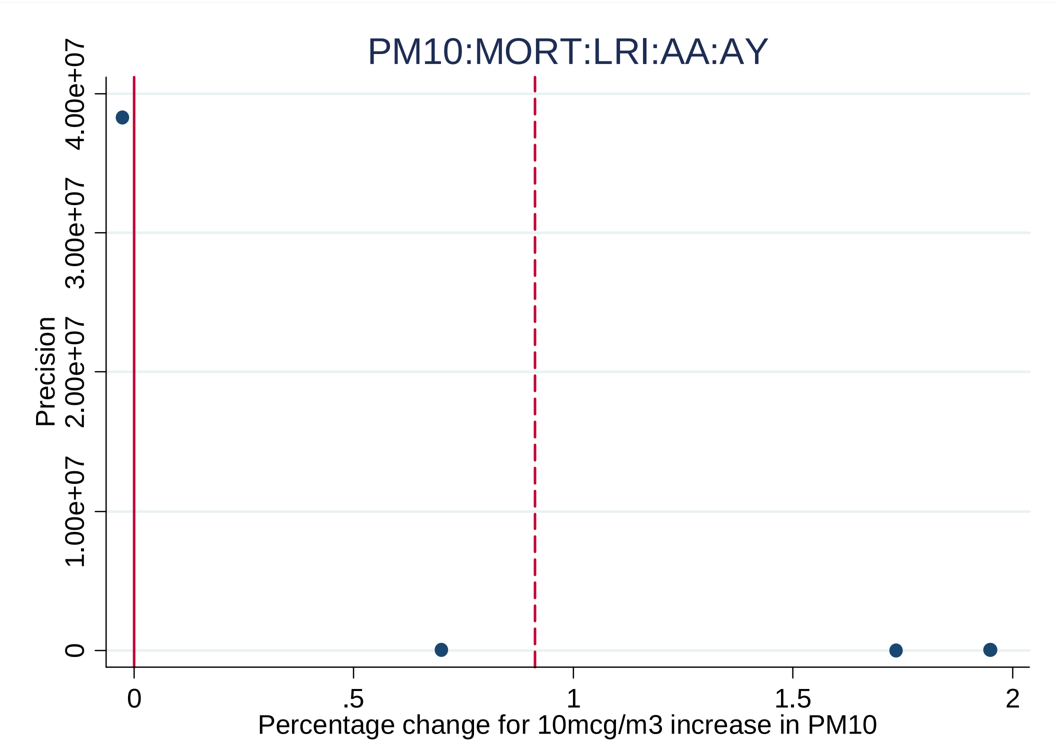

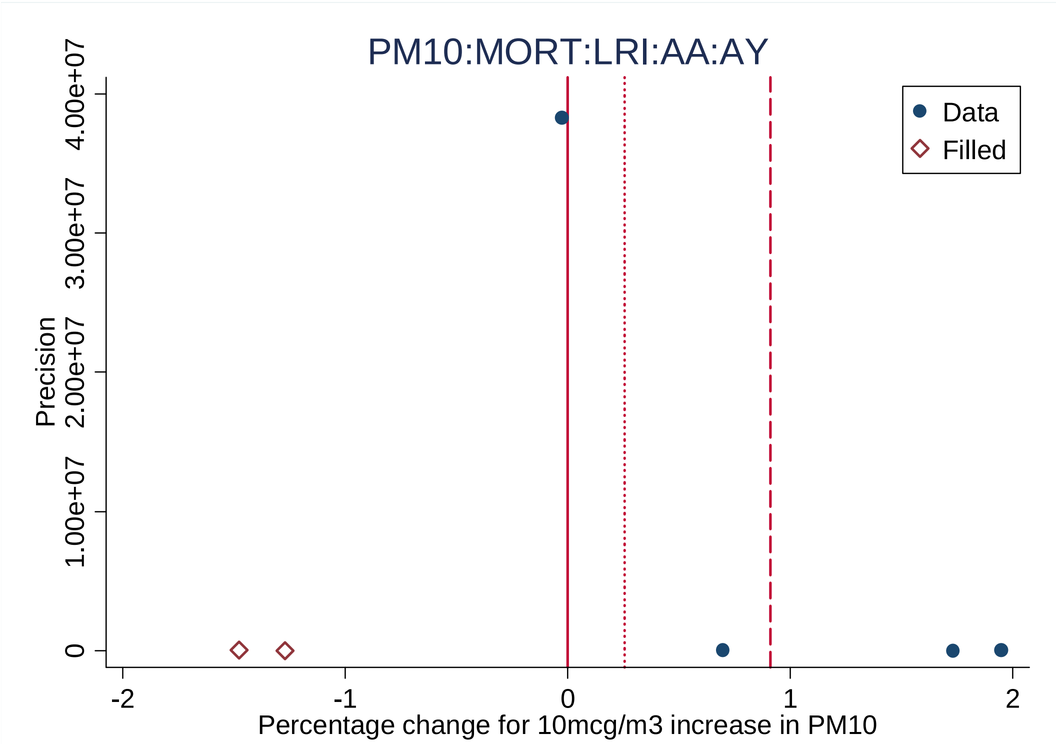

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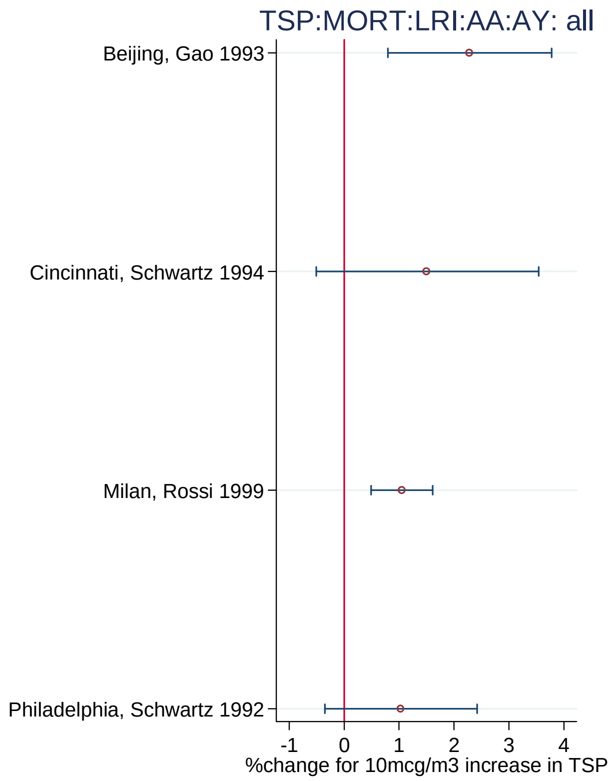

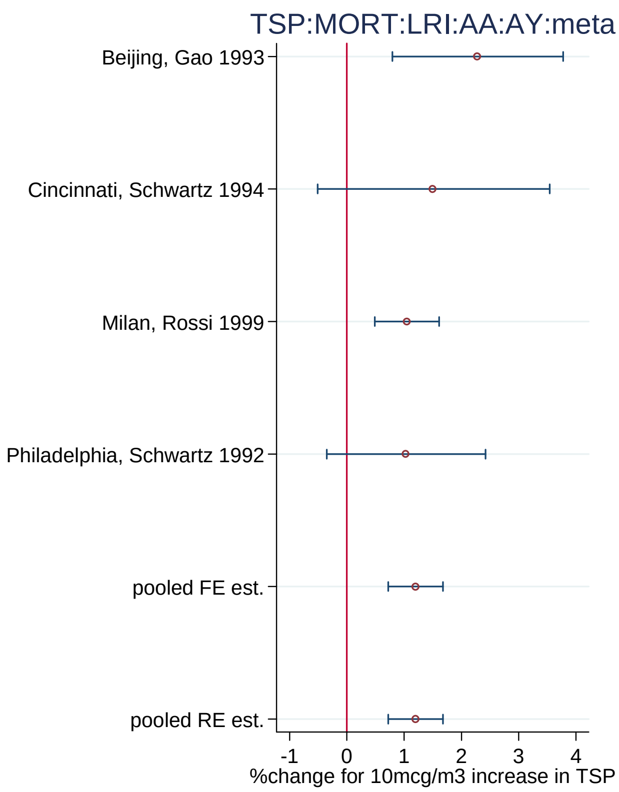

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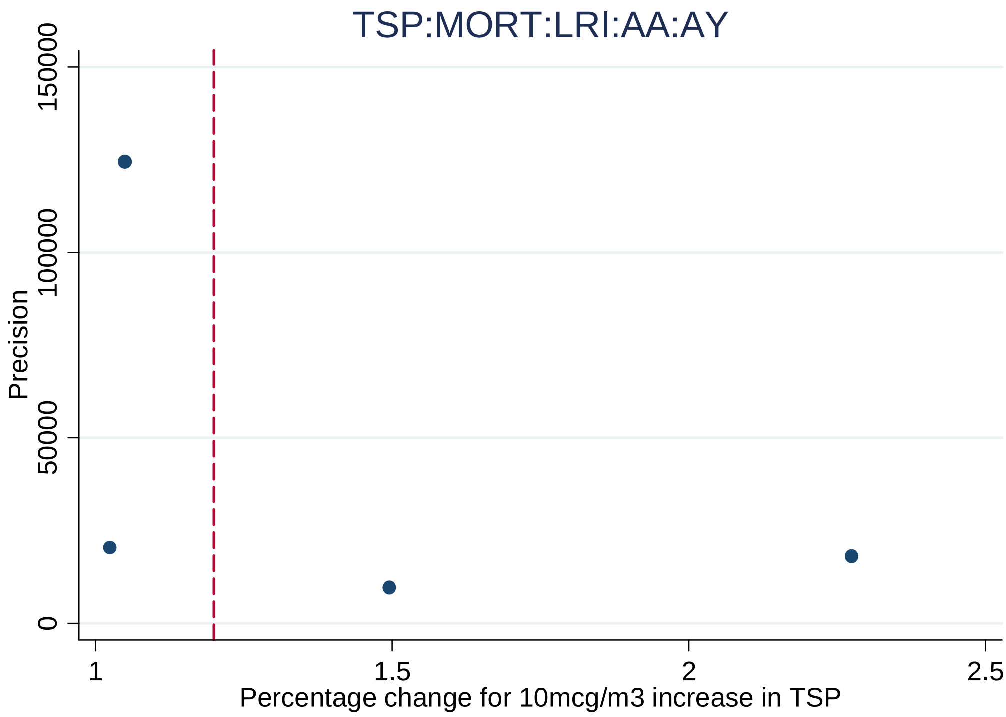

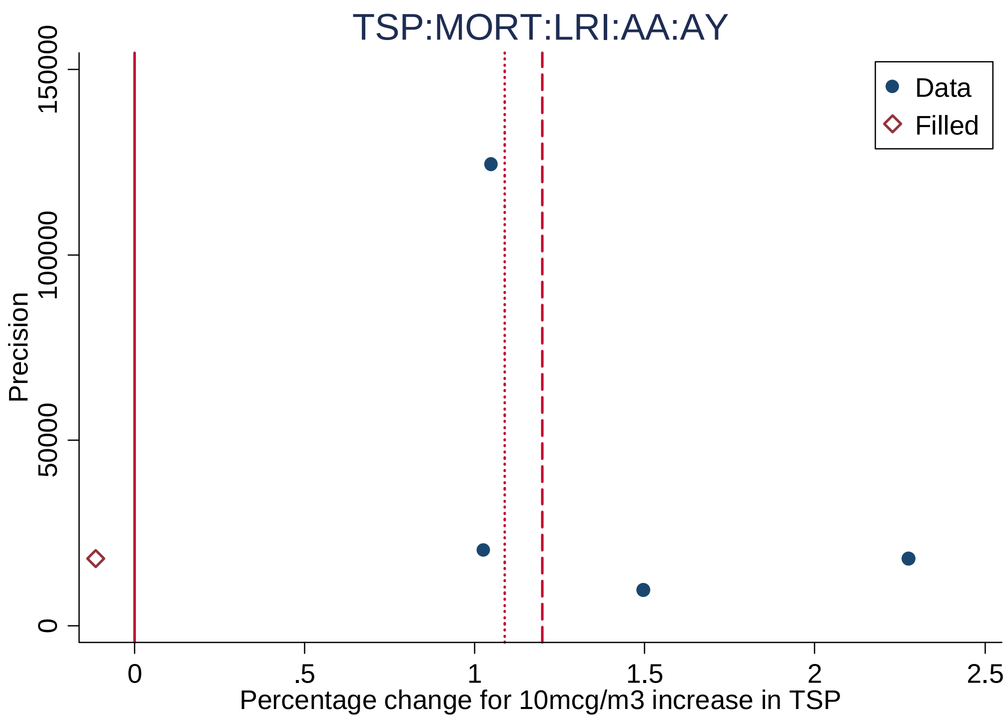

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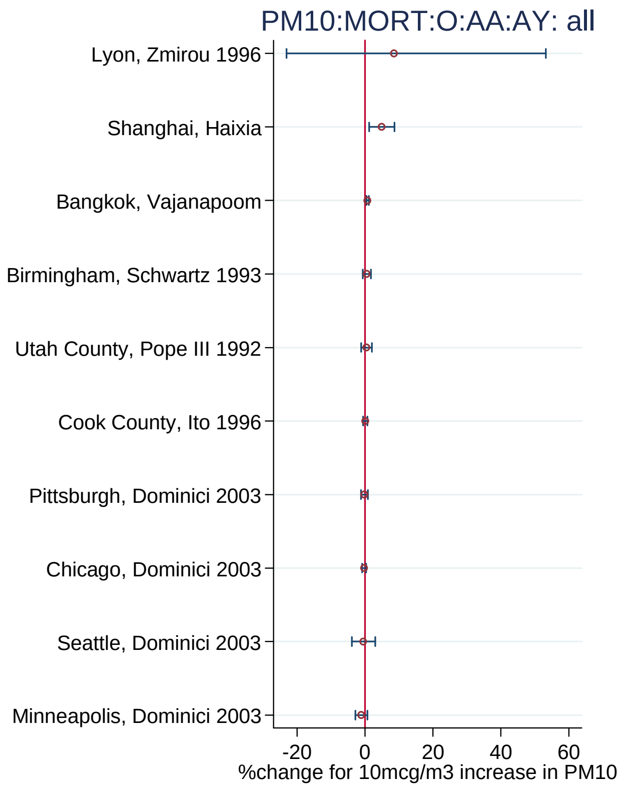

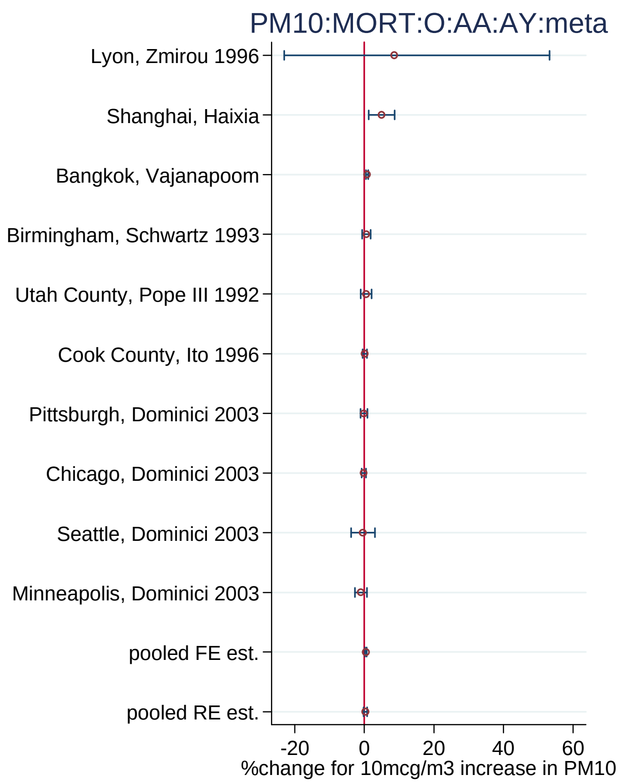

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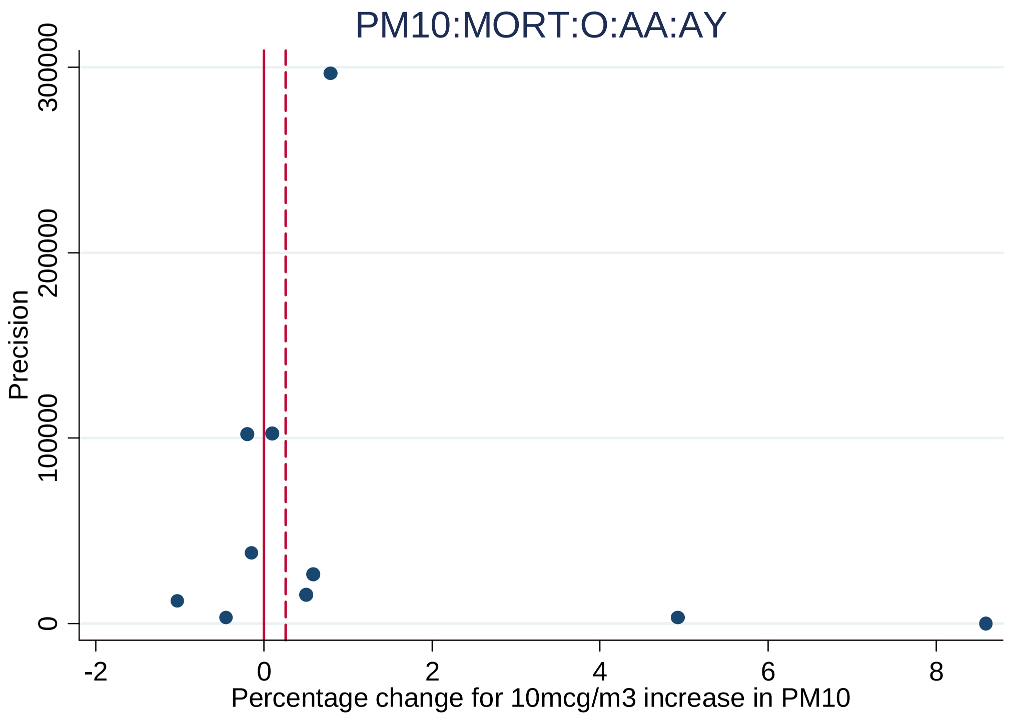

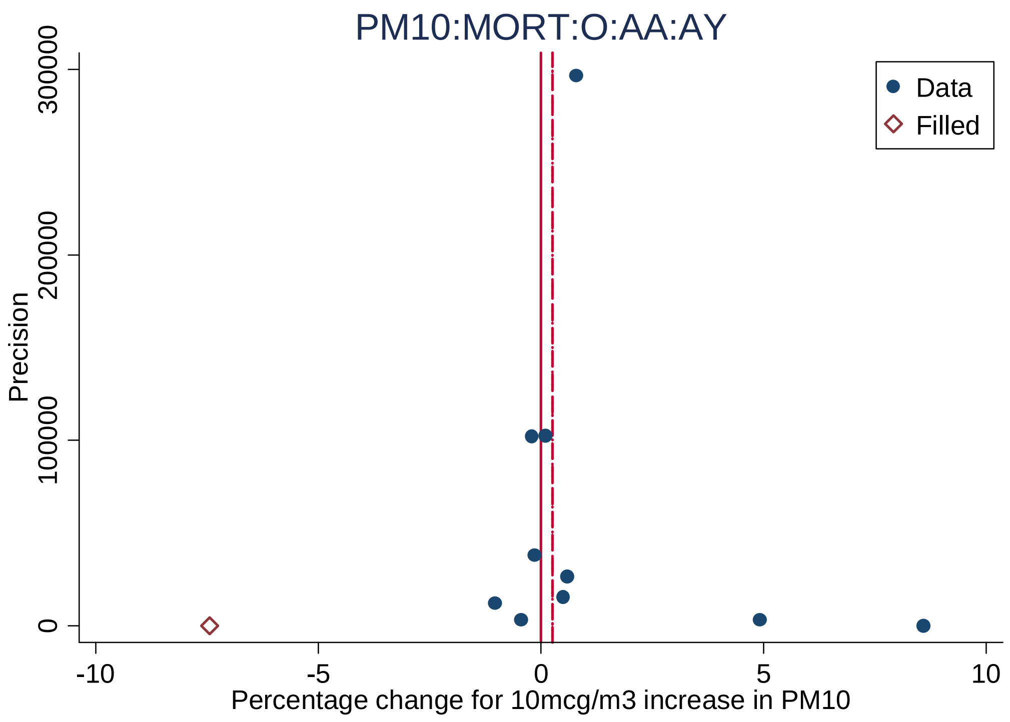

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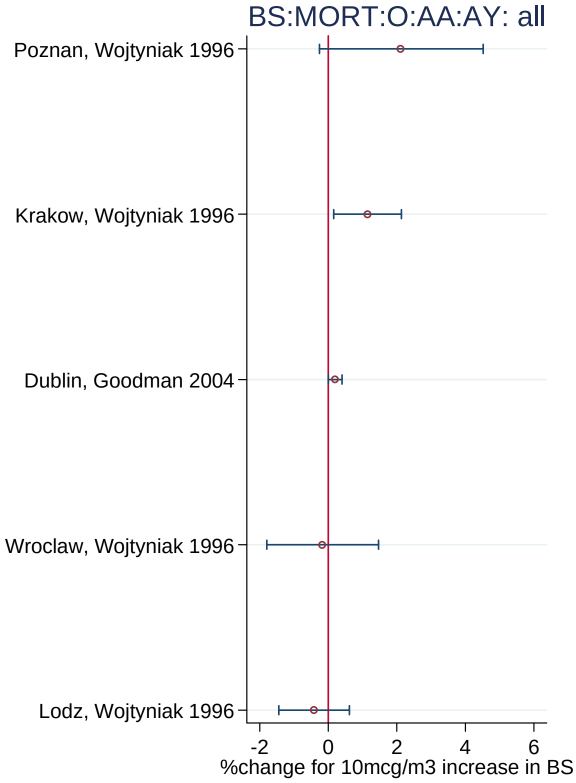

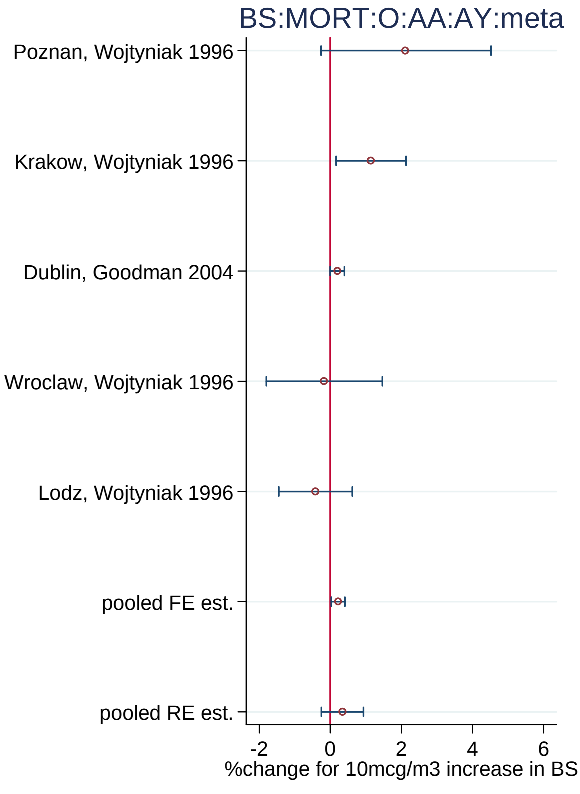

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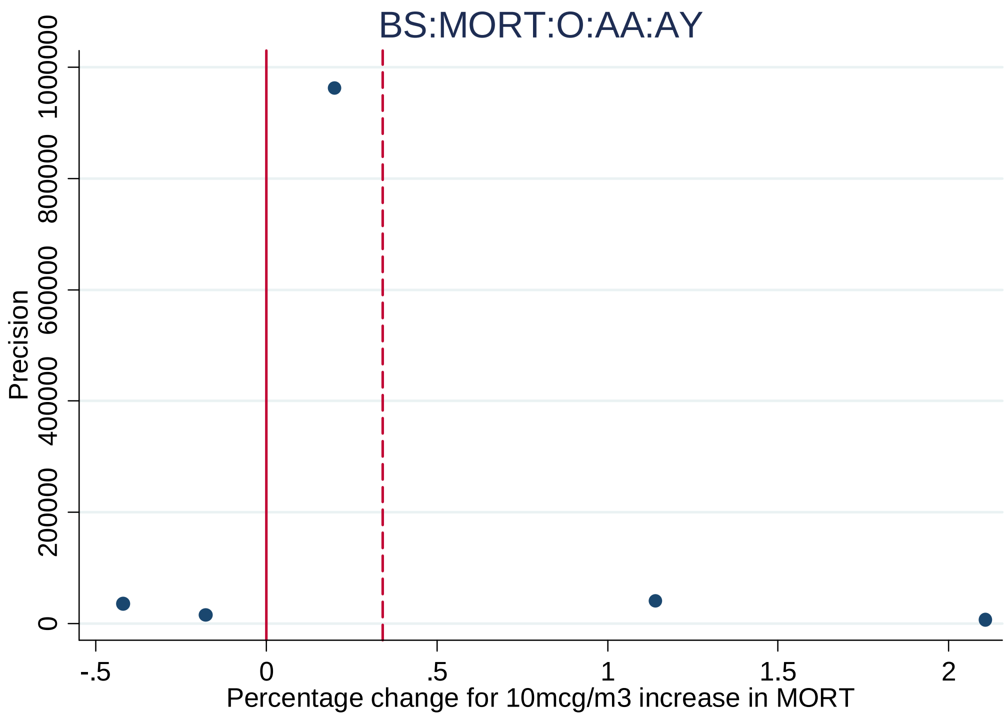

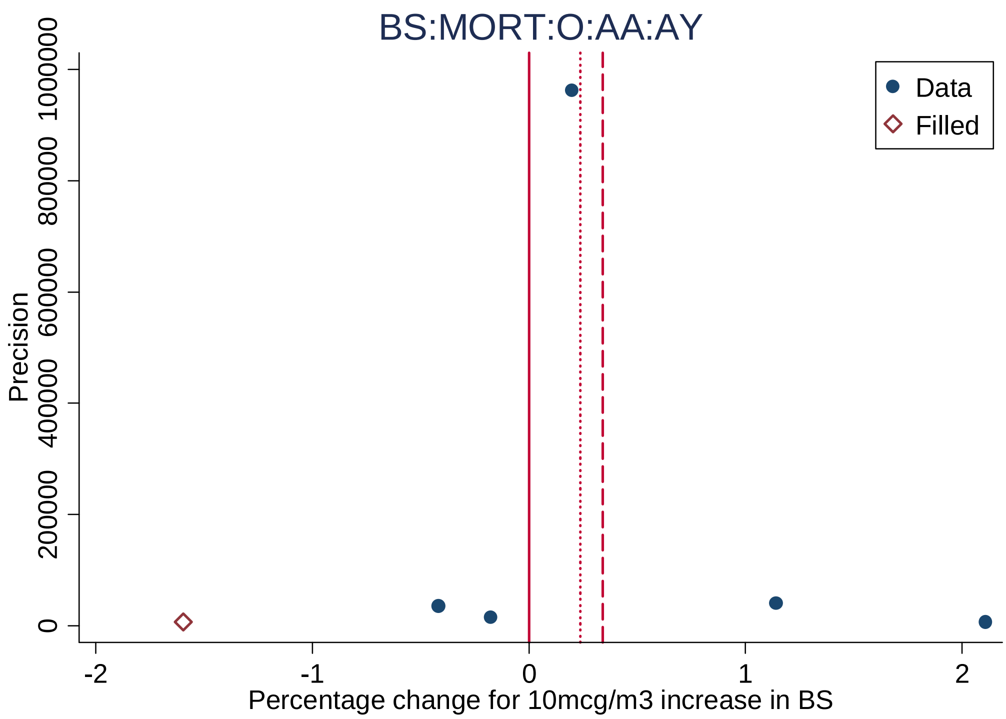

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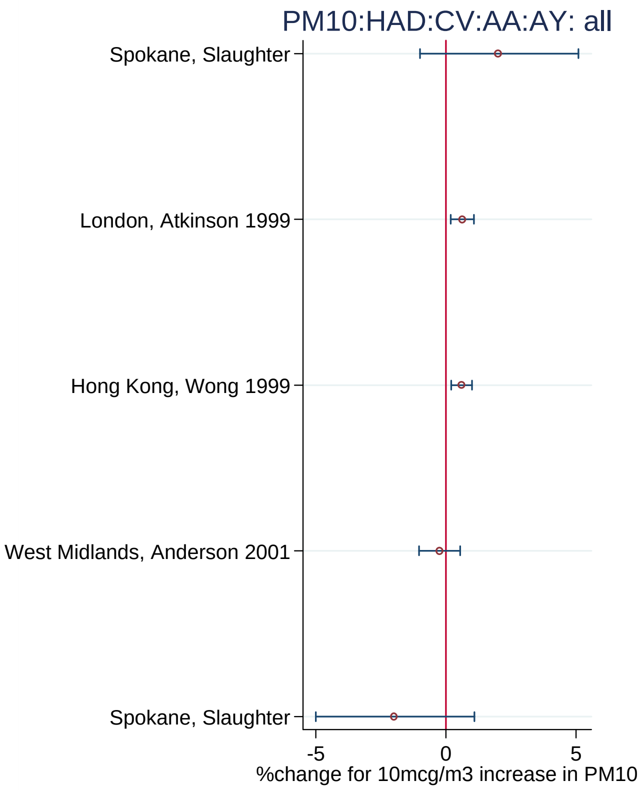

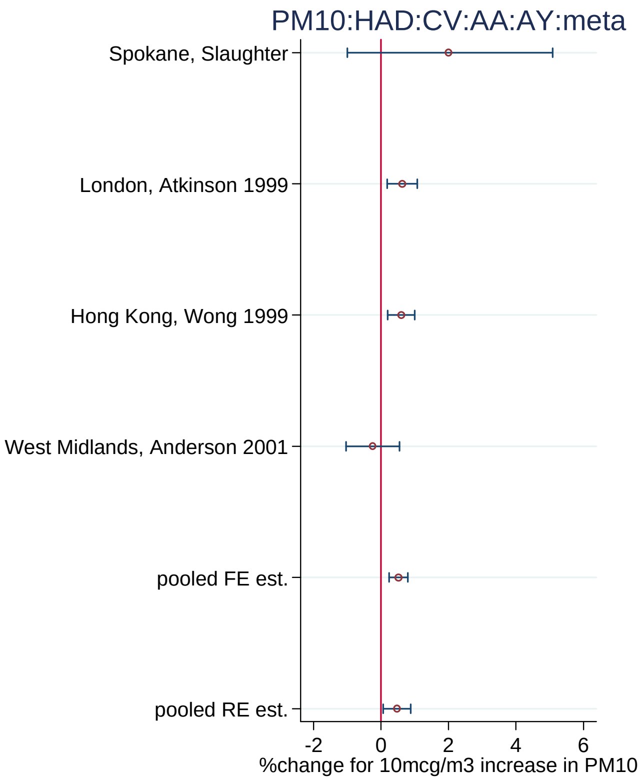

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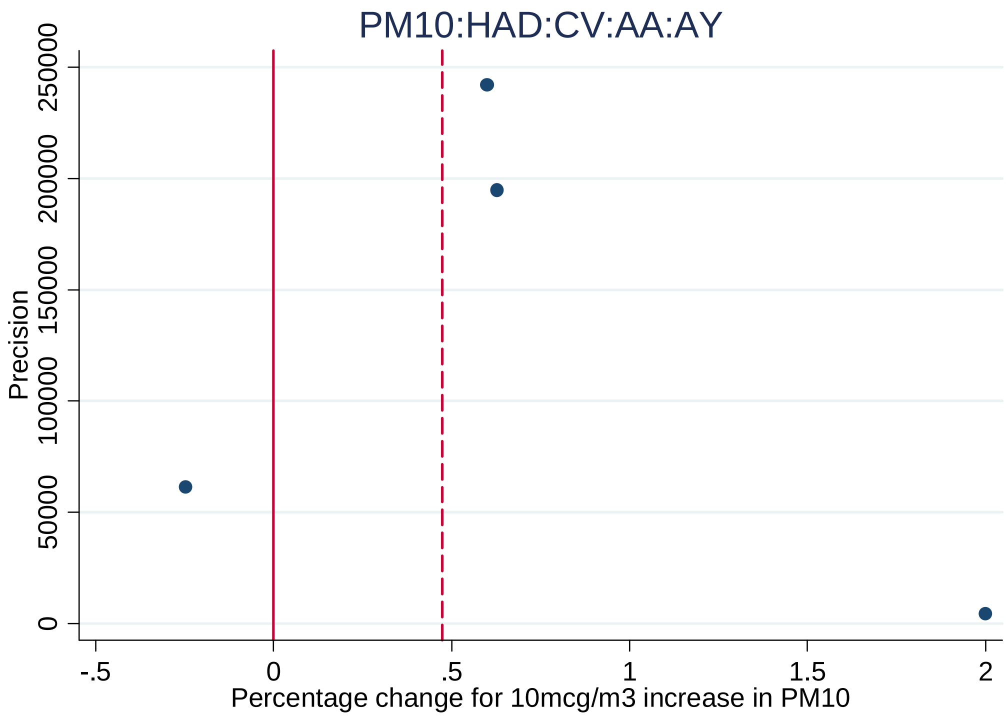

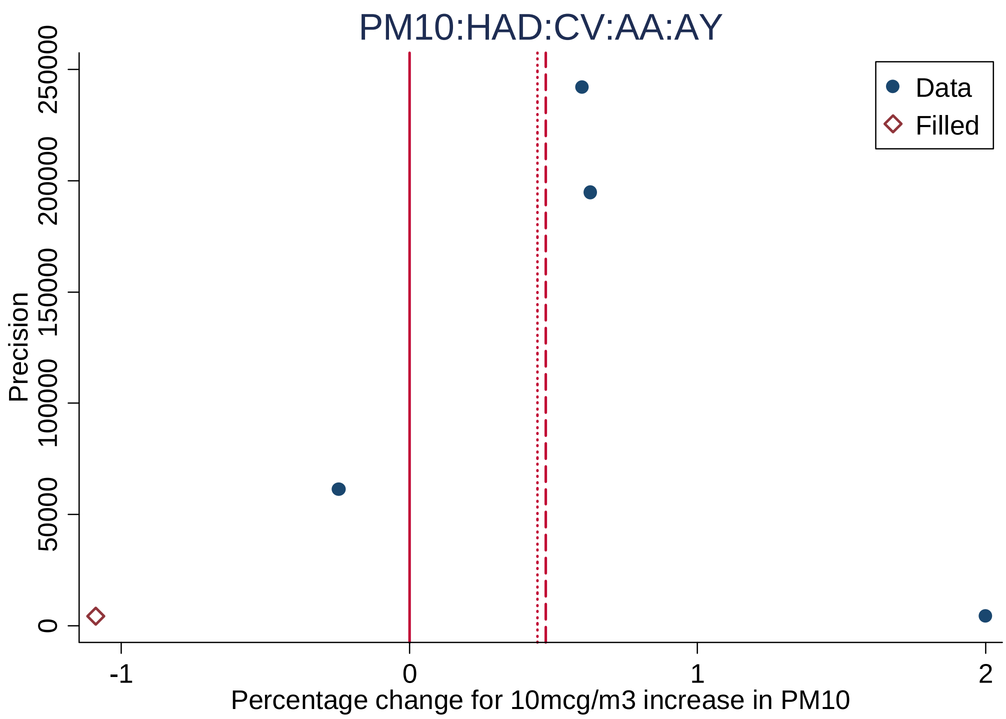

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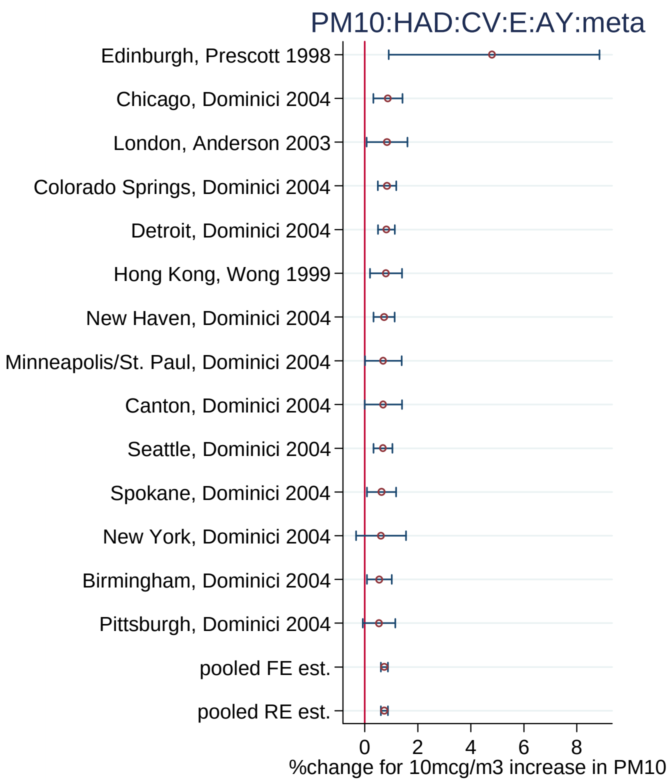

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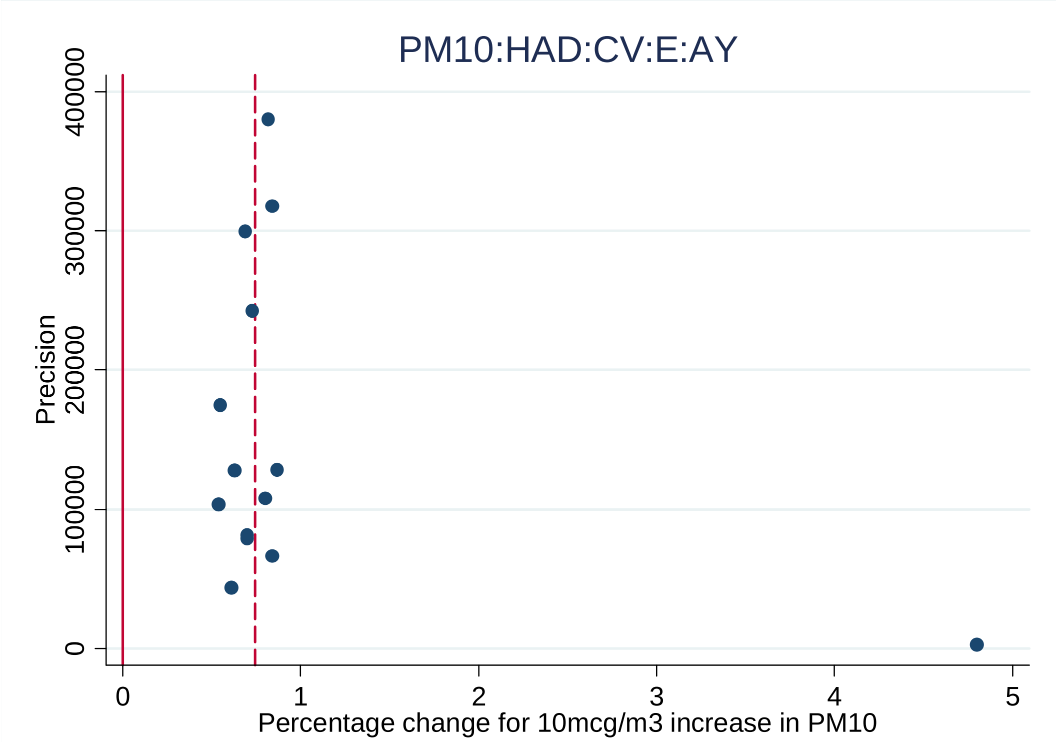

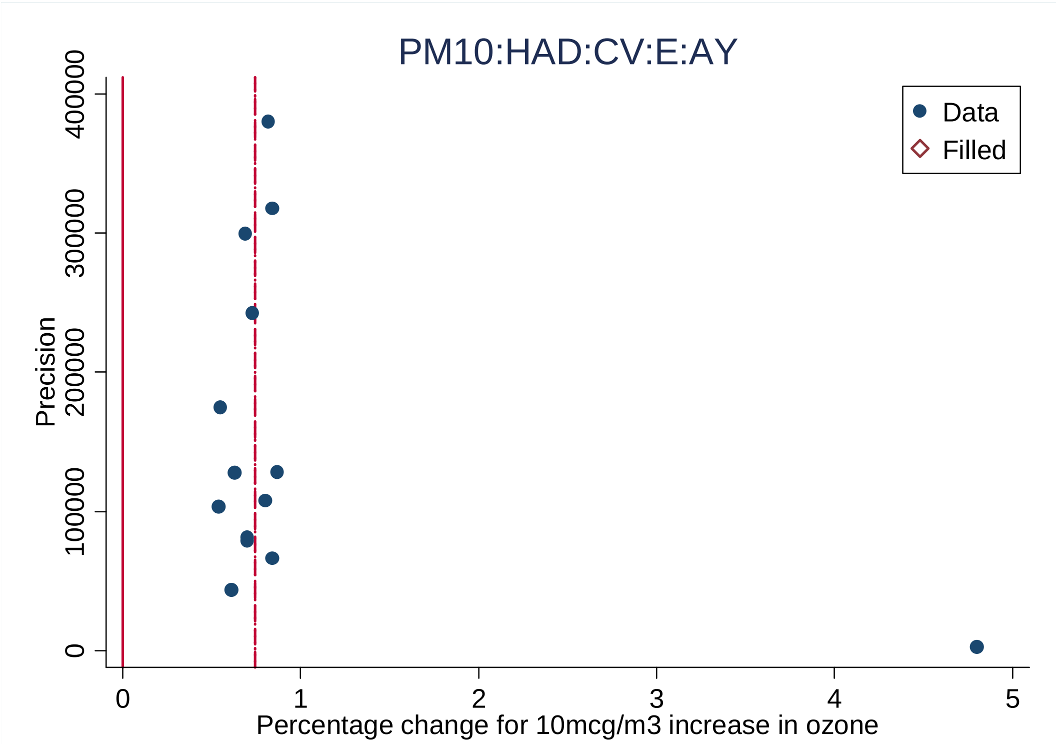

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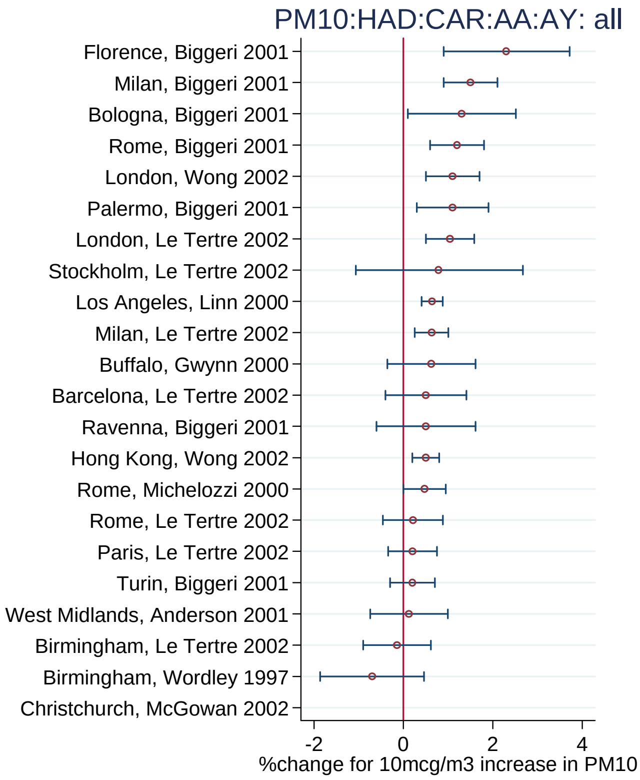

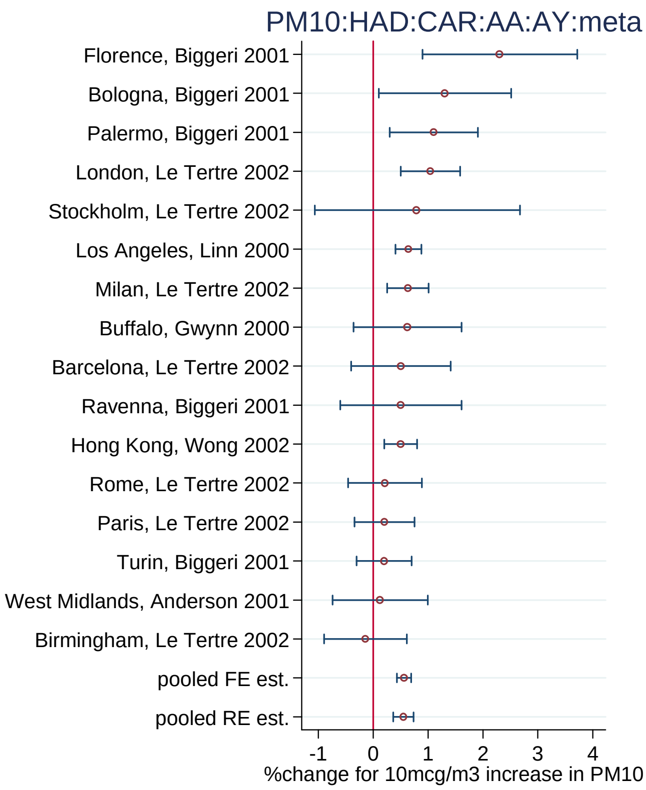

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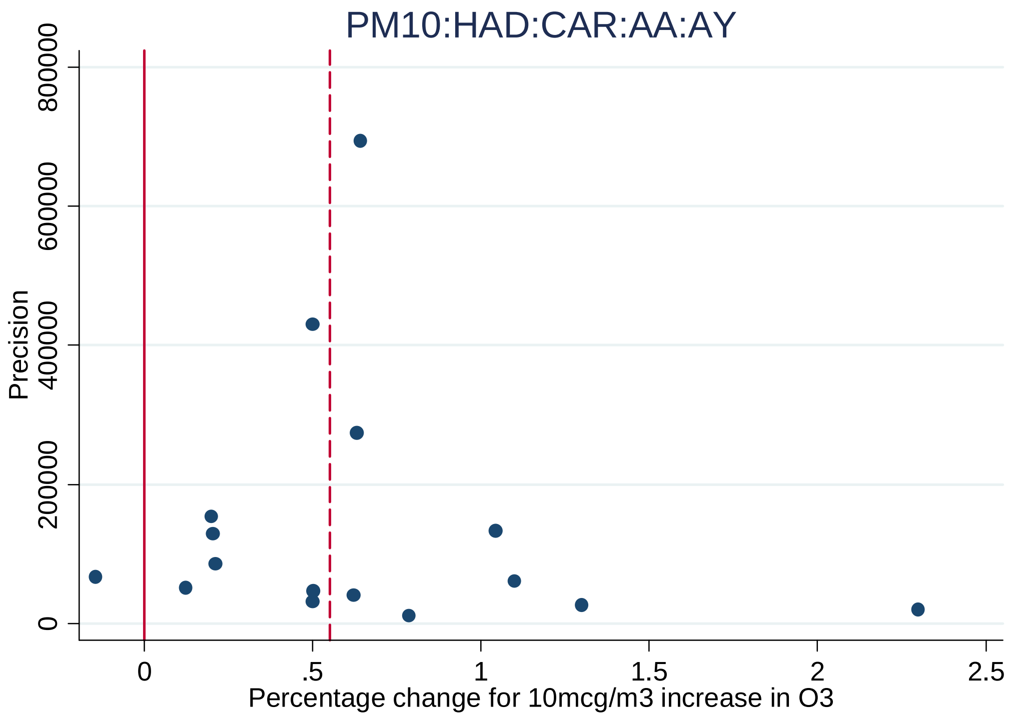

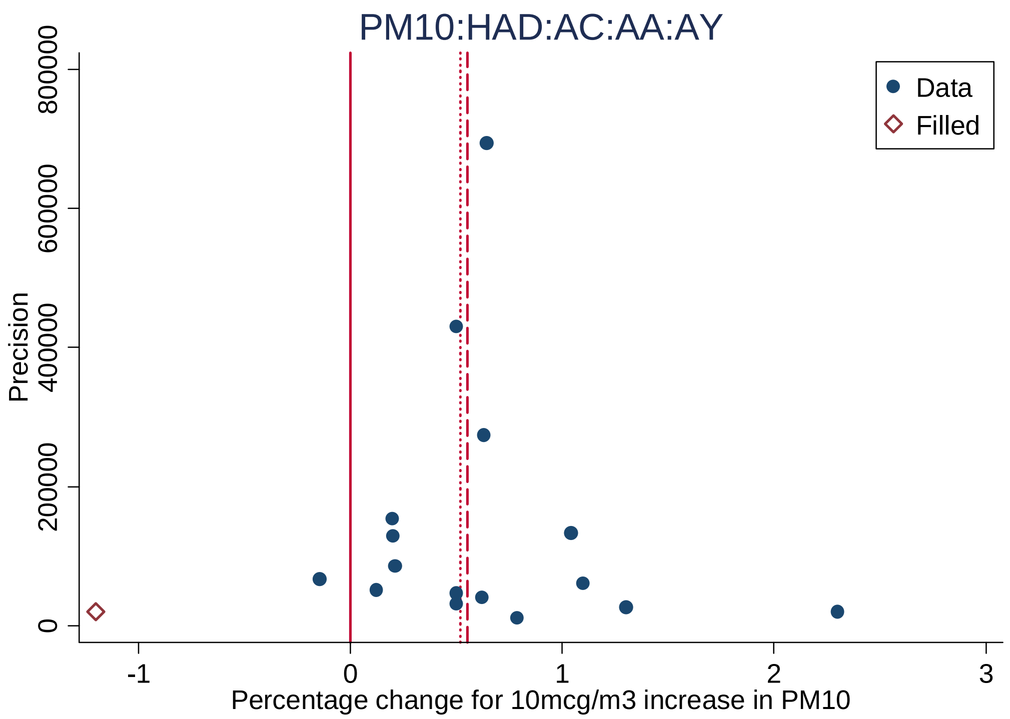

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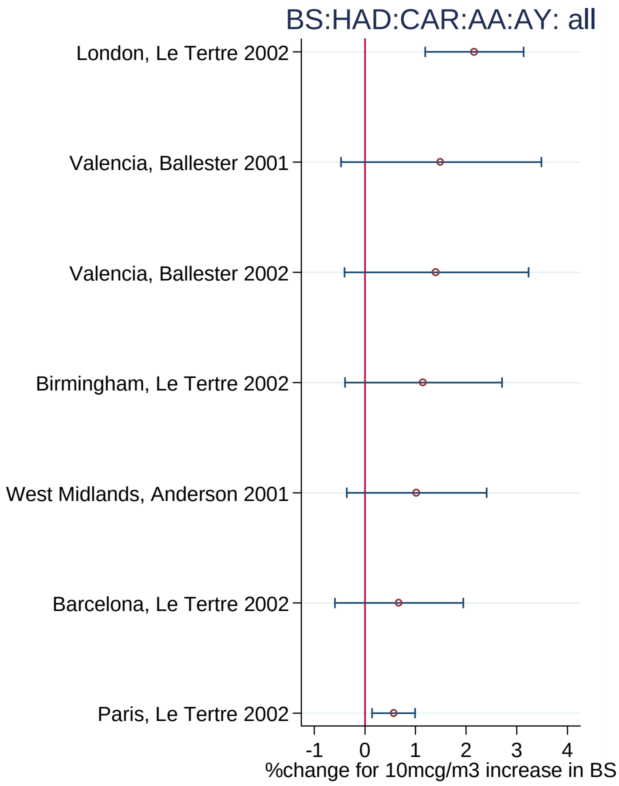

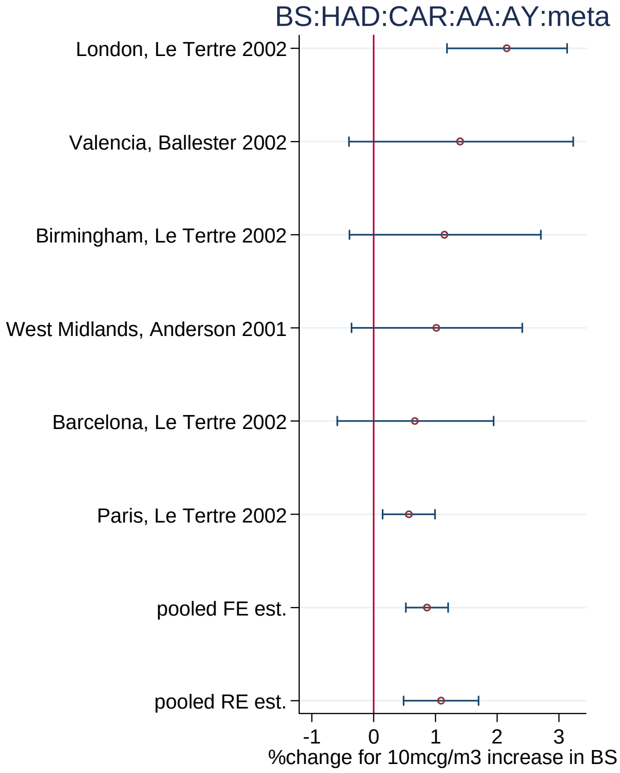

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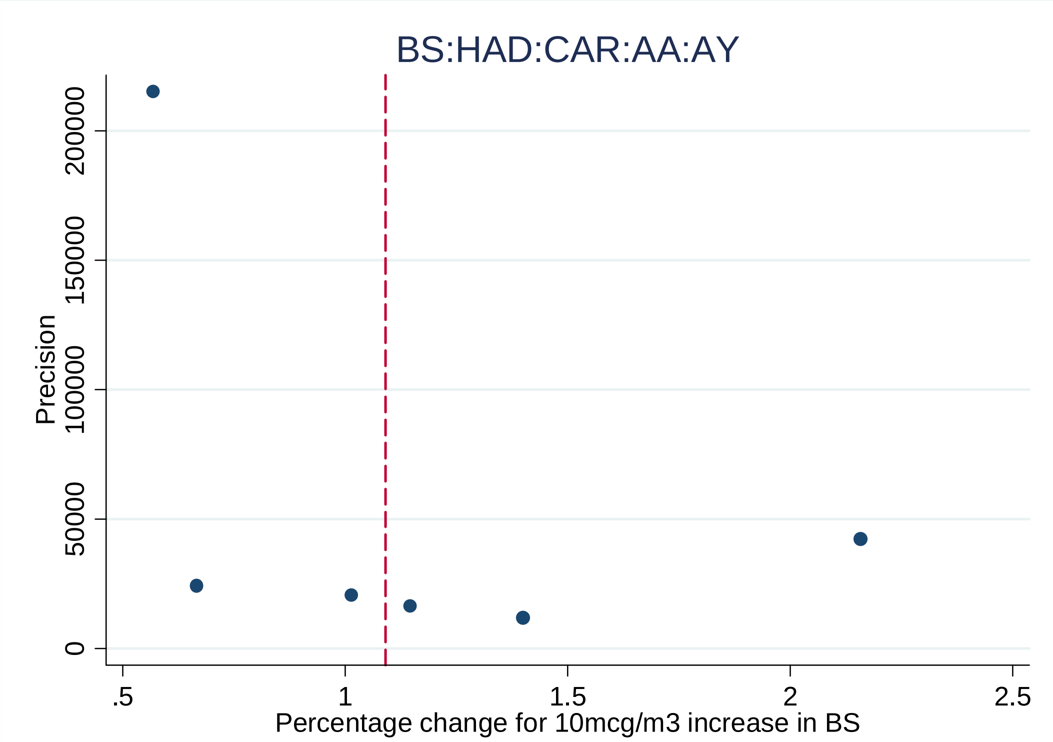

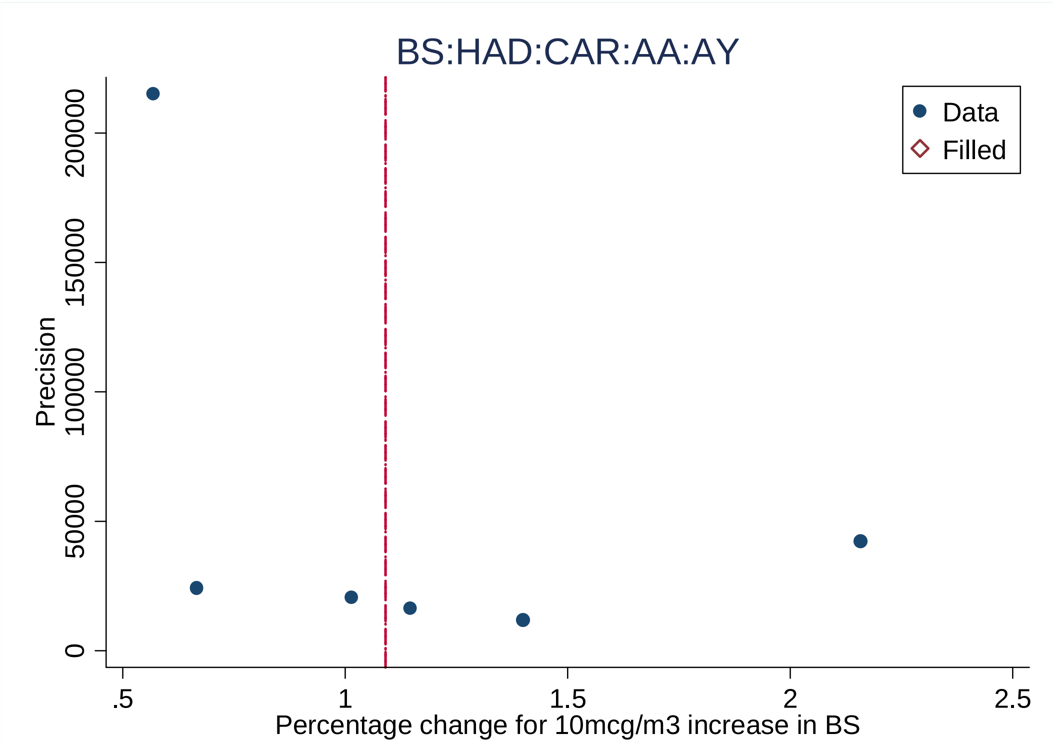

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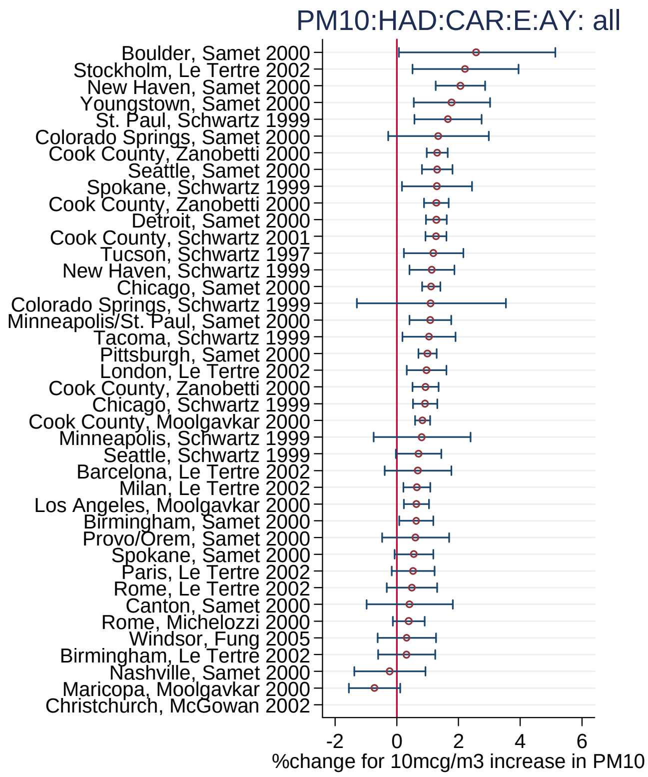

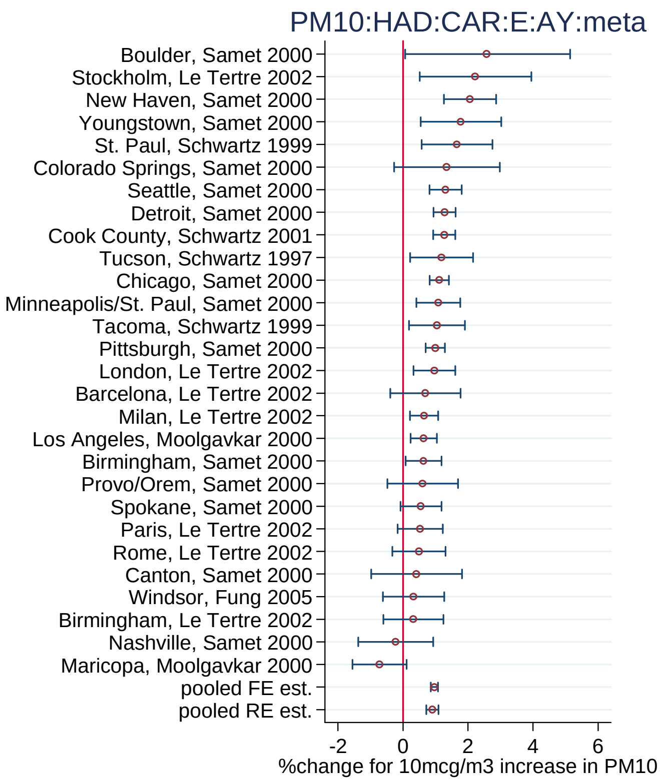

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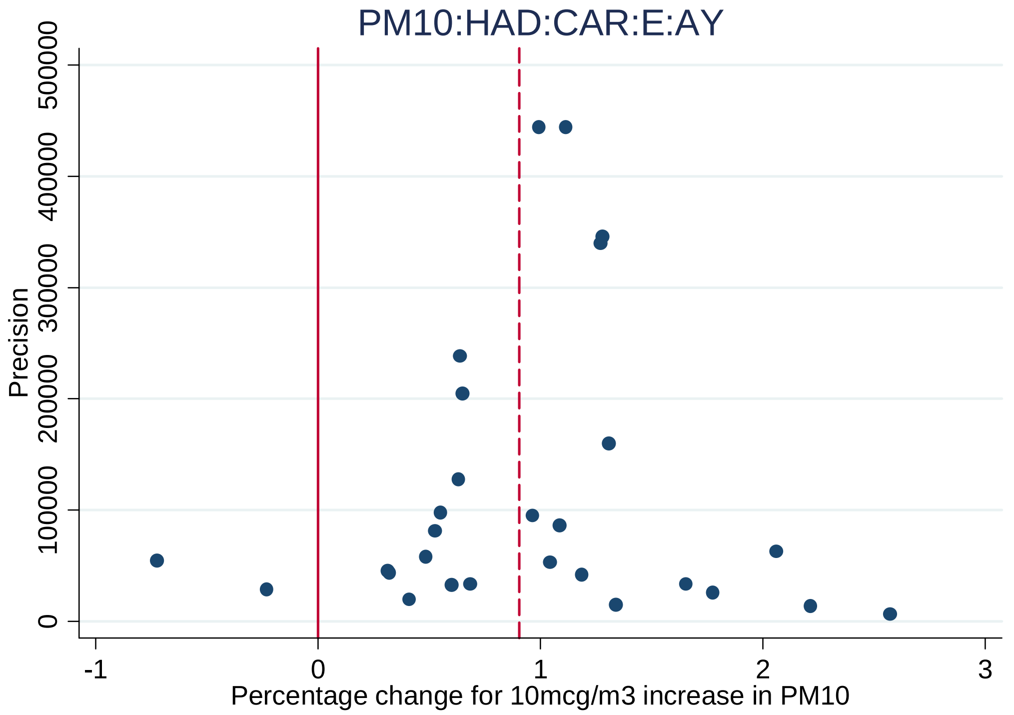

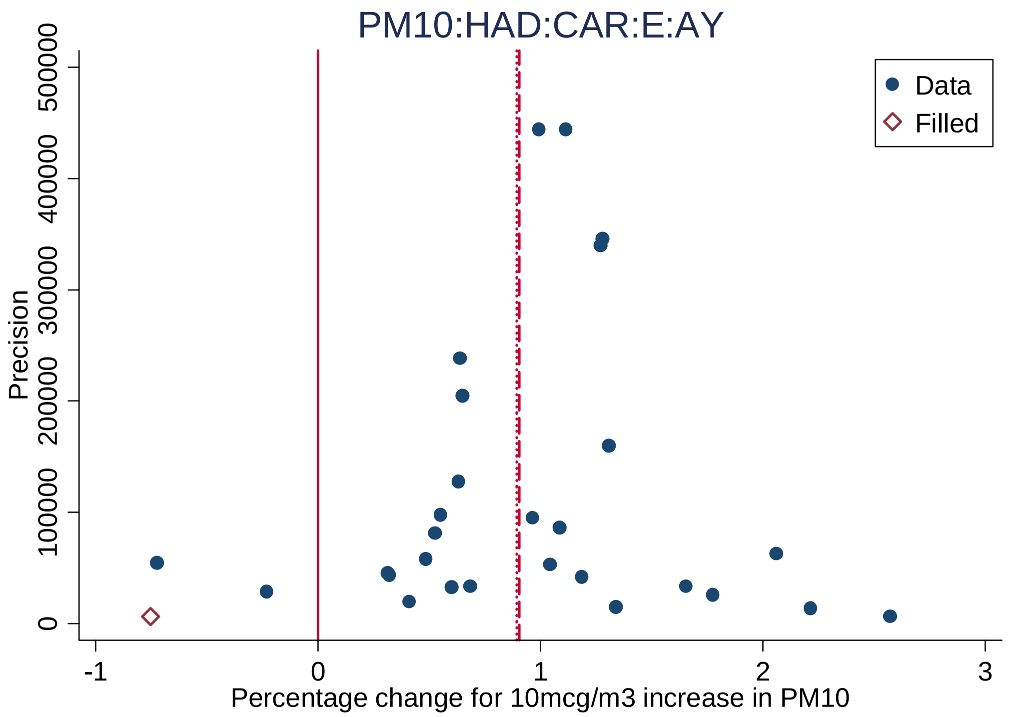

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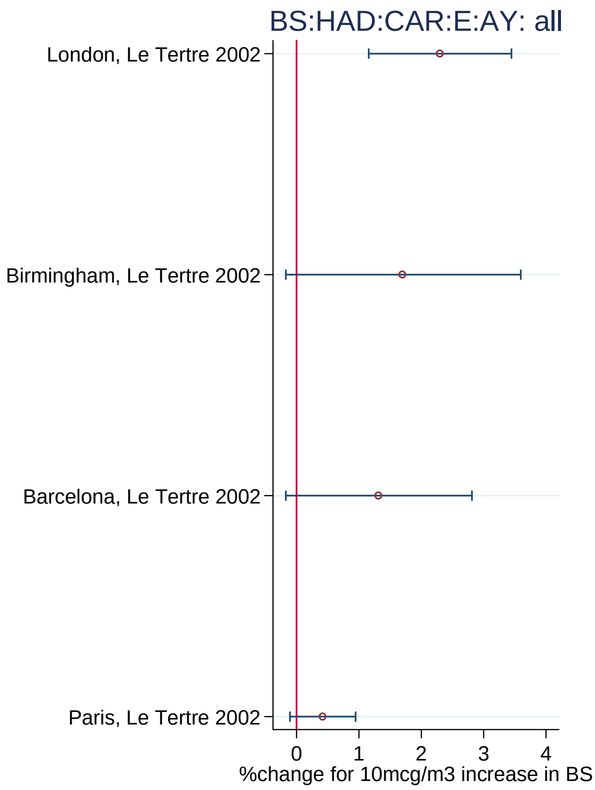

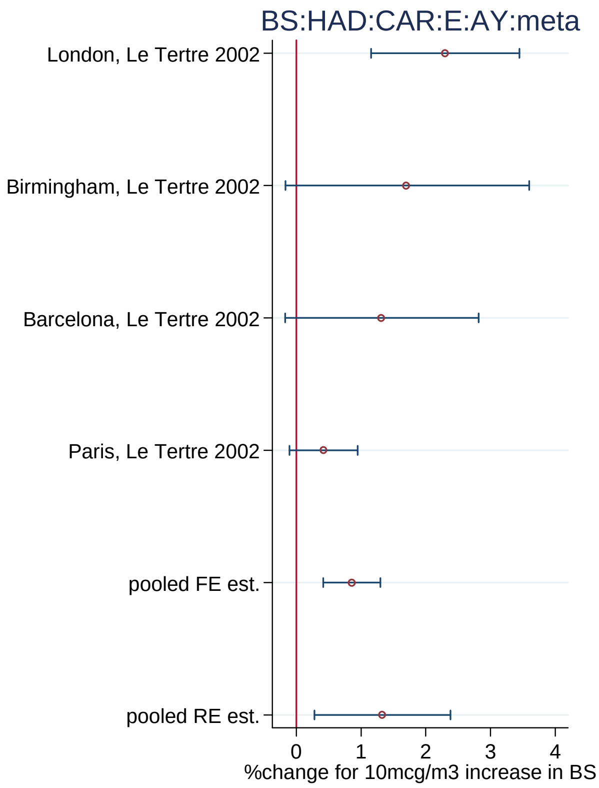

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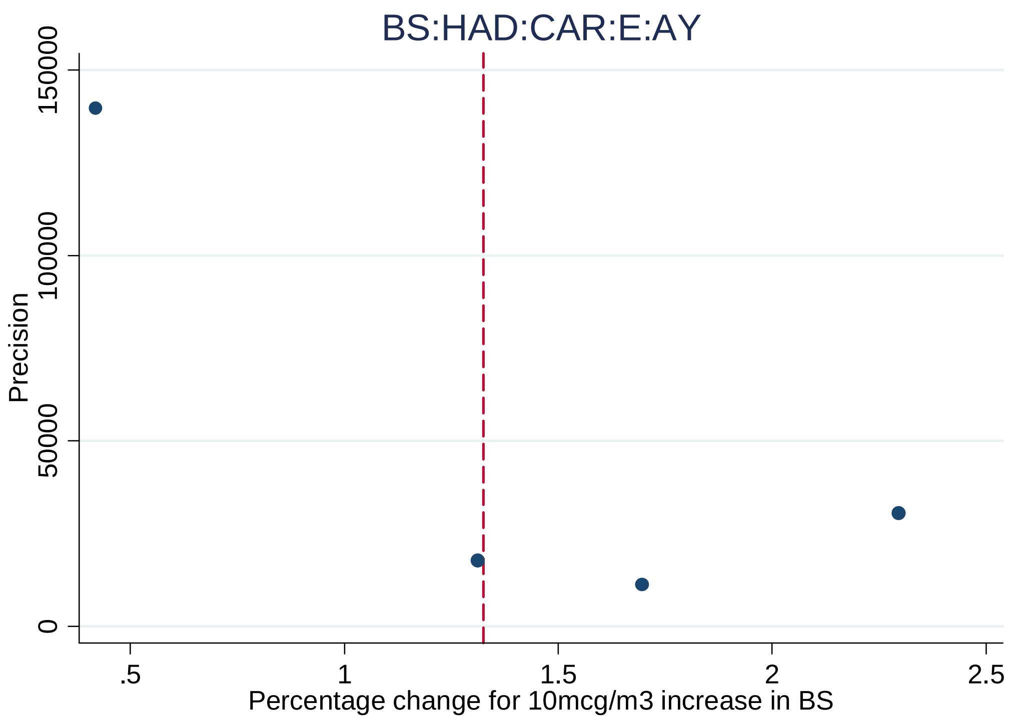

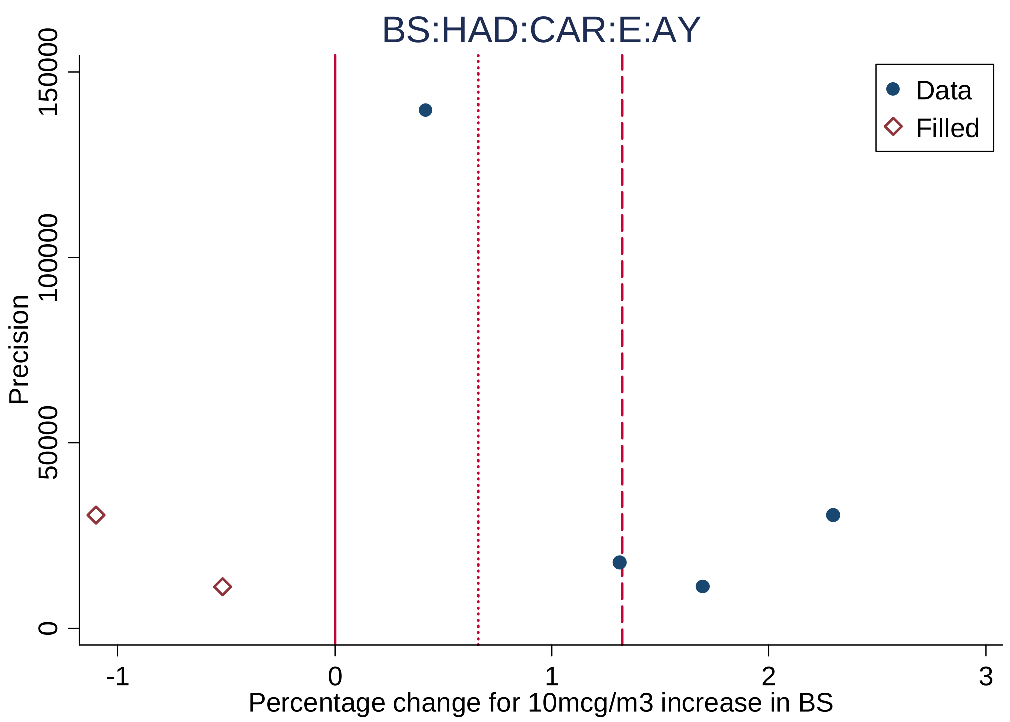

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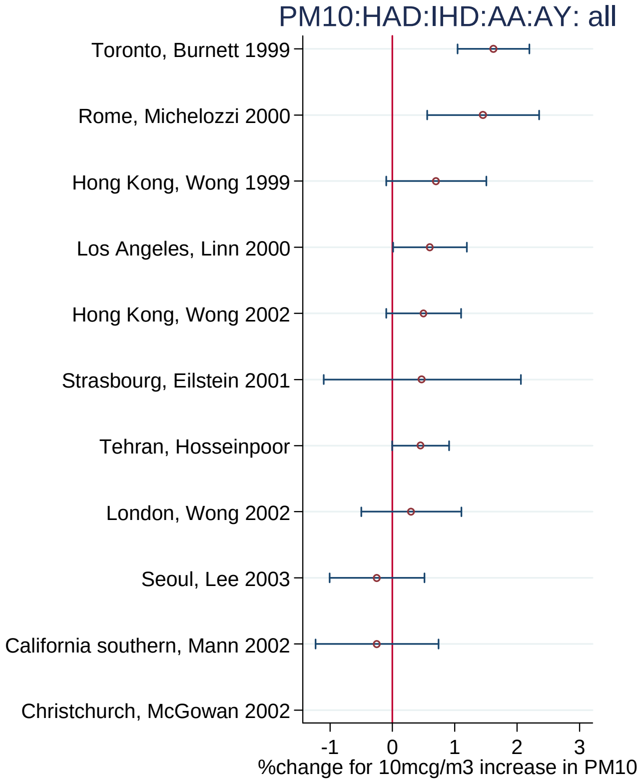

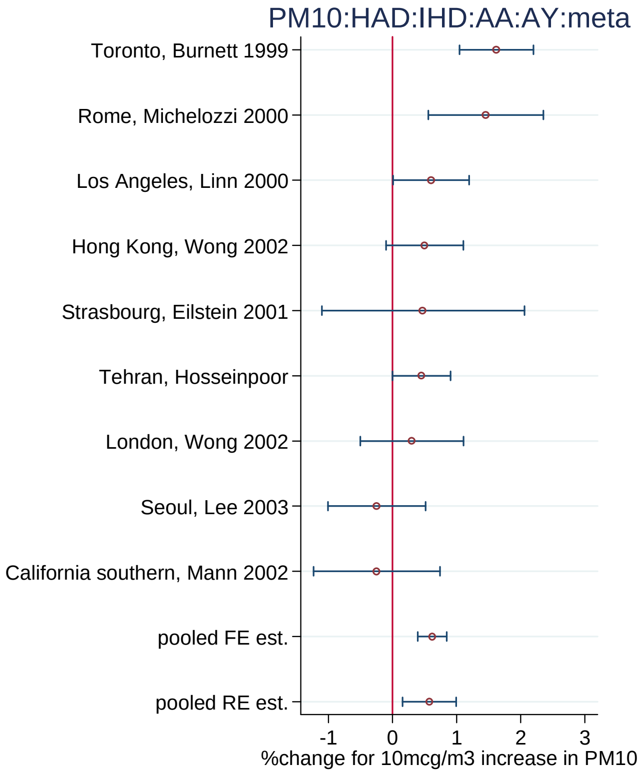

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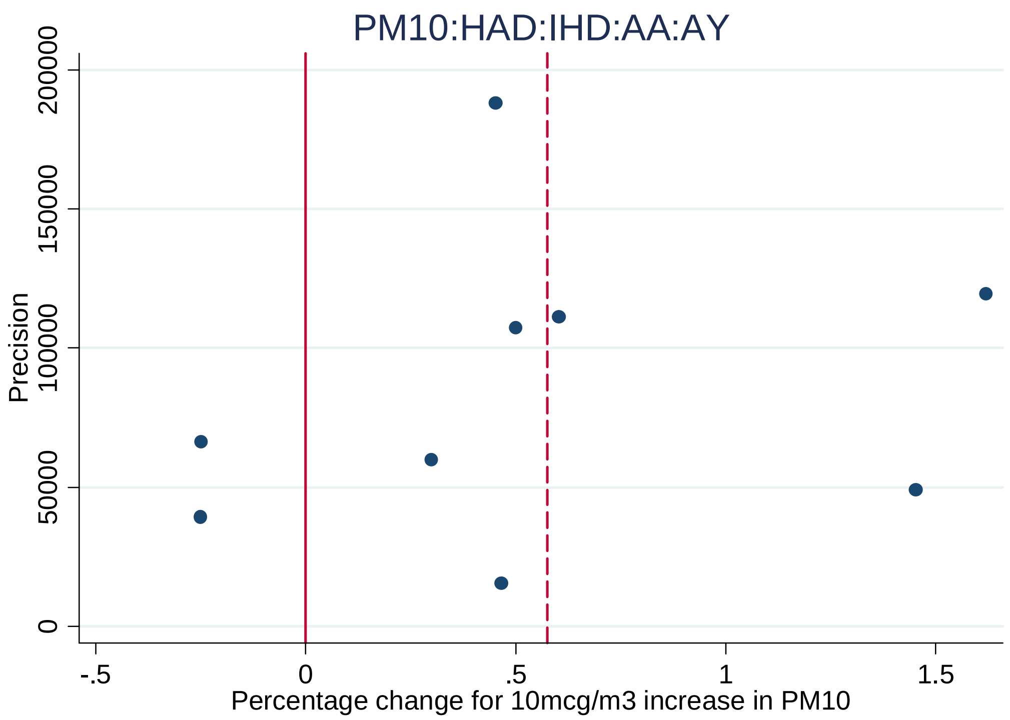

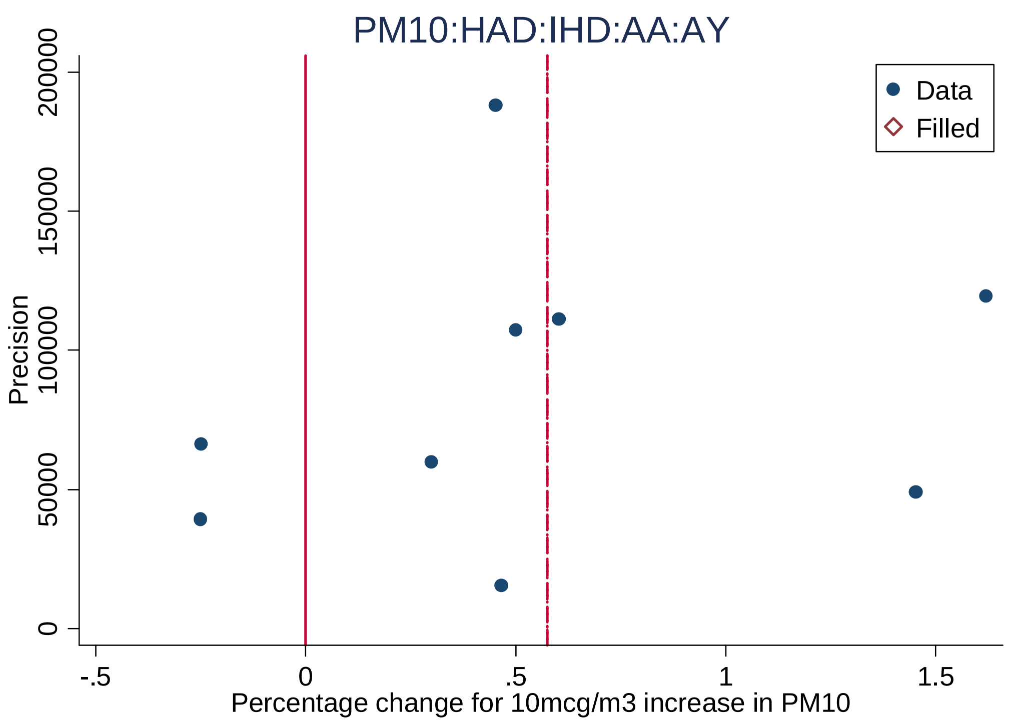

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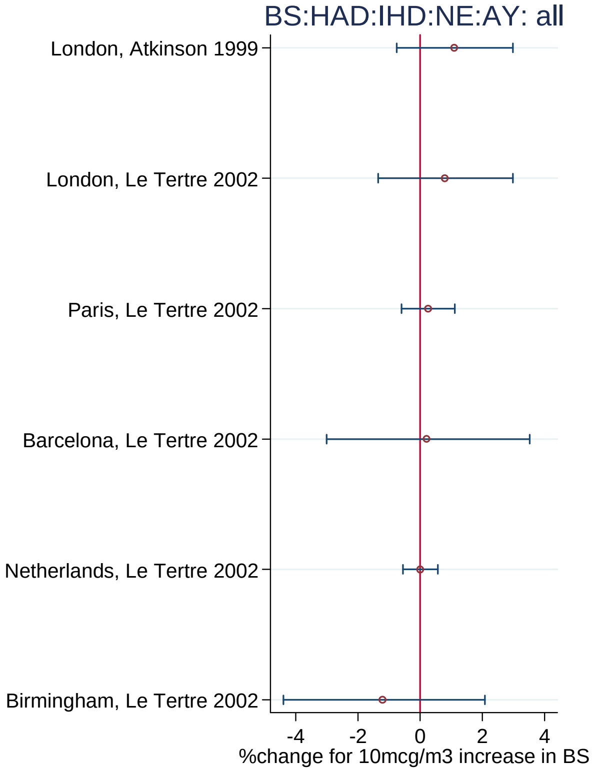

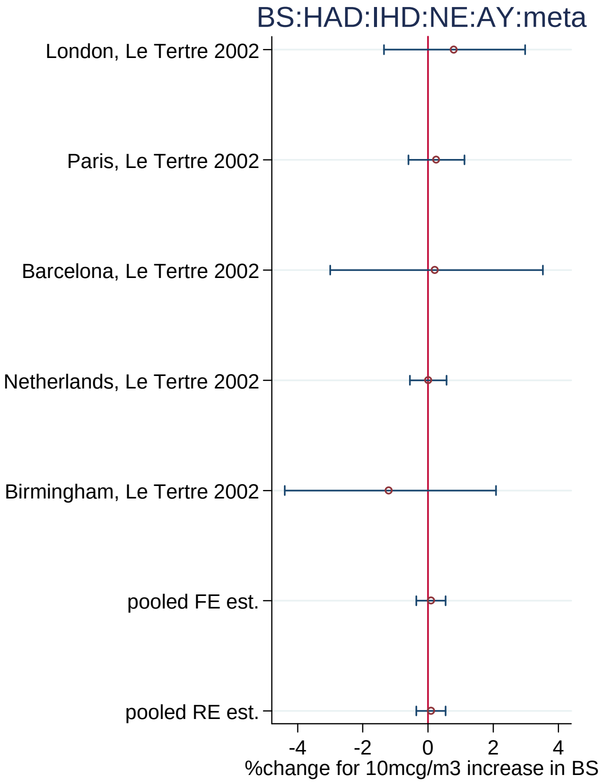

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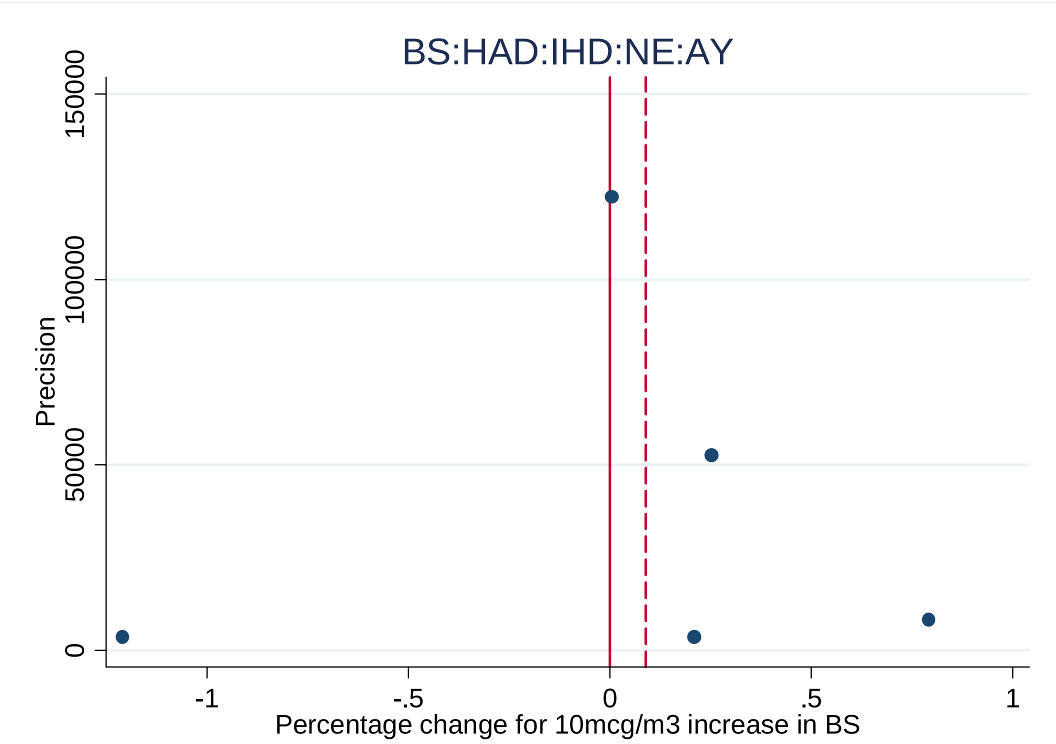

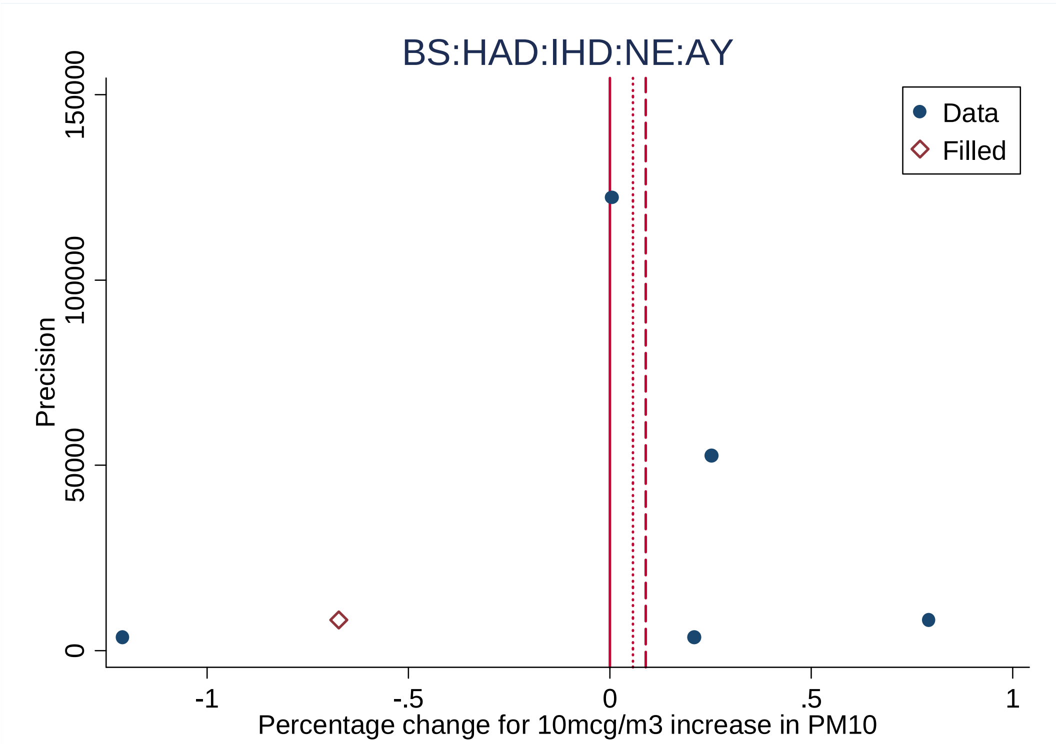

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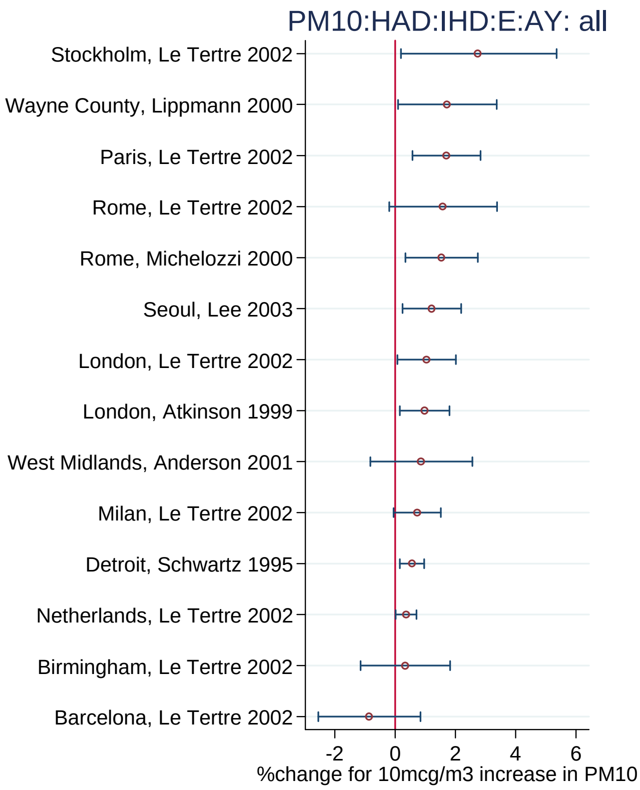

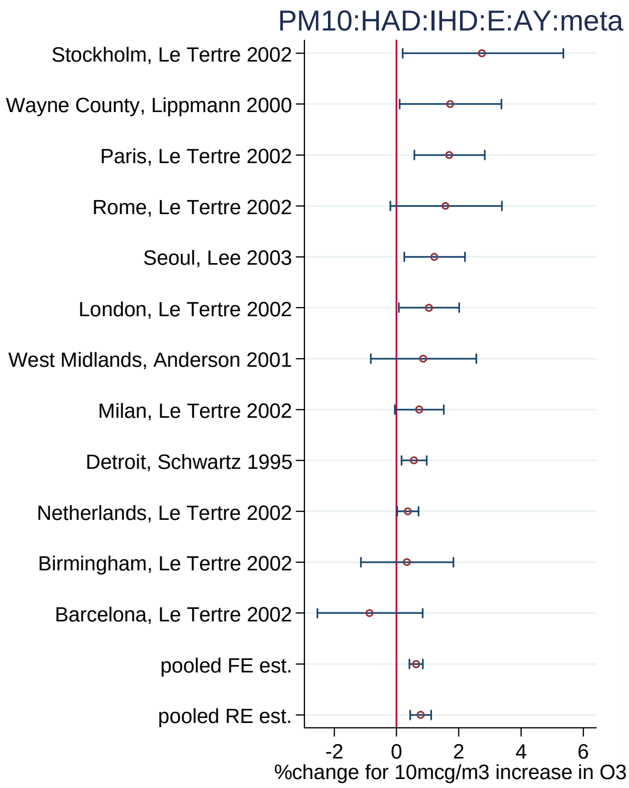

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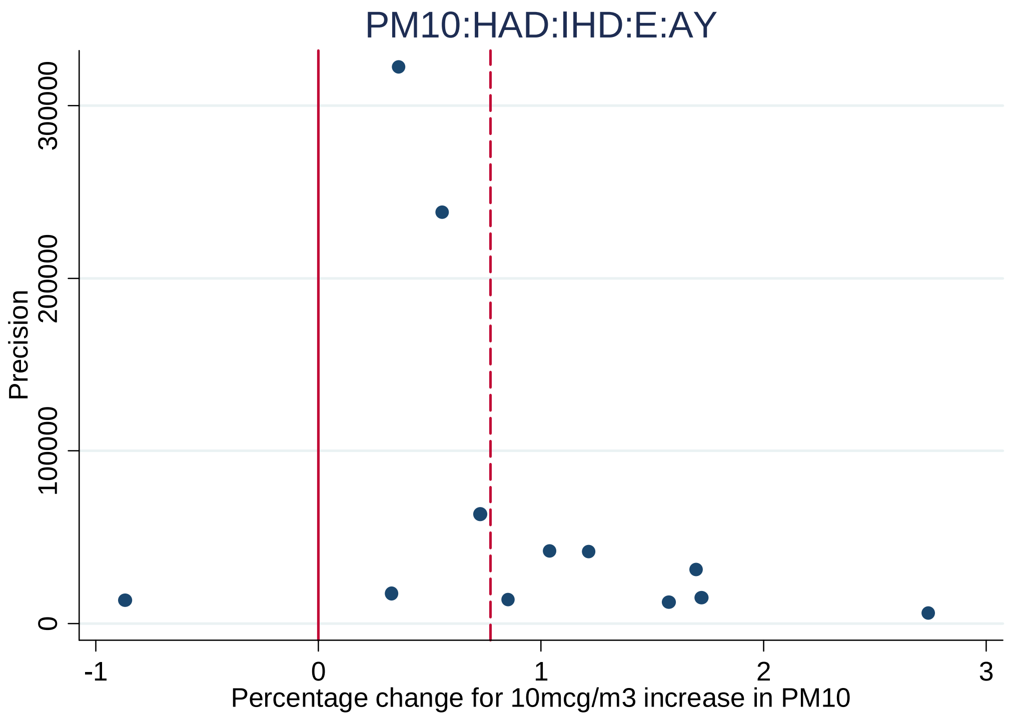

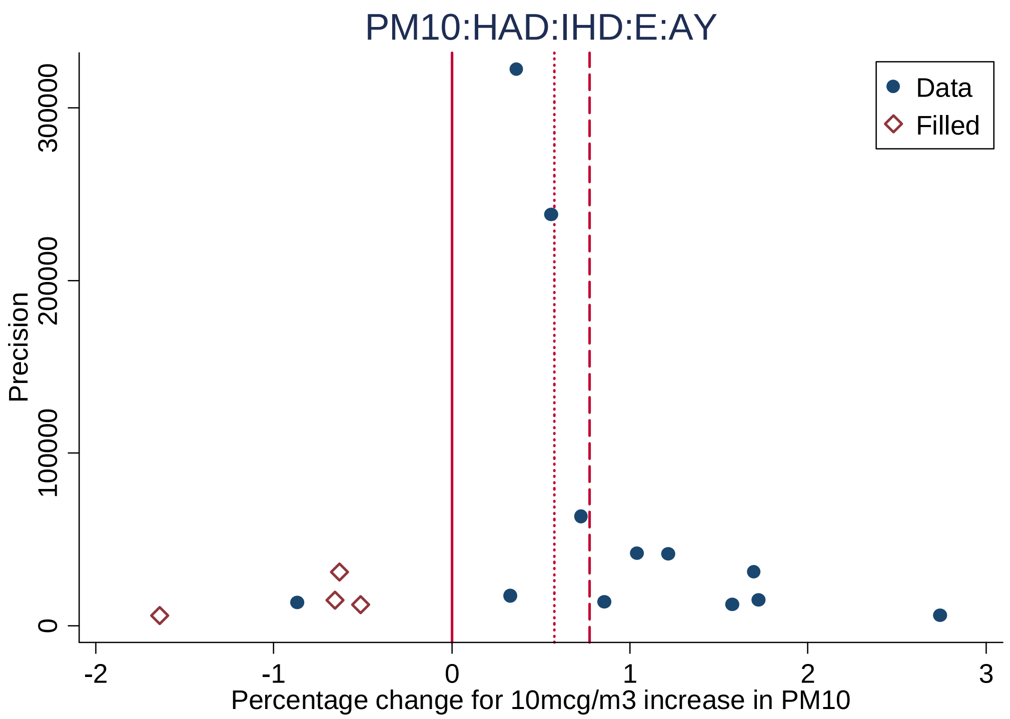

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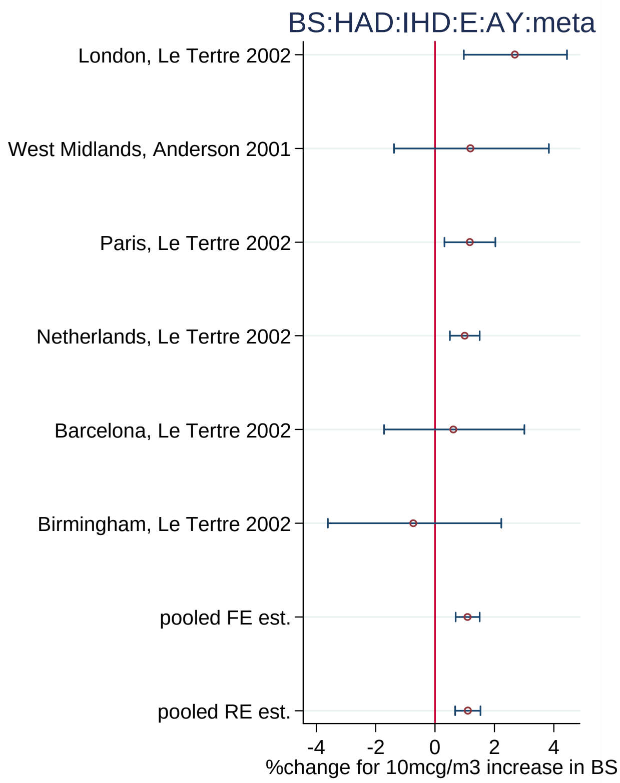

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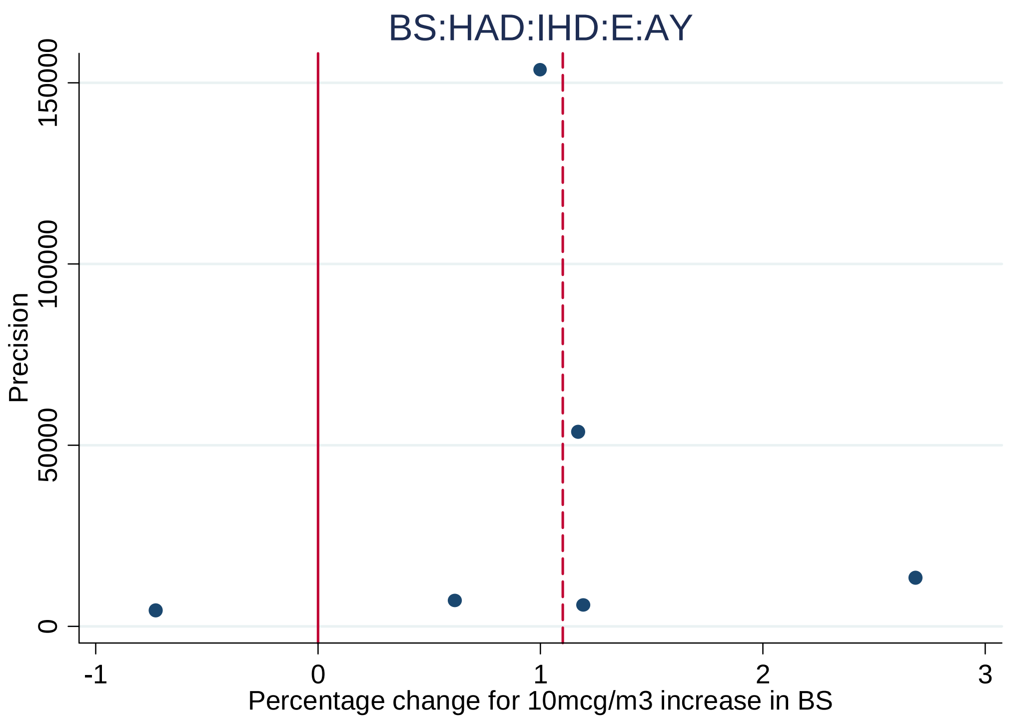

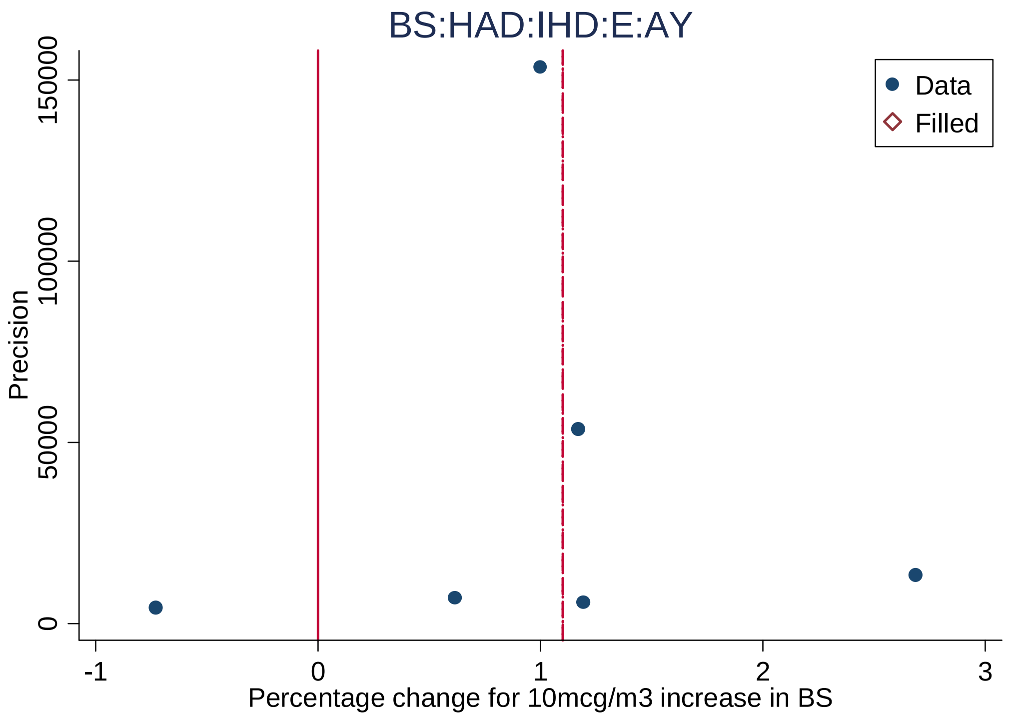

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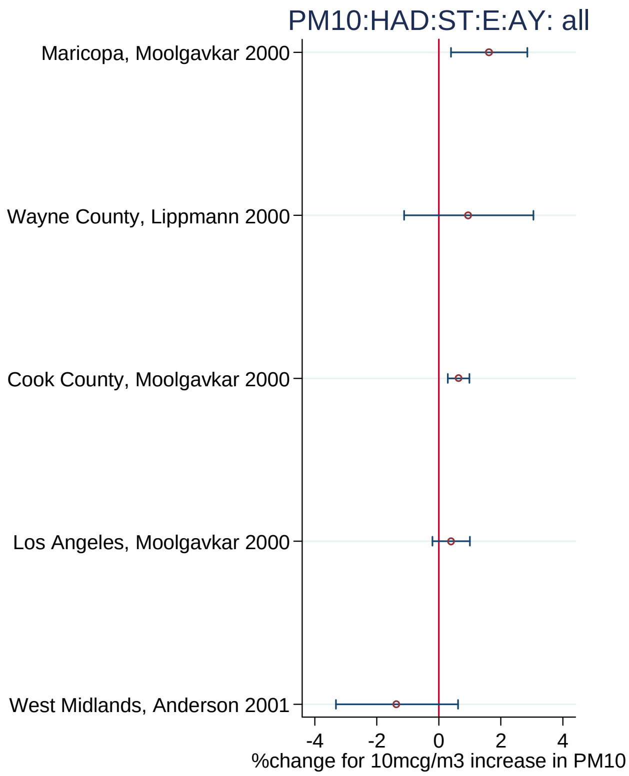

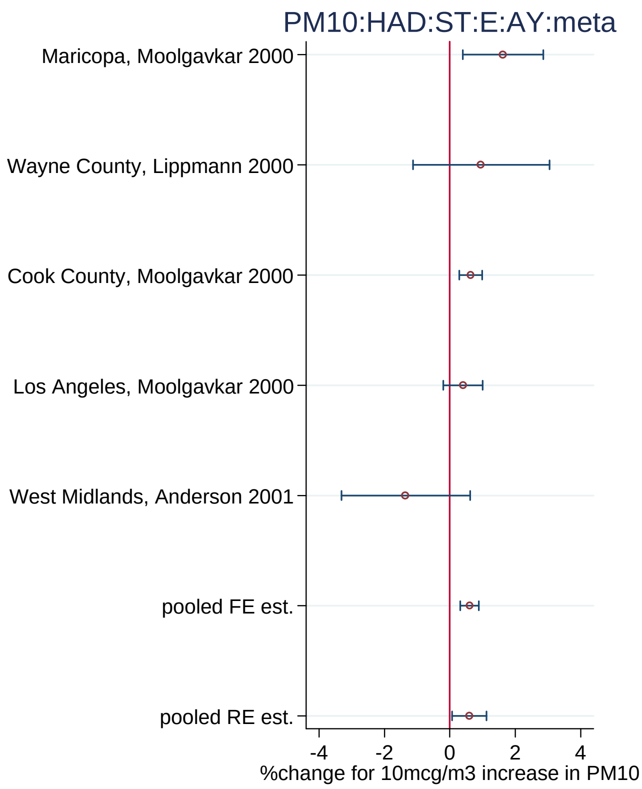

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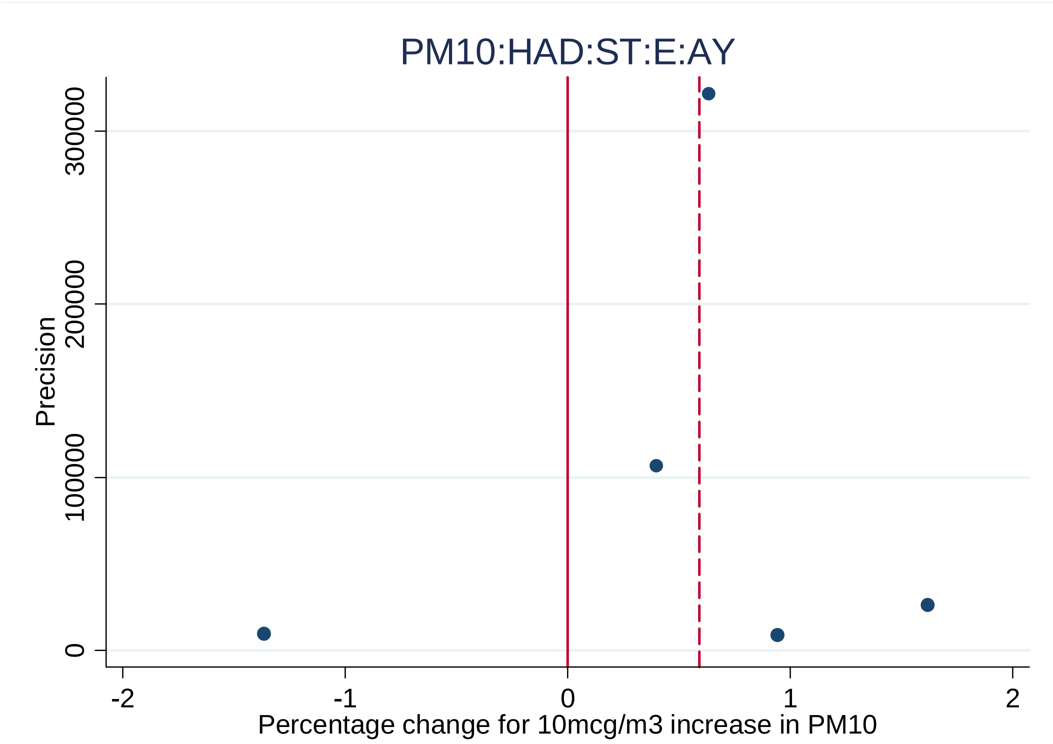

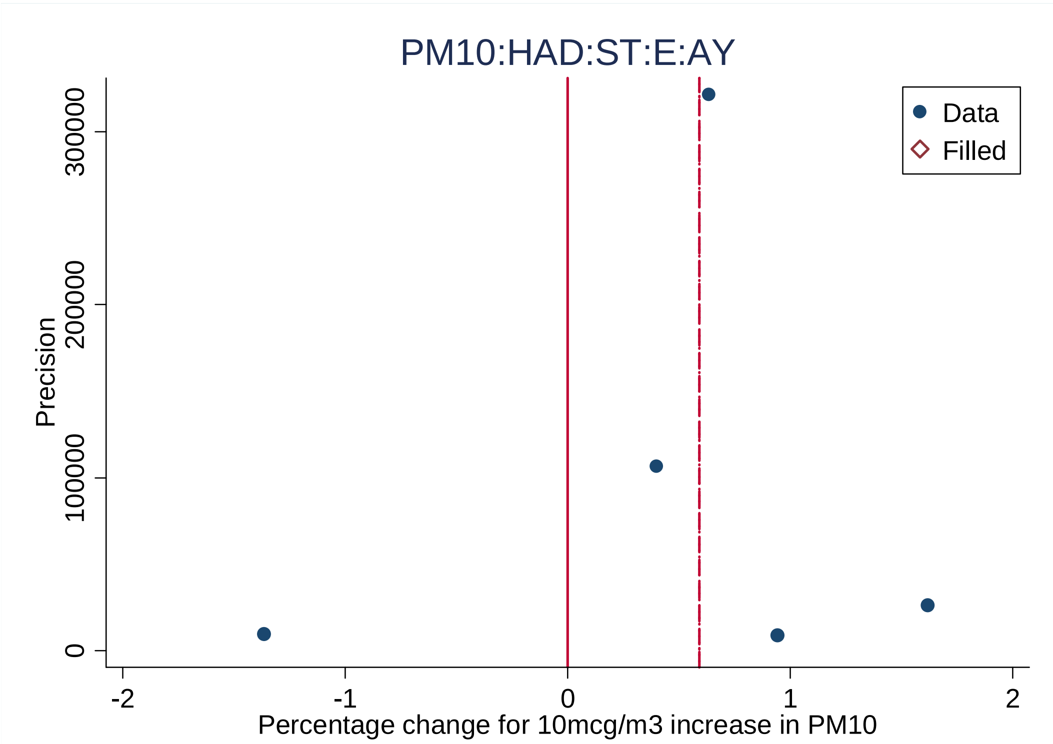

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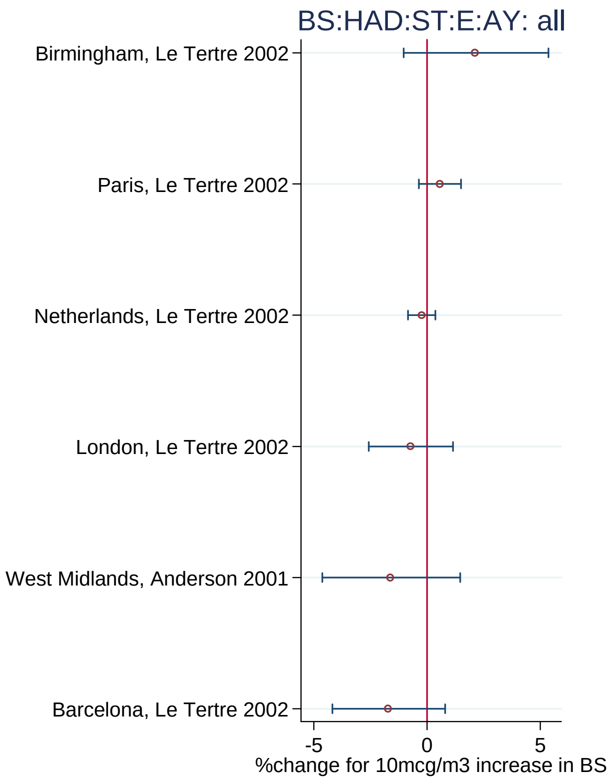

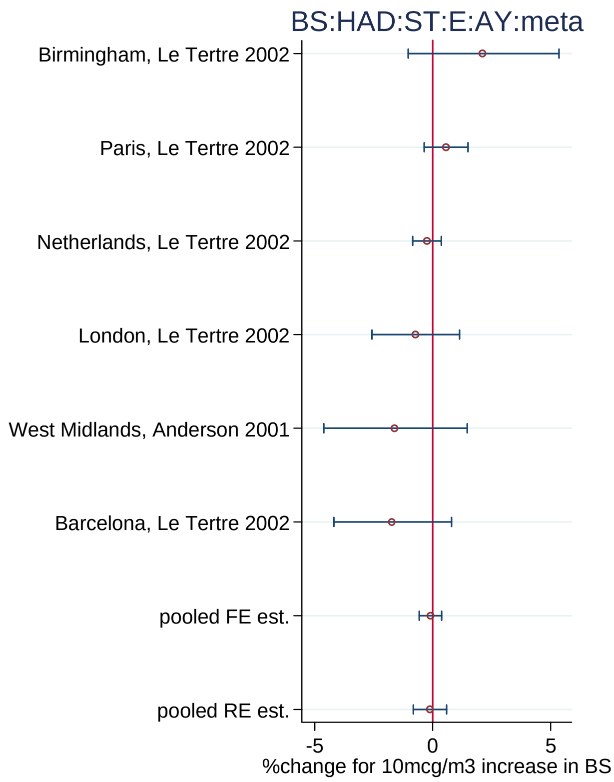

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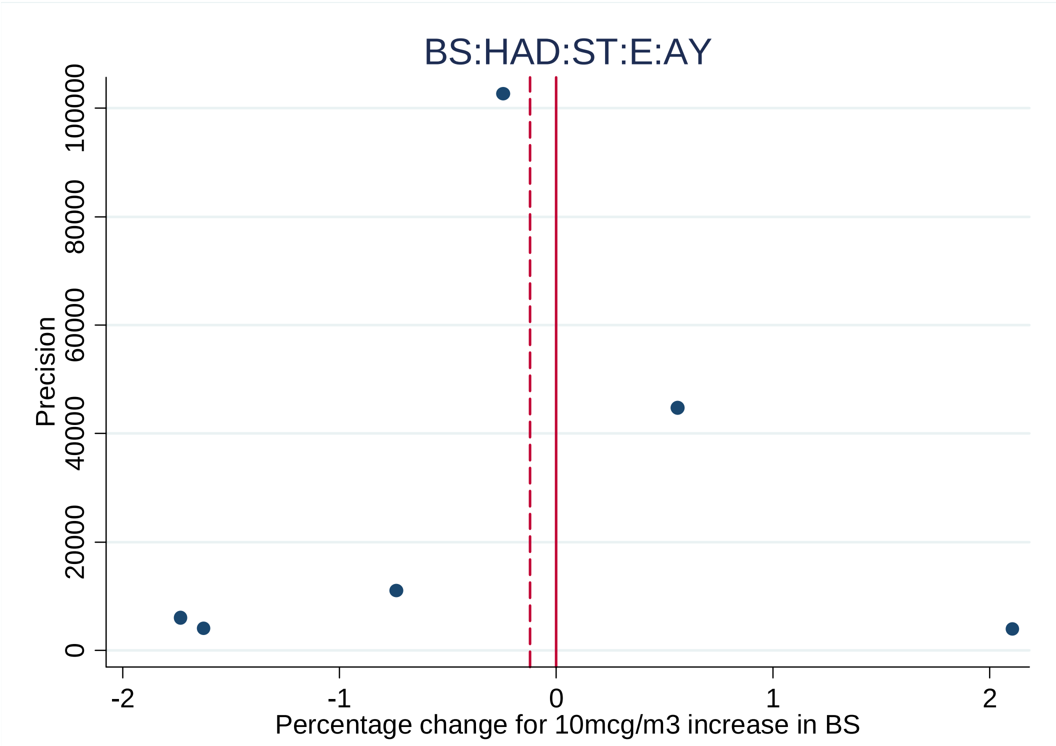

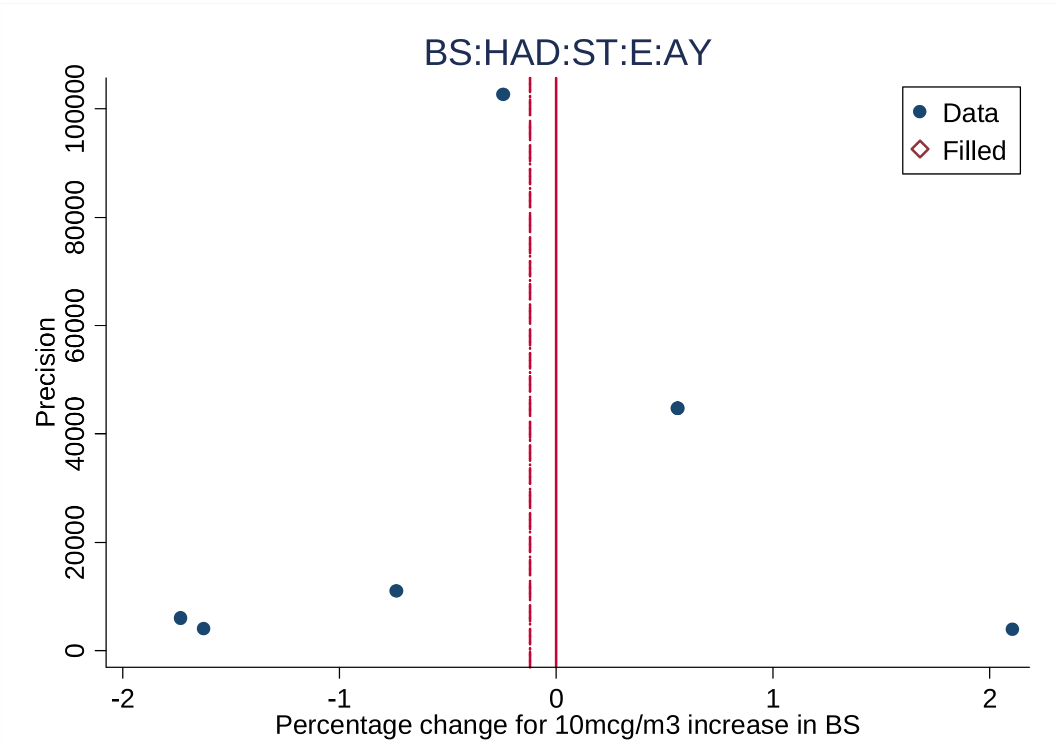

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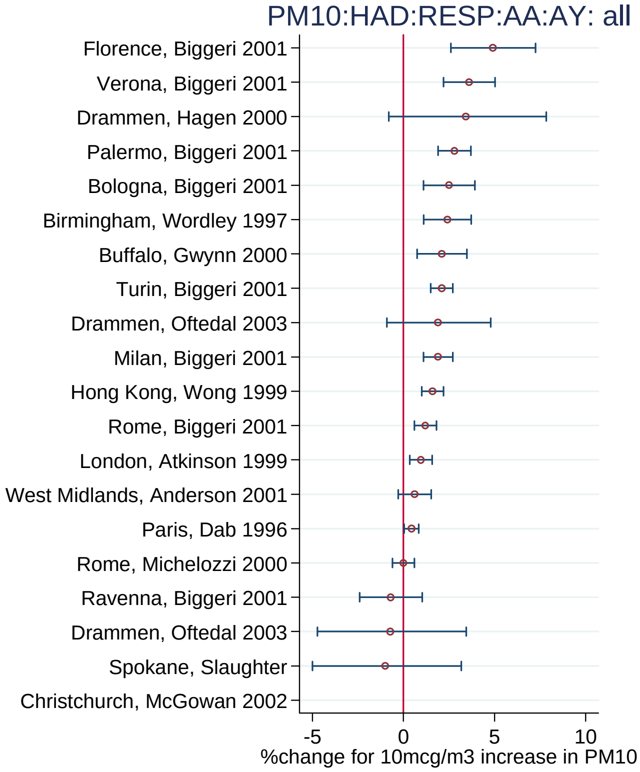

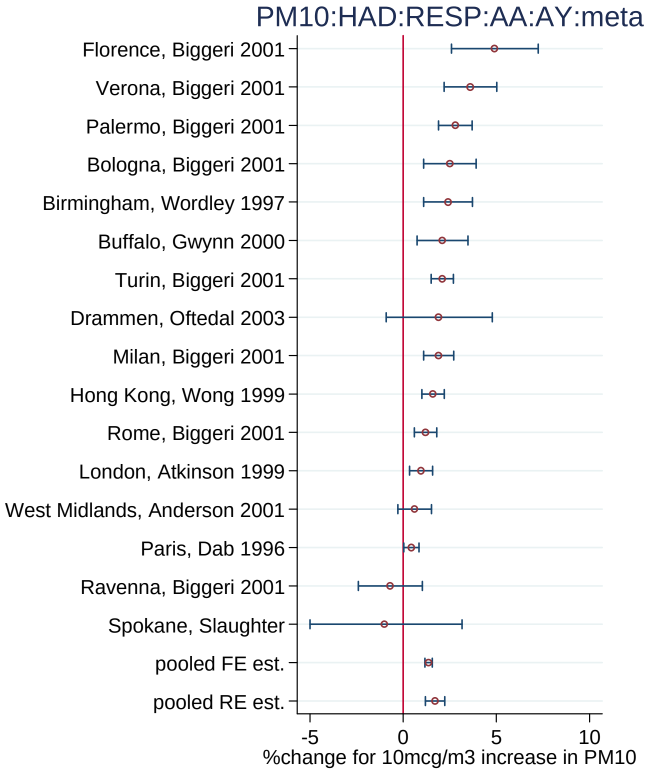

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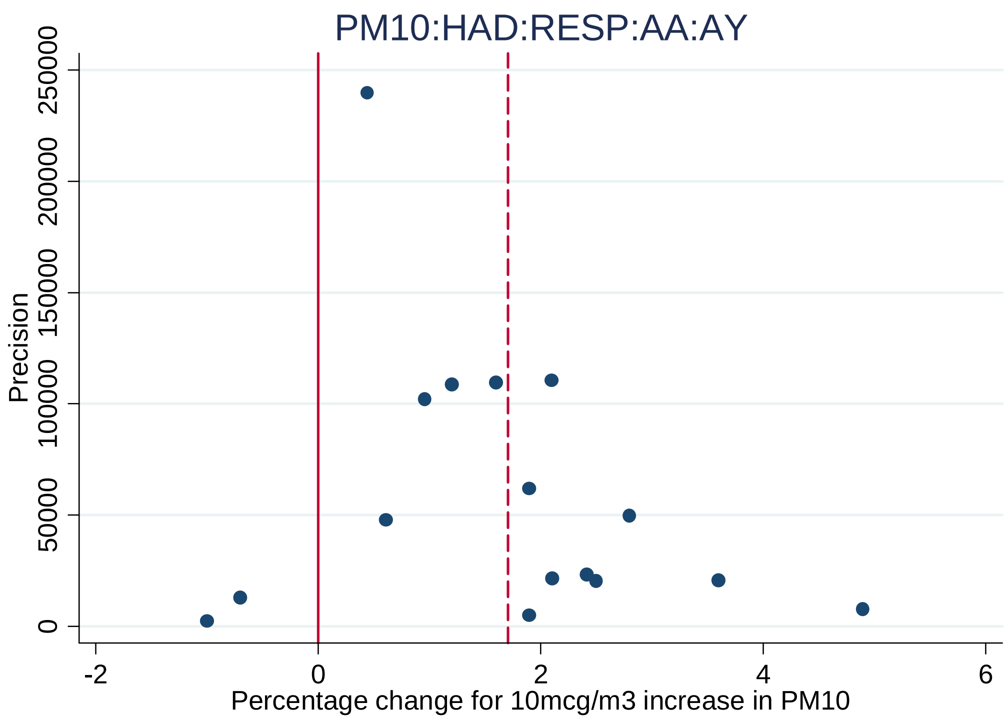

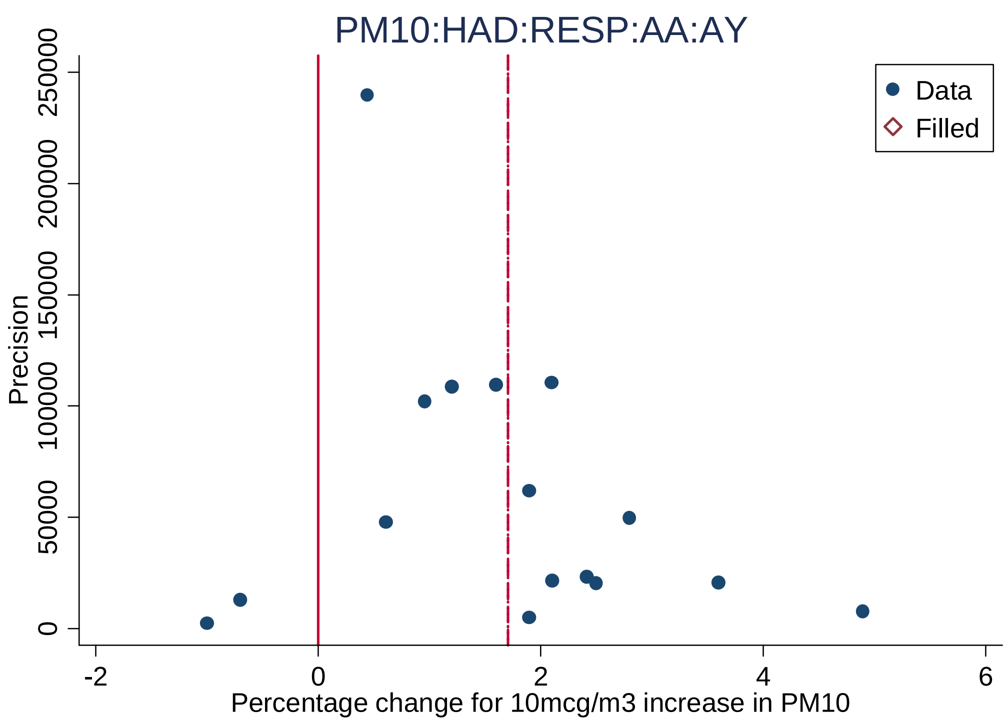

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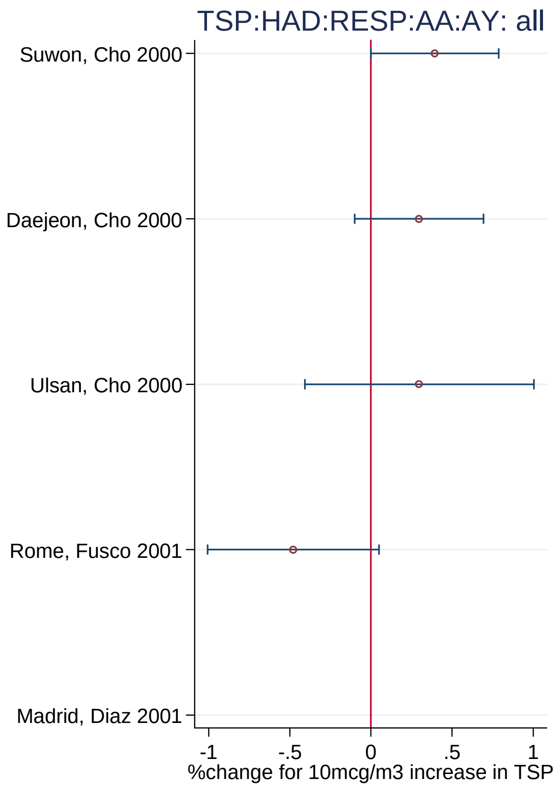

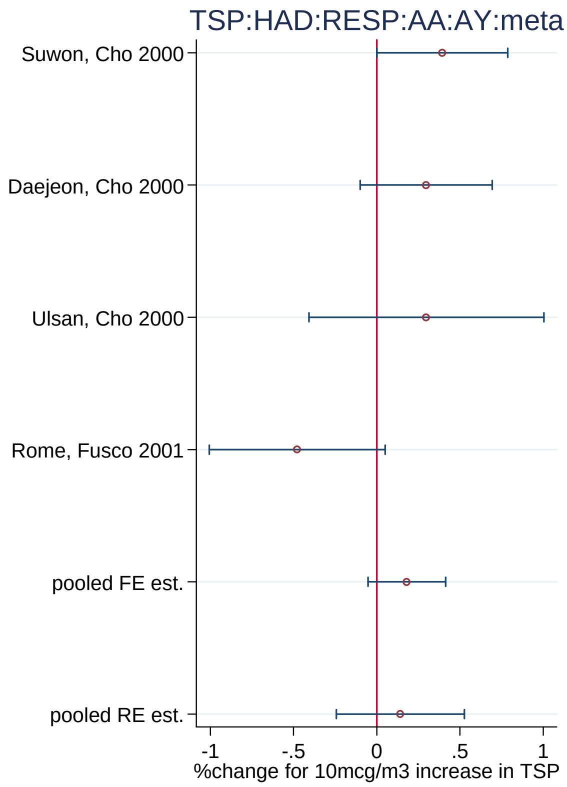

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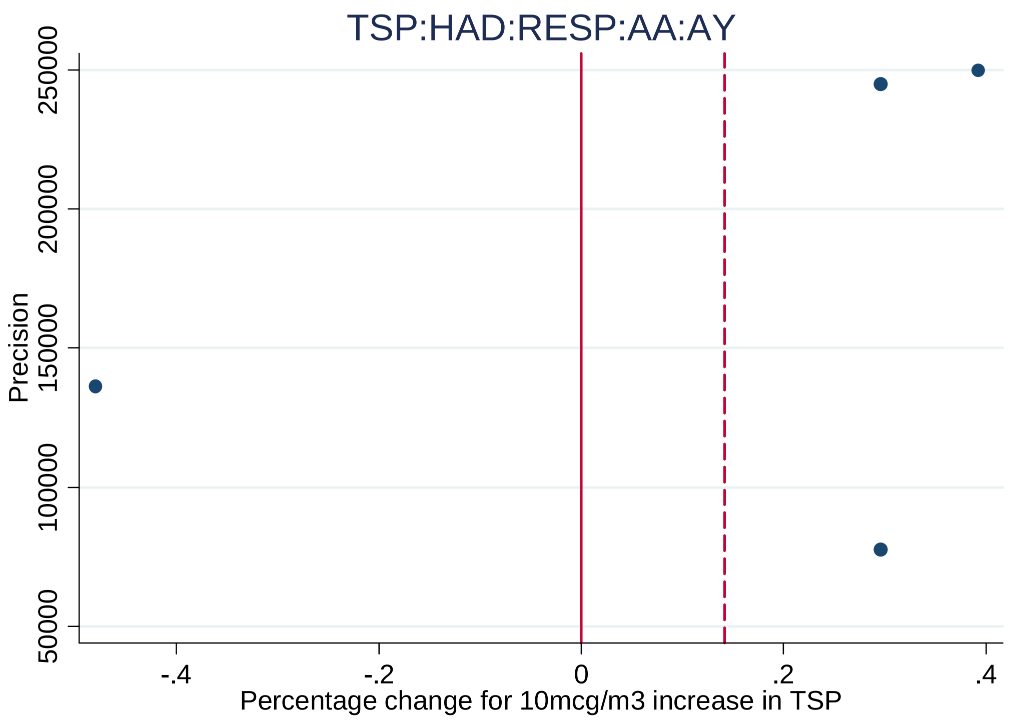

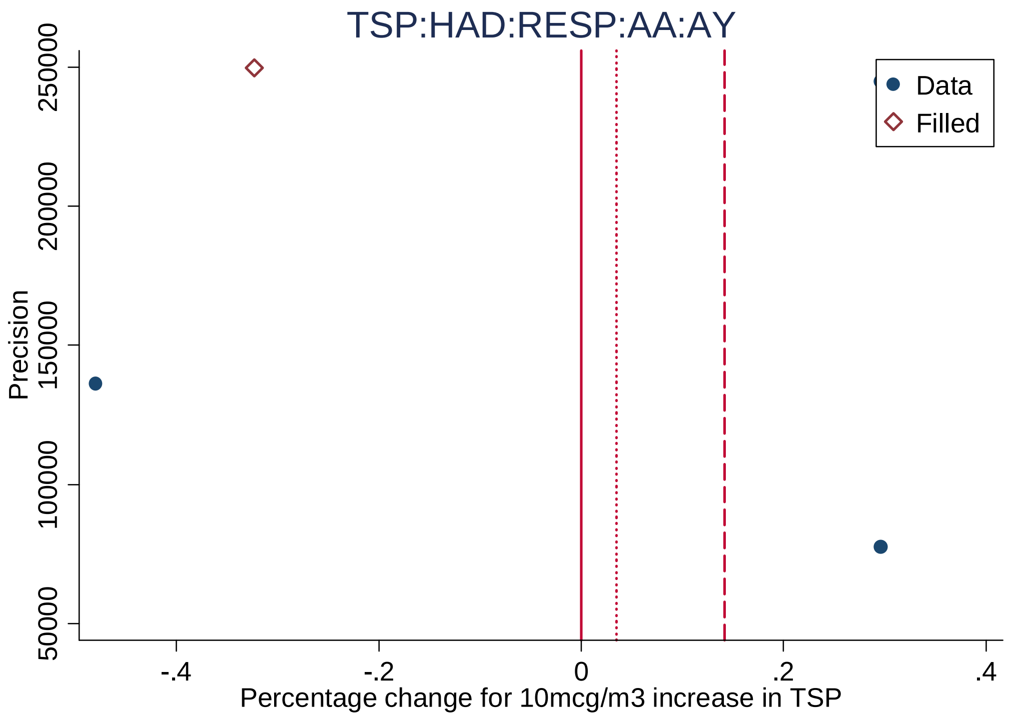

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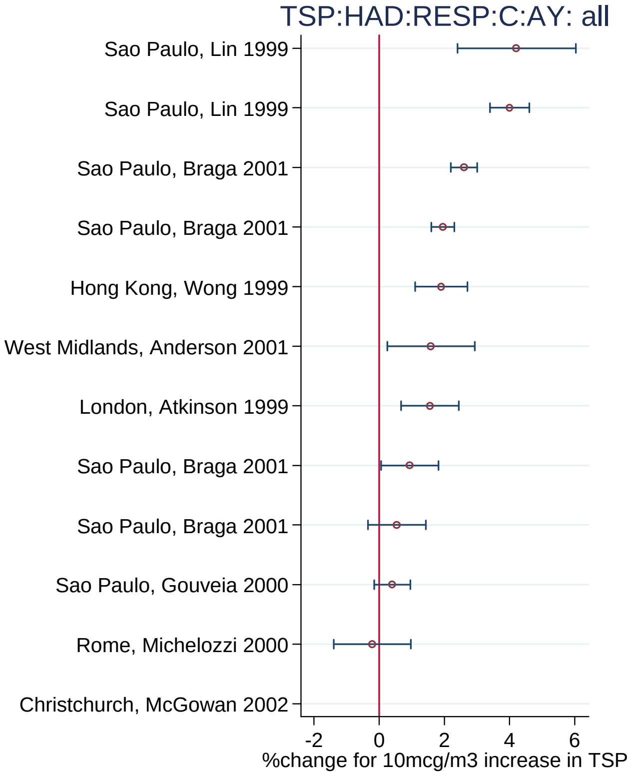

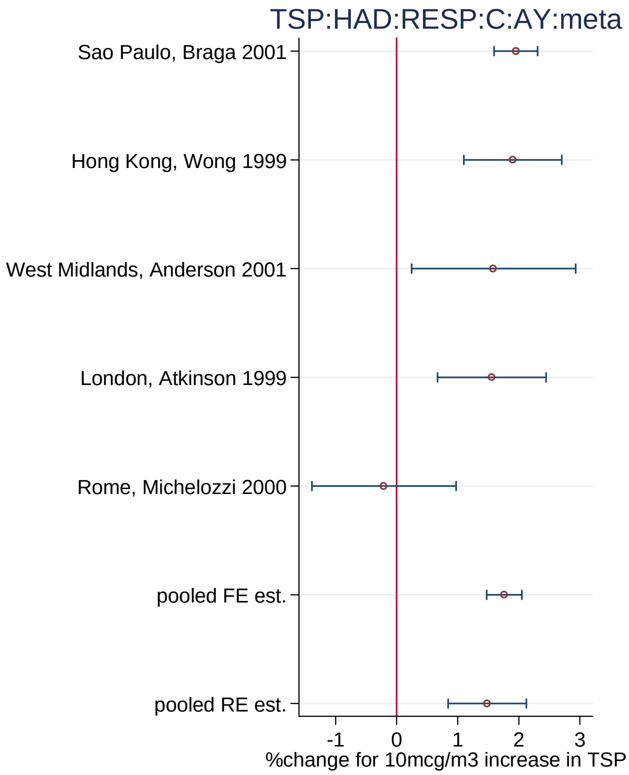

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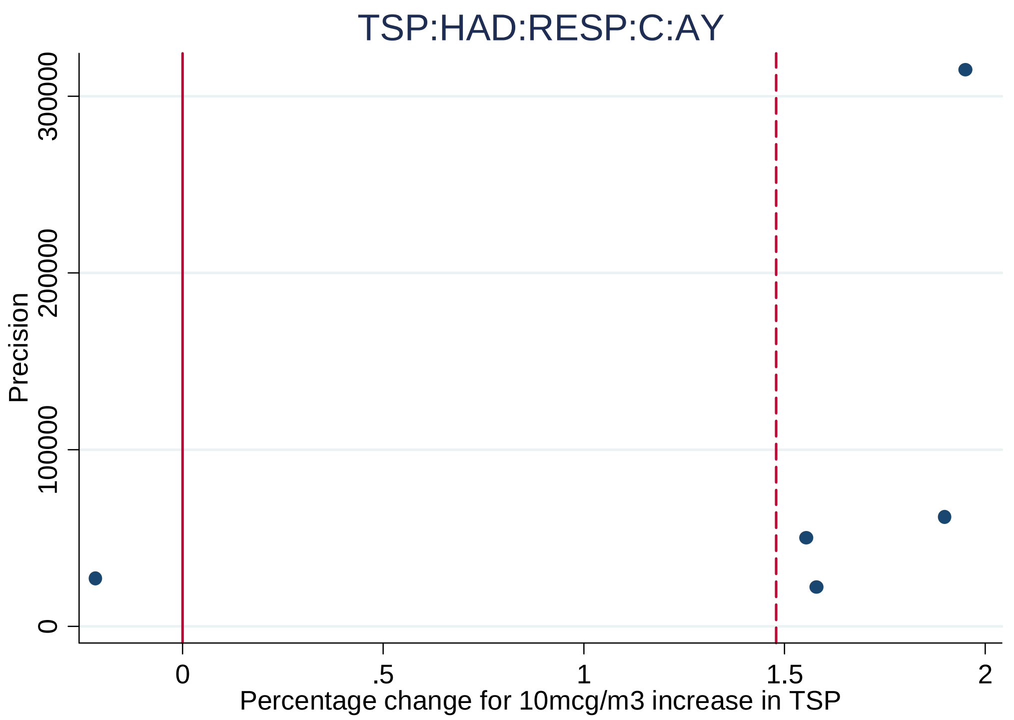

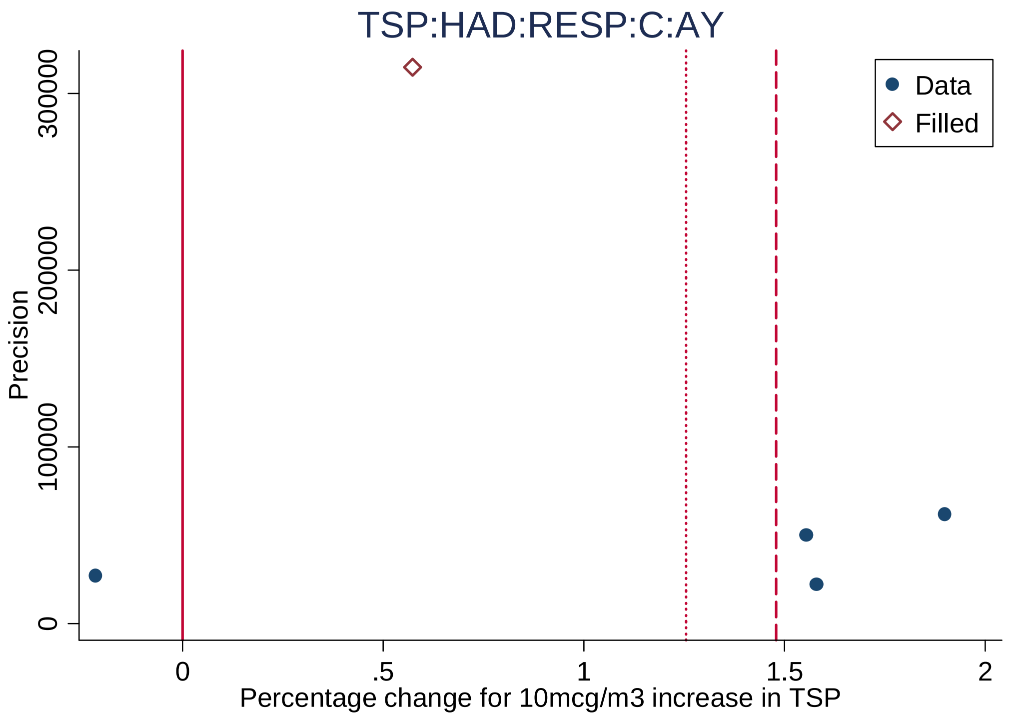

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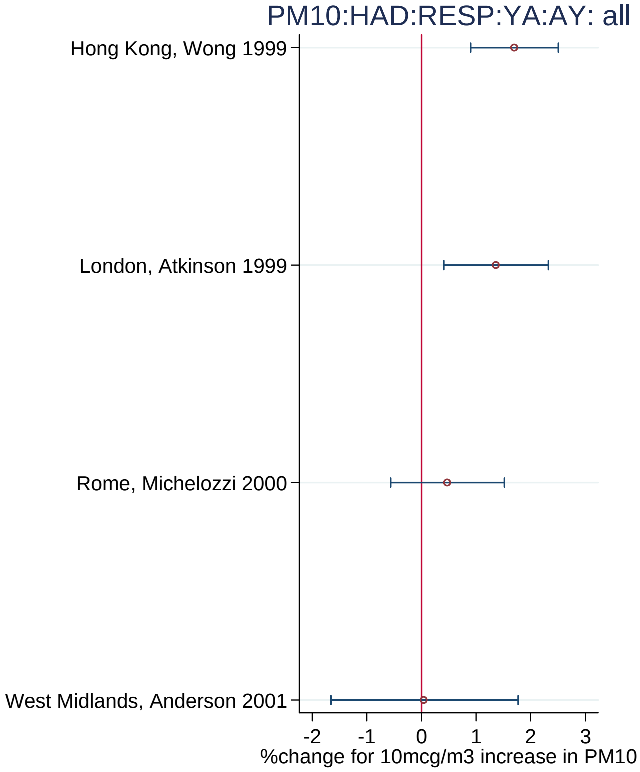

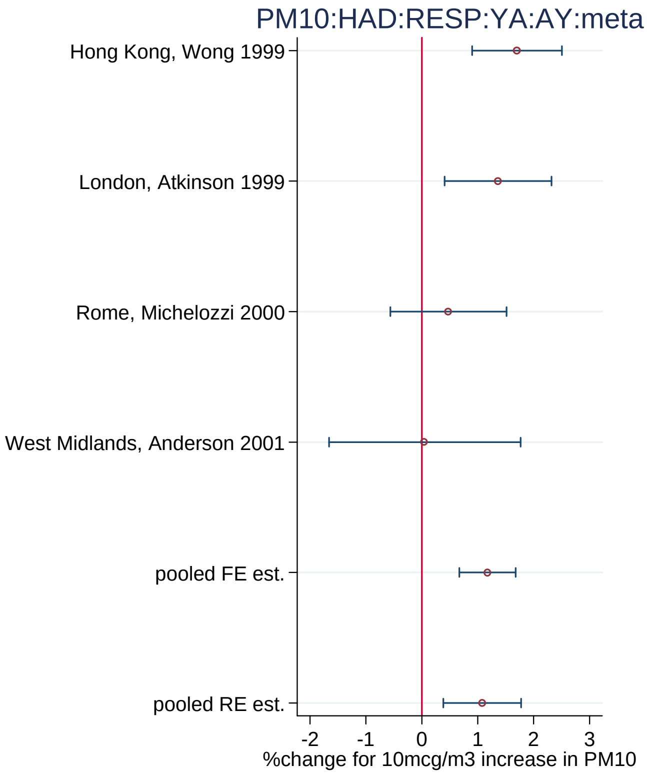

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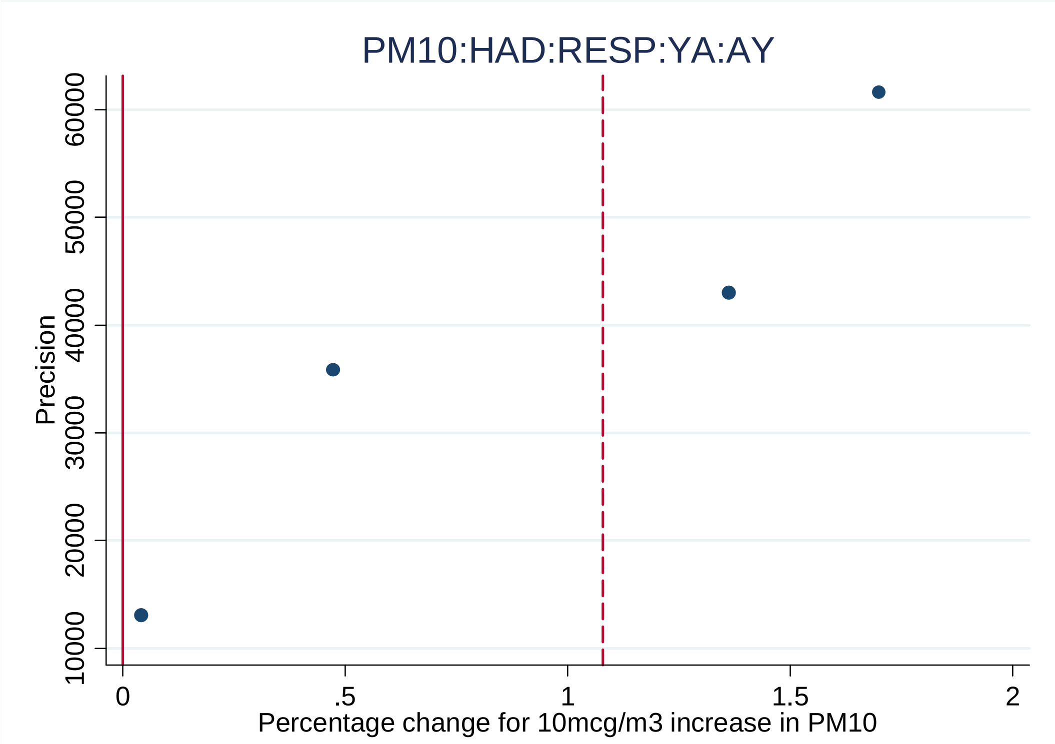

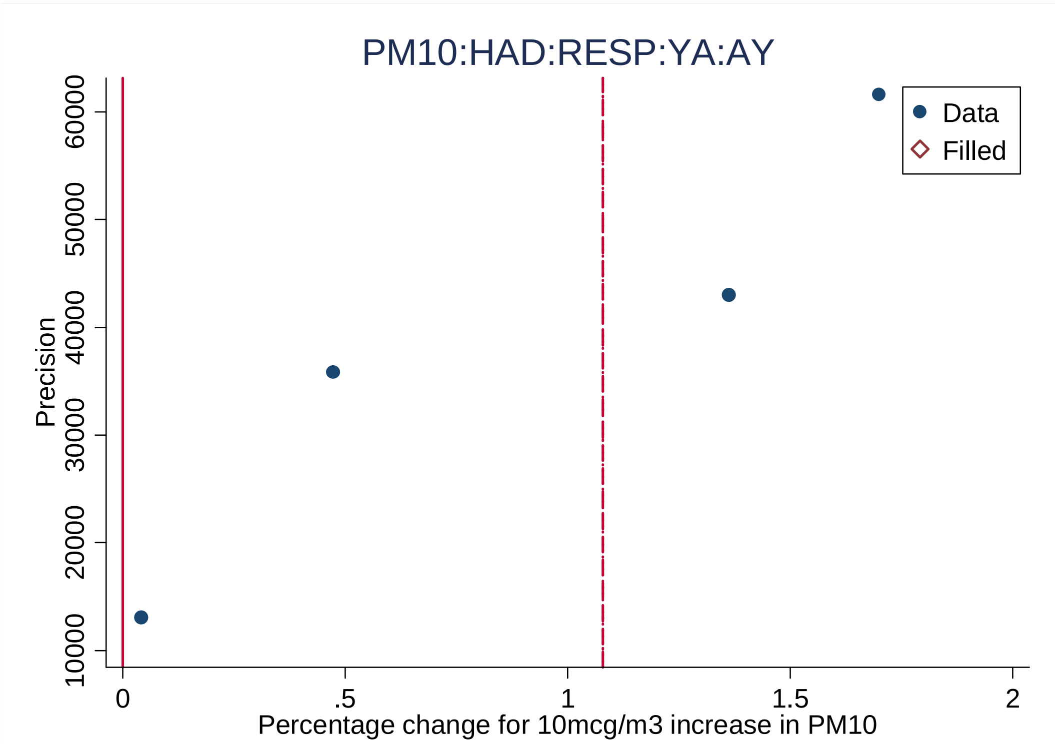

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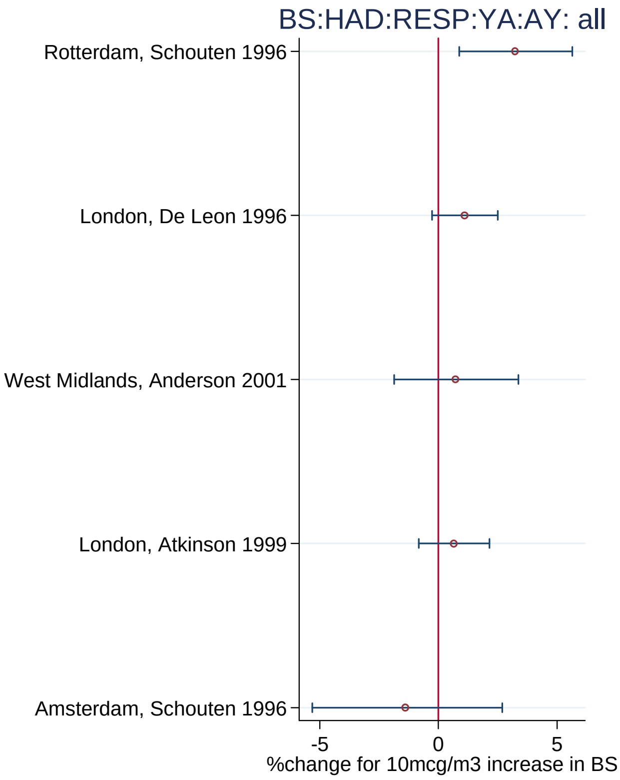

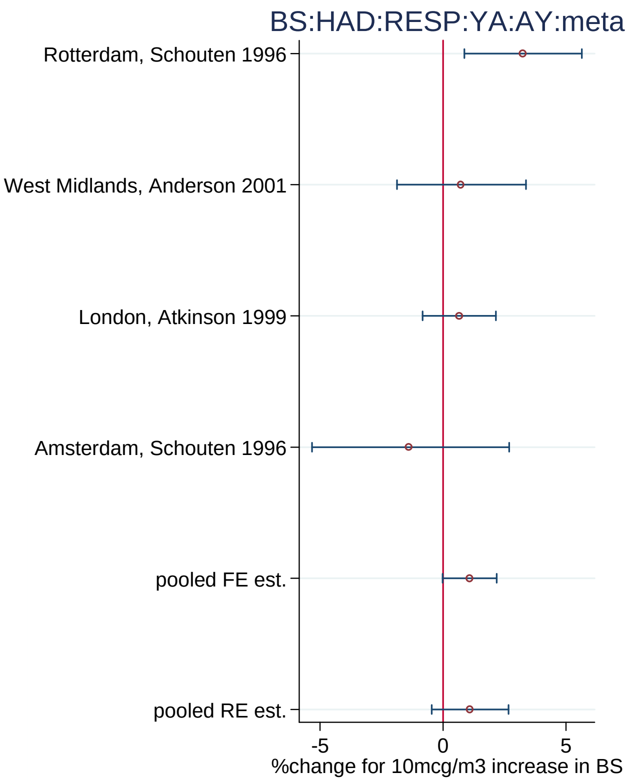

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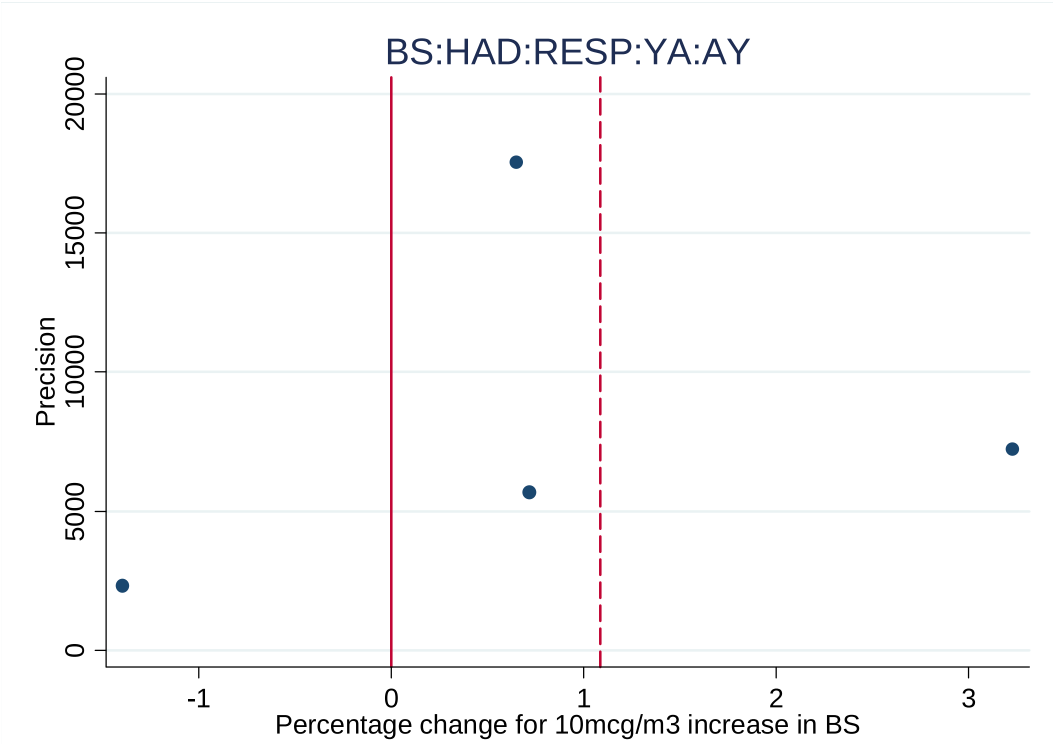

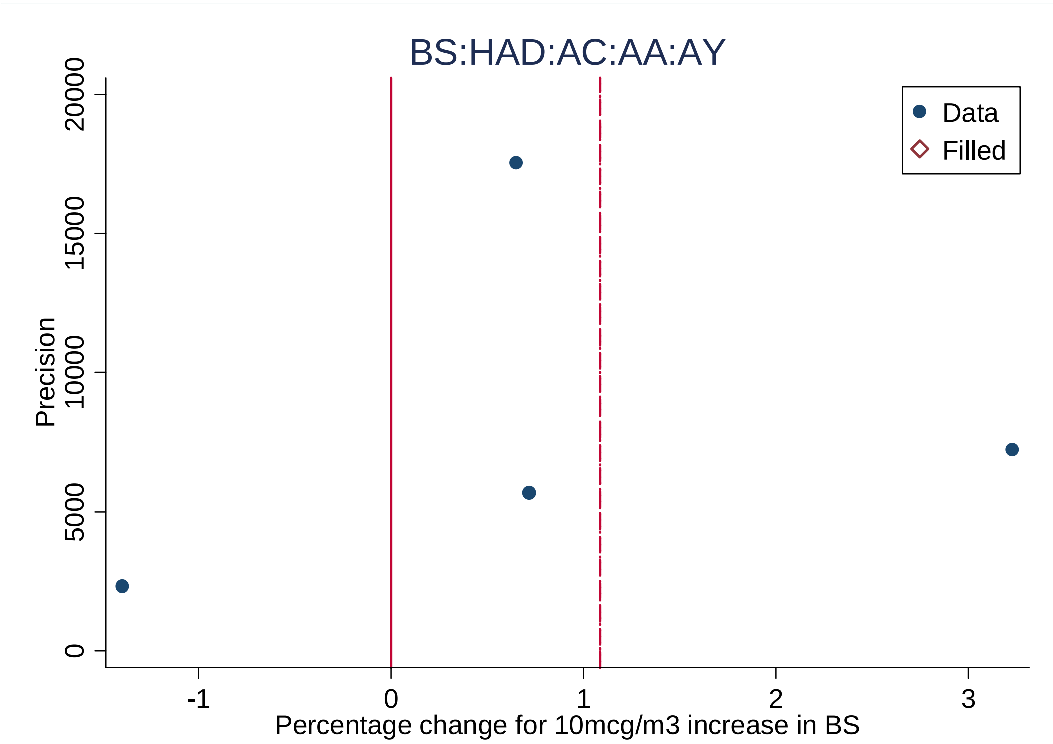

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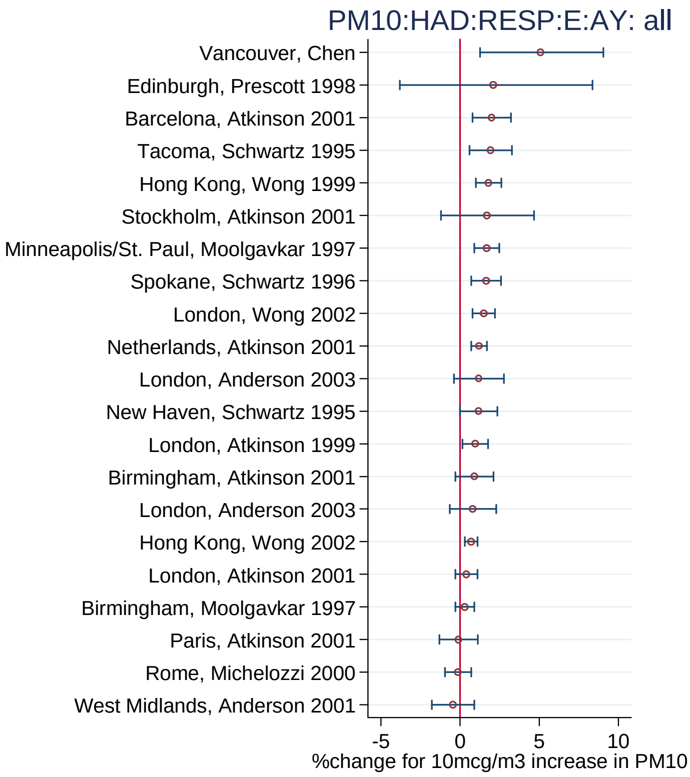

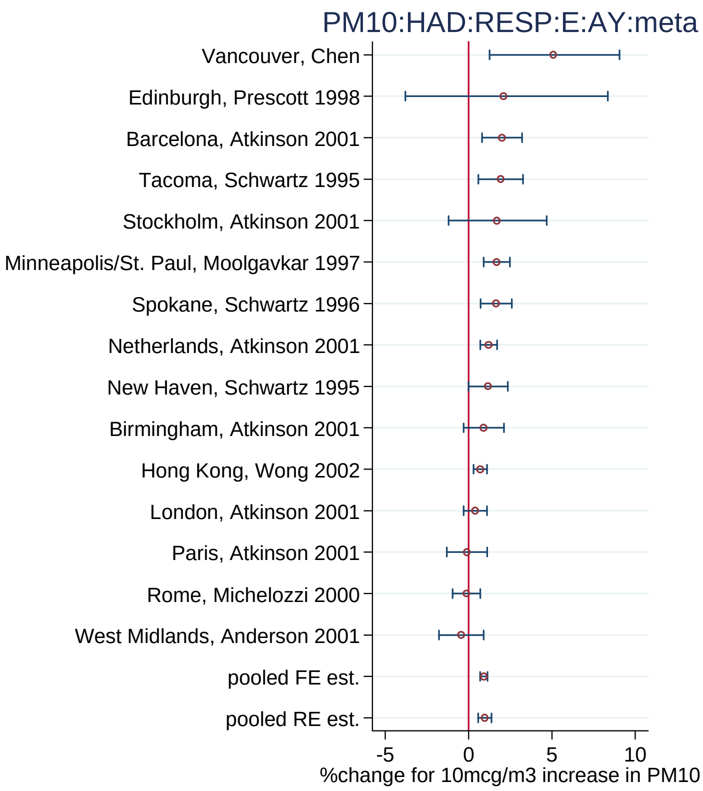

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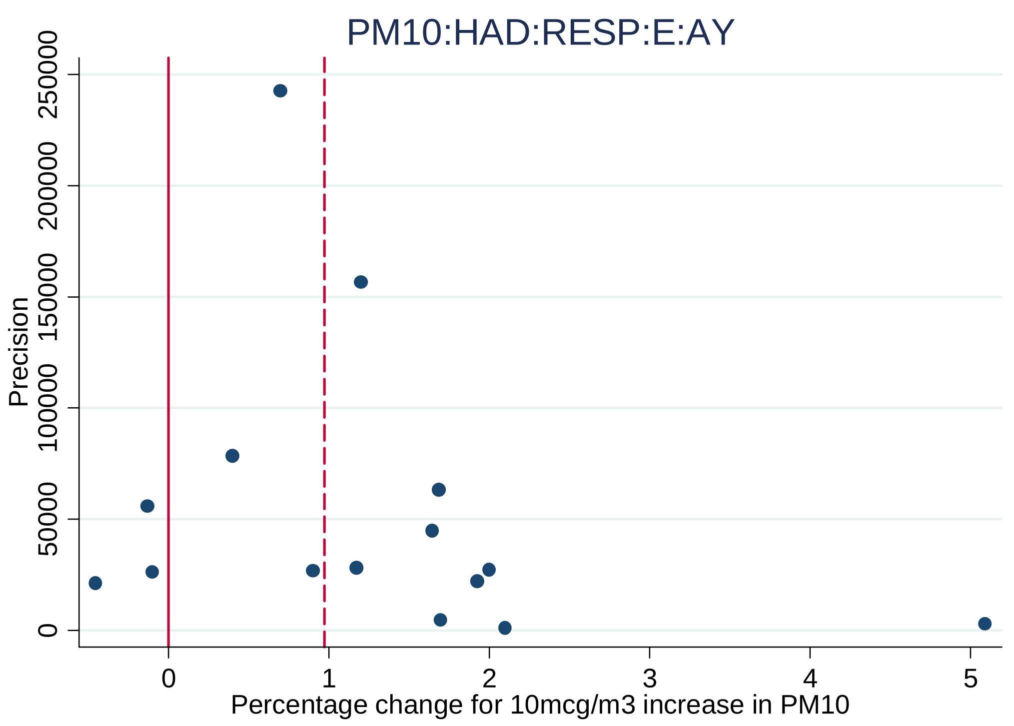

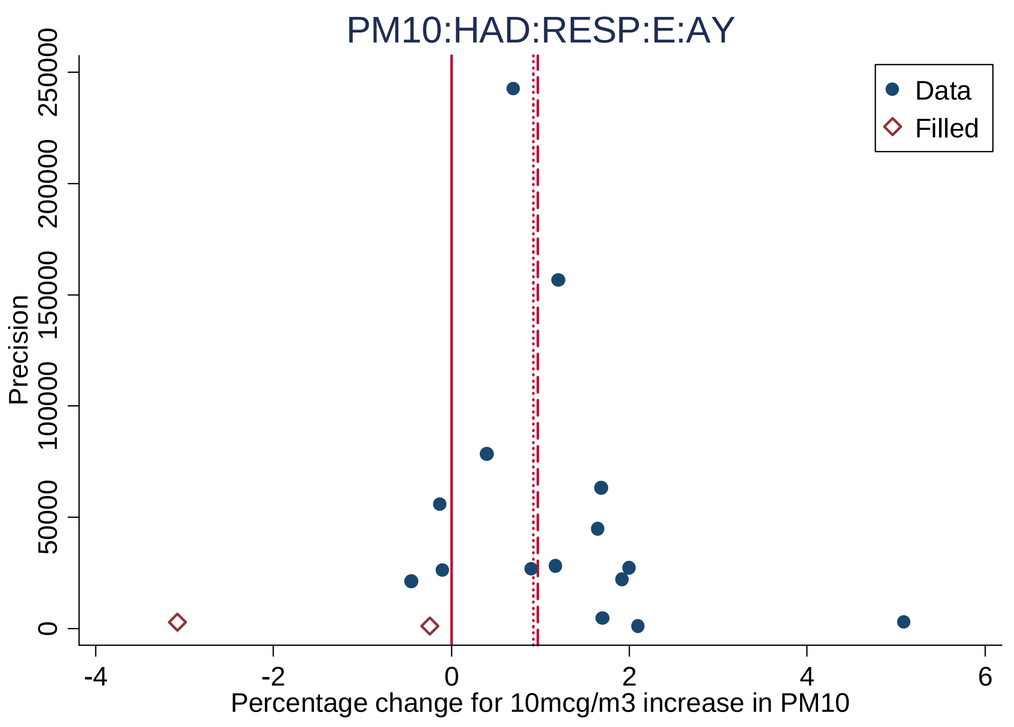

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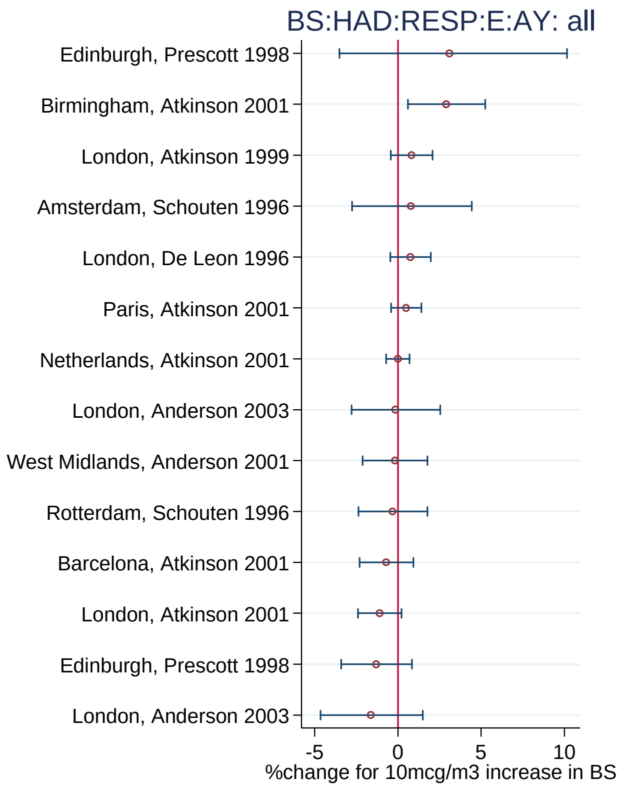

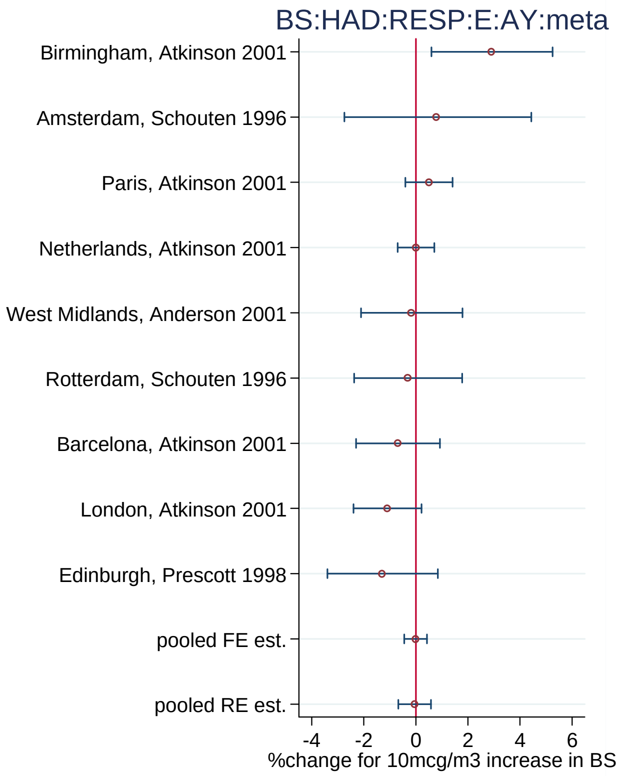

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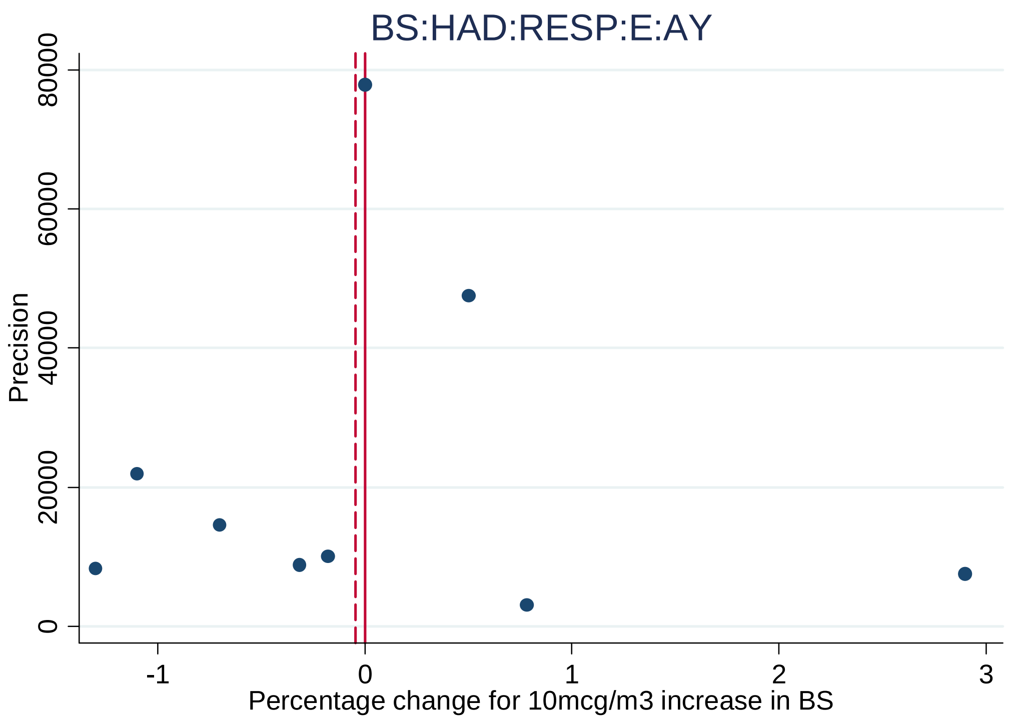

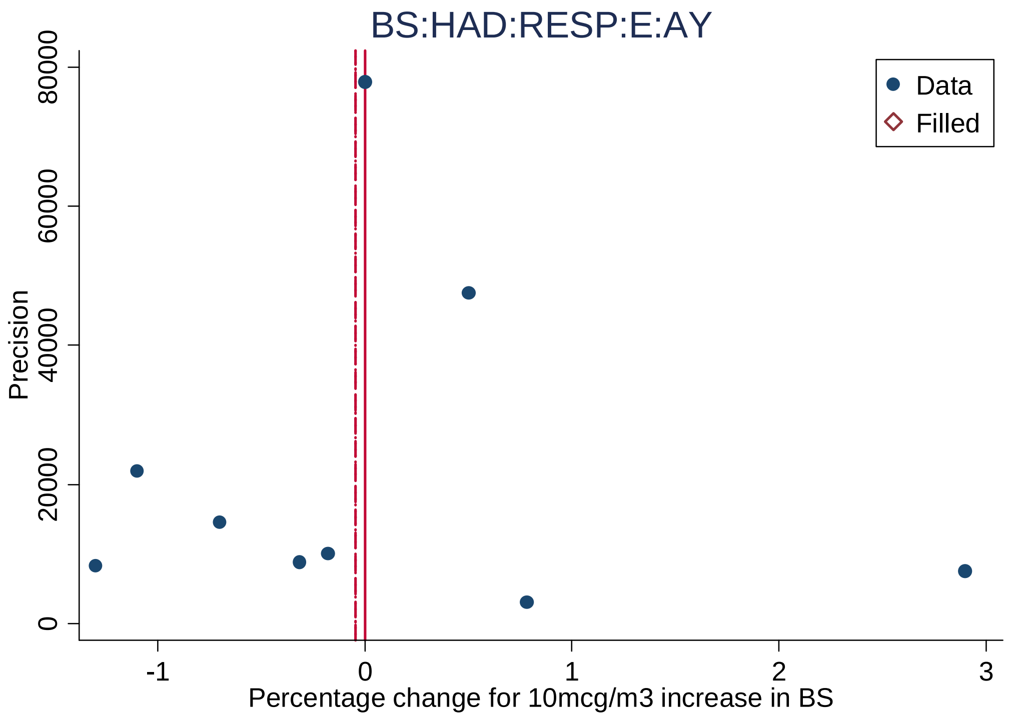

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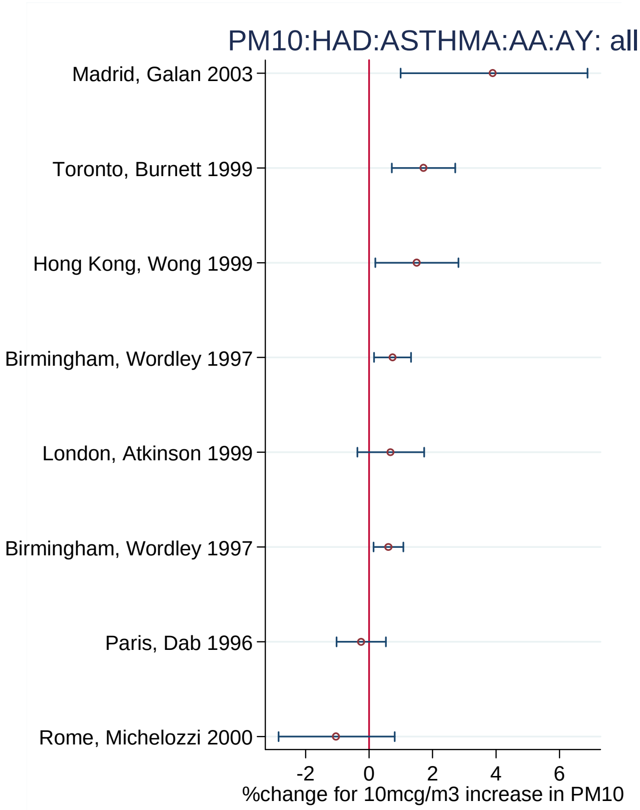

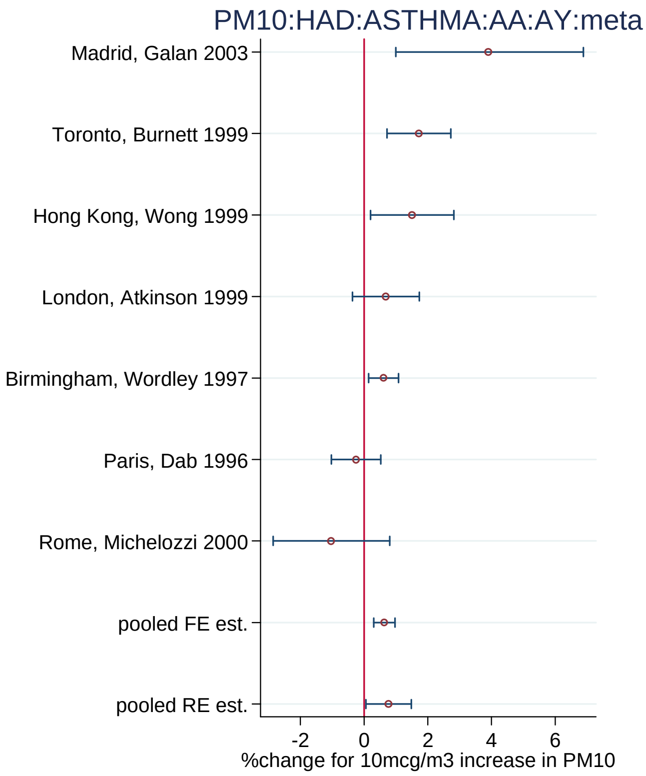

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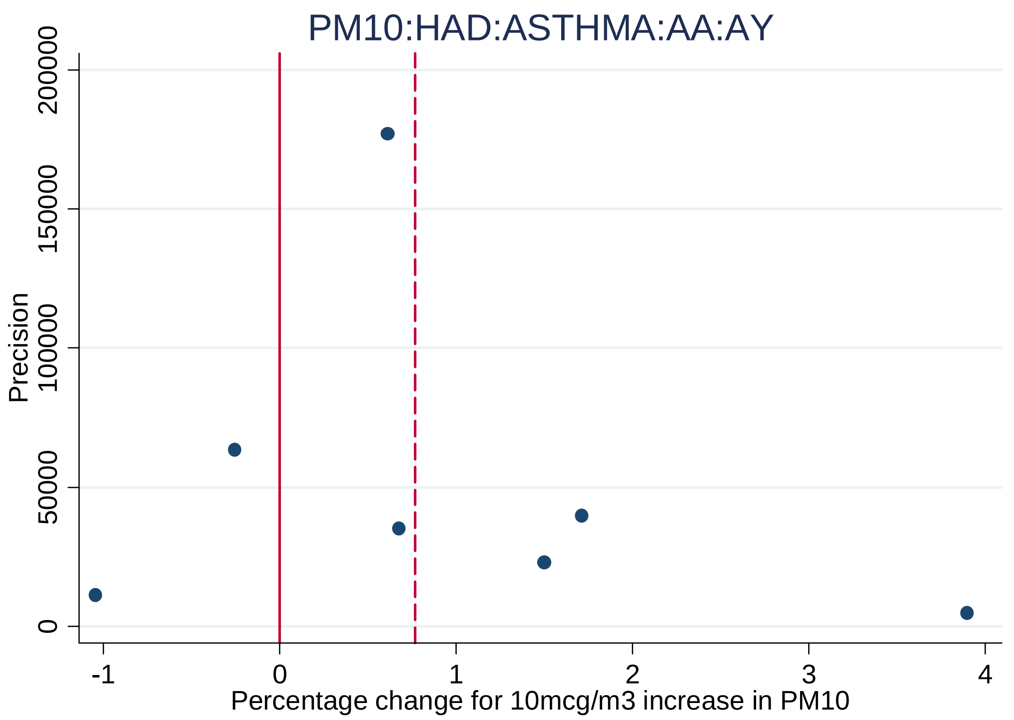

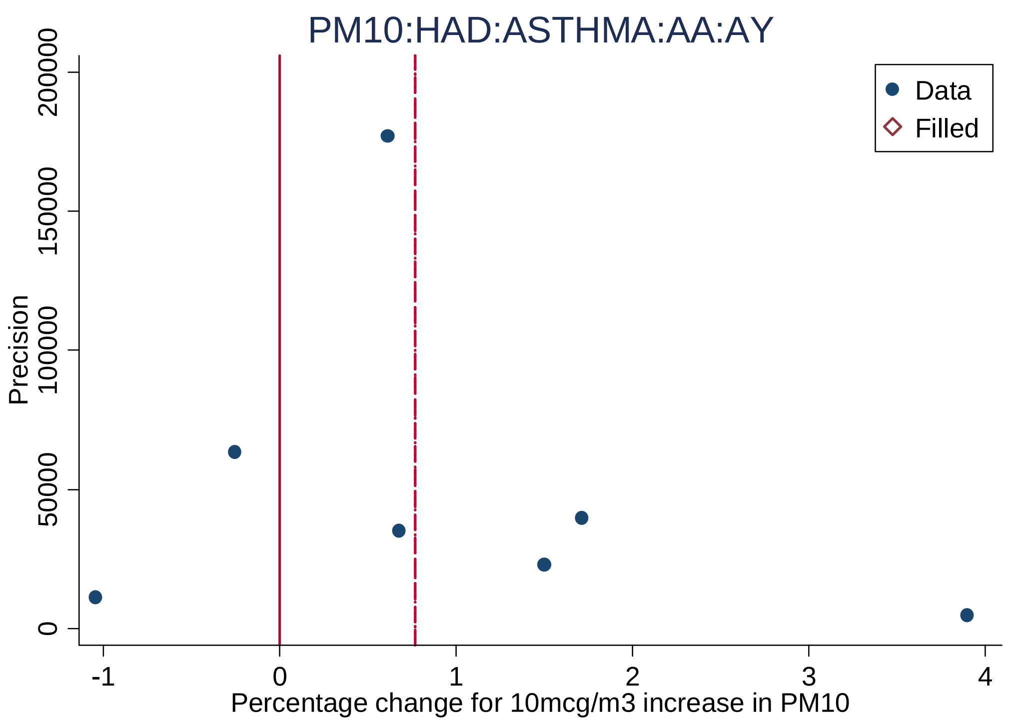

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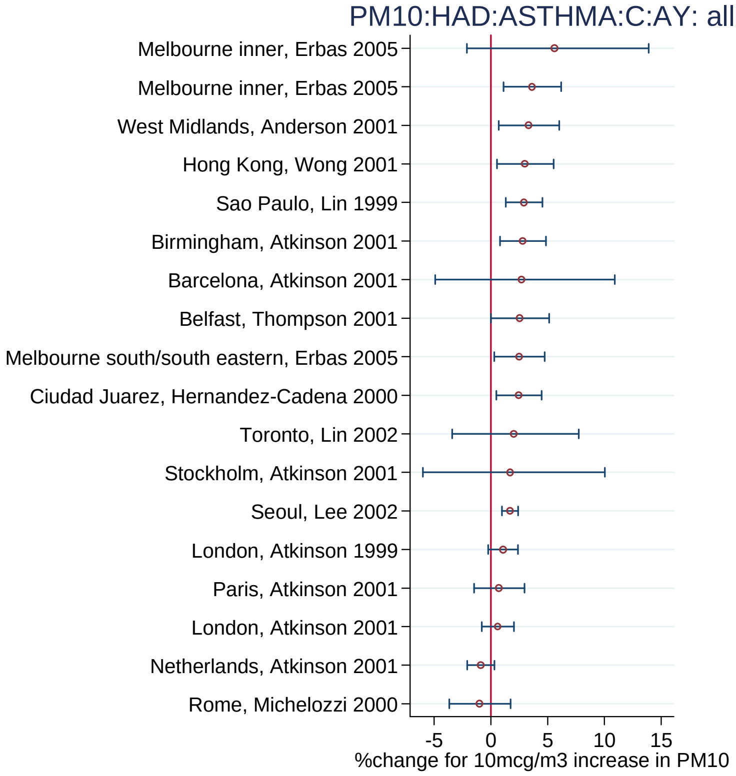

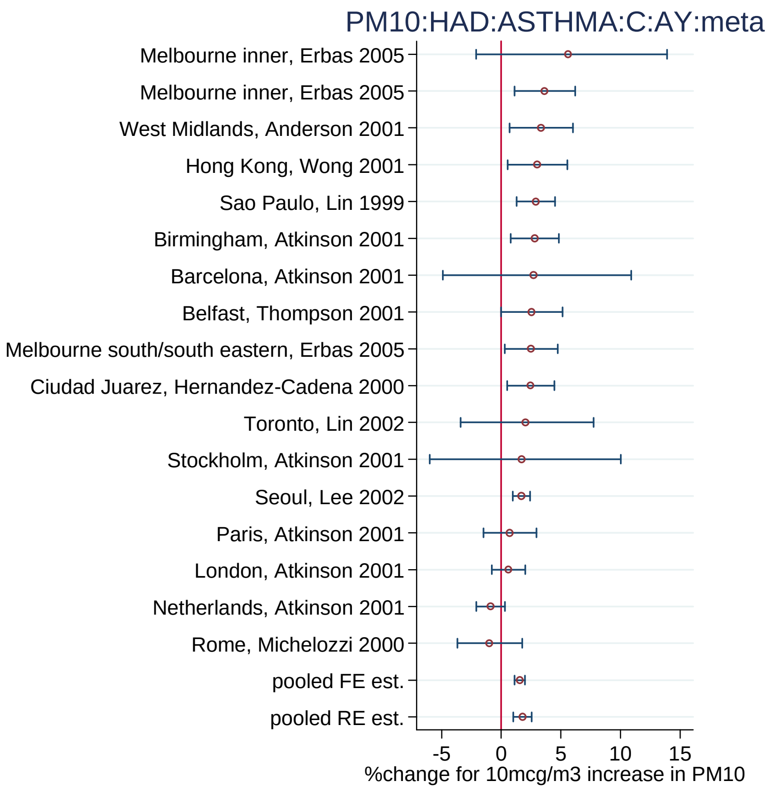

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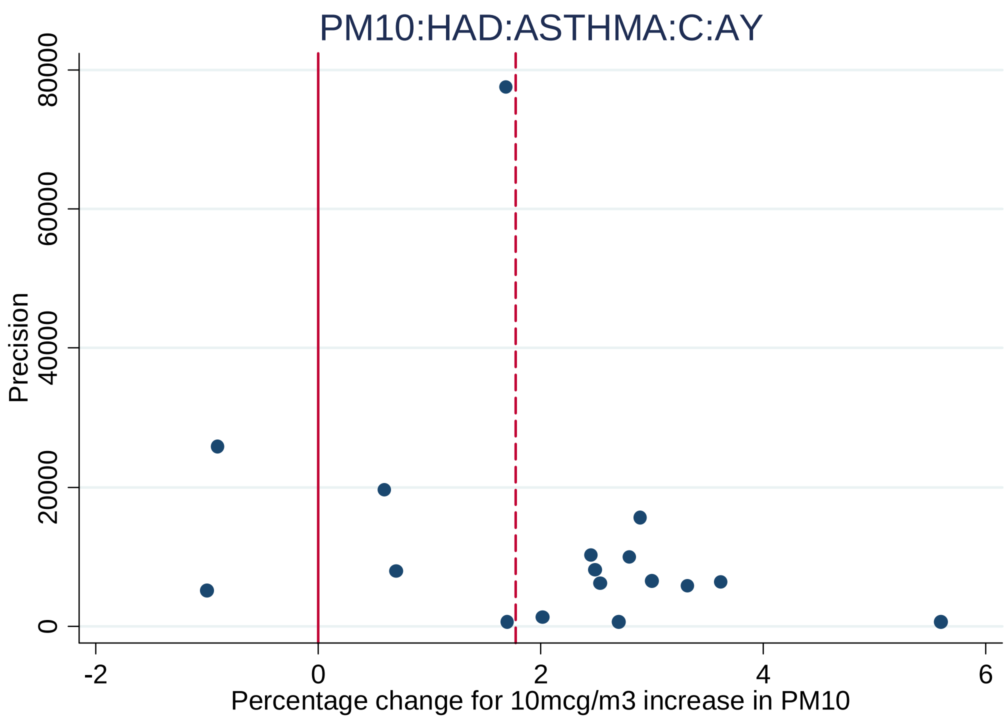

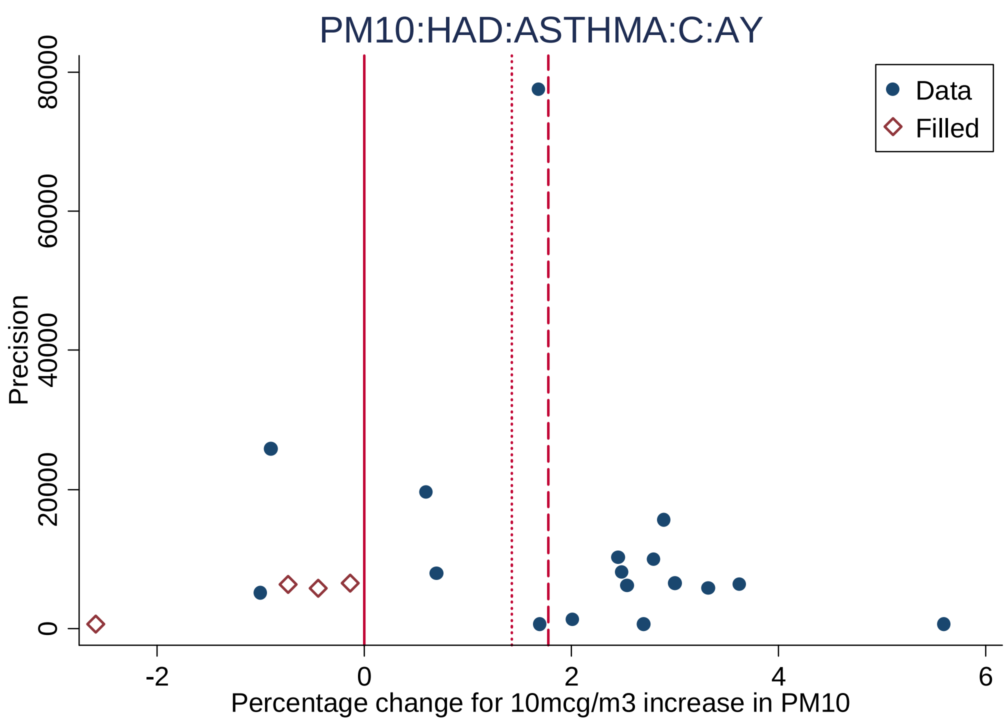

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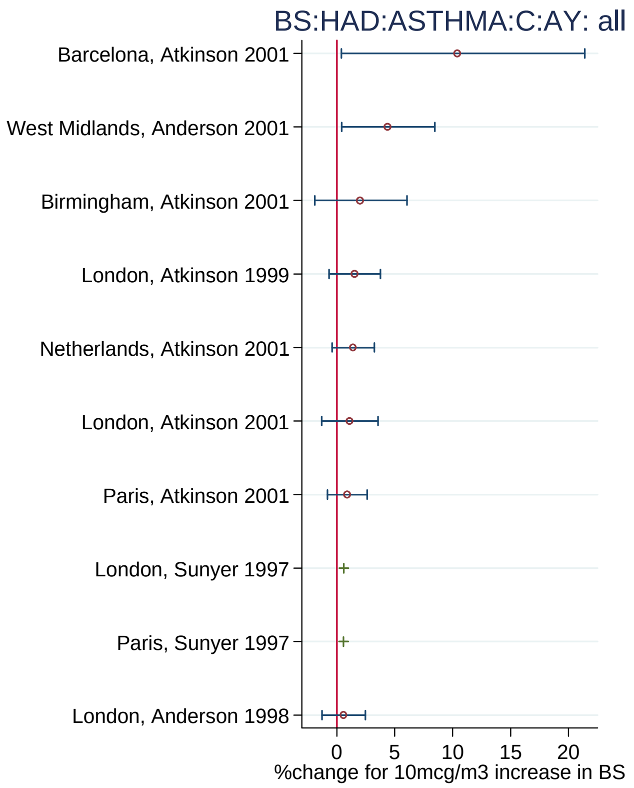

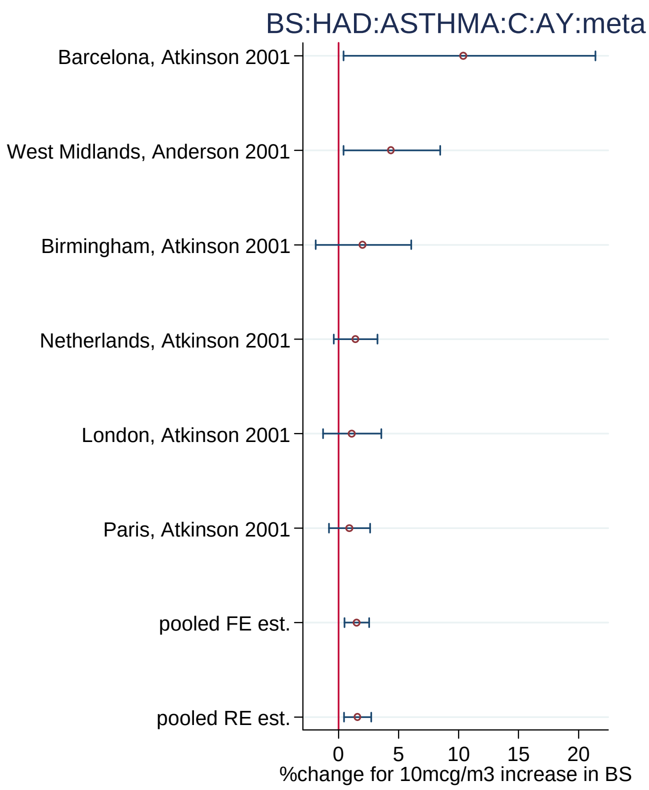

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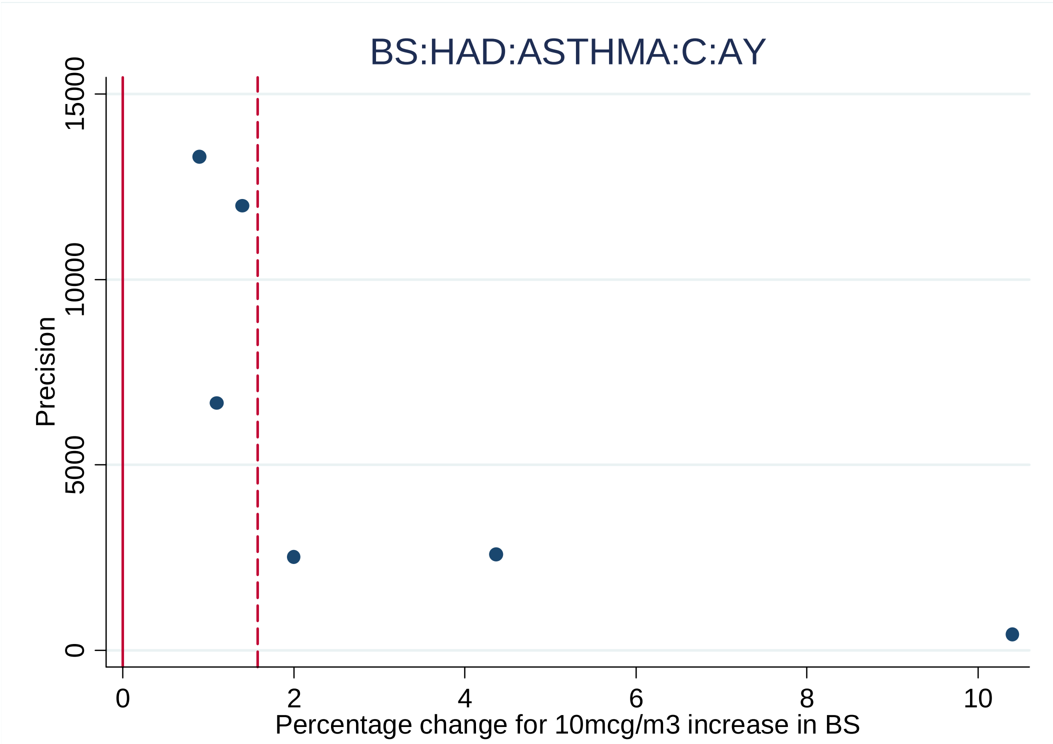

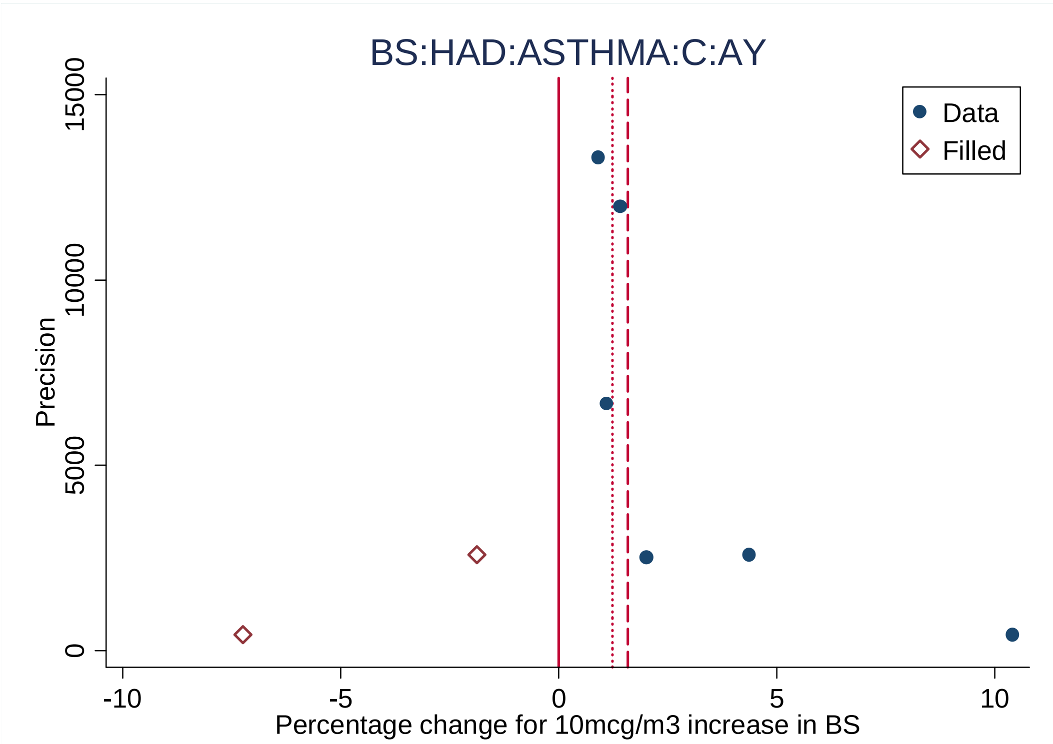

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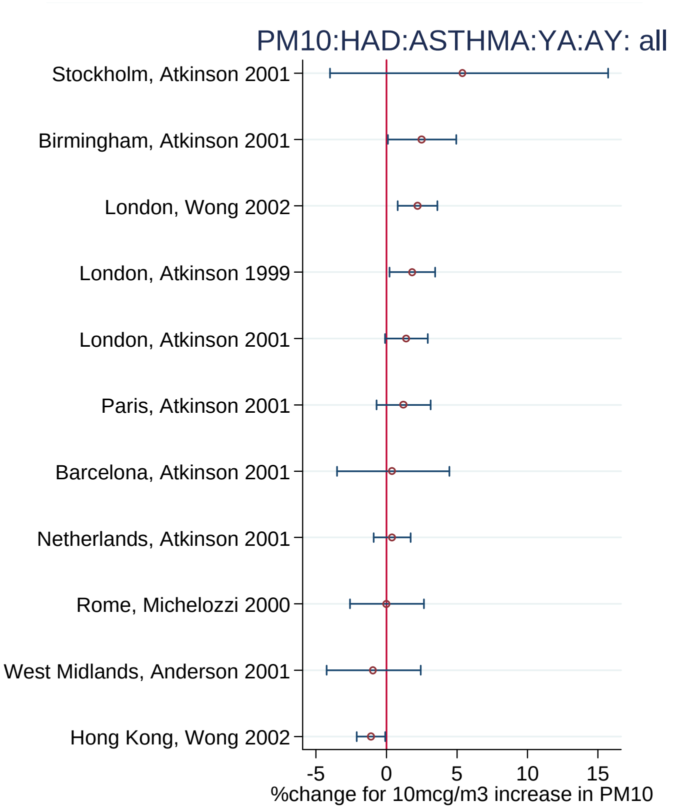

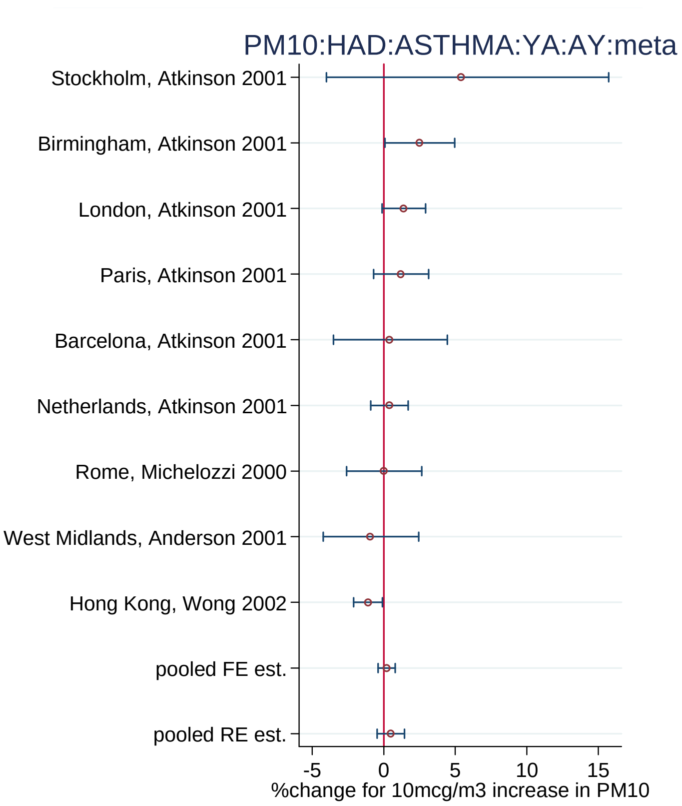

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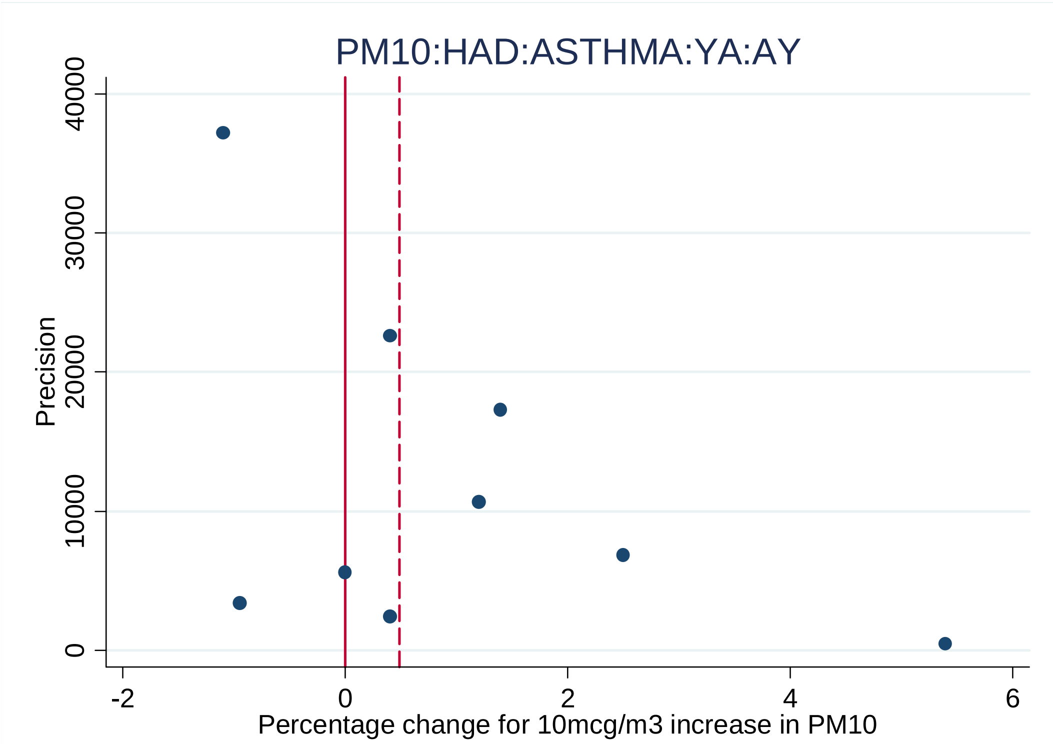

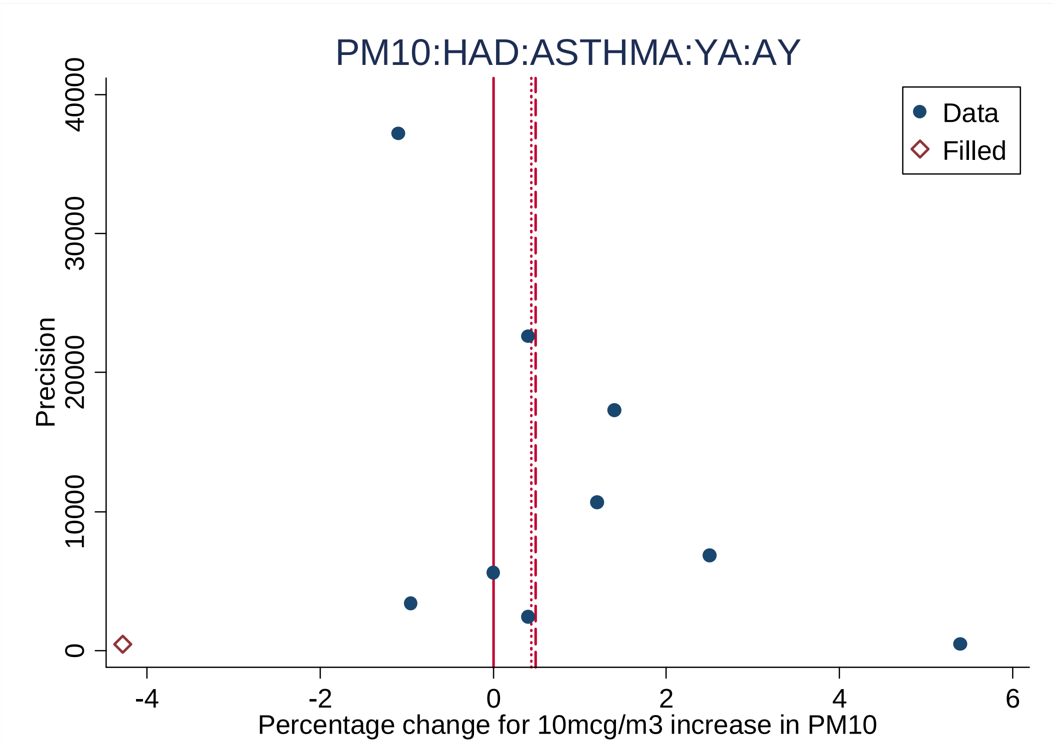

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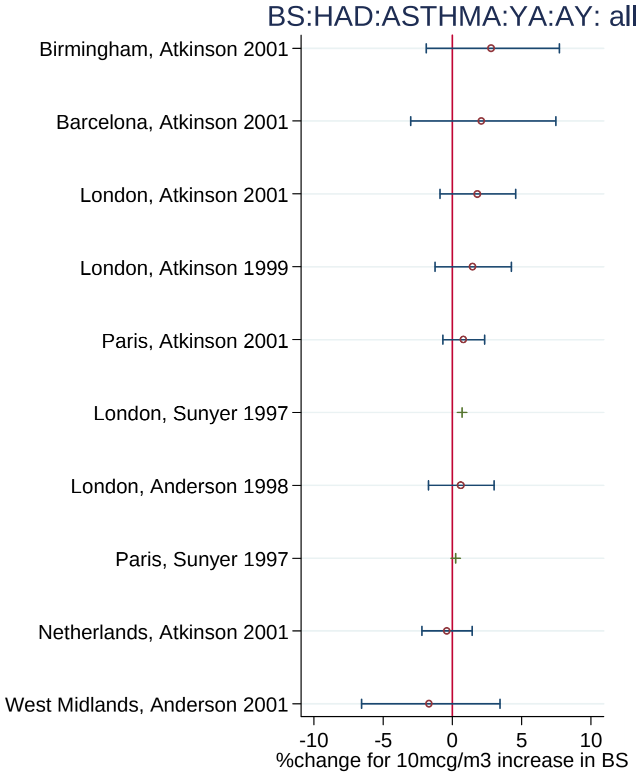

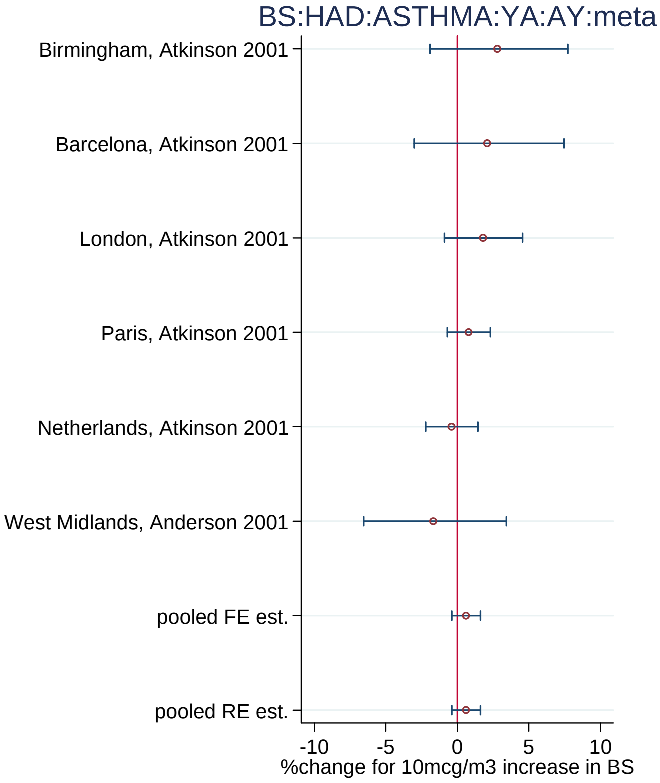

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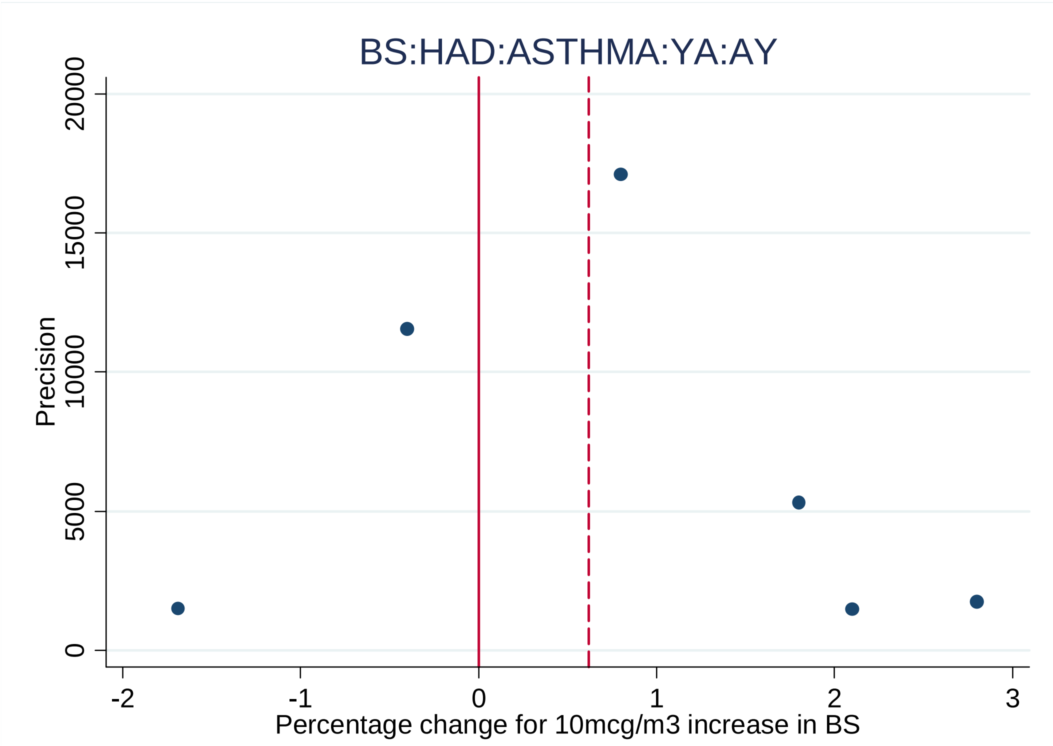

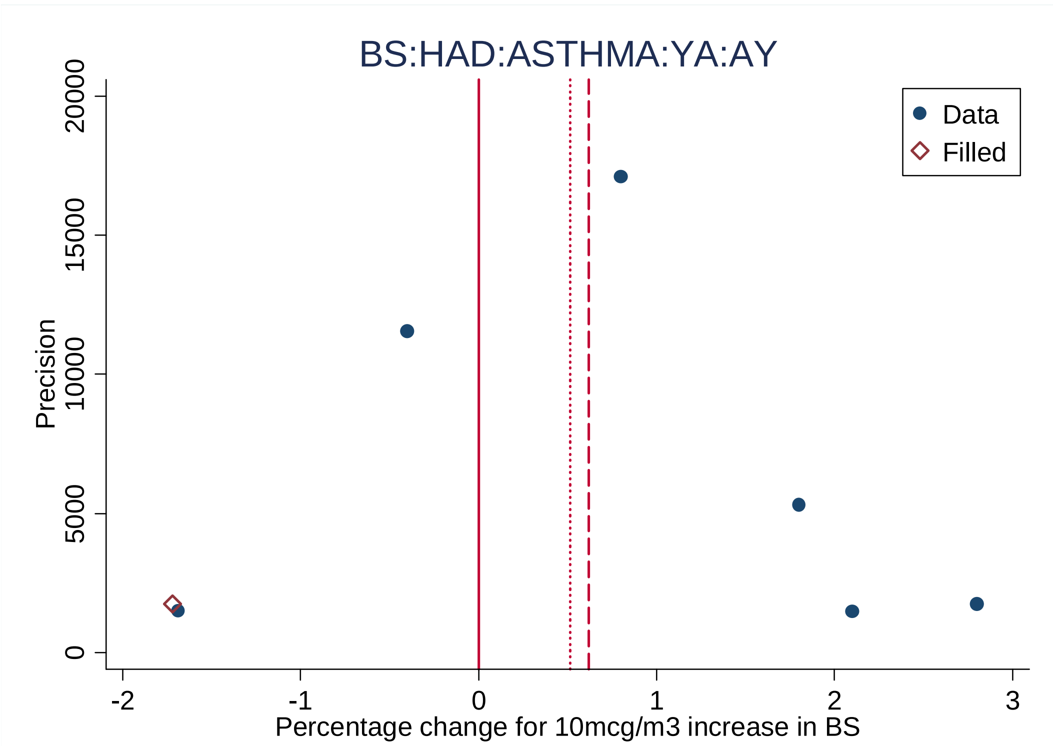

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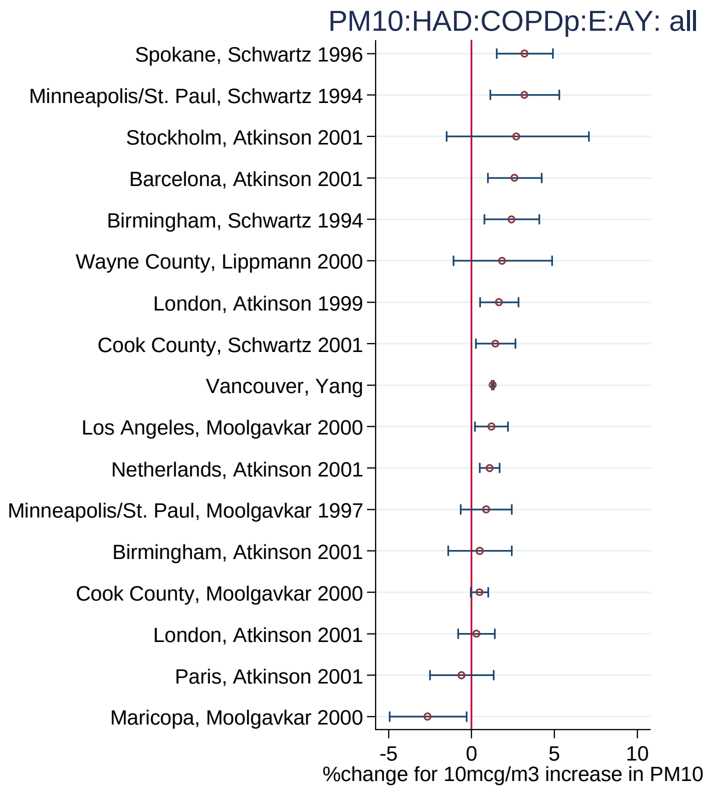

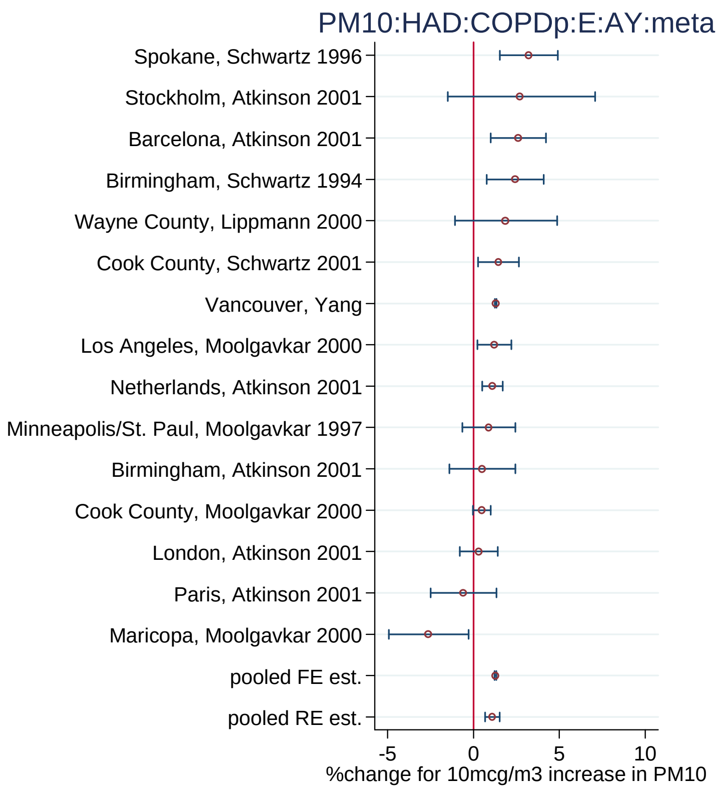

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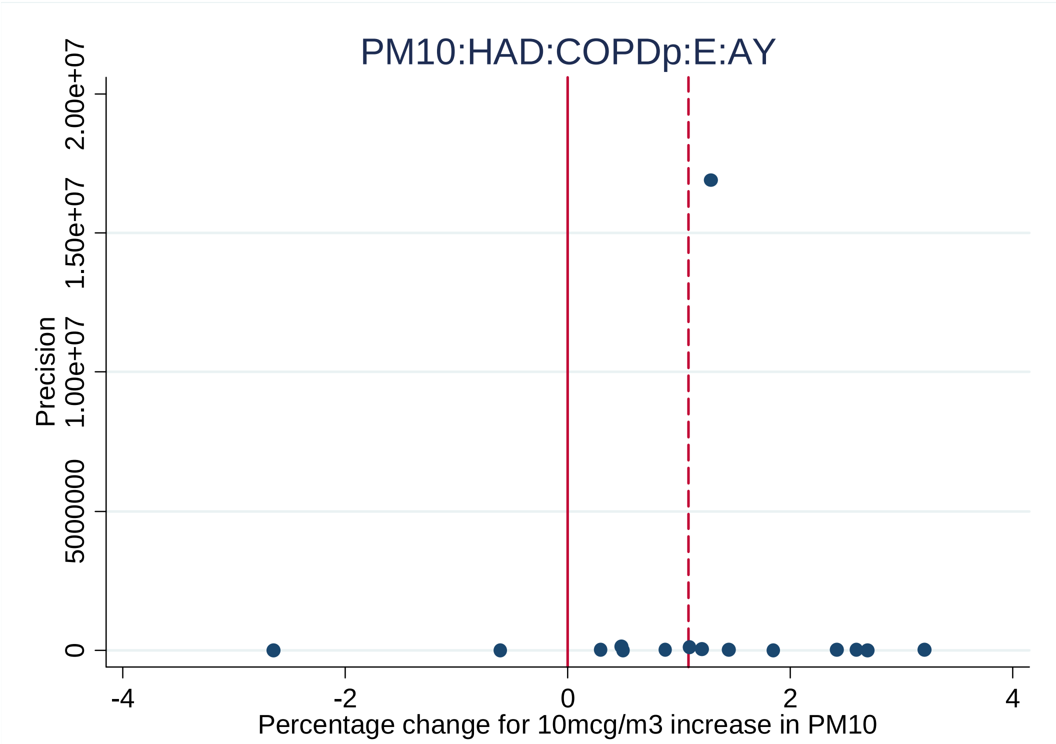

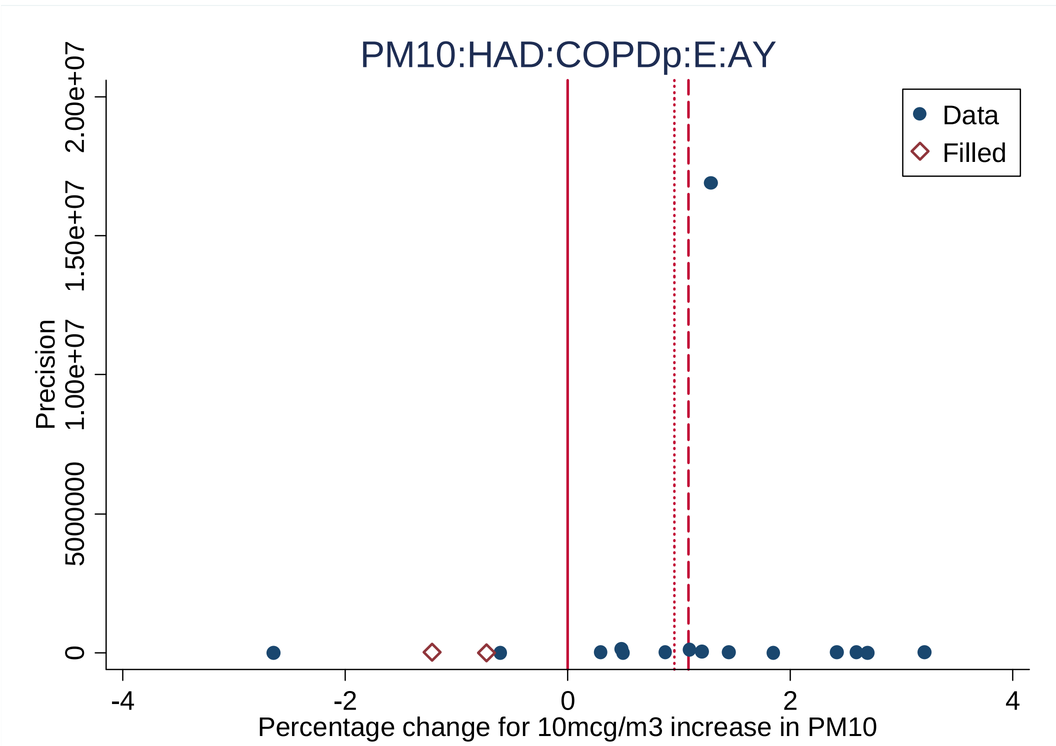

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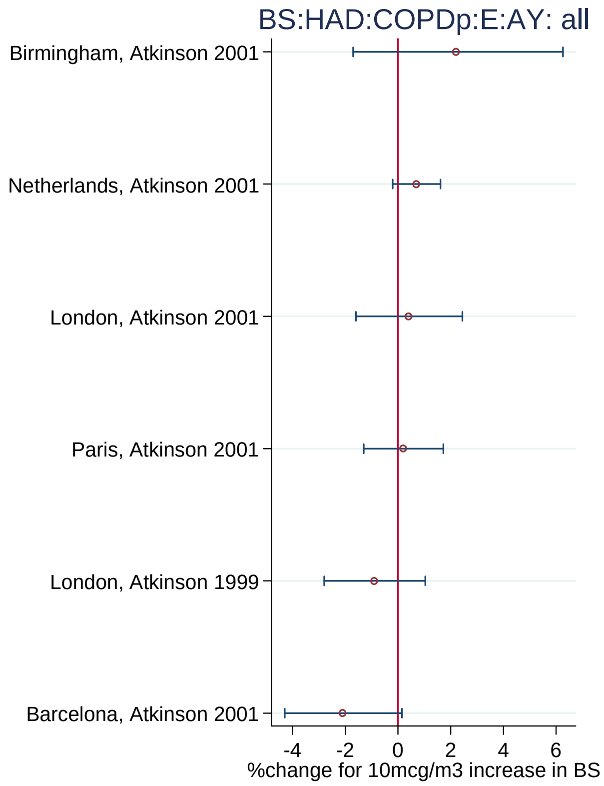

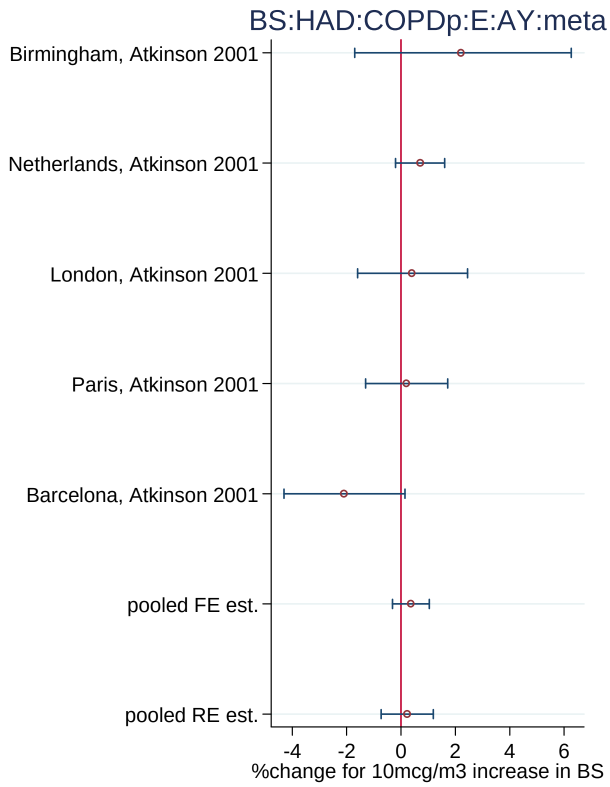

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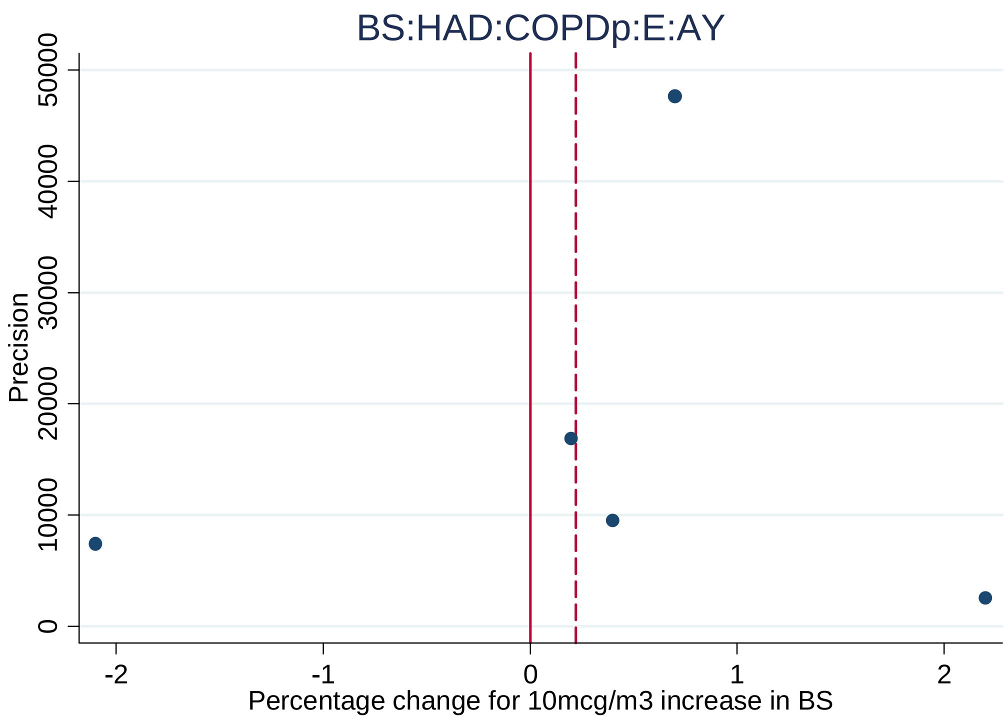

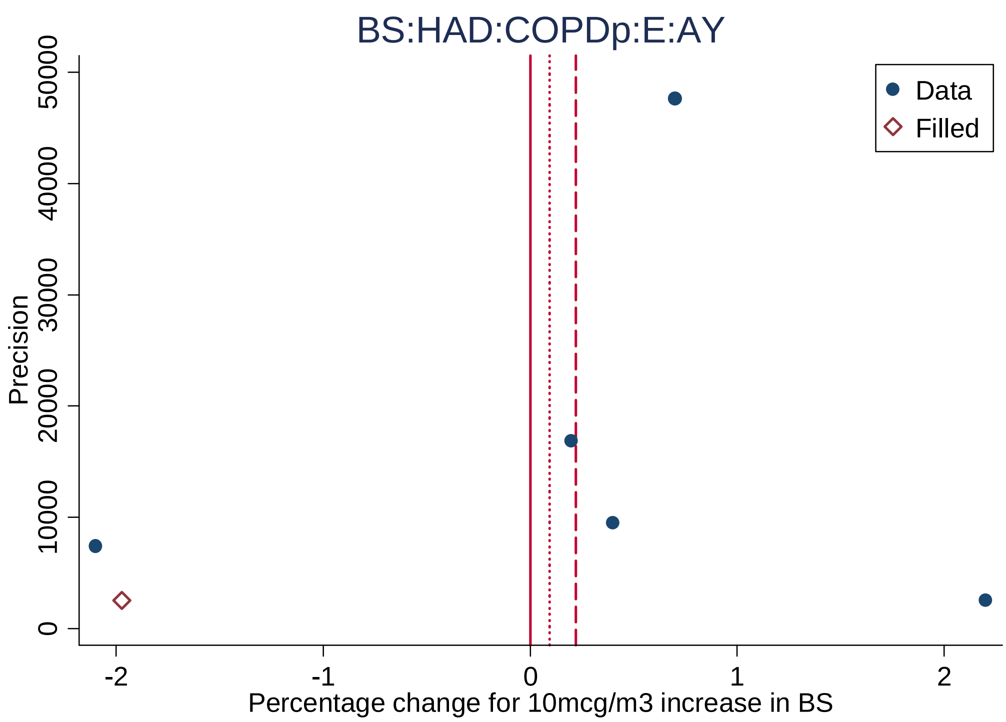

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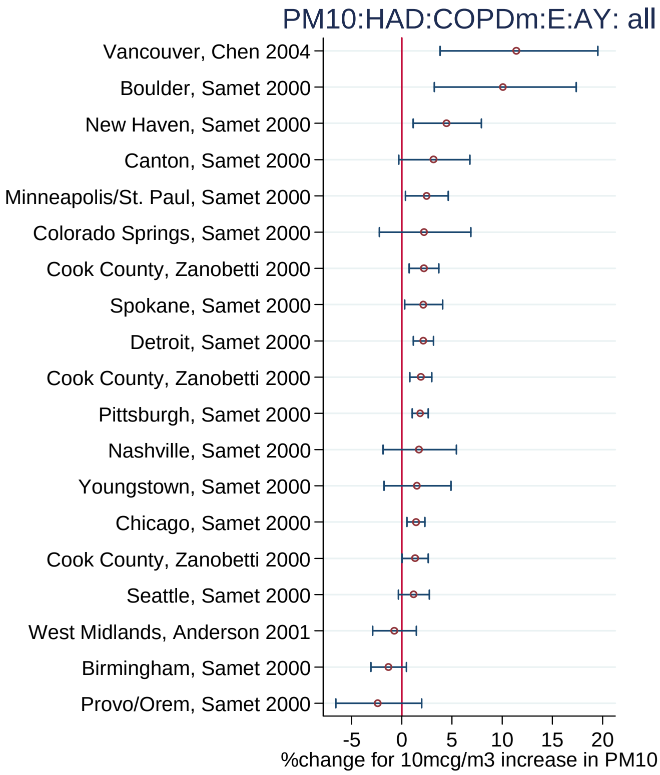

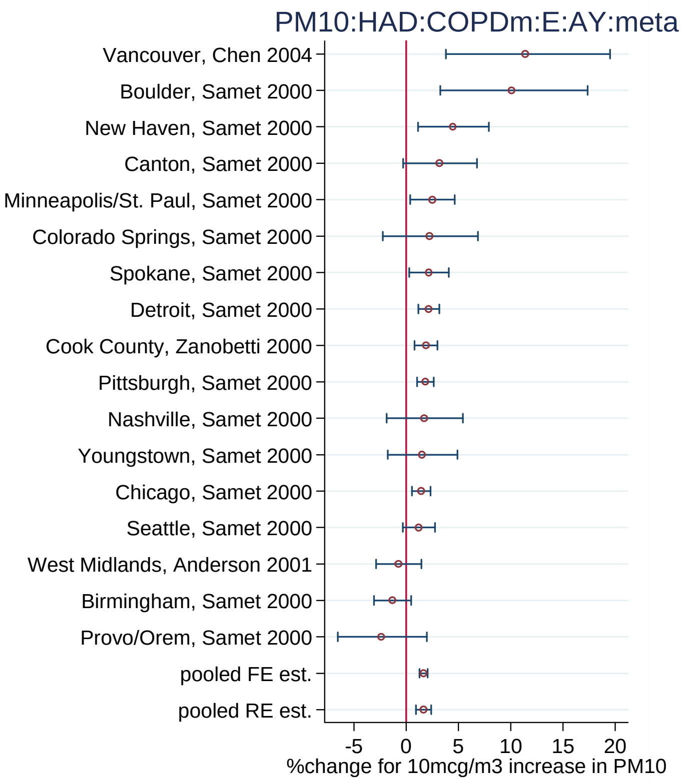

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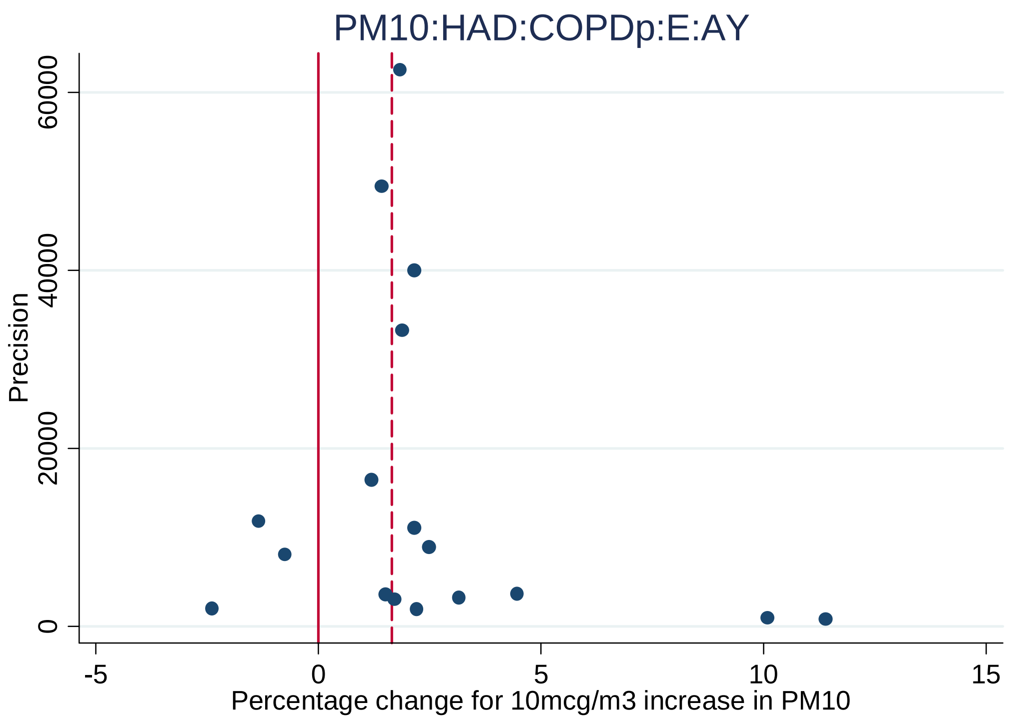

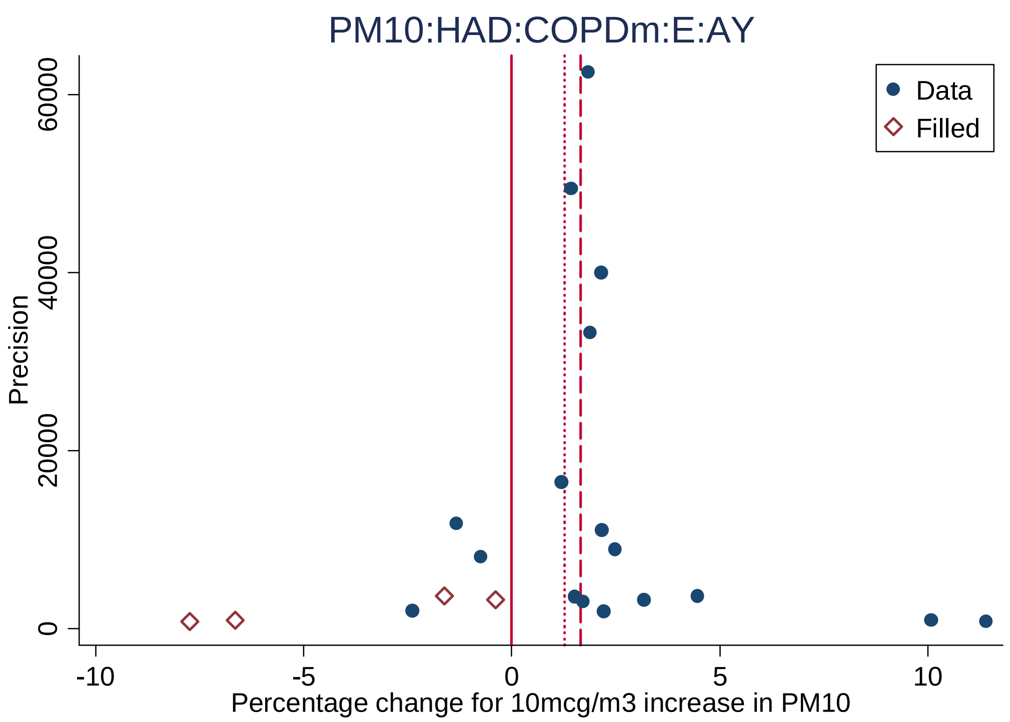

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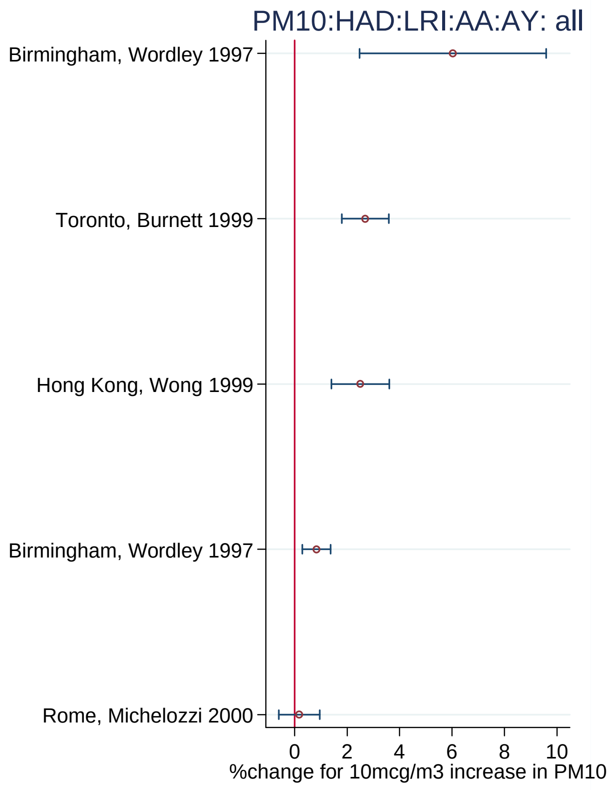

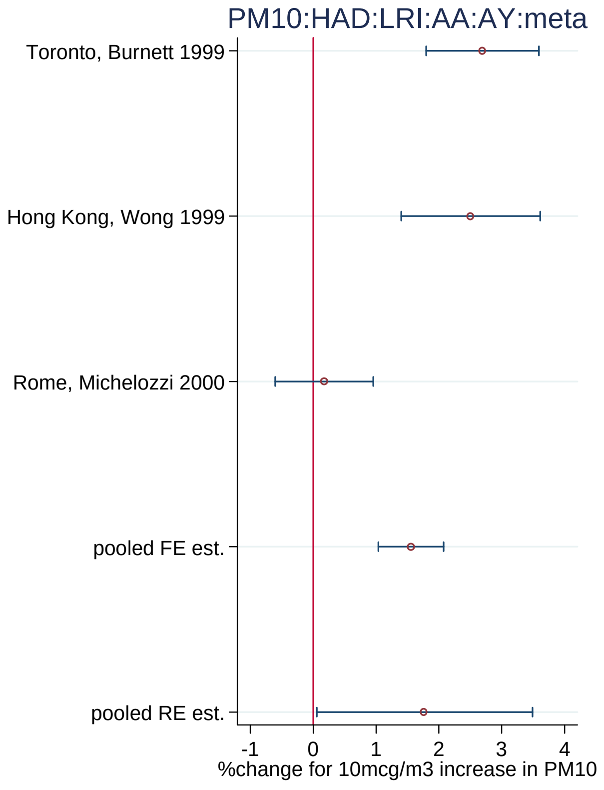

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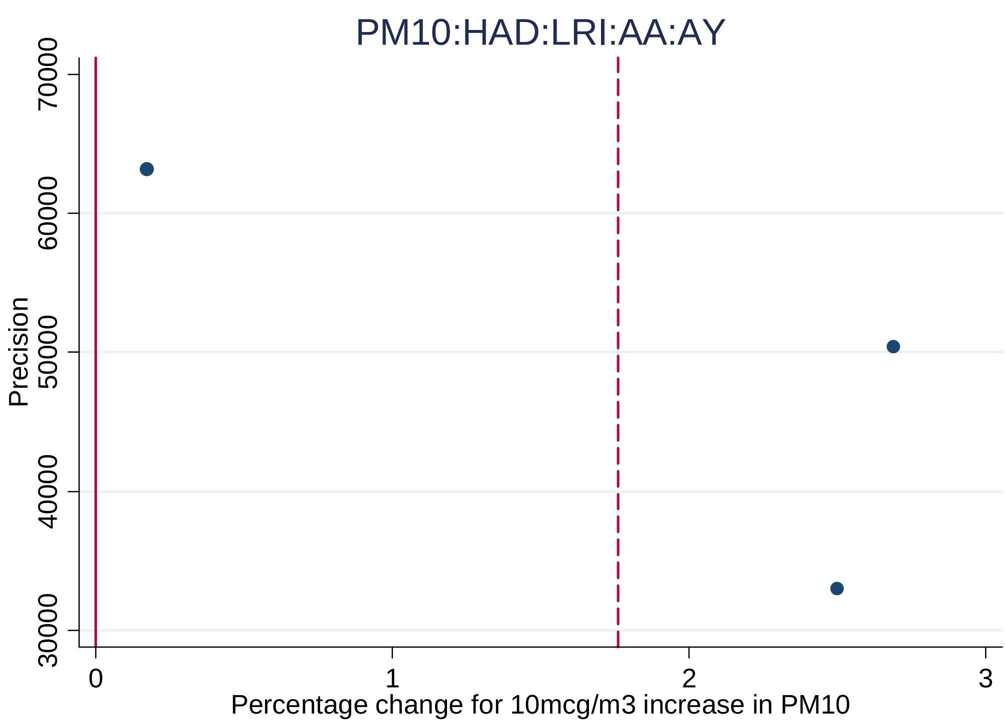

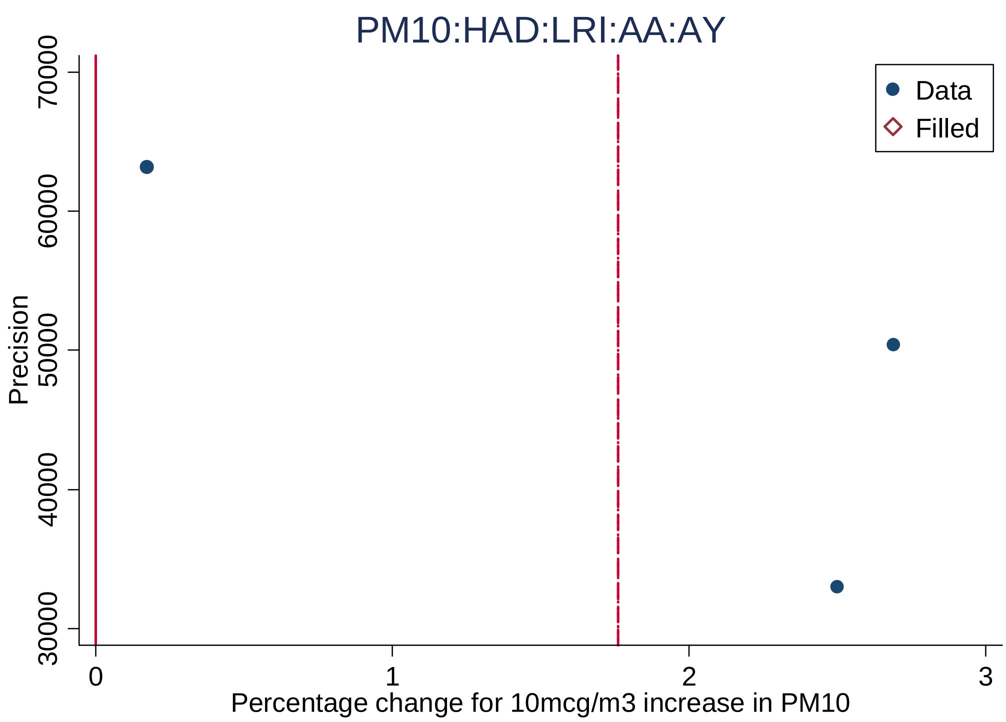

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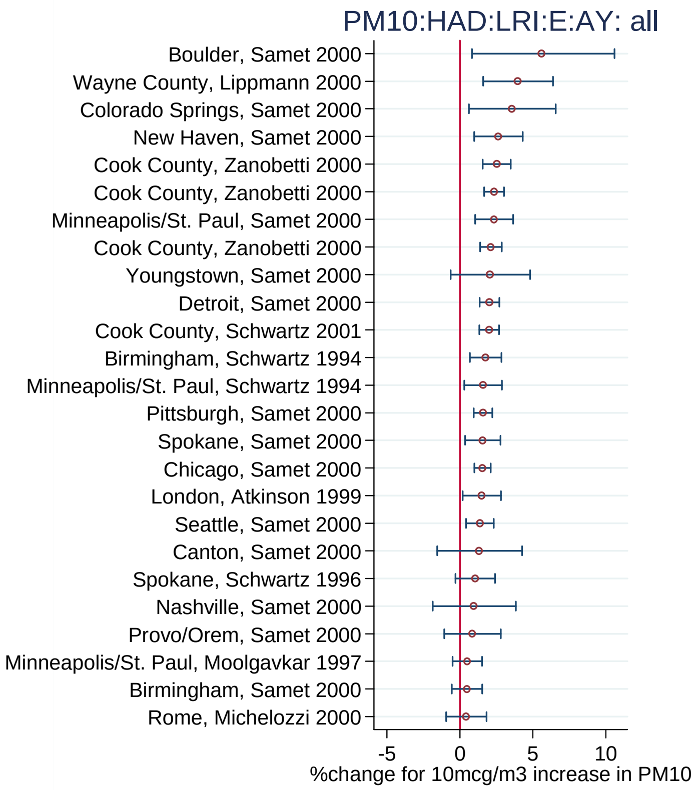

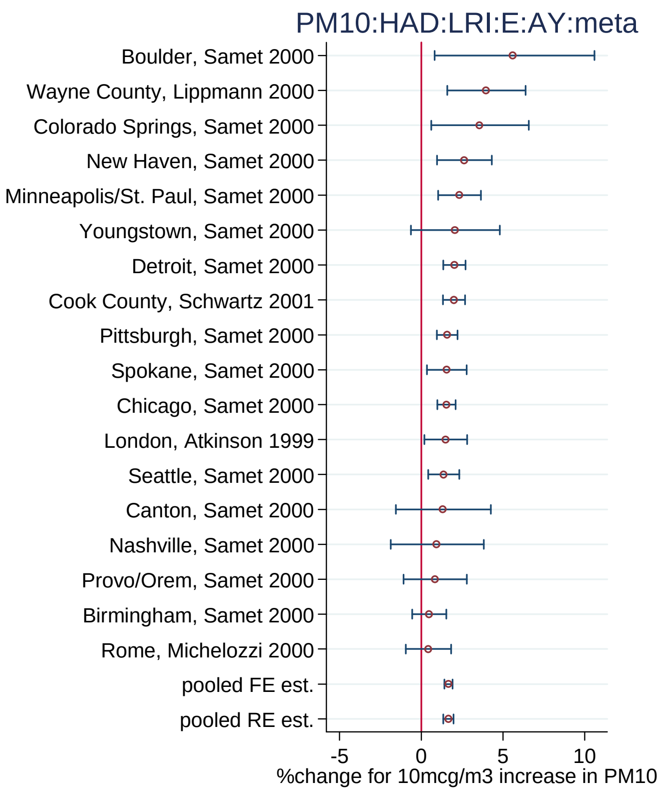

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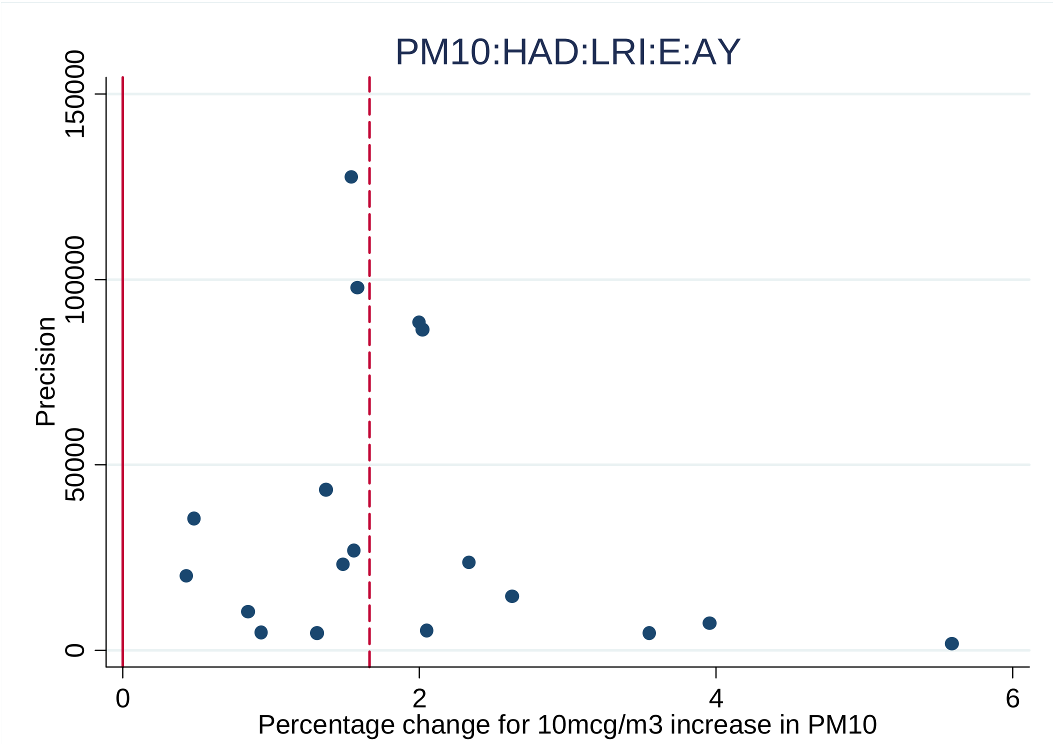

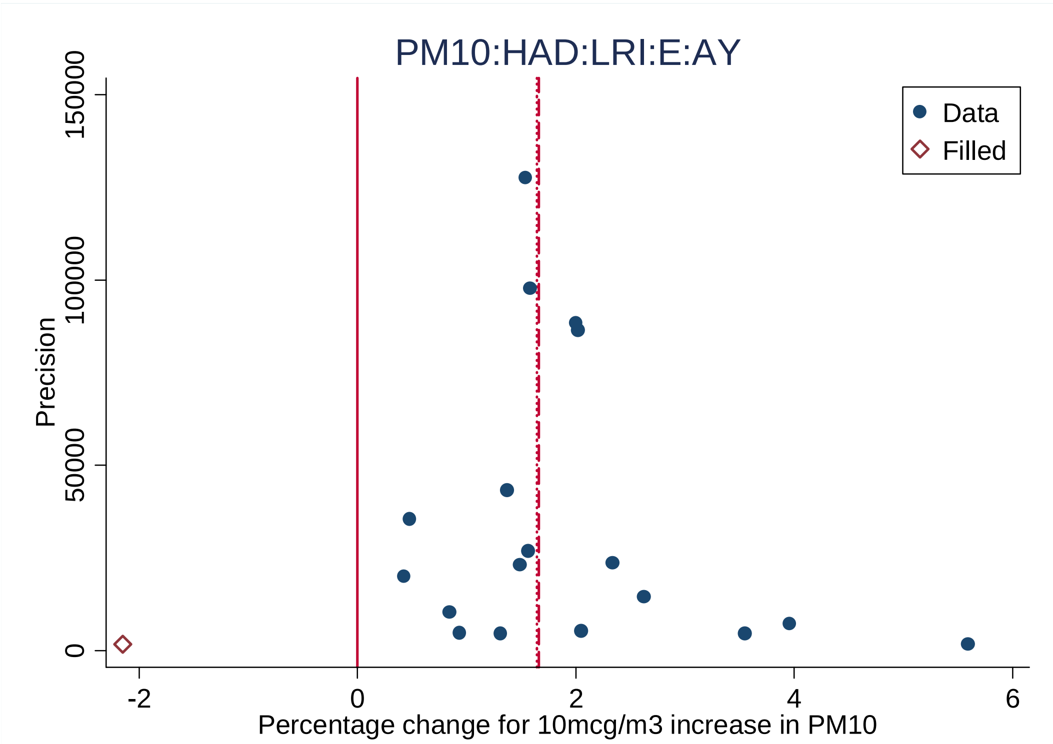

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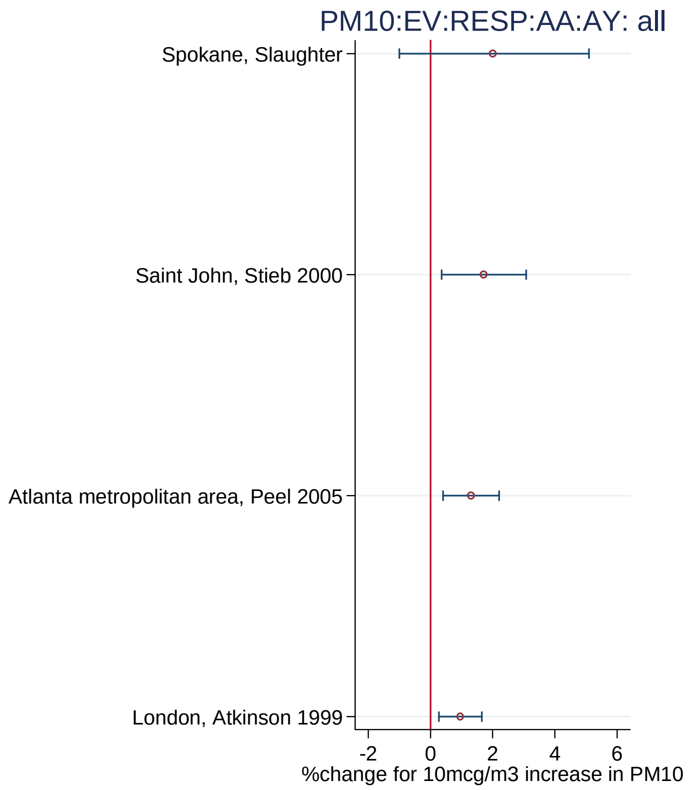

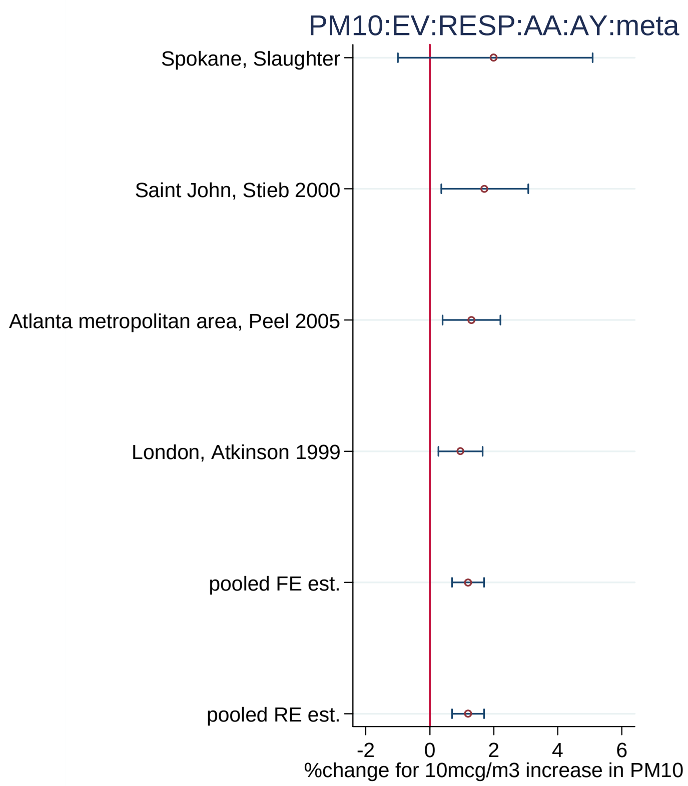

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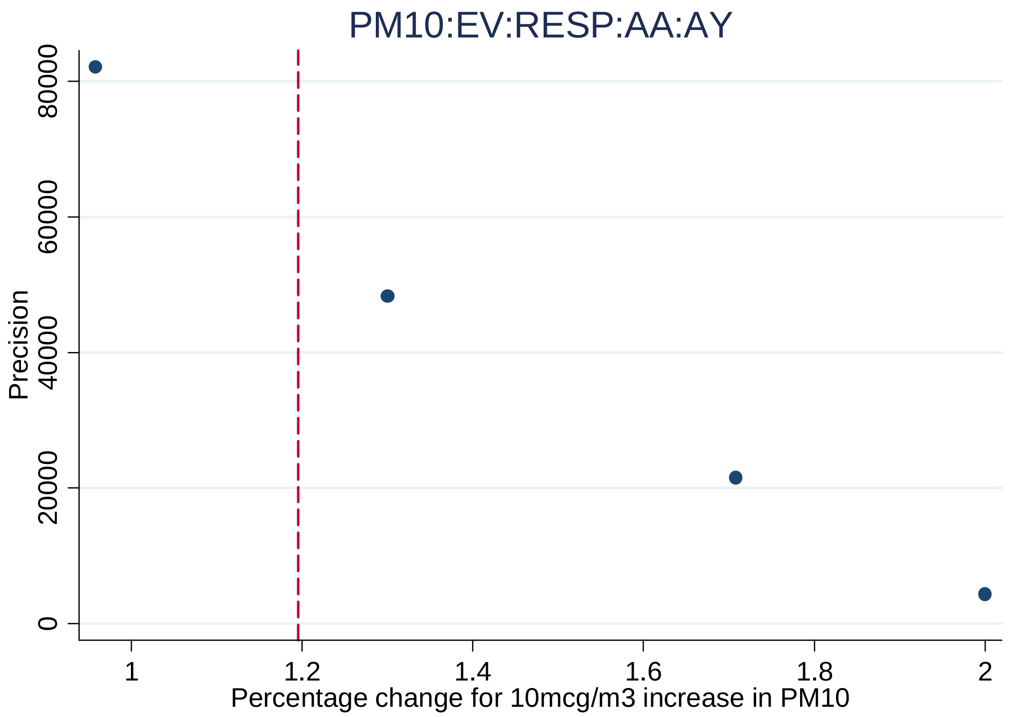

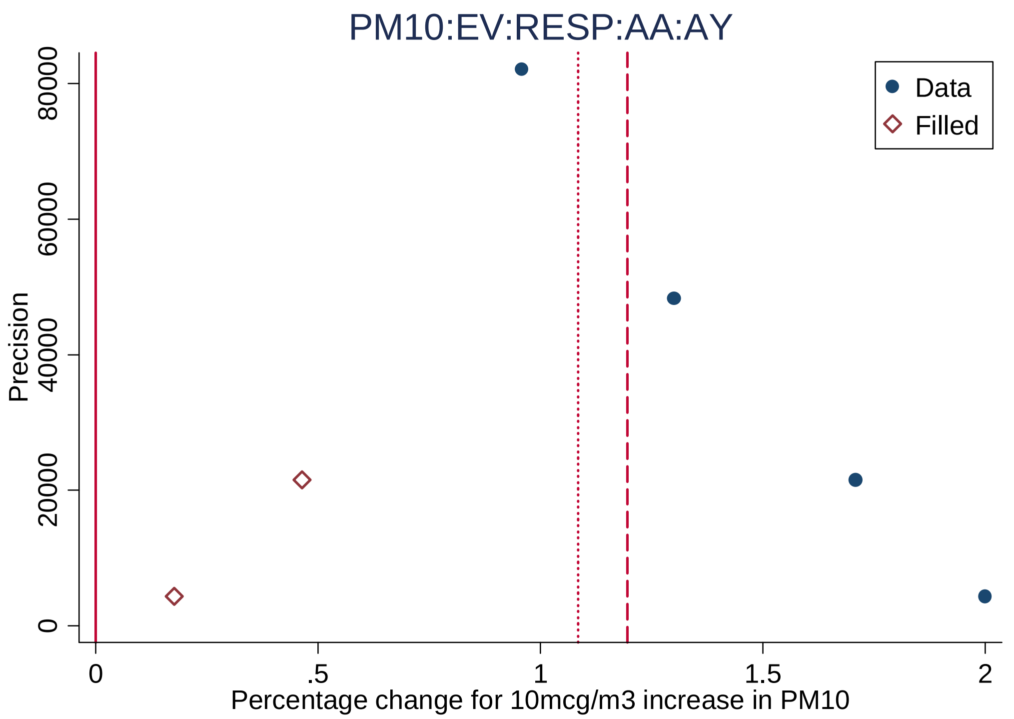

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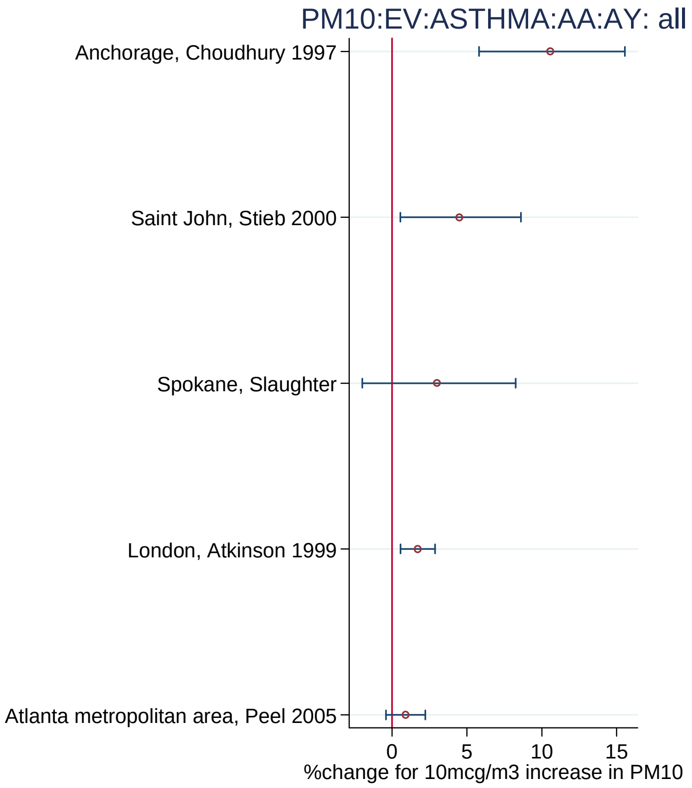
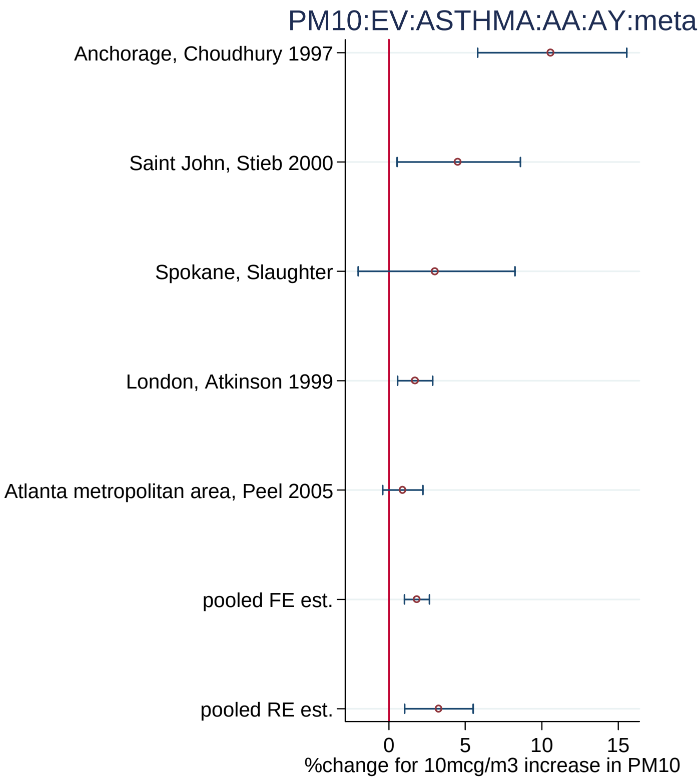
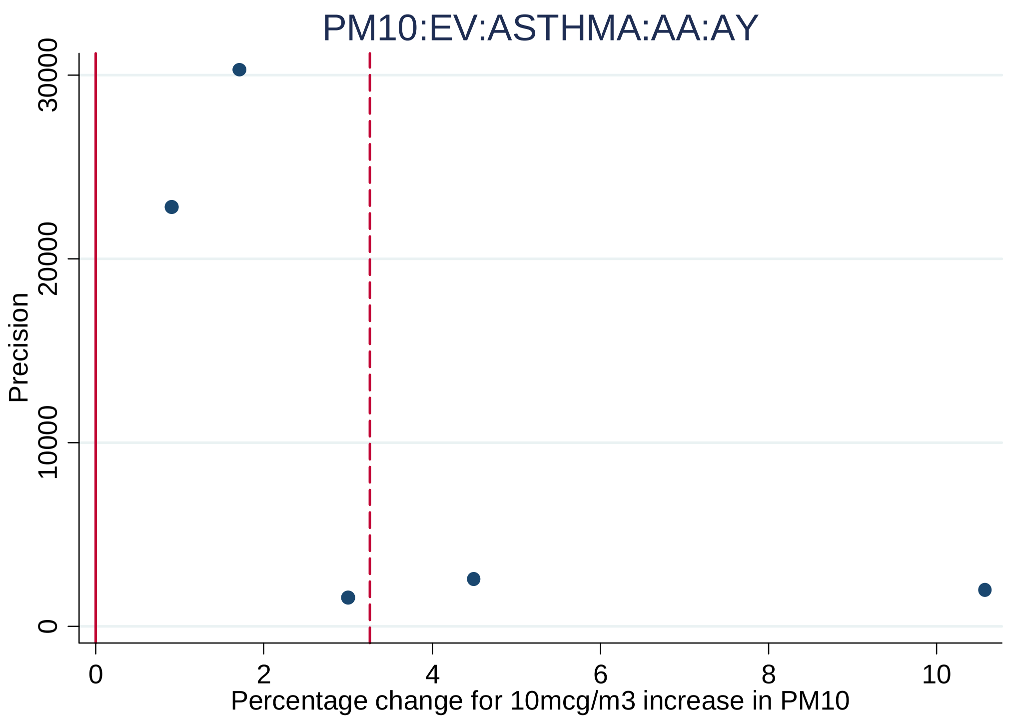
Set 64

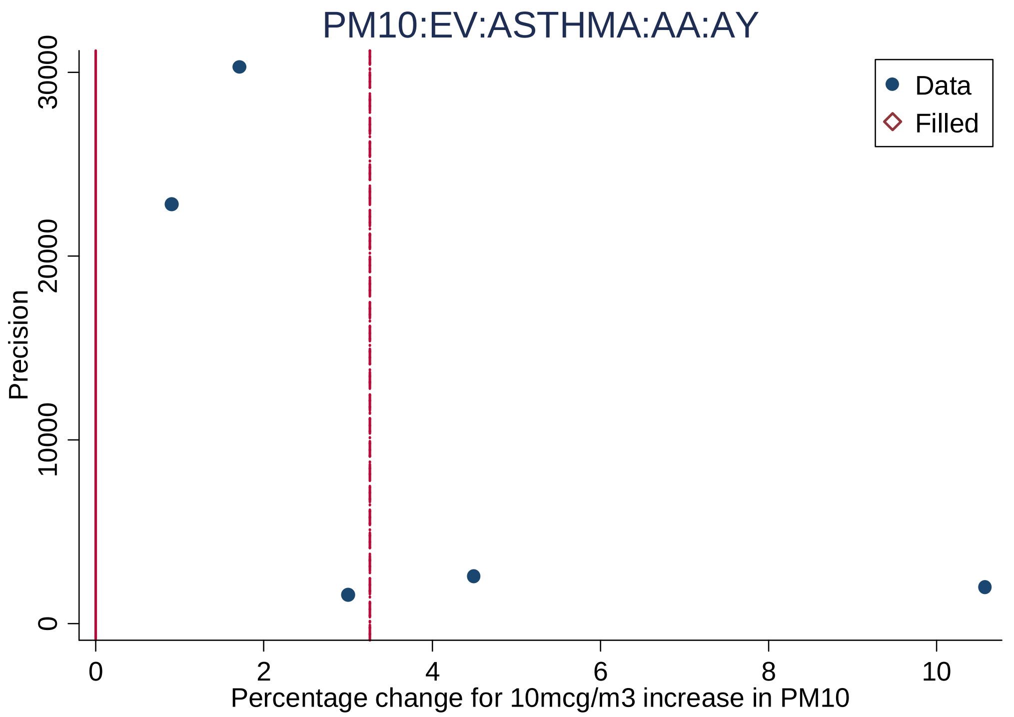




Time series: PM

Set 64





Time Series: NO_2

Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl: Estimate	Lcl	Ucl
1	3	4056	Coachella Valley, Ostro 1999	MORT	AC	AA	1 hour	lag 0	1.19	0.20	2.19
	198	4352	Gijon, Canada 1999	MORT	AC	AA	1 hour	lag 1	0.79	-0.24	1.83
	198	3395	Oviedo, Canada 1999	MORT	AC	AA	1 hour	lag 3	0.39	-0.84	1.64
	176	6288	Georgia, Klemm 2000	MORT	AC	AA	1 hour	lag 0	0.36	-0.56	1.29
	196	906	Bilbao, Cambra 1999	MORT	AC	AA	1 hour	lag 1	0.34	-0.42	1.11
	69	7689	West Midlands, Anderson 2001	MORT	AC	AA	1 hour	lag 0-1	0.29	-0.08	0.65
	197	898	Barcelona, Saurina 1999	MORT	AC	AA	1 hour	lag 1	0.25	0.05	0.46
	206	1225	Sydney, Morgan 1998	MORT	AC	AA	1 hour	lag 0	0.21	-0.10	0.52
	182	410	London, Bremner 1999	MORT	AC	AA	1 hour	lag 1	0.16	0.00	0.32
	233	1145	Brisbane, Simpson 1997	MORT	AC	AA	1 hour	lag 0	0.15	-0.46	0.77
	264	1171	Koln, Spix 1996	MORT	AC	AA	1 hour	lag 1	0.09	-0.13	0.32
	1187	5423	Sao Paulo, Gouveia 2000	MORT	AC	AA	1 hour	lag 0	-0.02	-0.12	0.07
	256	439	Santiago, Ostro 1996	MORT	AC	AA	1 hour	lag 1	-0.09	-0.19	0.00
	192	3248	Madrid, Galan 1999	MORT	AC	AA	1 hour	lag 3	-0.12	-0.29	0.05
2	1494	9356	Kansas, Samet 2003	MORT	AC	AA	24 hours	lag 1	3.83	-2.19	10.22
	1416	8357	Huelva, Saez 2002	MORT	AC	AA	24 hours	single	3.52	-0.56	7.77
	83	7278	Basel, Wietlisbach 1996	MORT	AC	AA	24 hours	lag 3	2.43	1.47	3.40
	1337	11811	Palermo, Biggeri 2001	MORT	AC	AA	24 hours	lag 1-2	2.30	1.10	3.51
	1416	8359	Oviedo, Saez 2002	MORT	AC	AA	24 hours	single	2.14	-0.34	4.68
	225	6044	London, Burnett 1998	MORT	AC	AA	24 hours	lag 0-2	2.12	1.30	2.95
	312	519	St. Louis, Dockery 1992	MORT	AC	AA	24 hours	lag 1	1.95	0.82	3.10
	1494	9348	Huntsville, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.87	-1.88	5.76
	225	6048	Calgary, Burnett 1998	MORT	AC	AA	24 hours	lag 0-1	1.77	1.10	2.44
	225	6046	Winnipeg, Burnett 1998	MORT	AC	AA	24 hours	lag 1-2	1.58	0.90	2.26
	1337	11745	Bologna, Biggeri 2001	MORT	AC	AA	24 hours	lag 1-2	1.50	0.20	2.82
	76	11955	Shanghai, Kan 2003	MORT	AC	AA	24 hours	lag 0	1.50	0.80	2.20
	1465	8725	Toulouse, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	1.48	-0.88	3.88
	1205	7480	Erfurt, Wichmann 2000	MORT	AC	AA	24 hours	lag 4	1.44	-0.40	3.31
	144	7084	Coachella Valley, Ostro 2000	MORT	AC	AA	24 hours	lag 0	1.41	0.00	2.85
	1337	11791	Rome, Biggeri 2001	MORT	AC	AA	24 hours	lag 1-2	1.40	0.70	2.10
	1070	3475	Inchon, Hong 1999	MORT	AC	AA	24 hours	lag 1	1.37	0.34	2.41
	225	6040	Montreal, Burnett 1998	MORT	AC	AA	24 hours	lag 0-2	1.37	1.03	1.71
	1494	9350	Lexington, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.33	-0.31	3.00
	148	5634	Melbourne, Simpson 2000	MORT	AC	AA	24 hours	lag 1	1.26	0.63	1.90
	1337	11682	Turin, Biggeri 2001	MORT	AC	AA	24 hours	lag 1-2	1.20	0.60	1.80
	225	6039	Quebec, Burnett 1998	MORT	AC	AA	24 hours	lag 0-1	1.18	0.73	1.62
	1416	8360	Seville, Saez 2002	MORT	AC	AA	24 hours	single	1.11	0.04	2.19
	1337	11770	Florence, Biggeri 2001	MORT	AC	AA	24 hours	lag 1-2	1.10	-0.10	2.31
	83	7279	Geneva, Wietlisbach 1996	MORT	AC	AA	24 hours	lag 3	1.08	0.09	2.07
	225	6043	Hamilton, Burnett 1998	MORT	AC	AA	24 hours	lag 0	1.03	0.52	1.53
	1337	11707	Milan, Biggeri 2001	MORT	AC	AA	24 hours	lag 1-2	1.00	0.40	1.60
	312	464	Tennessee eastern, Dockery 1992	MORT	AC	AA	24 hours	lag 1	1.00	-2.36	4.47
	1360	7821	Amsterdam, Roemer 2001	MORT	AC	AA	24 hours	lag 1	0.98	0.45	1.50
	1416	8361	Valencia, Saez 2002	MORT	AC	AA	24 hours	single	0.92	-0.05	1.90
	1494	9335	Baton Rouge, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.91	-0.45	2.29
	1465	8719	Rouen, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	0.86	-0.61	2.36
	1494	9336	Modesto, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.86	-0.86	2.62
	225	6042	Toronto, Burnett 1998	MORT	AC	AA	24 hours	lag 0-1	0.83	0.52	1.14
	1465	8716	Paris, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	0.83	0.44	1.22
	1494	9352	Richmond, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.76	-0.71	2.24
	1354	8106	Seoul, Kwon 2001	MORT	AC	AA	24 hours	lag 0	0.75	0.50	1.00
	225	6041	Ottawa, Burnett 1998	MORT	AC	AA	24 hours	lag 1	0.68	0.15	1.22
	1327	5978	Hong Kong, Wong 2001	MORT	AC	AA	24 hours	lag 1	0.68	0.23	1.13
	212	7180	Czech Republic (coal basin), Peters 2000	MORT	AC	AA	24 hours	lag 0	0.64	-0.34	1.63
	1494	9325	Tulsa, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.60	-0.45	1.66
	1416	8355	Barcelona, Saez 2002	MORT	AC	AA	24 hours	single	0.60	0.08	1.11
	214	567	Mexico City, Borja-Aburto 1998	MORT	AC	AA	24 hours	lag 1-5	0.59	-0.26	1.45
	175	5503	Netherlands, Hoek 2000	MORT	AC	AA	24 hours	lag 1	0.57	0.40	0.75
	1494	9321	Bakersfield, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.57	-0.88	2.03
	1494	9310	Louisville, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.54	-0.33	1.43
	1416	8358	Madrid, Saez 2002	MORT	AC	AA	24 hours	single	0.54	0.10	0.97
	1416	8356	Gijon, Saez 2002	MORT	AC	AA	24 hours	single	0.53	-0.85	1.93
	162	12744	Los Angeles County, Moolgavkar 2003	MORT	AC	AA	24 hours	lag 1	0.52	0.40	0.64
	1494	9315	Providence, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.48	-0.39	1.36
	83	7277	Zurich, Wietlisbach 1996	MORT	AC	AA	24 hours	lag 3	0.48	-0.01	0.97
	1465	8710	Le Havre, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	0.42	-0.94	1.79
	1494	9328	Stockton, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.41	-1.11	1.96
	1494	9285	Pittsburgh, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.40	-0.12	0.92
	1494	9271	Chicago, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.39	0.10	0.69
	1494	9286	Oakland, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.39	-0.17	0.94
	1494	9306	Worcester, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.38	-0.22	0.99
	1494	9270	New York, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.35	0.18	0.53
	1494	9300	Memphis, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.35	-0.33	1.03
	1494	9301	Indianapolis, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.34	-0.48	1.17
	1494	9296	St. Petersburg, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.28	-0.47	1.04
	1494	9297	Kansas, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.27	-0.85	1.40
	225	6045	Windsor, Burnett 1998	MORT	AC	AA	24 hours	lag 2-4	0.27	-0.60	1.14
	1494	9280	Minneapolis/St. Paul, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.22	-0.40	0.85
	1494	9275	Santa Ana/Anaheim, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.22	-0.07	0.51
	212	7199	Germany (rural), Peters 2000	MORT	AC	AA	24 hours	lag 2	0.22	-0.69	1.14
	1494	9284	San Bernadino, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.21	-0.35	0.78
	1494	9311	Boston, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.20	-0.57	0.97
	264	381	Koln, Spix 1996	MORT	AC	AA	24 hours	lag 1	0.19	-0.21	0.59
	1494	9302	Newark, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.17	-0.31	0.66
	1494	9274	San Diego, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.16	-0.27	0.60
	1494	9277	Detroit, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.16	-0.27	0.59
	225	6047	Edmonton, Burnett 1998	MORT	AC	AA	24 hours	lag 2	0.13	-0.39	0.66
	1494	9283	Cleveland, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.11	-0.40	0.61
	1465	8713	Lyon, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	0.10	-1.61	1.84
	1494	9273	Houston, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.03	-0.57	0.63
	1494	9289	Riverside, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.02	-0.56	0.61

Time Series: NO_2

Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
2	1494	9327	New Orleans, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.02	-0.85	0.90
	1494	9346	Norfolk, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.01	-1.89	1.93
	1465	8722	Strasbourg, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	0.00	-1.38	1.40
	1494	9282	San Jose, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.01	-0.67	0.65
	1494	9304	Salt Lake City, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.02	-0.88	0.85
	1494	9279	Philadelphia, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.03	-0.43	0.37
	1494	9313	Washington, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.06	-0.69	0.57
	1494	9290	Denver, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.08	-0.89	0.74
	1494	9303	Baltimore, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.11	-0.66	0.43
	1494	9323	Charlotte, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.11	-1.95	1.76
	1494	9307	Orlando, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.12	-1.78	1.58
	1494	9320	Jersey City, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.19	-0.82	0.45
	1494	9308	Jacksonville, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.21	-1.39	0.99
	1494	9309	Fresno, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.26	-1.26	0.76
	1494	9293	Buffalo, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.26	-1.01	0.49
	1494	9314	Oklahoma City, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.28	-1.45	0.91
	1494	9291	Sacramento, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.29	-1.16	0.59
	1494	9278	Miami, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.34	-0.91	0.23
	1494	9272	Dallas/Fort Worth, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.46	-1.07	0.16
	1494	9353	Arlington, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.65	-2.39	1.12
	1494	9295	Cincinnati, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.72	-1.50	0.07
	1494	9276	Phoenix, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.73	-2.07	0.63
	1494	9316	El Paso, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.83	-2.01	0.36
	1494	9332	Raleigh, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.85	-3.30	1.67
	1494	9287	Atlanta, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.95	-1.71	-0.18
	1494	9299	Tampa, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.97	-2.44	0.52
	1494	9339	Little Rock, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.46	-3.33	0.44
3	1140	4169	Valencia, Tenias Burillo 1999	MORT	AC	E	1 hour	lag 5	0.68	0.07	1.29
	196	927	Bilbao, Cambra 1999	MORT	AC	E	1 hour	lag 0	0.60	-0.32	1.53
	198	3385	Gijon, Canada 1999	MORT	AC	E	1 hour	lag 1	0.47	-0.73	1.68
	197	900	Barcelona, Saurina 1999	MORT	AC	E	1 hour	lag 1	0.29	0.04	0.54
	182	738	London, Bremner 1999	MORT	AC	E	1 hour	lag 1	0.14	-0.03	0.32
	192	4076	Madrid, Galan 1999	MORT	AC	E	1 hour	lag 0	0.14	-0.06	0.34
	1187	5428	Sao Paulo, Gouveia 2000	MORT	AC	E	1 hour	lag 1	0.07	-0.04	0.19
	177	6350	Pittsburgh, Chock 2000	MORT	AC	E	1 hour	lag 2	-0.22	-0.81	0.38
	198	3401	Oviedo, Canada 1999	MORT	AC	E	1 hour	lag 5	-1.02	-2.44	0.42
4	83	7289	Basel, Wietlisbach 1996	MORT	AC	E	24 hours	lag 3	2.20	1.13	3.29
	1120	3758	Phoenix, Mar 2000	MORT	AC	E	24 hours	lag 1	1.73	0.56	2.92
	83	7290	Geneva, Wietlisbach 1996	MORT	AC	E	24 hours	lag 3	1.72	1.01	2.45
	1587	12460	Vancouver, Villeneuve 2003	MORT	AC	E	24 hours	lag 1	1.03	0.24	1.83
	1495	11862	Seoul, Ha 2003	MORT	AC	E	24 hours	lag 0	0.97	0.94	1.01
	83	7288	Zurich, Wietlisbach 1996	MORT	AC	E	24 hours	lag 3	0.57	0.02	1.13
	1610	13505	Atlanta, Klemm 2004	MORT	AC	E	24 hours	lag 0-1	0.54	-0.54	1.63
	1299	7326	Rome, Michelozzi 2000	MORT	AC	E	24 hours	lag 1-2	0.40	0.10	0.70
	214	568	Mexico City, Borja-Aburto 1998	MORT	AC	E	24 hours	lag 1-5	0.39	-0.76	1.55
	190	1040	Seville, Ocana-Riola 1999	MORT	AC	E	24 hours	lag 0	-1.26	-2.70	0.21
	193	3780	Huelva, Daponte 1999	MORT	AC	E	24 hours	lag 2	-2.19	-6.46	2.27

Time Series: NO_2

Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
5	1494	10976	Kansas, Samet 2003	MORT	CR	AA	24 hours	lag 1	2.86	-5.69	12.18
	1494	10927	Orlando, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.40	-0.93	3.78
	1494	10921	Indianapolis, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.28	0.16	2.42
	1494	10968	Huntsville, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.16	-3.91	6.50
	1494	10947	New Orleans, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.11	-0.16	2.39
	1494	10945	Tulsa, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.99	-0.41	2.41
	1494	10952	Raleigh, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.99	-2.55	4.65
	1494	10973	Arlington, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.84	-1.74	3.49
	214	570	Mexico City, Borja-Aburto 1998	MORT	CR	AA	24 hours	lag 1-5	0.73	-0.87	2.36
	1494	10970	Lexington, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.72	-1.64	3.15
	1494	10912	St. Louis, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.72	-0.56	2.01
	1494	10928	Jacksonville, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.71	-0.92	2.36
	1494	10905	Pittsburgh, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.70	0.01	1.39
	1494	10972	Richmond, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.64	-1.36	2.69
	1494	10930	Louisville, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.56	-0.65	1.79
	1494	10933	Washington, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.52	-0.42	1.48
	1494	10896	Phoenix, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.47	-1.40	2.37
	1494	10956	Modesto, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.45	-1.78	2.73
	1494	10955	Baton Rouge, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.44	-1.47	2.39
	1494	10926	Worcester, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.44	-0.37	1.26
	1494	10924	Salt Lake City, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.44	-0.73	1.61
	1494	10948	Stockton, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.42	-1.63	2.51
	1494	10891	Chicago, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.41	0.01	0.81
	1494	10906	Oakland, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.36	-0.38	1.11
	1494	10890	New York, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.31	0.08	0.54
	1494	10904	San Bernadino, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.30	-0.43	1.04
	1494	10935	Providence, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.25	-0.93	1.44
	1494	10941	Bakersfield, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.24	-1.63	2.16
	1494	10895	Santa Ana/Anaheim, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.22	-0.15	0.60
	1494	10916	St. Petersburg, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.21	-0.77	1.20
	1494	10889	Los Angeles, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.20	0.01	0.40
	1494	10931	Boston, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.18	-0.90	1.28
	1494	10922	Newark, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.18	-0.52	0.89
	1494	10897	Detroit, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.17	-0.39	0.74
	1494	10909	Riverside, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.16	-0.57	0.90
	1494	10940	Jersey City, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.14	-0.75	1.03
	1494	10900	Minneapolis/St. Paul, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.14	-0.72	1.00
	1494	10898	Miami, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.11	-0.65	0.89
	1494	10929	Fresno, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.09	-1.26	1.47
	1494	10911	Sacramento, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.07	-1.10	1.25
	1494	10899	Philadelphia, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.04	-0.51	0.60
	1494	10893	Houston, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.00	-0.83	0.84
	1494	10894	San Diego, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.04	-0.62	0.54
	1494	10934	Oklahoma City, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.21	-1.77	1.37
	161	13250	Helsinki, Penttinen 2004	MORT	CR	AA	24 hours	lag 0	-0.23	-0.88	0.42
	1494	10936	El Paso, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.23	-1.92	1.48
	1494	10915	Cincinnati, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.29	-1.35	0.77
	1494	10903	Cleveland, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.31	-1.00	0.38
	1494	10920	Memphis, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.34	-1.24	0.57
	1494	10902	San Jose, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.47	-1.35	0.42
	1494	10919	Tampa, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.47	-2.45	1.55
	1494	10892	Dallas/Fort Worth, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.53	-1.35	0.30
	1494	10913	Buffalo, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.63	-1.59	0.34
	1494	10907	Atlanta, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.66	-1.78	0.47
	1494	10943	Charlotte, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.77	-3.41	1.93
	1494	10923	Baltimore, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.79	-1.57	-0.01
	1494	10917	Kansas, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.82	-2.31	0.69
	1494	10966	Norfolk, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.97	-3.60	1.72
	1494	10959	Little Rock, Samet 2003	MORT	CR	AA	24 hours	lag 1	-3.24	-5.82	-0.59
6	198	3388	Gijon, Canada 1999	MORT	CV	AA	1 hour	lag 4	2.15	0.39	3.94
	198	3407	Oviedo, Canada 1999	MORT	CV	AA	1 hour	lag 2	1.65	-0.24	3.58
	196	920	Bilbao, Cambra 1999	MORT	CV	AA	1 hour	lag 0	1.05	-0.18	2.30
	69	7698	West Midlands, Anderson 2001	MORT	CV	AA	1 hour	lag 0-1	0.53	-0.02	1.08
	197	902	Barcelona, Saurina 1999	MORT	CV	AA	1 hour	lag 2	0.34	0.01	0.67
	182	670	London, Bremner 1999	MORT	CV	AA	1 hour	lag 1	0.33	0.10	0.56
	192	4083	Madrid, Galan 1999	MORT	CV	AA	1 hour	lag 0	0.29	0.03	0.55
	1140	4177	Valencia, Tenias Burillo 1999	MORT	CV	AA	1 hour	lag 5	0.22	-0.37	0.81
	206	1739	Sydney, Morgan 1998	MORT	CV	AA	1 hour	lag 1	0.16	-0.25	0.57

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Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
7	1416	8383	Oviedo, Saez 2002	MORT	CV	AA	24 hours	single	3.37	-0.99	7.91
	1337	11795	Palermo, Biggeri 2001	MORT	CV	AA	24 hours	lag 1-2	3.20	1.20	5.24
	1120	3761	Phoenix, Mar 2000	MORT	CV	AA	24 hours	lag 4	3.05	1.40	4.72
	1465	8720	Rouen, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	3.00	0.38	5.68
	83	7312	Basel, Wietlisbach 1996	MORT	CV	AA	24 hours	lag 3	2.62	1.13	4.14
	1416	8384	Seville, Saez 2002	MORT	CV	AA	24 hours	single	2.43	0.82	4.06
	501	3917	Inchon, Hong 1999	MORT	CV	AA	24 hours	lag 0-4	2.12	-1.69	6.08
	1337	11725	Bologna, Biggeri 2001	MORT	CV	AA	24 hours	lag 1-2	2.10	0.10	4.14
	1416	8381	Huelva, Saez 2002	MORT	CV	AA	24 hours	single	2.04	-4.54	9.07
	1337	11775	Rome, Biggeri 2001	MORT	CV	AA	24 hours	lag 1-2	2.00	1.10	2.91
	1337	11750	Florence, Biggeri 2001	MORT	CV	AA	24 hours	lag 1-2	1.90	0.00	3.84
	76	11967	Shanghai, Kan 2003	MORT	CV	AA	24 hours	lag 0	1.80	0.70	2.91
	1416	8380	Gijon, Saez 2002	MORT	CV	AA	24 hours	single	1.76	-0.55	4.13
	1465	8711	Le Havre, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	1.51	-0.92	4.00
	1337	11687	Milan, Biggeri 2001	MORT	CV	AA	24 hours	lag 1-2	1.30	0.40	2.21
	1337	11661	Turin, Biggeri 2001	MORT	CV	AA	24 hours	lag 1-2	1.30	0.35	2.26
	83	7313	Geneva, Wietlisbach 1996	MORT	CV	AA	24 hours	lag 3	1.08	0.09	2.07
	1416	8379	Barcelona, Saez 2002	MORT	CV	AA	24 hours	single	1.03	0.11	1.96
	1465	8714	Lyon, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	0.96	-1.98	3.99
	144	7090	Coachella Valley, Ostro 2000	MORT	CV	AA	24 hours	lag 0	0.95	-0.48	2.39
	1465	8717	Paris, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	0.90	0.20	1.61
	153	8055	Hong Kong, Wong 2002	MORT	CV	AA	24 hours	lag 0-2	0.80	-0.10	1.71
	1275	6691	Netherlands, Hoek 2001	MORT	CV	AA	24 hours	lag 0-6	0.76	0.30	1.22
	1416	8385	Valencia, Saez 2002	MORT	CV	AA	24 hours	single	0.62	-0.89	2.14
	212	7208	Germany (rural), Peters 2000	MORT	CV	AA	24 hours	lag 0	0.54	-0.76	1.85
	1465	8726	Toulouse, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	0.46	-3.11	4.15
	83	7311	Zurich, Wietlisbach 1996	MORT	CV	AA	24 hours	lag 3	0.30	-0.42	1.03
	1416	8382	Madrid, Saez 2002	MORT	CV	AA	24 hours	single	0.09	-0.16	0.34
	161	13268	Helsinki, Penttinen 2004	MORT	CV	AA	24 hours	lag 0	-0.20	-1.12	0.73
	1465	8723	Strasbourg, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	-1.36	-3.70	1.05
8	163	6981	Maricopa, Moolgavkar 2000	MORT	CAR	AA	24 hours	lag 4	1.21	0.51	1.91
	163	6967	Los Angeles, Moolgavkar 2000	MORT	CAR	AA	24 hours	lag 1	0.73	0.53	0.92
	163	6950	Cook County, Moolgavkar 2000	MORT	CAR	AA	24 hours	lag 3	0.54	0.12	0.97
	1299	7328	Rome, Michelozzi 2000	MORT	CAR	AA	24 hours	lag 1-2	0.40	-0.10	0.90
	1073	4189	Buffalo, Gwynn 2000	MORT	CAR	AA	24 hours	lag 2	0.33	-0.77	1.44
	258	868	Lyon, Zmirou 1996	MORT	CAR	AA	24 hours	lag 1	0.20	-0.81	1.22
9	349	14215	Shanghai, Haidong	MORT	ST	AA	24 hours	lag 0-1	2.90	0.10	5.78
	163	7052	Maricopa, Moolgavkar 2000	MORT	ST	AA	24 hours	lag 1	2.10	0.17	4.06
	112	8542	Seoul, Hong 2002	MORT	ST	AA	24 hours	lag 2	1.94	0.69	3.21
	1275	6695	Netherlands, Hoek 2001	MORT	ST	AA	24 hours	lag 0-6	1.58	-0.60	3.80
	163	7041	Los Angeles, Moolgavkar 2000	MORT	ST	AA	24 hours	lag 0	0.72	0.37	1.08
	163	7030	Cook County, Moolgavkar 2000	MORT	ST	AA	24 hours	lag 1	0.62	-0.15	1.41
	153	8057	Hong Kong, Wong 2002	MORT	ST	AA	24 hours	lag 1	-0.40	-1.50	0.71
10	198	3413	Oviedo, Canada 1999	MORT	RESP	AA	1 hour	lag 2	3.02	-0.37	6.53
	196	913	Bilbao, Cambra 1999	MORT	RESP	AA	1 hour	lag 2	1.87	-0.65	4.45
	197	904	Barcelona, Saurina 1999	MORT	RESP	AA	1 hour	lag 0	0.80	0.17	1.44
	206	1748	Sydney, Morgan 1998	MORT	RESP	AA	1 hour	lag 1	0.73	-0.29	1.77
	1140	4185	Valencia, Tenias Burillo 1999	MORT	RESP	AA	1 hour	lag 1	0.68	-1.08	2.47
	69	7707	West Midlands, Anderson 2001	MORT	RESP	AA	1 hour	lag 0-1	0.57	-0.33	1.47
	233	1236	Brisbane, Simpson 1997	MORT	RESP	AA	1 hour	lag 0	0.52	-1.41	2.50
	192	4090	Madrid, Galan 1999	MORT	RESP	AA	1 hour	lag 0	0.35	-0.13	0.83
	182	417	London, Bremner 1999	MORT	RESP	AA	1 hour	lag 3	0.33	-0.06	0.72
	253	1317	Paris, Dab 1996	MORT	RESP	AA	1 hour	lag 1	0.23	-0.62	1.08
	198	3390	Gijon, Canada 1999	MORT	RESP	AA	1 hour	lag 2	-2.53	-5.49	0.52
11	1416	8407	Oviedo, Saez 2002	MORT	RESP	AA	24 hours	single	5.34	-1.87	13.09
	1337	11799	Palermo, Biggeri 2001	MORT	RESP	AA	24 hours	lag 1-2	5.20	0.40	10.23
	1465	8727	Toulouse, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	5.16	-3.87	15.03
	1416	8404	Gijon, Saez 2002	MORT	RESP	AA	24 hours	single	4.67	-0.61	10.23
	1465	8712	Le Havre, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	4.11	-1.04	9.53
	1337	11779	Rome, Biggeri 2001	MORT	RESP	AA	24 hours	lag 1-2	4.00	1.10	6.98
	83	7300	Basel, Wietlisbach 1996	MORT	RESP	AA	24 hours	lag 3	3.52	1.51	5.57
	83	7301	Geneva, Wietlisbach 1996	MORT	RESP	AA	24 hours	lag 3	2.44	0.92	3.98
	148	5646	Melbourne, Simpson 2000	MORT	RESP	AA	24 hours	lag 0	2.37	0.16	4.64
	1070	4206	Inchon, Hong 1999	MORT	RESP	AA	24 hours	lag 1	2.33	-1.98	6.83
	1416	8409	Valencia, Saez 2002	MORT	RESP	AA	24 hours	single	2.26	-0.91	5.53
	83	7299	Zurich, Wietlisbach 1996	MORT	RESP	AA	24 hours	lag 3	2.05	0.86	3.26
	1337	11692	Milan, Biggeri 2001	MORT	RESP	AA	24 hours	lag 1-2	1.80	-0.20	3.84
	1416	8406	Madrid, Saez 2002	MORT	RESP	AA	24 hours	single	1.75	0.48	3.03
	1337	11730	Bologna, Biggeri 2001	MORT	RESP	AA	24 hours	lag 1-2	1.70	-3.10	6.74
	1073	4070	Buffalo, Gwynn 2000	MORT	RESP	AA	24 hours	lag 1	1.64	-0.67	4.01
	1416	8405	Huelva, Saez 2002	MORT	RESP	AA	24 hours	single	1.55	-9.39	13.82
	1337	11666	Turin, Biggeri 2001	MORT	RESP	AA	24 hours	lag 1-2	1.50	-0.80	3.85
	1416	8408	Seville, Saez 2002	MORT	RESP	AA	24 hours	single	1.48	-2.10	5.19
	161	13286	Helsinki, Penttinen 2004	MORT	RESP	AA	24 hours	lag 0	1.43	-0.74	3.65
	1416	8403	Barcelona, Saez 2002	MORT	RESP	AA	24 hours	single	1.43	-0.26	3.14
	153	8052	Hong Kong, Wong 2002	MORT	RESP	AA	24 hours	lag 0-1	1.30	0.40	2.21
	1465	8724	Strasbourg, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	1.29	-3.84	6.69
	214	569	Mexico City, Borja-Aburto 1998	MORT	RESP	AA	24 hours	lag 1-5	1.21	-1.43	3.91
	1465	8721	Rouen, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	1.06	-4.06	6.44
	144	7096	Coachella Valley, Ostro 2000	MORT	RESP	AA	24 hours	lag 0	0.47	-2.90	3.96
	1465	8718	Paris, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	0.44	-0.96	1.85
	1337	11755	Florence, Biggeri 2001	MORT	RESP	AA	24 hours	lag 1-2	0.10	-4.40	4.81
	1465	8715	Lyon, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	-0.08	-5.77	5.95

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12	76	11979	Shanghai, Kan 2003	MORT	COPDp	AA	24 hours	lag 0	3.20	0.90	5.55
	175	5521	Netherlands, Hoek 2000	MORT	COPDp	AA	24 hours	lag 0-6	2.91	1.70	4.14
	163	7023	Maricopa, Moolgavkar 2000	MORT	COPDp	AA	24 hours	lag 3	2.38	0.05	4.76
	153	8053	Hong Kong, Wong 2002	MORT	COPDp	AA	24 hours	lag 0-2	2.30	0.60	4.03
	163	6993	Cook County, Moolgavkar 2000	MORT	COPDp	AA	24 hours	lag 1	1.18	0.01	2.36
	163	7012	Los Angeles, Moolgavkar 2000	MORT	COPDp	AA	24 hours	lag 1	0.98	0.43	1.52
13	1184	5376	Valencia, Ballester 2001	HAD	CV	AA	1 hour	lag 0	0.65	-0.18	1.49
	1053	1348	London, Atkinson 1999	HAD	CV	AA	1 hour	lag 0	0.19	0.03	0.36
	69	7716	West Midlands, Anderson 2001	HAD	CV	AA	1 hour	lag 0-1	0.06	-0.29	0.41
	49	6446	Brisbane, Petroeschevsky 2001	HAD	CV	AA	1 hour	lag 3	-0.68	-1.26	-0.10
14	1337	11735	Bologna, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	2.60	1.10	4.12
	1337	11697	Milan, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	2.50	2.00	3.00
	1337	11783	Rome, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	2.50	1.90	3.10
	1337	11760	Florence, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	2.00	0.60	3.42
	1429	8230	Hong Kong, Wong 2002	HAD	CAR	AA	24 hours	lag 0	1.20	0.70	1.70
	1337	11803	Palermo, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	1.20	0.30	2.11
	1105	3528	Los Angeles, Linn 2000	HAD	CAR	AA	24 hours	lag 0	0.73	0.53	0.94
	1429	8246	London, Wong 2002	HAD	CAR	AA	24 hours	lag 0	0.70	0.40	1.00
	1337	11672	Turin, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	0.70	0.00	1.40
	1073	3455	Buffalo, Gwynn 2000	HAD	CAR	AA	24 hours	lag 0	0.51	-0.19	1.22
	1337	11717	Ravenna, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	0.30	-1.00	1.62
15	1299	7345	Rome, Michelozzi 2000	HAD	CAR	E	24 hours	lag 0	1.71	1.02	2.41
	1196	6841	Cook County, Moolgavkar 2000	HAD	CAR	E	24 hours	lag 0	1.51	1.21	1.80
	1196	6866	Maricopa, Moolgavkar 2000	HAD	CAR	E	24 hours	lag 0	1.51	0.78	2.23
	1196	6853	Los Angeles, Moolgavkar 2000	HAD	CAR	E	24 hours	lag 0	1.20	1.05	1.34
	472	1968	Tucson, Schwartz 1997	HAD	CAR	E	24 hours	lag 0	0.32	-1.06	1.71
16	1299	7346	Rome, Michelozzi 2000	HAD	IHD	AA	24 hours	lag 0	2.49	1.39	3.60
	368	6155	Toronto, Burnett 1999	HAD	IHD	AA	24 hours	lag 0-1	1.94	1.49	2.40
	1547	11997	California southern, Mann 2002	HAD	IHD	AA	24 hours	lag 1	0.74	0.34	1.15
	1429	8250	London, Wong 2002	HAD	IHD	AA	24 hours	lag 0	0.70	0.20	1.20
	1429	8234	Hong Kong, Wong 2002	HAD	IHD	AA	24 hours	lag 3	0.70	0.10	1.30
	1629	13950	Tehran, Hosseinpoor	HAD	IHD	AA	24 hours	lag 1	0.62	0.26	0.98
	1105	4253	Los Angeles, Linn 2000	HAD	IHD	AA	24 hours	lag 0	0.58	0.06	1.09
	1622	13213	Seoul, Lee 2003	HAD	IHD	AA	24 hours	lag 0-5	0.00	-1.08	1.10
17	364	4295	Hong Kong, Wong 1999	HAD	HF	AA	24 hours	lag 0-3	4.40	2.50	6.34
	368	6154	Toronto, Burnett 1999	HAD	HF	AA	24 hours	lag 0	1.90	1.31	2.49
	1105	4257	Los Angeles, Linn 2000	HAD	HF	AA	24 hours	lag 0	0.52	0.01	1.04
	64	1584	London, Poloniecki 1997	HAD	HF	AA	24 hours	lag 1	-0.05	-0.41	0.30
18	484	2540	Los Angeles, Morris 1995	HAD	HF	E	1 hour		0.73	0.50	0.97
	376	2231	Chicago, Morris 1998	HAD	HF	E	1 hour	lag 0	0.39	0.10	0.68
	484	2543	New York, Morris 1995	HAD	HF	E	1 hour		0.35	0.10	0.61
	484	2546	Milwaukee, Morris 1995	HAD	HF	E	1 hour		0.26	-0.61	1.13
	484	2544	Detroit, Morris 1995	HAD	HF	E	1 hour		0.21	-0.43	0.85
	484	2542	Philadelphia, Morris 1995	HAD	HF	E	1 hour		0.15	-0.27	0.58
	484	2545	Houston, Morris 1995	HAD	HF	E	1 hour		-0.05	-0.67	0.56
19	1184	5386	Valencia, Ballester 2001	HAD	ST	AA	24 hours	lag 4	3.62	0.66	6.67
	1105	4269	Los Angeles, Linn 2000	HAD	ST	AA	24 hours	lag 0	1.05	0.53	1.57
	364	4283	Hong Kong, Wong 1999	HAD	ST	AA	24 hours	lag 0-1	0.80	-0.20	1.81
	368	6156	Toronto, Burnett 1999	HAD	ST	AA	24 hours	lag 0	0.41	-0.19	1.01
	64	1589	London, Poloniecki 1997	HAD	ST	AA	24 hours	lag 1	-0.26	-0.56	0.04
	414	2733	Helsinki, Ponka 1996	HAD	ST	AA	24 hours	lag 6	-4.09	-7.00	-1.09
20	69	7752	West Midlands, Anderson 2001	HAD	RESP	AA	1 hour	lag 0-1	0.35	-0.04	0.73
	1053	1762	London, Atkinson 1999	HAD	RESP	AA	1 hour	lag 1	0.24	0.02	0.45
	253	1325	Paris, Dab 1996	HAD	RESP	AA	1 hour	lag 0	0.15	-0.07	0.37
	49	6422	Brisbane, Petroeschevsky 2001	HAD	RESP	AA	1 hour	lag 1	-0.58	-1.21	0.06
21	1337	11765	Florence, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	4.00	1.80	6.25
	1337	11712	Verona, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	3.90	2.40	5.42
	1337	11740	Bologna, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	3.60	1.80	5.43
	1337	11677	Turin, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	3.40	2.60	4.21
	1337	11807	Palermo, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	3.30	2.30	4.31
	1071	4371	Drammen, Hagen 2000	HAD	RESP	AA	24 hours	lag 0	2.73	-0.29	5.85
	1337	11702	Milan, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	2.30	1.60	3.00
	1185	5402	Ulsan, Cho 2000	HAD	RESP	AA	24 hours	lag 0	2.11	0.82	3.41
	364	2982	Hong Kong, Wong 1999	HAD	RESP	AA	24 hours	lag 0-3	2.00	1.30	2.70
	1337	11787	Rome, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	1.90	1.40	2.40
	1073	3463	Buffalo, Gwynn 2000	HAD	RESP	AA	24 hours	lag 1	0.63	-0.31	1.58
	417	1404	London, De Leon 1996	HAD	RESP	AA	24 hours	lag 2	0.22	0.01	0.43
	1185	5391	Daejeon, Cho 2000	HAD	RESP	AA	24 hours	lag 0	0.10	-0.11	0.31
	1185	5396	Suwon, Cho 2000	HAD	RESP	AA	24 hours	lag 0	0.00	-0.61	0.61
	1337	11721	Ravenna, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	-1.20	-3.20	0.84

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22	49	6406	Brisbane, Petroeschevsky 2001	HAD	RESP	C	1 hour	lag 3	0.78	-0.21	1.78
	69	7761	West Midlands, Anderson 2001	HAD	RESP	C	1 hour	lag 0-1	0.47	-0.12	1.06
	1053	1768	London, Atkinson 1999	HAD	RESP	C	1 hour	lag 2	0.28	-0.06	0.62
	207	5454	Sao Paulo, Gouveia 2000	HAD	RESP	C	1 hour	lag 0	0.19	0.00	0.39
	49	6410	Brisbane, Petroeschevsky 2001	HAD	RESP	C	1 hour	lag 0	-0.79	-2.65	1.11
23	364	4324	Hong Kong, Wong 1999	HAD	RESP	C	24 hours	lag 0-3	2.00	1.00	3.01
	1265	5716	Rome, Fusco 2001	HAD	RESP	C	24 hours	lag 0	1.77	0.27	3.30
	242	5352	Sao Paulo, Braga 2001	HAD	RESP	C	24 hours	distribu	1.13	0.75	1.51
	242	5372	Sao Paulo, Braga 2001	HAD	RESP	C	24 hours	distribu	0.79	0.41	1.18
	242	5362	Sao Paulo, Braga 2001	HAD	RESP	C	24 hours	distribu	0.28	-0.76	1.34
	417	1405	London, De Leon 1996	HAD	RESP	C	24 hours	lag 2	0.20	-0.11	0.51
	242	5357	Sao Paulo, Braga 2001	HAD	RESP	C	24 hours	distribu	0.20	-0.82	1.23
24	480	2654	Rotterdam, Schouten 1996	HAD	RESP	YA	1 hour	lag 1	0.35	-0.50	1.22
	1053	1774	London, Atkinson 1999	HAD	RESP	YA	1 hour	lag 1	0.23	-0.12	0.59
	69	7770	West Midlands, Anderson 2001	HAD	RESP	YA	1 hour	lag 0-1	0.00	-0.77	0.78
	480	2275	Amsterdam, Schouten 1996	HAD	RESP	YA	1 hour	lag 1	-1.11	-1.95	-0.27
25	364	2980	Hong Kong, Wong 1999	HAD	RESP	YA	24 hours	lag 0-3	2.30	1.10	3.51
	1299	7379	Rome, Michelozzi 2000	HAD	RESP	YA	24 hours	lag 0	2.26	0.93	3.61
	49	6414	Brisbane, Petroeschevsky 2001	HAD	RESP	YA	24 hours	lag 0	1.40	-0.84	3.70
	417	1406	London, De Leon 1996	HAD	RESP	YA	24 hours	lag 1	0.22	-0.16	0.59
26	480	2317	Rotterdam, Schouten 1996	HAD	RESP	E	1 hour	lag 2	1.44	-0.18	3.09
	1053	1780	London, Atkinson 1999	HAD	RESP	E	1 hour	lag 3	0.36	0.08	0.64
	69	7779	West Midlands, Anderson 2001	HAD	RESP	E	1 hour	lag 0-1	0.20	-0.37	0.78
	480	2618	Amsterdam, Schouten 1996	HAD	RESP	E	1 hour	lag 2	-0.04	-0.85	0.78
27	216	3845	Edinburgh, Prescott 1998	HAD	RESP	E	24 hours	lag 1-3	1.61	-2.43	5.82
	1429	8226	Hong Kong, Wong 2002	HAD	RESP	E	24 hours	lag 0	1.30	0.80	1.80
	635	2037	Minneapolis/St. Paul, Moolgavkar 1997	HAD	RESP	E	24 hours	lag 1	1.14	0.10	2.19
	1429	8242	London, Wong 2002	HAD	RESP	E	24 hours	lag 3	0.90	0.50	1.30
	1299	7380	Rome, Michelozzi 2000	HAD	RESP	E	24 hours	lag 0	-0.37	-1.46	0.72
	49	6418	Brisbane, Petroeschevsky 2001	HAD	RESP	E	24 hours	lag 0-4	-5.19	-8.09	-2.21
28	253	1341	Paris, Dab 1996	HAD	ASTHMA	AA	1 hour	lag 0-1	0.78	0.19	1.38
	480	2303	Amsterdam, Schouten 1996	HAD	ASTHMA	AA	1 hour	lag 2	0.34	-0.85	1.56
	1053	1786	London, Atkinson 1999	HAD	ASTHMA	AA	1 hour	lag 0	0.26	-0.11	0.63
	49	6434	Brisbane, Petroeschevsky 2001	HAD	ASTHMA	AA	1 hour	lag 0-2	-2.00	-3.40	-0.59
29	123	12193	Madrid, Galan 2003	HAD	ASTHMA	AA	24 hours	lag 3	3.30	1.30	5.34
	364	3001	Hong Kong, Wong 1999	HAD	ASTHMA	AA	24 hours	lag 0-3	2.60	1.00	4.23
	1265	5694	Rome, Fusco 2001	HAD	ASTHMA	AA	24 hours	lag 2	2.04	-0.04	4.16
	368	6150	Toronto, Burnett 1999	HAD	ASTHMA	AA	24 hours	lag 0	0.68	0.12	1.25
	380	2373	London, Anderson 1998	HAD	ASTHMA	AA	24 hours	lag 2	0.65	0.26	1.05
30	1605	13387	Melbourne western, Erbas 2005	HAD	ASTHMA	C	1 hour	lag 2	2.56	-50.77	113.66
	1605	13394	Melbourne south, Erbas 2005	HAD	ASTHMA	C	1 hour	lag 0	2.02	-2.12	6.34
	373	2091	Sydney, Morgan 1998	HAD	ASTHMA	C	1 hour	lag 0	0.93	0.19	1.68
	69	7788	West Midlands, Anderson 2001	HAD	ASTHMA	C	1 hour	lag 0-1	0.81	-0.41	2.04
	1605	13392	Melbourne south/south eastern, Erbas 2005	HAD	ASTHMA	C	1 hour	lag 1	-0.59	-6.71	5.92
	49	6426	Brisbane, Petroeschevsky 2001	HAD	ASTHMA	C	1 hour	lag 0	-1.31	-2.81	0.20
	1605	13389	Melbourne inner, Erbas 2005	HAD	ASTHMA	C	1 hour	lag 0	-3.76	-7.62	0.27
31	1328	7399	Hong Kong, Wong 2001	HAD	ASTHMA	C	24 hours	lag 0	8.00	3.16	13.07
	1466	8586	Seoul, Lee 2002	HAD	ASTHMA	C	24 hours	lag 2-3	5.13	3.47	6.82
	1265	5742	Rome, Fusco 2001	HAD	ASTHMA	C	24 hours	lag 1	4.66	1.33	8.10
	70	8096	Belfast, Thompson 2001	HAD	ASTHMA	C	24 hours	lag 0	4.11	1.56	6.72
	380	2128	London, Anderson 1998	HAD	ASTHMA	C	24 hours	lag 2	0.65	0.16	1.15
	1006	6715	Sao Paulo, Lin 1999	HAD	ASTHMA	C	24 hours	lag 0-4	-0.40	-1.00	0.20
32	1053	1798	London, Atkinson 1999	HAD	ASTHMA	YA	1 hour	lag 1	0.72	0.12	1.33
	373	2096	Sydney, Morgan 1998	HAD	ASTHMA	YA	1 hour	lag 0	0.57	-0.28	1.42
	69	7797	West Midlands, Anderson 2001	HAD	ASTHMA	YA	1 hour	lag 0-1	-0.69	-2.23	0.88
	49	6430	Brisbane, Petroeschevsky 2001	HAD	ASTHMA	YA	1 hour	lag 1	-0.89	-2.70	0.95
33	136	6776	Maricopa, Moolgavkar 2000	HAD	COPDp	E	24 hours	lag 5	2.33	0.57	4.12
	136	6758	Los Angeles, Moolgavkar 2000	HAD	COPDp	E	24 hours	lag 0	1.32	0.97	1.66
	136	6745	Cook County, Moolgavkar 2000	HAD	COPDp	E	24 hours	lag 3	1.05	0.36	1.74
	1638	14080	Vancouver, Yang	HAD	COPDp	E	24 hours	lag 0	1.00	0.96	1.04
34	11	5655	Paris, Fauroux 2000	EV	ASTHMA	C	24 hours	lag 0	6.68	-0.30	14.16
	15	4428	London, Buchdahl 2000	EV	ASTHMA	C	24 hours	lag 2	2.03	-0.60	4.73
	15	2882	London, Buchdahl 2000	EV	ASTHMA	C	24 hours	lag 2	1.46	0.00	2.94
	15	4432	London, Buchdahl 2000	EV	ASTHMA	C	24 hours	lag 2	1.17	-0.60	2.97
	403	13461	Atlanta metropolitan area, Peel 2005	EV	ASTHMA	C	24 hours	lag 0-1	0.70	0.13	1.27

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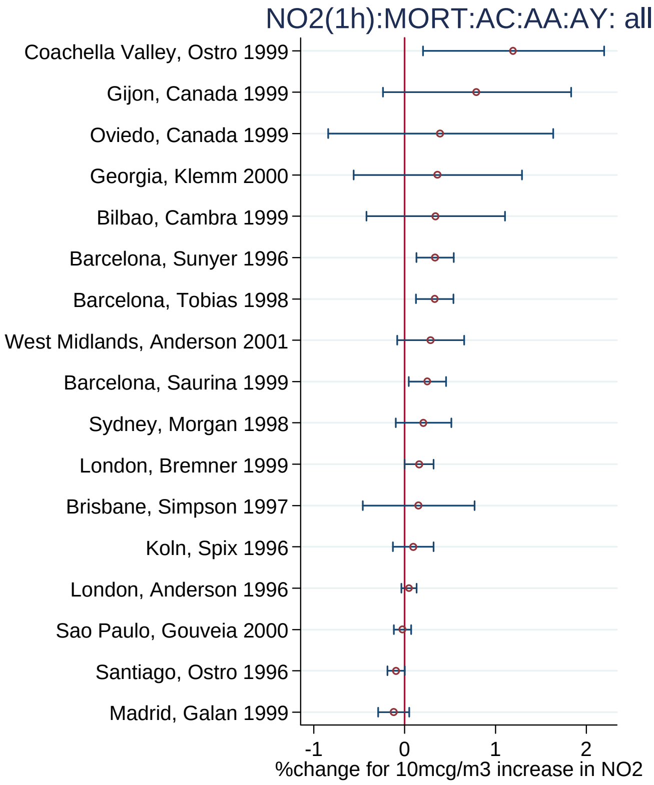

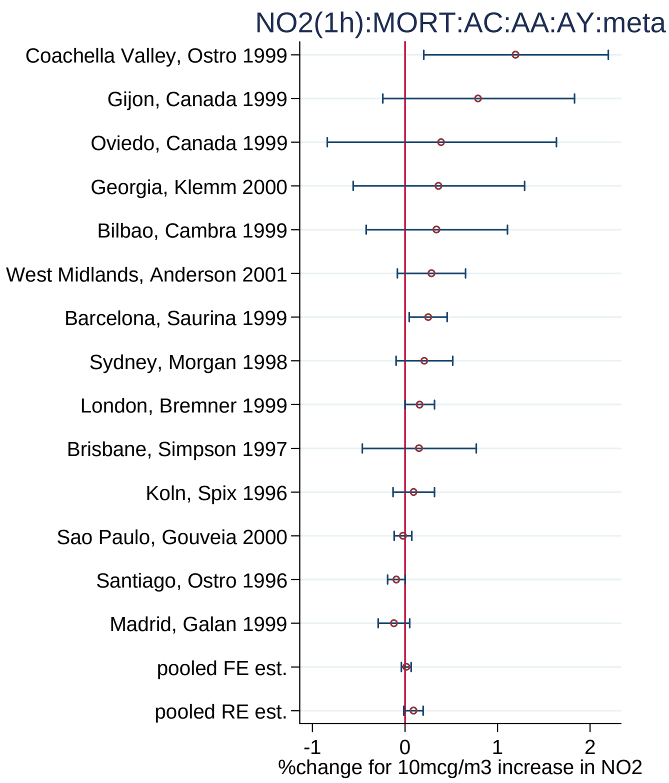

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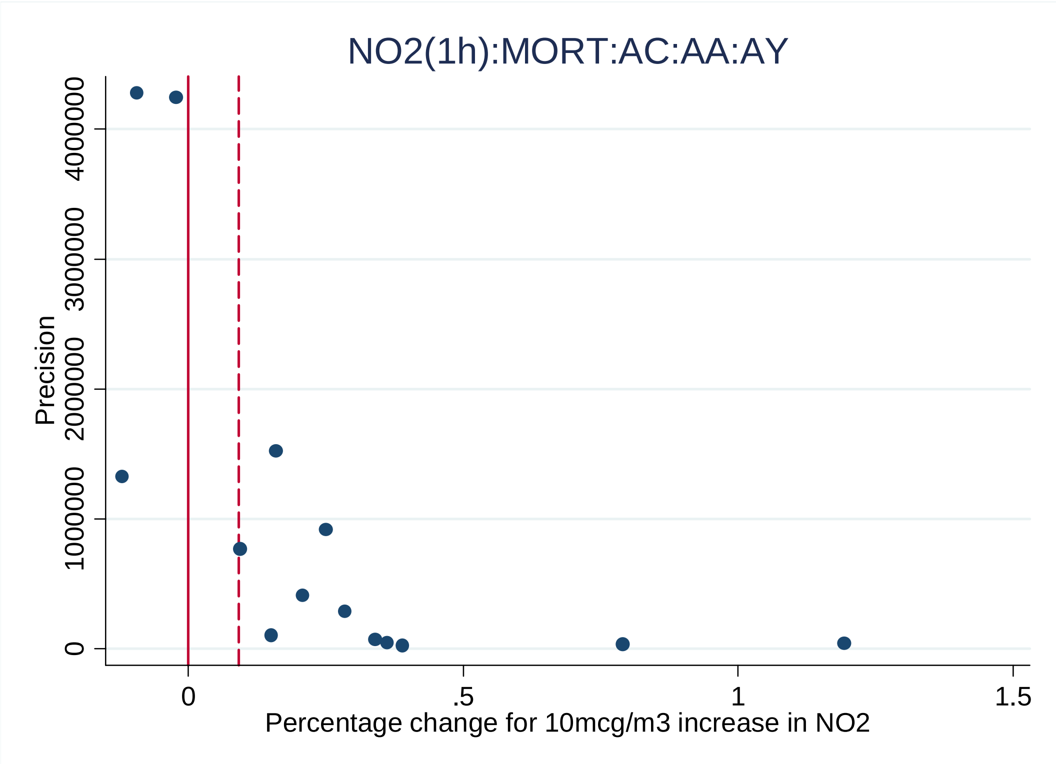

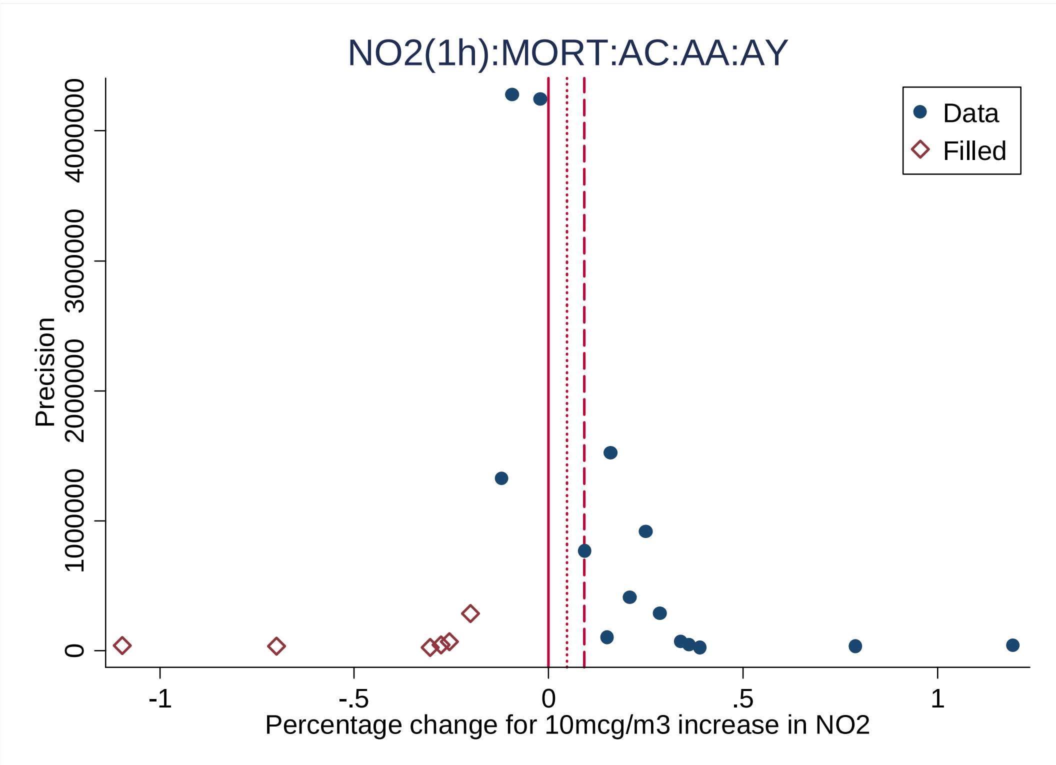

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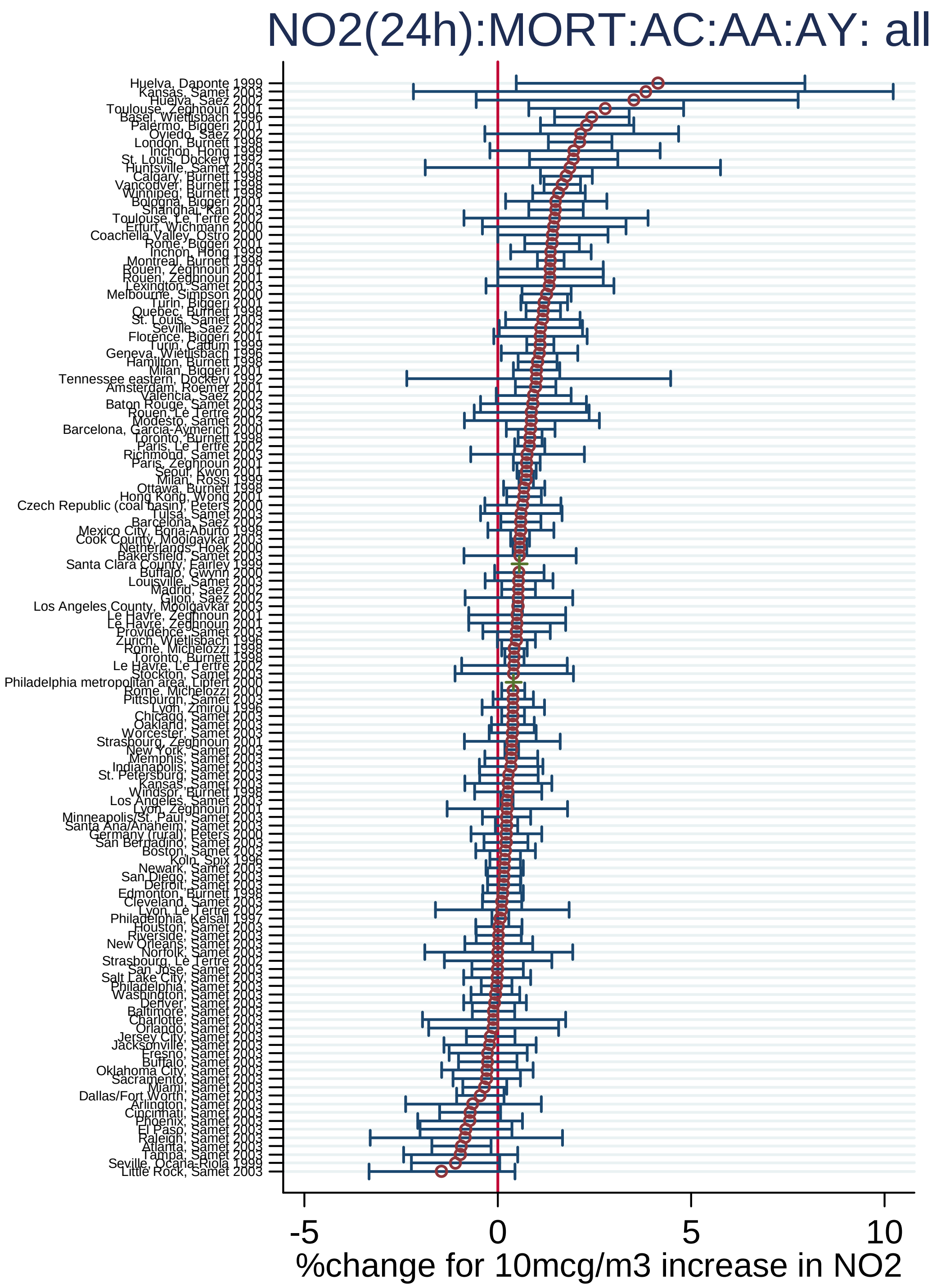

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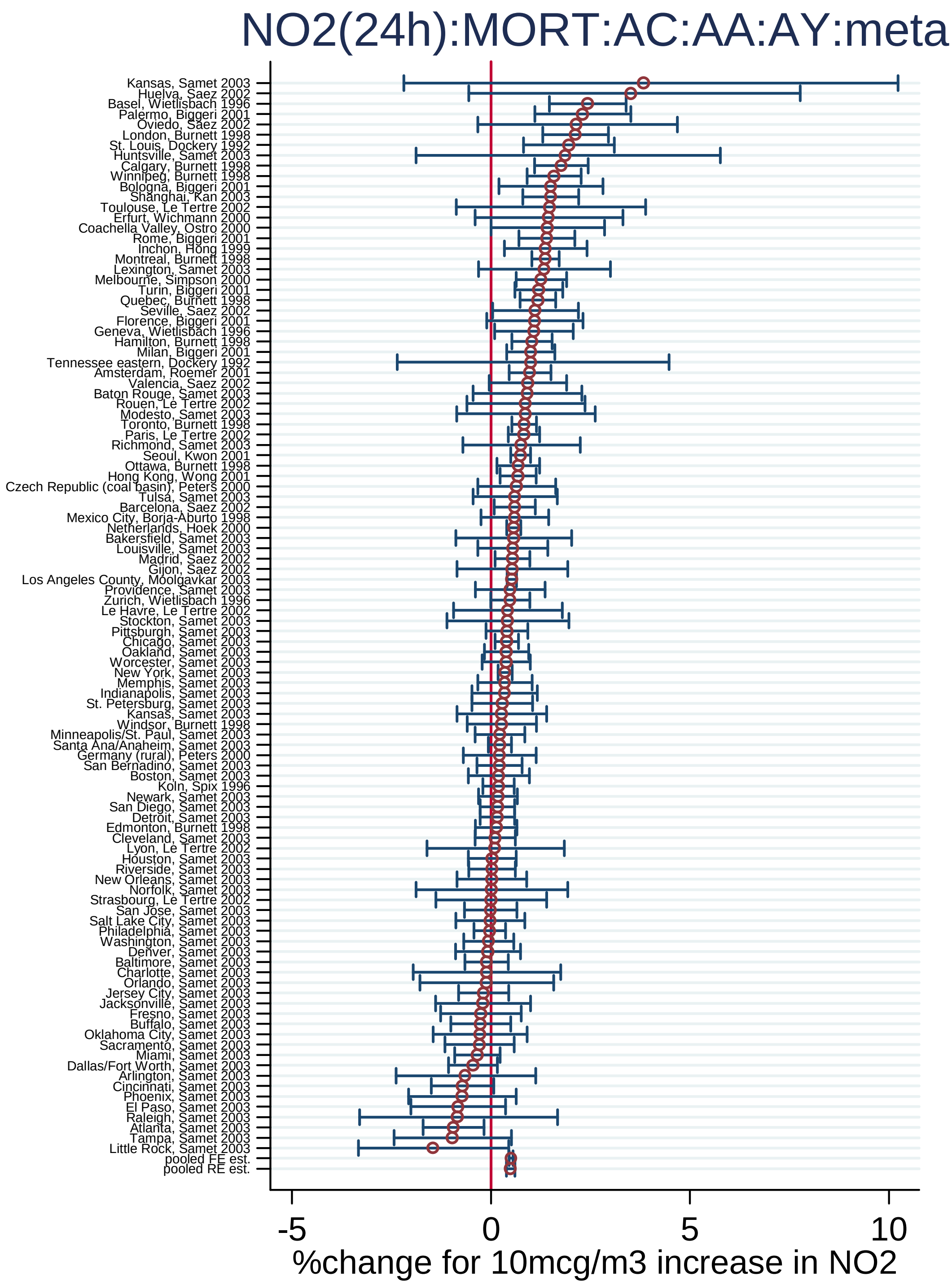

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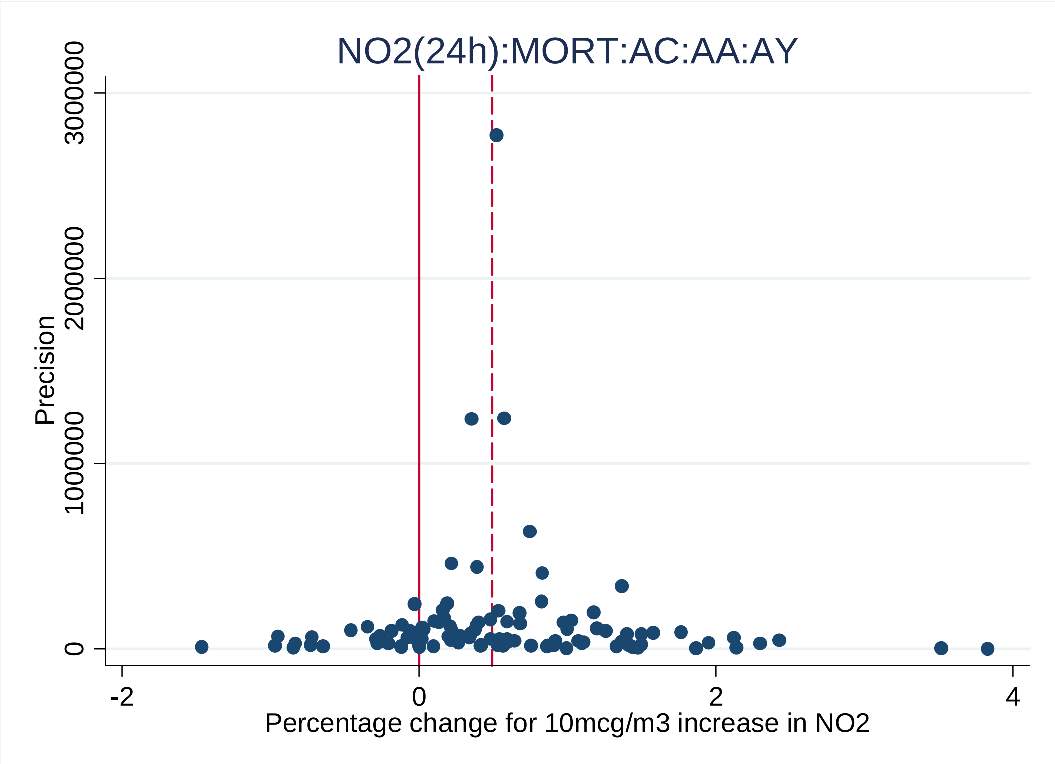

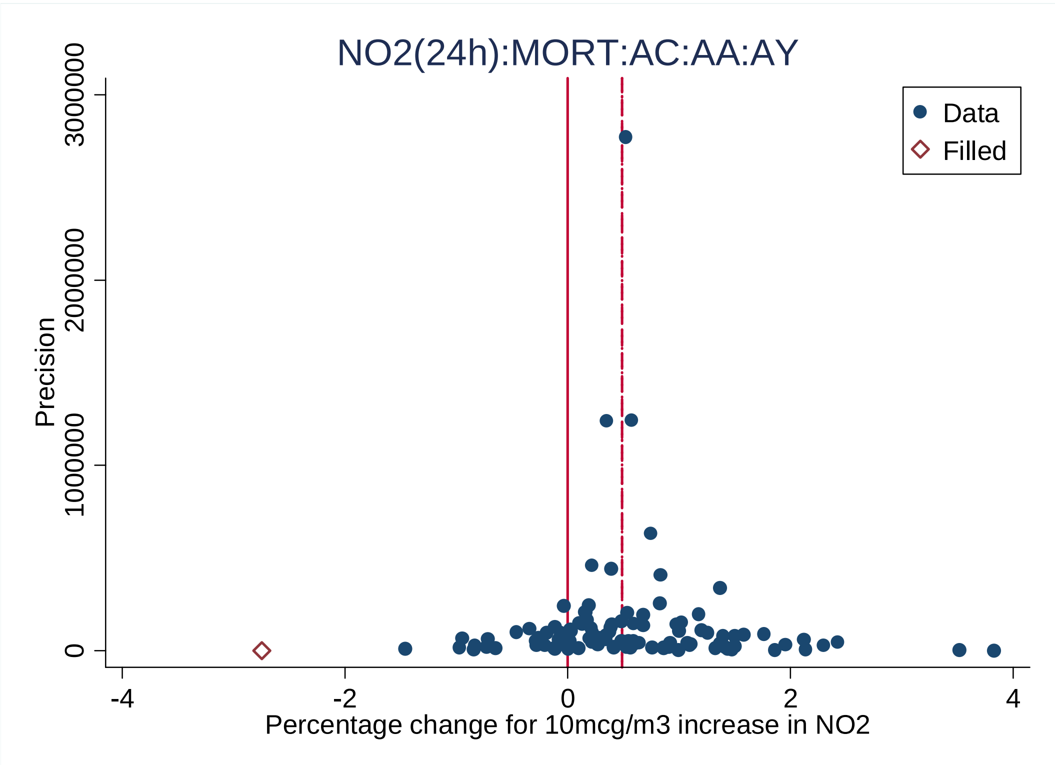

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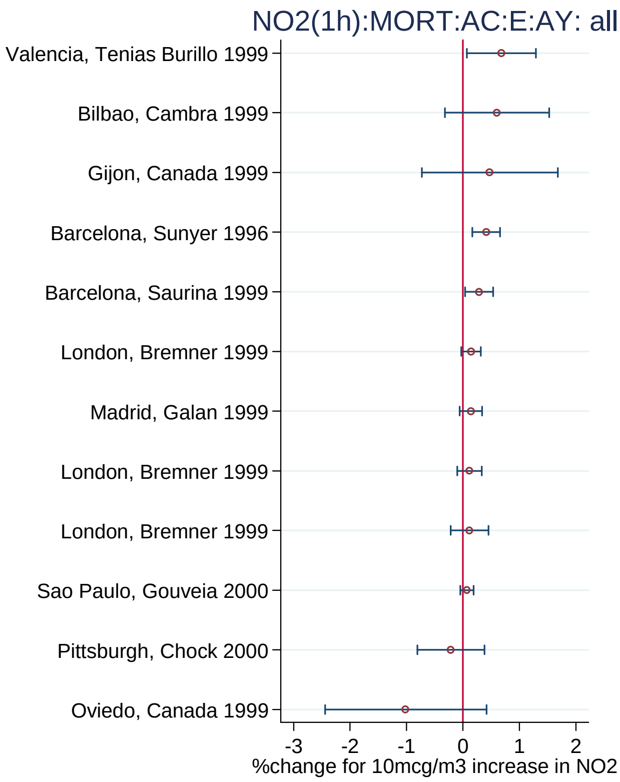

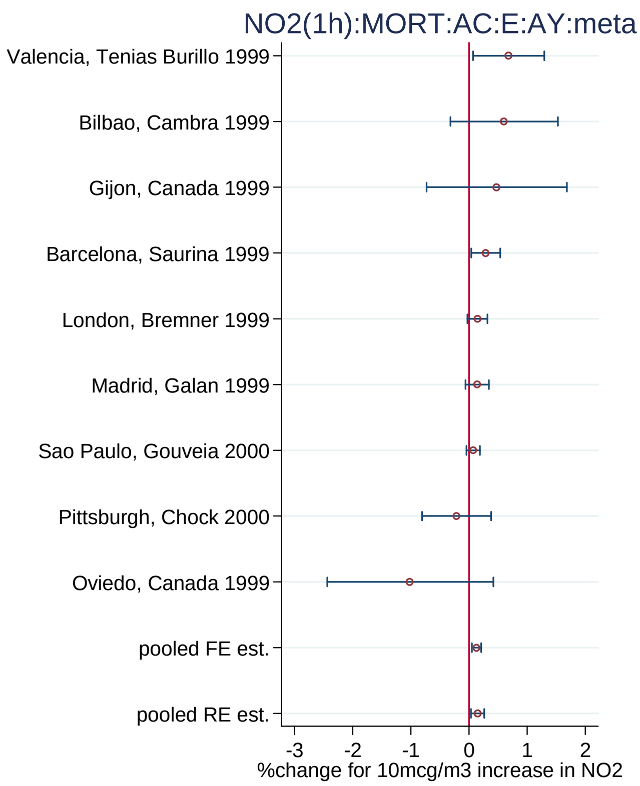

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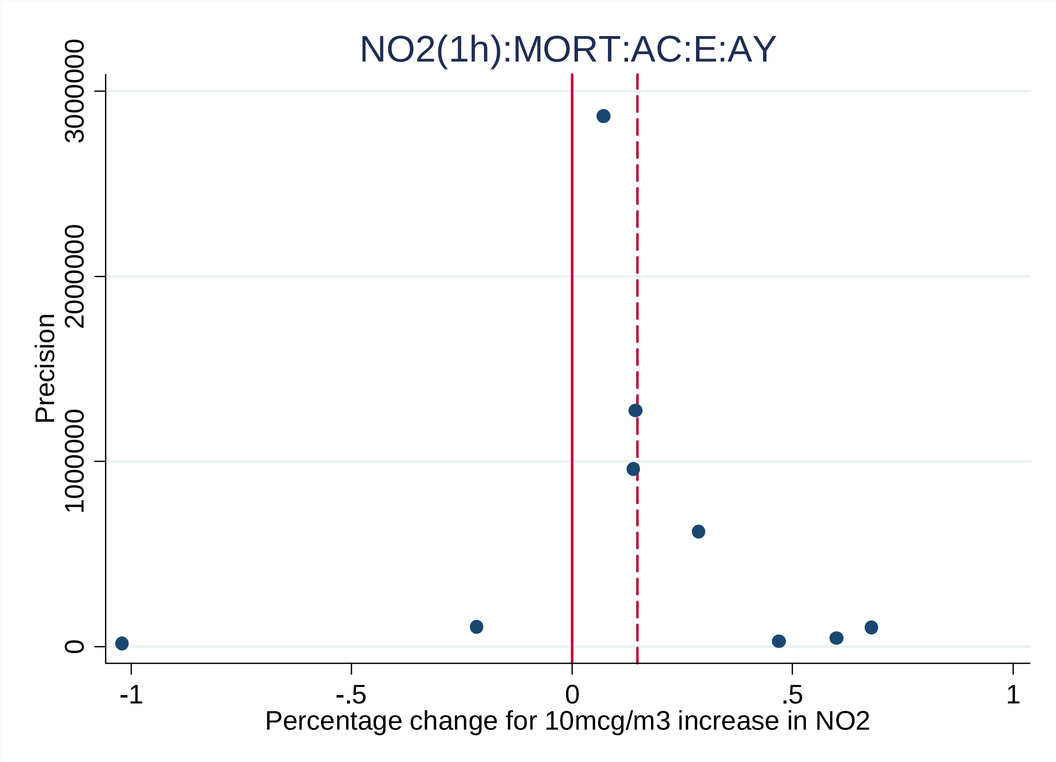

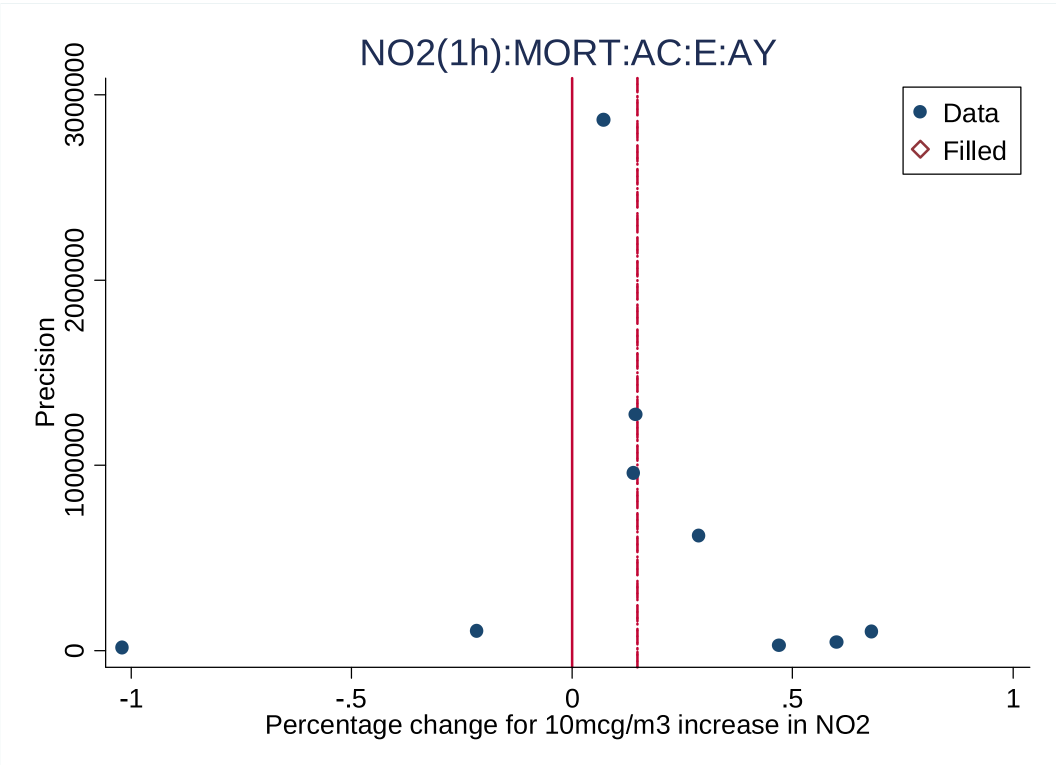

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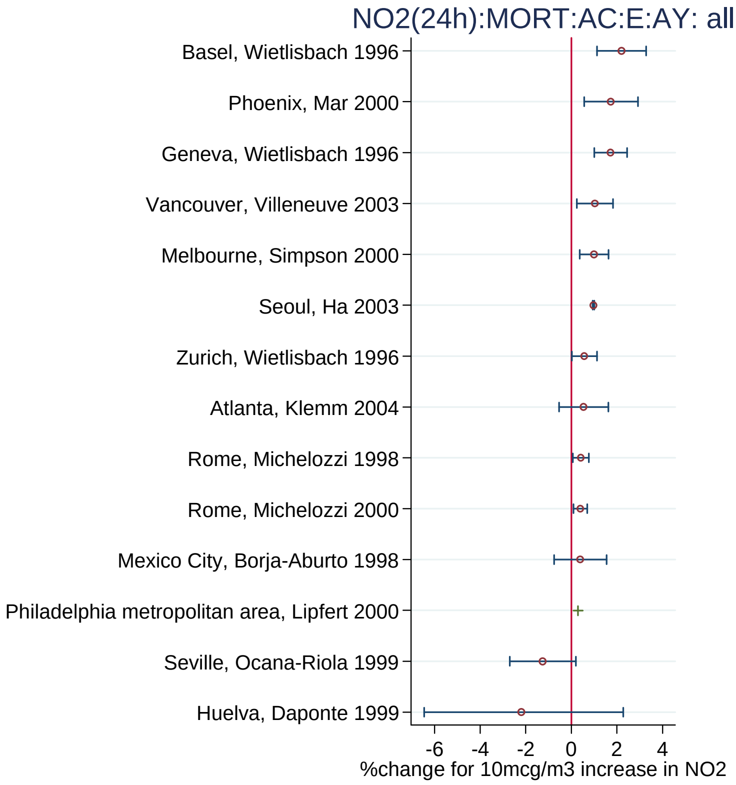

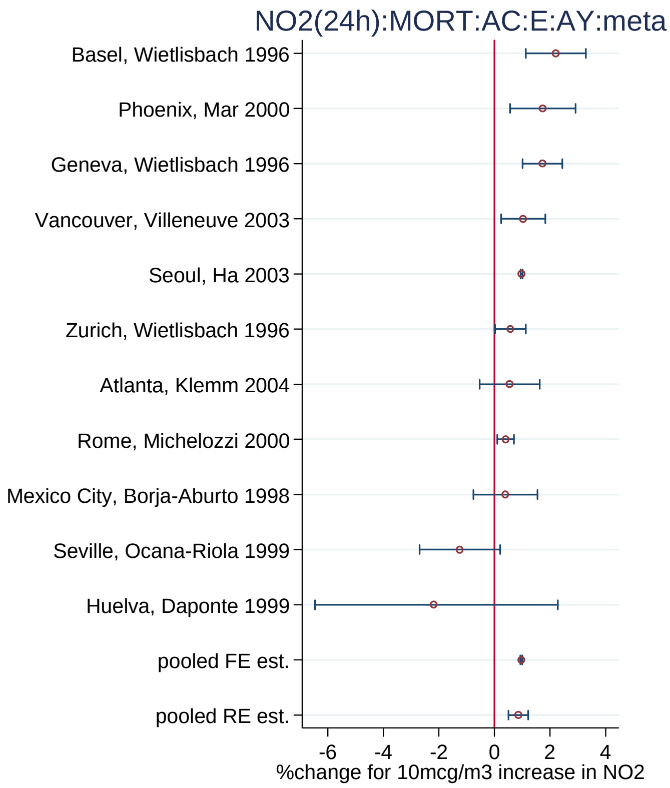

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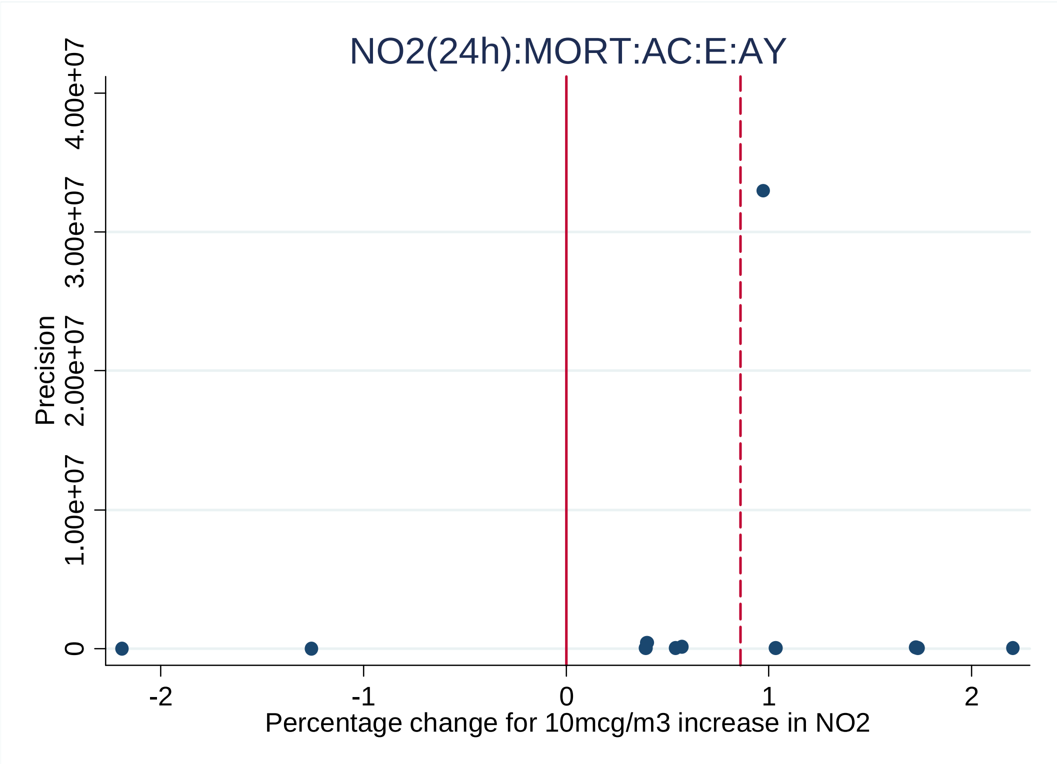

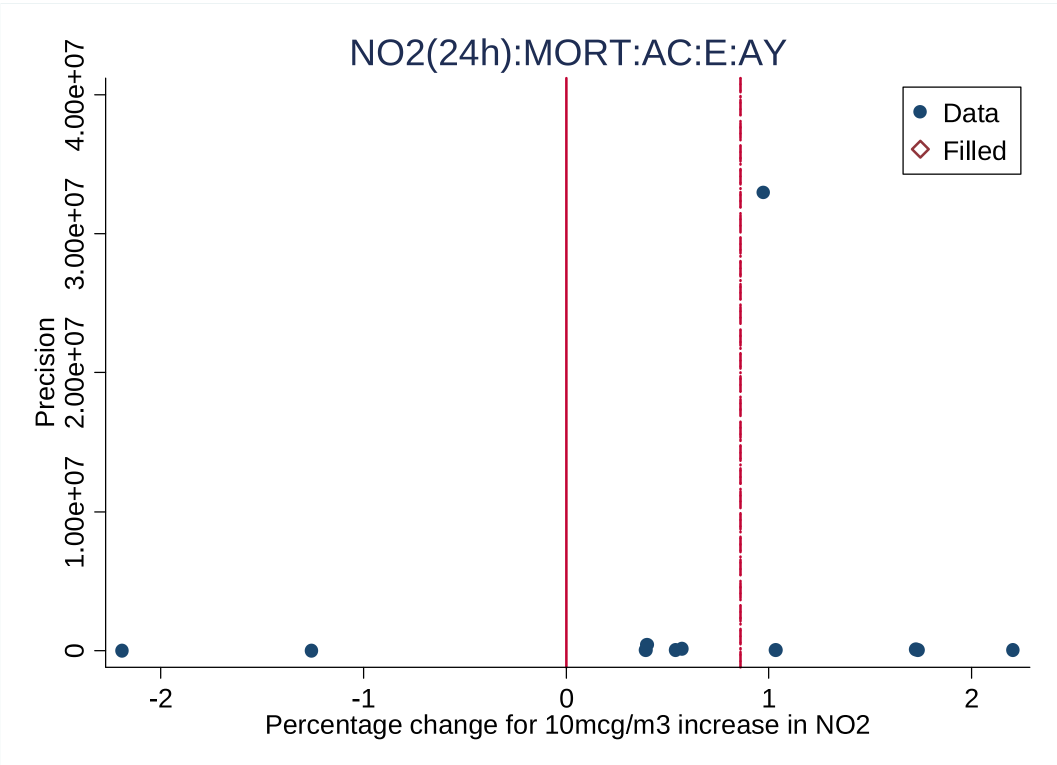

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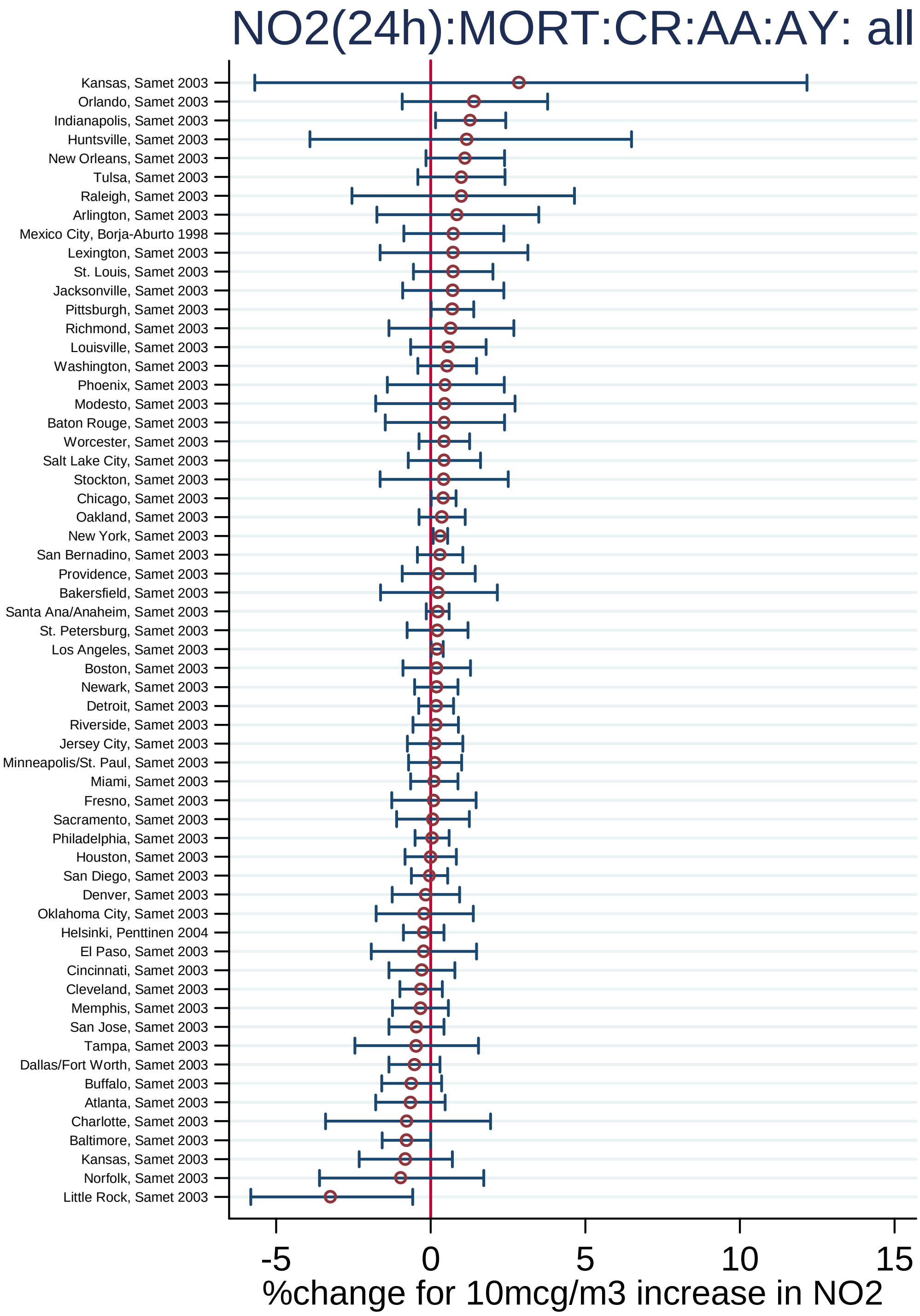

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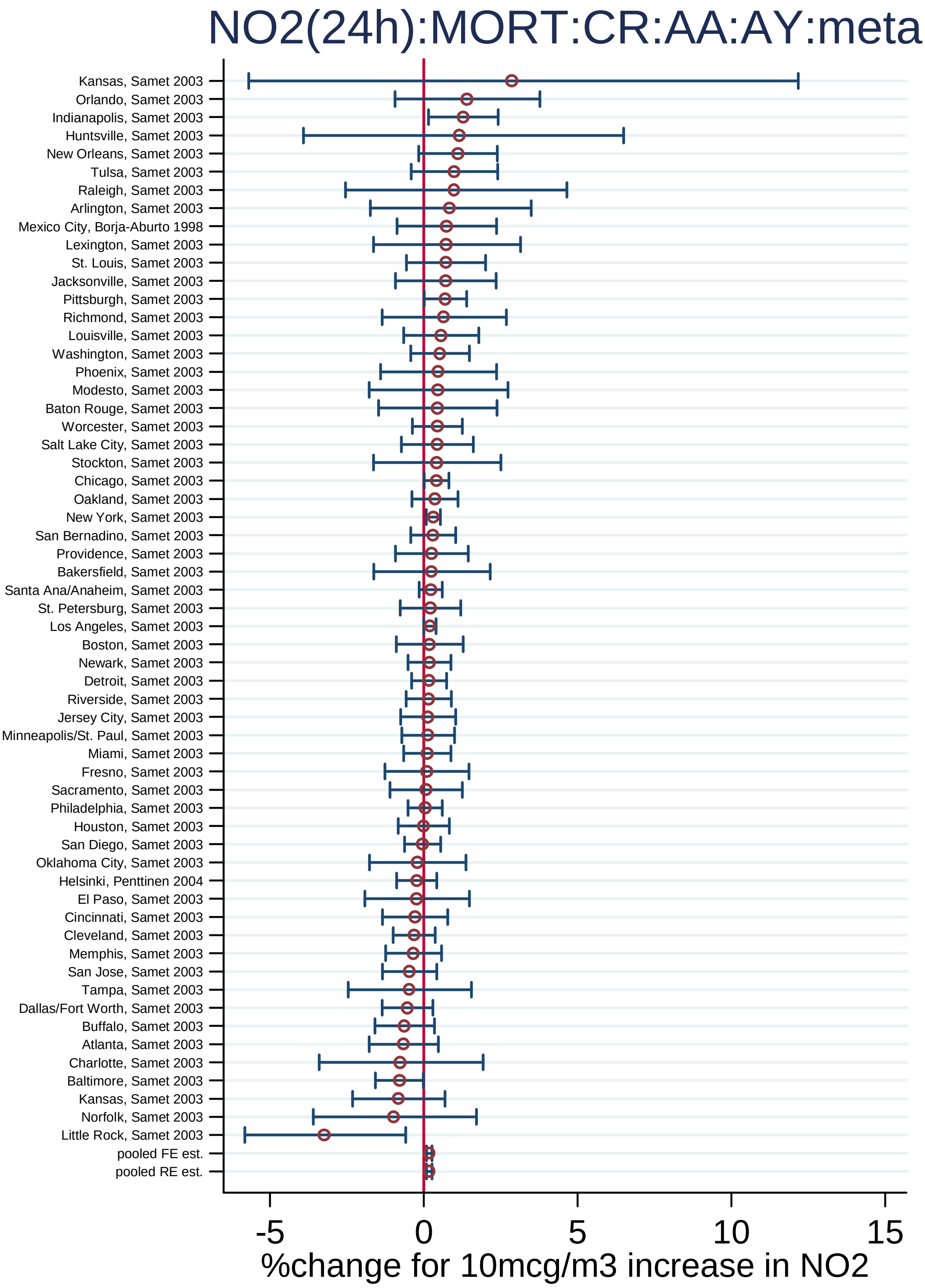

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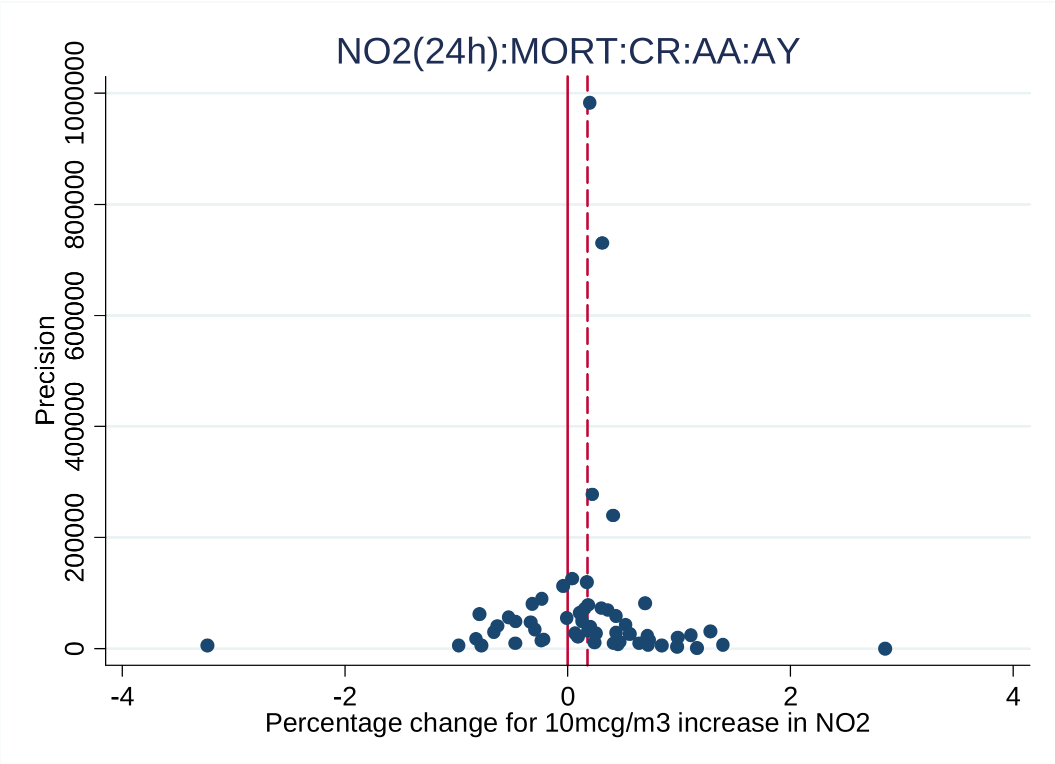

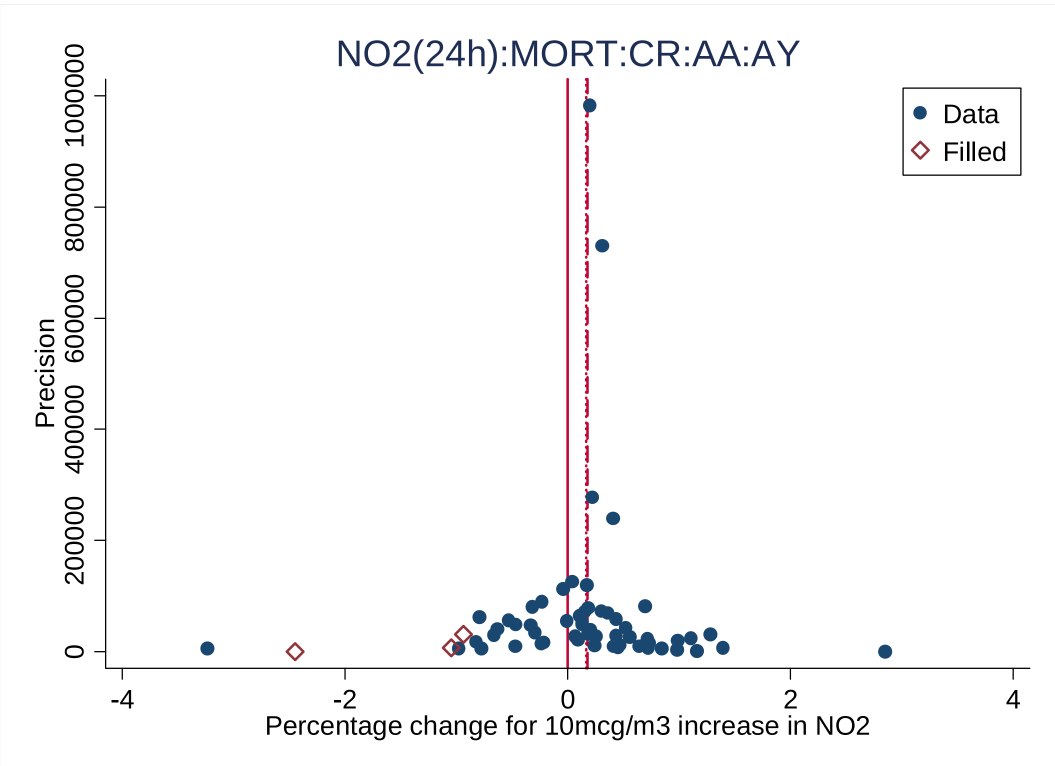

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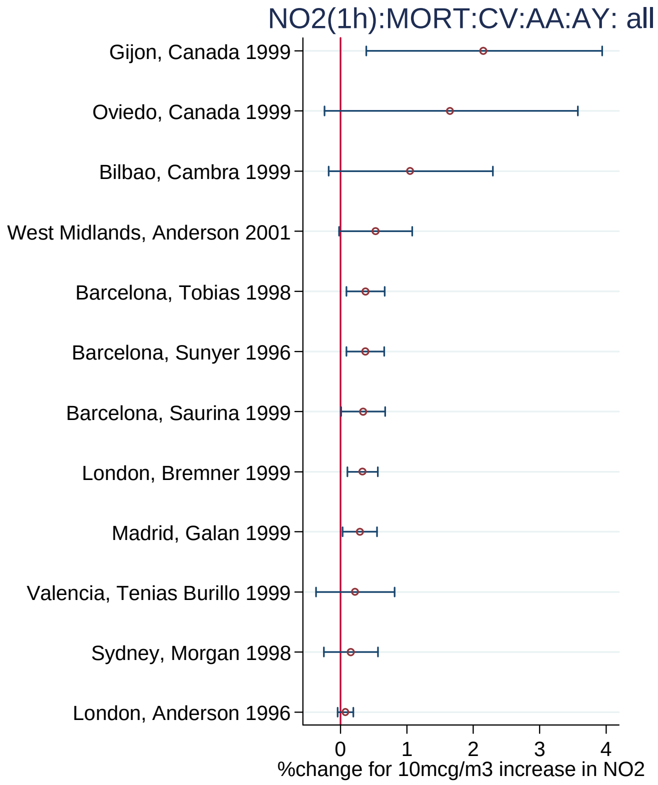

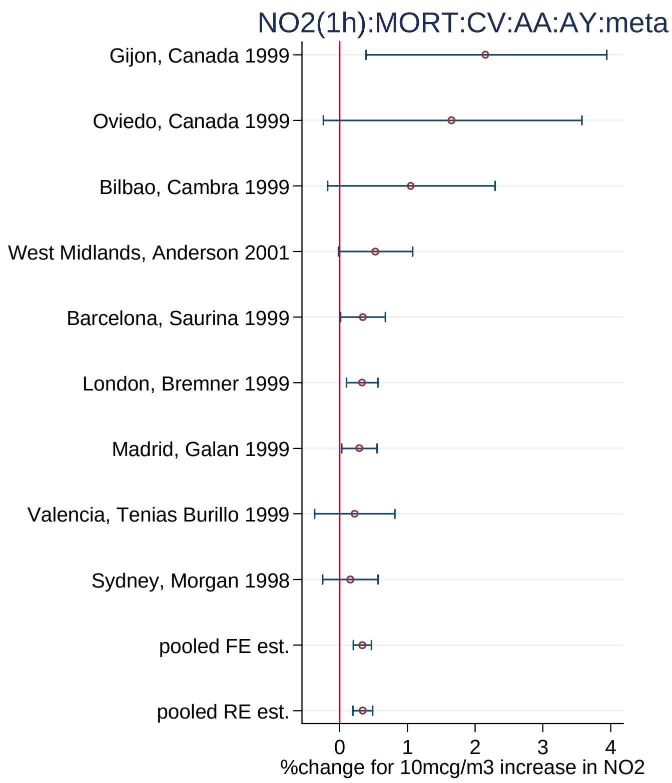

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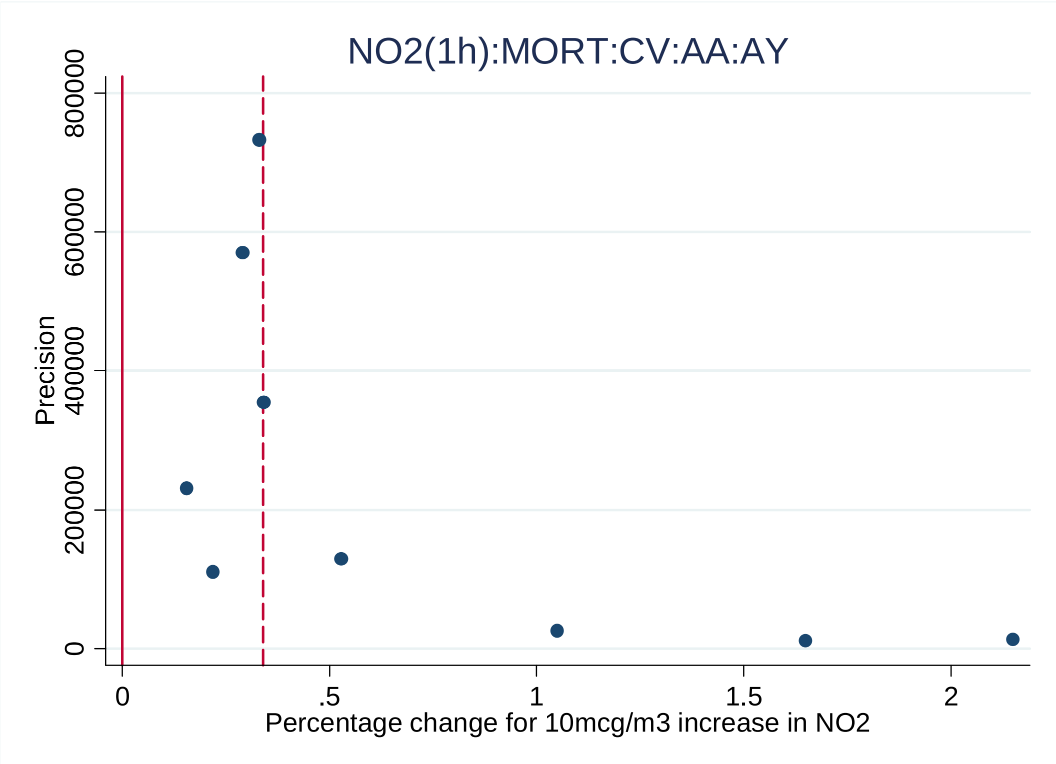

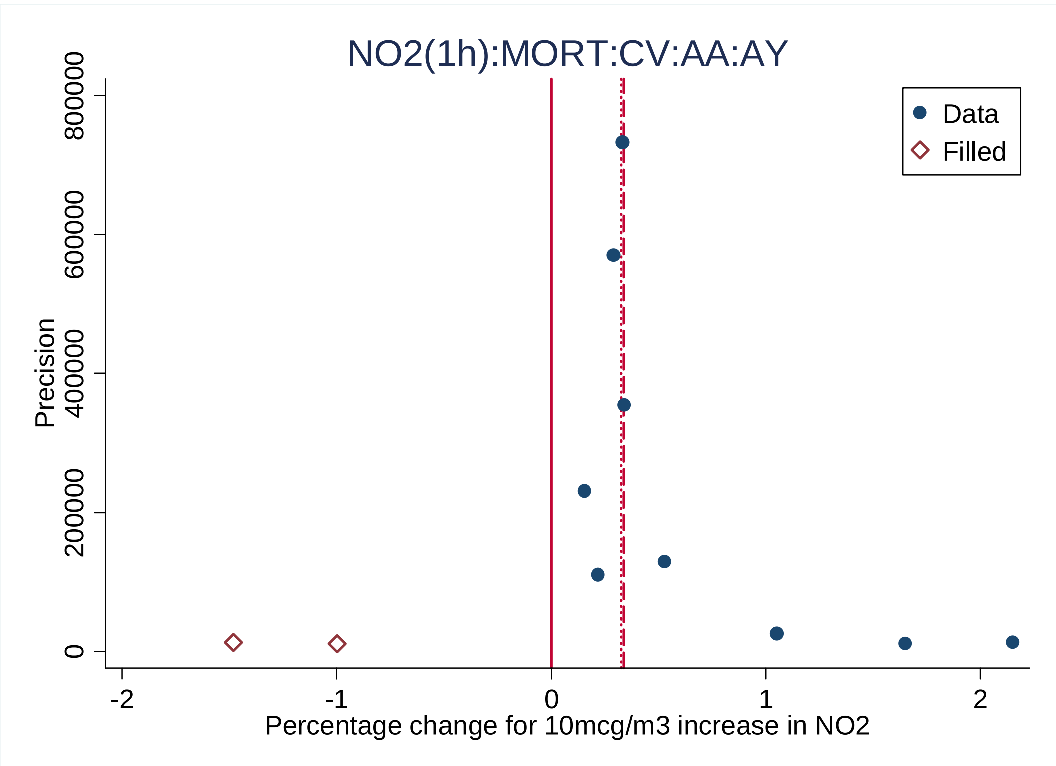

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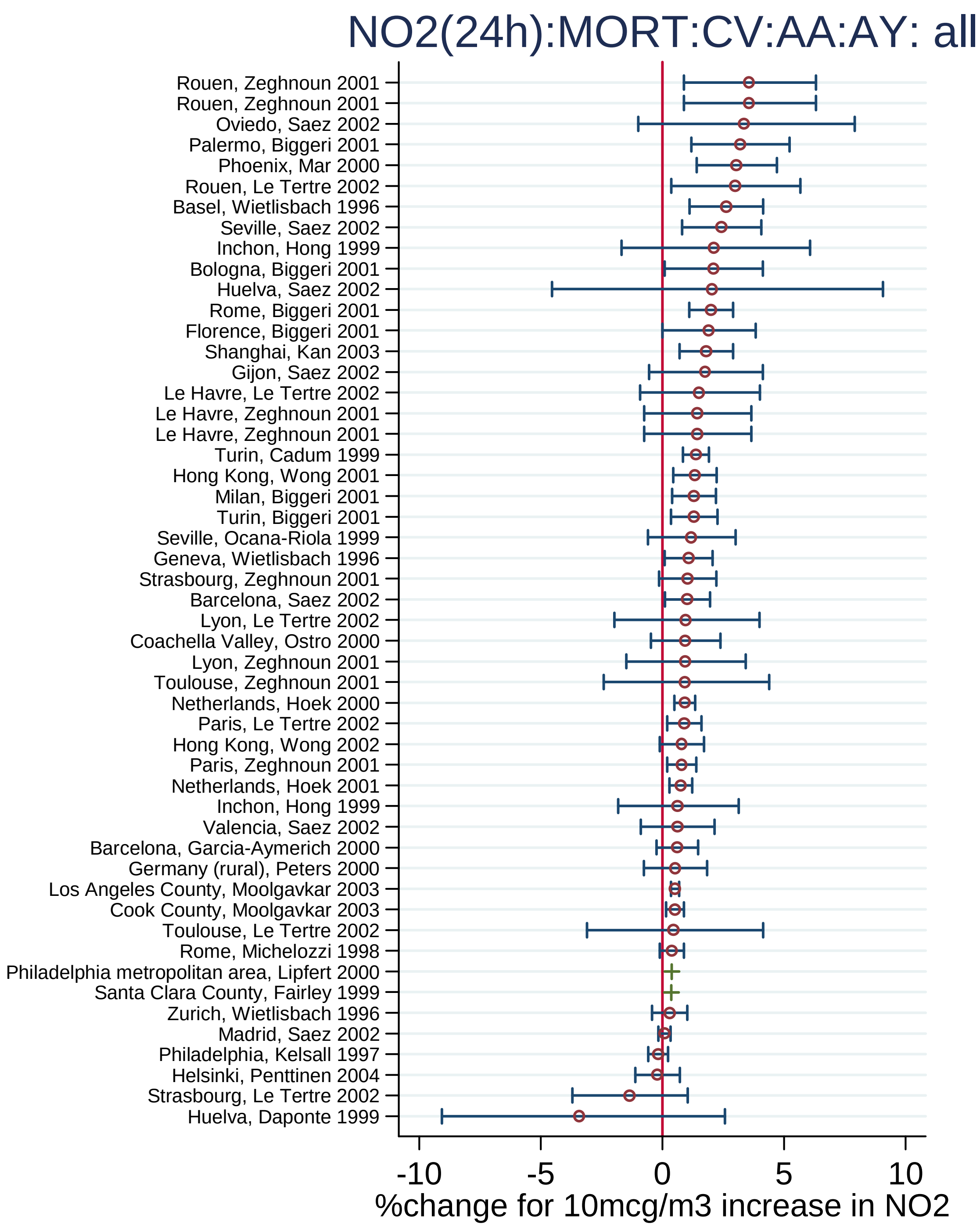

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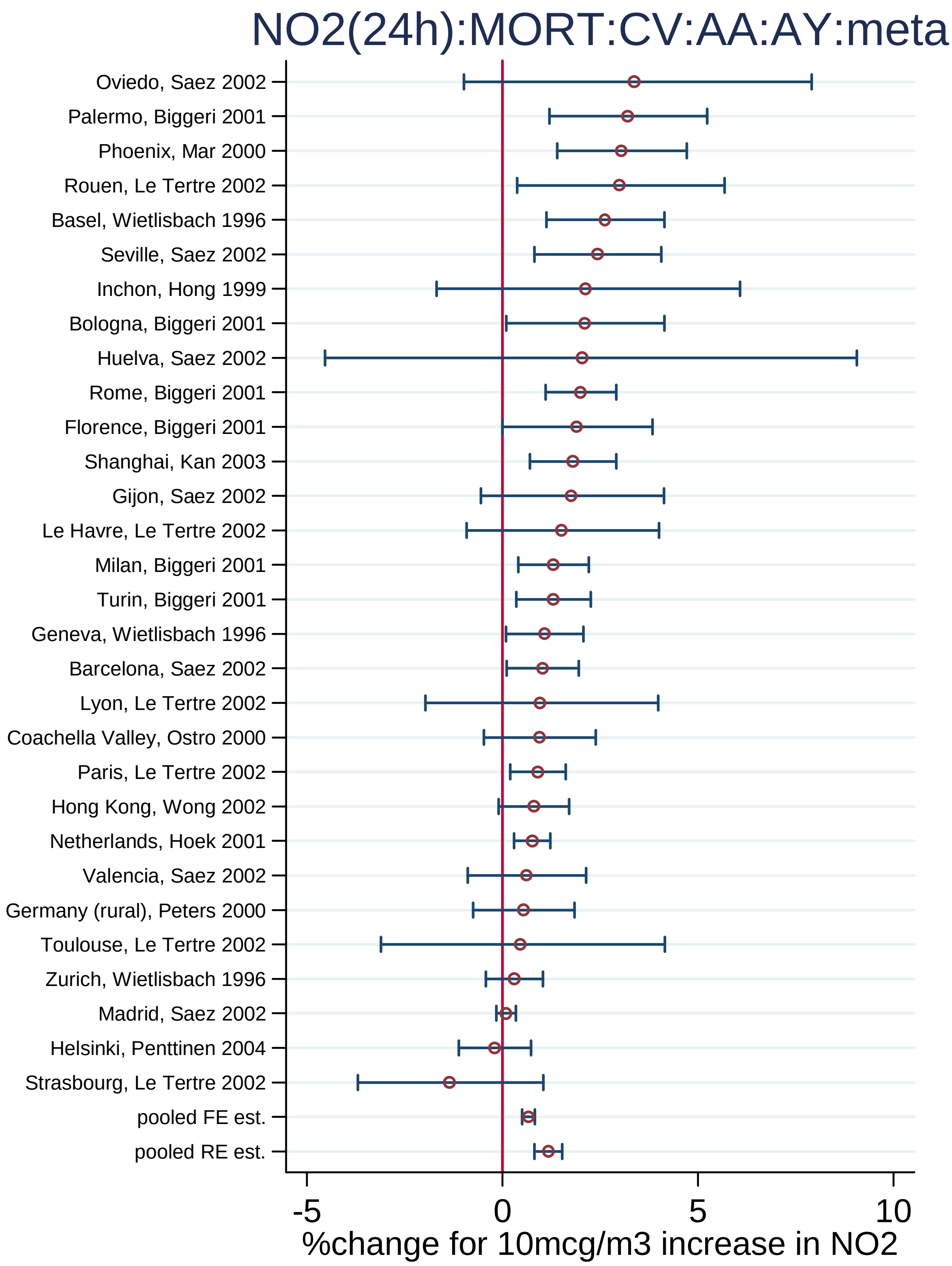

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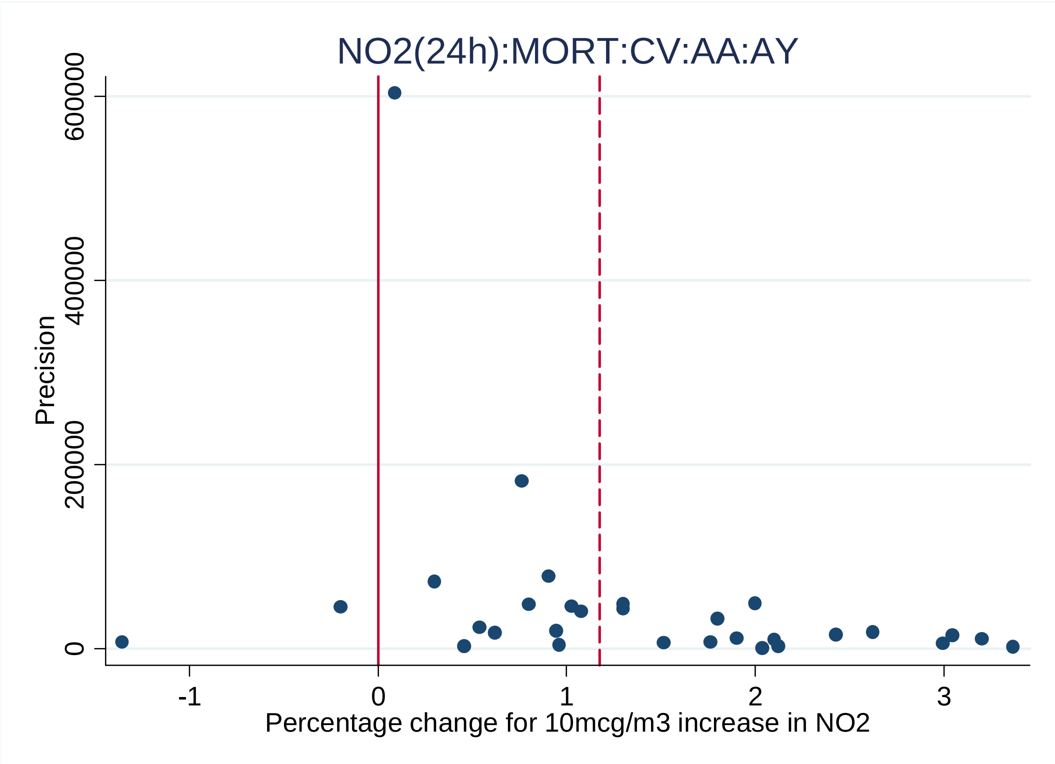

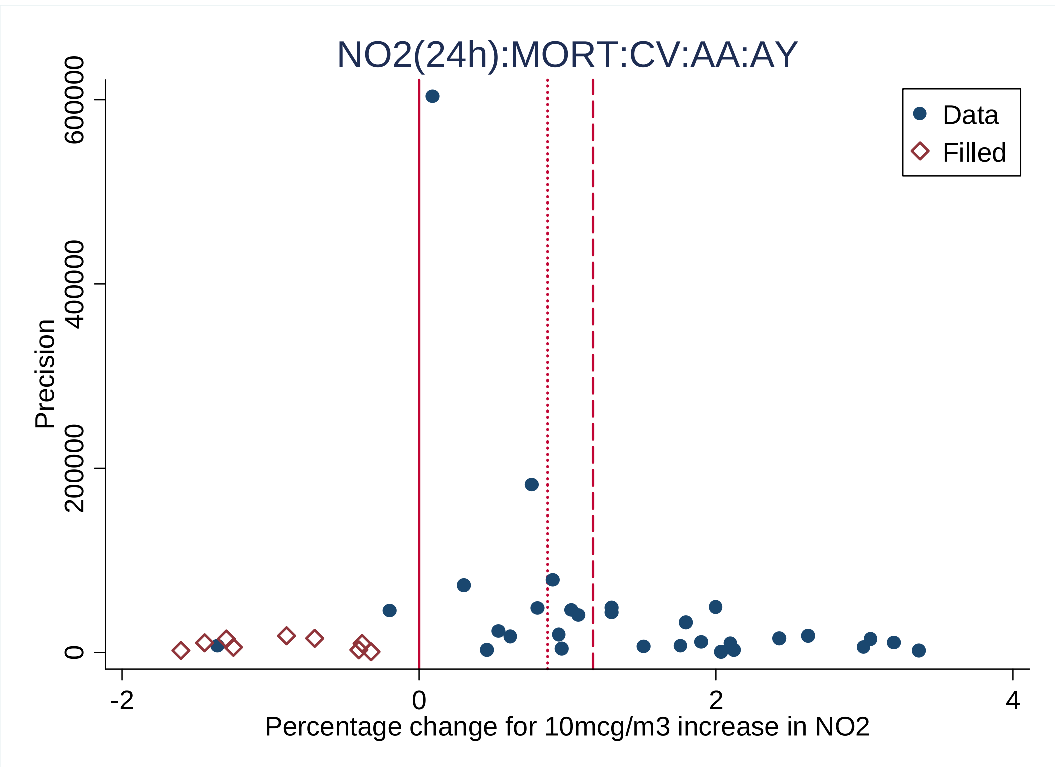

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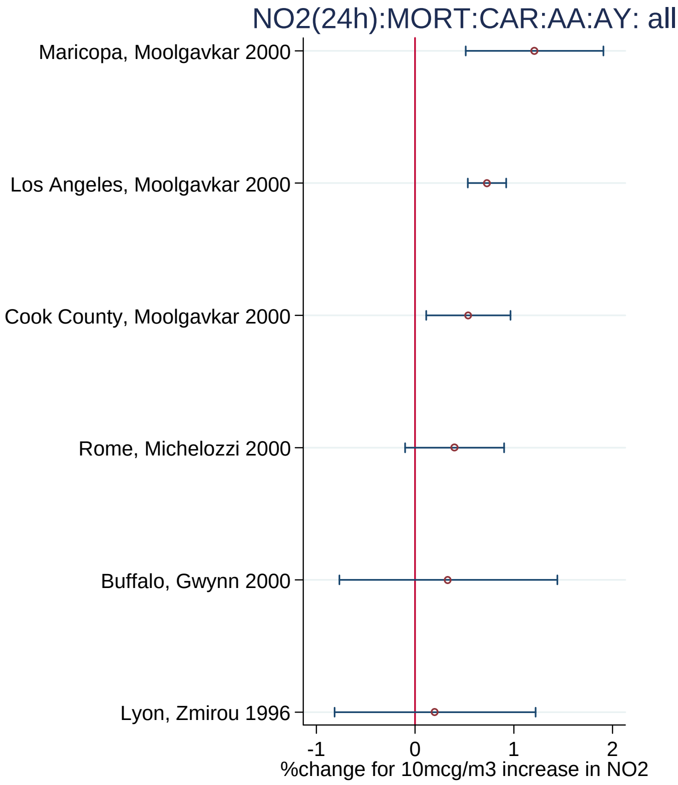

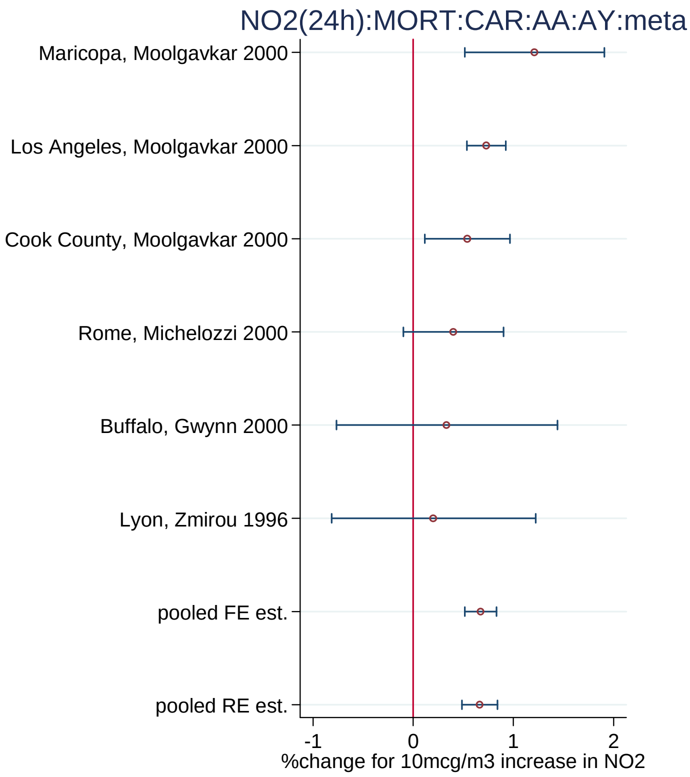

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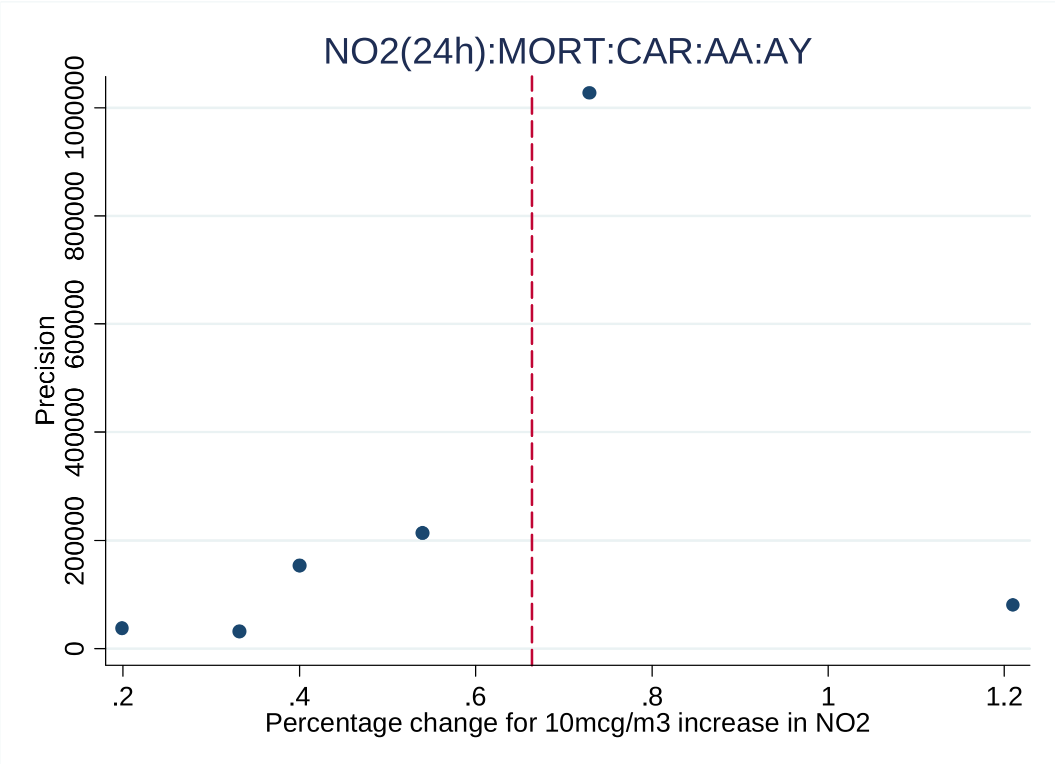

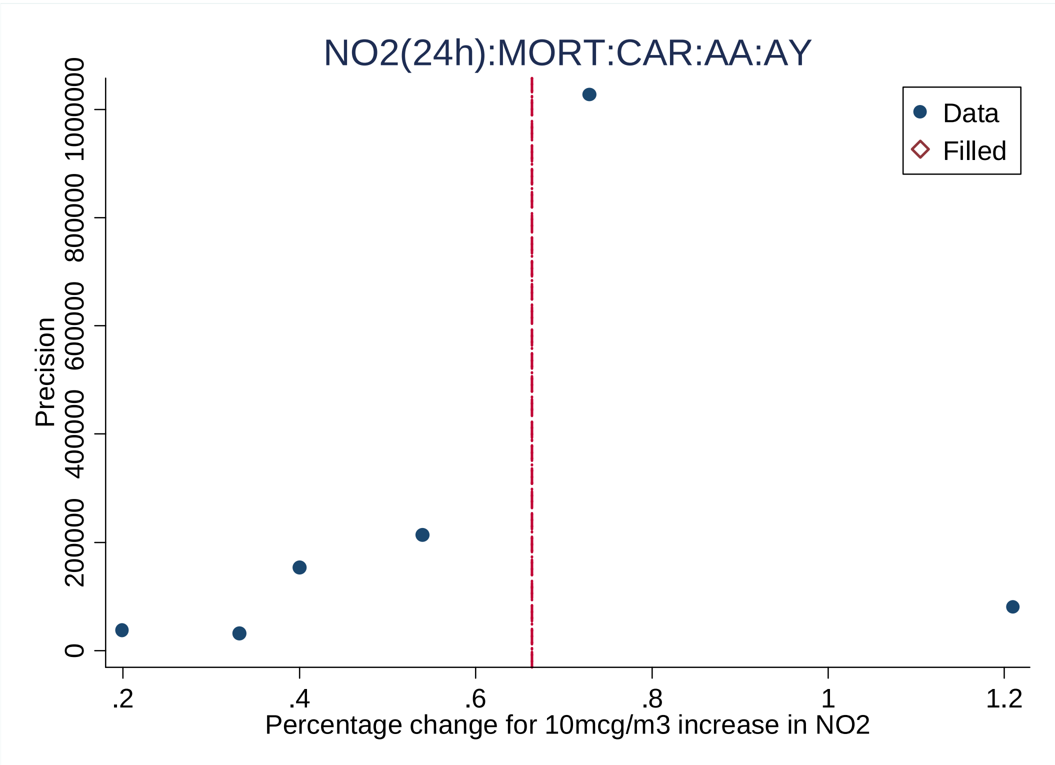

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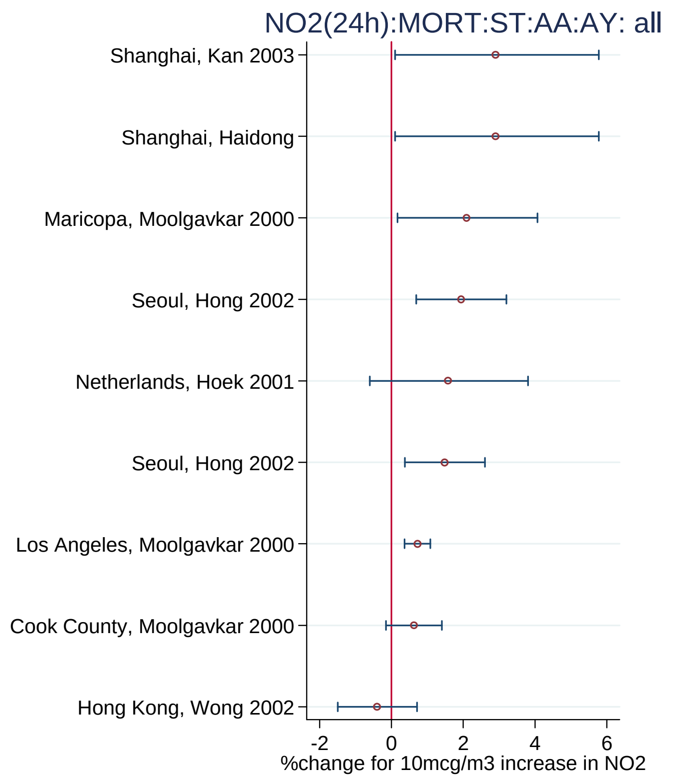

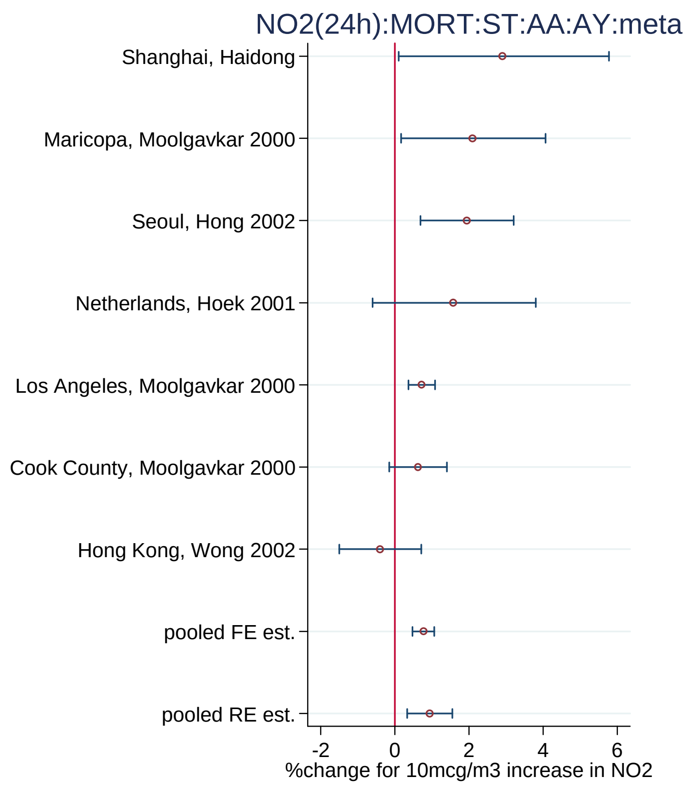

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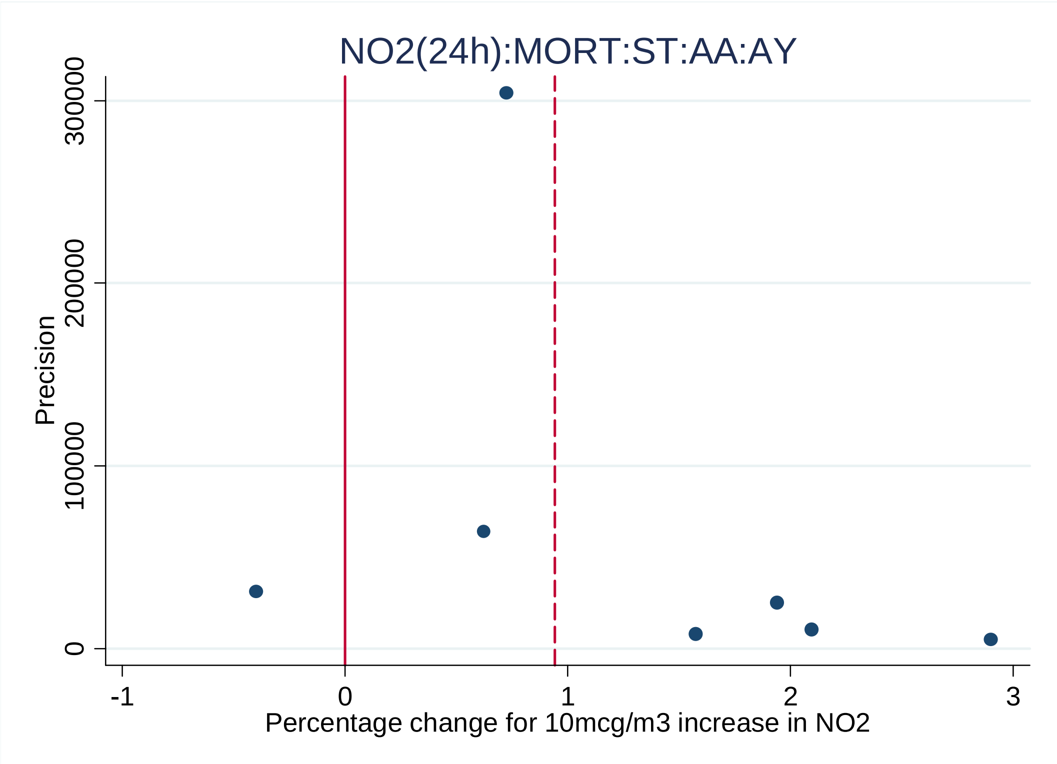

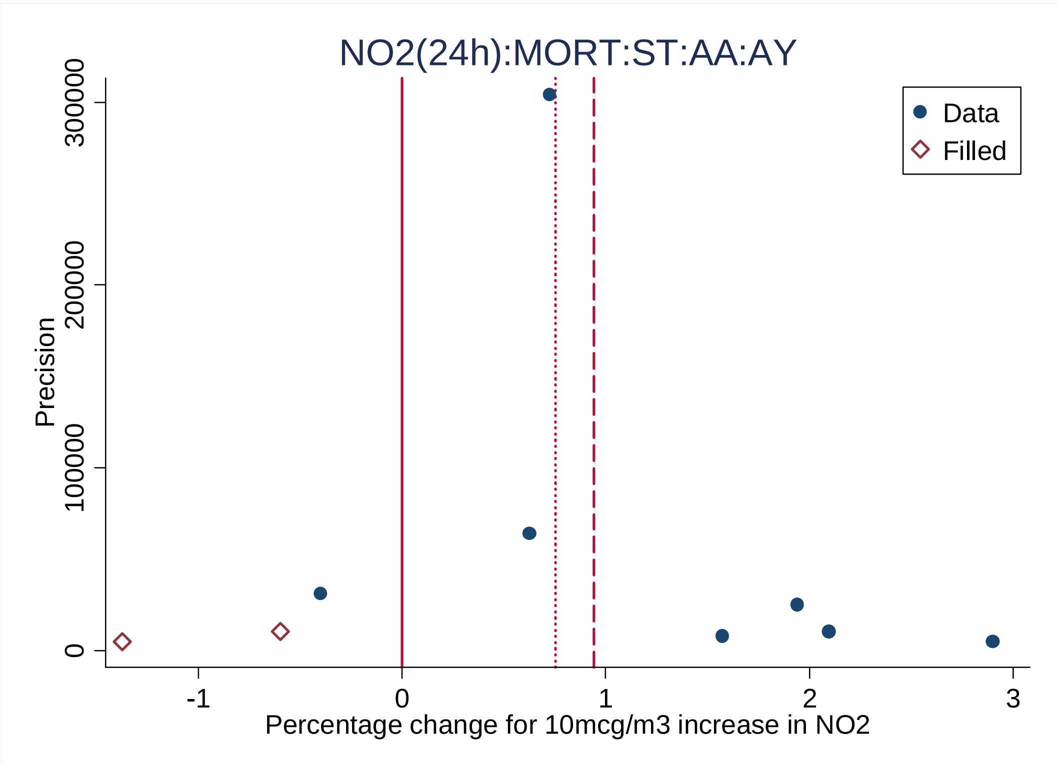

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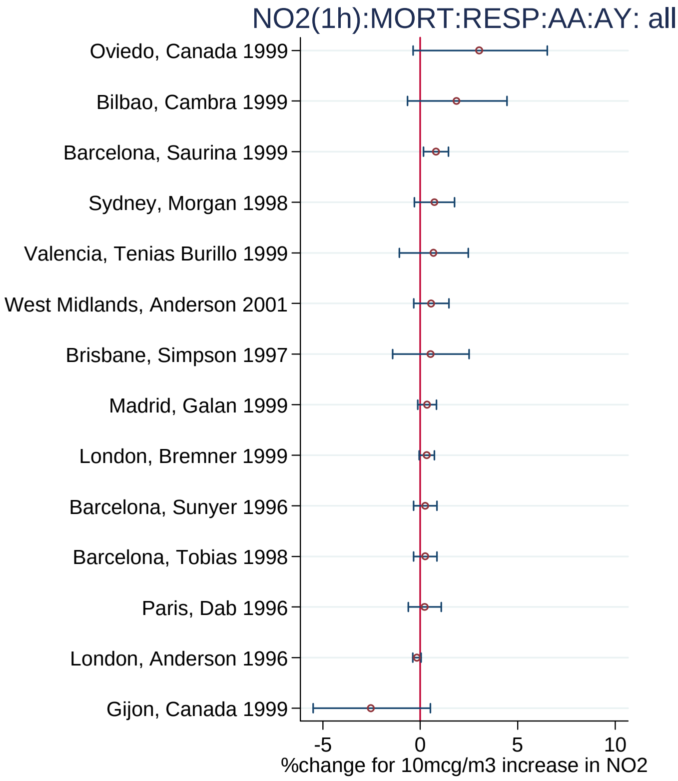

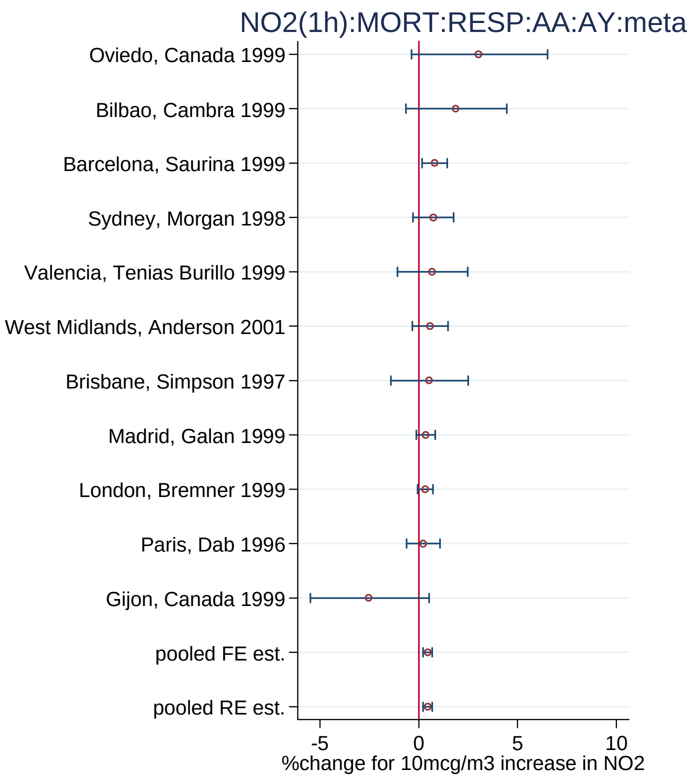

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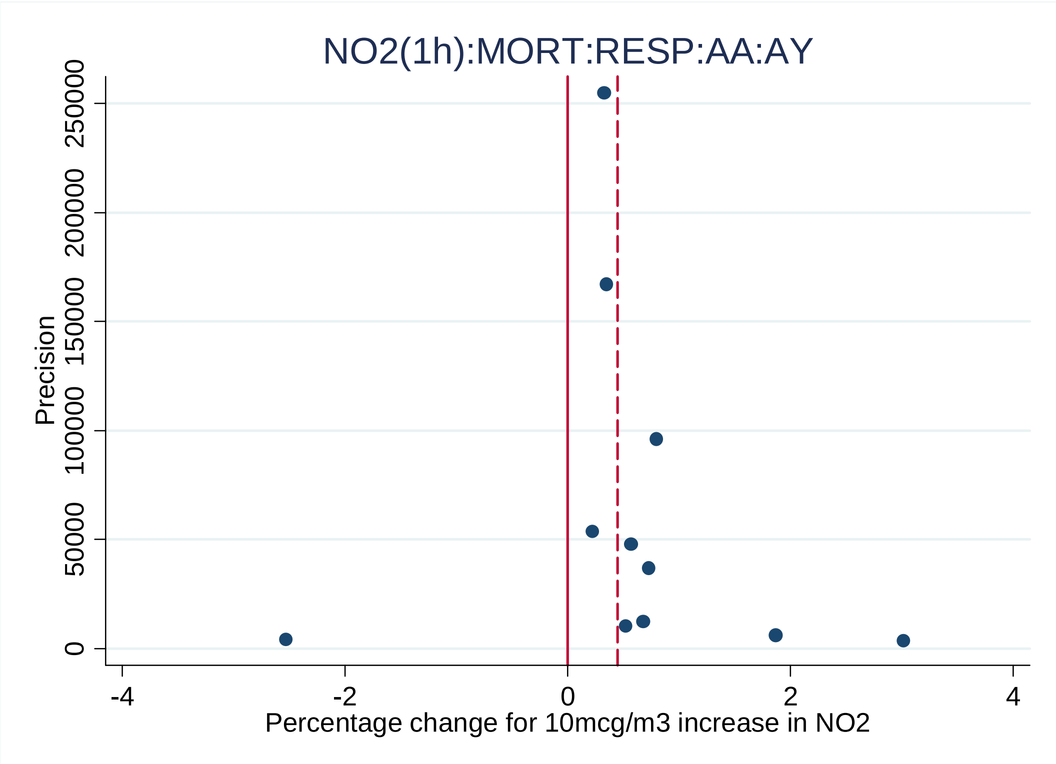

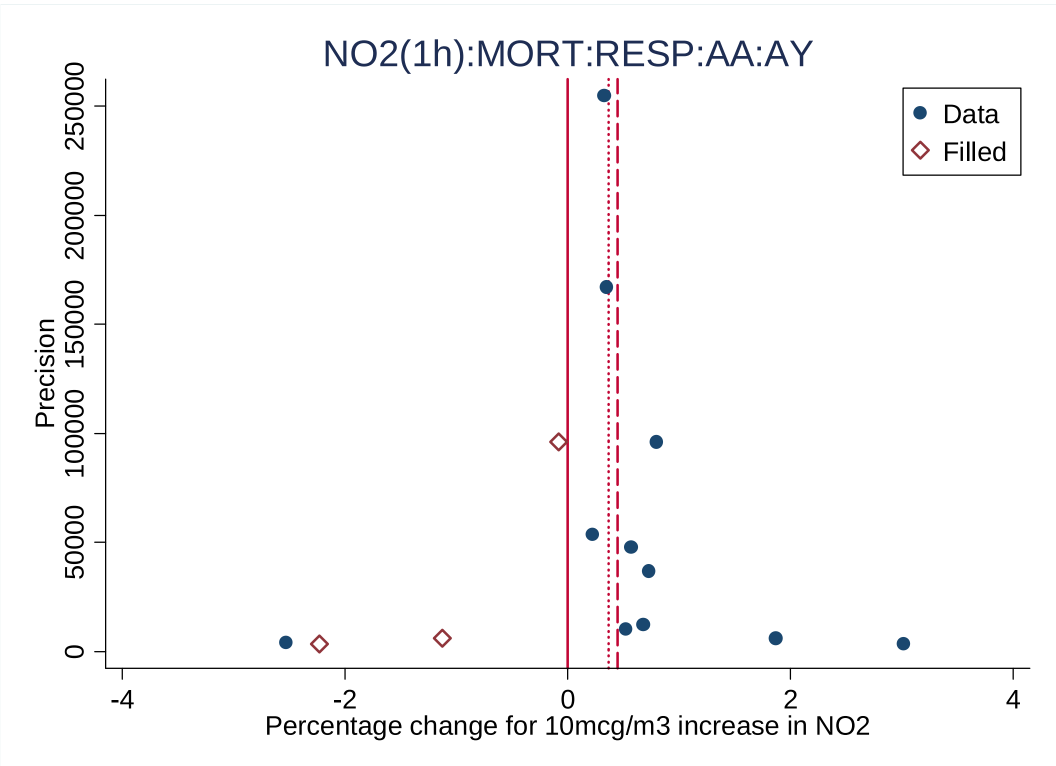

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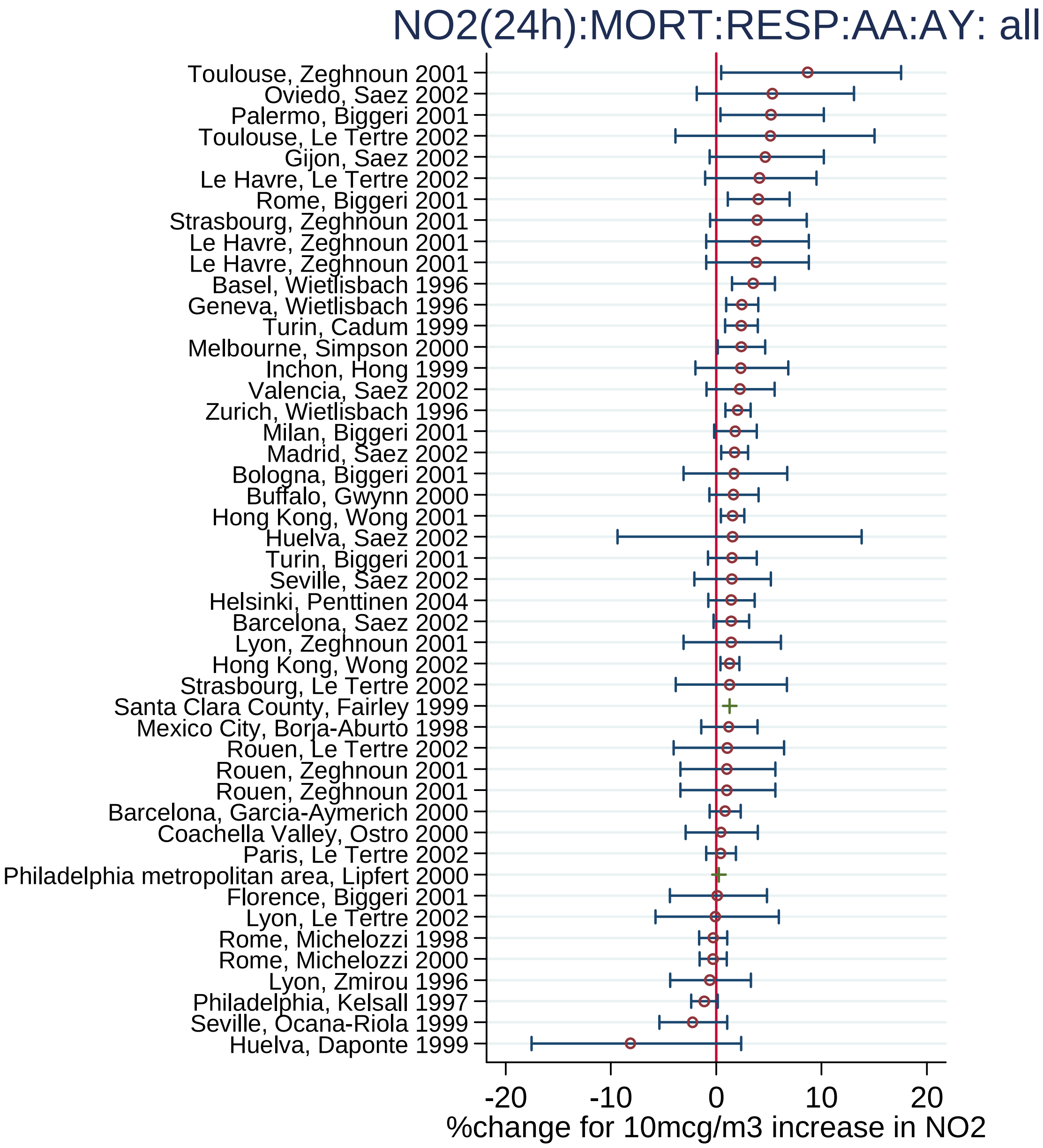

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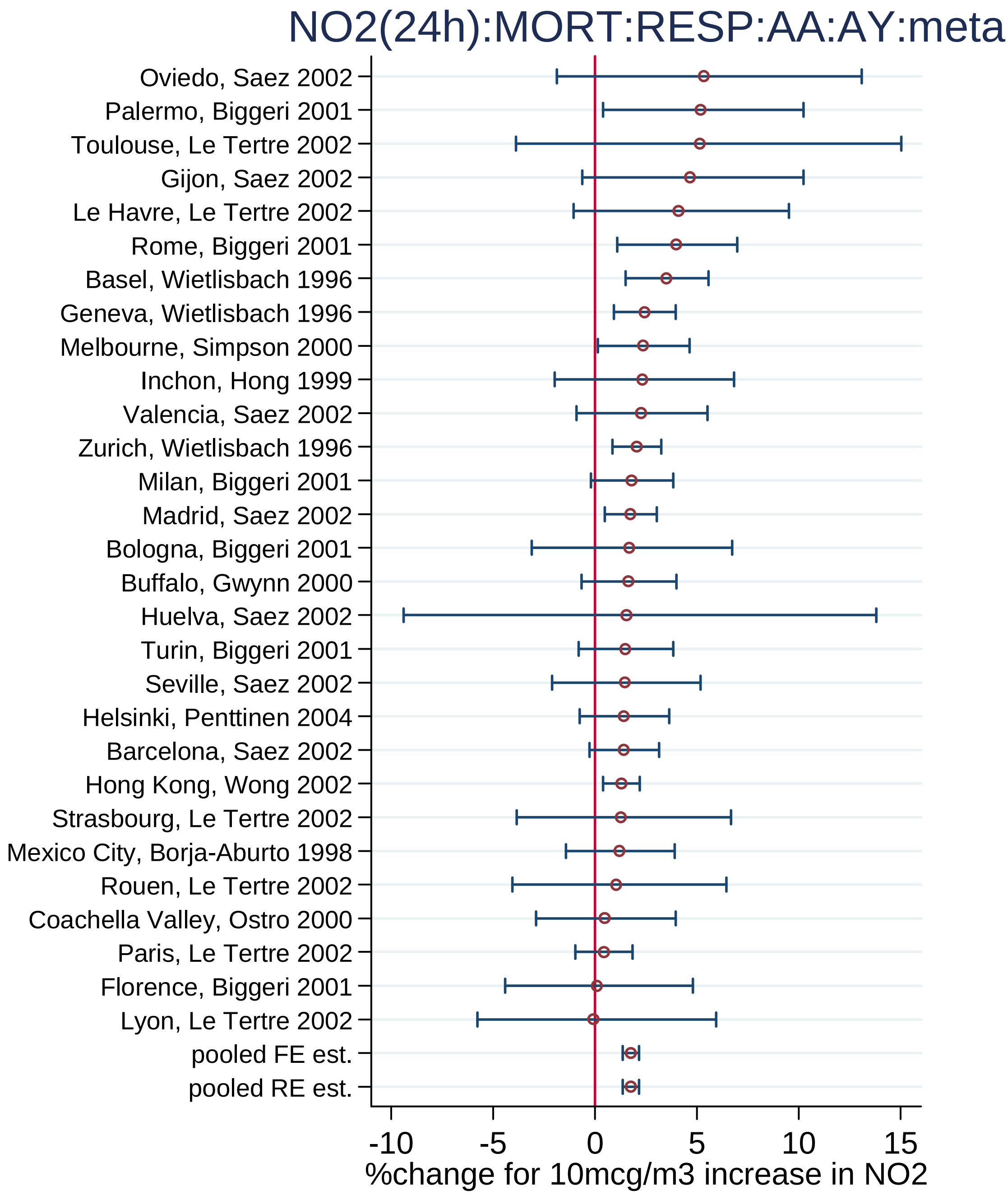

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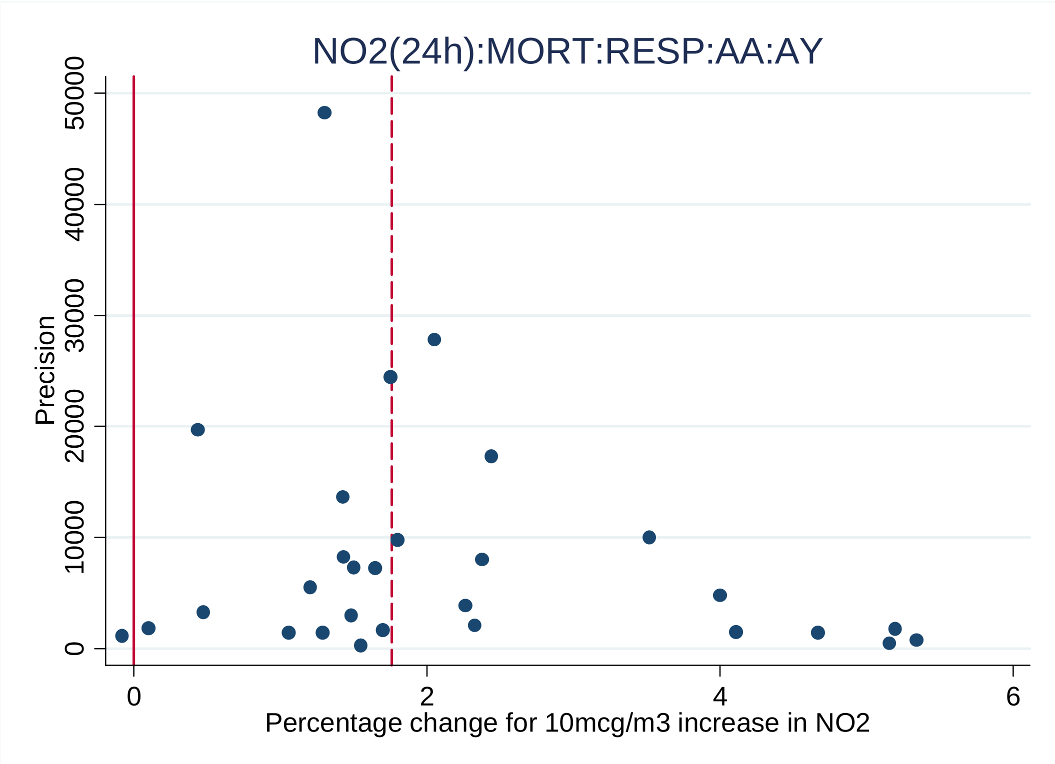

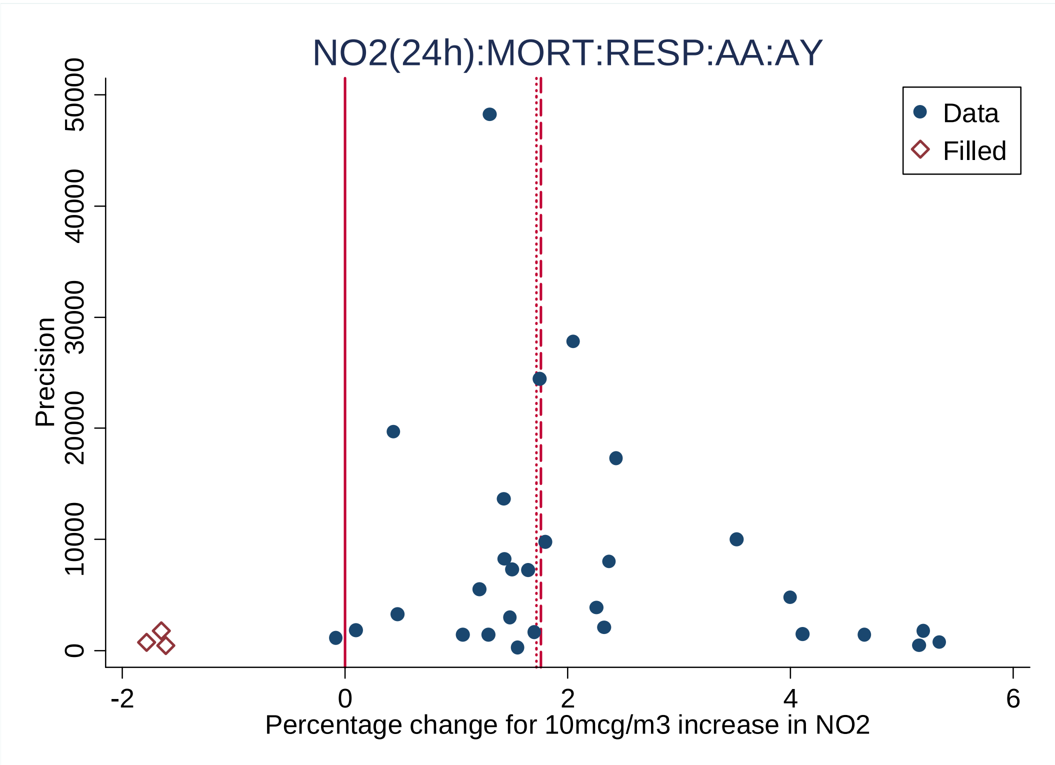

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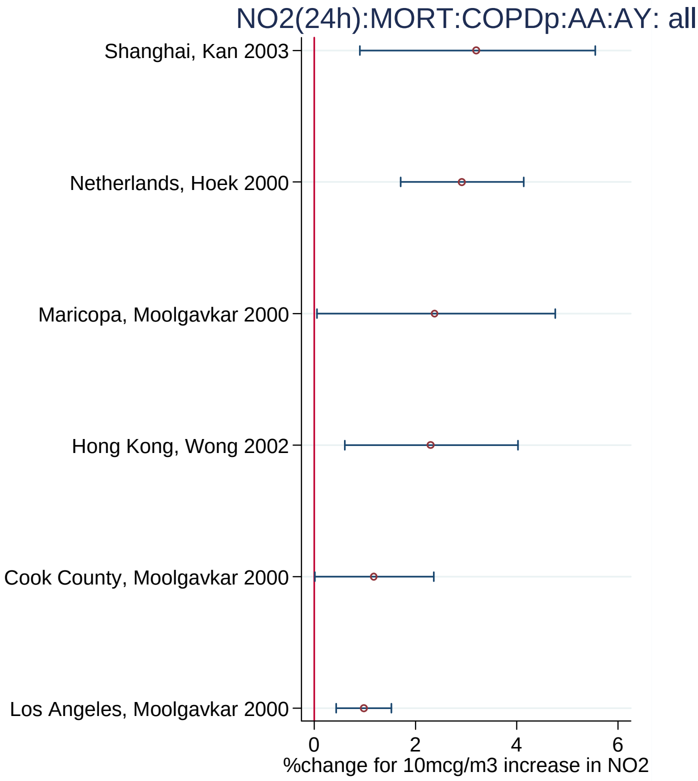

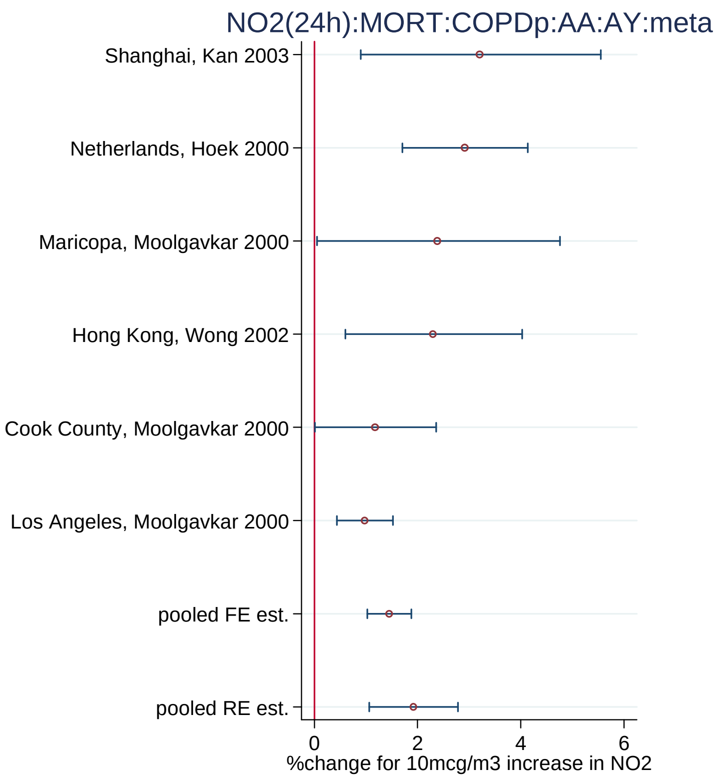

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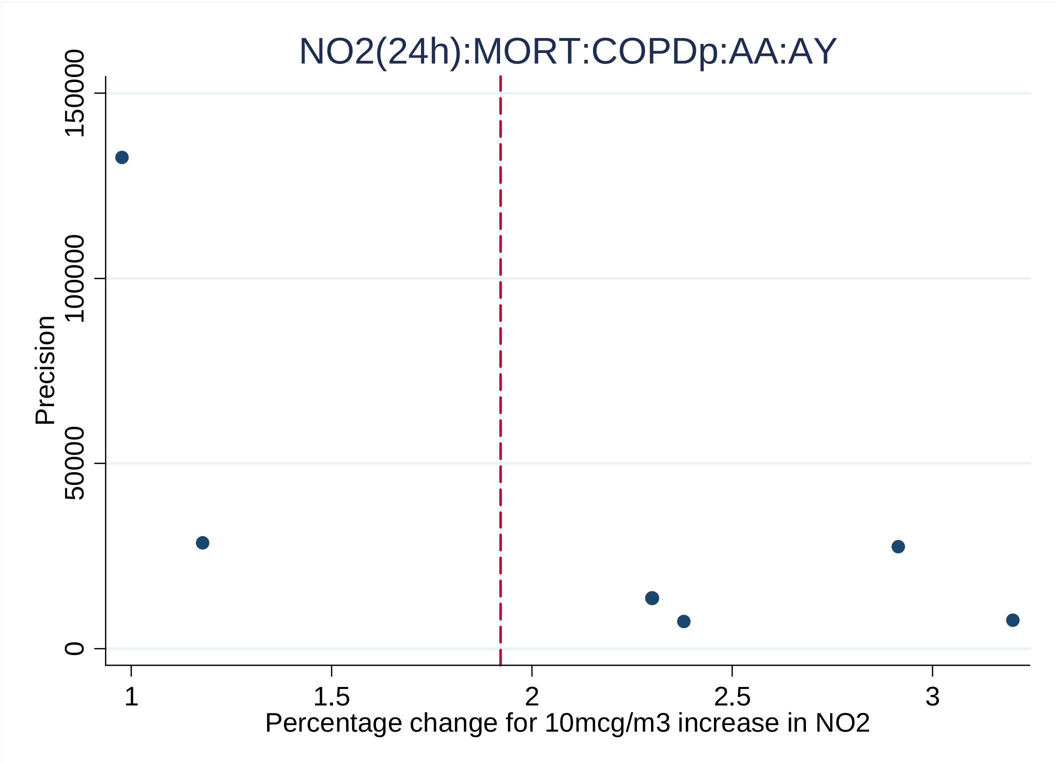

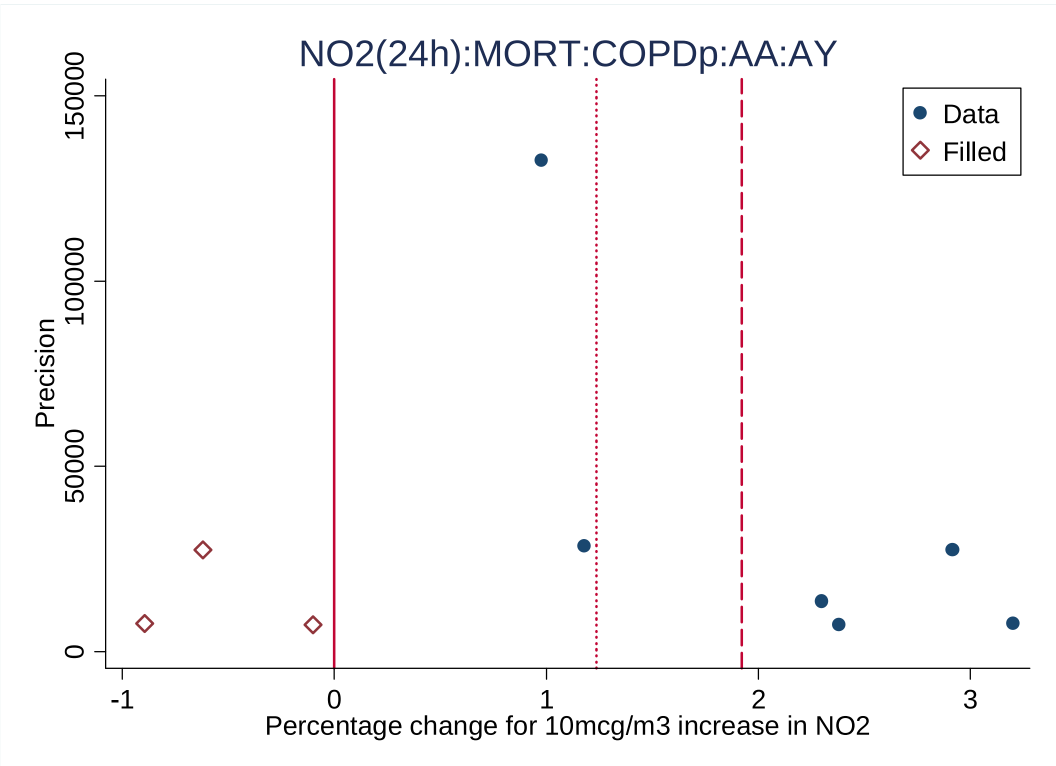

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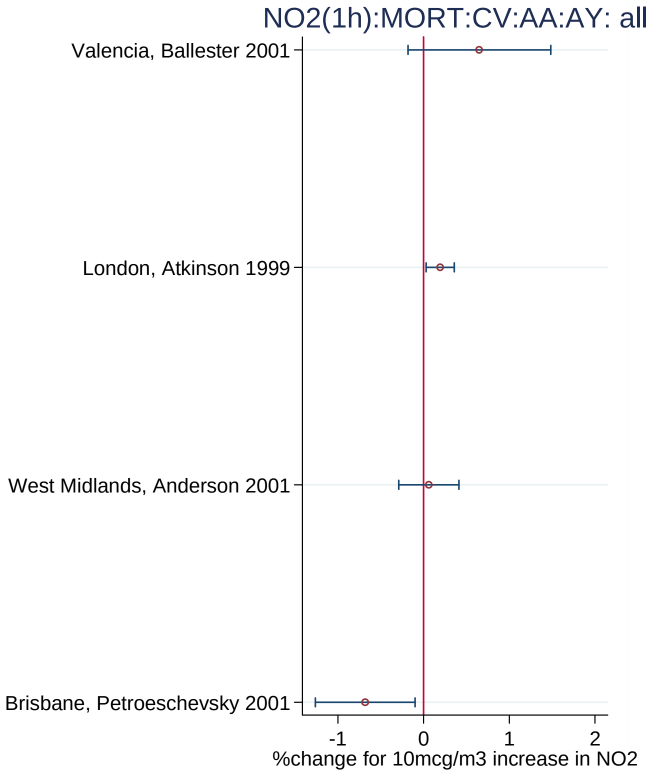

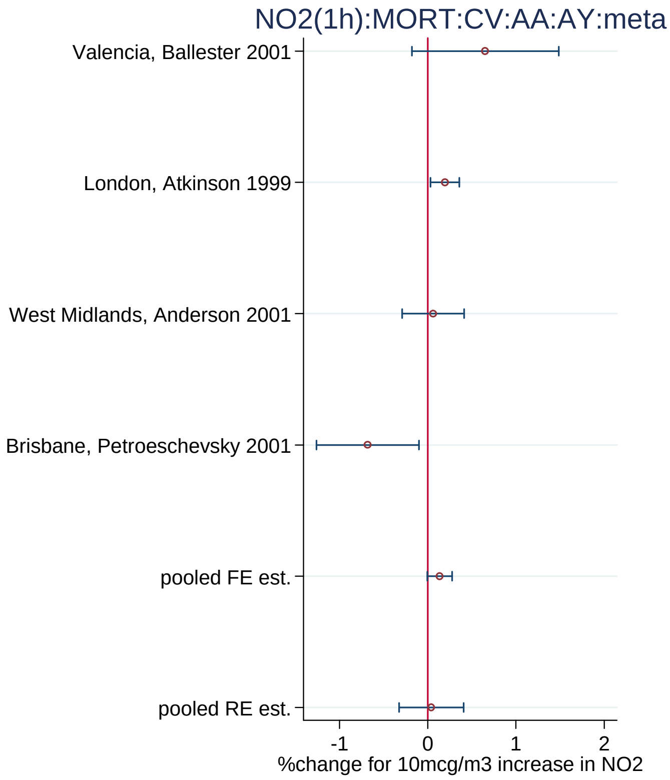

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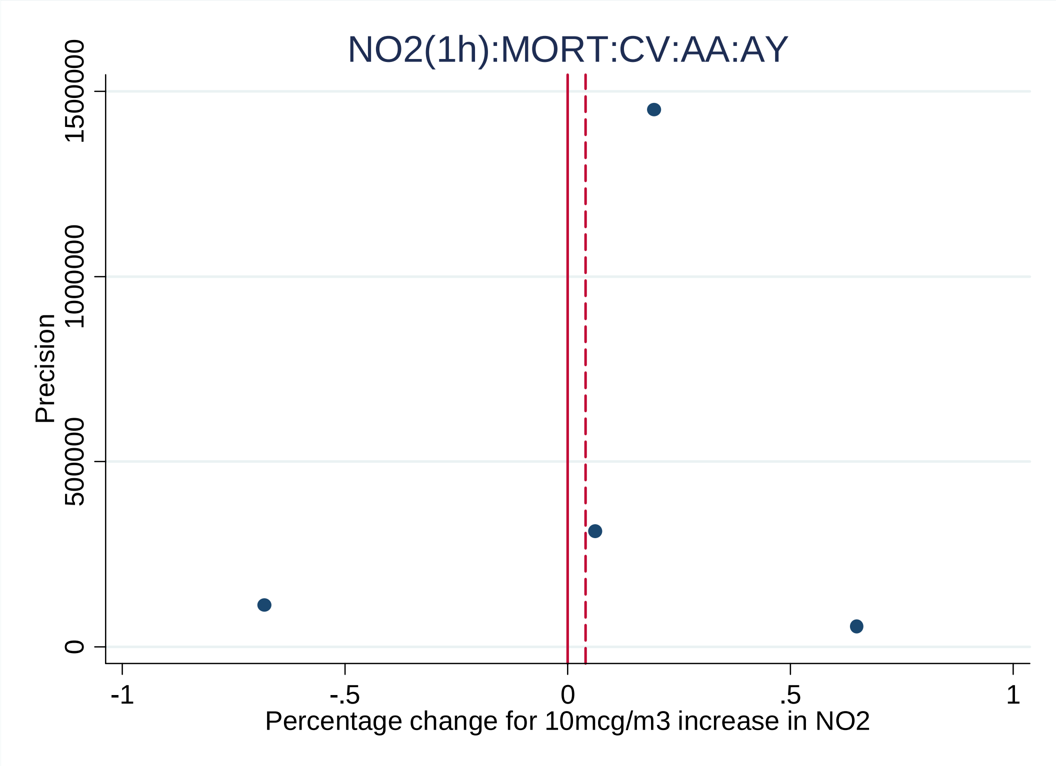

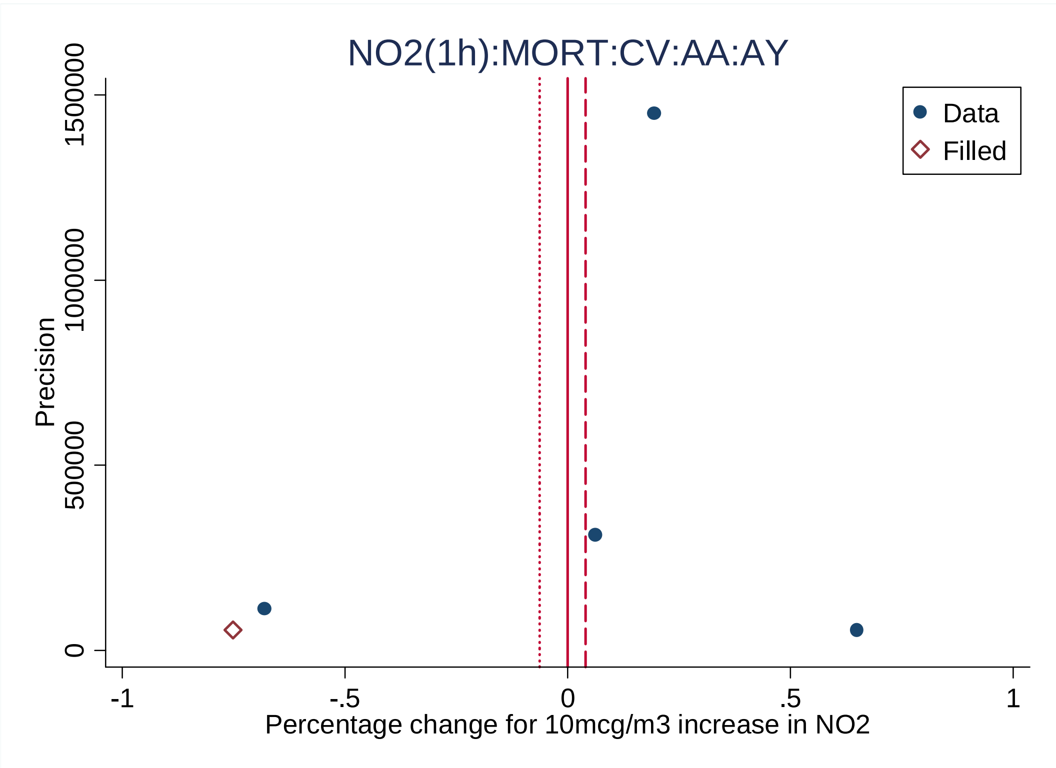

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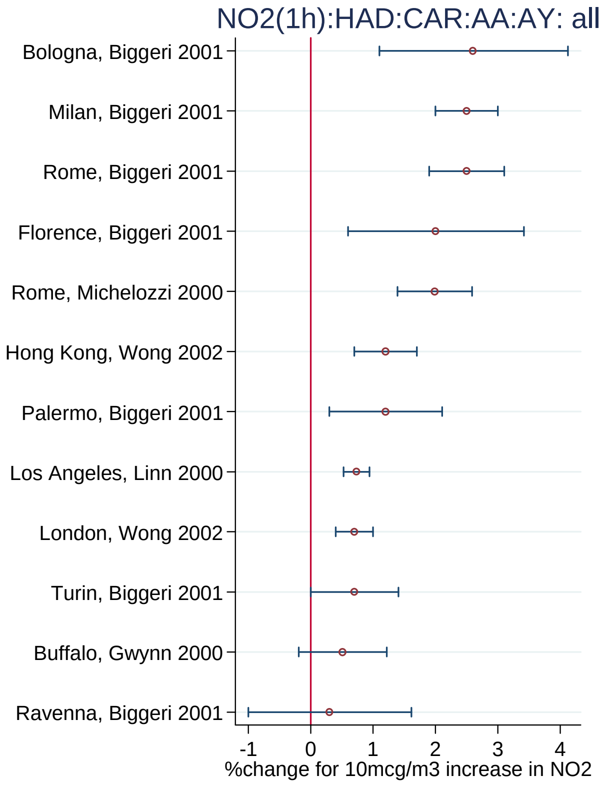

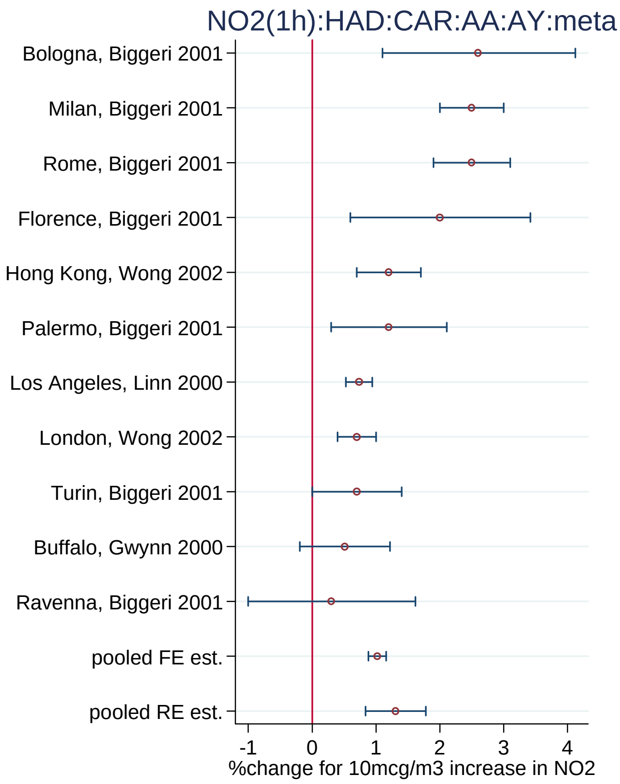

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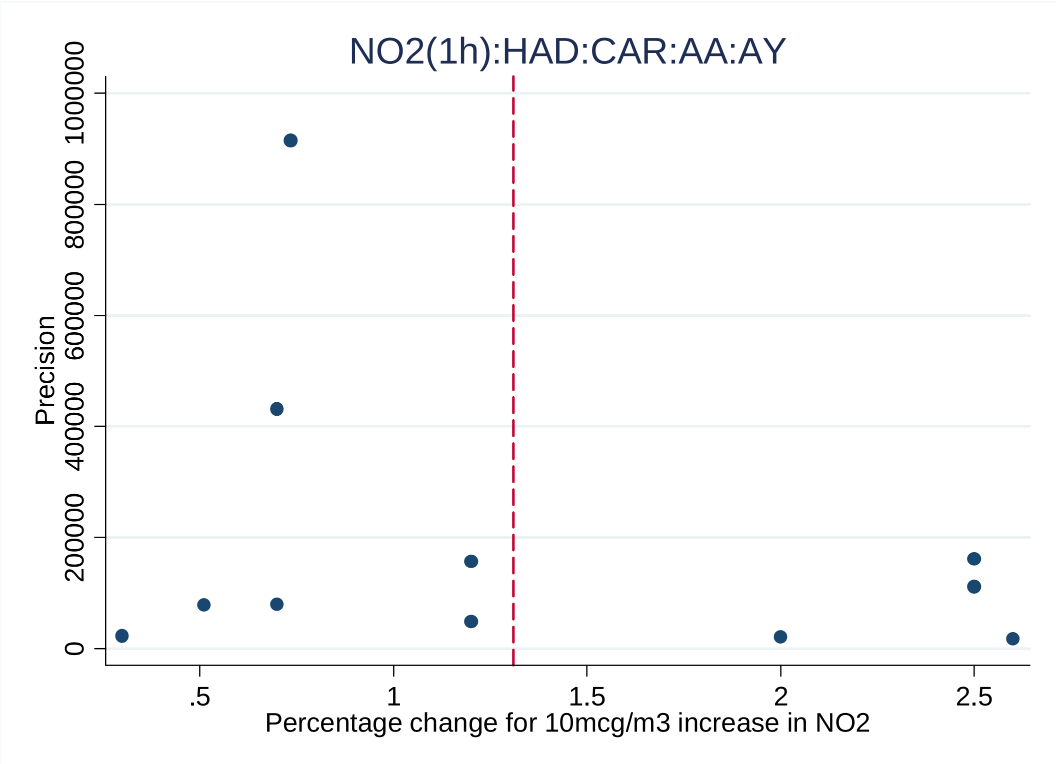

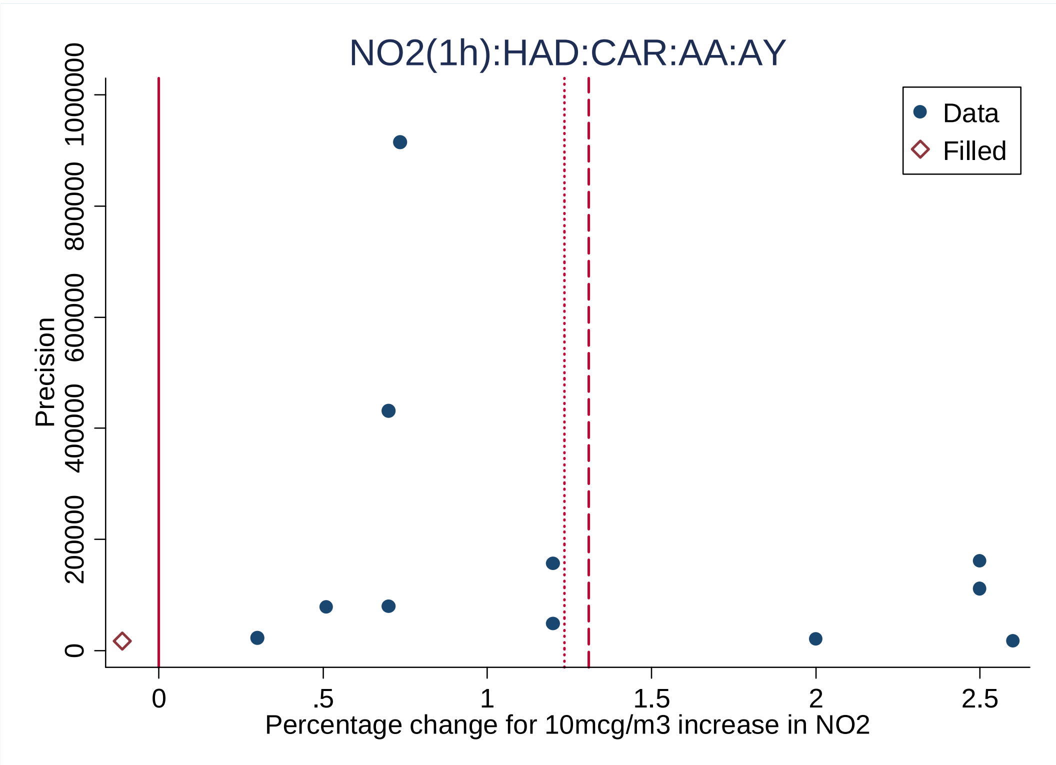

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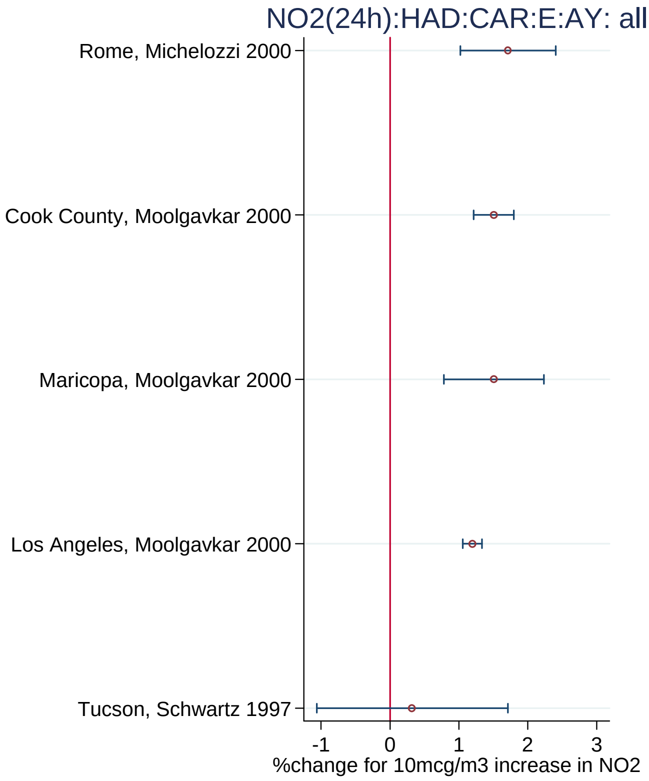

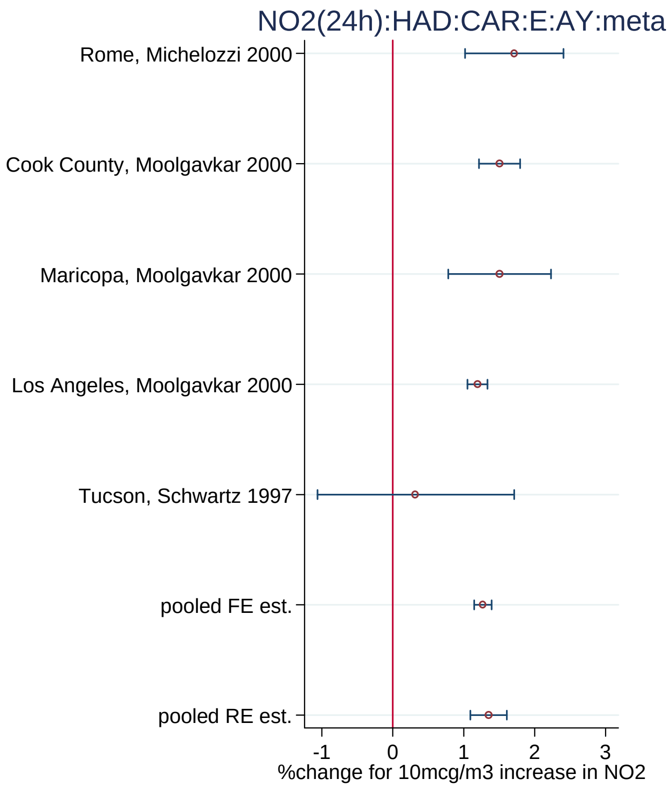

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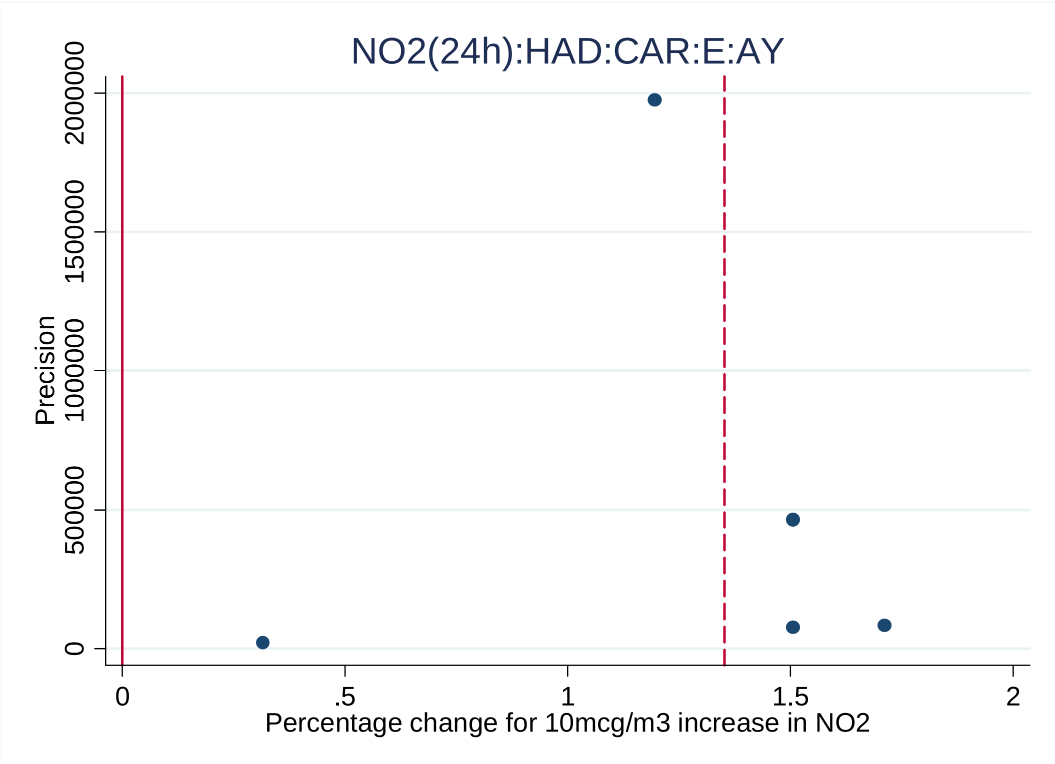

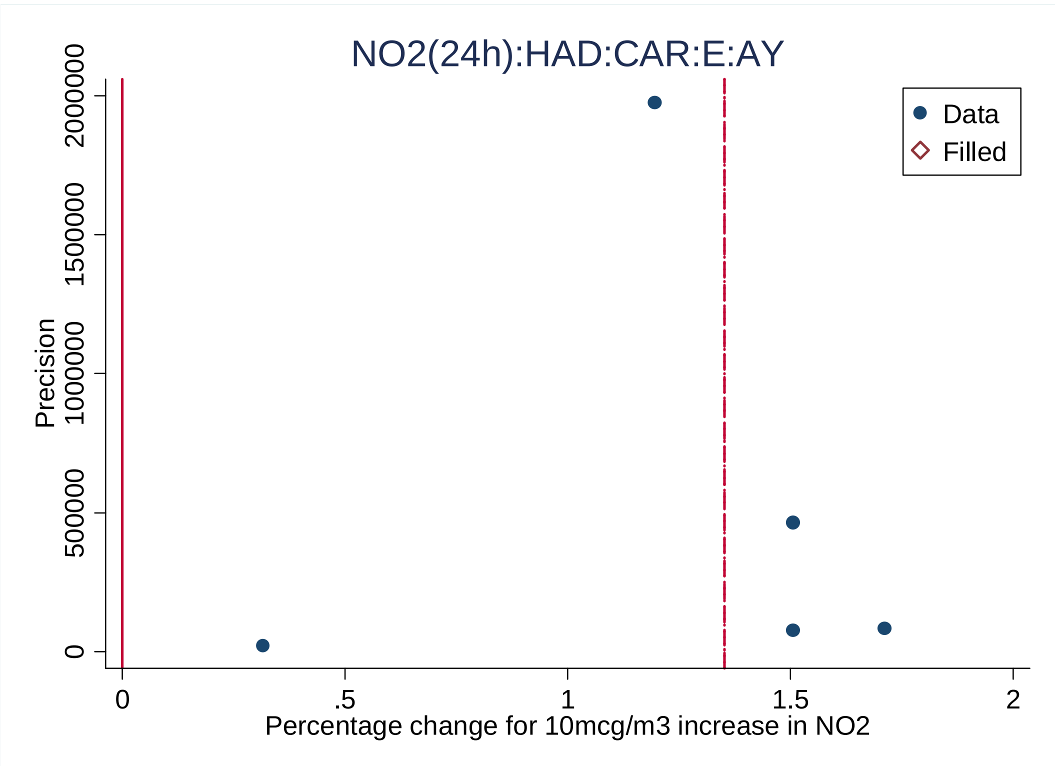

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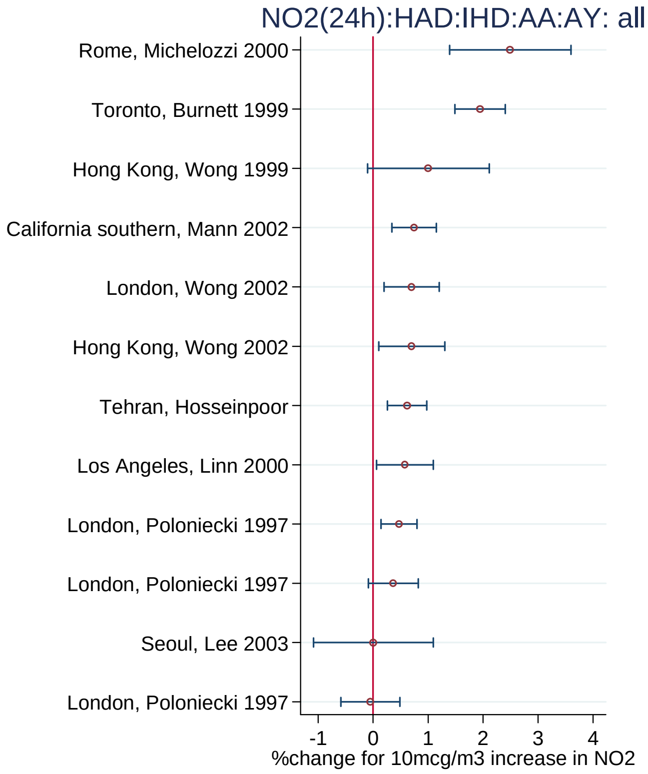

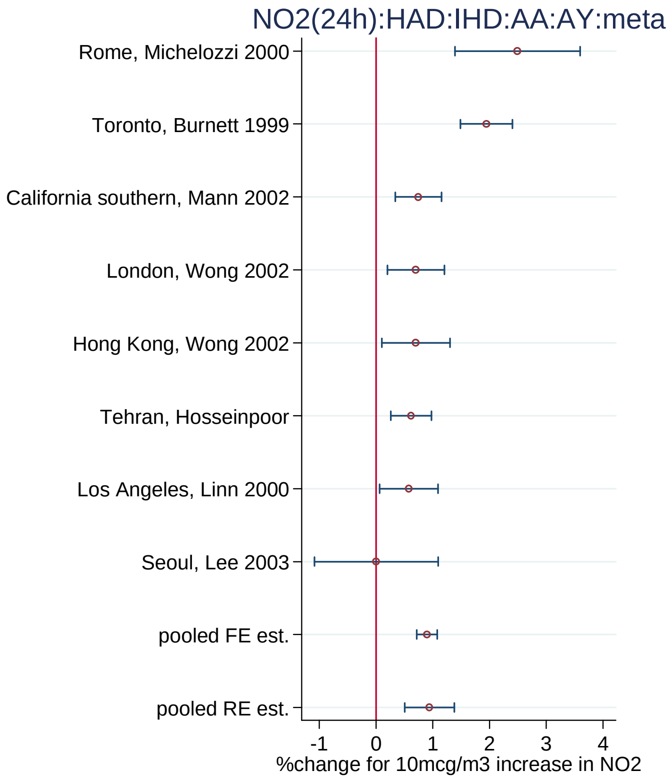

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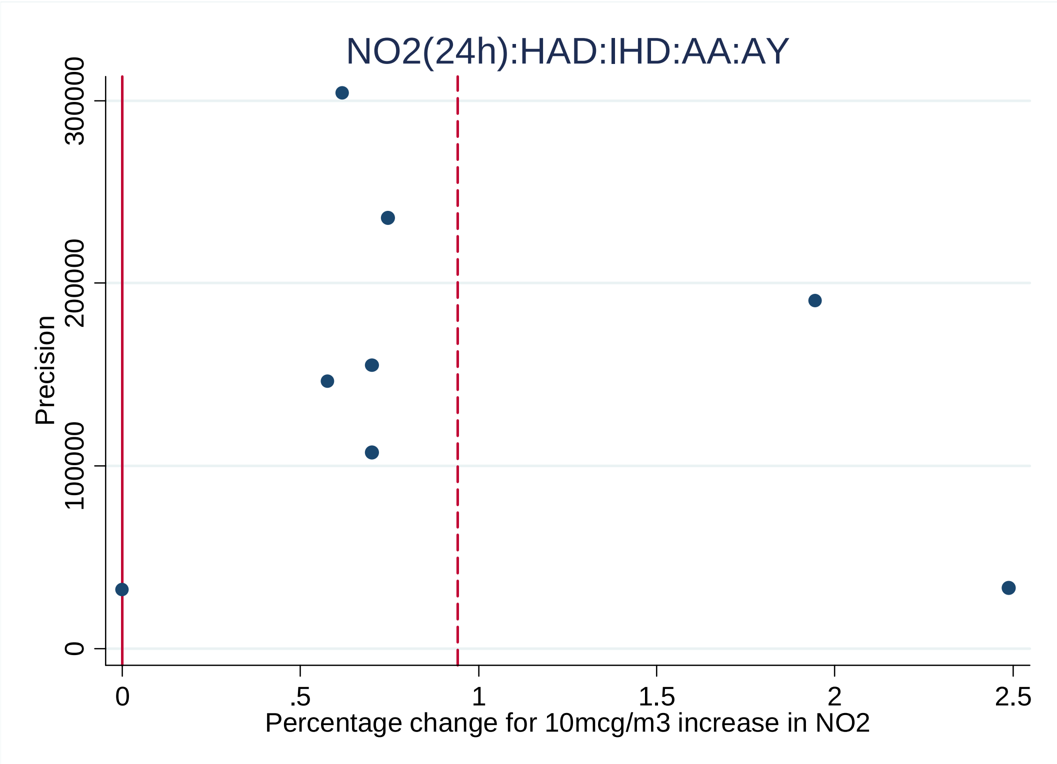

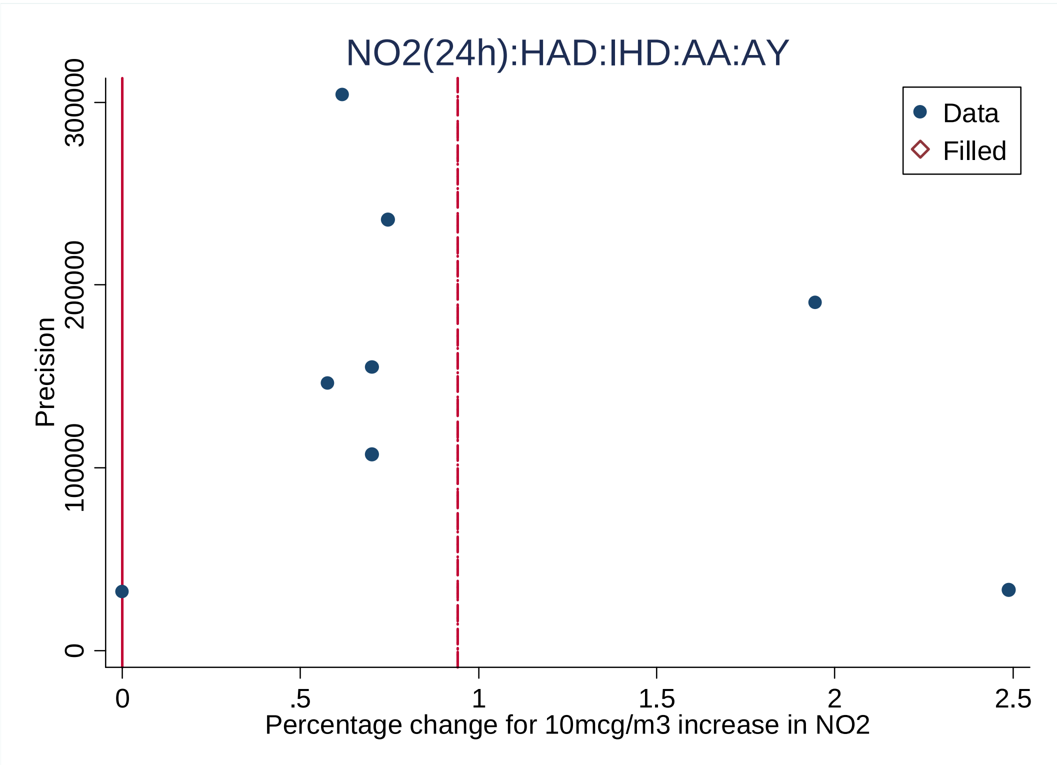

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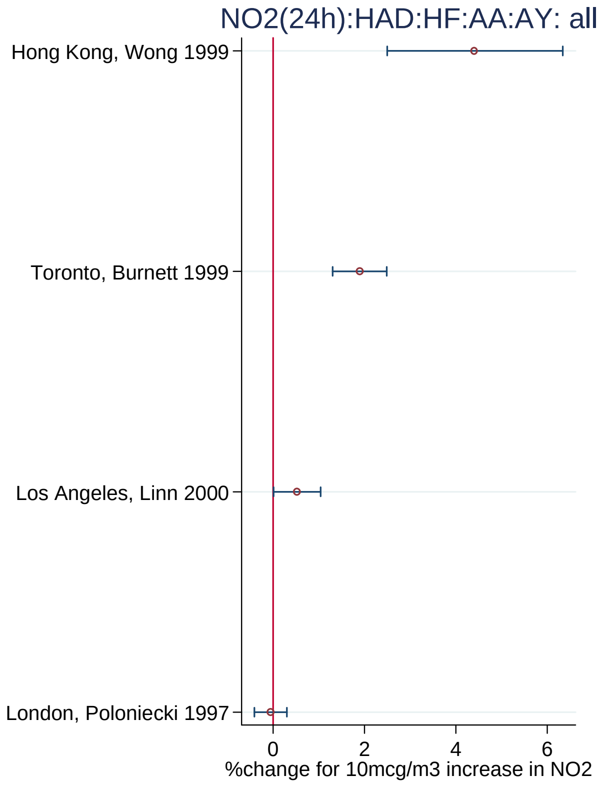

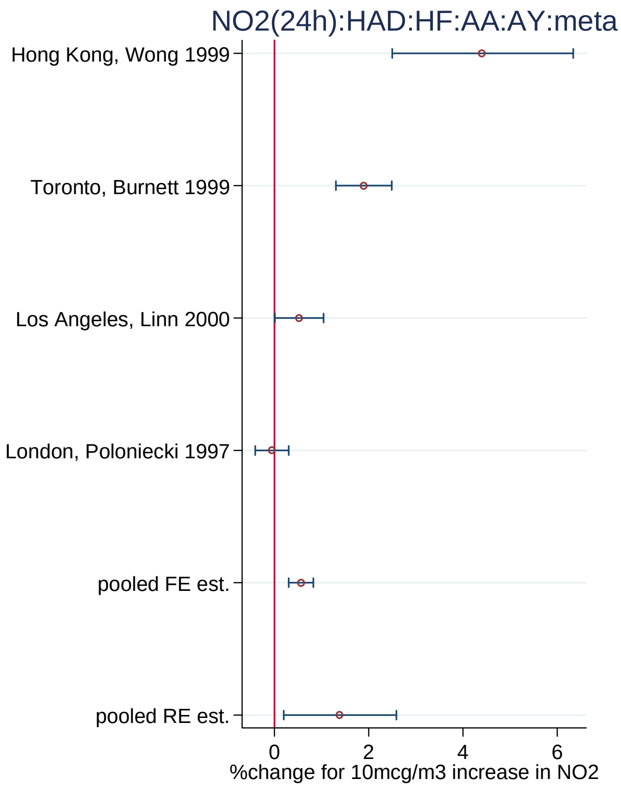

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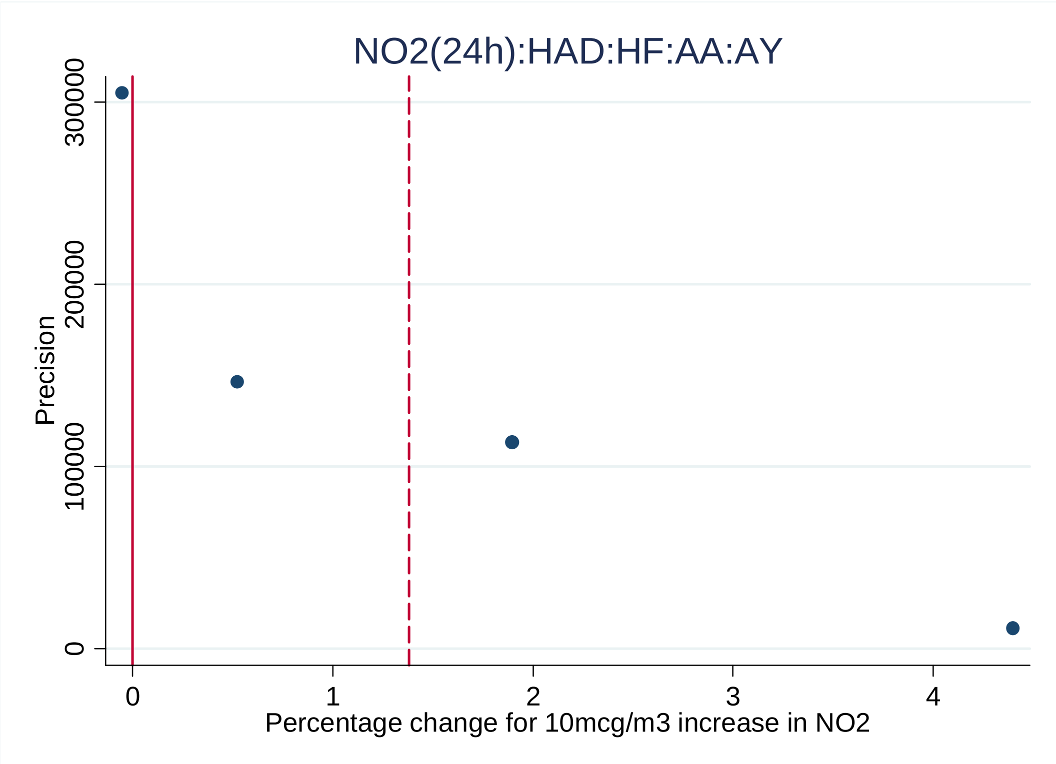

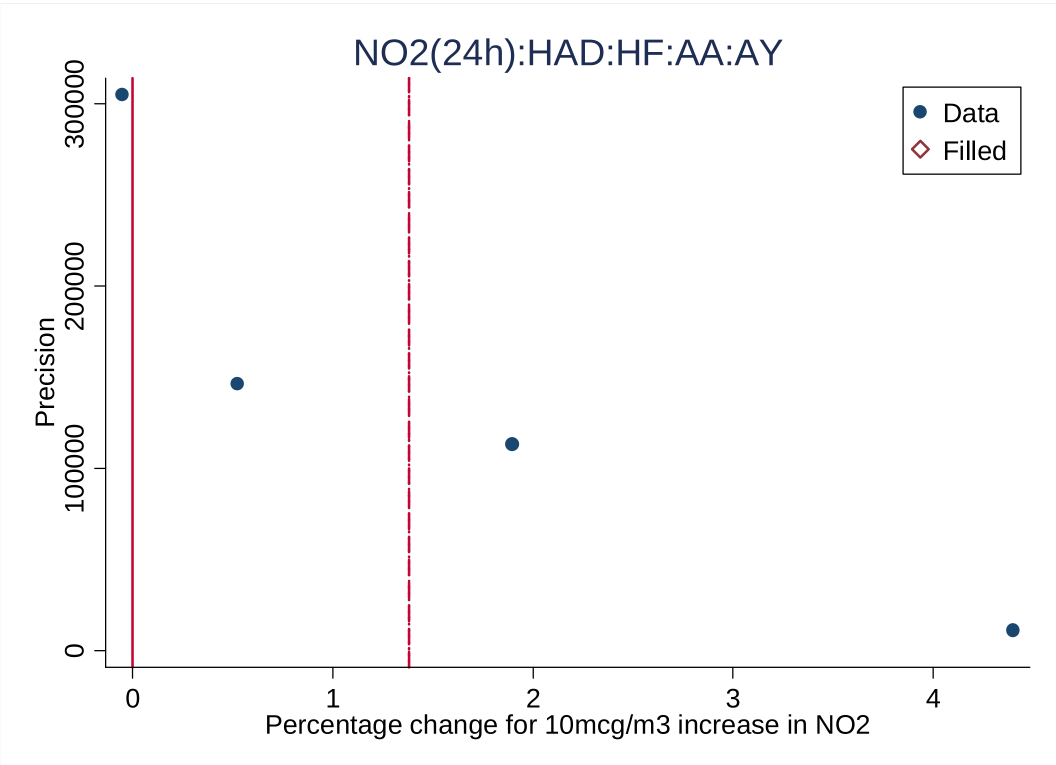

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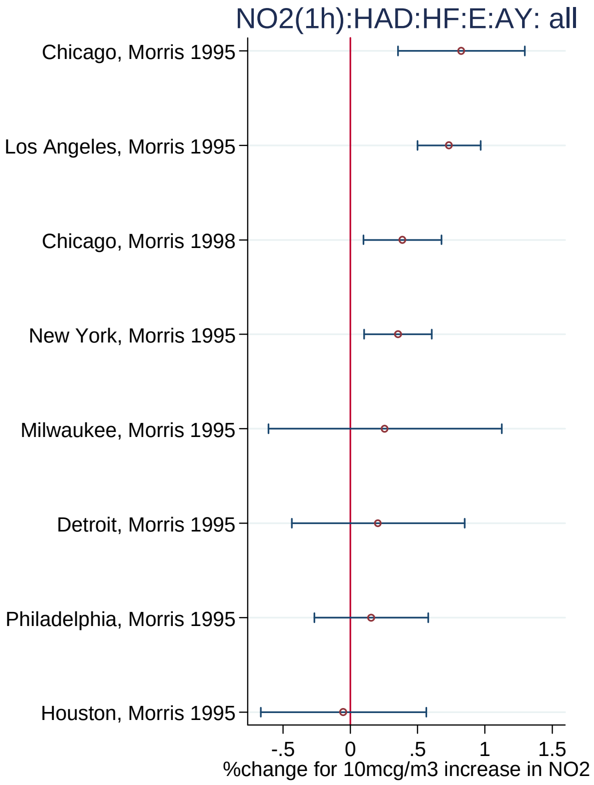

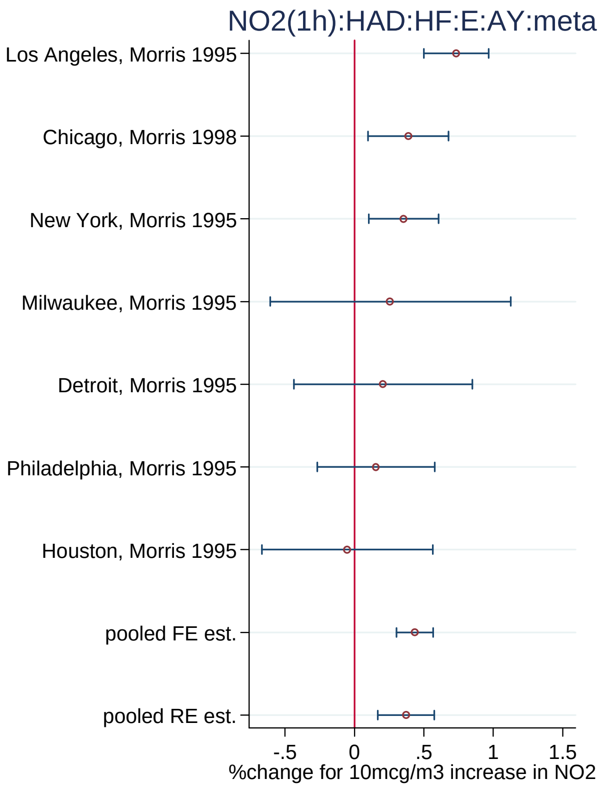

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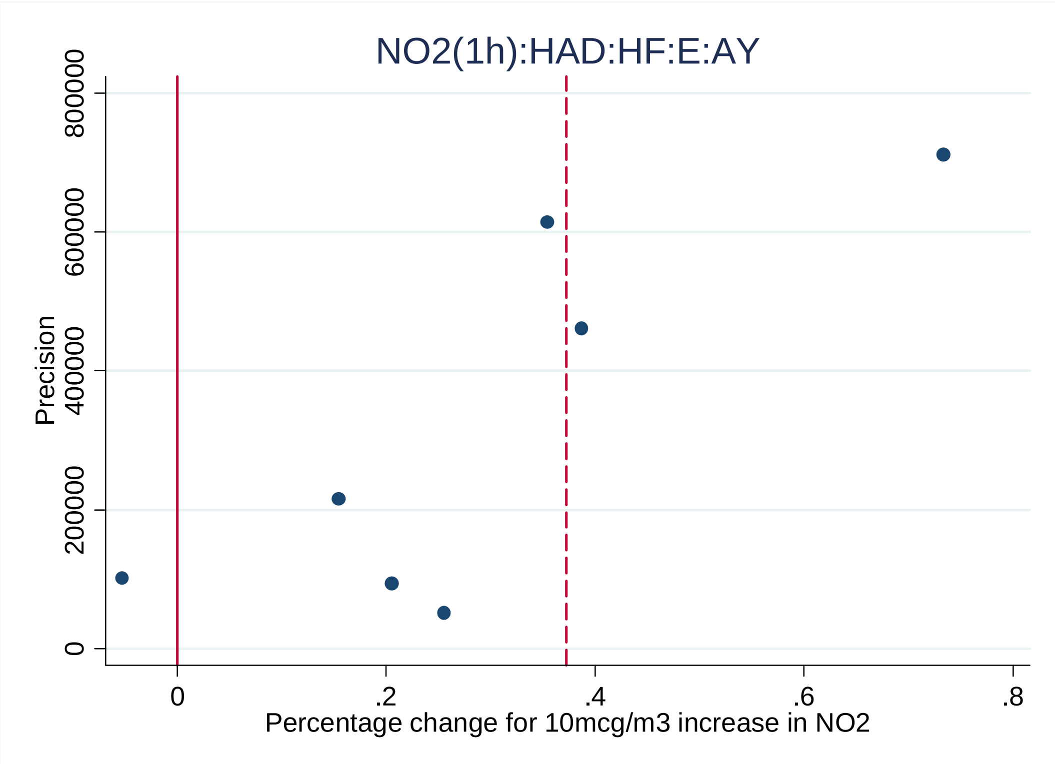

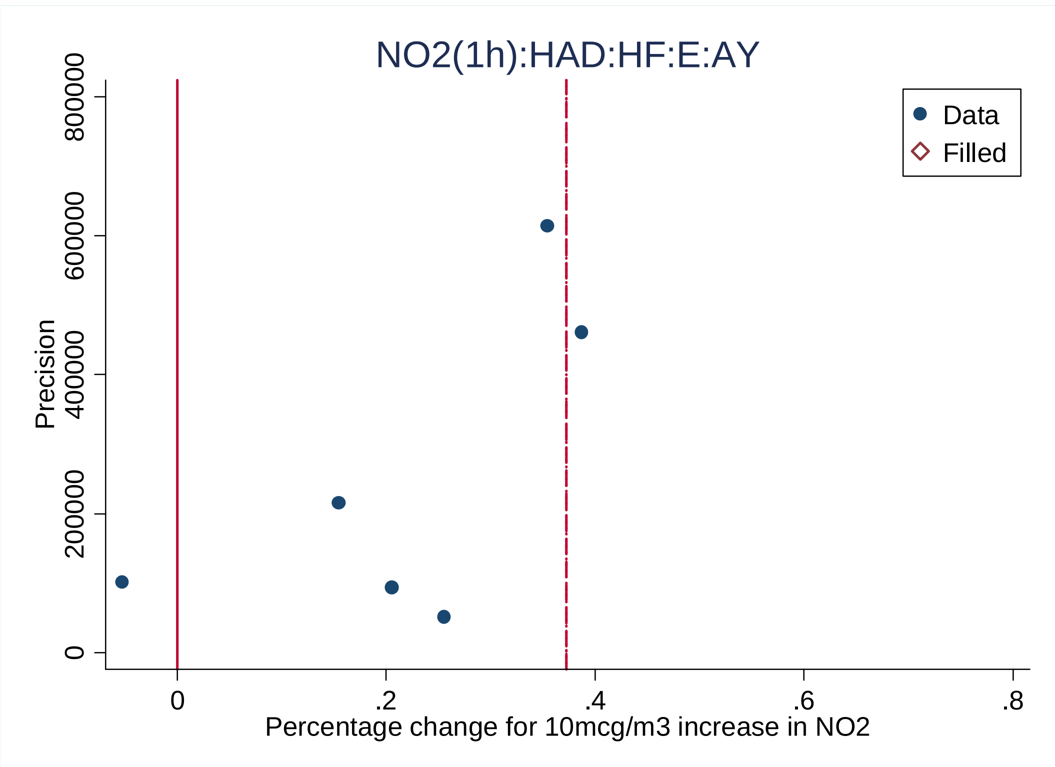

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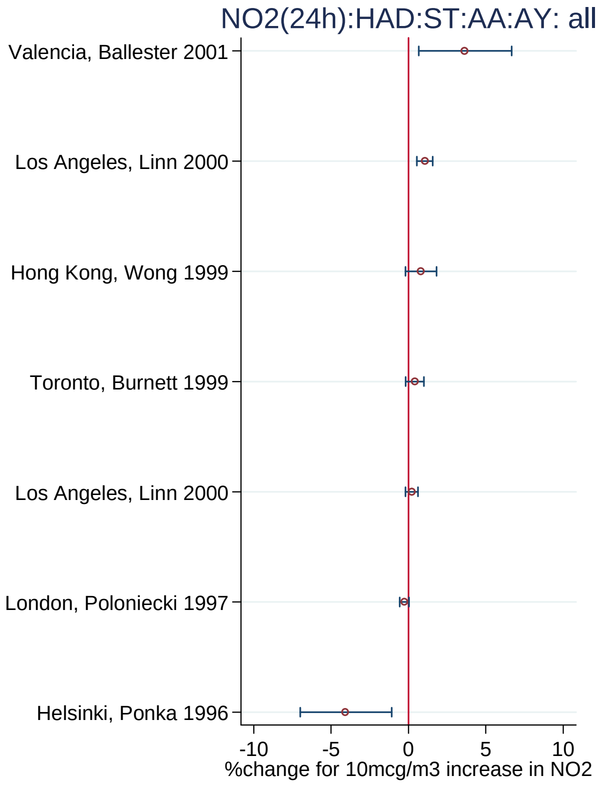

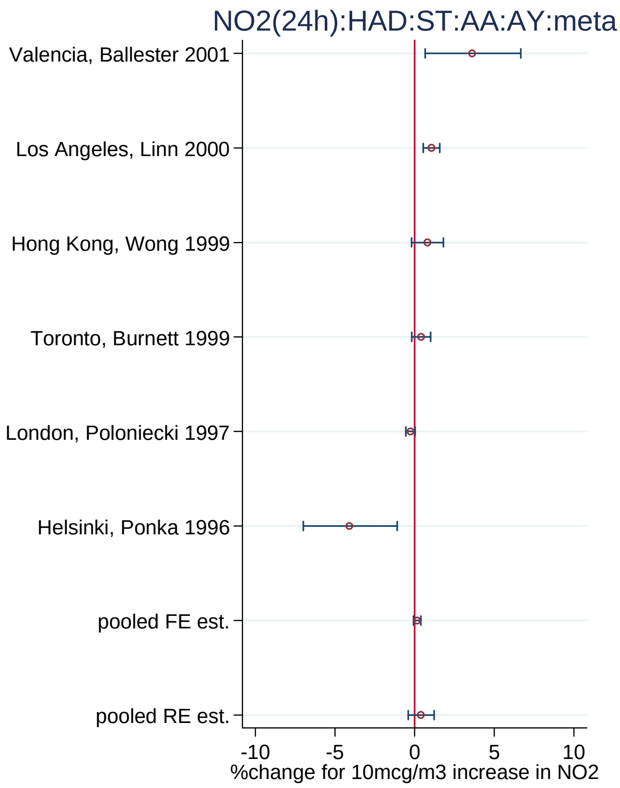

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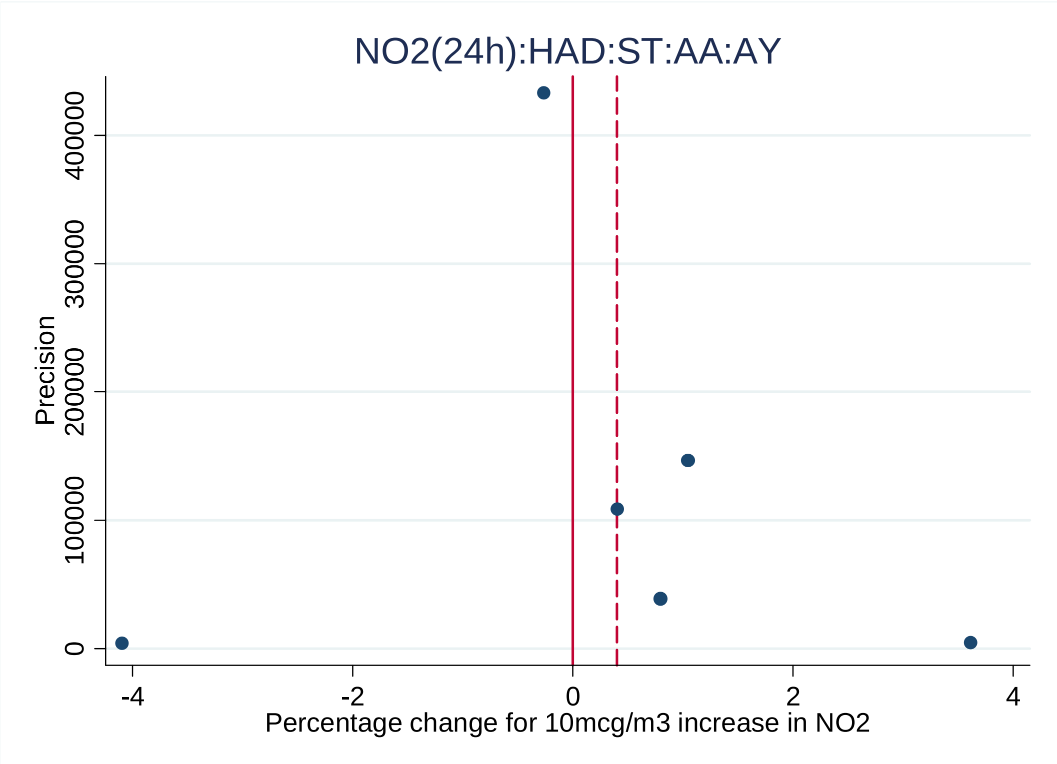

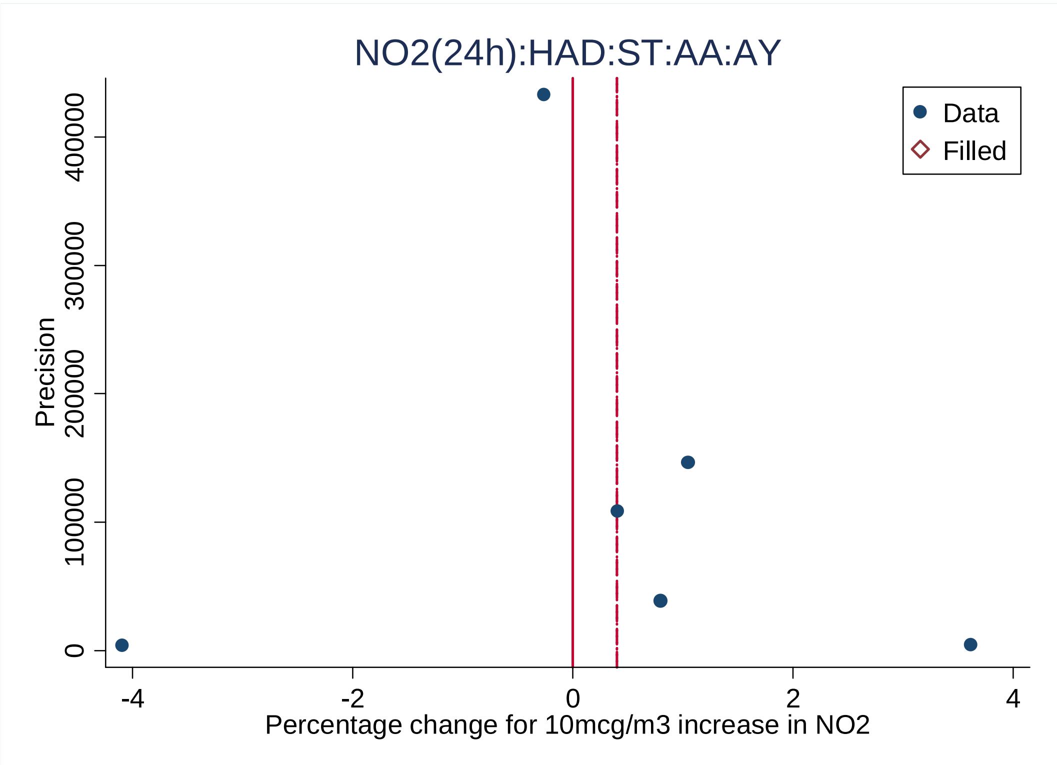

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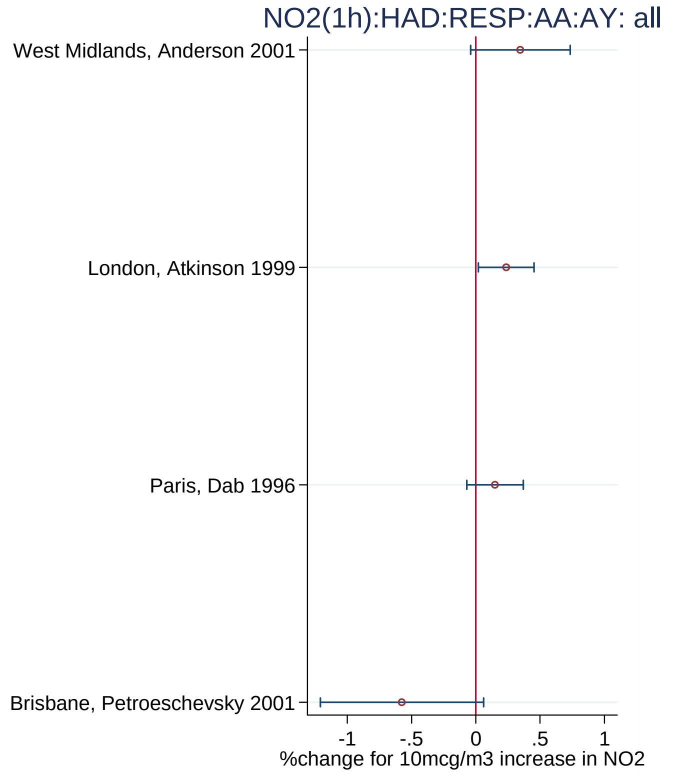

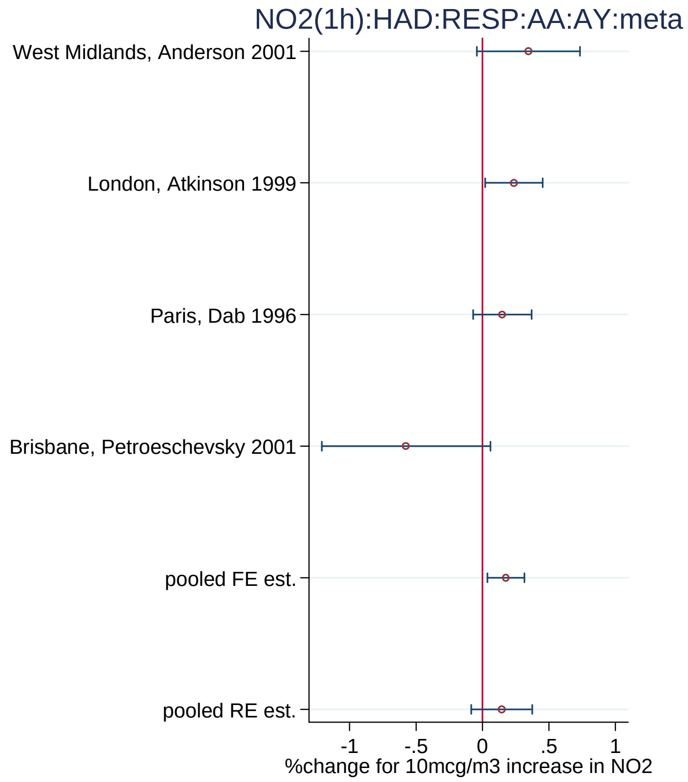

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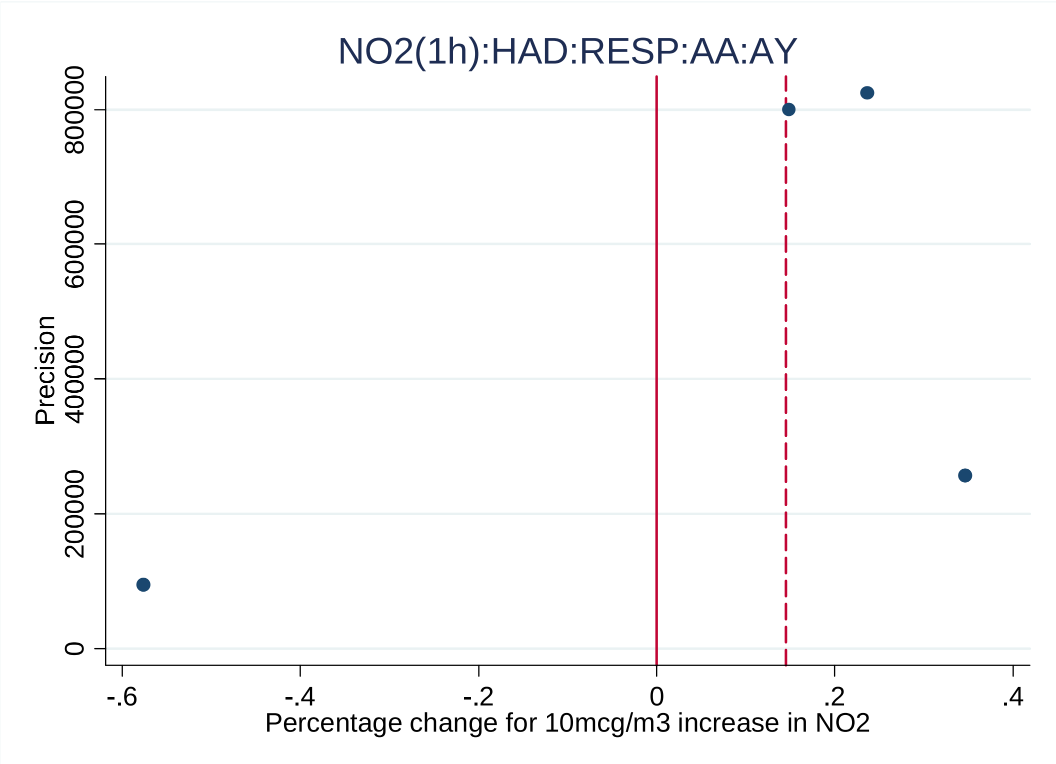

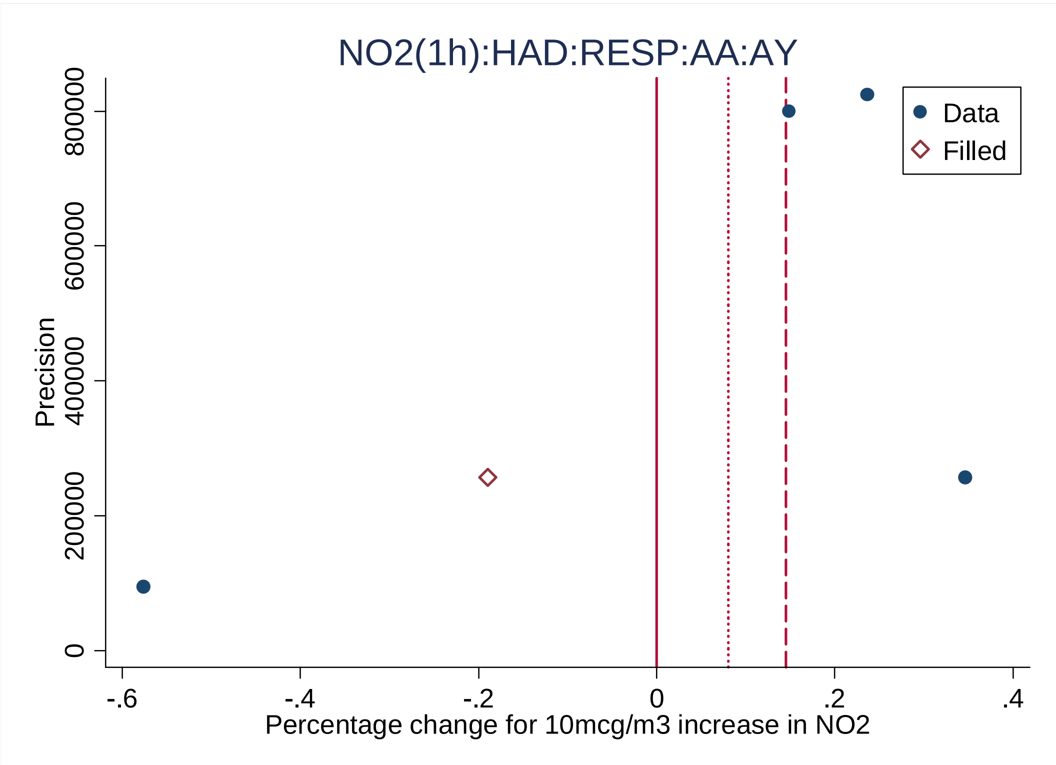

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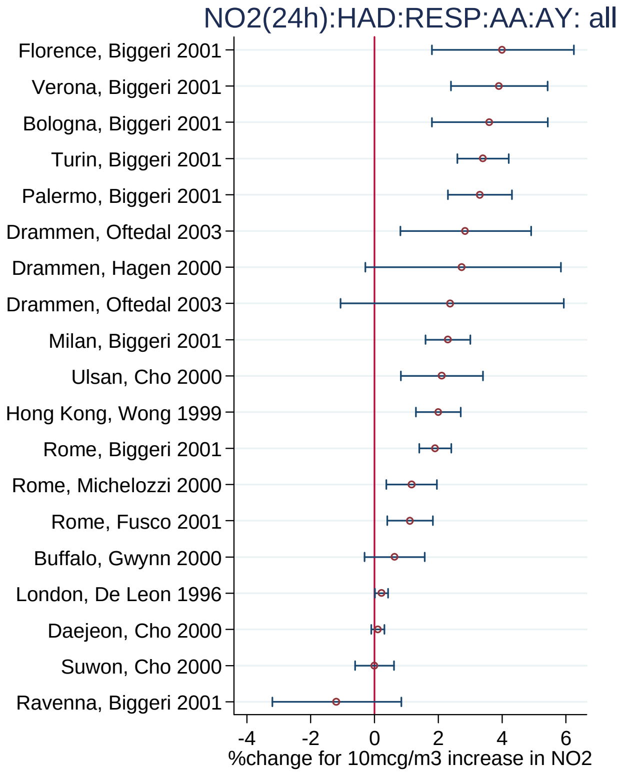

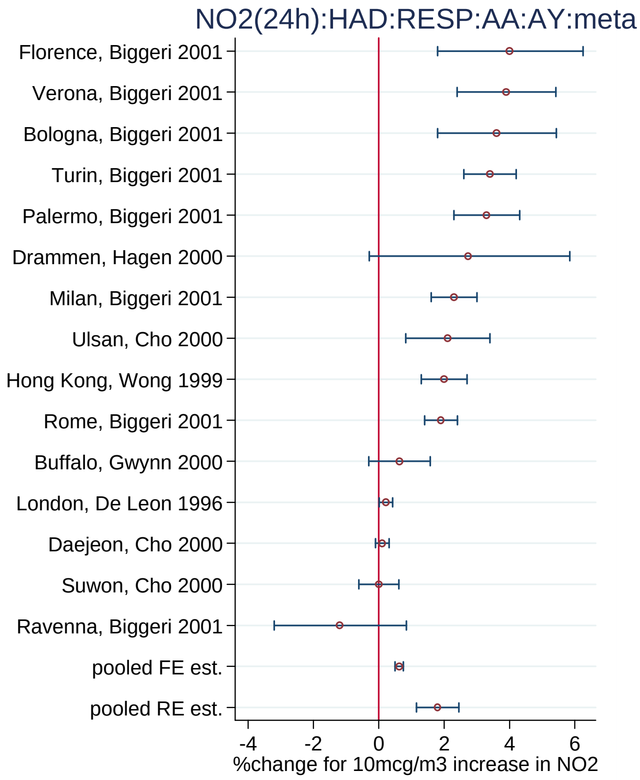

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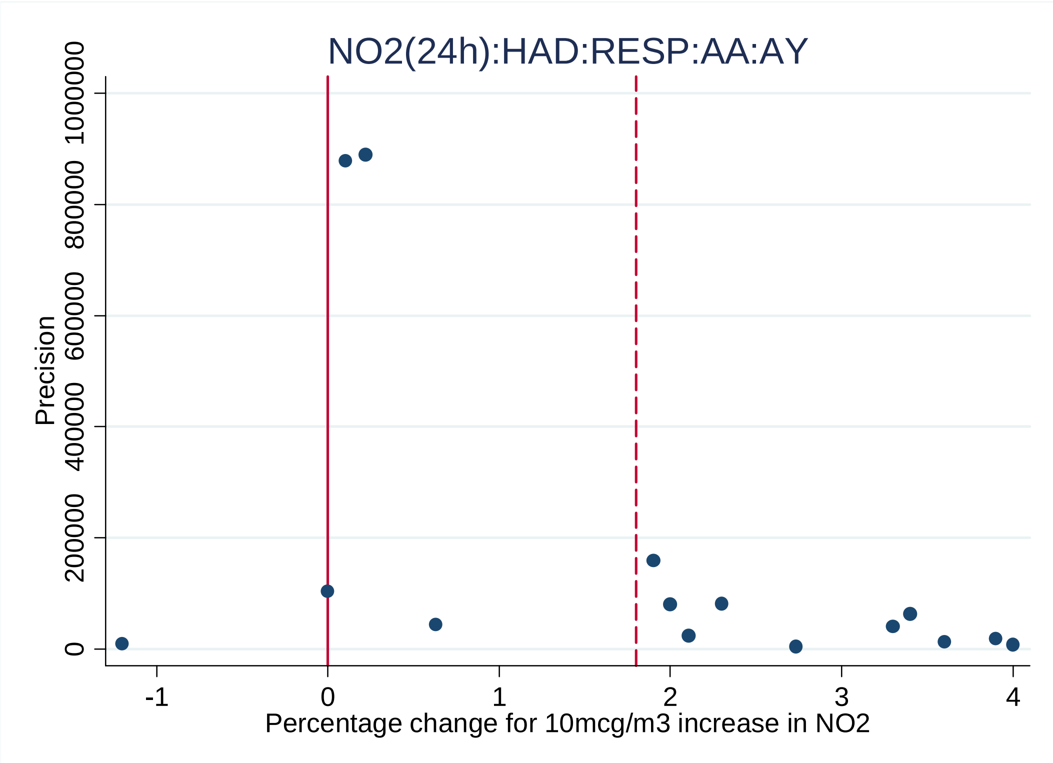

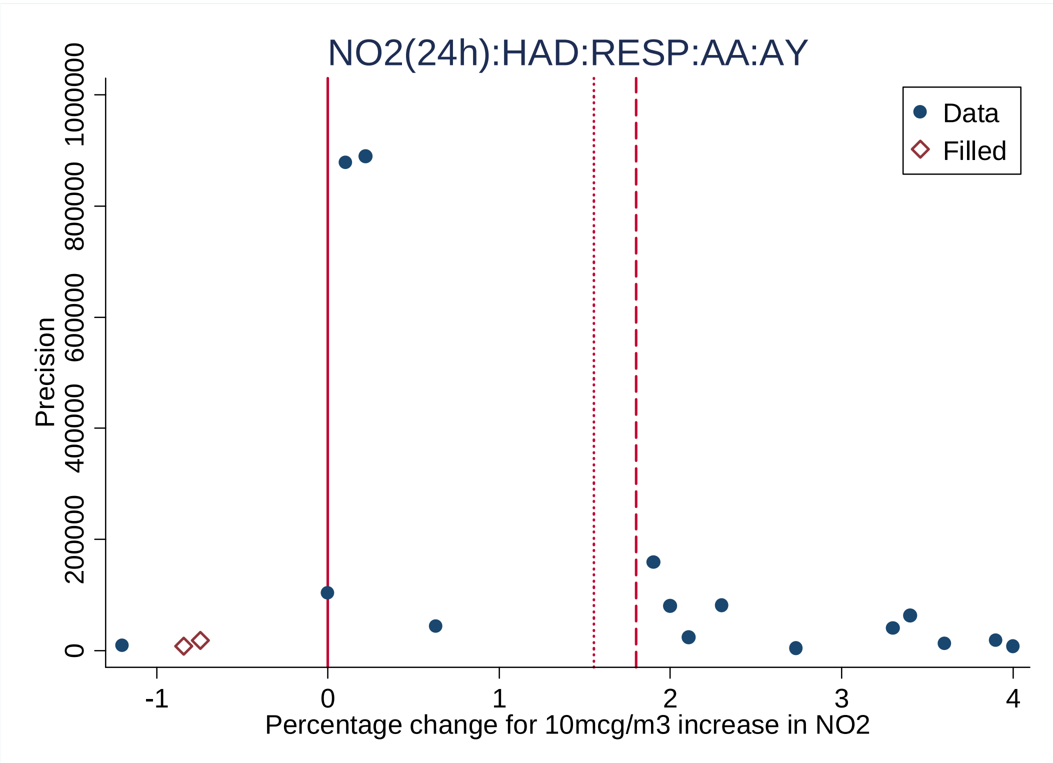

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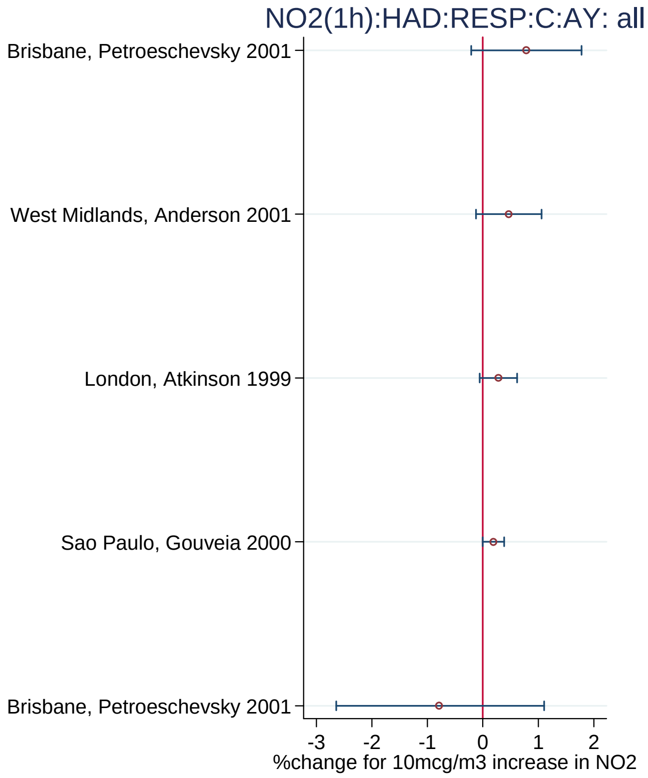

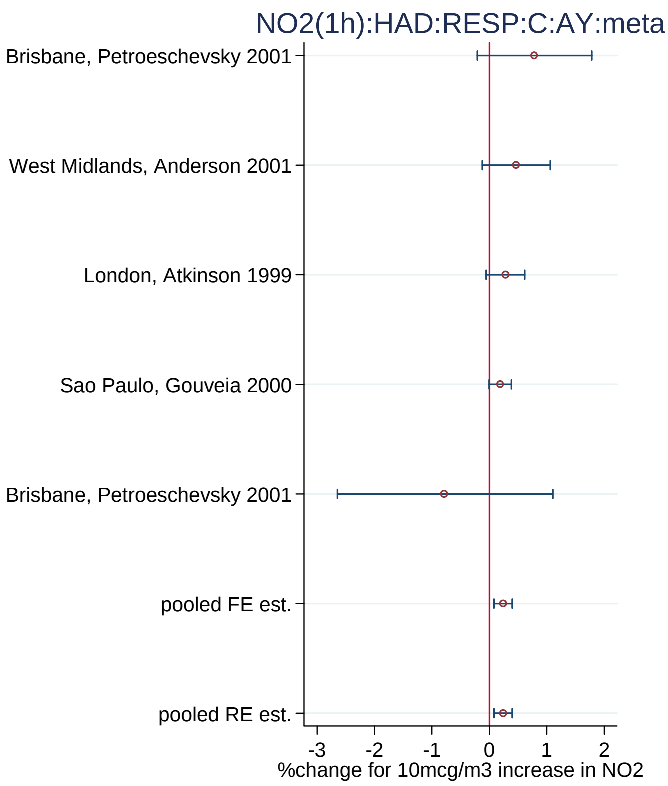

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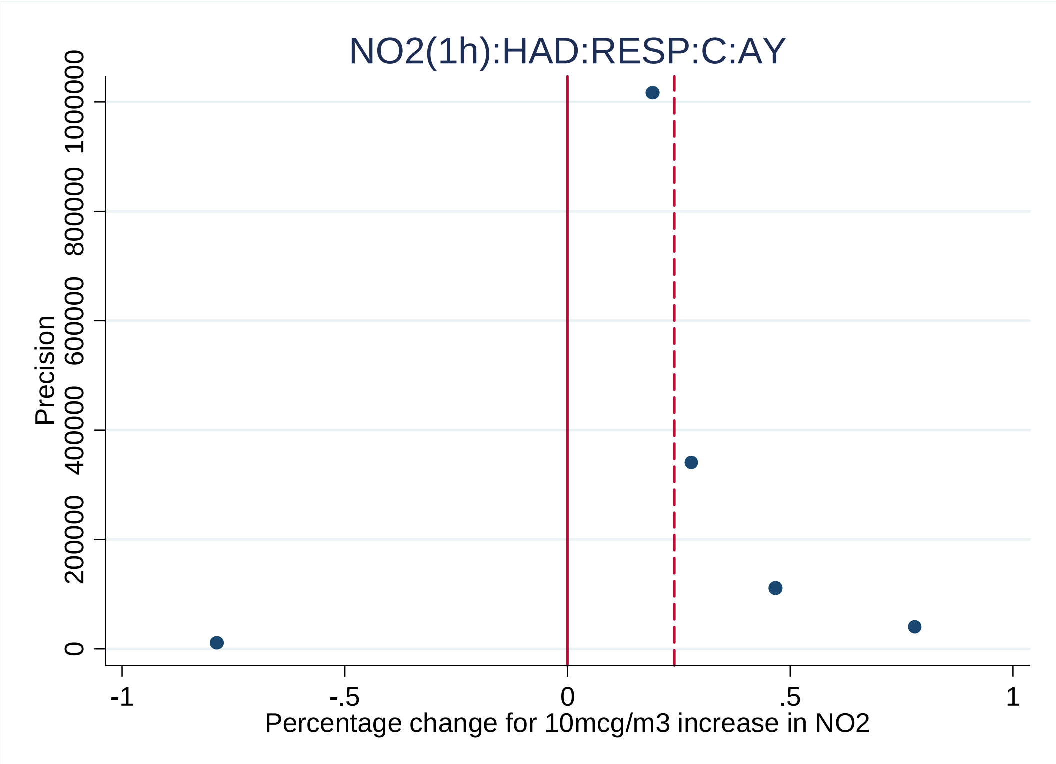

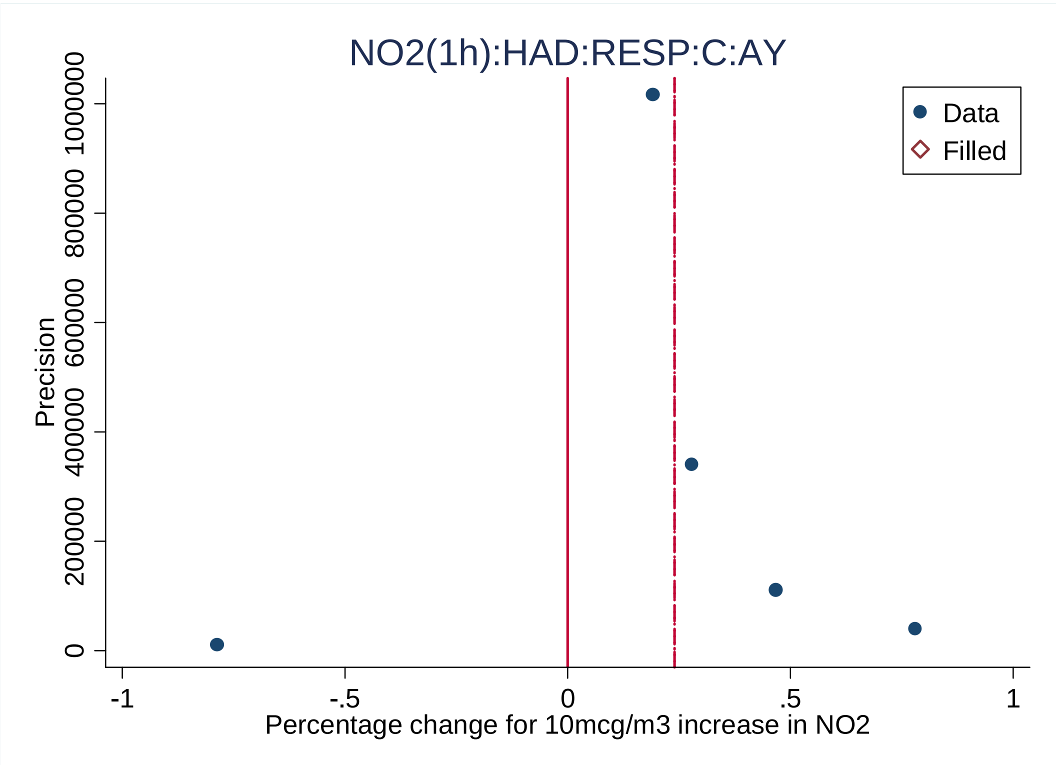

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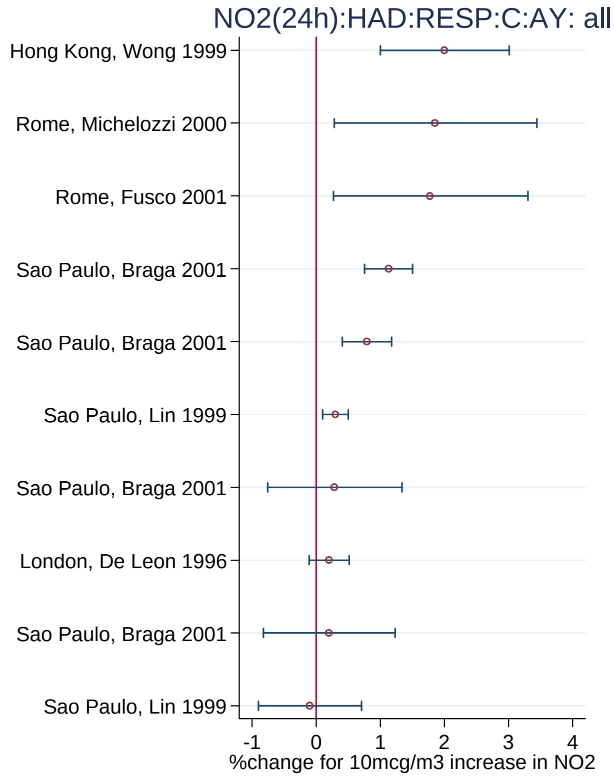

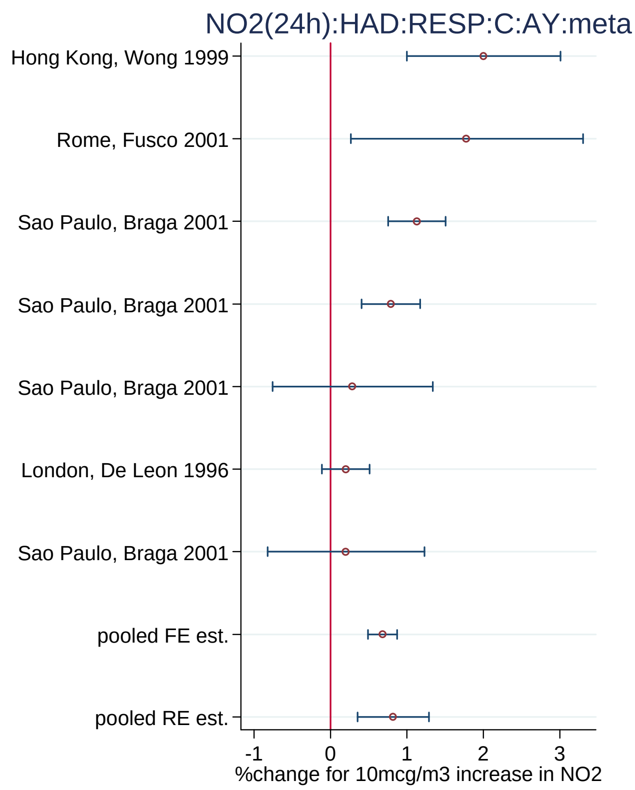

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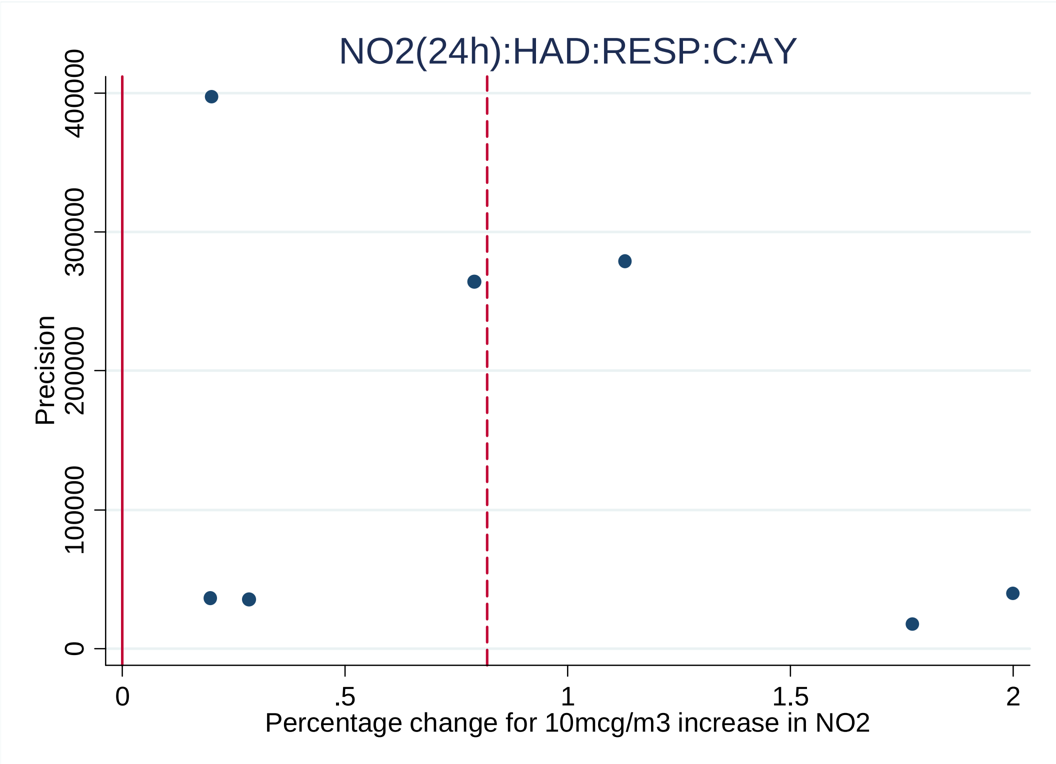

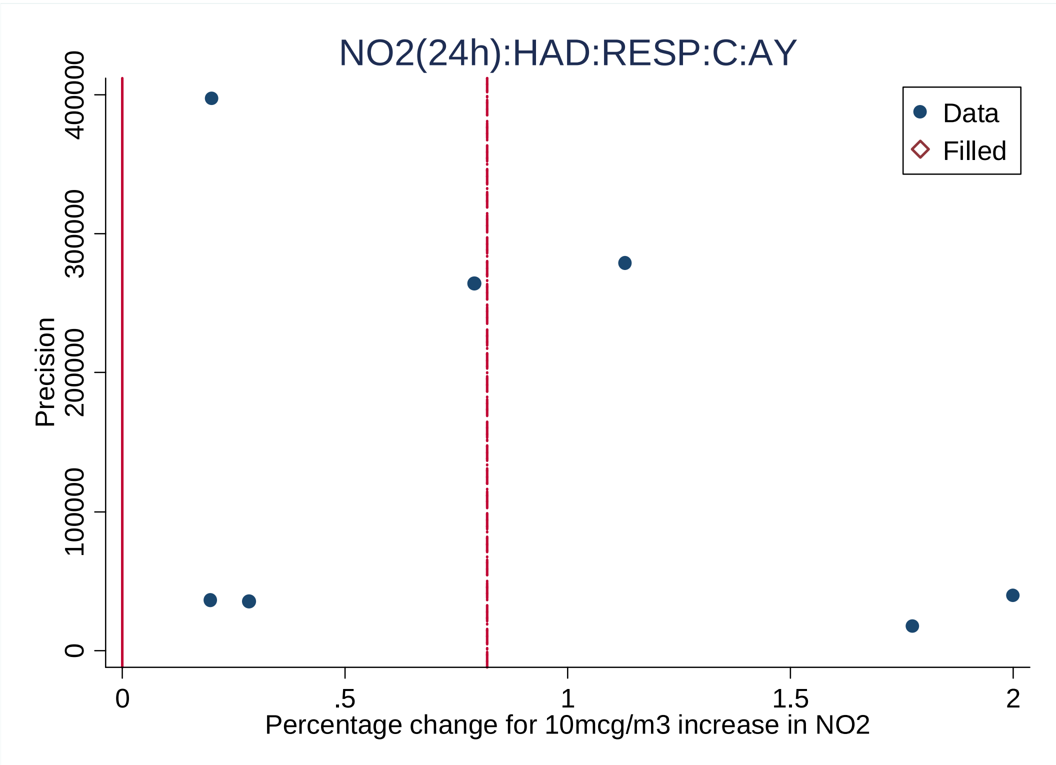

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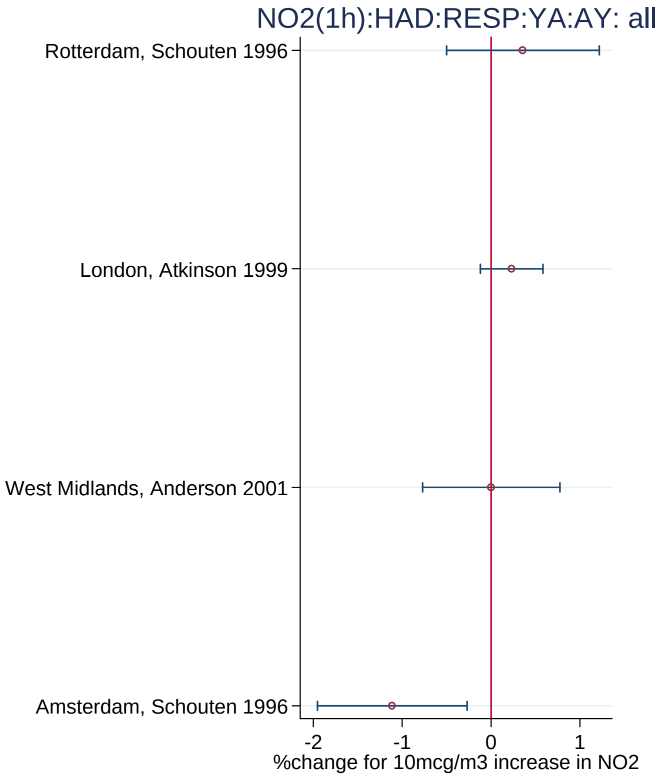

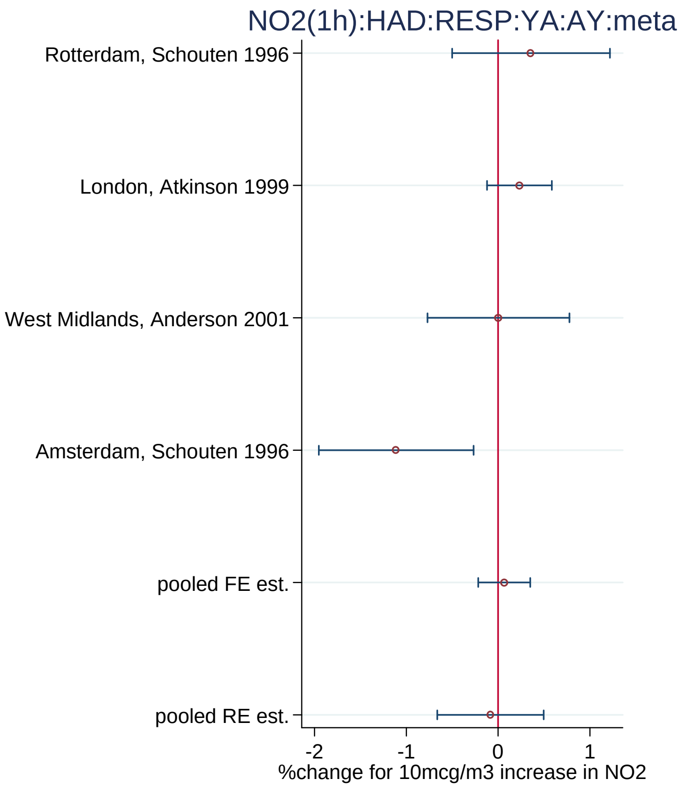

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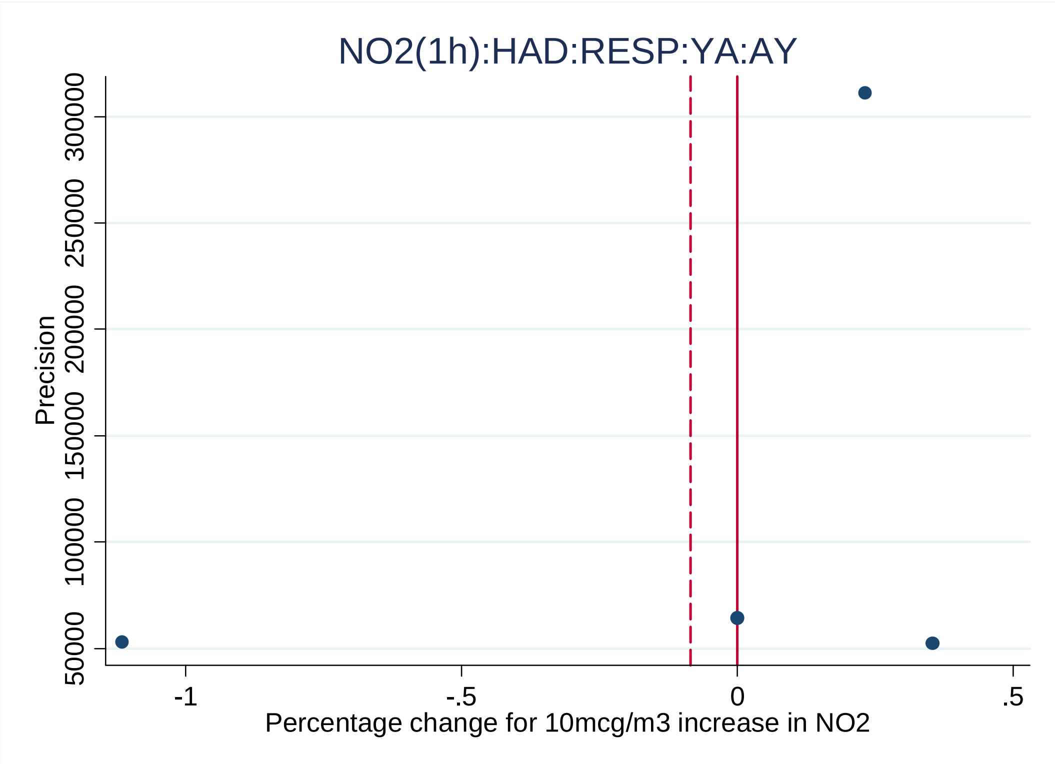

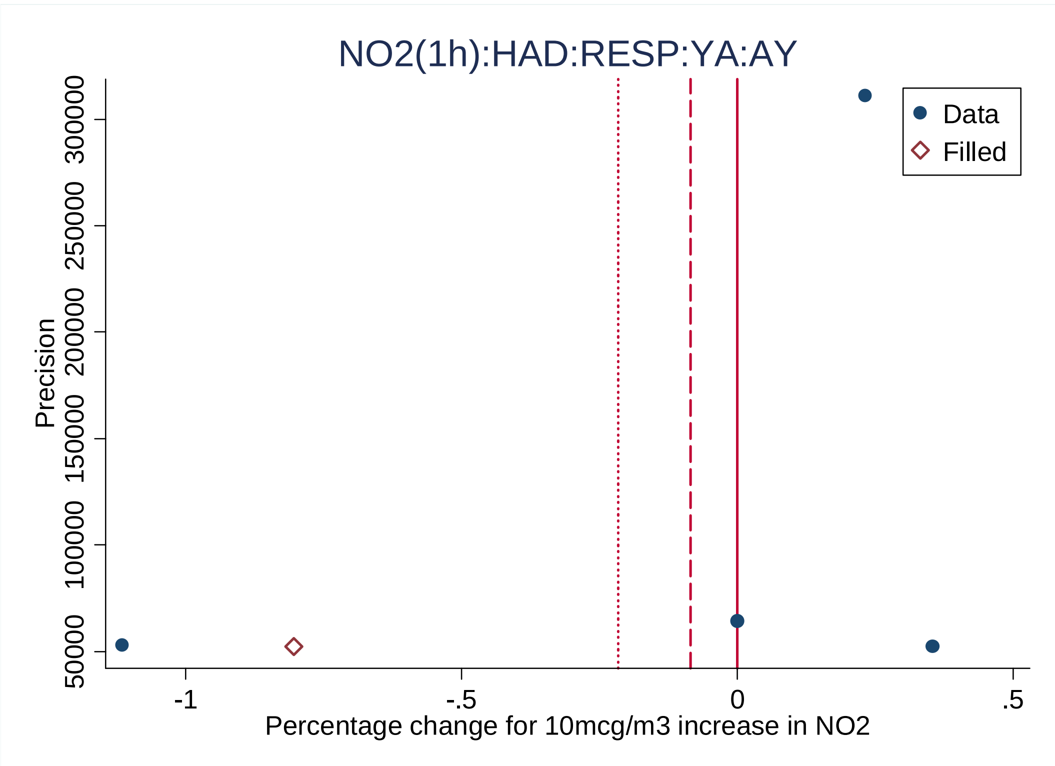

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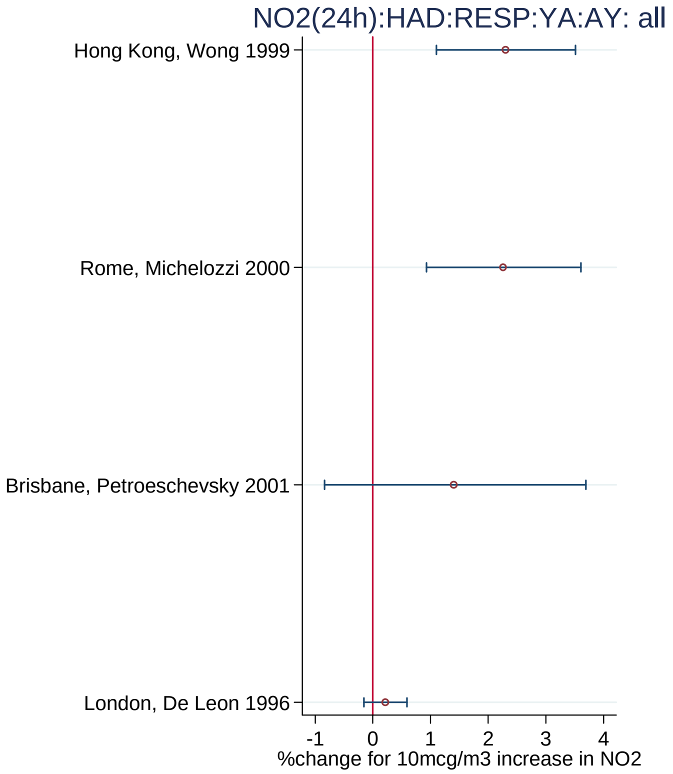

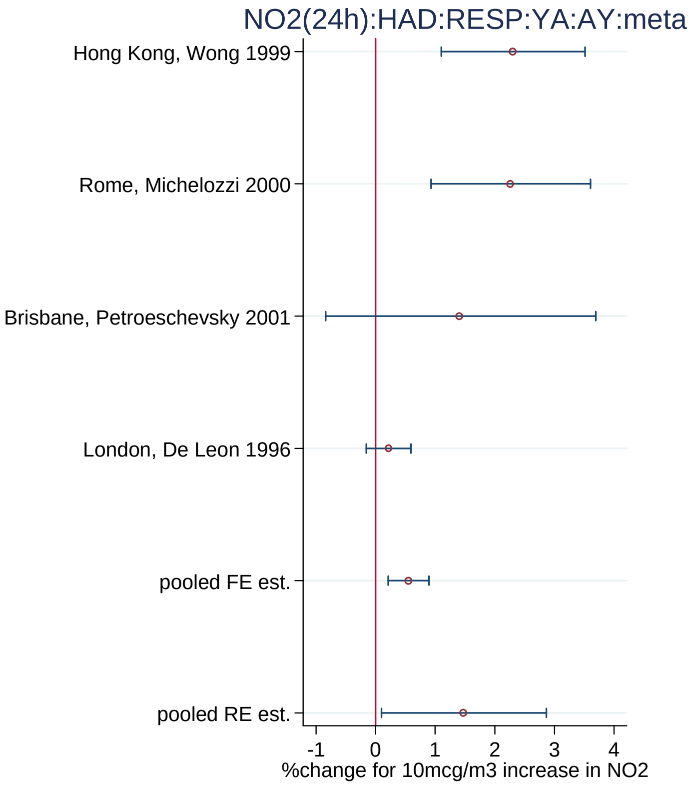

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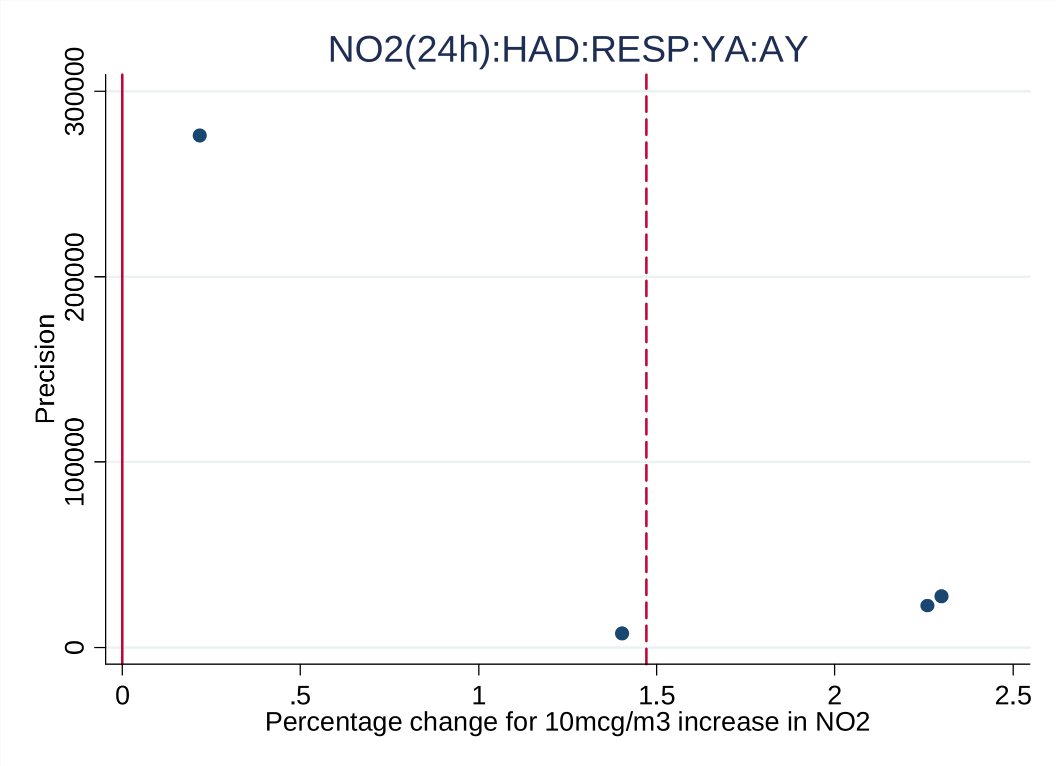

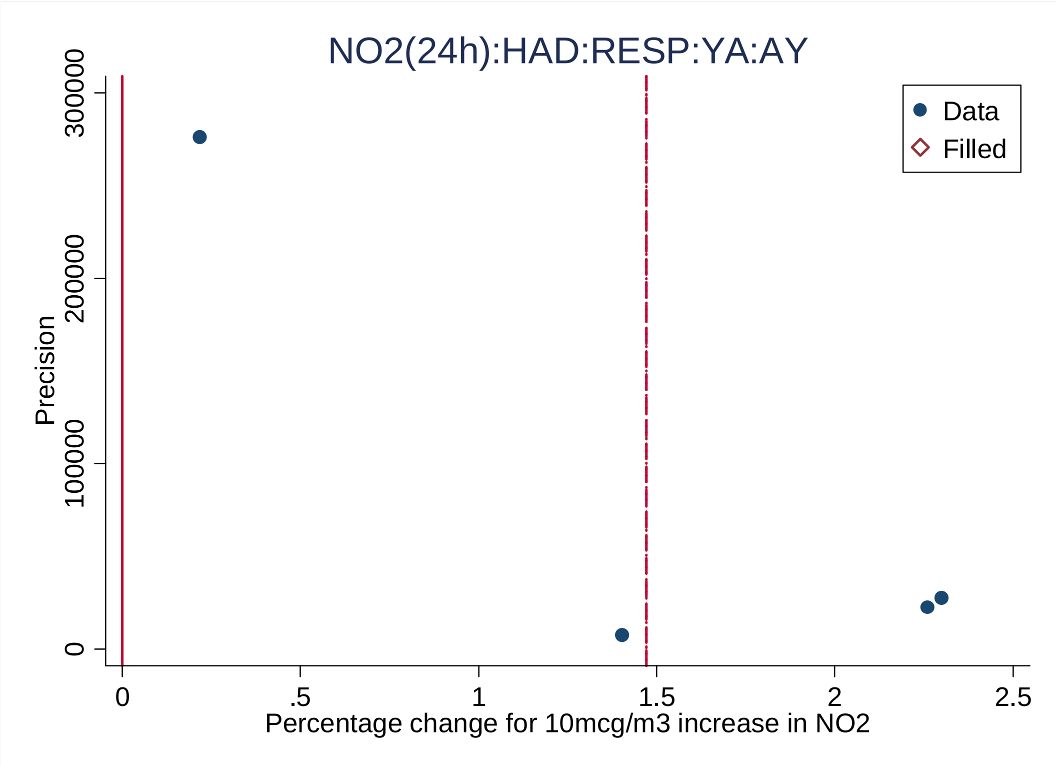

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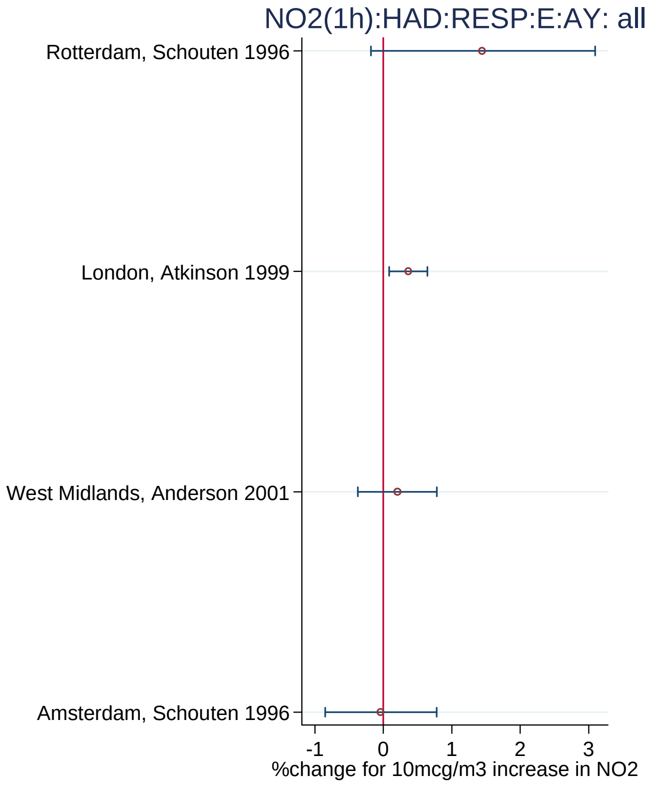

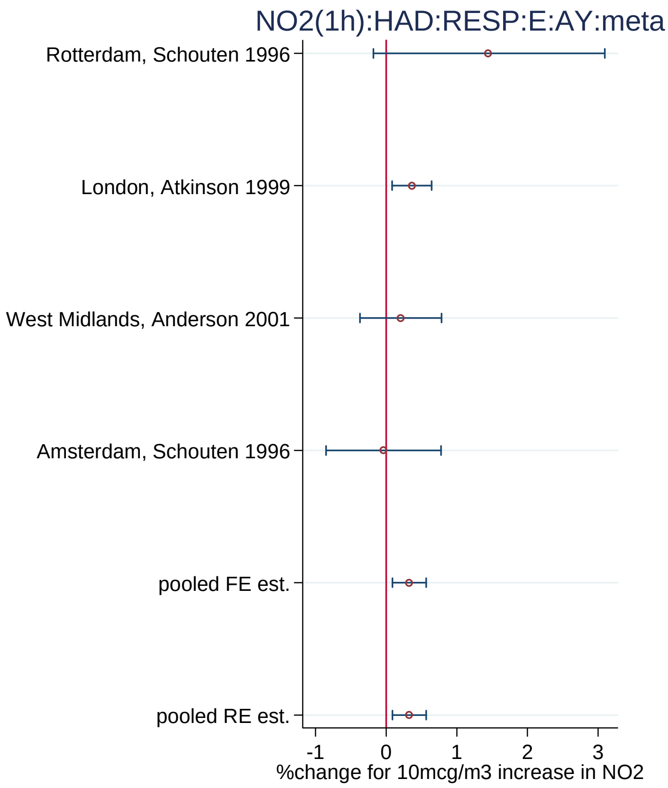

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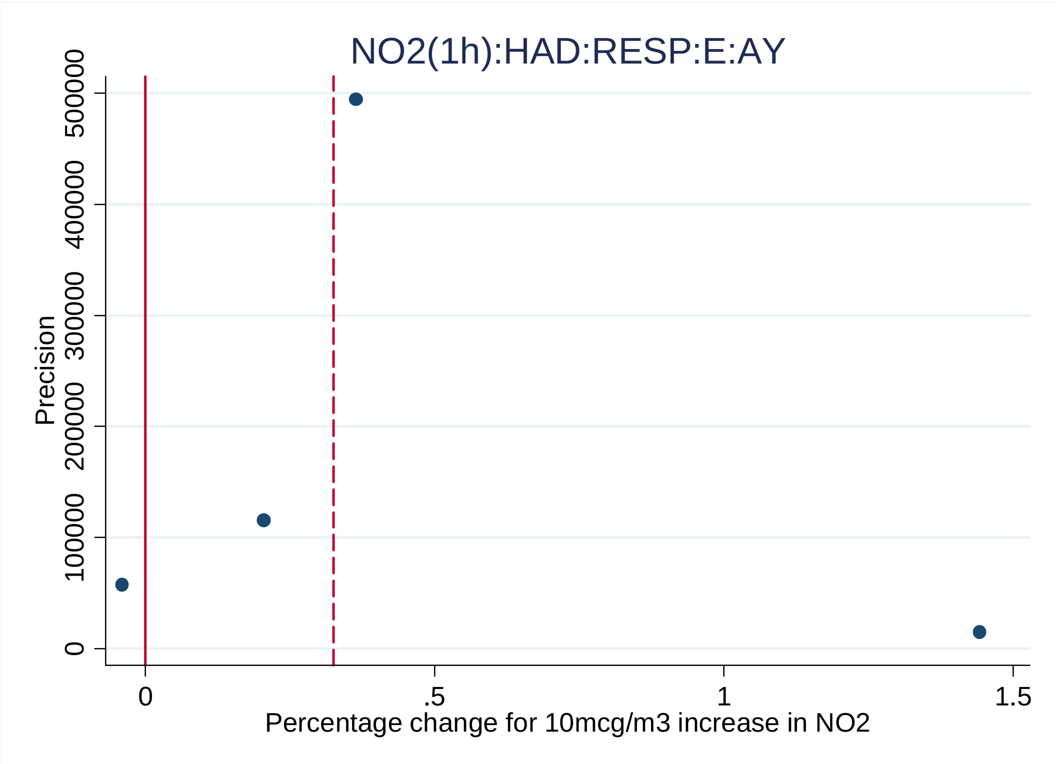

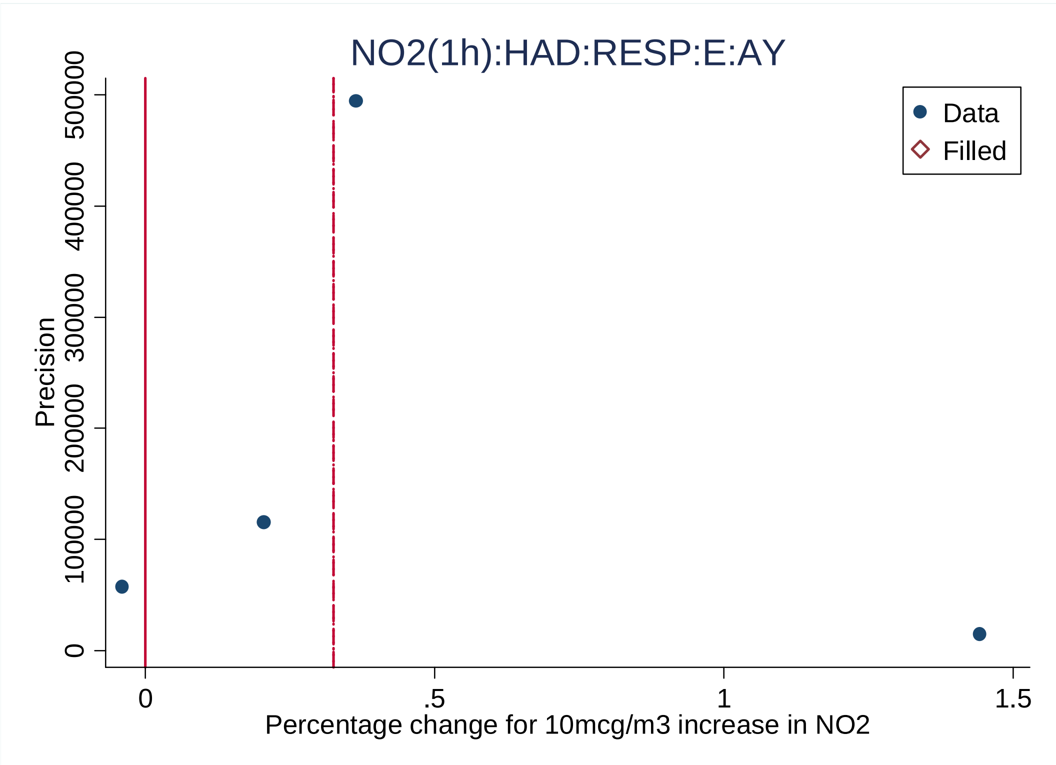

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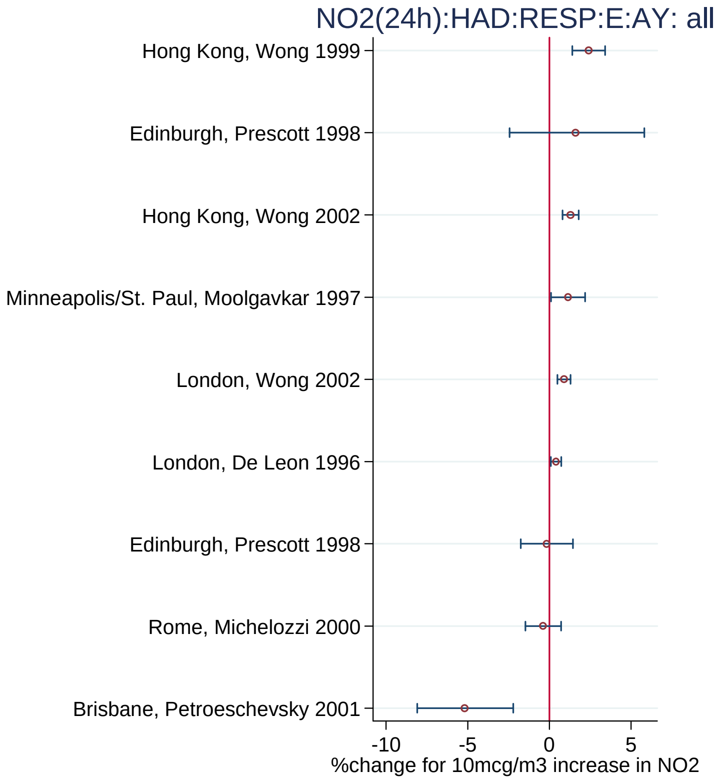

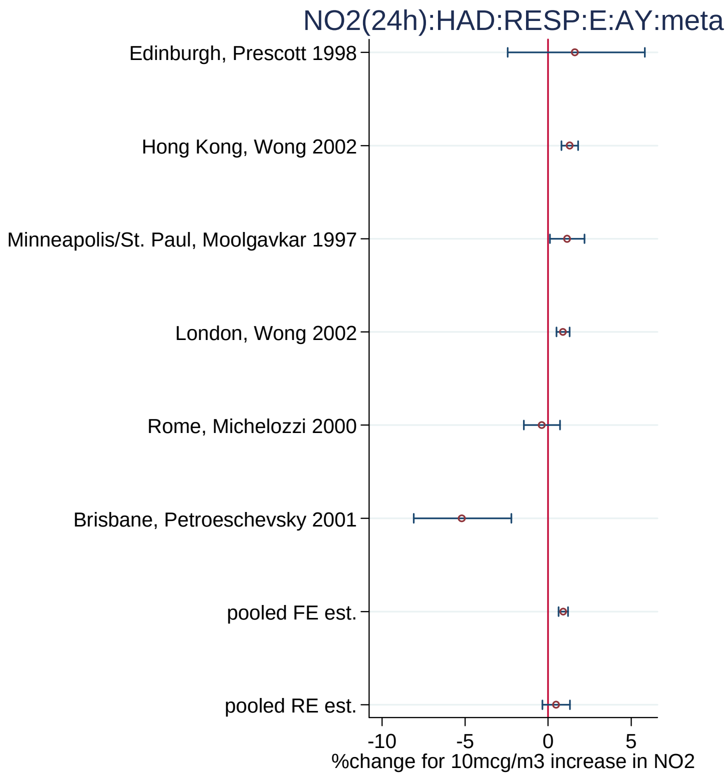

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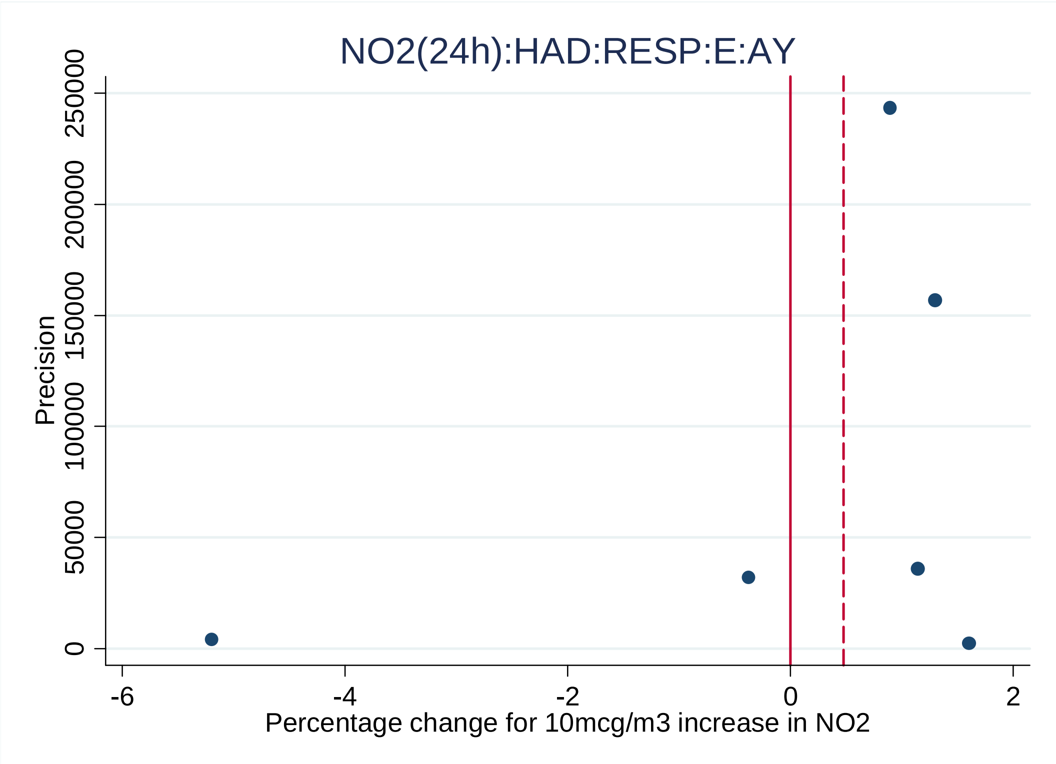

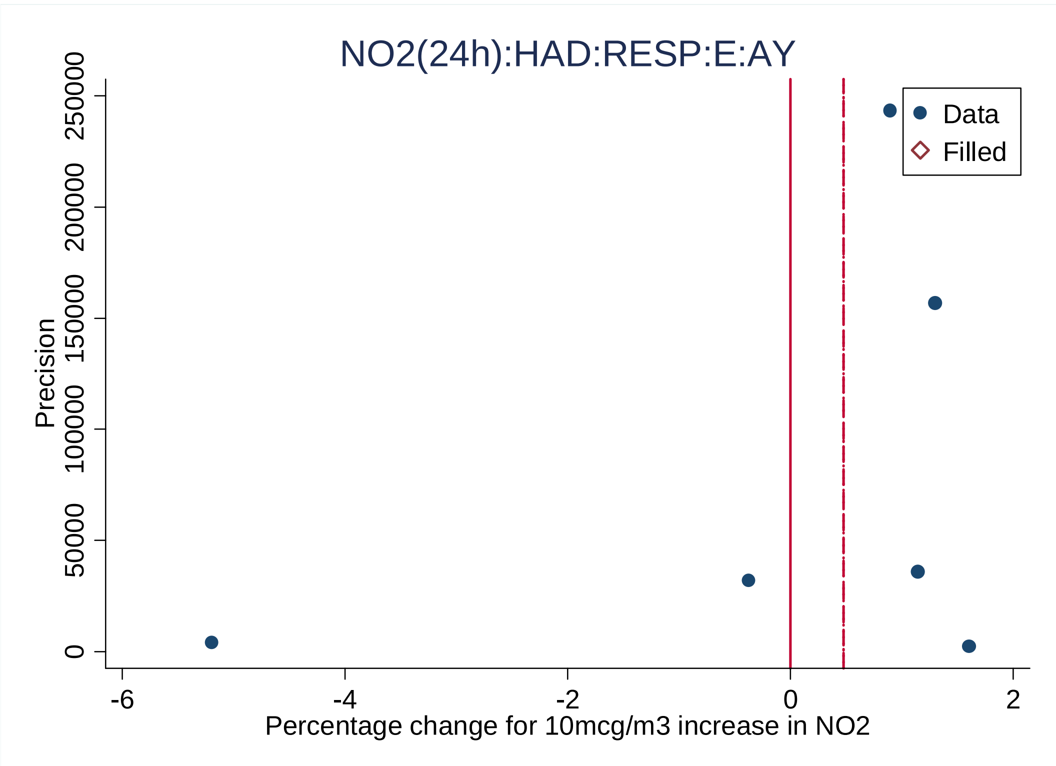

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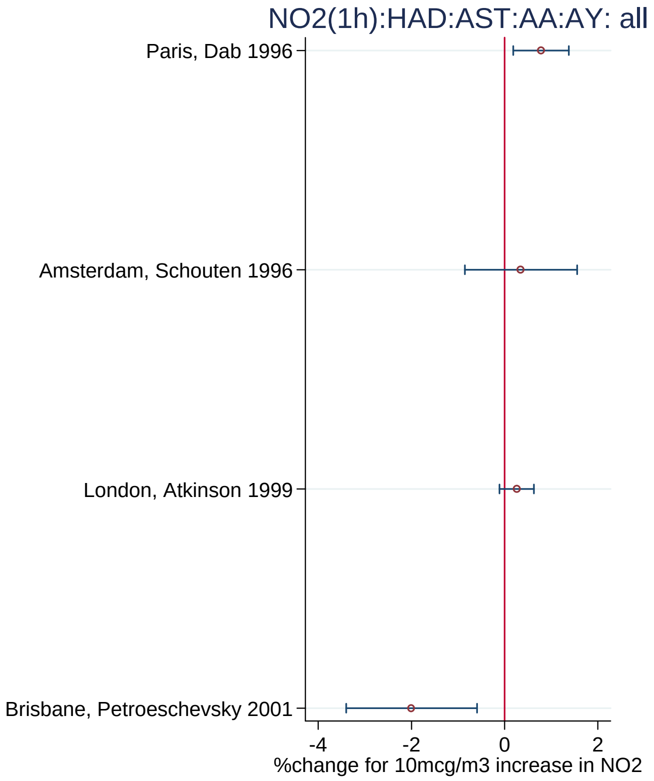

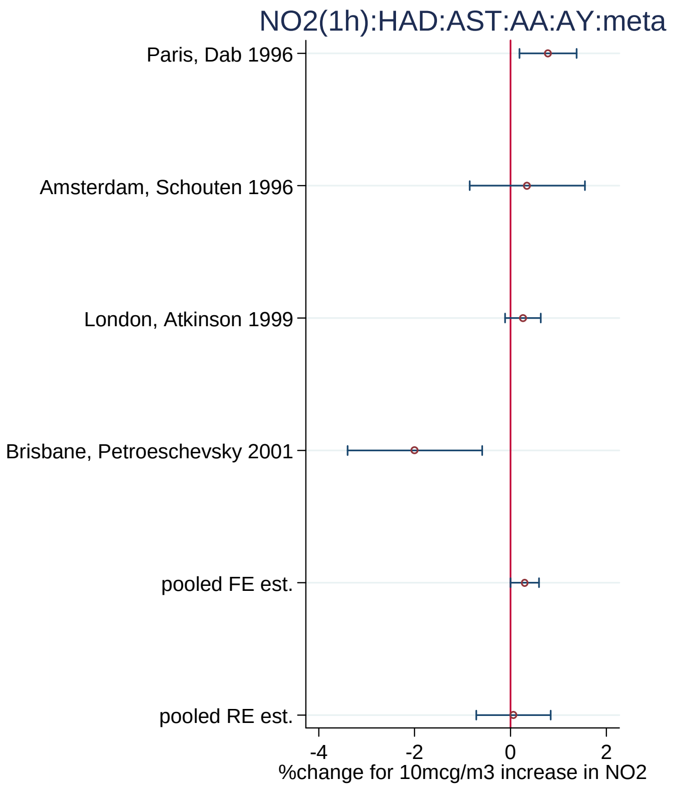

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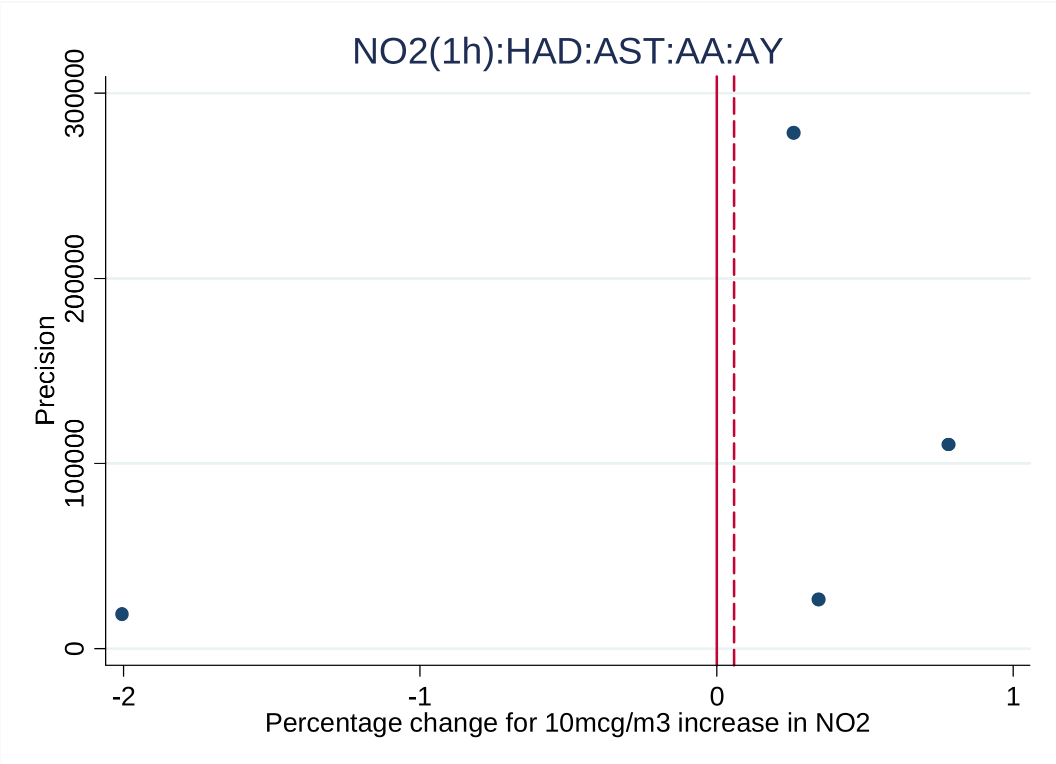

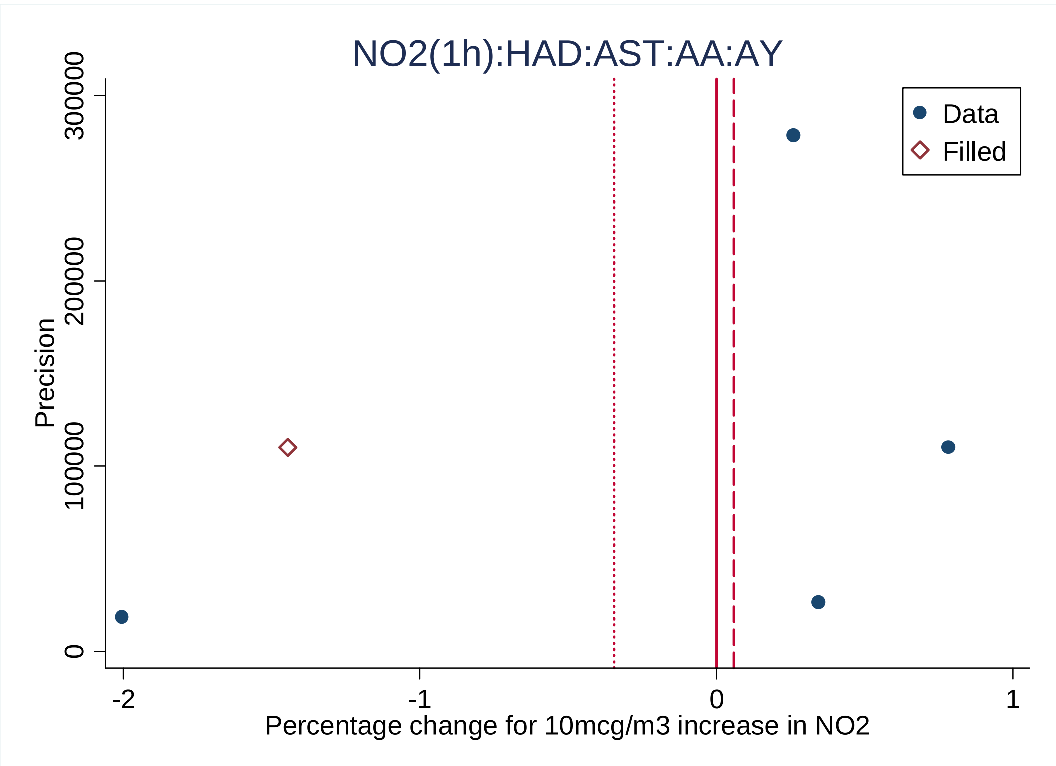

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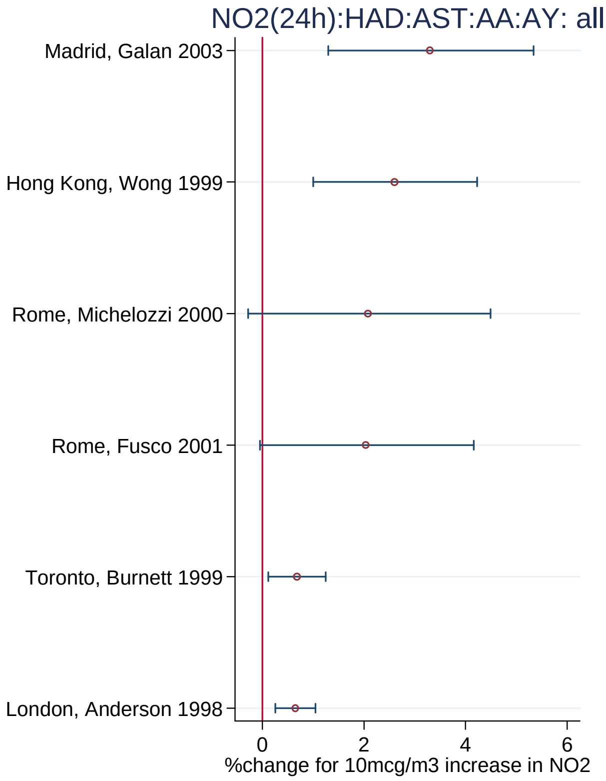

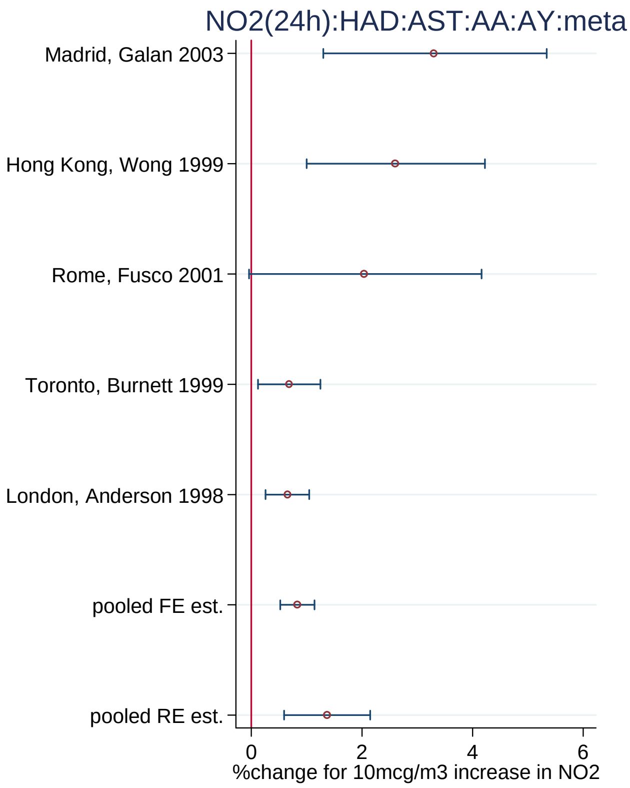

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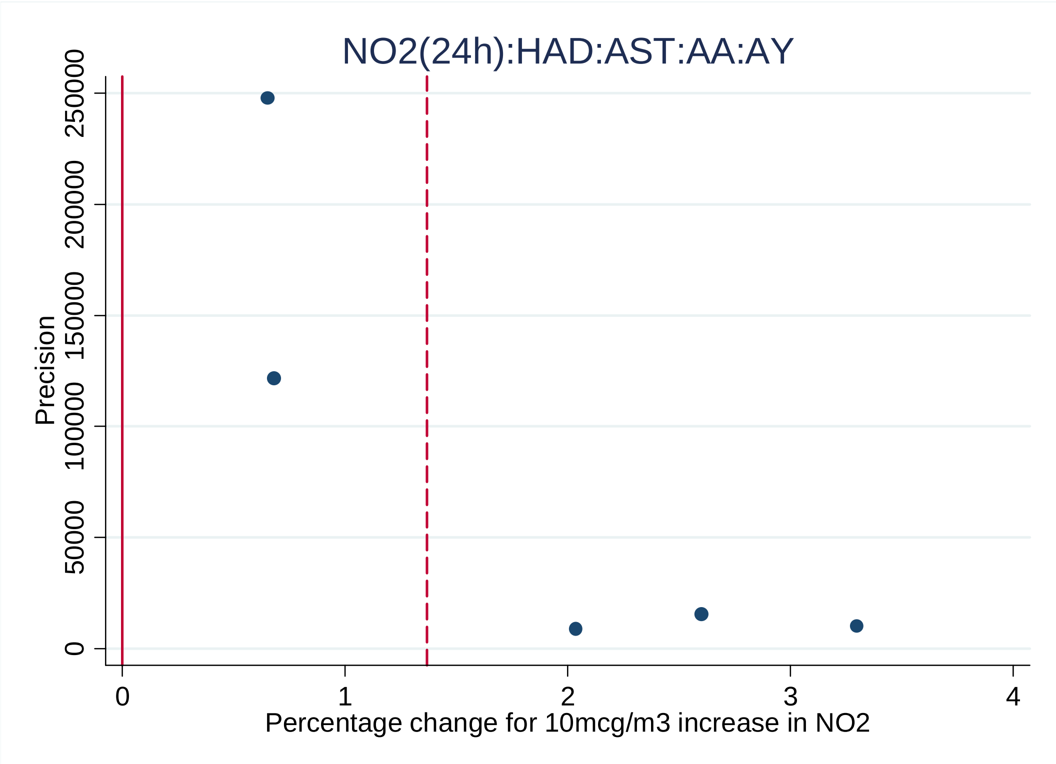

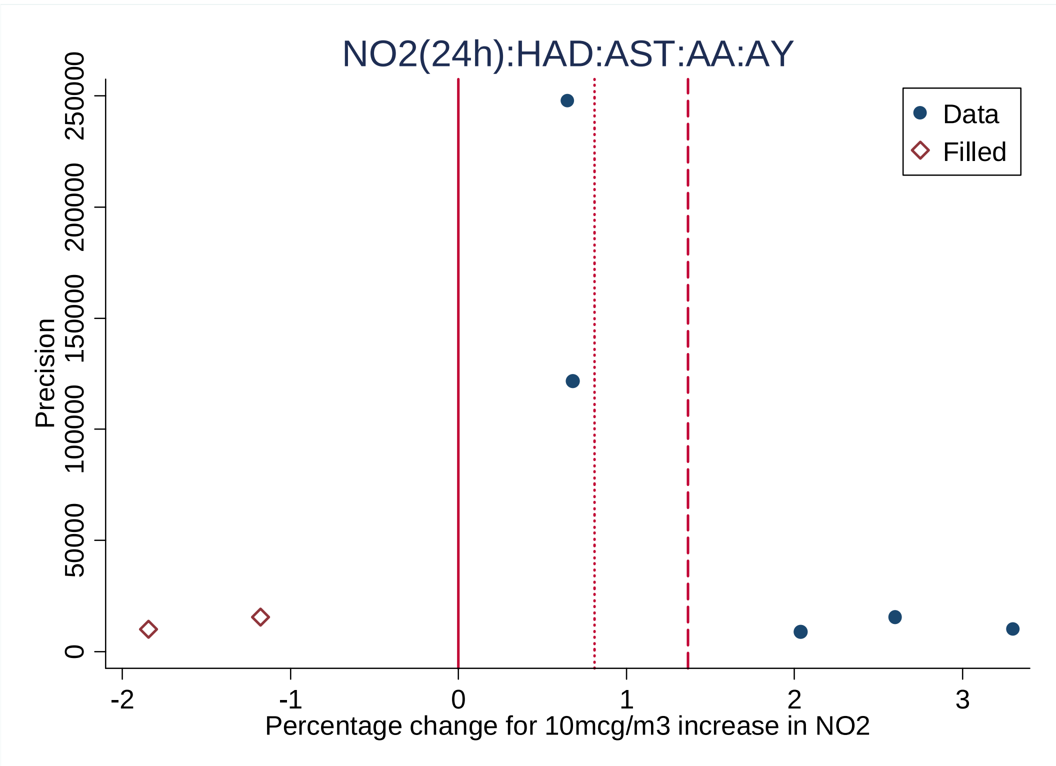

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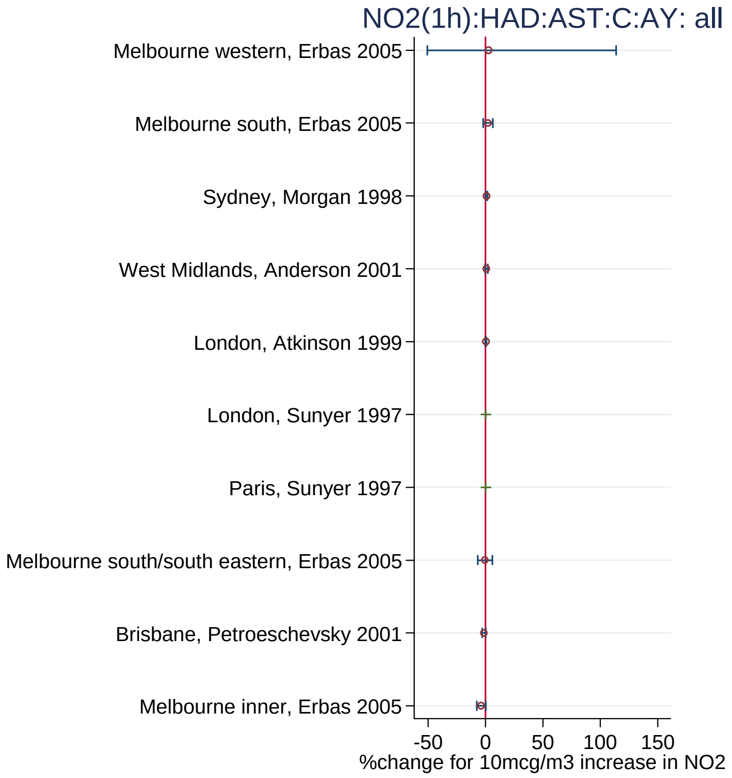

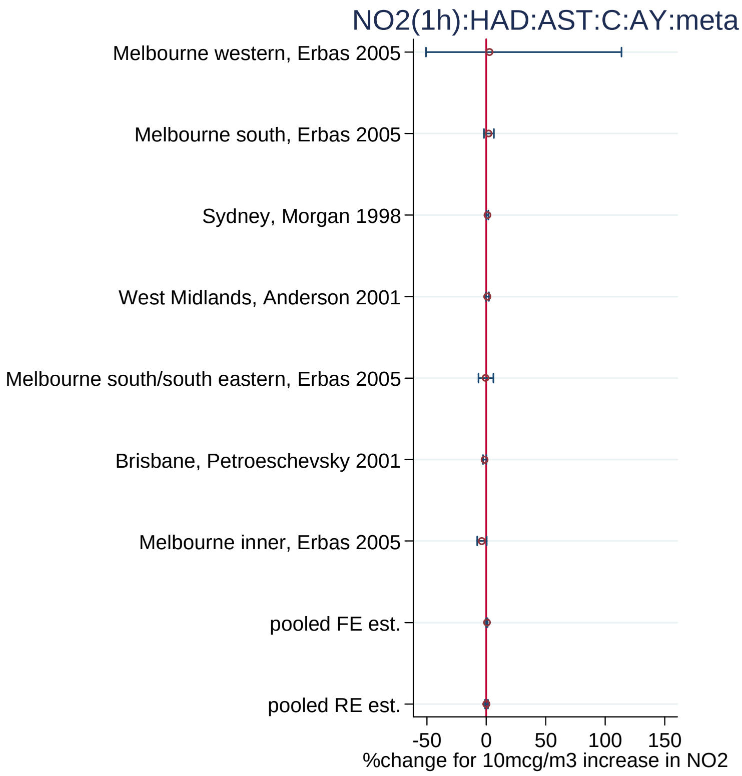

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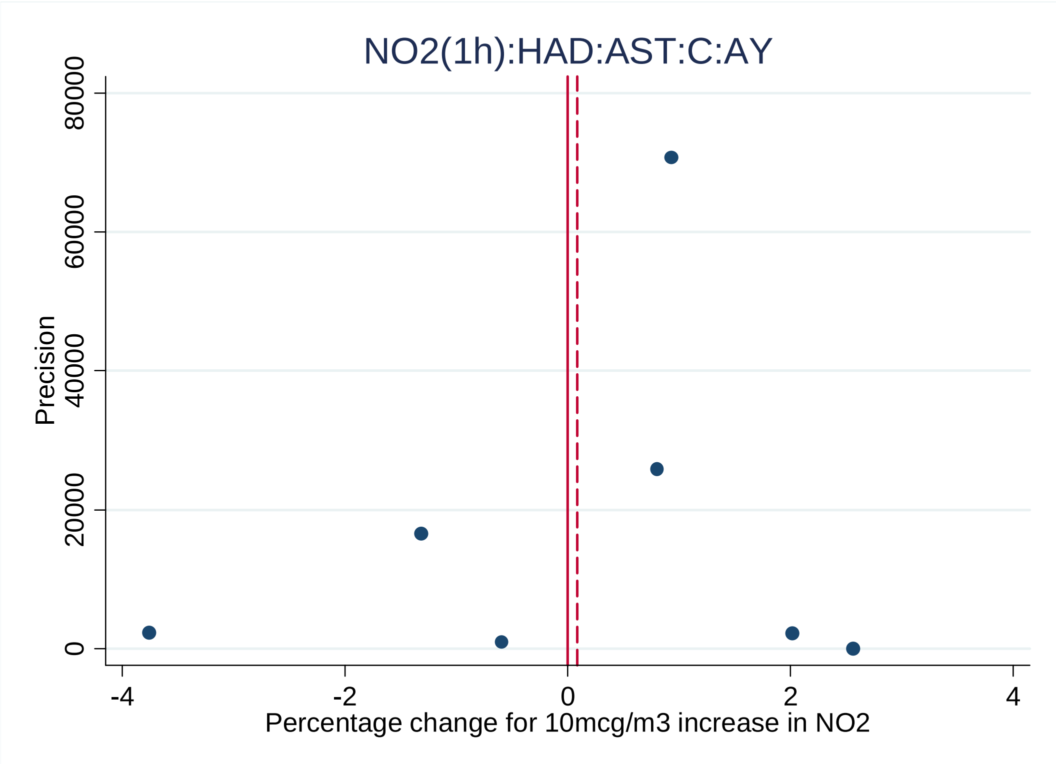

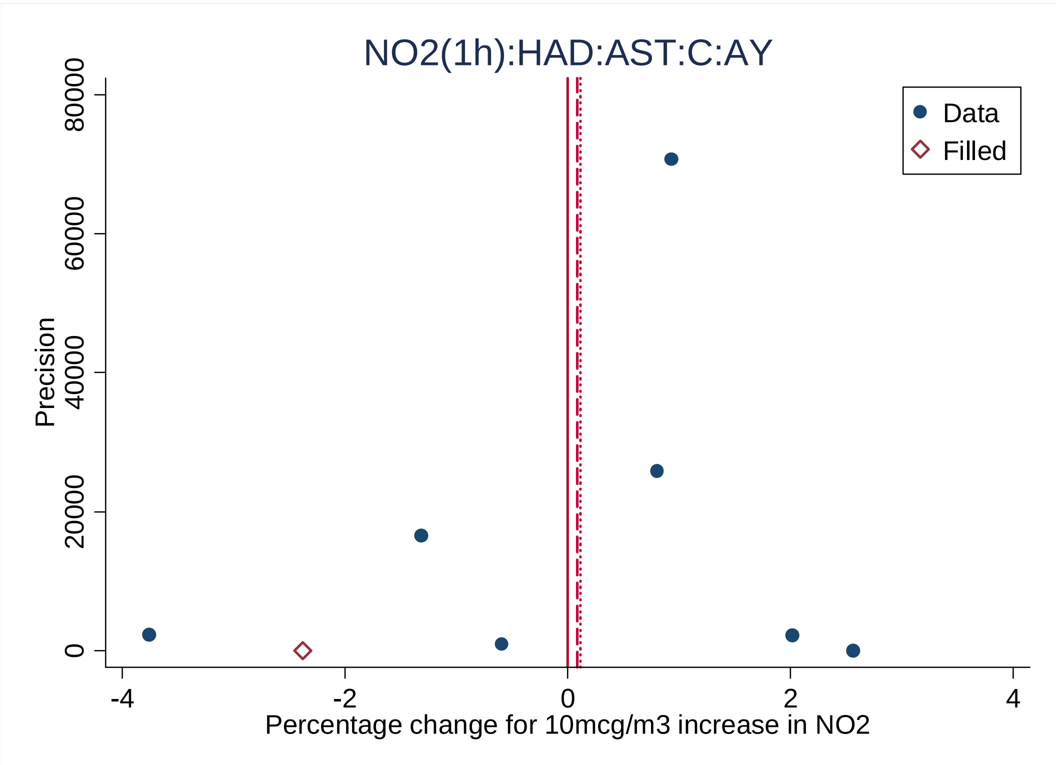

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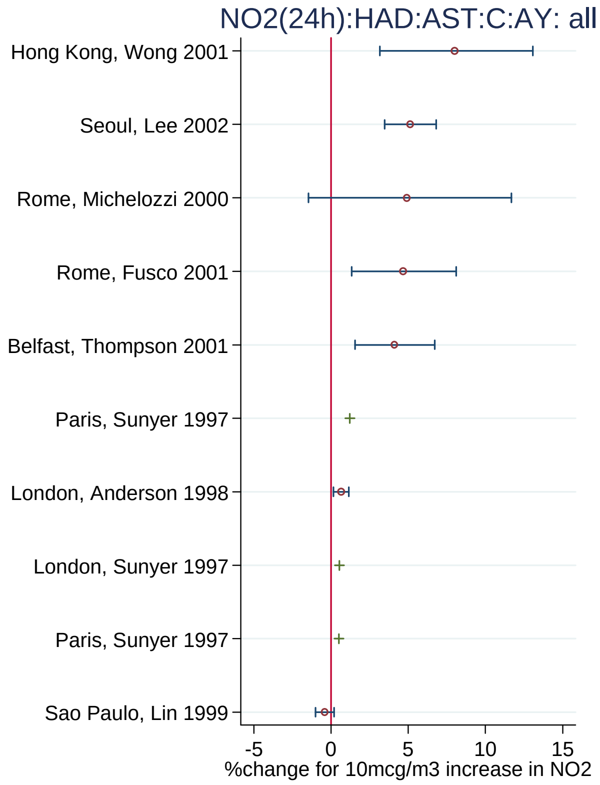

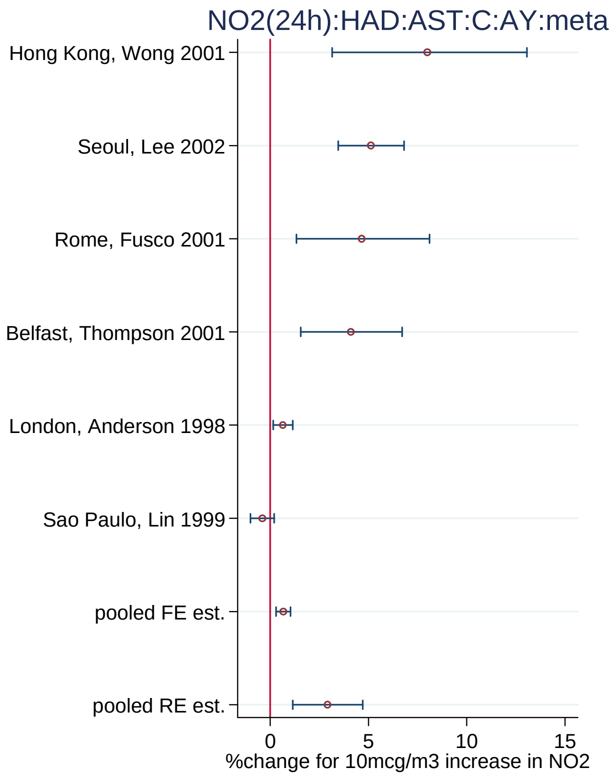

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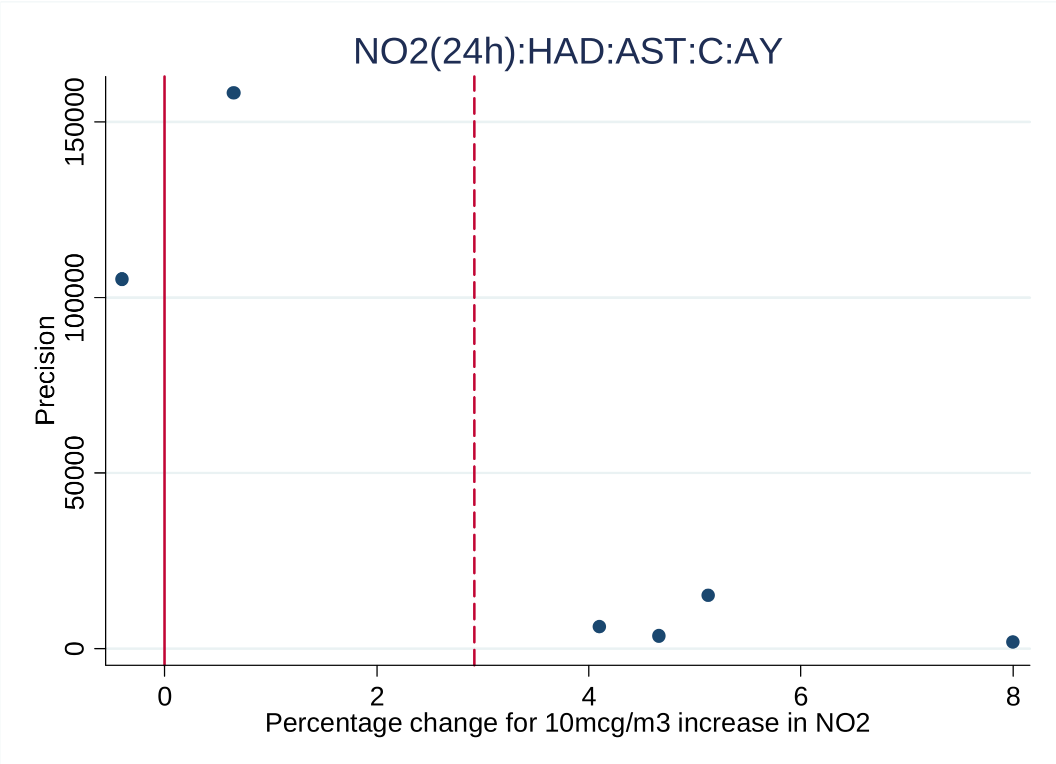

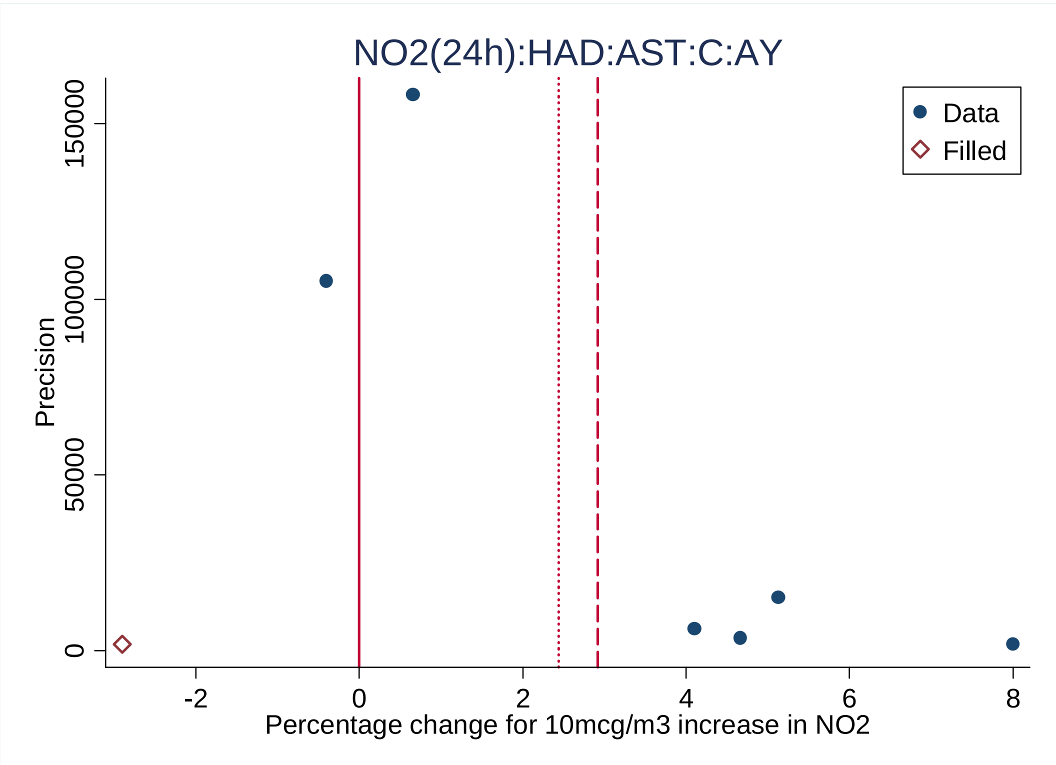

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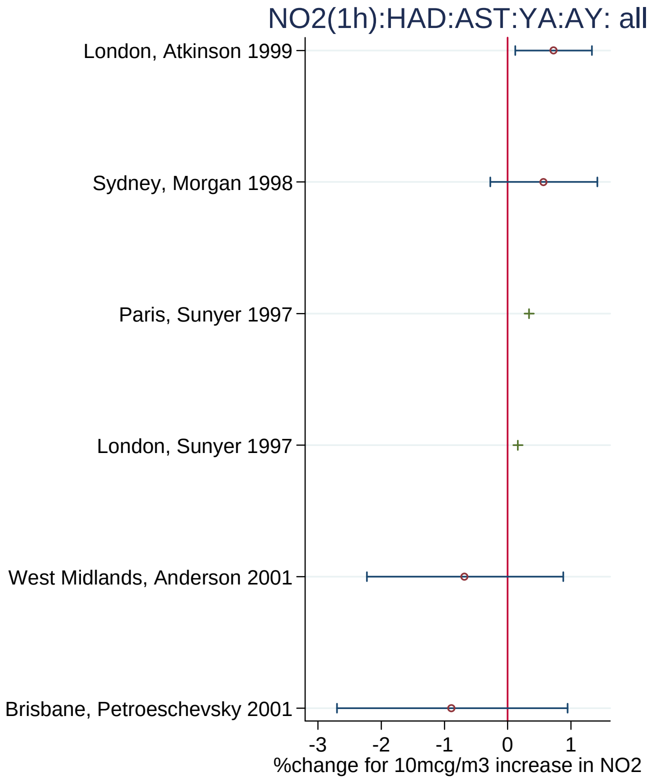
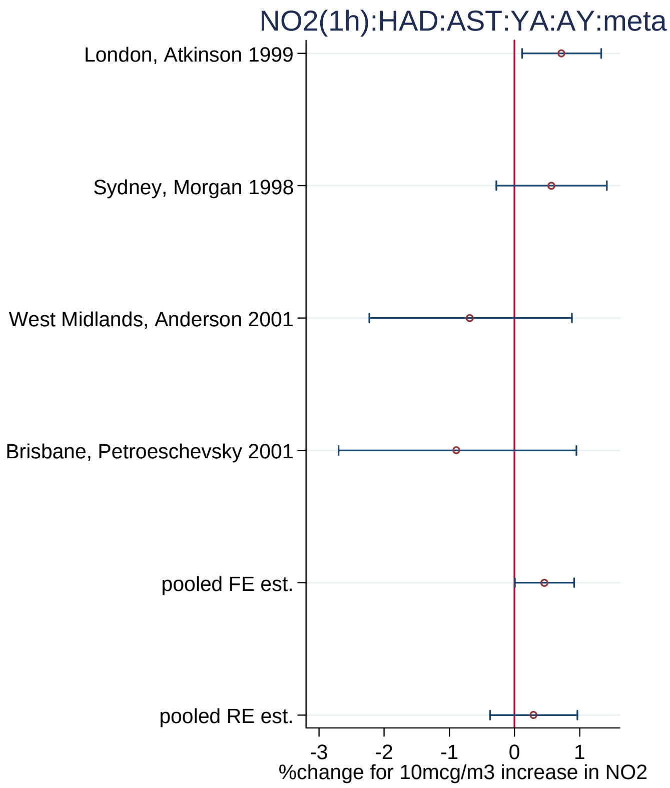
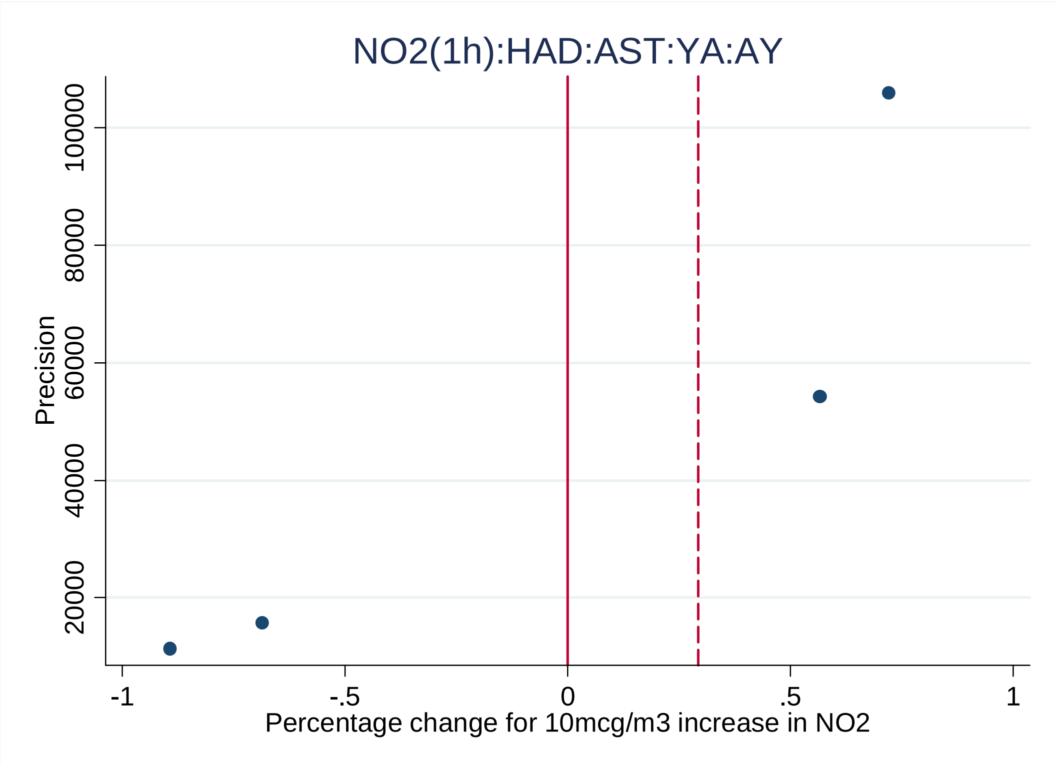
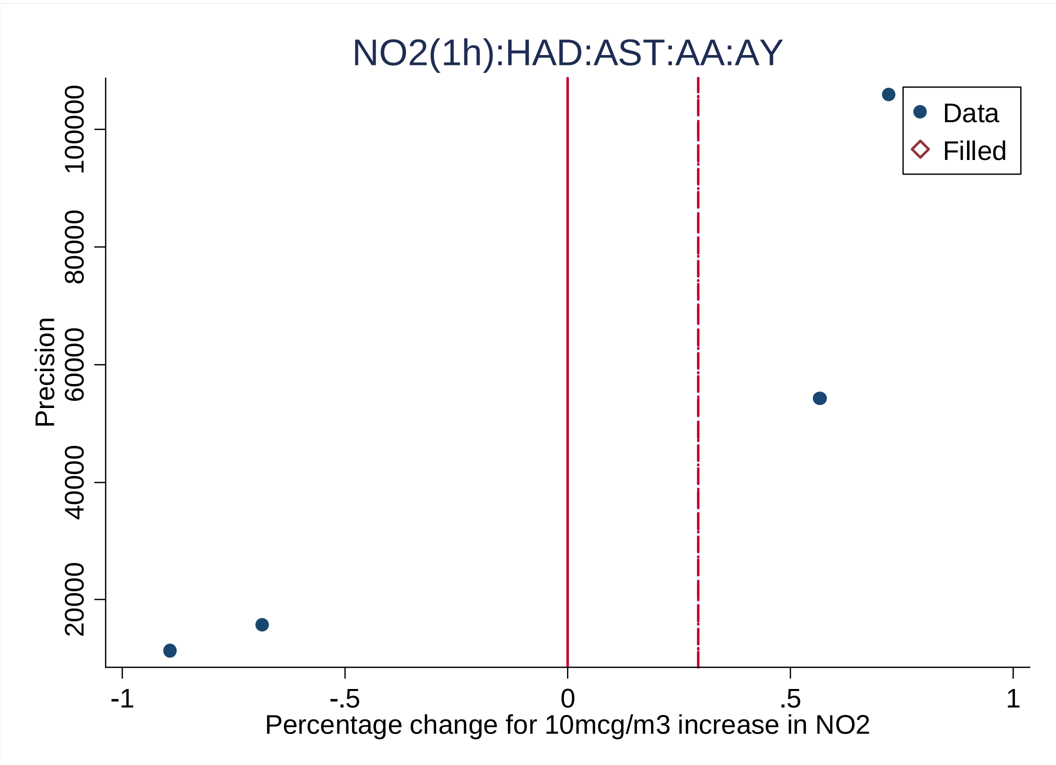




Time Series NO_2

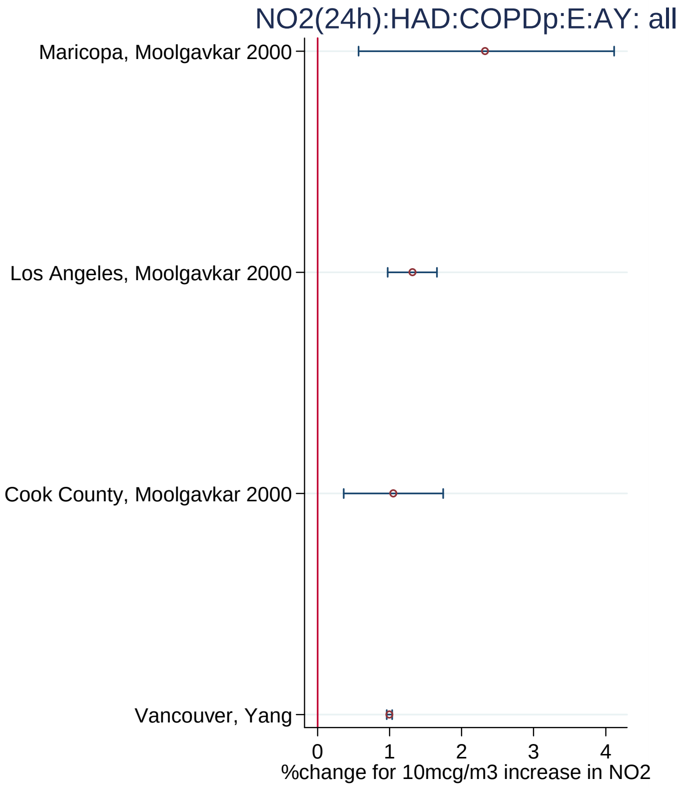
Set 32

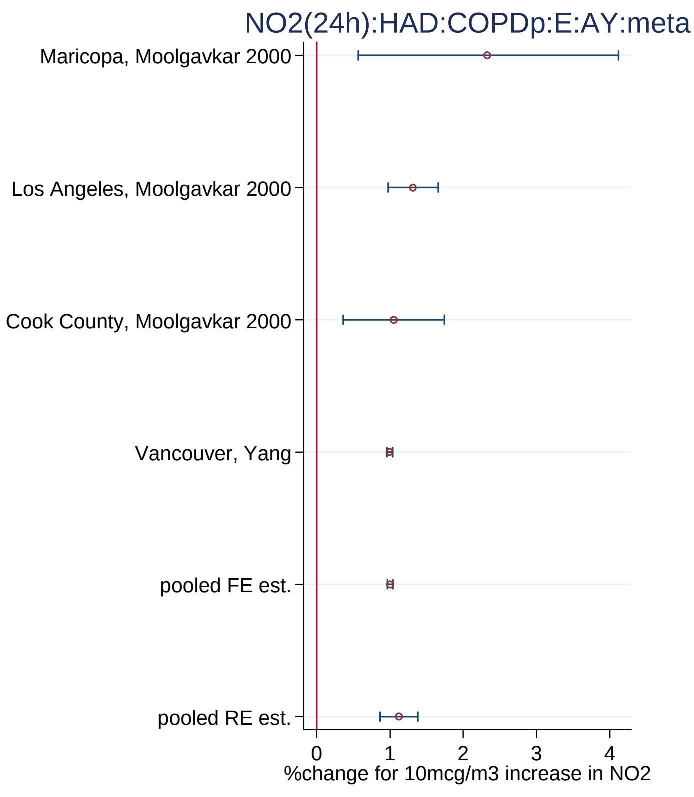




Time Series NO_2

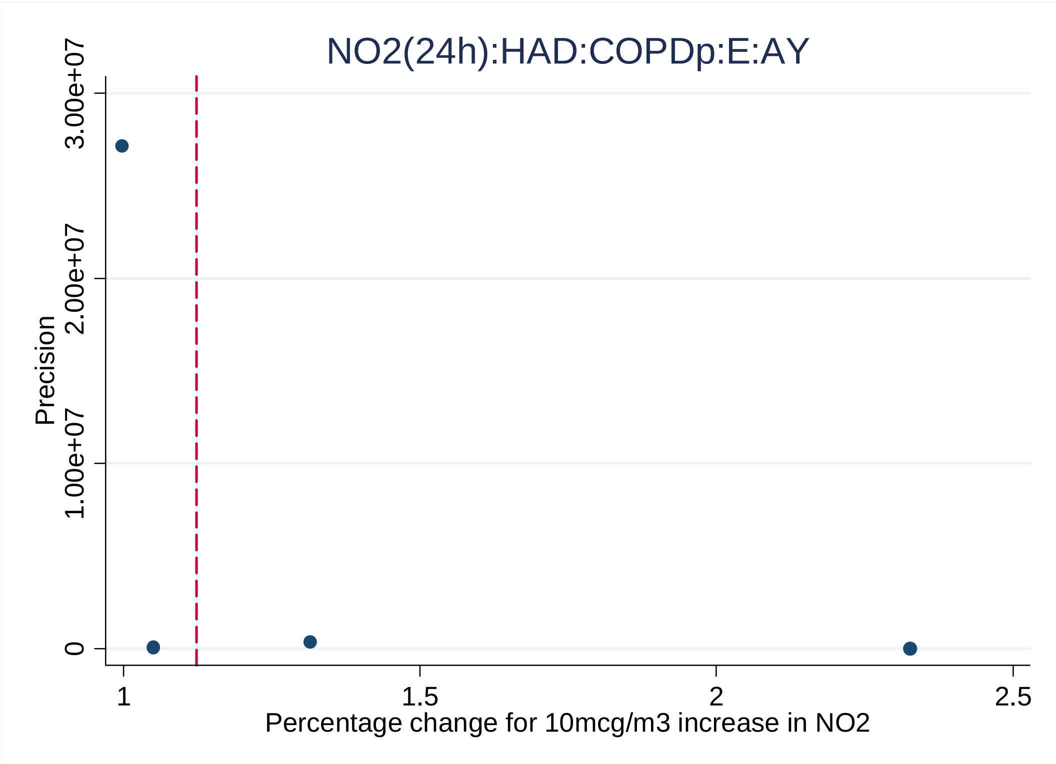
Set 33

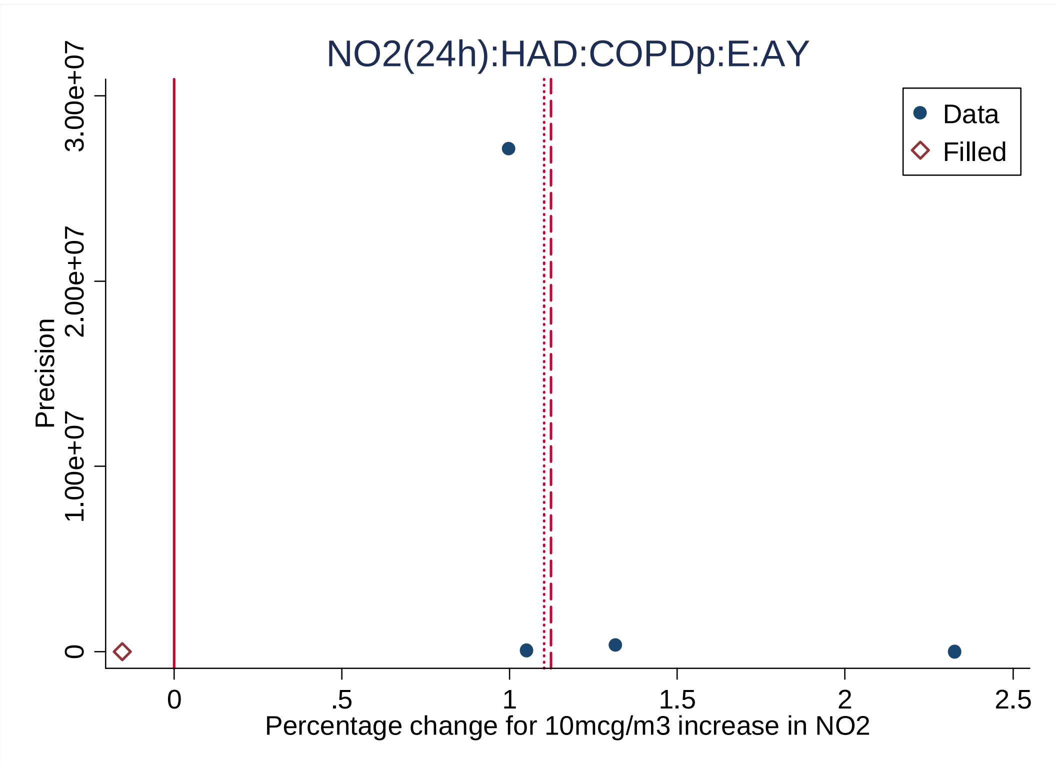




Time Series NO_2

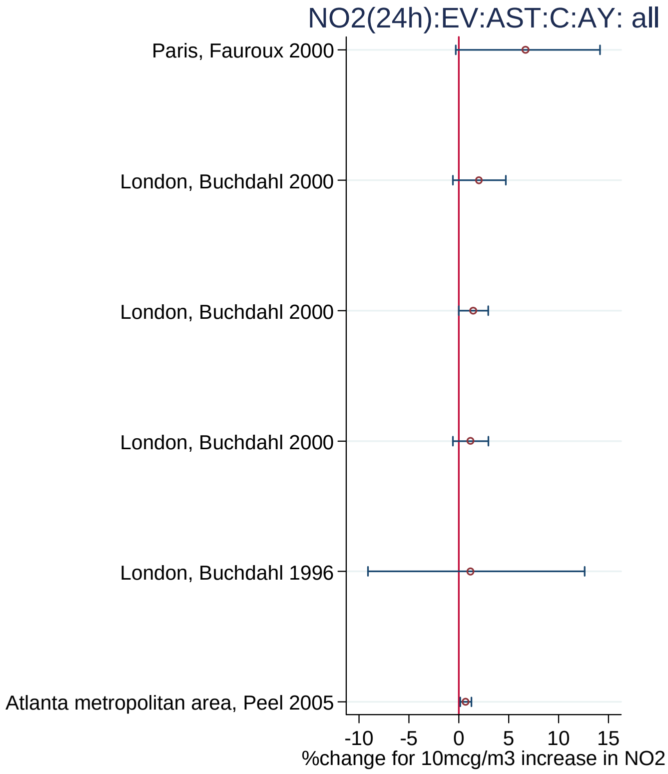
Set 33

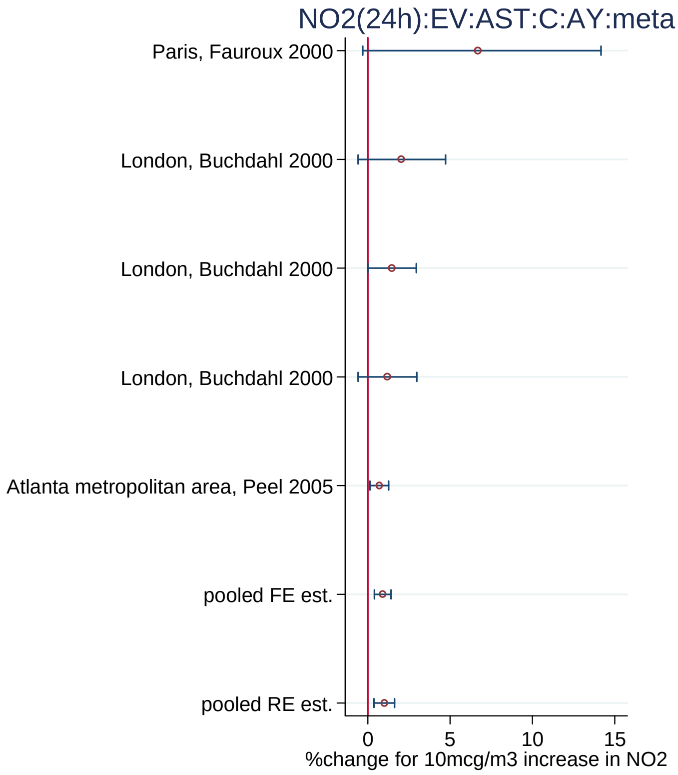




Time Series NO_2

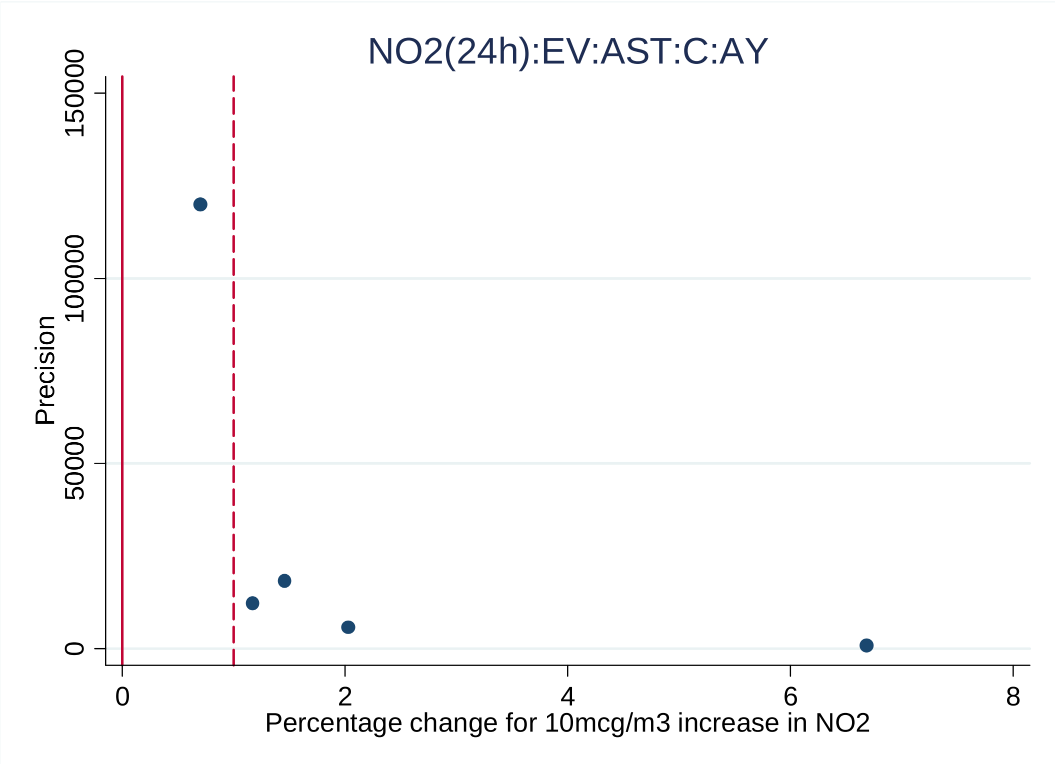
Set 34

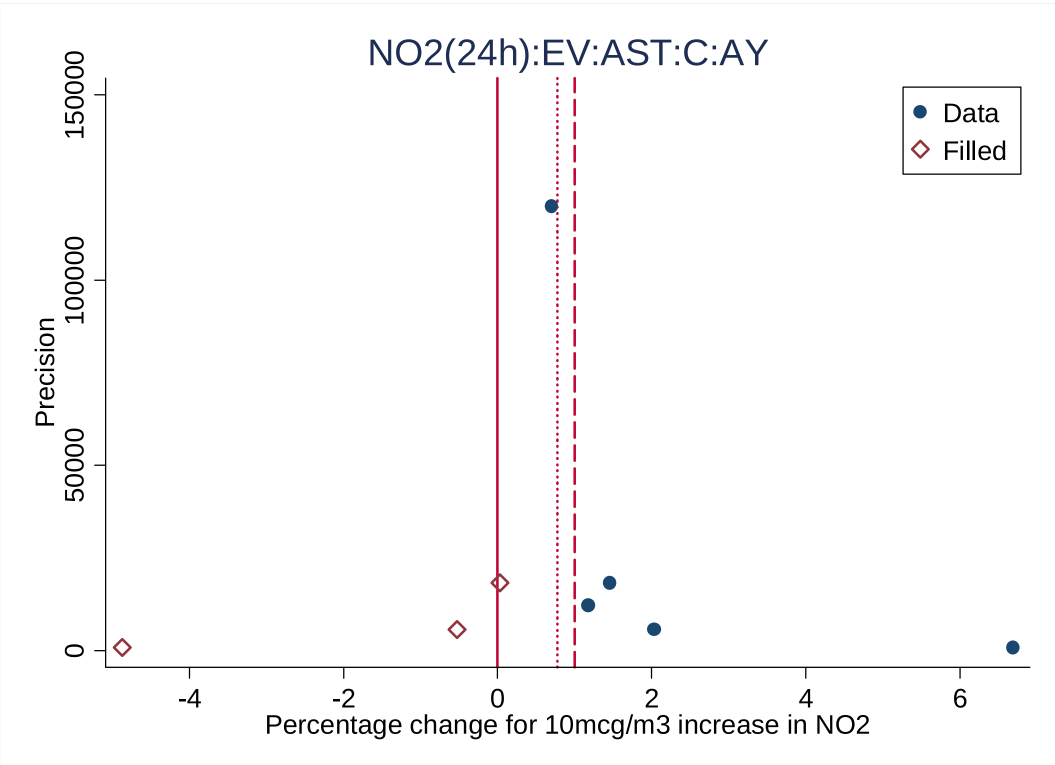




Time Series NO_2

Set 34





Time Series: O3

Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
1	233	1124	Brisbane, Simpson 1997	MORT	AC	AA	1 hour	lag 0	0.79	0.30	1.28
	258	8192	Lyon, Zmirou 1996	MORT	AC	AA	1 hour	lag 0	0.79	-1.23	2.85
	1536	12606	Seoul, Kim 2004	MORT	AC	AA	1 hour	lag 1	0.59	0.38	0.80
	148	5631	Melbourne, Simpson 2000	MORT	AC	AA	1 hour	lag 0-2	0.55	0.15	0.95
	246	1712	Amsterdam, Verhoeff 1996	MORT	AC	AA	1 hour	lag 2	0.48	0.01	0.95
	85	377	Barcelona, Sunyer 1996	MORT	AC	AA	1 hour	lag 0	0.47	0.12	0.82
	268	1459	London, Anderson 1996	MORT	AC	AA	1 hour	lag 0	0.41	0.21	0.62
	206	1735	Sydney, Morgan 1998	MORT	AC	AA	1 hour	lag 0	0.36	0.07	0.66
	26	494	Ulsan, Lee 1999	MORT	AC	AA	1 hour	lag 0	0.20	-1.17	1.59
	245	416	Mexico City, Borja-Aburto 1997	MORT	AC	AA	1 hour	lag 0	0.12	0.05	0.18
	1187	5425	Sao Paulo, Gouveia 2000	MORT	AC	AA	1 hour	lag 0	0.08	-0.10	0.26
	1152	5908	Santiago, Cifuentes 2000	MORT	AC	AA	1 hour	lag 1-2	0.07	0.01	0.13
	729	449	Los Angeles, Kinney 1995	MORT	AC	AA	1 hour	lag 1	0.07	0.00	0.14
	144	7082	Coachella Valley, Ostro 2000	MORT	AC	AA	1 hour	lag 0	-0.13	-0.51	0.26
2	1416	8365	Valencia, Saez 2002	MORT	AC	AA	8 hours	single	2.25	0.47	4.07
	233	770	Brisbane, Simpson 1997	MORT	AC	AA	8 hours	lag 0	1.18	0.39	1.98
	1465	8737	Rouen, Le Tertre 2002	MORT	AC	AA	8 hours	lag 0-1	1.04	-0.02	2.11
	1465	8731	Lyon, Le Tertre 2002	MORT	AC	AA	8 hours	lag 0-1	0.73	-0.04	1.50
	1465	8728	Le Havre, Le Tertre 2002	MORT	AC	AA	8 hours	lag 0-1	0.69	-0.46	1.86
	1465	8740	Strasbourg, Le Tertre 2002	MORT	AC	AA	8 hours	lag 0-1	0.57	-0.08	1.23
	69	7690	West Midlands, Anderson 2001	MORT	AC	AA	8 hours	lag 0-1	0.50	-0.02	1.02
	1465	8734	Paris, Le Tertre 2002	MORT	AC	AA	8 hours	lag 0-1	0.42	0.04	0.79
	219	1198	Rome, Michelozzi 1998	MORT	AC	AA	8 hours	lag 1	0.38	-0.03	0.79
	192	3250	Madrid, Galan 1999	MORT	AC	AA	8 hours	lag 4	0.33	-0.13	0.79
	1094	5480	Turin, Cadum 1999	MORT	AC	AA	8 hours	lag 0	0.32	-0.12	0.76
	1465	8743	Toulouse, Le Tertre 2002	MORT	AC	AA	8 hours	lag 0-1	0.26	-0.83	1.36
	175	5499	Netherlands, Hoek 2000	MORT	AC	AA	8 hours	lag 1	0.22	0.13	0.31
	245	3305	Mexico City, Borja-Aburto 1997	MORT	AC	AA	8 hours	lag 0	0.21	0.10	0.32
	1327	5981	Hong Kong, Wong 2001	MORT	AC	AA	8 hours	lag 5	0.18	-0.18	0.54
	1416	8363	Barcelona, Saez 2002	MORT	AC	AA	8 hours	single	0.13	-0.17	0.43
	182	411	London, Bremner 1999	MORT	AC	AA	8 hours	lag 2	-0.14	-0.45	0.18
	1360	7827	Amsterdam, Roemer 2001	MORT	AC	AA	8 hours	lag 2	-0.17	-0.52	0.18
	176	6287	Georgia, Klemm 2000	MORT	AC	AA	8 hours	lag 0	-0.20	-1.27	0.88
	1070	3793	Inchon, Hong 1999	MORT	AC	AA	8 hours	lag 1	-0.24	-0.46	-0.03
3	1494	9083	Arlington, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.70	-0.18	3.62
	1494	9073	Des Moines, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.13	-0.41	2.69
	1494	9053	Charlotte, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.09	-0.05	2.24
	225	6062	Montreal, Burnett 1998	MORT	AC	AA	24 hours	lag 0-1	1.01	0.74	1.28
	1494	9048	Austin, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.97	-0.06	2.02
	225	6061	Quebec, Burnett 1998	MORT	AC	AA	24 hours	lag 0	0.95	0.38	1.51
	1494	9061	Toledo, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.90	-0.14	1.96
	1494	9054	Nashville, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.89	-0.08	1.88
	1494	9086	Kansas, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.84	-0.62	2.31
	225	6065	Hamilton, Burnett 1998	MORT	AC	AA	24 hours	lag 0	0.80	0.31	1.29
	212	7202	Germany (rural), Peters 2000	MORT	AC	AA	24 hours	lag 0	0.79	0.04	1.55
	1494	9025	Cincinnati, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.77	-0.06	1.61
	212	7186	Czech Republic (coal basin), Peters	MORT	AC	AA	24 hours	lag 2	0.75	-0.18	1.70
	83	7281	Basel, Wietlisbach 1996	MORT	AC	AA	24 hours	lag 1	0.75	-0.70	2.22
	162	12724	Cook County, Moolgavkar 2003	MORT	AC	AA	24 hours	lag 0	0.70	0.48	0.92
	1494	9062	Raleigh, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.67	-1.04	2.41
	1494	9043	Washington, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.62	-0.14	1.39
	1494	9059	Albuquerque, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.61	-0.69	1.93
	225	6071	Vancouver, Burnett 1998	MORT	AC	AA	24 hours	lag 0	0.55	0.06	1.05
	225	6067	Windsor, Burnett 1998	MORT	AC	AA	24 hours	lag 2	0.49	-0.11	1.10
	1494	9030	Memphis, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.48	-0.34	1.32
	1494	9060	Syracuse, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.46	-0.27	1.19
	1494	9019	Riverside, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.43	-0.13	0.98
	1494	9063	Wichita, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.41	-0.70	1.54
	225	6066	London, Burnett 1998	MORT	AC	AA	24 hours	lag 1	0.40	-0.20	1.00
	1494	9007	Detroit, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.37	-0.16	0.91
	1494	9028	Honolulu, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.36	-1.11	1.84
	1494	9036	Worcester, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.34	-0.34	1.03
	225	6064	Toronto, Burnett 1998	MORT	AC	AA	24 hours	lag 0-1	0.34	0.05	0.63
	225	6063	Ottawa, Burnett 1998	MORT	AC	AA	24 hours	lag 0	0.34	-0.21	0.89
	1555	12405	Mexico City, O'Neill 2004	MORT	AC	AA	24 hours	lag 0-1	0.32	0.01	0.64
	1494	9031	Indianapolis, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.31	-0.59	1.21
	1494	9064	Colorado Springs, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.30	-1.15	1.77
	1494	9080	Lexington, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.28	-1.36	1.95
	1494	9035	Rochester, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.28	-0.32	0.88
	1494	9023	Buffalo, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.26	-0.19	0.71
	1494	9078	Huntsville, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.25	-1.32	1.85
	1494	9008	Miami, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.25	-0.18	0.68
	1494	9051	Bakersfield, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.24	-0.72	1.22
	1494	9000	New York, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.22	0.01	0.44
	1494	9024	Columbus, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.22	-0.63	1.07
	225	6069	Edmonton, Burnett 1998	MORT	AC	AA	24 hours	lag 1	0.22	-0.49	0.92
	1494	9072	Shreveport, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.21	-0.91	1.34
	1494	9027	Kansas, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.17	-0.55	0.88
	1494	9041	Boston, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.16	-0.52	0.84
	1494	9040	Louisville, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.14	-0.65	0.93
	1494	9075	Corpus Christi, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.13	-1.04	1.32
	1494	9046	El Paso, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.12	-1.14	1.40
	1494	9067	Madison, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.12	-1.36	1.63
	83	7280	Zurich, Wietlisbach 1996	MORT	AC	AA	24 hours	lag 1	0.12	-0.41	0.65
	1494	9009	Philadelphia, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.12	-0.25	0.48
	1494	9001	Chicago, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.11	-0.19	0.41
	1494	9050	Jersey City, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.10	-0.56	0.78
	1494	9032	Newark, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.08	-0.54	0.71
	1494	9066	Modesto, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.07	-1.62	1.78
	225	6068	Winnipeg, Burnett 1998	MORT	AC	AA	24 hours	lag 0	0.06	-1.14	1.28
	1494	9015	Pittsburgh, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.05	-0.40	0.50
	1494	9014	San Bernadino, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.05	-0.55	0.65
	1494	9012	San Jose, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.03	-0.89	0.95
	1494	9020	Denver, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.02	-1.25	1.31
	1494	9069	Little Rock, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.01	-1.09	1.12
	1494	9037	Orlando, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.00	-0.80	0.81

Time Series: O3

Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
3	1494	9004	San Diego, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.01	-0.43	0.40
	1494	9017	Atlanta, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.02	-0.84	0.81
	1494	9042	Birmingham, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.02	-0.95	0.92
	1494	9044	Oklahoma City, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.04	-0.79	0.71
	1494	9065	Baton Rouge, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.04	-1.08	1.00
	1494	9045	Providence, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.04	-0.79	0.70
	1494	9016	Oakland, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.05	-0.87	0.79
	1494	9002	Dallas/Fort Worth, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.09	-0.50	0.32
	1494	9033	Baltimore, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.09	-0.79	0.61
	1494	9058	Stockton, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.10	-1.66	1.50
	1494	9021	Sacramento, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.13	-0.89	0.64
	1494	9006	Phoenix, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.13	-0.84	0.58
	1494	9018	San Antonio, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.15	-0.81	0.52
	1494	9005	Santa Ana/Anaheim, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.15	-0.64	0.33
	1494	9011	Seattle, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.17	-1.04	0.71
	1494	9003	Houston, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.17	-0.61	0.27
	1494	9052	Akron, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.17	-1.12	0.79
	1494	9047	Tacoma, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.24	-1.54	1.08
	1494	9055	Tulsa, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.25	-1.09	0.60
	1494	9026	St. Petersburg, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.26	-0.73	0.21
	1494	9029	Tampa, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.26	-0.90	0.38
	1494	9039	Fresno, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.28	-1.25	0.70
	1494	9071	Knoxville, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.29	-1.57	1.00
	312	465	Tennessee eastern, Dockery 1992	MORT	AC	AA	24 hours	lag 1	-0.32	-2.05	1.43
	1494	9057	New Orleans, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.33	-1.14	0.48
	1494	9013	Cleveland, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.34	-0.86	0.18
	1494	9022	St. Louis, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.35	-1.59	0.91
	1494	9038	Jacksonville, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.38	-1.07	0.32
	162	12747	Los Angeles County, Moolgavkar 2(	MORT	AC	AA	24 hours	lag 5	-0.45	-0.61	-0.29
	225	6070	Calgary, Burnett 1998	MORT	AC	AA	24 hours	lag 0	-0.50	-1.14	0.15
	1494	9049	Dayton, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.52	-1.54	0.51
	1494	9056	Grand Rapids, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.52	-1.55	0.51
	1494	9074	Fort Wayne, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.75	-2.21	0.74
	1494	9077	Jackson, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.79	-2.28	0.73
	1494	9068	Spokane, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.76	-3.99	0.52
	216	3828	Edinburgh, Prescott 1998	MORT	AC	AA	24 hours	lag 0	-2.12	-4.14	-0.07
	501	3912	Inchon, Hong 1999	MORT	AC	AA	24 hours	lag 0-4	-2.89	-7.05	1.45
4	233	1257	Brisbane, Simpson 1997	MORT	AC	E	1 hour	lag 0	0.80	0.20	1.40
	59	13990	Genoa, Parodi 2005	MORT	AC	E	1 hour	lag 2	0.44	-0.14	1.02
	85	790	Barcelona, Sunyer 1996	MORT	AC	E	1 hour	lag 1	0.41	0.03	0.80
	148	5637	Melbourne, Simpson 2000	MORT	AC	E	1 hour	lag 0	0.40	0.10	0.70
	1187	5430	Sao Paulo, Gouveia 2000	MORT	AC	E	1 hour	lag 2	0.21	0.00	0.43
	245	395	Mexico City, Borja-Aburto 1997	MORT	AC	E	1 hour	lag 0	0.19	0.09	0.29
	177	6337	Pittsburgh, Chock 2000	MORT	AC	E	1 hour	lag 0	-0.23	-0.78	0.32
5	1140	4172	Valencia, Tenias Burillo 1999	MORT	AC	E	8 hours	lag 2	1.47	-0.11	3.07
	233	1263	Brisbane, Simpson 1997	MORT	AC	E	8 hours	lag 0	1.19	0.25	2.14
	1495	11868	Seoul, Ha 2003	MORT	AC	E	8 hours	lag 0	0.65	0.59	0.71
	59	13986	Genoa, Parodi 2005	MORT	AC	E	8 hours	lag 2	0.57	-0.10	1.25
	192	4078	Madrid, Galan 1999	MORT	AC	E	8 hours	lag 1	0.51	-0.07	1.09
	197	901	Barcelona, Saurina 1999	MORT	AC	E	8 hours	lag 0	0.39	0.01	0.78
	245	3311	Mexico City, Borja-Aburto 1997	MORT	AC	E	8 hours	lag 0	0.36	0.21	0.50
	182	739	London, Bremner 1999	MORT	AC	E	8 hours	lag 2	-0.25	-0.59	0.08
6	83	7292	Basel, Wietlisbach 1996	MORT	AC	E	24 hours	lag 1	1.46	-0.18	3.12
	59	13982	Genoa, Parodi 2005	MORT	AC	E	24 hours	lag 1	0.86	-0.08	1.82
	17	7879	Montreal, Goldberg 2001	MORT	AC	E	24 hours	lag 1	0.77	0.33	1.21
	1555	12406	Mexico City, O'Neill 2004	MORT	AC	E	24 hours	lag 0-1	0.69	0.25	1.13
	1610	13504	Atlanta, Klemm 2004	MORT	AC	E	24 hours	lag 0-1	0.68	-0.41	1.78
	1587	12448	Vancouver, Villeneuve 2003	MORT	AC	E	24 hours	lag 0	0.51	-0.33	1.35
	530	4417	Santiago, Sanhueza 1999	MORT	AC	E	24 hours	lag 1	0.15	0.05	0.25
	285	1109	Sao Paulo, Saldiva 1995	MORT	AC	E	24 hours	lag 0-1	0.07	-1.20	1.35
	83	7291	Zurich, Wietlisbach 1996	MORT	AC	E	24 hours	lag 1	0.05	-0.54	0.64

Time Series: O3

Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
7	1494	10703	Arlington, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.69	-1.14	4.61
	1494	10673	Charlotte, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.45	-0.22	3.15
	1494	10700	Lexington, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.43	-1.02	3.94
	1494	10693	Des Moines, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.36	-0.72	3.48
	1494	10681	Toledo, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.12	-0.29	2.55
	1494	10670	Jersey City, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.06	0.11	2.02
	1494	10706	Kansas, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.00	-1.03	3.07
	1494	10645	Cincinnati, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.93	-0.20	2.07
	1494	10678	Stockton, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.90	-1.26	3.10
	214	565	Mexico City, Borja-Aburto 1998	MORT	CR	AA	24 hours	lag 1-2	0.88	0.03	1.72
	1494	10656	Worcester, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.80	-0.16	1.76
	1494	10687	Madison, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.78	-1.29	2.88
	1494	10682	Raleigh, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.77	-1.69	3.29
	1494	10680	Syracuse, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.57	-0.43	1.57
	1494	10657	Orlando, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.54	-0.58	1.67
	1494	10653	Baltimore, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.52	-0.49	1.55
	1494	10698	Huntsville, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.50	-1.66	2.70
	1494	10663	Washington, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.48	-0.68	1.64
	1494	10675	Tulsa, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.47	-0.65	1.61
	1494	10689	Little Rock, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.46	-1.09	2.03
	1494	10627	Detroit, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.45	-0.26	1.16
	1494	10661	Boston, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.33	-0.63	1.31
	1494	10636	Oakland, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.32	-0.80	1.44
	1494	10629	Philadelphia, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.29	-0.22	0.80
	1494	10674	Nashville, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.27	-1.07	1.62
	1494	10668	Austin, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.27	-1.25	1.80
	1494	10683	Wichita, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.26	-1.26	1.80
	1494	10620	New York, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.25	-0.03	0.52
	1494	10643	Buffalo, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.24	-0.33	0.83
	1494	10619	Los Angeles, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.24	-0.07	0.55
	1494	10621	Chicago, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.23	-0.18	0.63
	1494	10639	Riverside, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.22	-0.49	0.93
	1494	10628	Miami, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.21	-0.38	0.80
	1494	10695	Corpus Christi, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.20	-1.48	1.91
	1494	10665	Providence, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.19	-0.85	1.24
	1494	10640	Denver, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.16	-1.57	1.92
	1494	10677	New Orleans, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.13	-1.05	1.33
	1494	10660	Louisville, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.13	-0.96	1.24
	1494	10666	El Paso, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.12	-1.69	1.96
	1494	10650	Memphis, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.11	-1.00	1.23
	1494	10679	Albuquerque, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.07	-1.79	1.95
	1494	10637	Atlanta, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.06	-1.13	1.27
	1494	10651	Indianapolis, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.05	-1.20	1.32
	1494	10644	Columbus, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.01	-1.19	1.23
	1494	10652	Newark, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.00	-0.92	0.92
	1494	10649	Tampa, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.04	-0.92	0.85
	1494	10635	Pittsburgh, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.08	-0.68	0.52
	1494	10626	Phoenix, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.08	-1.05	0.89
	1494	10659	Fresno, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.08	-1.40	1.25
	1494	10624	San Diego, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.10	-0.67	0.47
	1494	10625	Santa Ana/Anaheim, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.11	-0.75	0.53
	1494	10676	Grand Rapids, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.17	-1.56	1.25
	1494	10691	Knoxville, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.18	-1.95	1.63
	1494	10671	Bakersfield, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.18	-1.45	1.10
	1494	10662	Birmingham, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.20	-1.49	1.11
	1494	10654	Salt Lake City, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.23	-1.98	1.55
	1494	10622	Dallas/Fort Worth, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.24	-0.79	0.31
	1494	10647	Kansas, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.26	-1.22	0.70
	1494	10646	St. Petersburg, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.27	-0.88	0.35
	1494	10634	San Bernadino, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.30	-1.08	0.48
	1494	10631	Seattle, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.32	-1.51	0.87
	1494	10684	Colorado Springs, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.34	-2.33	1.69
	1494	10623	Houston, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.37	-0.98	0.25
	1494	10633	Cleveland, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.37	-1.08	0.35
	1494	10632	San Jose, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.38	-1.61	0.88
	1494	10692	Shreveport, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.40	-1.94	1.17
	1494	10664	Oklahoma City, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.40	-1.39	0.61
	1494	10641	Sacramento, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.43	-1.46	0.61
	1494	10672	Akron, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.46	-1.75	0.84
	1494	10688	Spokane, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.48	-3.58	2.71
	1494	10655	Rochester, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.49	-1.31	0.33
	1494	10642	St. Louis, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.50	-2.18	1.21
	1494	10648	Honolulu, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.63	-2.59	1.36
	1494	10685	Baton Rouge, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.69	-2.17	0.82
	1494	10669	Dayton, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.96	-2.35	0.45
	1494	10658	Jacksonville, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.08	-2.01	-0.14
	1494	10667	Tacoma, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.25	-2.99	0.52
	1494	10694	Fort Wayne, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.42	-3.36	0.57
	1494	10686	Modesto, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.66	-3.83	0.57
	1494	10697	Jackson, Samet 2003	MORT	CR	AA	24 hours	lag 1	-2.18	-4.21	-0.11
8	183	4402	Barcelona, Tobias 1998	MORT	CV	AA	1 hour	lag 5	0.57	0.09	1.06
	206	1231	Sydney, Morgan 1998	MORT	CV	AA	1 hour	lag 0	0.45	-0.04	0.94
	268	3268	London, Anderson 1996	MORT	CV	AA	1 hour	lag 0	0.35	0.05	0.65
	245	424	Mexico City, Borja-Aburto 1997	MORT	CV	AA	1 hour	lag 0	0.18	0.03	0.32
	144	7088	Coachella Valley, Ostro 2000	MORT	CV	AA	1 hour	lag 0	-0.51	-1.17	0.16

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Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
9	1416	8389	Valencia, Saez 2002	MORT	CV	AA	8 hours	single	3.14	0.35	6.00
	1465	8738	Rouen, Le Tertre 2002	MORT	CV	AA	8 hours	lag 0-1	1.38	-0.63	3.43
	1332	7588	Toulouse, Zeghnoun 2001	MORT	CV	AA	8 hours	lag 3	1.22	0.02	2.43
	182	671	London, Bremner 1999	MORT	CV	AA	8 hours	lag 2	0.67	0.10	1.25
	1094	5485	Turin, Cadum 1999	MORT	CV	AA	8 hours	lag 0	0.67	-0.02	1.37
	1416	8387	Barcelona, Saez 2002	MORT	CV	AA	8 hours	single	0.55	-0.03	1.14
	1416	8388	Madrid, Saez 2002	MORT	CV	AA	8 hours	single	0.54	-0.05	1.13
	1465	8735	Paris, Le Tertre 2002	MORT	CV	AA	8 hours	lag 0-1	0.42	-0.34	1.18
	1465	8732	Lyon, Le Tertre 2002	MORT	CV	AA	8 hours	lag 0-1	0.38	-1.59	2.38
	245	3309	Mexico City, Borja-Aburto 1997	MORT	CV	AA	8 hours	lag 0	0.37	0.15	0.59
	161	13267	Helsinki, Penttinen 2004	MORT	CV	AA	8 hours	lag 0-4	0.36	-0.46	1.19
	1275	6661	Netherlands, Hoek 2001	MORT	CV	AA	8 hours	lag 1	0.36	0.21	0.51
	1465	8729	Le Havre, Le Tertre 2002	MORT	CV	AA	8 hours	lag 0-1	0.28	-1.80	2.40
	1465	8741	Strasbourg, Le Tertre 2002	MORT	CV	AA	8 hours	lag 0-1	0.22	-0.83	1.28
	69	7699	West Midlands, Anderson 2001	MORT	CV	AA	8 hours	lag 0-1	0.16	-0.60	0.92
	153	8049	Hong Kong, Wong 2002	MORT	CV	AA	8 hours	lag 0	-0.30	-0.90	0.30
	1070	3813	Inchon, Hong 1999	MORT	CV	AA	8 hours	lag 1	-0.90	-6.28	4.80
10	162	12878	Cook County, Moolgavkar 2003	MORT	CV	AA	24 hours	lag 0	0.90	0.57	1.22
	17	7882	Montreal, Goldberg 2001	MORT	CV	AA	24 hours	lag 1	0.72	0.02	1.42
	212	7212	Germany (rural), Peters 2000	MORT	CV	AA	24 hours	lag 0	0.59	-0.38	1.57
	236	586	Philadelphia, Kelsall 1997	MORT	CV	AA	24 hours	lag 1	0.28	-0.18	0.74
	162	12903	Los Angeles County, Moolgavkar 2(	MORT	CV	AA	24 hours	lag 2	0.25	0.04	0.46
	530	2916	Santiago, Sanhueza 1999	MORT	CV	AA	24 hours	lag 0	0.08	-0.06	0.22
	83	7314	Zurich, Wietlisbach 1996	MORT	CV	AA	24 hours	lag 1	-0.03	-0.81	0.76
	83	7315	Basel, Wietlisbach 1996	MORT	CV	AA	24 hours	lag 1	-1.62	-3.83	0.65
	501	3918	Inchon, Hong 1999	MORT	CV	AA	24 hours	lag 0-4	-3.67	-10.95	4.21
11	268	3271	London, Anderson 1996	MORT	RESP	AA	1 hour	lag 0	1.01	0.42	1.60
	183	4398	Barcelona, Tobias 1998	MORT	RESP	AA	1 hour	lag 5	0.69	-0.39	1.78
	233	1154	Brisbane, Simpson 1997	MORT	RESP	AA	1 hour	lag 0	0.64	-1.12	2.43
	253	1319	Paris, Dab 1996	MORT	RESP	AA	1 hour	lag 0	0.39	-0.68	1.48
	144	7094	Coachella Valley, Ostro 2000	MORT	RESP	AA	1 hour	lag 0	0.37	-1.17	1.94
	258	8195	Lyon, Zmirou 1996	MORT	RESP	AA	1 hour	lag 1	0.20	-2.09	2.54
	245	423	Mexico City, Borja-Aburto 1997	MORT	RESP	AA	1 hour	lag 0	0.11	-0.10	0.32
	206	1745	Sydney, Morgan 1998	MORT	RESP	AA	1 hour	lag 0	-0.15	-1.32	1.03
12	161	13285	Helsinki, Penttinen 2004	MORT	RESP	AA	8 hours	lag 0-4	3.27	1.25	5.33
	1465	8739	Rouen, Le Tertre 2002	MORT	RESP	AA	8 hours	lag 0-1	2.07	-2.06	6.38
	233	1151	Brisbane, Simpson 1997	MORT	RESP	AA	8 hours	lag 0	1.92	-0.94	4.86
	1416	8413	Valencia, Saez 2002	MORT	RESP	AA	8 hours	single	1.85	-3.83	7.88
	1465	8733	Lyon, Le Tertre 2002	MORT	RESP	AA	8 hours	lag 0-1	1.72	-1.00	4.51
	153	8046	Hong Kong, Wong 2002	MORT	RESP	AA	8 hours	lag 2	1.00	0.40	1.60
	1465	8745	Toulouse, Le Tertre 2002	MORT	RESP	AA	8 hours	lag 0-1	1.00	-3.18	5.36
	1094	5490	Turin, Cadum 1999	MORT	RESP	AA	8 hours	lag 0	0.51	-1.48	2.55
	1416	8411	Barcelona, Saez 2002	MORT	RESP	AA	8 hours	single	0.40	-0.58	1.39
	69	7708	West Midlands, Anderson 2001	MORT	RESP	AA	8 hours	lag 0-1	0.38	-0.97	1.75
	245	3307	Mexico City, Borja-Aburto 1997	MORT	RESP	AA	8 hours	lag 0	0.17	-0.16	0.49
	1416	8412	Madrid, Saez 2002	MORT	RESP	AA	8 hours	single	0.10	-0.98	1.20
	1070	4212	Inchon, Hong 1999	MORT	RESP	AA	8 hours	lag 1	0.05	-8.67	9.60
	1465	8742	Strasbourg, Le Tertre 2002	MORT	RESP	AA	8 hours	lag 0-1	0.02	-2.41	2.51
	1465	8736	Paris, Le Tertre 2002	MORT	RESP	AA	8 hours	lag 0-1	-0.38	-1.87	1.13
	182	418	London, Bremner 1999	MORT	RESP	AA	8 hours	lag 2	-0.71	-1.55	0.13
	1465	8730	Le Havre, Le Tertre 2002	MORT	RESP	AA	8 hours	lag 0-1	-2.02	-6.54	2.72
13	83	7303	Basel, Wietlisbach 1996	MORT	RESP	AA	24 hours	lag 1	1.95	-1.10	5.09
	1073	4071	Buffalo, Gwynn 2000	MORT	RESP	AA	24 hours	lag 0	1.22	-0.08	2.53
	17	7900	Montreal, Goldberg 2001	MORT	RESP	AA	24 hours	lag 1	1.15	-0.08	2.39
	236	634	Philadelphia, Kelsall 1997	MORT	RESP	AA	24 hours	lag 1	0.62	-0.72	1.97
	214	564	Mexico City, Borja-Aburto 1998	MORT	RESP	AA	24 hours	lag 1-2	-0.37	-1.81	1.09
	83	7302	Zurich, Wietlisbach 1996	MORT	RESP	AA	24 hours	lag 1	-1.50	-2.78	-0.20
14	364	3000	Hong Kong, Wong 1999	HAD	CV	AA	8 hours	lag 0-5	1.30	0.50	2.11
	1053	1349	London, Atkinson 1999	HAD	CV	AA	8 hours	lag 2	0.45	0.04	0.87
	69	7717	West Midlands, Anderson 2001	HAD	CV	AA	8 hours	lag 0-1	0.02	-0.48	0.51
	49	6444	Brisbane, Petroeschevsky 2001	HAD	CV	AA	8 hours	lag 3	-0.65	-1.46	0.16
	1184	5377	Valencia, Ballester 2001	HAD	CV	AA	8 hours	lag 2	-0.95	-2.90	1.04
15	1429	8231	Hong Kong, Wong 2002	HAD	CAR	AA	8 hours	lag 2	0.50	0.10	0.90
	69	7726	West Midlands, Anderson 2001	HAD	CAR	AA	8 hours	lag 0-1	0.28	-0.26	0.82
	1429	8247	London, Wong 2002	HAD	CAR	AA	8 hours	lag 0	-0.80	-1.20	-0.40
	1184	5382	Valencia, Ballester 2001	HAD	CAR	AA	8 hours	lag 5	-2.14	-4.65	0.44
16	1429	8235	Hong Kong, Wong 2002	HAD	IHD	AA	8 hours	lag 3	0.50	0.00	1.00
	1547	11994	California southern, Mann 2002	HAD	IHD	AA	8 hours	lag 0	-0.31	-0.62	0.01
	1429	8251	London, Wong 2002	HAD	IHD	AA	8 hours	lag 0	-0.90	-1.40	-0.40
	1629	13952	Tehran, Hosseinpoor	HAD	IHD	AA	8 hours	lag 1	-3.60	-5.74	-1.42
17	484	2696	Los Angeles, Morris 1995	HAD	HF	E	1 hour		0.24	0.04	0.45
	484	2697	Chicago, Morris 1995	HAD	HF	E	1 hour		0.12	-0.30	0.55
	484	2702	Milwaukee, Morris 1995	HAD	HF	E	1 hour		0.00	-2.61	2.68
	484	2701	Houston, Morris 1995	HAD	HF	E	1 hour		-0.04	-0.44	0.36
	484	2698	Philadelphia, Morris 1995	HAD	HF	E	1 hour		-0.21	-0.58	0.15
	484	2700	Detroit, Morris 1995	HAD	HF	E	1 hour		-0.44	-1.03	0.16
	484	2699	New York, Morris 1995	HAD	HF	E	1 hour		-0.48	-0.87	-0.09

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18	364	2992	Hong Kong, Wong 1999	HAD	RESP	AA	8 hours	lag 0-3	2.20	1.50	2.90
	49	6420	Brisbane, Petroeschevsky 2001	HAD	RESP	AA	8 hours	lag 2	1.14	0.15	2.15
	1265	5674	Rome, Fusco 2001	HAD	RESP	AA	8 hours	lag 1	0.87	-0.17	1.93
	417	1400	London, De Leon 1996	HAD	RESP	AA	8 hours	lag 1	0.56	0.22	0.90
	253	1326	Paris, Dab 1996	HAD	RESP	AA	8 hours	lag 0	0.24	-0.25	0.73
	1053	1763	London, Atkinson 1999	HAD	RESP	AA	8 hours	lag 1	0.23	-0.20	0.67
	69	7753	West Midlands, Anderson 2001	HAD	RESP	AA	8 hours	lag 0-1	-0.42	-0.95	0.10
19	1073	3464	Buffalo, Gwynn 2000	HAD	RESP	AA	24 hours	lag 1	0.98	0.46	1.50
	1185	5392	Daejeon, Cho 2000	HAD	RESP	AA	24 hours	lag 0	0.34	-0.31	0.99
	1185	5403	Ulsan, Cho 2000	HAD	RESP	AA	24 hours	lag 0	0.29	-0.42	1.00
	1185	5397	Suwon, Cho 2000	HAD	RESP	AA	24 hours	lag 0	0.20	-0.26	0.65
	1556	12622	Drammen, Oftedal 2003	HAD	RESP	AA	24 hours	lag 0	-0.15	-2.20	1.94
20	1265	5722	Rome, Fusco 2001	HAD	RESP	C	8 hours	lag 1	2.22	0.08	4.41
	364	4325	Hong Kong, Wong 1999	HAD	RESP	C	8 hours	lag 0-3	1.90	0.90	2.91
	1053	1769	London, Atkinson 1999	HAD	RESP	C	8 hours	lag 0	-0.32	-1.13	0.50
	69	7762	West Midlands, Anderson 2001	HAD	RESP	C	8 hours	lag 0-1	-0.93	-1.77	-0.08
21	49	6412	Brisbane, Petroeschevsky 2001	HAD	RESP	YA	8 hours	lag 2	2.23	0.65	3.83
	364	2990	Hong Kong, Wong 1999	HAD	RESP	YA	8 hours	lag 0-3	2.20	1.10	3.31
	480	2622	Amsterdam, Schouten 1996	HAD	RESP	YA	8 hours	lag 1	0.01	-1.02	1.05
	480	2644	Rotterdam, Schouten 1996	HAD	RESP	YA	8 hours	lag 0	-0.02	-1.18	1.15
	1053	1775	London, Atkinson 1999	HAD	RESP	YA	8 hours	lag 3	-0.39	-1.05	0.27
	69	7771	West Midlands, Anderson 2001	HAD	RESP	YA	8 hours	lag 0-1	-0.50	-1.39	0.41
22	49	6416	Brisbane, Petroeschevsky 2001	HAD	RESP	E	8 hours	lag 3	2.66	0.80	4.57
	480	2307	Rotterdam, Schouten 1996	HAD	RESP	E	8 hours	lag 2	2.24	0.38	4.13
	1429	8243	London, Wong 2002	HAD	RESP	E	8 hours	lag 0	0.60	0.10	1.10
	1429	8227	Hong Kong, Wong 2002	HAD	RESP	E	8 hours	lag 1	0.60	0.20	1.00
	480	2608	Amsterdam, Schouten 1996	HAD	RESP	E	8 hours	lag 1	0.58	-0.42	1.60
	480	2630	Rotterdam, Schouten 1996	HAD	RESP	E	8 hours	lag 0	0.43	-1.25	2.14
	69	7780	West Midlands, Anderson 2001	HAD	RESP	E	8 hours	lag 0-1	0.03	-0.73	0.80
	480	2319	Rotterdam, Schouten 1996	HAD	RESP	E	8 hours	lag 1	-0.76	-2.90	1.44
23	123	12196	Madrid, Galan 2003	HAD	ASTHMA	AA	8 hours	lag 1	4.50	1.80	7.27
	49	6432	Brisbane, Petroeschevsky 2001	HAD	ASTHMA	AA	8 hours	lag 0-4	4.40	2.08	6.78
	364	3004	Hong Kong, Wong 1999	HAD	ASTHMA	AA	8 hours	lag 0-2	3.10	1.70	4.52
	1265	5699	Rome, Fusco 2001	HAD	ASTHMA	AA	8 hours	lag 2	1.74	-1.14	4.69
	480	2293	Amsterdam, Schouten 1996	HAD	ASTHMA	AA	8 hours	lag 1	0.87	-0.68	2.44
	1053	1787	London, Atkinson 1999	HAD	ASTHMA	AA	8 hours	lag 2	-0.61	-1.42	0.20
	253	1342	Paris, Dab 1996	HAD	ASTHMA	AA	8 hours	lag 0	-1.29	-2.30	-0.27
24	1466	8591	Seoul, Lee 2002	HAD	ASTHMA	C	1 hour	lag 1	2.65	1.57	3.73
	1006	6713	Sao Paulo, Lin 1999	HAD	ASTHMA	C	1 hour	lag 0-4	2.50	1.30	3.71
	1208	6513	Ciudad Juarez, Hernandez-Cadena	HAD	ASTHMA	C	1 hour	lag 6	0.86	-0.12	1.84
	1605	13390	Melbourne inner, Erbas 2005	HAD	ASTHMA	C	1 hour	lag 0	0.00	-2.55	2.62
	1605	13395	Melbourne south, Erbas 2005	HAD	ASTHMA	C	1 hour	lag 0	-1.73	-4.82	1.46
25	263	1759	Helsinki, Ponka 1996	HAD	ASTHMA	C	8 hours	lag 0	7.68	0.35	15.55
	49	6424	Brisbane, Petroeschevsky 2001	HAD	ASTHMA	C	8 hours	lag 1	3.15	0.75	5.61
	1265	5747	Rome, Fusco 2001	HAD	ASTHMA	C	8 hours	lag 2	2.31	-2.12	6.94
	1053	1793	London, Atkinson 1999	HAD	ASTHMA	C	8 hours	lag 2	-1.24	-2.30	-0.18
	69	7789	West Midlands, Anderson 2001	HAD	ASTHMA	C	8 hours	lag 0-1	-2.39	-4.08	-0.66
26	49	6428	Brisbane, Petroeschevsky 2001	HAD	ASTHMA	YA	8 hours	lag 2	4.12	1.83	6.45
	1429	8223	Hong Kong, Wong 2002	HAD	ASTHMA	YA	8 hours	lag 2	1.20	0.00	2.41
	69	7798	West Midlands, Anderson 2001	HAD	ASTHMA	YA	8 hours	lag 0-1	-0.30	-2.06	1.49
	1429	8239	London, Wong 2002	HAD	ASTHMA	YA	8 hours	lag 0	-0.70	-1.70	0.31
27	1265	5710	Rome, Fusco 2001	HAD	COPDm	AA	8 hours	lag 1	1.49	-0.38	3.39
	253	1334	Paris, Dab 1996	HAD	COPDm	AA	8 hours	lag 0-1	1.15	-0.09	2.40
	480	2658	Rotterdam, Schouten 1996	HAD	COPDm	AA	8 hours	lag 2	0.38	-0.82	1.60
	480	2279	Amsterdam, Schouten 1996	HAD	COPDm	AA	8 hours	lag 0	0.38	-0.79	1.57
28	11	5658	Paris, Fauroux 2000	EV	ASTHMA	C	8 hours	lag 1	4.28	0.58	8.10
	1139	2938	Seattle, Norris 1999	EV	ASTHMA	C	8 hours	lag 1	2.18	-2.17	6.72
	1621	13192	Portland, Wilson 2005	EV	ASTHMA	C	8 hours	lag 0-4	2.02	-0.94	5.06
	1621	13200	Manchester, Wilson 2005	EV	ASTHMA	C	8 hours	lag 0	1.01	-4.76	7.12
	542	3706	London, Atkinson 1999	EV	ASTHMA	C	8 hours	lag 0	-1.04	-2.47	0.41

Time Series O_3

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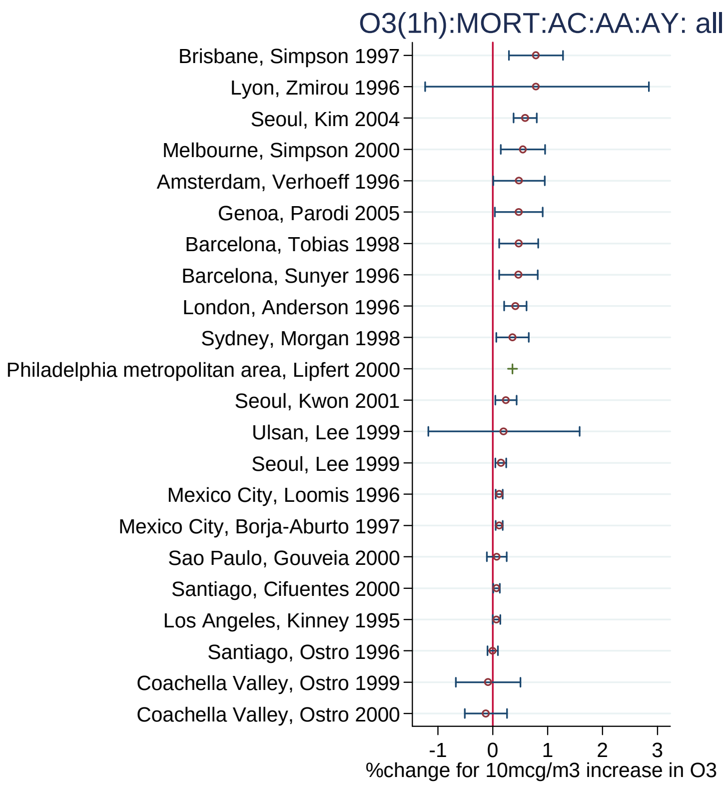
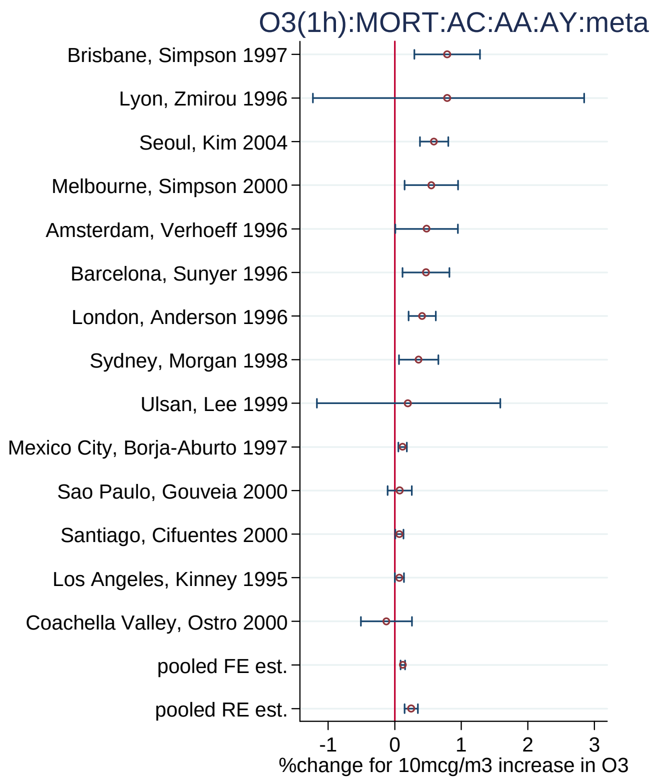
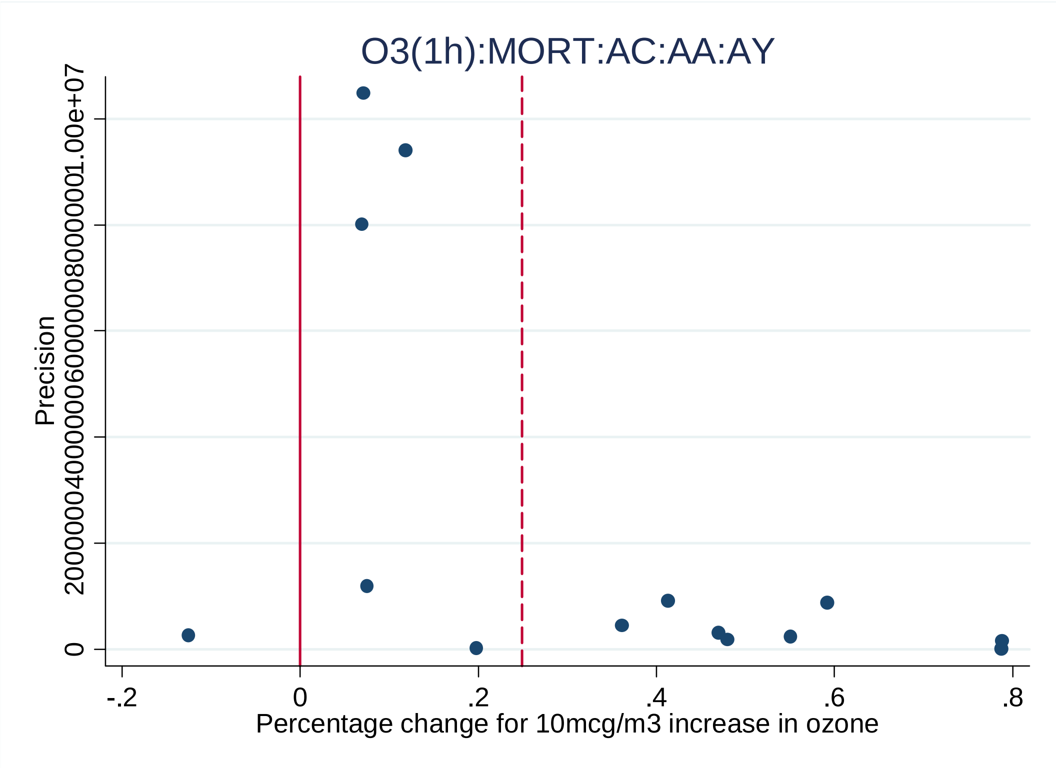
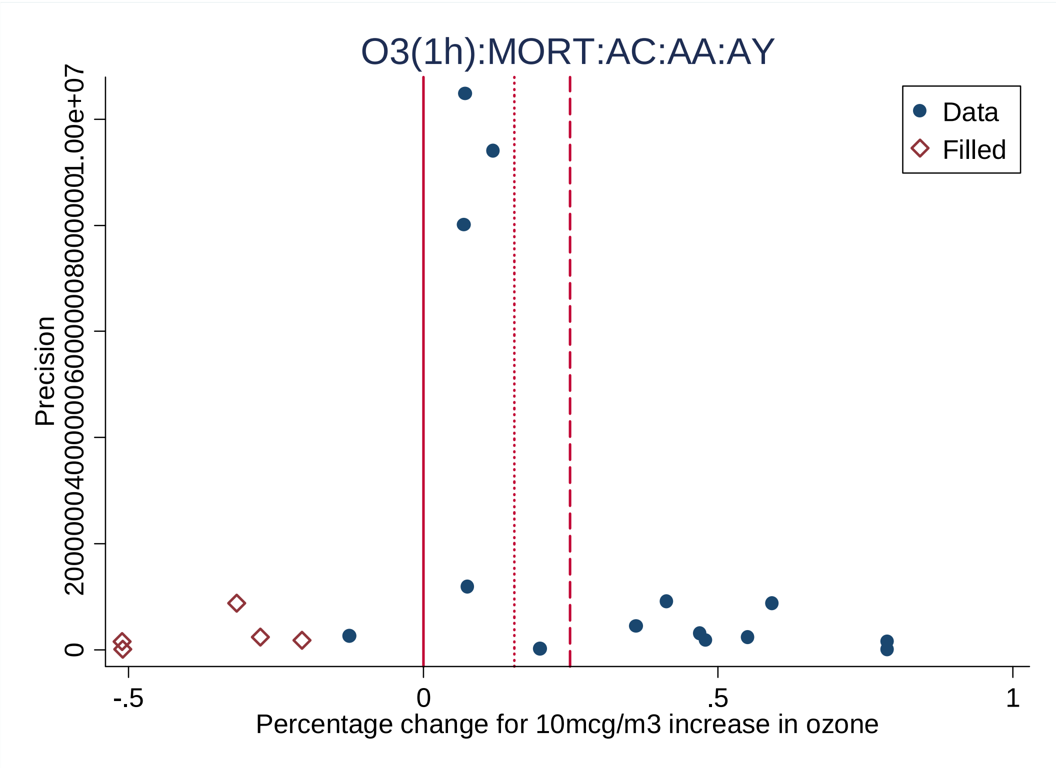




Time Series O_3

Set 1





Time Series O_3

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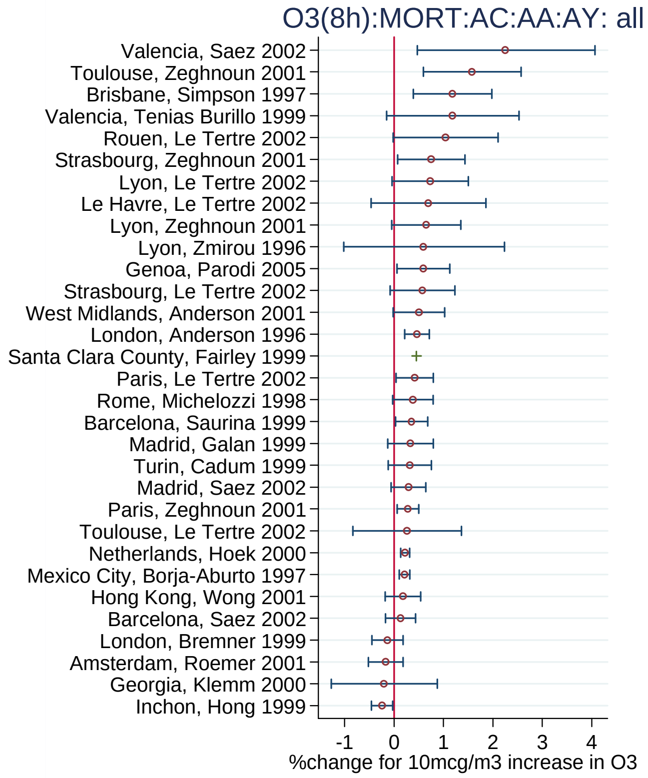

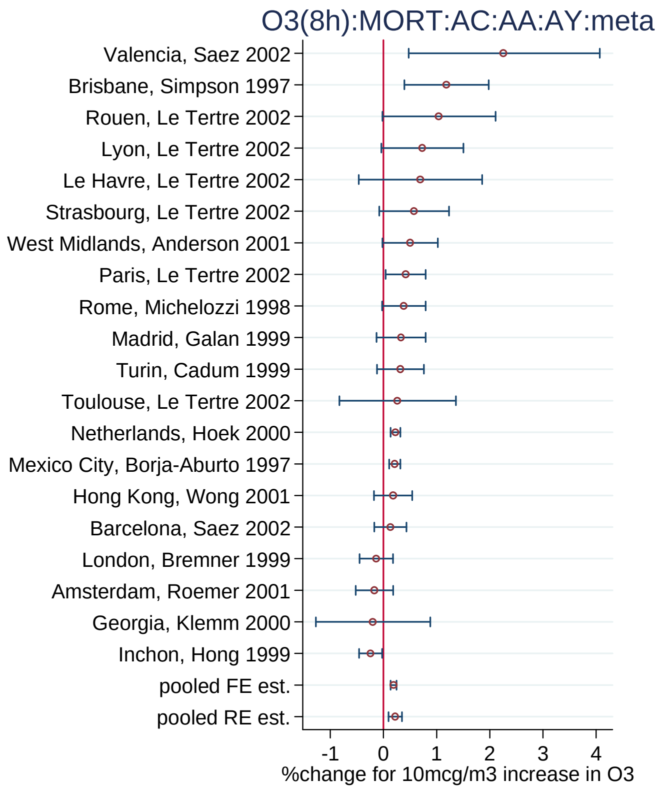

Time Series O_3

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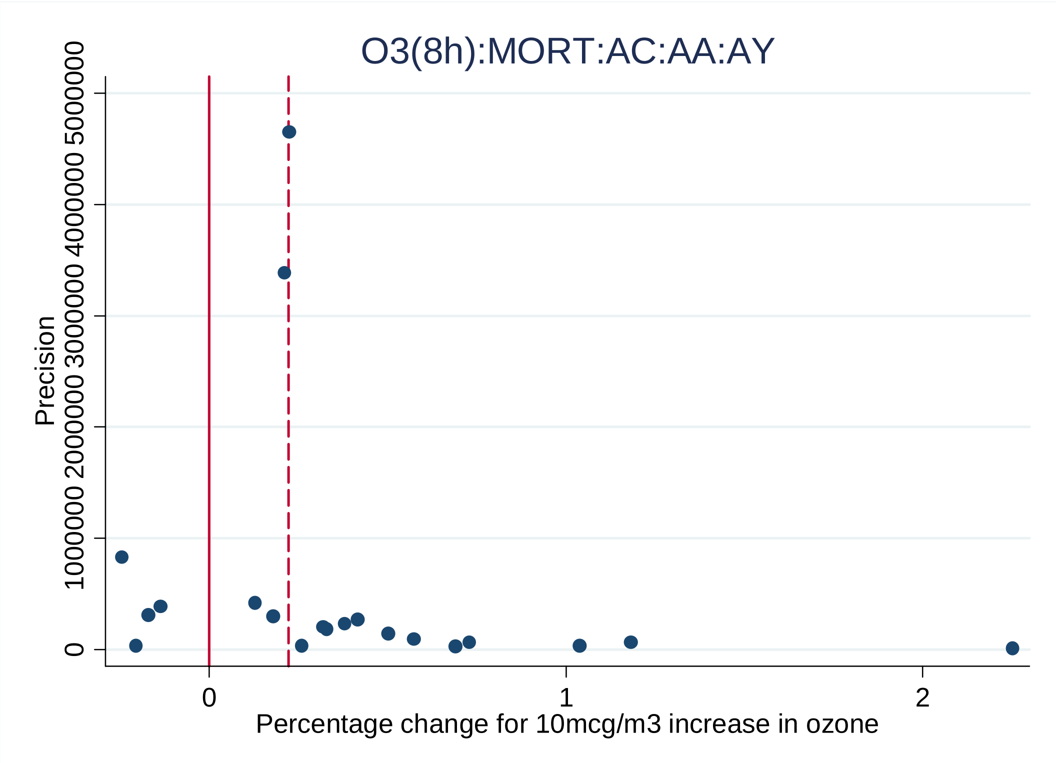

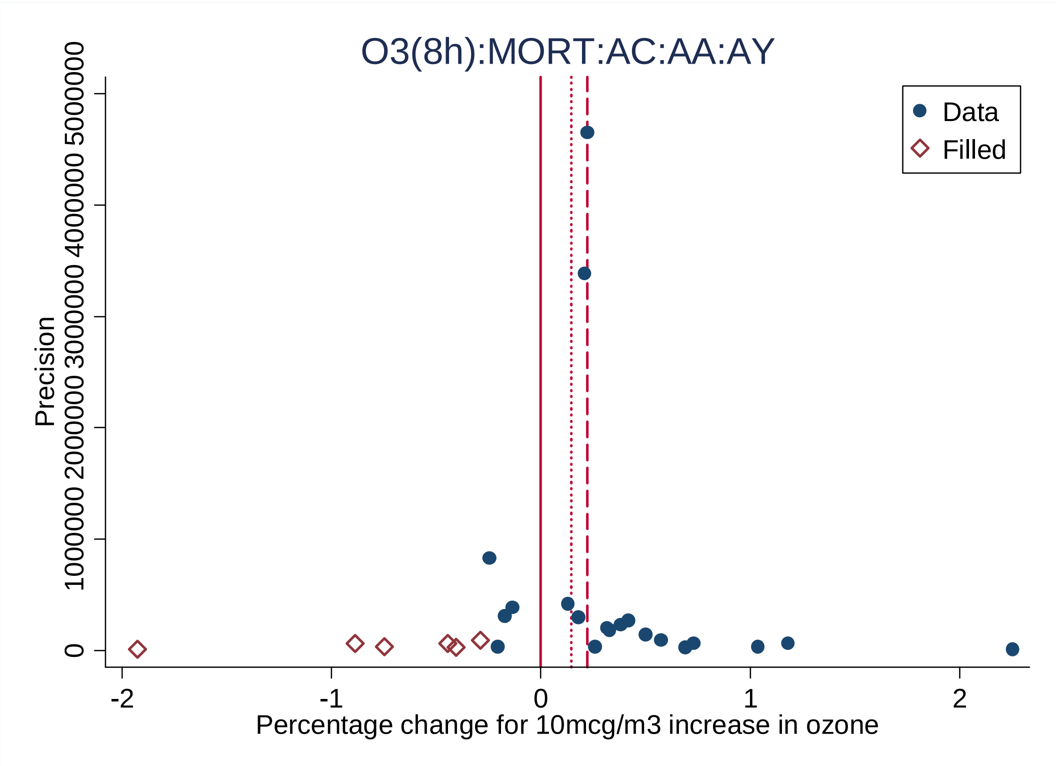

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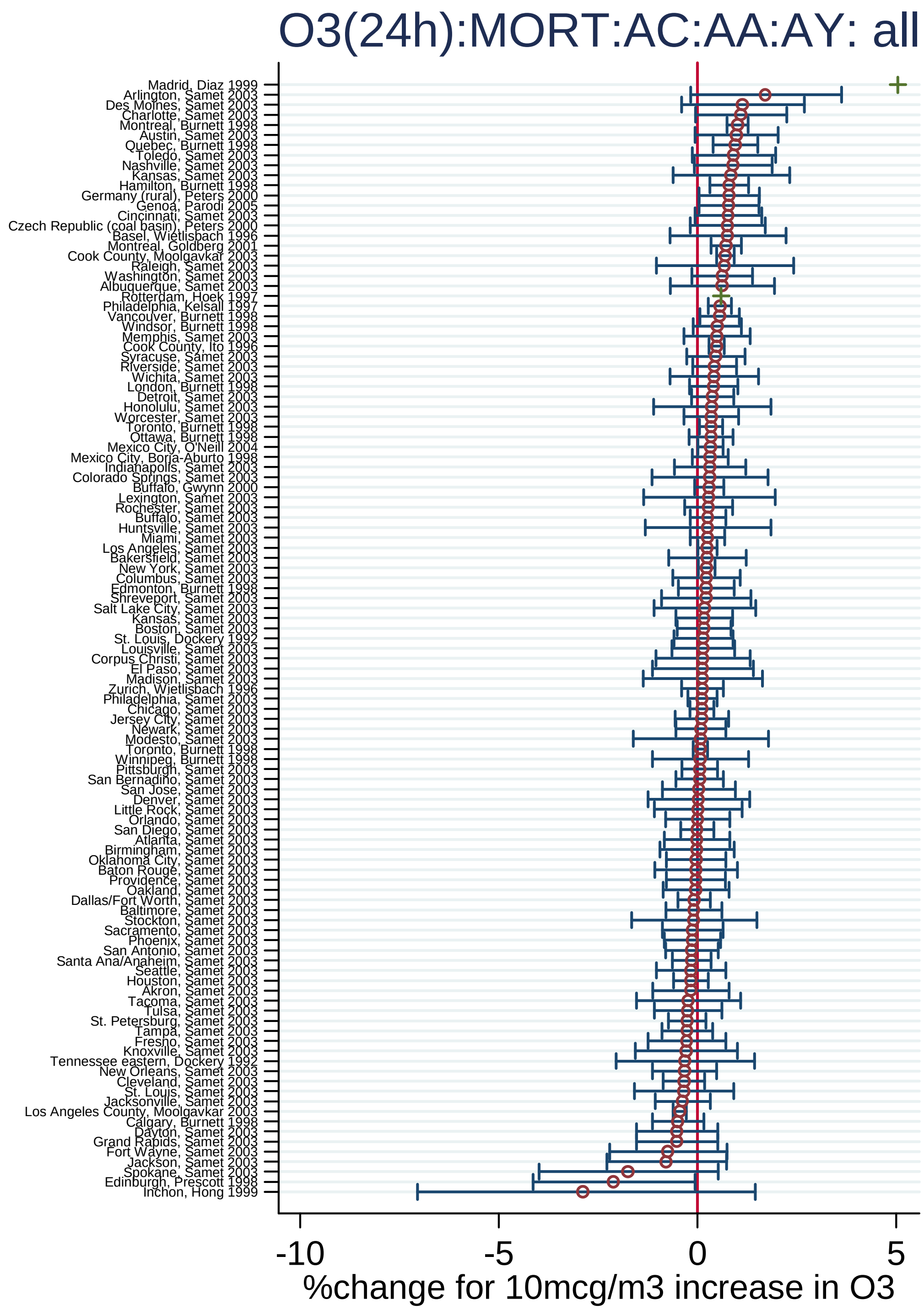

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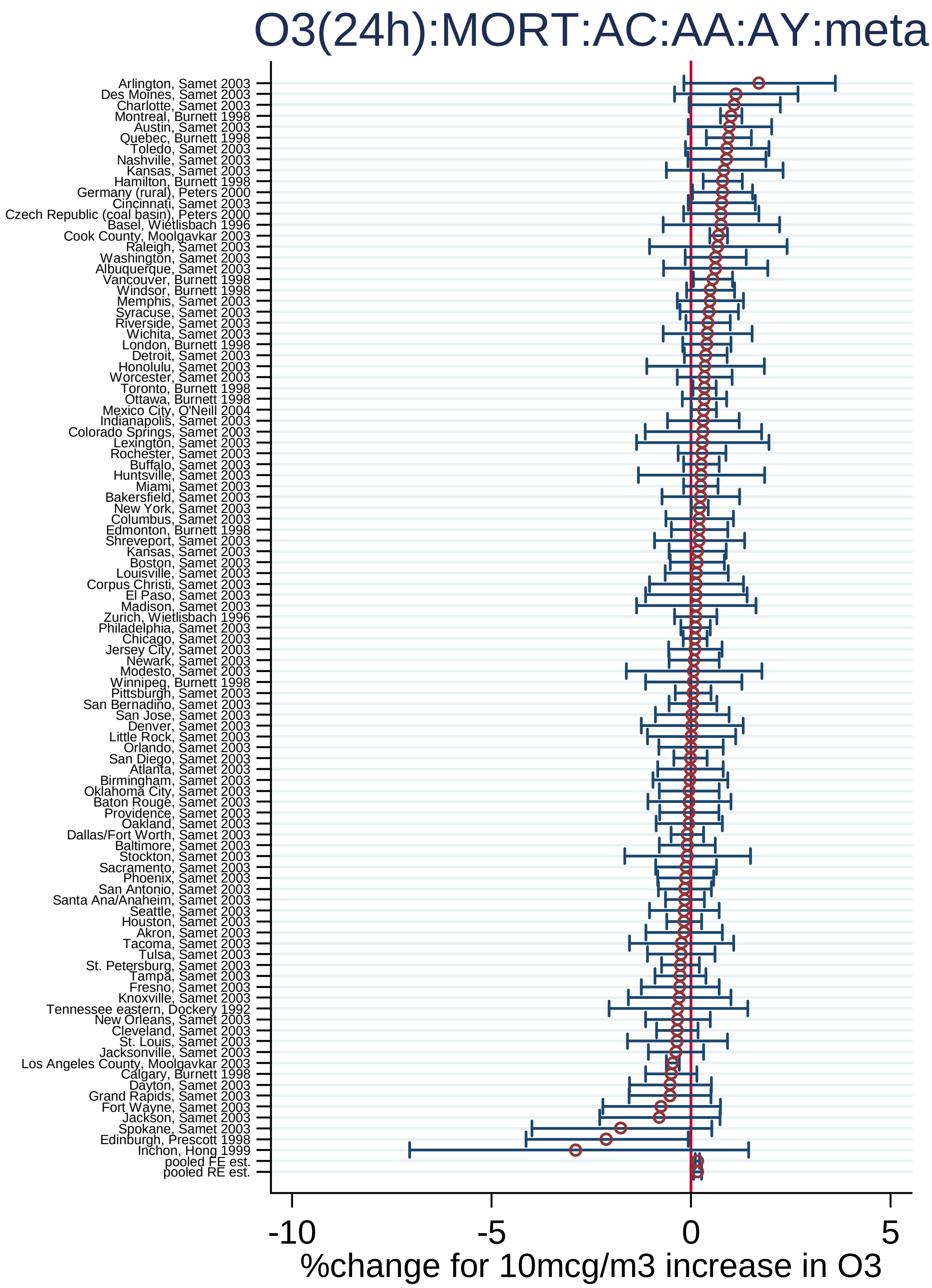

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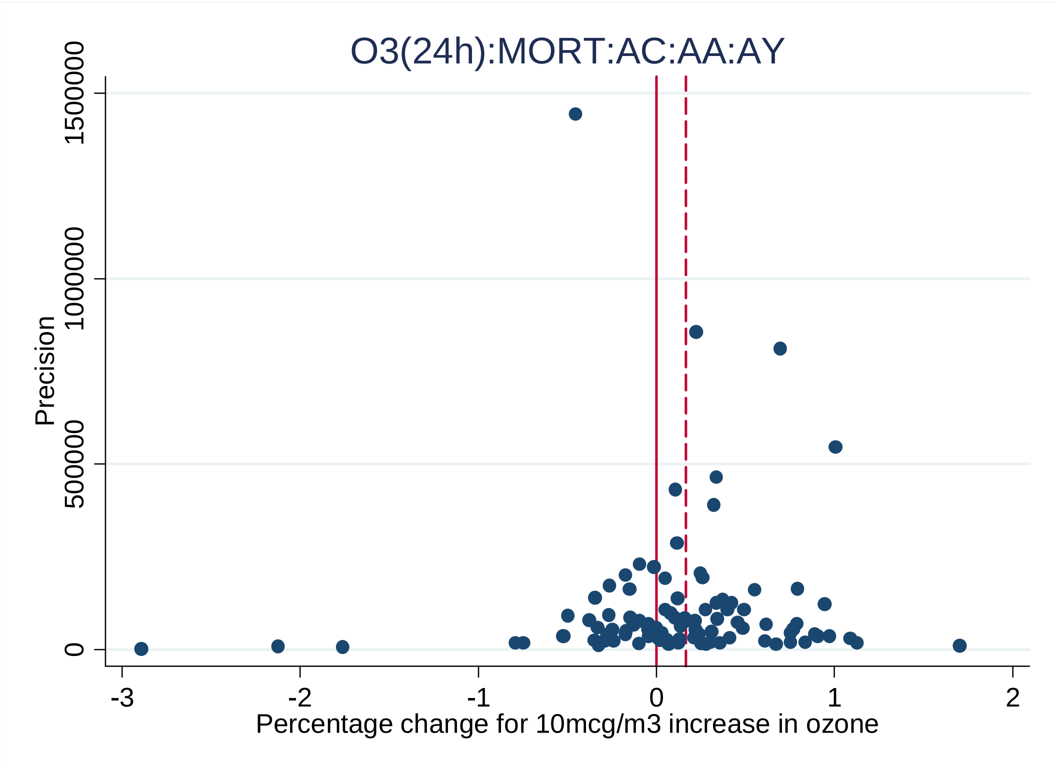

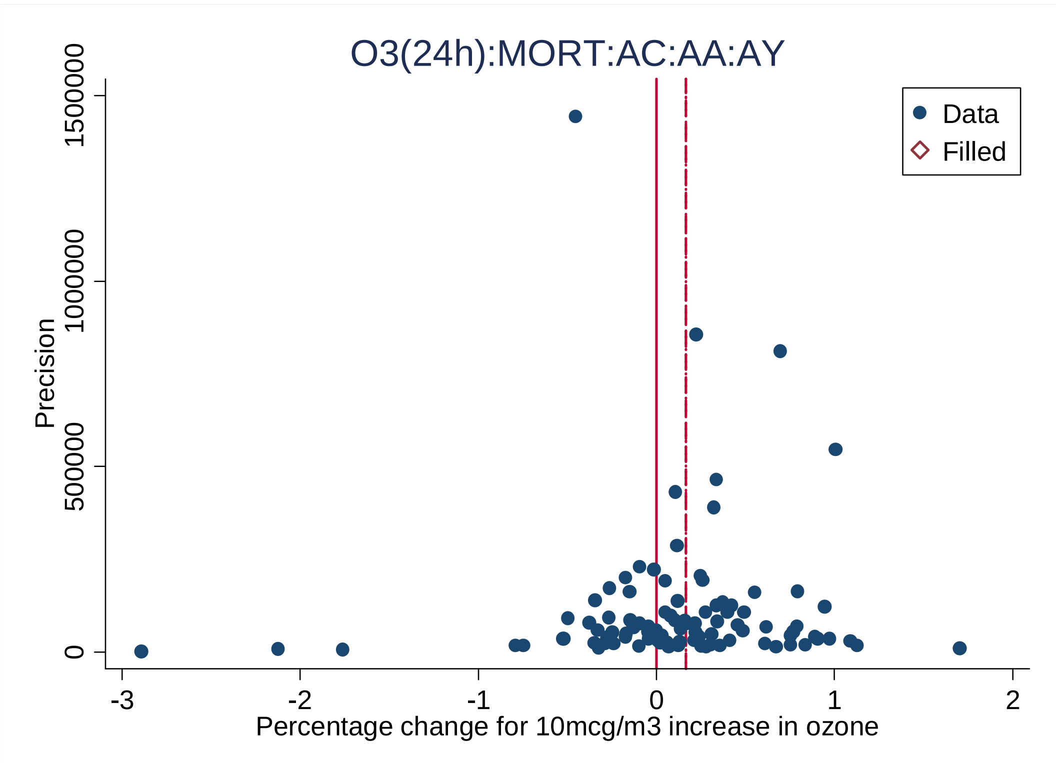

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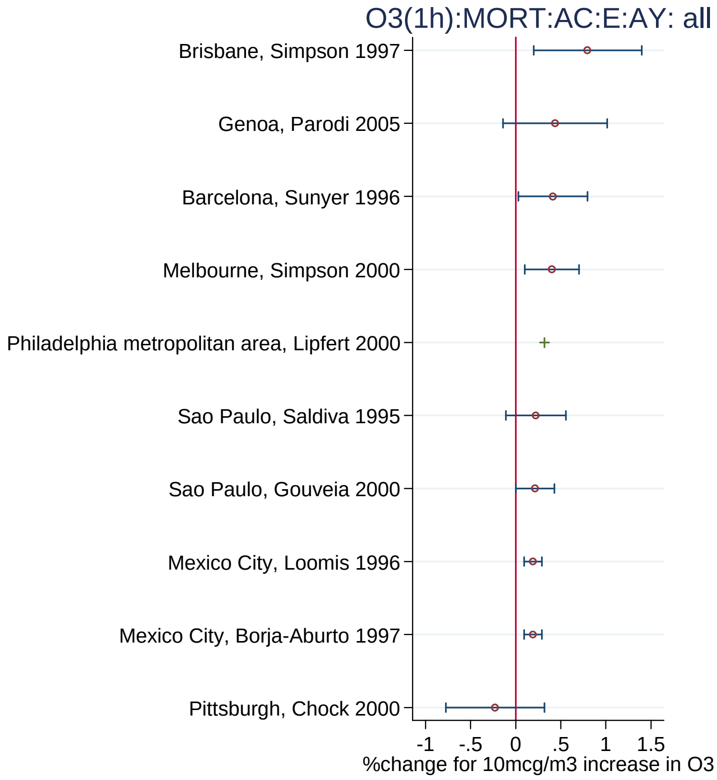

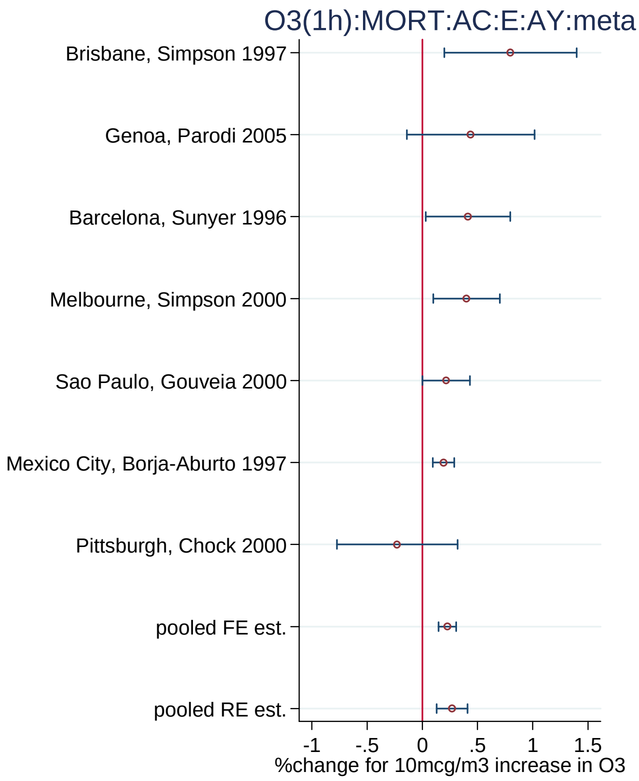

Time Series O_3

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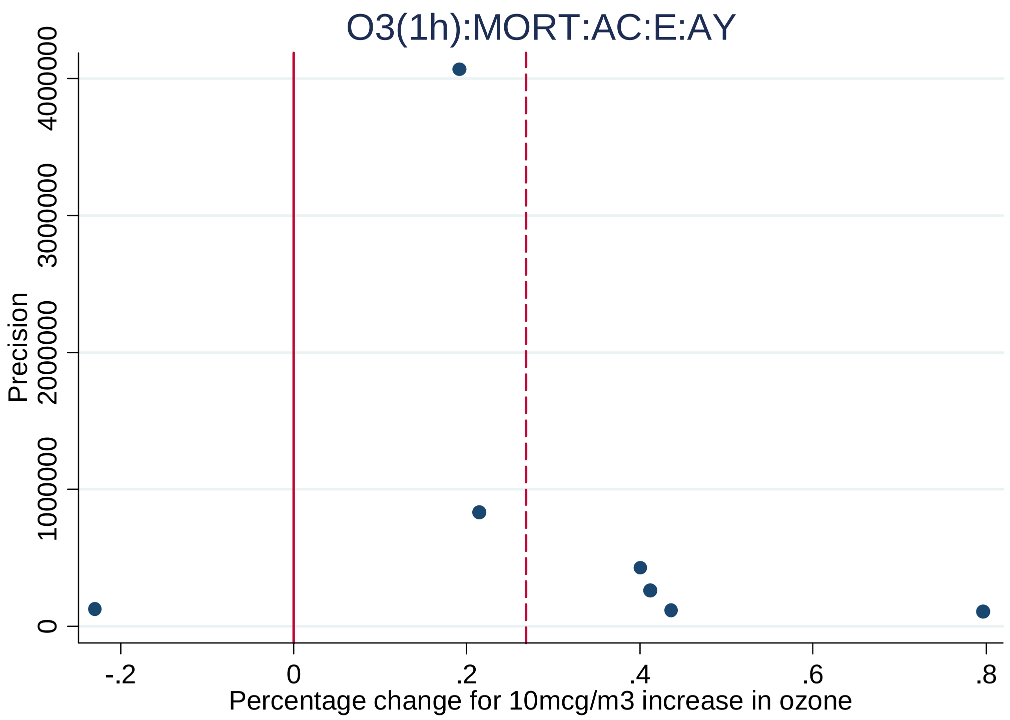

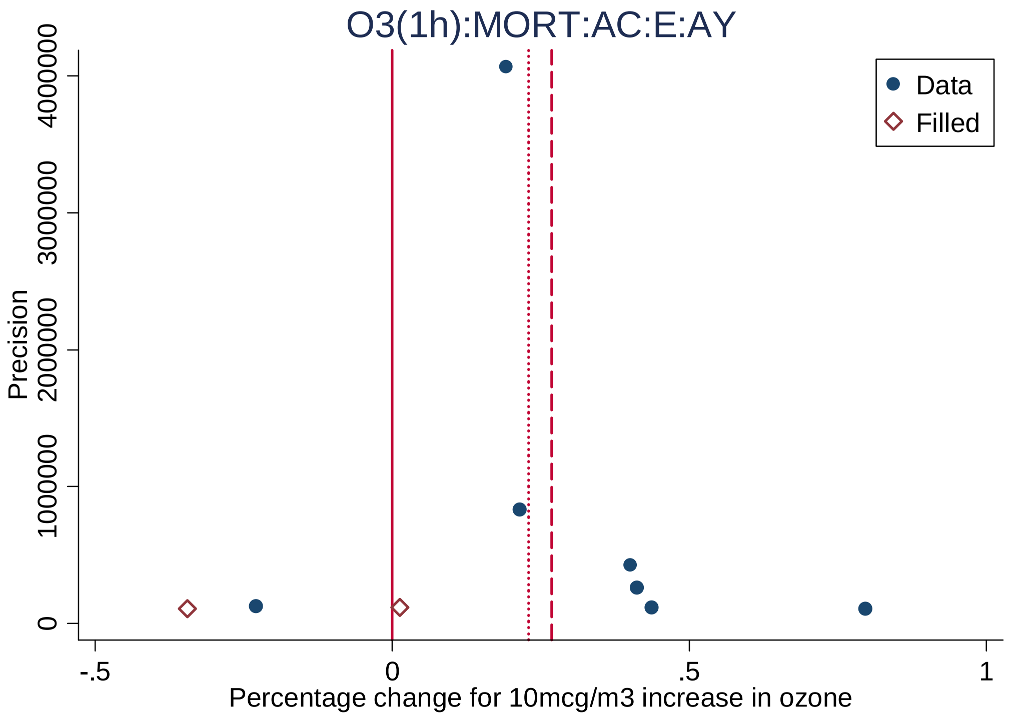

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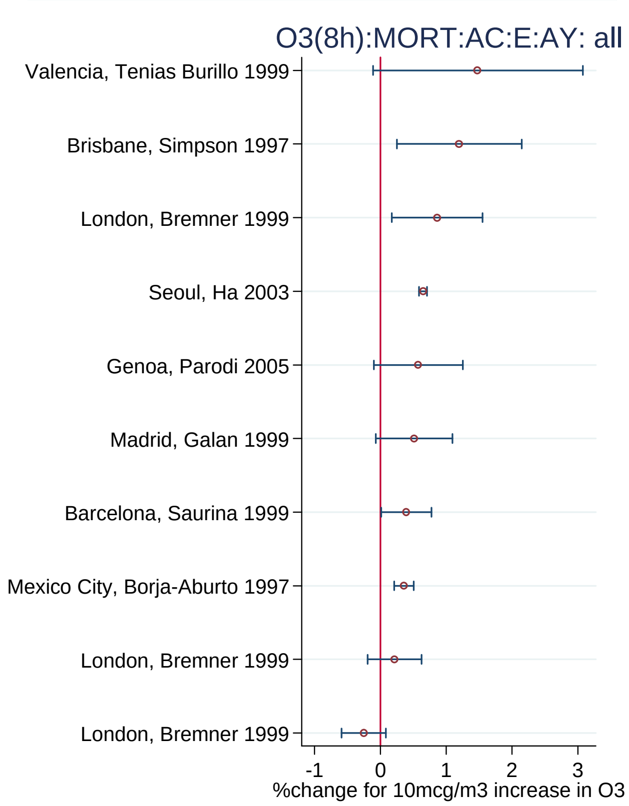

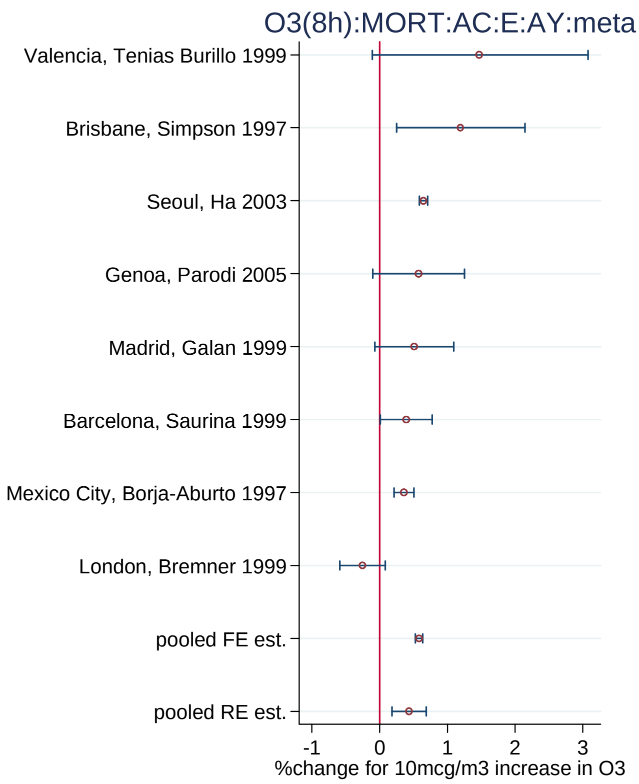

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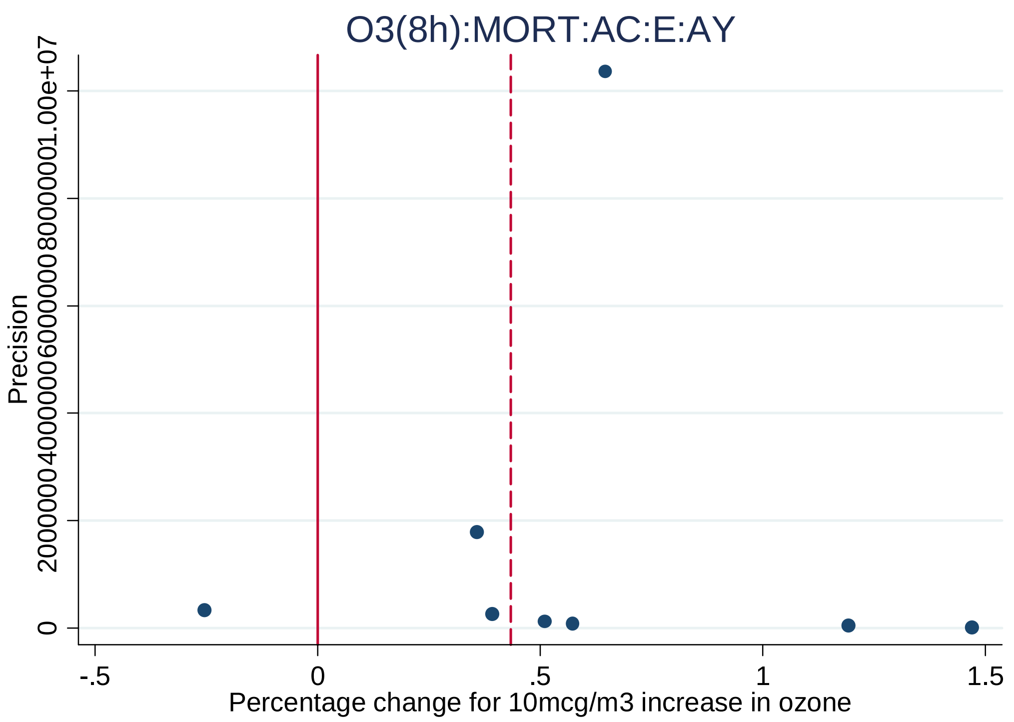

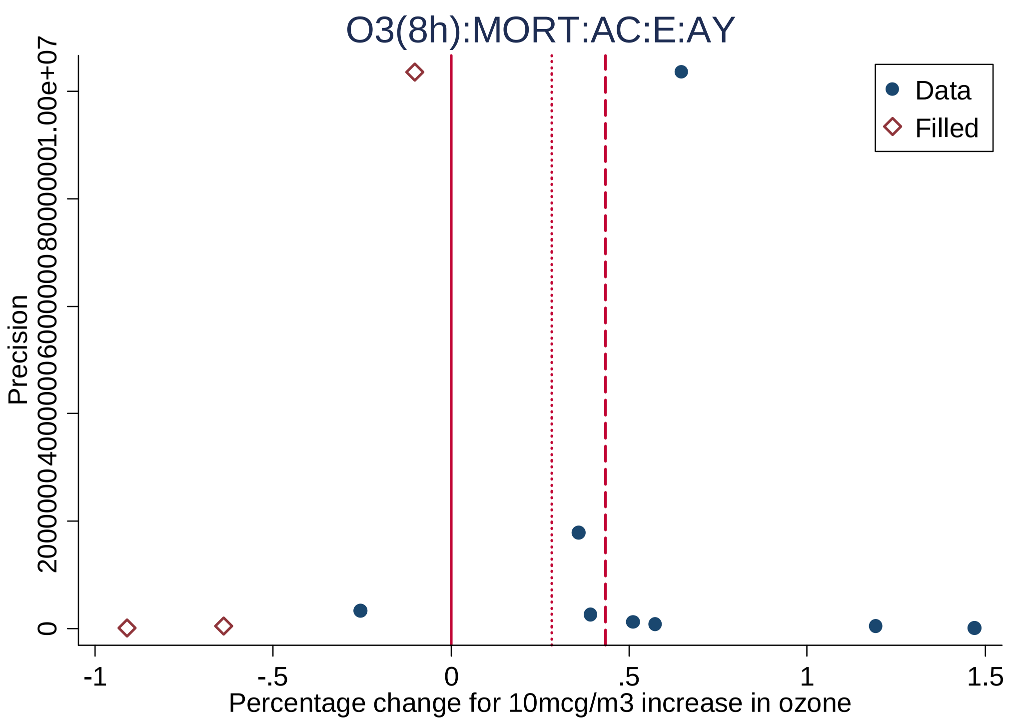

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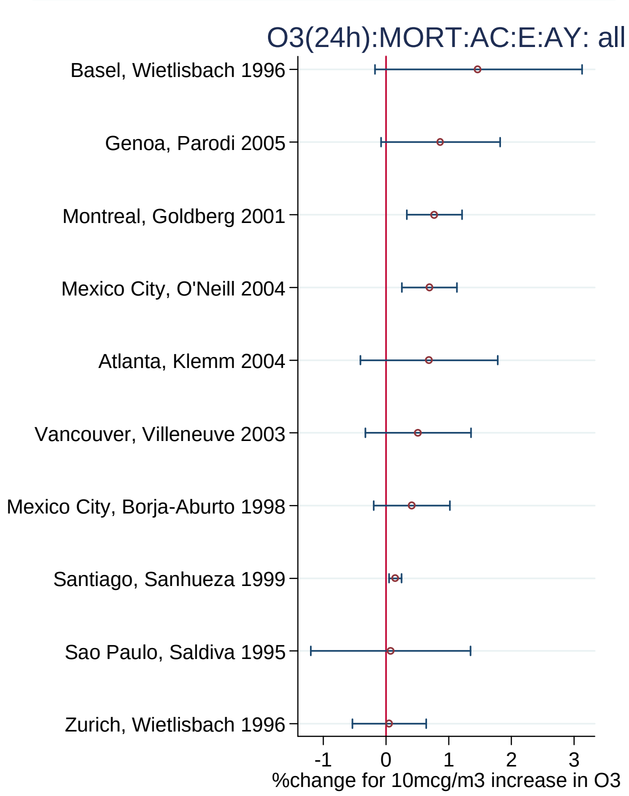

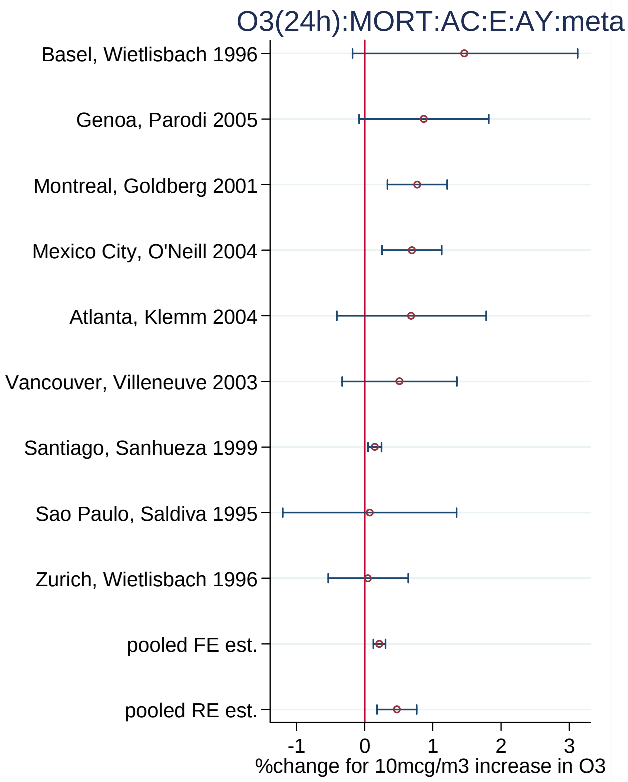

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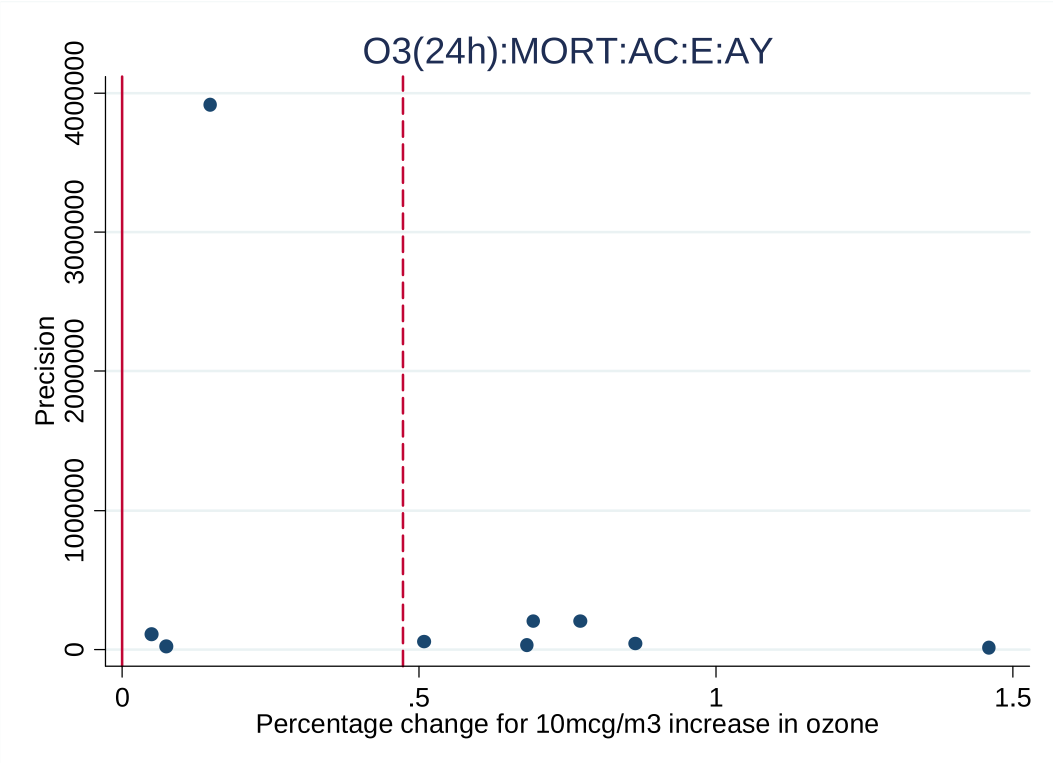

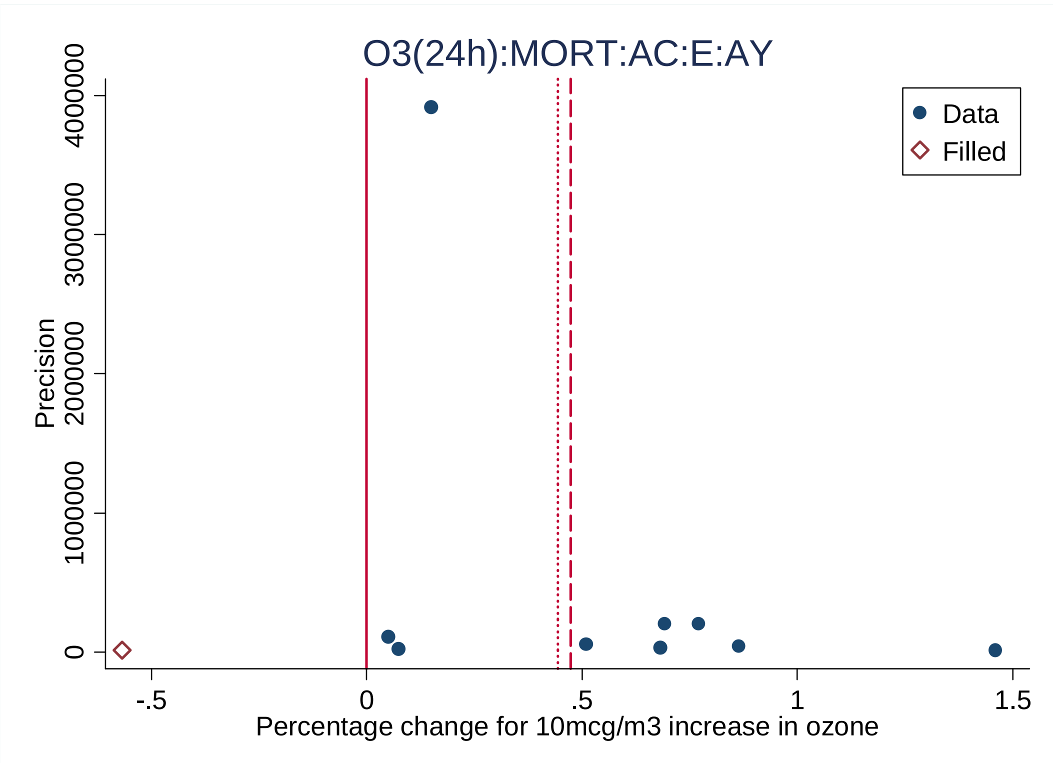

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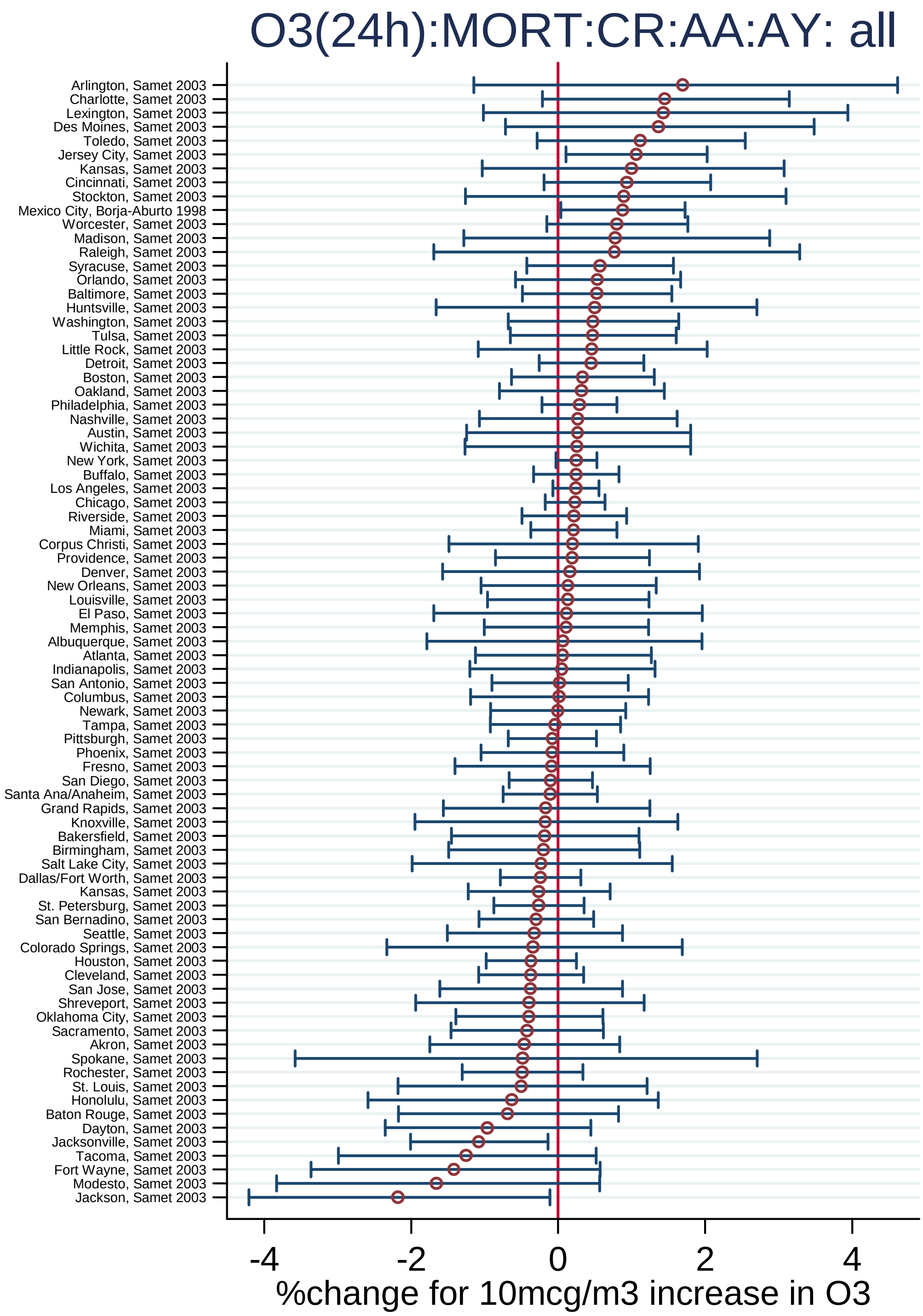

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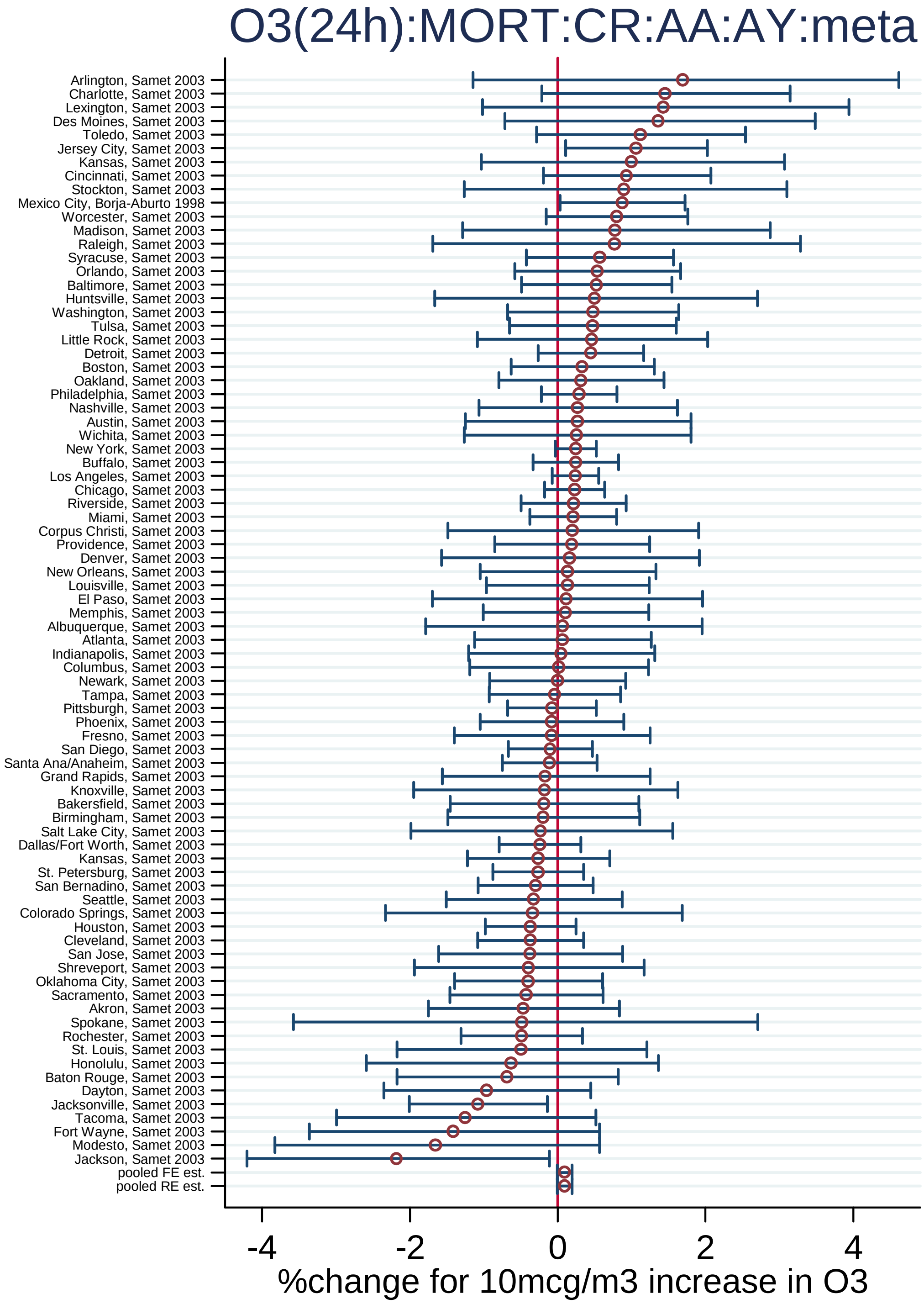

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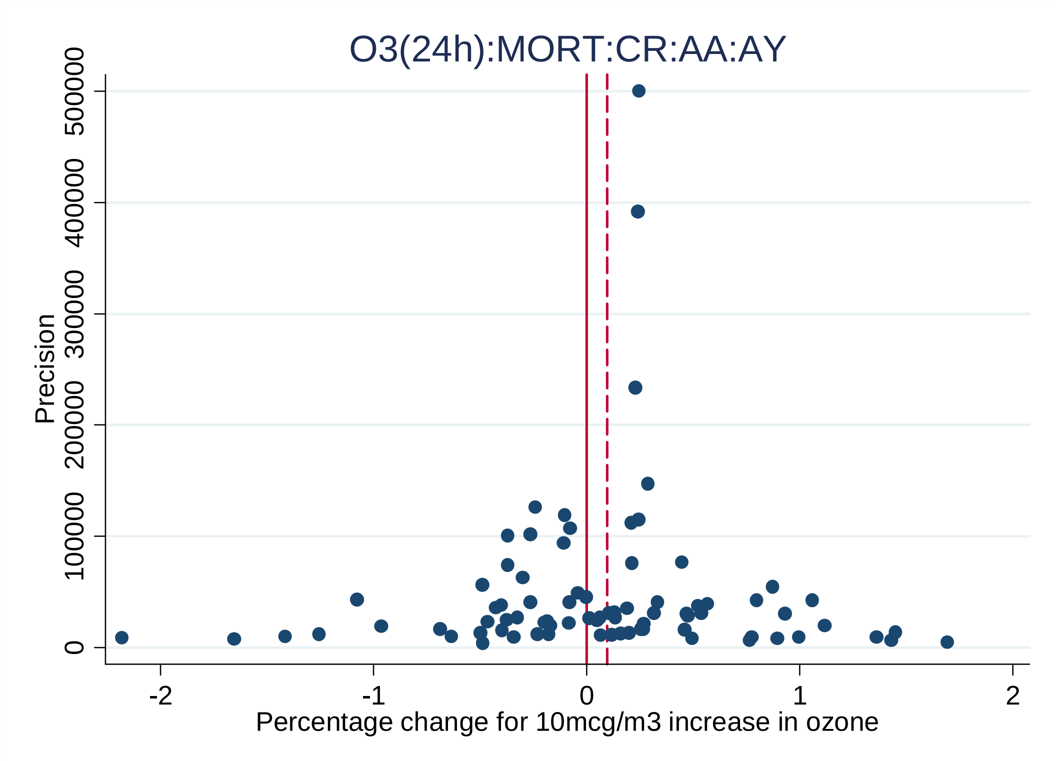

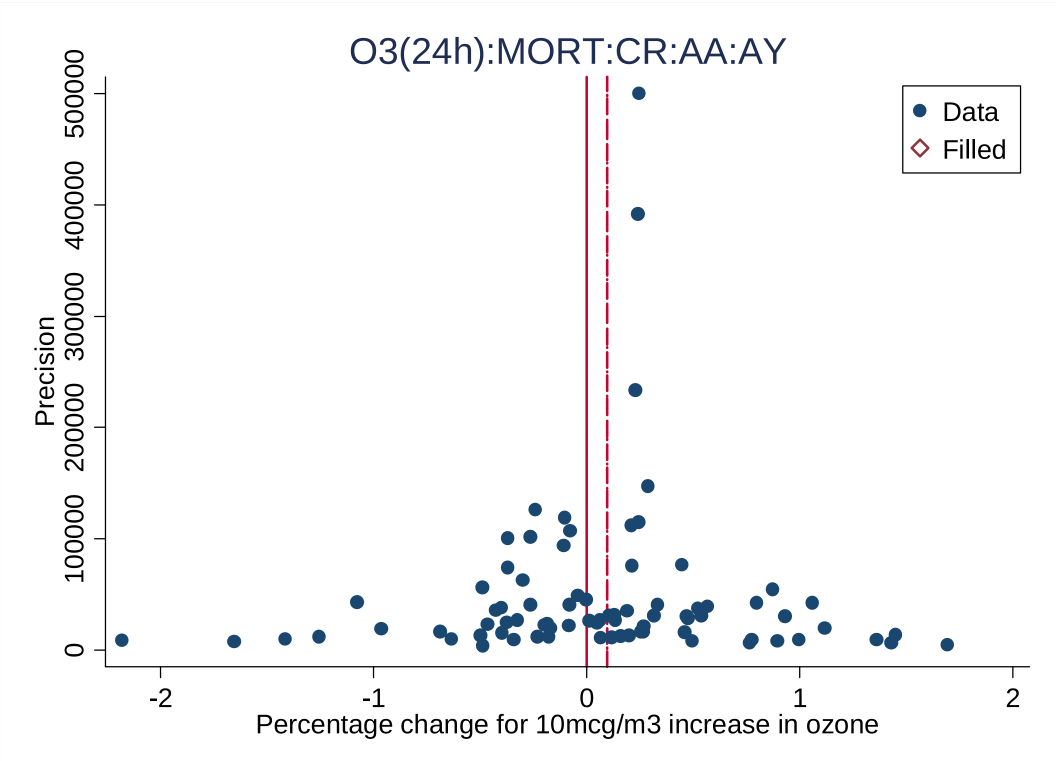

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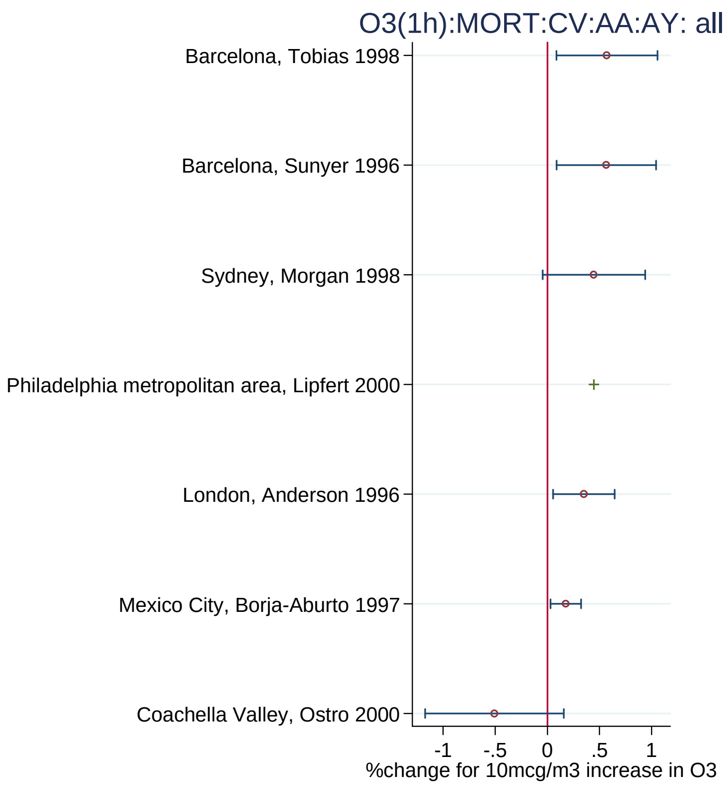

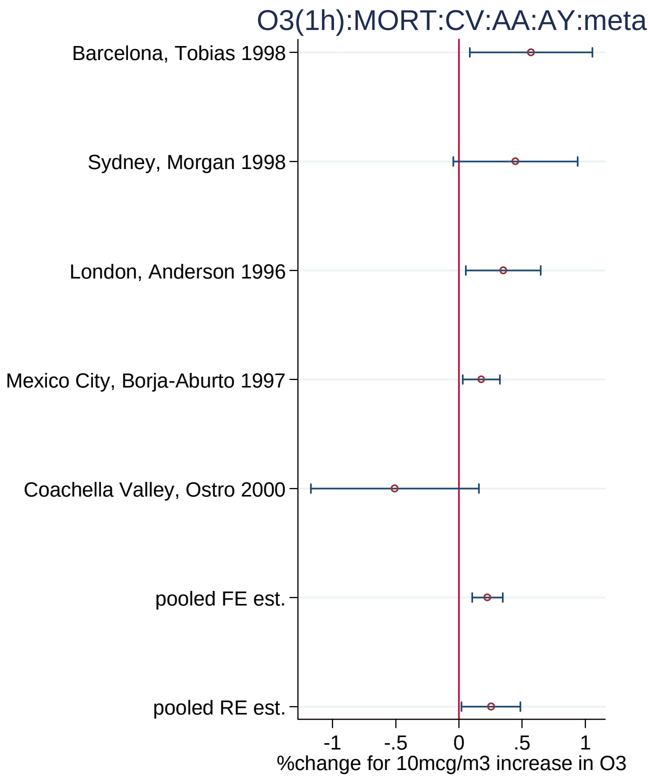

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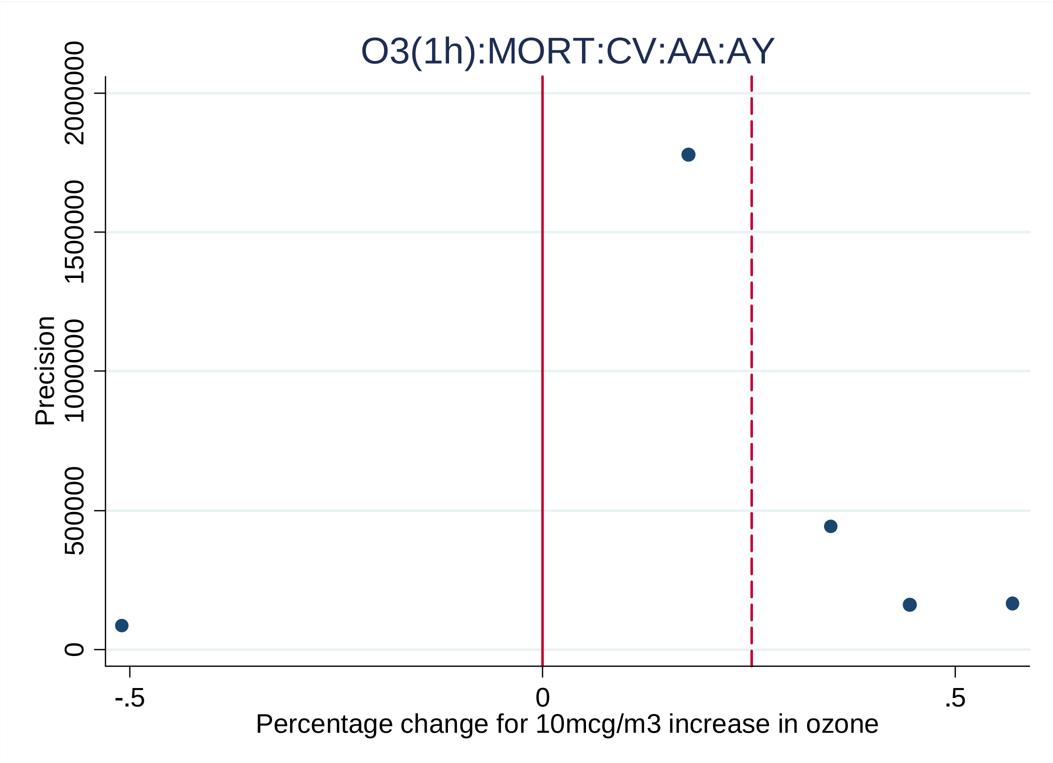

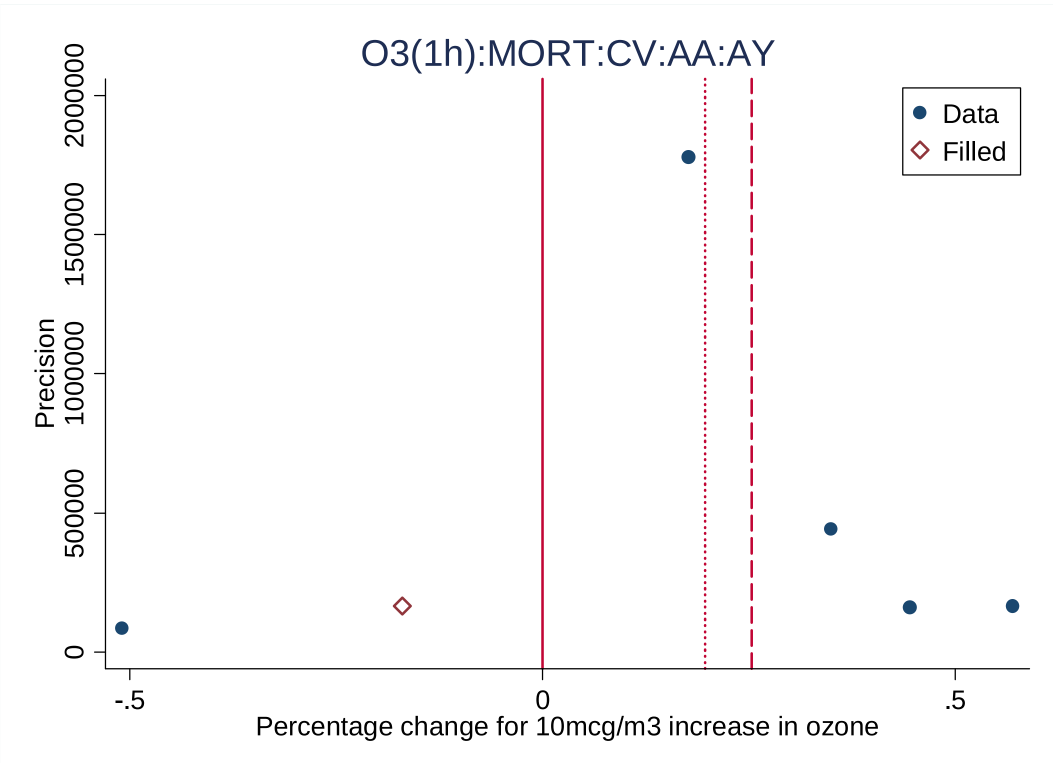

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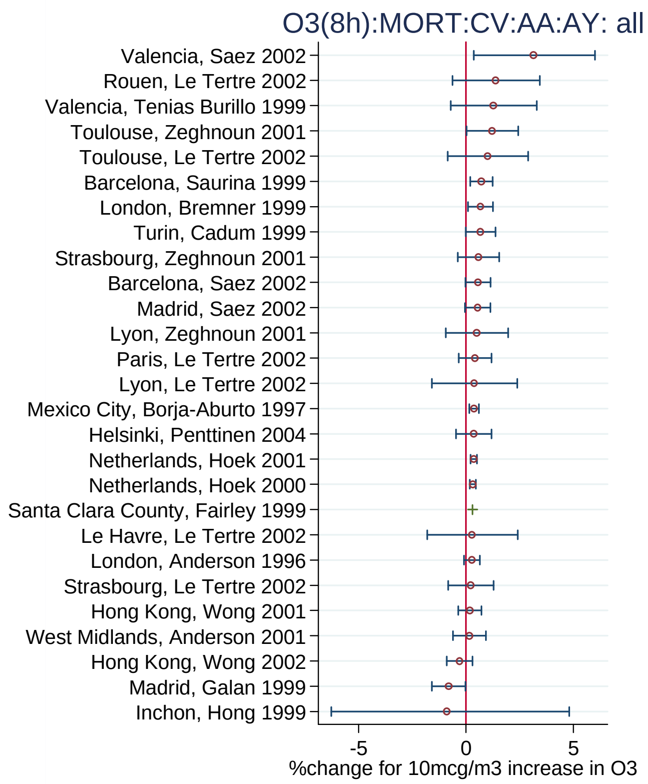

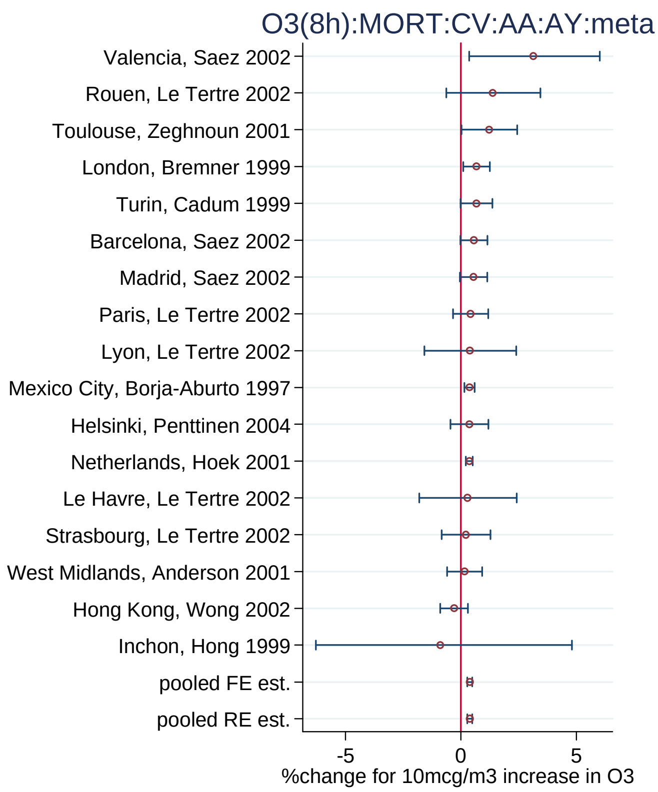

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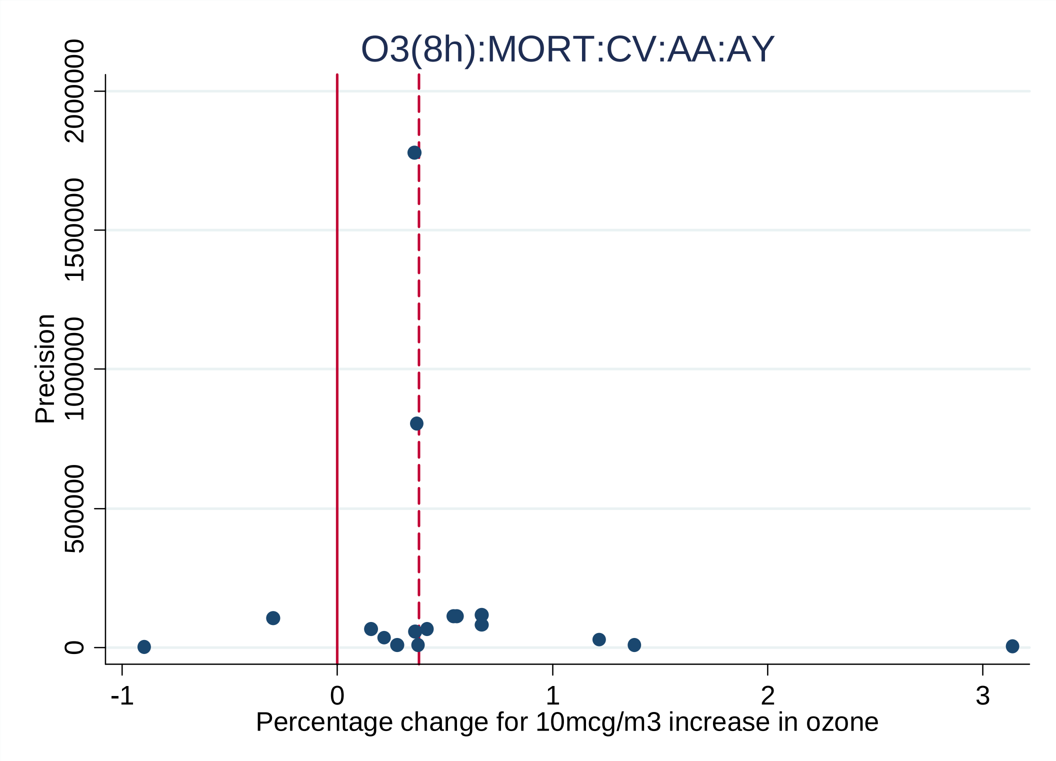

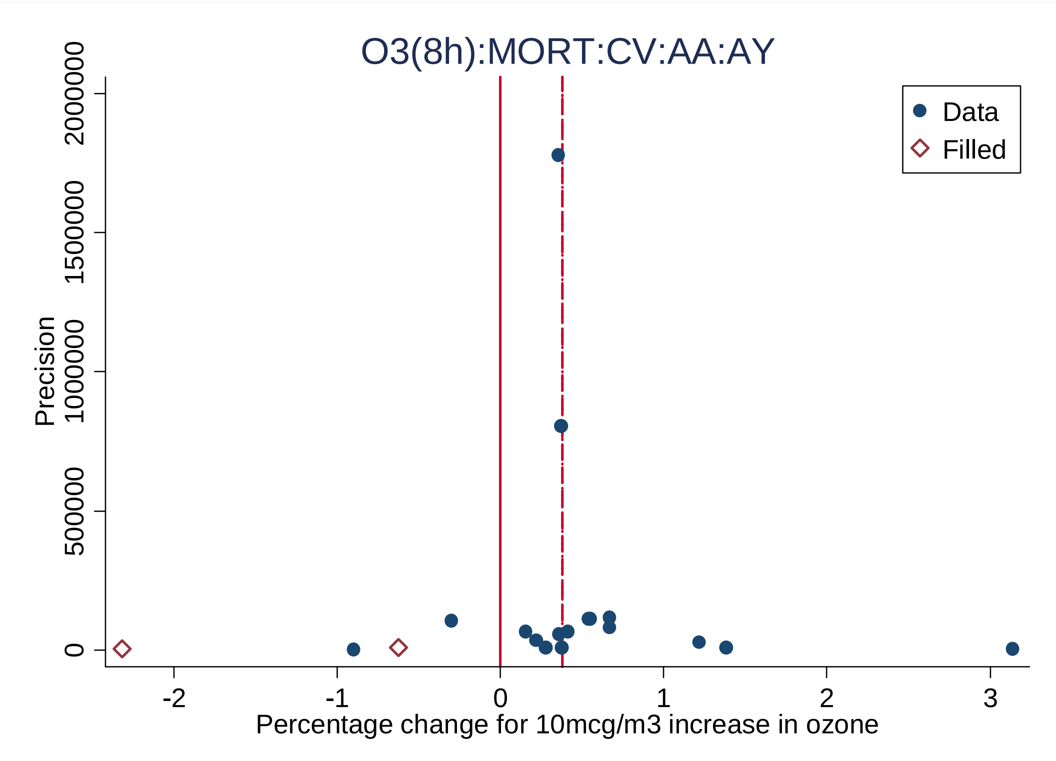

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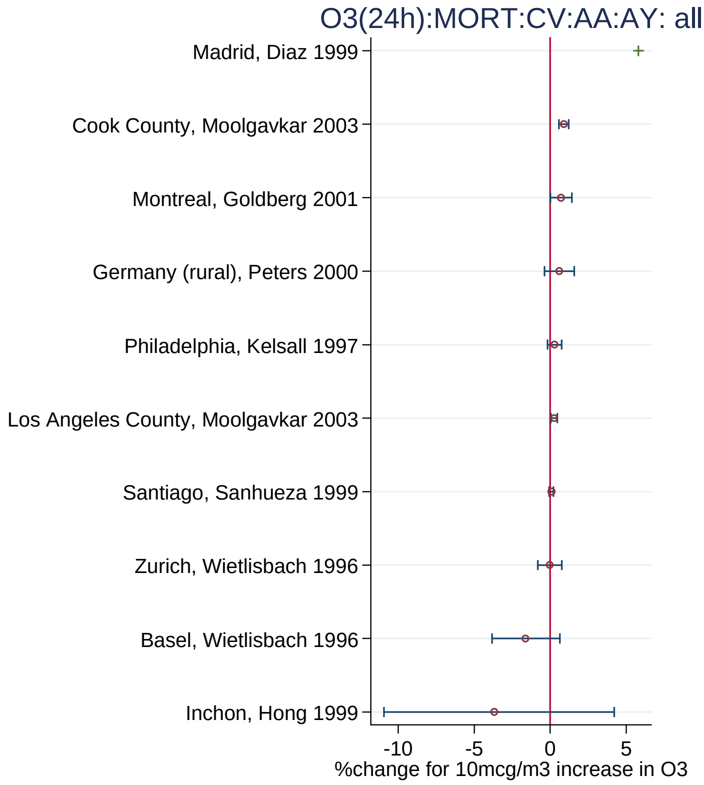

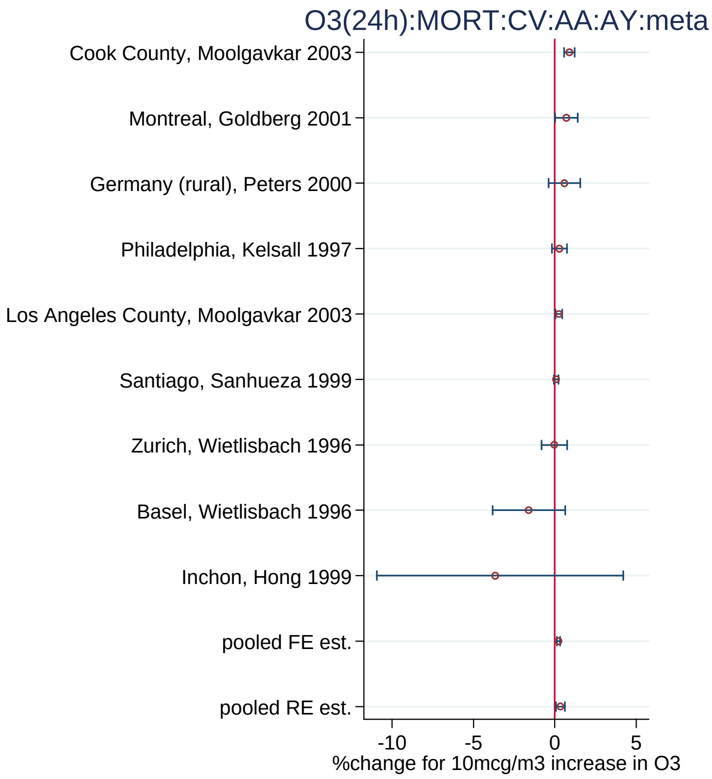

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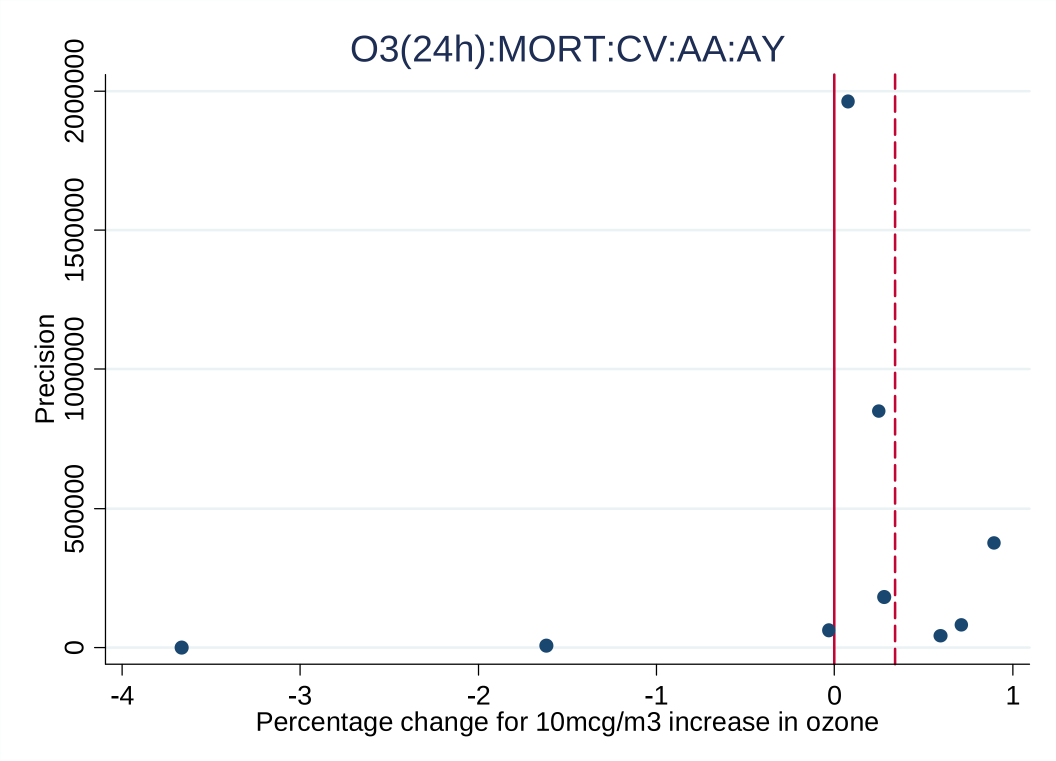

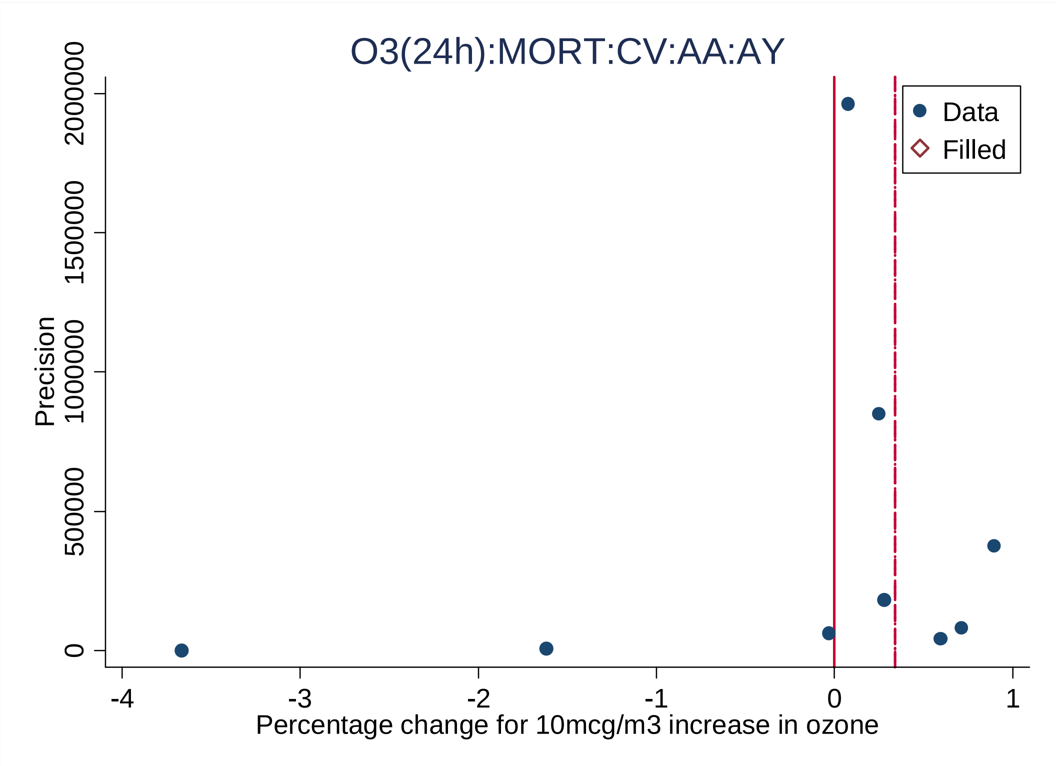

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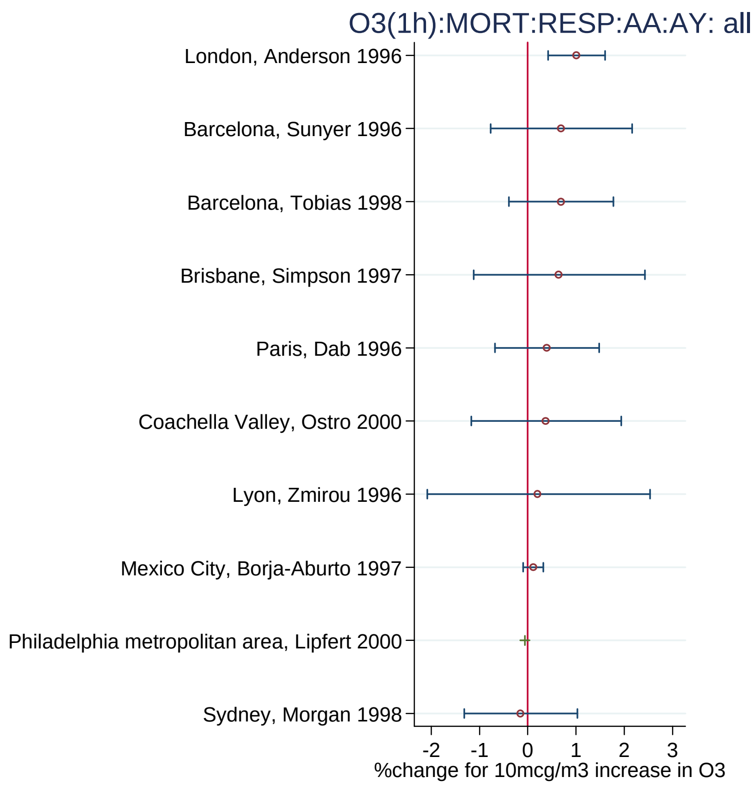

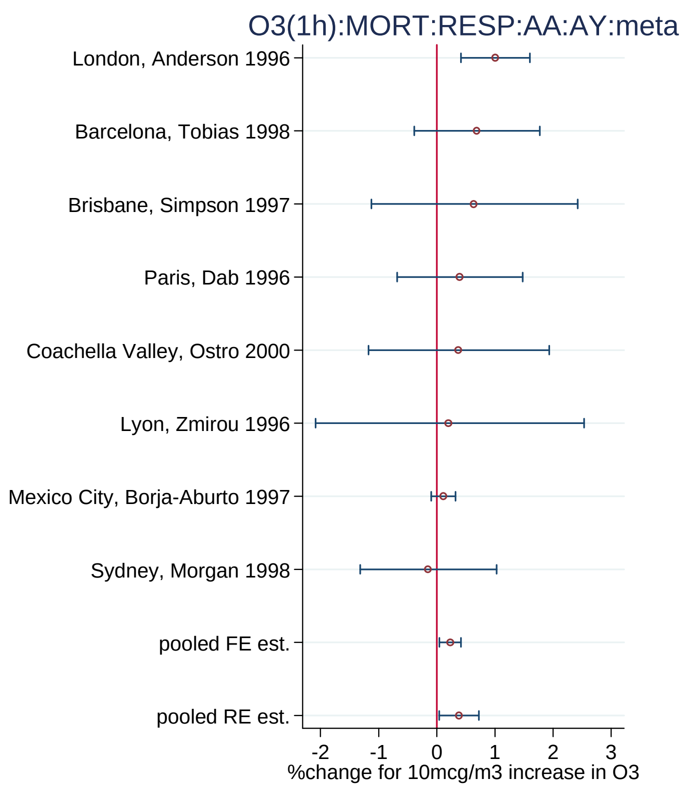

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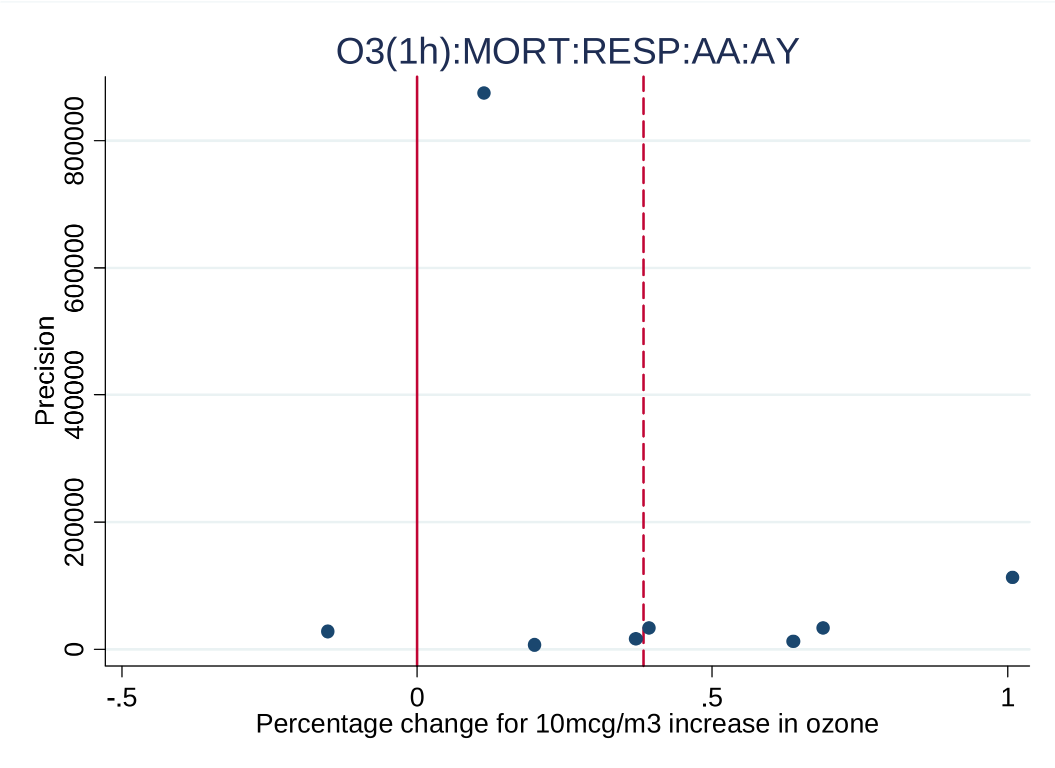

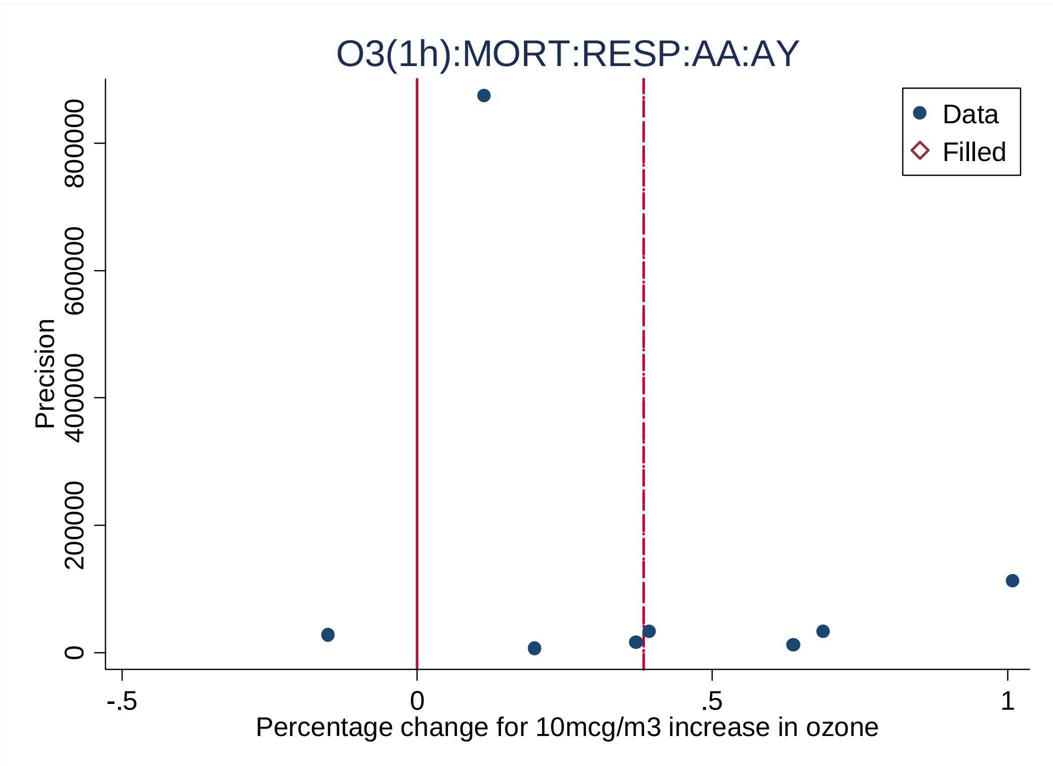

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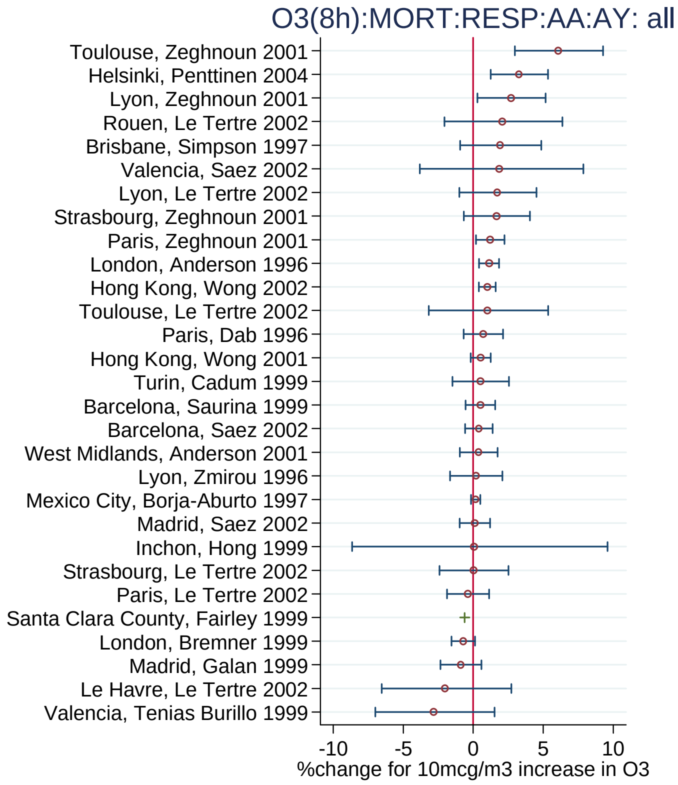

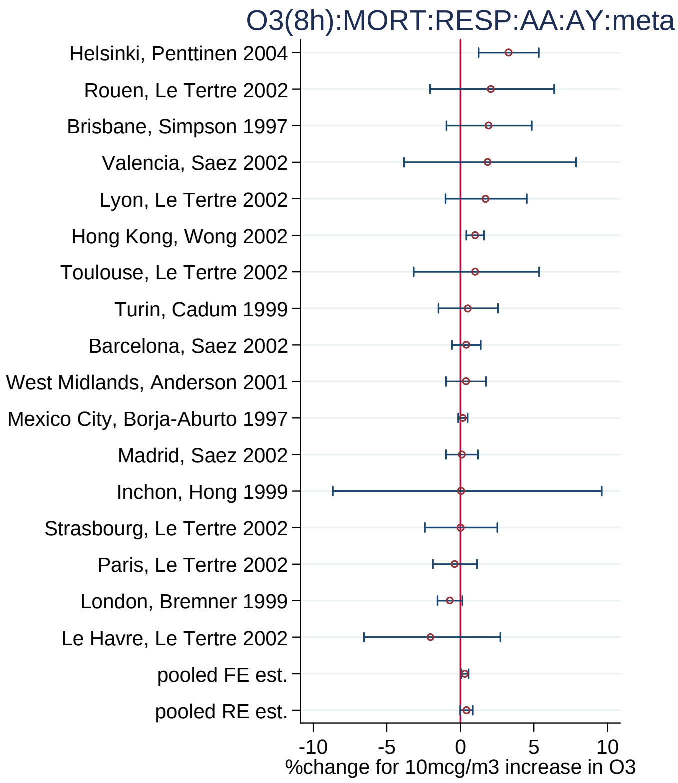

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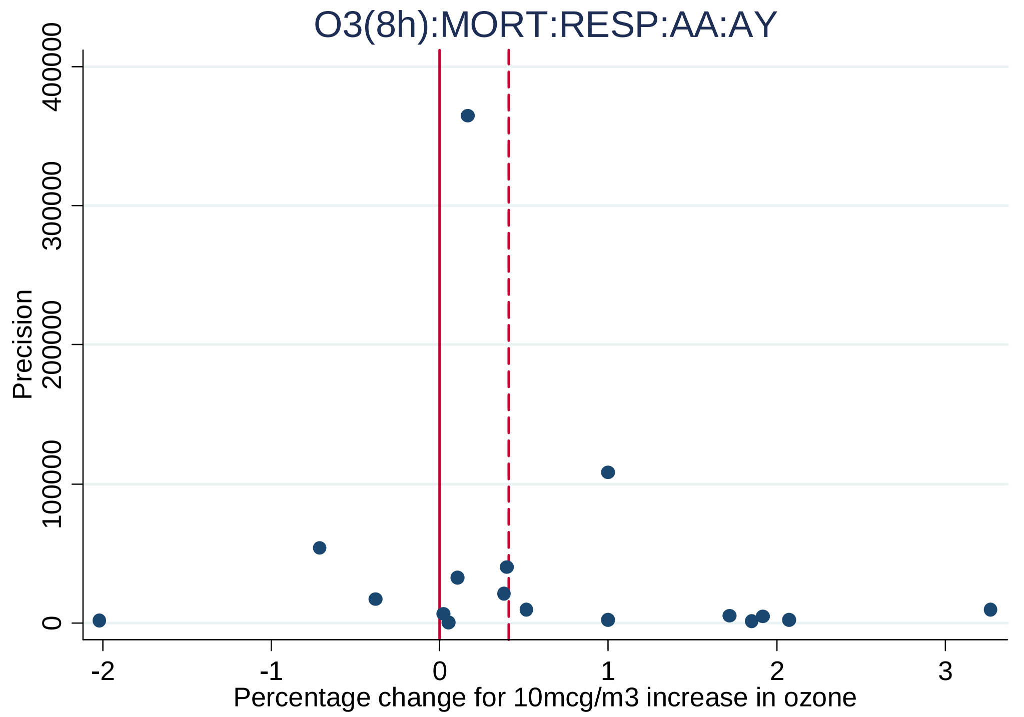

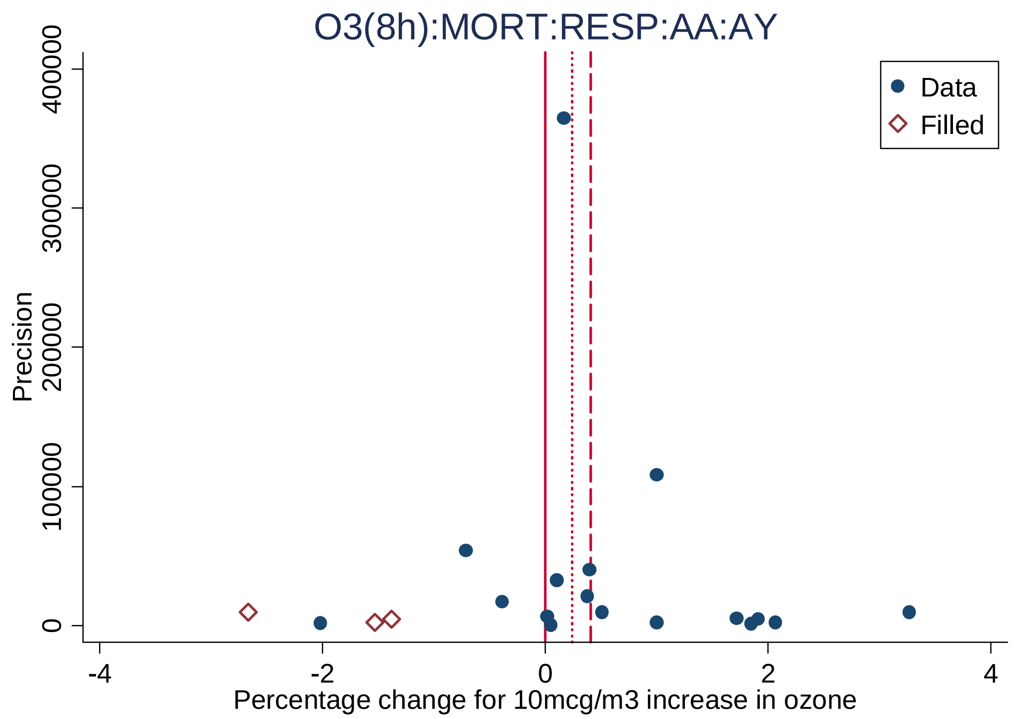

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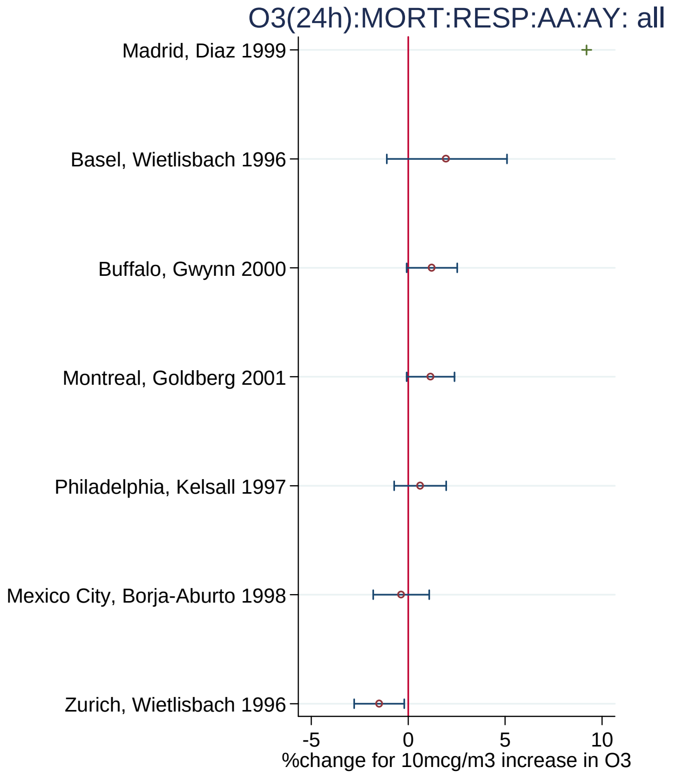

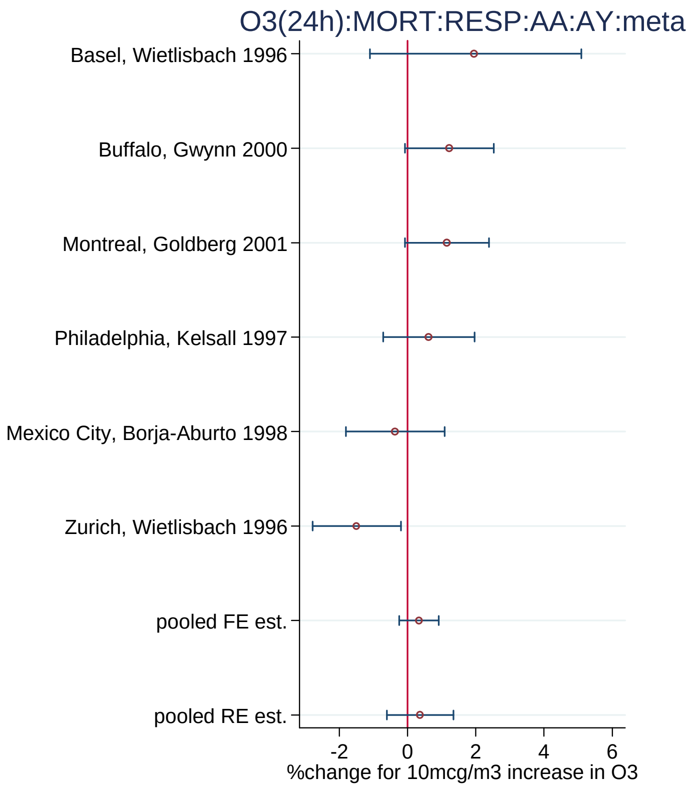

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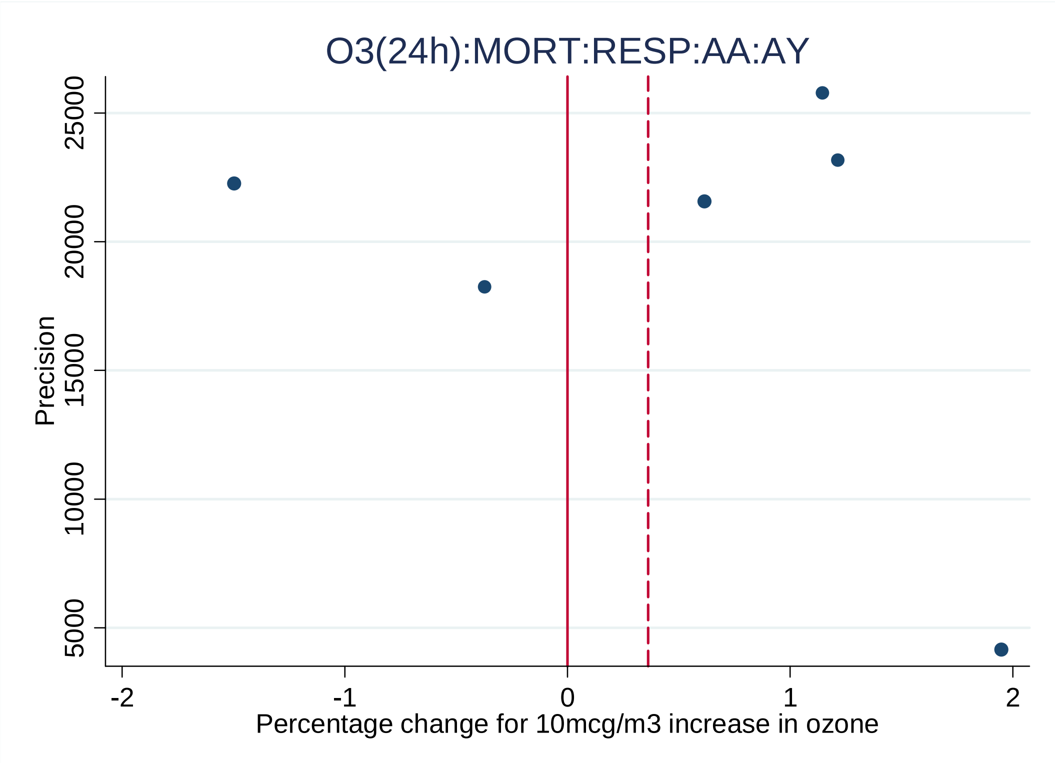

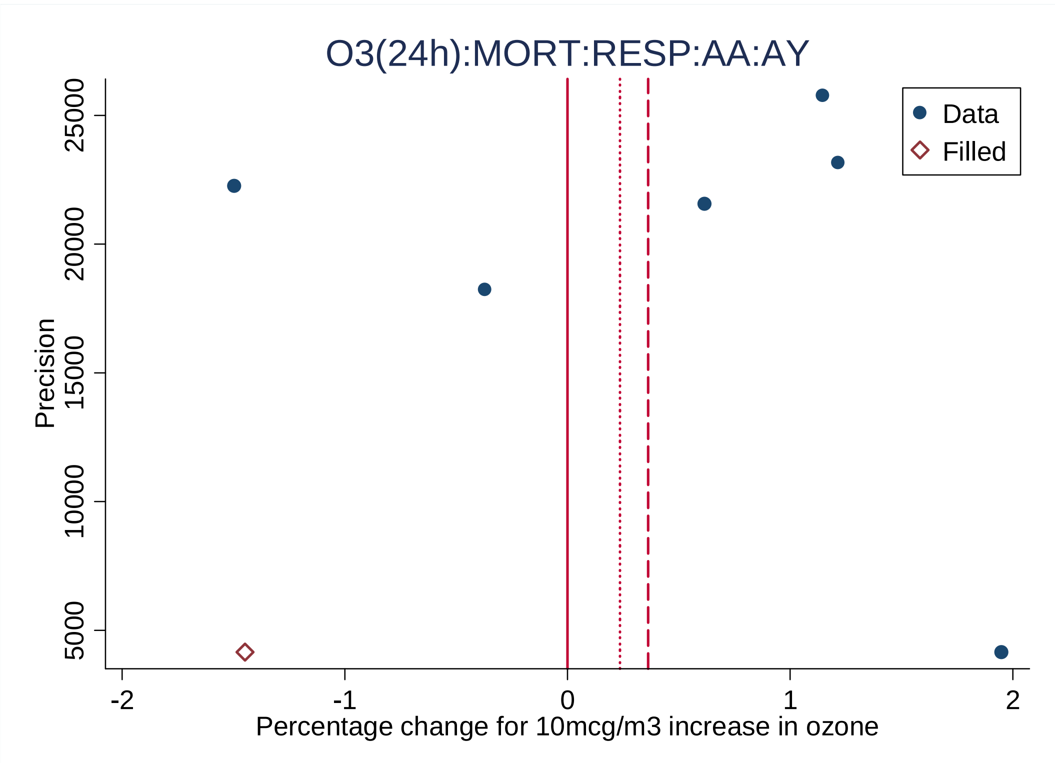

Time Series O_3

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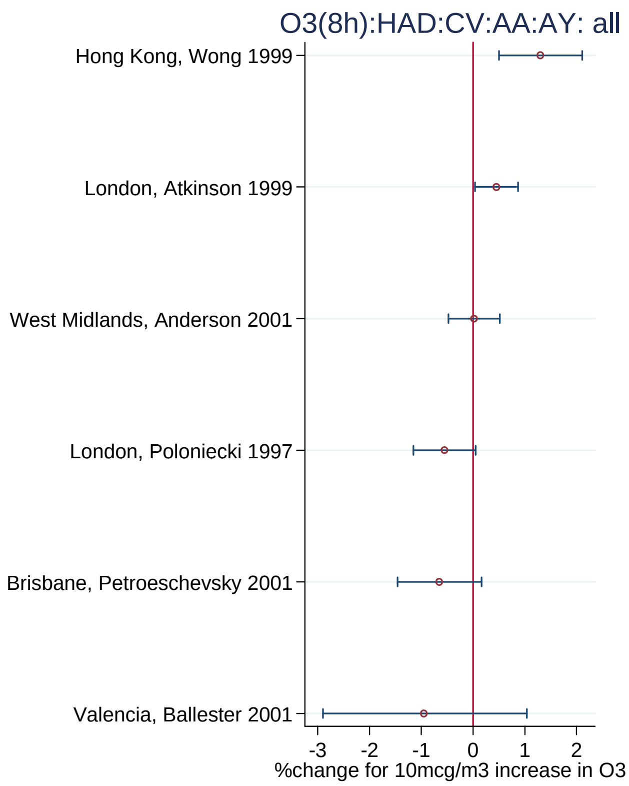

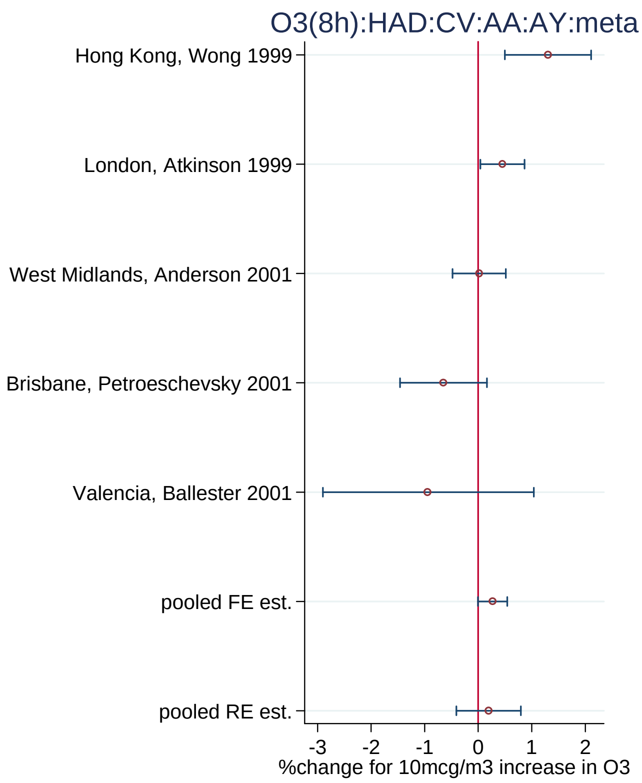

Time Series O_3

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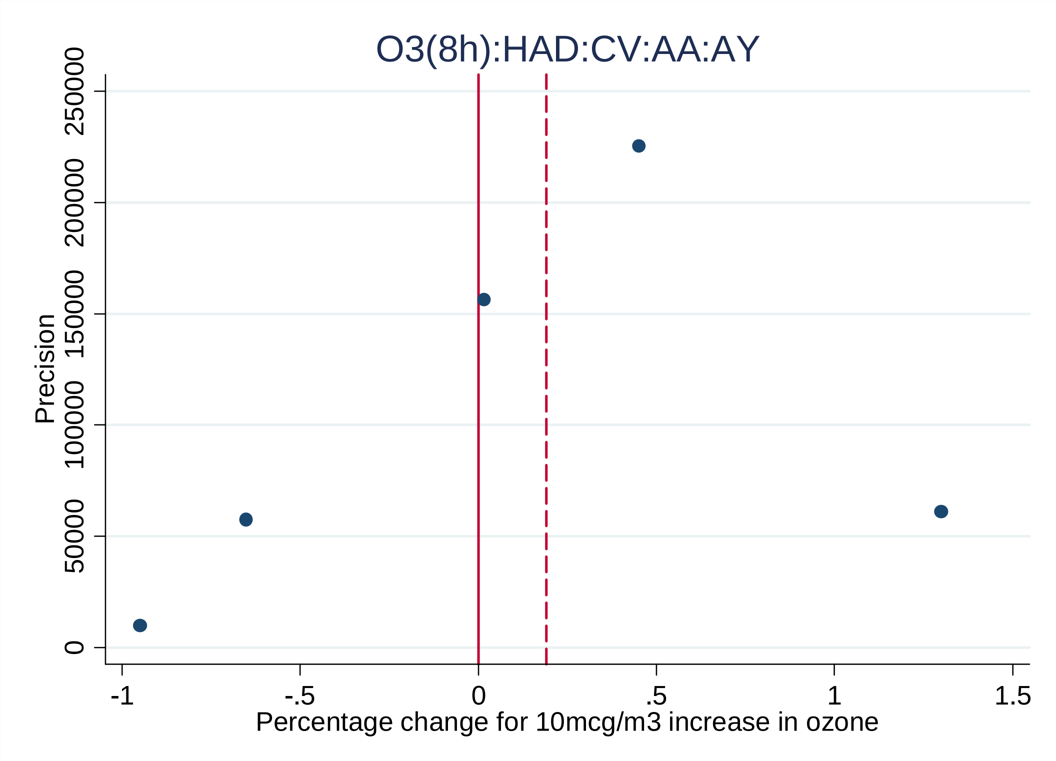

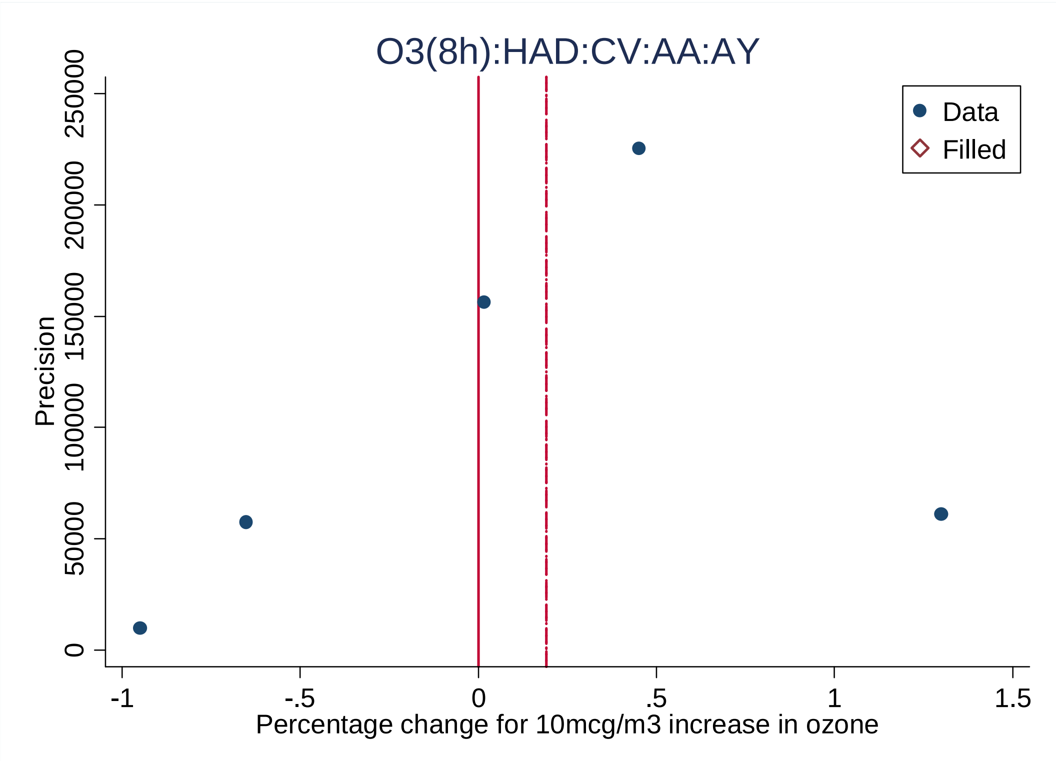

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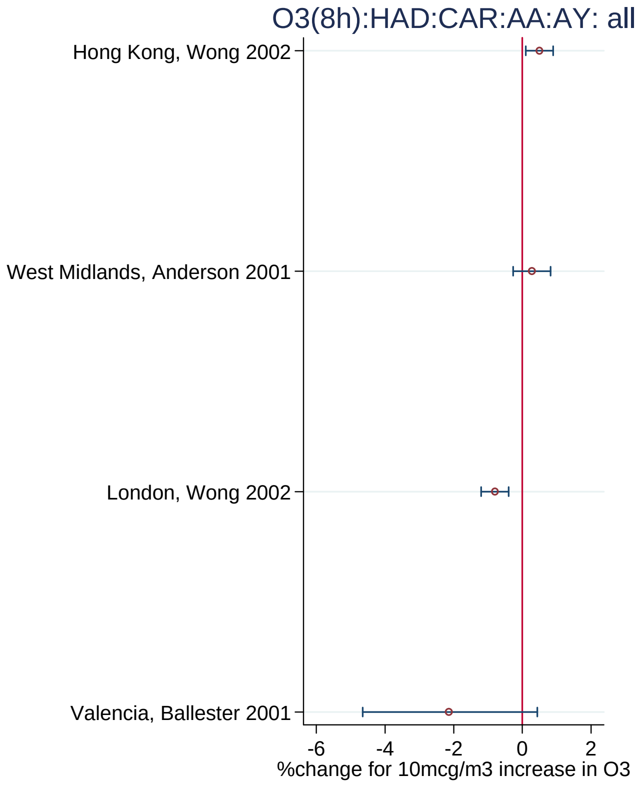

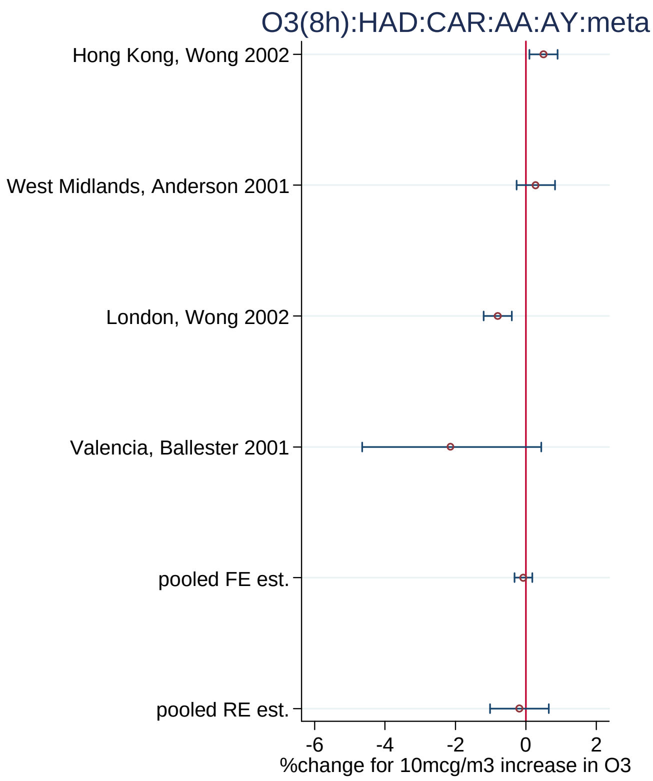

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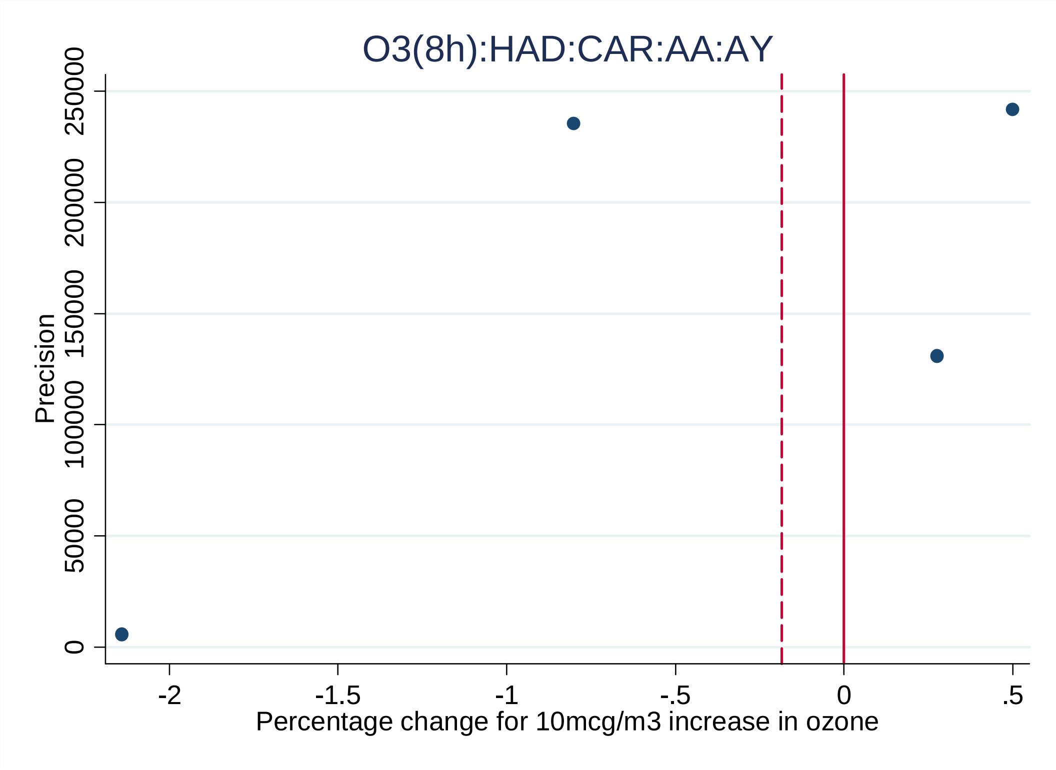

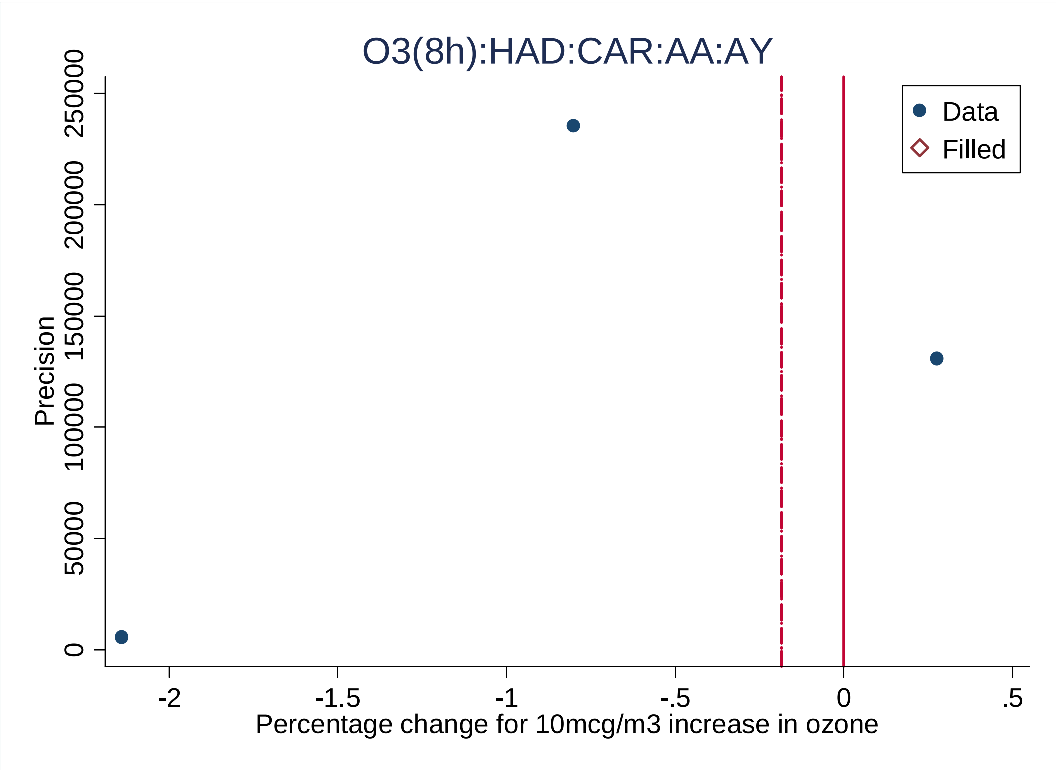

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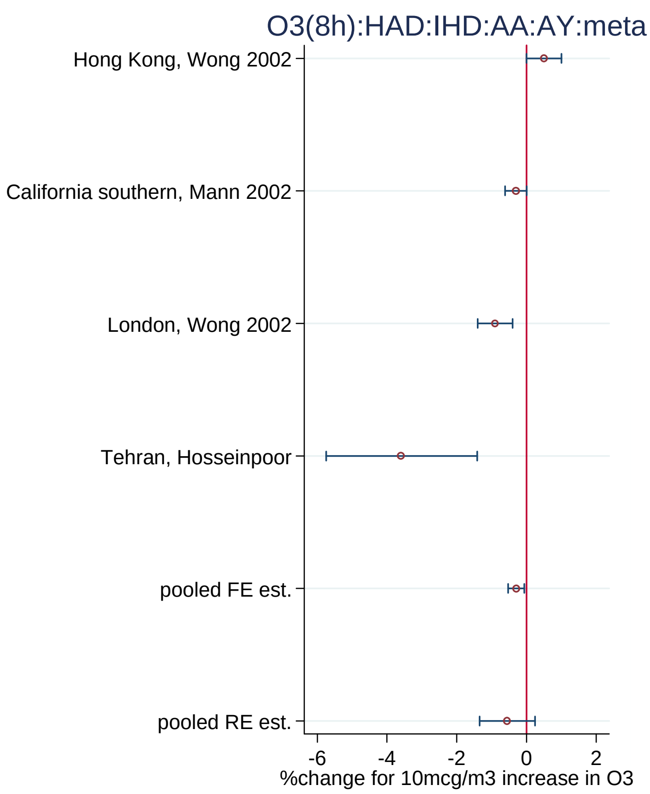

Time Series O_3

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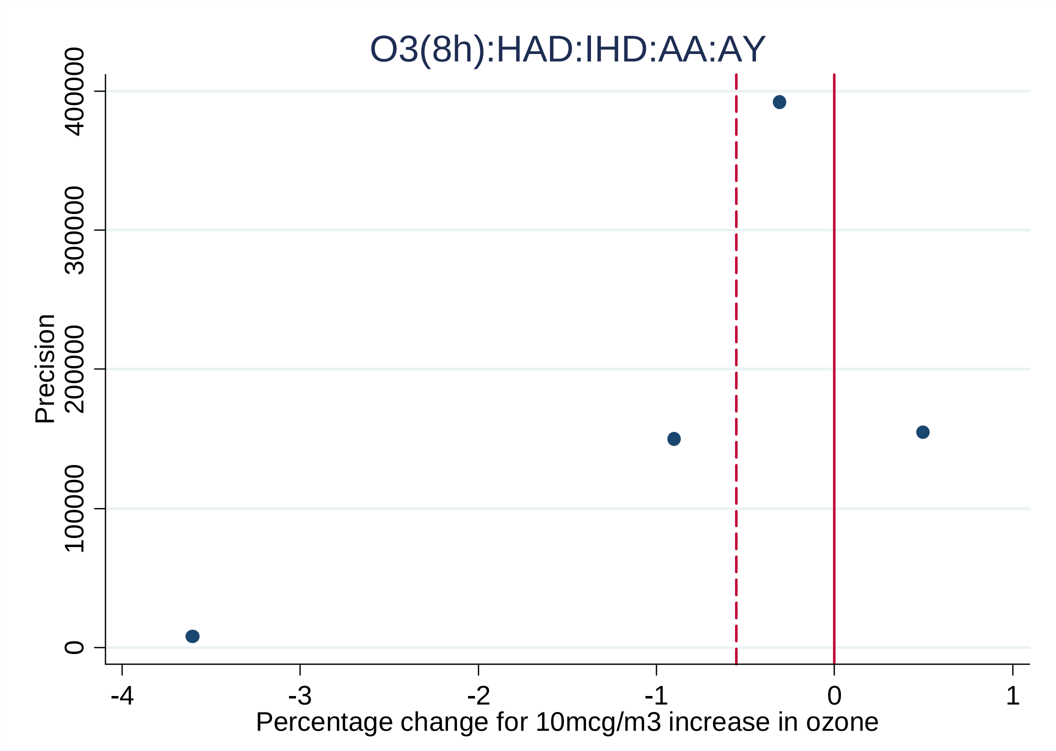

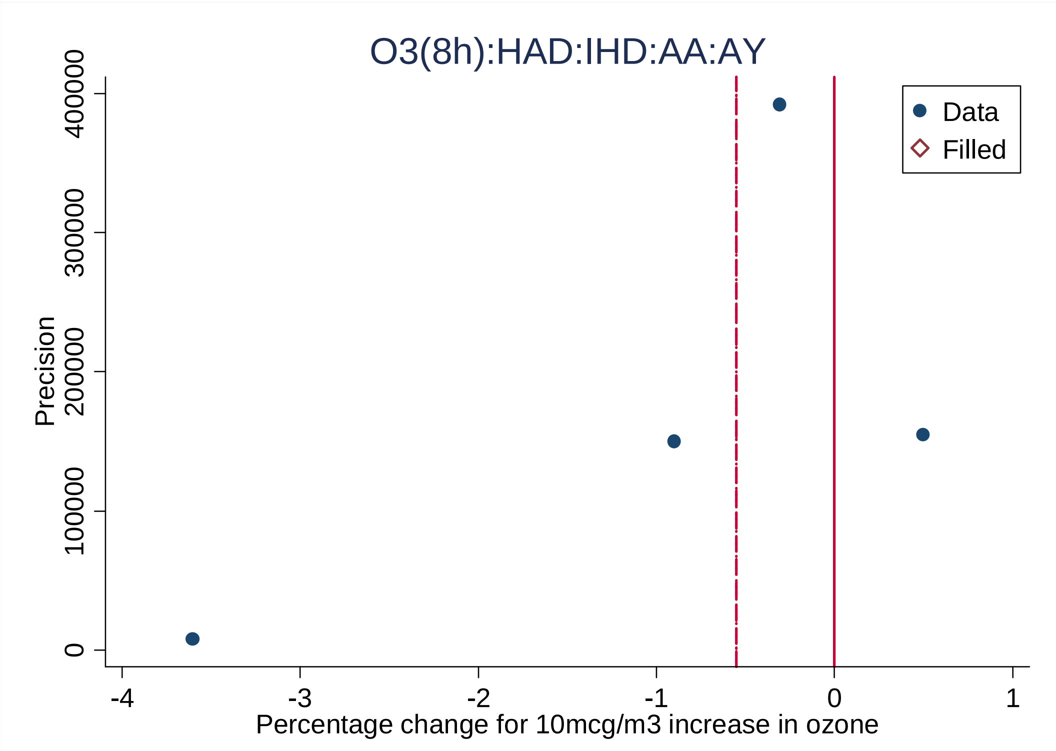

Time Series O_3

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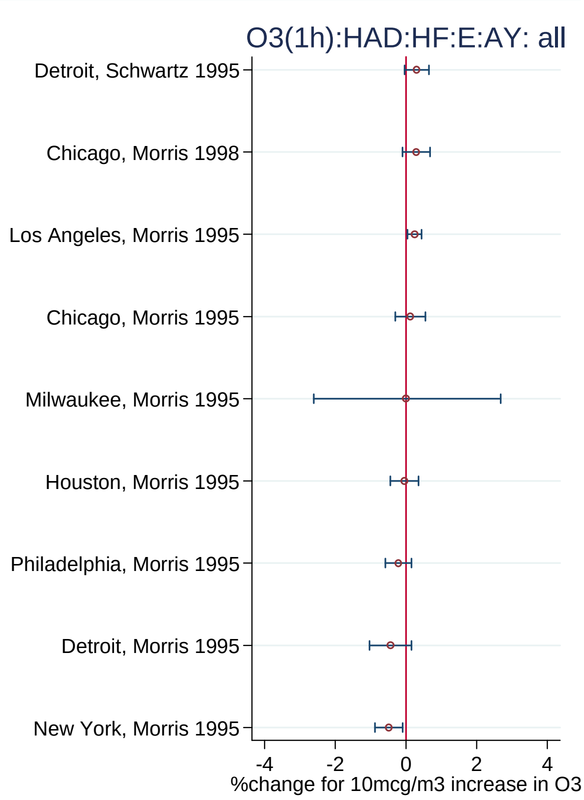

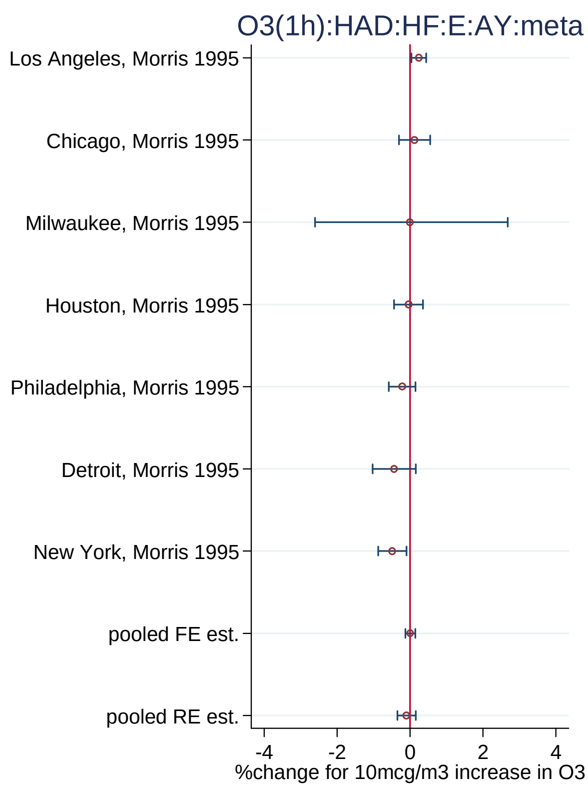

Time Series O_3

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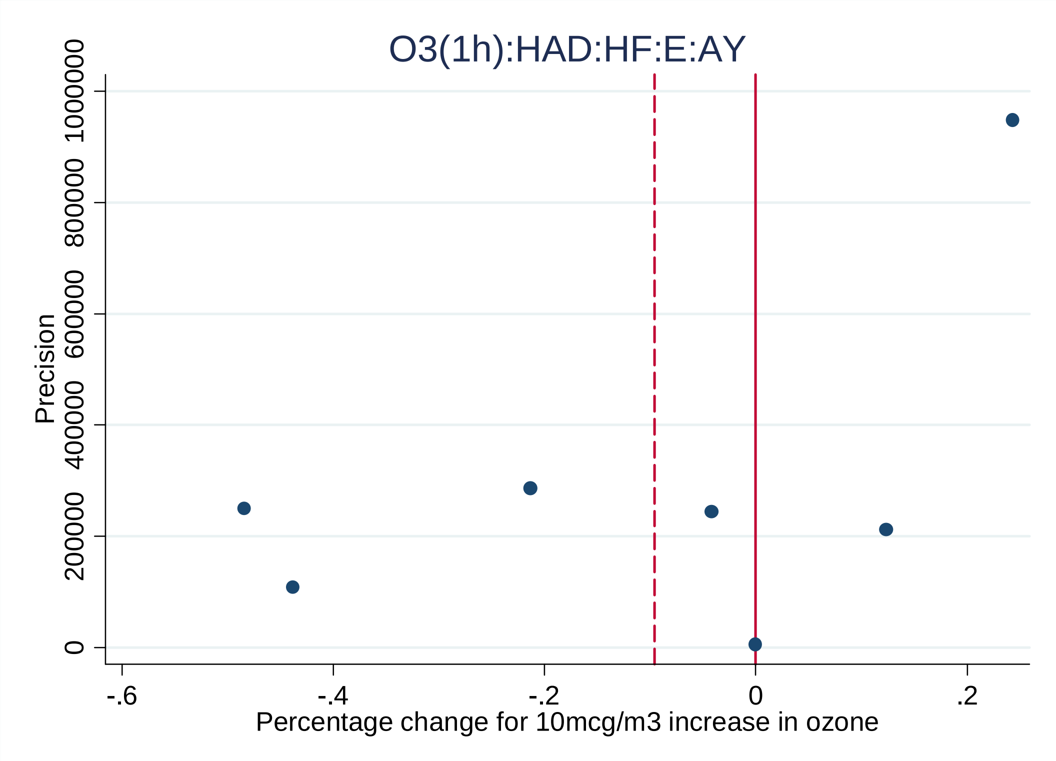

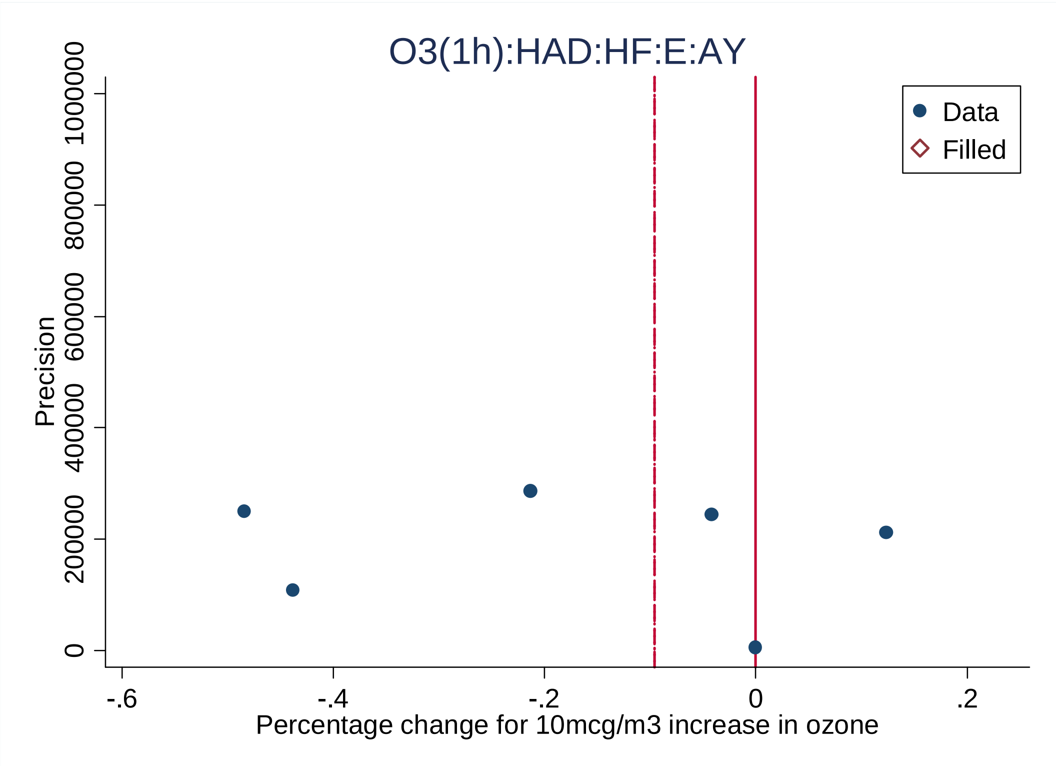

Time Series O_3

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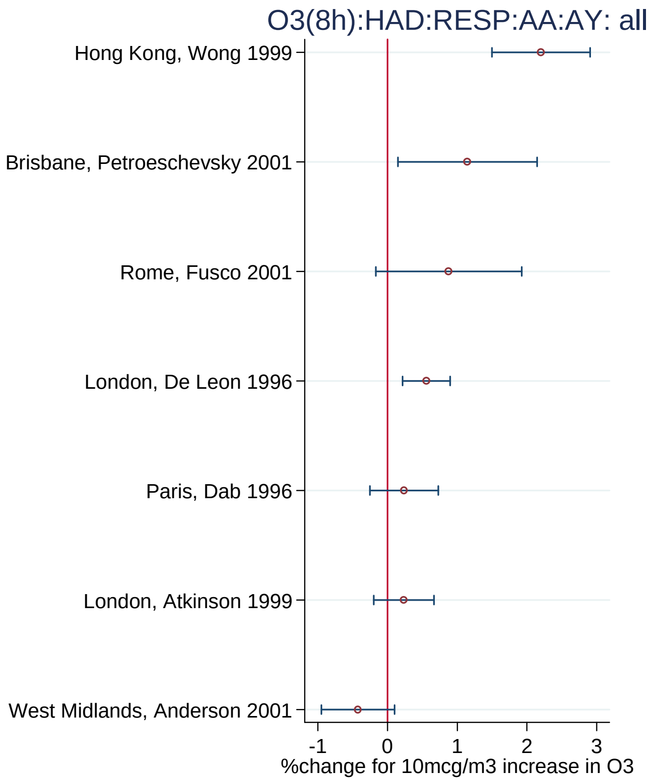

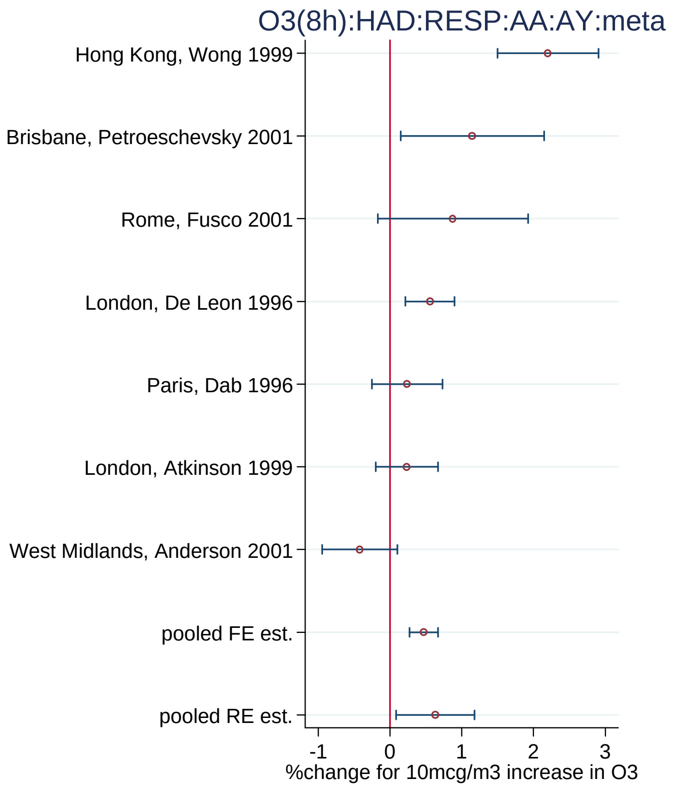

Time Series O_3

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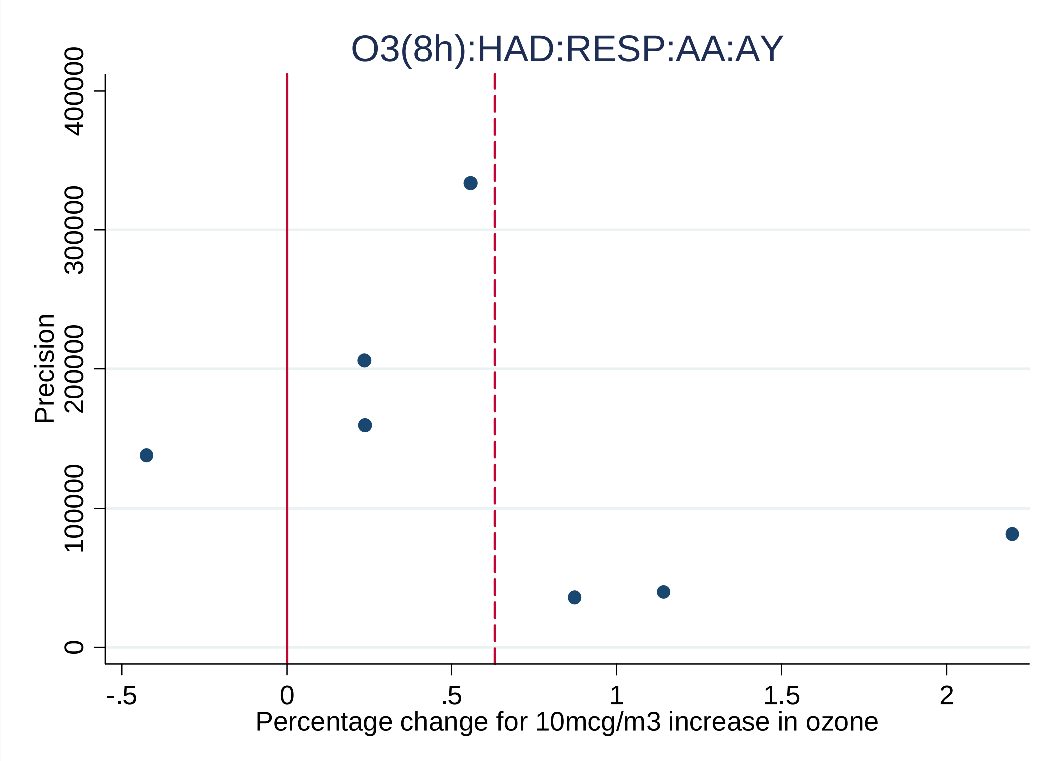

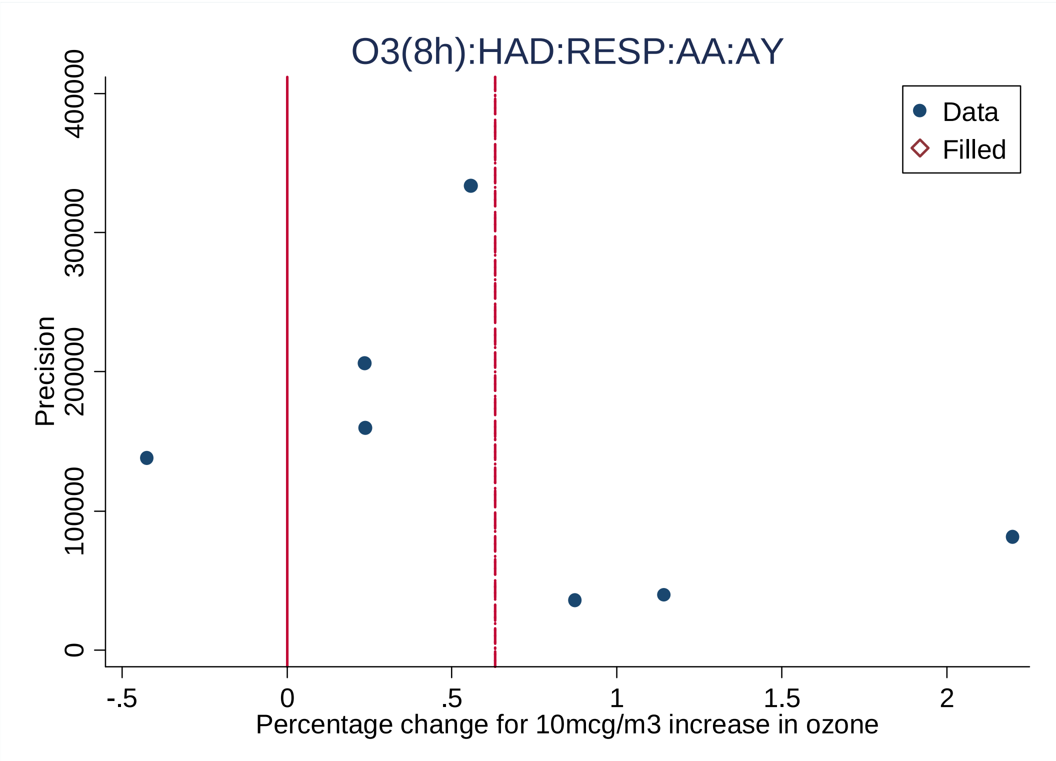

Time Series O_3

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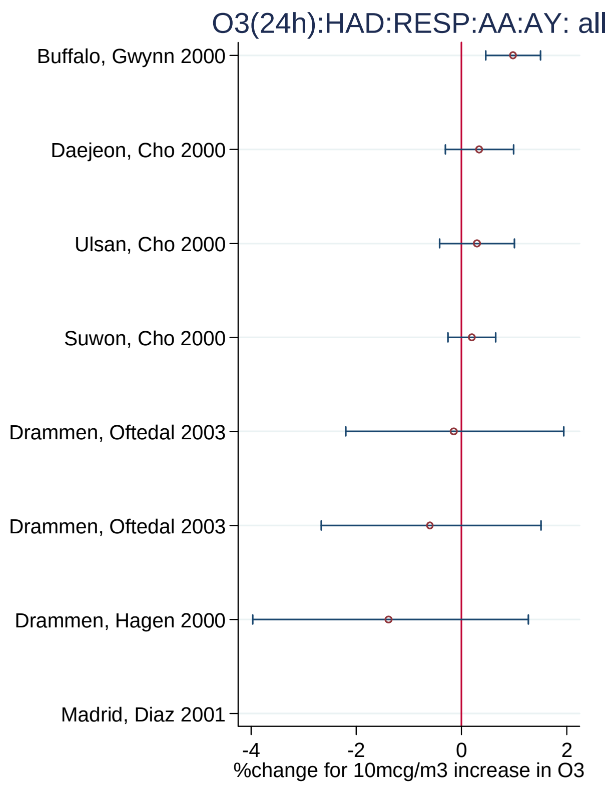

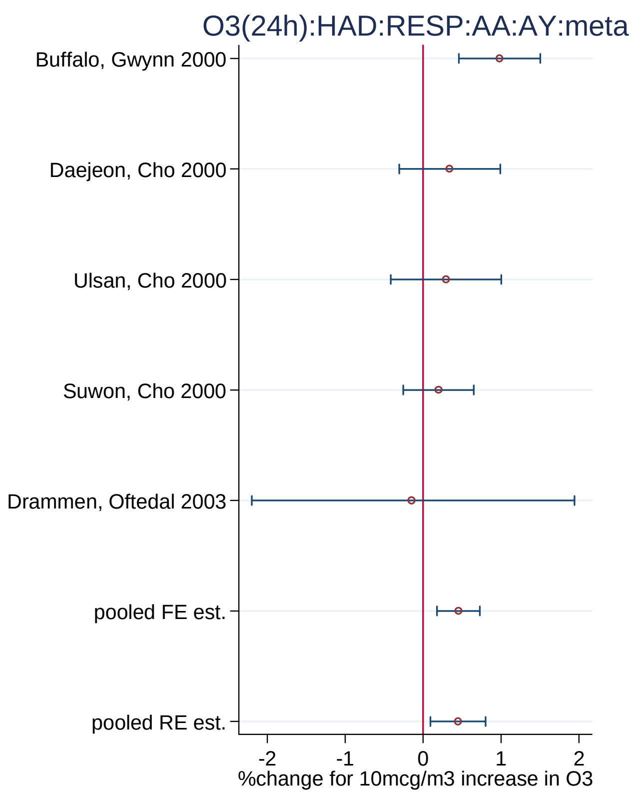

Time Series O_3

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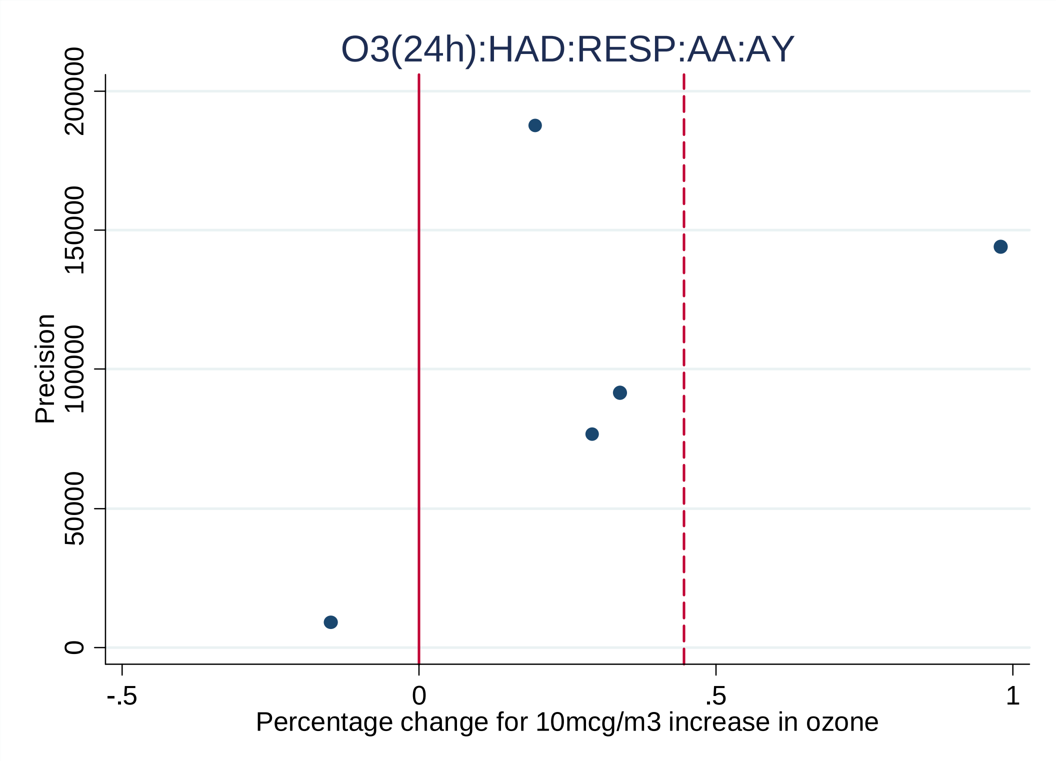

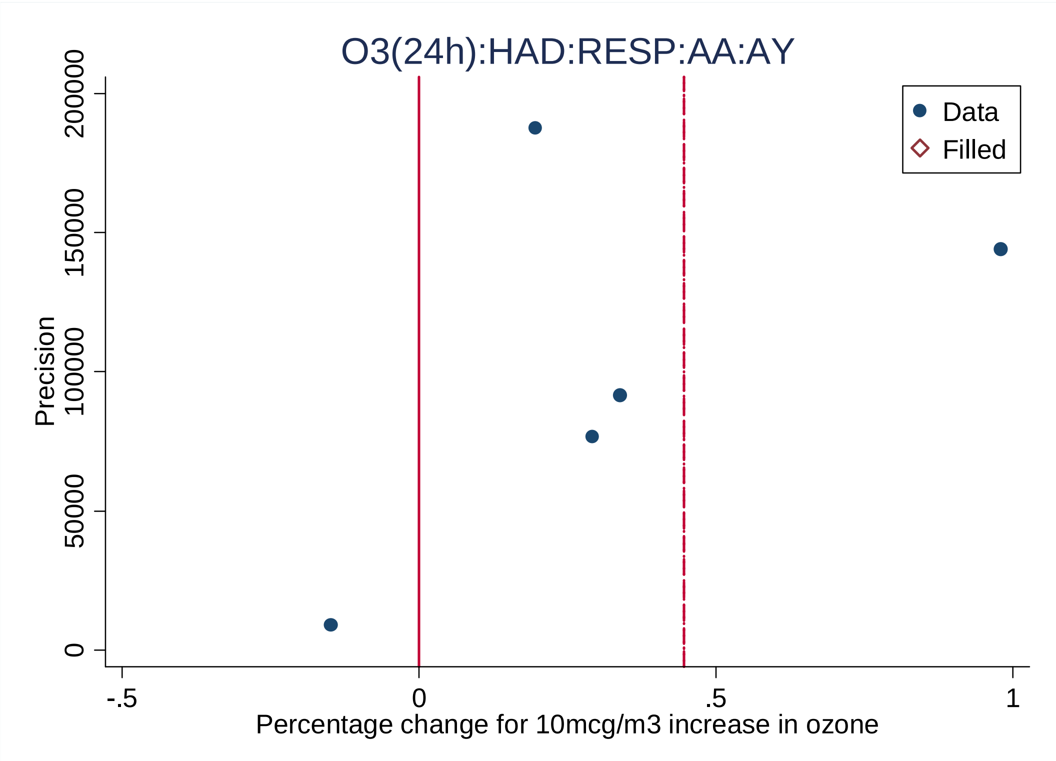

Time Series O_3

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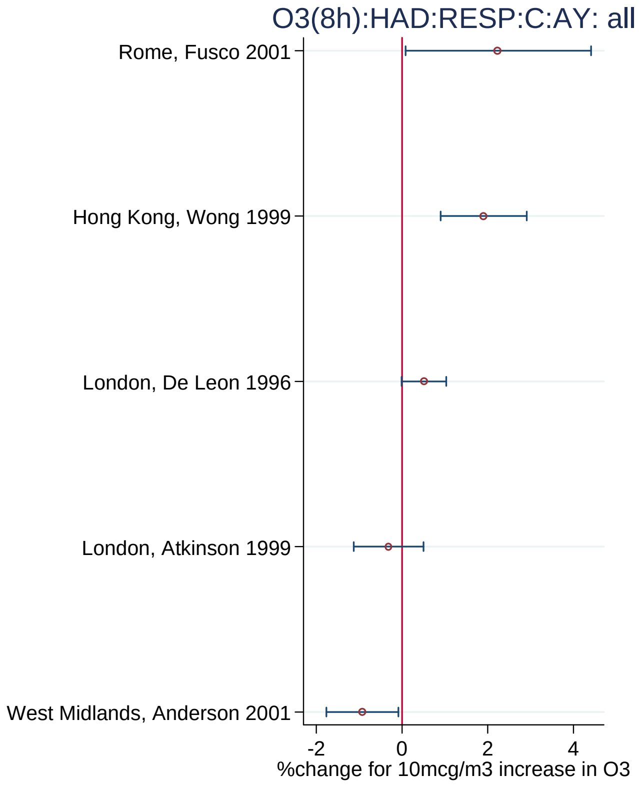

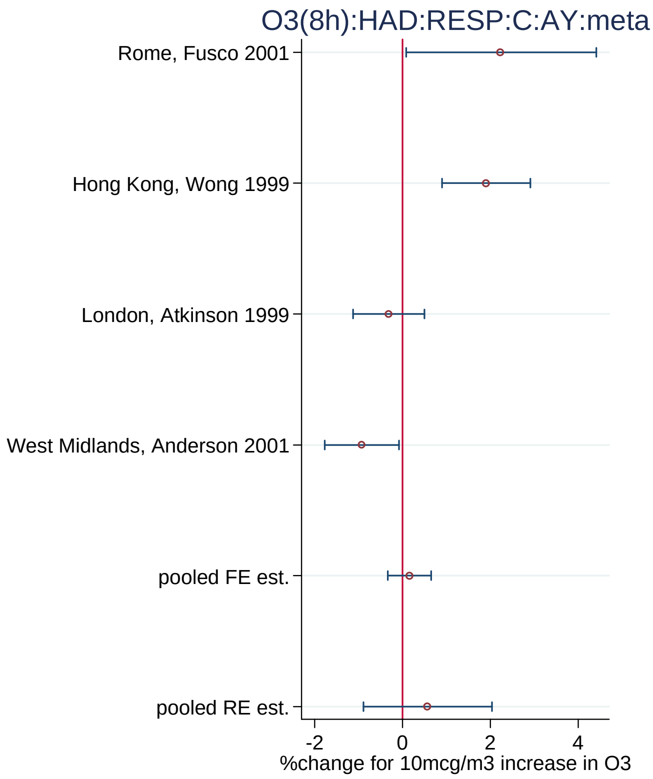

Time Series O_3

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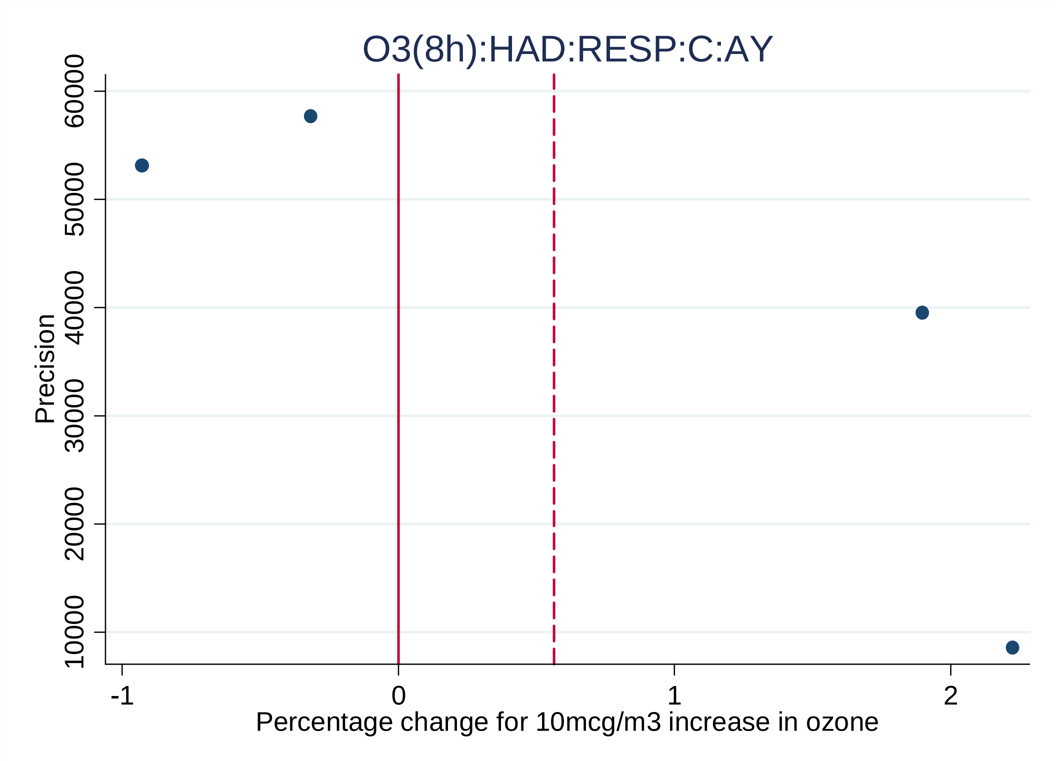

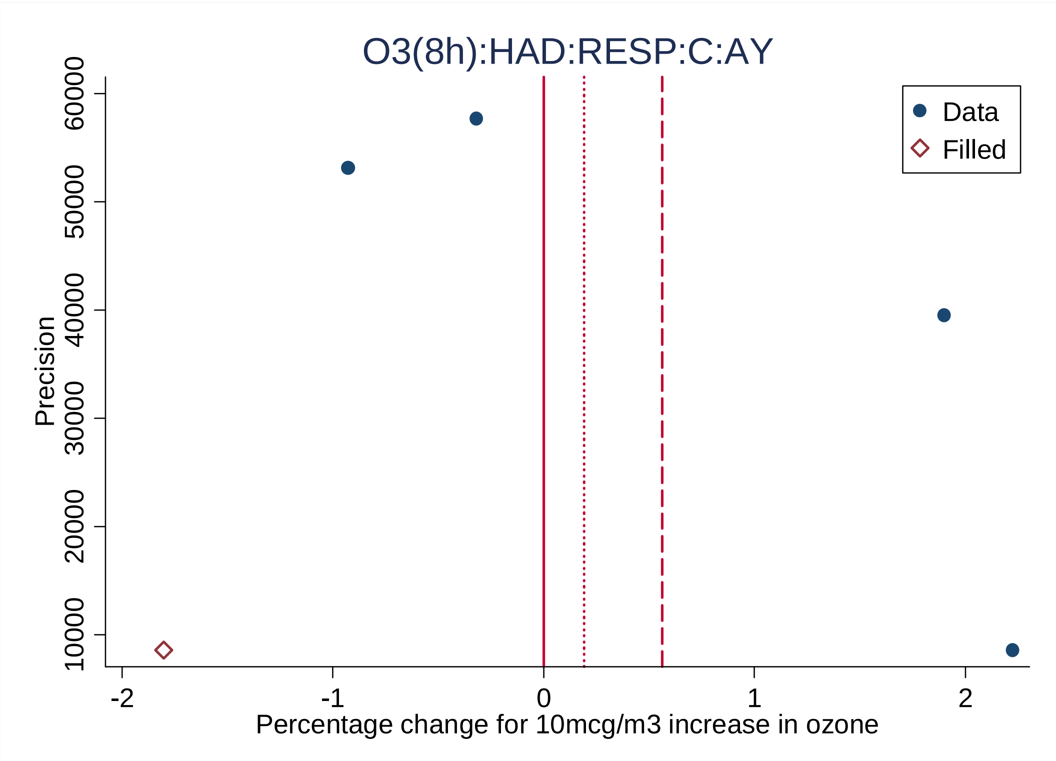

Time Series O_3

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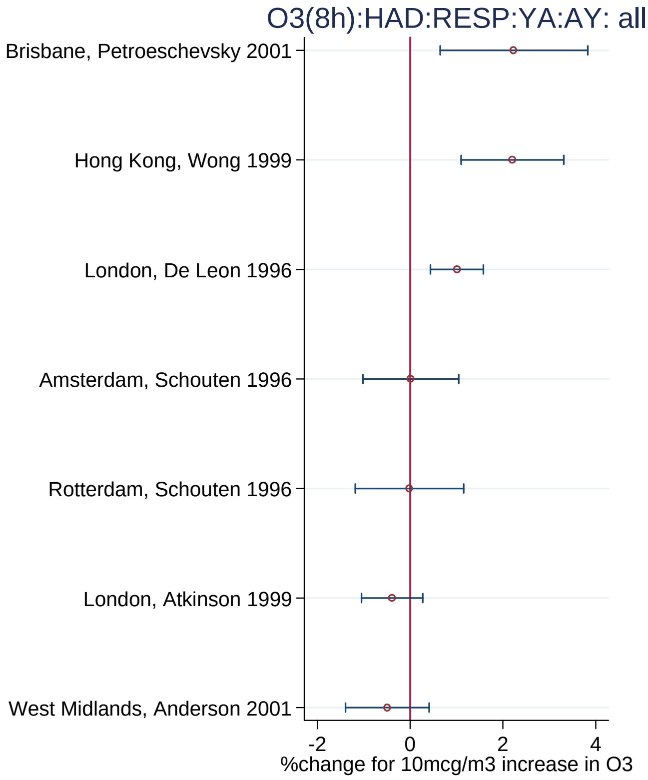

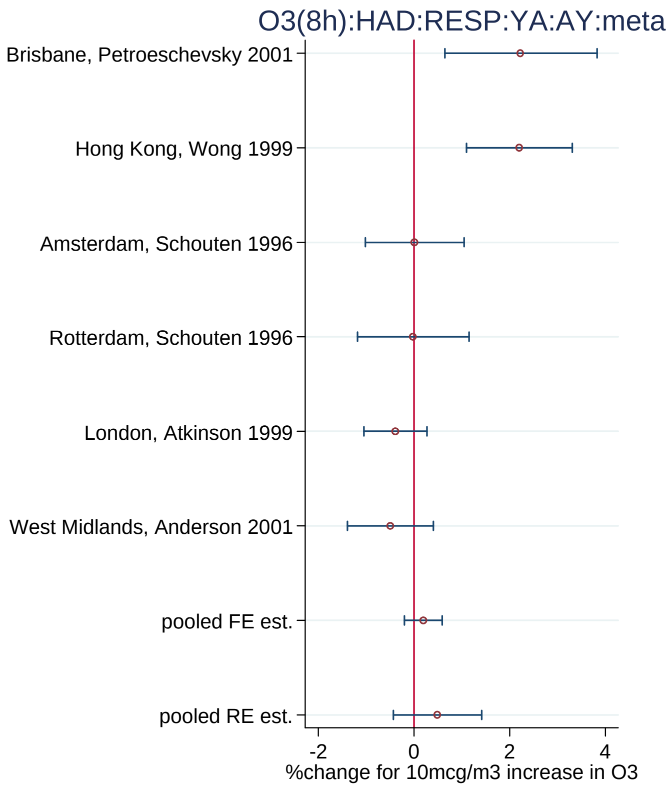

Time Series O_3

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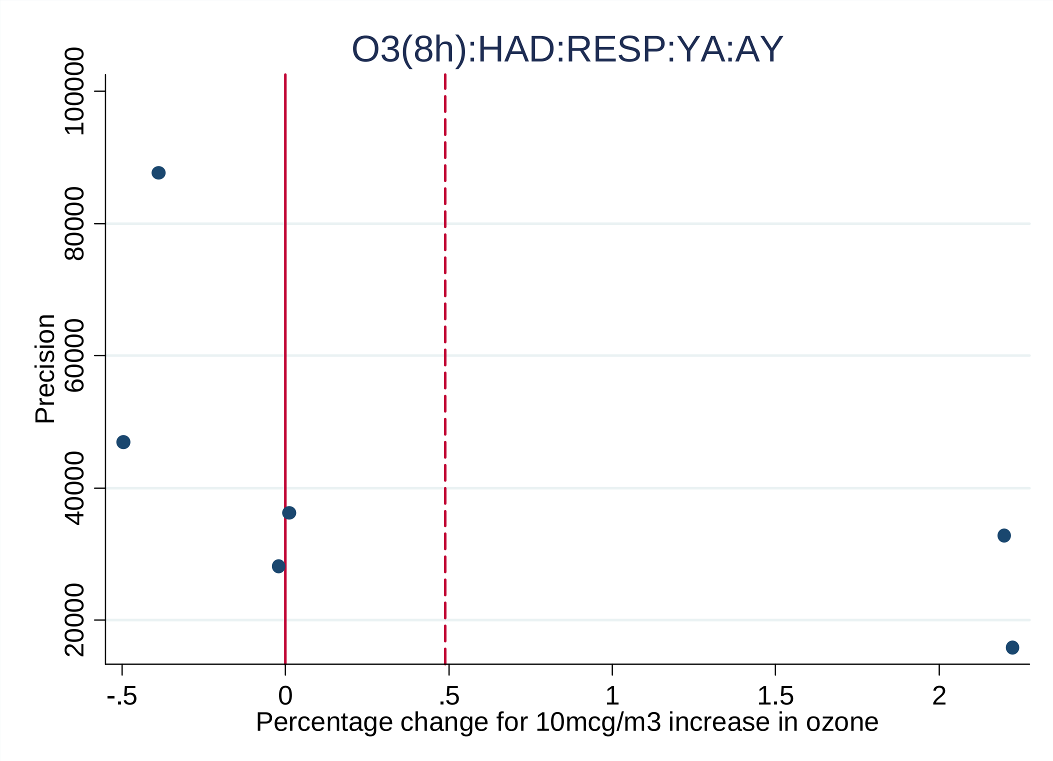

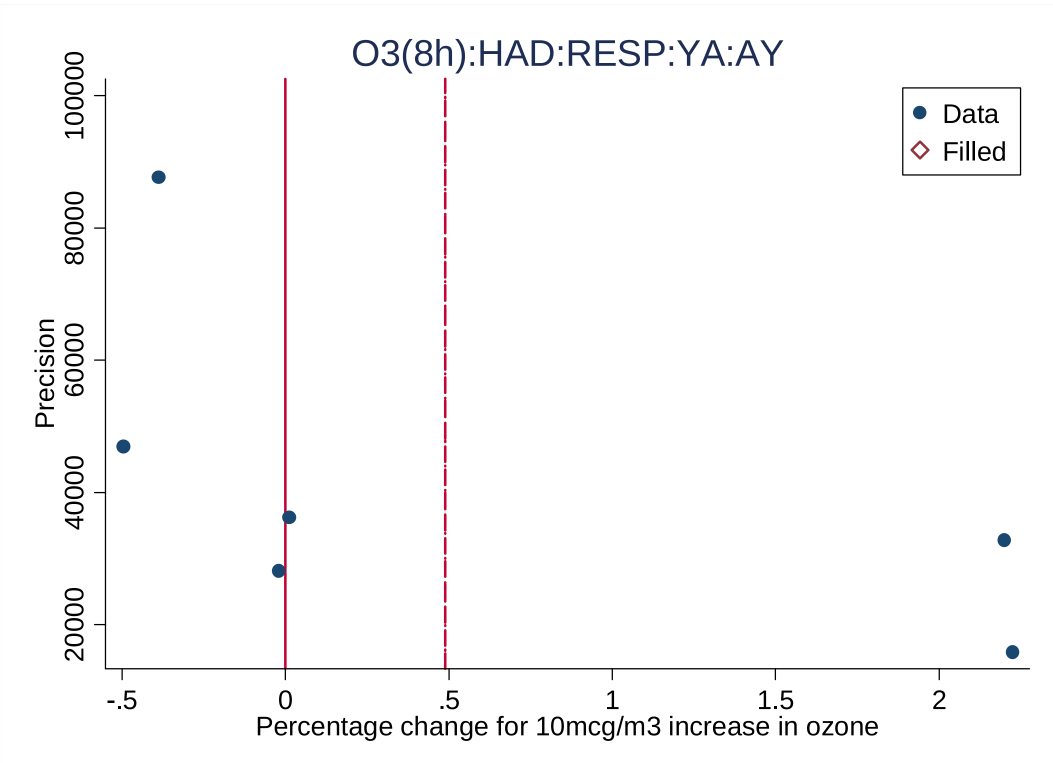

Time Series O_3

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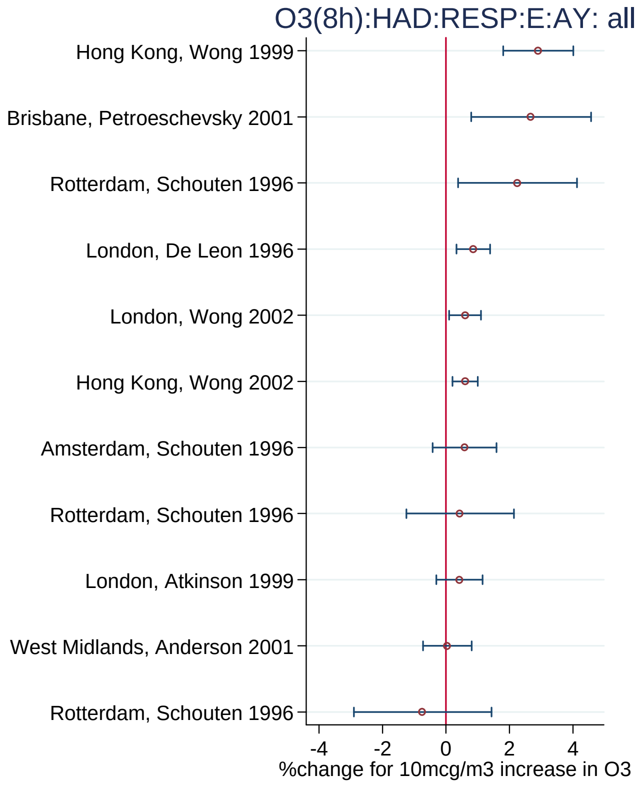

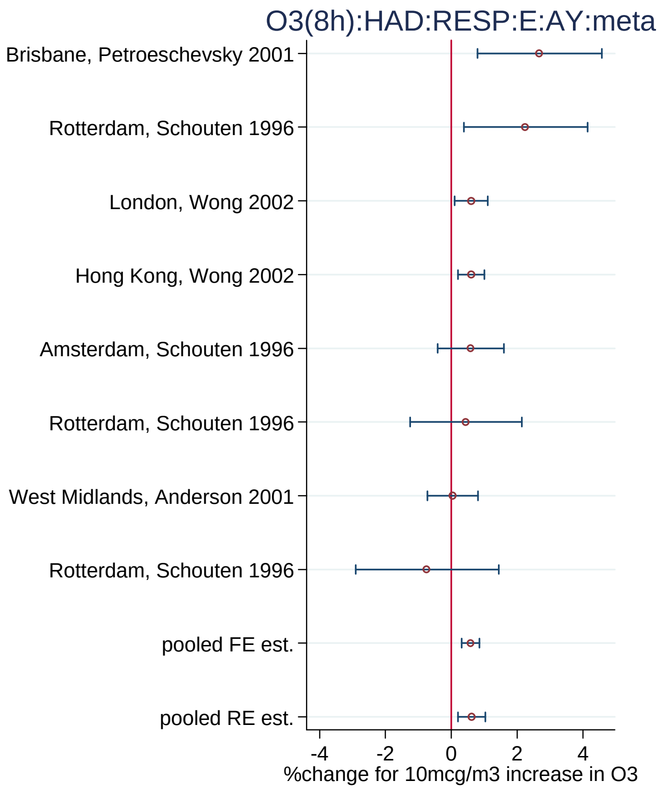

Time Series O_3

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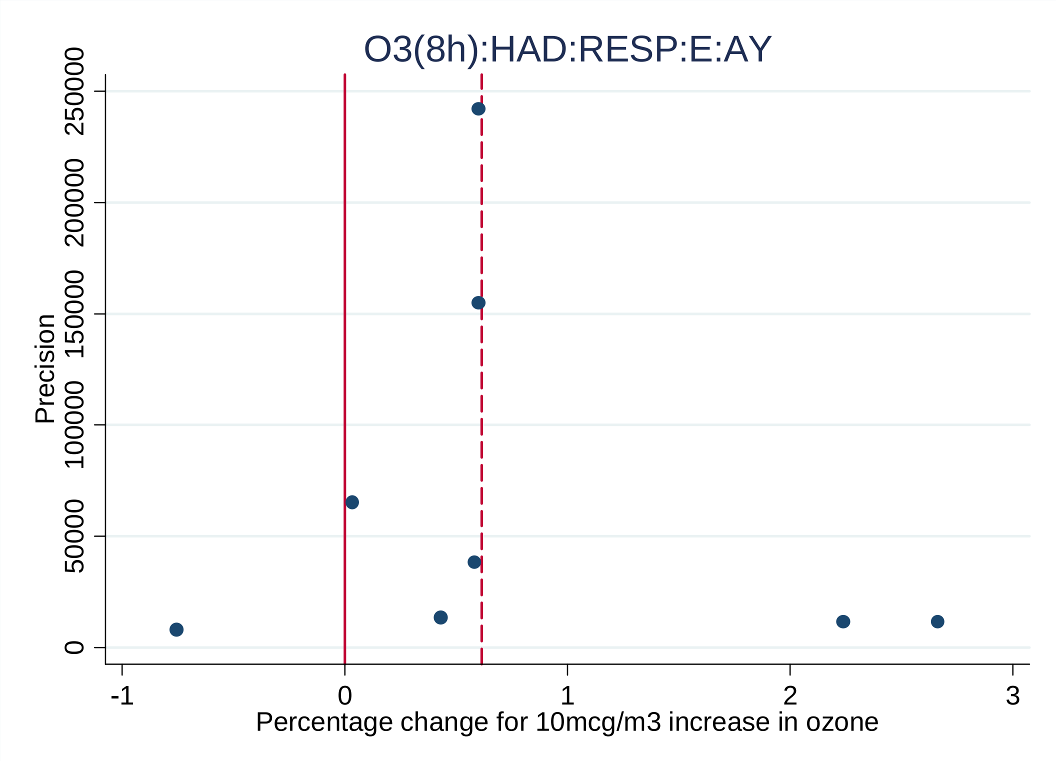

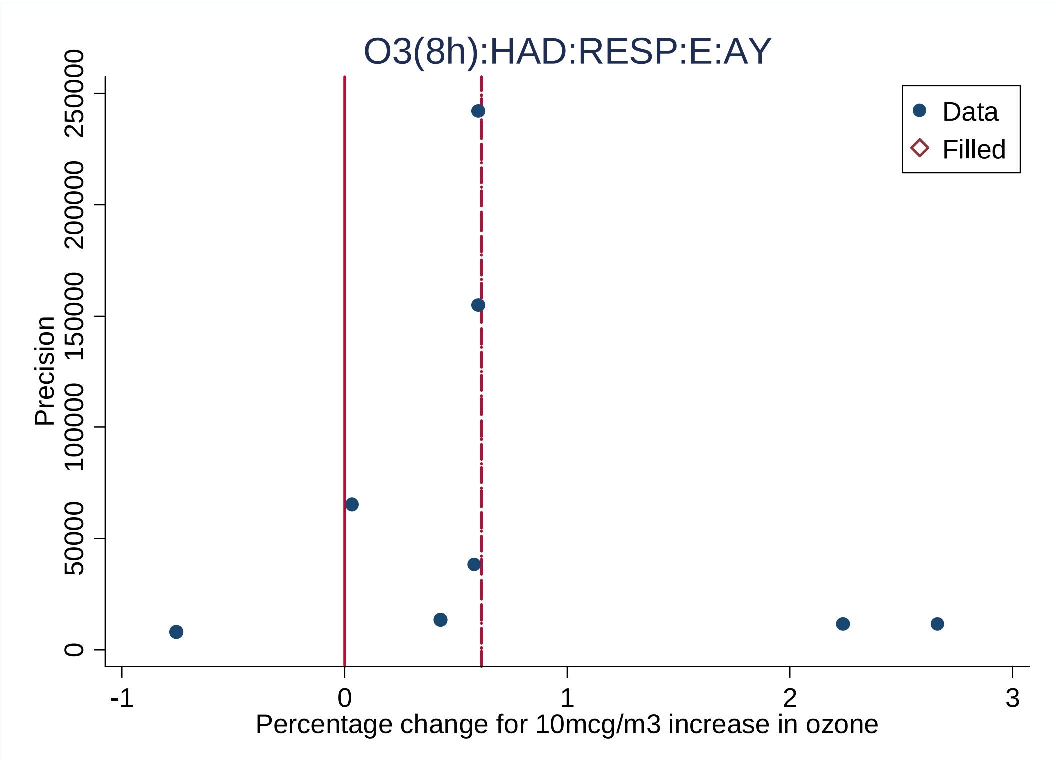

Time Series O_3

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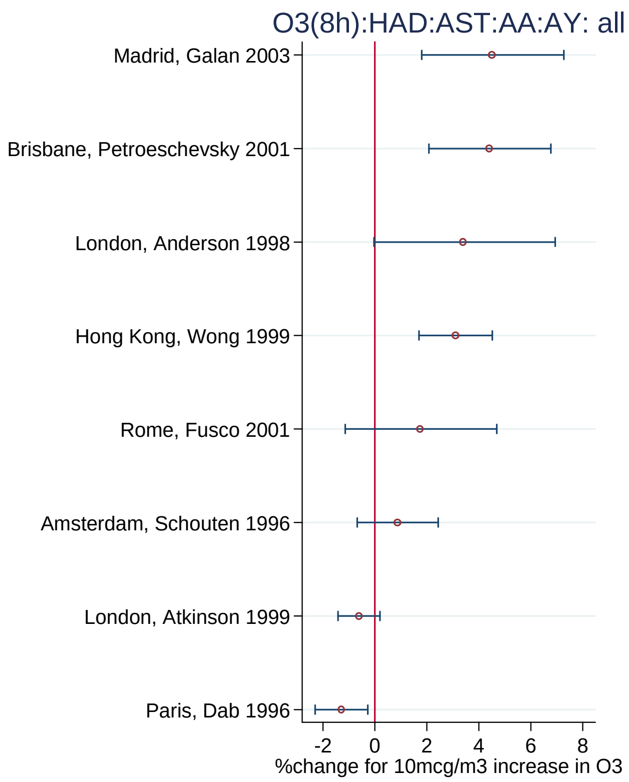

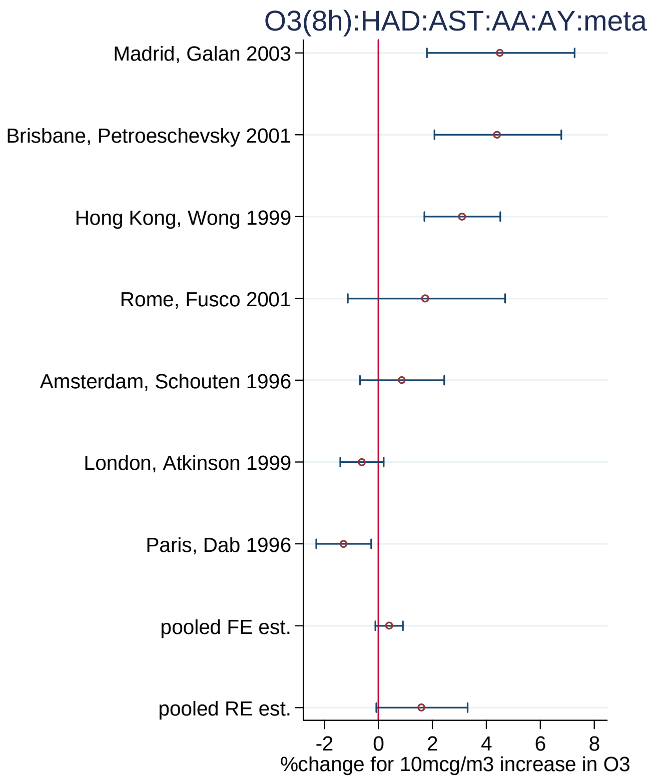

Time Series O_3

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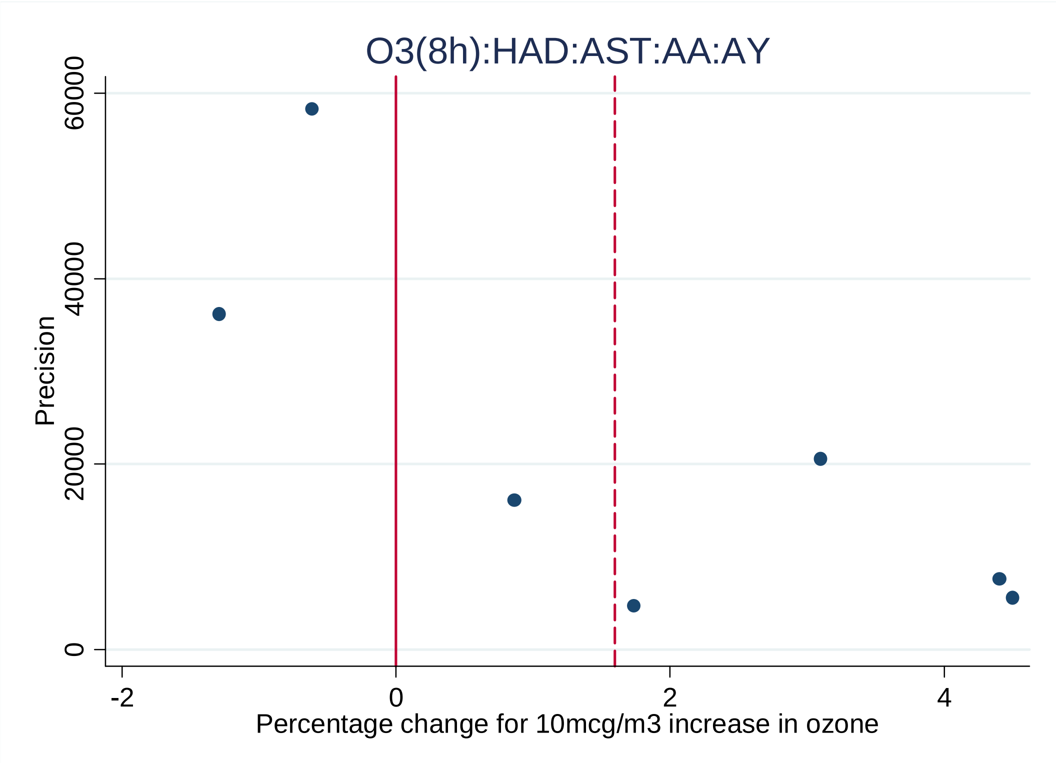

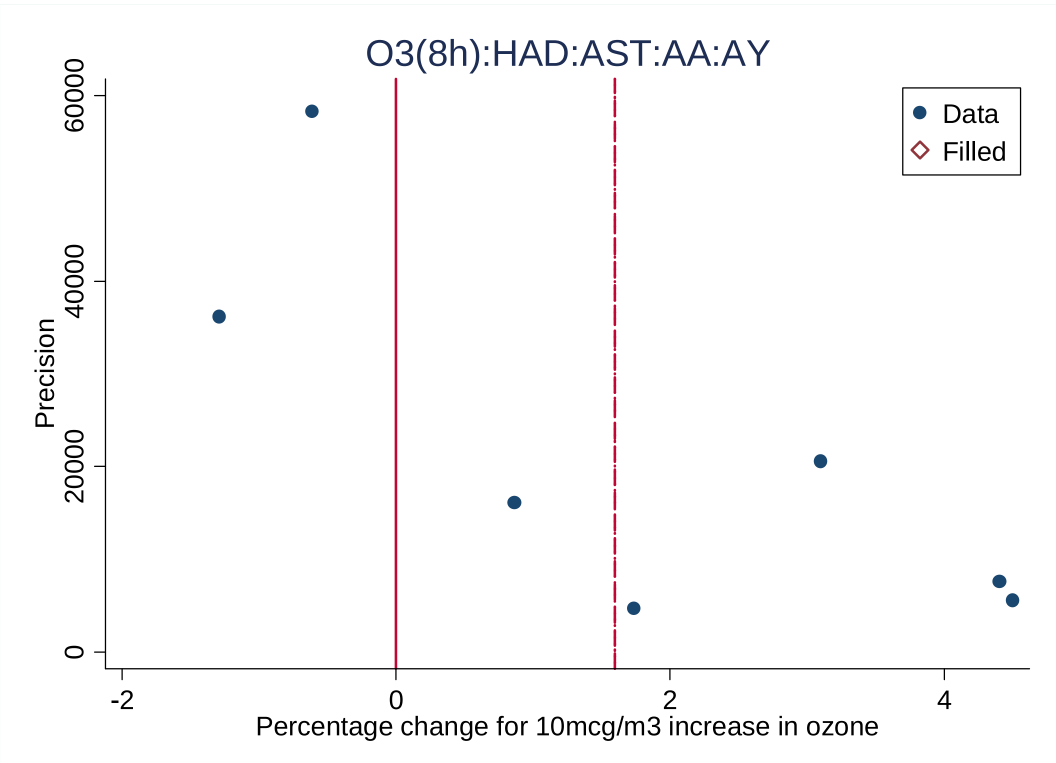

Time Series O_3

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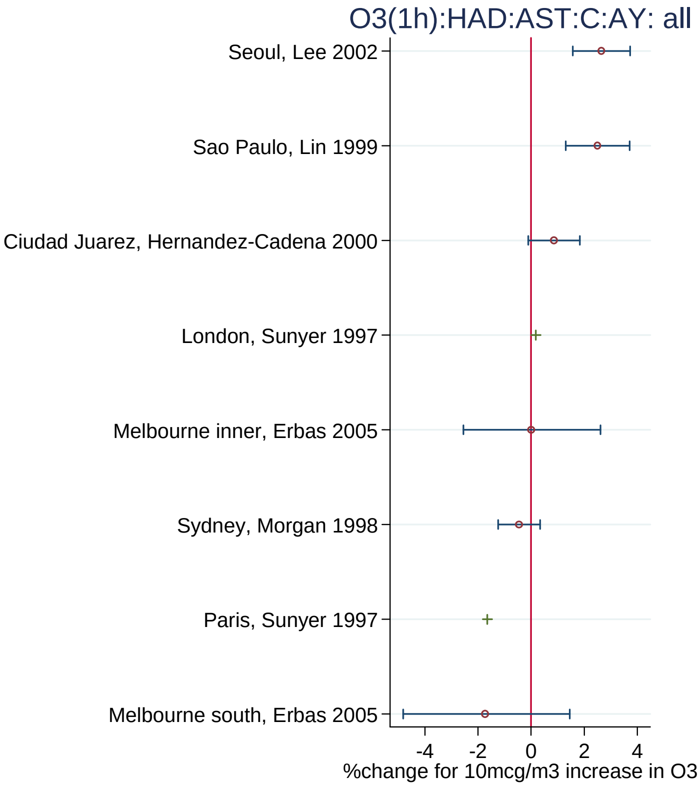

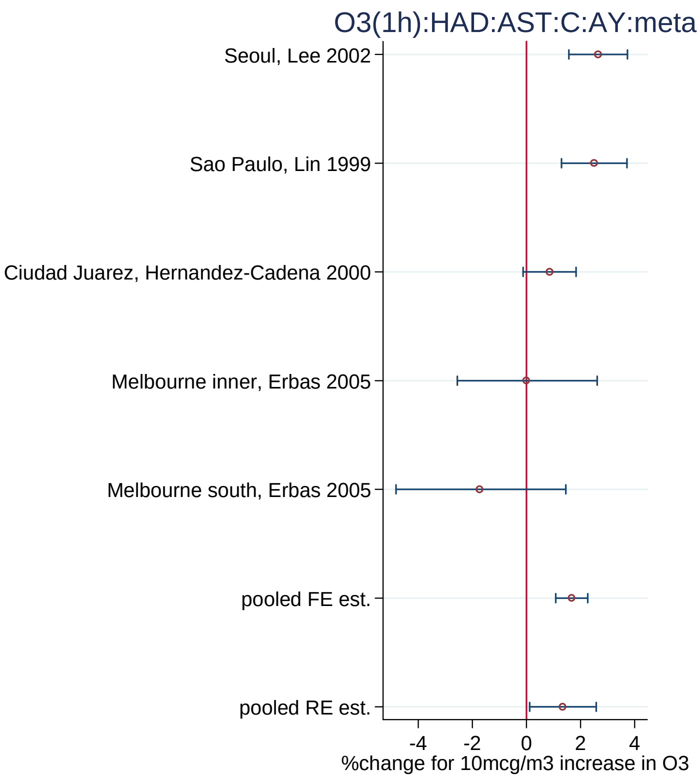

Time Series O_3

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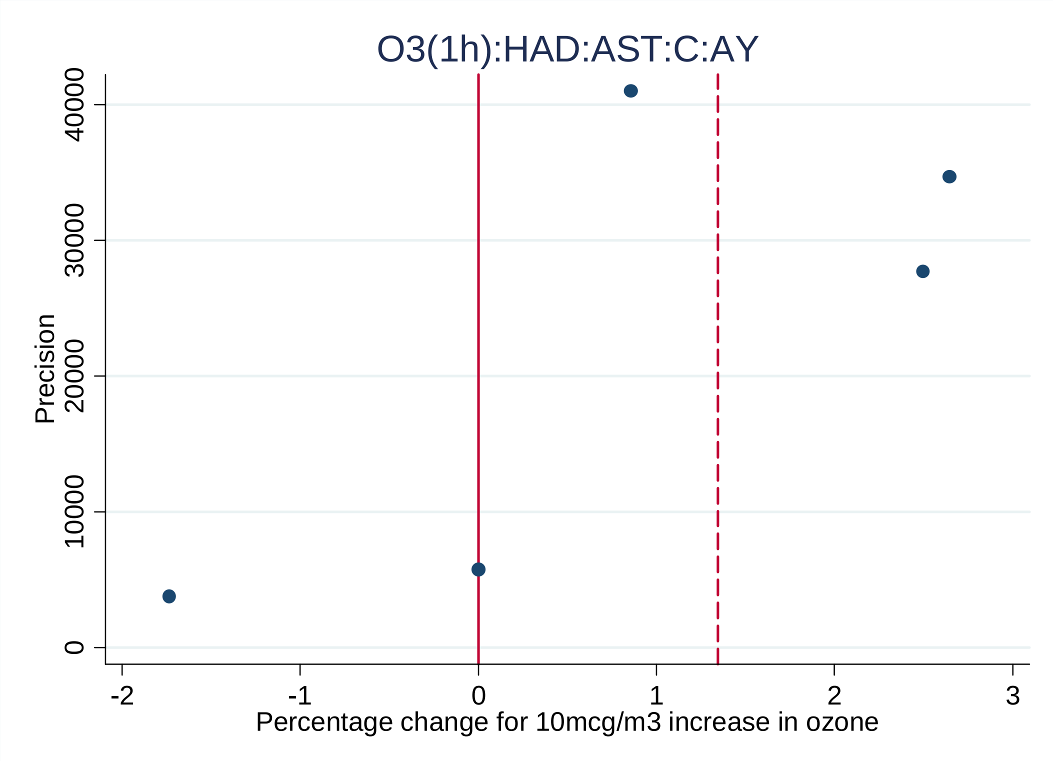

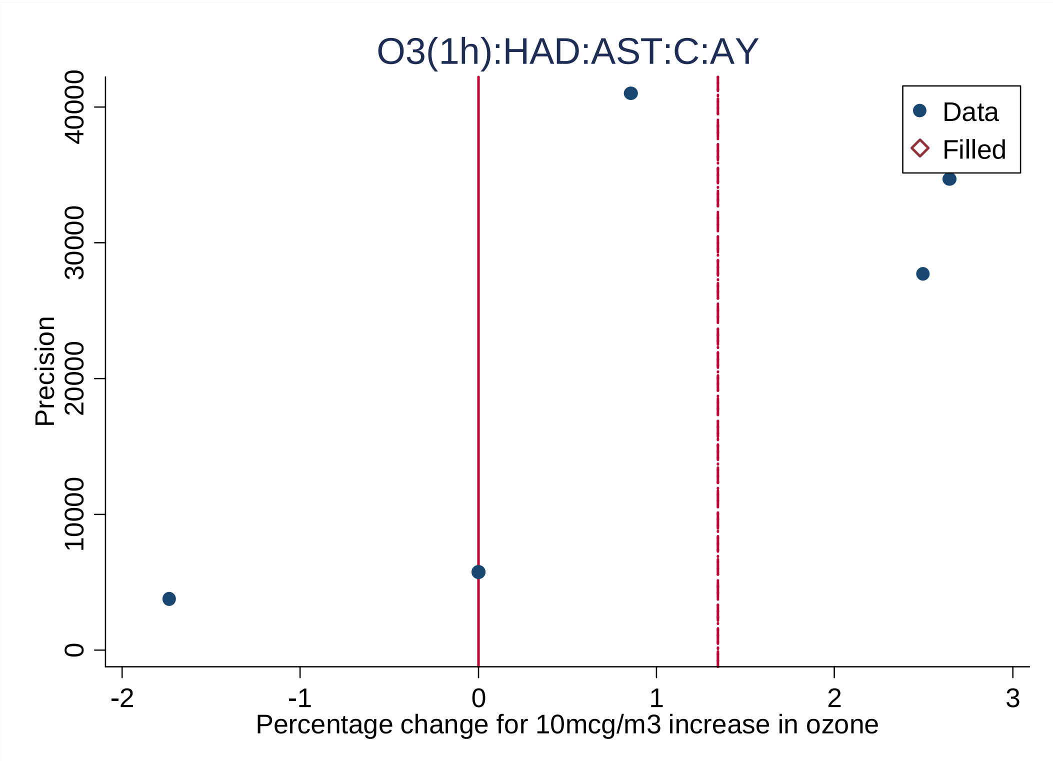

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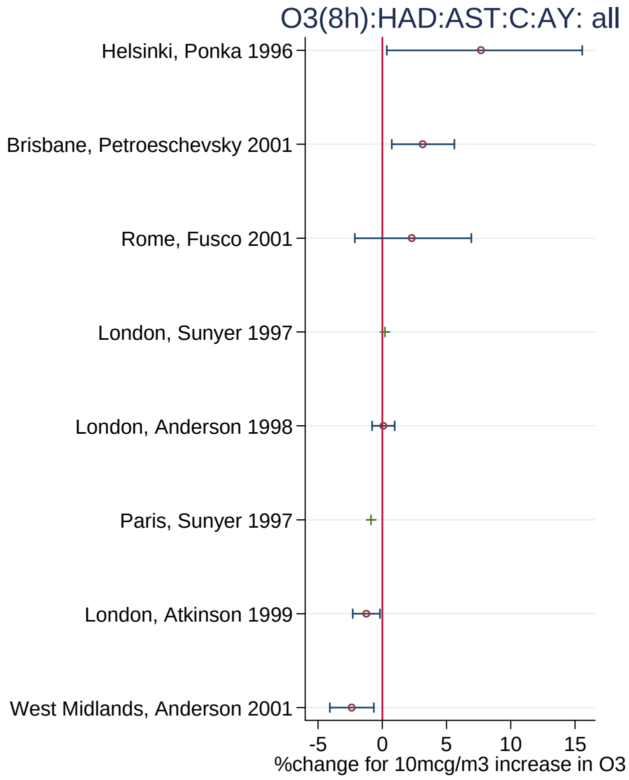

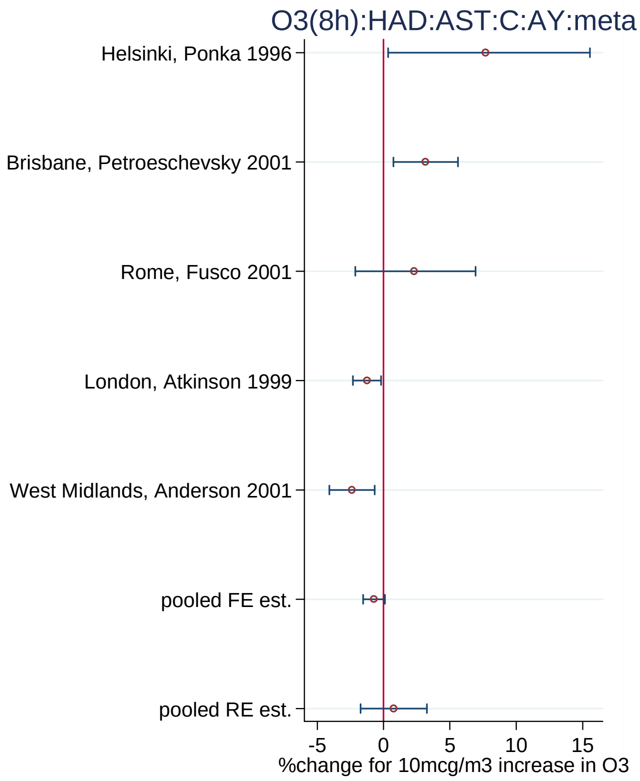

Time Series O_3

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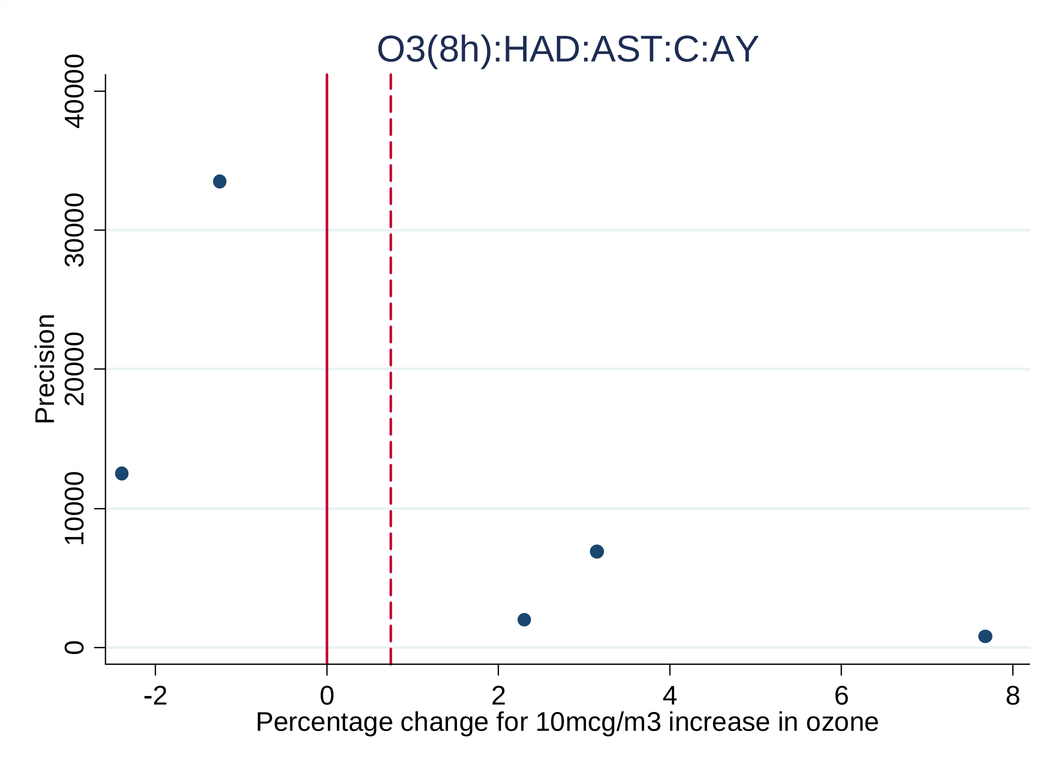

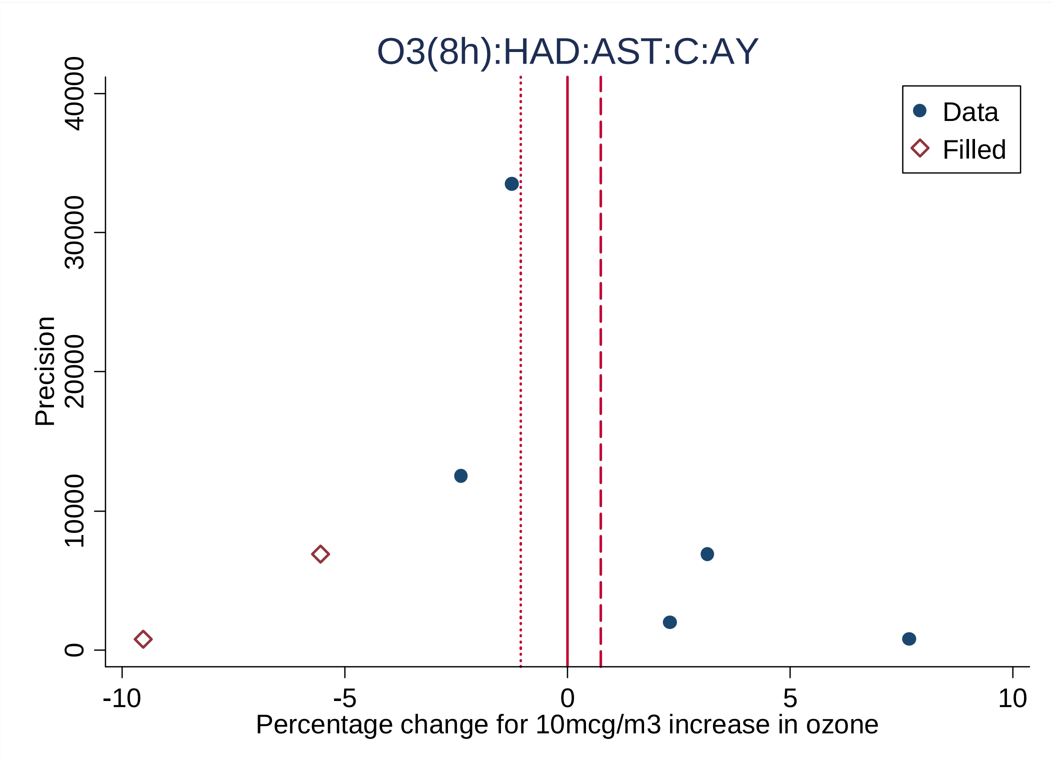

Time Series O_3

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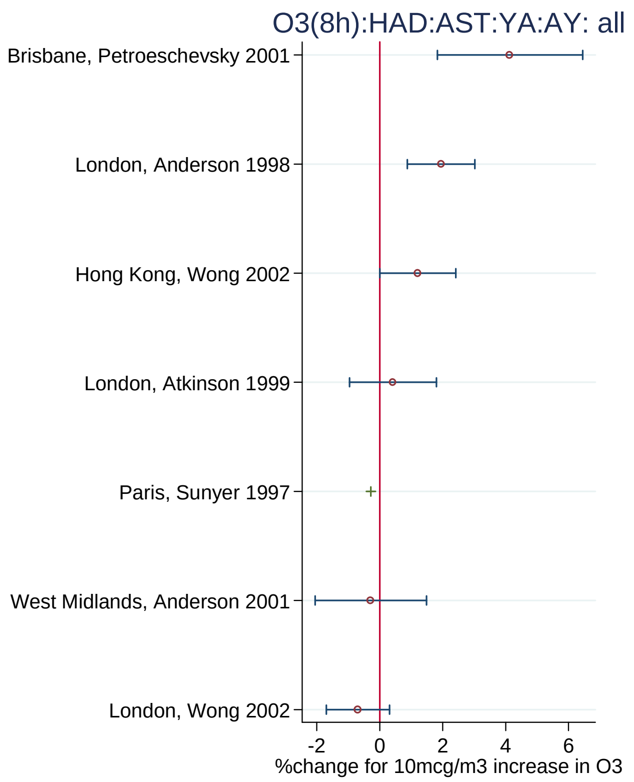

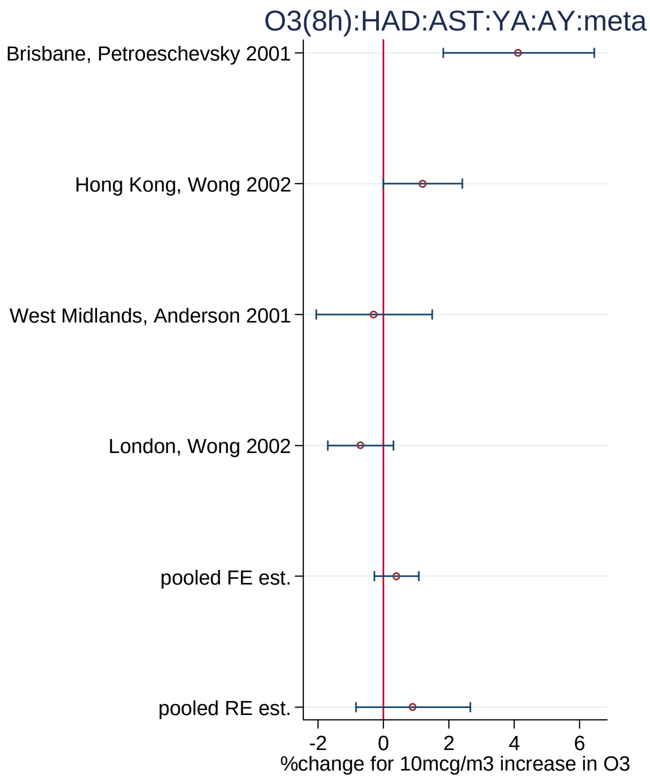

Time Series O_3

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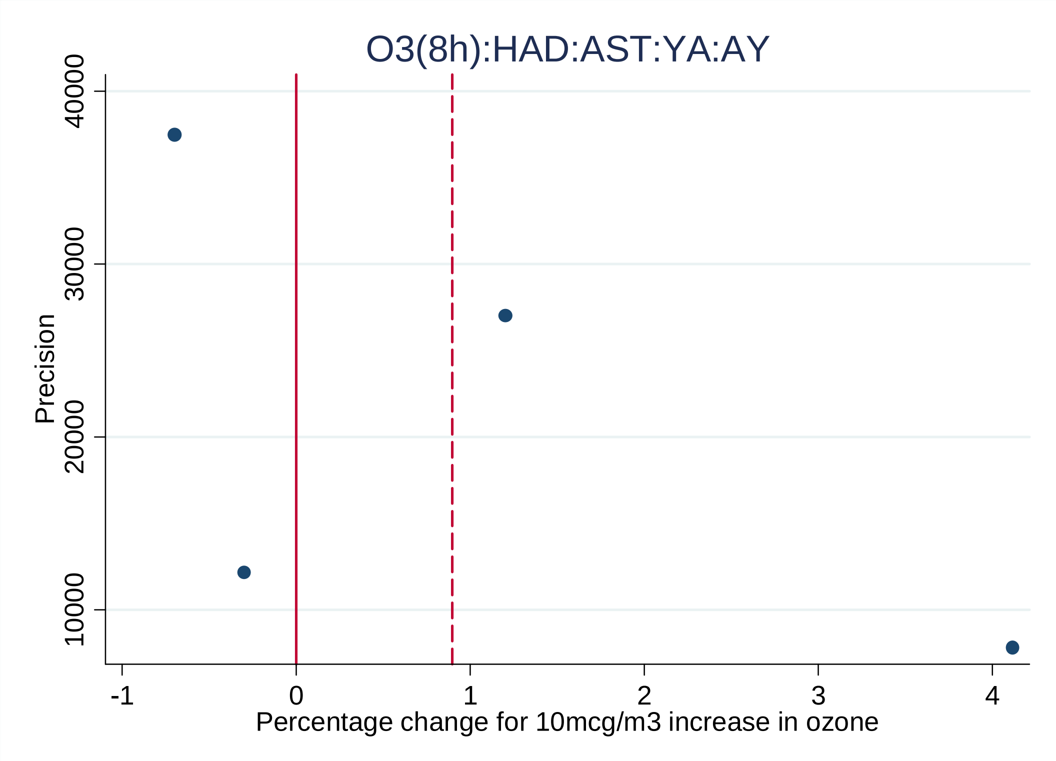

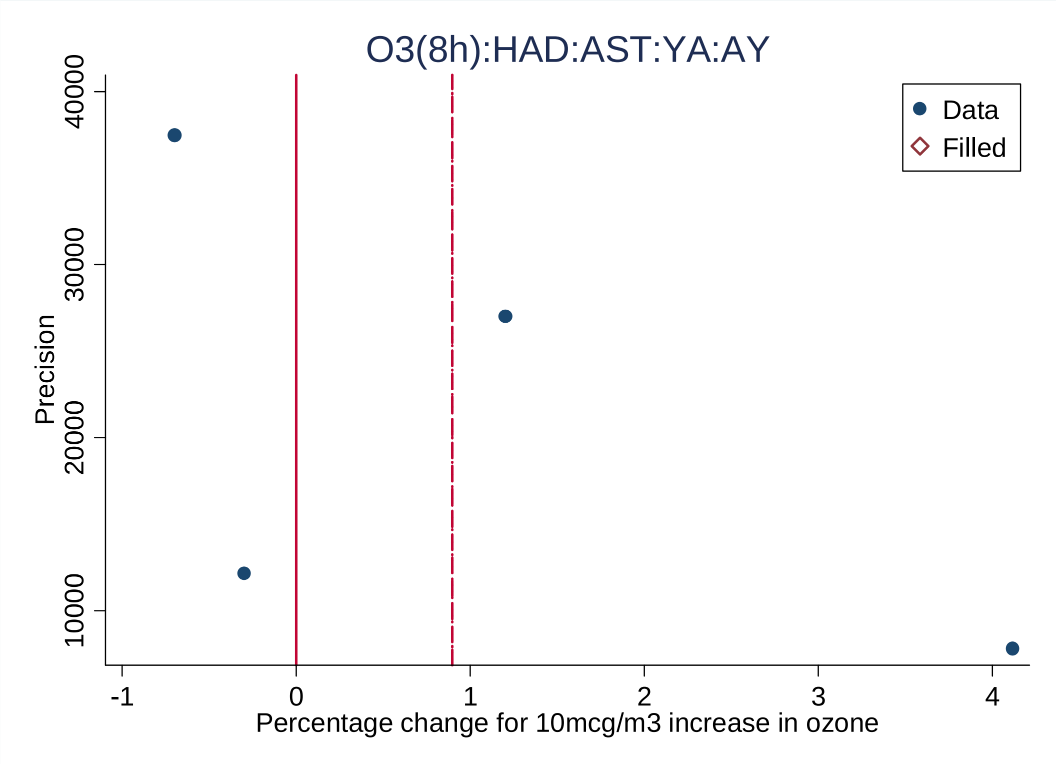

Time Series O_3

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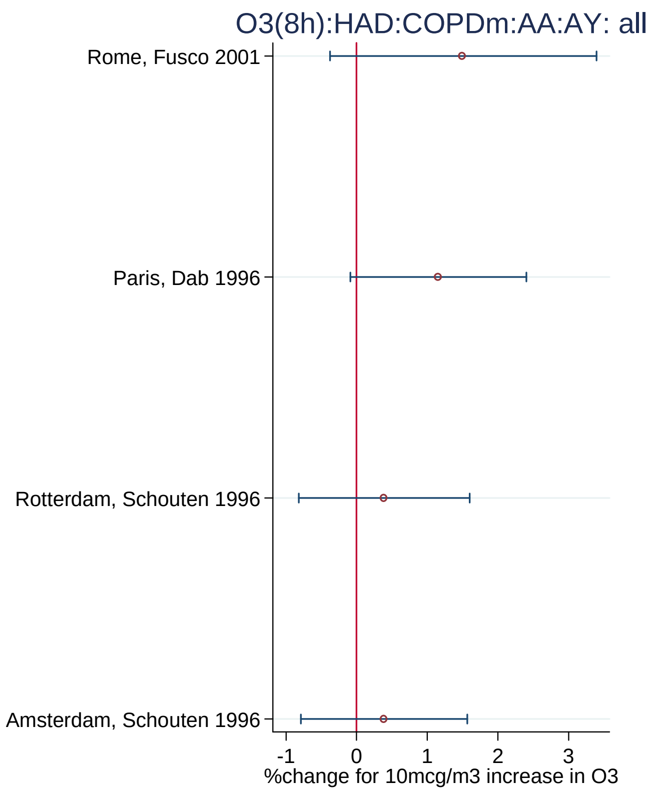

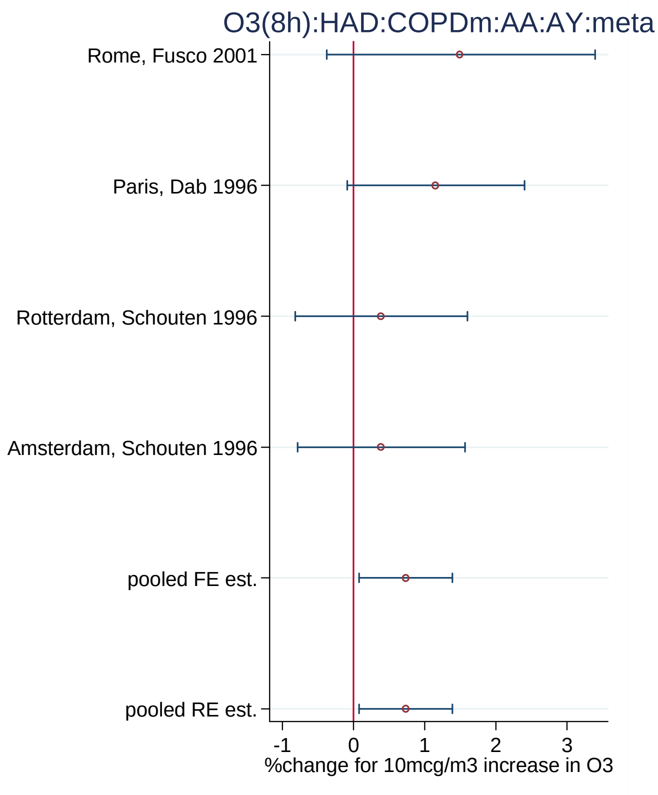

Time Series O_3

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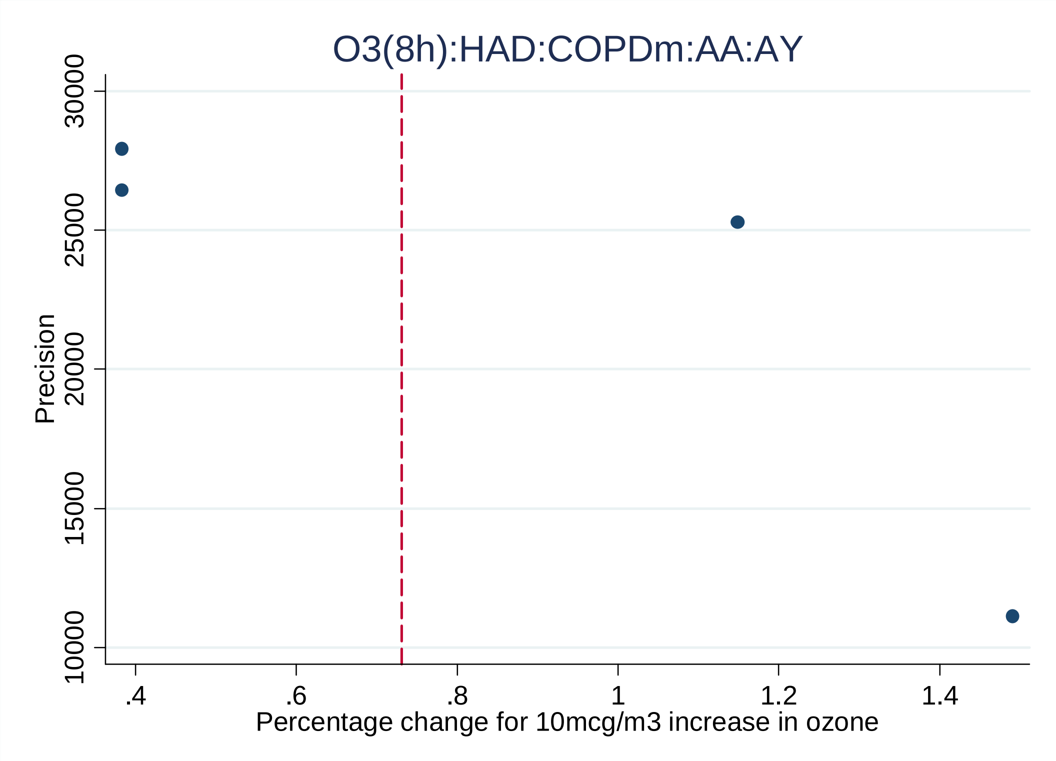

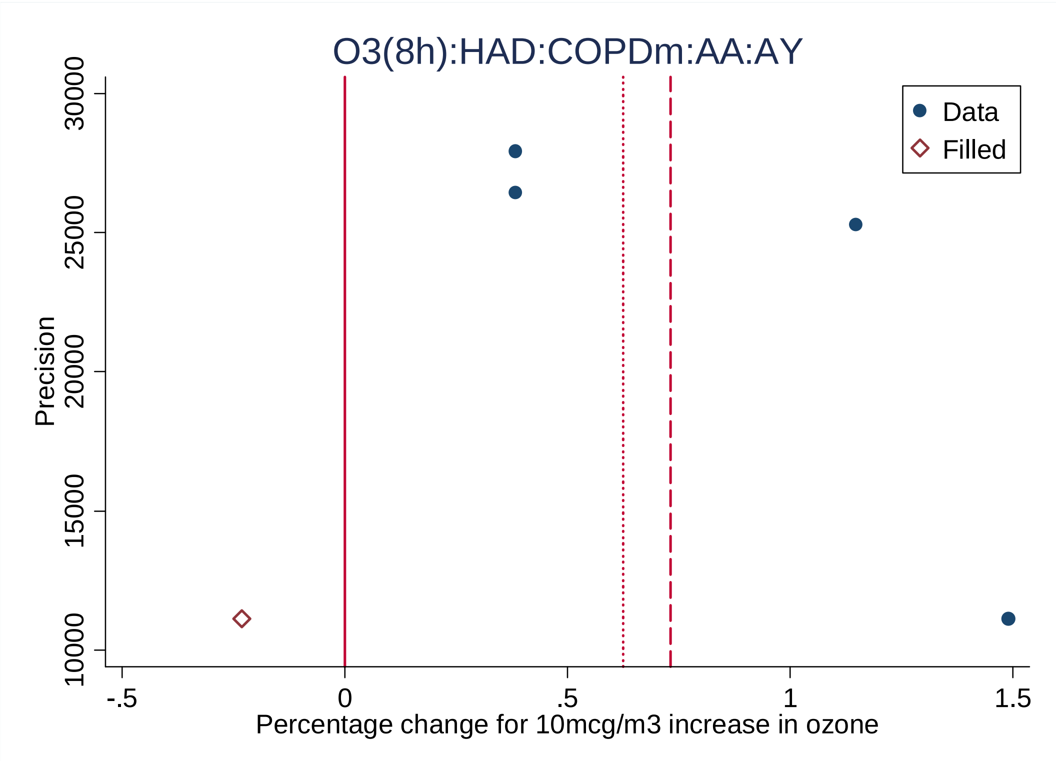

Time Series O_3

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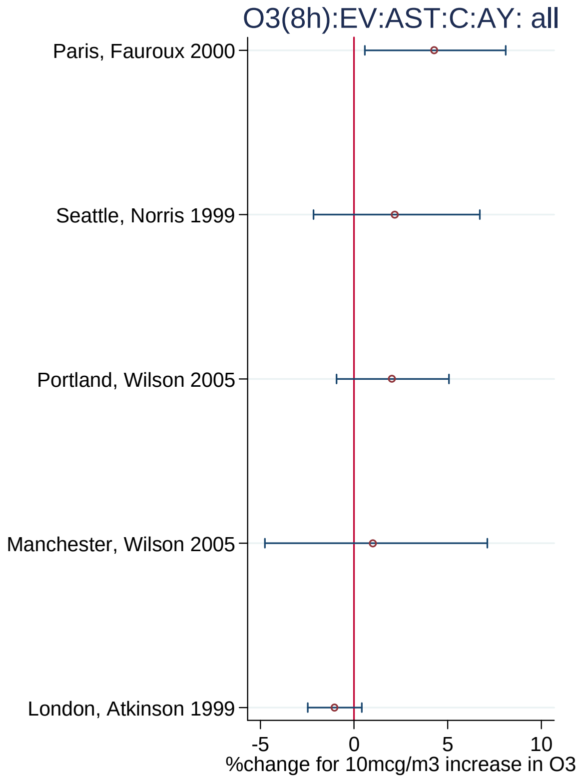

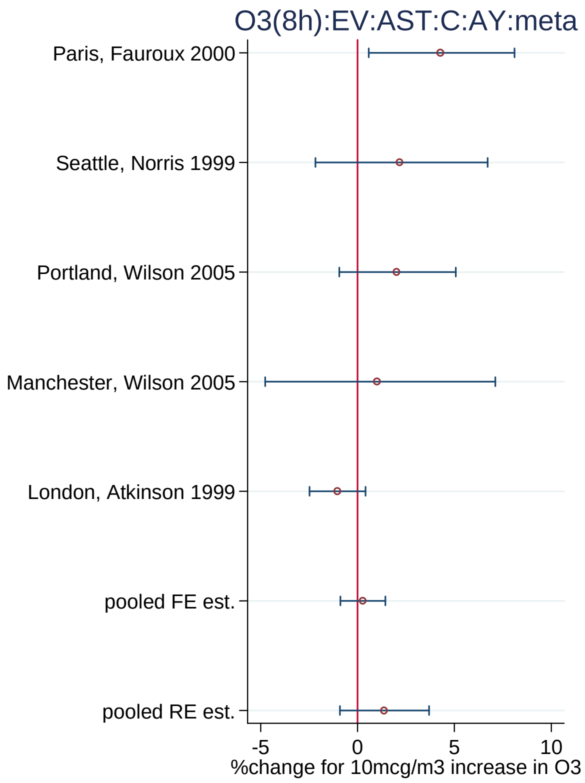

Time Series O_3

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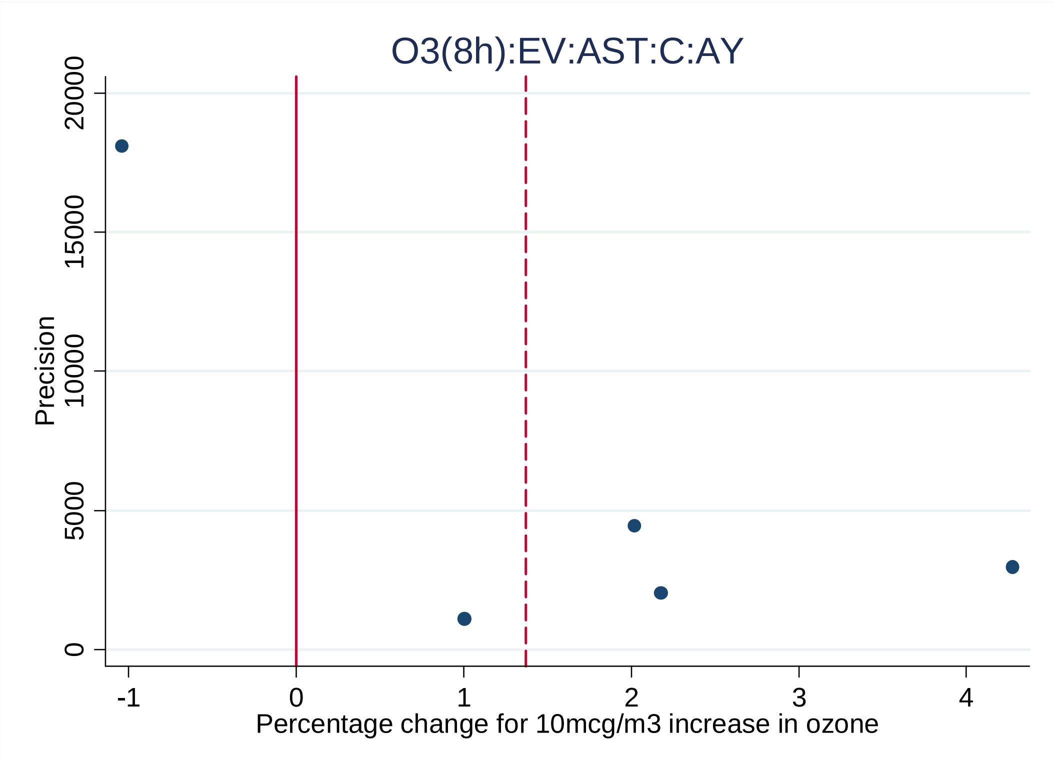

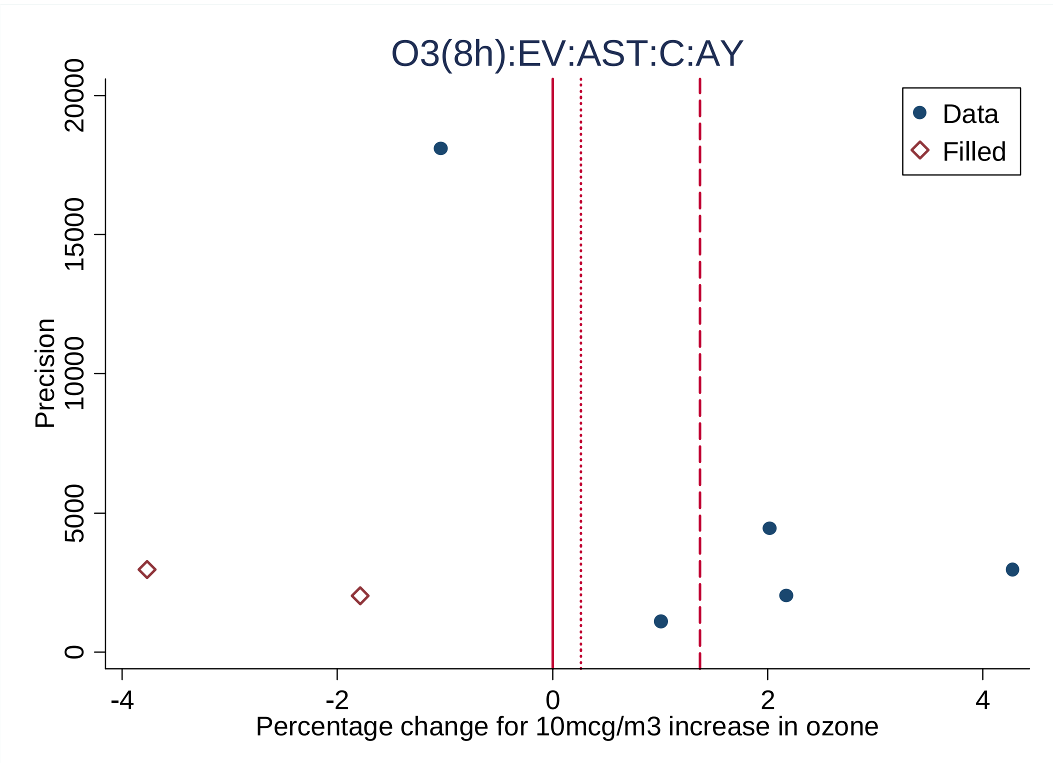

Time Series: SO_2

Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
1	1337	11744	Bologna, Biggeri 2001	MORT	AC	AA	24 hours	lag 1-2	6.50	2.60	10.55
	1494	9598	Stockton, Samet 2003	MORT	AC	AA	24 hours	lag 1	4.84	1.48	8.32
	1337	11810	Palermo, Biggeri 2001	MORT	AC	AA	24 hours	lag 1-2	4.20	1.20	7.29
	1205	7479	Erfurt, Wichmann 2000	MORT	AC	AA	24 hours	lag 0	4.16	0.77	7.66
	118	2184	Beijing, Xu 1994	MORT	AC	AA	24 hours	lag 0	3.79	2.17	5.44
	1465	8670	Bordeaux, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	3.68	1.06	6.37
	1337	11790	Rome, Biggeri 2001	MORT	AC	AA	24 hours	lag 1-2	3.60	1.30	5.95
	193	3865	Huelva, Daponte 1999	MORT	AC	AA	24 hours	lag 0	3.56	-1.28	8.64
	1337	11769	Florence, Biggeri 2001	MORT	AC	AA	24 hours	lag 1-2	3.50	-1.50	8.75
	1529	12132	Hamilton East, Jerrett 2004	MORT	AC	AA	24 hours	lag 3	3.18	0.74	5.67
	225	6059	Calgary, Burnett 1998	MORT	AC	AA	24 hours	lag 0-1	2.86	1.55	4.19
	1494	9615	Corpus Christi, Samet 2003	MORT	AC	AA	24 hours	lag 1	2.81	-0.06	5.76
	194	946	Castellon, Bellido Blasco 1999	MORT	AC	AA	24 hours	lag 4	2.52	0.31	4.78
	162	12749	Los Angeles County, Moolgavkar 2003	MORT	AC	AA	24 hours	lag 1	2.50	1.96	3.04
	187	961	Vitoria-Gasteiz, Perez 1999	MORT	AC	AA	24 hours	lag 5	2.04	-0.80	4.96
	1337	11706	Milan, Biggeri 2001	MORT	AC	AA	24 hours	lag 1-2	2.00	0.70	3.32
	1465	8680	Lyon, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	1.87	0.46	3.30
	225	6058	Edmonton, Burnett 1998	MORT	AC	AA	24 hours	lag 0-1	1.84	-0.41	4.14
	1337	11681	Turin, Biggeri 2001	MORT	AC	AA	24 hours	lag 1-2	1.80	0.40	3.22
	1494	9620	Lexington, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.79	0.24	3.37
	1529	12110	Hamilton downtown, Jerrett 2004	MORT	AC	AA	24 hours	lag 2	1.78	0.26	3.32
	225	6057	Winnipeg, Burnett 1998	MORT	AC	AA	24 hours	lag 2-4	1.77	-1.11	4.74
	1494	9546	Phoenix, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.70	-0.60	4.06
	225	6051	Montreal, Burnett 1998	MORT	AC	AA	24 hours	lag 0-2	1.64	1.36	1.91
	1529	12119	Hamilton industrial north, Jerrett 2004	MORT	AC	AA	24 hours	lag 1	1.60	0.02	3.21
	1529	12140	Hamilton Mountain, Jerrett 2004	MORT	AC	AA	24 hours	lag 0	1.58	0.11	3.07
	1494	9559	Riverside, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.46	-0.99	3.96
	1152	5902	Santiago, Cifuentes 2000	MORT	AC	AA	24 hours	lag 1-2	1.43	0.93	1.93
	76	11951	Shanghai, Kan 2003	MORT	AC	AA	24 hours	lag 2	1.40	0.80	2.00
	83	7275	Basel, Wietlisbach 1996	MORT	AC	AA	24 hours	lag 3	1.40	0.61	2.20
	1494	9596	Grand Rapids, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.30	-0.83	3.48
	1494	9544	San Diego, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.25	-0.11	2.63
	83	7276	Geneva, Wietlisbach 1996	MORT	AC	AA	24 hours	lag 3	1.21	0.24	2.18
	1465	8683	Marseille, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	1.13	-0.08	2.36
	265	404	Athens, Touloumi 1996	MORT	AC	AA	24 hours	lag 1	1.11	0.79	1.42
	1327	5979	Hong Kong, Wong 2001	MORT	AC	AA	24 hours	lag 1	1.10	0.37	1.84
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	225	6055	London, Burnett 1998	MORT	AC	AA	24 hours	lag 1	1.09	0.27	1.92
	1494	9614	Fort Wayne, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.07	-1.72	3.95
	1494	9576	Worcester, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.06	0.05	2.09
	1494	9551	Seattle, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.03	-2.60	4.80
	233	1148	Brisbane, Simpson 1997	MORT	AC	AA	24 hours	lag 0	1.03	-1.00	3.10
	18	7263	Vigo, Saez 2001	MORT	AC	AA	24 hours	lag 1	1.03	-0.05	2.11
	225	6060	Vancouver, Burnett 1998	MORT	AC	AA	24 hours	lag 0-2	1.02	0.40	1.66
	1494	9616	Norfolk, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.97	-0.72	2.70
	1494	9600	Syracuse, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.96	-0.73	2.68
	1494	9622	Richmond, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.96	-0.44	2.39
	162	12727	Cook County, Moolgavkar 2003	MORT	AC	AA	24 hours	lag 1	0.95	0.55	1.36
	1494	9587	Tacoma, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.95	-0.12	2.04
	1360	7823	Amsterdam, Roemer 2001	MORT	AC	AA	24 hours	lag 1	0.89	-0.20	2.00
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	1207	5968	Taejeon, Lee 2000	MORT	AC	AA	24 hours	lag 0-1	0.89	0.38	1.40
	1465	8677	Lille, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	0.88	0.20	1.57
	1494	9626	Kansas, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.87	-1.30	3.08
	1207	5962	Kwangju, Lee 2000	MORT	AC	AA	24 hours	lag 0-1	0.84	0.13	1.56
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	225	6053	Toronto, Burnett 1998	MORT	AC	AA	24 hours	lag 1-2	0.82	0.46	1.18
	1465	8692	Strasbourg, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	0.79	-1.06	2.67
	1494	9578	Jacksonville, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.78	-0.74	2.33
	1494	9571	Indianapolis, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.72	0.00	1.45
	1494	9581	Boston, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.71	-0.04	1.46
	1465	8686	Paris, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	0.69	0.16	1.22
	1494	9609	Little Rock, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.65	-1.89	3.26
	1494	9562	St. Louis, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.64	-0.15	1.43
	1335	8865	Zaragoza, Arribas-Monzon 2001	MORT	AC	AA	24 hours	lag 1	0.61	-0.56	1.79
	1494	9545	Santa Ana/Anaheim, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.61	-1.07	2.31
	1494	9585	Providence, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.58	-0.09	1.26
	182	412	London, Bremner 1999	MORT	AC	AA	24 hours	lag 1	0.55	-0.17	1.28
	175	5501	Netherlands, Hoek 2000	MORT	AC	AA	24 hours	lag 1	0.53	0.34	0.73
	1187	5422	Sao Paulo, Gouveia 2000	MORT	AC	AA	24 hours	lag 0	0.49	-0.40	1.39
	91	526	Lodz, Wojtyniak 1996	MORT	AC	AA	24 hours	lag 2	0.47	0.12	0.82
	1207	5966	Seoul, Lee 2000	MORT	AC	AA	24 hours	lag 0-1	0.46	0.32	0.60
	1494	9605	Baton Rouge, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.44	-0.98	1.89
	1207	5972	Ulsan, Lee 2000	MORT	AC	AA	24 hours	lag 0-1	0.44	-0.19	1.08
	1494	9591	Bakersfield, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.44	-1.98	2.92
	1497	11840	Chongqing, Venners 2003	MORT	AC	AA	24 hours	lag 2	0.43	-0.02	0.88
	1494	9564	Columbus, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.40	-0.58	1.39
	317	1103	Steubenville, Schwartz 1992	MORT	AC	AA	24 hours	lag 1	0.39	0.08	0.69
	1494	9540	New York, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.37	0.20	0.54
	91	467	Krakow, Wojtyniak 1996	MORT	AC	AA	24 hours	lag 1	0.34	0.10	0.59
	1494	9580	Louisville, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.33	-0.26	0.92
	1494	9603	Wichita, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.32	-2.40	3.13
	212	7172	Czech Republic (coal basin), Peters 2000	MORT	AC	AA	24 hours	lag 2	0.32	0.00	0.63
	1465	8689	Rouen, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	0.30	-1.06	1.68
	1494	9601	Toledo, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.30	-0.54	1.14
	1207	5970	Taegu, Lee 2000	MORT	AC	AA	24 hours	lag 0-1	0.28	0.05	0.52
	264	380	Koln, Spix 1996	MORT	AC	AA	24 hours	lag 1	0.28	0.07	0.49
	18	7261	Barcelona, Saez 2001	MORT	AC	AA	24 hours	lag 1	0.28	0.08	0.48
	225	6050	Quebec, Burnett 1998	MORT	AC	AA	24 hours	lag 1-2	0.27	0.02	0.53
	83	7274	Zurich, Wietlisbach 1996	MORT	AC	AA	24 hours	lag 3	0.27	-0.08	0.62
	1494	9586	El Paso, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.27	-0.25	0.79
	1207	5964	Pusan, Lee 2000	MORT	AC	AA	24 hours	lag 0-1	0.26	0.03	0.49
	1494	9541	Chicago, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.26	-0.25	0.78
	1494	9570	Memphis, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.26	-0.56	1.08
	1116	3898	Shenyang, Xu 2000	MORT	AC	AA	24 hours	lag 0-3	0.24	0.07	0.42
	1465	8673	Le Havre, Le Tertre 2002	MORT	AC	AA	24 hours	lag 0-1	0.24	-0.34	0.82

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Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
1	1494	9592	Akron, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.21	-0.39	0.82
	1494	9573	Baltimore, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.19	-0.53	0.92
	1494	9550	Minneapolis/St. Paul, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.19	-1.10	1.50
	91	530	Poznan, Wojtyniak 1996	MORT	AC	AA	24 hours	lag 1	0.18	-0.10	0.45
	1494	9557	Atlanta, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.15	-0.48	0.79
	1494	9543	Houston, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.15	-1.12	1.44
	1494	9579	Fresno, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.15	-1.62	1.95
	312	463	Tennessee eastern, Dockery 1992	MORT	AC	AA	24 hours	lag 1	0.13	-0.13	0.39
	212	7194	Germany (rural), Peters 2000	MORT	AC	AA	24 hours	lag 3	0.11	-0.08	0.30
	1494	9572	Newark, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.09	-0.49	0.68
	1207	5960	Inchon, Lee 2000	MORT	AC	AA	24 hours	lag 0-1	0.09	-0.16	0.34
	245	396	Mexico City, Borja-Aburto 1997	MORT	AC	AA	24 hours	lag 0	0.09	-0.06	0.24
	1494	9575	Rochester, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.08	-0.46	0.63
	978	5844	Northern Bohemia, Kotesovec 2000	MORT	AC	AA	24 hours	lag 4	0.07	-0.03	0.17
	225	6056	Windsor, Burnett 1998	MORT	AC	AA	24 hours	lag 0-1	0.07	-0.60	0.74
	1494	9549	Philadelphia, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.04	-0.30	0.37
	1494	9582	Birmingham, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.04	-0.88	0.97
	192	3245	Madrid, Galan 1999	MORT	AC	AA	24 hours	lag 0	0.03	0.00	0.06
	1494	9554	San Bernadino, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.00	-2.26	2.31
	1494	9547	Detroit, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.01	-0.57	0.56
	1494	9553	Cleveland, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.02	-0.41	0.38
	1494	9555	Pittsburgh, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.02	-0.29	0.26
	1494	9590	Jersey City, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.05	-0.79	0.69
	1494	9560	Denver, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.06	-1.29	1.18
	1494	9565	Cincinnati, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.07	-0.49	0.35
	1494	9595	Tulsa, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.08	-0.63	0.49
	1494	9569	Tampa, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.08	-0.80	0.65
	69	7691	West Midlands, Anderson 2001	MORT	AC	AA	24 hours	lag 0-1	-0.09	-0.92	0.75
	195	935	Cartagena, Guillen Perez 1999	MORT	AC	AA	24 hours	lag 2	-0.10	-0.20	0.00
	1494	9563	Buffalo, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.28	-0.75	0.19
	1494	9567	Kansas, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.28	-2.80	2.30
	1494	9577	Orlando, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.28	-3.52	3.05
	1494	9574	Salt Lake City, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.35	-1.19	0.50
	1494	9594	Nashville, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.35	-1.14	0.45
	91	534	Wroclaw, Wojtyniak 1996	MORT	AC	AA	24 hours	lag 2	-0.38	-0.71	-0.04
	266	390	Bratislava, Bacharova 1996	MORT	AC	AA	24 hours	lag 0	-0.40	-1.37	0.58
	1494	9583	Washington, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.53	-1.40	0.34
	198	4223	Gijon, Canada 1999	MORT	AC	AA	24 hours	lag 0	-0.54	-1.57	0.50
	1494	9542	Dallas/Fort Worth, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.79	-1.93	0.36
	191	1091	Pamplona, Aguinaga 1999	MORT	AC	AA	24 hours	lag 4	-0.80	-2.34	0.77
	196	911	Bilbao, Cambra 1999	MORT	AC	AA	24 hours	lag 5	-0.87	-2.03	0.30
	198	3391	Oviedo, Canada 1999	MORT	AC	AA	24 hours	lag 5	-0.91	-2.05	0.24
	18	7262	Valencia, Saez 2001	MORT	AC	AA	24 hours	lag 1	-1.28	-2.56	0.01
	1529	12151	Hamilton West, Jerrett 2004	MORT	AC	AA	24 hours	lag 0	-1.52	-3.93	0.94
	186	1076	Zaragoza, Arribas 1999	MORT	AC	AA	24 hours	lag 3	-1.70	-5.20	1.93
	1494	9612	Shreveport, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.75	-4.41	0.99
	1494	9610	Greensboro, Samet 2003	MORT	AC	AA	24 hours	lag 1	-2.23	-5.47	1.12
	190	1025	Seville, Ocana-Riola 1999	MORT	AC	AA	24 hours	lag 0	-2.85	-7.21	1.71
2	300	4034	Beijing, Gao 1993	MORT	AC	NE	24 hours	lag 0	2.80	0.50	5.16
	978	5852	Northern Bohemia, Kotesovec 2000	MORT	AC	NE	24 hours	lag 4	0.21	0.03	0.39
	1495	11864	Seoul, Ha 2003	MORT	AC	NE	24 hours	lag 0	-0.05	-0.14	0.05
	182	734	London, Bremner 1999	MORT	AC	NE	24 hours	lag 2	-0.67	-2.19	0.87
	216	3824	Edinburgh, Prescott 1998	MORT	AC	NE	24 hours	lag 0	-2.40	-4.60	-0.15
3	193	3778	Huelva, Daponte 1999	MORT	AC	E	24 hours	lag 0	6.06	0.20	12.26
	1120	3759	Phoenix, Mar 2000	MORT	AC	E	24 hours	lag 0	4.42	-0.29	9.36
	216	3825	Edinburgh, Prescott 1998	MORT	AC	E	24 hours	lag 0	4.20	0.10	8.47
	187	1015	Vitoria-Gasteiz, Perez 1999	MORT	AC	E	24 hours	lag 5	2.37	-1.03	5.89
	300	4036	Beijing, Gao 1993	MORT	AC	E	24 hours	lag 0	2.31	0.32	4.35
	194	949	Castellon, Bellido Blasco 1999	MORT	AC	E	24 hours	lag 4	2.03	-0.55	4.68
	1140	4166	Valencia, Tenias Burillo 1999	MORT	AC	E	24 hours	lag 0	1.66	-0.53	3.90
	83	7286	Basel, Wietlisbach 1996	MORT	AC	E	24 hours	lag 3	1.62	0.75	2.50
	83	7287	Geneva, Wietlisbach 1996	MORT	AC	E	24 hours	lag 3	1.44	0.73	2.16
	85	800	Barcelona, Sunyer 1996	MORT	AC	E	24 hours	lag 1	1.27	0.63	1.92
	1495	11865	Seoul, Ha 2003	MORT	AC	E	24 hours	lag 0	1.18	1.13	1.22
	1126	4413	Krakow, Szafraniec 1999	MORT	AC	E	24 hours	lag 0	0.96	0.49	1.43
	1587	12462	Vancouver, Villeneuve 2003	MORT	AC	E	24 hours	lag 1	0.62	-0.40	1.66
	1335	8867	Zaragoza, Arribas-Monzon 2001	MORT	AC	E	24 hours	lag 1	0.56	-0.91	2.05
	182	740	London, Bremner 1999	MORT	AC	E	24 hours	lag 2	0.55	-0.17	1.28
	1610	13507	Atlanta, Klemm 2004	MORT	AC	E	24 hours	lag 0-1	0.31	-0.38	1.01
	83	7285	Zurich, Wietlisbach 1996	MORT	AC	E	24 hours	lag 3	0.27	-0.12	0.66
	1432	8626	Sao Paulo, Botter 2002	MORT	AC	E	24 hours	lag 3	0.24	0.10	0.37
	249	4318	Mexico City, Loomis 1996	MORT	AC	E	24 hours	lag 0	0.16	-0.04	0.36
	530	4418	Santiago, Sanhueza 1999	MORT	AC	E	24 hours	lag 0	0.06	0.00	0.12
	192	3252	Madrid, Galan 1999	MORT	AC	E	24 hours	lag 0	0.05	0.01	0.08
	195	939	Cartagena, Guillen Perez 1999	MORT	AC	E	24 hours	lag 1	-0.12	-0.30	0.06
	196	932	Bilbao, Cambra 1999	MORT	AC	E	24 hours	lag 4	-0.82	-2.28	0.66
	191	1092	Pamplona, Aguinaga 1999	MORT	AC	E	24 hours	lag 4	-0.98	-2.53	0.59
	198	1876	Gijon, Canada 1999	MORT	AC	E	24 hours	lag 0	-1.04	-2.22	0.15
	198	3397	Oviedo, Canada 1999	MORT	AC	E	24 hours	lag 5	-1.87	-3.21	-0.51
	190	1034	Seville, Ocana-Riola 1999	MORT	AC	E	24 hours	lag 1	-4.63	-9.90	0.95

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4	1494	11235	Corpus Christi, Samet 2003	MORT	CR	AA	24 hours	lag 1	4.04	-0.05	8.31
	1494	11171	Seattle, Samet 2003	MORT	CR	AA	24 hours	lag 1	2.52	-2.33	7.61
	1494	11211	Bakersfield, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.76	-1.43	5.06
	1494	11166	Phoenix, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.68	-1.51	4.97
	1494	11191	Indianapolis, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.64	0.65	2.65
	1494	11229	Little Rock, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.39	-2.16	5.06
	1494	11240	Lexington, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.35	-0.90	3.66
	1494	11164	San Diego, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.35	-0.50	3.23
	1494	11165	Santa Ana/Anaheim, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.28	-0.89	3.49
	1494	11198	Jacksonville, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.13	-0.92	3.23
	1494	11179	Riverside, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.99	-2.07	4.16
	1494	11216	Grand Rapids, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.98	-1.88	3.93
	1494	11159	Los Angeles, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.90	-0.12	1.93
	1494	11218	Stockton, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.87	-3.54	5.48
	1494	11196	Worcester, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.86	-0.50	2.24
	1494	11187	Kansas, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.82	-2.53	4.27
	1494	11236	Norfolk, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.81	-1.52	3.20
	1494	11205	Providence, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.81	-0.09	1.71
	1494	11199	Fresno, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.77	-1.64	3.24
	1494	11192	Newark, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.65	-0.19	1.49
	1494	11184	Columbus, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.63	-0.70	1.99
	1494	11206	El Paso, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.60	-0.13	1.34
	1494	11177	Atlanta, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.59	-0.32	1.51
	1494	11201	Boston, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.52	-0.51	1.57
	1494	11160	New York, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.49	0.27	0.71
	1494	11197	Orlando, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.49	-3.96	5.13
	1494	11174	San Bernadino, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.49	-2.45	3.51
	1494	11167	Detroit, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.40	-0.34	1.15
	1494	11182	St. Louis, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.36	-0.68	1.42
	1494	11200	Louisville, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.33	-0.49	1.15
	1494	11193	Baltimore, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.32	-0.71	1.36
	1494	11185	Cincinnati, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.31	-0.25	0.88
	1494	11195	Rochester, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.28	-0.45	1.02
	1494	11227	Madison, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.26	-2.83	3.45
	1494	11225	Baton Rouge, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.23	-1.78	2.28
	1494	11170	Minneapolis/St. Paul, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.17	-1.58	1.96
	1494	11215	Tulsa, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.17	-0.56	0.92
	1494	11242	Richmond, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.13	-1.80	2.09
	1494	11234	Fort Wayne, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.11	-3.53	3.88
	1494	11203	Washington, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.10	-1.20	1.43
	1494	11169	Philadelphia, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.10	-0.36	0.56
	1494	11173	Cleveland, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.09	-0.44	0.62
	161	13257	Helsinki, Penttinen 2004	MORT	CR	AA	24 hours	lag 1	0.08	-1.01	1.18
	1494	11175	Pittsburgh, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.07	-0.30	0.43
	1494	11212	Akron, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.05	-0.76	0.88
	1494	11190	Memphis, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.01	-1.08	1.12
	1494	11194	Salt Lake City, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.04	-1.17	1.10
	1494	11163	Houston, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.08	-1.84	1.70
	1494	11207	Tacoma, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.11	-1.54	1.34
	1494	11246	Kansas, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.12	-3.15	3.01
	1494	11161	Chicago, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.15	-0.85	0.55
	1494	11221	Toledo, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.20	-1.31	0.93
	1494	11202	Birmingham, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.22	-1.47	1.04
	1494	11210	Jersey City, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.23	-1.27	0.81
	1494	11183	Buffalo, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.27	-0.87	0.33
	1494	11220	Syracuse, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.35	-2.62	1.98
	1494	11189	Tampa, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.44	-1.46	0.58
	1494	11180	Denver, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.51	-2.18	1.19
	1494	11230	Greensboro, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.67	-5.08	3.95
	1494	11214	Nashville, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.71	-1.76	0.36
	1494	11162	Dallas/Fort Worth, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.15	-2.67	0.39
	1494	11226	Modesto, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.37	-7.10	4.72
	1494	11223	Wichita, Samet 2003	MORT	CR	AA	24 hours	lag 1	-2.35	-6.24	1.70
	1494	11232	Shreveport, Samet 2003	MORT	CR	AA	24 hours	lag 1	-2.39	-6.04	1.39

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5	1120	3762	Phoenix, Mar 2000	MORT	CV	AA	24 hours	lag 0	9.65	3.03	16.68
	1337	11774	Rome, Biggeri 2001	MORT	CV	AA	24 hours	lag 1-2	7.30	3.80	10.92
	1465	8671	Bordeaux, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	6.23	1.89	10.76
	1337	11749	Florence, Biggeri 2001	MORT	CV	AA	24 hours	lag 1-2	5.90	-1.80	14.20
	1337	11724	Bologna, Biggeri 2001	MORT	CV	AA	24 hours	lag 1-2	5.50	-0.50	11.86
	1337	11794	Palermo, Biggeri 2001	MORT	CV	AA	24 hours	lag 1-2	4.40	-0.10	9.10
	194	952	Castellon, Bellido Blasco 1999	MORT	CV	AA	24 hours	lag 1	3.60	0.27	7.04
	1337	11686	Milan, Biggeri 2001	MORT	CV	AA	24 hours	lag 1-2	3.20	1.20	5.24
	1465	8684	Marseille, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	2.82	0.81	4.87
	300	2801	Beijing, Gao 1993	MORT	CV	AA	24 hours	lag 0	2.80	0.60	5.06
	162	12905	Los Angeles County, Moolgavkar 2003	MORT	CV	AA	24 hours	lag 1	2.57	1.81	3.33
	83	7309	Basel, Wietlisbach 1996	MORT	CV	AA	24 hours	lag 3	2.20	0.97	3.45
	1070	3809	Inchon, Hong 1999	MORT	CV	AA	24 hours	lag 1	2.17	-0.61	5.02
	198	4354	Gijon, Canada 1999	MORT	CV	AA	24 hours	lag 5	1.97	0.24	3.73
	1335	8871	Zaragoza, Arribas-Monzon 2001	MORT	CV	AA	24 hours	lag 1	1.84	0.07	3.64
	183	4403	Barcelona, Tobias 1998	MORT	CV	AA	24 hours	lag 3	1.36	0.62	2.11
	76	11963	Shanghai, Kan 2003	MORT	CV	AA	24 hours	lag 2	1.30	0.40	2.21
	1465	8681	Lyon, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	1.25	-1.13	3.68
	161	13510	Helsinki, Penttinen 2004	MORT	CV	AA	24 hours	lag 0-4	1.23	-0.68	3.18
	83	7310	Geneva, Wietlisbach 1996	MORT	CV	AA	24 hours	lag 3	1.21	0.24	2.18
	1465	8678	Lille, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	1.15	0.04	2.28
	162	12881	Cook County, Moolgavkar 2003	MORT	CV	AA	24 hours	lag 1	1.10	0.51	1.69
	1465	8674	Le Havre, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	0.96	-0.08	2.01
	198	3403	Oviedo, Canada 1999	MORT	CV	AA	24 hours	lag 4	0.77	-1.00	2.57
	1275	6685	Netherlands, Hoek 2001	MORT	CV	AA	24 hours	lag 0-6	0.72	0.30	1.14
	153	8043	Hong Kong, Wong 2002	MORT	CV	AA	24 hours	lag 0-1	0.70	-0.60	2.02
	1337	11660	Turin, Biggeri 2001	MORT	CV	AA	24 hours	lag 1-2	0.60	-1.50	2.74
	91	874	Krakow, Wojtyniak 1996	MORT	CV	AA	24 hours	lag 0	0.52	0.17	0.86
	1465	8687	Paris, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	0.51	-0.40	1.44
	182	672	London, Bremner 1999	MORT	CV	AA	24 hours	lag 1	0.44	-0.56	1.45
	236	583	Philadelphia, Kelsall 1997	MORT	CV	AA	24 hours	lag 0	0.44	0.04	0.85
	91	846	Lodz, Wojtyniak 1996	MORT	CV	AA	24 hours	lag 2	0.43	-0.03	0.90
	1465	8690	Rouen, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	0.26	-2.24	2.82
	1116	3902	Shenyang, Xu 2000	MORT	CV	AA	24 hours	lag 0-3	0.18	-0.05	0.42
	1465	8693	Strasbourg, Le Tertre 2002	MORT	CV	AA	24 hours	lag 0-1	0.16	-2.88	3.30
	83	7308	Zurich, Wietlisbach 1996	MORT	CV	AA	24 hours	lag 3	0.14	-0.37	0.65
	192	4080	Madrid, Galan 1999	MORT	CV	AA	24 hours	lag 0	0.07	0.02	0.11
	212	7204	Germany (rural), Peters 2000	MORT	CV	AA	24 hours	lag 0	0.01	-0.26	0.28
	91	858	Poznan, Wojtyniak 1996	MORT	CV	AA	24 hours	lag 0	-0.06	-0.42	0.29
	69	7700	West Midlands, Anderson 2001	MORT	CV	AA	24 hours	lag 0-1	-0.09	-1.32	1.16
	195	967	Cartagena, Guillen Perez 1999	MORT	CV	AA	24 hours	lag 2	-0.16	-0.38	0.06
	91	886	Wroclaw, Wojtyniak 1996	MORT	CV	AA	24 hours	lag 2	-0.47	-0.91	-0.03
	191	1093	Pamplona, Aguinaga 1999	MORT	CV	AA	24 hours	lag 0	-1.45	-3.97	1.13
	1140	4174	Valencia, Tenias Burillo 1999	MORT	CV	AA	24 hours	lag 2	-1.78	-4.31	0.82
	196	925	Bilbao, Cambra 1999	MORT	CV	AA	24 hours	lag 4	-2.05	-3.93	-0.13
	190	1049	Seville, Ocana-Riola 1999	MORT	CV	AA	24 hours	lag 0	-5.19	-11.74	1.84
	193	3782	Huelva, Daponte 1999	MORT	CV	AA	24 hours	lag 3	-5.70	-13.22	2.47
	266	866	Bratislava, Bacharova 1996	MORT	CV	AA	24 hours	lag 0	-13.15	-46.14	40.04
6	158	372	Marseille, Derriennic 1989	MORT	CV	E	24 hours	lag 5	7.12	1.14	13.10
	1187	5438	Sao Paulo, Gouveia 2000	MORT	CV	E	24 hours	lag 1	2.15	0.49	3.84
	1126	4415	Krakow, Szafraniec 1999	MORT	CV	E	24 hours	lag 0	1.58	0.96	2.21
	1517	12047	Netherlands, Fischer 2003	MORT	CV	E	24 hours	lag 0-6	0.96	0.45	1.48
	182	708	London, Bremner 1999	MORT	CV	E	24 hours	lag 3	0.78	-0.28	1.84
	1587	12503	Vancouver, Villeneuve 2003	MORT	CV	E	24 hours	lag 1	0.40	-1.14	1.96
7	163	6969	Los Angeles, Moolgavkar 2000	MORT	CAR	AA	24 hours	lag 1	5.34	4.46	6.22
	163	6984	Maricopa, Moolgavkar 2000	MORT	CAR	AA	24 hours	lag 3	3.27	1.45	5.12
	1497	11849	Chongqing, Venners 2003	MORT	CAR	AA	24 hours	lag 3	1.84	1.05	2.64
	258	834	Lyon, Zmirou 1996	MORT	CAR	AA	24 hours	lag 0-3	1.55	0.59	2.52
	163	6952	Cook County, Moolgavkar 2000	MORT	CAR	AA	24 hours	lag 1	1.10	0.41	1.79
	233	1254	Brisbane, Simpson 1997	MORT	CAR	AA	24 hours	lag 0	0.37	-3.20	4.08
	1073	4191	Buffalo, Gwynn 2000	MORT	CAR	AA	24 hours	lag 3	0.18	-0.92	1.29
8	163	7054	Maricopa, Moolgavkar 2000	MORT	ST	AA	24 hours	lag 1	8.07	4.67	11.58
	163	7044	Los Angeles, Moolgavkar 2000	MORT	ST	AA	24 hours	lag 1	4.78	3.14	6.44
	112	8543	Seoul, Hong 2002	MORT	ST	AA	24 hours	lag 2	1.87	0.52	3.24
	130	12334	Shanghai, Kan 2003	MORT	ST	AA	24 hours	lag 1	1.70	-0.20	3.64
	1275	6689	Netherlands, Hoek 2001	MORT	ST	AA	24 hours	lag 0-6	1.15	0.50	1.82
	163	7033	Cook County, Moolgavkar 2000	MORT	ST	AA	24 hours	lag 2	0.66	-0.58	1.93
	153	8045	Hong Kong, Wong 2002	MORT	ST	AA	24 hours	lag 2	-1.19	-3.50	1.18

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Set				Outcome	Diagnostic	Age	Averaging		Random effects estimate and 95% cl		
No.	Refman id	Access id	Cities, author and date	code	code	code	time	Lag	Estimate	Lcl	Ucl
9	190	1052	Seville, Ocana-Riola 1999	MORT	RESP	AA	24 hours	lag 3	10.94	-3.63	27.70
	1337	11778	Rome, Biggeri 2001	MORT	RESP	AA	24 hours	lag 1-2	6.50	-3.00	16.93
	1337	11798	Palermo, Biggeri 2001	MORT	RESP	AA	24 hours	lag 1-2	5.80	-4.50	17.21
	1337	11665	Turin, Biggeri 2001	MORT	RESP	AA	24 hours	lag 1-2	5.30	0.20	10.66
	1465	8672	Bordeaux, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	4.90	-4.39	15.08
	300	4038	Beijing, Gao 1993	MORT	RESP	AA	24 hours	lag 0	4.84	0.89	8.94
	194	955	Castellon, Bellido Blasco 1999	MORT	RESP	AA	24 hours	lag 4	4.78	-2.19	12.25
	1070	4208	Inchon, Hong 1999	MORT	RESP	AA	24 hours	lag 1	4.38	0.01	8.94
	1337	11691	Milan, Biggeri 2001	MORT	RESP	AA	24 hours	lag 1-2	4.20	-0.50	9.12
	1140	4182	Valencia, Tenias Burillo 1999	MORT	RESP	AA	24 hours	lag 0	3.09	-2.15	8.61
	1465	8691	Rouen, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	2.96	-2.00	8.17
	83	7298	Geneva, Wietlisbach 1996	MORT	RESP	AA	24 hours	lag 3	2.91	1.37	4.48
	196	918	Bilbao, Cambra 1999	MORT	RESP	AA	24 hours	lag 4	2.73	-1.12	6.73
	1073	4072	Buffalo, Gwynn 2000	MORT	RESP	AA	24 hours	lag 0	1.88	-0.34	4.14
	1465	8682	Lyon, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	1.78	-2.99	6.78
	182	419	London, Bremner 1999	MORT	RESP	AA	24 hours	lag 2	1.66	-0.06	3.40
	1465	8685	Marseille, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	1.63	-2.55	5.98
	153	8040	Hong Kong, Wong 2002	MORT	RESP	AA	24 hours	lag 0-1	1.50	0.10	2.92
	161	13292	Helsinki, Penttinen 2004	MORT	RESP	AA	24 hours	lag 0	1.38	-2.48	5.39
	1079	3295	Barcelona, Garcia-Aymerich 2000	MORT	RESP	AA	24 hours	lag 0-1	1.21	-0.22	2.66
	1465	8679	Lille, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	1.19	-1.08	3.52
	1465	8676	Le Havre, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	1.19	-0.90	3.32
	83	7296	Zurich, Wietlisbach 1996	MORT	RESP	AA	24 hours	lag 3	1.10	0.27	1.93
	1335	8869	Zaragoza, Arribas-Monzon 2001	MORT	RESP	AA	24 hours	lag 1	1.00	-2.50	4.63
	91	888	Wroclaw, Wojtyniak 1996	MORT	RESP	AA	24 hours	lag 0	0.83	-0.70	2.38
	83	7297	Basel, Wietlisbach 1996	MORT	RESP	AA	24 hours	lag 3	0.76	-0.90	2.46
	1465	8688	Paris, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	0.55	-1.23	2.37
	530	2913	Santiago, Sanhueza 1999	MORT	RESP	AA	24 hours	lag 8	0.17	0.00	0.34
	192	4087	Madrid, Galan 1999	MORT	RESP	AA	24 hours	lag 0	0.11	0.02	0.19
	236	631	Philadelphia, Kelsall 1997	MORT	RESP	AA	24 hours	lag 0	0.06	-1.13	1.27
	195	971	Cartagena, Guillen Perez 1999	MORT	RESP	AA	24 hours	lag 1	-0.27	-0.62	0.08
	91	848	Lodz, Wojtyniak 1996	MORT	RESP	AA	24 hours	lag 1	-0.27	-1.84	1.32
	308	1176	Netherlands, Mackenbach 1993	MORT	RESP	AA	24 hours	lag 0	-0.33	-0.70	0.04
	91	836	Krakow, Wojtyniak 1996	MORT	RESP	AA	24 hours	lag 1	-0.47	-1.67	0.75
	233	1239	Brisbane, Simpson 1997	MORT	RESP	AA	24 hours	lag 0	-0.61	-7.49	6.78
	91	876	Poznan, Wojtyniak 1996	MORT	RESP	AA	24 hours	lag 2	-0.62	-1.71	0.47
	69	7709	West Midlands, Anderson 2001	MORT	RESP	AA	24 hours	lag 0-1	-0.83	-2.79	1.17
	1465	8694	Strasbourg, Le Tertre 2002	MORT	RESP	AA	24 hours	lag 0-1	-1.15	-7.70	5.87
	198	3409	Oviedo, Canada 1999	MORT	RESP	AA	24 hours	lag 5	-1.34	-4.46	1.88
	198	1872	Gijon, Canada 1999	MORT	RESP	AA	24 hours	lag 2	-2.09	-5.14	1.06
	191	1125	Pamplona, Aguinaga 1999	MORT	RESP	AA	24 hours	lag 1	-5.40	-10.59	0.09
	1337	11754	Florence, Biggeri 2001	MORT	RESP	AA	24 hours	lag 1-2	-5.50	-21.20	13.33
	1337	11729	Bologna, Biggeri 2001	MORT	RESP	AA	24 hours	lag 1-2	-6.80	-19.10	7.37
	193	3786	Huelva, Daponte 1999	MORT	RESP	AA	24 hours	lag 2	-9.35	-22.18	5.60
10	158	373	Lyon, Derriennic 1989	MORT	RESP	E	24 hours	lag 0	112.75	55.10	170.39
	158	371	Marseille, Derriennic 1989	MORT	RESP	E	24 hours	lag 0	94.17	32.65	155.70
	1587	12544	Vancouver, Villeneuve 2003	MORT	RESP	E	24 hours	lag 1	2.98	0.23	5.81
	1187	5432	Sao Paulo, Gouveia 2000	MORT	RESP	E	24 hours	lag 1	1.96	-0.95	4.95
	182	684	London, Bremner 1999	MORT	RESP	E	24 hours	lag 1	1.49	-0.33	3.35
	1495	11880	Seoul, Ha 2003	MORT	RESP	E	24 hours	lag 0	0.43	0.00	0.85
11	163	7014	Los Angeles, Moolgavkar 2000	MORT	COPDp	AA	24 hours	lag 1	7.44	4.94	10.00
	300	2799	Beijing, Gao 1993	MORT	COPDp	AA	24 hours	lag 0	6.94	-2.61	17.43
	186	1079	Zaragoza, Arribas 1999	MORT	COPDp	AA	24 hours	lag 4	3.80	-2.00	9.94
	76	11975	Shanghai, Kan 2003	MORT	COPDp	AA	24 hours	lag 2	3.50	1.50	5.54
	163	6996	Cook County, Moolgavkar 2000	MORT	COPDp	AA	24 hours	lag 2	2.17	0.29	4.09
	175	5520	Netherlands, Hoek 2000	MORT	COPDp	AA	24 hours	lag 0-6	1.37	0.17	2.58
	1497	11846	Chongqing, Venners 2003	MORT	COPDp	AA	24 hours	lag 2	1.05	0.20	1.91
	153	8041	Hong Kong, Wong 2002	MORT	COPDp	AA	24 hours	lag 2	1.00	-1.00	3.04
	1116	3900	Shenyang, Xu 2000	MORT	COPDp	AA	24 hours	lag 0-3	0.74	0.24	1.24
12	300	4040	Beijing, Gao 1993	MORT	LRI	AA	24 hours	lag 0	11.10	0.24	23.15
	186	1082	Zaragoza, Arribas 1999	MORT	LRI	AA	24 hours	lag 1	5.90	-0.30	12.49
	175	5528	Netherlands, Hoek 2000	MORT	LRI	AA	24 hours	lag 0-6	2.46	0.84	4.10
	153	8042	Hong Kong, Wong 2002	MORT	LRI	AA	24 hours	lag 0-1	2.10	0.30	3.93
13	266	828	Bratislava, Bacharova 1996	MORT	O	AA	24 hours	lag 0	41.06	10.46	80.13
	150	13382	Shanghai, Kan 2004	MORT	O	AA	24 hours		1.10	-1.00	3.24
	91	878	Poznan, Wojtyniak 1996	MORT	O	AA	24 hours	lag 1	0.73	-0.74	2.21
	91	838	Krakow, Wojtyniak 1996	MORT	O	AA	24 hours	lag 1	0.66	-0.48	1.81
	308	1699	Netherlands, Mackenbach 1993	MORT	O	AA	24 hours	lag 0	0.10	-0.31	0.51
	91	850	Lodz, Wojtyniak 1996	MORT	O	AA	24 hours	lag 1	-0.20	-1.71	1.32
	258	870	Lyon, Zmirou 1996	MORT	O	AA	24 hours	lag 0	-0.40	-3.20	2.47
	91	890	Wroclaw, Wojtyniak 1996	MORT	O	AA	24 hours	lag 2	-0.41	-1.90	1.09
14	1184	5375	Valencia, Ballester 2001	HAD	CV	AA	24 hours	lag 2	3.02	0.42	5.69
	364	2996	Hong Kong, Wong 1999	HAD	CV	AA	24 hours	lag 0-1	1.60	0.60	2.61
	49	6445	Brisbane, Petroeschevsky 2001	HAD	CV	AA	24 hours	lag 0	1.03	-0.48	2.56
	1053	1350	London, Atkinson 1999	HAD	CV	AA	24 hours	lag 0	0.87	0.12	1.62
	69	7718	West Midlands, Anderson 2001	HAD	CV	AA	24 hours	lag 0-1	-0.17	-0.96	0.62

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Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl: Estimate	Lcl	Ucl
15	364	2995	Hong Kong, Wong 1999	HAD	CV	E	24 hours	lag 0-1	2.10	1.00	3.21
	216	3836	Edinburgh, Prescott 1998	HAD	CV	E	24 hours	lag 1-3	1.78	-0.37	3.99
	49	6441	Brisbane, Petroeschevsky 2001	HAD	CV	E	24 hours	lag 1	1.39	-0.45	3.26
	1053	1362	London, Atkinson 1999	HAD	CV	E	24 hours	lag 0	0.95	0.08	1.83
16	1337	11802	Palermo, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	8.00	5.80	10.25
	1337	11759	Florence, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	5.40	0.40	10.65
	1337	11782	Rome, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	4.30	2.30	6.34
	1184	5380	Valencia, Ballester 2001	HAD	CAR	AA	24 hours	lag 2	3.57	0.12	7.14
	1337	11696	Milan, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	3.30	2.20	4.41
	1337	11716	Ravenna, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	2.60	0.10	5.16
	1429	8233	Hong Kong, Wong 2002	HAD	CAR	AA	24 hours	lag 0	1.60	1.00	2.20
	1429	8249	London, Wong 2002	HAD	CAR	AA	24 hours	lag 0	1.40	0.90	1.90
	1337	11671	Turin, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	1.00	-0.60	2.63
	69	7727	West Midlands, Anderson 2001	HAD	CAR	AA	24 hours	lag 0-1	0.30	-0.57	1.18
	1073	3457	Buffalo, Gwynn 2000	HAD	CAR	AA	24 hours	lag 0	0.09	-0.57	0.76
	1337	11734	Bologna, Biggeri 2001	HAD	CAR	AA	24 hours	lag 0-3	-0.60	-4.50	3.46
17	1299	7339	Rome, Michelozzi 2000	HAD	CAR	E	24 hours	lag 0	5.61	3.19	8.09
	1196	6855	Los Angeles, Moolgavkar 2000	HAD	CAR	E	24 hours	lag 0	5.10	4.43	5.78
	1196	6868	Maricopa, Moolgavkar 2000	HAD	CAR	E	24 hours	lag 0	2.68	1.50	3.86
	1196	6843	Cook County, Moolgavkar 2000	HAD	CAR	E	24 hours	lag 0	1.46	0.99	1.94
	472	1966	Tucson, Schwartz 1997	HAD	CAR	E	24 hours	lag 0	0.13	-1.23	1.52
18	1299	7340	Rome, Michelozzi 2000	HAD	IHD	AA	24 hours	lag 0	11.34	7.24	15.59
	368	6163	Toronto, Burnett 1999	HAD	IHD	AA	24 hours	lag 0-2	1.60	1.08	2.11
	1429	8253	London, Wong 2002	HAD	IHD	AA	24 hours	lag 0	1.40	0.70	2.10
	1253	6463	Strasbourg, Eilstein 2001	HAD	IHD	AA	24 hours	lag 0	0.73	-0.36	1.84
	1429	8237	Hong Kong, Wong 2002	HAD	IHD	AA	24 hours	lag 2	0.40	-0.50	1.31
	1629	13949	Tehran, Hosseinpoor	HAD	IHD	AA	24 hours	lag 1	-0.01	-0.60	0.60
	1622	13214	Seoul, Lee 2003	HAD	IHD	AA	24 hours	lag 0-3	-3.37	-6.77	0.15
19	1299	7342	Rome, Michelozzi 2000	HAD	IHD	E	24 hours	lag 0	7.56	2.07	13.35
	1053	1374	London, Atkinson 1999	HAD	IHD	E	24 hours	lag 0	1.71	0.34	3.10
	69	7736	West Midlands, Anderson 2001	HAD	IHD	E	24 hours	lag 0-1	0.65	-1.10	2.43
	1622	13219	Seoul, Lee 2003	HAD	IHD	E	24 hours	lag 0-3	-4.22	-8.47	0.23
20	484	2554	Los Angeles, Morris 1995	HAD	HF	E	1 hour		3.54	2.57	4.51
	376	2232	Chicago, Morris 1998	HAD	HF	E	1 hour	lag 0	1.07	0.60	1.53
	484	2560	Milwaukee, Morris 1995	HAD	HF	E	1 hour		0.50	-0.07	1.08
	484	2559	Houston, Morris 1995	HAD	HF	E	1 hour		0.50	-0.23	1.23
	484	2557	New York, Morris 1995	HAD	HF	E	1 hour		0.29	0.07	0.51
	484	2556	Philadelphia, Morris 1995	HAD	HF	E	1 hour		0.07	-0.30	0.45
	286	2688	Detroit, Schwartz 1995	HAD	HF	E	1 hour		0.04	-0.46	0.54
21	1184	5385	Valencia, Ballester 2001	HAD	ST	AA	24 hours	lag 5	3.78	-1.56	9.41
	64	1598	London, Poloniecki 1997	HAD	ST	AA	24 hours	lag 1	0.04	-0.32	0.39
	368	6164	Toronto, Burnett 1999	HAD	ST	AA	24 hours	lag 0	0.03	-0.46	0.52
	364	4285	Hong Kong, Wong 1999	HAD	ST	AA	24 hours	lag 3	-1.00	-2.20	0.21
22	1556	12621	Drammen, Oftedal 2003	HAD	RESP	AA	24 hours	lag 0	22.47	5.54	42.11
	1337	11711	Verona, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	12.10	5.00	19.68
	1337	11764	Florence, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	11.50	3.50	20.12
	1337	11806	Palermo, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	6.00	3.70	8.35
	1337	11739	Bologna, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	4.30	-0.70	9.55
	1337	11701	Milan, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	3.60	2.10	5.12
	49	6421	Brisbane, Petroeschevsky 2001	HAD	RESP	AA	24 hours	lag 0	2.89	1.10	4.71
	1337	11676	Turin, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	2.70	0.80	4.64
	1337	11786	Rome, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	1.40	-0.60	3.44
	1073	3465	Buffalo, Gwynn 2000	HAD	RESP	AA	24 hours	lag 0	1.34	0.48	2.21
	364	2986	Hong Kong, Wong 1999	HAD	RESP	AA	24 hours	lag 0	1.30	0.40	2.21
	1053	1764	London, Atkinson 1999	HAD	RESP	AA	24 hours	lag 1	1.11	0.16	2.07
	69	7754	West Midlands, Anderson 2001	HAD	RESP	AA	24 hours	lag 0-1	0.56	-0.31	1.44
	253	1322	Paris, Dab 1996	HAD	RESP	AA	24 hours	lag 0-2	0.41	0.05	0.78
	1185	5401	Ulsan, Cho 2000	HAD	RESP	AA	24 hours	lag 0	0.07	-0.64	0.79
	1185	5395	Suwon, Cho 2000	HAD	RESP	AA	24 hours	lag 0	-0.15	-0.69	0.39
	1185	5390	Daejeon, Cho 2000	HAD	RESP	AA	24 hours	lag 0	-0.35	-1.06	0.37
	1337	11720	Ravenna, Biggeri 2001	HAD	RESP	AA	24 hours	lag 0-3	-0.50	-4.30	3.45
23	49	6405	Brisbane, Petroeschevsky 2001	HAD	RESP	C	24 hours	lag 0-4	7.76	3.13	12.60
	242	5370	Sao Paulo, Braga 2001	HAD	RESP	C	24 hours	distribute	3.19	2.35	4.05
	1053	1770	London, Atkinson 1999	HAD	RESP	C	24 hours	lag 1	2.82	1.43	4.24
	69	7763	West Midlands, Anderson 2001	HAD	RESP	C	24 hours	lag 0-1	1.98	0.61	3.36
	364	4326	Hong Kong, Wong 1999	HAD	RESP	C	24 hours	lag 0	0.50	-0.90	1.92
	1265	5715	Rome, Fusco 2001	HAD	RESP	C	24 hours	lag 1	-2.89	-7.45	1.90
24	1299	7368	Rome, Michelozzi 2000	HAD	RESP	YA	24 hours	lag 0	5.45	0.64	10.50
	49	6413	Brisbane, Petroeschevsky 2001	HAD	RESP	YA	24 hours	lag 1	1.21	-4.02	6.72
	1053	1776	London, Atkinson 1999	HAD	RESP	YA	24 hours	lag 3	1.05	-0.44	2.56
	364	2983	Hong Kong, Wong 1999	HAD	RESP	YA	24 hours	lag 0	0.80	-0.40	2.01
	86	1283	Milan, Vigotti 1996	HAD	RESP	YA	24 hours	lag 0	0.49	0.00	0.98
	69	7772	West Midlands, Anderson 2001	HAD	RESP	YA	24 hours	lag 0-1	-0.39	-2.12	1.36
	480	2269	Amsterdam, Schouten 1996	HAD	RESP	YA	24 hours	lag 2	-0.57	-1.45	0.31
	480	2648	Rotterdam, Schouten 1996	HAD	RESP	YA	24 hours	lag 1	-0.61	-1.55	0.35

Time Series: SO_2

Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
25	49	6417	Brisbane, Petroeschevsky 2001	HAD	RESP	E	24 hours	lag 0	4.31	0.70	8.06
	1429	8229	Hong Kong, Wong 2002	HAD	RESP	E	24 hours	lag 0	1.70	1.00	2.40
	635	2038	Minneapolis/St. Paul, Moolgavkar 1997	HAD	RESP	E	24 hours	lag 2	1.69	-0.11	3.52
	1429	8245	London, Wong 2002	HAD	RESP	E	24 hours	lag 3	1.20	0.50	1.90
	486	2508	Tacoma, Schwartz 1995	HAD	RESP	E	24 hours	lag 0	1.17	0.20	2.15
	486	1849	New Haven, Schwartz 1995	HAD	RESP	E	24 hours	lag 2	0.59	0.40	0.79
	480	2612	Amsterdam, Schouten 1996	HAD	RESP	E	24 hours	lag 2	0.45	-0.36	1.26
	86	1295	Milan, Vigotti 1996	HAD	RESP	E	24 hours	lag 0	0.39	0.00	0.79
	480	2311	Rotterdam, Schouten 1996	HAD	RESP	E	24 hours	lag 2	0.27	-1.00	1.55
	69	7781	West Midlands, Anderson 2001	HAD	RESP	E	24 hours	lag 0-1	-0.88	-2.16	0.43
	216	3844	Edinburgh, Prescott 1998	HAD	RESP	E	24 hours	lag 1-3	-0.93	-4.22	2.47
	1299	7369	Rome, Michelozzi 2000	HAD	RESP	E	24 hours	lag 0	-1.90	-5.65	2.01
26	1265	5691	Rome, Fusco 2001	HAD	ASTHMA	AA	24 hours	lag 2	3.64	-3.17	10.94
	123	12188	Madrid, Galan 2003	HAD	ASTHMA	AA	24 hours	lag 3	2.90	-0.30	6.20
	1053	1788	London, Atkinson 1999	HAD	ASTHMA	AA	24 hours	lag 1	1.86	0.23	3.52
	364	3002	Hong Kong, Wong 1999	HAD	ASTHMA	AA	24 hours	lag 0	1.70	-0.20	3.64
	368	6158	Toronto, Burnett 1999	HAD	ASTHMA	AA	24 hours	lag 2-4	0.70	-0.08	1.48
	253	1338	Paris, Dab 1996	HAD	ASTHMA	AA	24 hours	lag 2	0.68	0.04	1.32
	480	2297	Amsterdam, Schouten 1996	HAD	ASTHMA	AA	24 hours	lag 1	-2.18	-3.56	-0.79
	49	6433	Brisbane, Petroeschevsky 2001	HAD	ASTHMA	AA	24 hours	lag 2	-2.22	-4.78	0.40
27	1466	8581	Seoul, Lee 2002	HAD	ASTHMA	C	24 hours	lag 2-3	9.17	5.02	13.48
	1265	5740	Rome, Fusco 2001	HAD	ASTHMA	C	24 hours	lag 2	8.07	-2.60	19.90
	1328	7400	Hong Kong, Wong 2001	HAD	ASTHMA	C	24 hours	lag 3	6.00	1.88	10.29
	69	7790	West Midlands, Anderson 2001	HAD	ASTHMA	C	24 hours	lag 0-1	4.60	1.93	7.34
	1053	1794	London, Atkinson 1999	HAD	ASTHMA	C	24 hours	lag 1	3.69	1.61	5.81
	1006	6714	Sao Paulo, Lin 1999	HAD	ASTHMA	C	24 hours	lag 0-4	3.40	-2.50	9.66
	49	6425	Brisbane, Petroeschevsky 2001	HAD	ASTHMA	C	24 hours	lag 0	2.89	-1.08	7.02
	70	8080	Belfast, Thompson 2001	HAD	ASTHMA	C	24 hours	lag 0	0.82	0.36	1.28
28	263	1760	Helsinki, Ponka 1996	HAD	ASTHMA	YA	24 hours	lag 2	12.44	0.31	26.05
	1429	8241	London, Wong 2002	HAD	ASTHMA	YA	24 hours	lag 3	2.10	0.70	3.52
	69	7799	West Midlands, Anderson 2001	HAD	ASTHMA	YA	24 hours	lag 0-1	1.04	-2.43	4.63
	1299	7376	Rome, Michelozzi 2000	HAD	ASTHMA	YA	24 hours	lag 0	-1.11	-11.94	11.06
	1429	8225	Hong Kong, Wong 2002	HAD	ASTHMA	YA	24 hours	lag 2	-1.50	-3.40	0.44
29	1265	5704	Rome, Fusco 2001	HAD	COPDm	AA	24 hours	lag 4	2.91	-1.01	6.99
	253	1330	Paris, Dab 1996	HAD	COPDm	AA	24 hours	lag 0	0.95	0.23	1.67
	368	6159	Toronto, Burnett 1999	HAD	COPDm	AA	24 hours	lag 2	0.02	-0.79	0.84
	480	2662	Rotterdam, Schouten 1996	HAD	COPDm	AA	24 hours	lag 2	-0.38	-1.34	0.59
	480	2283	Amsterdam, Schouten 1996	HAD	COPDm	AA	24 hours	lag 0	-0.97	-2.04	0.11
30	136	6761	Los Angeles, Moolgavkar 2000	HAD	COPDp	E	24 hours	lag 1	6.13	4.50	7.80
	136	6779	Maricopa, Moolgavkar 2000	HAD	COPDp	E	24 hours	lag 5	5.63	2.52	8.82
	1638	14082	Vancouver, Yang	HAD	COPDp	E	24 hours	lag 0	1.32	1.28	1.36
	1053	1812	London, Atkinson 1999	HAD	COPDp	E	24 hours	lag 3	0.85	-1.02	2.75
	136	6746	Cook County, Moolgavkar 2000	HAD	COPDp	E	24 hours	lag 3	-0.99	-2.13	0.15
31	1621	13179	Manchester, Wilson 2005	EV	RESP	AA	24 hours	lag 0-4	3.77	2.27	5.28
	1621	13171	Portland, Wilson 2005	EV	RESP	AA	24 hours	lag 0-4	2.62	1.15	4.12
	542	2893	London, Atkinson 1999	EV	RESP	AA	24 hours	lag 1	1.55	0.40	2.72
	1203	7163	Saint John, Stieb 2000	EV	RESP	AA	24 hours	lag 5	0.60	0.26	0.93
	403	13401	Atlanta metropolitan area, Peel 2005	EV	RESP	AA	24 hours	lag 0-3	0.15	-0.06	0.35
32	1621	13175	Portland, Wilson 2005	EV	ASTHMA	AA	24 hours	lag 0	3.77	0.80	6.82
	542	3701	London, Atkinson 1999	EV	ASTHMA	AA	24 hours	lag 1	2.72	0.85	4.63
	1621	13183	Manchester, Wilson 2005	EV	ASTHMA	AA	24 hours	lag 0-4	2.24	-1.40	6.02
	1203	7637	Saint John, Stieb 2000	EV	ASTHMA	AA	24 hours	lag 4-8	1.04	0.22	1.87
	403	13418	Atlanta metropolitan area, Peel 2005	EV	ASTHMA	AA	24 hours	lag 0-3	0.02	-0.30	0.34
	183	4407	Barcelona, Tobias 1998	EV	ASTHMA	AA	24 hours	lag 3	-0.64	-2.19	0.93
33	524	2851	Singapore, Chew 1999	EV	ASTHMA	C	24 hours	lag 1	11.33	5.13	17.53
	1621	13184	Manchester, Wilson 2005	EV	ASTHMA	C	24 hours	lag 0-4	6.88	-1.31	15.75
	1621	13176	Portland, Wilson 2005	EV	ASTHMA	C	24 hours	lag 0	1.87	-4.57	8.73
	11	5660	Paris, Fauroux 2000	EV	ASTHMA	C	24 hours	lag 1	1.84	-2.58	6.46
	15	2884	London, Buchdahl 2000	EV	ASTHMA	C	24 hours	lag 2	1.44	0.00	2.90
	1102	4541	Seattle, Norris 2000	EV	ASTHMA	C	24 hours	lag 0	0.61	-1.25	2.51

Time Series SO_2

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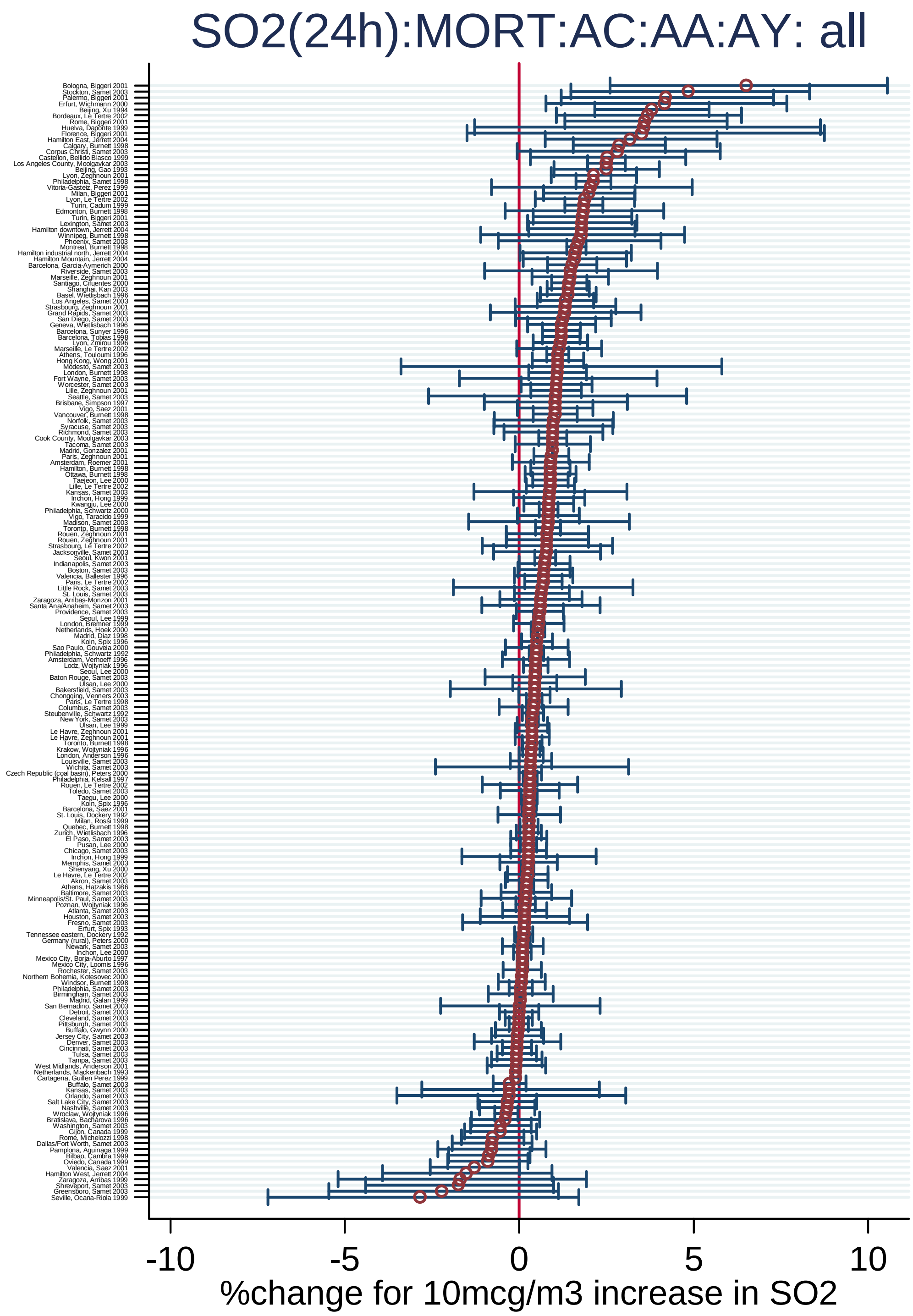

Time Series SO_2

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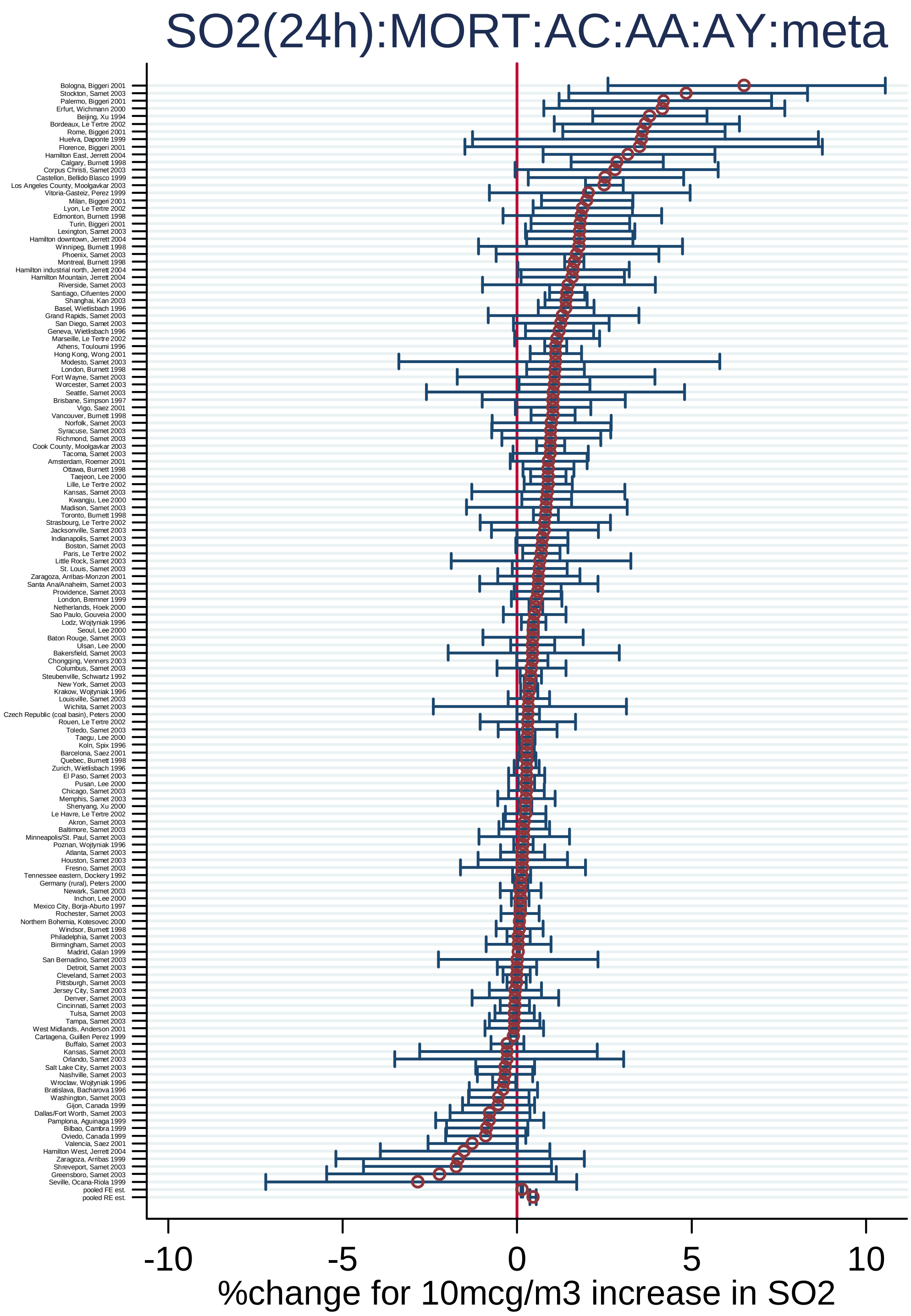

Time Series SO_2

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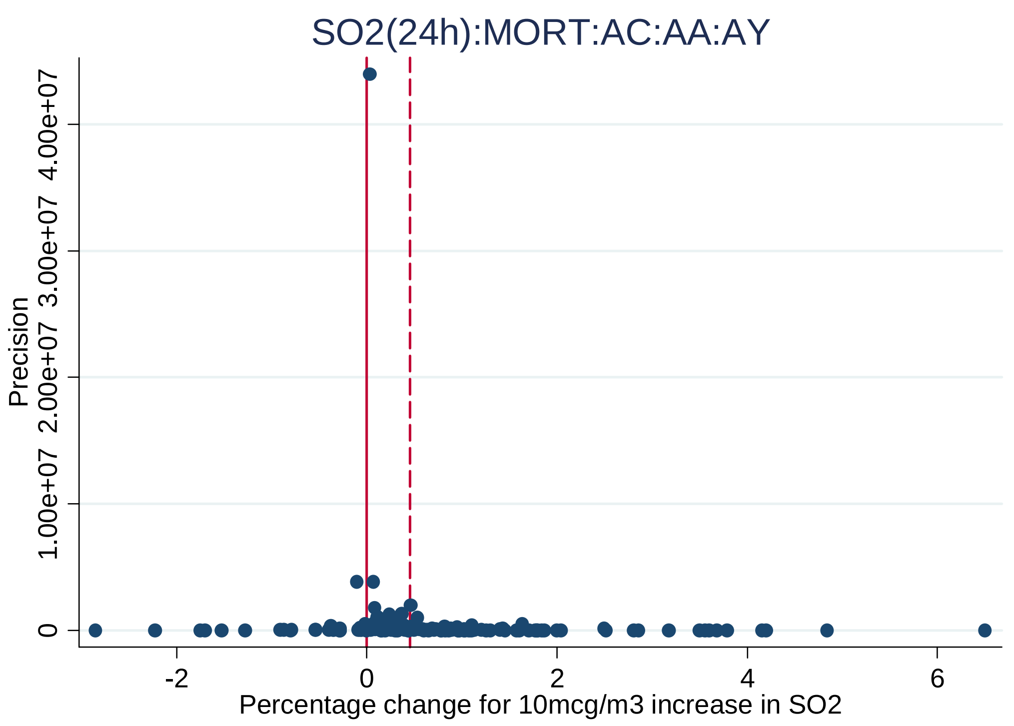

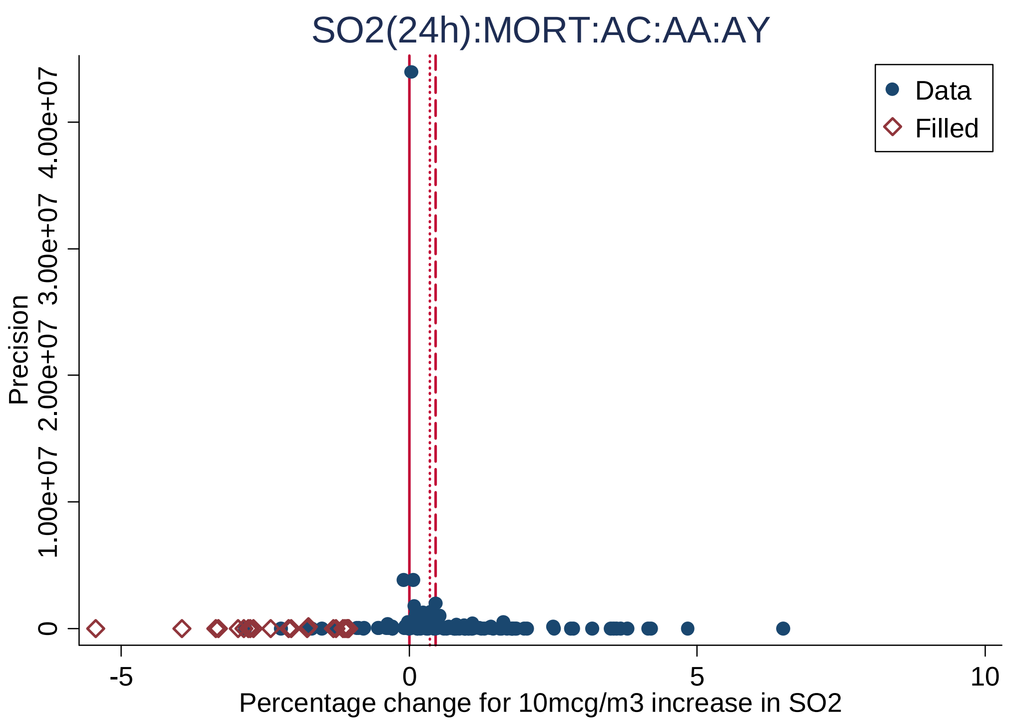

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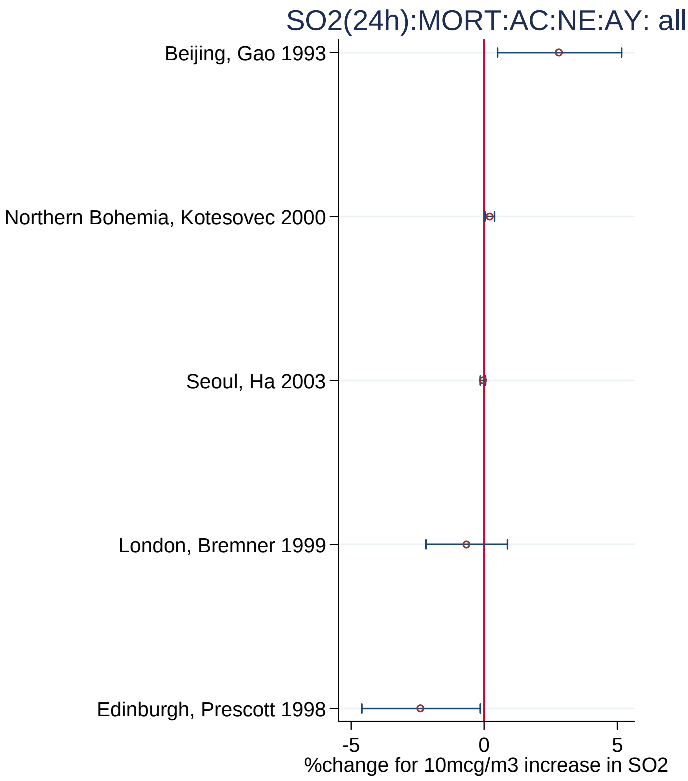

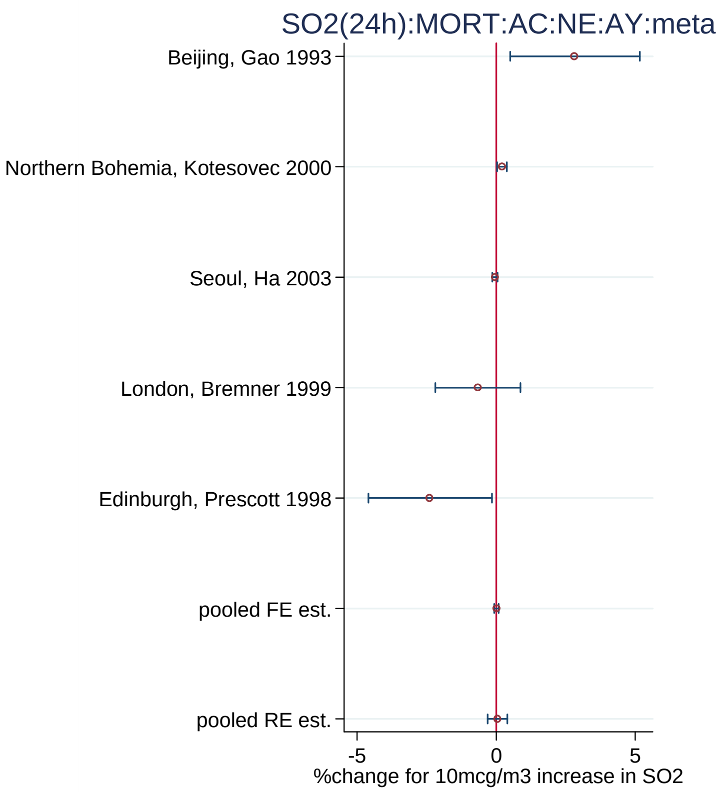

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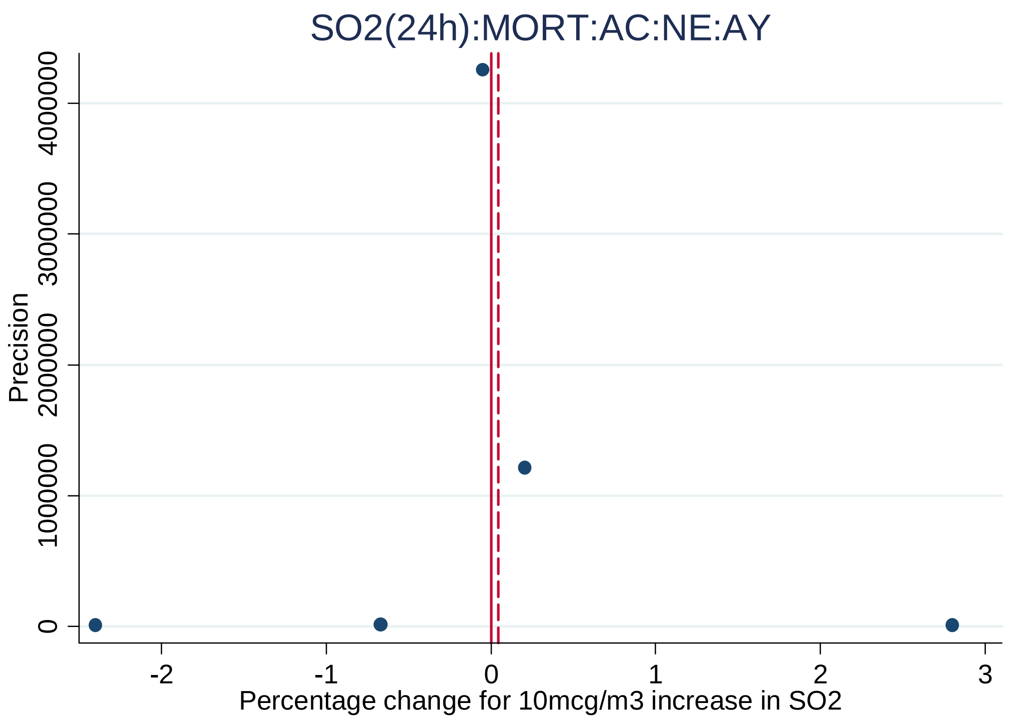

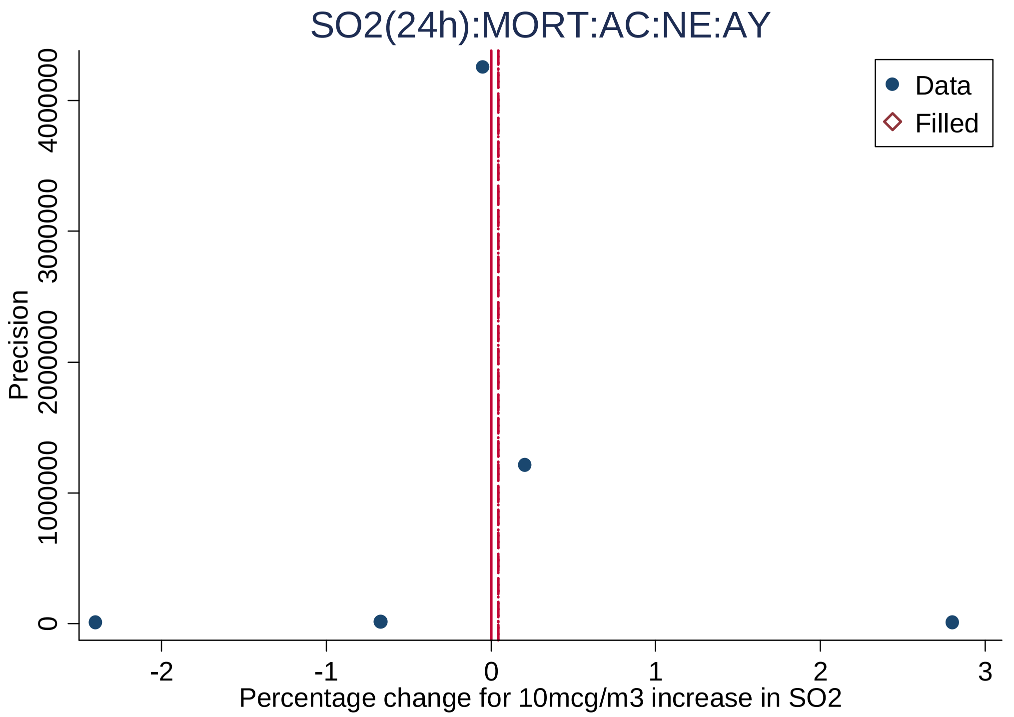

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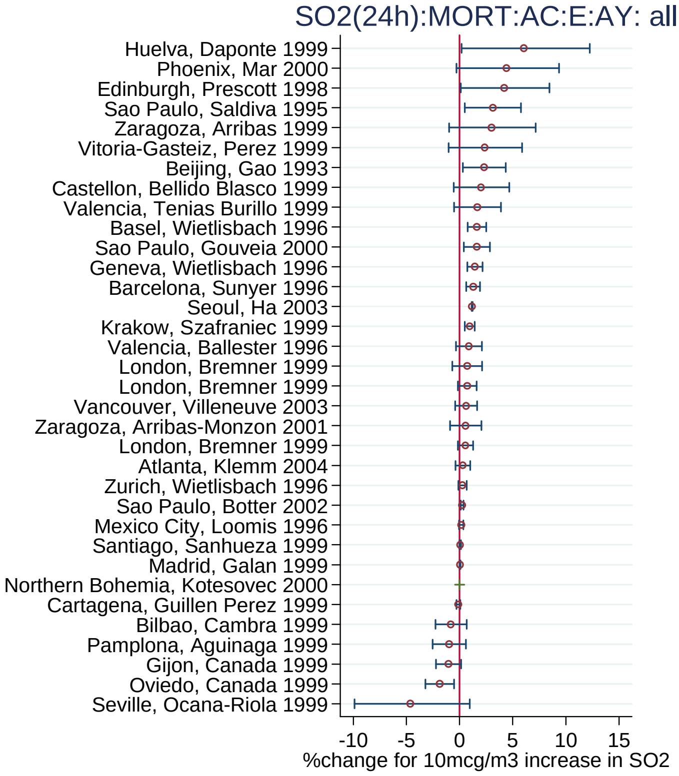

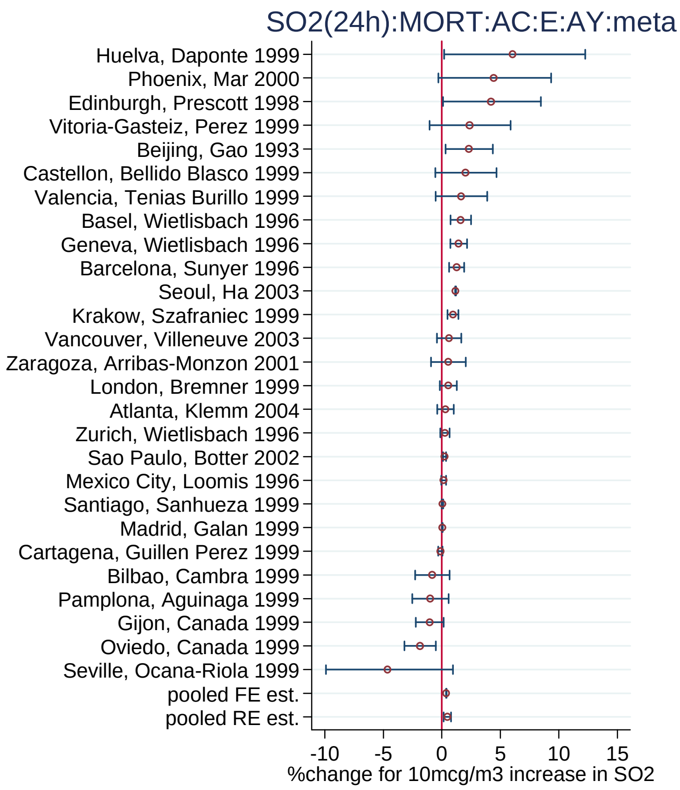

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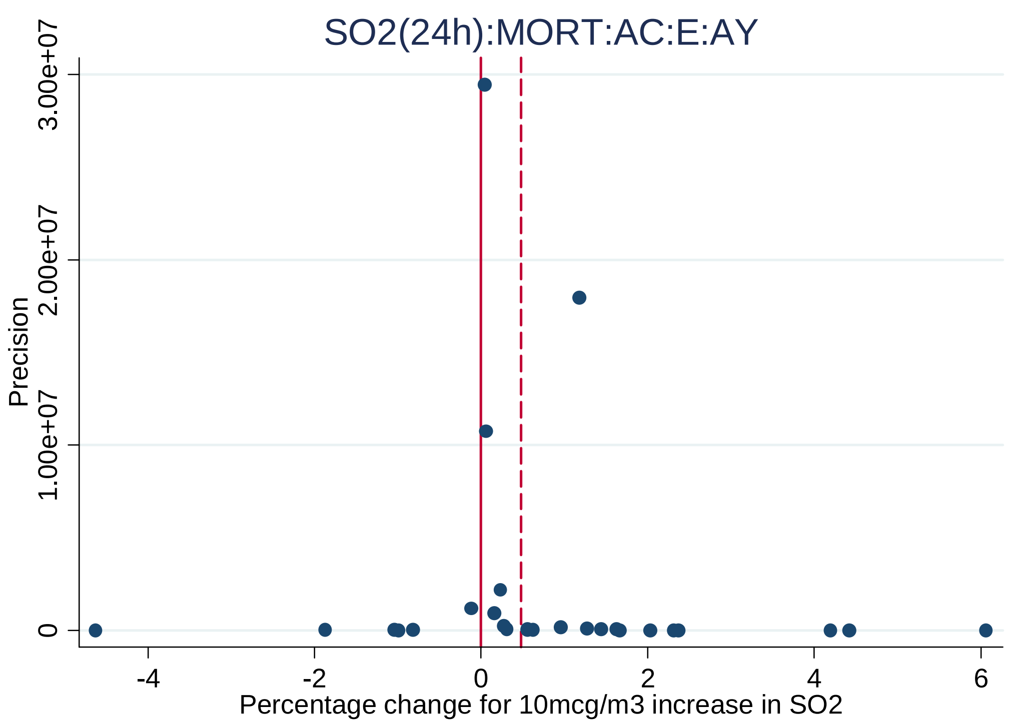

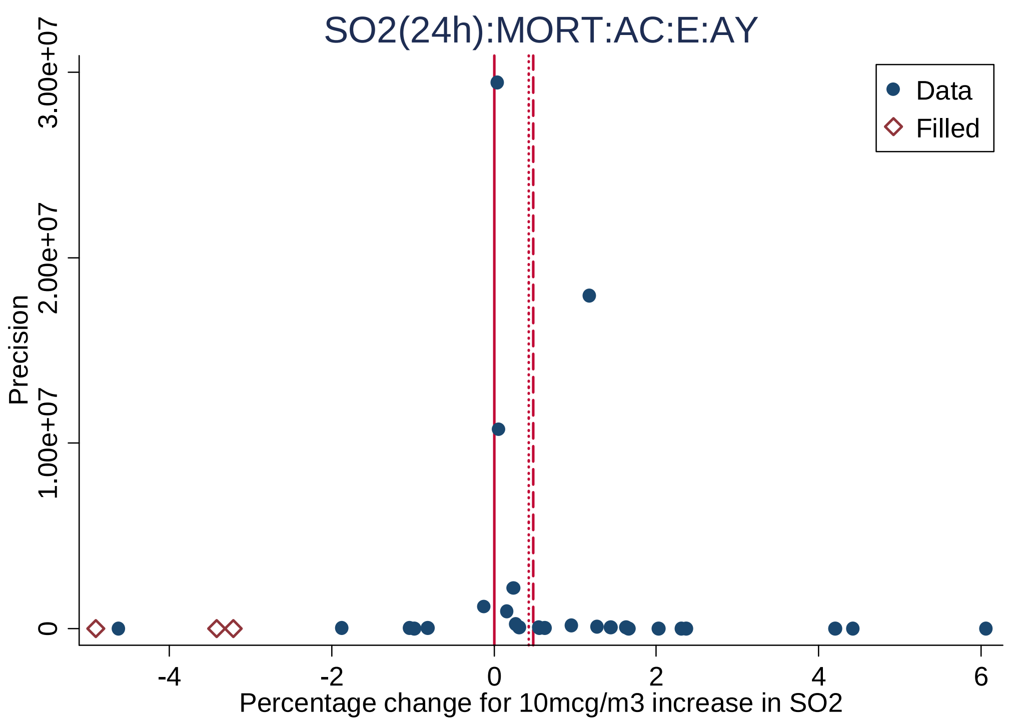

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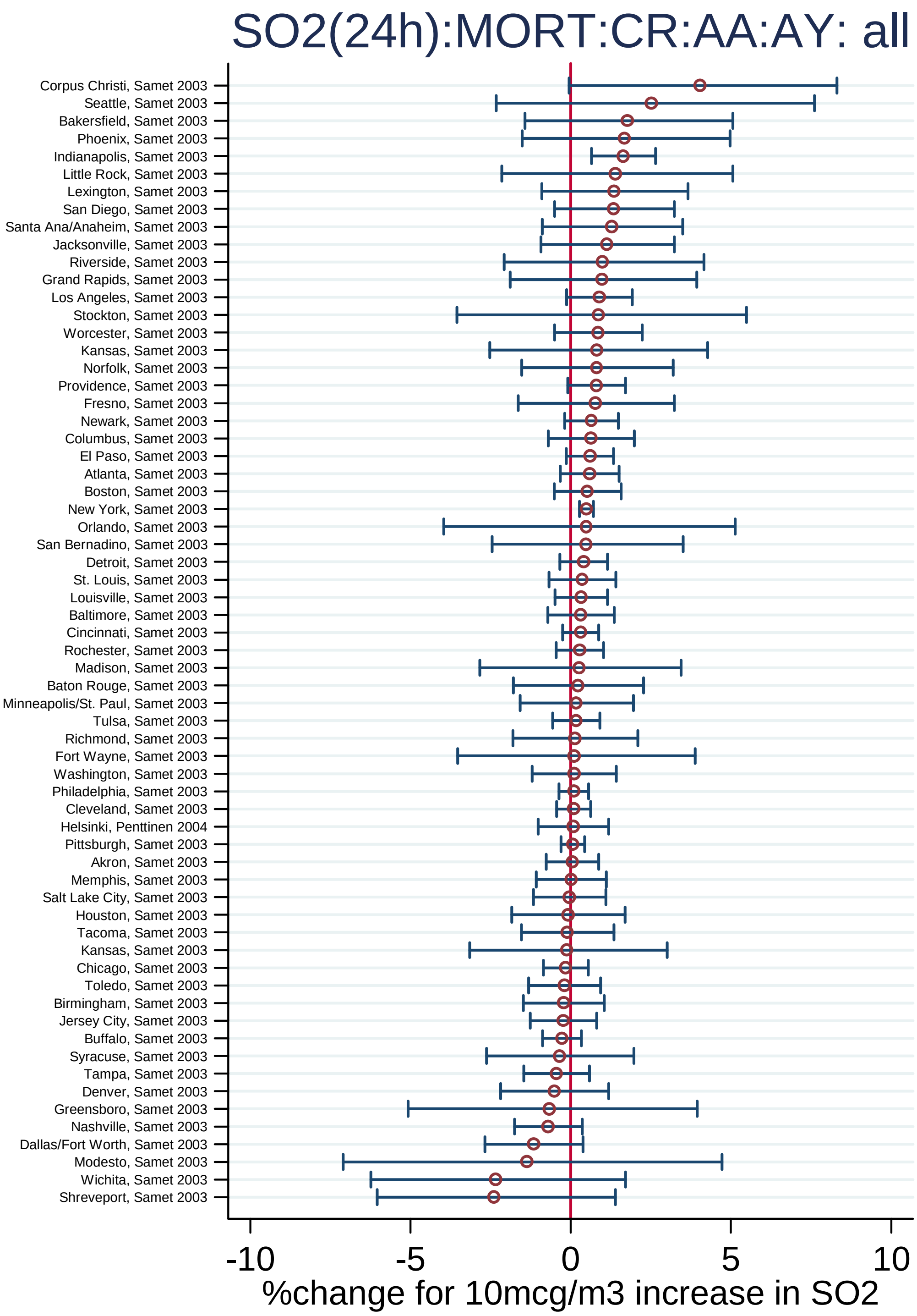

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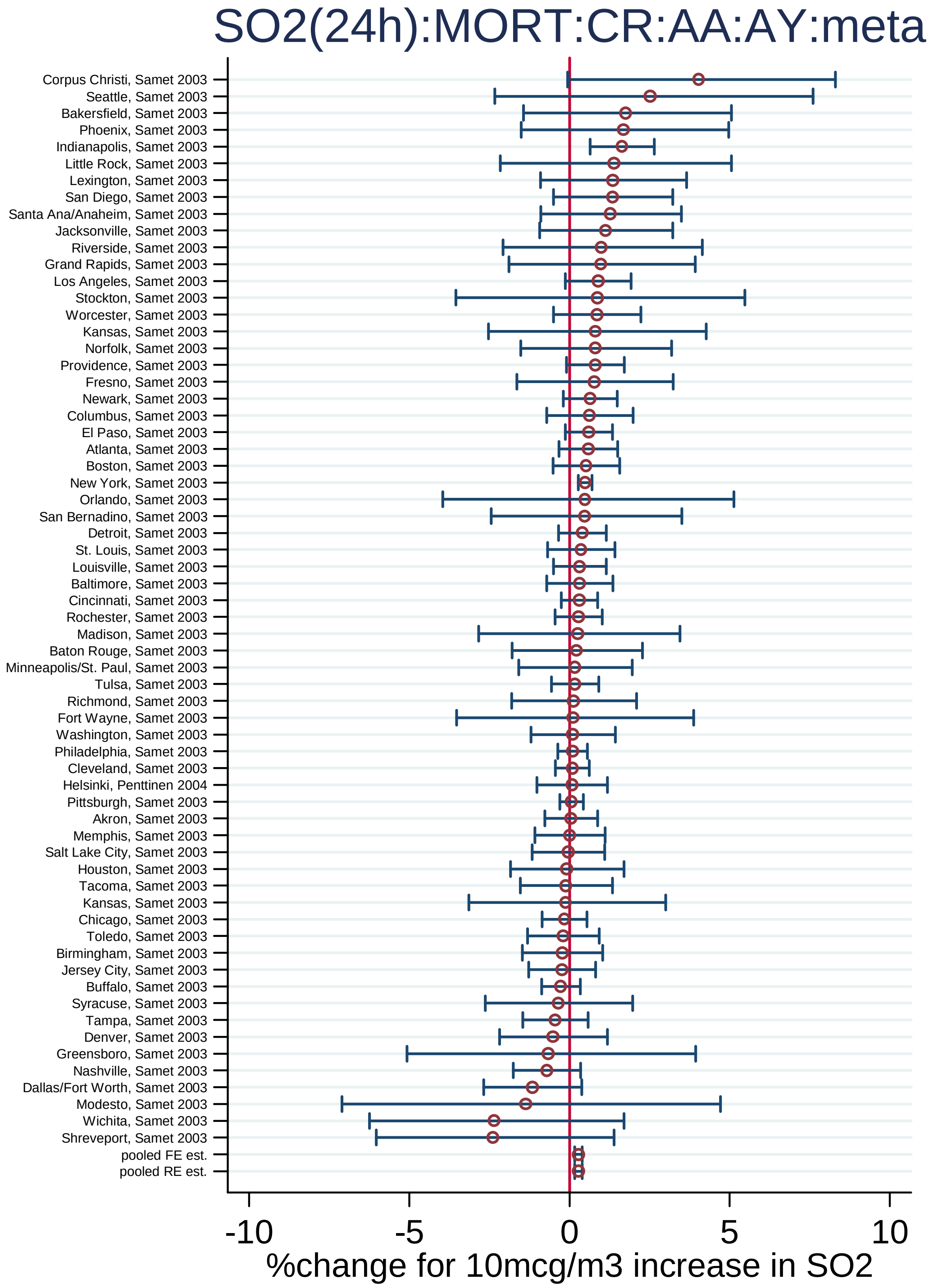

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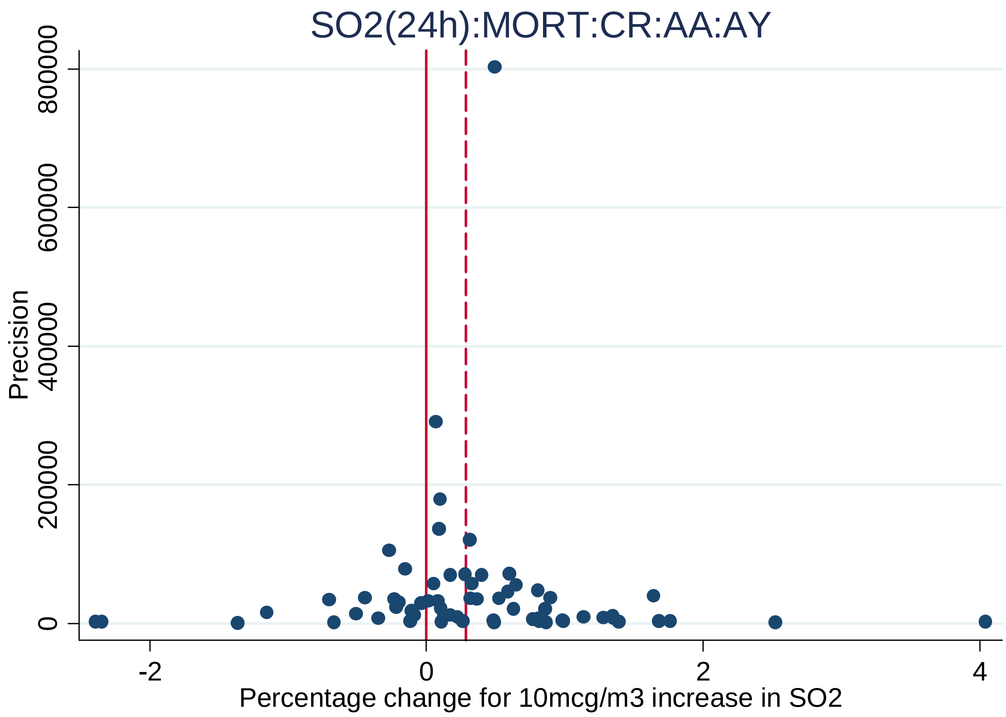

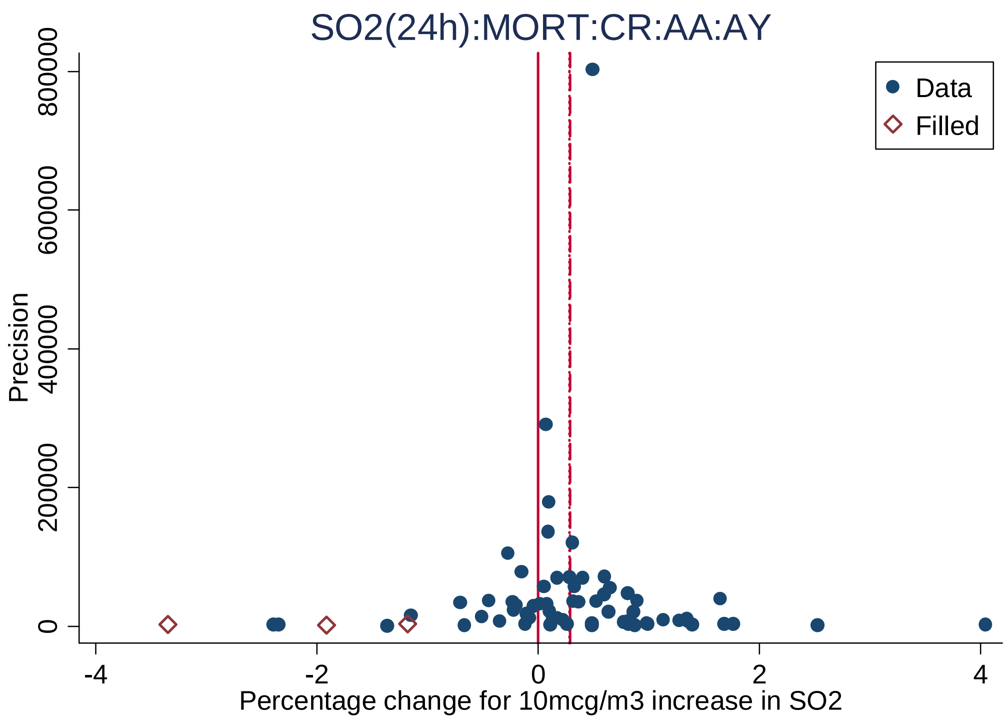

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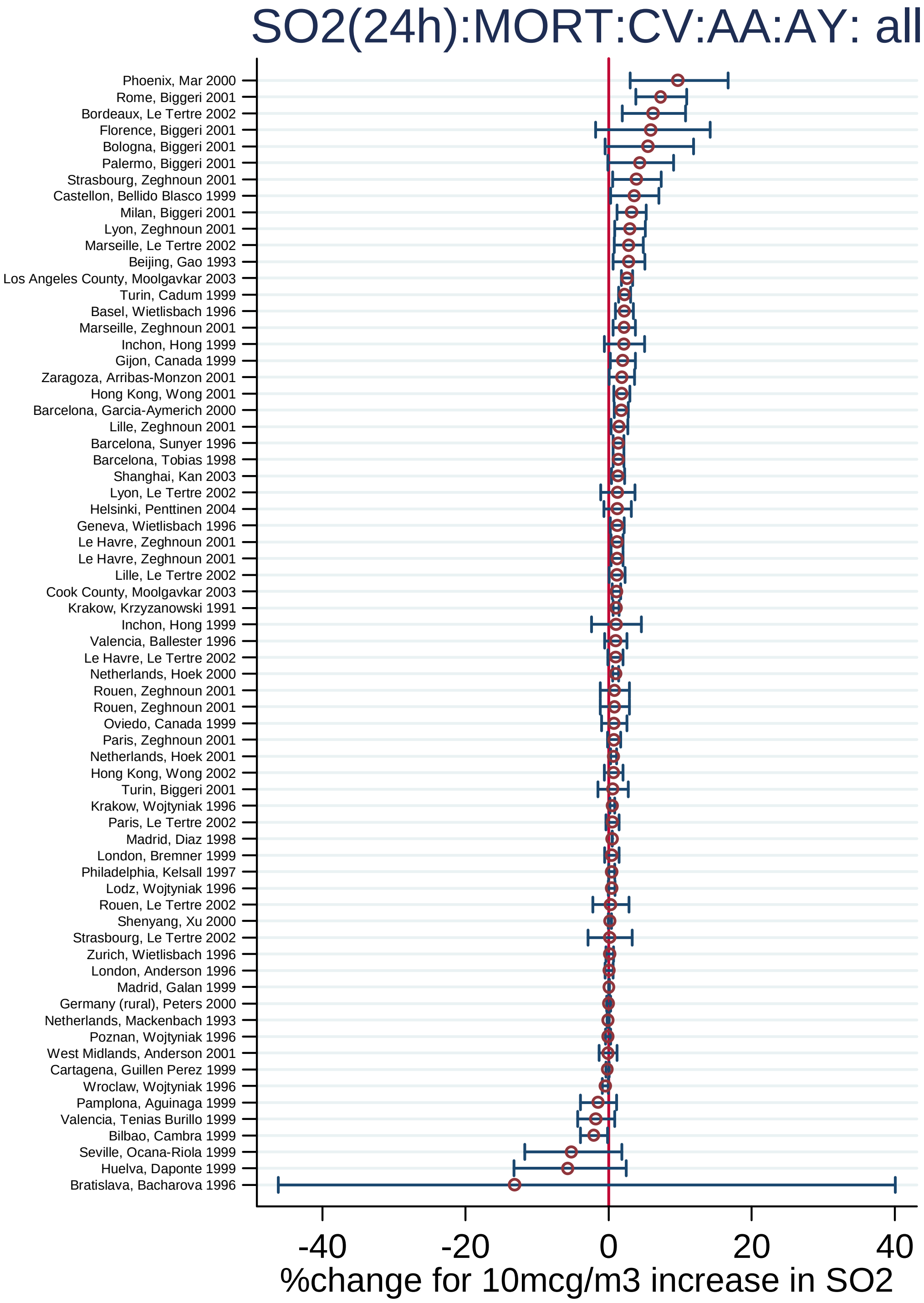

Time Series SO_2

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Time Series SO_2

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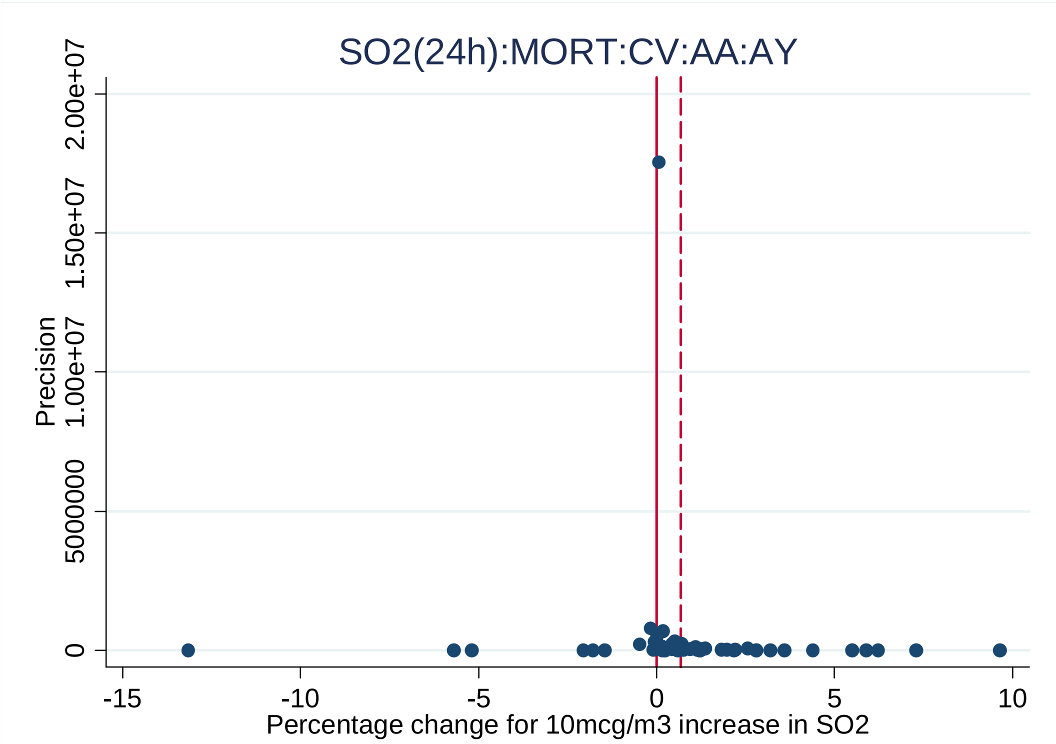

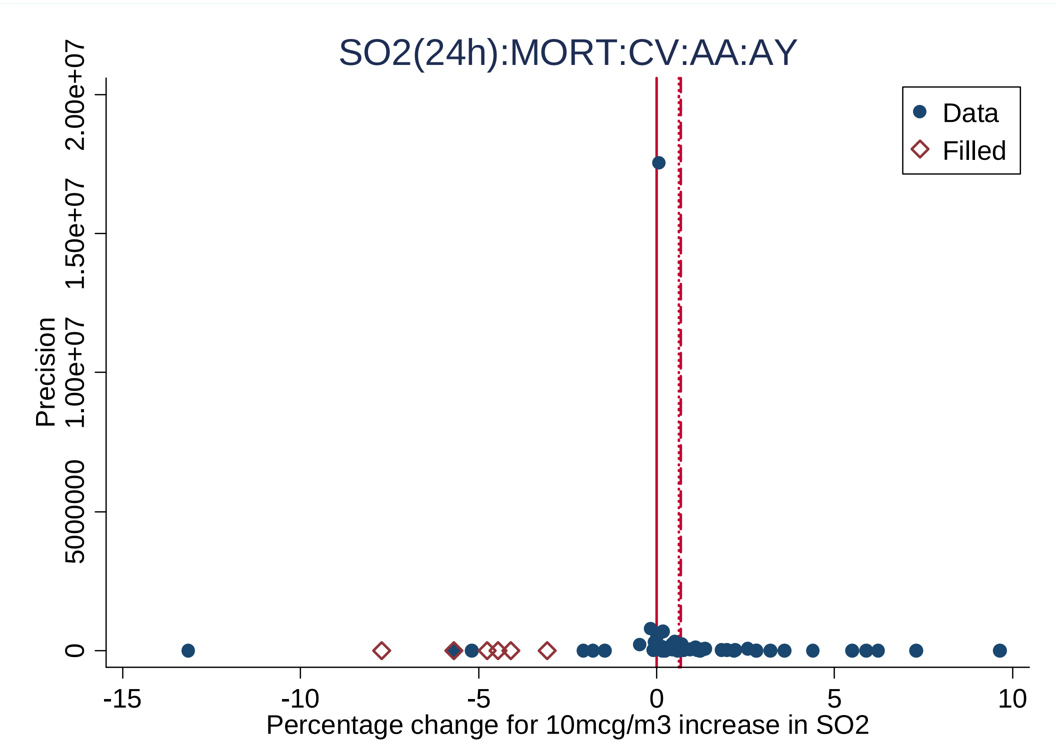

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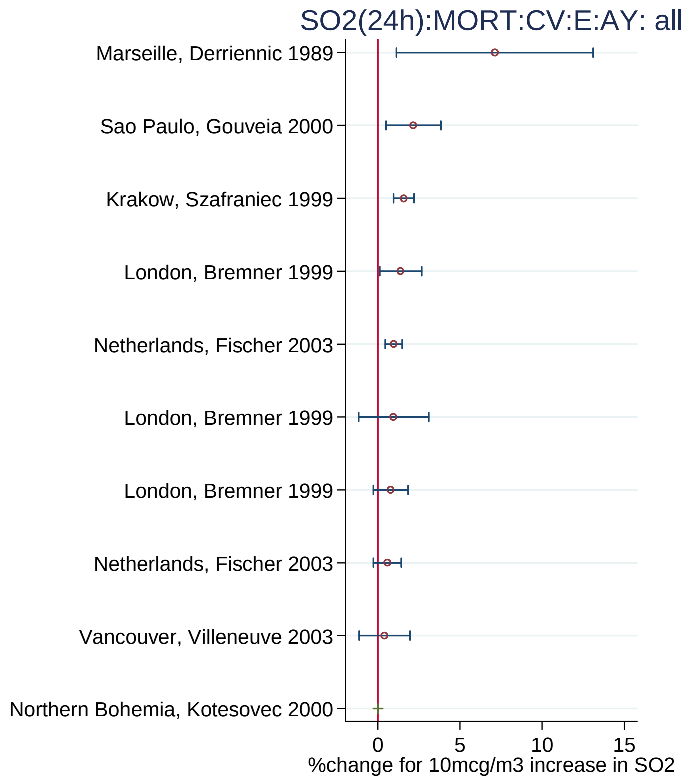

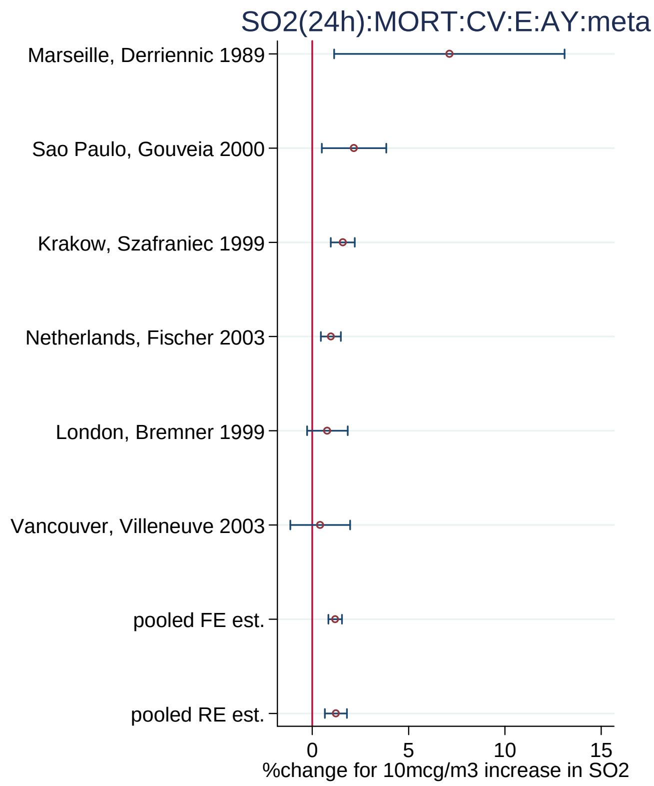

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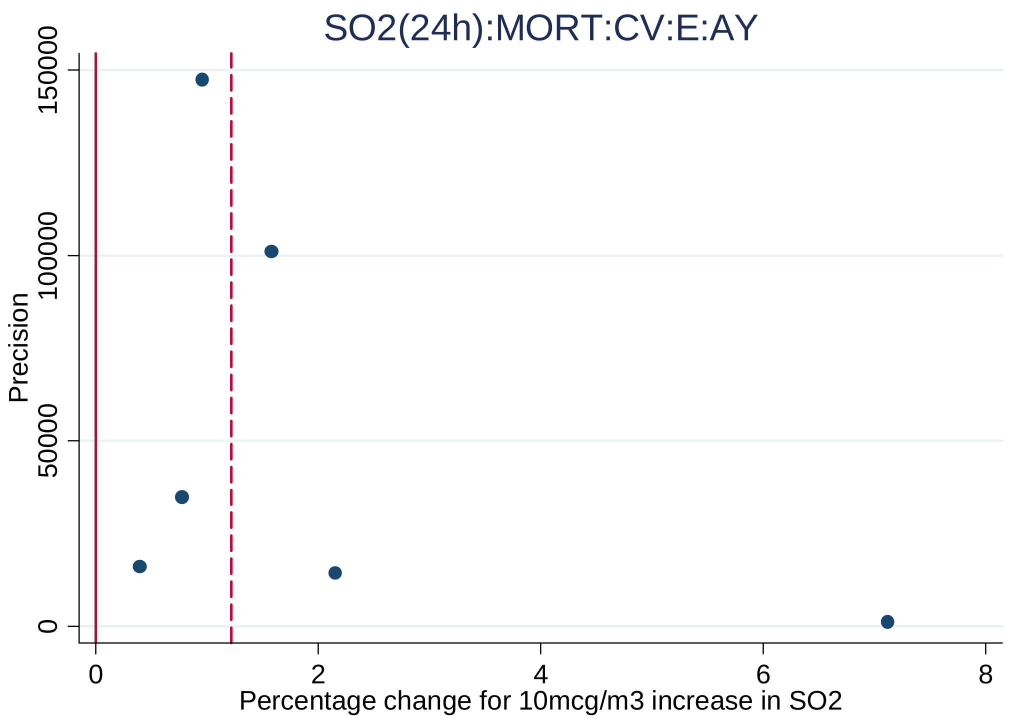

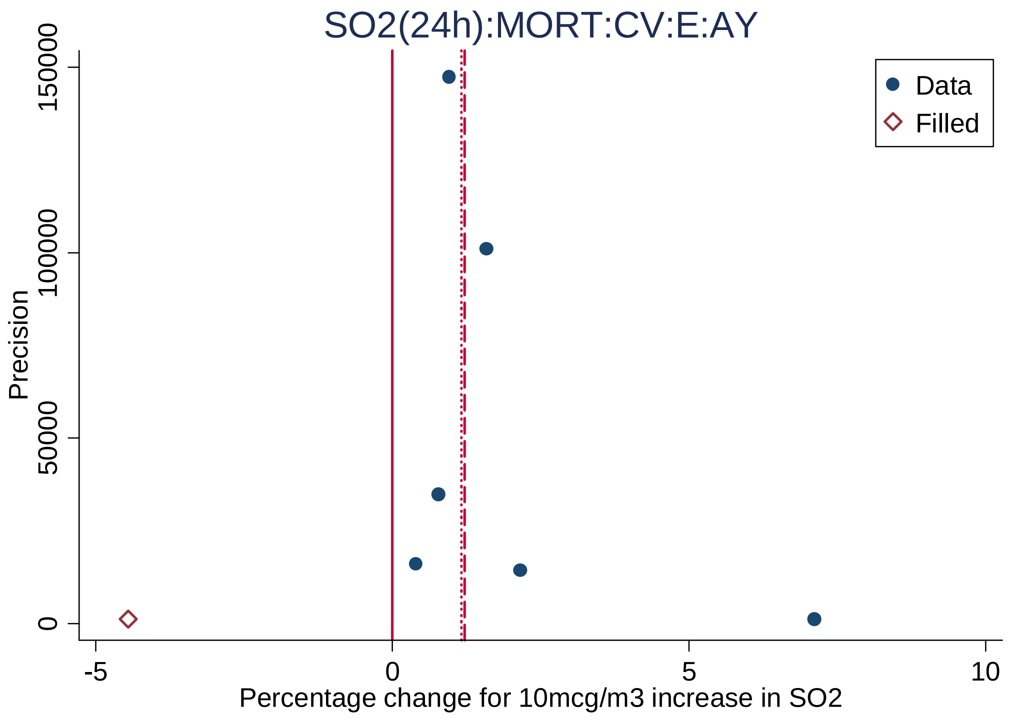

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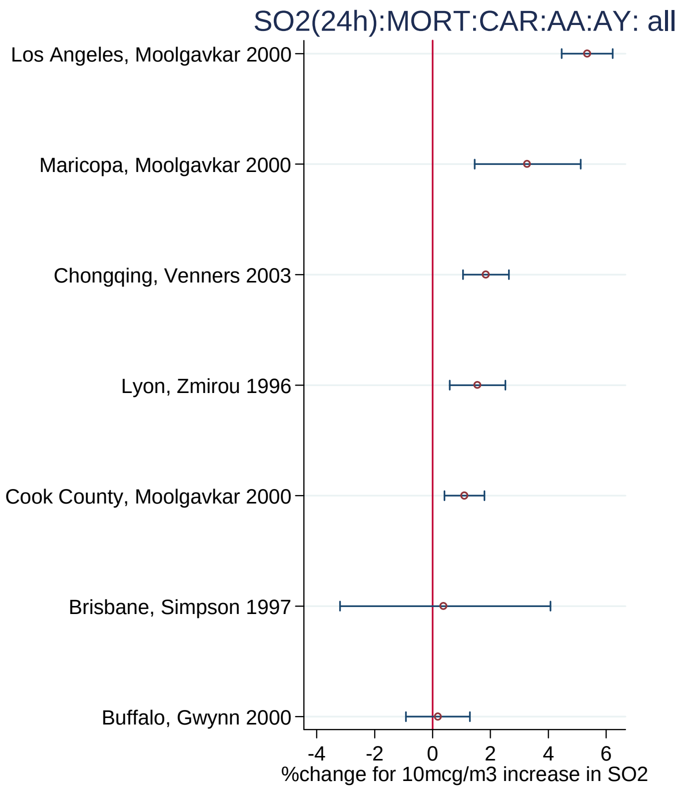

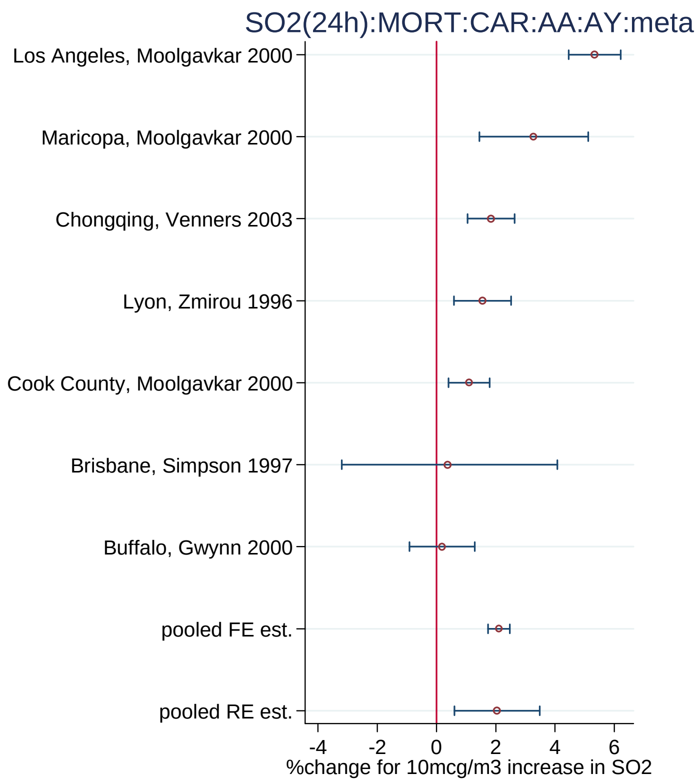

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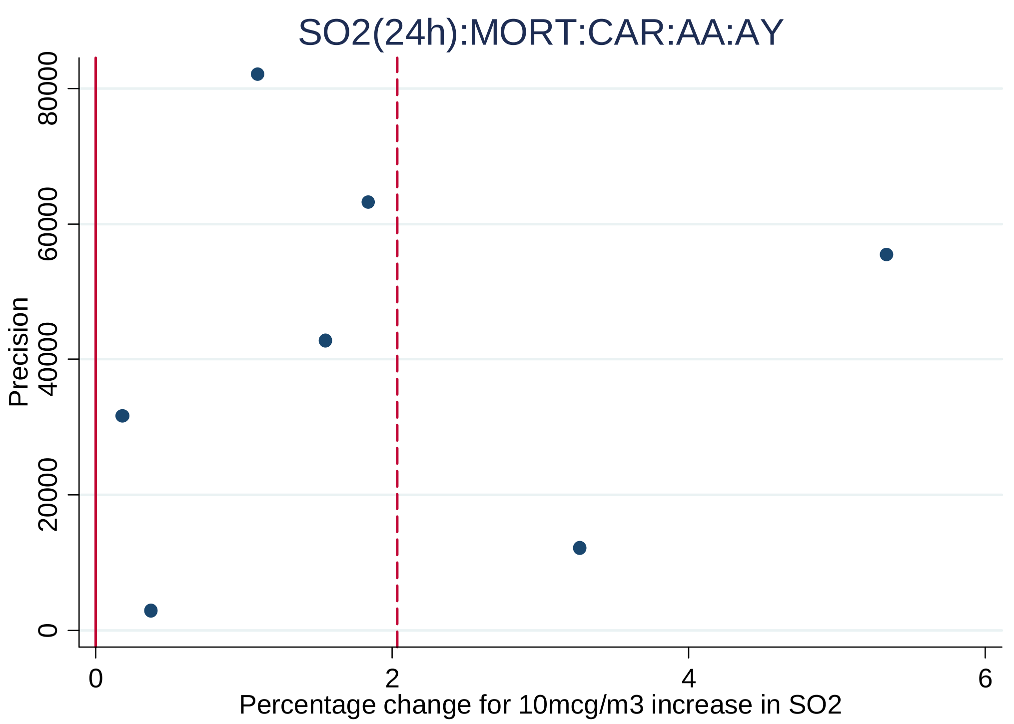

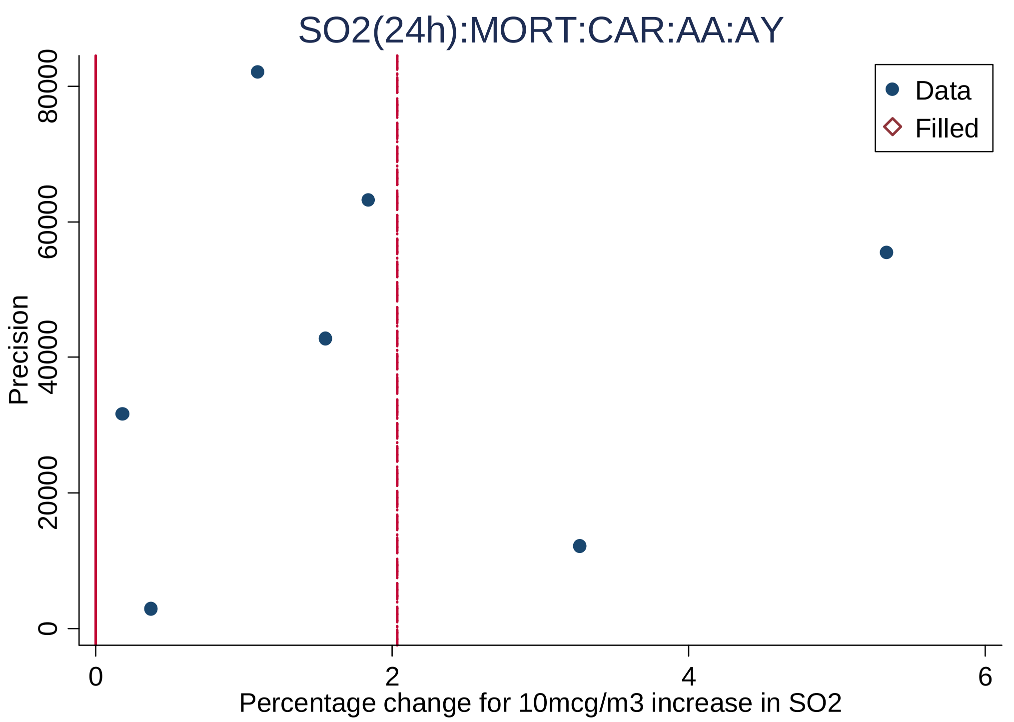

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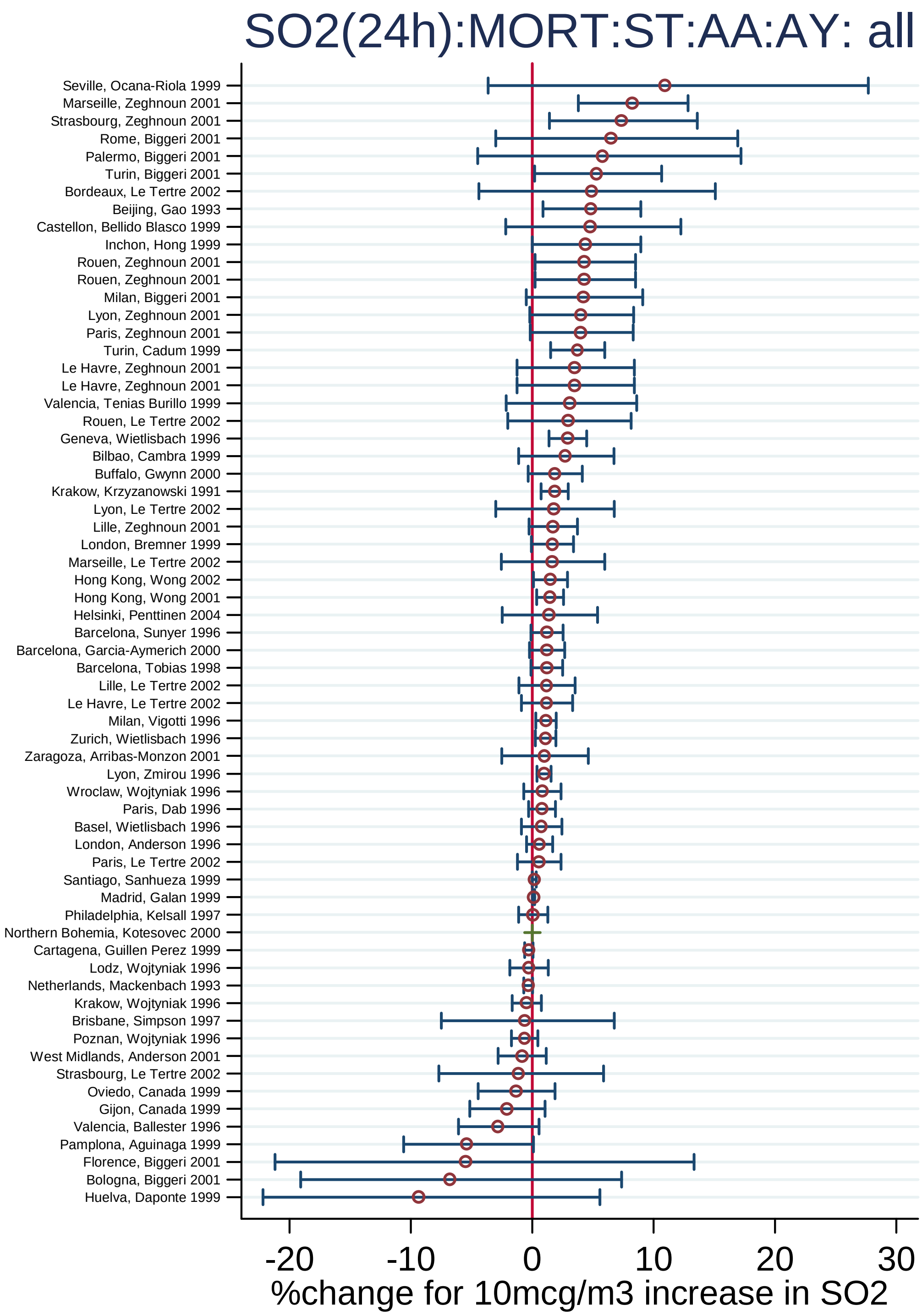

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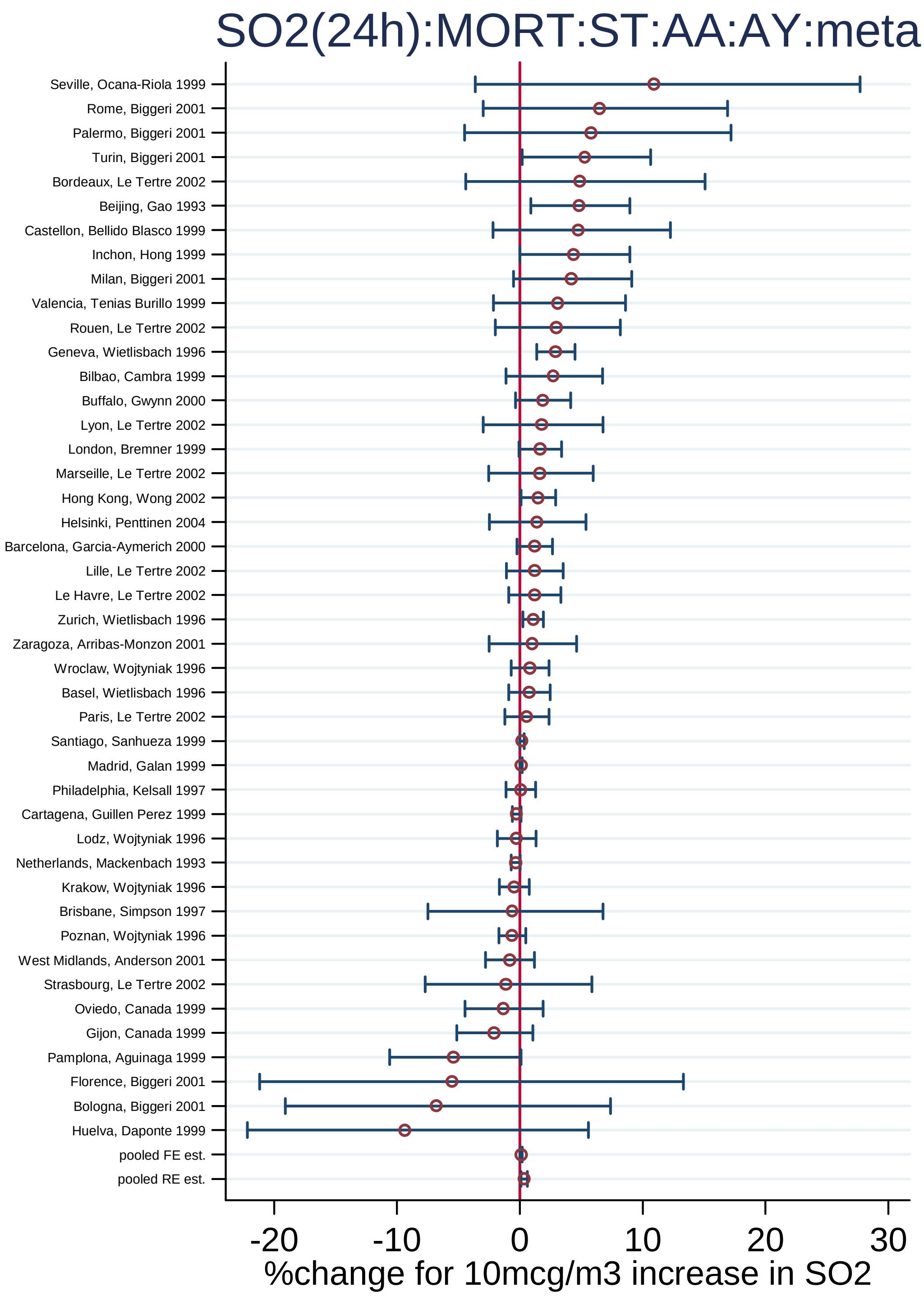

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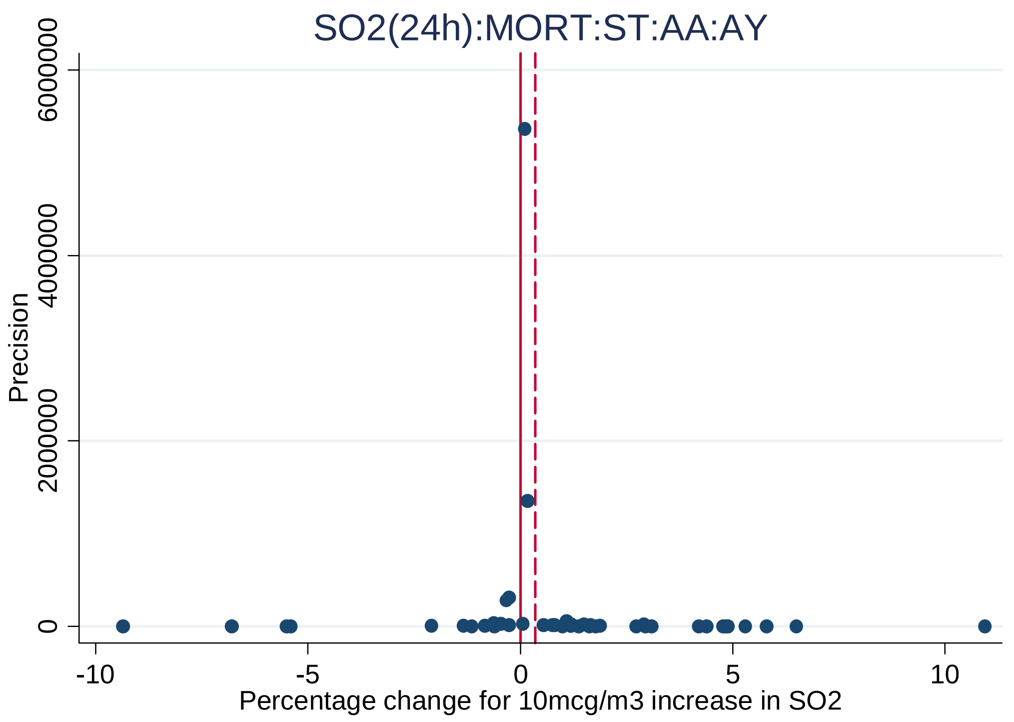

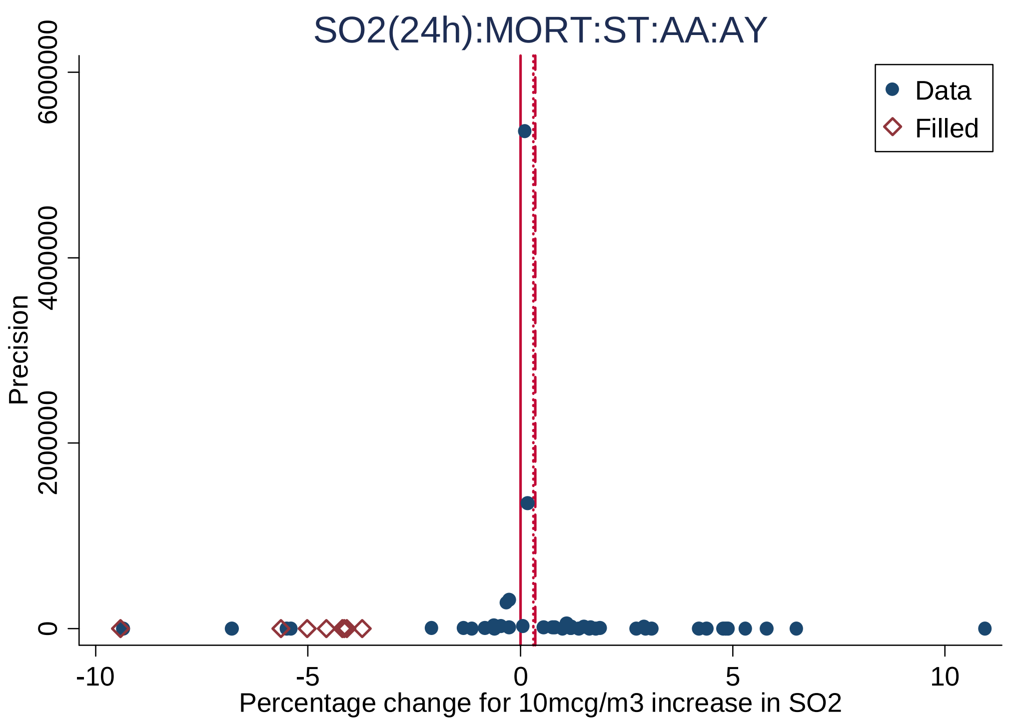

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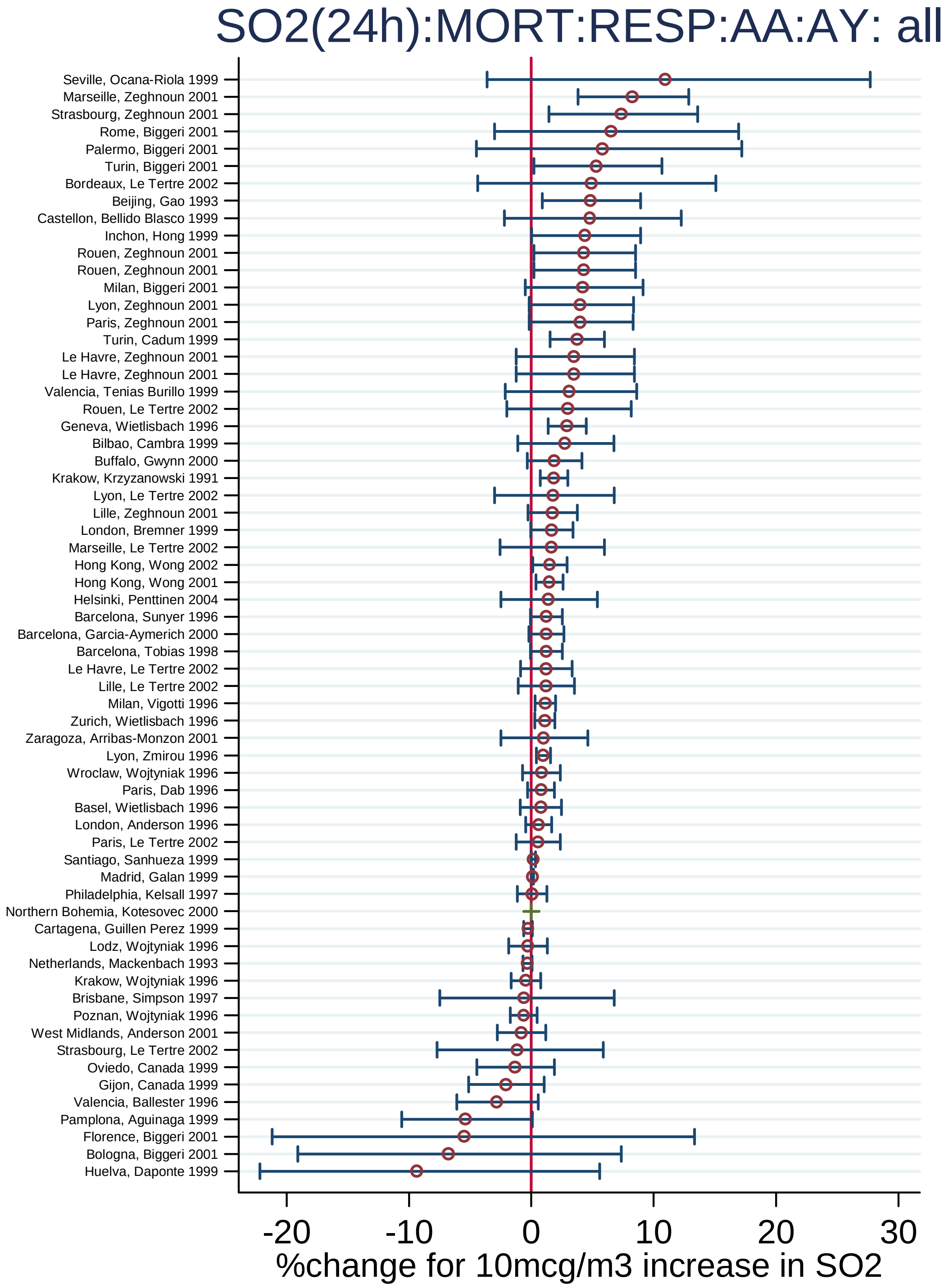

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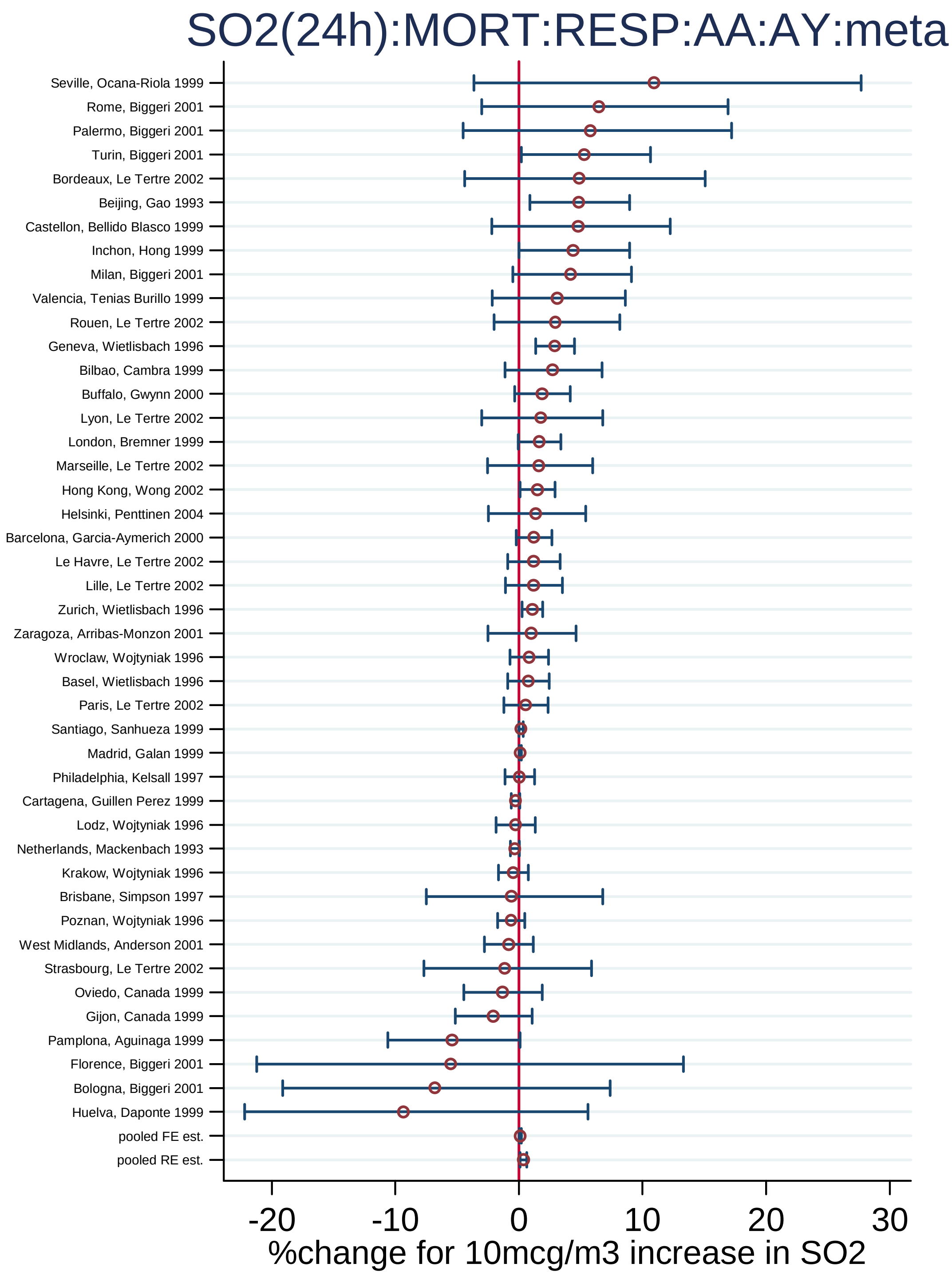

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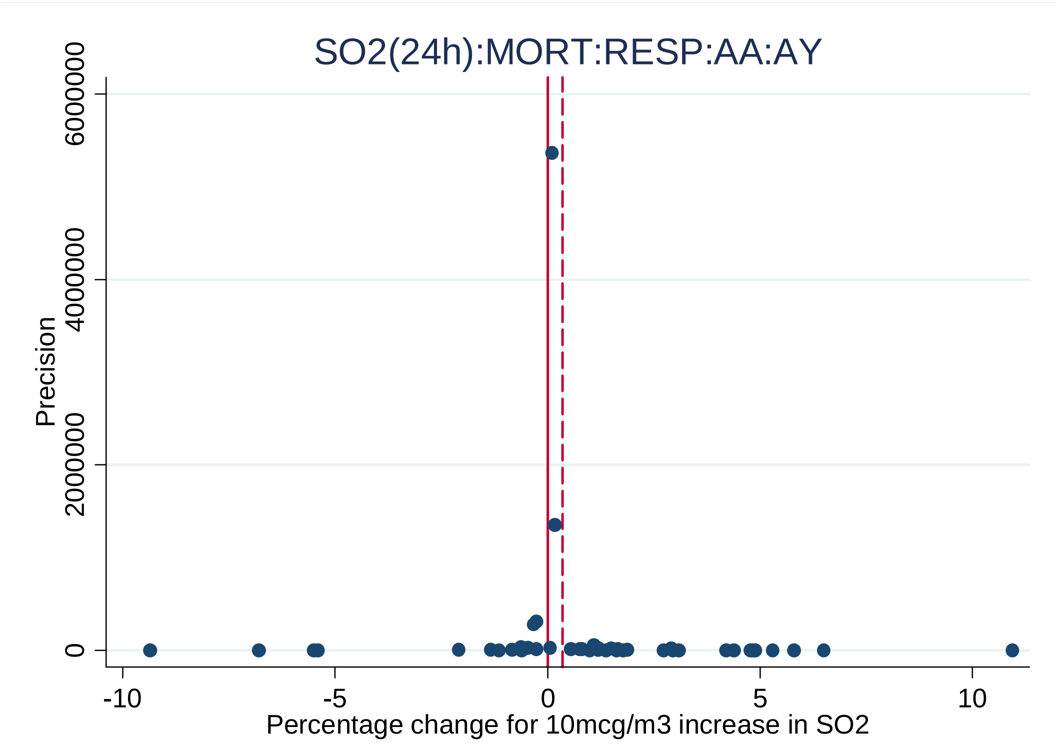

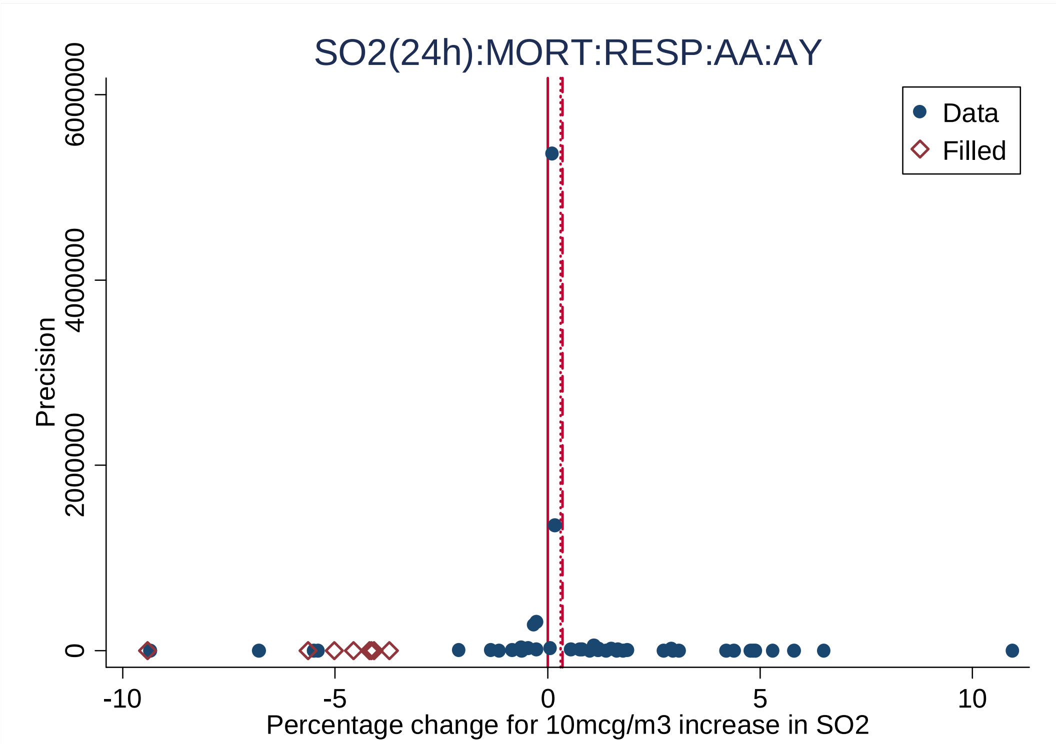

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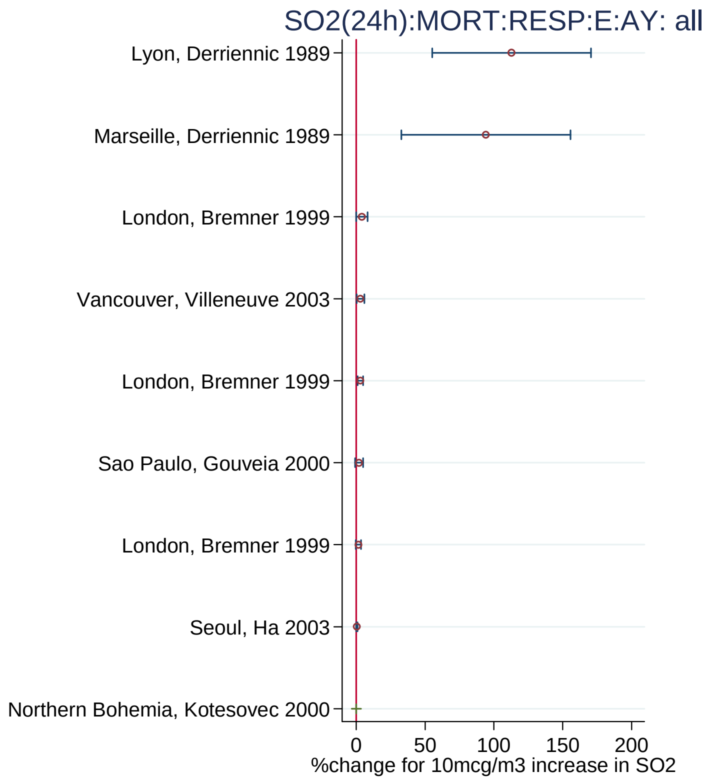

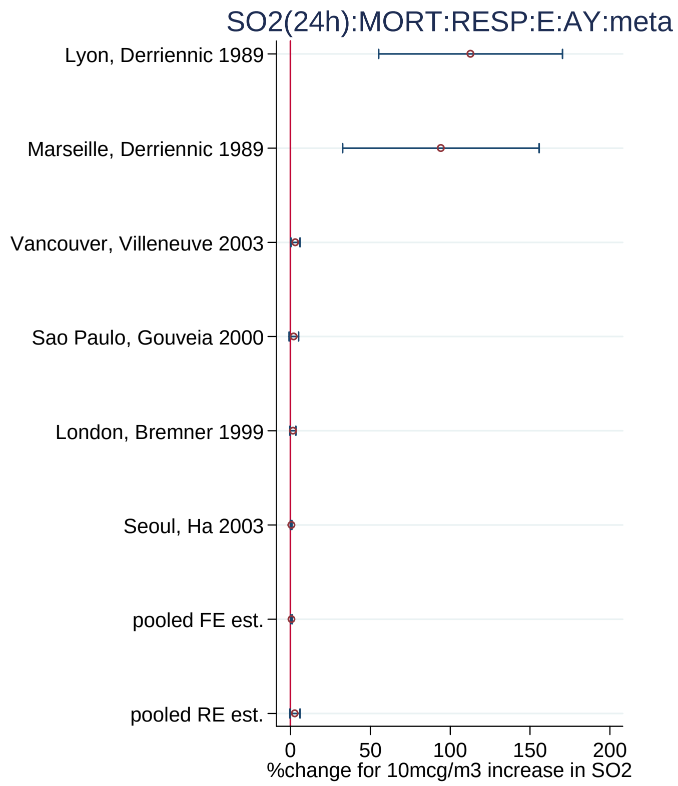

Time Series SO_2

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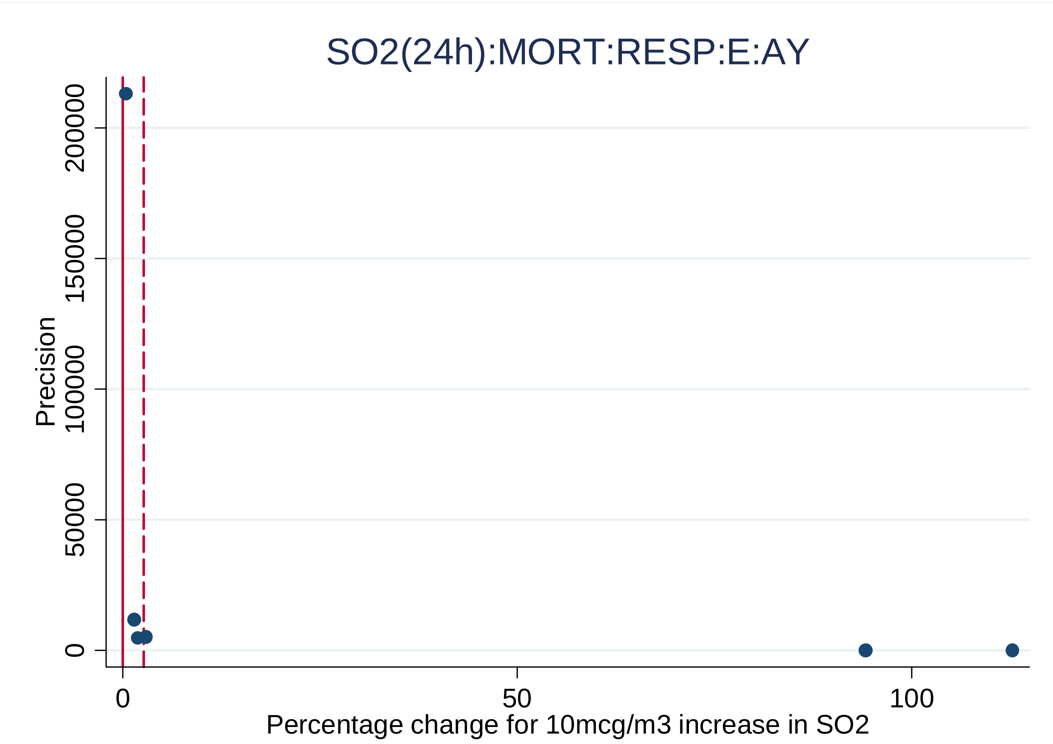

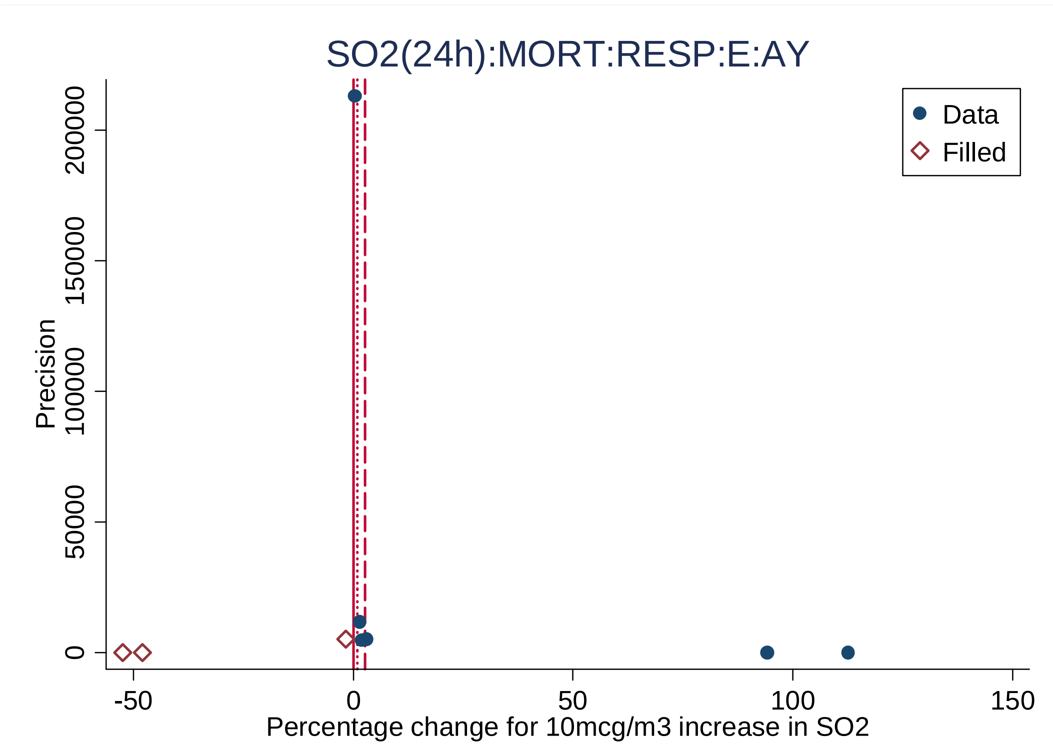

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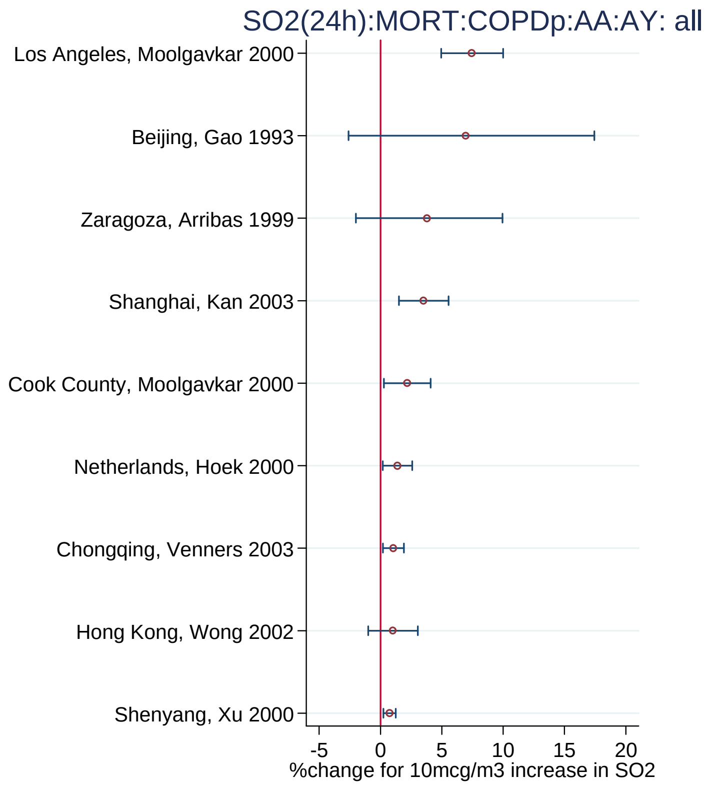

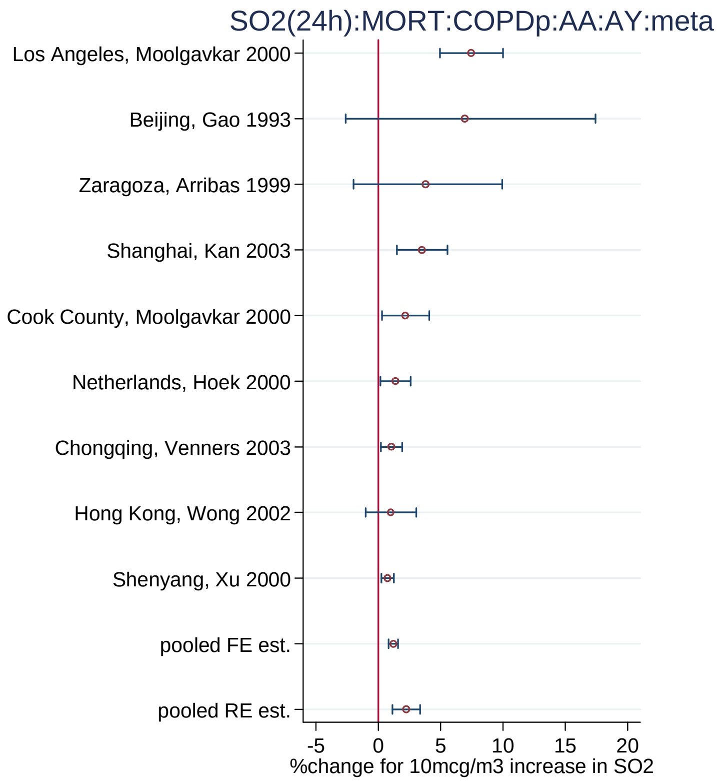

Time Series SO_2

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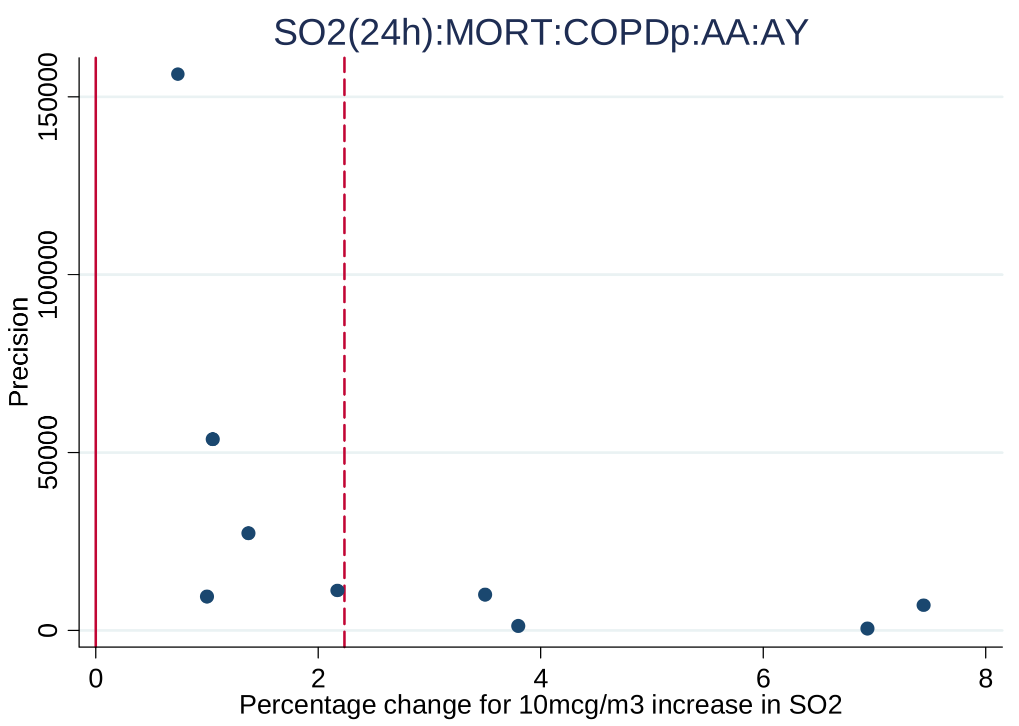
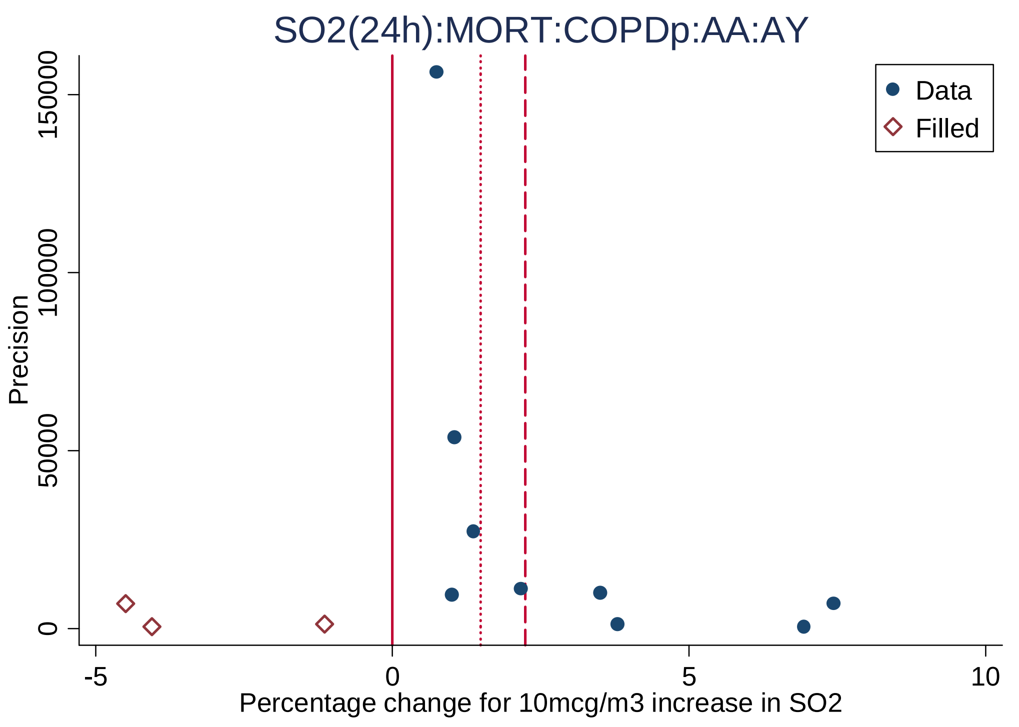


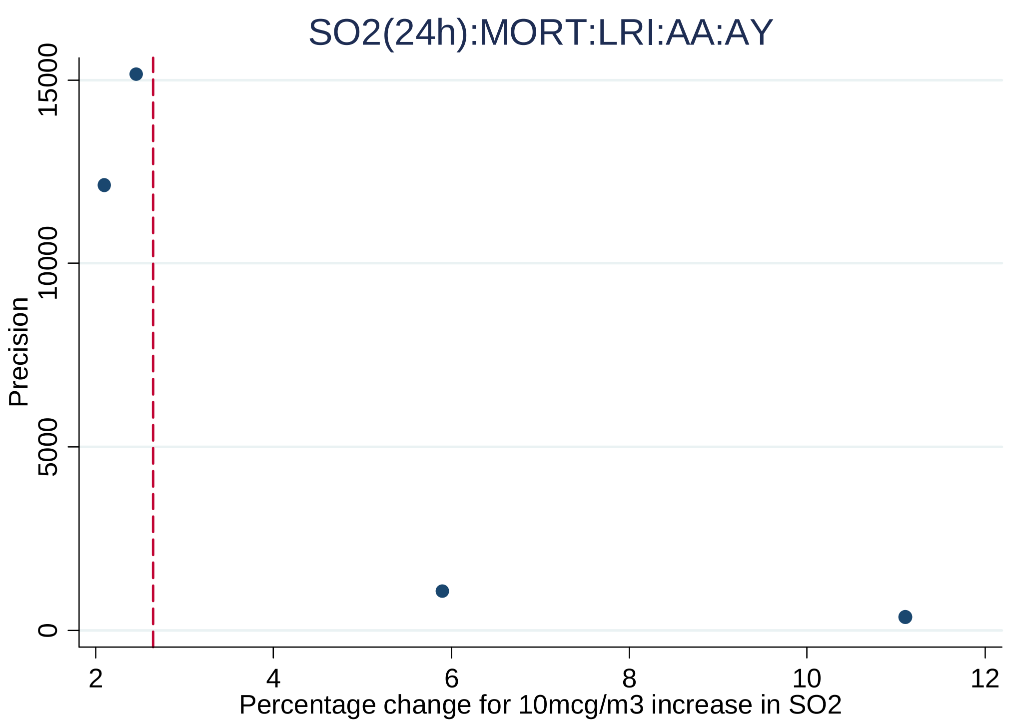


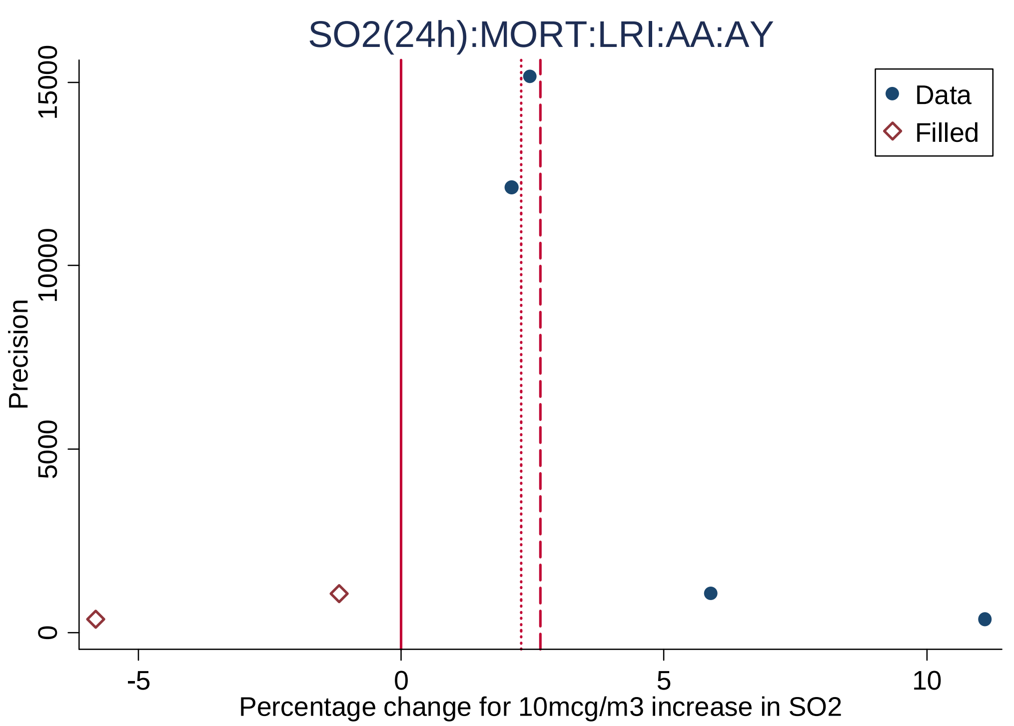
Time Series SO_2

Set 12

Time Series SO_2

Set 12





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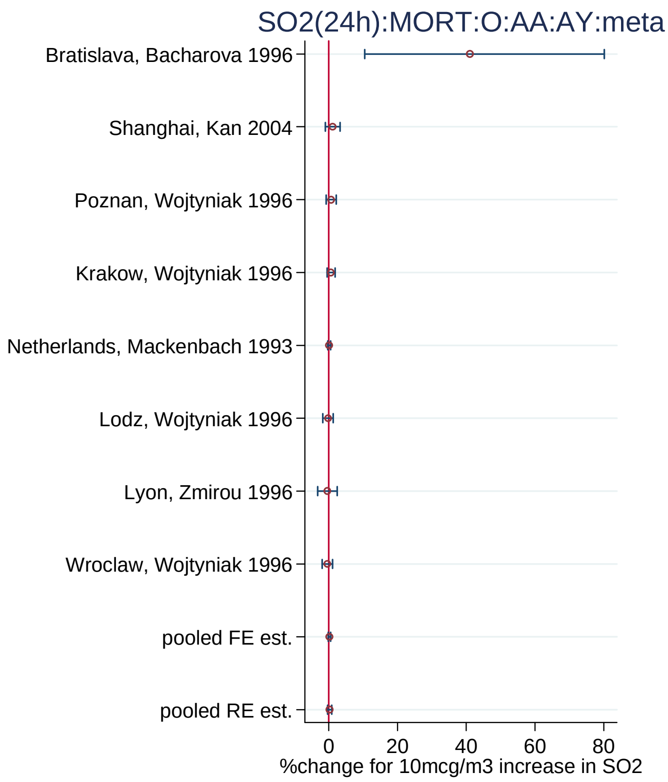

Time Series SO_2

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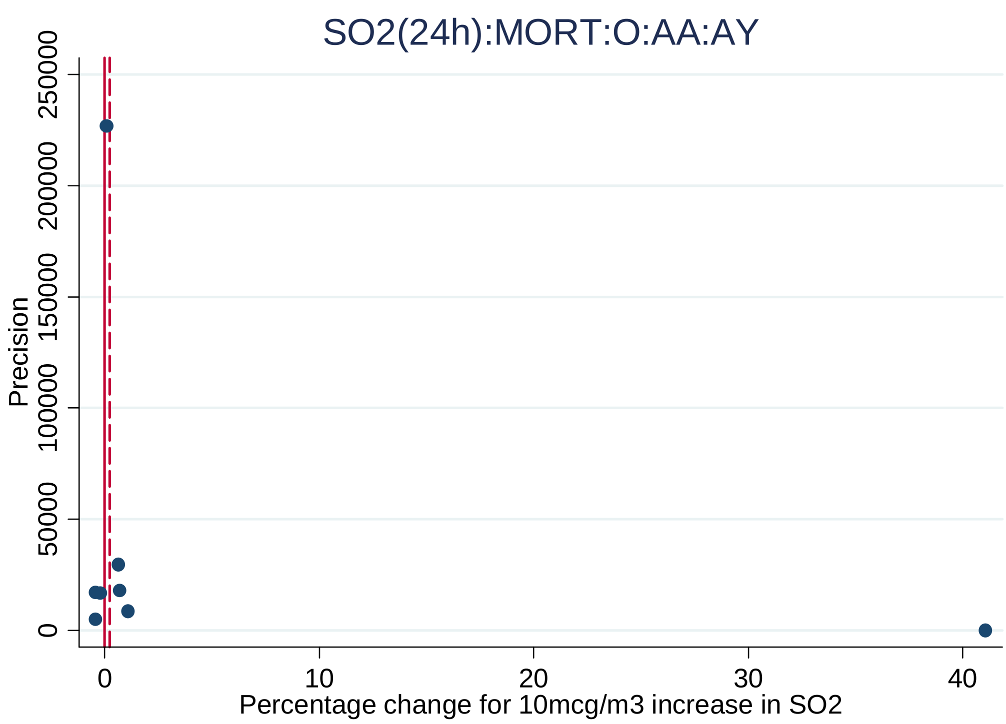

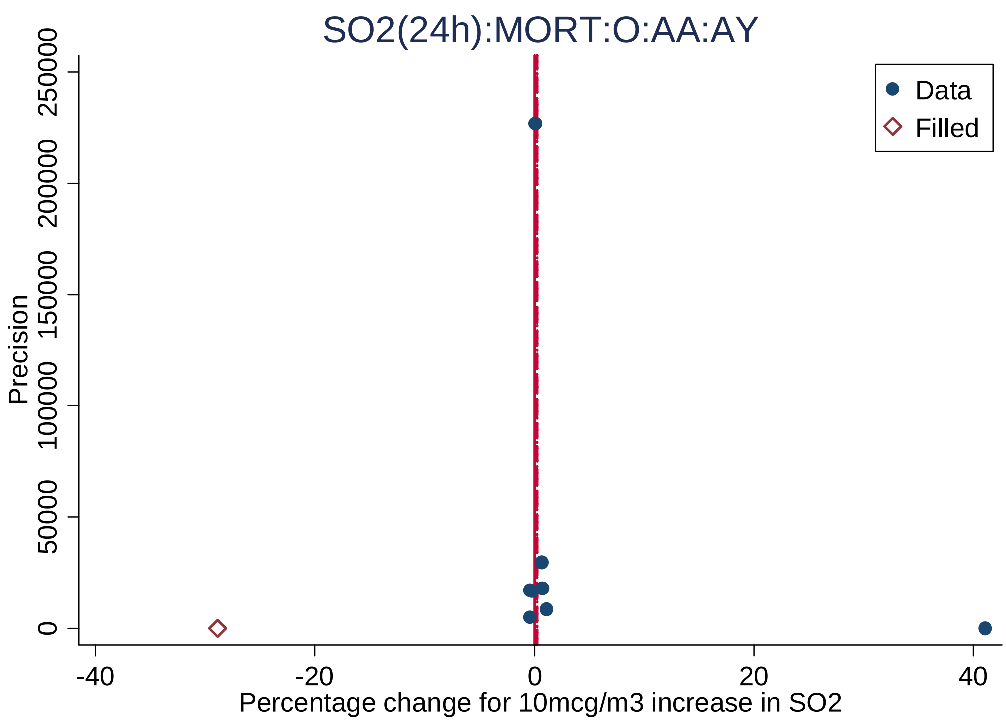

Time Series SO_2

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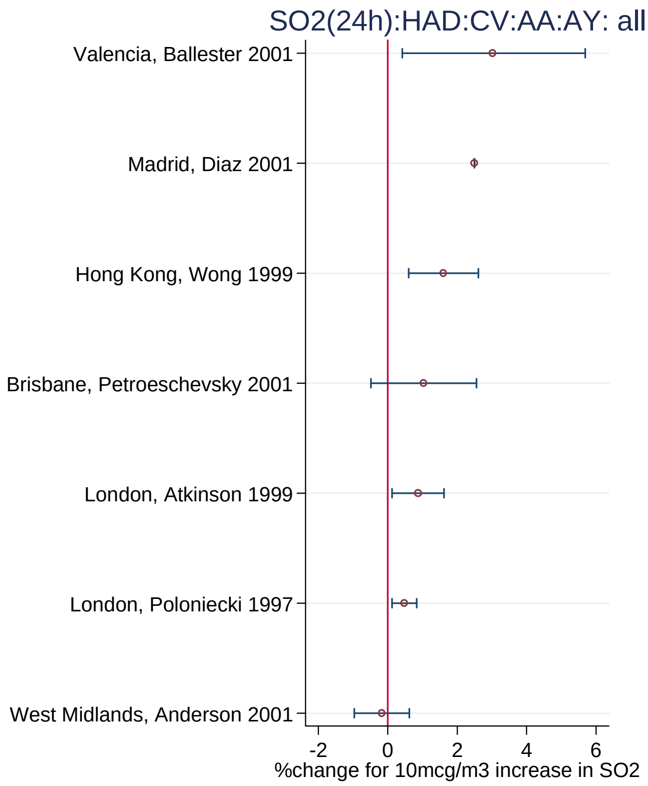

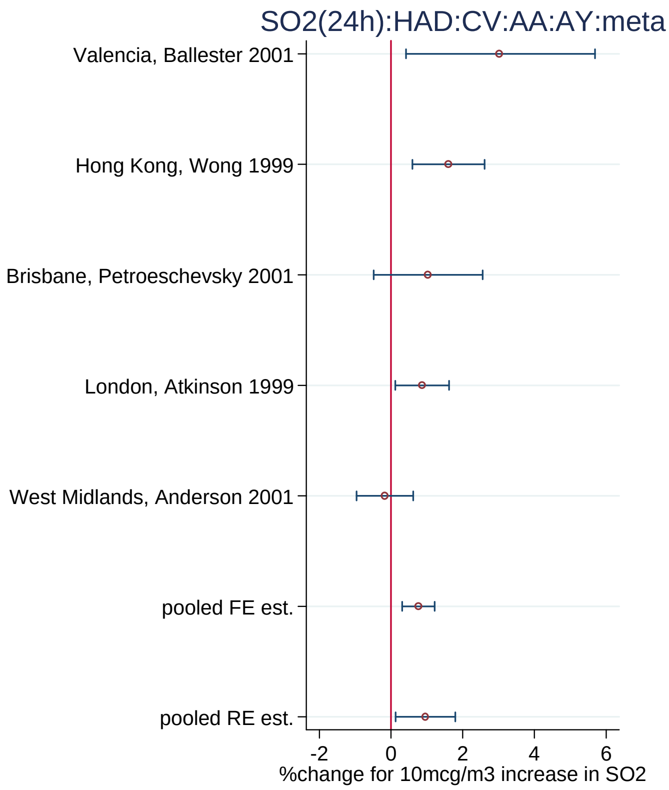

Time Series SO_2

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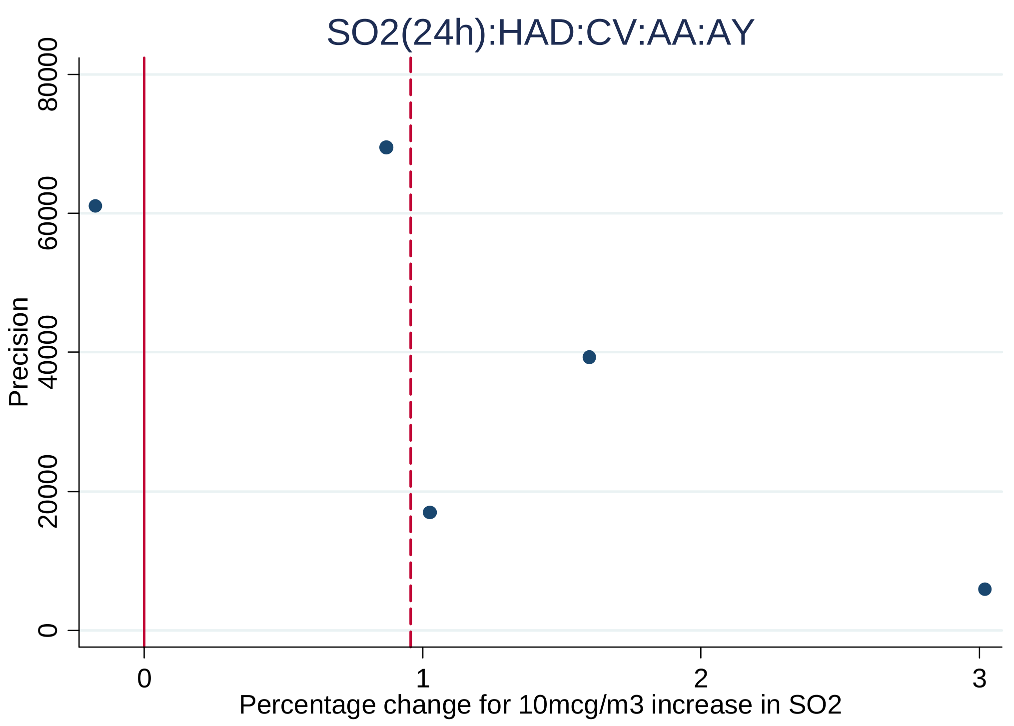

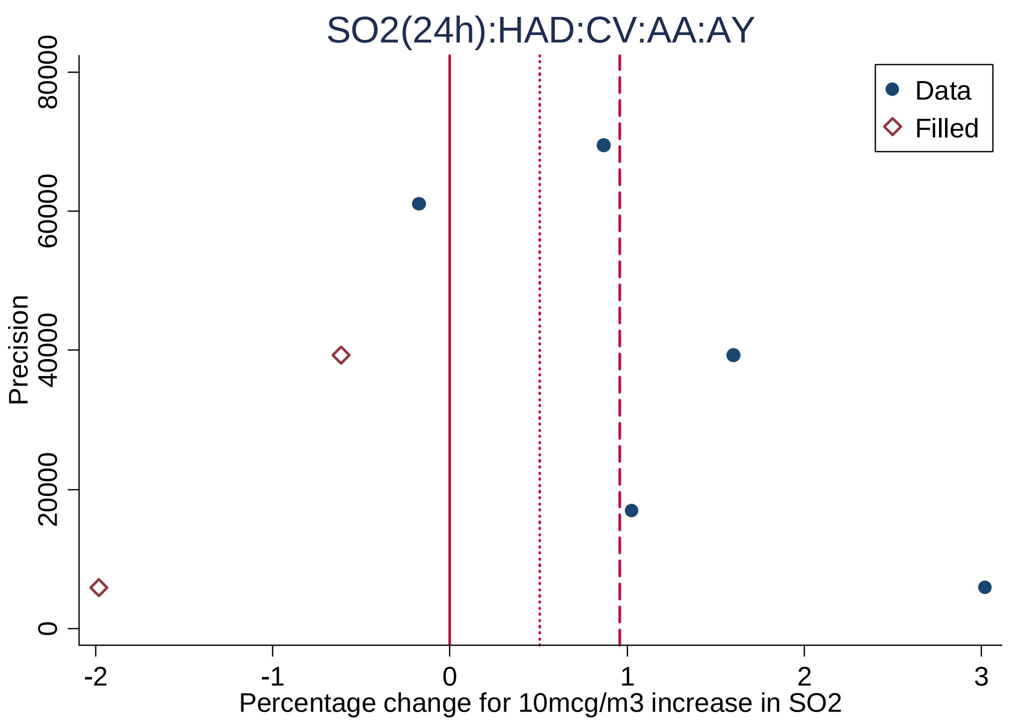

Time Series SO_2

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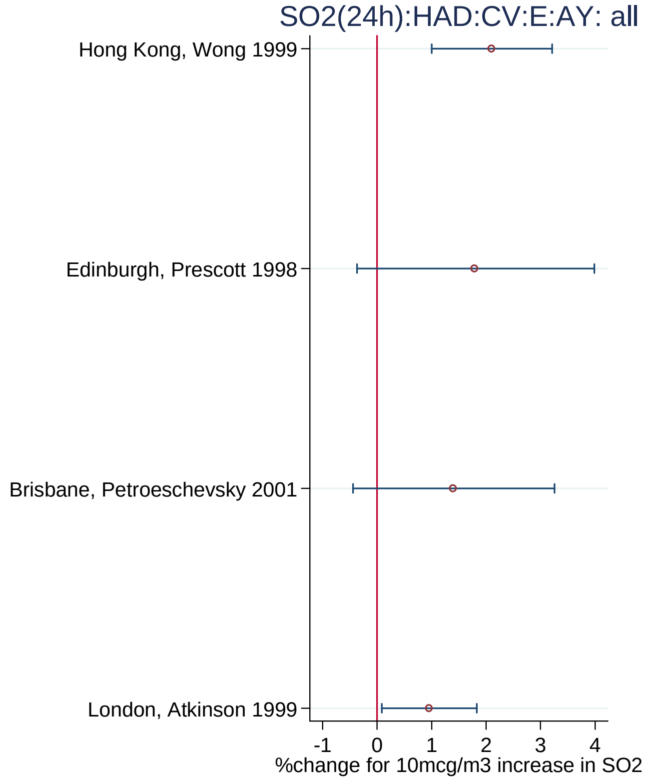

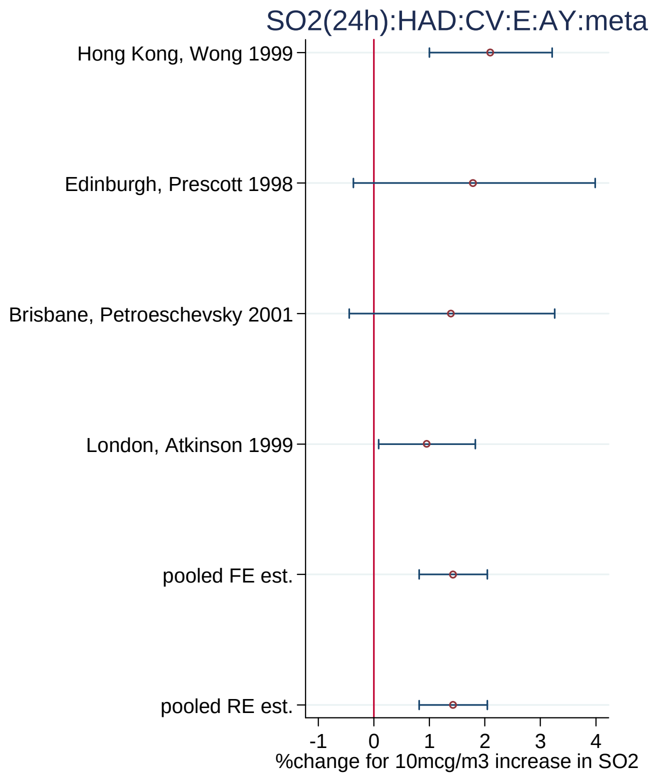

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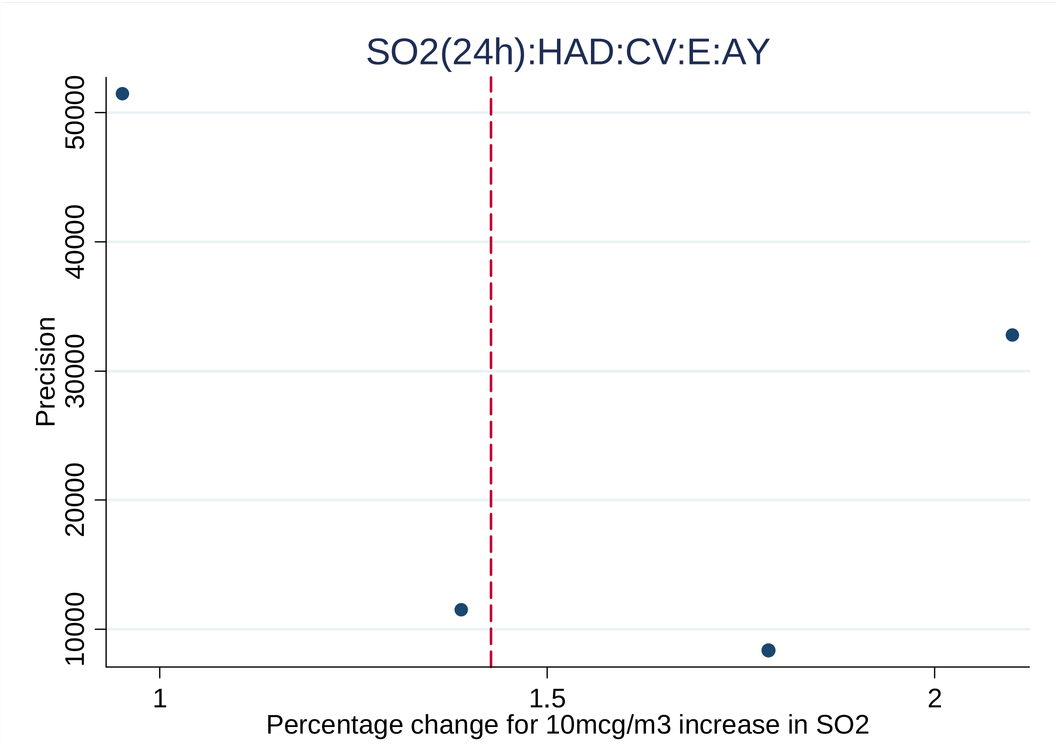

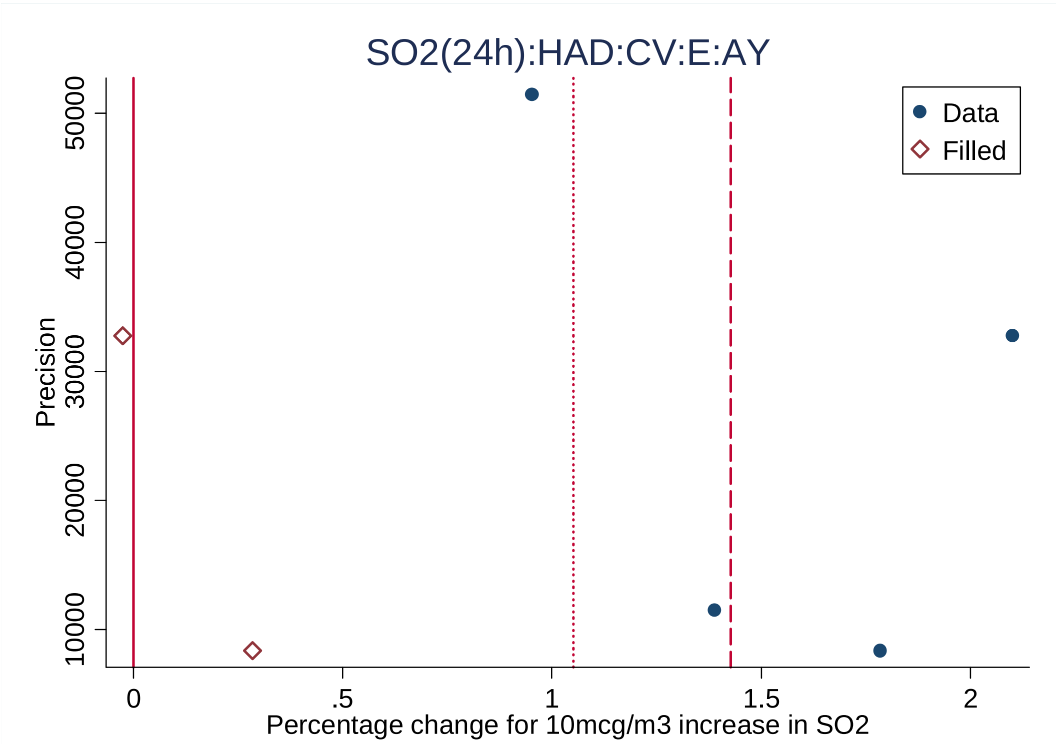

Time Series SO_2

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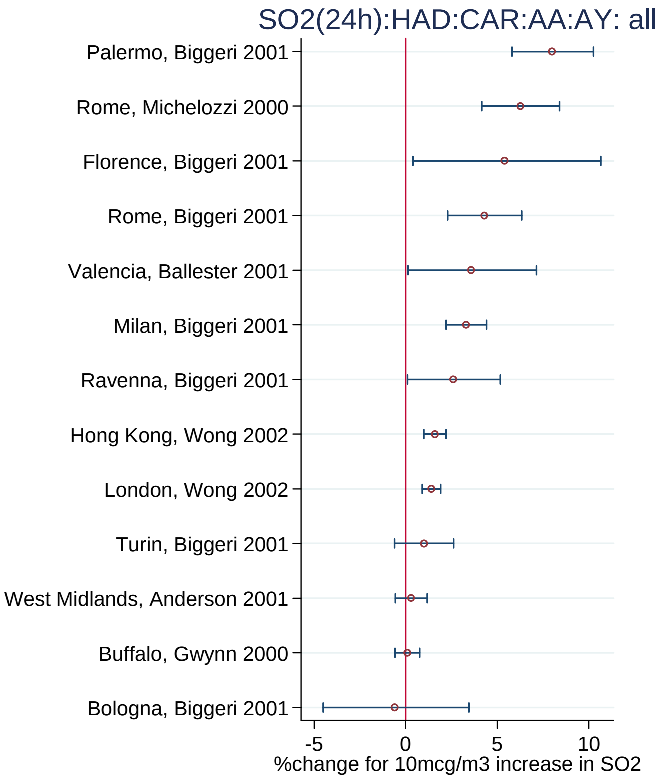

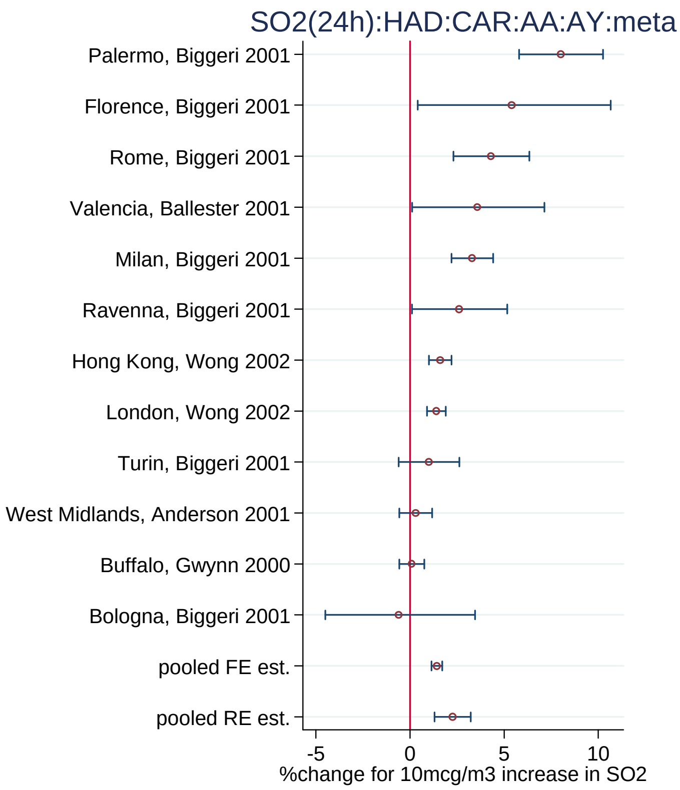

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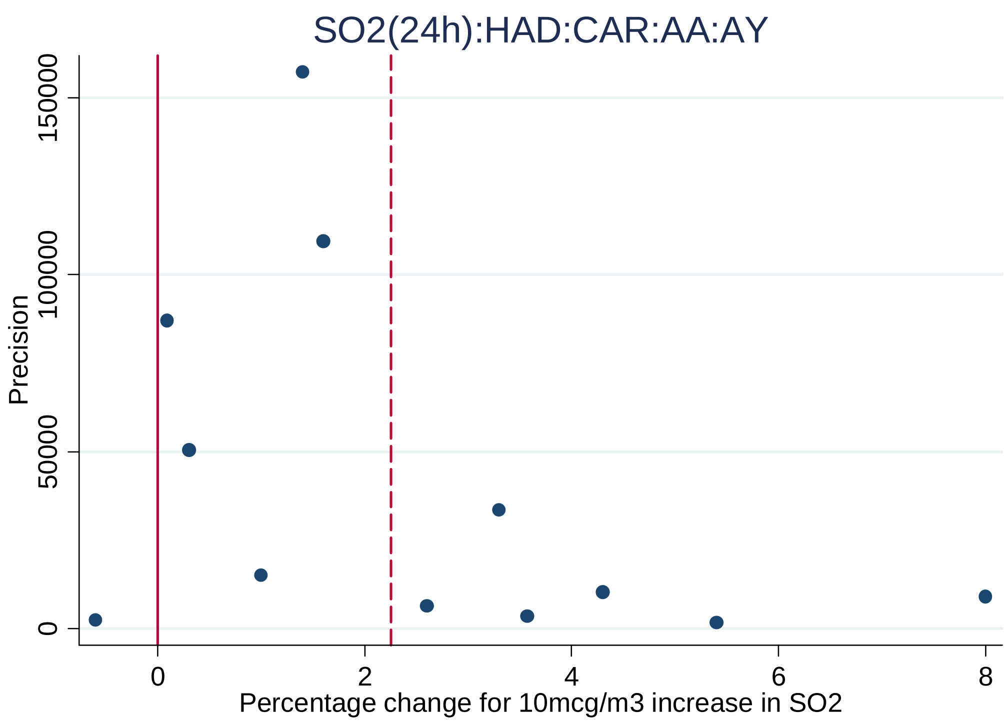

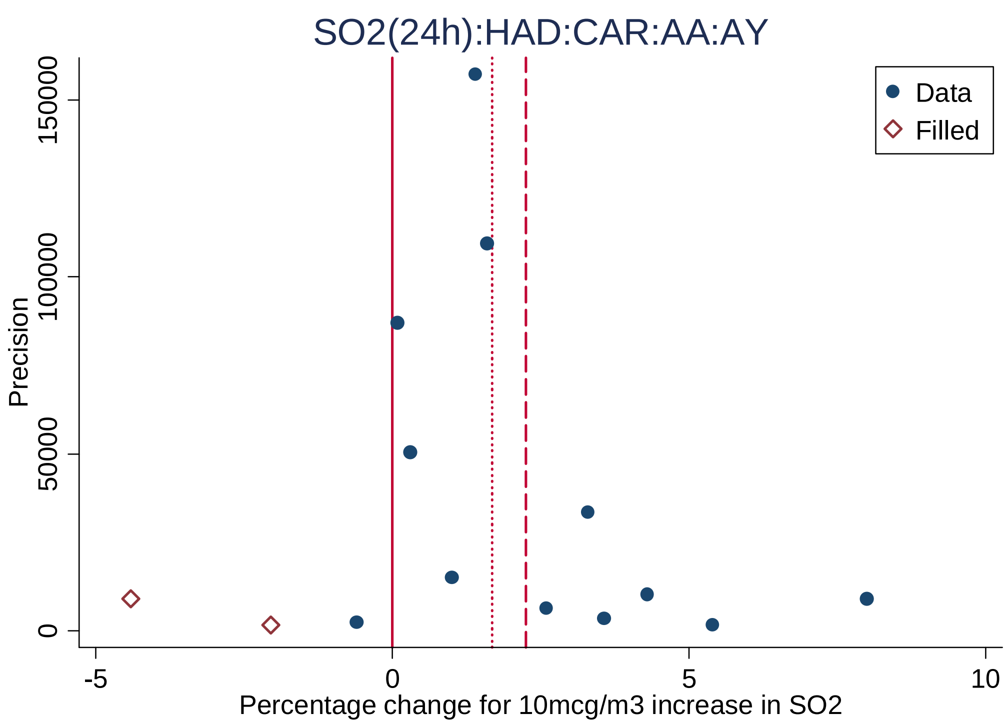

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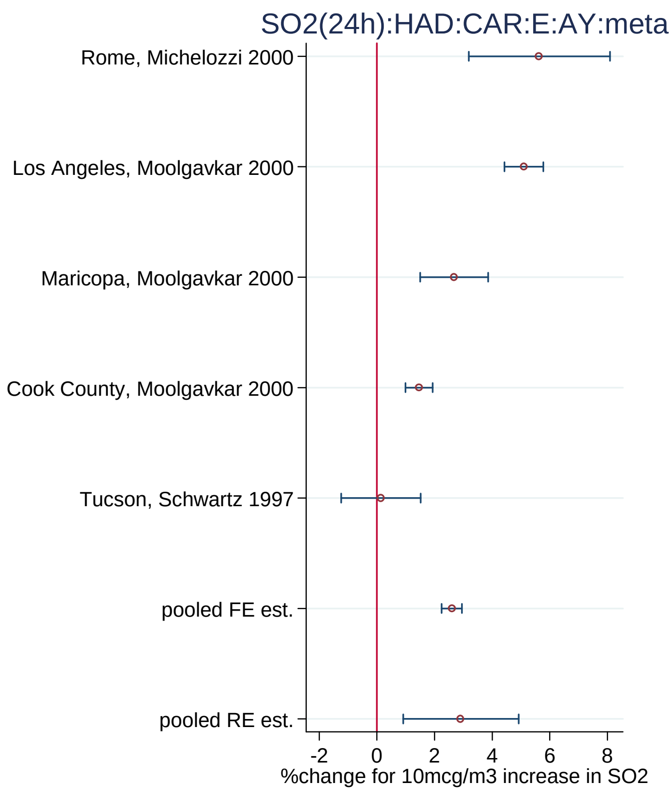

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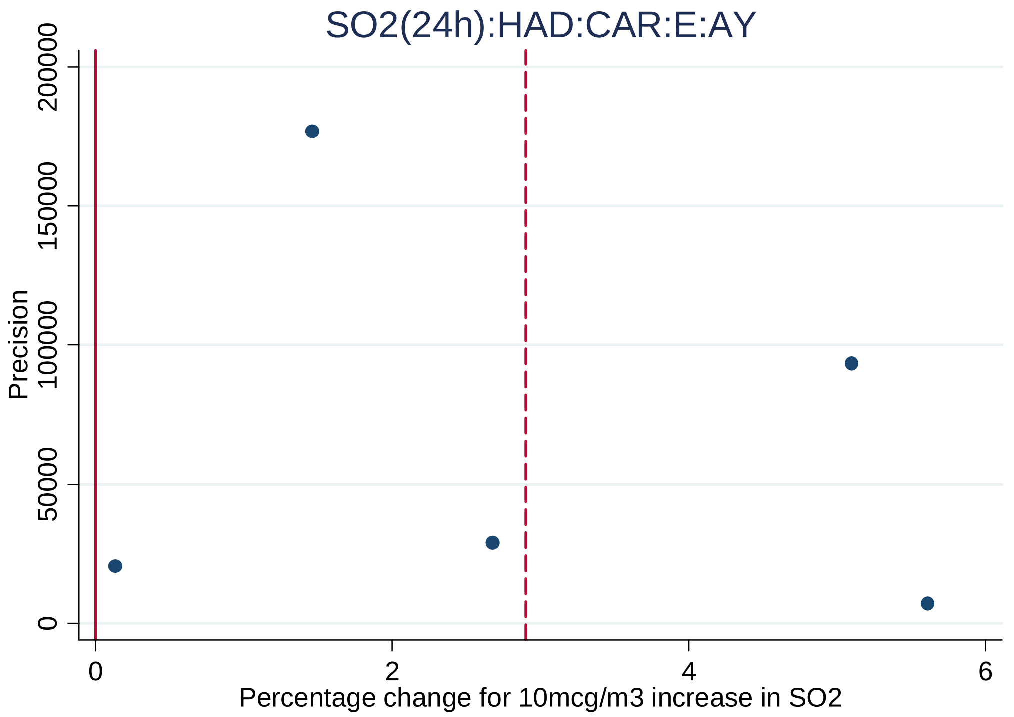

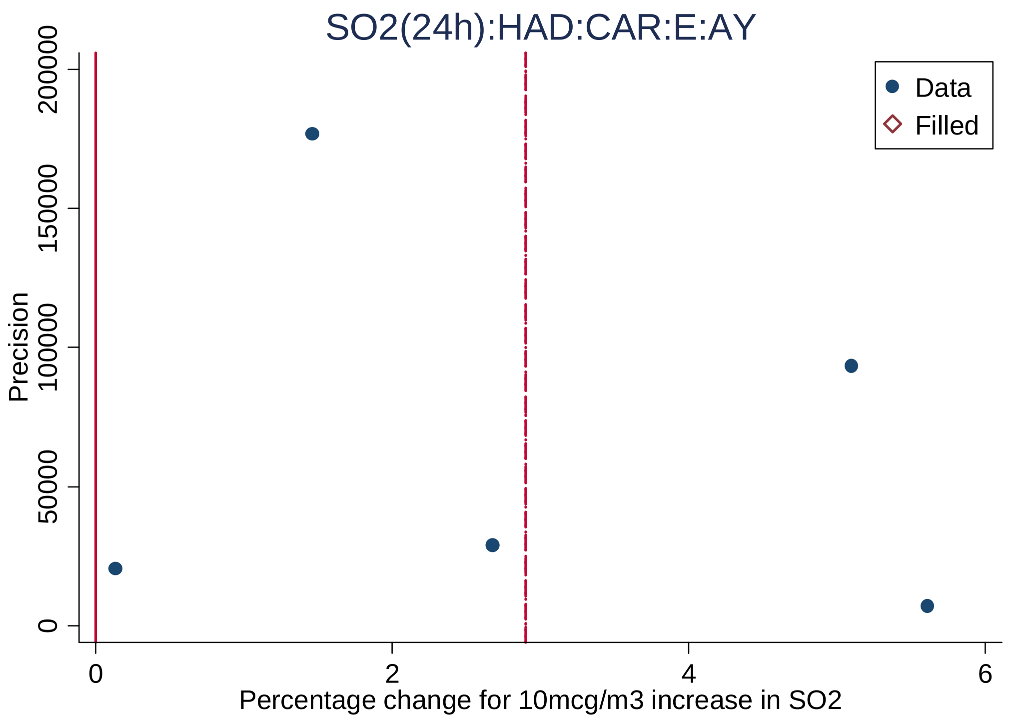

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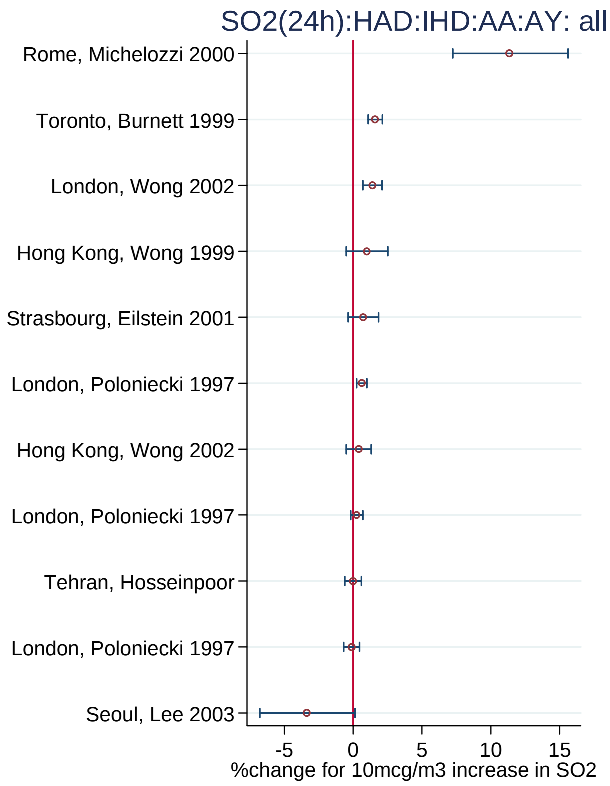

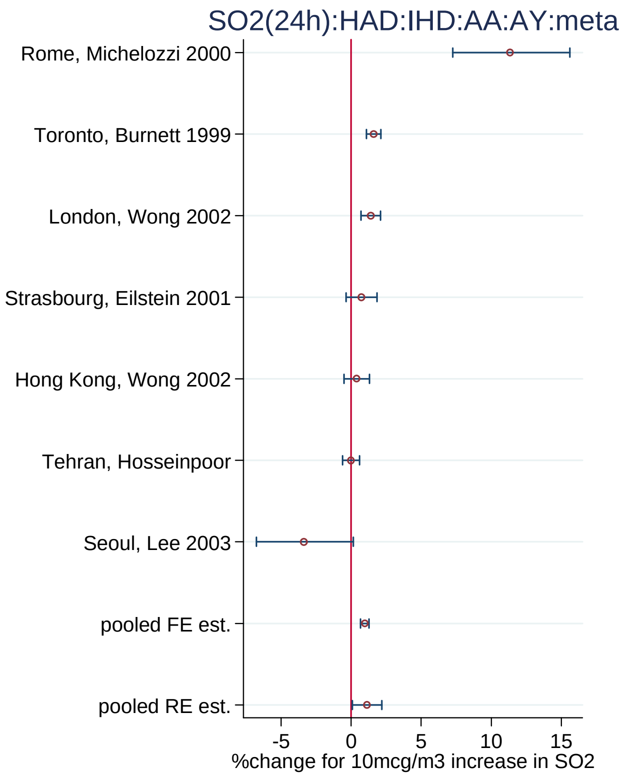

Time Series SO_2

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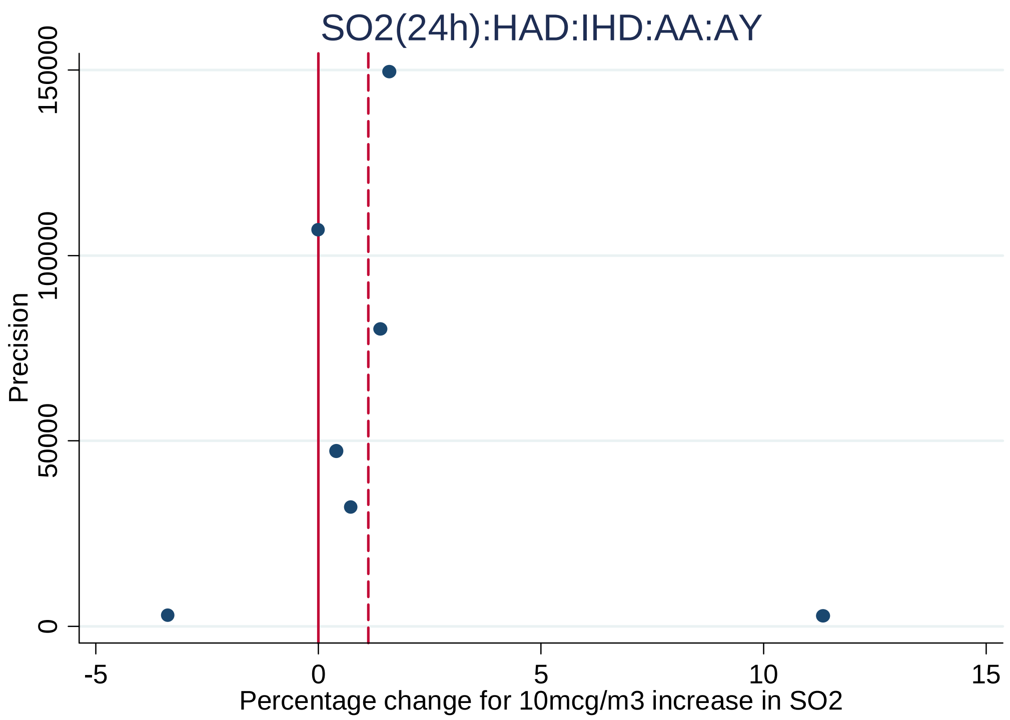

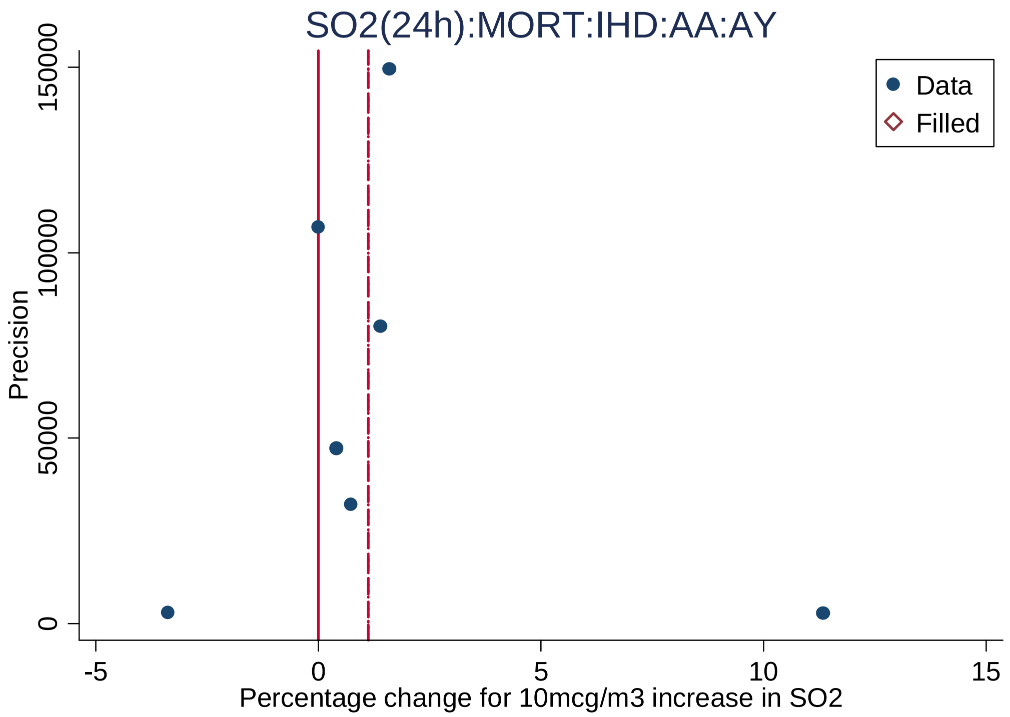

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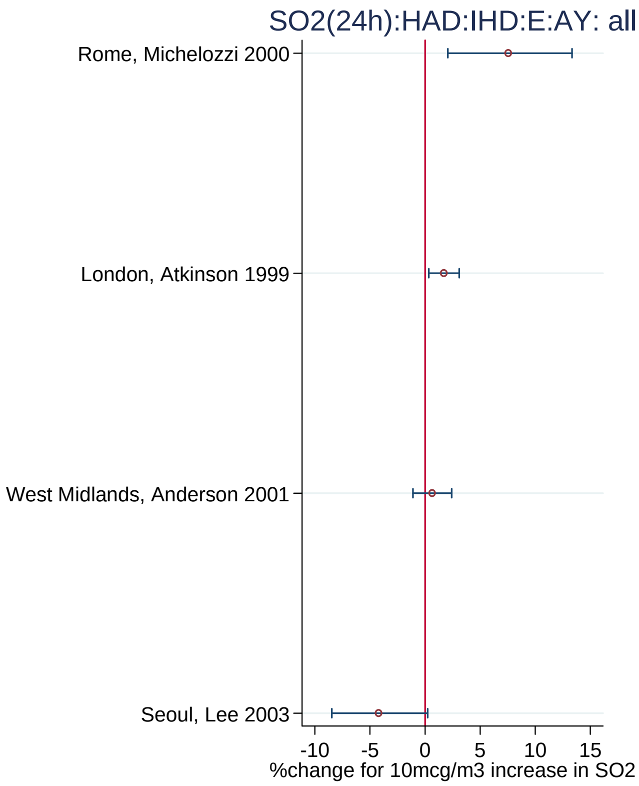

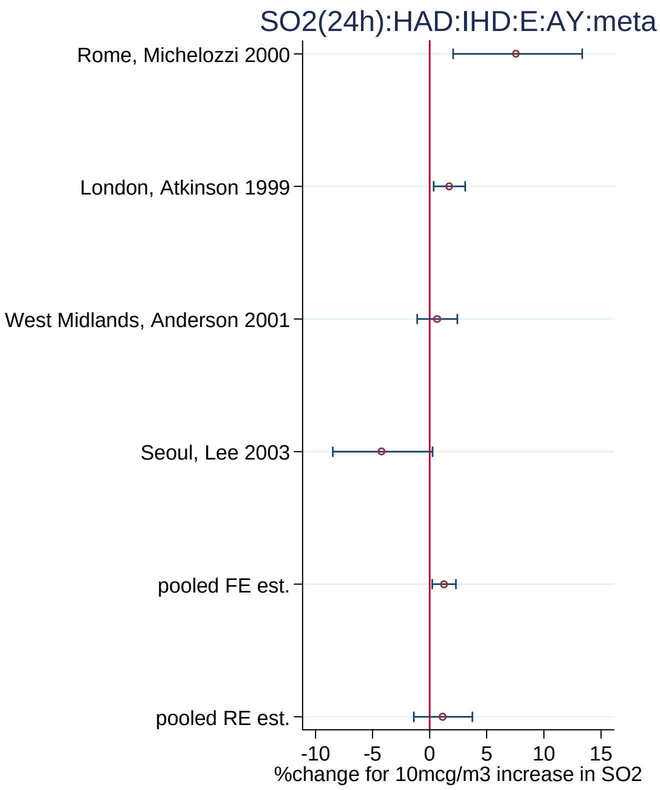

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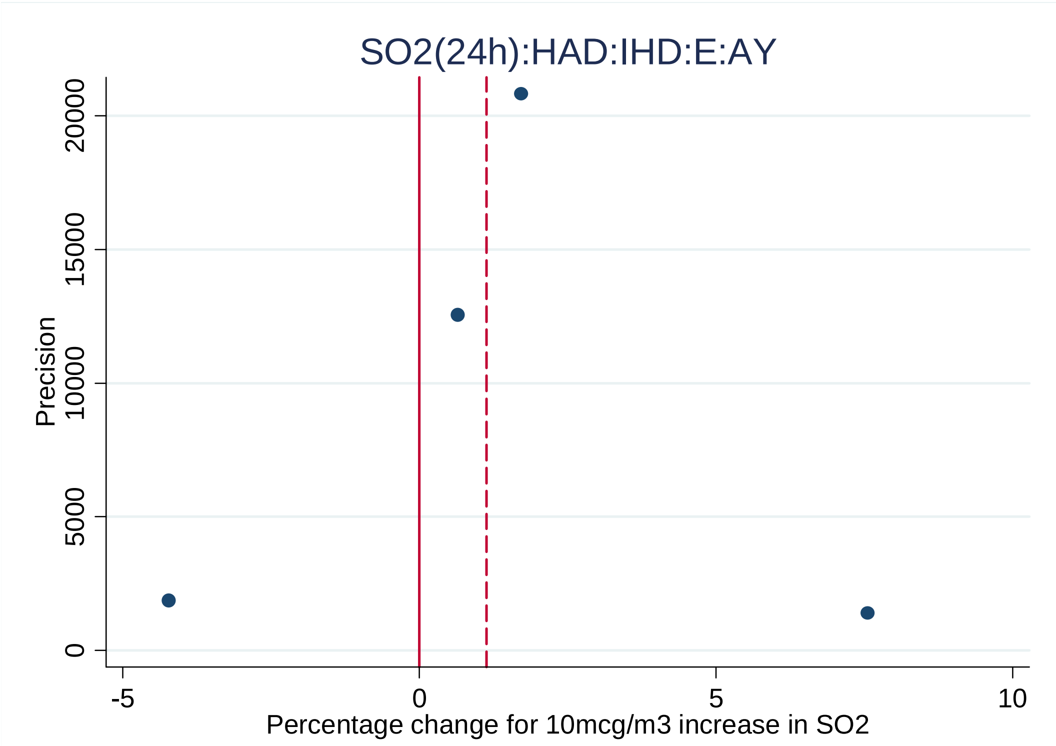

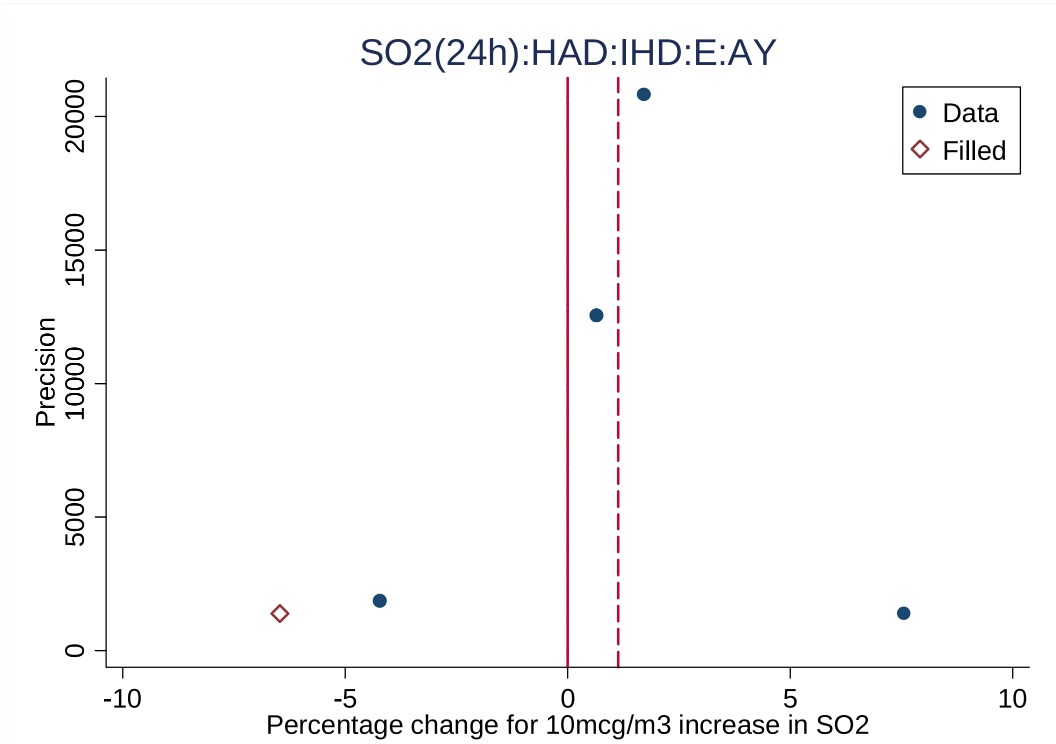

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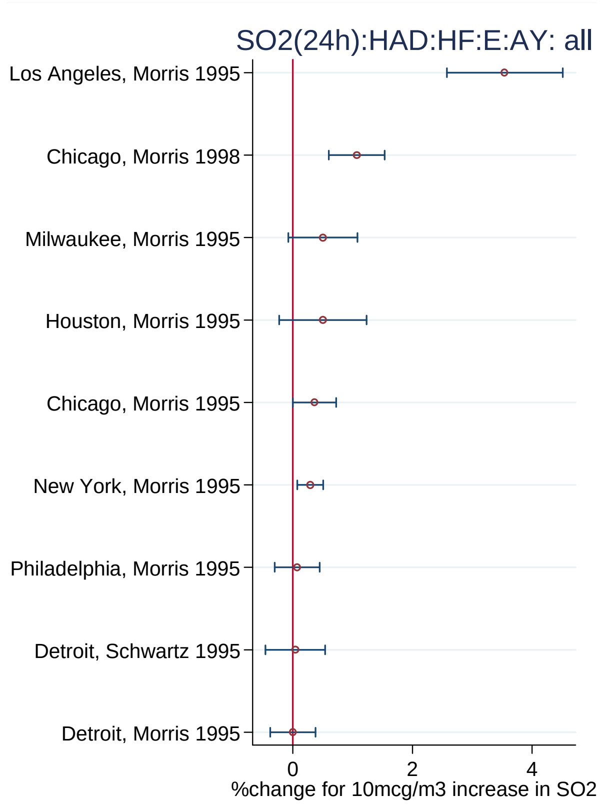

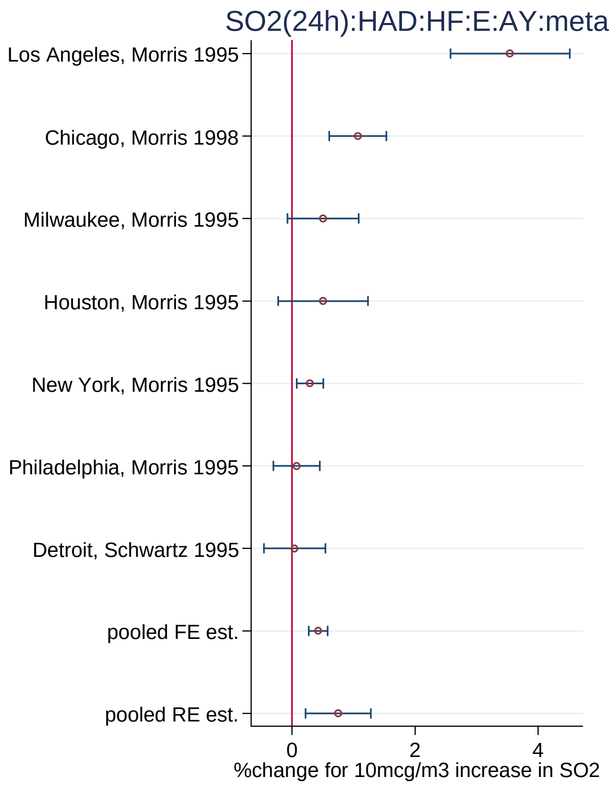

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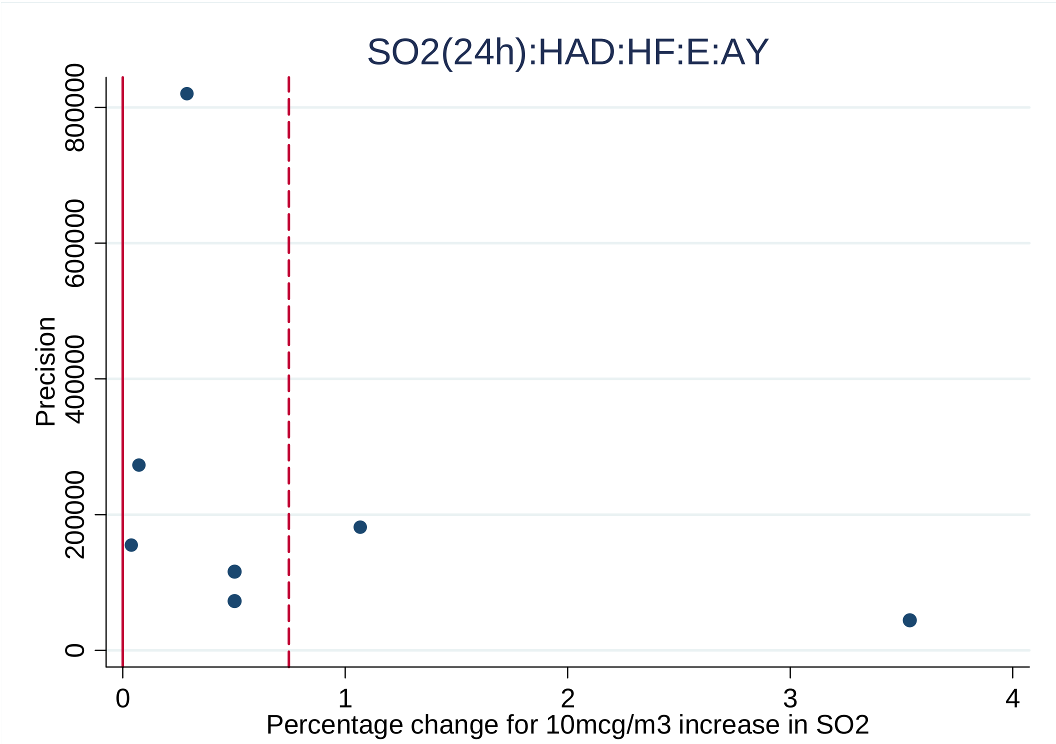

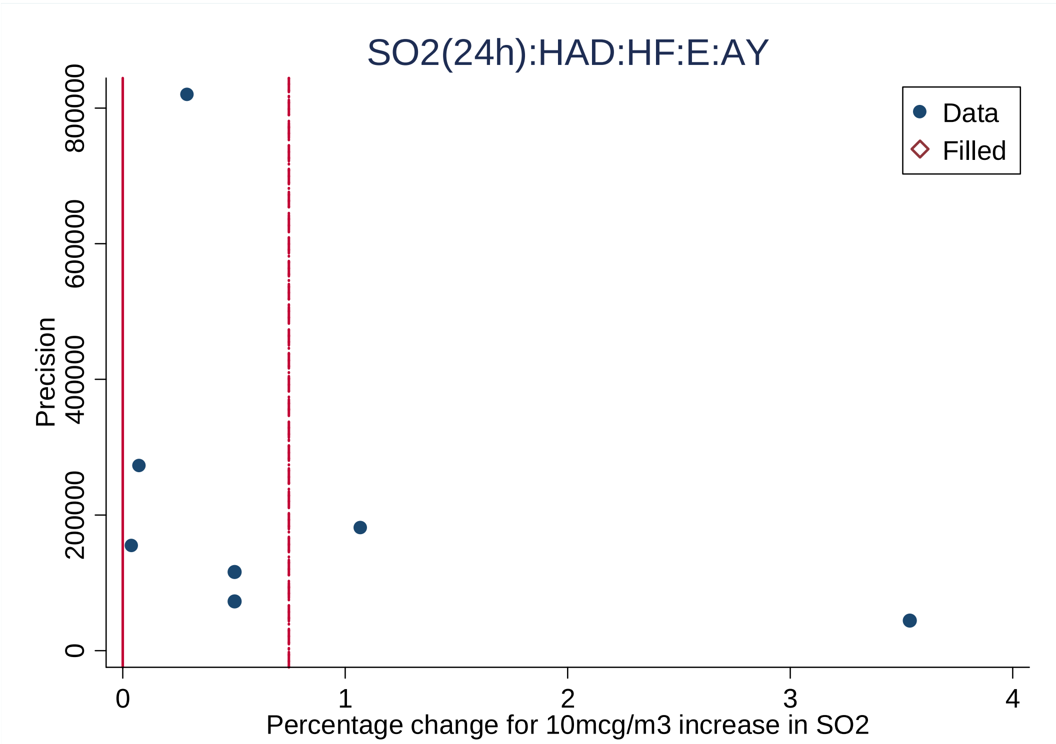

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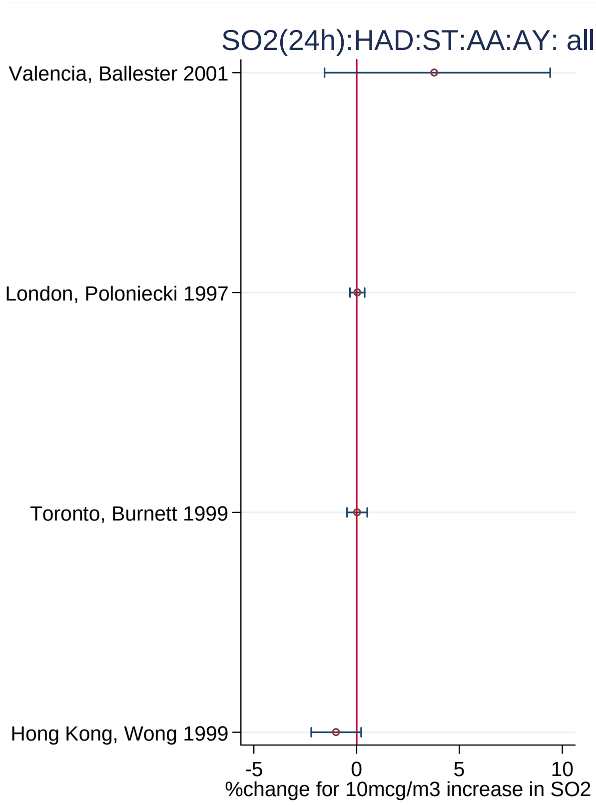

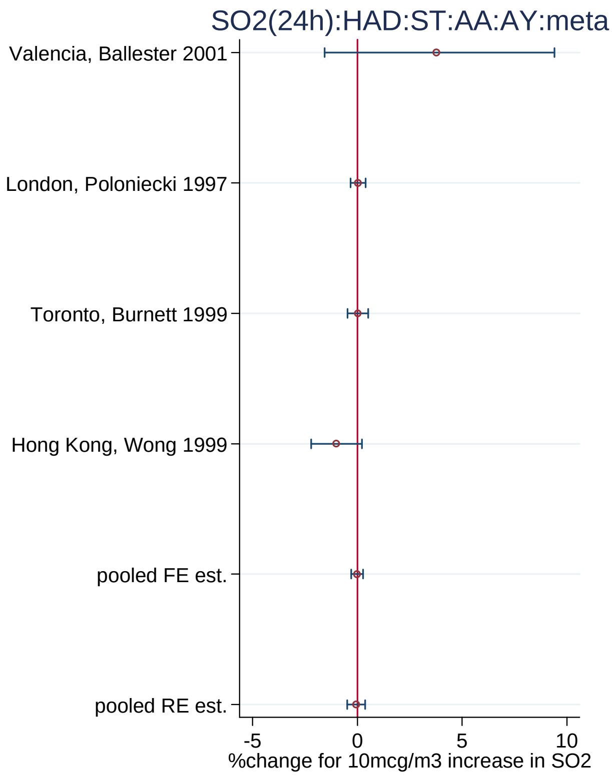

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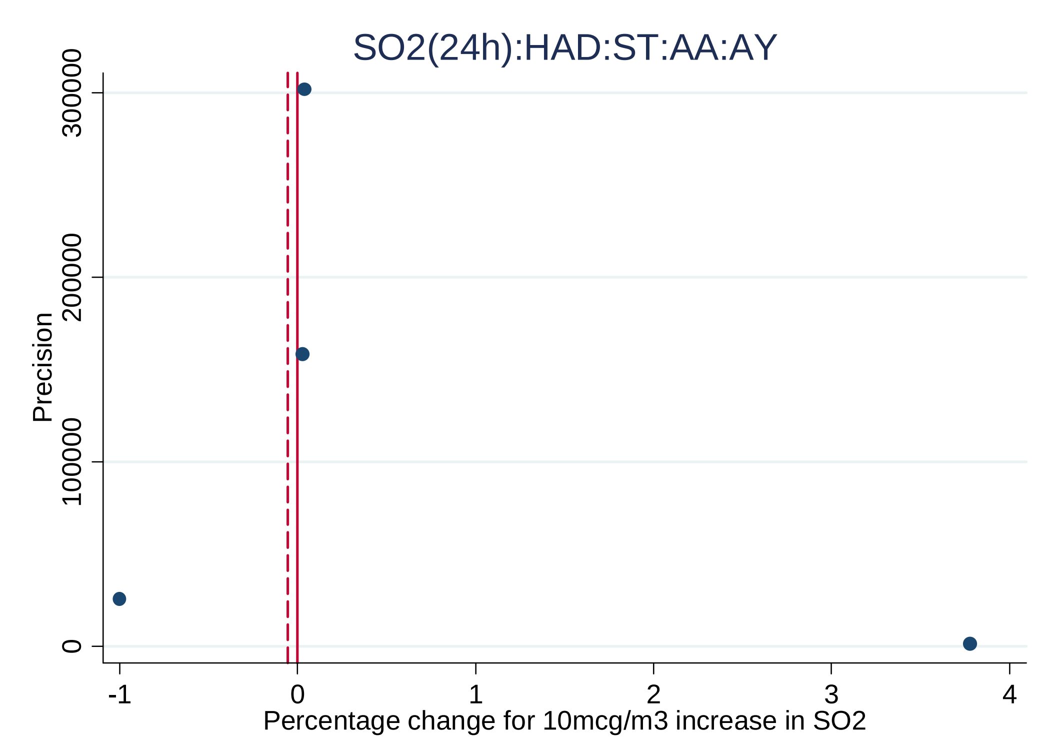

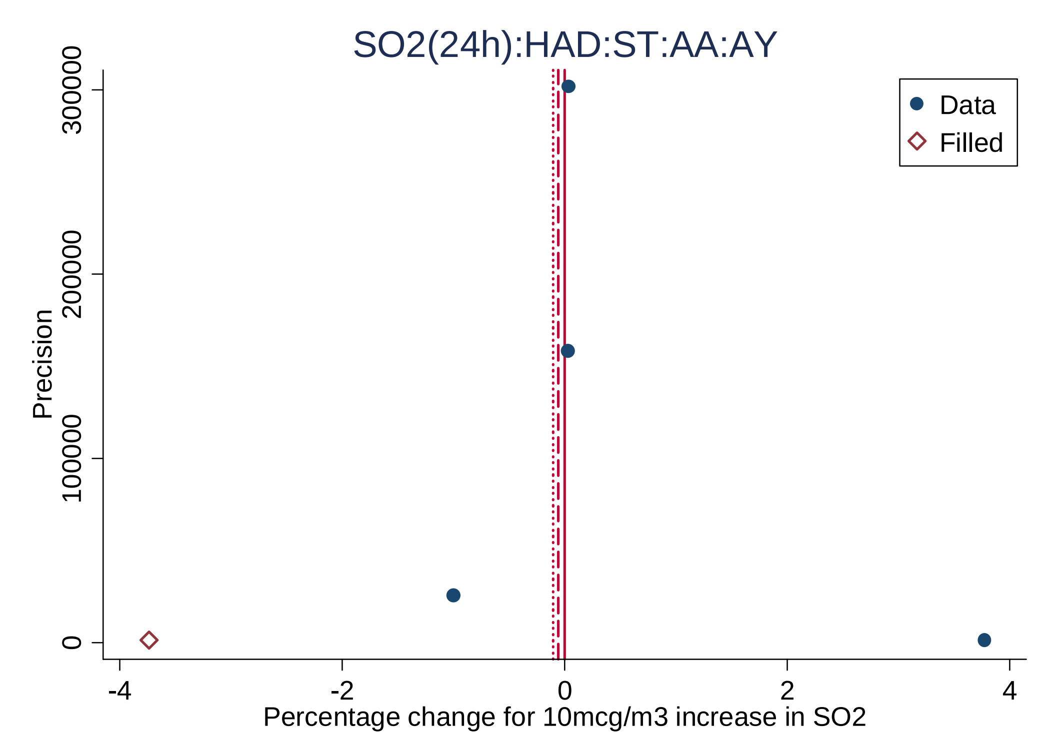

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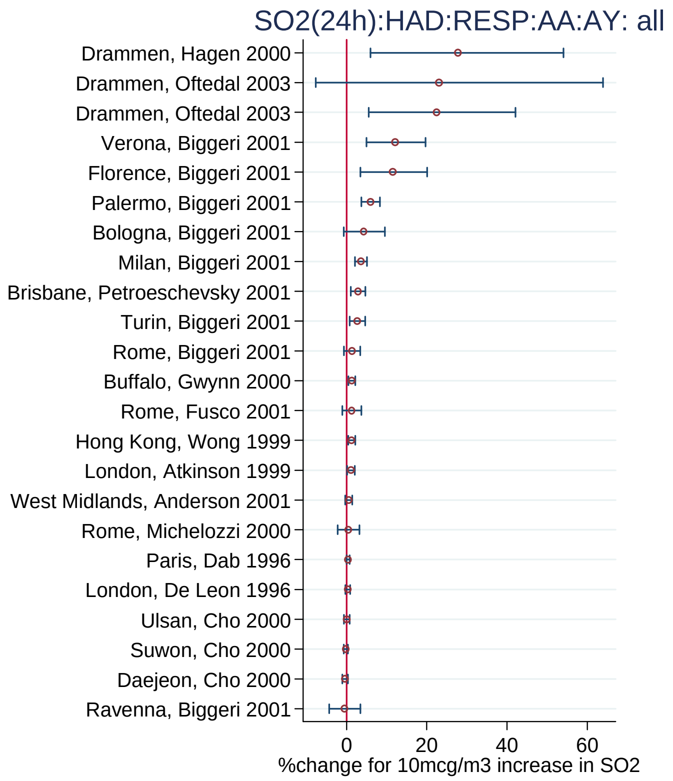

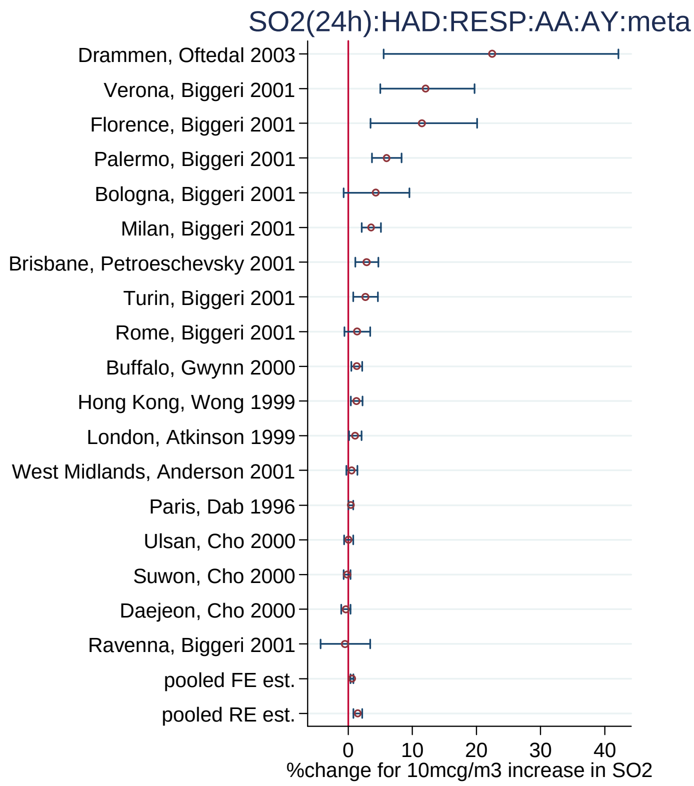

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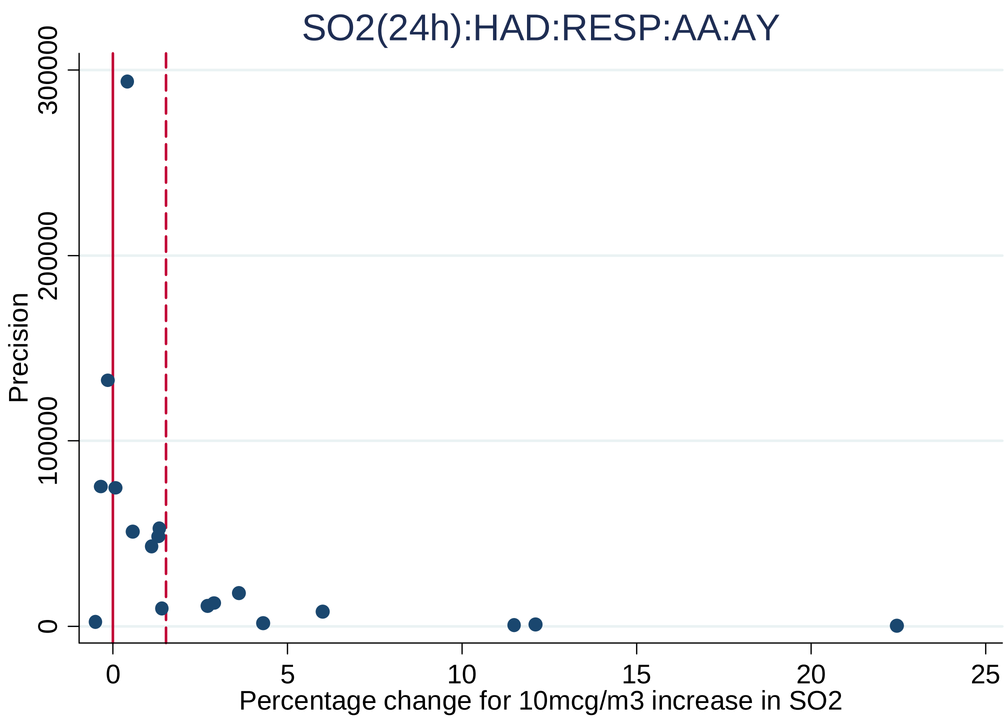

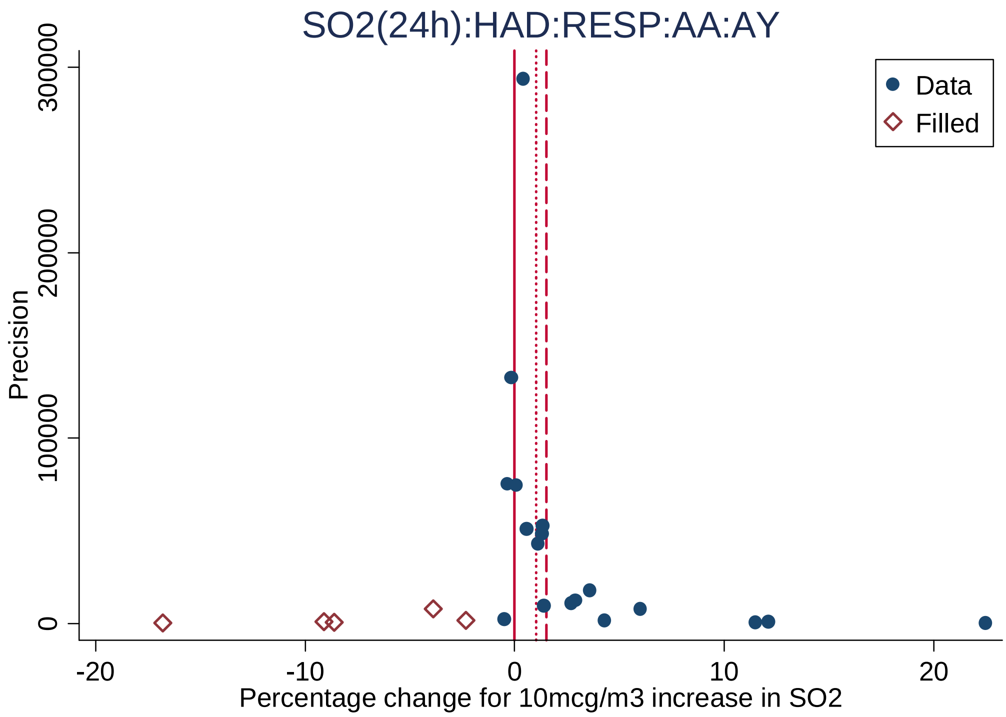

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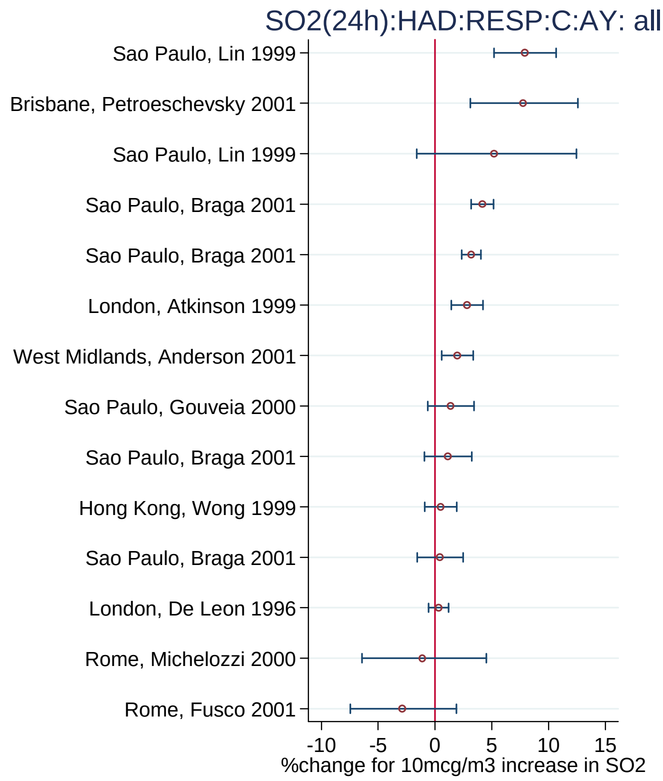

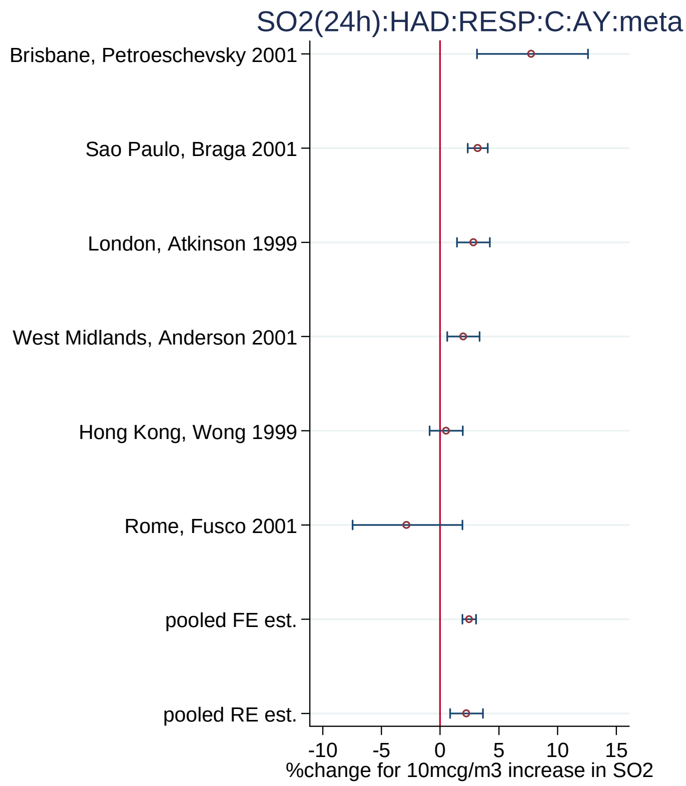

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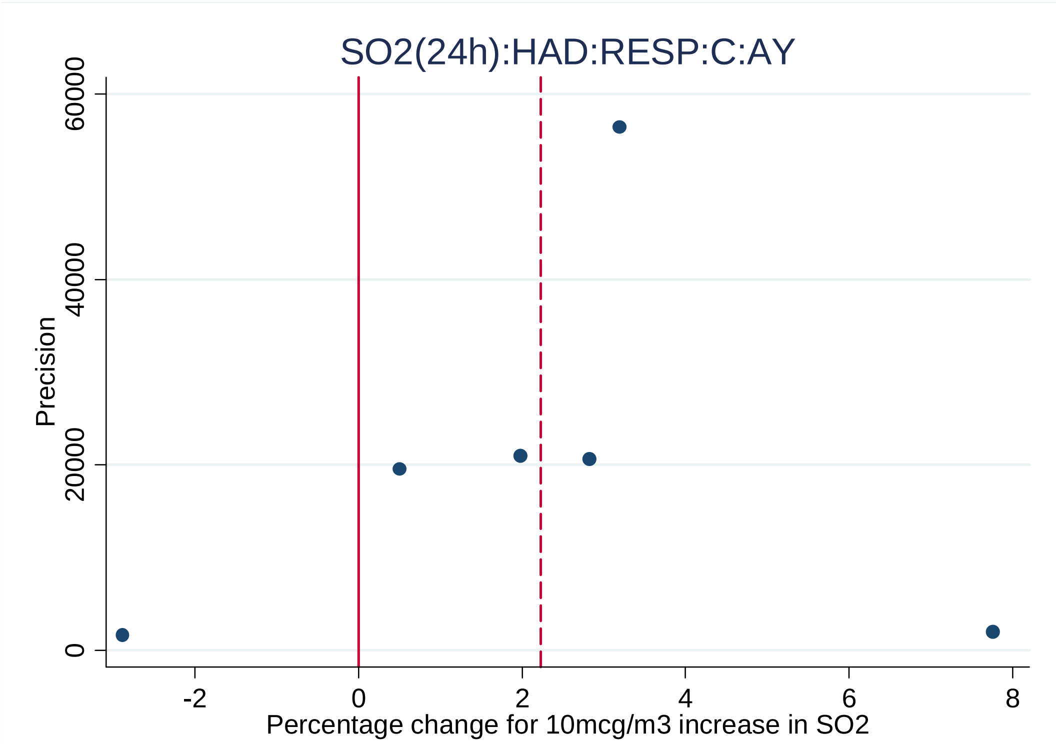

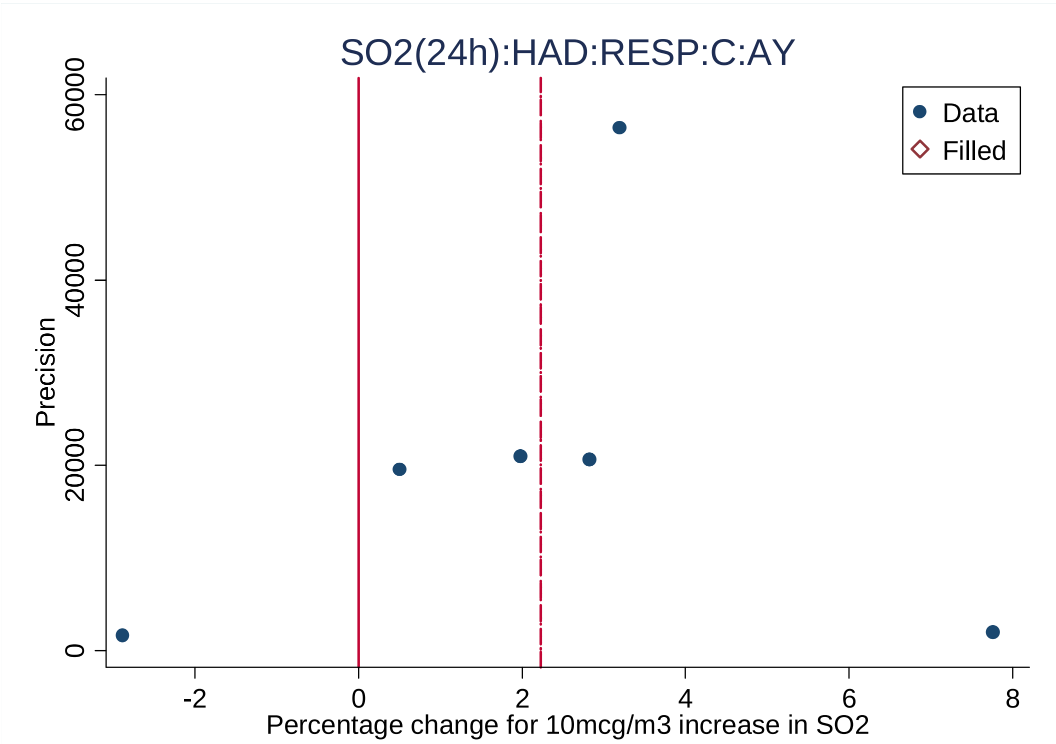

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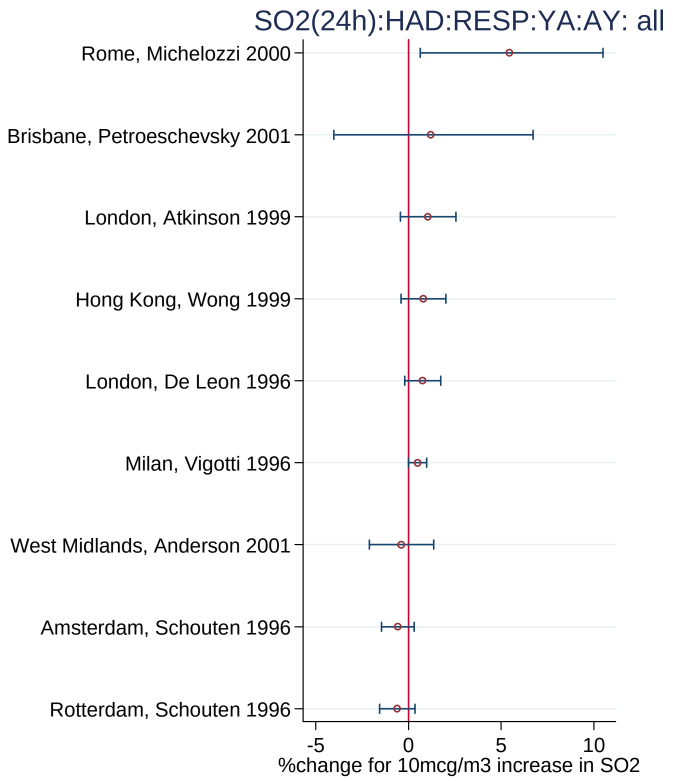

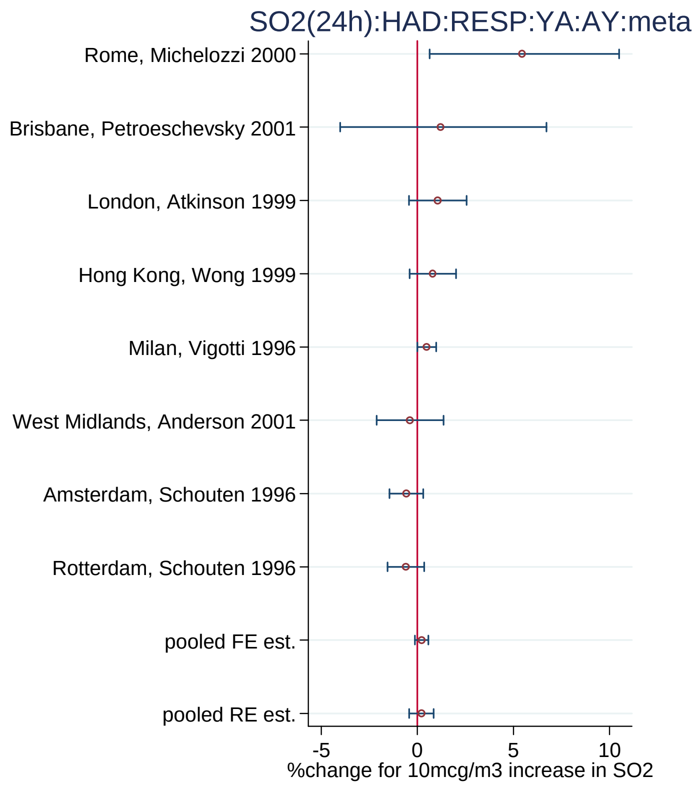

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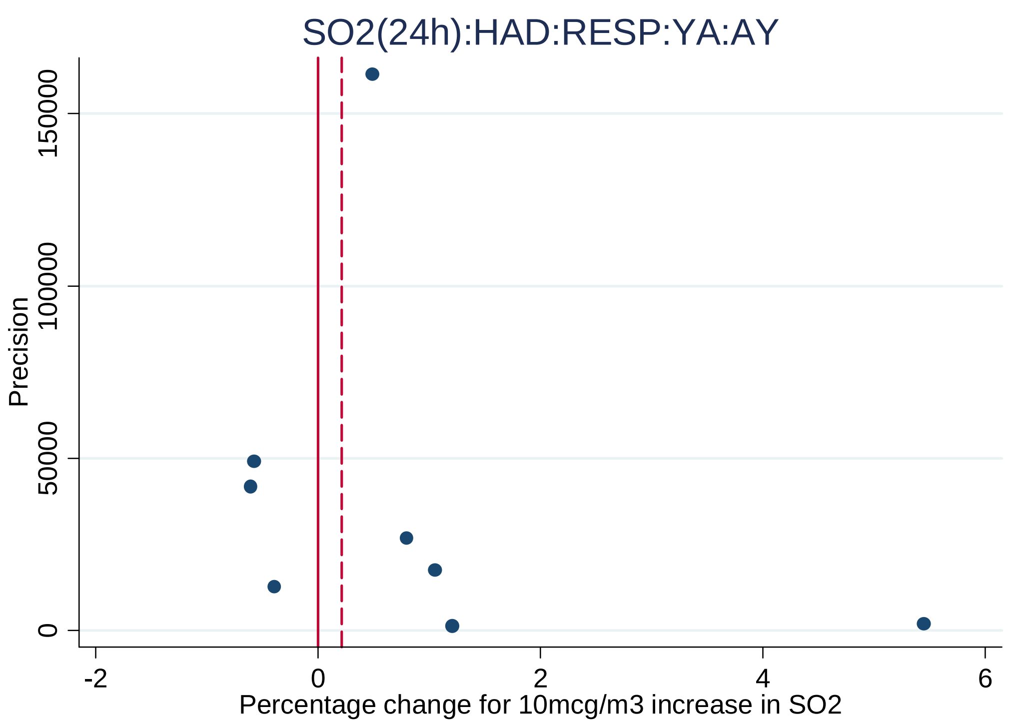

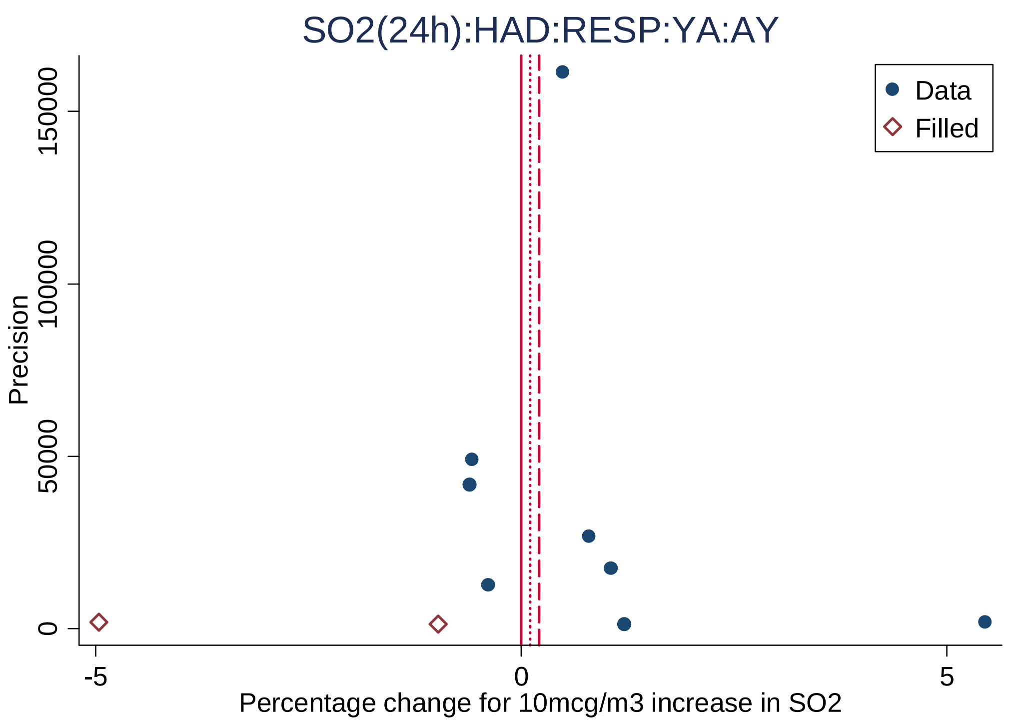

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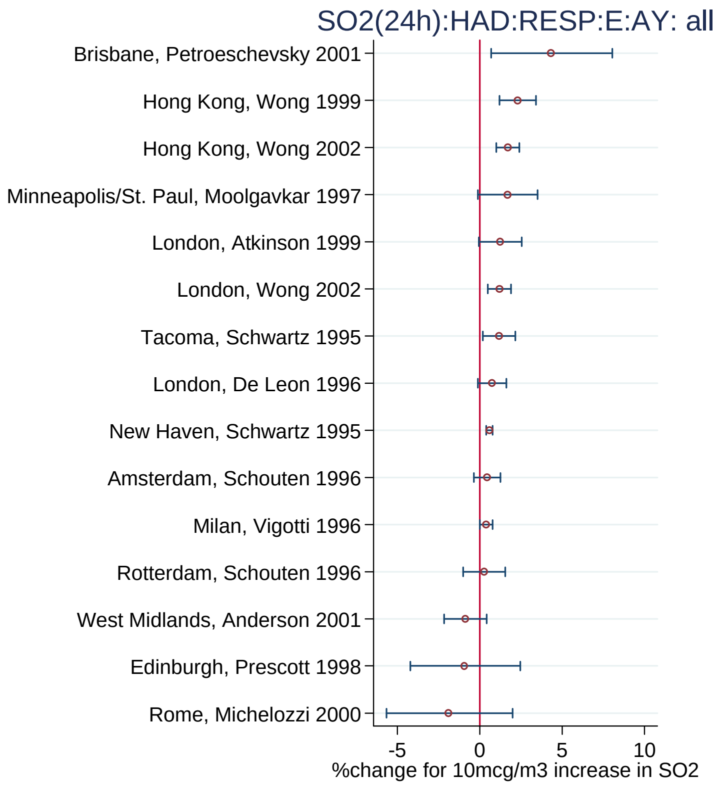

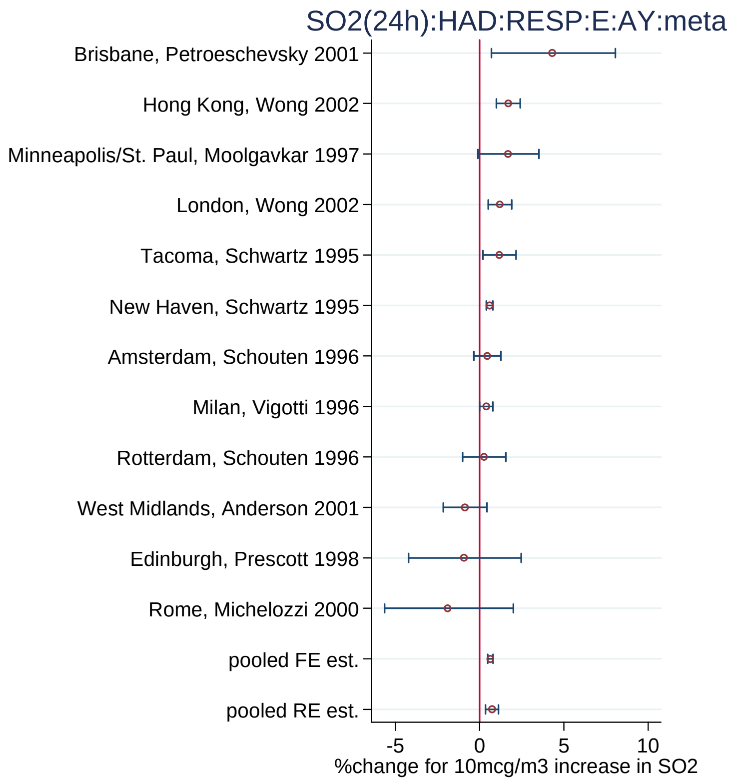

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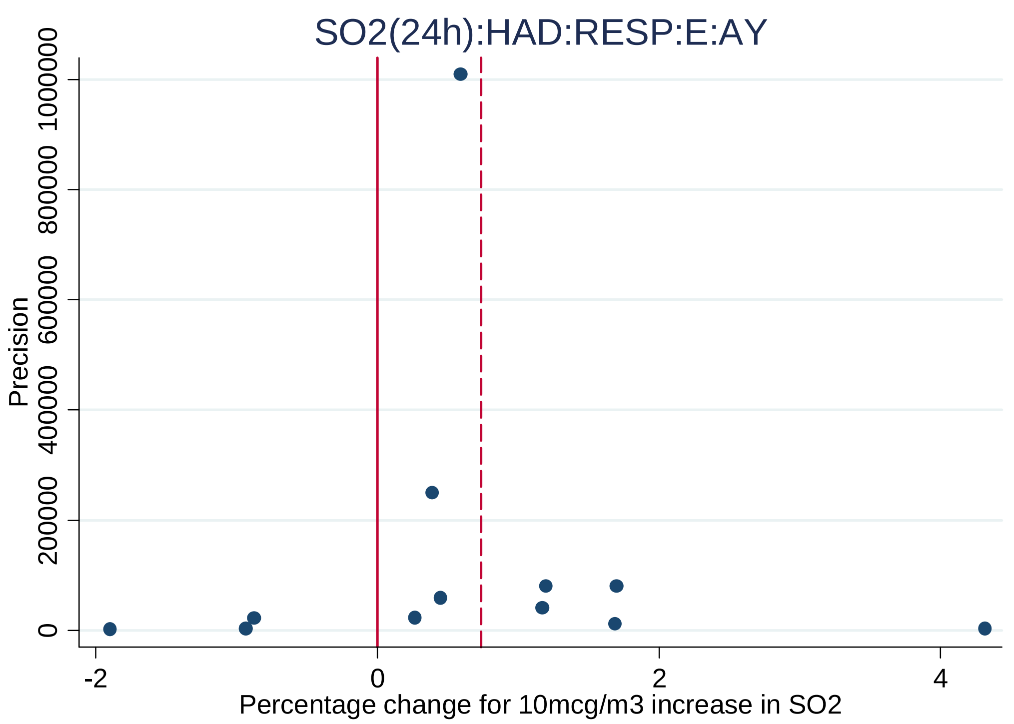

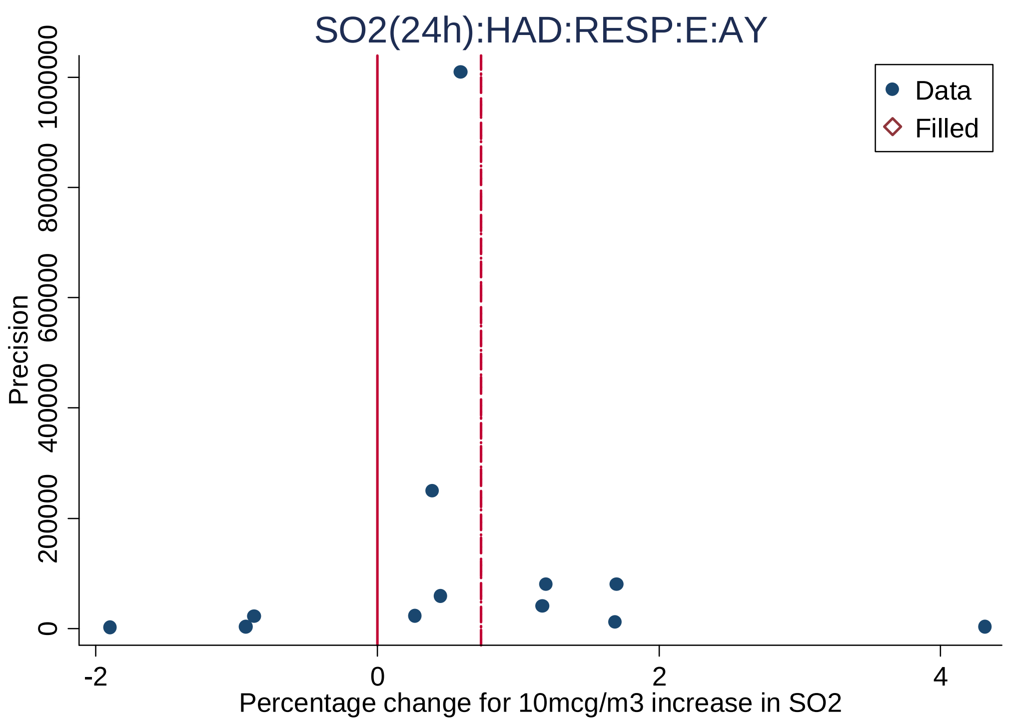

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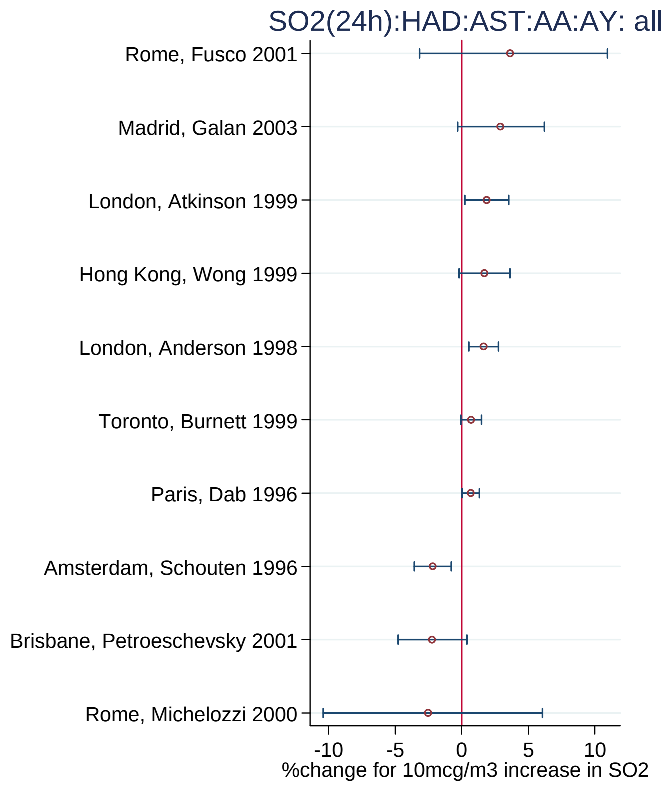

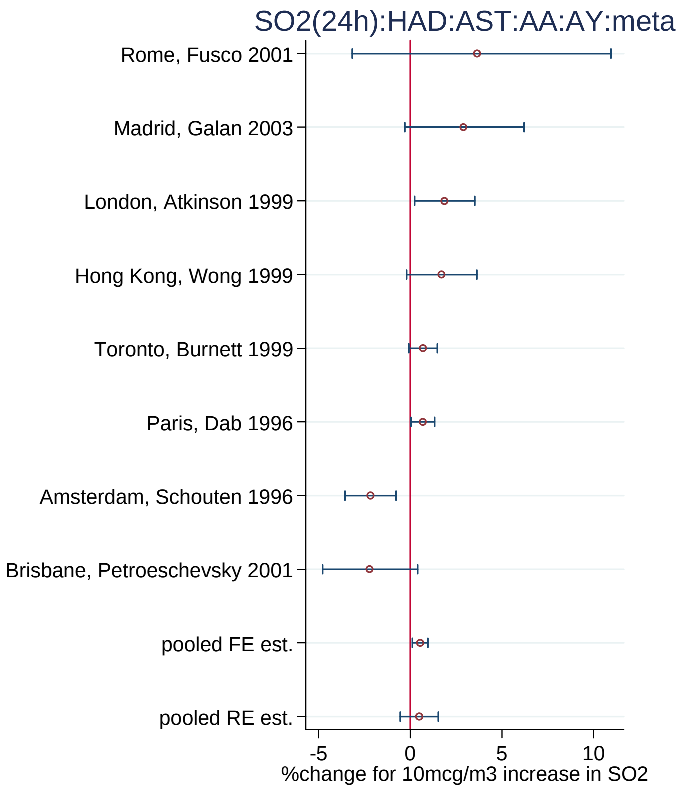

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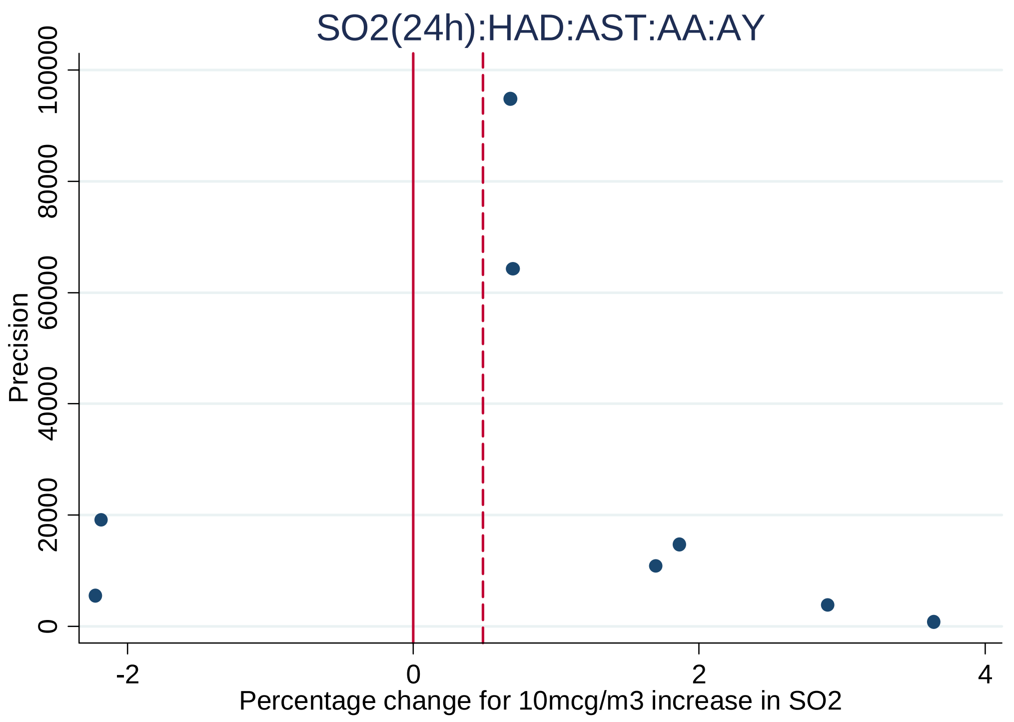

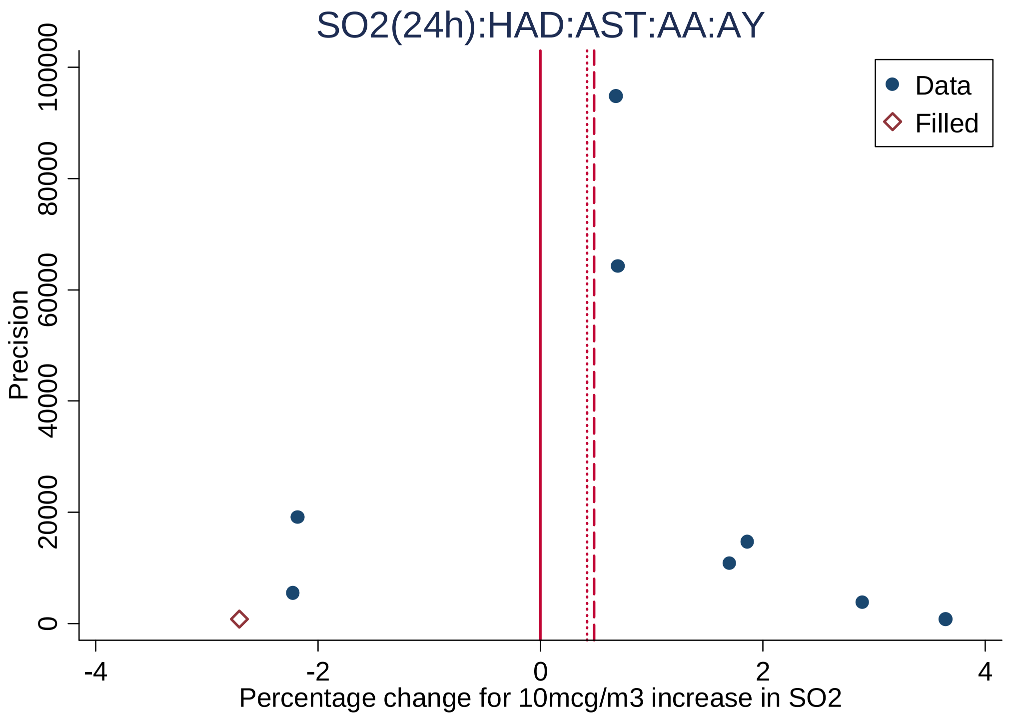

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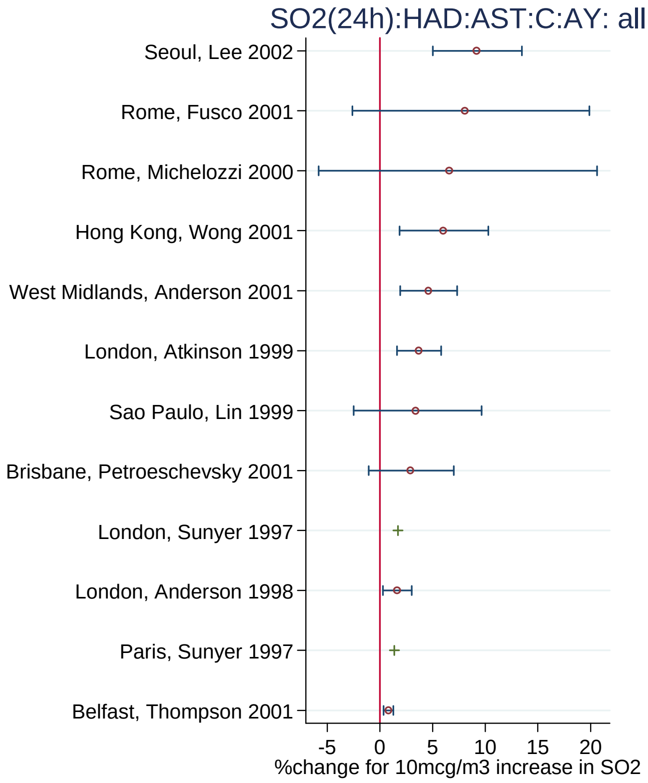

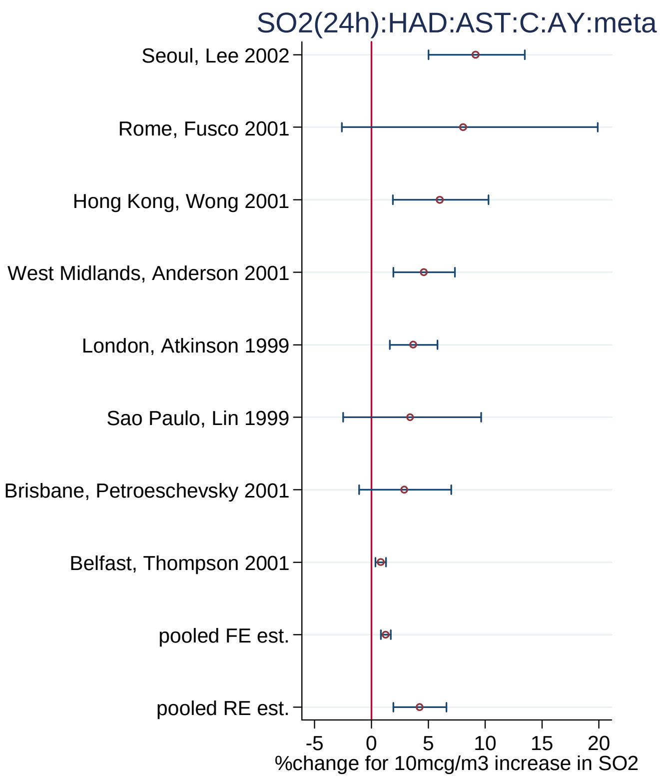

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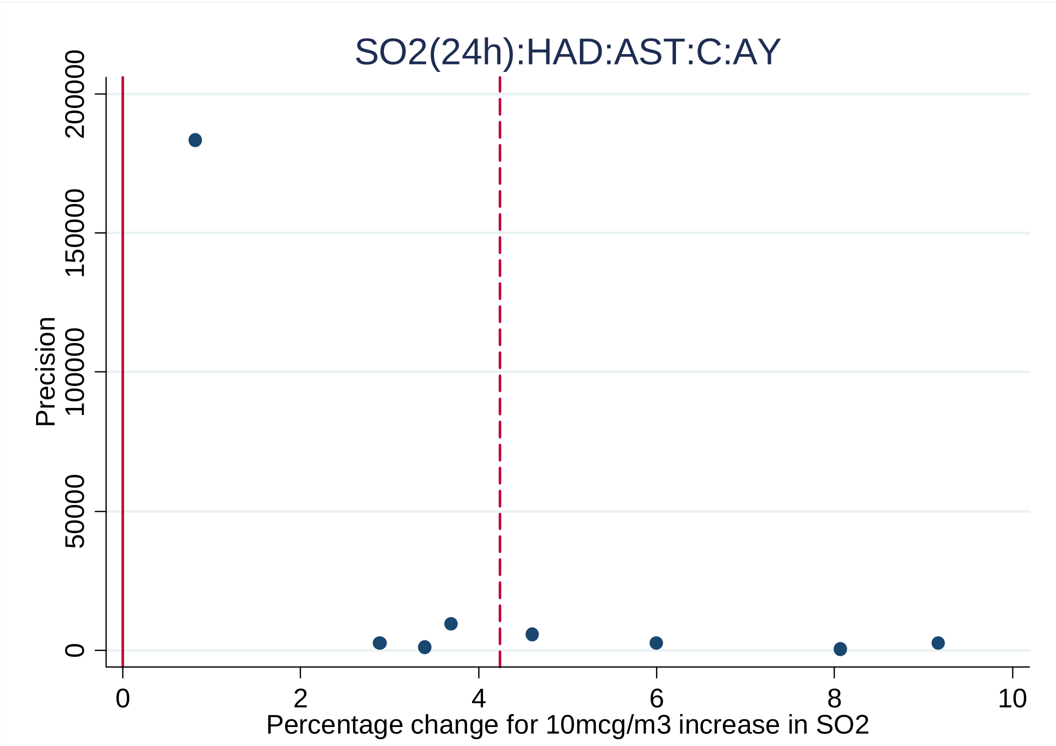

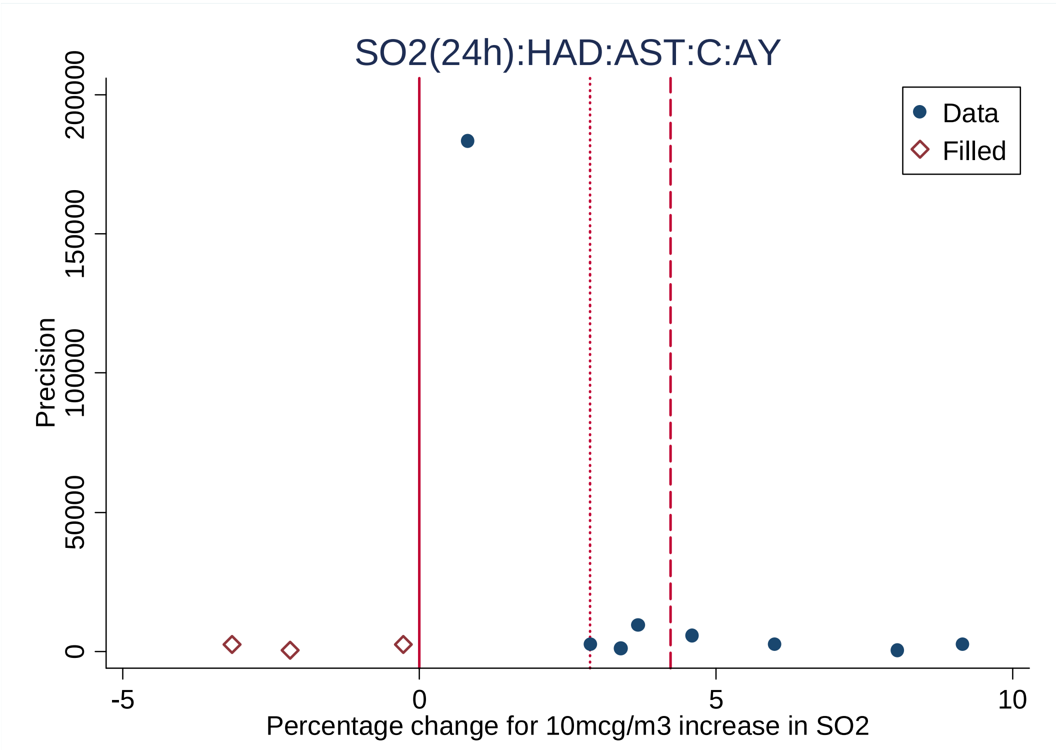

Time Series SO_2

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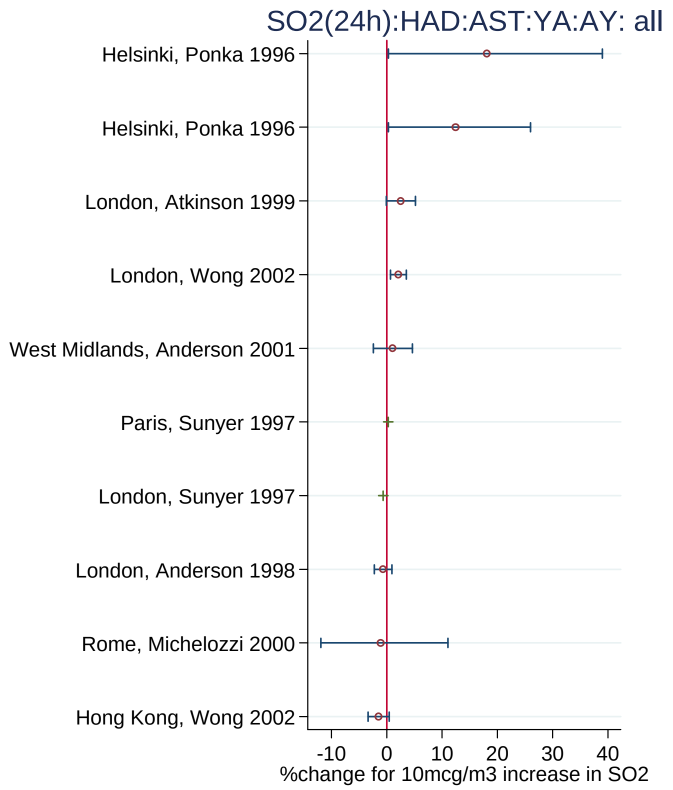

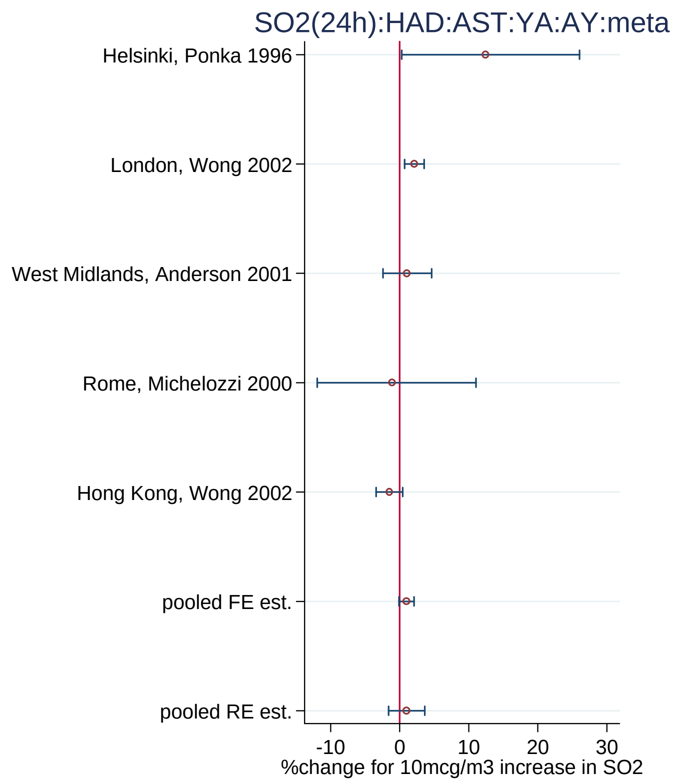

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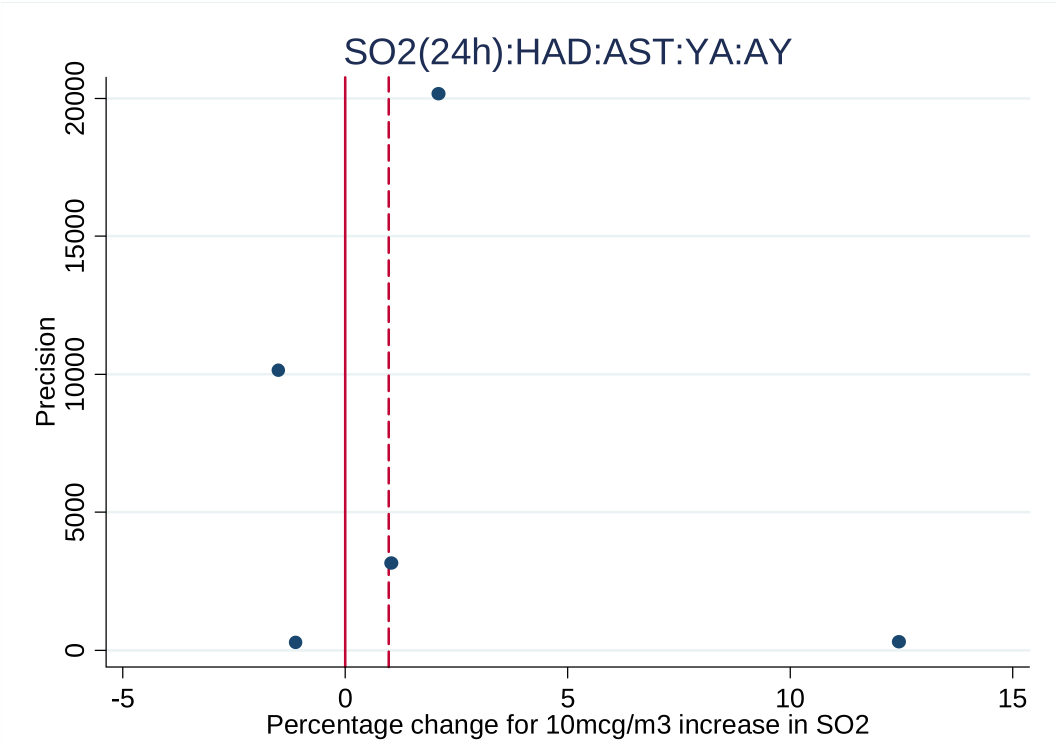

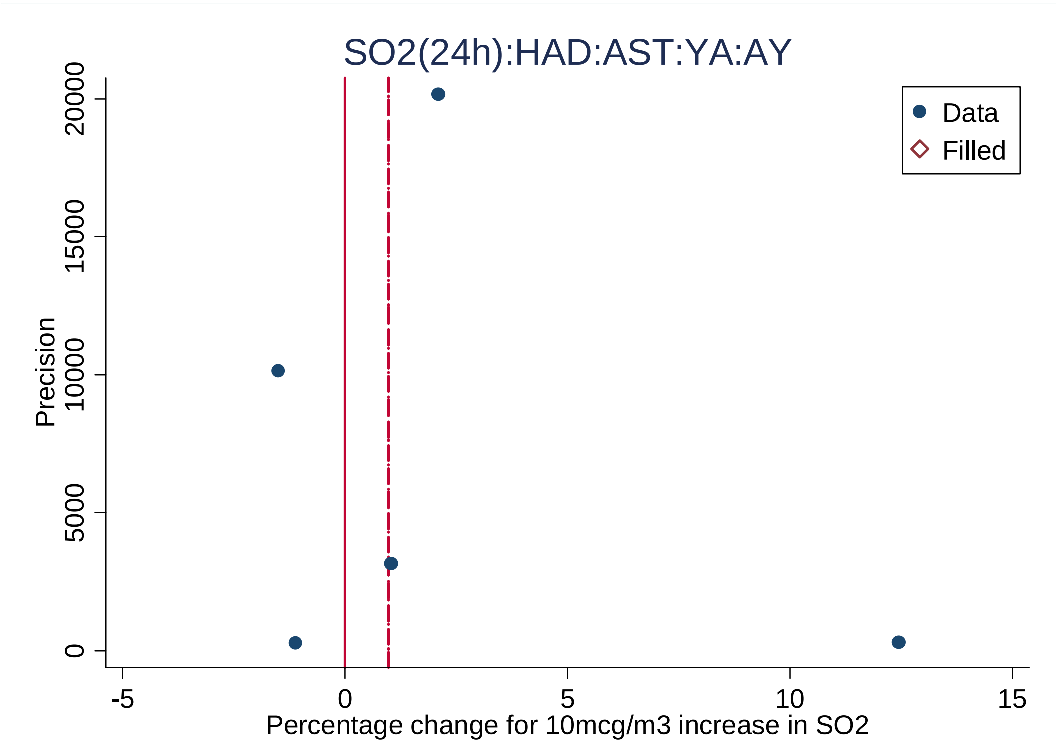

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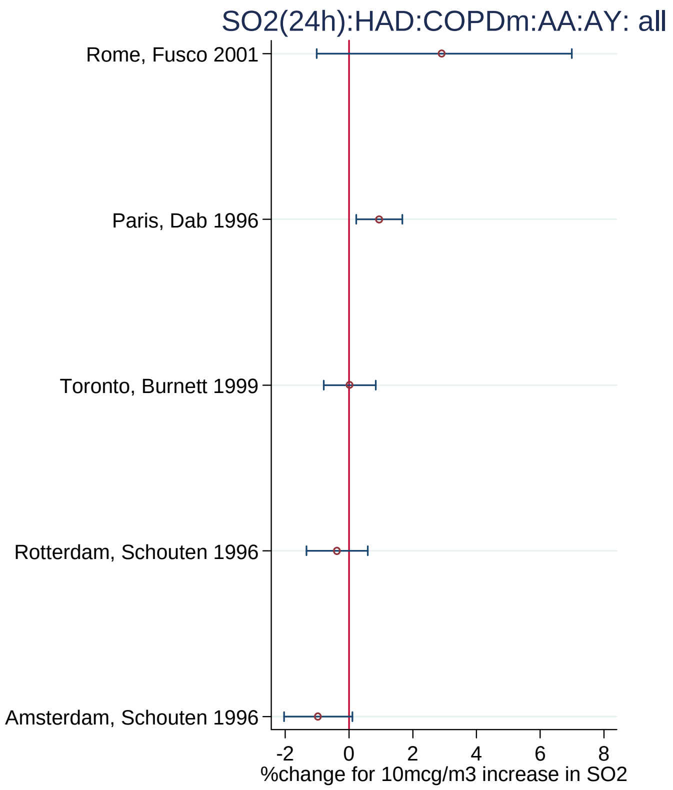

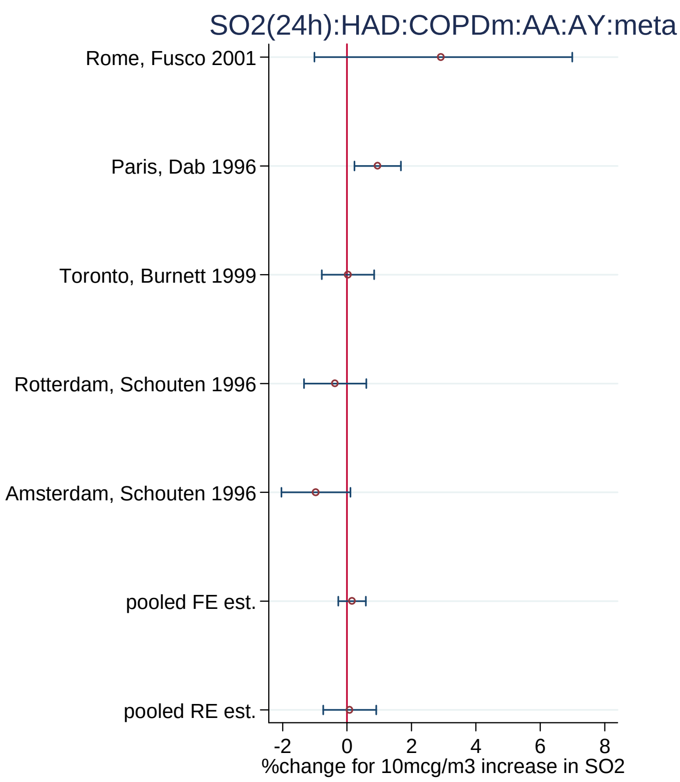

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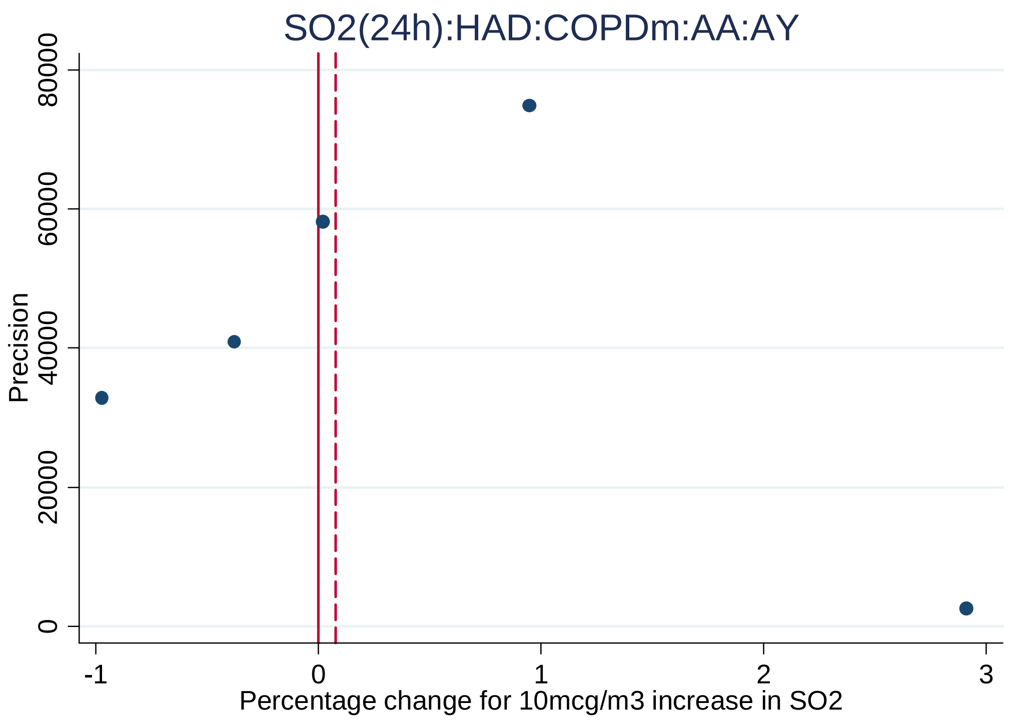

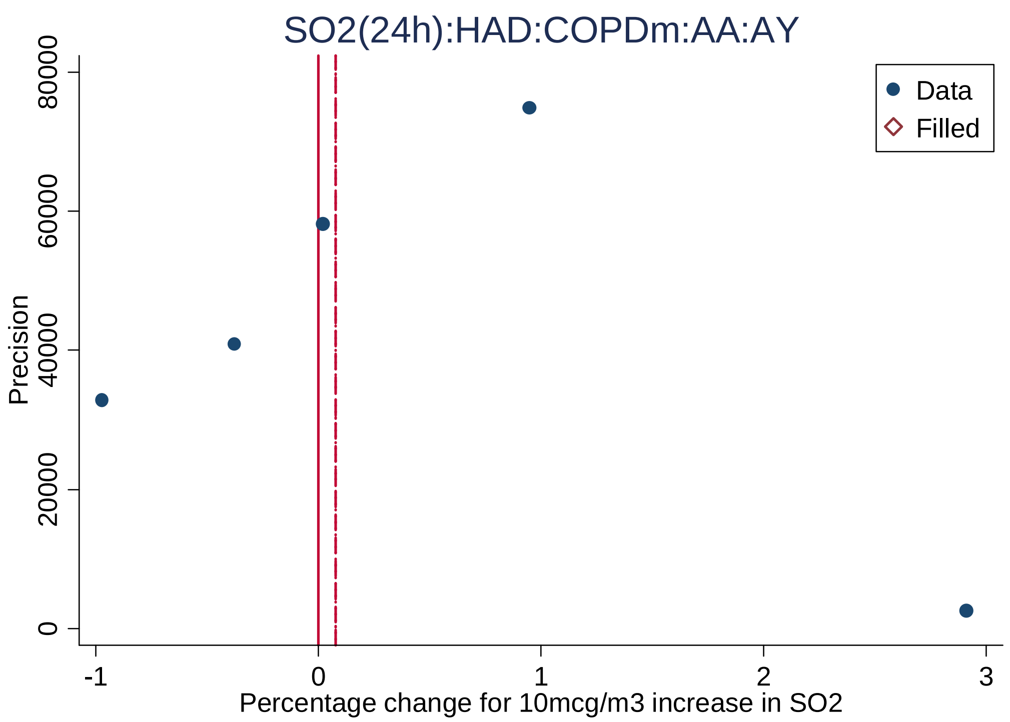

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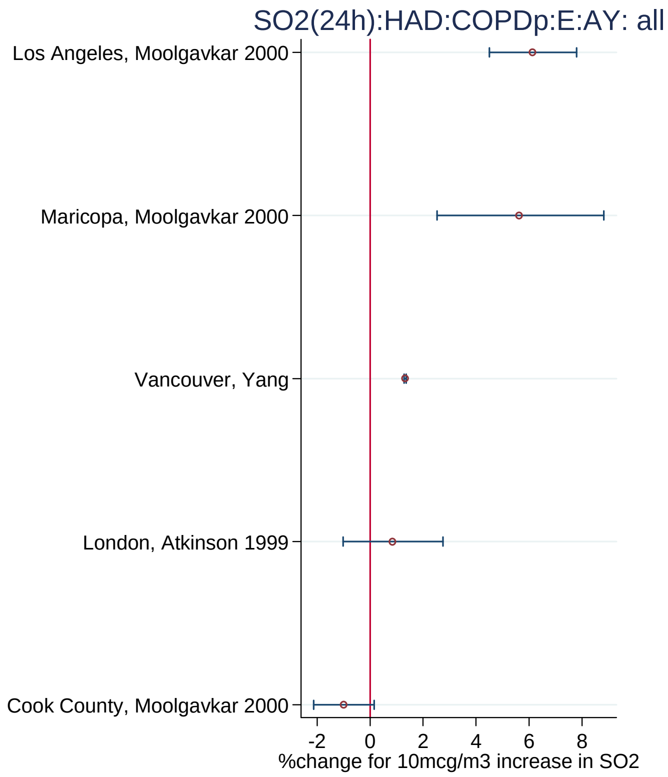
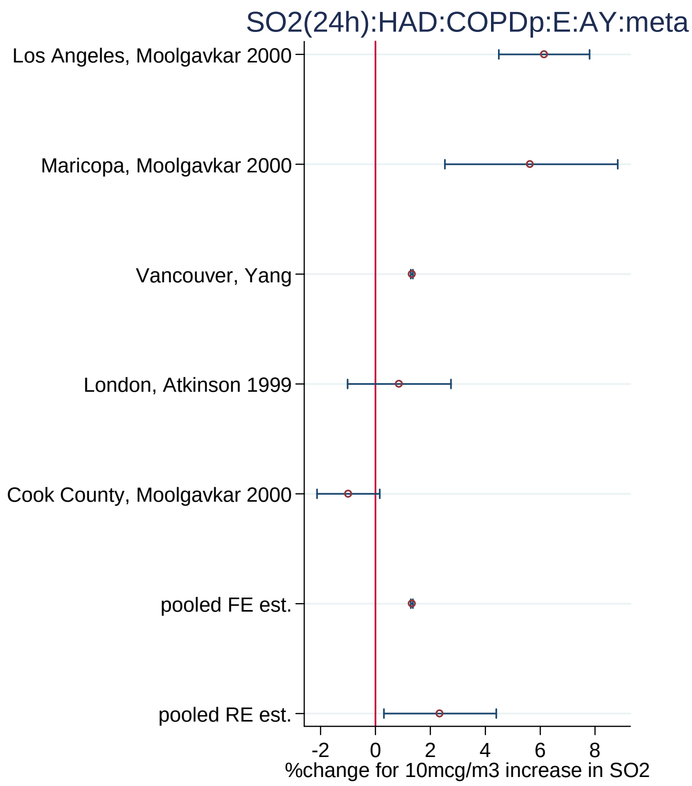
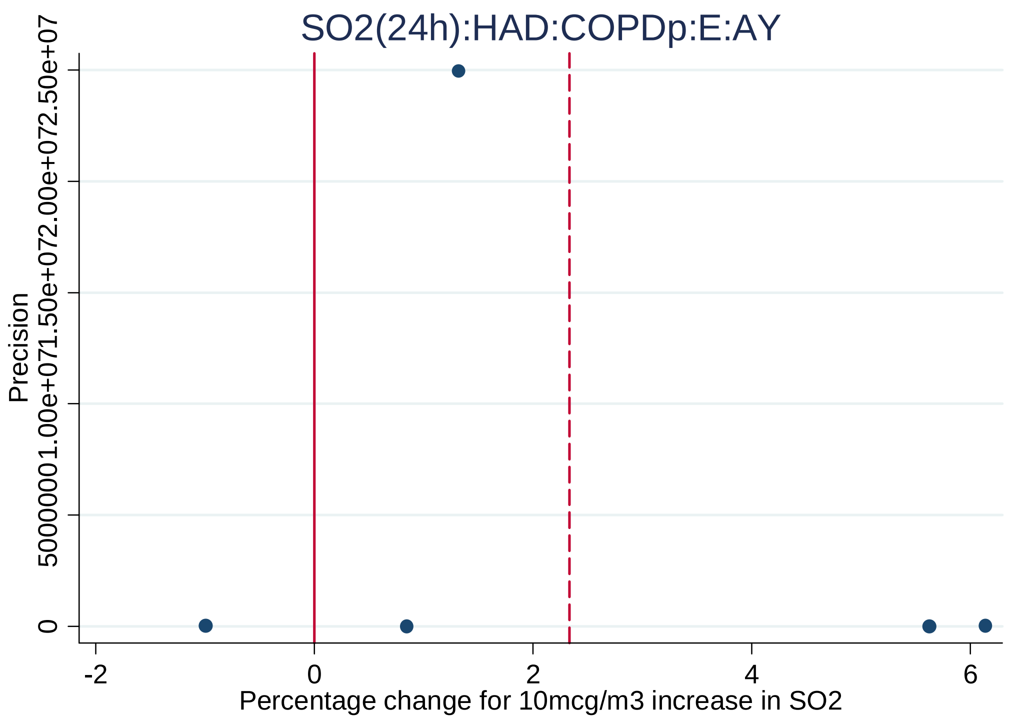
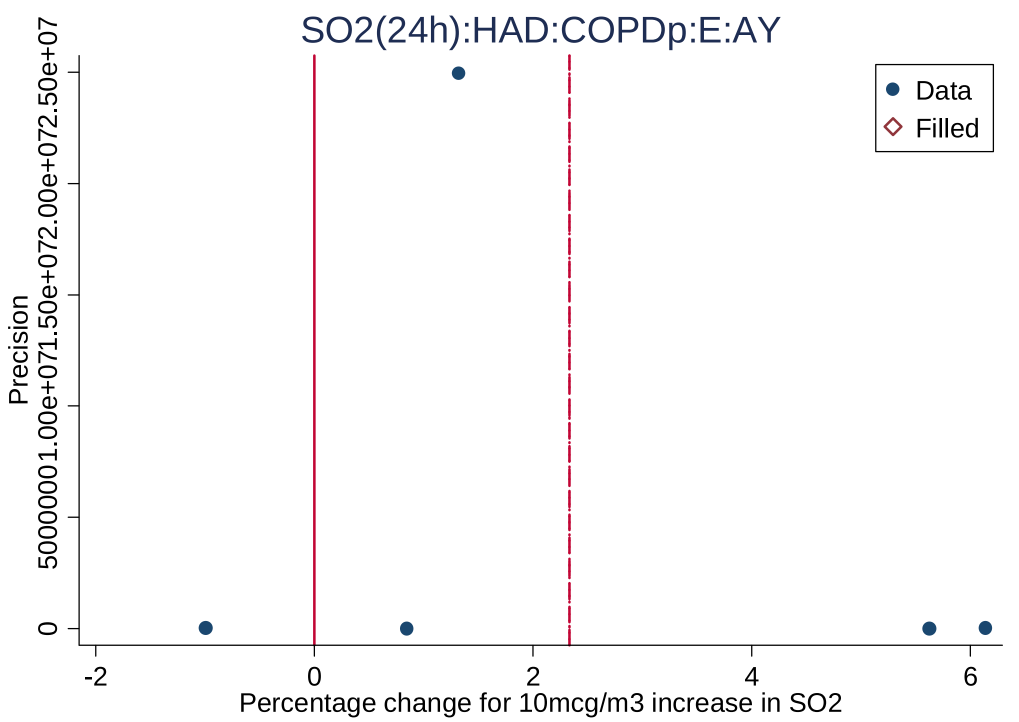




Time Series SO_2

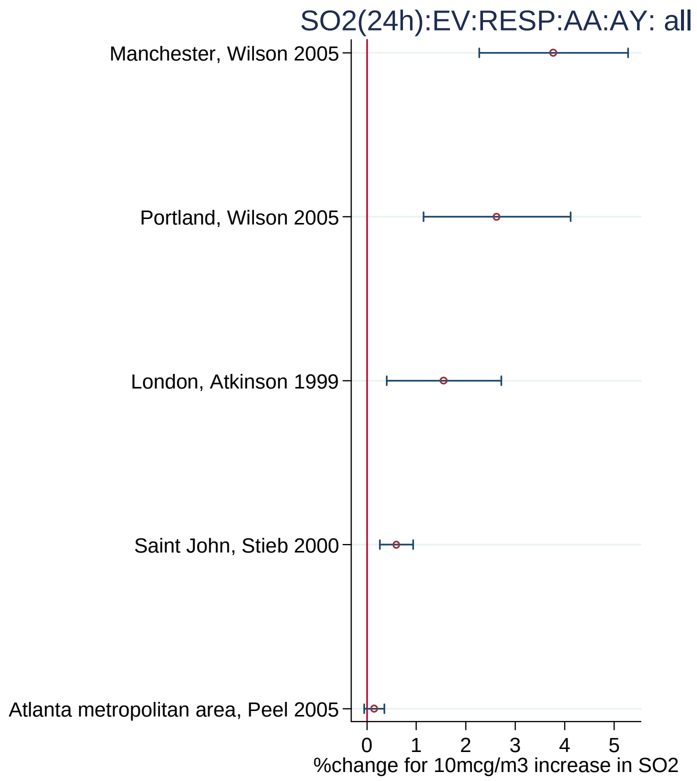
Set 30

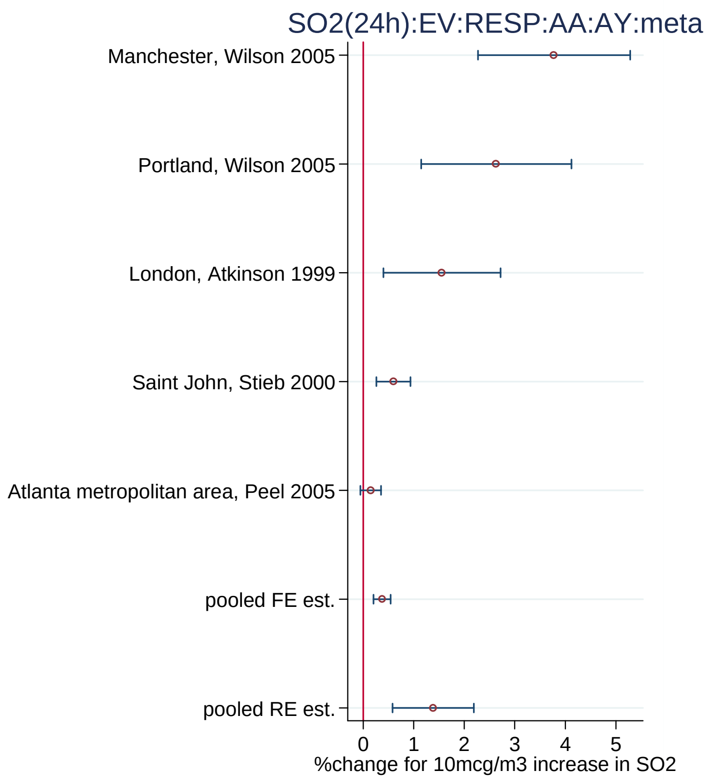




Time Series SO_2

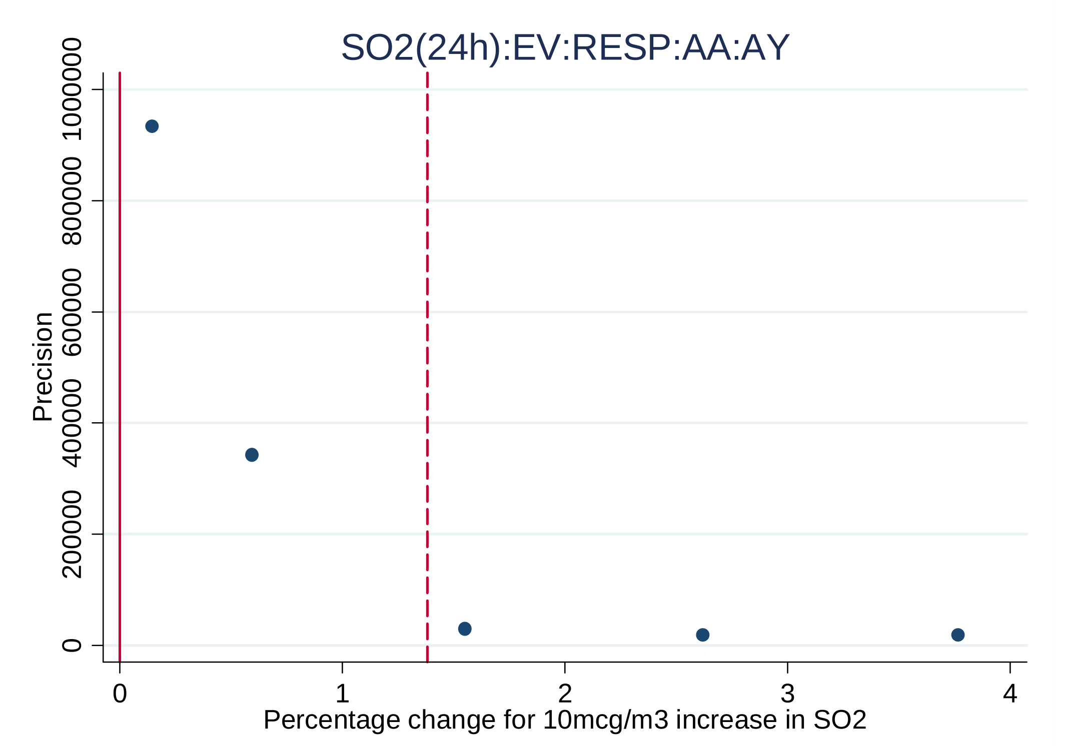
Set 31

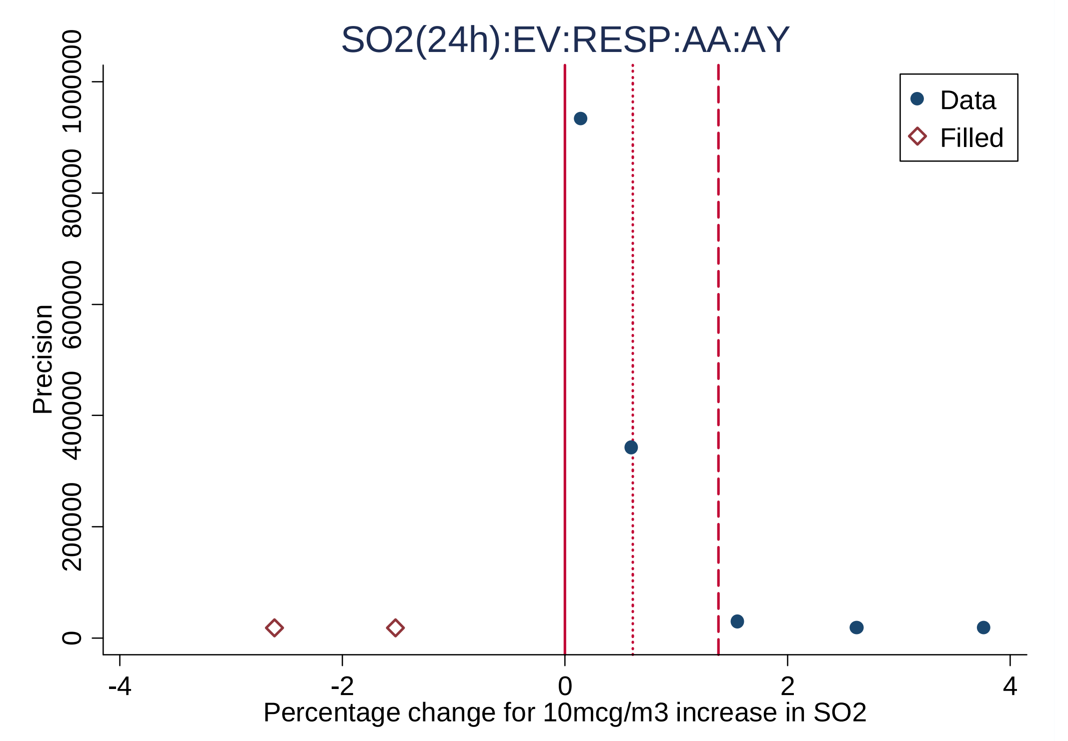




Time Series SO_2

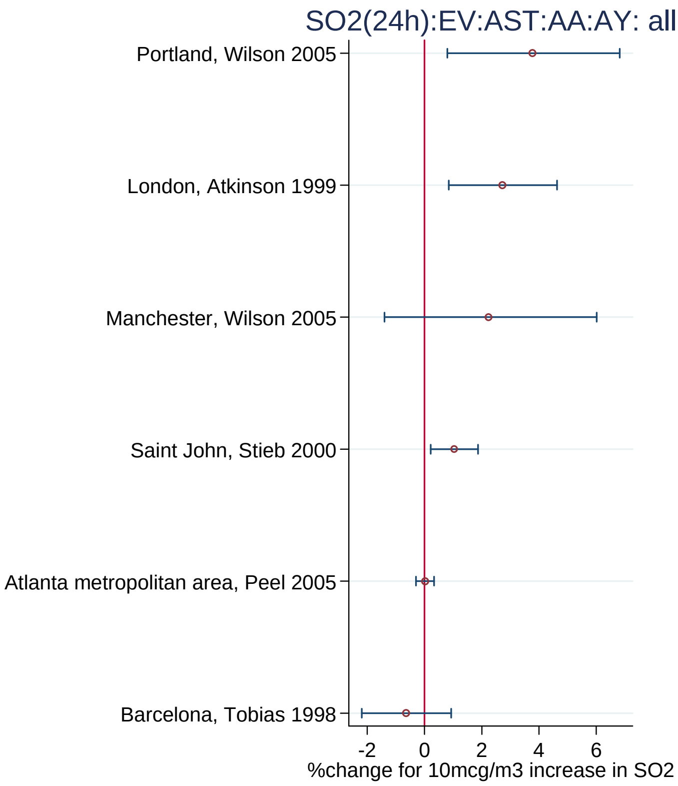
Set 31

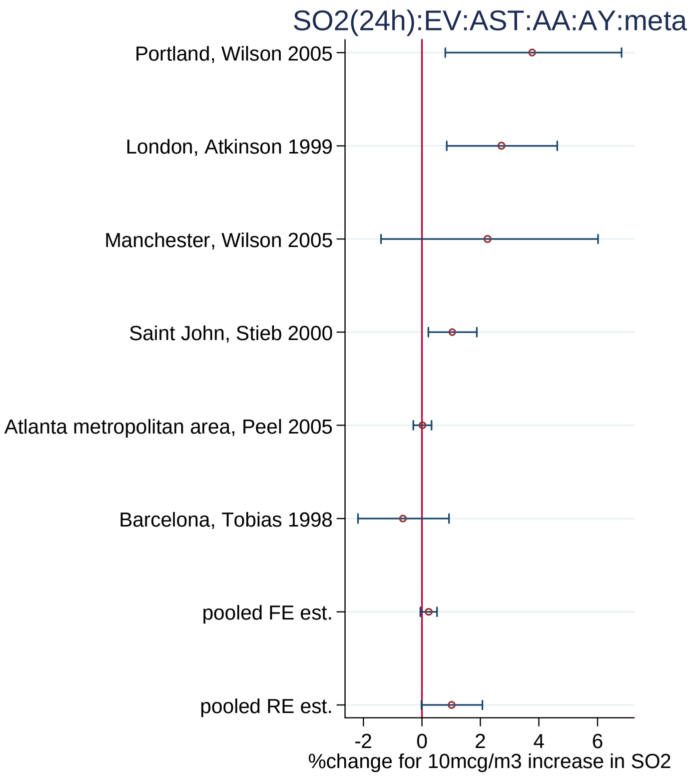




Time Series SO_2

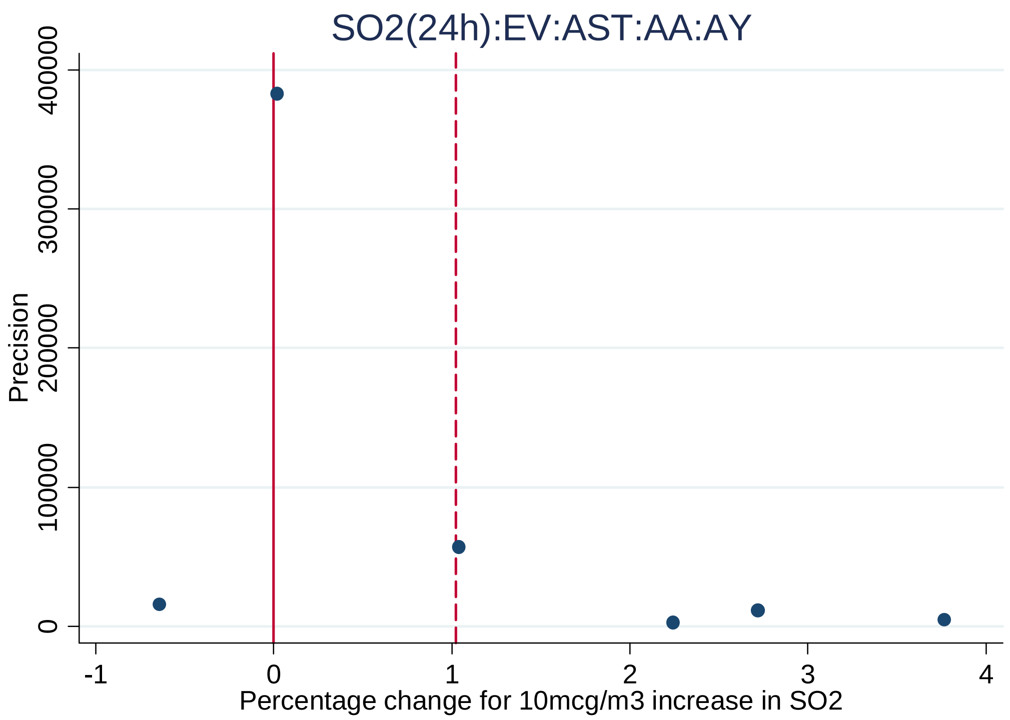
Set 32

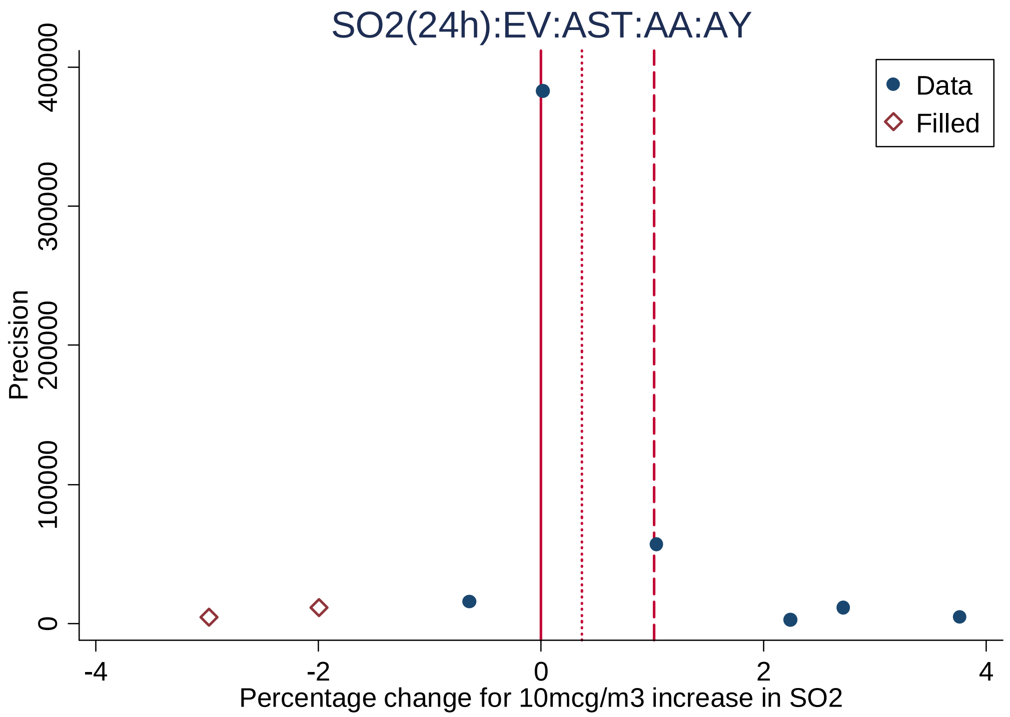




Time Series SO_2

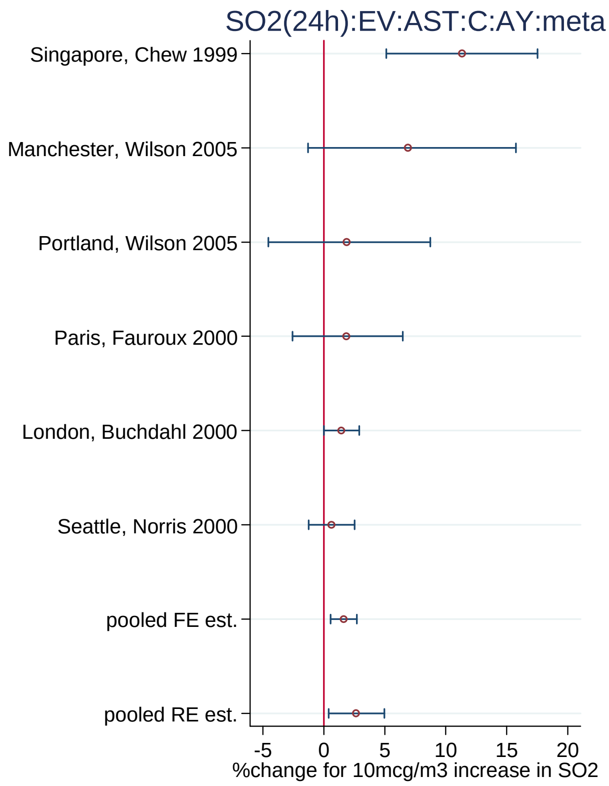
Set 32





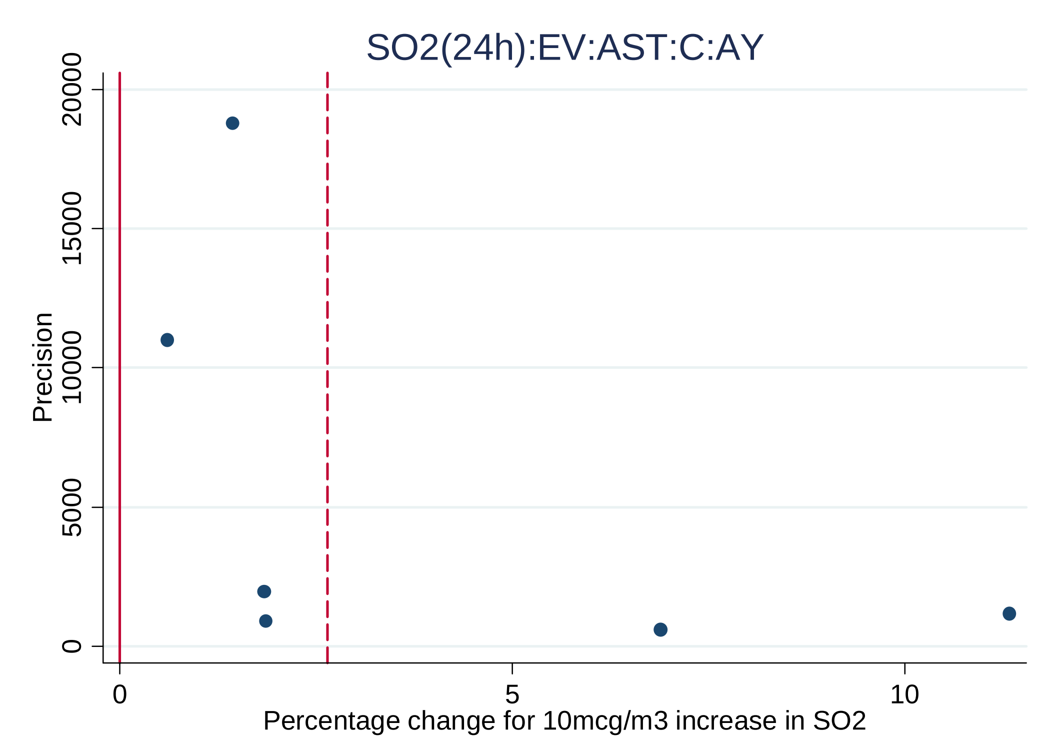
Time Series SO_2

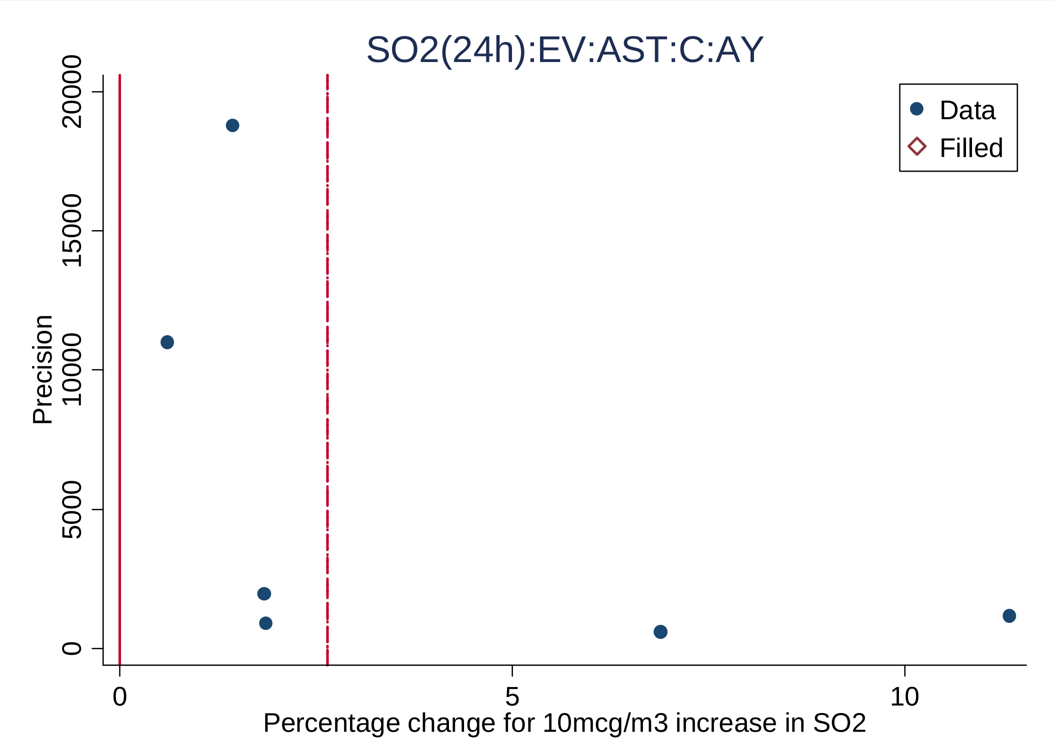
Set 33



Time Series SO_2

Set 33





Time Series: CO

Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl: Estimate	Lcl	Ucl
1	144	7083	Coachella Valley, Ostro 2000	MORT	AC	AA	8 hours	lag 0	4.84	1.60	8.18
	1337	11812	Palermo, Biggeri 2001	MORT	AC	AA	8 hours	lag 1-2	3.90	2.30	5.53
	1337	11683	Turin, Biggeri 2001	MORT	AC	AA	8 hours	lag 1-2	1.90	1.00	2.81
	1337	11746	Bologna, Biggeri 2001	MORT	AC	AA	8 hours	lag 1-2	1.90	0.50	3.32
	1337	11708	Milan, Biggeri 2001	MORT	AC	AA	8 hours	lag 1-2	1.40	0.60	2.21
	1337	11792	Rome, Biggeri 2001	MORT	AC	AA	8 hours	lag 1-2	1.00	0.40	1.60
	265	406	Athens, Touloumi 1996	MORT	AC	AA	8 hours	lag 0	0.65	0.25	1.05
	69	7692	West Midlands, Anderson 2001	MORT	AC	AA	8 hours	lag 0-1	0.64	-0.48	1.77
	1337	11771	Florence, Biggeri 2001	MORT	AC	AA	8 hours	lag 1-2	0.60	-1.50	2.74
	1187	5424	Sao Paulo, Gouveia 2000	MORT	AC	AA	8 hours	lag 0	0.19	-0.09	0.47
2	1205	7481	Erfurt, Wichmann 2000	MORT	AC	AA	24 hours	lag 4	11.30	0.60	23.14
	245	398	Mexico City, Borja-Aburto 1997	MORT	AC	AA	24 hours	lag 0	10.89	2.43	20.04
	83	7283	Basel, Wietlisbach 1996	MORT	AC	AA	24 hours	lag 3	7.47	-1.22	16.92
	216	3827	Edinburgh, Prescott 1998	MORT	AC	AA	24 hours	lag 0	6.58	0.80	12.69
	225	6029	Montreal, Burnett 1998	MORT	AC	AA	24 hours	lag 0-2	3.98	2.97	5.01
	225	6035	Winnipeg, Burnett 1998	MORT	AC	AA	24 hours	lag 0-1	3.50	0.85	6.23
	1494	9896	Kansas, Samet 2003	MORT	AC	AA	24 hours	lag 1	3.39	-1.68	8.73
	1494	9832	St. Louis, Samet 2003	MORT	AC	AA	24 hours	lag 1	3.08	0.77	5.46
	1354	8105	Seoul, Kwon 2001	MORT	AC	AA	24 hours	lag 0	2.99	2.31	3.68
	1140	4162	Valencia, Tenias Burillo 1999	MORT	AC	AA	24 hours	lag 1	2.43	0.33	4.57
	225	6037	Calgary, Burnett 1998	MORT	AC	AA	24 hours	lag 0-1	2.39	1.12	3.68
	175	5505	Netherlands, Hoek 2000	MORT	AC	AA	24 hours	lag 1	2.32	1.20	3.46
	212	7201	Germany (rural), Peters 2000	MORT	AC	AA	24 hours	lag 1	2.30	0.50	4.13
	1494	9866	Grand Rapids, Samet 2003	MORT	AC	AA	24 hours	lag 1	2.12	-1.05	5.40
	1494	9851	Boston, Samet 2003	MORT	AC	AA	24 hours	lag 1	2.10	-0.33	4.58
	225	6032	Hamilton, Burnett 1998	MORT	AC	AA	24 hours	lag 0-1	2.07	0.22	3.96
	1494	9846	Worcester, Samet 2003	MORT	AC	AA	24 hours	lag 1	2.02	0.16	3.91
	1360	7817	Amsterdam, Roemer 2001	MORT	AC	AA	24 hours	lag 1	2.02	0.00	4.08
	162	12721	Cook County, Moolgavkar 2003	MORT	AC	AA	24 hours	lag 1	2.00	1.26	2.74
	1494	9887	Jackson, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.87	-2.33	6.25
	1494	9826	Oakland, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.85	0.13	3.60
	1494	9838	Honolulu, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.78	-1.73	5.42
	225	6031	Toronto, Burnett 1998	MORT	AC	AA	24 hours	lag 1	1.76	1.05	2.47
	225	6028	Quebec, Burnett 1998	MORT	AC	AA	24 hours	lag 0-1	1.68	0.25	3.13
	212	7182	Czech Republic (coal basin), Peters 2000	MORT	AC	AA	24 hours	lag 0	1.60	-0.20	3.43
	225	6038	Vancouver, Burnett 1998	MORT	AC	AA	24 hours	lag 0-2	1.60	0.87	2.33
	1494	9886	Norfolk, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.58	-1.77	5.05
	1494	9843	Baltimore, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.58	0.02	3.16
	1494	9862	Akron, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.54	-1.52	4.69
	162	12742	Los Angeles County, Moolgavkar 2003	MORT	AC	AA	24 hours	lag 1	1.52	1.23	1.81
	225	6033	London, Burnett 1998	MORT	AC	AA	24 hours	lag 1-2	1.52	-0.76	3.85
	1494	9811	Chicago, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.49	0.55	2.44
	1494	9855	Providence, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.47	-0.26	3.24
	225	6034	Windsor, Burnett 1998	MORT	AC	AA	24 hours	lag 2-4	1.44	-0.44	3.35
	225	6030	Ottawa, Burnett 1998	MORT	AC	AA	24 hours	lag 0-1	1.44	0.03	2.87
	1494	9842	Newark, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.33	-0.46	3.16
	1494	9876	Modesto, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.31	-1.31	3.99
	83	7282	Zurich, Wietlisbach 1996	MORT	AC	AA	24 hours	lag 3	1.31	-0.46	3.11
	1152	5899	Santiago, Cifuentes 2000	MORT	AC	AA	24 hours	lag 1-2	1.29	0.94	1.65
	1494	9816	Phoenix, Samet 2003	MORT	AC	AA	24 hours	lag 1	1.04	-0.16	2.26
	1494	9863	Charlotte, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.95	-1.37	3.33
	83	7284	Geneva, Wietlisbach 1996	MORT	AC	AA	24 hours	lag 3	0.90	-1.44	3.31
	182	413	London, Bremner 1999	MORT	AC	AA	24 hours	lag 1	0.90	-0.20	2.01
	1494	9828	San Antonio, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.86	-1.10	2.87
	1494	9814	San Diego, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.80	-0.44	2.05
	1494	9865	Tulsa, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.77	-2.48	4.13
	1494	9874	Colorado Springs, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.75	-1.97	3.55
	1494	9822	San Jose, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.73	-0.56	2.03
	1494	9840	Memphis, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.72	-0.77	2.23
	1494	9810	New York, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.70	0.18	1.23
	1494	9815	Santa Ana/Anaheim, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.70	-0.21	1.62
	1494	9873	Wichita, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.69	-2.73	4.23
	1494	9890	Lexington, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.69	-3.29	4.83
	1494	9824	San Bernadino, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.64	-1.13	2.44
	1494	9857	Tacoma, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.63	-0.44	1.72
	1494	9892	Richmond, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.62	-4.55	6.07
	1494	9820	Minneapolis/St. Paul, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.59	-0.94	2.15
	1494	9871	Toledo, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.51	-1.86	2.94
	1494	9825	Pittsburgh, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.45	-0.49	1.40
	192	3249	Madrid, Galan 1999	MORT	AC	AA	24 hours	lag 0	0.44	-0.03	0.90
	1494	9837	Kansas, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.42	-2.27	3.19
	1494	9878	Spokane, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.42	-1.18	2.04
	1494	9823	Cleveland, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.41	-1.02	1.87
	1494	9836	St. Petersburg, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.40	-1.80	2.64
	225	6036	Edmonton, Burnett 1998	MORT	AC	AA	24 hours	lag 2-4	0.32	-0.93	1.58
	1494	9852	Birmingham, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.32	-1.08	1.73
	1494	9834	Columbus, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.31	-1.89	2.55
	219	1197	Rome, Michelozzi 1998	MORT	AC	AA	24 hours	lag 1	0.30	-0.23	0.83
	1494	9860	Jersey City, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.29	-0.86	1.45
	1494	9833	Buffalo, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.28	-1.82	2.42
	1494	9841	Indianapolis, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.23	-2.17	2.69
	1494	9817	Detroit, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.20	-1.13	1.54
	1070	3791	Inchon, Hong 1999	MORT	AC	AA	24 hours	lag 1	0.15	-0.08	0.39
	1494	9877	Madison, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.11	-3.25	3.58
	1494	9854	Oklahoma City, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.10	-2.09	2.34
	1494	9864	Nashville, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.08	-2.03	2.24
	1494	9850	Louisville, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.08	-1.77	1.97
	1494	9831	Sacramento, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.07	-1.10	1.24
	193	3777	Huelva, Daponte 1999	MORT	AC	AA	24 hours	lag 3	0.04	-0.08	0.17
	1494	9813	Houston, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.01	-1.30	1.34
	1494	9875	Baton Rouge, Samet 2003	MORT	AC	AA	24 hours	lag 1	0.00	-3.39	3.49
	1494	9819	Philadelphia, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.04	-1.24	1.17
	1494	9869	Albuquerque, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.06	-3.22	3.21
	1494	9859	Dayton, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.06	-2.85	2.82
	1494	9893	Arlington, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.14	-5.02	5.00
	1494	9844	Salt Lake City, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.17	-1.84	1.53

Time Series: CO

Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
2	1494	9830	Denver, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.18	-2.09	1.77
	1494	9872	Raleigh, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.18	-2.54	2.23
	1494	9868	Stockton, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.20	-2.60	2.26
	1494	9867	New Orleans, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.23	-2.43	2.01
	1494	9821	Seattle, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.27	-1.35	0.83
	1494	9827	Atlanta, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.33	-2.49	1.87
	1494	9829	Riverside, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.36	-1.63	0.92
	1494	9818	Miami, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.56	-1.78	0.67
	1494	9870	Syracuse, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.64	-2.16	0.90
	1494	9853	Washington, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.76	-2.31	0.81
	1494	9856	El Paso, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.77	-2.79	1.29
	1494	9839	Tampa, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.79	-3.87	2.38
	1494	9848	Jacksonville, Samet 2003	MORT	AC	AA	24 hours	lag 1	-0.88	-3.18	1.46
	1494	9884	Fort Wayne, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.08	-4.20	2.15
	1494	9812	Dallas/Fort Worth, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.31	-2.87	0.28
	1494	9861	Bakersfield, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.33	-3.38	0.76
	1494	9880	Greensboro, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.36	-4.39	1.77
	1494	9881	Knoxville, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.38	-4.14	1.46
	1494	9849	Fresno, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.45	-4.00	1.16
	1494	9888	Huntsville, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.62	-5.90	2.86
	1494	9835	Cincinnati, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.64	-3.57	0.32
	1494	9847	Orlando, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.68	-4.76	1.51
	1494	9845	Rochester, Samet 2003	MORT	AC	AA	24 hours	lag 1	-1.69	-5.00	1.74
	198	4353	Gijon, Canada 1999	MORT	AC	AA	24 hours	lag 1	-1.81	-4.53	0.99
	198	3396	Oviedo, Canada 1999	MORT	AC	AA	24 hours	lag 5	-1.90	-6.22	2.62
	1494	9889	Anchorage, Samet 2003	MORT	AC	AA	24 hours	lag 1	-3.65	-7.57	0.45
	1494	9883	Des Moines, Samet 2003	MORT	AC	AA	24 hours	lag 1	-5.15	-9.17	-0.95
	1494	9897	Olympia, Samet 2003	MORT	AC	AA	24 hours	lag 1	-5.16	-12.10	2.33
3	83	7294	Basel, Wietlisbach 1996	MORT	AC	E	24 hours	lag 3	9.53	-0.31	20.33
	1495	11859	Seoul, Ha 2003	MORT	AC	E	24 hours	lag 0	5.37	5.23	5.52
	1120	3756	Phoenix, Mar 2000	MORT	AC	E	24 hours	lag 0	3.38	1.00	5.80
	83	7295	Geneva, Wietlisbach 1996	MORT	AC	E	24 hours	lag 3	2.84	1.24	4.46
	1140	4170	Valencia, Tenias Burillo 1999	MORT	AC	E	24 hours	lag 1	2.43	-0.12	5.05
	285	1111	Sao Paulo, Saldiva 1995	MORT	AC	E	24 hours	lag 0-1	2.16	0.78	3.54
	83	7293	Zurich, Wietlisbach 1996	MORT	AC	E	24 hours	lag 3	2.02	0.04	4.04
	1610	13506	Atlanta, Klemm 2004	MORT	AC	E	24 hours	lag 0-1	1.61	0.03	3.22
	182	741	London, Bremner 1999	MORT	AC	E	24 hours	lag 2	0.80	-0.40	2.01
	192	4077	Madrid, Galan 1999	MORT	AC	E	24 hours	lag 0	0.66	0.09	1.23
	1587	12461	Vancouver, Villeneuve 2003	MORT	AC	E	24 hours	lag 1	0.44	-0.95	1.84
	193	3781	Huelva, Daponte 1999	MORT	AC	E	24 hours	lag 5	0.07	-0.07	0.22
	198	3386	Gijon, Canada 1999	MORT	AC	E	24 hours	lag 1	-2.42	-5.56	0.82
	198	3402	Oviedo, Canada 1999	MORT	AC	E	24 hours	lag 5	-4.02	-9.06	1.30
4	1494	11516	Kansas, Samet 2003	MORT	CR	AA	24 hours	lag 1	6.09	-1.03	13.74
	1494	11452	St. Louis, Samet 2003	MORT	CR	AA	24 hours	lag 1	3.66	0.56	6.86
	1494	11466	Worcester, Samet 2003	MORT	CR	AA	24 hours	lag 1	2.79	0.27	5.38
	1494	11486	Grand Rapids, Samet 2003	MORT	CR	AA	24 hours	lag 1	2.59	-1.68	7.04
	1494	11444	San Bernadino, Samet 2003	MORT	CR	AA	24 hours	lag 1	2.42	0.11	4.77
	1494	11512	Richmond, Samet 2003	MORT	CR	AA	24 hours	lag 1	2.25	-4.87	9.92
	1494	11462	Newark, Samet 2003	MORT	CR	AA	24 hours	lag 1	2.23	-0.37	4.90
	1494	11446	Oakland, Samet 2003	MORT	CR	AA	24 hours	lag 1	2.17	-0.12	4.51
	1494	11506	Norfolk, Samet 2003	MORT	CR	AA	24 hours	lag 1	2.12	-2.50	6.96
	1494	11485	Tulsa, Samet 2003	MORT	CR	AA	24 hours	lag 1	2.02	-2.27	6.51
	1494	11431	Chicago, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.95	0.68	3.25
	1494	11436	Phoenix, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.89	0.26	3.55
	1494	11461	Indianapolis, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.85	-1.49	5.30
	1494	11510	Lexington, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.76	-4.03	7.91
	1494	11513	Arlington, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.67	-5.54	9.42
	1494	11451	Sacramento, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.52	-0.04	3.11
	1494	11500	Greensboro, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.44	-2.84	5.90
	1494	11482	Akron, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.31	-2.78	5.58
	1494	11448	San Antonio, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.18	-1.51	3.94
	1494	11454	Columbus, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.11	-1.97	4.27
	1494	11507	Jackson, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.10	-4.53	7.06
	1494	11445	Pittsburgh, Samet 2003	MORT	CR	AA	24 hours	lag 1	1.01	-0.23	2.27
	1494	11473	Washington, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.97	-1.40	3.39
	1494	11493	Wichita, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.96	-3.66	5.81
	1494	11458	Honolulu, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.96	-3.75	5.89
	1494	11430	New York, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.88	0.20	1.56
	1494	11456	St. Petersburg, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.81	-2.04	3.74
	1494	11498	Spokane, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.81	-1.32	2.99
	1494	11472	Birmingham, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.79	-1.11	2.73
	1494	11476	El Paso, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.67	-2.21	3.63
	1494	11475	Providence, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.64	-1.68	3.02
	1494	11429	Los Angeles, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.62	0.06	1.19
	1494	11435	Santa Ana/Anaheim, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.58	-0.58	1.76
	1494	11477	Tacoma, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.55	-0.86	1.98
	1494	11433	Houston, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.52	-1.30	2.38
	1494	11494	Colorado Springs, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.36	-3.34	4.20
	1494	11471	Boston, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.35	-2.97	3.79
	1494	11437	Detroit, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.33	-1.42	2.11
	1494	11442	San Jose, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.31	-1.39	2.04
	1494	11441	Seattle, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.24	-1.21	1.72
	1494	11438	Miami, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.22	-1.43	1.89
	1494	11464	Salt Lake City, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.20	-2.07	2.52
	1494	11460	Memphis, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.20	-1.77	2.21
	1494	11480	Jersey City, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.19	-1.44	1.83
	1494	11434	San Diego, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.17	-1.48	1.86
	1494	11468	Jacksonville, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.17	-2.95	3.40
	1494	11496	Modesto, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.13	-3.22	3.60
	1494	11467	Orlando, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.09	-4.17	4.54
	1494	11463	Baltimore, Samet 2003	MORT	CR	AA	24 hours	lag 1	0.05	-2.15	2.30
	1494	11469	Fresno, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.08	-3.53	3.48
	1494	11489	Albuquerque, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.10	-4.51	4.51
	1494	11483	Charlotte, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.11	-3.41	3.29

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Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
4	1494	11491	Toledo, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.16	-3.28	3.07
	1494	11470	Louisville, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.20	-2.75	2.41
	1494	11497	Madison, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.25	-4.77	4.48
	1494	11449	Riverside, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.30	-1.89	1.32
	1494	11439	Philadelphia, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.31	-1.96	1.37
	1494	11443	Cleveland, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.32	-2.24	1.65
	1494	11440	Minneapolis/St. Paul, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.42	-2.48	1.69
	1494	11459	Tampa, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.47	-4.68	3.92
	1494	11447	Atlanta, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.48	-3.62	2.77
	1494	11488	Stockton, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.49	-3.71	2.84
	1494	11453	Buffalo, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.53	-3.21	2.23
	1494	11450	Denver, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.64	-3.15	1.93
	1494	11474	Oklahoma City, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.65	-3.51	2.31
	1494	11501	Knoxville, Samet 2003	MORT	CR	AA	24 hours	lag 1	-0.90	-4.71	3.07
	1494	11492	Raleigh, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.11	-4.37	2.25
	1494	11432	Dallas/Fort Worth, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.12	-3.21	1.01
	1494	11457	Kansas, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.58	-5.13	2.11
	1494	11495	Baton Rouge, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.67	-6.42	3.33
	1494	11487	New Orleans, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.75	-4.86	1.47
	1494	11465	Rochester, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.86	-6.32	2.81
	1494	11481	Bakersfield, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.92	-4.58	0.81
	1494	11479	Dayton, Samet 2003	MORT	CR	AA	24 hours	lag 1	-1.99	-5.70	1.87
	1494	11490	Syracuse, Samet 2003	MORT	CR	AA	24 hours	lag 1	-2.04	-4.07	0.03
	1494	11455	Cincinnati, Samet 2003	MORT	CR	AA	24 hours	lag 1	-2.23	-4.79	0.39
	1494	11484	Nashville, Samet 2003	MORT	CR	AA	24 hours	lag 1	-2.41	-5.22	0.48
	1494	11504	Fort Wayne, Samet 2003	MORT	CR	AA	24 hours	lag 1	-2.51	-6.66	1.83
	1494	11508	Huntsville, Samet 2003	MORT	CR	AA	24 hours	lag 1	-3.61	-9.27	2.40
	1494	11503	Des Moines, Samet 2003	MORT	CR	AA	24 hours	lag 1	-4.35	-9.75	1.38
	1494	11517	Olympia, Samet 2003	MORT	CR	AA	24 hours	lag 1	-6.29	-15.74	4.23
	1494	11509	Anchorage, Samet 2003	MORT	CR	AA	24 hours	lag 1	-9.53	-15.96	-2.61
5	1337	11796	Palermo, Biggeri 2001	MORT	CV	AA	8 hours	lag 1-2	4.30	1.90	6.76
	1337	11688	Milan, Biggeri 2001	MORT	CV	AA	8 hours	lag 1-2	2.40	1.10	3.72
	1337	11751	Florence, Biggeri 2001	MORT	CV	AA	8 hours	lag 1-2	2.30	-0.90	5.60
	1337	11662	Turin, Biggeri 2001	MORT	CV	AA	8 hours	lag 1-2	2.10	0.80	3.42
	69	7701	West Midlands, Anderson 2001	MORT	CV	AA	8 hours	lag 0-1	2.00	0.32	3.70
	1337	11726	Bologna, Biggeri 2001	MORT	CV	AA	8 hours	lag 1-2	1.40	-0.80	3.65
	1337	11776	Rome, Biggeri 2001	MORT	CV	AA	8 hours	lag 1-2	1.30	0.50	2.11
	144	7089	Coachella Valley, Ostro 2000	MORT	CV	AA	8 hours	lag 0	0.00	-4.76	4.99
	161	13271	Helsinki, Penttinen 2004	MORT	CV	AA	8 hours	lag 0	-2.48	-4.30	-0.63
6	1275	6679	Netherlands, Hoek 2001	MORT	CV	AA	24 hours	lag 0-6	23.85	-5.69	62.63
	83	7317	Basel, Wietlisbach 1996	MORT	CV	AA	24 hours	lag 3	14.68	0.37	31.03
	1120	4137	Phoenix, Mar 2000	MORT	CV	AA	24 hours	lag 1	6.32	2.92	9.83
	198	3408	Oviedo, Canada 1999	MORT	CV	AA	24 hours	lag 3	5.13	-1.20	11.87
	212	7210	Germany (rural), Peters 2000	MORT	CV	AA	24 hours	lag 0	1.80	-0.60	4.26
	162	12898	Los Angeles County, Moolgavkar 2003	MORT	CV	AA	24 hours	lag 3	1.52	1.15	1.89
	162	12874	Cook County, Moolgavkar 2003	MORT	CV	AA	24 hours	lag 1	1.44	0.30	2.58
	182	673	London, Bremner 1999	MORT	CV	AA	24 hours	lag 1	1.40	-0.10	2.92
	192	4084	Madrid, Galan 1999	MORT	CV	AA	24 hours	lag 0	1.07	0.33	1.81
	236	585	Philadelphia, Kelsall 1997	MORT	CV	AA	24 hours	lag 3-4	0.93	0.08	1.79
	83	7318	Geneva, Wietlisbach 1996	MORT	CV	AA	24 hours	lag 3	0.90	-1.44	3.31
	1140	4178	Valencia, Tenias Burillo 1999	MORT	CV	AA	24 hours	lag 5	0.65	-2.17	3.55
	83	7316	Zurich, Wietlisbach 1996	MORT	CV	AA	24 hours	lag 3	0.60	-1.93	3.20
	1070	3811	Inchon, Hong 1999	MORT	CV	AA	24 hours	lag 1	0.15	-0.99	1.31
	193	3785	Huelva, Daponte 1999	MORT	CV	AA	24 hours	lag 5	0.14	-0.04	0.32
	198	4357	Gijon, Canada 1999	MORT	CV	AA	24 hours	lag 1	-3.34	-7.89	1.43
7	163	6965	Los Angeles, Moolgavkar 2000	MORT	CAR	AA	24 hours	lag 2	3.32	2.89	3.75
	1073	3237	Buffalo, Gwynn 2000	MORT	CAR	AA	24 hours	lag 3	3.19	-1.02	7.57
	163	6978	Maricopa, Moolgavkar 2000	MORT	CAR	AA	24 hours	lag 3	3.07	1.83	4.32
	163	6947	Cook County, Moolgavkar 2000	MORT	CAR	AA	24 hours	lag 3	1.53	0.26	2.82
8	1275	6683	Netherlands, Hoek 2001	MORT	ST	AA	24 hours	lag 0-6	70.34	26.90	128.64
	112	8544	Seoul, Hong 2002	MORT	ST	AA	24 hours	lag 2	5.97	1.07	11.12
	163	7050	Maricopa, Moolgavkar 2000	MORT	ST	AA	24 hours	lag 5	4.21	1.98	6.48
	163	7040	Los Angeles, Moolgavkar 2000	MORT	ST	AA	24 hours	lag 1	3.15	2.34	3.97
	163	7028	Cook County, Moolgavkar 2000	MORT	ST	AA	24 hours	lag 1	2.54	0.18	4.94
9	1337	11800	Palermo, Biggeri 2001	MORT	RESP	AA	8 hours	lag 1-2	8.70	3.20	14.49
	1337	11756	Florence, Biggeri 2001	MORT	RESP	AA	8 hours	lag 1-2	6.10	-1.60	14.40
	144	7095	Coachella Valley, Ostro 2000	MORT	RESP	AA	8 hours	lag 0	4.84	-7.88	19.32
	1337	11693	Milan, Biggeri 2001	MORT	RESP	AA	8 hours	lag 1-2	3.10	0.10	6.19
	1337	11780	Rome, Biggeri 2001	MORT	RESP	AA	8 hours	lag 1-2	3.10	0.80	5.45
	1337	11731	Bologna, Biggeri 2001	MORT	RESP	AA	8 hours	lag 1-2	2.00	-3.00	7.26
	1337	11667	Turin, Biggeri 2001	MORT	RESP	AA	8 hours	lag 1-2	1.80	-1.40	5.10
	69	7710	West Midlands, Anderson 2001	MORT	RESP	AA	8 hours	lag 0-1	0.96	-1.68	3.67
	161	13291	Helsinki, Penttinen 2004	MORT	RESP	AA	8 hours	lag 0-4	-1.49	-7.73	5.17
10	83	7304	Zurich, Wietlisbach 1996	MORT	RESP	AA	24 hours	lag 3	8.33	3.96	12.88
	198	3414	Oviedo, Canada 1999	MORT	RESP	AA	24 hours	lag 2	6.87	-4.28	19.32
	83	7306	Geneva, Wietlisbach 1996	MORT	RESP	AA	24 hours	lag 3	5.65	1.99	9.45
	1140	4186	Valencia, Tenias Burillo 1999	MORT	RESP	AA	24 hours	lag 1	3.10	-3.20	9.81
	1073	4066	Buffalo, Gwynn 2000	MORT	RESP	AA	24 hours	lag 0	2.63	-5.67	11.67
	83	7305	Basel, Wietlisbach 1996	MORT	RESP	AA	24 hours	lag 3	2.22	-14.47	22.18
	182	420	London, Bremner 1999	MORT	RESP	AA	24 hours	lag 3	2.00	-0.30	4.35
	192	4091	Madrid, Galan 1999	MORT	RESP	AA	24 hours	lag 0	1.71	0.34	3.09
	1070	4210	Inchon, Hong 1999	MORT	RESP	AA	24 hours	lag 1	1.19	0.16	2.23
	236	633	Philadelphia, Kelsall 1997	MORT	RESP	AA	24 hours	lag 3-4	0.00	-2.55	2.62
	193	3789	Huelva, Daponte 1999	MORT	RESP	AA	24 hours	lag 5	-0.15	-0.52	0.23
	198	1875	Gijon, Canada 1999	MORT	RESP	AA	24 hours	lag 5	-4.44	-11.70	3.42

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Set No.	Refman id	Access id	Cities, author and date	Outcome code	Diagnostic code	Age code	Averaging time	Lag	Random effects estimate and 95% cl		
									Estimate	Lcl	Ucl
11	175	5522	Netherlands, Hoek 2000	MORT	COPDp	AA	24 hours	lag 0-6	15.92	8.18	24.22
	163	7020	Maricopa, Moolgavkar 2000	MORT	COPDp	AA	24 hours	lag 4	5.09	2.45	7.81
	163	7010	Los Angeles, Moolgavkar 2000	MORT	COPDp	AA	24 hours	lag 2	4.67	3.47	5.90
	163	6991	Cook County, Moolgavkar 2000	MORT	COPDp	AA	24 hours	lag 1	2.27	-1.27	5.93
12	375	1554	Seattle, Schwartz 1999	HAD	CAR	E	1 hour	lag 0	1.91	1.11	2.71
	375	1551	Minneapolis, Schwartz 1999	HAD	CAR	E	1 hour	lag 0	1.85	0.72	2.99
	375	1552	New Haven, Schwartz 1999	HAD	CAR	E	1 hour	lag 0	1.38	0.54	2.23
	375	1555	Spokane, Schwartz 1999	HAD	CAR	E	1 hour	lag 0	1.23	0.31	2.15
	375	1549	Chicago, Schwartz 1999	HAD	CAR	E	1 hour	lag 0	1.13	0.72	1.53
	375	1556	Tacoma, Schwartz 1999	HAD	CAR	E	1 hour	lag 0	0.84	0.11	1.57
	375	1553	St. Paul, Schwartz 1999	HAD	CAR	E	1 hour	lag 0	0.34	-0.85	1.53
	375	1550	Colorado Springs, Schwartz 1999	HAD	CAR	E	1 hour	lag 0	0.23	-1.11	1.59
13	1337	11698	Milan, Biggeri 2001	HAD	CAR	AA	8 hours	lag 0-3	4.90	4.20	5.60
	1337	11761	Florence, Biggeri 2001	HAD	CAR	AA	8 hours	lag 0-3	4.40	2.20	6.65
	1337	11784	Rome, Biggeri 2001	HAD	CAR	AA	8 hours	lag 0-3	3.00	2.40	3.60
	1337	11804	Palermo, Biggeri 2001	HAD	CAR	AA	8 hours	lag 0-3	2.10	1.00	3.21
	1337	11736	Bologna, Biggeri 2001	HAD	CAR	AA	8 hours	lag 0-3	1.30	-0.30	2.93
	1337	11673	Turin, Biggeri 2001	HAD	CAR	AA	8 hours	lag 0-3	1.10	0.00	2.21
	69	7728	West Midlands, Anderson 2001	HAD	CAR	AA	8 hours	lag 0-1	0.72	-0.48	1.93
	1337	11718	Ravenna, Biggeri 2001	HAD	CAR	AA	8 hours	lag 0-3	0.60	-3.10	4.44
14	1196	6851	Los Angeles, Moolgavkar 2000	HAD	CAR	E	24 hours	lag 0	3.74	3.39	4.09
	1196	6839	Cook County, Moolgavkar 2000	HAD	CAR	E	24 hours	lag 0	3.58	2.72	4.46
	1299	7351	Rome, Michelozzi 2000	HAD	CAR	E	24 hours	lag 0	3.29	2.22	4.37
	1196	6864	Maricopa, Moolgavkar 2000	HAD	CAR	E	24 hours	lag 0	2.39	1.53	3.26
	472	1965	Tucson, Schwartz 1997	HAD	CAR	E	24 hours	lag 0	1.33	0.25	2.44
15	368	6147	Toronto, Burnett 1999	HAD	IHD	AA	24 hours	lag 0-1	4.90	3.39	6.43
	1253	6461	Strasbourg, Eilstein 2001	HAD	IHD	AA	24 hours	lag 0	4.64	-1.36	11.01
	1299	7352	Rome, Michelozzi 2000	HAD	IHD	AA	24 hours	lag 0	4.43	2.68	6.21
	1105	4255	Los Angeles, Linn 2000	HAD	IHD	AA	24 hours	lag 0	3.25	1.80	4.72
	64	1566	London, Poloniecki 1997	HAD	IHD	AA	24 hours	lag 1	1.83	0.64	3.03
	1629	13951	Tehran, Hosseinpoor	HAD	IHD	AA	24 hours	lag 1	0.96	0.60	1.32
	1622	13211	Seoul, Lee 2003	HAD	IHD	AA	24 hours	lag 0-5	-4.83	-7.27	-2.33
16	484	2526	Los Angeles, Morris 1995	HAD	HF	E	1 hour		2.49	1.99	2.99
	376	2230	Chicago, Morris 1998	HAD	HF	E	1 hour	lag 0	2.28	1.54	3.03
	484	2532	Milwaukee, Morris 1995	HAD	HF	E	1 hour		2.06	0.54	3.60
	286	2687	Detroit, Schwartz 1995	HAD	HF	E	1 hour	lag 0	1.37	0.69	2.06
	484	2528	Philadelphia, Morris 1995	HAD	HF	E	1 hour		1.26	0.39	2.14
	484	2531	Houston, Morris 1995	HAD	HF	E	1 hour		0.84	-0.24	1.93
	484	2529	New York, Morris 1995	HAD	HF	E	1 hour		0.77	0.24	1.30
17	1337	11766	Florence, Biggeri 2001	HAD	RESP	AA	8 hours	lag 0-3	5.60	2.20	9.11
	1337	11713	Verona, Biggeri 2001	HAD	RESP	AA	8 hours	lag 0-3	5.40	3.10	7.75
	1337	11808	Palermo, Biggeri 2001	HAD	RESP	AA	8 hours	lag 0-3	4.90	3.80	6.01
	1337	11678	Turin, Biggeri 2001	HAD	RESP	AA	8 hours	lag 0-3	4.80	3.60	6.01
	1337	11741	Bologna, Biggeri 2001	HAD	RESP	AA	8 hours	lag 0-3	4.80	2.80	6.84
	1337	11703	Milan, Biggeri 2001	HAD	RESP	AA	8 hours	lag 0-3	3.60	2.60	4.61
	1337	11788	Rome, Biggeri 2001	HAD	RESP	AA	8 hours	lag 0-3	2.20	1.70	2.70
	1337	11722	Ravenna, Biggeri 2001	HAD	RESP	AA	8 hours	lag 0-3	1.00	-4.80	7.15
	69	7755	West Midlands, Anderson 2001	HAD	RESP	AA	8 hours	lag 0-1	0.24	-0.88	1.37
18	1265	5671	Rome, Fusco 2001	HAD	RESP	AA	24 hours	lag 0	1.86	0.86	2.86
	1073	3459	Buffalo, Gwynn 2000	HAD	RESP	AA	24 hours	lag 2	1.34	-1.99	4.78
	1053	1765	London, Atkinson 1999	HAD	RESP	AA	24 hours	lag 1	0.74	-0.57	2.07
	1185	5404	Ulsan, Cho 2000	HAD	RESP	AA	24 hours	lag 0	0.10	0.04	0.16
	1185	5393	Daejeon, Cho 2000	HAD	RESP	AA	24 hours	lag 0	0.02	0.01	0.03
	1185	5398	Suwon, Cho 2000	HAD	RESP	AA	24 hours	lag 0	0.02	0.00	0.04
	230	13825	Spokane, Slaughter	HAD	RESP	AA	24 hours	lag 1	-0.80	-4.02	2.53
19	1053	1783	London, Atkinson 1999	HAD	RESP	E	24 hours	lag 3	1.18	-0.54	2.93
	635	2033	Birmingham, Moolgavkar 1997	HAD	RESP	E	24 hours	lag 0	0.14	-0.05	0.32
	1299	7391	Rome, Michelozzi 2000	HAD	RESP	E	24 hours	lag 0	0.00	-1.54	1.57
	216	3847	Edinburgh, Prescott 1998	HAD	RESP	E	24 hours	lag 1-3	0.00	-14.92	17.54
20	635	2045	Minneapolis/St. Paul, Moolgavkar 1997	HAD	COPDp	E	24 hours	lag 2	4.69	-0.67	10.34
	136	6756	Los Angeles, Moolgavkar 2000	HAD	COPDp	E	24 hours	lag 0	4.41	3.64	5.20
	136	6773	Maricopa, Moolgavkar 2000	HAD	COPDp	E	24 hours	lag 5	4.00	1.92	6.12
	1638	14076	Vancouver, Yang	HAD	COPDp	E	24 hours	lag 0	3.20	3.11	3.30
	136	6740	Cook County, Moolgavkar 2000	HAD	COPDp	E	24 hours	lag 1	2.43	0.26	4.64
	1053	1813	London, Atkinson 1999	HAD	COPDp	E	24 hours	lag 3	1.51	-1.05	4.14

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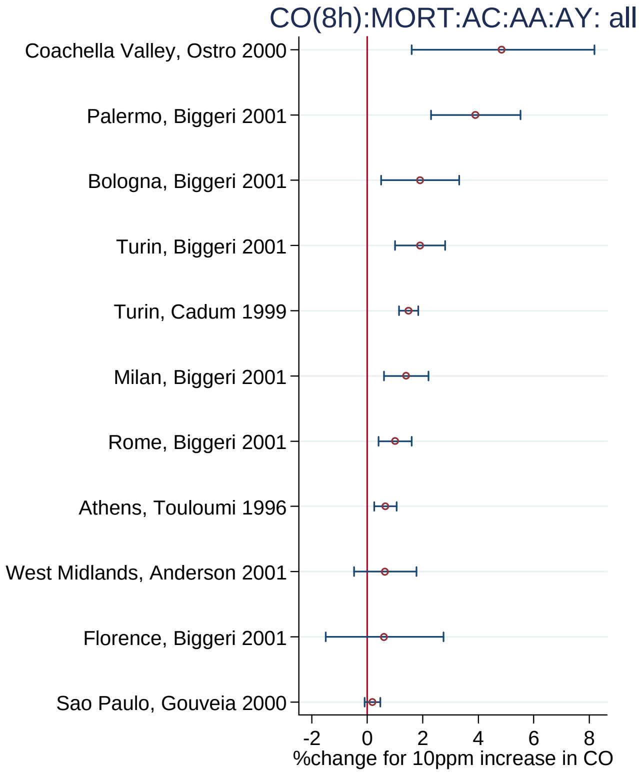
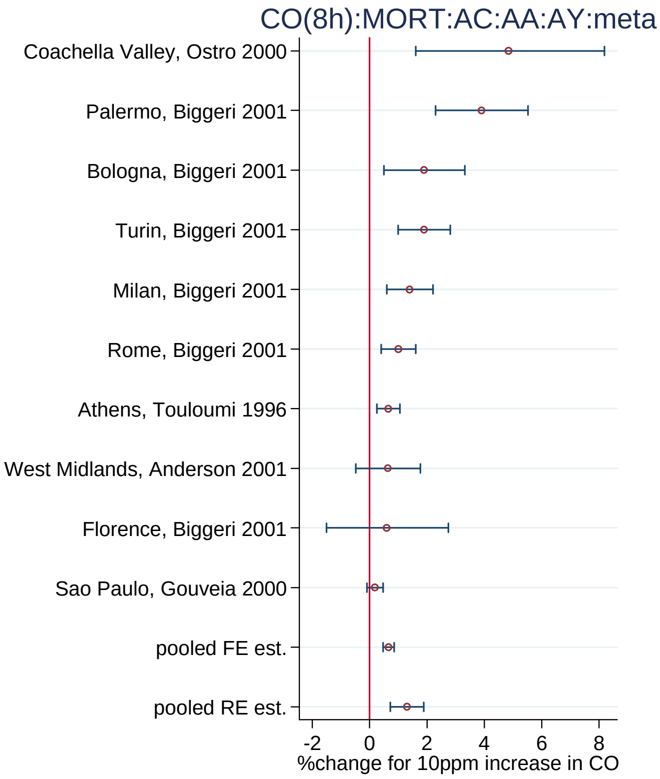
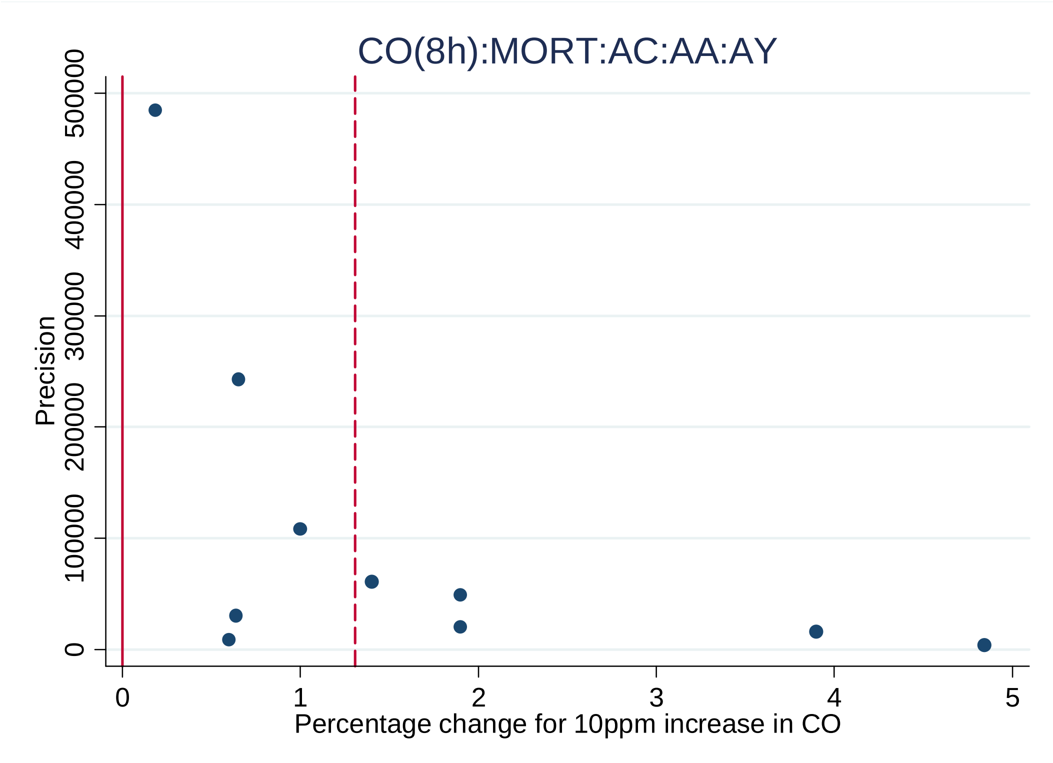
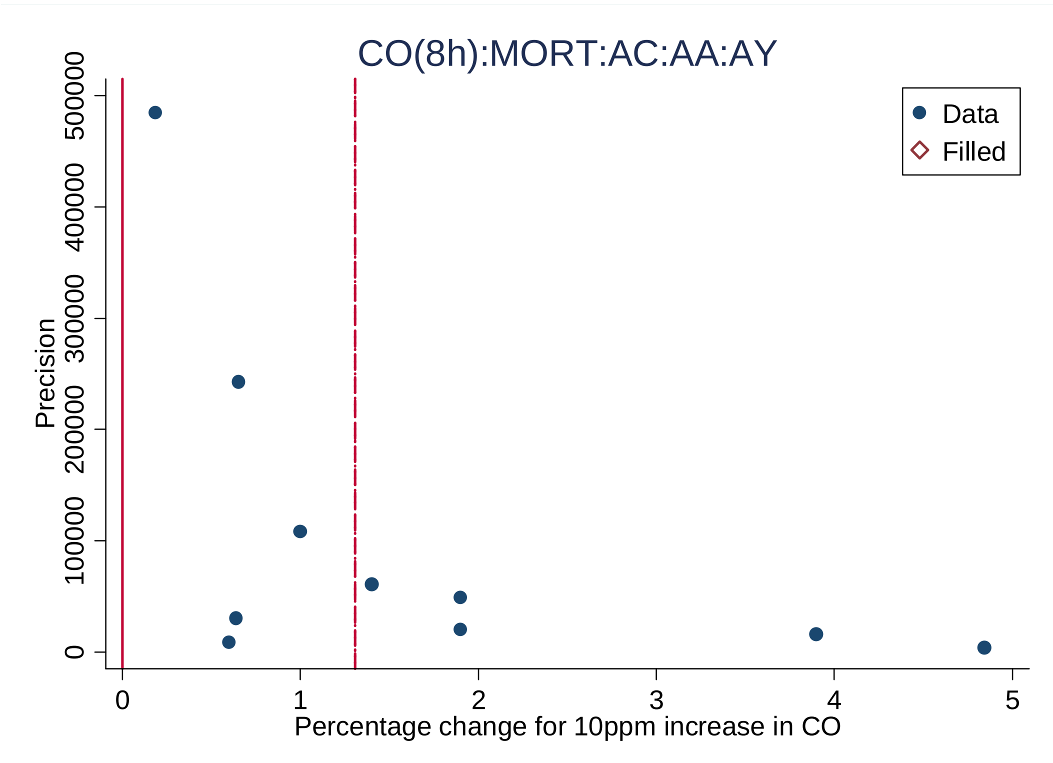




Time Series CO

Set 1





Time Series CO

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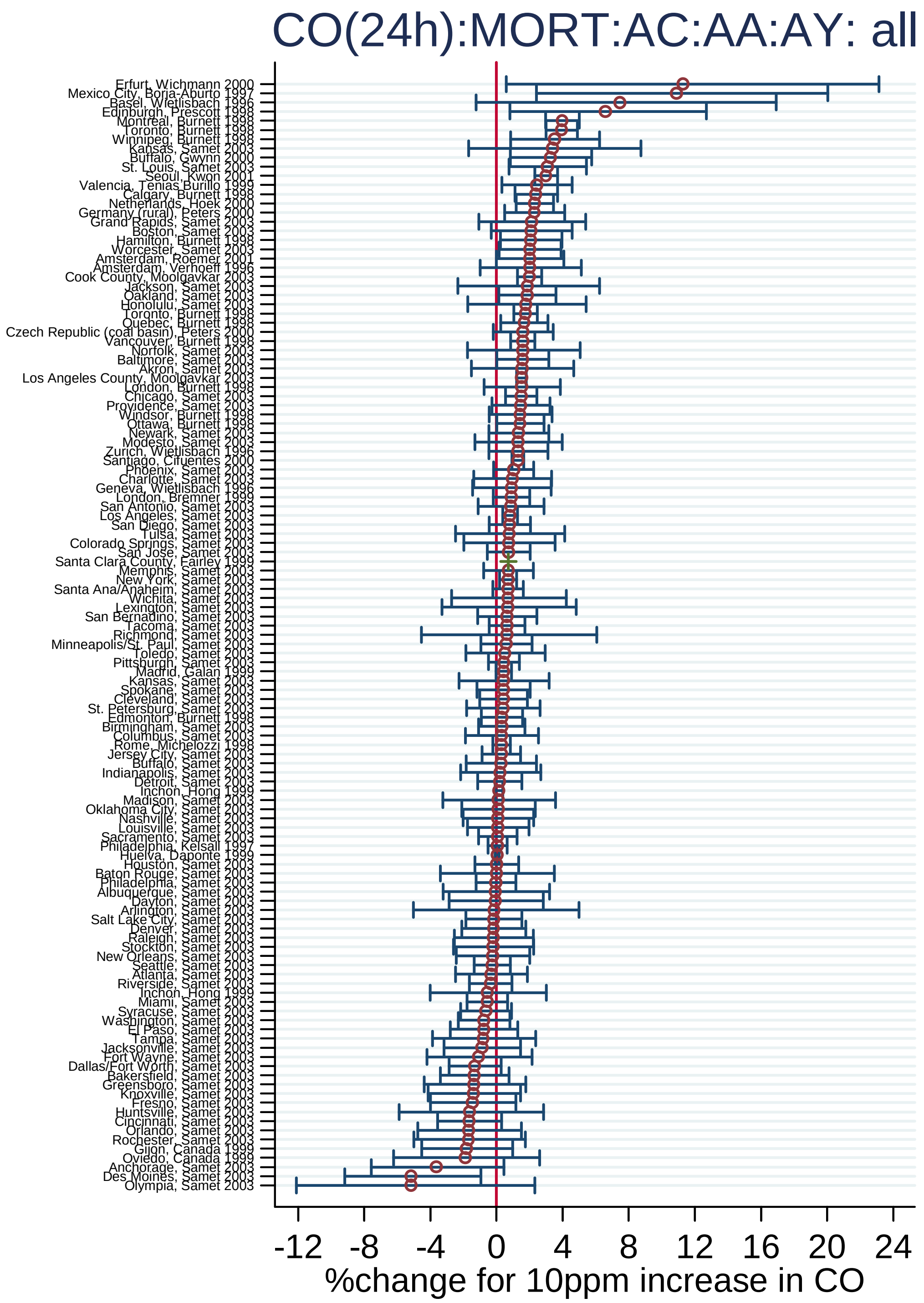

Time Series CO

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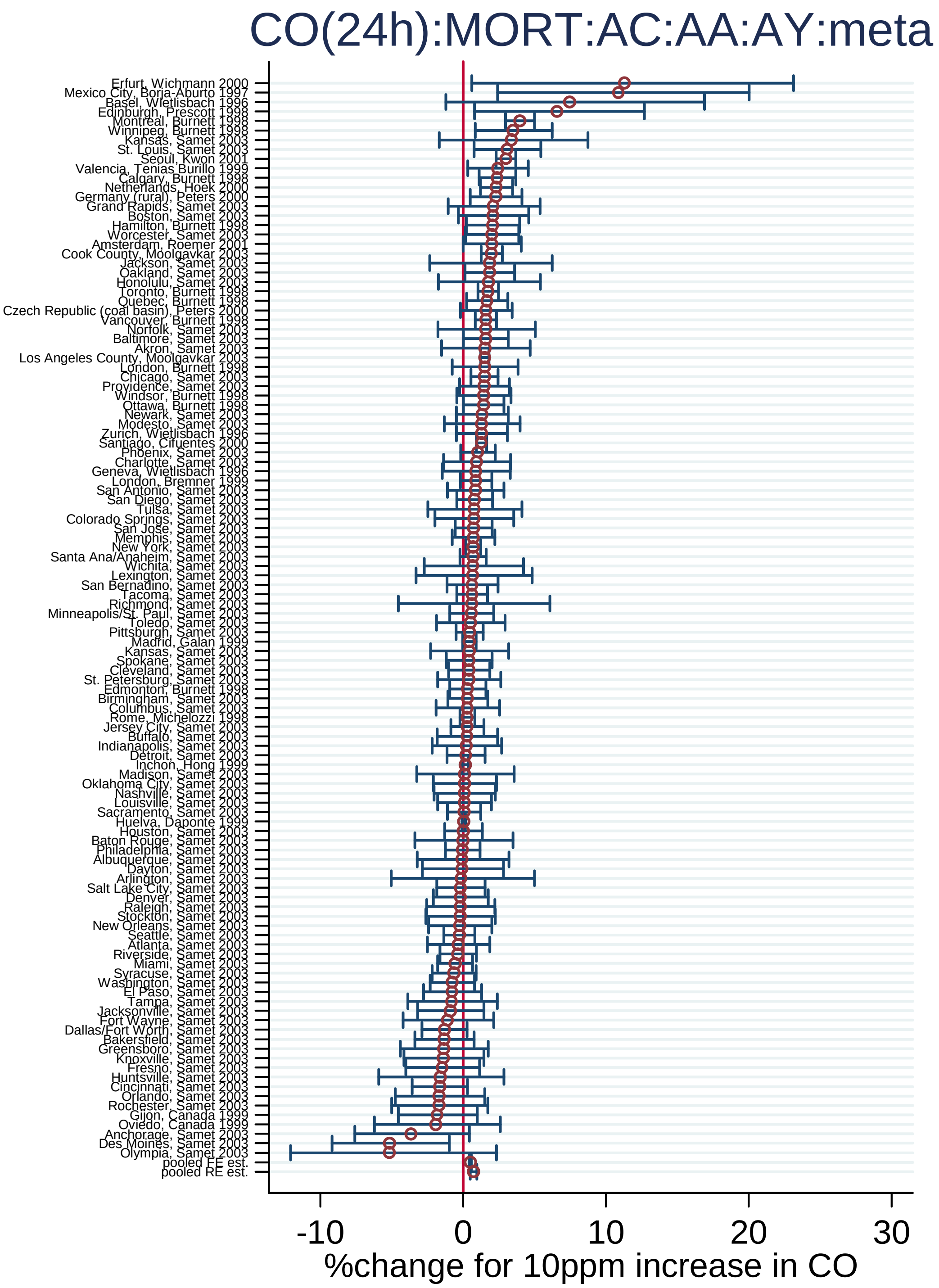

Time Series CO

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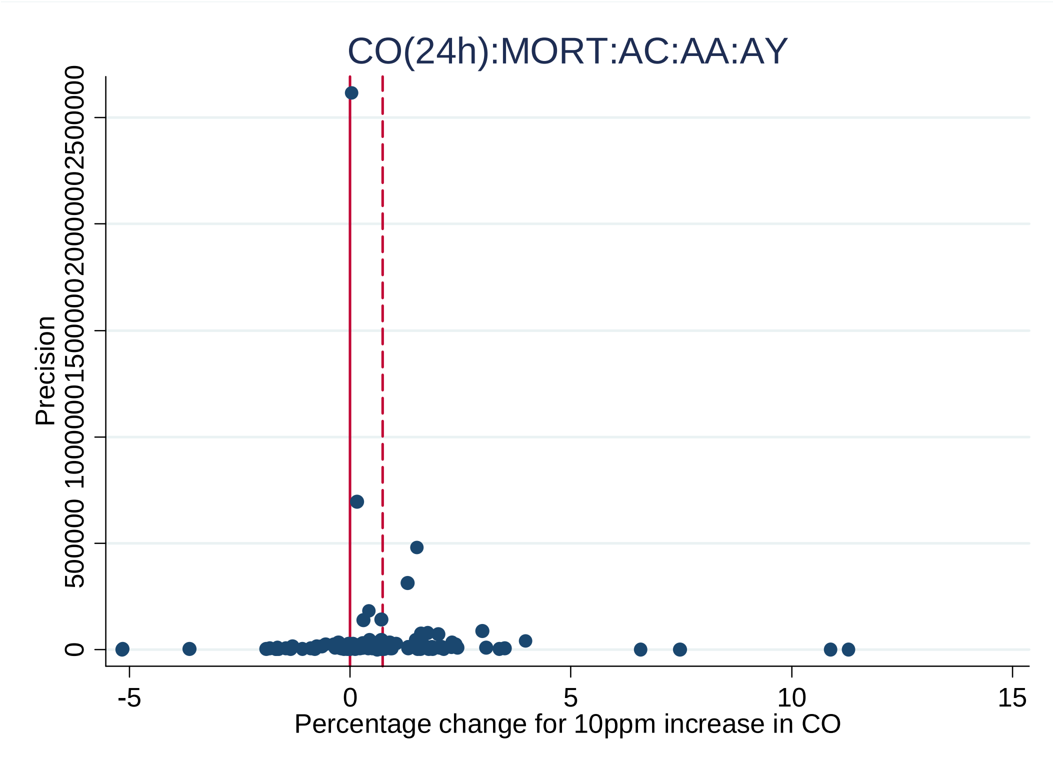

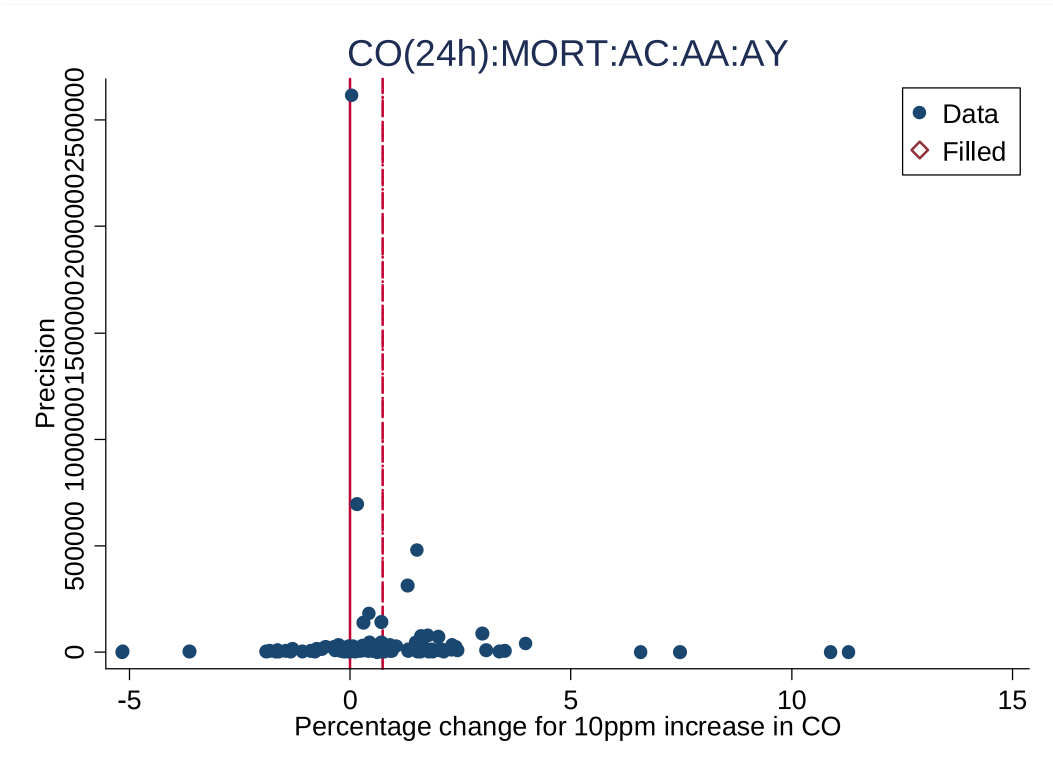

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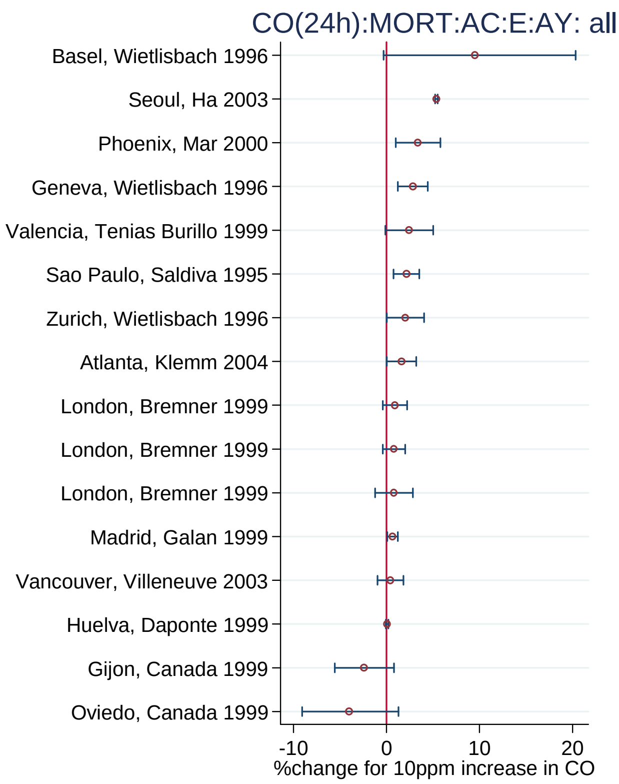

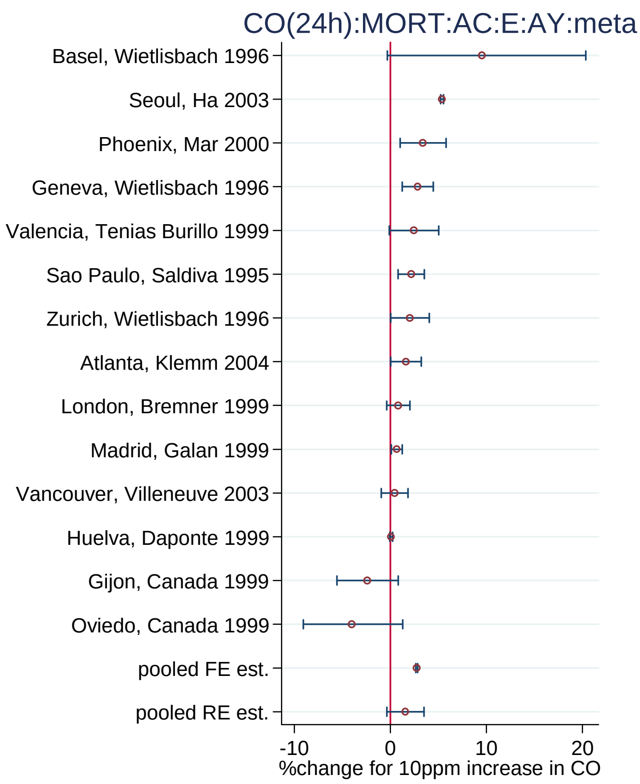

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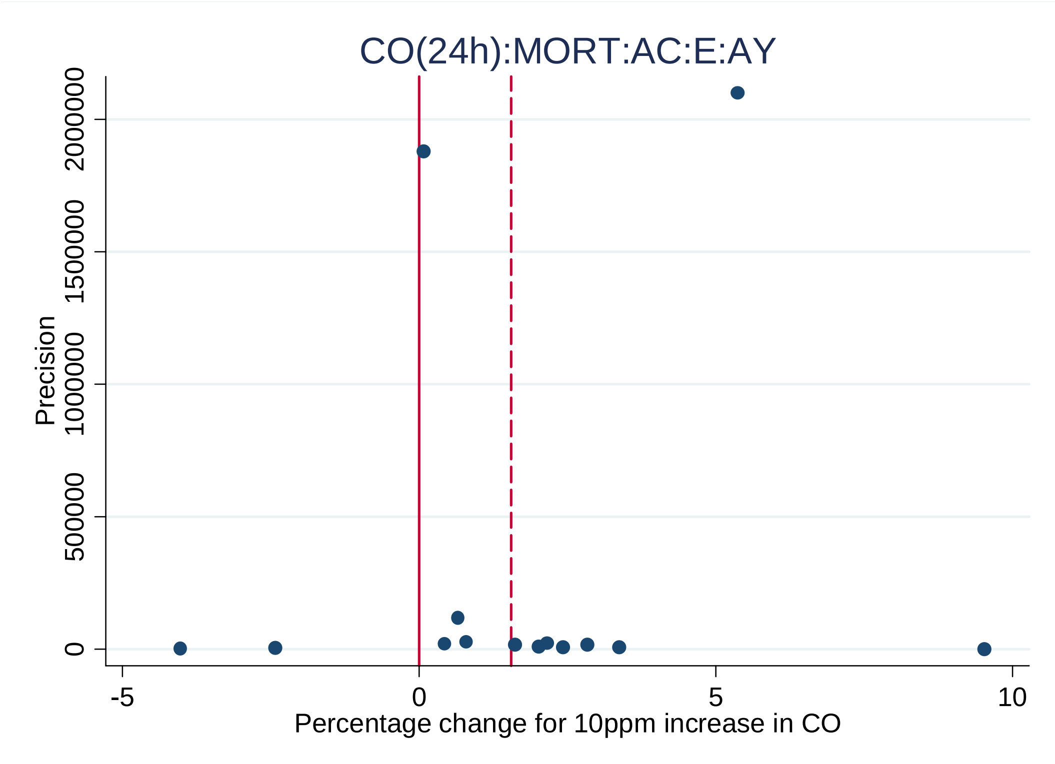

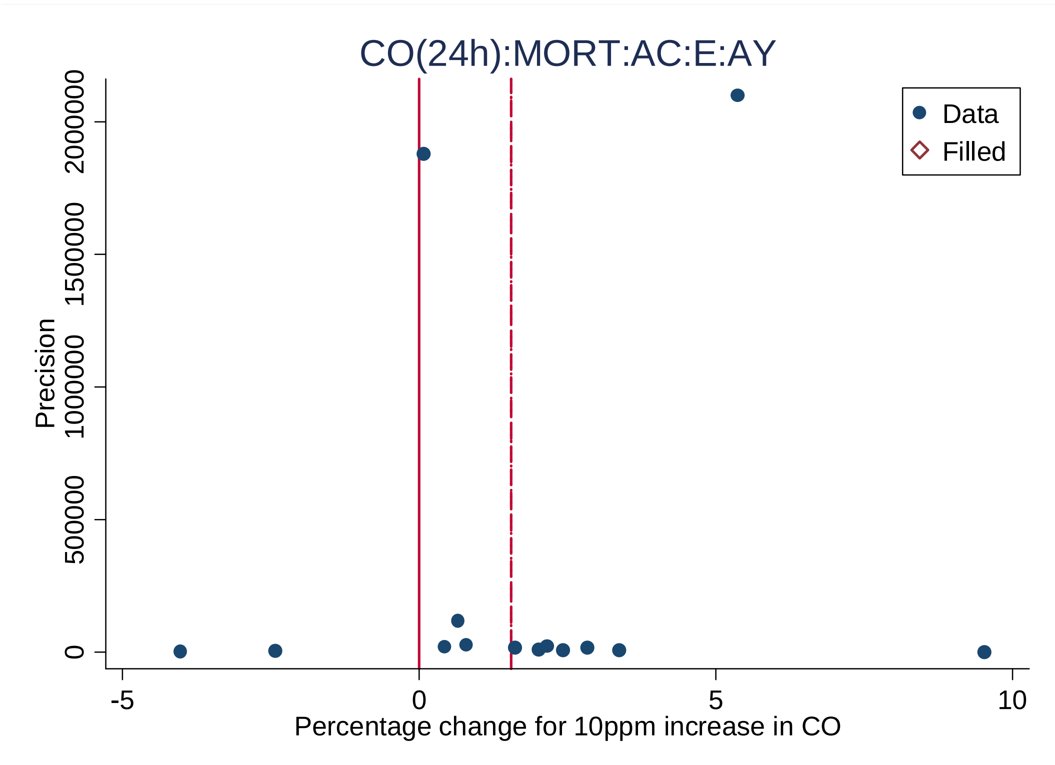

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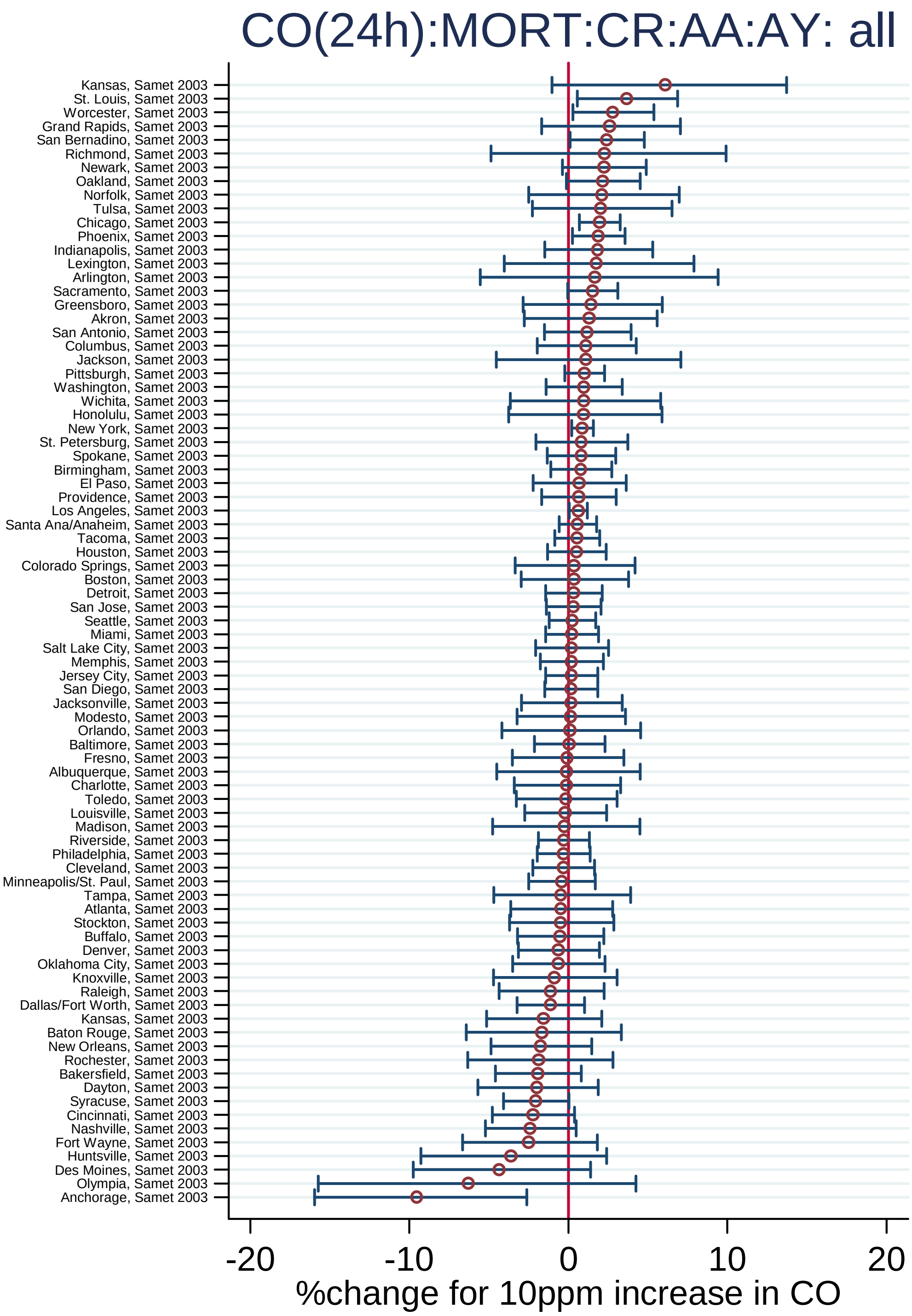

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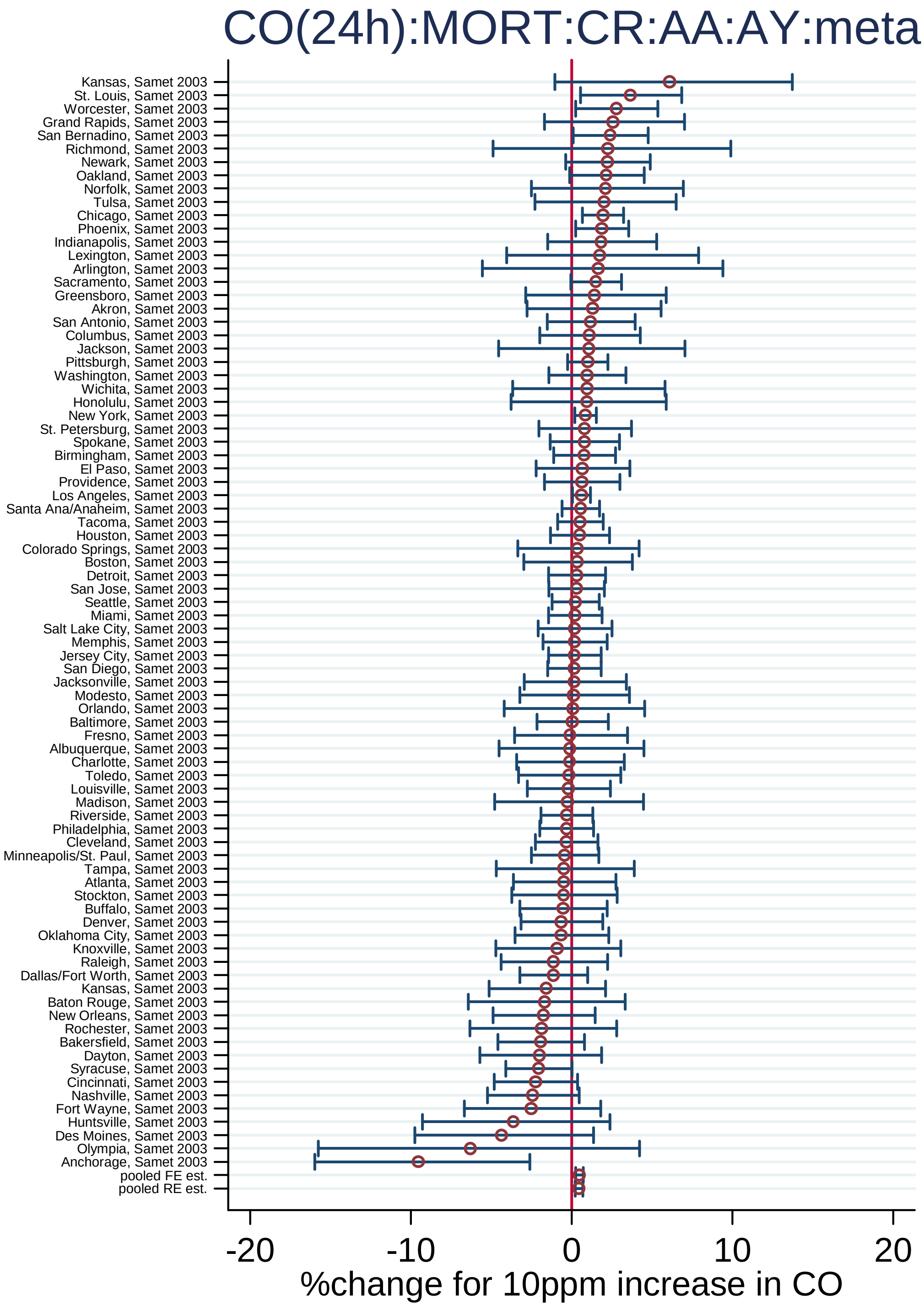

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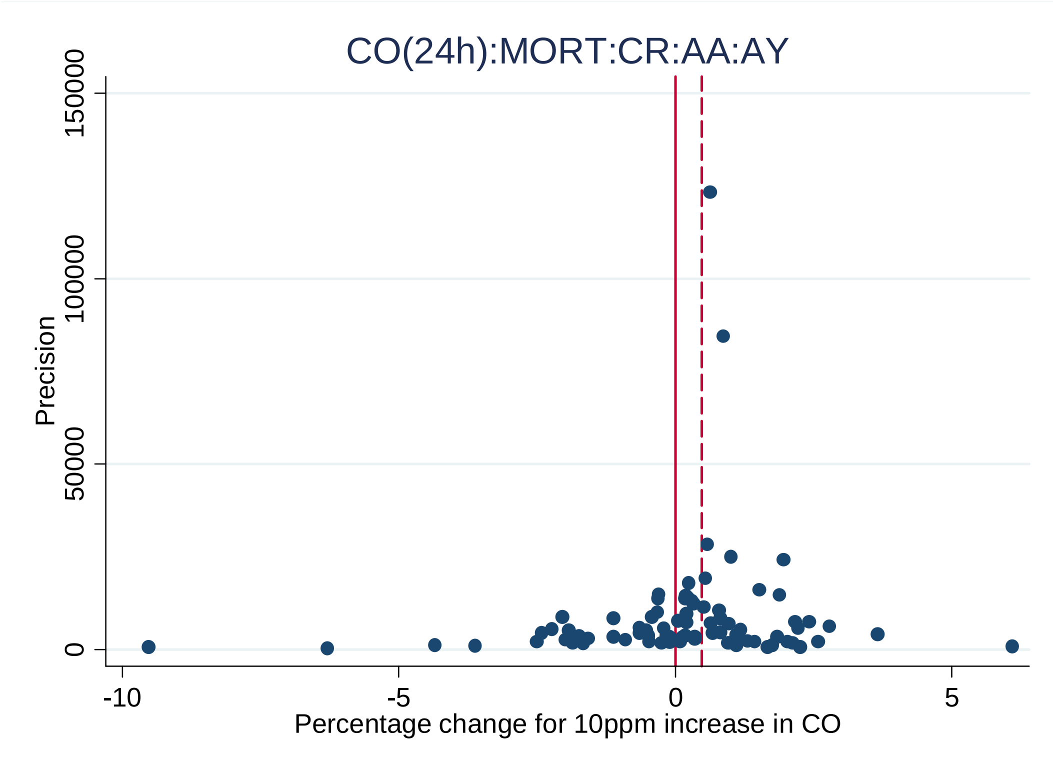

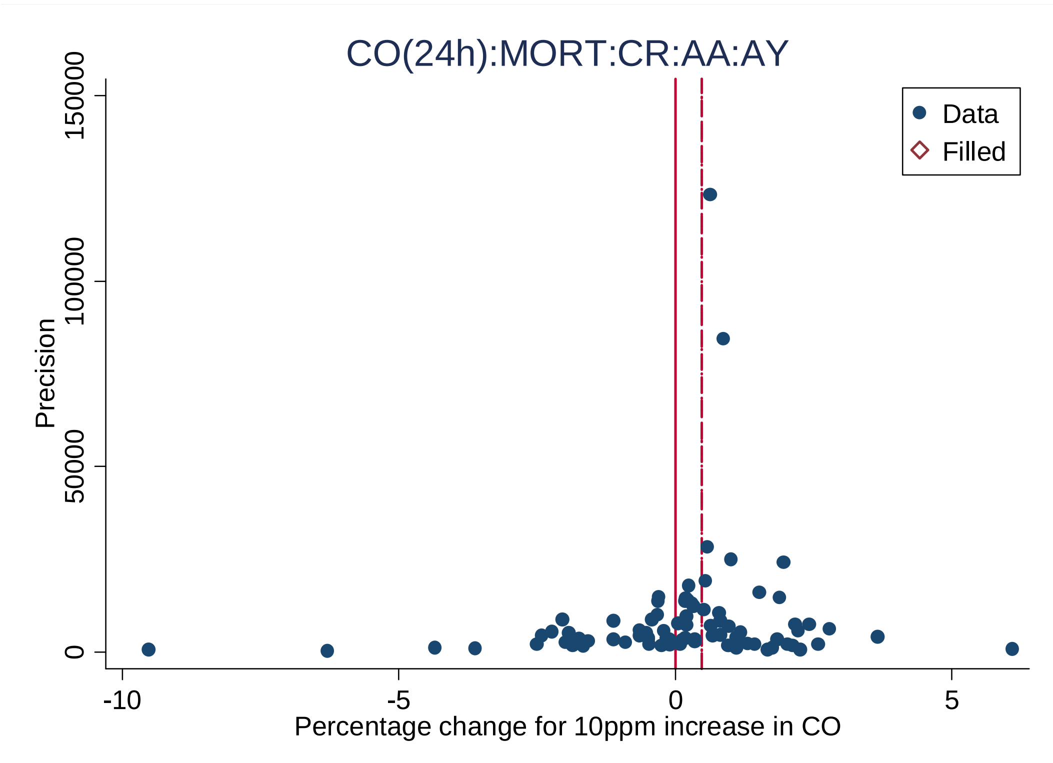

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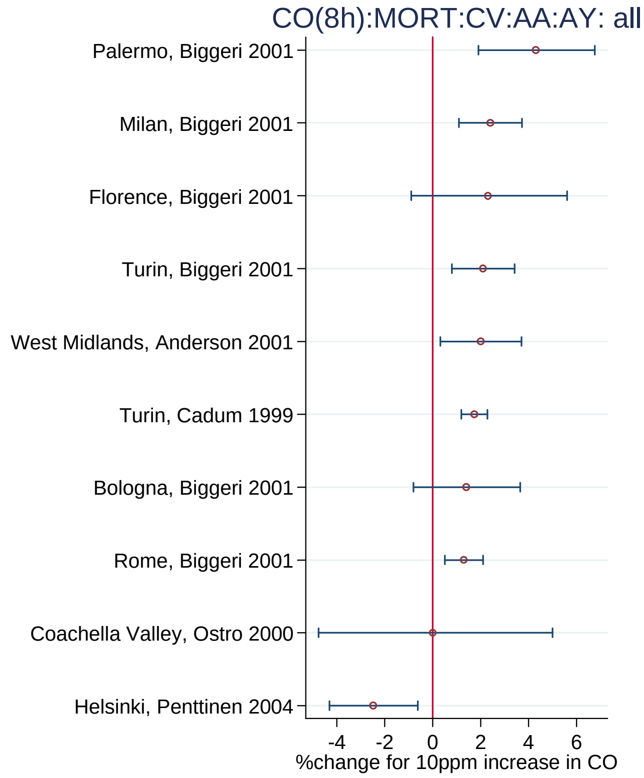

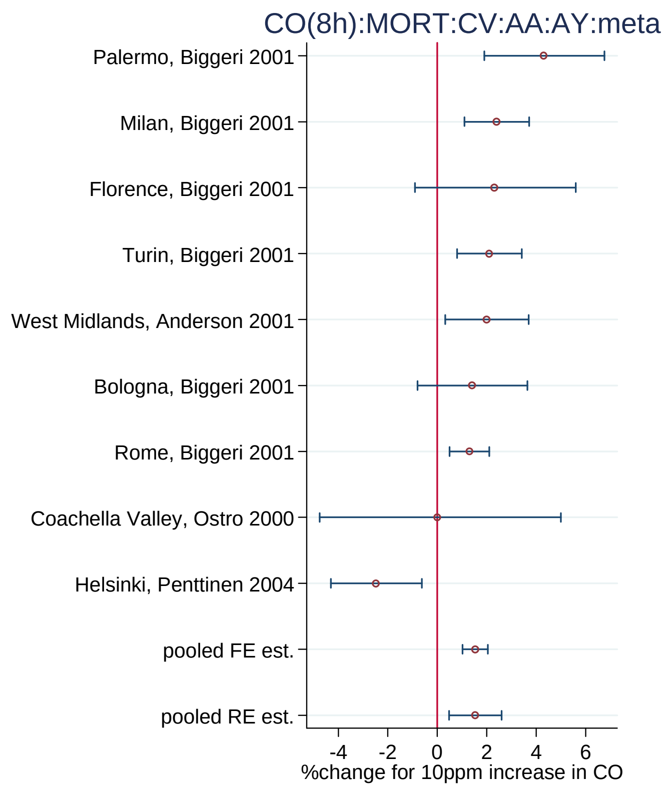

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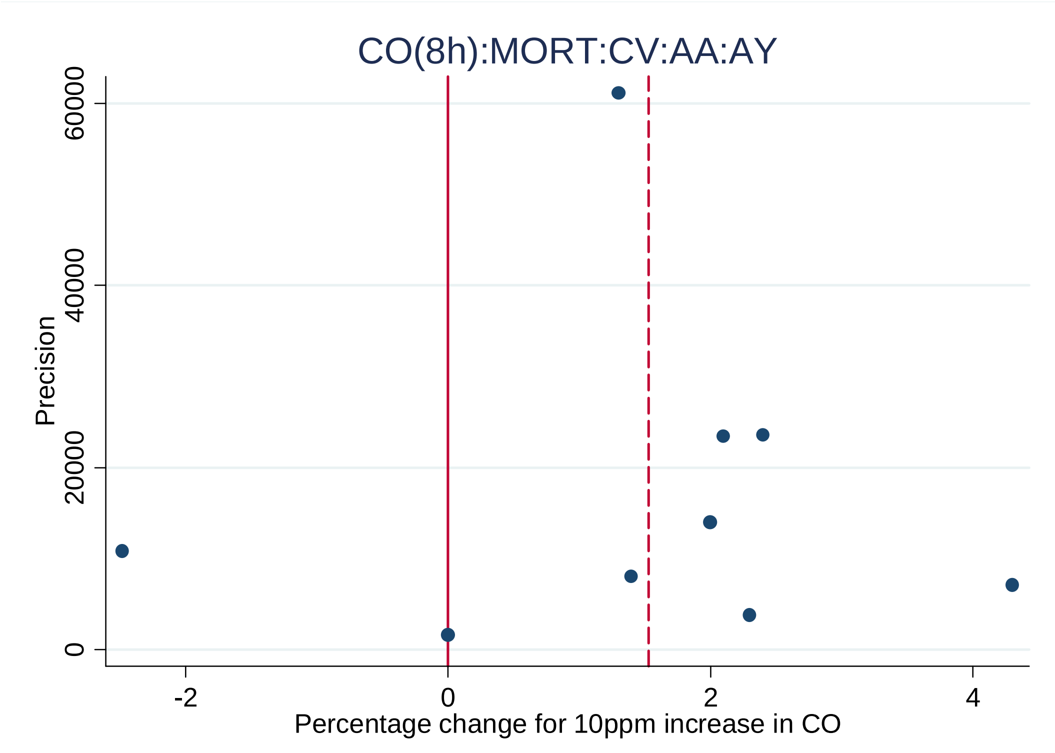

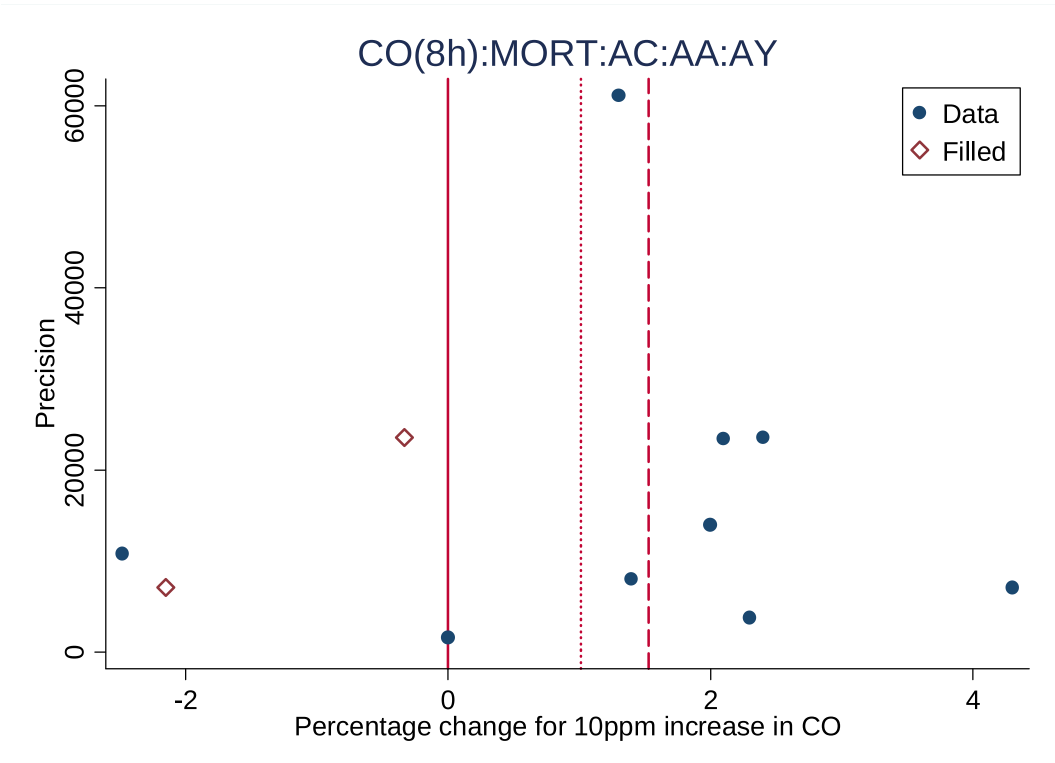

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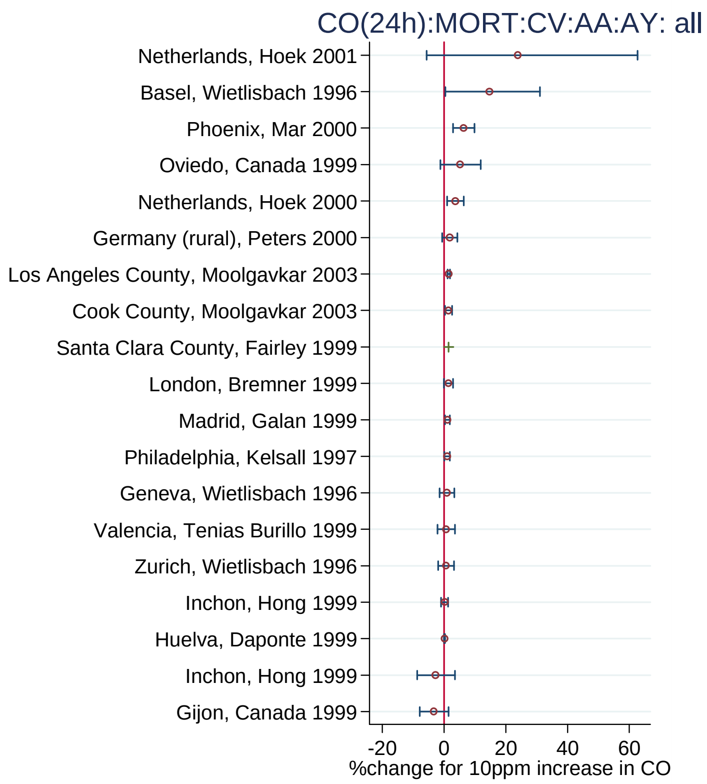

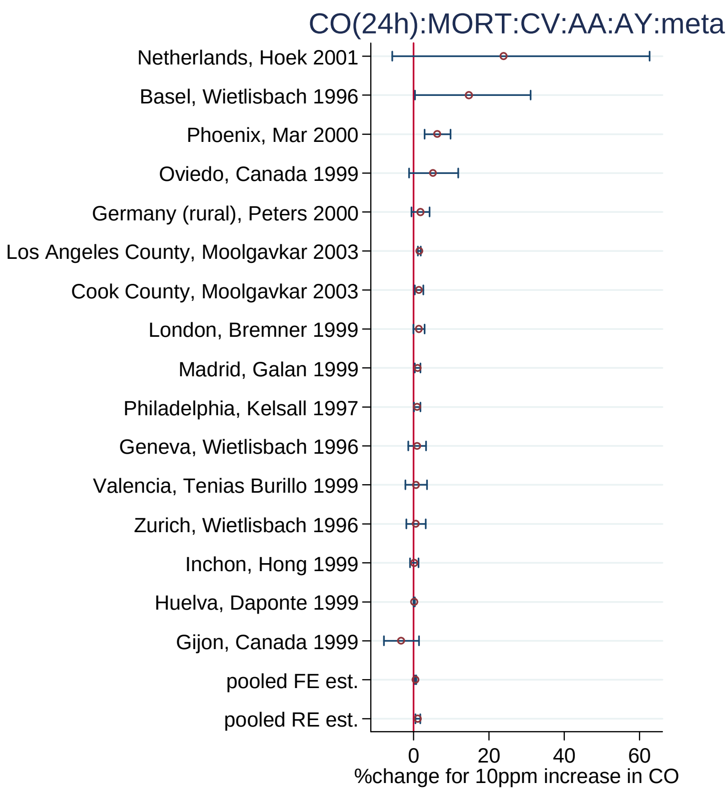

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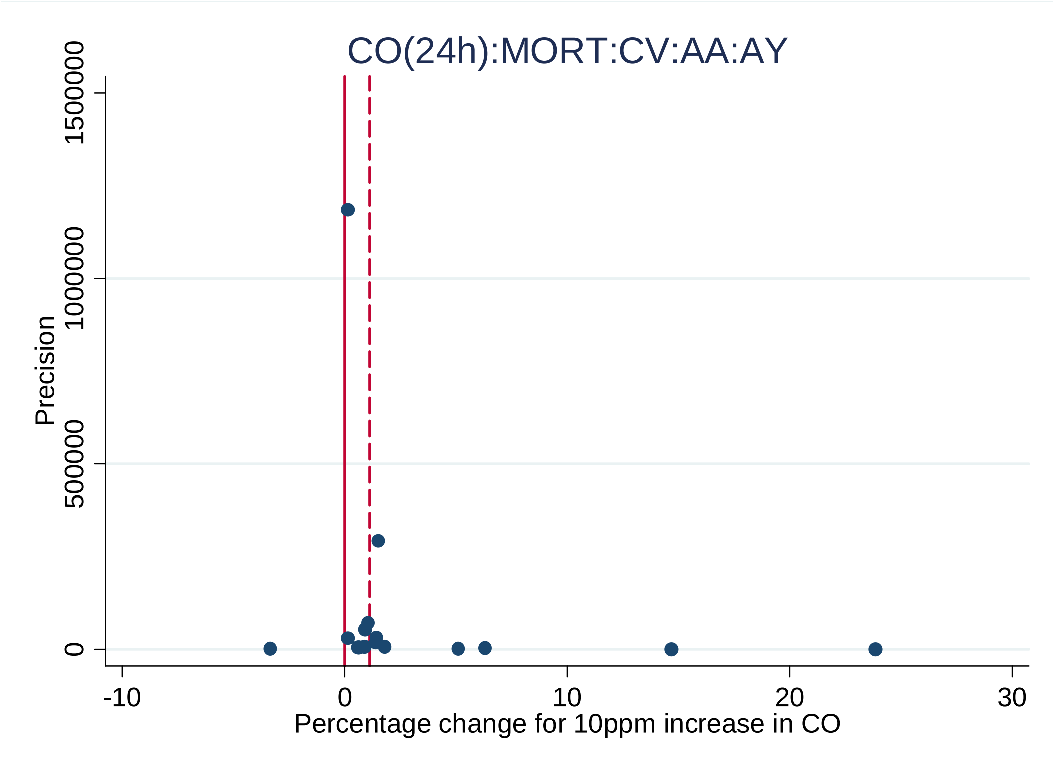

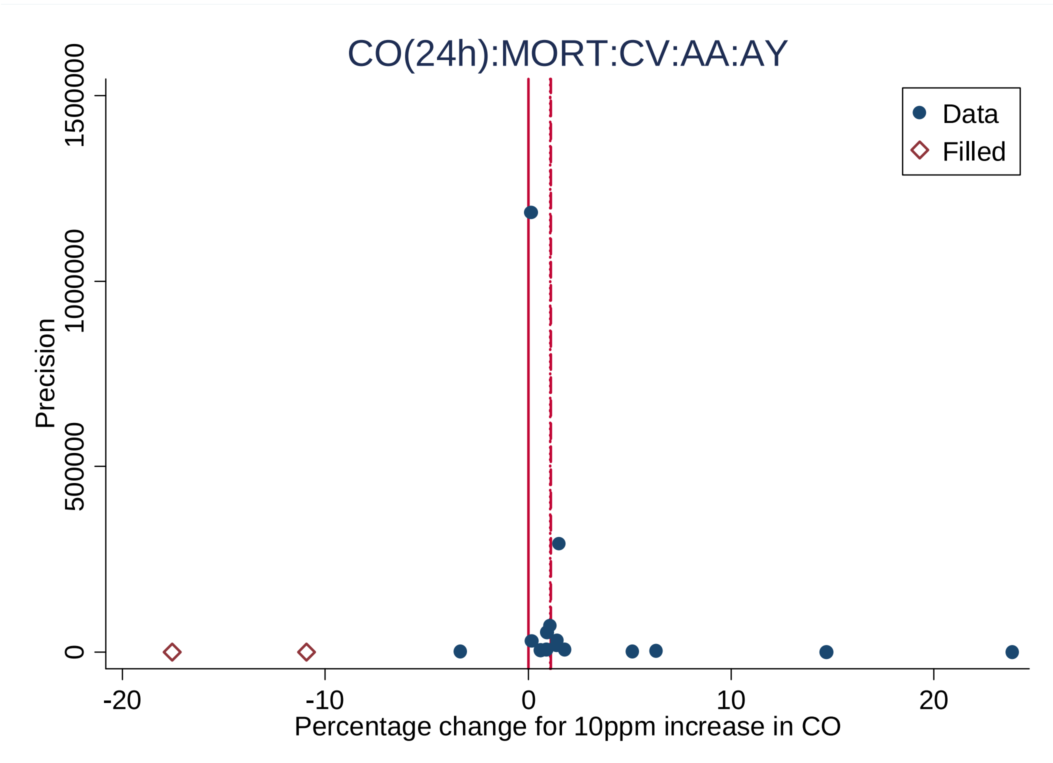

Time Series CO

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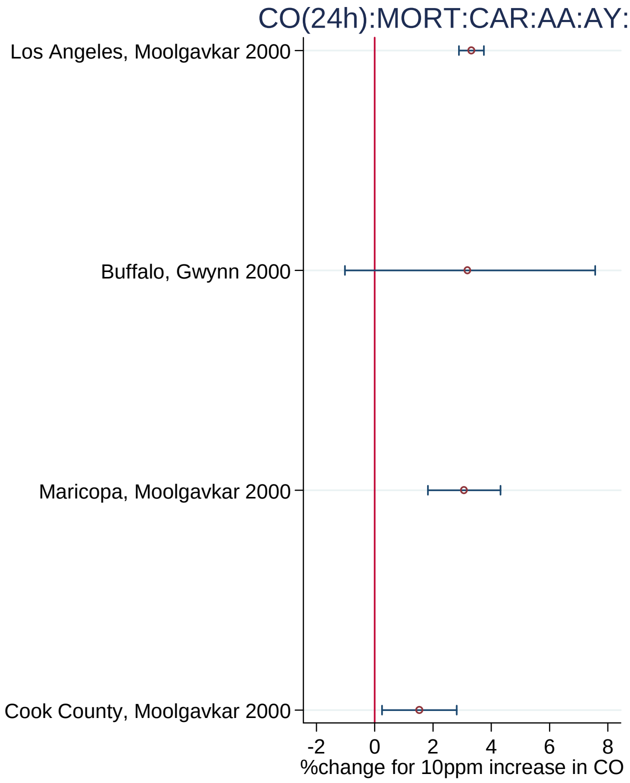

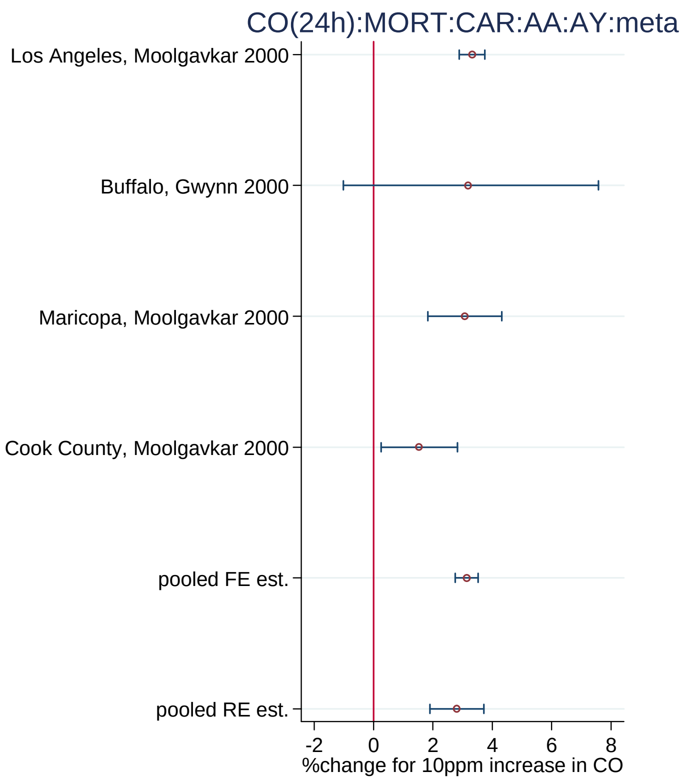

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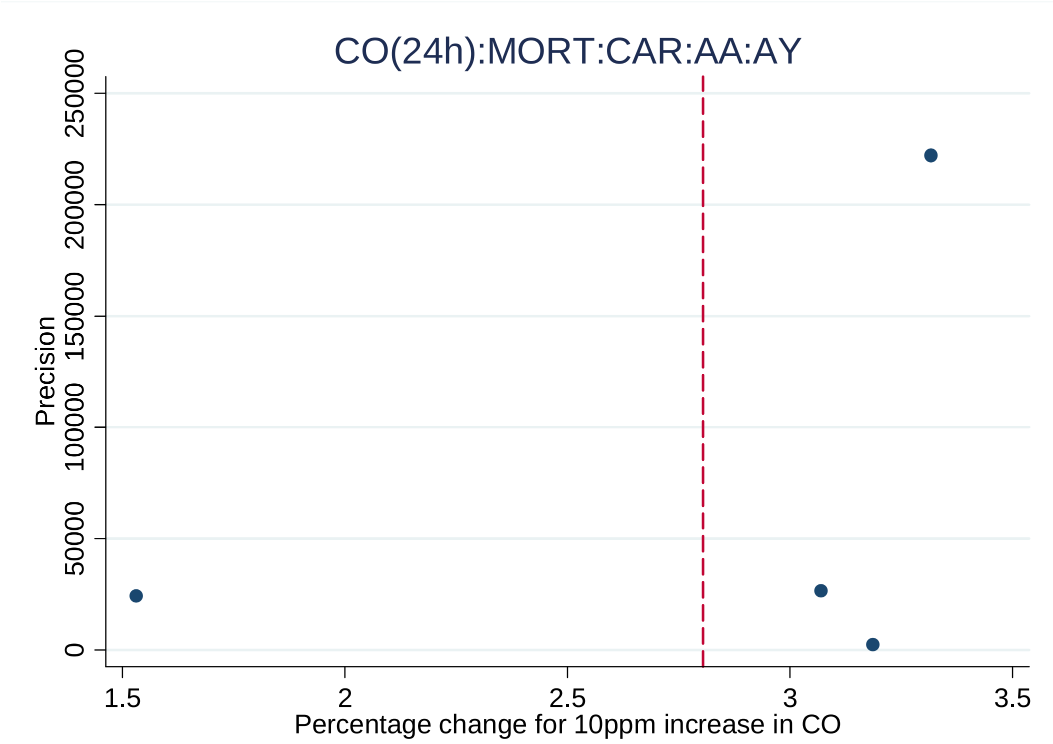

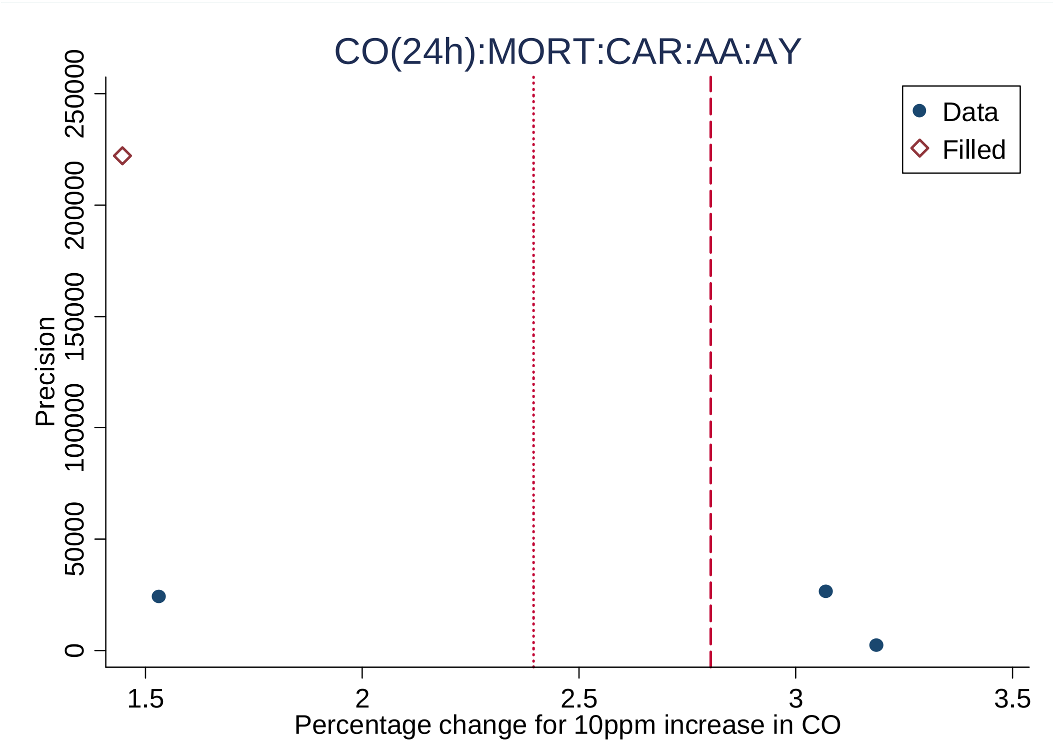

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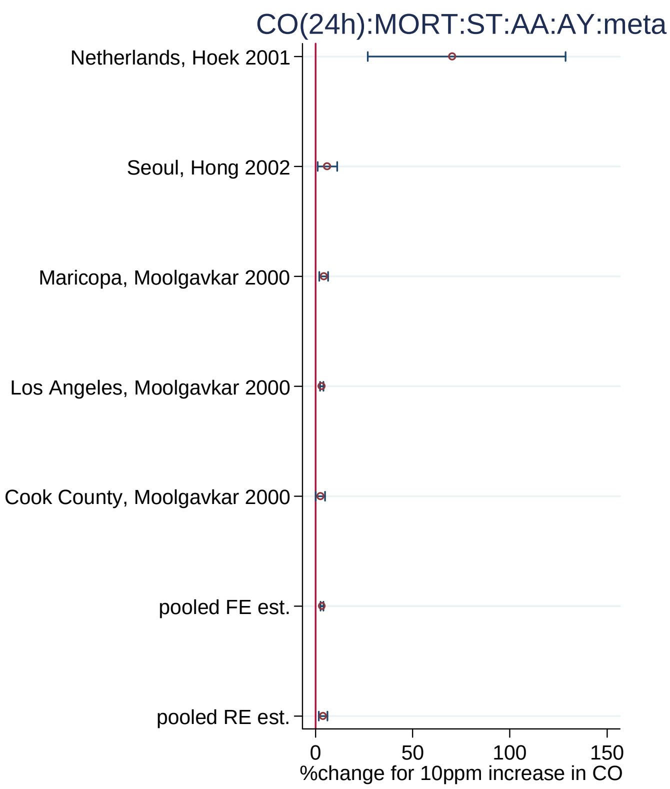

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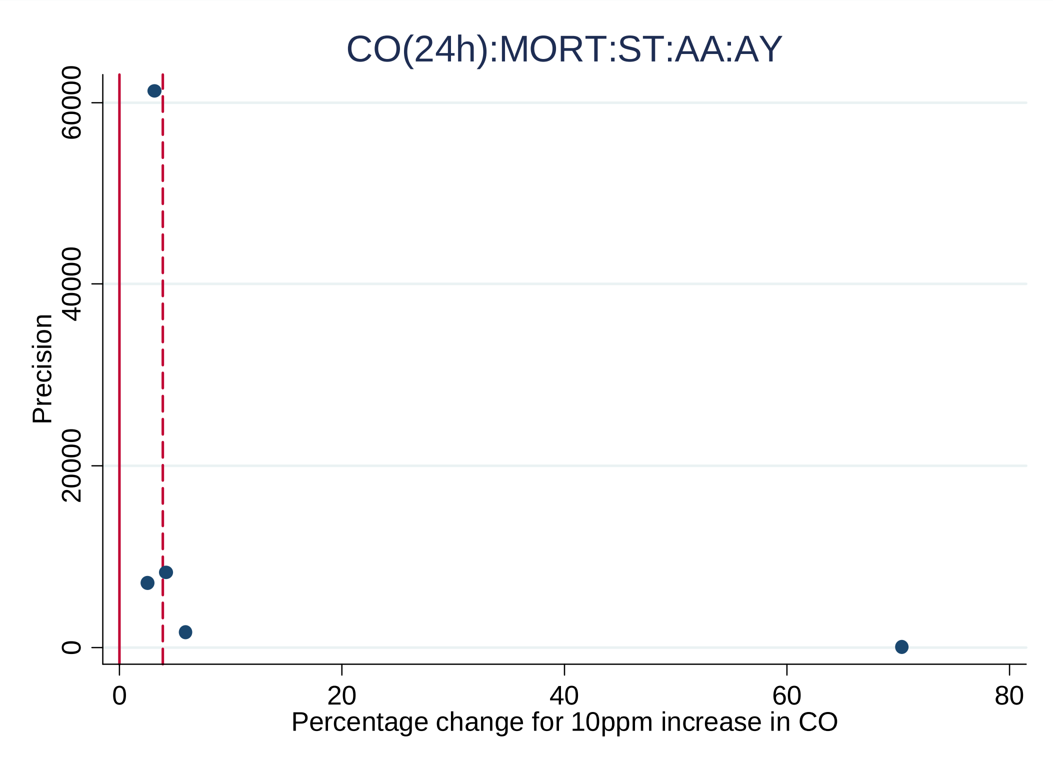

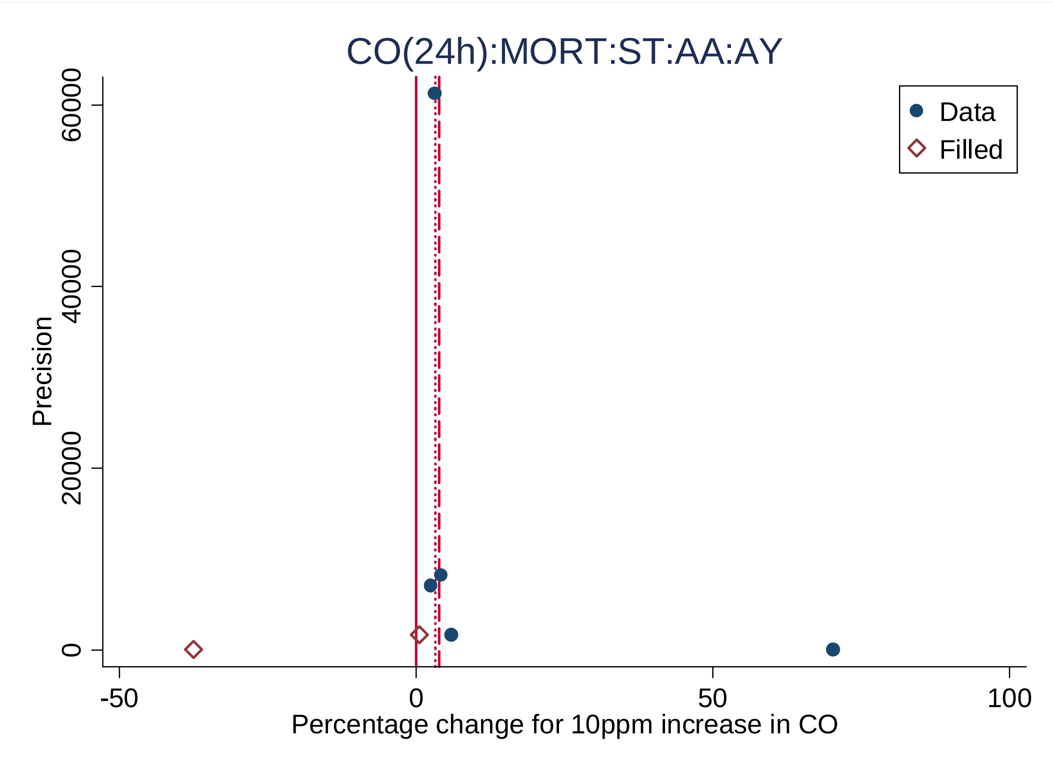

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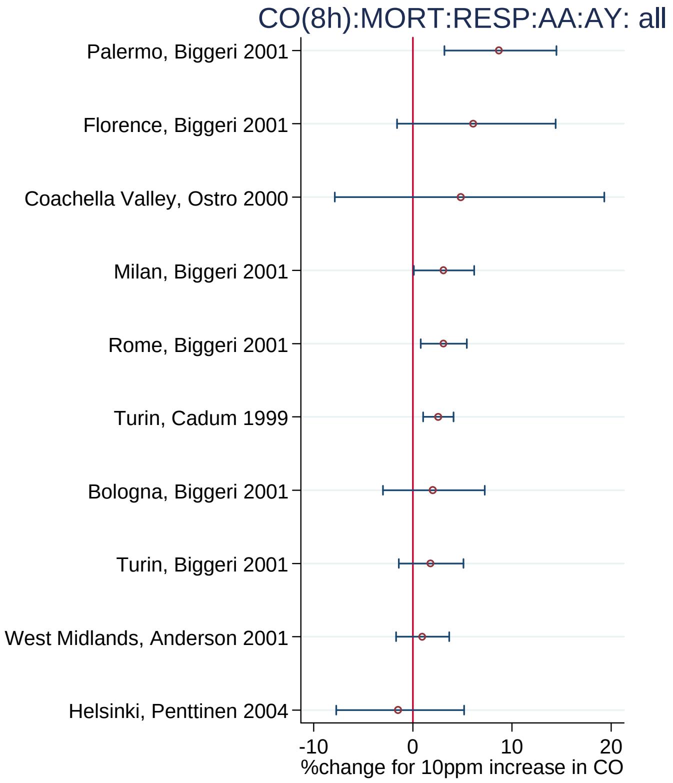

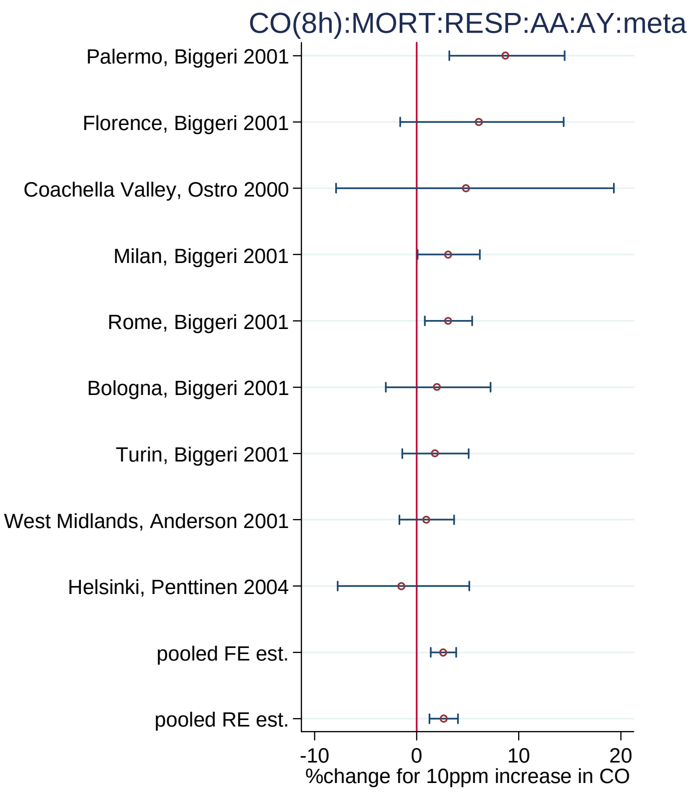

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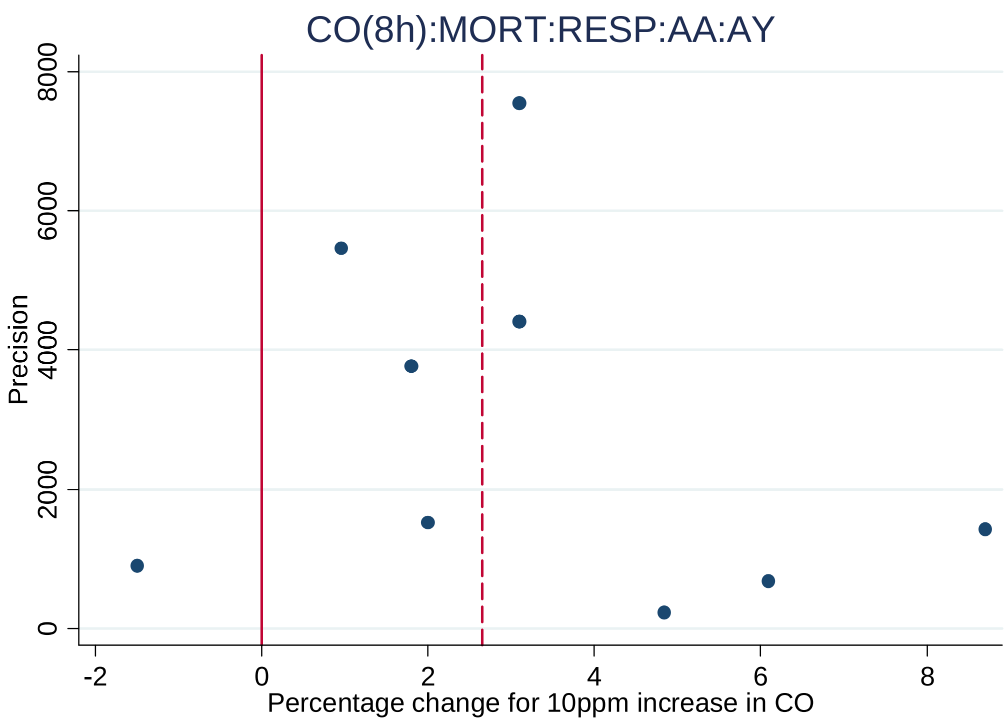

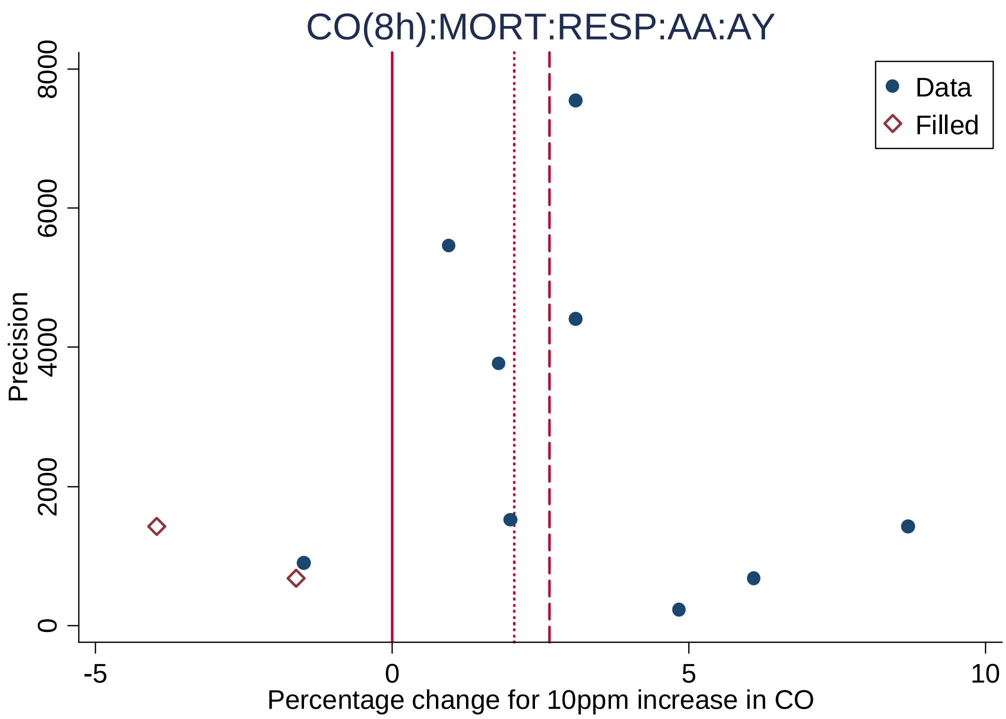

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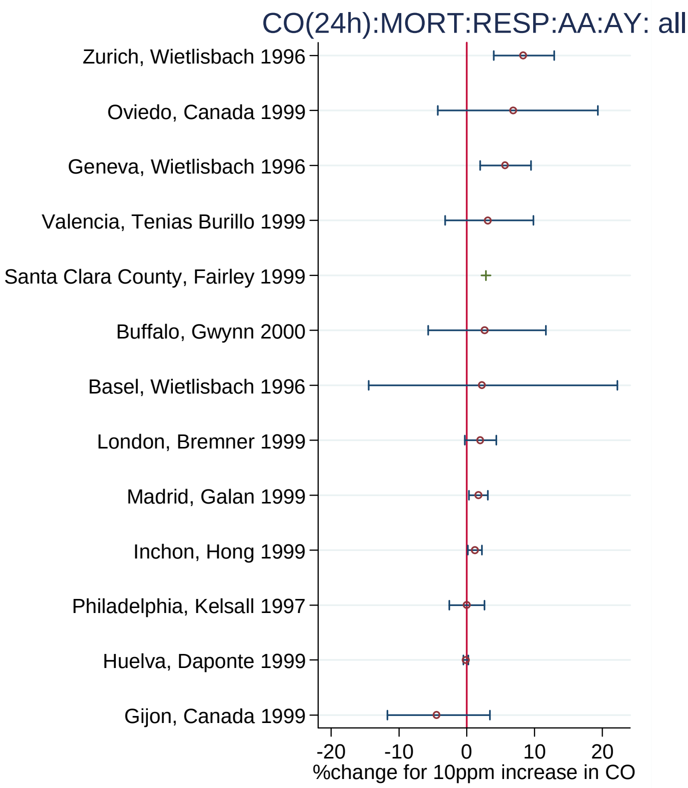

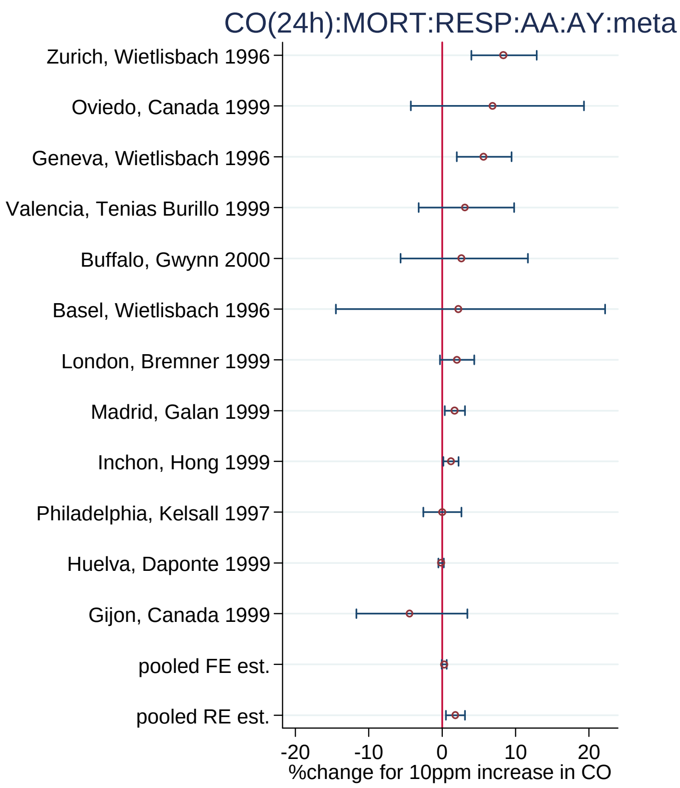

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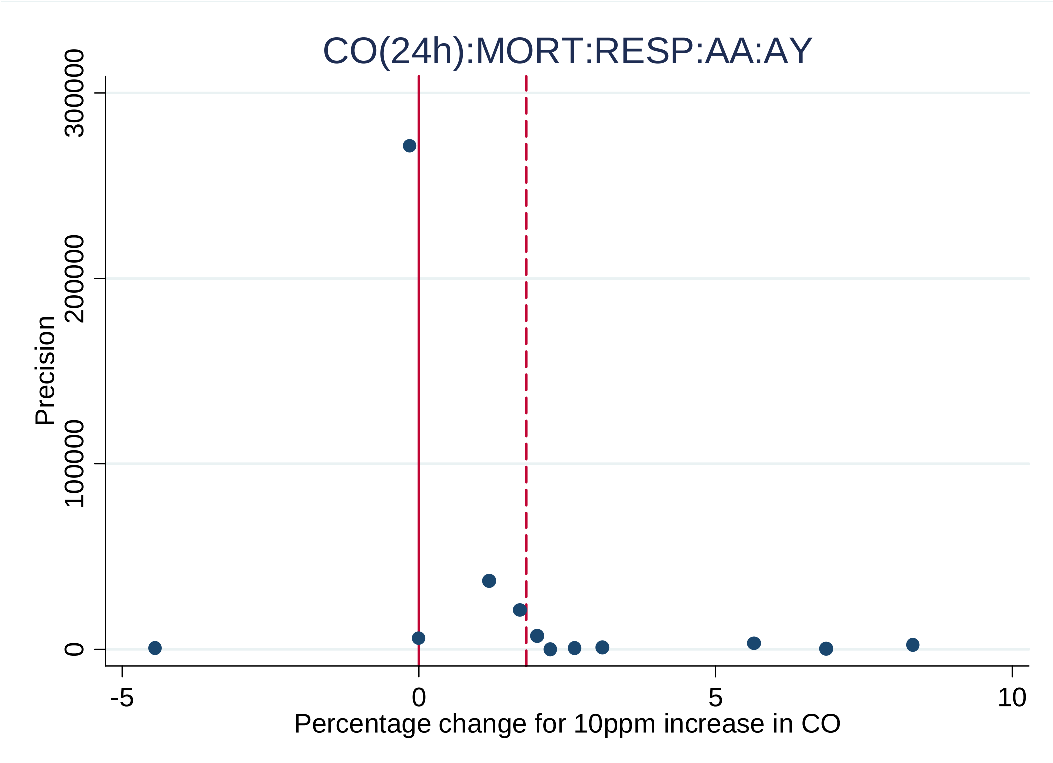

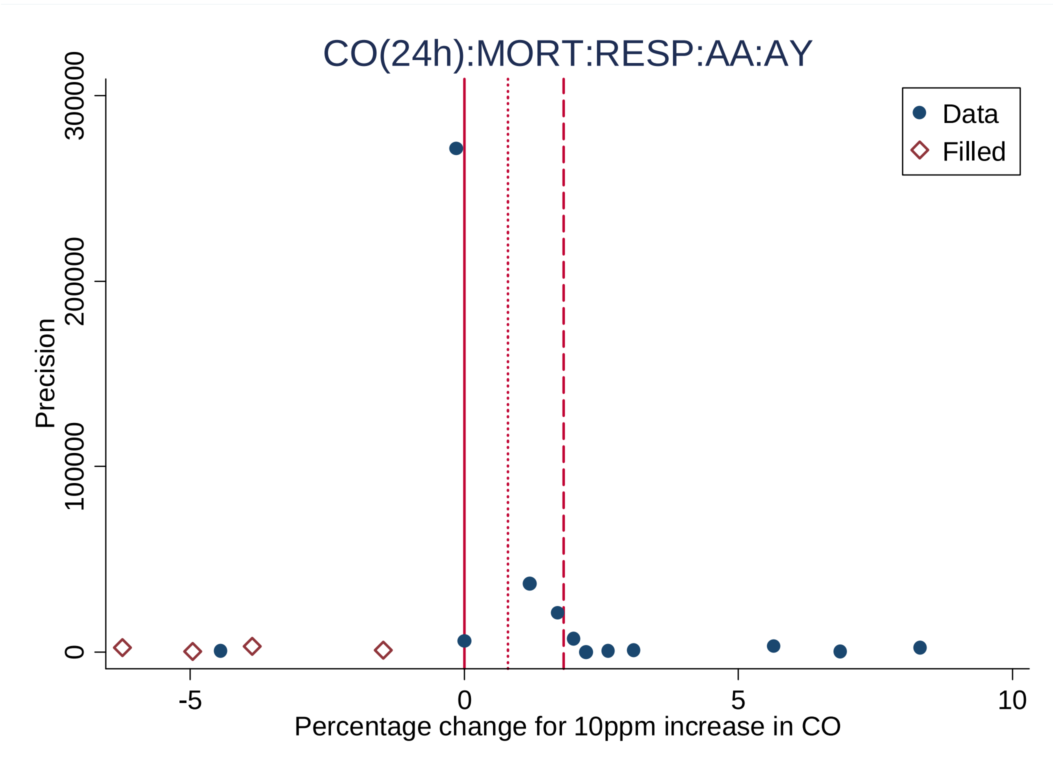

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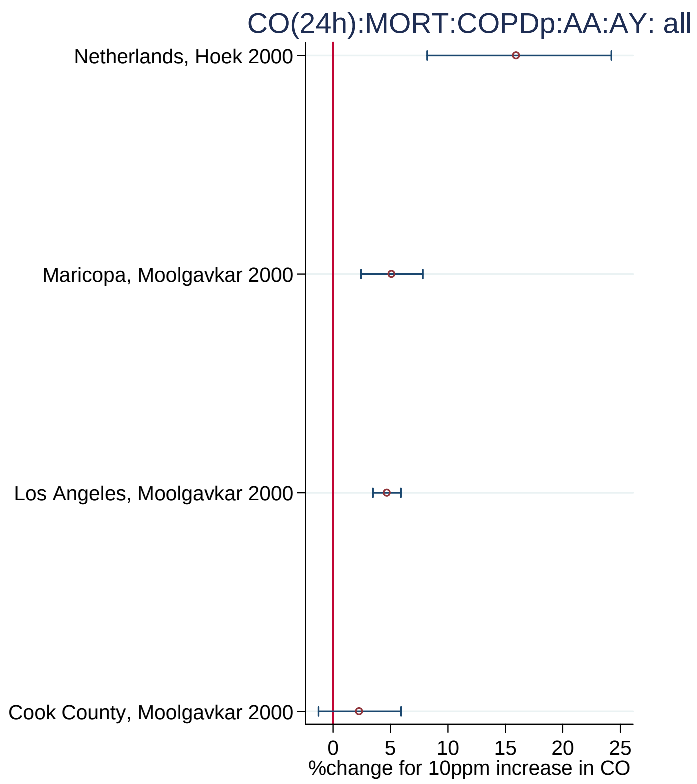

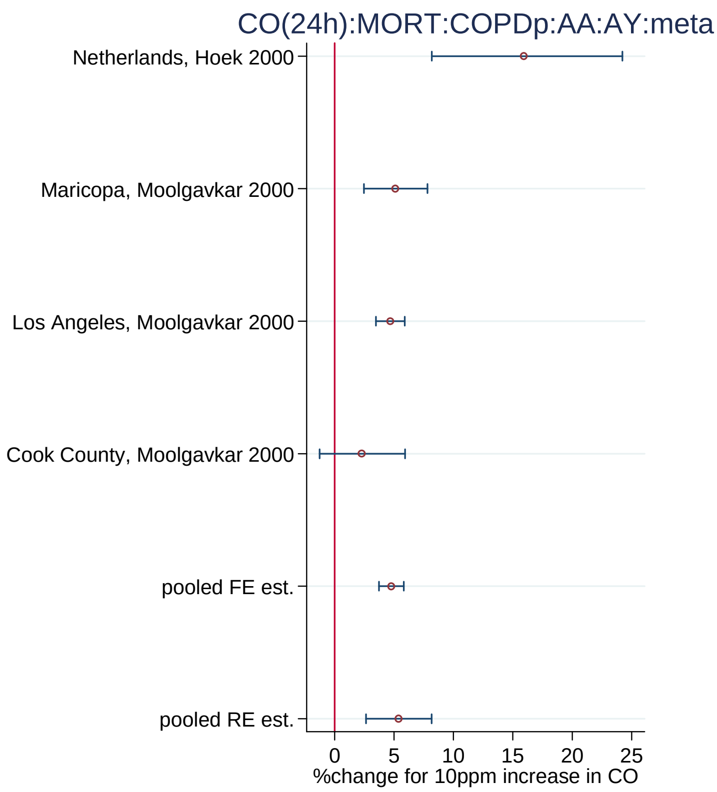

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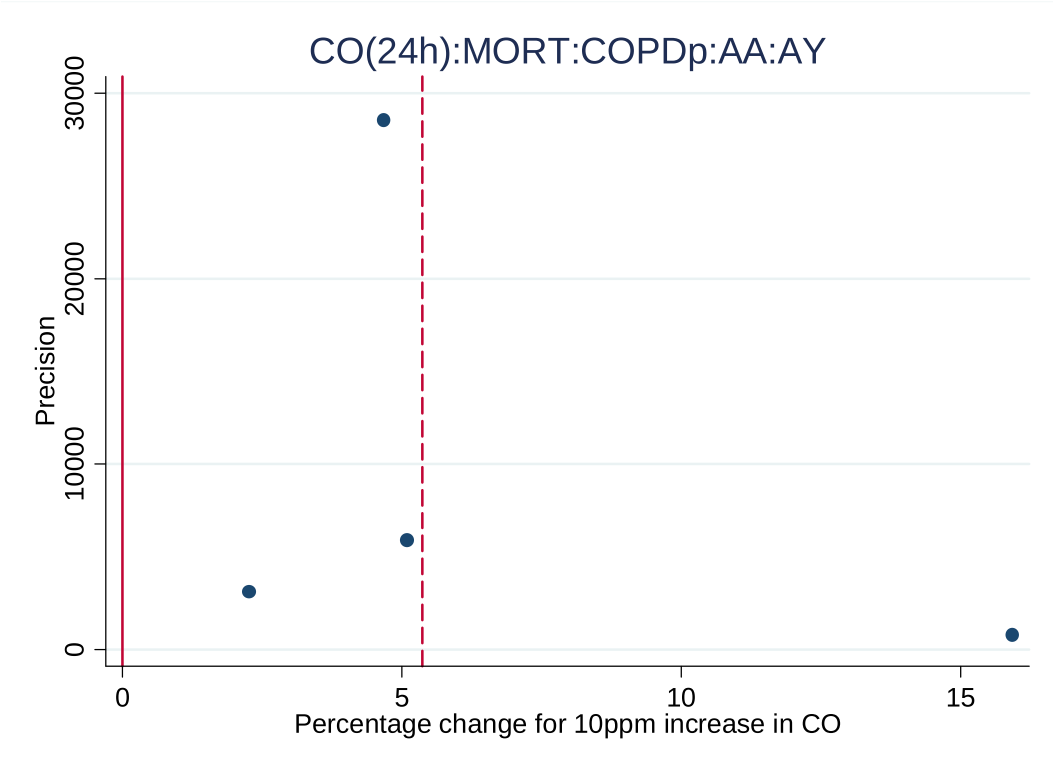

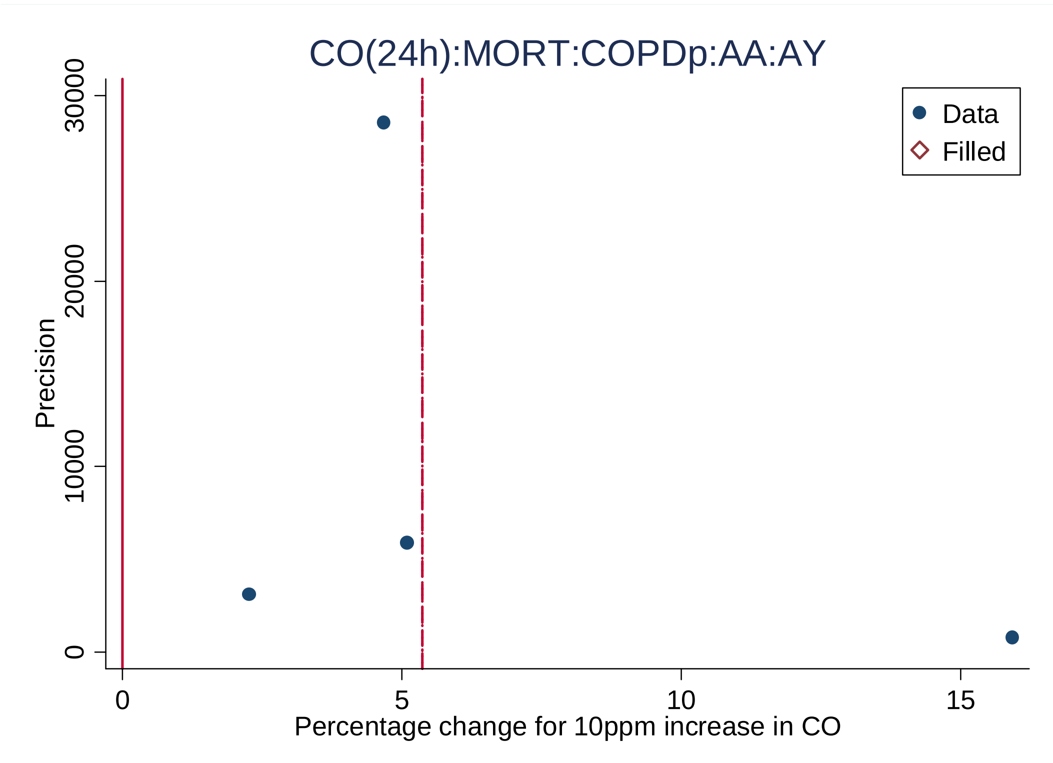

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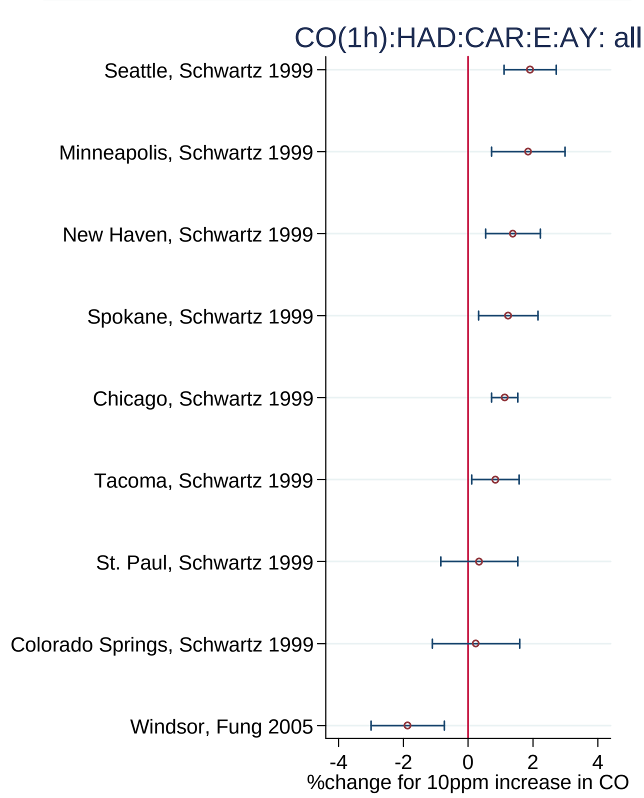

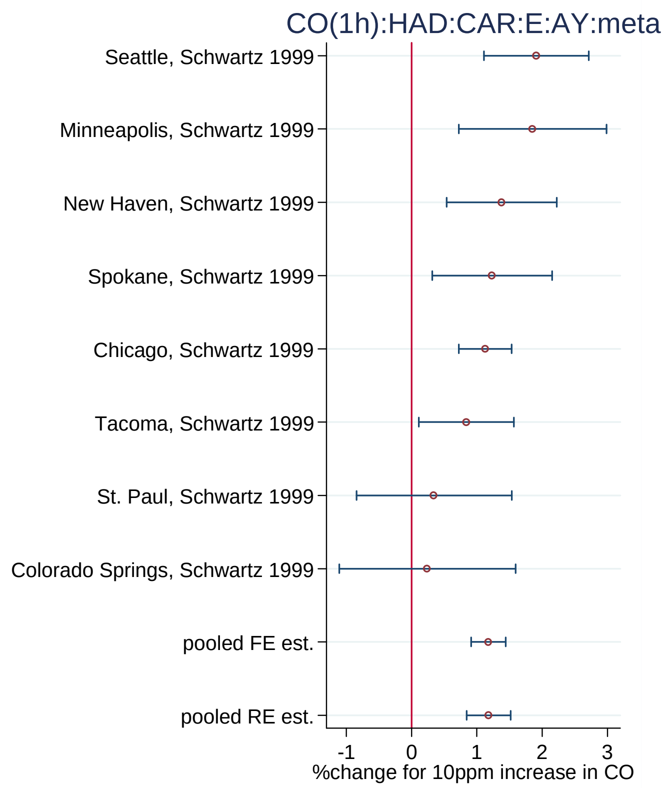

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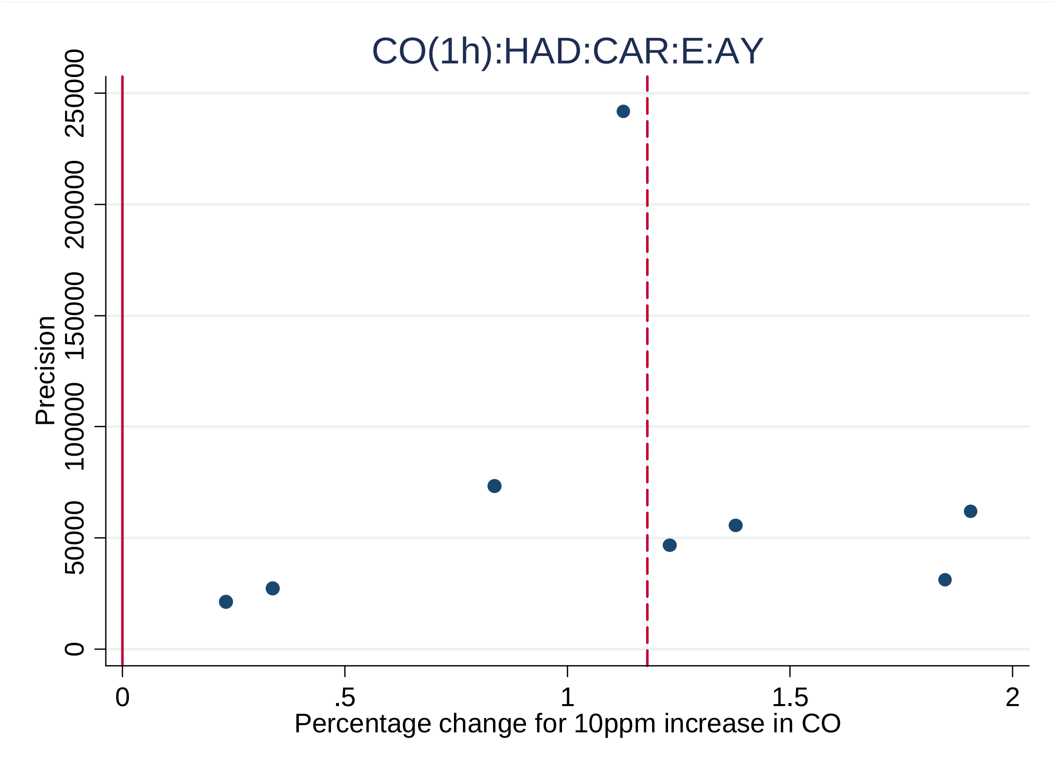

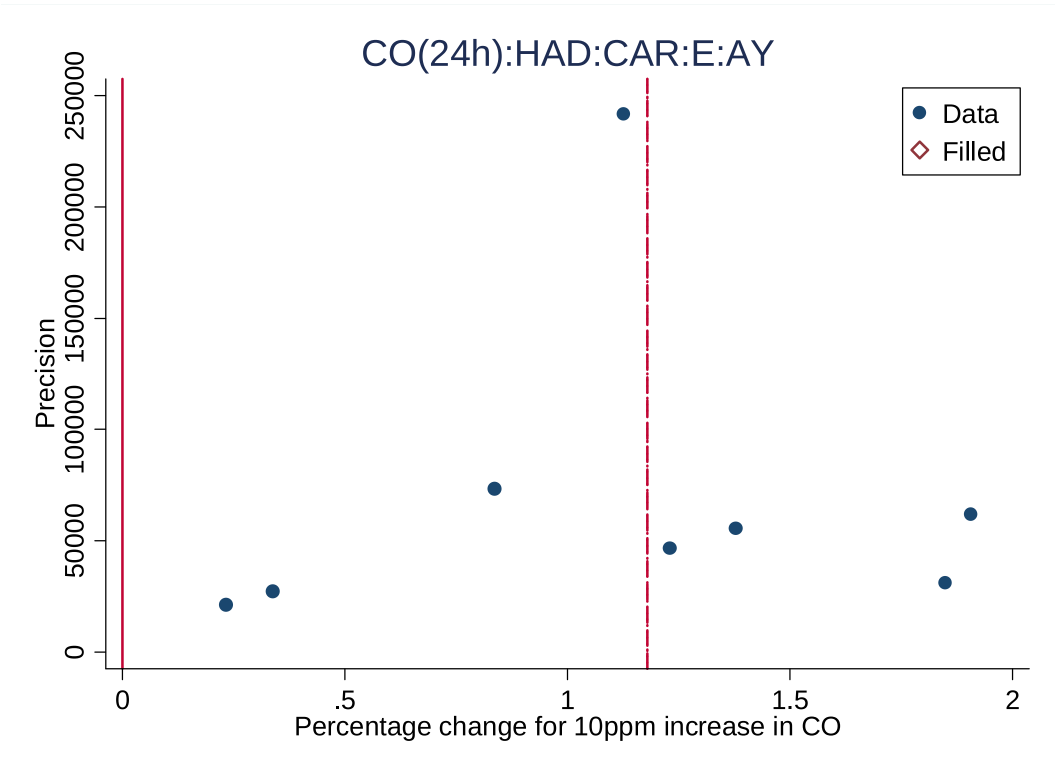

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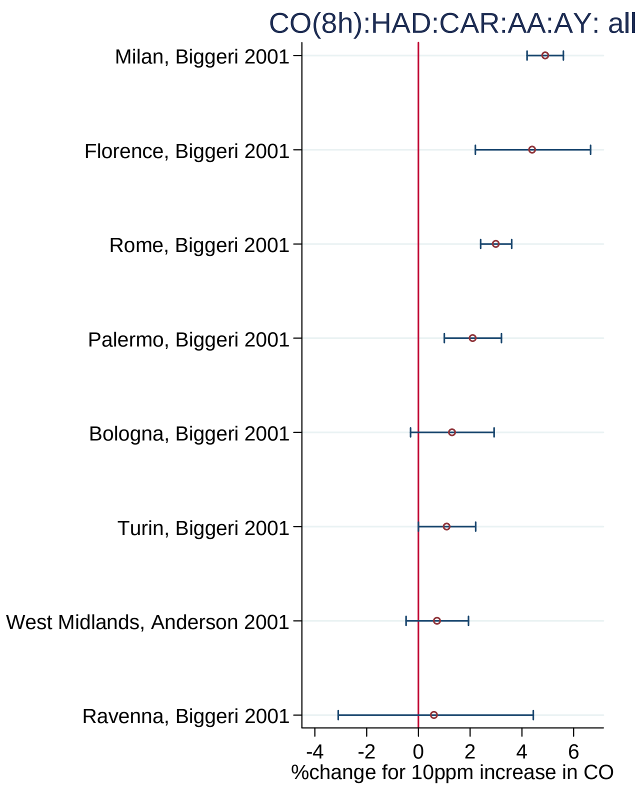

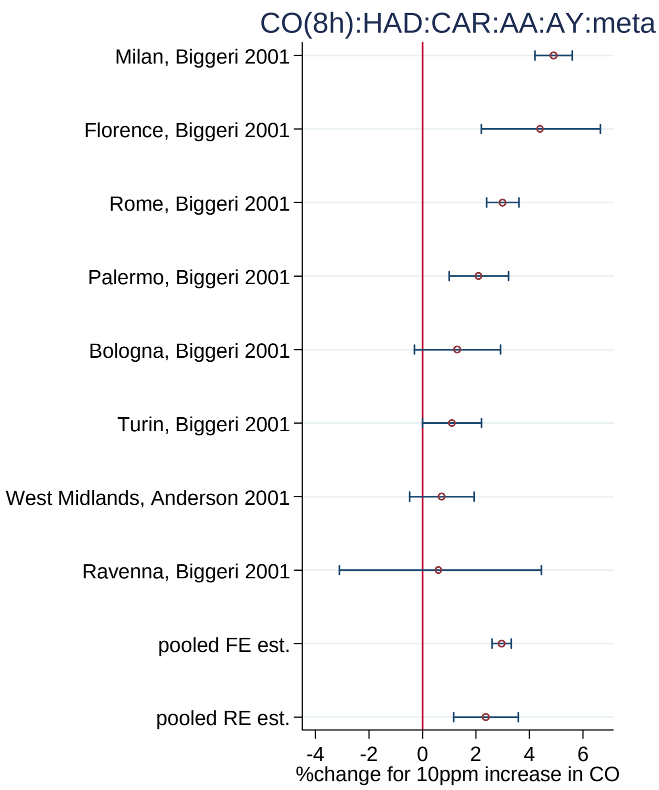

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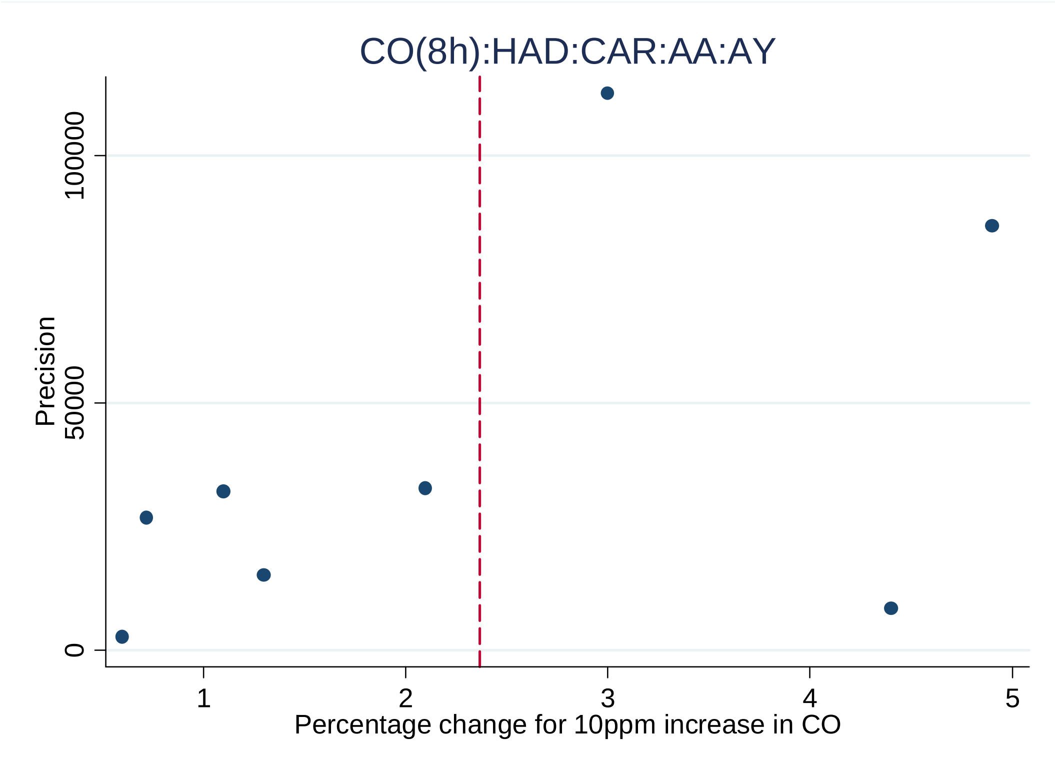

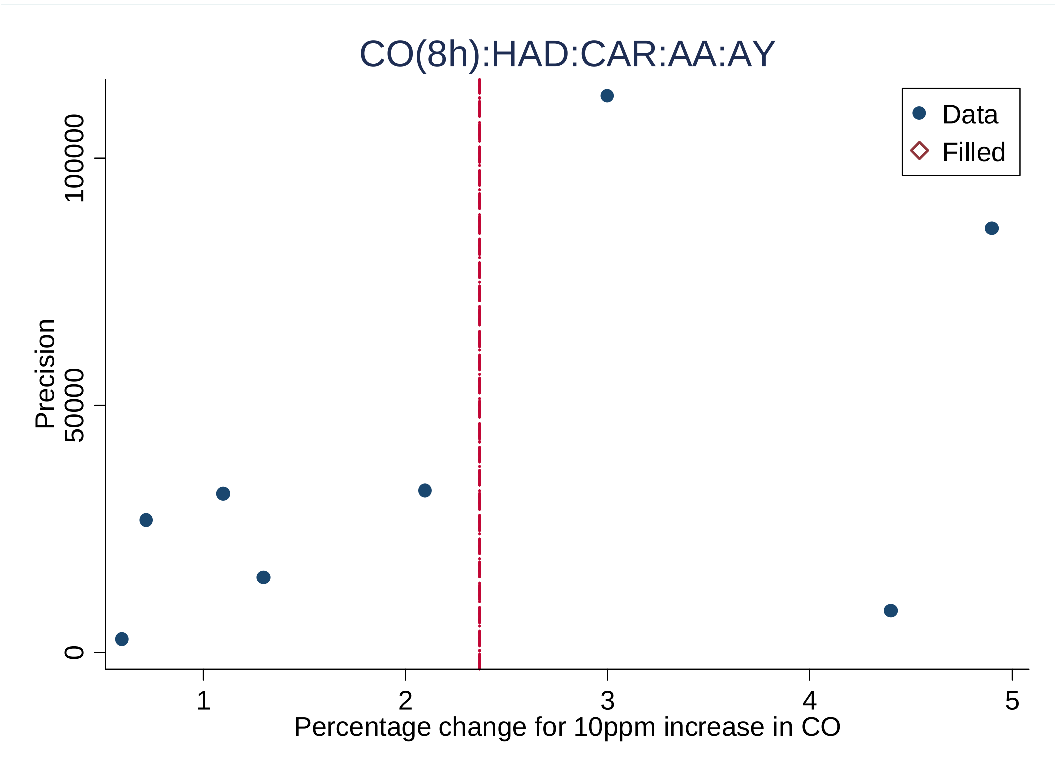

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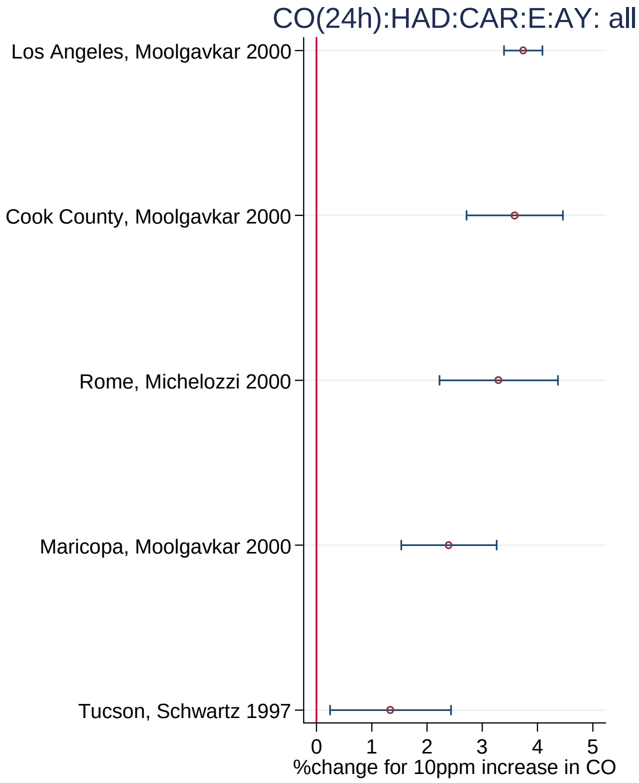

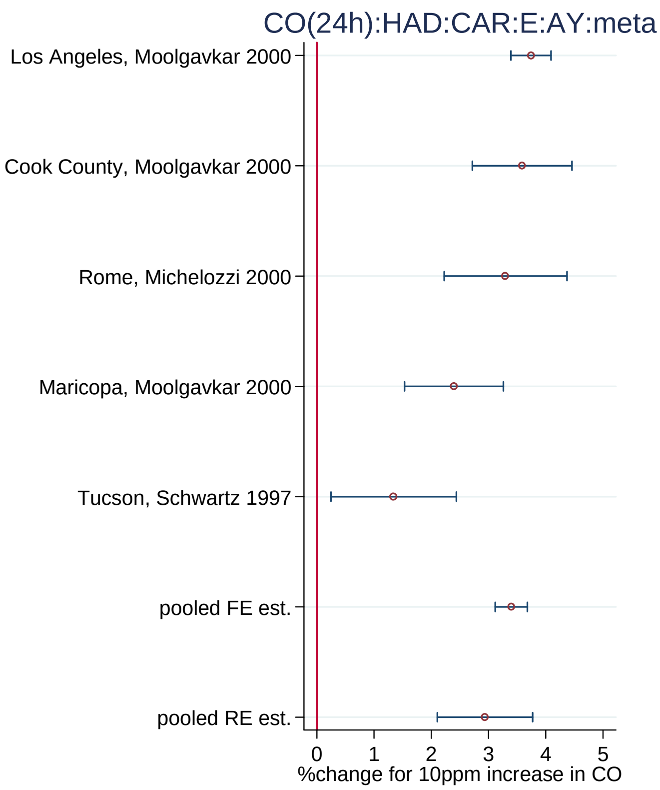

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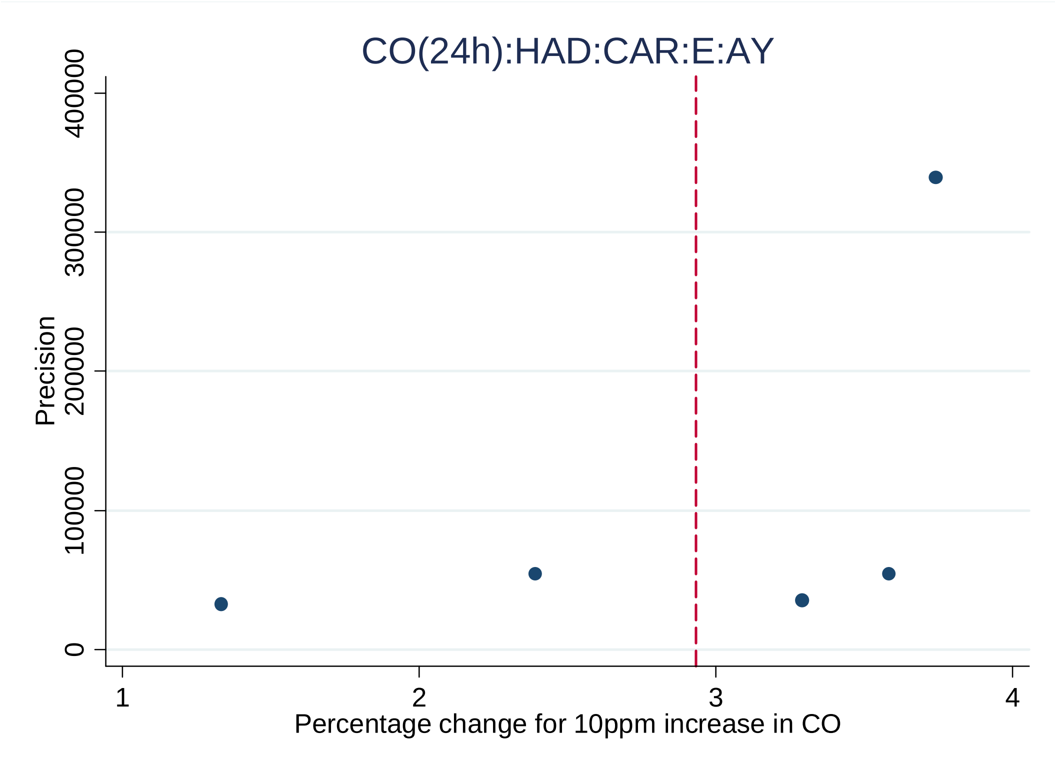

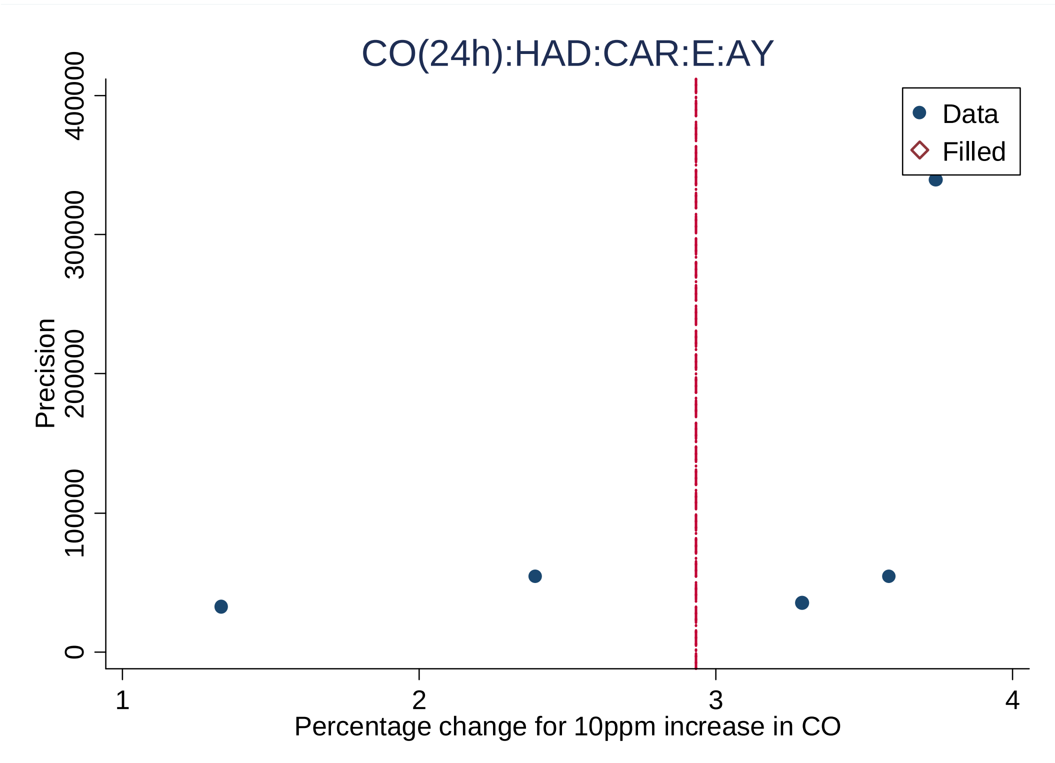

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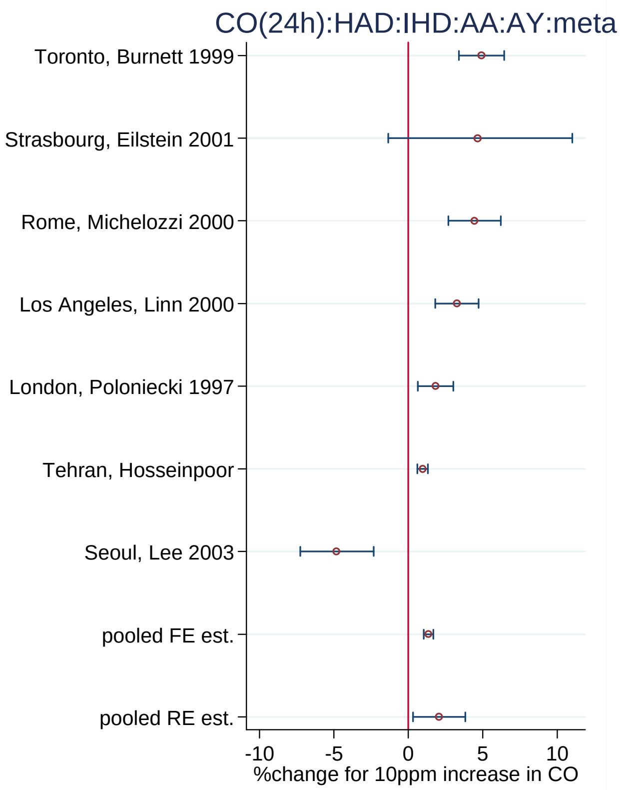

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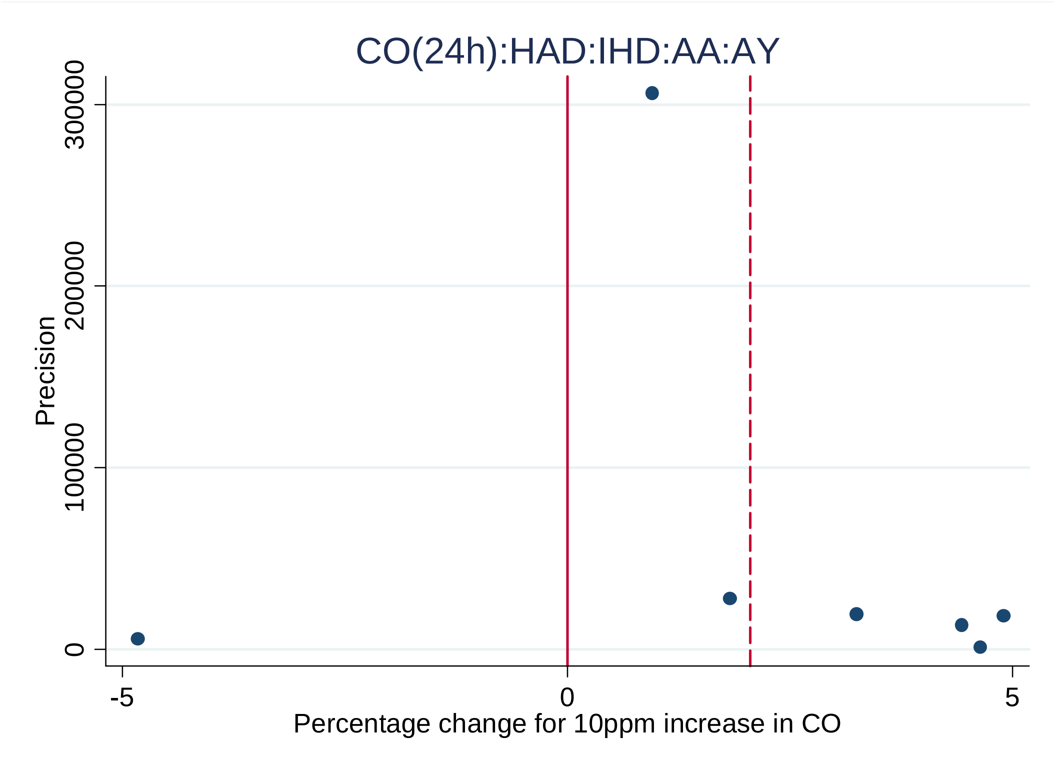

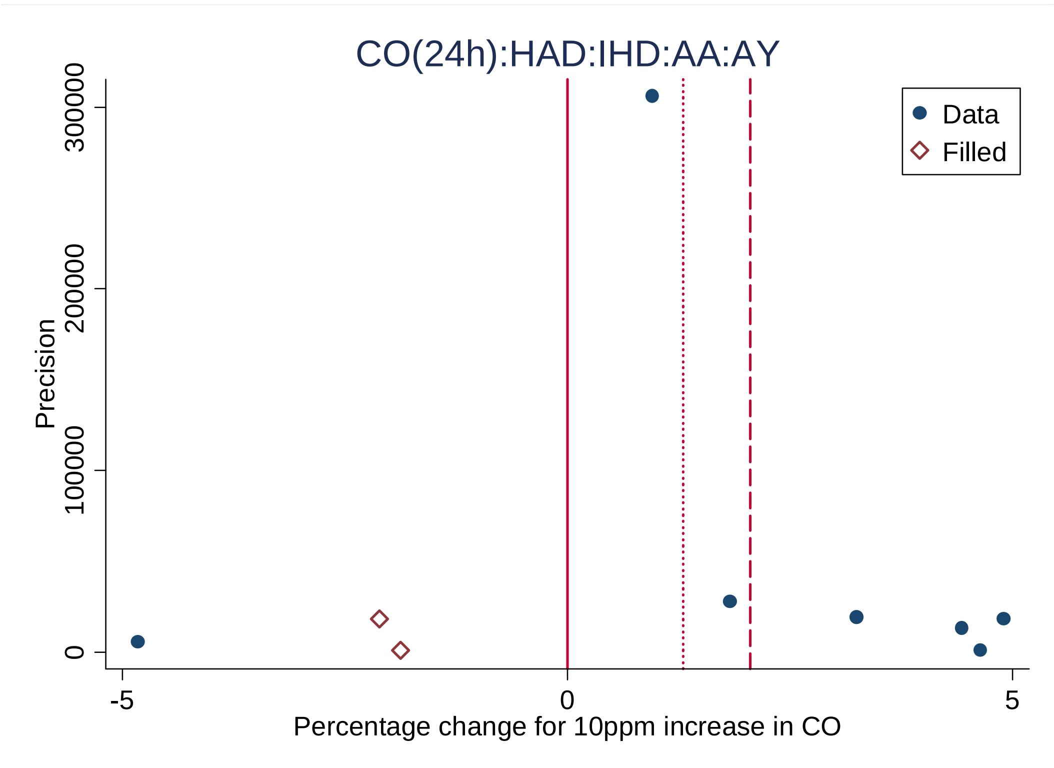

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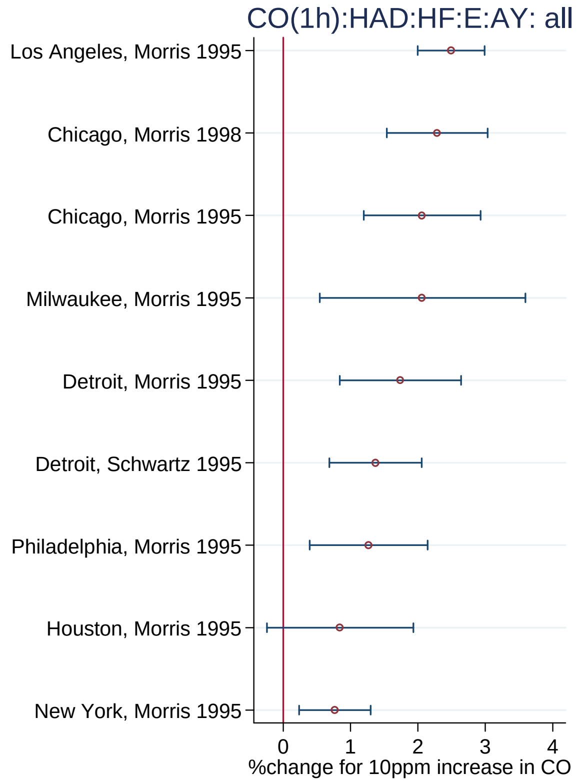

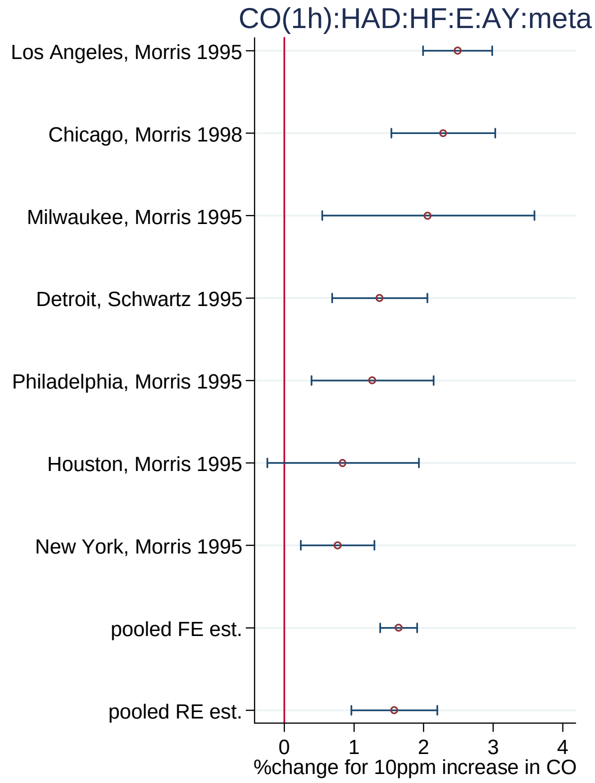

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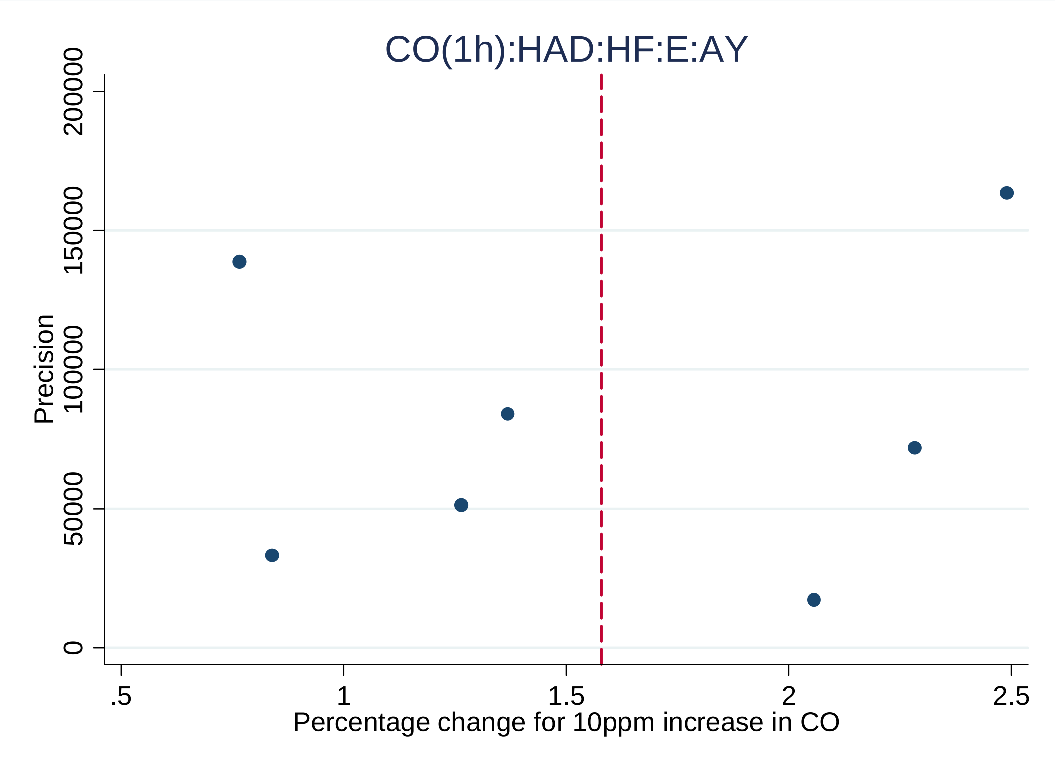

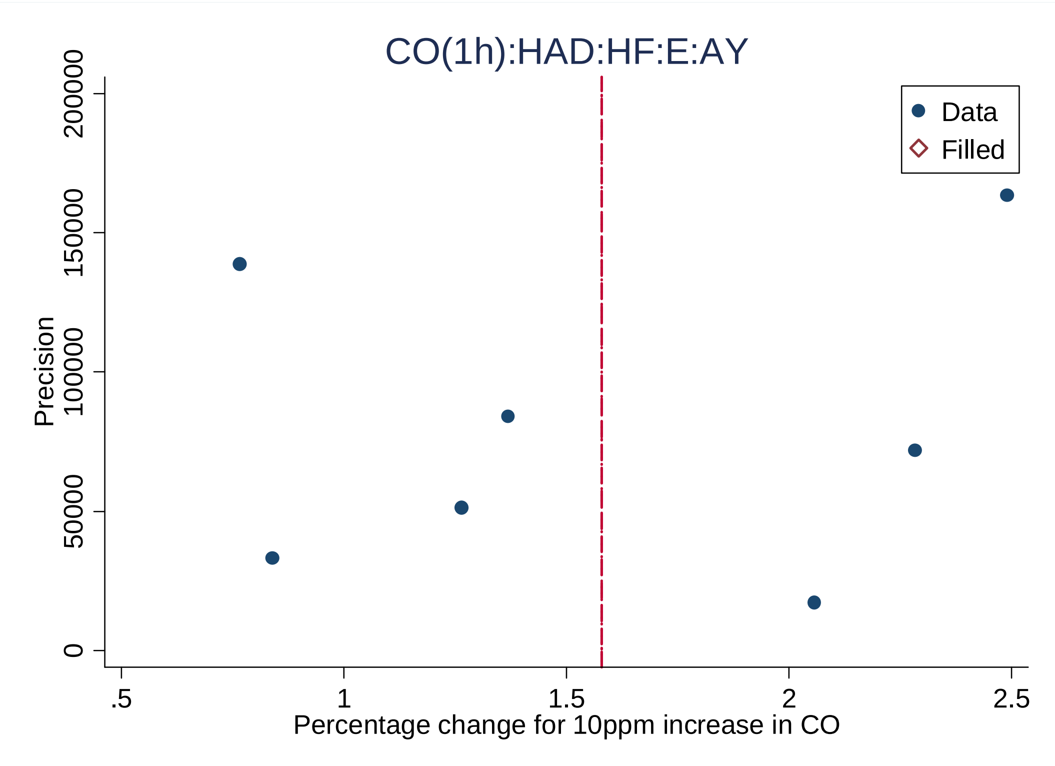

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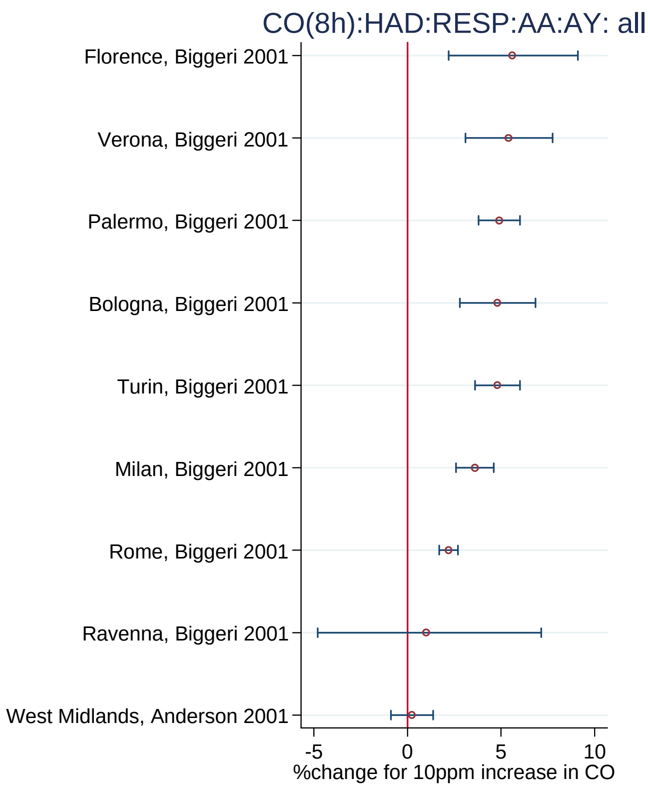

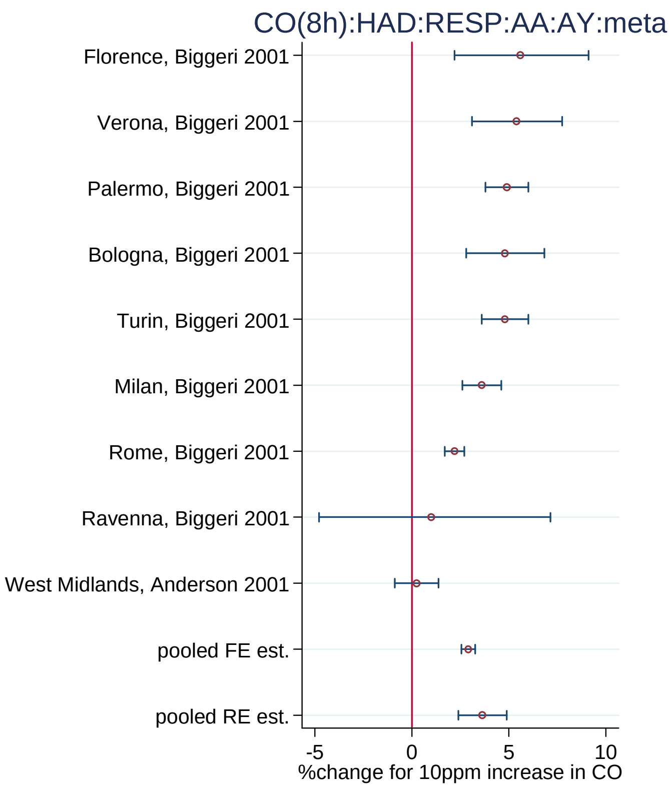

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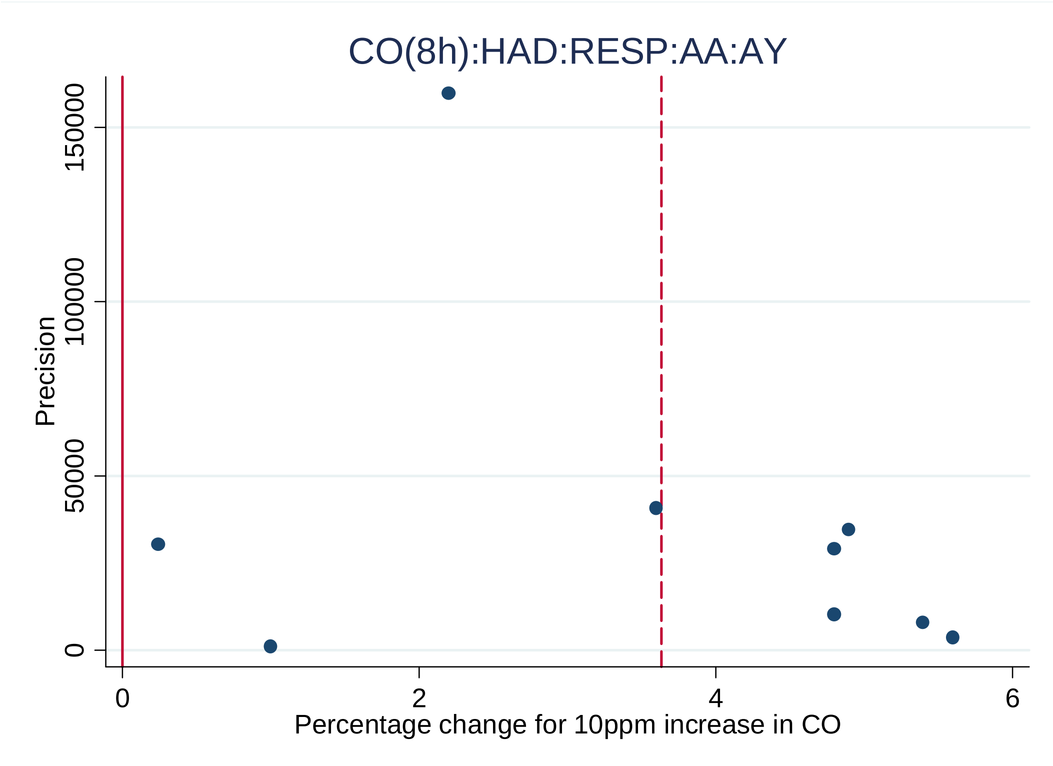

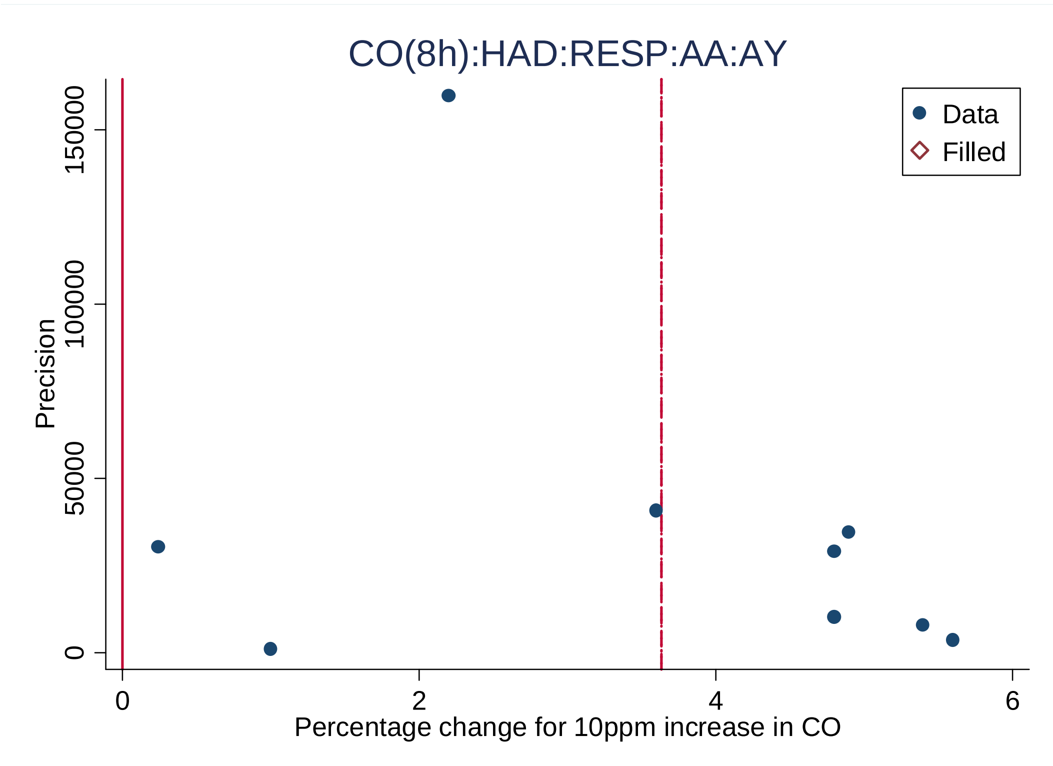

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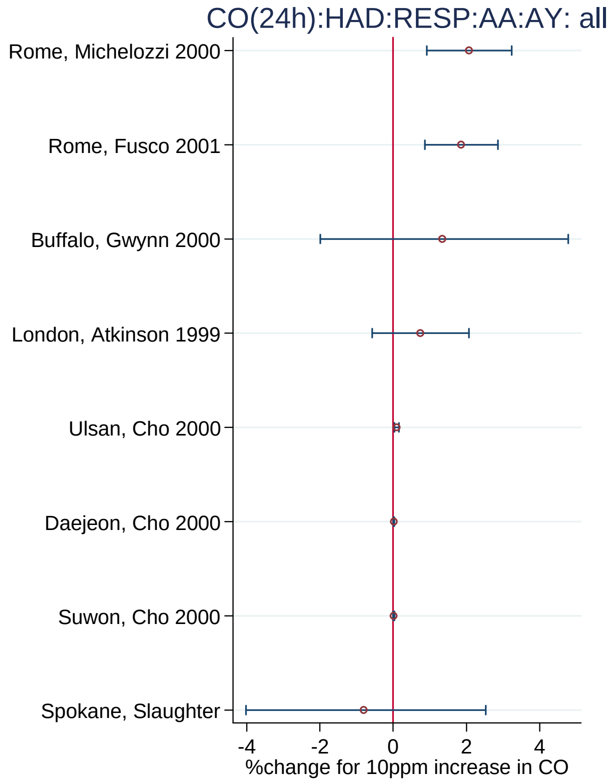

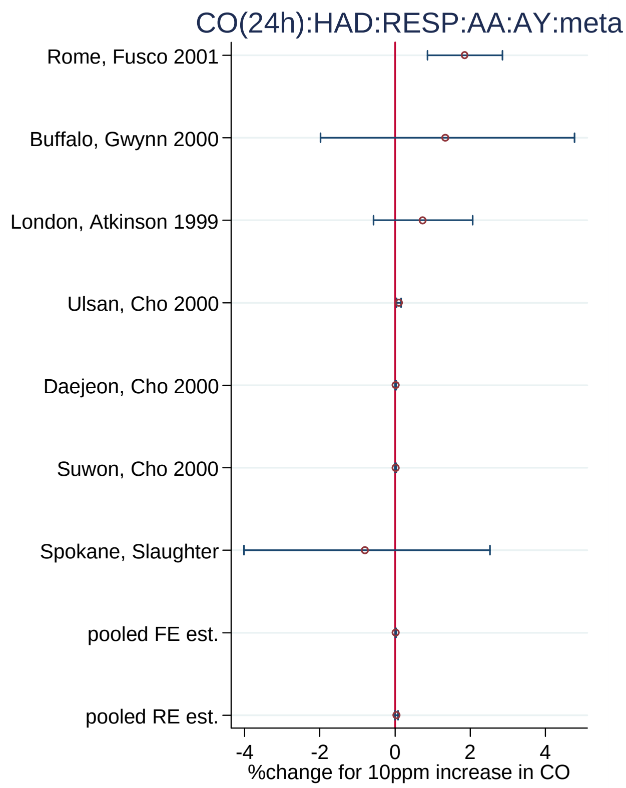

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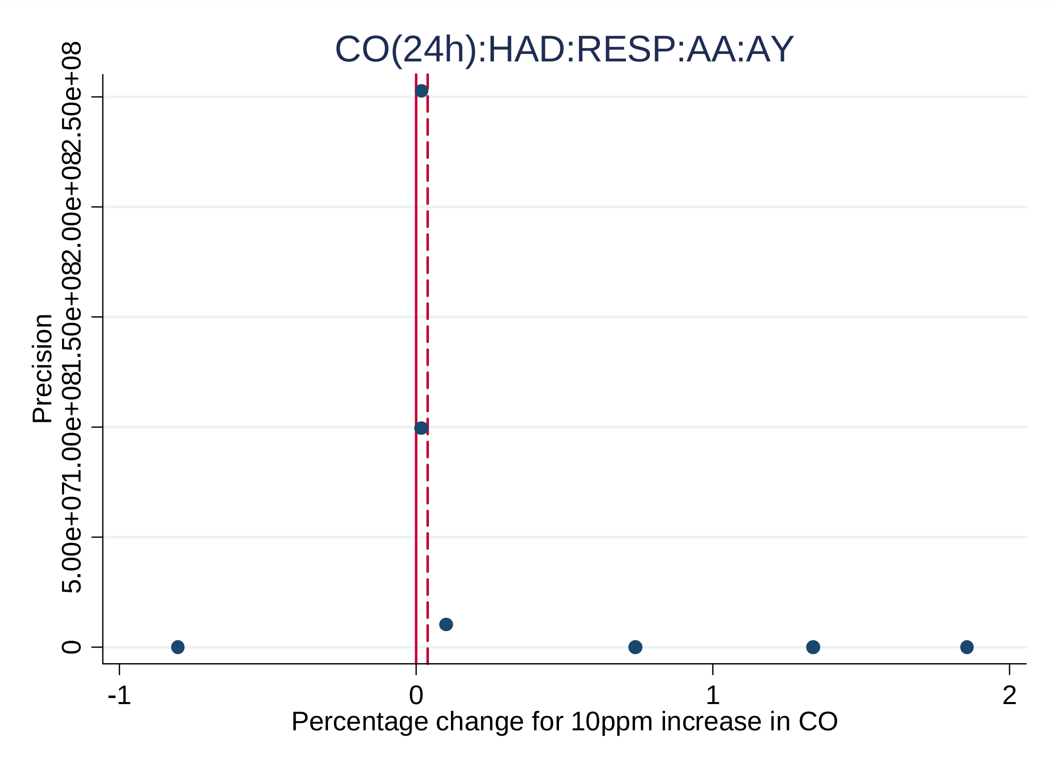

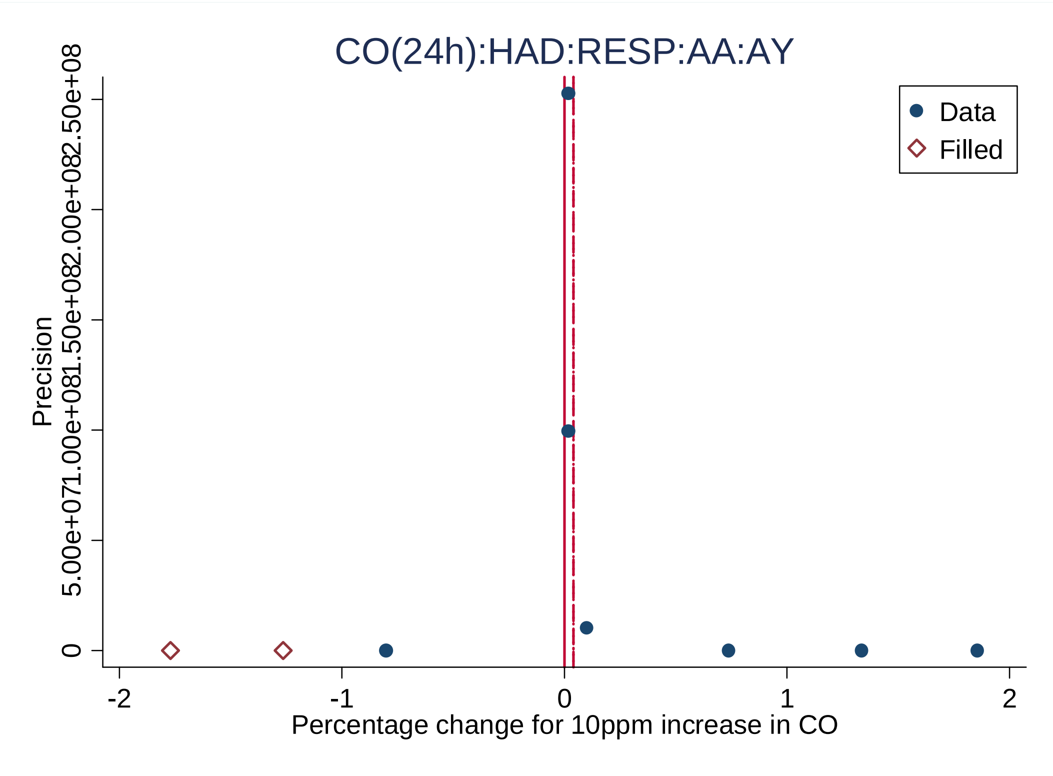

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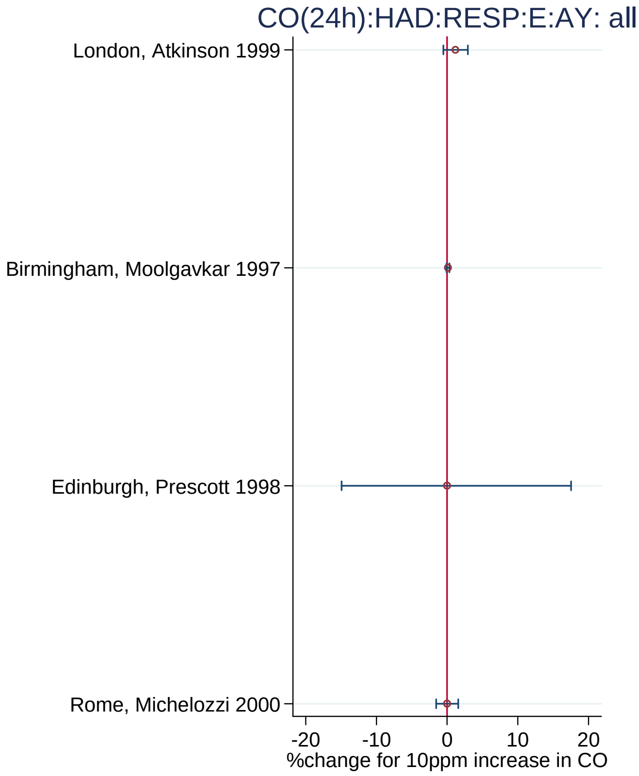

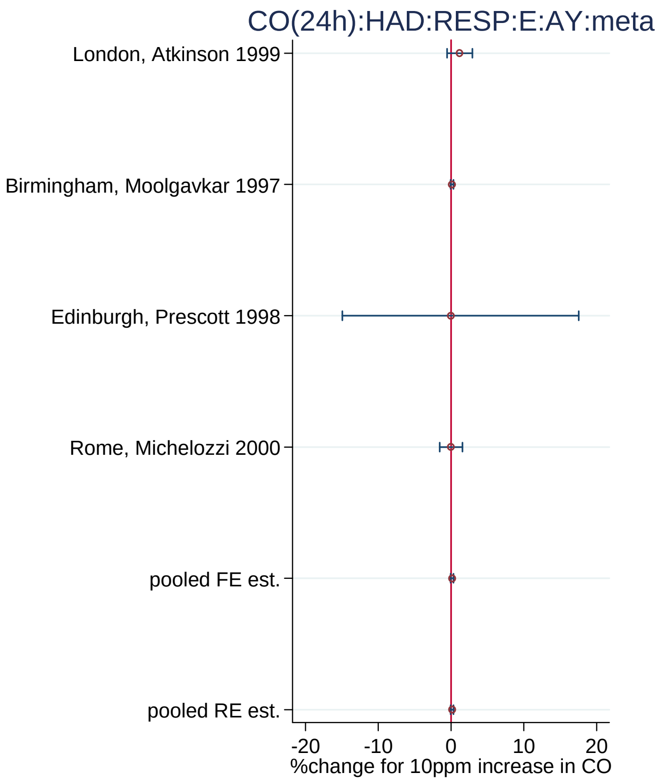

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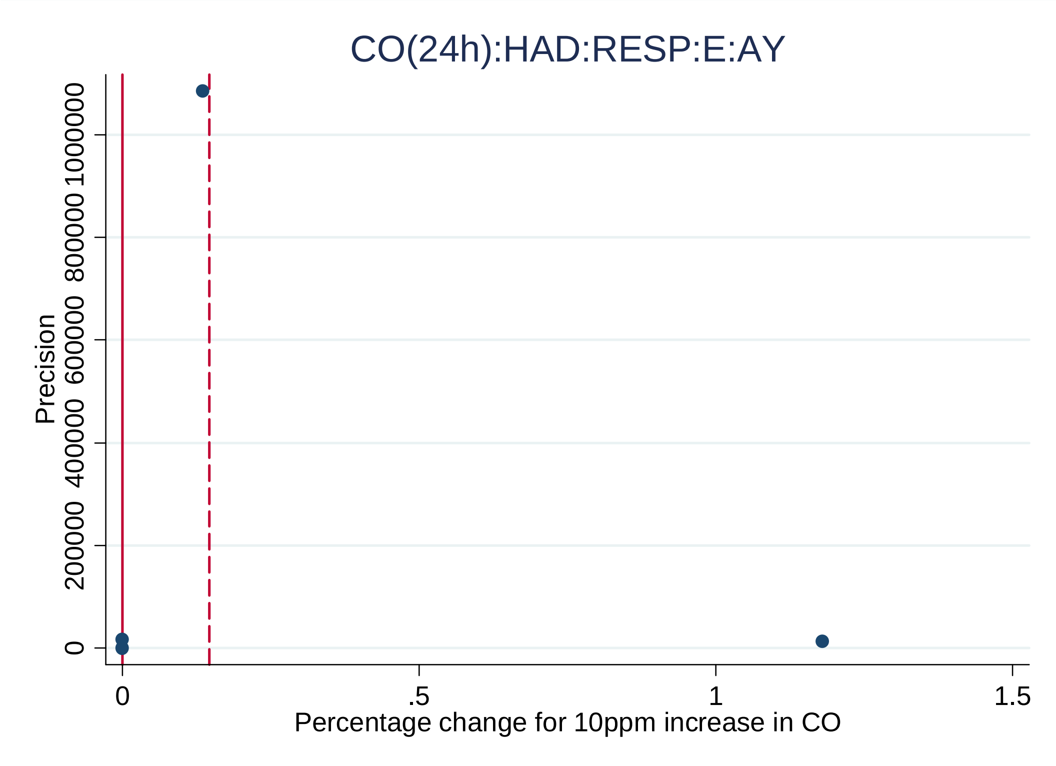

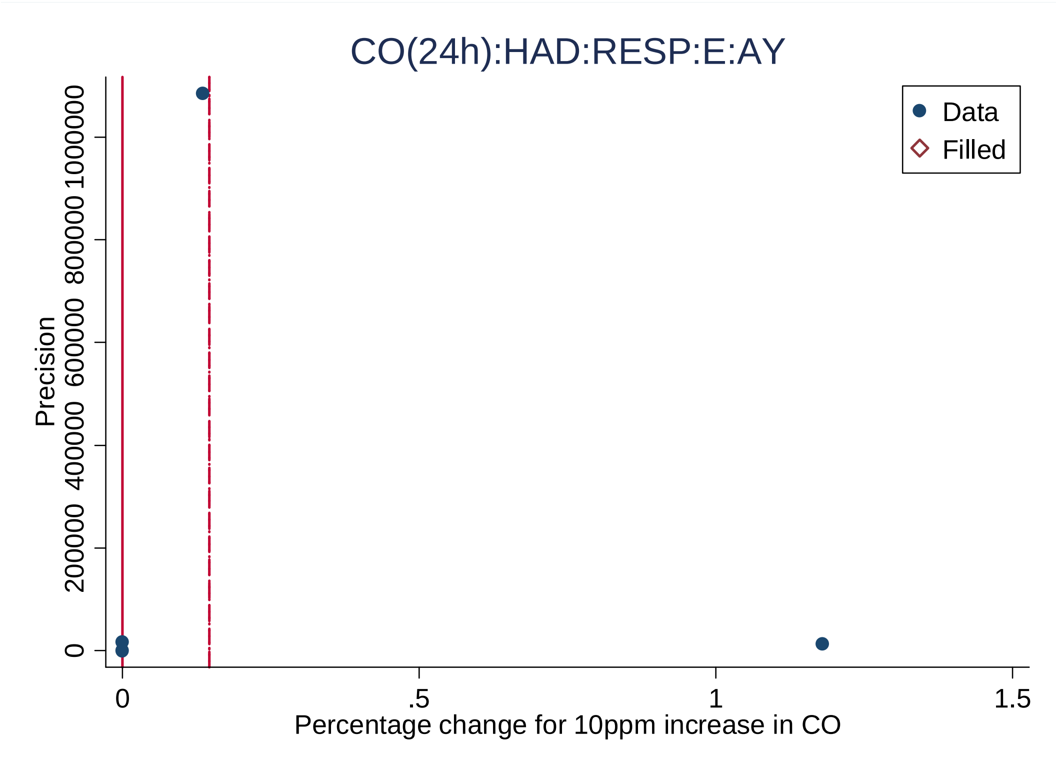

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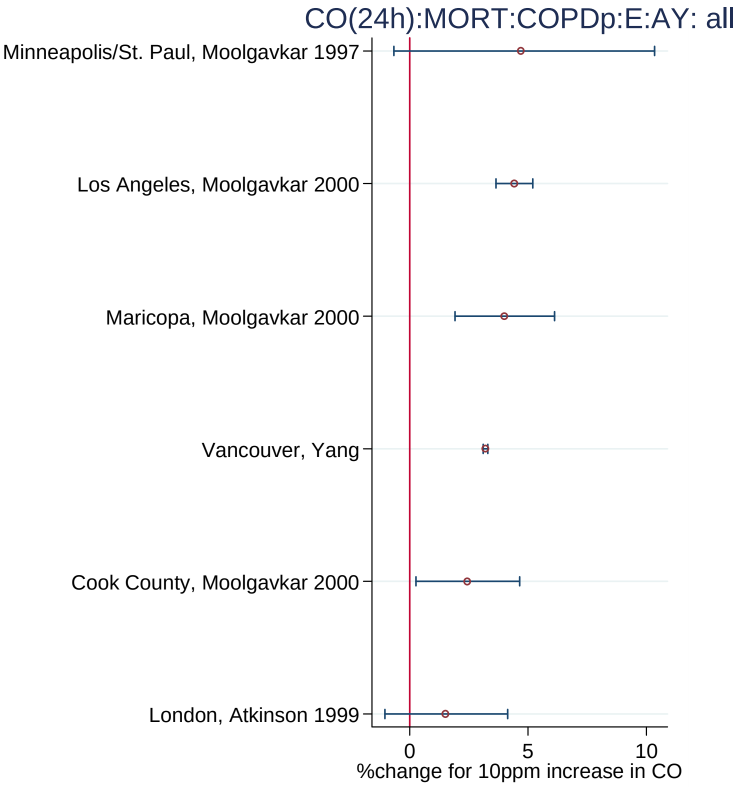

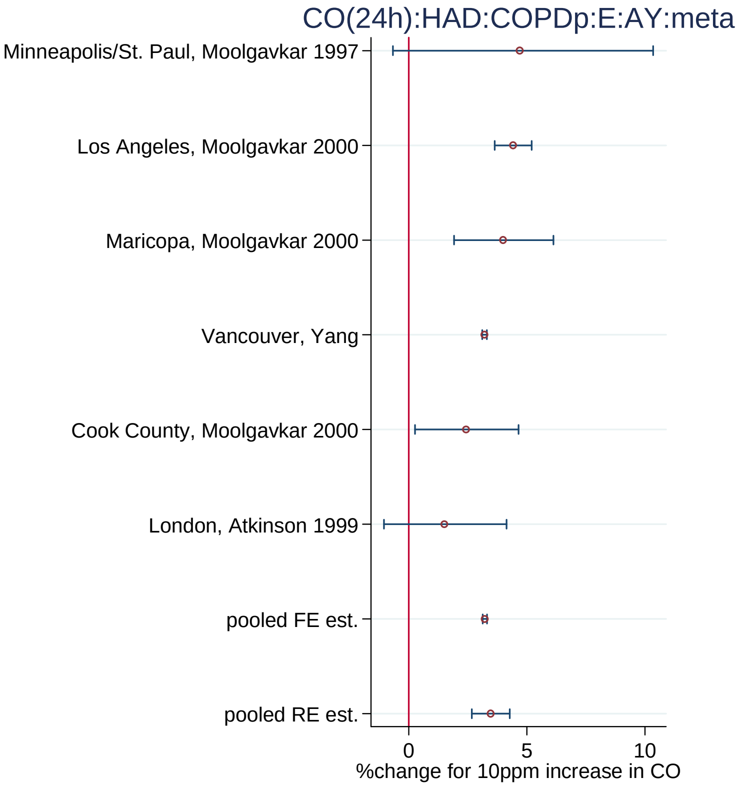

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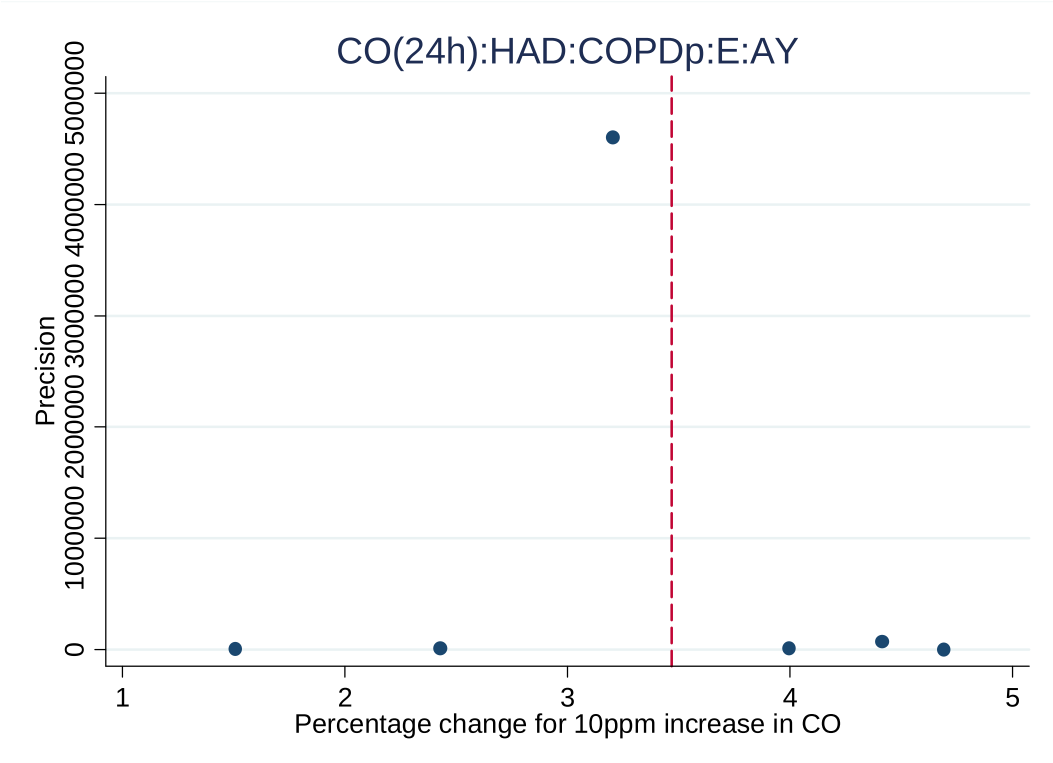
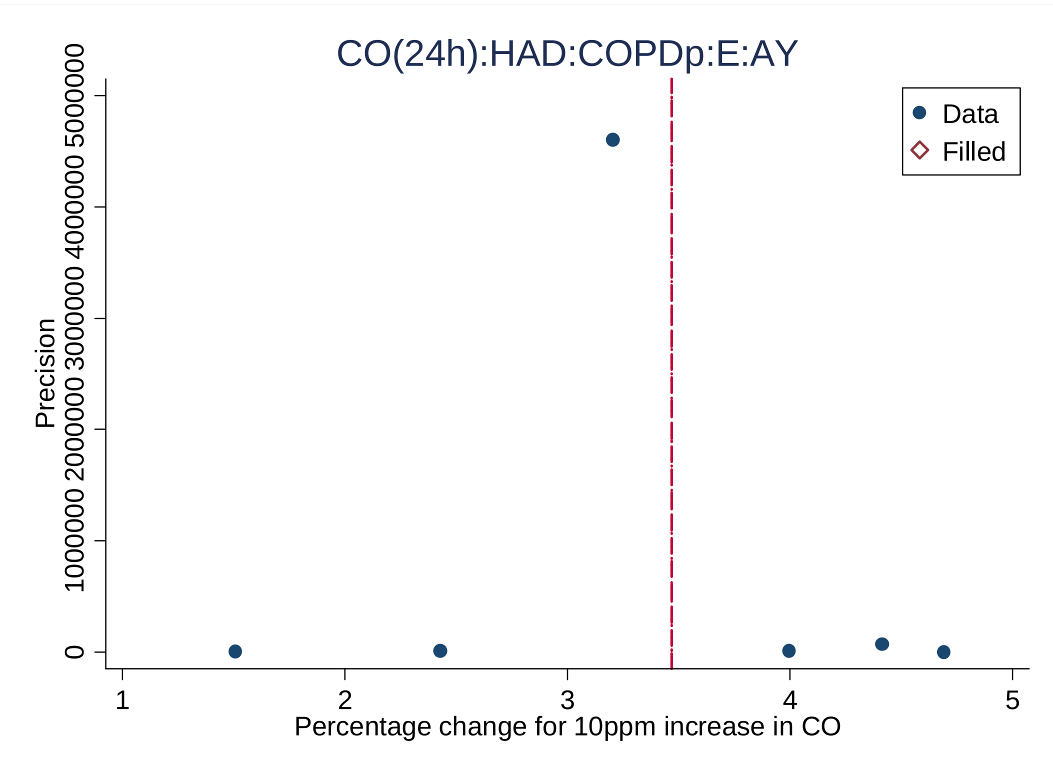
Set 20





Quantitative systematic review of short term associations between ambient air pollution (particulate matter, ozone, nitrogen dioxide, sulphur dioxide and carbon monoxide), and mortality and morbidity.

Appendix 3

Panel Studies

Sets of chosen estimates and forest and funnel plots relating to the individual single city meta-analyses for each pollutant

PM

NO_2

O_3

SO_2

There were no panel results for CO

See Table 3.4b for explanation of codes

The naming convention is:

- pollutant_(averaging.time)_patient.group_outcome_age.group_season [number of cities]

- all = all estimates
  meta = chosen subset of estimates, together with fixed & random effects
  funnel = funnel plot
  trimfill = trimmed & filled funnel

- (averaging.time) is not included in the names for PM analyses as it is always 24hrs

Panel Studies: PM (BS)

Set No.	Refman id	Access id	Cities, author and date	Panel Group	Outcome	Age group	Averaging time	Lag	Random effects estimate and 95% cl: Estimate	Lcl	Ucl
1	489	3546	Umea, Forsberg 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.25	0.74	2.13
	486	1330	Oslo suburb, Clench-Aas 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.17	0.98	1.40
	485	3339	Drenthe, van der Zee 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.13	0.95	1.33
	486	1322	Oslo, Clench-Aas 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.08	0.93	1.26
	476	1732	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.08	1.00	1.17
	481	3683	Prague, Vondra 1998	Symptomatic	iLRS(O)	child	24 hours	lag 0-6	1.07	0.76	1.50
	478	116	Budapest, Rudnai 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.06	0.95	1.18
	476	1724	Athens, Kalandidi 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.02	0.98	1.06
	479	1418	Rabka, Haluszka 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.99	0.94	1.04
	477	2017	Torre del Lago Puccini, Baldini 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.98	0.91	1.04
	482	1622	Teplice, Kotesovec 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.97	0.89	1.05
	483	1937	Hettstedt, Beyer 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.97	0.91	1.02
	479	1412	Krakow, Haluszka 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.96	0.89	1.03
	478	147	Szentendre, Rudnai 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.95	0.86	1.05
	483	1965	Zerbst, Beyer 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.95	0.78	1.16
	477	2009	Pisa, Baldini 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.92	0.81	1.04
	481	3078	Benesov, Vondra 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.89	0.76	1.05
	487	4061	Kuopio, Timonen 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.85	0.71	1.00
	489	3538	Umea, Forsberg 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.83	0.56	1.21
	484	2303	Berlin suburb, Englert 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.80	0.59	1.09
	482	1630	Prachatice, Kotesovec 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.78	0.65	0.94
	485	3307	Amsterdam, van der Zee 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.78	0.64	0.94
	484	2295	Berlin, Englert 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.70	0.42	1.17
	487	4104	Kuopio suburb, Timonen 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.70	0.43	1.13
2	483	2697	Zerbst, Beyer 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.13	1.03	1.25
	477	3708	Pisa, Baldini 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.09	0.82	1.44
	486	1156	Oslo suburb, Clench-Aas 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.09	1.01	1.17
	489	3355	Umea, Forsberg 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.08	0.97	1.19
	487	2827	Kuopio suburb, Timonen 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.08	1.02	1.14
	487	4128	Kuopio, Timonen 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.05	0.94	1.18
	485	3893	Drenthe, van der Zee 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.04	1.00	1.09
	711	2979	Netherlands, van der Zee 1999	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.04	0.98	1.10
	711	3878	Netherlands, van der Zee 1999	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.03	1.00	1.05
	481	3038	Prague, Vondra 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.03	0.99	1.06
	478	180	Budapest, Rudnai 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.02	1.00	1.04
	480	4876	Pszczyna, Niepsuj 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.02	1.00	1.05
	486	1132	Oslo, Clench-Aas 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.02	0.99	1.05
	482	1542	Teplice, Kotesovec 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.01	1.00	1.02
	476	1774	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.99	0.98	1.01
	476	1808	Athens, Kalandidi 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.99	0.98	1.00
	483	2654	Hettstedt, Beyer 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.98	0.95	1.01
	479	1370	Rabka, Haluszka 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.98	0.96	1.00
	479	4823	Krakow, Haluszka 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.98	0.96	1.00
	480	1470	Katowice, Niepsuj 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.98	0.96	1.00
	484	2383	Berlin suburb, Englert 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.95	0.88	1.02
	484	2407	Berlin, Englert 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.94	0.89	1.00
	485	1919	Amsterdam, van der Zee 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.94	0.88	1.01
	482	1598	Prachatice, Kotesovec 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.93	0.86	1.01
	478	214	Szentendre, Rudnai 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.91	0.85	0.98
	477	3716	Torre del Lago Puccini, Baldini 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.89	0.76	1.05
	481	3650	Benesov, Vondra 1998	Symptomatic	pLRS(O)	child	24 hours	lag 0-6	0.87	0.75	1.02
	489	3379	Umea, Forsberg 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.85	0.68	1.08
3	477	2725	Pisa, Baldini 1998	Symptomatic	iM	child	24 hours	lag 1	1.44	0.71	2.94
	484	2351	Berlin suburb, Englert 1998	Symptomatic	iM	child	24 hours	lag 1	1.16	0.83	1.63
	479	1070	Rabka, Haluszka 1998	Symptomatic	iM	child	24 hours	lag 1	1.05	0.92	1.20
	485	1870	Drenthe, van der Zee 1998	Symptomatic	iM	child	24 hours	lag 1	1.05	0.82	1.34
	476	1830	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	iM	child	24 hours	lag 1	1.03	0.90	1.17
	485	1869	Amsterdam, van der Zee 1998	Symptomatic	iM	child	24 hours	lag 1	1.02	0.69	1.51
	476	1822	Athens, Kalandidi 1998	Symptomatic	iM	child	24 hours	lag 1	1.02	0.90	1.14
	481	3123	Benesov, Vondra 1998	Symptomatic	iM	child	24 hours	lag 1	1.02	0.71	1.46
	481	3122	Prague, Vondra 1998	Symptomatic	iM	child	24 hours	lag 1	1.01	0.83	1.23
	477	2733	Torre del Lago Puccini, Baldini 1998	Symptomatic	iM	child	24 hours	lag 1	0.98	0.79	1.23
	479	4827	Krakow, Haluszka 1998	Symptomatic	iM	child	24 hours	lag 1	0.98	0.74	1.28
	483	2642	Zerbst, Beyer 1998	Symptomatic	iM	child	24 hours	lag 1	0.95	0.67	1.34
	478	232	Budapest, Rudnai 1998	Symptomatic	iM	child	24 hours	lag 1	0.85	0.70	1.02
	478	233	Szentendre, Rudnai 1998	Symptomatic	iM	child	24 hours	lag 1	0.76	0.57	1.02
	484	2343	Berlin, Englert 1998	Symptomatic	iM	child	24 hours	lag 1	0.74	0.49	1.11
	483	1969	Hettstedt, Beyer 1998	Symptomatic	iM	child	24 hours	lag 1	0.68	0.46	1.01
	489	3578	Umea, Forsberg 1998	Symptomatic	iM	child	24 hours	lag 1	0.48	0.16	1.49
	489	3570	Umea, Forsberg 1998	Symptomatic	iM	child	24 hours	lag 1	0.33	0.10	1.13

Panel Studies: PM (BS)

Set No.	Refman id	Access id	Cities, author and date	Panel Group	Outcome	Age group	Averaging time	Lag	Random effects estimate and 95% cl: Estimate	Lcl	Ucl
4	482	1481	Teplice, Kotesovec 1998	Symptomatic	pM	child	24 hours	lag 1	1.04	1.00	1.09
	711	3838	Netherlands, van der Zee 1999	Symptomatic	pM	child	24 hours	lag 1	1.04	0.98	1.10
	481	3106	Prague, Vondra 1998	Symptomatic	pM	child	24 hours	lag 1	1.04	0.99	1.09
	487	2847	Kuopio suburb, Timonen 1998	Symptomatic	pM	child	24 hours	lag 1	1.03	0.96	1.10
	487	2846	Kuopio, Timonen 1998	Symptomatic	pM	child	24 hours	lag 1	1.02	0.93	1.12
	711	4351	Netherlands, van der Zee 1999	Symptomatic	pM	child	24 hours	lag 1	1.01	0.93	1.10
	485	3922	Drenthe, van der Zee 1998	Symptomatic	pM	child	24 hours	lag 1	1.01	0.91	1.12
	476	1836	Athens, Kalandidi 1998	Symptomatic	pM	child	24 hours	lag 1	1.01	0.99	1.02
	481	3107	Benesov, Vondra 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.98	1.03
	476	1844	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.98	1.02
	486	1012	Oslo suburb, Clench-Aas 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.95	1.05
	483	3805	Zerbst, Beyer 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.97	1.03
	489	3554	Umea, Forsberg 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.93	1.06
	477	2025	Pisa, Baldini 1998	Symptomatic	pM	child	24 hours	lag 1	0.99	0.81	1.22
	483	3801	Hettstedt, Beyer 1998	Symptomatic	pM	child	24 hours	lag 1	0.99	0.97	1.01
	477	2033	Torre del Lago Puccini, Baldini 1998	Symptomatic	pM	child	24 hours	lag 1	0.99	0.92	1.07
	479	1058	Krakow, Haluszka 1998	Symptomatic	pM	child	24 hours	lag 1	0.99	0.94	1.04
	478	255	Budapest, Rudnai 1998	Symptomatic	pM	child	24 hours	lag 1	0.98	0.95	1.01
	480	1250	Pszczyna, Niepsuj 1998	Symptomatic	pM	child	24 hours	lag 1	0.98	0.94	1.01
	484	2431	Berlin suburb, Englert 1998	Symptomatic	pM	child	24 hours	lag 1	0.97	0.94	1.01
	484	2423	Berlin, Englert 1998	Symptomatic	pM	child	24 hours	lag 1	0.96	0.91	1.00
	478	256	Szentendre, Rudnai 1998	Symptomatic	pM	child	24 hours	lag 1	0.95	0.91	0.99
	485	3921	Amsterdam, van der Zee 1998	Symptomatic	pM	child	24 hours	lag 1	0.95	0.86	1.04
	489	3562	Umea, Forsberg 1998	Symptomatic	pM	child	24 hours	lag 1	0.95	0.85	1.05
	486	1672	Oslo, Clench-Aas 1998	Symptomatic	pM	child	24 hours	lag 1	0.94	0.85	1.04
5	485	5146	Drenthe, van der Zee 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.54	-0.17	1.25
	481	5134	Prague, Vondra 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.43	0.04	0.82
	487	5119	Kuopio, Timonen 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.29	-0.27	0.85
	484	5032	Berlin suburb, Englert 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.23	-0.55	1.01
	478	5094	Szentendre, Rudnai 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.22	-0.02	0.46
	484	5031	Berlin, Englert 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.18	-0.47	0.83
	480	5075	Katowice, Niepsuj 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.13	-0.14	0.40
	485	5144	Amsterdam, van der Zee 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.11	-0.97	1.19
	482	5068	Prachatice, Kotesovec 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.08	-0.37	0.53
	476	5058	Athens, Kalandidi 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.04	-0.10	0.18
	482	5070	Teplice, Kotesovec 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.02	-0.16	0.20
	486	5019	Oslo, Clench-Aas 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.01	-0.60	0.62
	479	5052	Rabka, Haluszka 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.00	-0.35	0.35
	483	5011	Hettstedt, Beyer 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.01	-0.19	0.17
	486	5020	Oslo suburb, Clench-Aas 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.02	-0.84	0.80
	489	5039	Umea, Forsberg 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.03	-1.42	1.36
	476	5060	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.07	-0.42	0.28
	480	5076	Pszczyna, Niepsuj 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.09	-0.36	0.18
	483	5013	Zerbst, Beyer 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.14	-0.45	0.17
	478	5095	Budapest, Rudnai 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.16	-0.41	0.09
	479	5051	Krakow, Haluszka 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.18	-0.57	0.21
	477	4997	Pisa, Baldini 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.20	-1.34	0.94
	477	4998	Torre del Lago Puccini, Baldini 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.23	-0.76	0.30
	487	5120	Kuopio suburb, Timonen 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.37	-1.02	0.29
	481	5133	Benesov, Vondra 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.39	-0.98	0.20
	489	5041	Umea, Forsberg 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.83	-1.99	0.33
6	481	3080	Benesov, Vondra 1998	Symptomatic	iURS	child	24 hours	lag 1	1.06	0.89	1.26
	486	619	Oslo suburb, Clench-Aas 1998	Symptomatic	iURS	child	24 hours	lag 1	1.04	0.88	1.23
	489	3451	Umea, Forsberg 1998	Symptomatic	iURS	child	24 hours	lag 1	1.03	0.78	1.37
	476	4894	Athens, Kalandidi 1998	Symptomatic	iURS	child	24 hours	lag 1	1.02	0.98	1.07
	482	1638	Teplice, Kotesovec 1998	Symptomatic	iURS	child	24 hours	lag 1	1.02	0.97	1.06
	487	4103	Kuopio suburb, Timonen 1998	Symptomatic	iURS	child	24 hours	lag 1	1.01	0.85	1.20
	476	1746	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	iURS	child	24 hours	lag 1	1.00	0.93	1.09
	477	2001	Torre del Lago Puccini, Baldini 1998	Symptomatic	iURS	child	24 hours	lag 1	1.00	0.96	1.04
	478	149	Szentendre, Rudnai 1998	Symptomatic	iURS	child	24 hours	lag 1	0.99	0.81	1.21
	483	1953	Hettstedt, Beyer 1998	Symptomatic	iURS	child	24 hours	lag 1	0.99	0.94	1.05
	484	2311	Berlin, Englert 1998	Symptomatic	iURS	child	24 hours	lag 1	0.98	0.77	1.24
	479	1040	Rabka, Haluszka 1998	Symptomatic	iURS	child	24 hours	lag 1	0.98	0.92	1.03
	478	117	Budapest, Rudnai 1998	Symptomatic	iURS	child	24 hours	lag 1	0.97	0.90	1.04
	479	1034	Krakow, Haluszka 1998	Symptomatic	iURS	child	24 hours	lag 1	0.95	0.87	1.04
	485	3309	Amsterdam, van der Zee 1998	Symptomatic	iURS	child	24 hours	lag 1	0.95	0.78	1.15
	481	3680	Prague, Vondra 1998	Symptomatic	iURS	child	24 hours	lag 1	0.95	0.83	1.08
	483	1957	Zerbst, Beyer 1998	Symptomatic	iURS	child	24 hours	lag 1	0.93	0.86	1.01
	487	4063	Kuopio, Timonen 1998	Symptomatic	iURS	child	24 hours	lag 1	0.92	0.79	1.06
	485	3341	Drenthe, van der Zee 1998	Symptomatic	iURS	child	24 hours	lag 1	0.90	0.78	1.04
	482	1261	Prachatice, Kotesovec 1998	Symptomatic	iURS	child	24 hours	lag 1	0.89	0.78	1.02
	477	1993	Pisa, Baldini 1998	Symptomatic	iURS	child	24 hours	lag 1	0.89	0.83	0.95
	486	1338	Oslo, Clench-Aas 1998	Symptomatic	iURS	child	24 hours	lag 1	0.85	0.76	0.96
	484	2319	Berlin suburb, Englert 1998	Symptomatic	iURS	child	24 hours	lag 1	0.85	0.72	1.00
	489	3530	Umea, Forsberg 1998	Symptomatic	iURS	child	24 hours	lag 1	0.55	0.36	0.84

Panel Studies: PM (BS)

Set No.	Refman id	Access id	Cities, author and date	Panel Group	Outcome	Age group	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
7	489	3395	Umea, Forsberg 1998	Symptomatic	pURS	child	24 hours	lag 1	1.05	0.90	1.22
	489	3387	Umea, Forsberg 1998	Symptomatic	pURS	child	24 hours	lag 1	1.05	0.98	1.12
	483	2693	Zerbst, Beyer 1998	Symptomatic	pURS	child	24 hours	lag 1	1.02	0.99	1.05
	476	1802	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	pURS	child	24 hours	lag 1	1.02	1.00	1.04
	486	1648	Oslo suburb, Clench-Aas 1998	Symptomatic	pURS	child	24 hours	lag 1	1.01	0.97	1.05
	481	3648	Benesov, Vondra 1998	Symptomatic	pURS	child	24 hours	lag 1	1.01	0.97	1.05
	477	2701	Torre del Lago Puccini, Baldini 1998	Symptomatic	pURS	child	24 hours	lag 1	1.01	0.88	1.15
	484	2391	Berlin, Englert 1998	Symptomatic	pURS	child	24 hours	lag 1	1.01	0.94	1.08
	711	2989	Netherlands, van der Zee 1999	Symptomatic	pURS	child	24 hours	lag 1	1.01	0.97	1.04
	487	4127	Kuopio, Timonen 1998	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.95	1.06
	711	3868	Netherlands, van der Zee 1999	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.97	1.03
	487	2828	Kuopio suburb, Timonen 1998	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.94	1.06
	482	1582	Prachatice, Kotesovec 1998	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.98	1.03
	482	1574	Teplice, Kotesovec 1998	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.99	1.02
	480	4878	Pszczyna, Niepsuj 1998	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.98	1.02
	477	3740	Pisa, Baldini 1998	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.76	1.31
	478	181	Budapest, Rudnai 1998	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.98	1.02
	486	1164	Oslo, Clench-Aas 1998	Symptomatic	pURS	child	24 hours	lag 1	0.99	0.97	1.02
	479	1394	Rabka, Haluszka 1998	Symptomatic	pURS	child	24 hours	lag 1	0.99	0.98	1.01
	483	3793	Hettstedt, Beyer 1998	Symptomatic	pURS	child	24 hours	lag 1	0.99	0.97	1.00
	476	1794	Athens, Kalandidi 1998	Symptomatic	pURS	child	24 hours	lag 1	0.99	0.98	1.00
	480	1178	Katowice, Niepsuj 1998	Symptomatic	pURS	child	24 hours	lag 1	0.99	0.97	1.00
	485	3895	Drenthe, van der Zee 1998	Symptomatic	pURS	child	24 hours	lag 1	0.98	0.94	1.03
	479	2	Krakow, Haluszka 1998	Symptomatic	pURS	child	24 hours	lag 1	0.98	0.96	1.00
	485	1920	Amsterdam, van der Zee 1998	Symptomatic	pURS	child	24 hours	lag 1	0.98	0.92	1.05
	478	213	Szentendre, Rudnai 1998	Symptomatic	pURS	child	24 hours	lag 1	0.97	0.94	1.00
	481	3040	Prague, Vondra 1998	Symptomatic	pURS	child	24 hours	lag 1	0.97	0.94	1.01
	484	2399	Berlin suburb, Englert 1998	Symptomatic	pURS	child	24 hours	lag 1	0.96	0.91	1.01

Panel Studies: PM (PM_{10})

Set No.	Refman id	Access id	Cities, author and date	Panel Group	Outcome	Age group	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
8	486	1329	Oslo suburb, Clench-Aas 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.29	0.94	1.76
	483	1960	Hettstedt, Beyer 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.16	0.99	1.37
	479	1021	Krakow, Haluszka 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.10	1.02	1.18
	484	2334	Berlin suburb, Englert 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.08	0.95	1.23
	486	1321	Oslo, Clench-Aas 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.07	0.87	1.31
	478	108	Budapest, Rudnai 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.06	0.96	1.16
	476	1731	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.05	0.95	1.16
	485	3331	Drenthe, van der Zee 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.04	0.98	1.09
	481	3073	Benesov, Vondra 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.03	0.96	1.11
	481	3670	Prague, Vondra 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.03	0.96	1.11
	482	1605	Teplice, Kotesovec 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.02	0.98	1.07
	476	1723	Athens, Kalandidi 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.01	0.97	1.06
	477	2016	Torre del Lago Puccini, Baldini 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.98	0.95	1.02
	479	1417	Rabka, Haluszka 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.98	0.95	1.02
	483	1940	Zerbst, Beyer 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.97	0.86	1.08
	477	1976	Pisa, Baldini 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.96	0.93	0.99
	482	1276	Prachatice, Kotesovec 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.94	0.77	1.16
	480	1209	Katowice, Niepsuj 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.93	0.87	1.00
	478	146	Szentendre, Rudnai 1998	Symptomatic	iLRS(O)	child	24 hours	lag 0-6	0.92	0.78	1.08
	484	2326	Berlin, Englert 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.90	0.79	1.03
	487	4053	Kuopio, Timonen 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.87	0.75	1.00
	485	3299	Amsterdam, van der Zee 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.87	0.79	0.95
	489	3537	Umea, Forsberg 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.76	0.58	1.00
	489	3426	Umea, Forsberg 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.75	0.55	1.04
	487	4096	Kuopio suburb, Timonen 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.64	0.41	1.00
9	486	1155	Oslo suburb, Clench-Aas 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.16	1.03	1.32
	487	2819	Kuopio suburb, Timonen 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.12	1.04	1.20
	483	2657	Zerbst, Beyer 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.08	1.02	1.15
	711	4361	Netherlands, van der Zee 1999	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.08	1.04	1.12
	486	1655	Oslo, Clench-Aas 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.03	0.99	1.08
	487	4120	Kuopio, Timonen 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.03	0.90	1.17
	481	3641	Benesov, Vondra 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.03	1.00	1.05
	92	4651	Sokolov, Peters 1997	Symptomatic	pLRS(O)	child	24 hours	lag 0	1.02	1.01	1.03
	478	172	Budapest, Rudnai 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.02	1.00	1.04
	485	1899	Drenthe, van der Zee 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.02	1.00	1.03
	477	2708	Pisa, Baldini 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.01	0.91	1.12
	479	4822	Krakow, Haluszka 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.01	0.99	1.03
	481	3030	Prague, Vondra 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.01	0.99	1.03
	482	1541	Teplice, Kotesovec 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.01	1.00	1.02
	479	1369	Rabka, Haluszka 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.00	0.99	1.01
	482	1597	Prachatice, Kotesovec 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.00	0.94	1.06
	489	3378	Umea, Forsberg 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.00	0.85	1.16
	476	1807	Athens, Kalandidi 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.99	0.98	1.01
	476	1773	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.99	0.97	1.01
	480	1453	Katowice, Niepsuj 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.99	0.97	1.01
	480	1201	Pszczyna, Niepsuj 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.99	0.93	1.05
	483	3796	Hettstedt, Beyer 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.98	0.91	1.07
	484	2366	Berlin suburb, Englert 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.98	0.96	1.01
	711	4377	Netherlands, van der Zee 1999	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.98	0.95	1.01
	485	1910	Amsterdam, van der Zee 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.97	0.94	0.99
	478	204	Szentendre, Rudnai 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.96	0.92	1.01
	477	3715	Torre del Lago Puccini, Baldini 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.95	0.87	1.04
	484	2358	Berlin, Englert 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.95	0.91	0.98
	489	3402	Umea, Forsberg 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.92	0.81	1.04
10	481	3119	Benesov, Vondra 1998	Symptomatic	iM	child	24 hours	lag 1	1.10	0.97	1.24
	484	2350	Berlin suburb, Englert 1998	Symptomatic	iM	child	24 hours	lag 1	1.09	0.87	1.37
	485	1865	Amsterdam, van der Zee 1998	Symptomatic	iM	child	24 hours	lag 1	1.09	0.90	1.31
	477	2724	Pisa, Baldini 1998	Symptomatic	iM	child	24 hours	lag 1	1.06	0.89	1.26
	477	2732	Torre del Lago Puccini, Baldini 1998	Symptomatic	iM	child	24 hours	lag 1	1.05	0.93	1.19
	489	3569	Umea, Forsberg 1998	Symptomatic	iM	child	24 hours	lag 1	1.05	0.57	1.95
	479	1069	Rabka, Haluszka 1998	Symptomatic	iM	child	24 hours	lag 1	1.02	0.91	1.13
	476	1821	Athens, Kalandidi 1998	Symptomatic	iM	child	24 hours	lag 1	1.00	0.88	1.14
	481	3118	Prague, Vondra 1998	Symptomatic	iM	child	24 hours	lag 1	1.00	0.89	1.12
	476	1829	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	iM	child	24 hours	lag 1	0.99	0.87	1.12
	485	1866	Drenthe, van der Zee 1998	Symptomatic	iM	child	24 hours	lag 1	0.99	0.90	1.08
	478	242	Budapest, Rudnai 1998	Symptomatic	iM	child	24 hours	lag 1	0.98	0.85	1.12
	489	3577	Umea, Forsberg 1998	Symptomatic	iM	child	24 hours	lag 1	0.92	0.44	1.95
	484	2342	Berlin, Englert 1998	Symptomatic	iM	child	24 hours	lag 1	0.91	0.72	1.15
	479	1063	Krakow, Haluszka 1998	Symptomatic	iM	child	24 hours	lag 1	0.89	0.71	1.12
	478	243	Szentendre, Rudnai 1998	Symptomatic	iM	child	24 hours	lag 1	0.86	0.70	1.07
	483	1968	Hettstedt, Beyer 1998	Symptomatic	iM	child	24 hours	lag 1	0.74	0.49	1.13
	483	2641	Zerbst, Beyer 1998	Symptomatic	iM	child	24 hours	lag 1	0.57	0.31	1.03

Panel Studies: PM (PM_{10})

Set No.	Refman id	Access id	Cities, author and date	Panel Group	Outcome	Age group	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
11	711	4363	Netherlands, van der Zee 1999	Symptomatic	pM	child	24 hours	lag 1	1.03	1.00	1.06
	487	2843	Kuopio suburb, Timonen 1998	Symptomatic	pM	child	24 hours	lag 1	1.02	0.95	1.10
	477	2032	Torre del Lago Puccini, Baldini 1998	Symptomatic	pM	child	24 hours	lag 1	1.02	0.98	1.06
	481	3102	Prague, Vondra 1998	Symptomatic	pM	child	24 hours	lag 1	1.02	0.99	1.05
	711	3836	Netherlands, van der Zee 1999	Symptomatic	pM	child	24 hours	lag 1	1.02	0.99	1.04
	476	1843	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	pM	child	24 hours	lag 1	1.01	0.99	1.03
	478	251	Budapest, Rudnai 1998	Symptomatic	pM	child	24 hours	lag 1	1.01	0.99	1.03
	711	3886	Netherlands, van der Zee 1999	Symptomatic	pM	child	24 hours	lag 1	1.01	0.98	1.04
	476	1835	Athens, Kalandidi 1998	Symptomatic	pM	child	24 hours	lag 1	1.01	0.99	1.02
	711	4373	Netherlands, van der Zee 1999	Symptomatic	pM	child	24 hours	lag 1	1.00	0.97	1.04
	483	3804	Zerbst, Beyer 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.97	1.03
	484	2430	Berlin suburb, Englert 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.97	1.04
	481	3103	Benesov, Vondra 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.99	1.01
	487	2842	Kuopio, Timonen 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.89	1.12
	489	3553	Umea, Forsberg 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.95	1.05
	482	1480	Teplice, Kotesovec 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.96	1.04
	483	3800	Hettstedt, Beyer 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.97	1.02
	485	3918	Drenthe, van der Zee 1998	Symptomatic	pM	child	24 hours	lag 1	0.99	0.96	1.03
	486	1679	Oslo suburb, Clench-Aas 1998	Symptomatic	pM	child	24 hours	lag 1	0.98	0.89	1.08
	477	2024	Pisa, Baldini 1998	Symptomatic	pM	child	24 hours	lag 1	0.98	0.92	1.04
	485	3917	Amsterdam, van der Zee 1998	Symptomatic	pM	child	24 hours	lag 1	0.97	0.93	1.02
	484	2422	Berlin, Englert 1998	Symptomatic	pM	child	24 hours	lag 1	0.97	0.94	0.99
	480	1249	Pszczyna, Niepsuj 1998	Symptomatic	pM	child	24 hours	lag 1	0.96	0.93	1.00
	489	3561	Umea, Forsberg 1998	Symptomatic	pM	child	24 hours	lag 1	0.96	0.89	1.03
	478	252	Szentendre, Rudnai 1998	Symptomatic	pM	child	24 hours	lag 1	0.96	0.93	0.99
	479	1057	Krakow, Haluszka 1998	Symptomatic	pM	child	24 hours	lag 1	0.96	0.92	1.00
	482	1488	Prachatice, Kotesovec 1998	Symptomatic	pM	child	24 hours	lag 1	0.91	0.86	0.97
	486	1671	Oslo, Clench-Aas 1998	Symptomatic	pM	child	24 hours	lag 1	0.91	0.78	1.06
12	486	5018	Oslo suburb, Clench-Aas 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.63	-0.90	2.16
	489	5037	Umea, Forsberg 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.57	-0.41	1.55
	486	5017	Oslo, Clench-Aas 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.34	-0.56	1.24
	479	1357	Rabka, Haluszka 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.22	0.02	0.42
	477	4995	Pisa, Baldini 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.20	-0.17	0.57
	489	5038	Umea, Forsberg 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.17	-0.63	0.97
	484	5034	Berlin, Englert 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.17	-0.20	0.54
	477	4996	Torre del Lago Puccini, Baldini 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.16	-0.17	0.49
	478	5092	Szentendre, Rudnai 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.14	-0.04	0.32
	481	5138	Prague, Vondra 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.12	-0.13	0.37
	483	5014	Hettstedt, Beyer 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.07	-0.20	0.34
	480	5073	Katowice, Niepsuj 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.06	-0.23	0.35
	482	5072	Teplice, Kotesovec 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.06	-0.10	0.22
	476	5055	Athens, Kalandidi 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.05	-0.09	0.19
	485	5142	Drenthe, van der Zee 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.03	-0.19	0.25
	483	5015	Zerbst, Beyer 1998	Symptomatic	PEFR	child	24 hours	lag 0	0.02	-0.29	0.33
	481	5136	Benesov, Vondra 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.02	-0.24	0.20
	479	5053	Krakow, Haluszka 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.04	-0.29	0.21
	476	5057	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.04	-0.39	0.31
	482	5071	Prachatice, Kotesovec 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.05	-0.36	0.26
	478	5093	Budapest, Rudnai 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.07	-0.31	0.17
	485	5140	Amsterdam, van der Zee 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.10	-0.59	0.39
	484	5035	Berlin suburb, Englert 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.13	-0.68	0.42
	480	5074	Pszczyna, Niepsuj 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.15	-0.37	0.07
	92	4681	Sokolov, Peters 1997	Symptomatic	PEFR	child	24 hours	lag 0	-0.18	-0.39	0.02
	756	5110	Kuopio, Timonen 1997	Symptomatic	PEFR	child	24 hours	lag 0	-0.22	-1.04	0.60
	487	5118	Kuopio suburb, Timonen 1998	Symptomatic	PEFR	child	24 hours	lag 0	-0.38	-1.08	0.32
	1303	6559	Los Angeles, Delfino 2003	Symptomatic	PEFR	child	24 hours	lag 0	-0.99	-2.78	0.80
13	486	618	Oslo suburb, Clench-Aas 1998	Symptomatic	iURS	child	24 hours	lag 1	1.05	0.80	1.39
	483	1952	Hettstedt, Beyer 1998	Symptomatic	iURS	child	24 hours	lag 1	1.05	0.97	1.14
	478	141	Szentendre, Rudnai 1998	Symptomatic	iURS	child	24 hours	lag 1	1.03	0.94	1.14
	478	109	Budapest, Rudnai 1998	Symptomatic	iURS	child	24 hours	lag 1	1.02	0.96	1.08
	476	4893	Athens, Kalandidi 1998	Symptomatic	iURS	child	24 hours	lag 1	1.02	0.97	1.06
	482	1637	Teplice, Kotesovec 1998	Symptomatic	iURS	child	24 hours	lag 1	1.02	0.97	1.06
	484	2310	Berlin, Englert 1998	Symptomatic	iURS	child	24 hours	lag 1	1.01	0.87	1.16
	477	2000	Torre del Lago Puccini, Baldini 1998	Symptomatic	iURS	child	24 hours	lag 1	1.00	0.98	1.03
	484	2318	Berlin suburb, Englert 1998	Symptomatic	iURS	child	24 hours	lag 1	1.00	0.91	1.09
	487	4055	Kuopio, Timonen 1998	Symptomatic	iURS	child	24 hours	lag 1	1.00	0.88	1.13
	481	3072	Benesov, Vondra 1998	Symptomatic	iURS	child	24 hours	lag 1	0.99	0.94	1.06
	479	1039	Rabka, Haluszka 1998	Symptomatic	iURS	child	24 hours	lag 1	0.99	0.95	1.04
	479	1033	Krakow, Haluszka 1998	Symptomatic	iURS	child	24 hours	lag 1	0.99	0.93	1.05
	481	3672	Prague, Vondra 1998	Symptomatic	iURS	child	24 hours	lag 1	0.99	0.91	1.06
	482	1260	Prachatice, Kotesovec 1998	Symptomatic	iURS	child	24 hours	lag 1	0.98	0.91	1.06
	477	1992	Pisa, Baldini 1998	Symptomatic	iURS	child	24 hours	lag 1	0.98	0.95	1.01
	485	3301	Amsterdam, van der Zee 1998	Symptomatic	iURS	child	24 hours	lag 1	0.97	0.88	1.06
	476	1745	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	iURS	child	24 hours	lag 1	0.96	0.89	1.05
	485	3333	Drenthe, van der Zee 1998	Symptomatic	iURS	child	24 hours	lag 1	0.95	0.91	1.00
	480	4883	Katowice, Niepsuj 1998	Symptomatic	iURS	child	24 hours	lag 1	0.94	0.88	1.01
	487	4095	Kuopio suburb, Timonen 1998	Symptomatic	iURS	child	24 hours	lag 1	0.94	0.78	1.13
	483	1956	Zerbst, Beyer 1998	Symptomatic	iURS	child	24 hours	lag 1	0.90	0.82	0.99
	486	1337	Oslo, Clench-Aas 1998	Symptomatic	iURS	child	24 hours	lag 1	0.84	0.72	0.98
	489	3529	Umea, Forsberg 1998	Symptomatic	iURS	child	24 hours	lag 1	0.81	0.61	1.07
	489	3450	Umea, Forsberg 1998	Symptomatic	iURS	child	24 hours	lag 1	0.79	0.63	0.99

Panel Studies: PM (PM_{10})

Set No.	Refman id	Access id	Cities, author and date	Panel Group	Outcome	Age group	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
14	486	1647	Oslo suburb, Clench-Aas 1998	Symptomatic	pURS	child	24 hours	lag 1	1.04	0.98	1.11
	484	2390	Berlin, Englert 1998	Symptomatic	pURS	child	24 hours	lag 1	1.03	0.99	1.08
	489	3394	Umea, Forsberg 1998	Symptomatic	pURS	child	24 hours	lag 1	1.02	0.92	1.13
	477	2700	Torre del Lago Puccini, Baldini 1998	Symptomatic	pURS	child	24 hours	lag 1	1.02	0.93	1.11
	487	4119	Kuopio, Timonen 1998	Symptomatic	pURS	child	24 hours	lag 1	1.02	0.97	1.06
	478	173	Budapest, Rudnai 1998	Symptomatic	pURS	child	24 hours	lag 1	1.01	0.99	1.03
	711	2987	Netherlands, van der Zee 1999	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.99	1.02
	481	3640	Benesov, Vondra 1998	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.99	1.02
	476	1801	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.98	1.03
	482	1581	Prachatice, Kotesovec 1998	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.98	1.02
	483	2692	Zerbst, Beyer 1998	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.97	1.03
	482	1573	Teplice, Kotesovec 1998	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.99	1.01
	479	1393	Rabka, Haluszka 1998	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.99	1.01
	483	3792	Hettstedt, Beyer 1998	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.97	1.02
	486	1163	Oslo, Clench-Aas 1998	Symptomatic	pURS	child	24 hours	lag 1	1.00	0.96	1.03
	711	3866	Netherlands, van der Zee 1999	Symptomatic	pURS	child	24 hours	lag 1	0.99	0.98	1.01
	480	1177	Katowice, Niepsuj 1998	Symptomatic	pURS	child	24 hours	lag 1	0.99	0.98	1.01
	476	1793	Athens, Kalandidi 1998	Symptomatic	pURS	child	24 hours	lag 1	0.99	0.98	1.00
	481	3032	Prague, Vondra 1998	Symptomatic	pURS	child	24 hours	lag 1	0.99	0.97	1.01
	485	1912	Amsterdam, van der Zee 1998	Symptomatic	pURS	child	24 hours	lag 1	0.99	0.96	1.02
	485	3887	Drenthe, van der Zee 1998	Symptomatic	pURS	child	24 hours	lag 1	0.99	0.98	1.00
	480	4877	Pszczyna, Niepsuj 1998	Symptomatic	pURS	child	24 hours	lag 1	0.99	0.97	1.01
	484	2398	Berlin suburb, Englert 1998	Symptomatic	pURS	child	24 hours	lag 1	0.99	0.96	1.01
	478	205	Szentendre, Rudnai 1998	Symptomatic	pURS	child	24 hours	lag 1	0.98	0.95	1.00
	477	3739	Pisa, Baldini 1998	Symptomatic	pURS	child	24 hours	lag 1	0.98	0.90	1.06
	489	3386	Umea, Forsberg 1998	Symptomatic	pURS	child	24 hours	lag 1	0.98	0.92	1.03
	487	2820	Kuopio suburb, Timonen 1998	Symptomatic	pURS	child	24 hours	lag 1	0.97	0.90	1.04
15	1291	5620	Rochester, Peacock 2003	unselected	PEFR	child	24 hours	lag 1	0.30	-0.40	1.00
	760	4988	Bilthoven, Steerenberg 2001	unselected	PEFR	child	24 hours	lag 1	0.00	-0.02	0.02
	760	4977	Utrecht, Steerenberg 2001	unselected	PEFR	child	24 hours	lag 1	0.00	-0.14	0.14
	228	4753	Wageningen, Hoek 1993	unselected	PEFR	child	24 hours	lag 1	-0.12	-1.23	0.99
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Panel studies: PM

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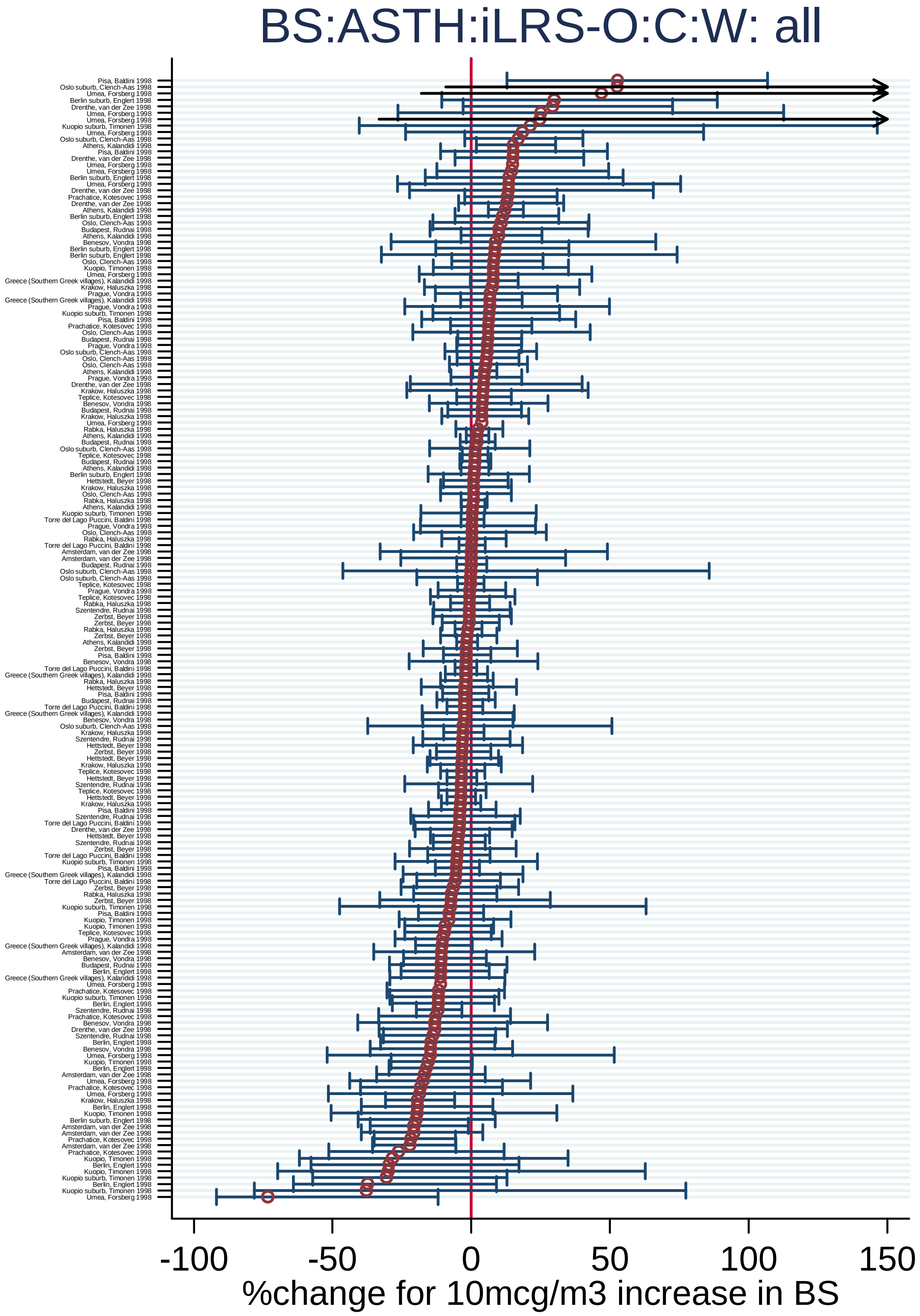

Panel studies: PM

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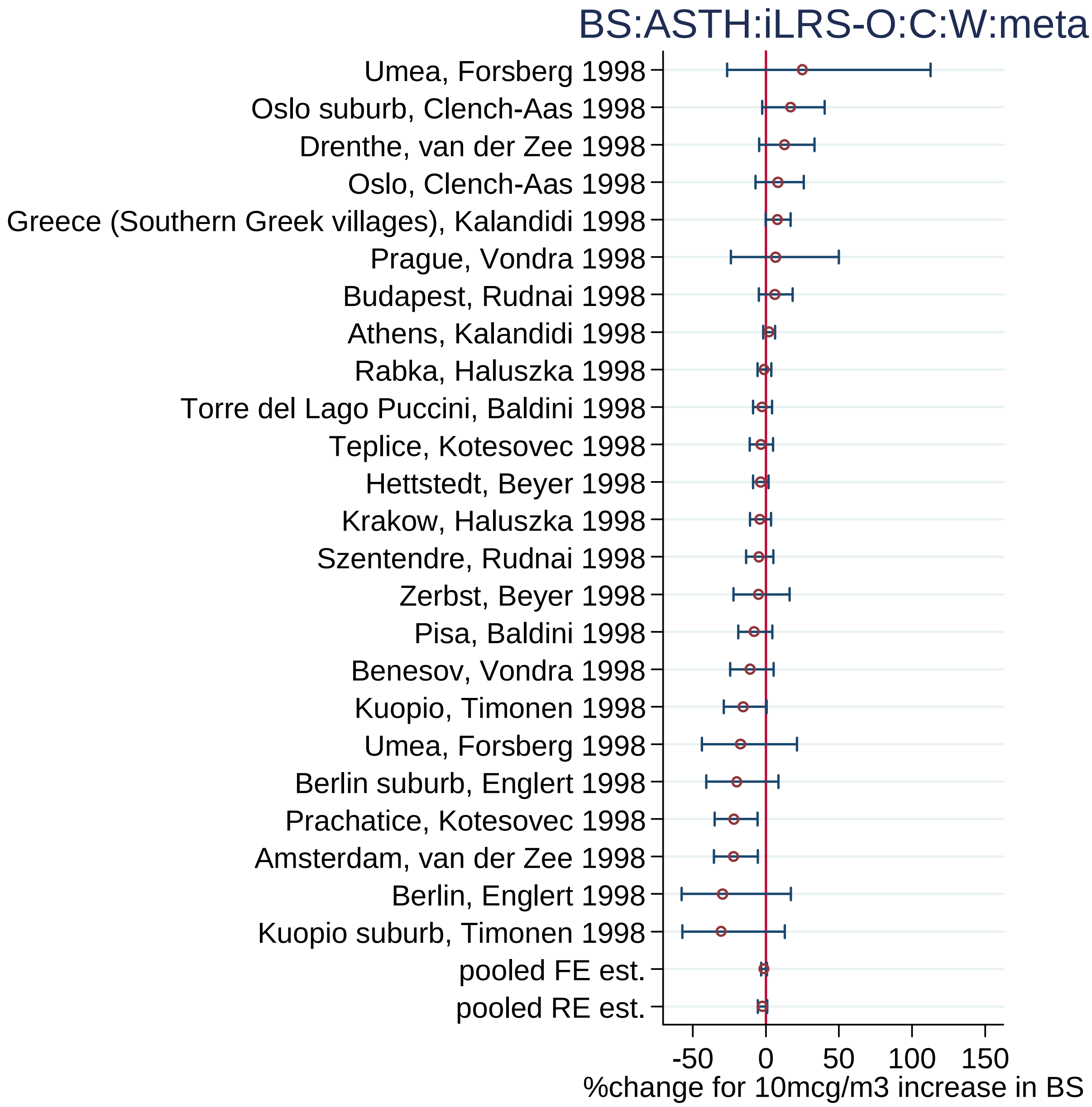

Panel studies: PM

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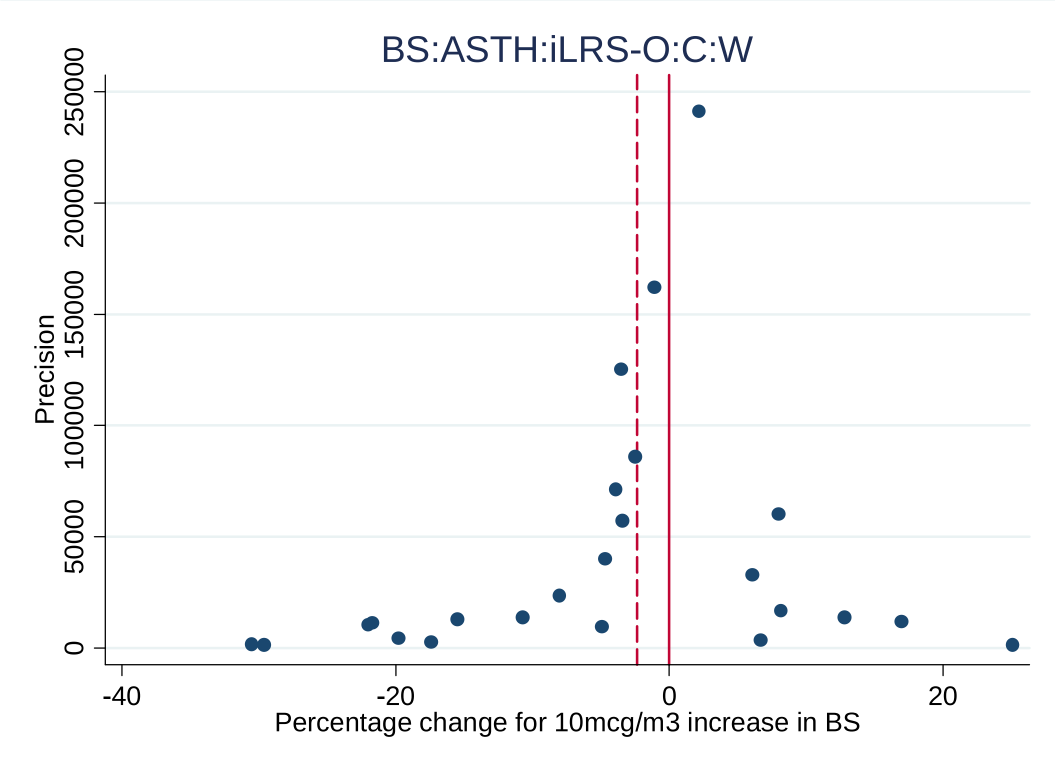

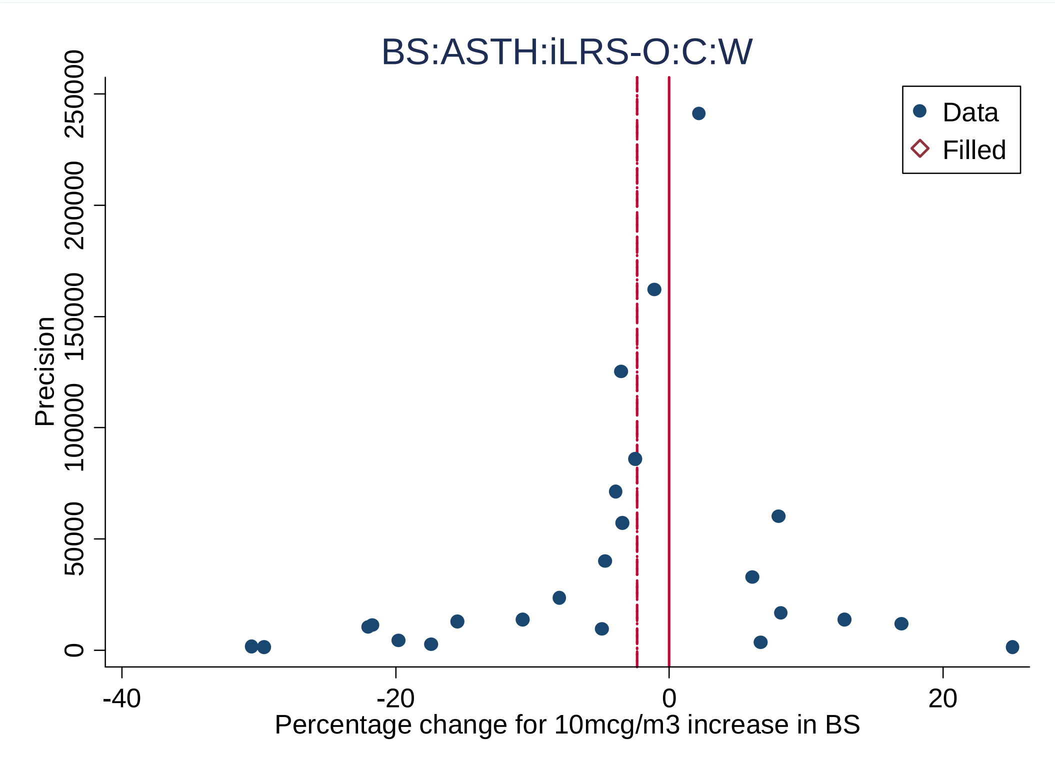

Panel studies: PM

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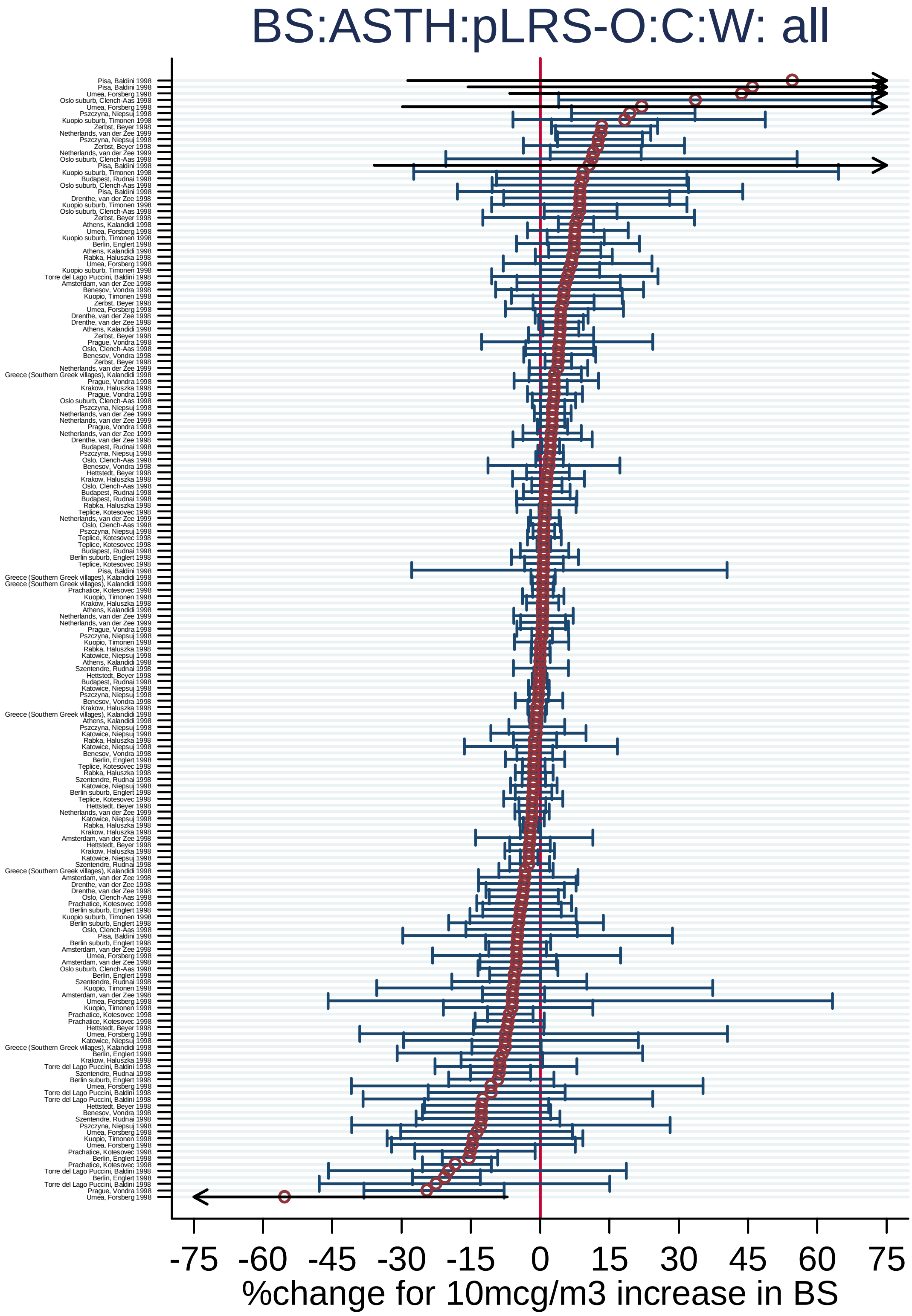

Panel studies: PM

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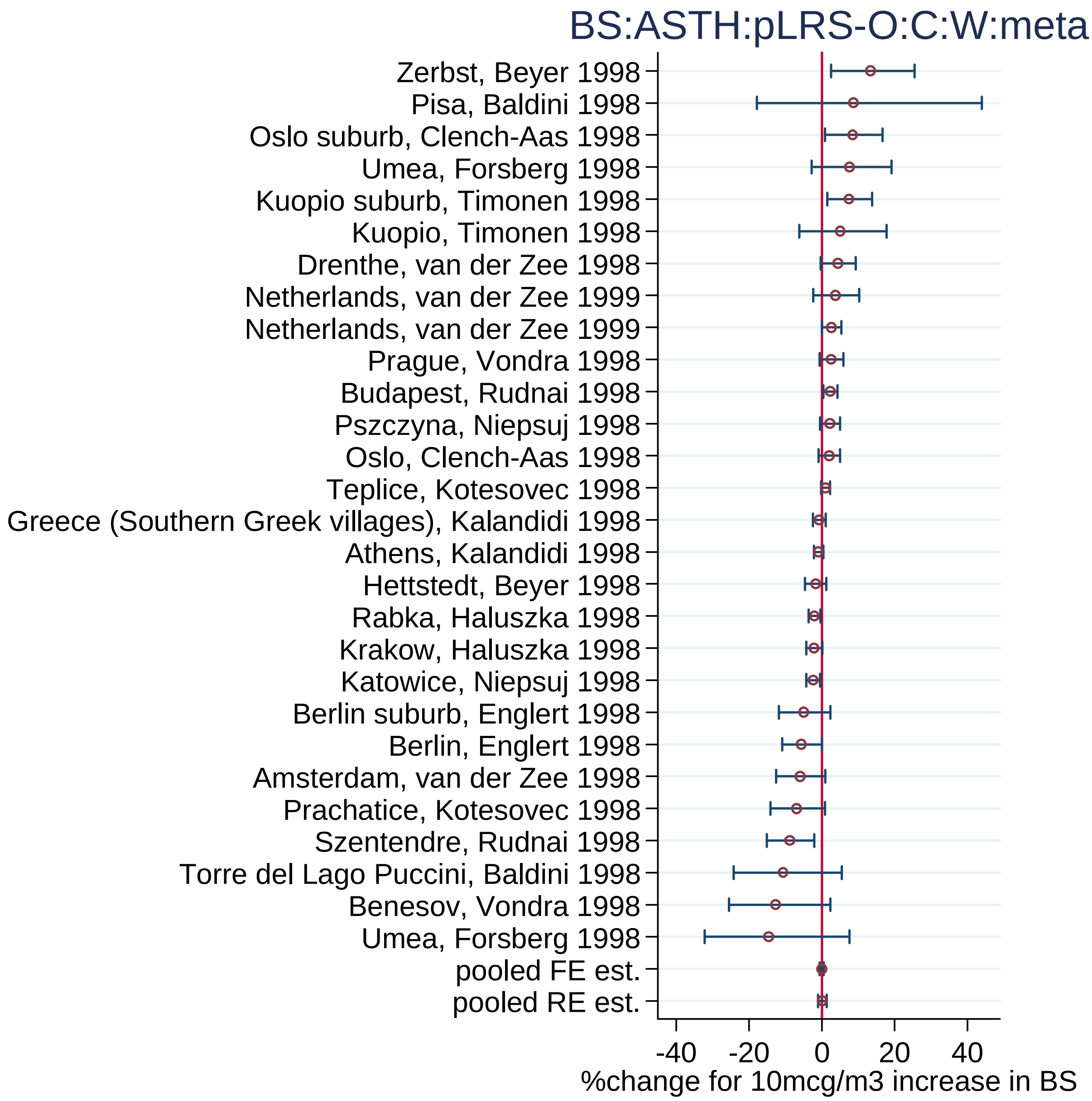

Panel studies: PM

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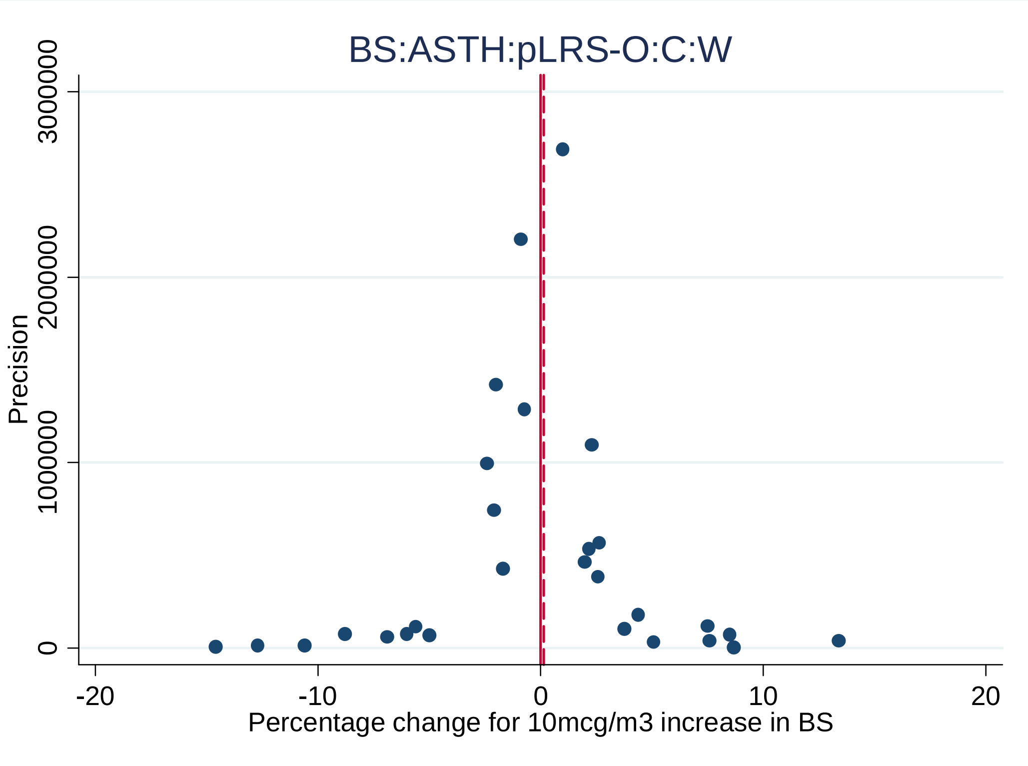

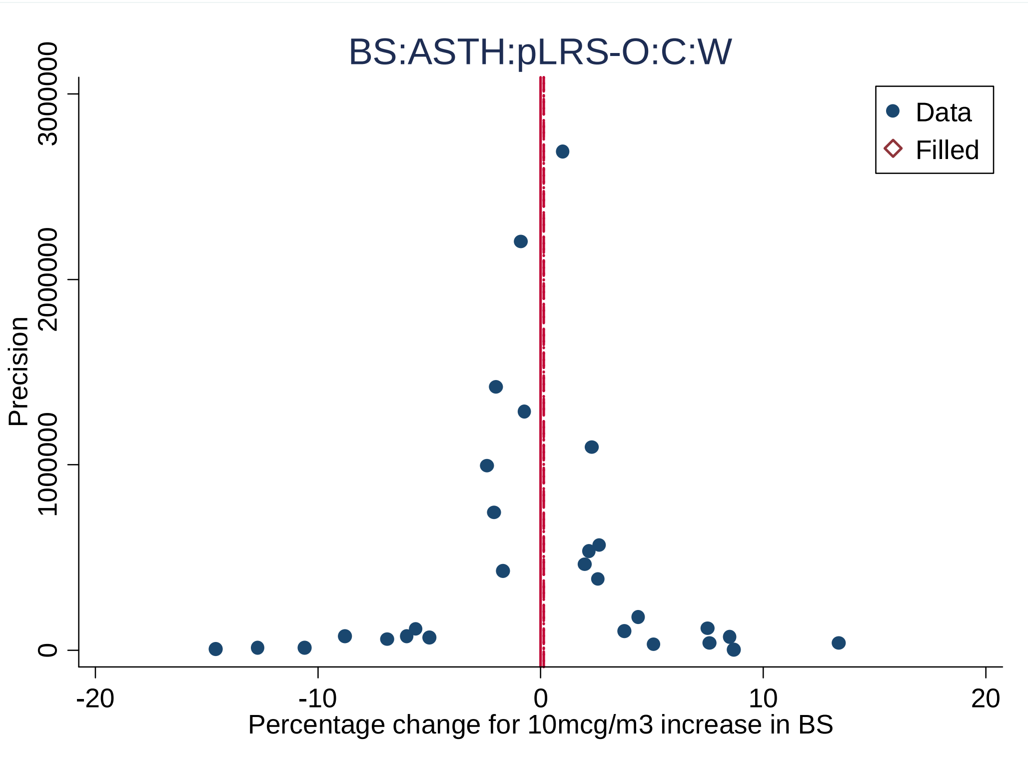

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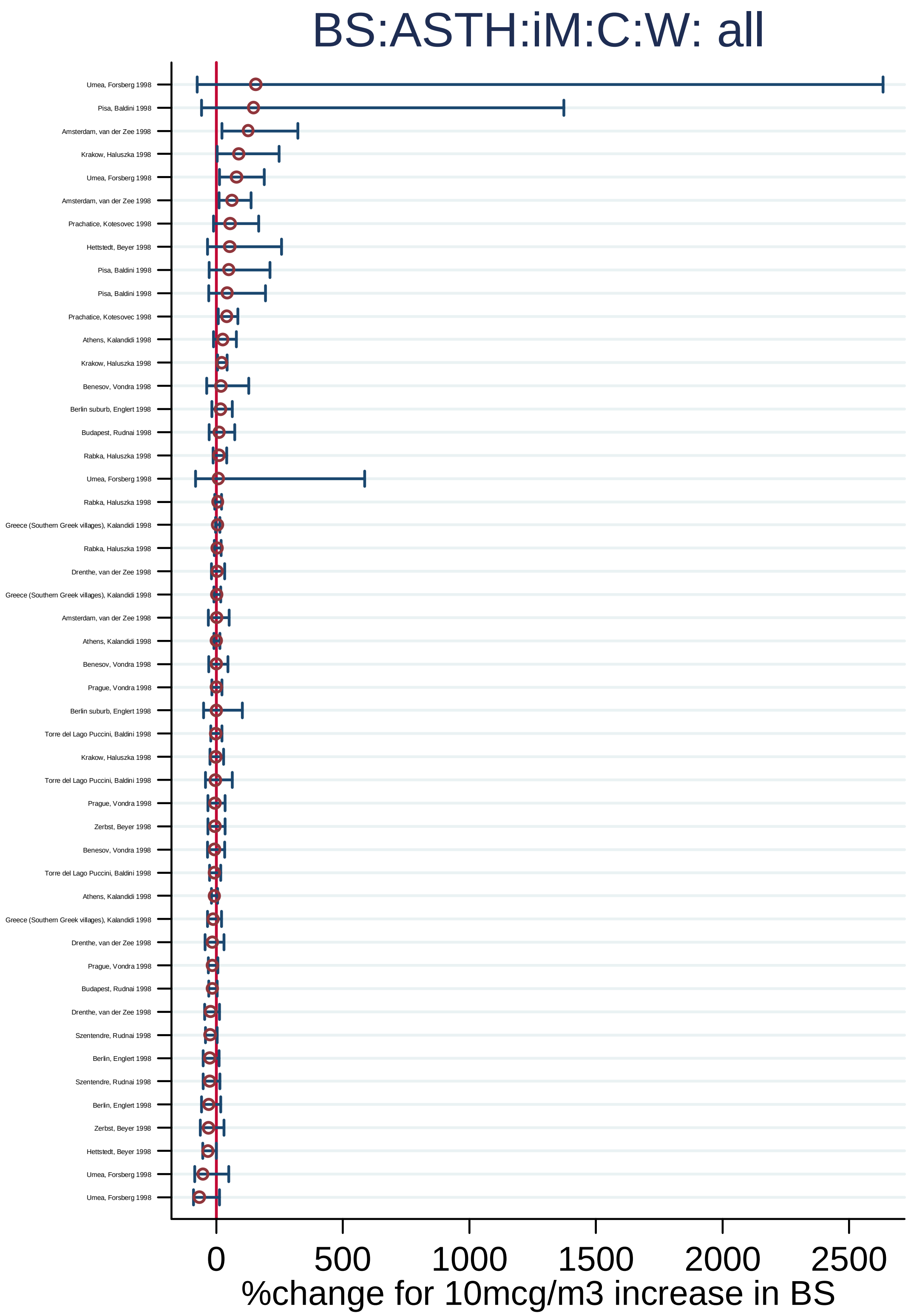

Panel studies: PM

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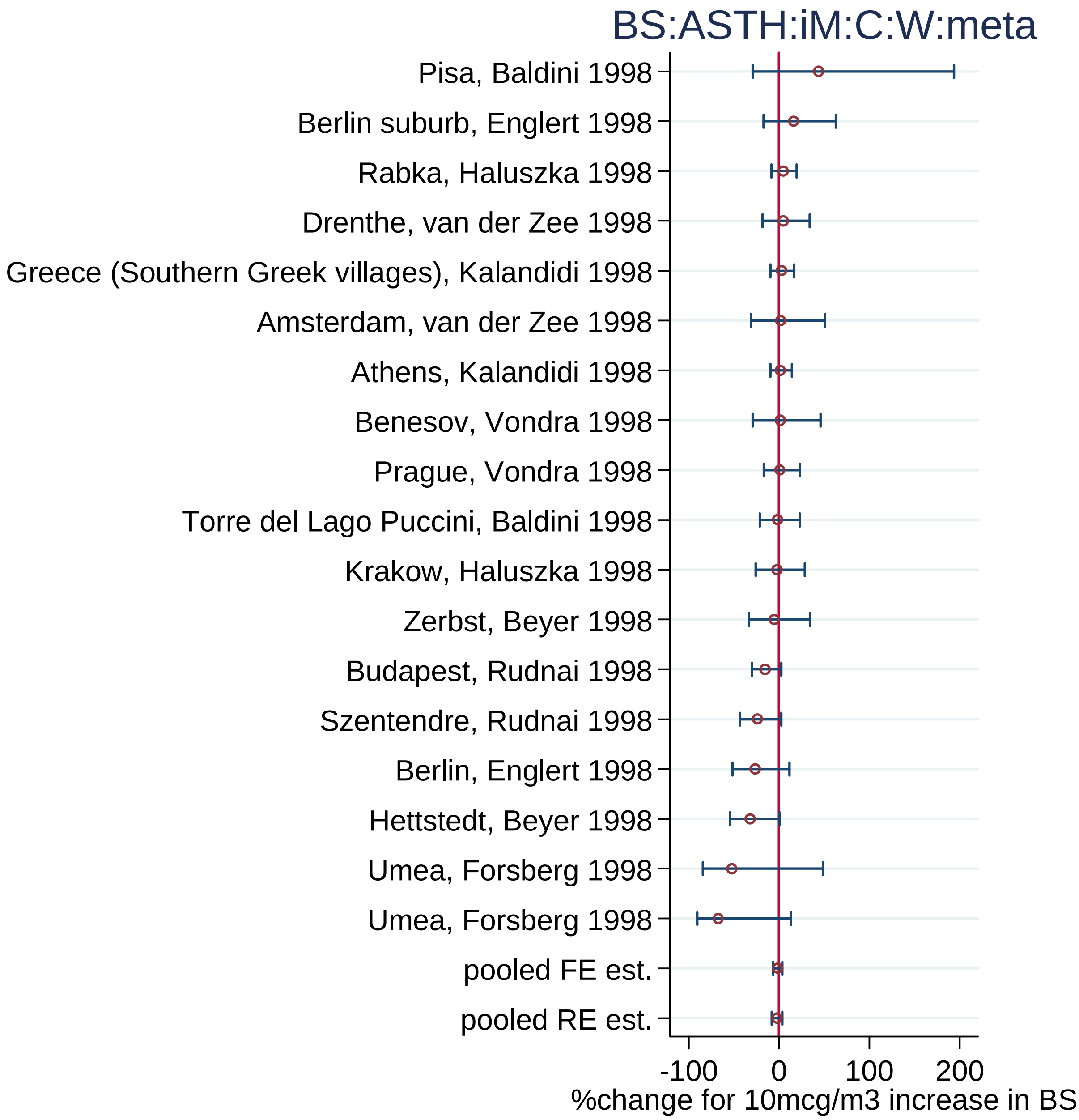

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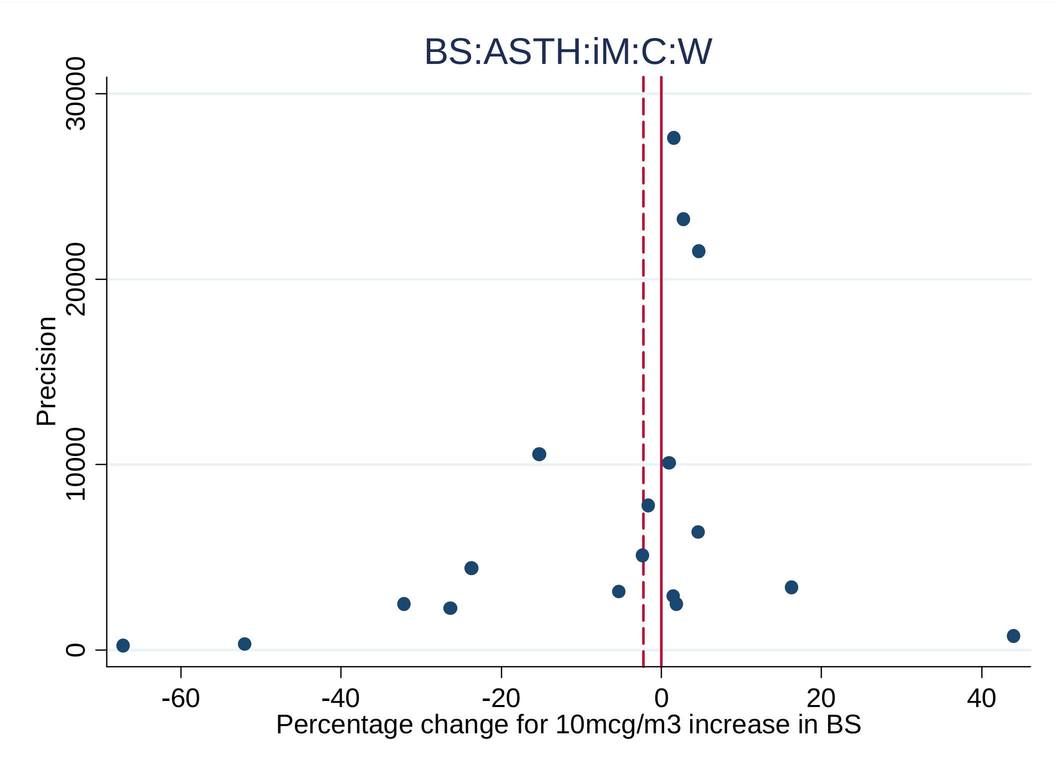

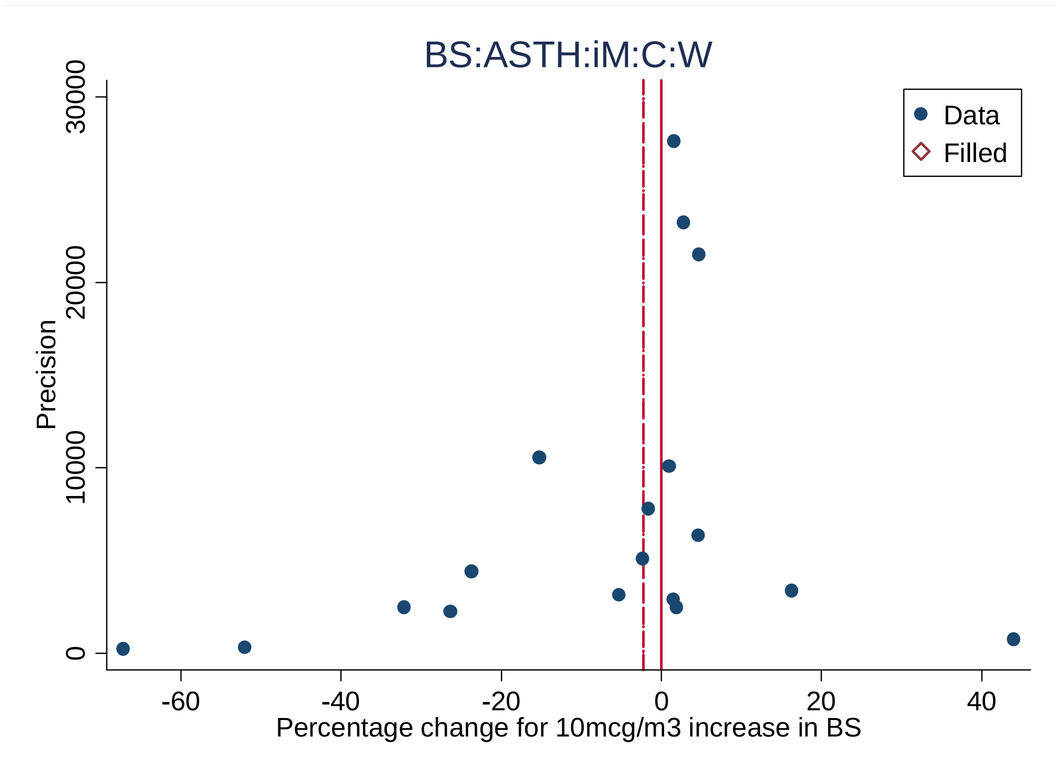

Panel studies: PM

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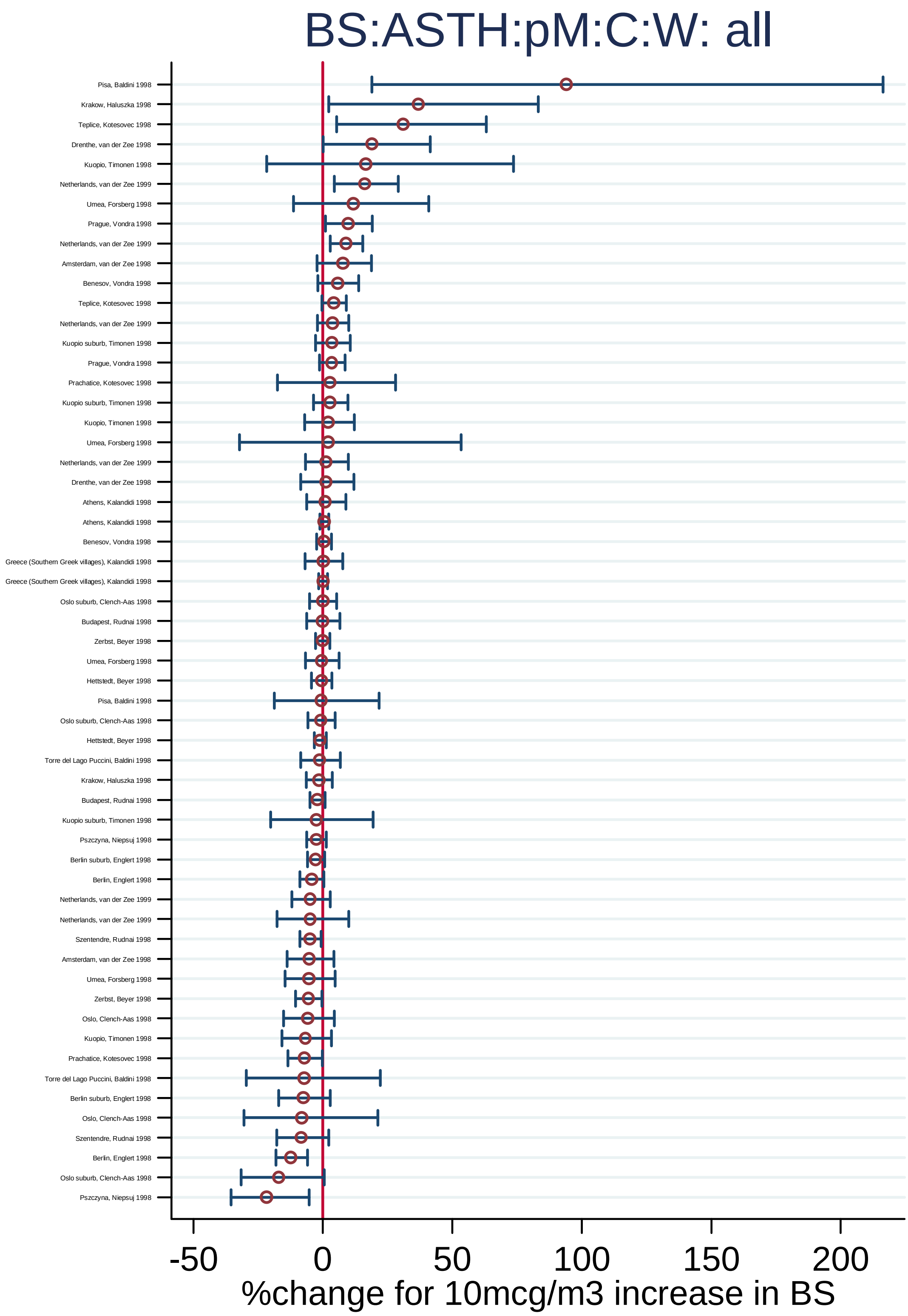

Panel studies: PM

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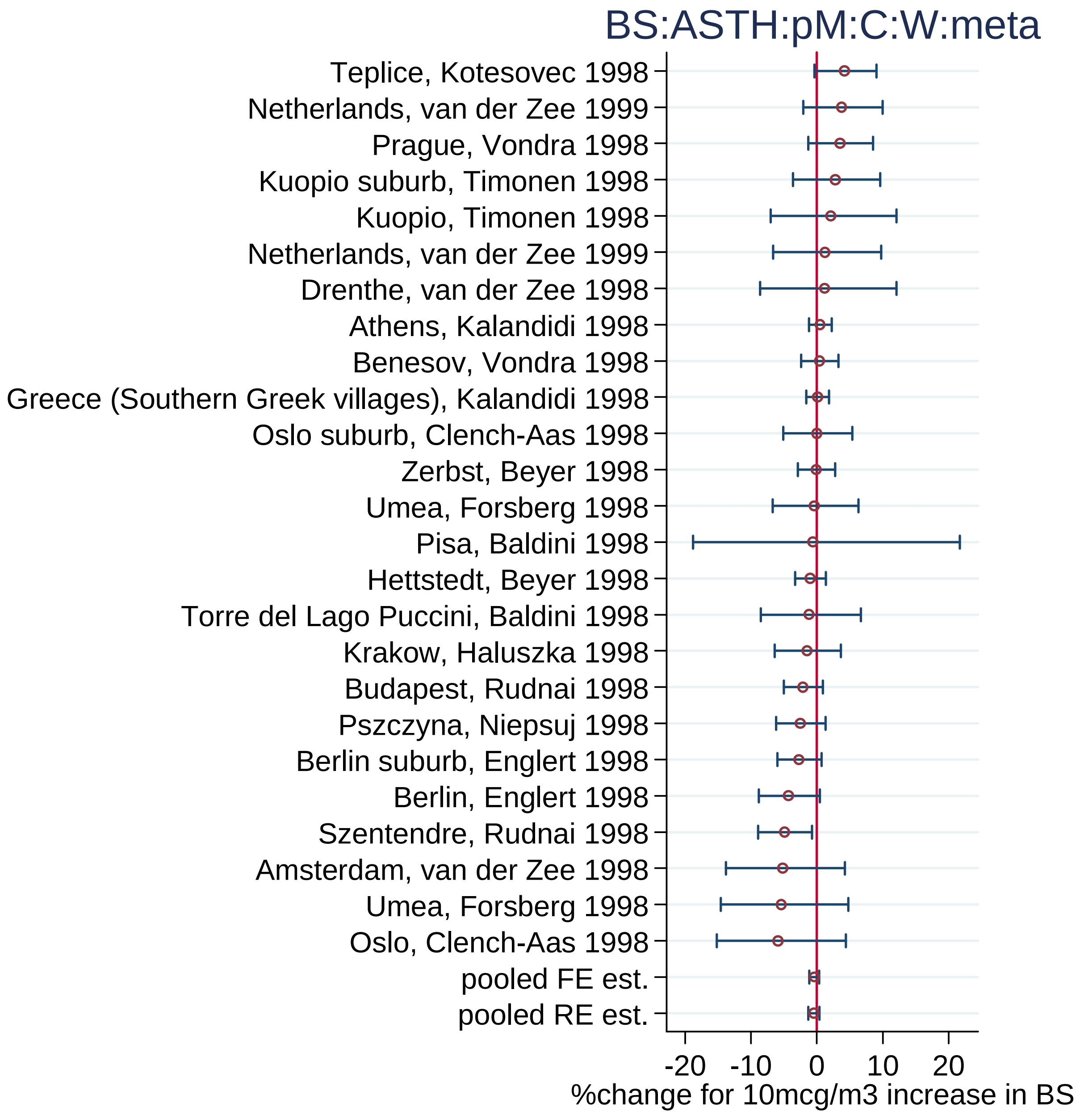

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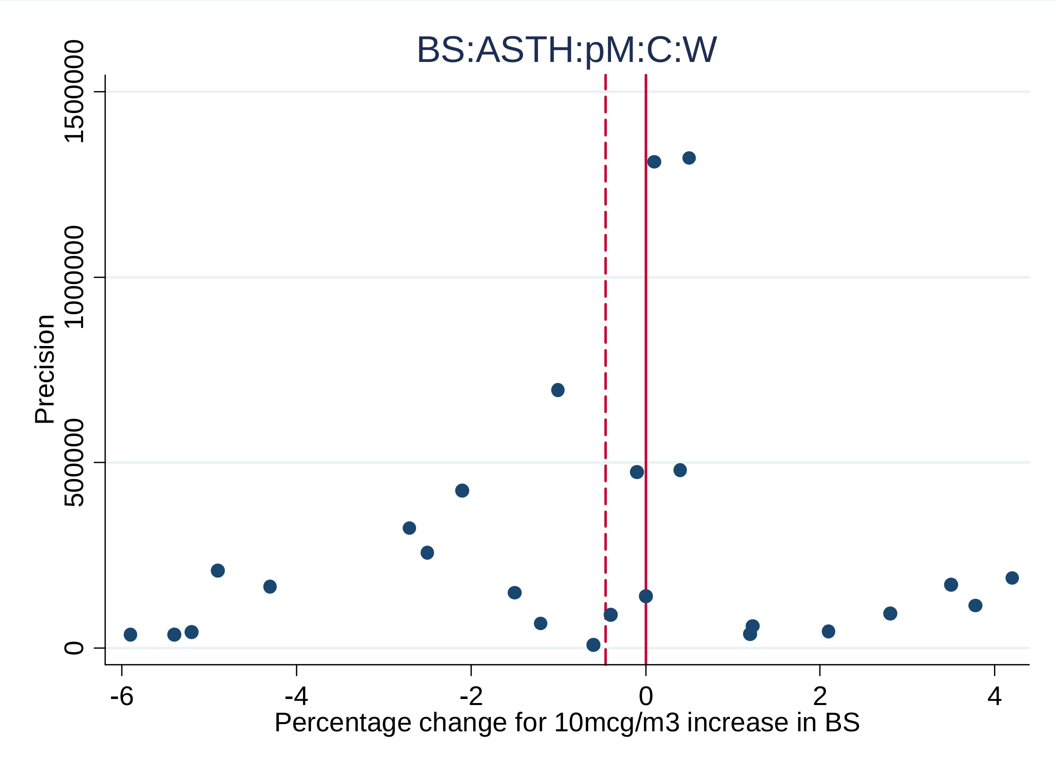

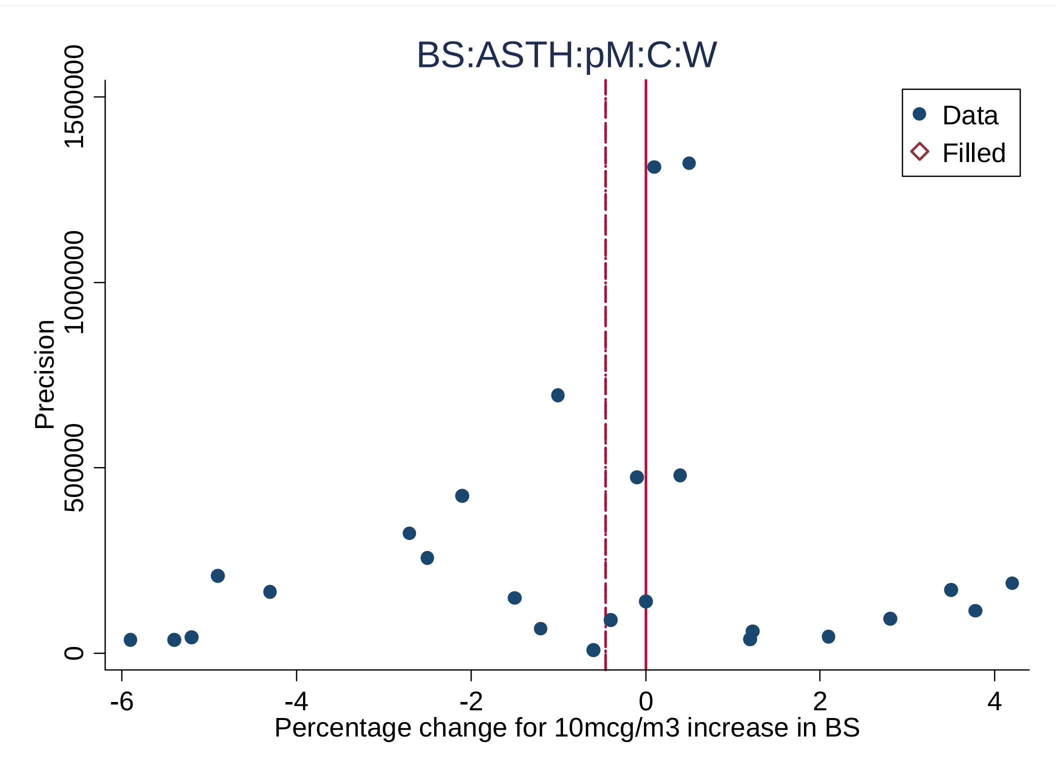

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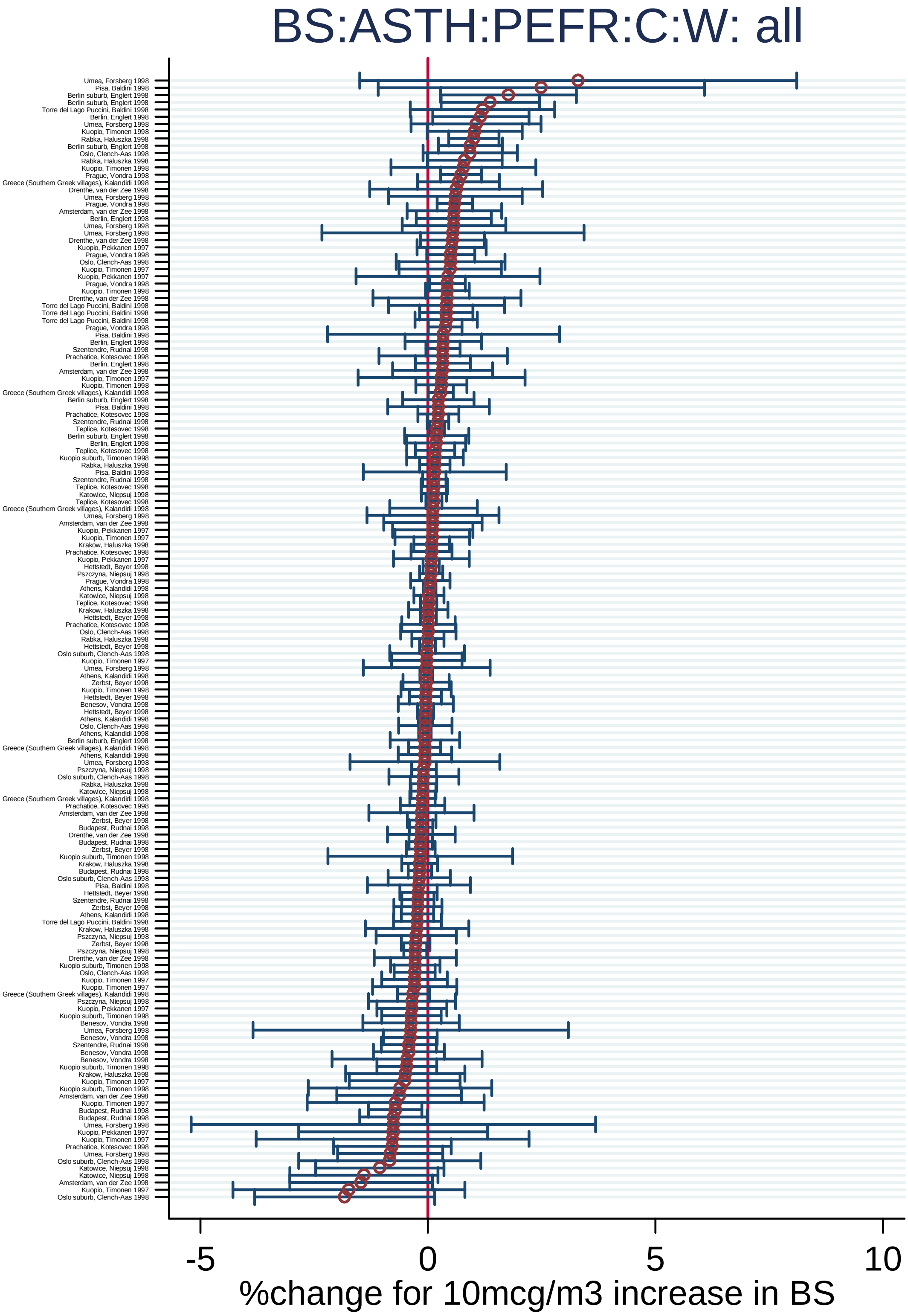

Panel studies: PM

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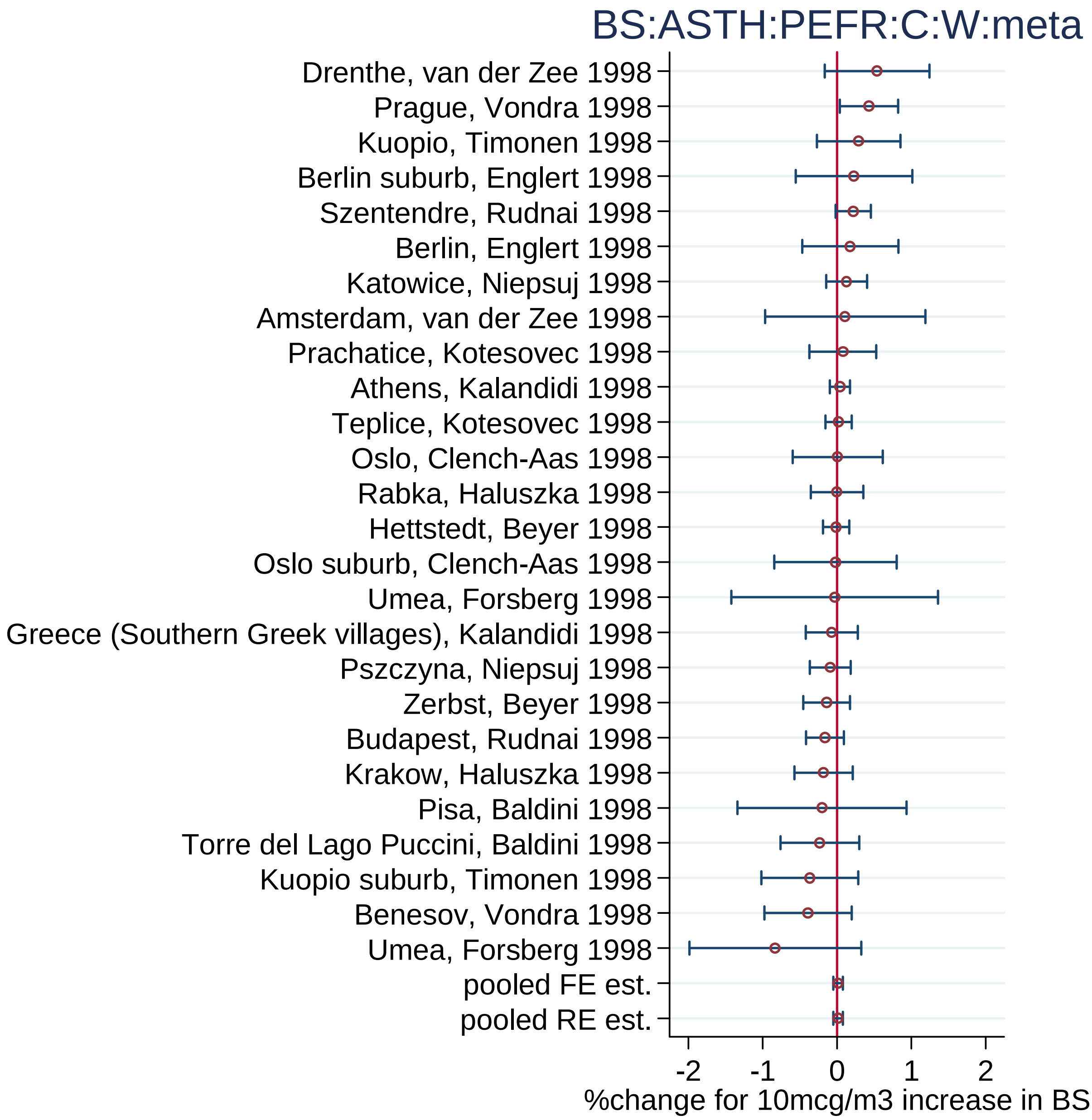

Panel studies: PM

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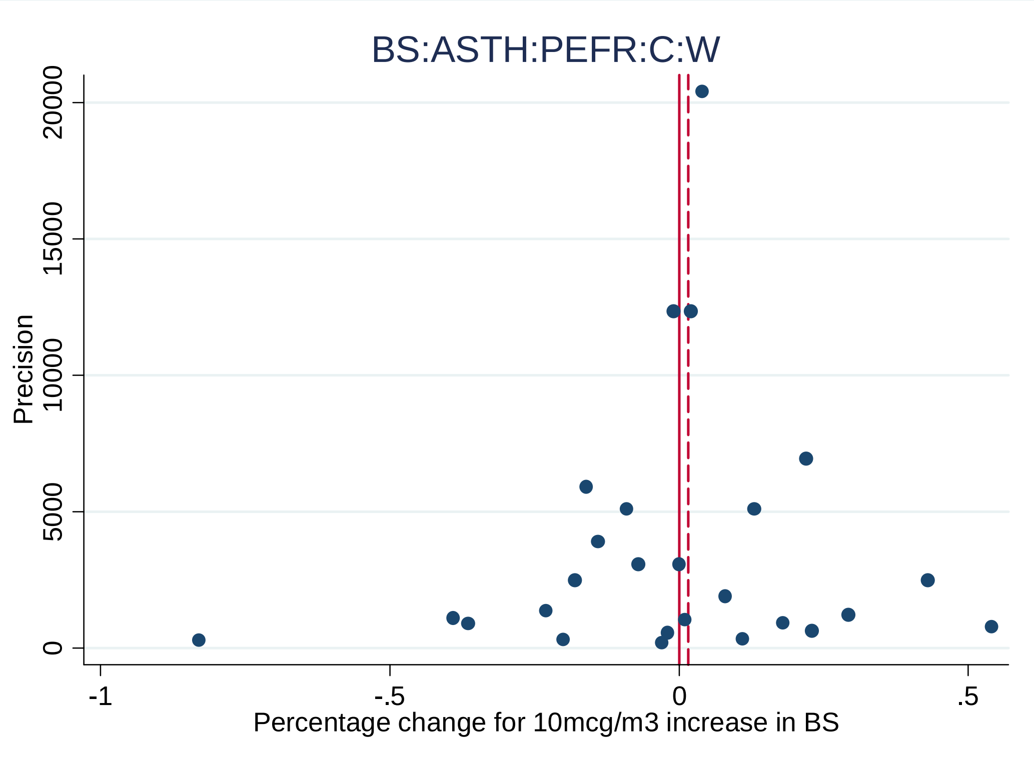

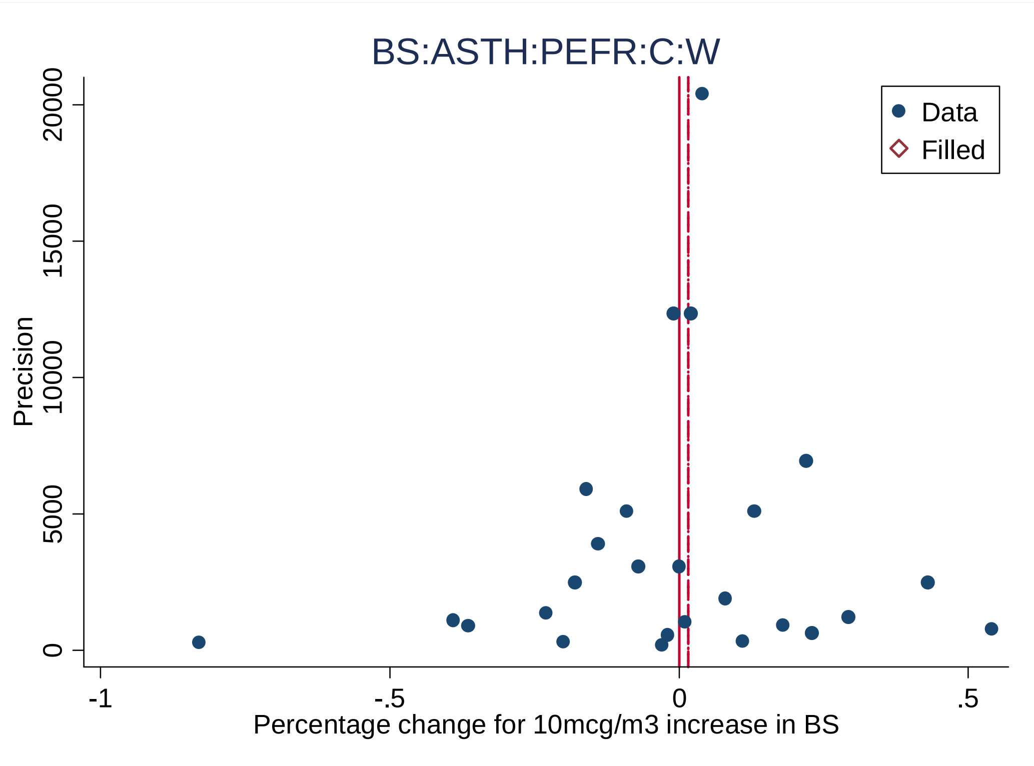

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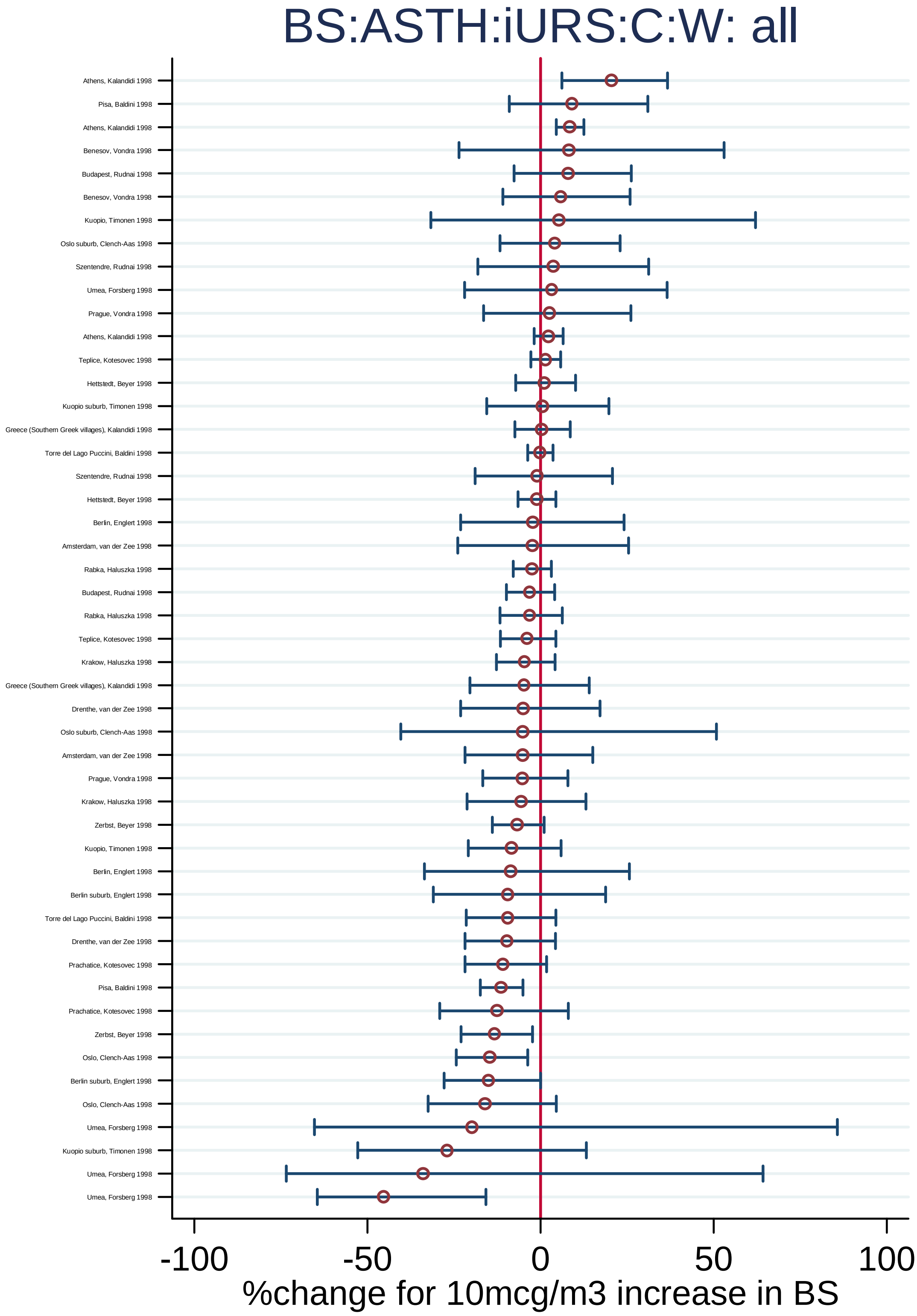

Panel studies: PM

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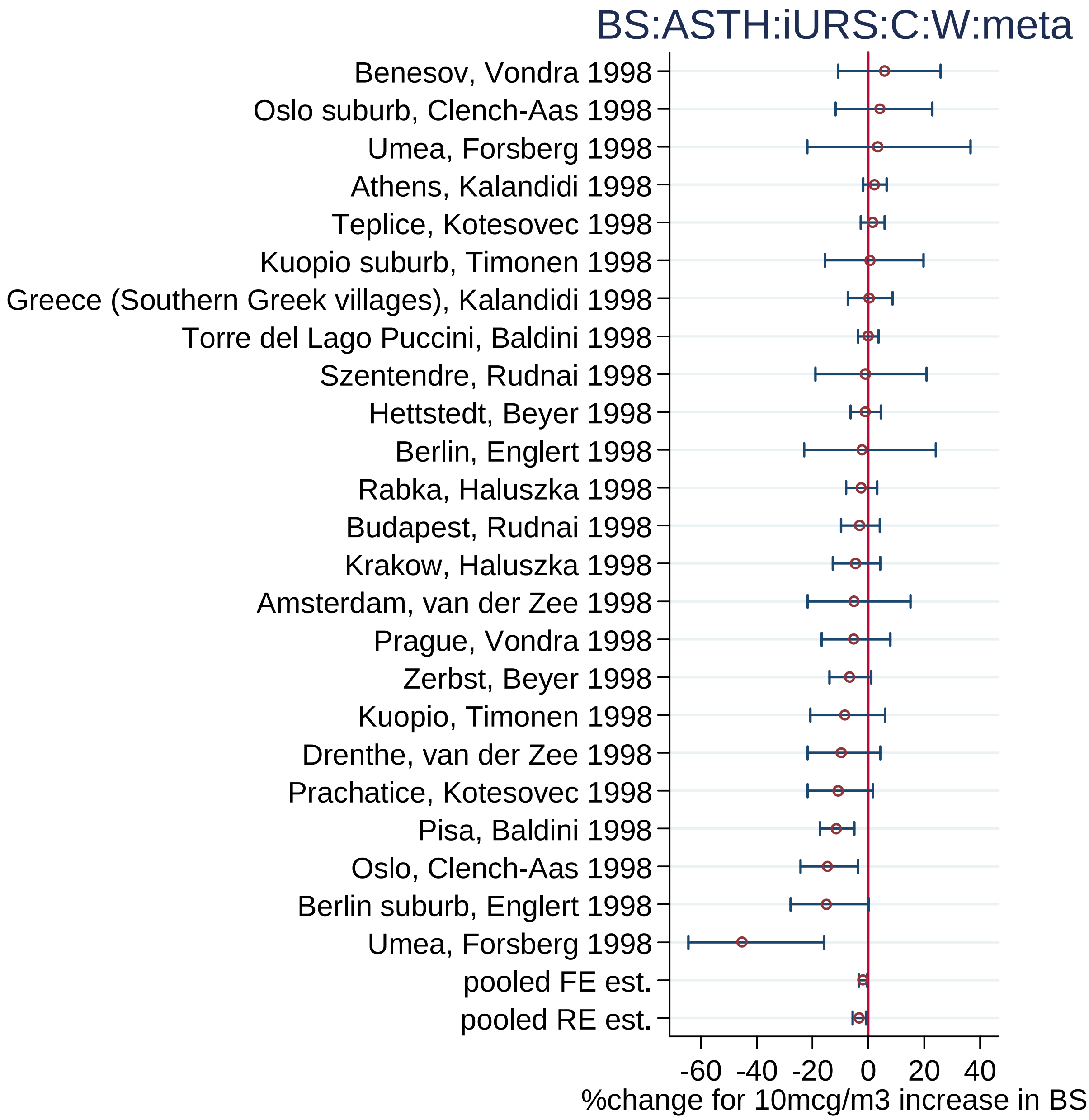

Panel studies: PM

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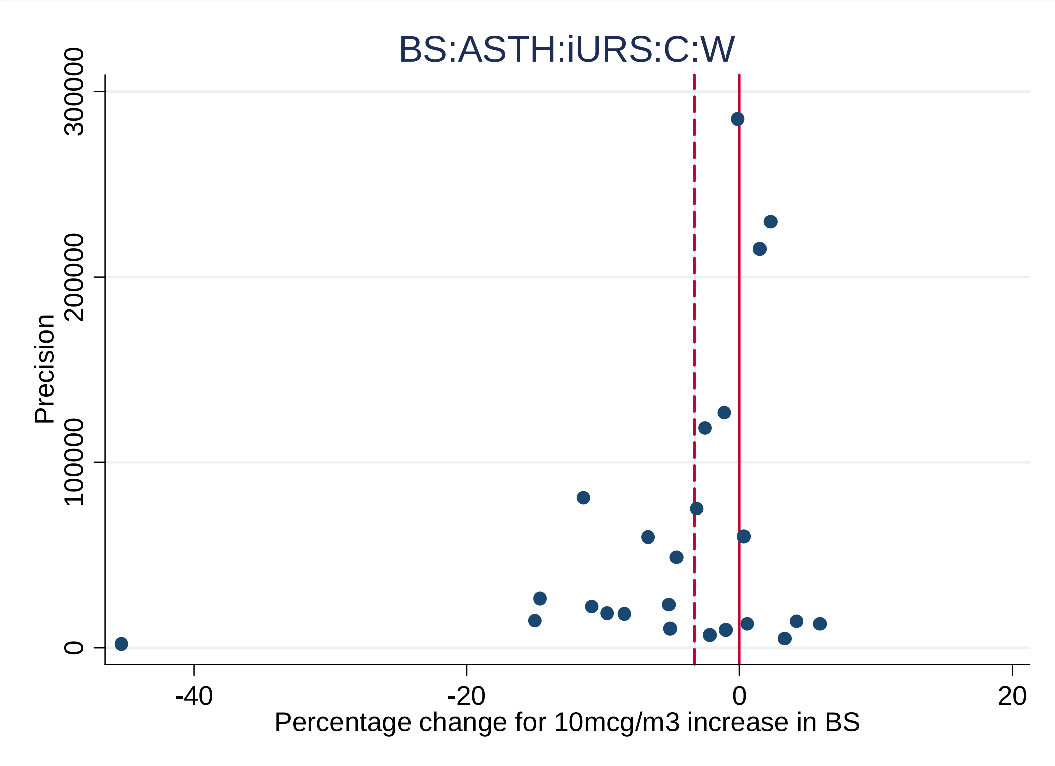

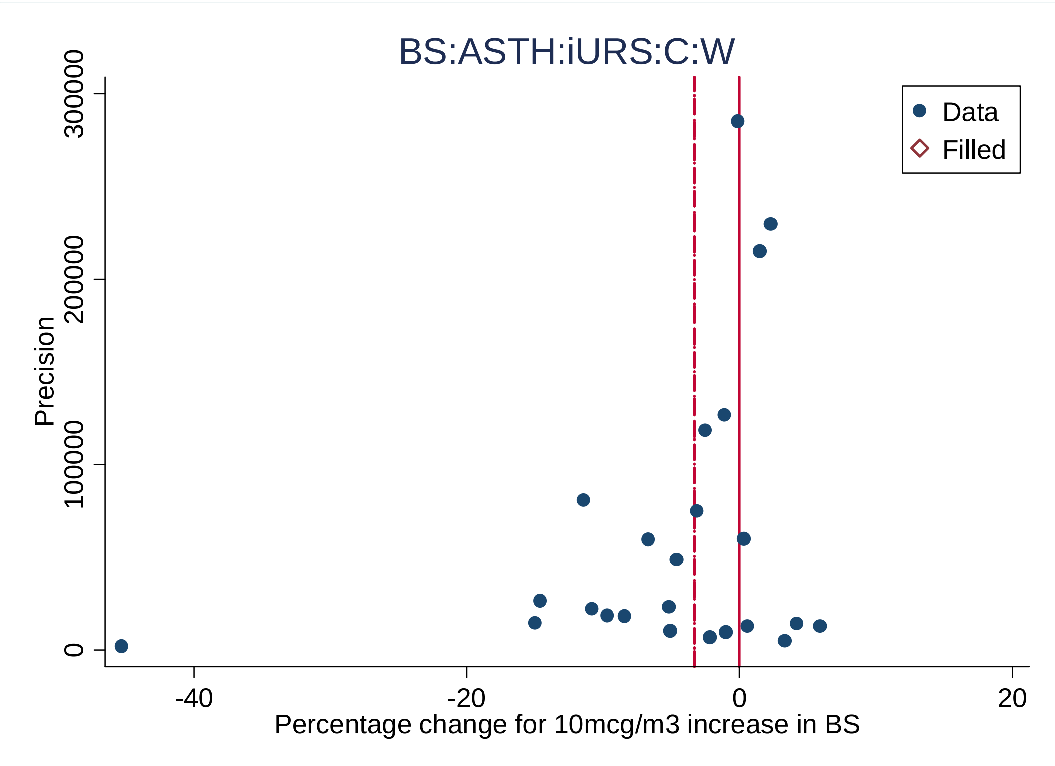

Panel studies: PM

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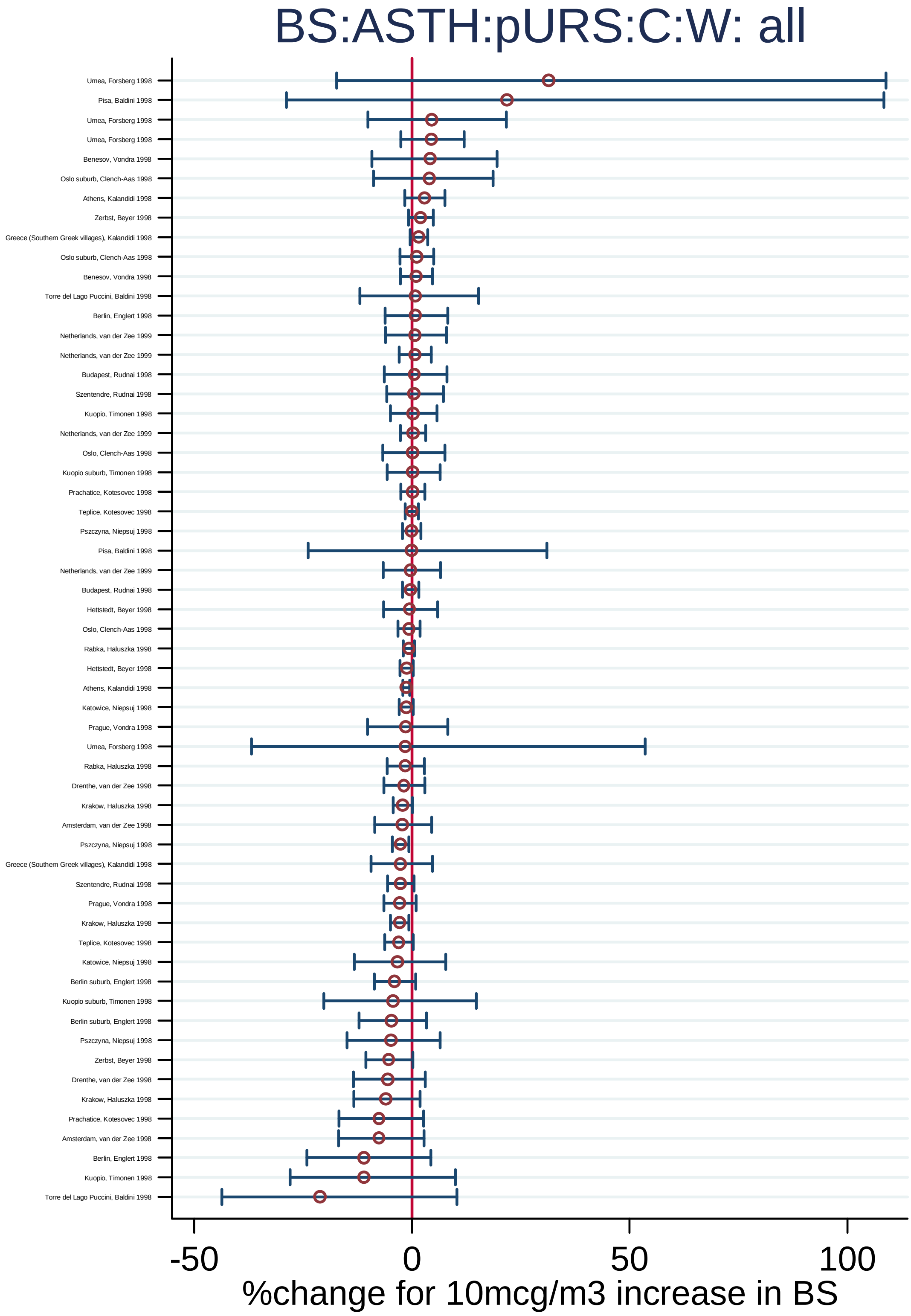

Panel studies: PM

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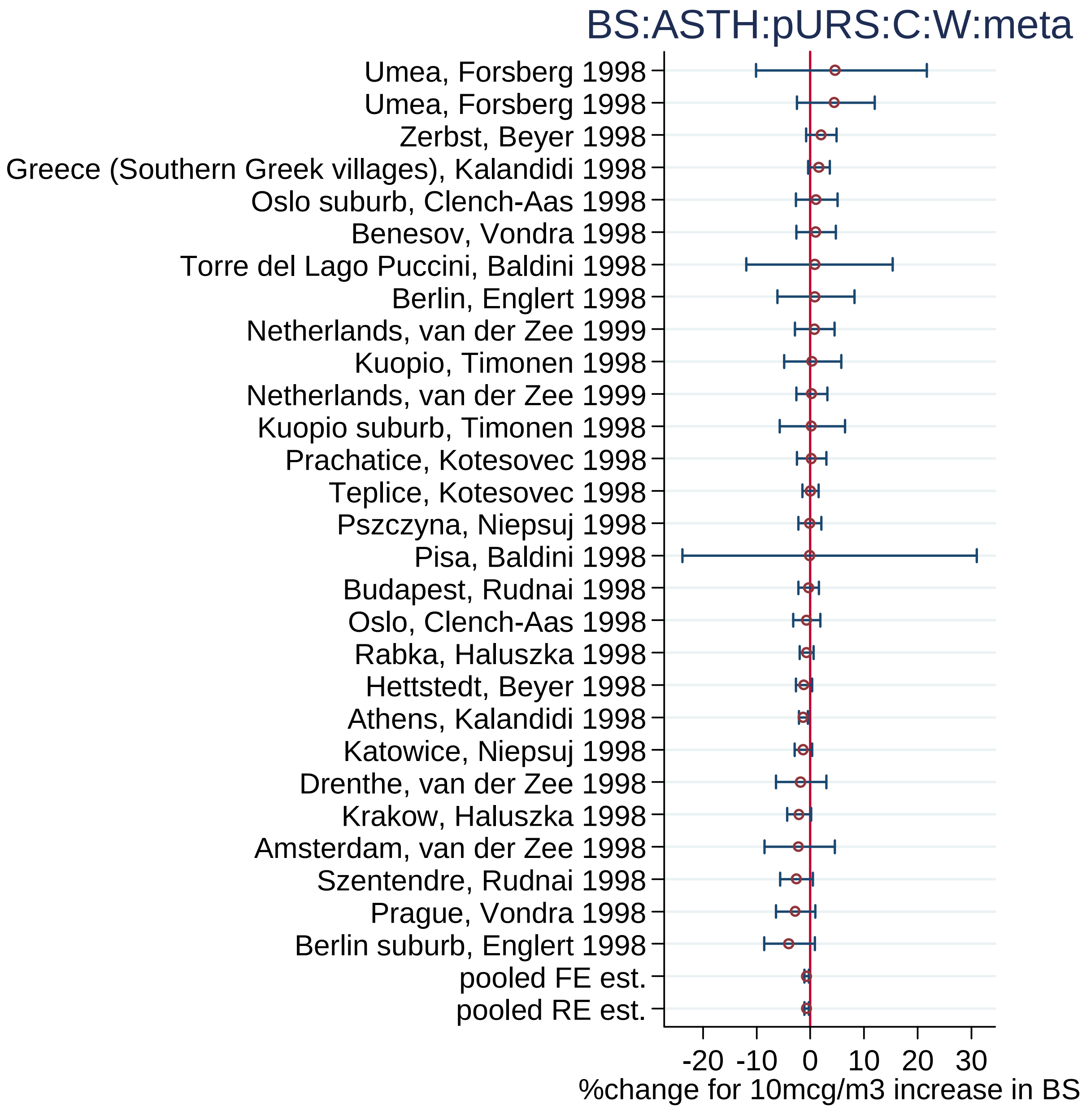

Panel studies: PM

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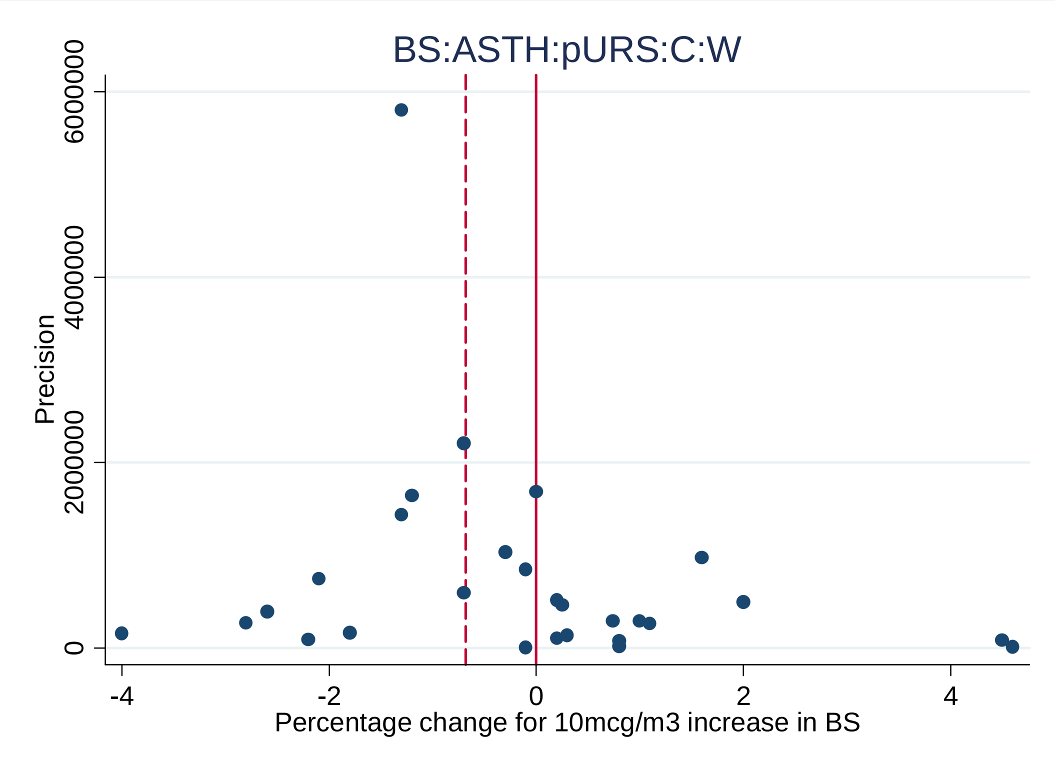

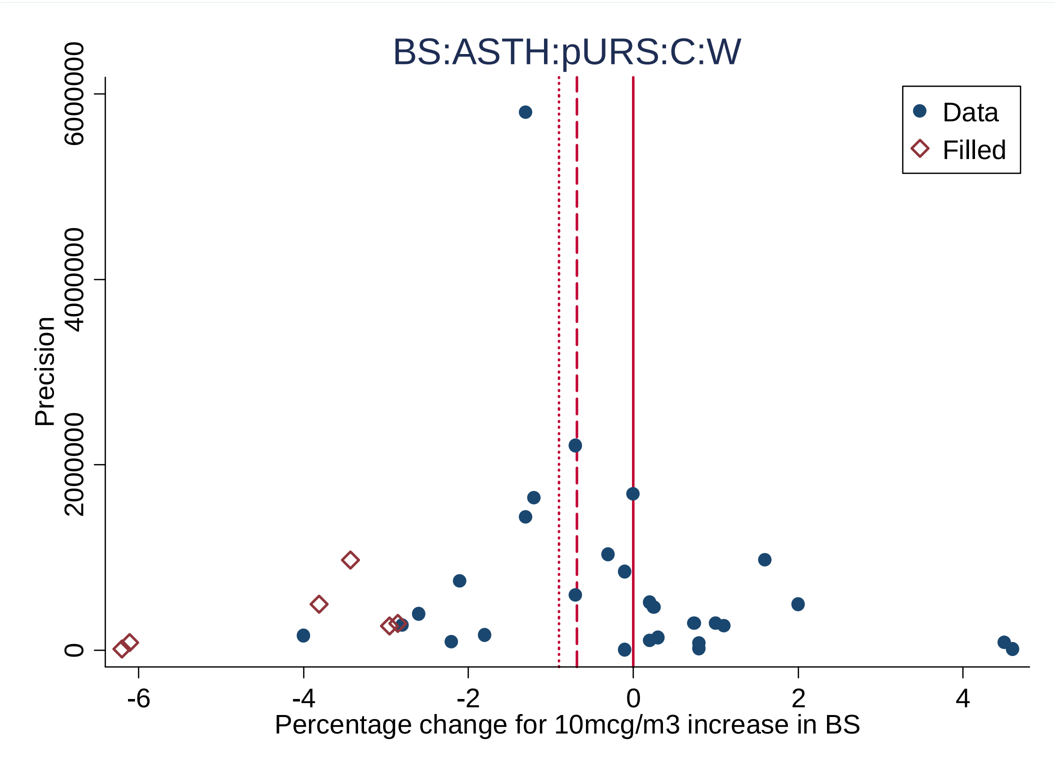

Panel studies: PM

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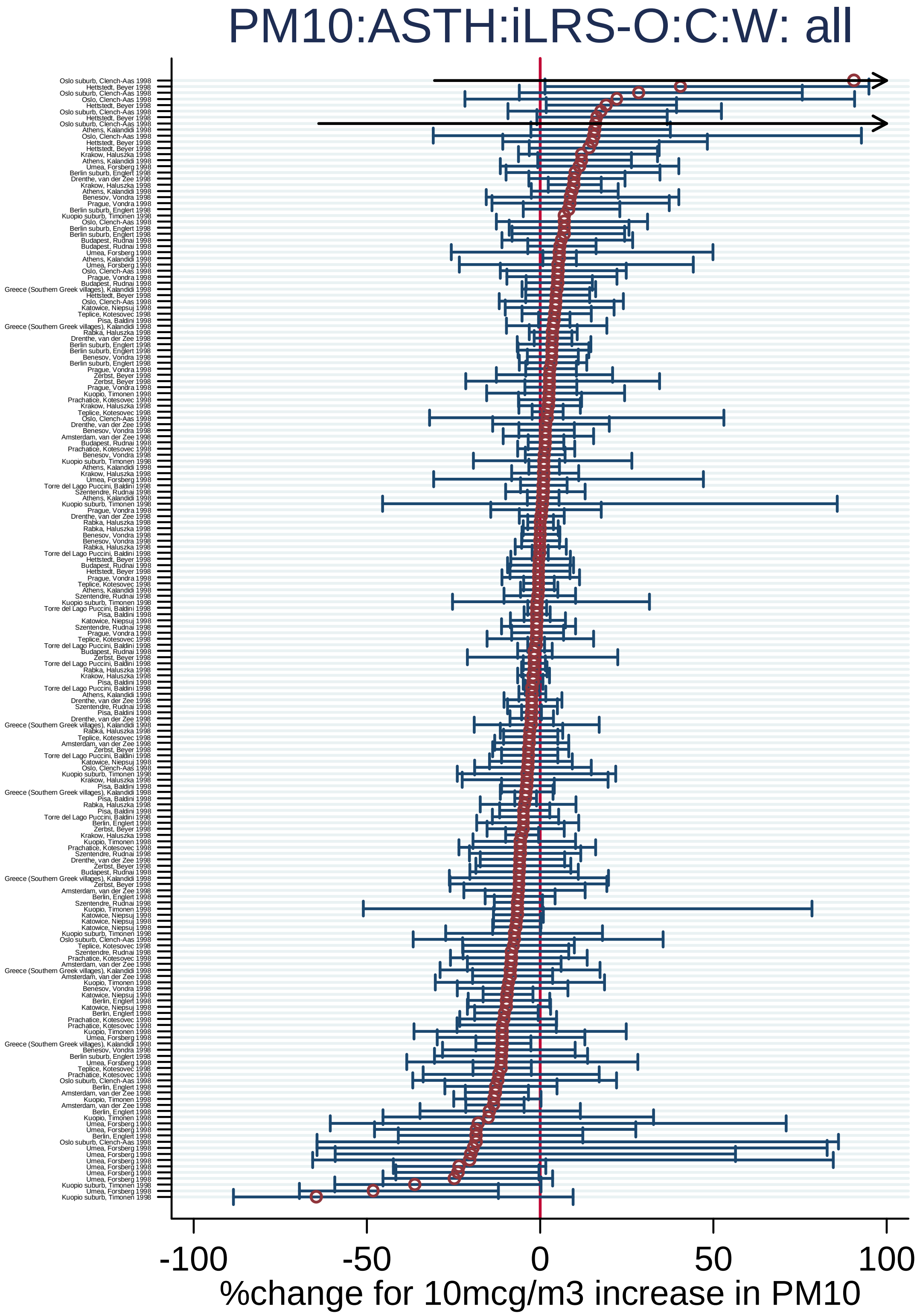

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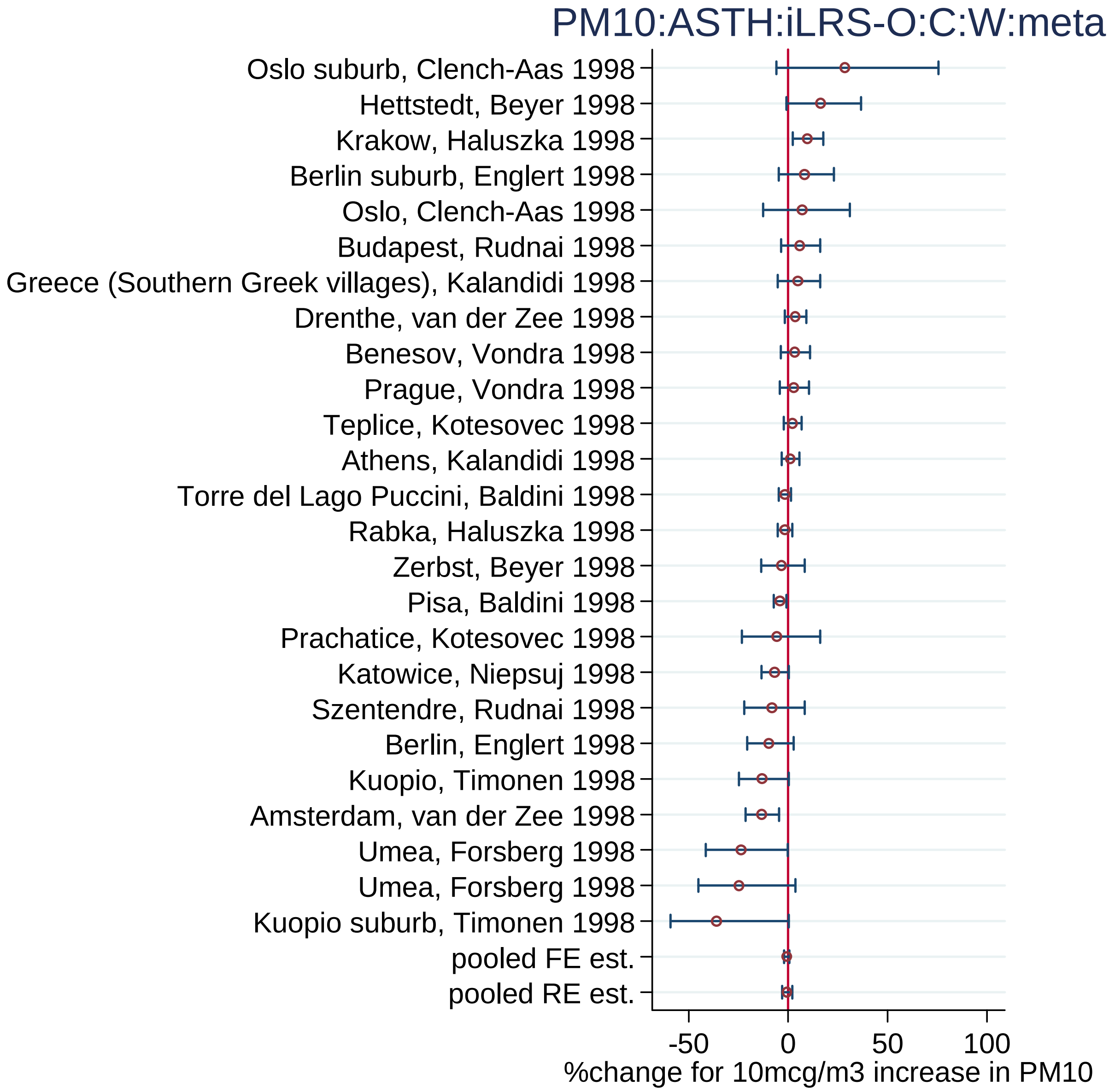

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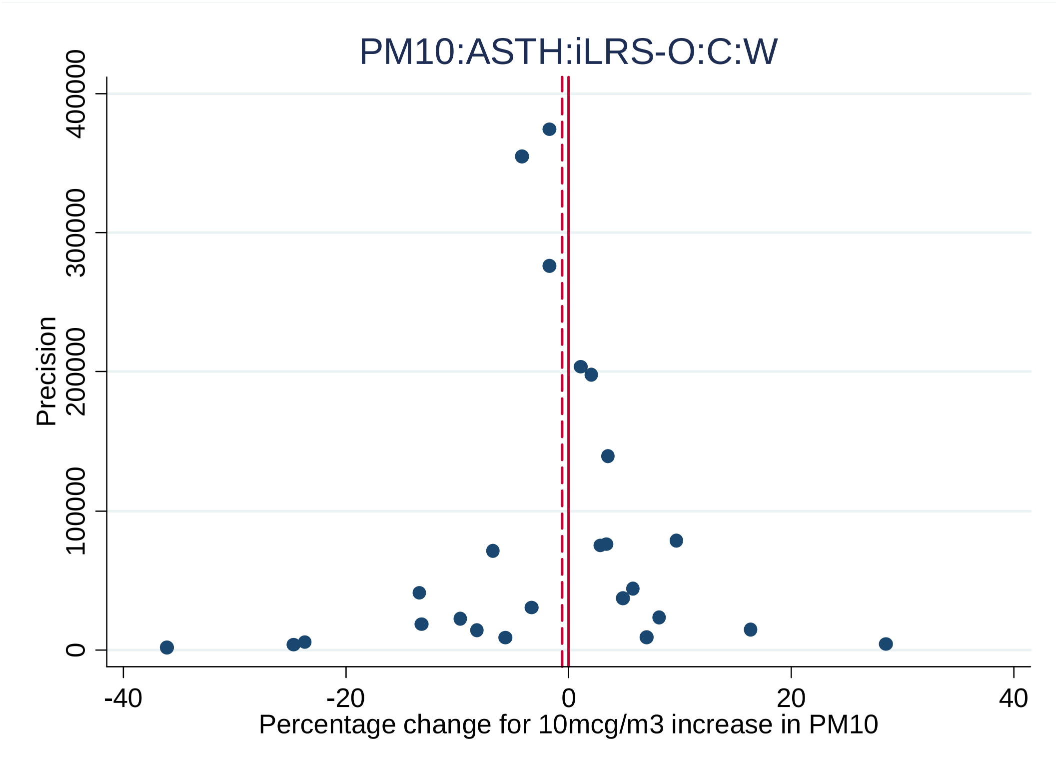

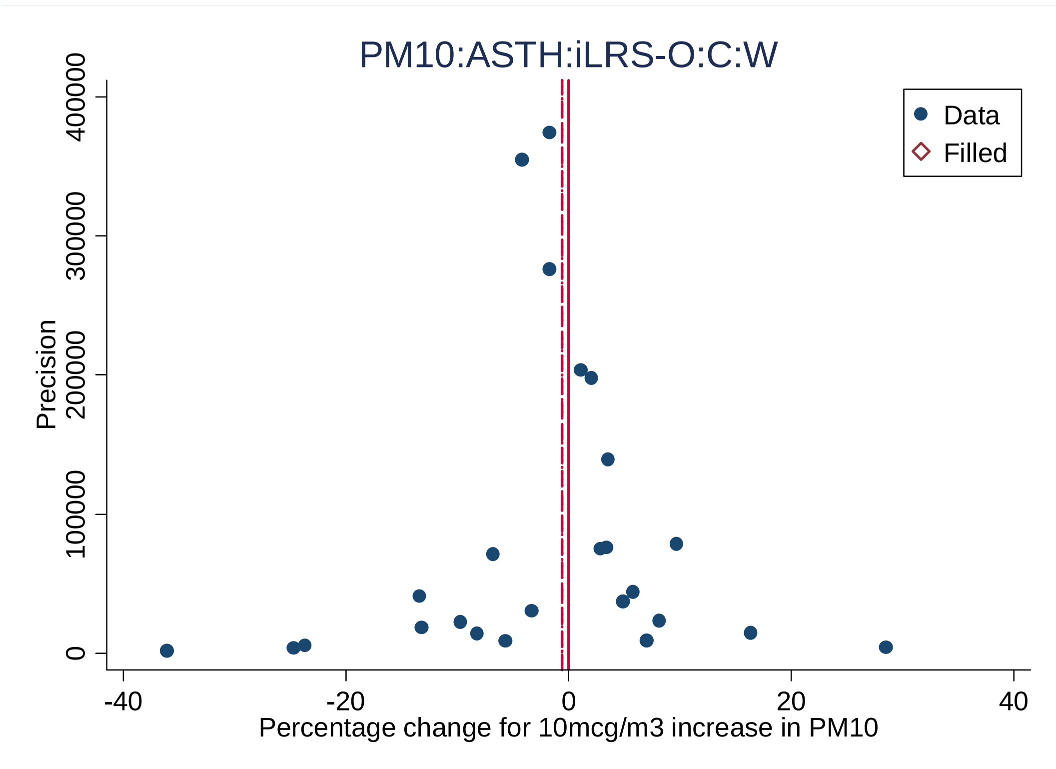

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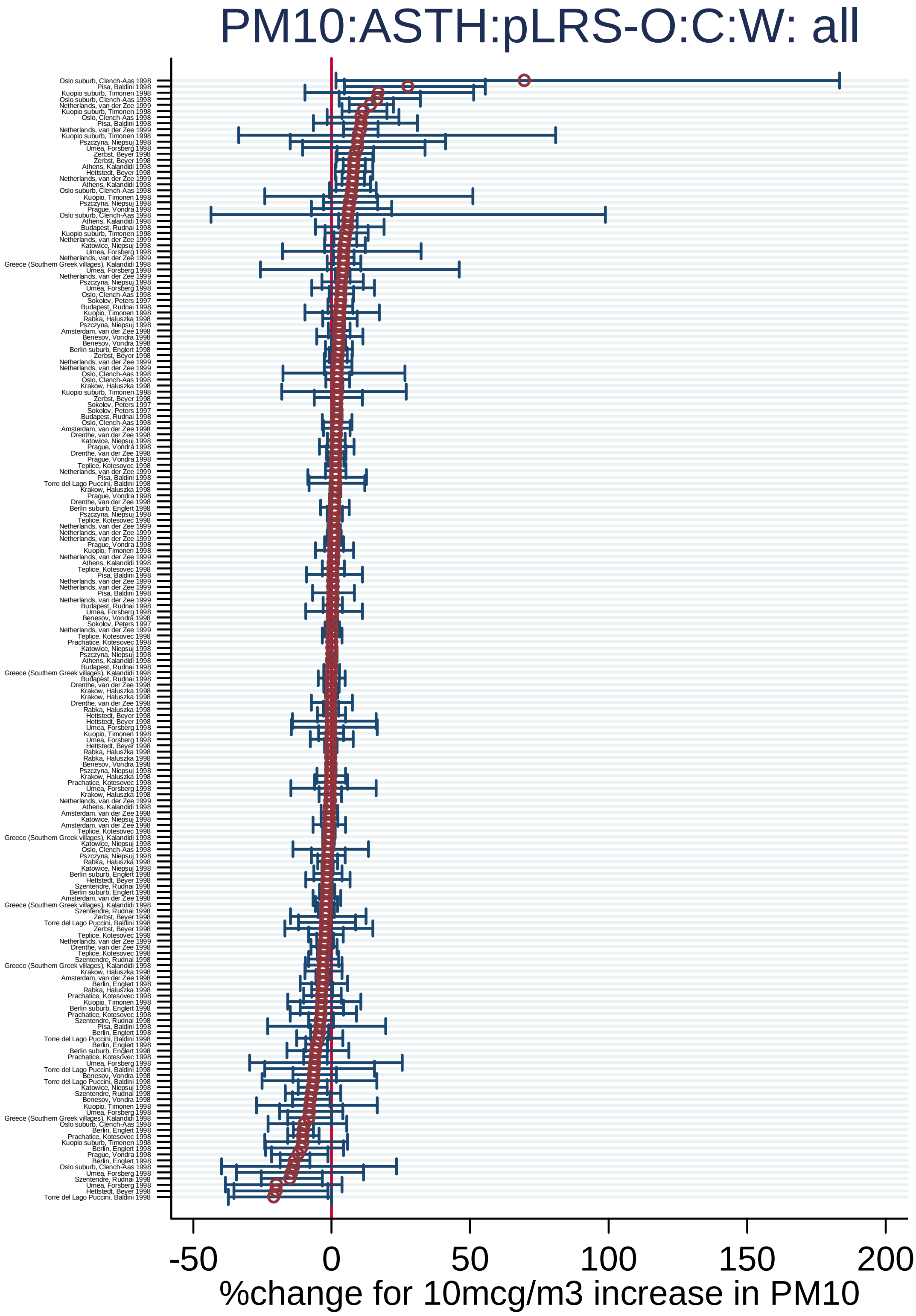

Panel studies: PM

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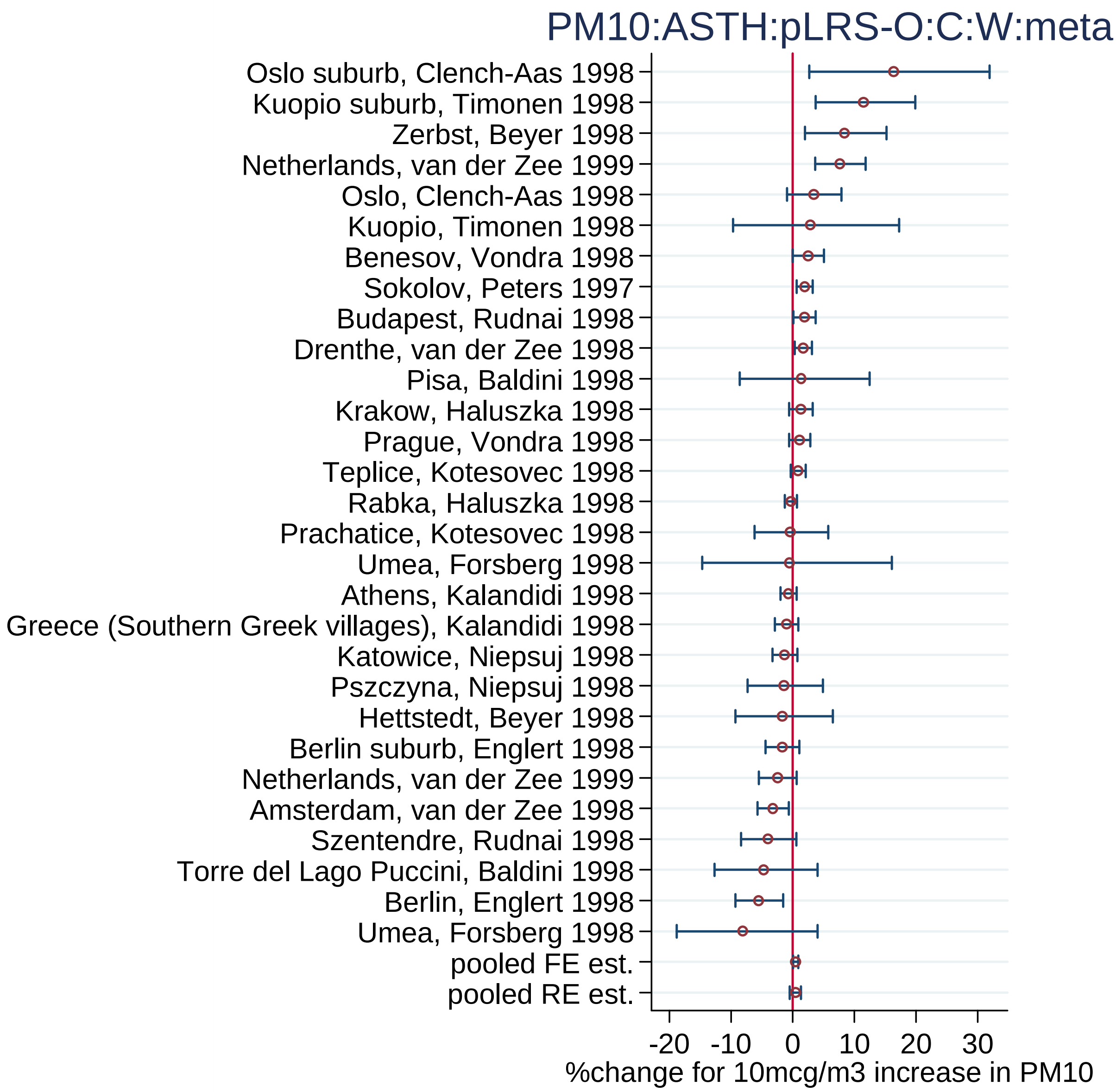

Panel studies: PM

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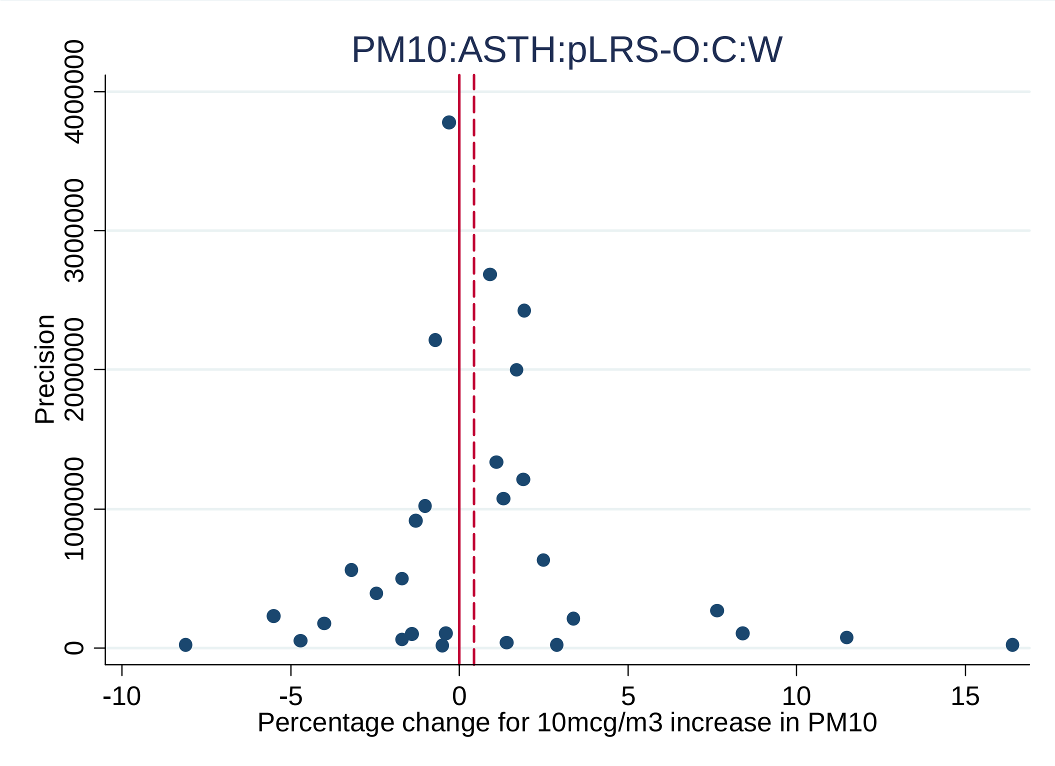

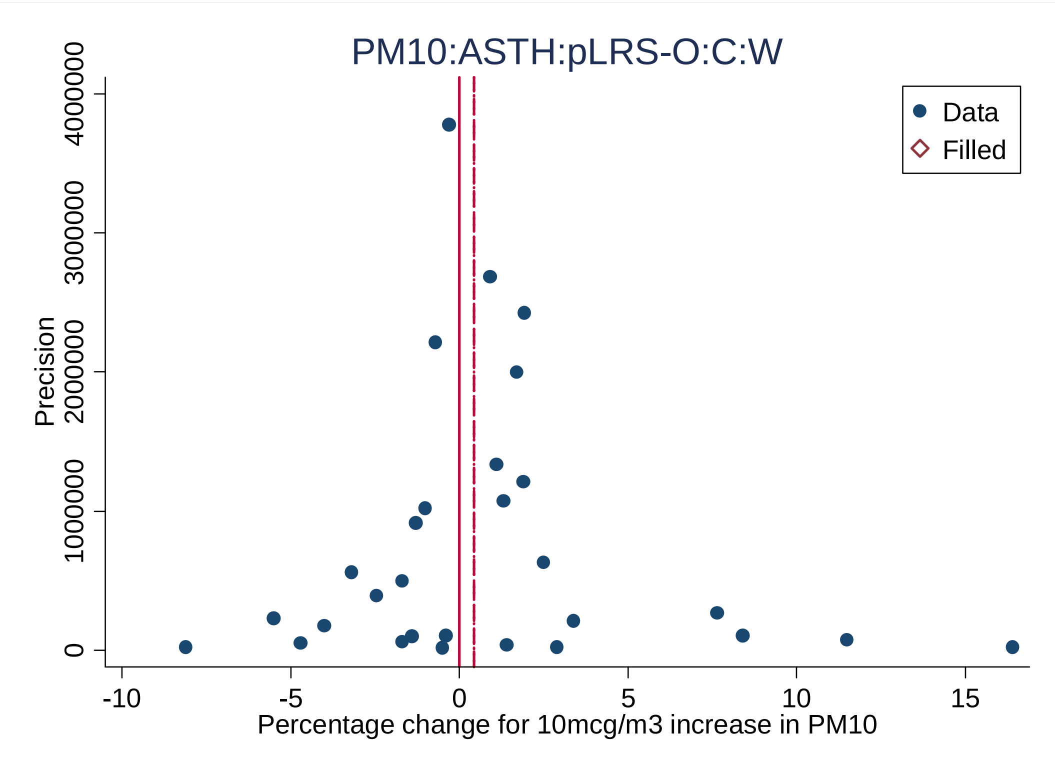

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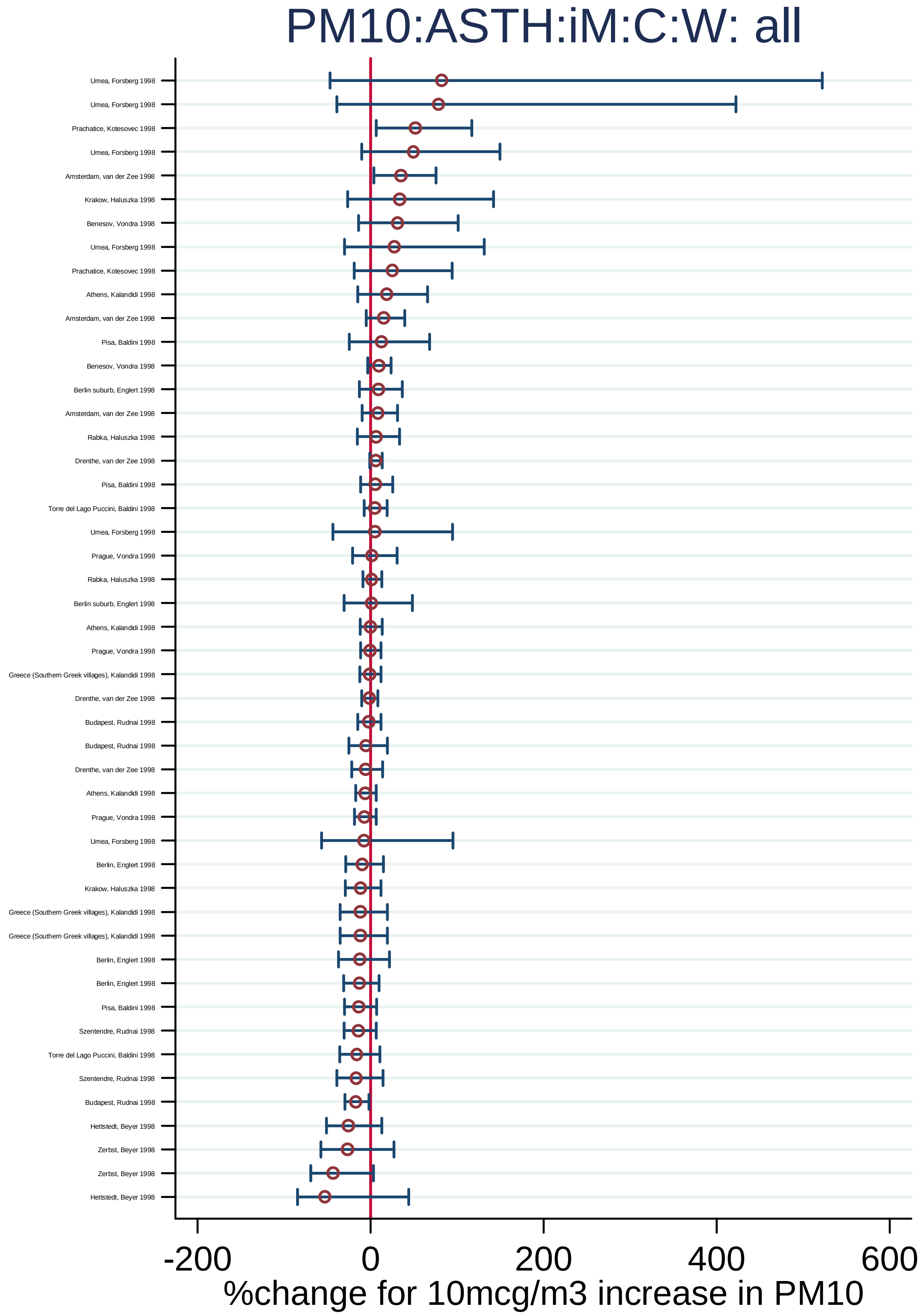

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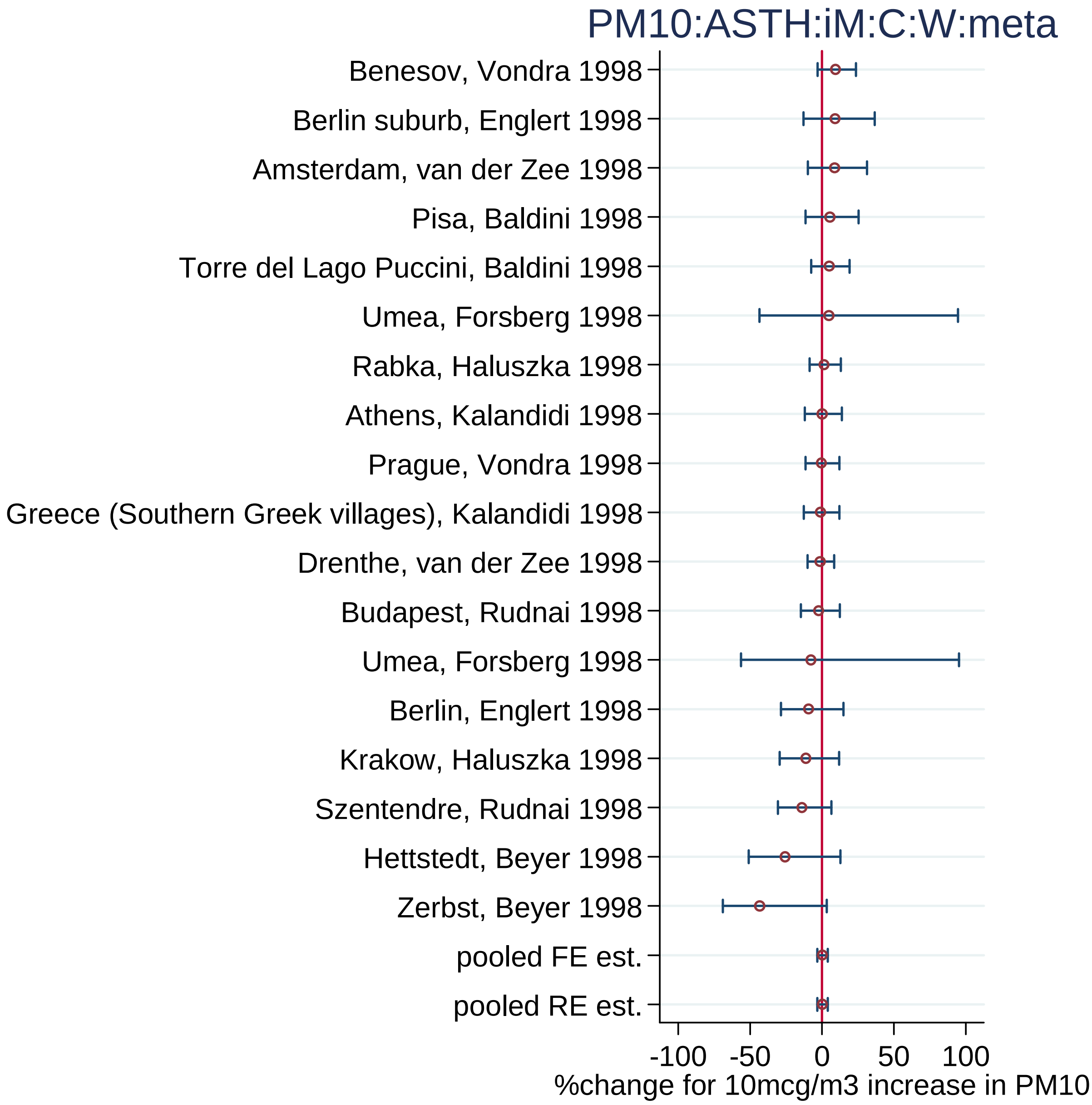

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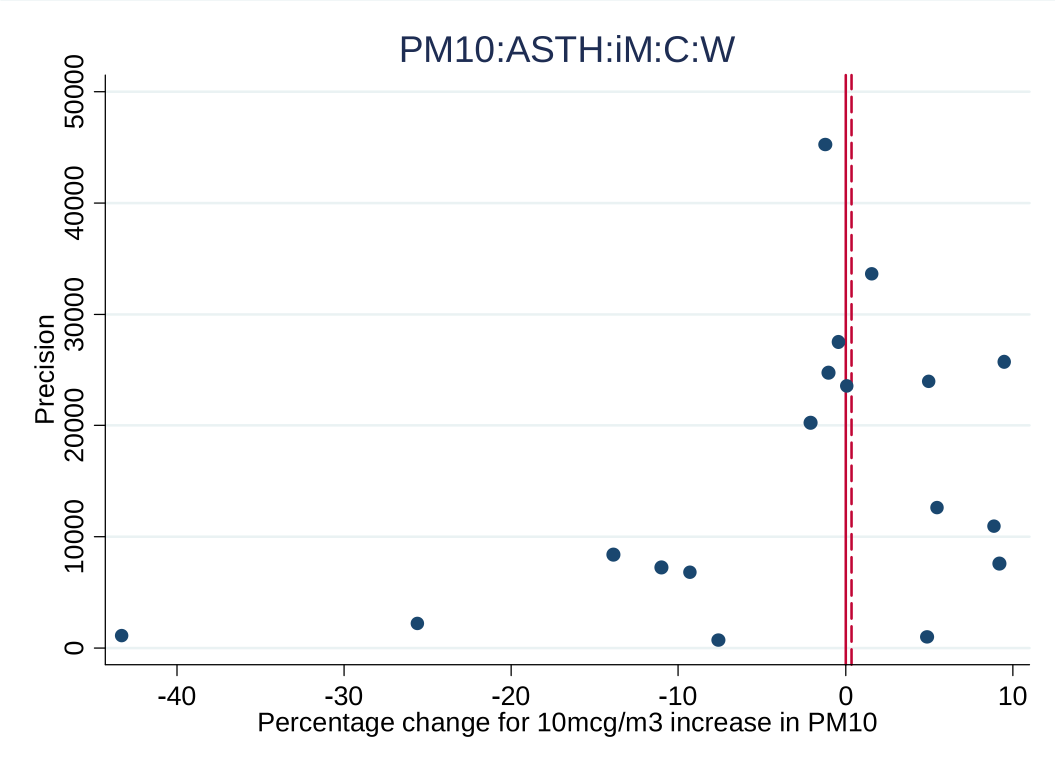

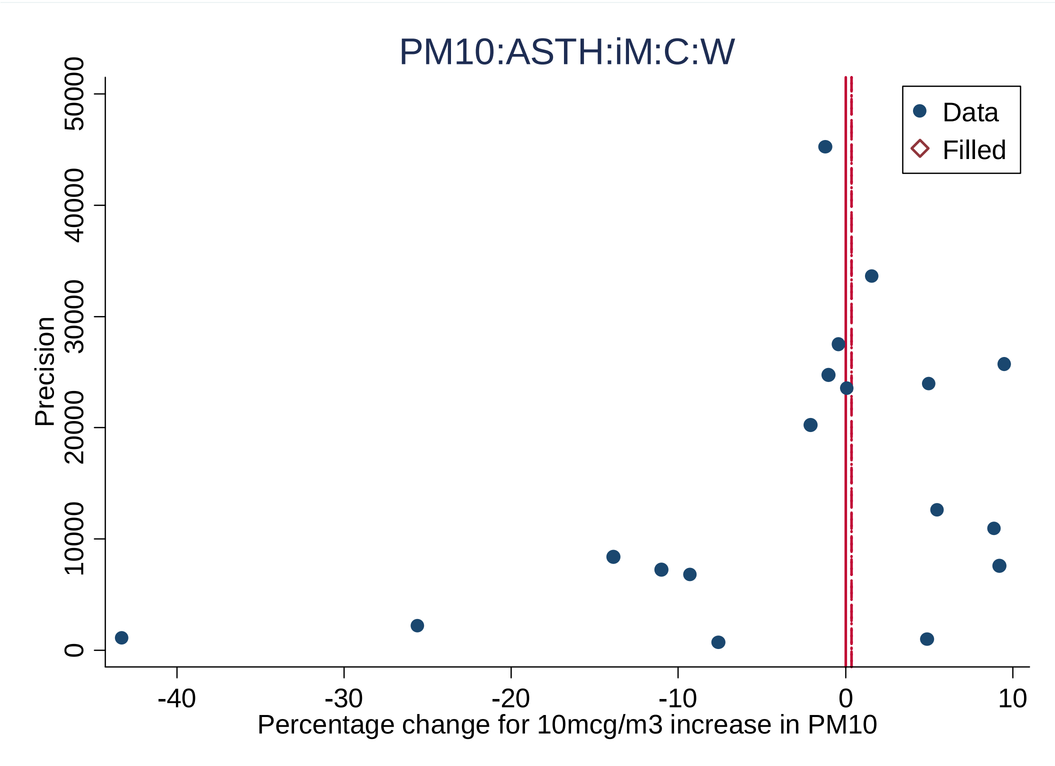

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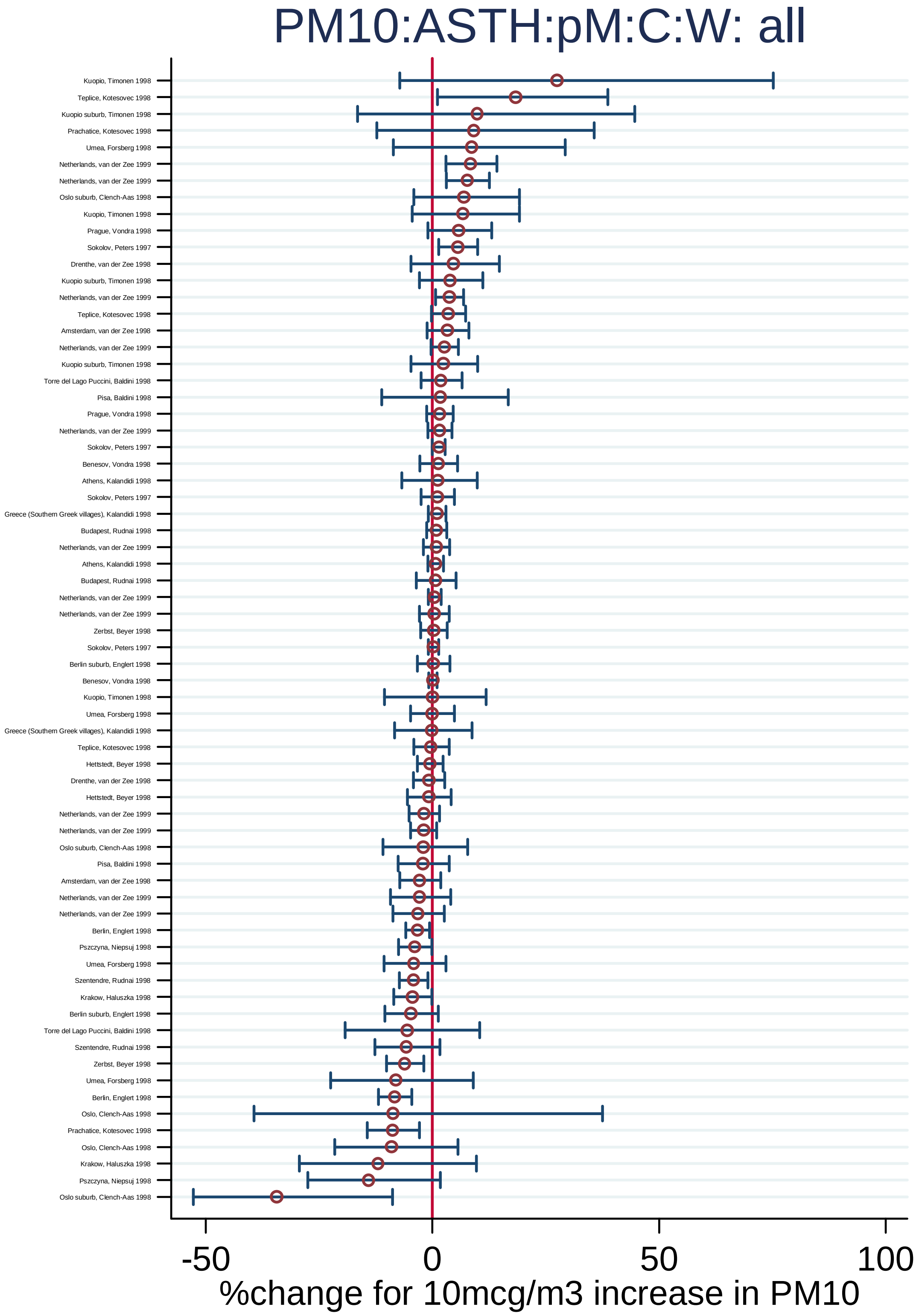

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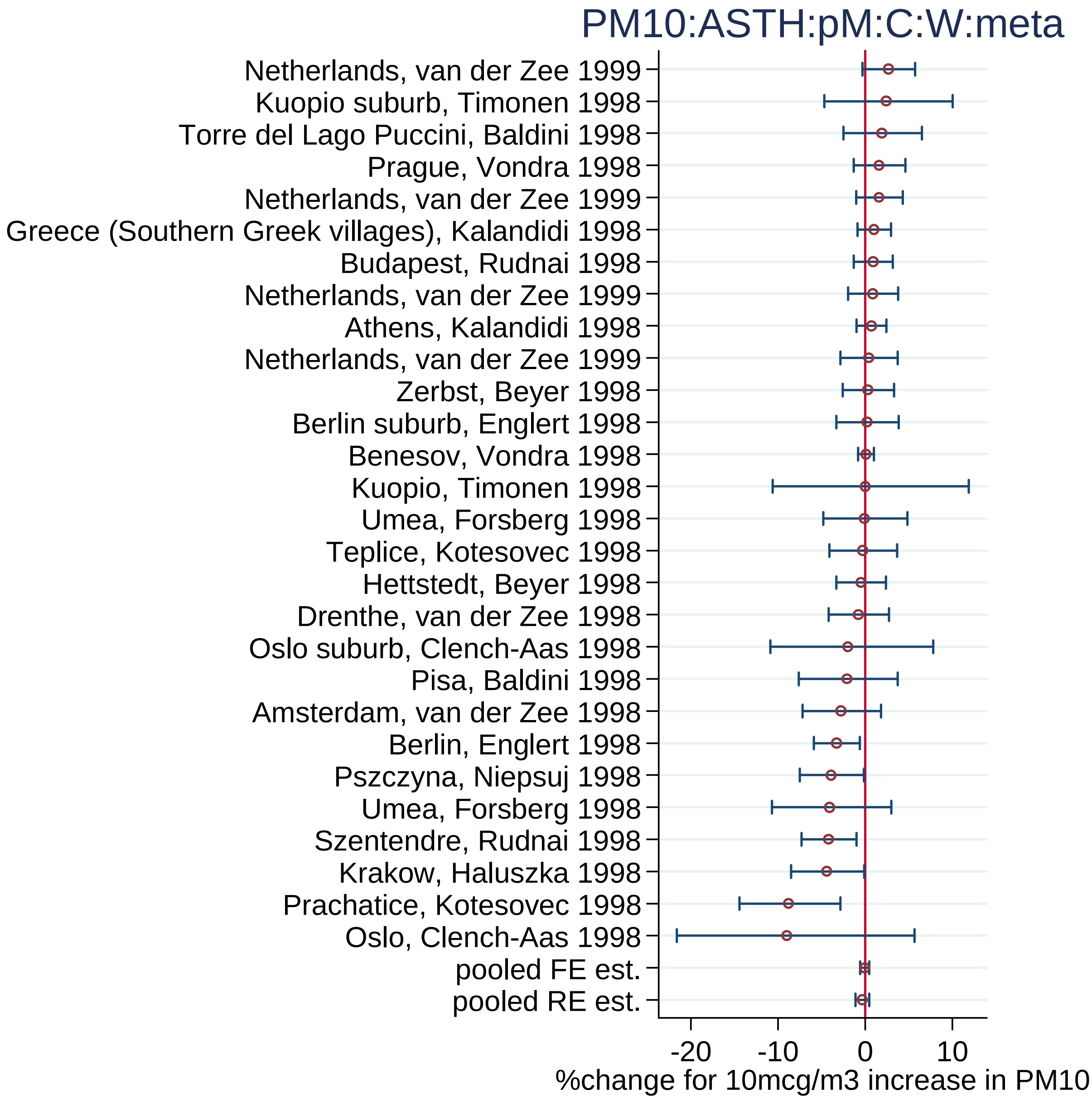

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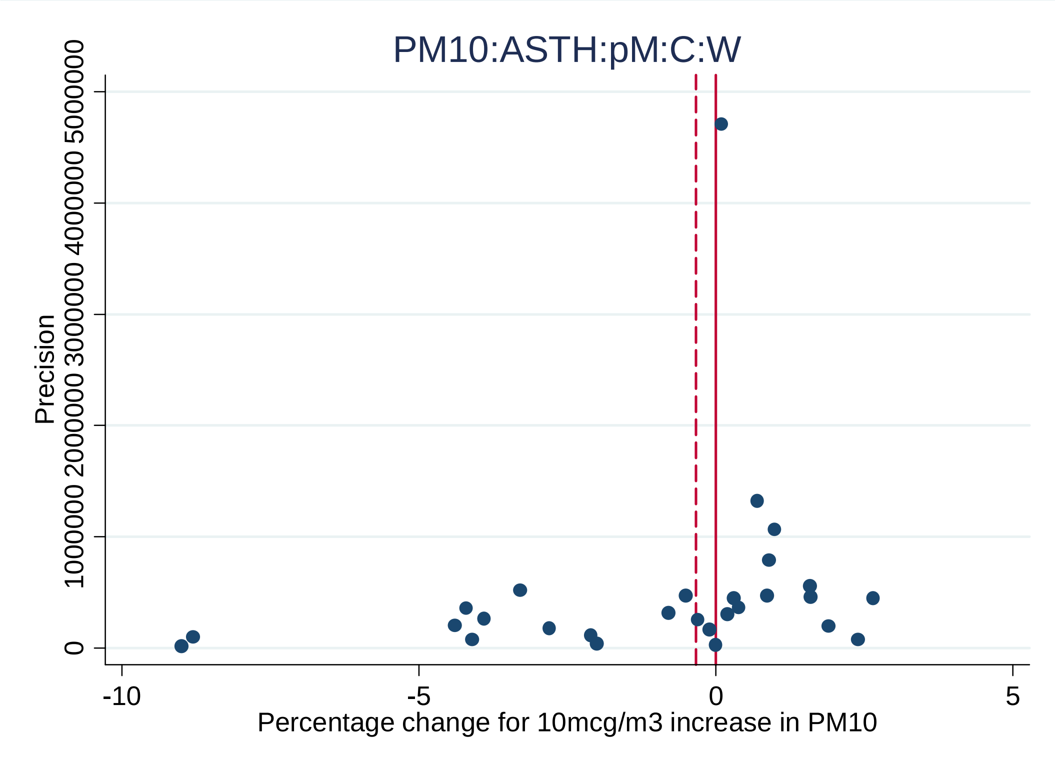

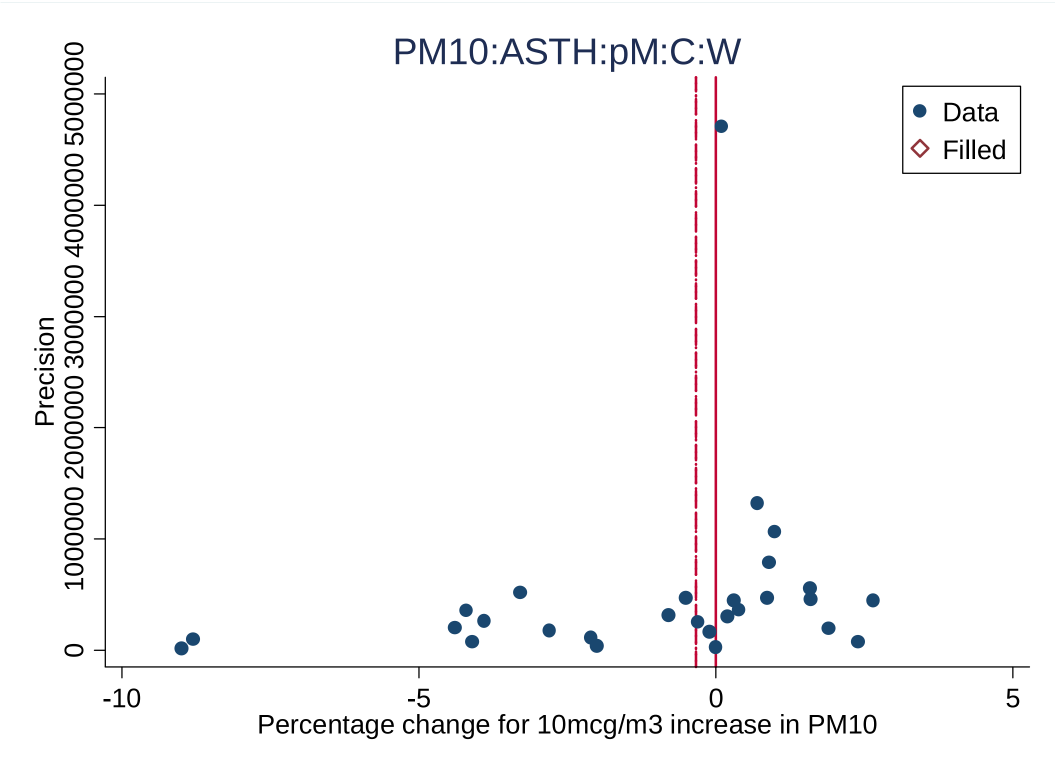

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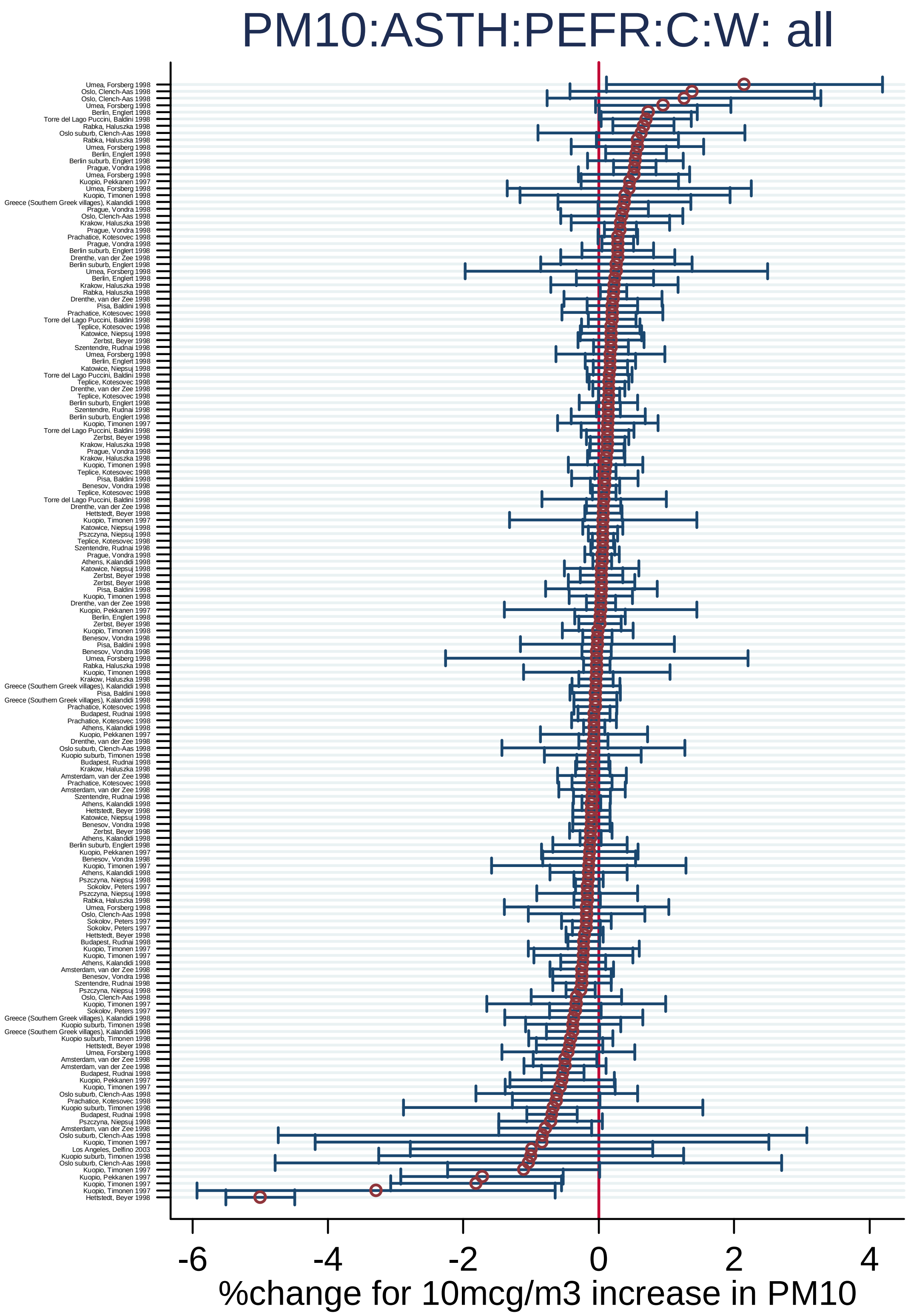

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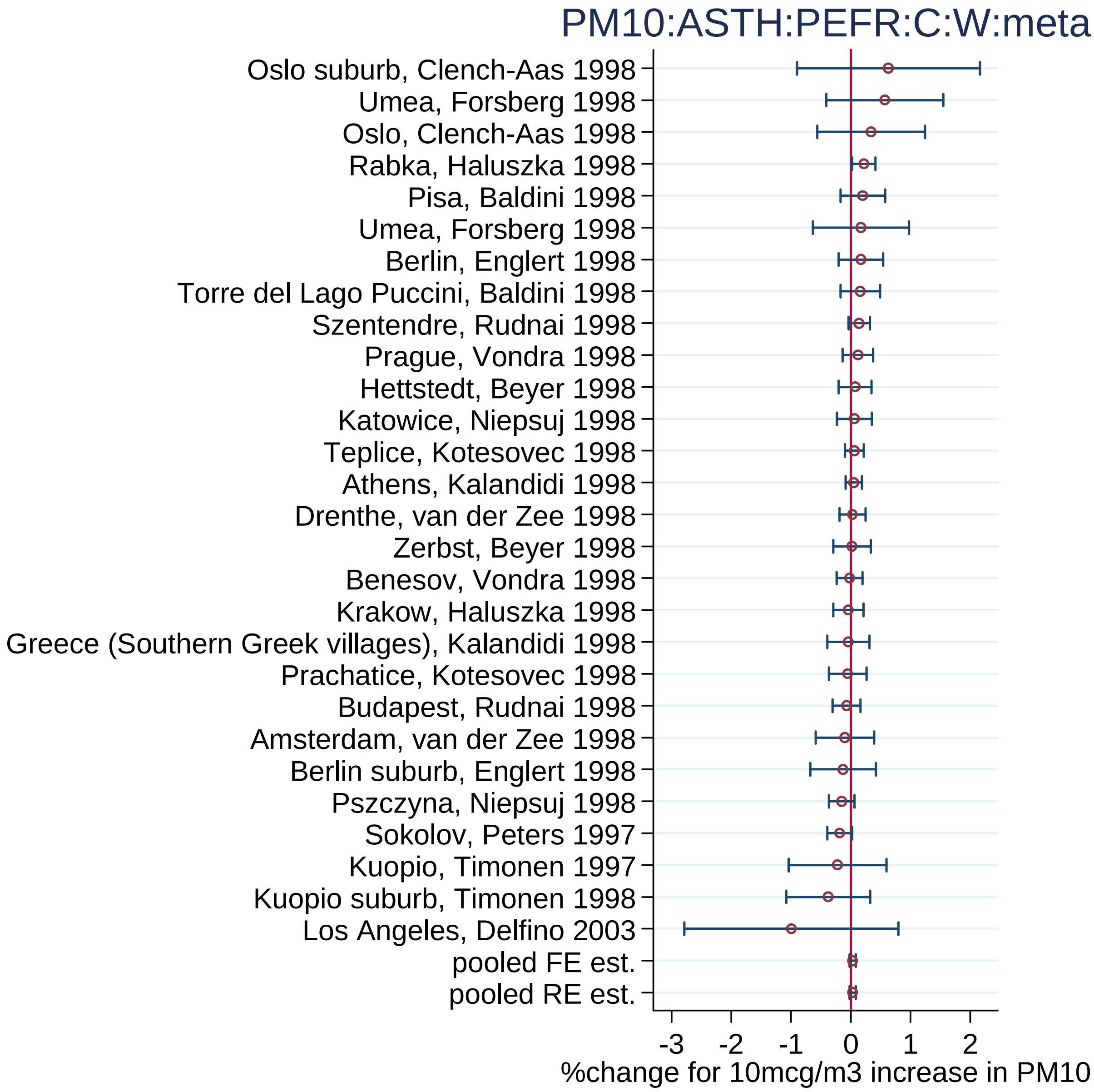

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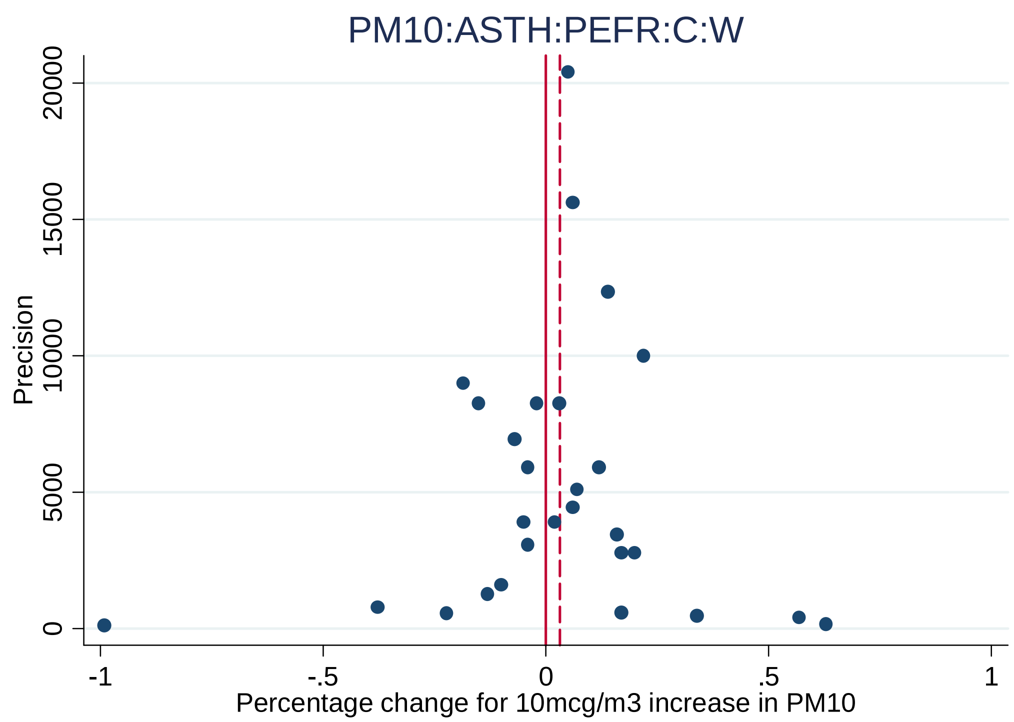

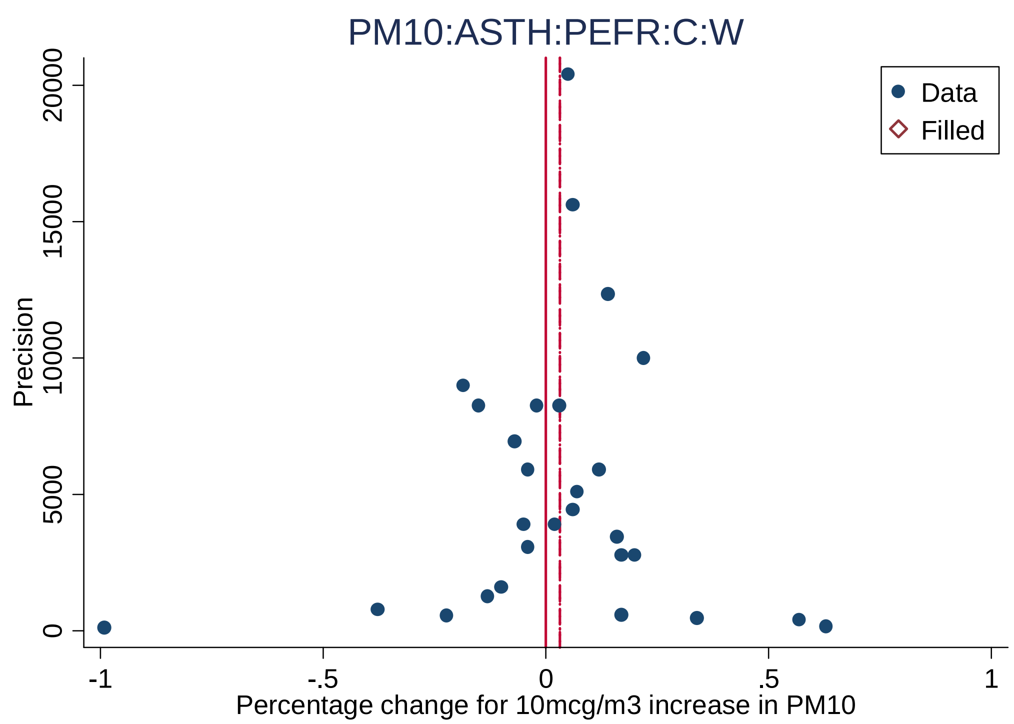

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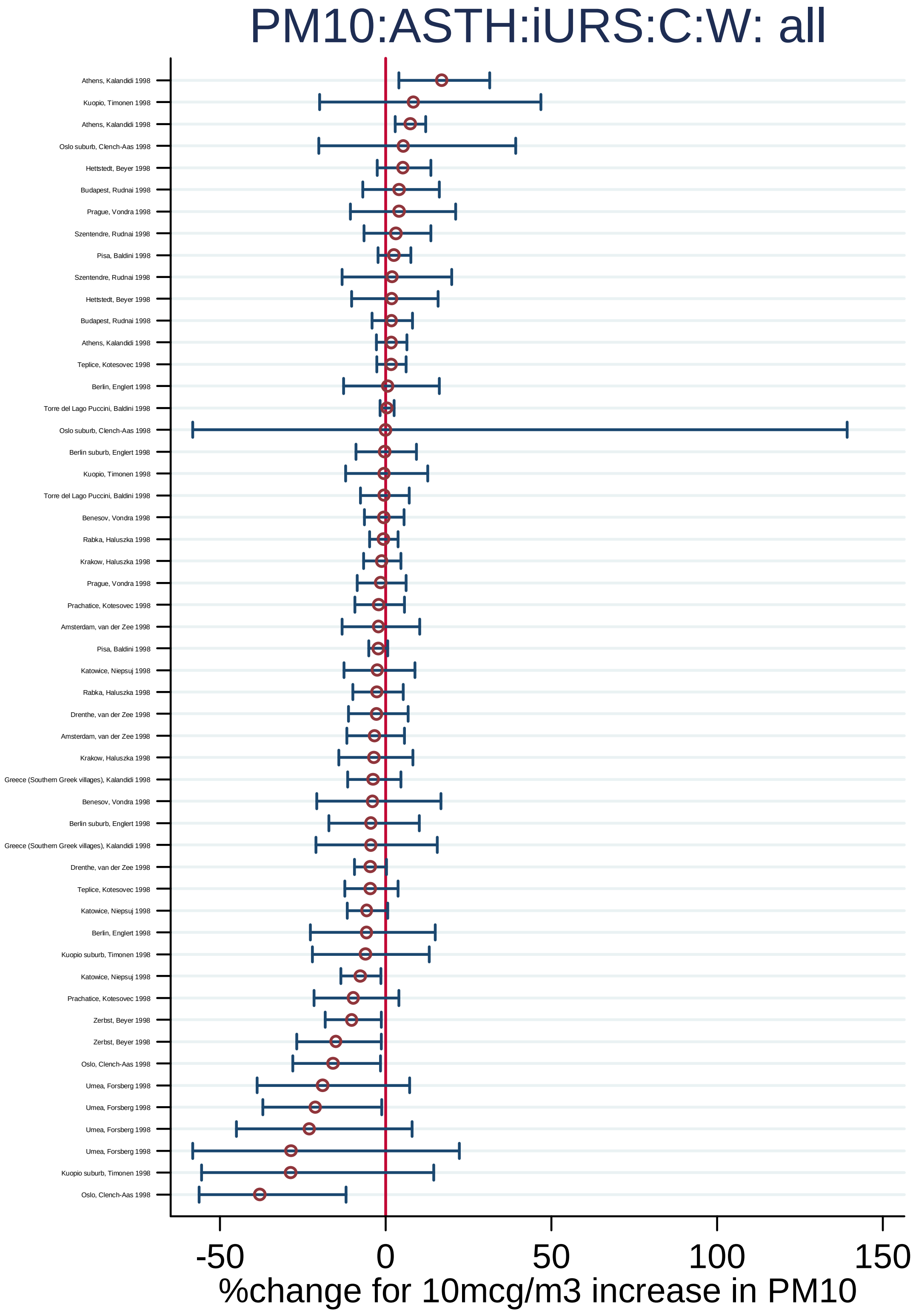

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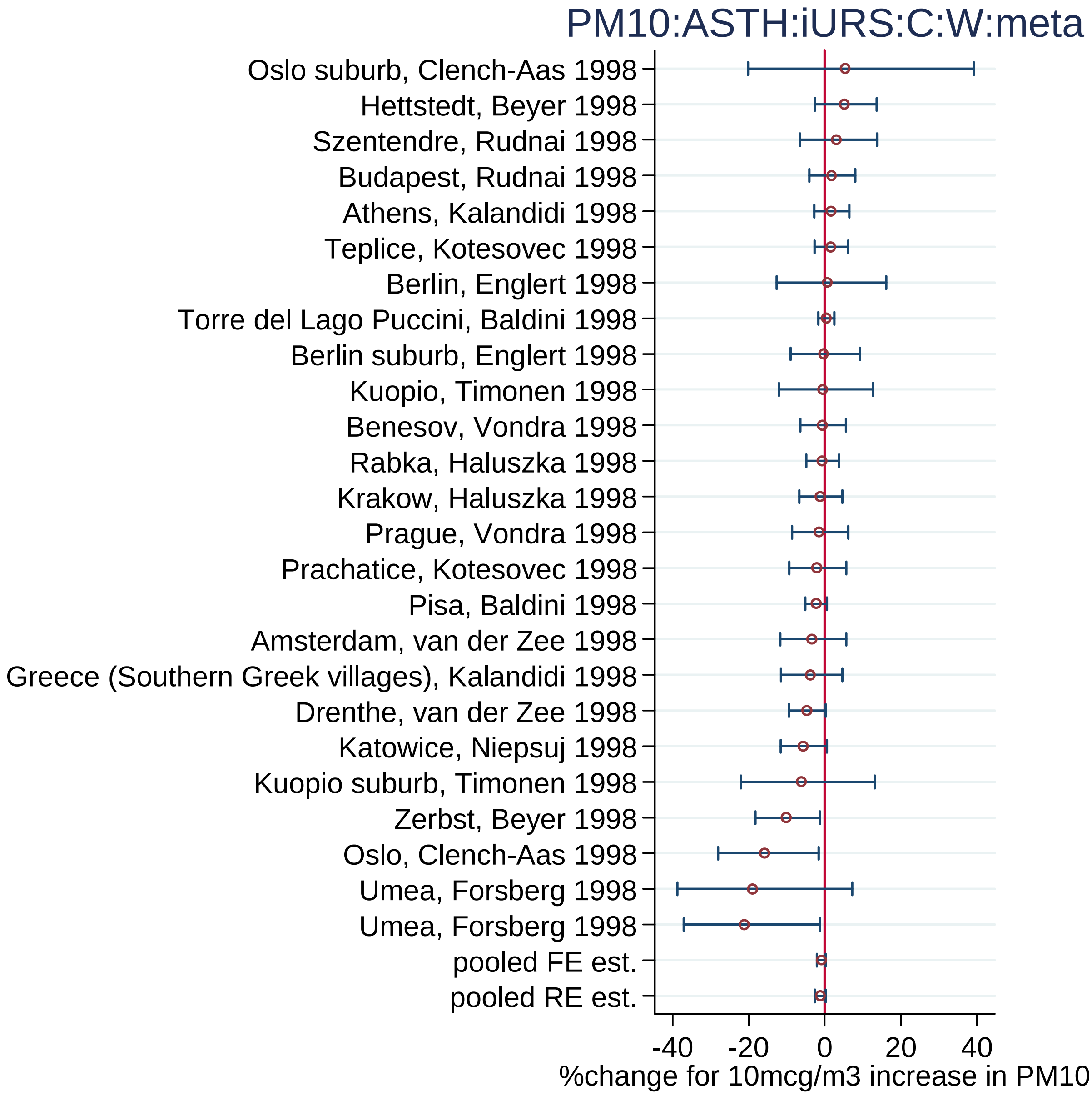

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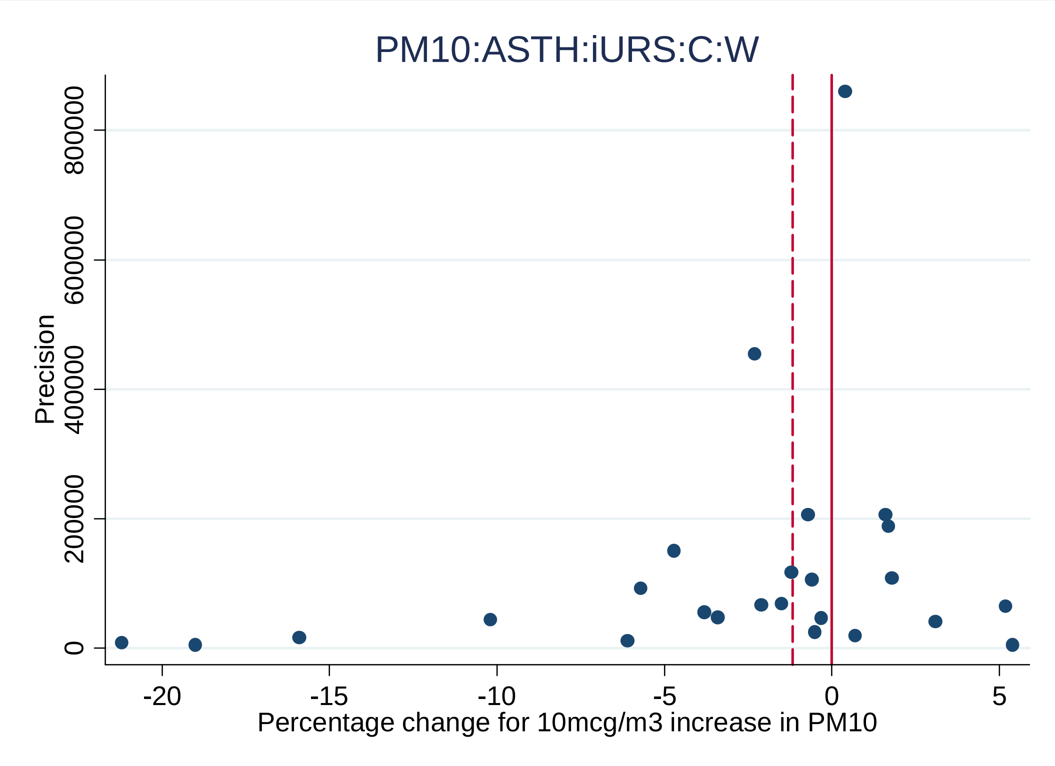

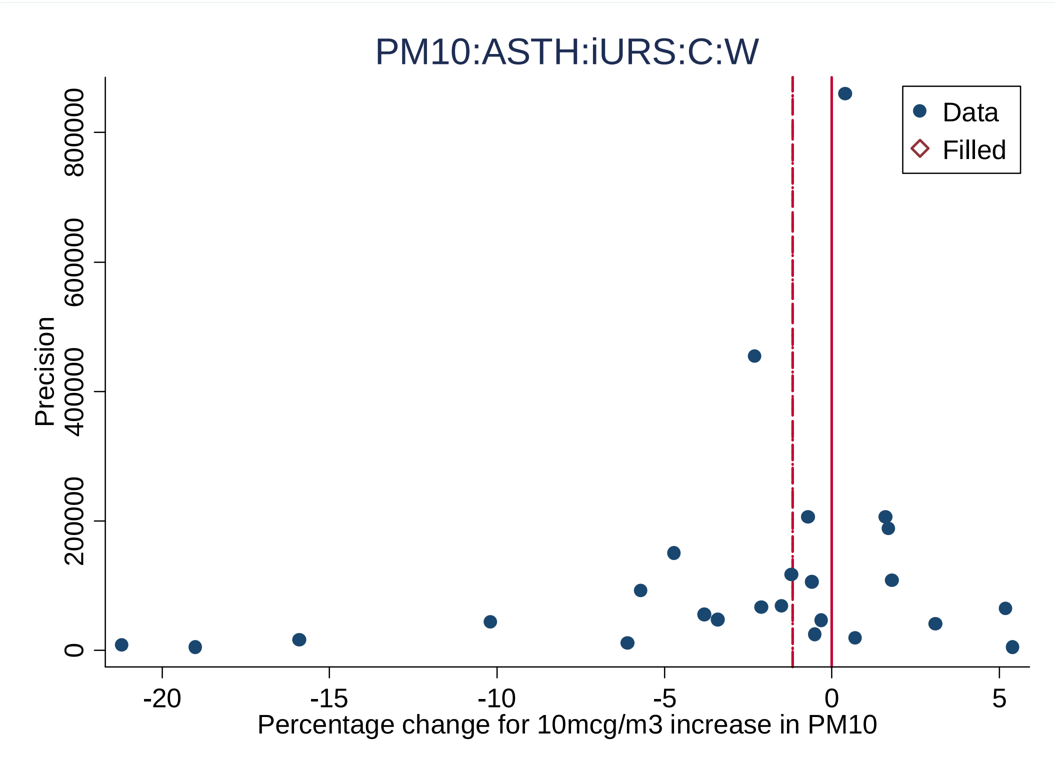

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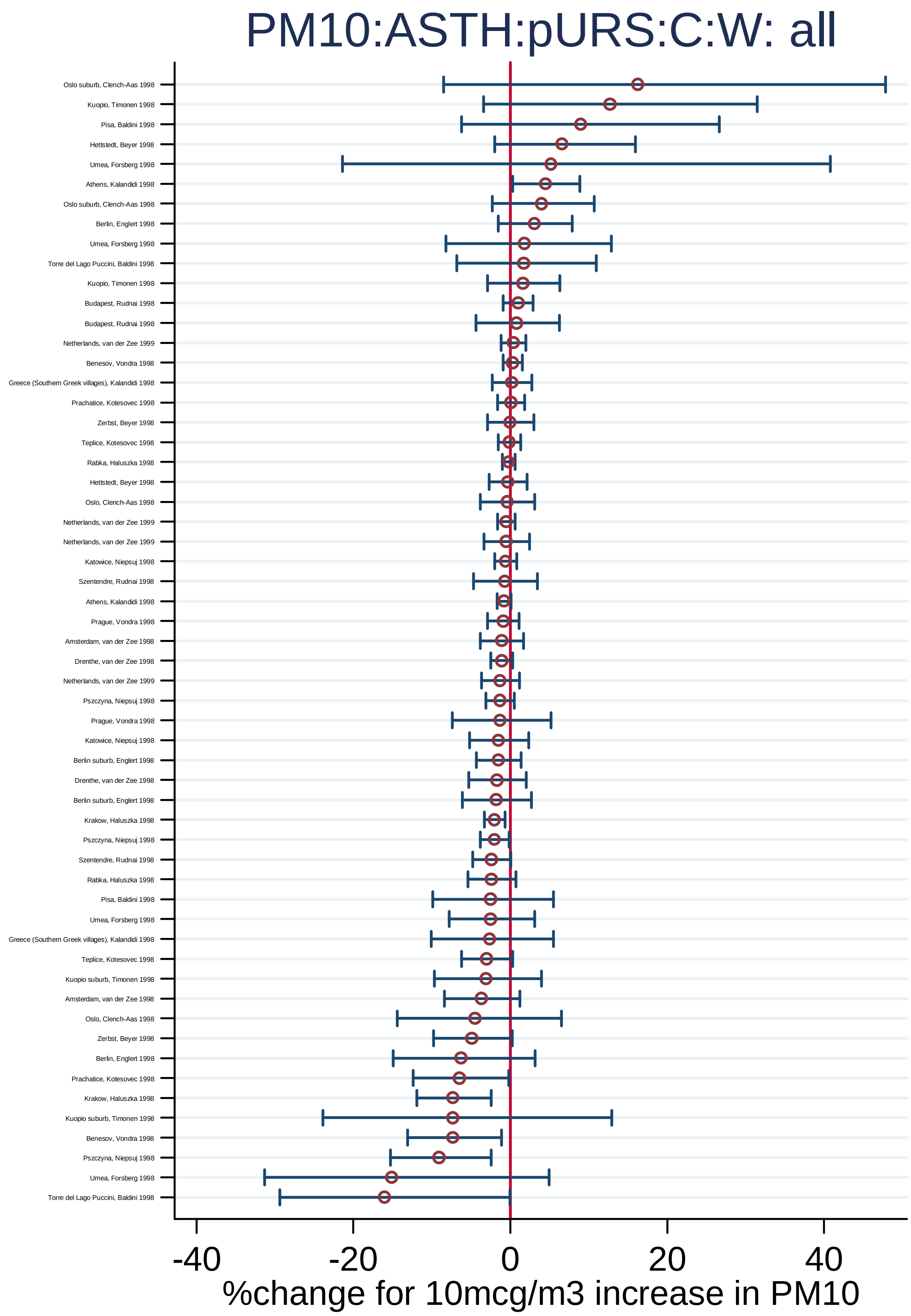

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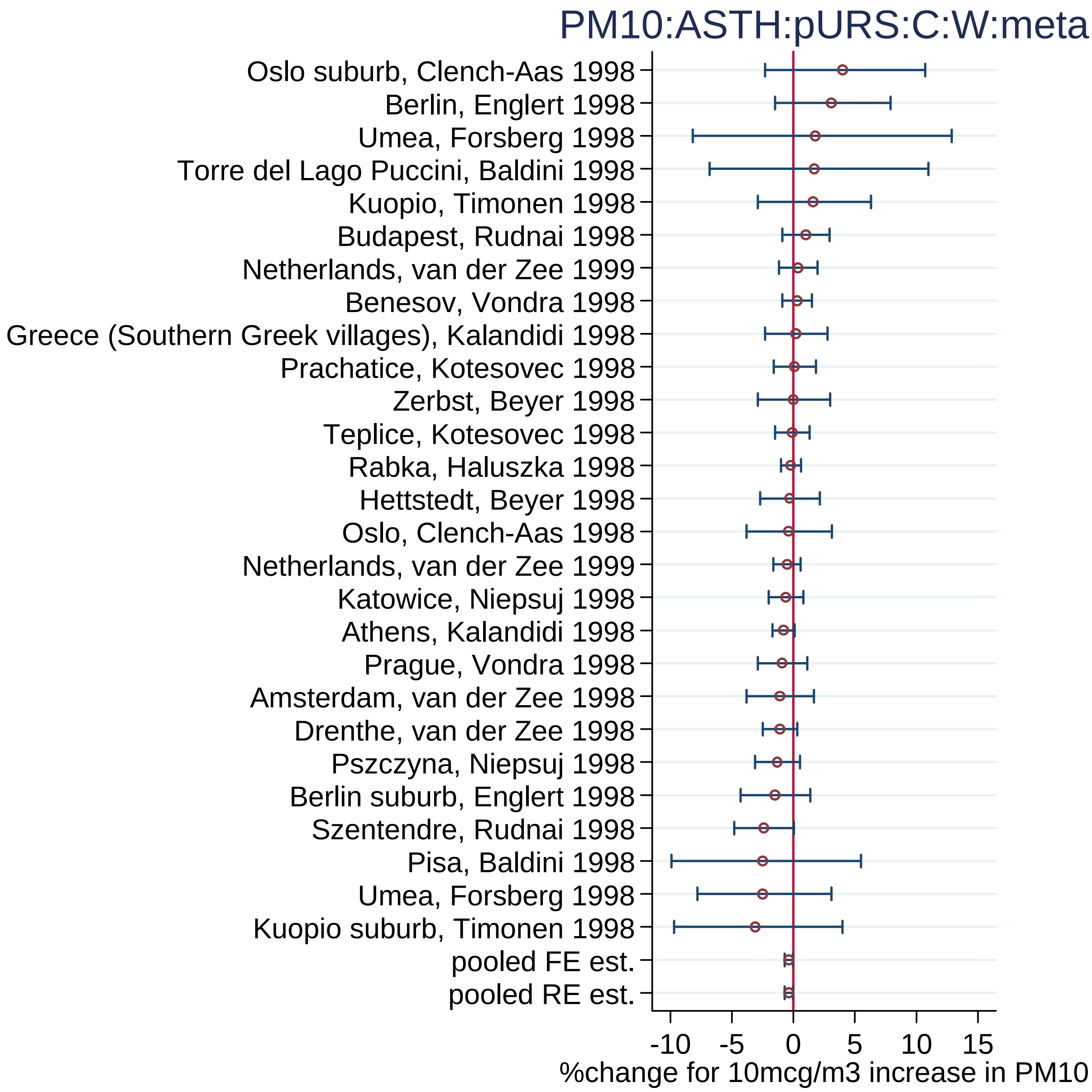

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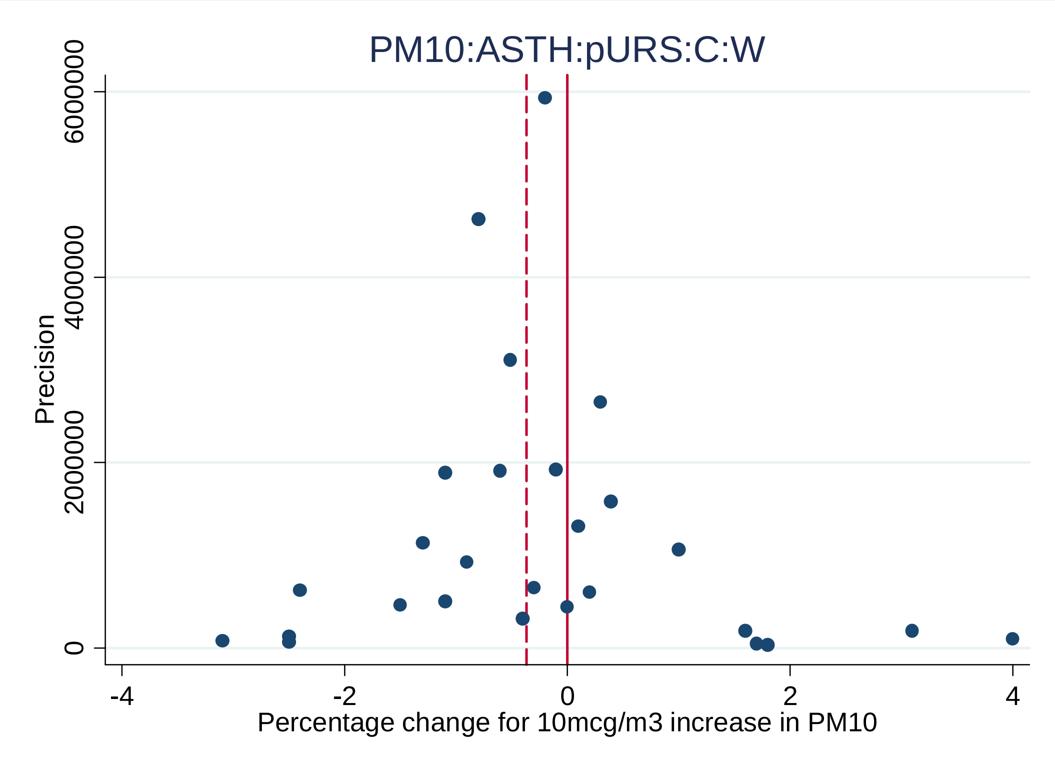

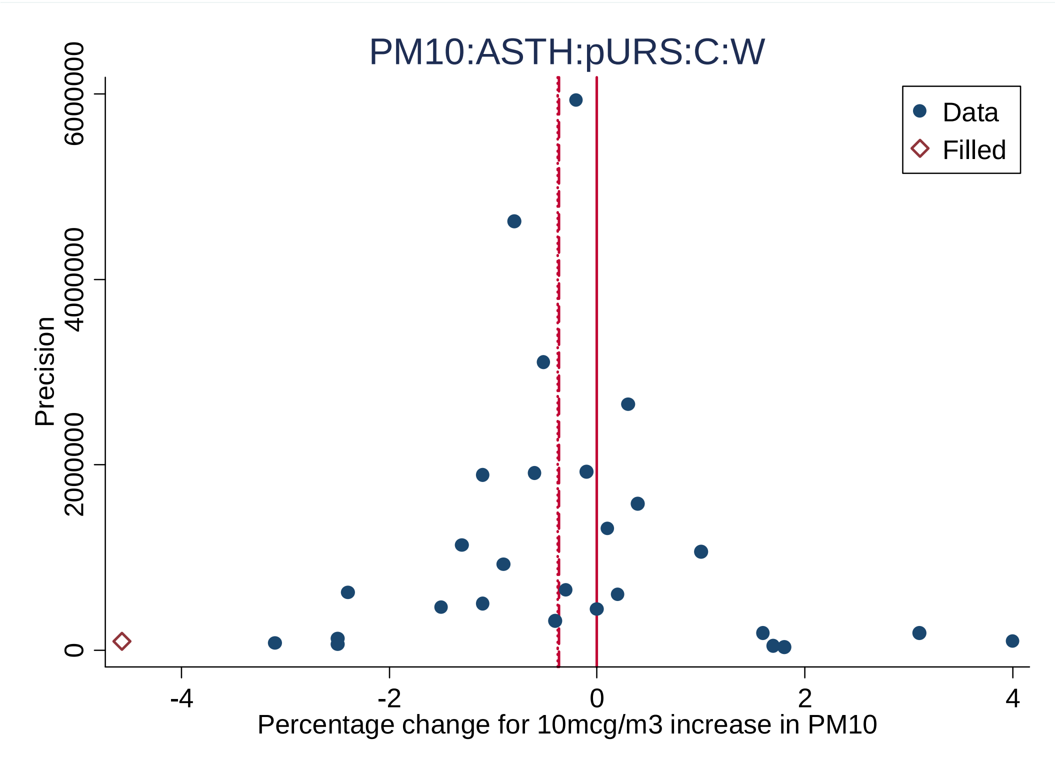

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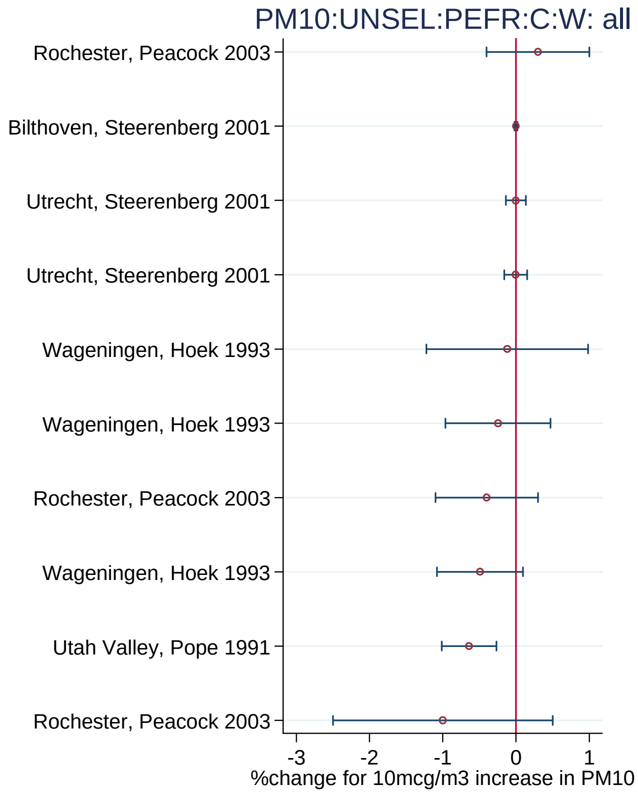

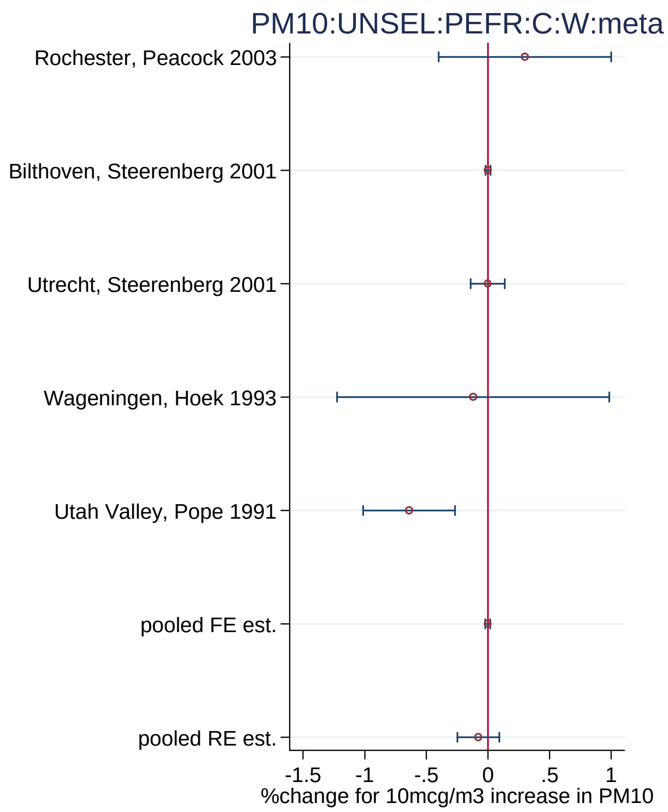

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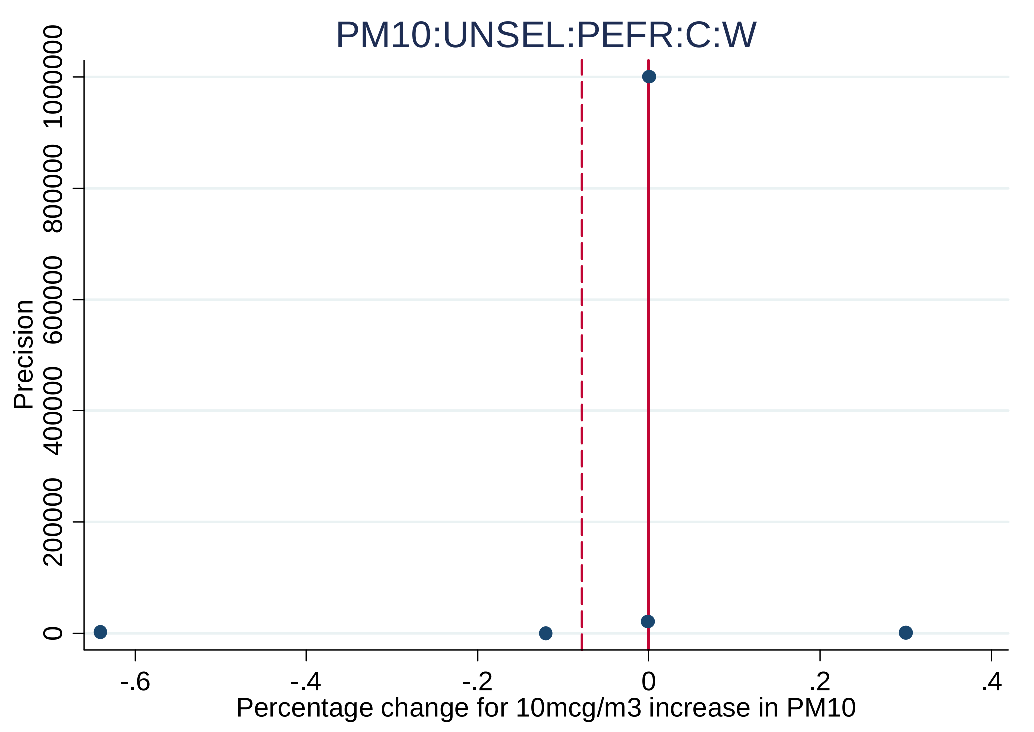

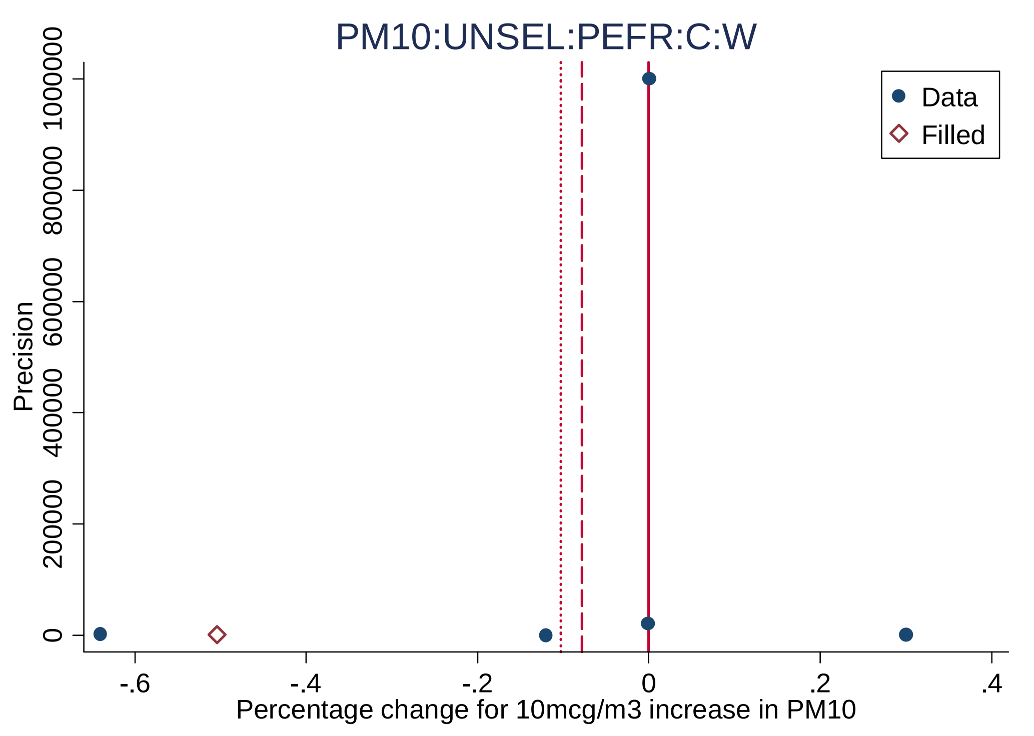

Panel Studies: NO_2

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	489	3445	Umea, Forsberg 1998	Symptomatic	iLRS(O)	child	24 hours	1	1.12	0.916	1.37
	486	1332	Oslo suburb, Clench-Aas 1998	Symptomatic	iLRS(O)	child	24 hours	1	1.112	0.953	1.30
	485	1858	Drenthe, van der Zee 1998	Symptomatic	iLRS(O)	child	24 hours	1	1.072	0.951	1.21
	477	2751	Torre del Lago Puccini, Baldini 1998	Symptomatic	iLRS(O)	child	24 hours	1	1.015	0.965	1.07
	478	134	Budapest, Rudnai 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.985	0.759	1.28
	477	2011	Pisa, Baldini 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.974	0.909	1.04
	489	3540	Umea, Forsberg 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.933	0.815	1.07
	483	1939	Hettstedt, Beyer 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.932	0.844	1.03
	480	1216	Pszczyna, Niepsuj 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.927	0.862	1.00
	486	1308	Oslo, Clench-Aas 1998	Symptomatic	iLRS(O)	child	24 hours	2	0.908	0.826	1.00
	476	1719	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.904	0.728	1.12
	487	4110	Kuopio suburb, Timonen 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.904	0.676	1.21
	480	4882	Katowice, Niepsuj 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.897	0.838	0.96
	478	163	Szentendre, Rudnai 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.884	0.767	1.02
	487	4077	Kuopio, Timonen 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.883	0.787	0.99
	476	1711	Athens, Kalandidi 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.86	0.75	0.99
	484	2329	Berlin, Englert 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.834	0.649	1.07
	481	3063	Prague, Vondra 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.833	0.701	0.99
	485	3324	Amsterdam, van der Zee 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.807	0.672	0.97
	482	1624	Teplice, Kotesovec 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.804	0.593	1.09
	481	3095	Benesov, Vondra 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.779	0.32	1.90
	483	1967	Zerbst, Beyer 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.727	0.556	0.95
	482	1632	Prachatice, Kotesovec 1998	Symptomatic	iLRS(O)	child	24 hours	1	0.631	0.394	1.01
2	483	3799	Zerbst, Beyer 1998	Symptomatic	pLRS(O)	child	24 hours	1	1.15	1.01	1.31
	477	3710	Pisa, Baldini 1998	Symptomatic	pLRS(O)	child	24 hours	1	1.08	0.96	1.22
	487	2834	Kuopio suburb, Timonen 1998	Symptomatic	pLRS(O)	child	24 hours	1	1.08	1.00	1.15
	486	1158	Oslo suburb, Clench-Aas 1998	Symptomatic	pLRS(O)	child	24 hours	1	1.07	1.00	1.14
	487	4144	Kuopio, Timonen 1998	Symptomatic	pLRS(O)	child	24 hours	1	1.07	0.99	1.15
	482	1552	Prachatice, Kotesovec 1998	Symptomatic	pLRS(O)	child	24 hours	1	1.05	0.98	1.13
	484	2385	Berlin suburb, Englert 1998	Symptomatic	pLRS(O)	child	24 hours	1	1.04	0.96	1.14
	485	3910	Drenthe, van der Zee 1998	Symptomatic	pLRS(O)	child	24 hours	1	1.04	1.01	1.08
	489	3373	Umea, Forsberg 1998	Symptomatic	pLRS(O)	child	24 hours	1	1.03	0.97	1.08
	481	3047	Prague, Vondra 1998	Symptomatic	pLRS(O)	child	24 hours	1	1.02	0.99	1.05
	711	3864	Netherlands, van der Zee 1999	Symptomatic	pLRS(O)	child	24 hours	1	1.01	0.98	1.04
	486	1658	Oslo, Clench-Aas 1998	Symptomatic	pLRS(O)	child	24 hours	1	1.01	0.98	1.03
	480	1472	Katowice, Niepsuj 1998	Symptomatic	pLRS(O)	child	24 hours	1	0.99	0.98	1.01
	711	3834	Netherlands, van der Zee 1999	Symptomatic	pLRS(O)	child	24 hours	1	0.98	0.96	1.00
	478	195	Budapest, Rudnai 1998	Symptomatic	pLRS(O)	child	24 hours	1	0.98	0.96	1.00
	485	1891	Amsterdam, van der Zee 1998	Symptomatic	pLRS(O)	child	24 hours	1	0.98	0.93	1.02
	476	1810	Athens, Kalandidi 1998	Symptomatic	pLRS(O)	child	24 hours	1	0.97	0.93	1.02
	480	4879	Pszczyna, Niepsuj 1998	Symptomatic	pLRS(O)	child	24 hours	1	0.97	0.95	1.00
	478	227	Szentendre, Rudnai 1998	Symptomatic	pLRS(O)	child	24 hours	1	0.97	0.93	1.00
	476	1817	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	pLRS(O)	child	24 hours	1	0.97	0.89	1.05
	484	2409	Berlin, Englert 1998	Symptomatic	pLRS(O)	child	24 hours	1	0.95	0.89	1.01
	489	3381	Umea, Forsberg 1998	Symptomatic	pLRS(O)	child	24 hours	1	0.93	0.84	1.02
	483	2656	Hettstedt, Beyer 1998	Symptomatic	pLRS(O)	child	24 hours	1	0.92	0.87	0.97
	477	2719	Torre del Lago Puccini, Baldini 1998	Symptomatic	pLRS(O)	child	24 hours	1	0.92	0.76	1.11
	482	1592	Teplice, Kotesovec 1998	Symptomatic	pLRS(O)	child	24 hours	1	0.90	0.82	0.99
	481	3663	Benesov, Vondra 1998	Symptomatic	pLRS(O)	child	24 hours	1	0.89	0.76	1.04
3	481	3130	Benesov, Vondra 1998	Symptomatic	iM	child	24 hours	1	1.34	0.41	4.36
	478	247	Budapest, Rudnai 1998	Symptomatic	iM	child	24 hours	1	1.32	0.89	1.94
	484	2353	Berlin suburb, Englert 1998	Symptomatic	iM	child	24 hours	1	1.23	0.80	1.88
	485	1877	Amsterdam, van der Zee 1998	Symptomatic	iM	child	24 hours	1	1.13	0.75	1.71
	477	2727	Pisa, Baldini 1998	Symptomatic	iM	child	24 hours	1	1.12	0.79	1.59
	485	1878	Drenthe, van der Zee 1998	Symptomatic	iM	child	24 hours	1	1.10	0.92	1.31
	481	3129	Prague, Vondra 1998	Symptomatic	iM	child	24 hours	1	1.08	0.89	1.32
	477	2735	Torre del Lago Puccini, Baldini 1998	Symptomatic	iM	child	24 hours	1	0.96	0.77	1.20
	484	2345	Berlin, Englert 1998	Symptomatic	iM	child	24 hours	1	0.92	0.60	1.42
	476	1831	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	iM	child	24 hours	1	0.92	0.63	1.32
	483	2644	Zerbst, Beyer 1998	Symptomatic	iM	child	24 hours	1	0.86	0.52	1.44
	478	248	Szentendre, Rudnai 1998	Symptomatic	iM	child	24 hours	1	0.77	0.52	1.15
	476	1824	Athens, Kalandidi 1998	Symptomatic	iM	child	24 hours	1	0.72	0.47	1.09
	489	3580	Umea, Forsberg 1998	Symptomatic	iM	child	24 hours	1	0.68	0.46	1.01
	489	3572	Umea, Forsberg 1998	Symptomatic	iM	child	24 hours	1	0.62	0.42	0.91
	483	2640	Hettstedt, Beyer 1998	Symptomatic	iM	child	24 hours	1	0.39	0.16	0.95

Panel Studies: NO_2

Set No.	Refman id	Access id	Cities, author and date	Panel Group	Outcome	Age group	Averaging time	Lag	Random effects estimate and 95% cl: Estimate	Lcl	Ucl
4	482	1483	Teplice, Kotesovec 1998	Symptomatic	pM	child	24 hours	1	1.08	0.89	1.31
	485	3930	Drenthe, van der Zee 1998	Symptomatic	pM	child	24 hours	1	1.06	1.00	1.13
	711	3844	Netherlands, van der Zee 1999	Symptomatic	pM	child	24 hours	1	1.06	1.01	1.10
	485	3929	Amsterdam, van der Zee 1998	Symptomatic	pM	child	24 hours	1	1.05	0.98	1.13
	477	2035	Torre del Lago Puccini, Baldini 1998	Symptomatic	pM	child	24 hours	1	1.05	0.95	1.16
	481	3114	Prague, Vondra 1998	Symptomatic	pM	child	24 hours	1	1.04	0.98	1.09
	487	2853	Kuopio suburb, Timonen 1998	Symptomatic	pM	child	24 hours	1	1.03	0.96	1.10
	484	2433	Berlin suburb, Englert 1998	Symptomatic	pM	child	24 hours	1	1.03	0.96	1.09
	476	1845	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	pM	child	24 hours	1	1.02	0.97	1.08
	711	4357	Netherlands, van der Zee 1999	Symptomatic	pM	child	24 hours	1	1.02	0.97	1.07
	480	1252	Pszczyna, Niepsuj 1998	Symptomatic	pM	child	24 hours	1	1.02	0.99	1.04
	478	263	Budapest, Rudnai 1998	Symptomatic	pM	child	24 hours	1	1.01	0.94	1.09
	483	3807	Zerbst, Beyer 1998	Symptomatic	pM	child	24 hours	1	1.00	0.97	1.04
	486	1014	Oslo suburb, Clench-Aas 1998	Symptomatic	pM	child	24 hours	1	1.00	0.95	1.05
	489	3556	Umea, Forsberg 1998	Symptomatic	pM	child	24 hours	1	1.00	0.97	1.03
	487	2852	Kuopio, Timonen 1998	Symptomatic	pM	child	24 hours	1	1.00	0.93	1.07
	483	3803	Hettstedt, Beyer 1998	Symptomatic	pM	child	24 hours	1	0.98	0.94	1.02
	476	1838	Athens, Kalandidi 1998	Symptomatic	pM	child	24 hours	1	0.98	0.92	1.03
	478	264	Szentendre, Rudnai 1998	Symptomatic	pM	child	24 hours	1	0.97	0.92	1.03
	484	2425	Berlin, Englert 1998	Symptomatic	pM	child	24 hours	1	0.97	0.93	1.02
	489	3564	Umea, Forsberg 1998	Symptomatic	pM	child	24 hours	1	0.97	0.94	1.00
	477	2027	Pisa, Baldini 1998	Symptomatic	pM	child	24 hours	1	0.96	0.86	1.07
	486	1674	Oslo, Clench-Aas 1998	Symptomatic	pM	child	24 hours	1	0.96	0.87	1.05
	481	3115	Benesov, Vondra 1998	Symptomatic	pM	child	24 hours	1	0.93	0.86	1.01
	482	1491	Prachatice, Kotesovec 1998	Symptomatic	pM	child	24 hours	1	0.77	0.65	0.92
5	485	3291	Amsterdam, van der Zee 1998	Symptomatic	PEFR	child	24 hours	1	0.98	0.31	1.65
	484	2193	Berlin, Englert 1998	Symptomatic	PEFR	child	24 hours	1	0.60	-0.34	1.54
	489	3956	Umea, Forsberg 1998	Symptomatic	PEFR	child	24 hours	1	0.58	-0.03	1.19
	477	5441	Pisa, Baldini 1998	Symptomatic	PEFR	child	24 hours	0	0.51	-0.08	1.10
	477	3694	Torre del Lago Puccini, Baldini 1998	Symptomatic	PEFR	child	24 hours	1	0.33	-0.36	1.02
	487	5452	Kuopio, Timonen 1998	Symptomatic	PEFR	child	24 hours	0	0.30	-0.11	0.71
	481	5445	Prague, Vondra 1998	Symptomatic	PEFR	child	24 hours	0	0.27	-0.20	0.74
	478	5442	Szentendre, Rudnai 1998	Symptomatic	PEFR	child	24 hours	0	0.24	-0.11	0.59
	480	4	Katowice, Niepsuj 1998	Symptomatic	PEFR	child	24 hours	1	0.17	-0.05	0.39
	482	1512	Teplice, Kotesovec 1998	Symptomatic	PEFR	child	24 hours	1	0.12	-0.41	0.65
	480	5444	Pszczyna, Niepsuj 1998	Symptomatic	PEFR	child	24 hours	0	0.10	-0.08	0.28
	476	1683	Athens, Kalandidi 1998	Symptomatic	PEFR	child	24 hours	1	0.04	-0.47	0.55
	483	1923	Hettstedt, Beyer 1998	Symptomatic	PEFR	child	24 hours	1	-0.04	-0.39	0.31
	486	1292	Oslo suburb, Clench-Aas 1998	Symptomatic	PEFR	child	24 hours	1	-0.05	-0.60	0.50
	486	1507	Oslo, Clench-Aas 1998	Symptomatic	PEFR	child	24 hours	1	-0.11	-0.50	0.28
	487	4047	Kuopio suburb, Timonen 1998	Symptomatic	PEFR	child	24 hours	1	-0.12	-0.74	0.50
	483	5447	Zerbst, Beyer 1998	Symptomatic	PEFR	child	24 hours	0	-0.20	-0.61	0.21
	482	1528	Prachatice, Kotesovec 1998	Symptomatic	PEFR	child	24 hours	1	-0.28	-1.81	1.25
	489	3990	Umea, Forsberg 1998	Symptomatic	PEFR	child	24 hours	1	-0.47	-1.21	0.27
	485	3293	Drenthe, van der Zee 1998	Symptomatic	PEFR	child	24 hours	1	-0.50	-1.07	0.07
	478	87	Budapest, Rudnai 1998	Symptomatic	PEFR	child	24 hours	1	-0.53	-1.18	0.12
	756	5456	Kuopio, Timonen 1997	Symptomatic	PEFR	child	24 hours	0	-0.70	-2.18	0.79
	481	331	Benesov, Vondra 1998	Symptomatic	PEFR	child	24 hours	1	-0.71	-2.98	1.56
	484	5448	Berlin suburb, Englert 1998	Symptomatic	PEFR	child	24 hours	0	-0.79	-1.61	0.03
	476	1704	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	PEFR	child	24 hours	0	-0.93	-1.67	-0.19
6	481	3096	Benesov, Vondra 1998	Symptomatic	iURS	child	24 hours	1	1.41	0.83	2.40
	484	2321	Berlin suburb, Englert 1998	Symptomatic	iURS	child	24 hours	1	1.09	0.92	1.28
	489	3453	Umea, Forsberg 1998	Symptomatic	iURS	child	24 hours	1	1.08	0.96	1.22
	484	2313	Berlin, Englert 1998	Symptomatic	iURS	child	24 hours	1	1.08	0.83	1.41
	485	1859	Drenthe, van der Zee 1998	Symptomatic	iURS	child	24 hours	1	1.01	0.93	1.09
	477	1995	Pisa, Baldini 1998	Symptomatic	iURS	child	24 hours	1	1.00	0.94	1.05
	478	165	Szentendre, Rudnai 1998	Symptomatic	iURS	child	24 hours	1	0.99	0.81	1.21
	483	1955	Hettstedt, Beyer 1998	Symptomatic	iURS	child	24 hours	1	0.98	0.89	1.07
	486	621	Oslo suburb, Clench-Aas 1998	Symptomatic	iURS	child	24 hours	1	0.98	0.86	1.11
	478	133	Budapest, Rudnai 1998	Symptomatic	iURS	child	24 hours	1	0.96	0.81	1.14
	480	4887	Pszczyna, Niepsuj 1998	Symptomatic	iURS	child	24 hours	1	0.96	0.90	1.01
	480	4884	Katowice, Niepsuj 1998	Symptomatic	iURS	child	24 hours	1	0.96	0.90	1.01
	487	4079	Kuopio, Timonen 1998	Symptomatic	iURS	child	24 hours	1	0.95	0.86	1.06
	489	3532	Umea, Forsberg 1998	Symptomatic	iURS	child	24 hours	1	0.94	0.80	1.11
	481	3064	Prague, Vondra 1998	Symptomatic	iURS	child	24 hours	1	0.93	0.82	1.05
	485	3325	Amsterdam, van der Zee 1998	Symptomatic	iURS	child	24 hours	1	0.93	0.82	1.06
	486	1340	Oslo, Clench-Aas 1998	Symptomatic	iURS	child	24 hours	1	0.93	0.84	1.03
	476	1740	Athens, Kalandidi 1998	Symptomatic	iURS	child	24 hours	1	0.90	0.79	1.04
	483	1959	Zerbst, Beyer 1998	Symptomatic	iURS	child	24 hours	1	0.90	0.81	1.01
	487	4111	Kuopio suburb, Timonen 1998	Symptomatic	iURS	child	24 hours	1	0.89	0.72	1.09
	482	1640	Teplice, Kotesovec 1998	Symptomatic	iURS	child	24 hours	1	0.88	0.76	1.02
	476	1747	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	iURS	child	24 hours	1	0.86	0.67	1.10
	482	1263	Prachatice, Kotesovec 1998	Symptomatic	iURS	child	24 hours	1	0.84	0.61	1.16

Panel Studies: NO_2

Set No.	Refman id	Access id	Cities, author and date	Panel Group	Outcome	Age group	Averaging time	Lag	Random effects estimate and 95% cl: Estimate	Lcl	Ucl
7	477	3742	Pisa, Baldini 1998	Symptomatic	pURS	child	24 hours	1	1.05	0.94	1.17
	482	1584	Prachatice, Kotesovec 1998	Symptomatic	pURS	child	24 hours	1	1.04	0.95	1.14
	483	2695	Zerbst, Beyer 1998	Symptomatic	pURS	child	24 hours	1	1.03	0.99	1.07
	489	3389	Umea, Forsberg 1998	Symptomatic	pURS	child	24 hours	1	1.03	1.00	1.06
	489	3397	Umea, Forsberg 1998	Symptomatic	pURS	child	24 hours	1	1.02	0.96	1.08
	485	3911	Drenthe, van der Zee 1998	Symptomatic	pURS	child	24 hours	1	1.01	0.98	1.04
	486	1650	Oslo suburb, Clench-Aas 1998	Symptomatic	pURS	child	24 hours	1	1.01	0.98	1.04
	487	4143	Kuopio, Timonen 1998	Symptomatic	pURS	child	24 hours	1	1.01	0.97	1.04
	484	2393	Berlin, Englert 1998	Symptomatic	pURS	child	24 hours	1	1.01	0.94	1.08
	476	1796	Athens, Kalandidi 1998	Symptomatic	pURS	child	24 hours	1	1.00	0.98	1.03
	486	1166	Oslo, Clench-Aas 1998	Symptomatic	pURS	child	24 hours	1	1.00	0.98	1.02
	481	3664	Benesov, Vondra 1998	Symptomatic	pURS	child	24 hours	1	1.00	0.90	1.11
	487	2836	Kuopio suburb, Timonen 1998	Symptomatic	pURS	child	24 hours	1	1.00	0.94	1.07
	480	1188	Pszczyna, Niepsuj 1998	Symptomatic	pURS	child	24 hours	1	1.00	0.99	1.01
	480	1180	Katowice, Niepsuj 1998	Symptomatic	pURS	child	24 hours	1	1.00	0.99	1.01
	478	197	Budapest, Rudnai 1998	Symptomatic	pURS	child	24 hours	1	1.00	0.95	1.05
	711	3874	Netherlands, van der Zee 1999	Symptomatic	pURS	child	24 hours	1	0.99	0.97	1.01
	485	1893	Amsterdam, van der Zee 1998	Symptomatic	pURS	child	24 hours	1	0.99	0.94	1.04
	477	2703	Torre del Lago Puccini, Baldini 1998	Symptomatic	pURS	child	24 hours	1	0.99	0.85	1.15
	484	2401	Berlin suburb, Englert 1998	Symptomatic	pURS	child	24 hours	1	0.98	0.94	1.03
	483	3795	Hettstedt, Beyer 1998	Symptomatic	pURS	child	24 hours	1	0.98	0.95	1.02
	711	3824	Netherlands, van der Zee 1999	Symptomatic	pURS	child	24 hours	1	0.98	0.96	1.00
	481	3049	Prague, Vondra 1998	Symptomatic	pURS	child	24 hours	1	0.97	0.94	1.01
	476	1803	Greece (Southern Greek villages), Kalandidi 1998	Symptomatic	pURS	child	24 hours	1	0.95	0.89	1.02
	478	229	Szentendre, Rudnai 1998	Symptomatic	pURS	child	24 hours	1	0.94	0.90	0.98

Panel Studies NO_2

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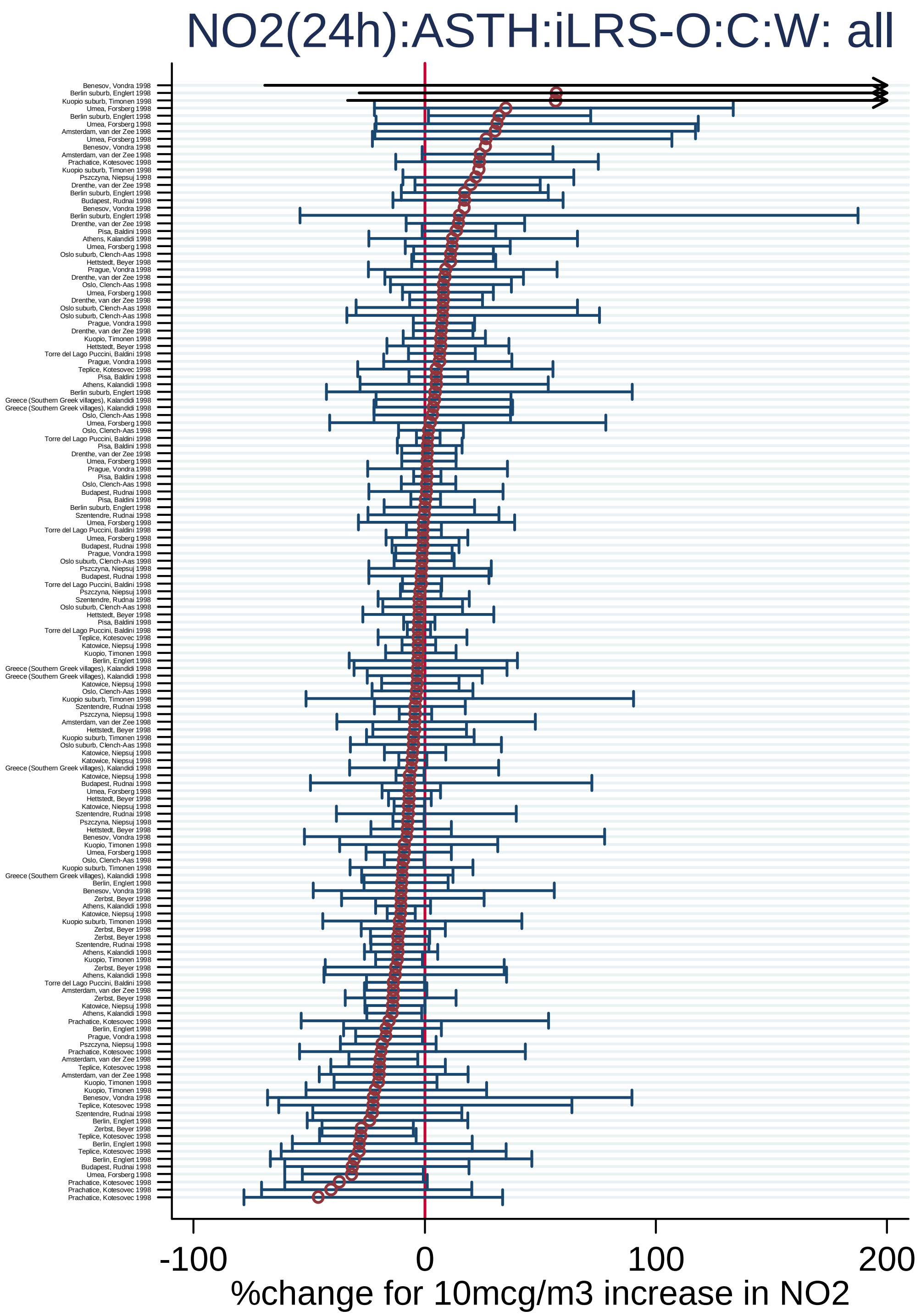

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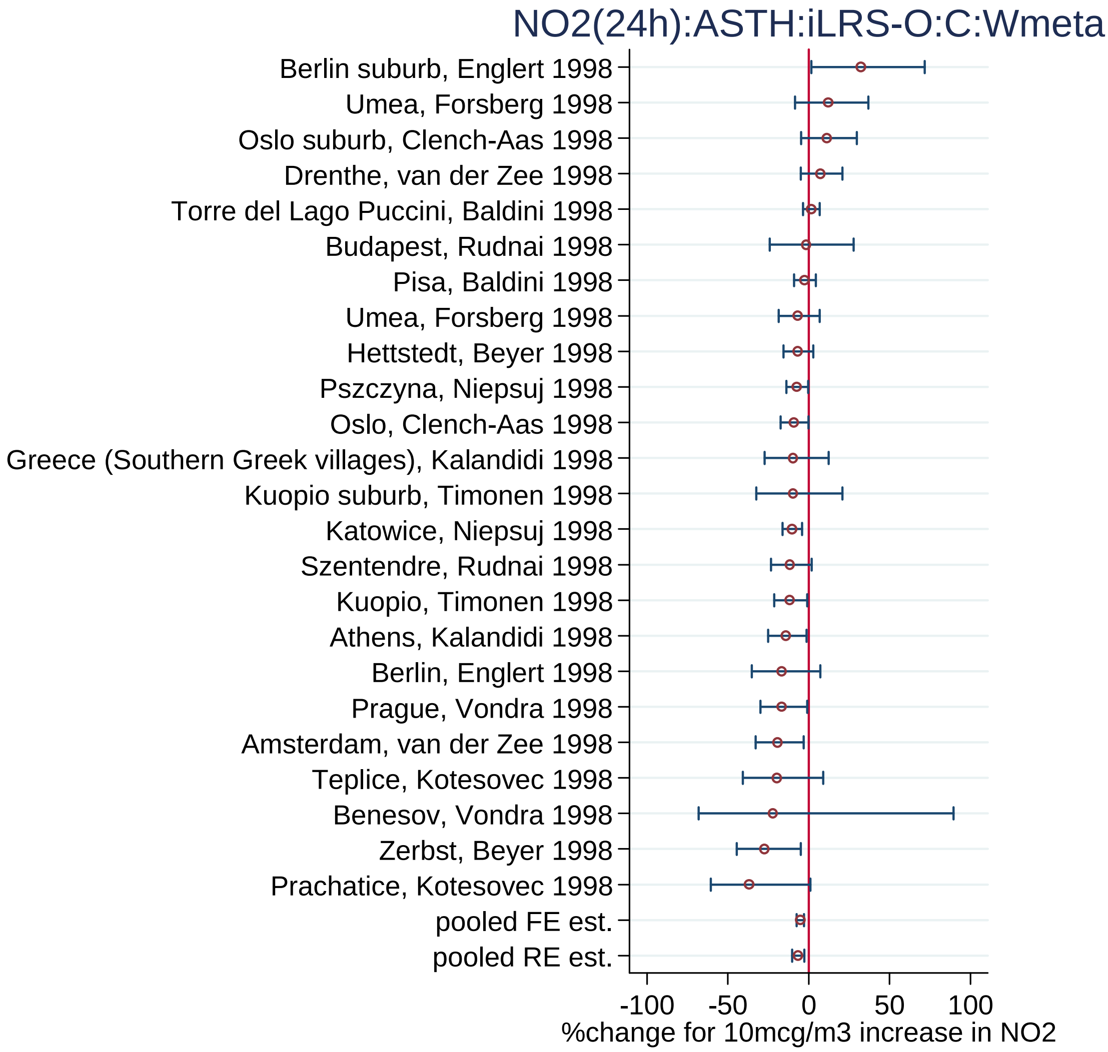

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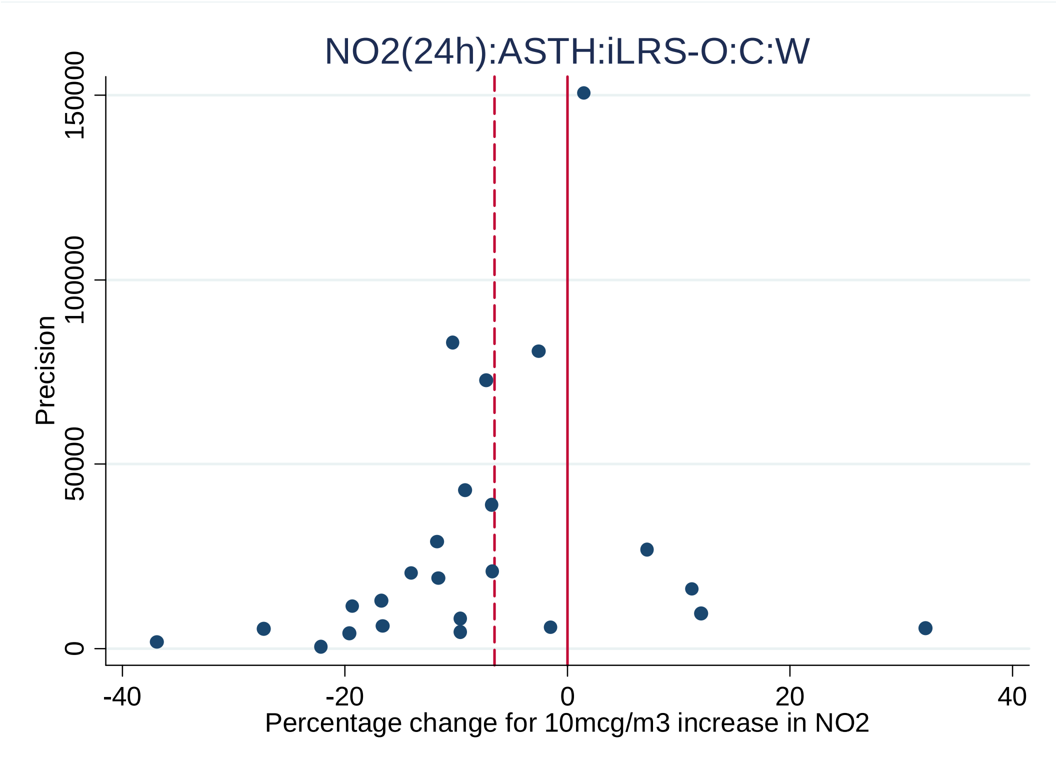

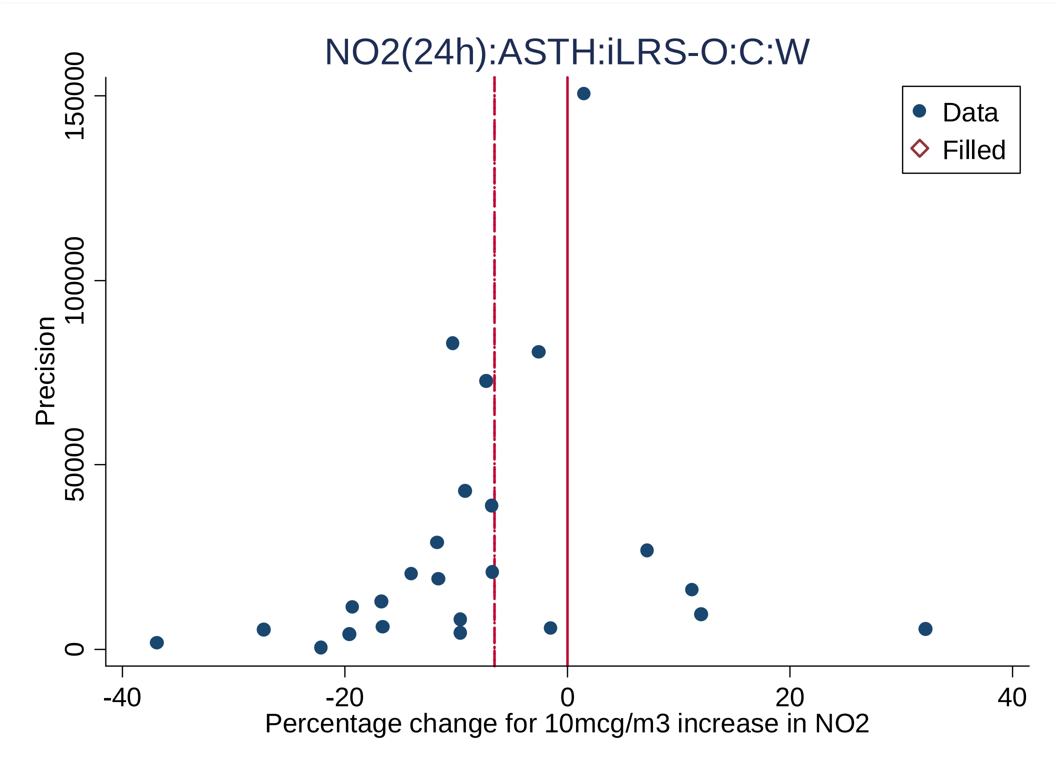

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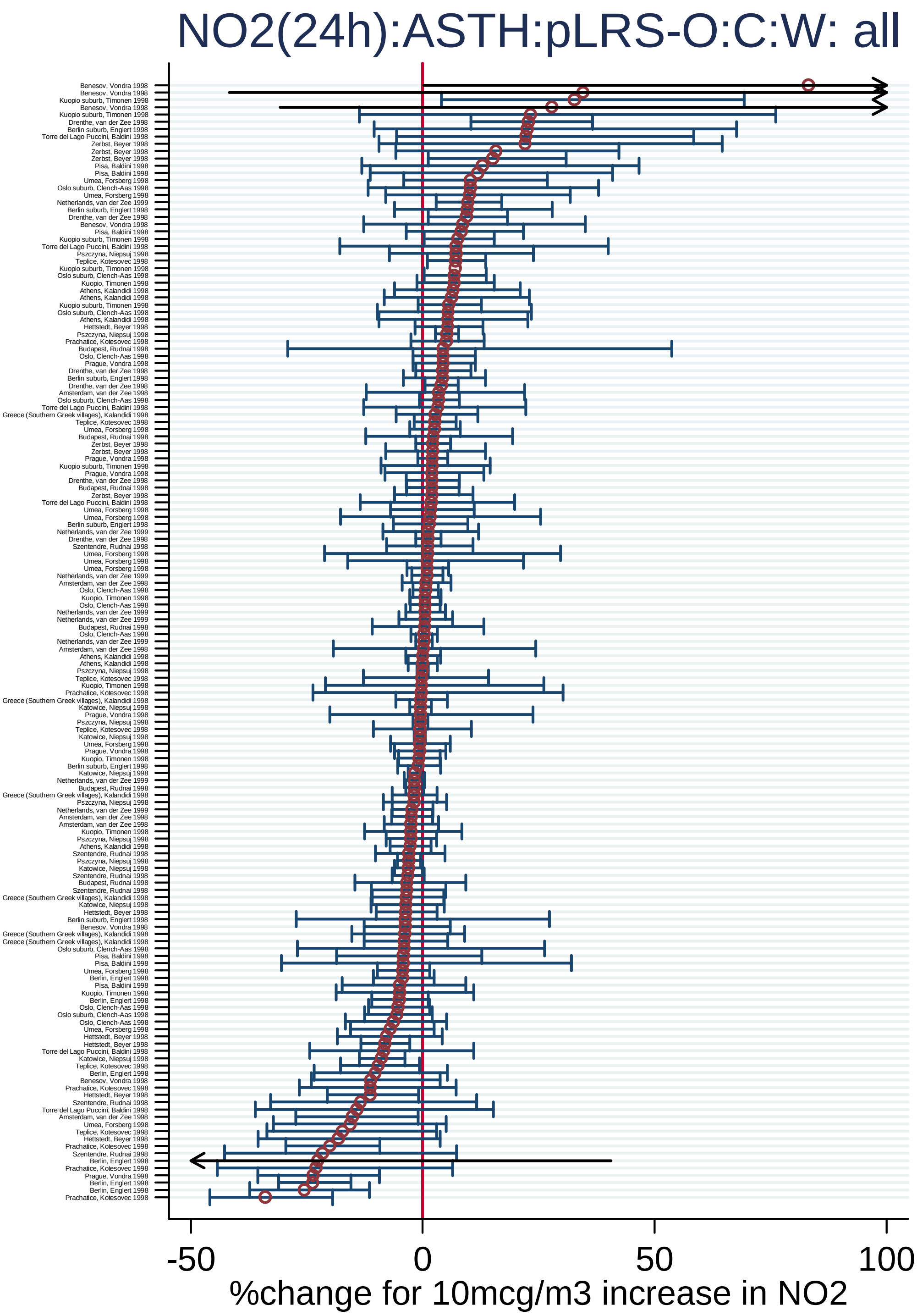

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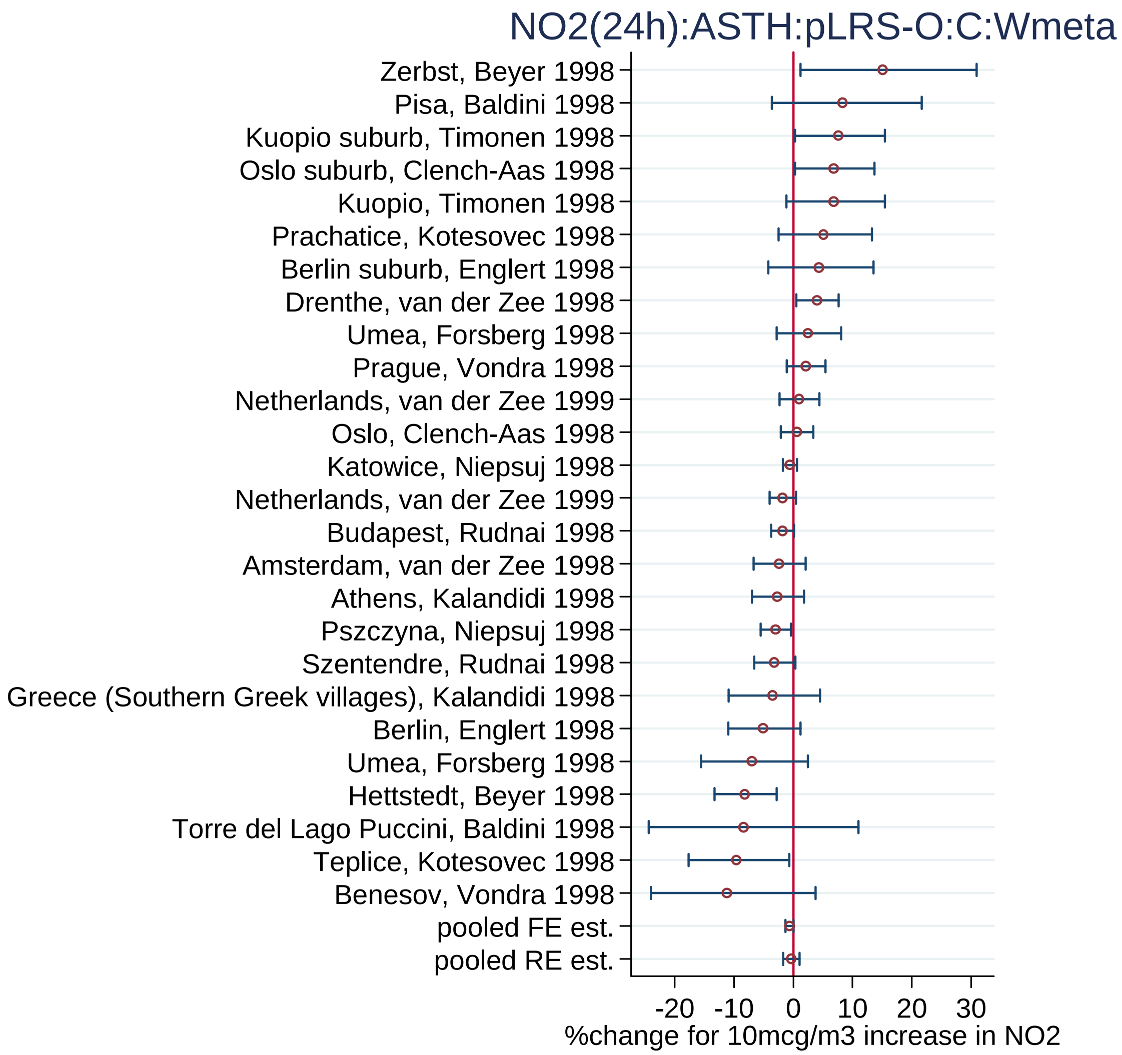

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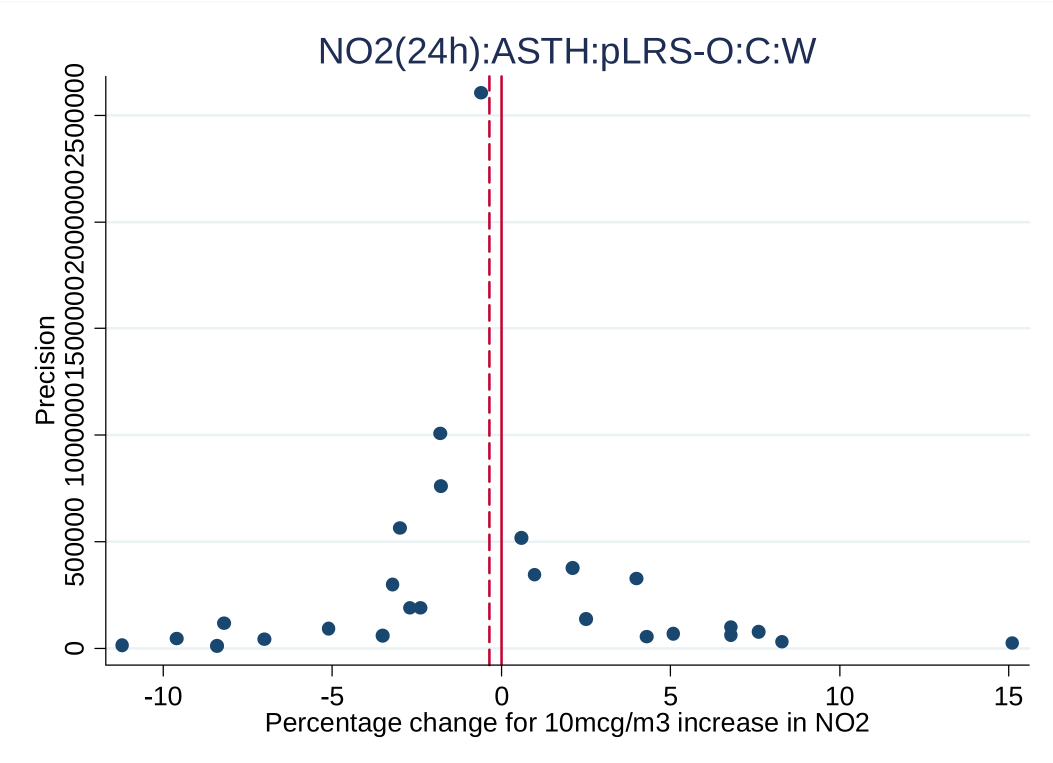

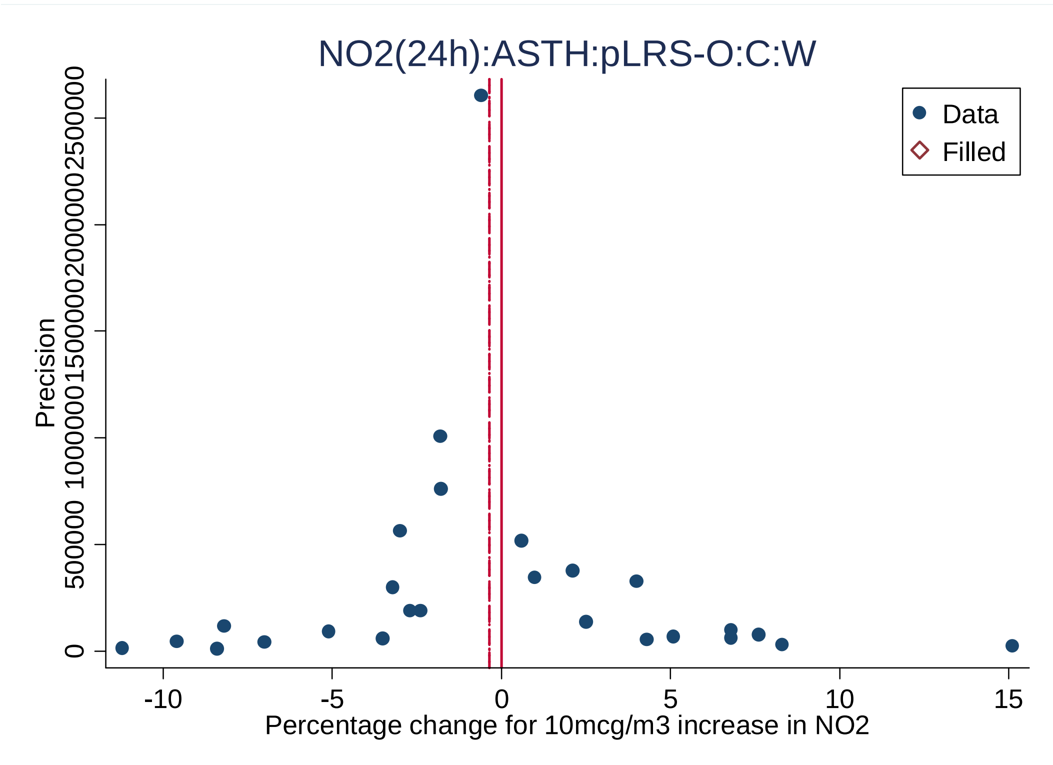

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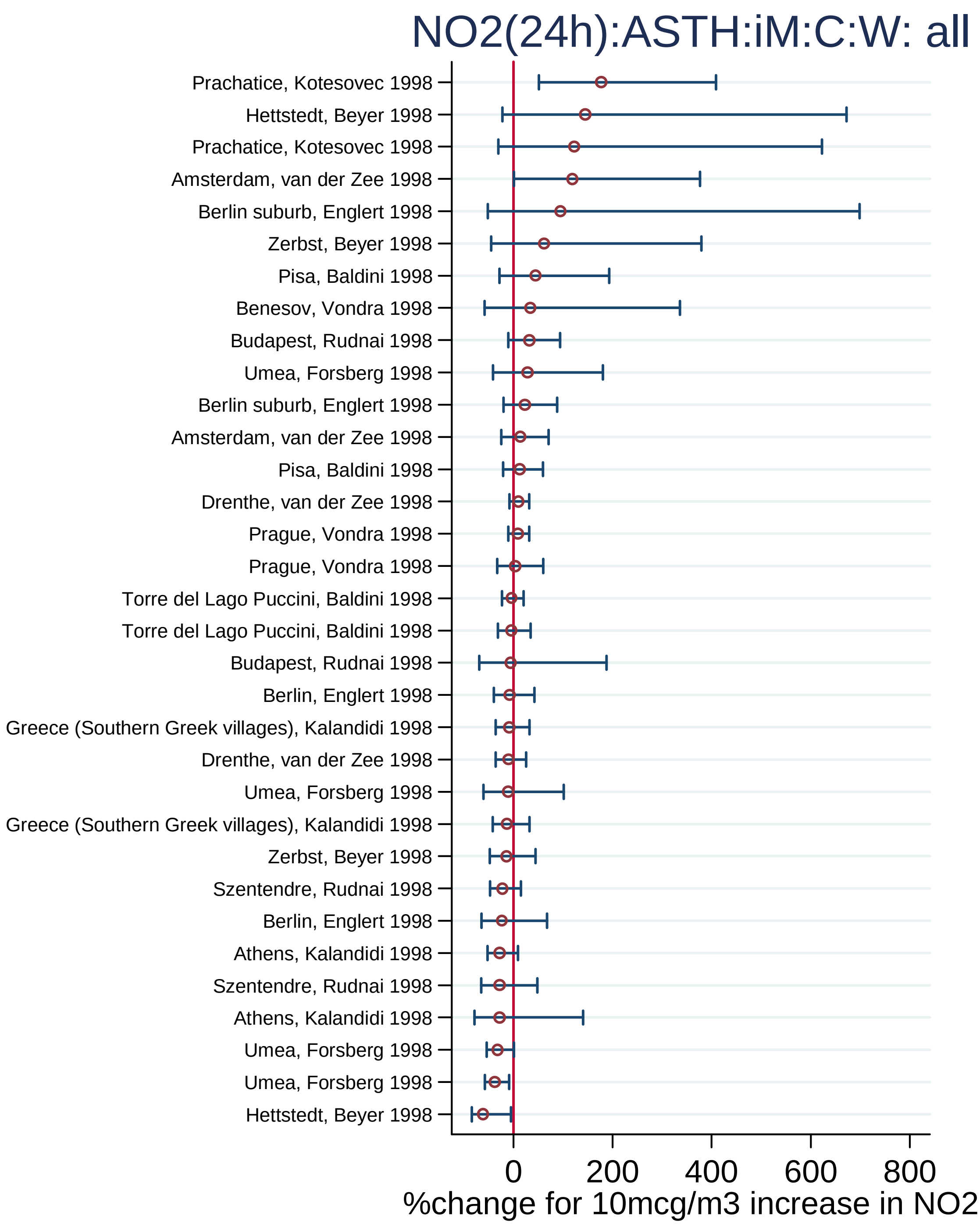

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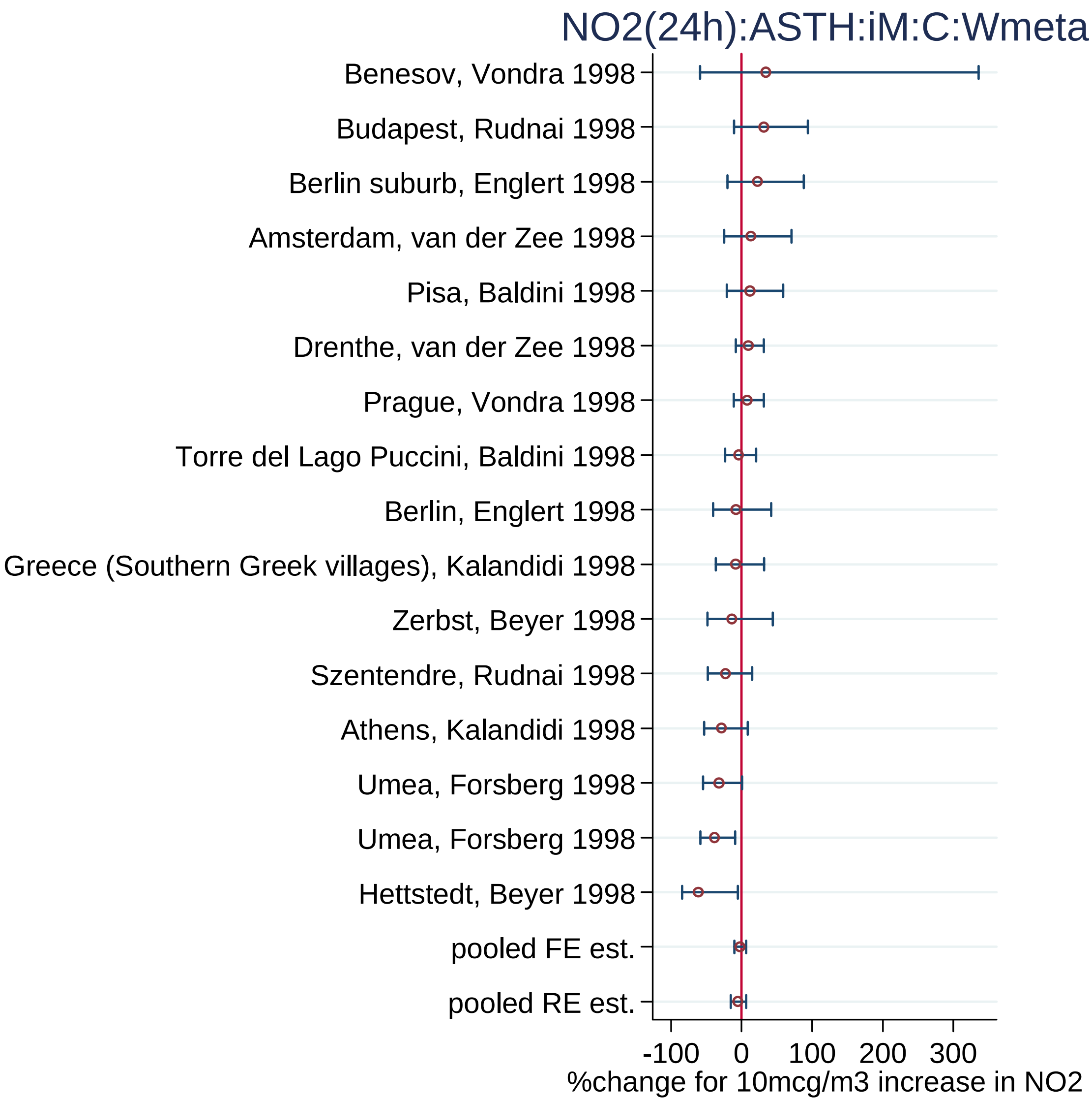

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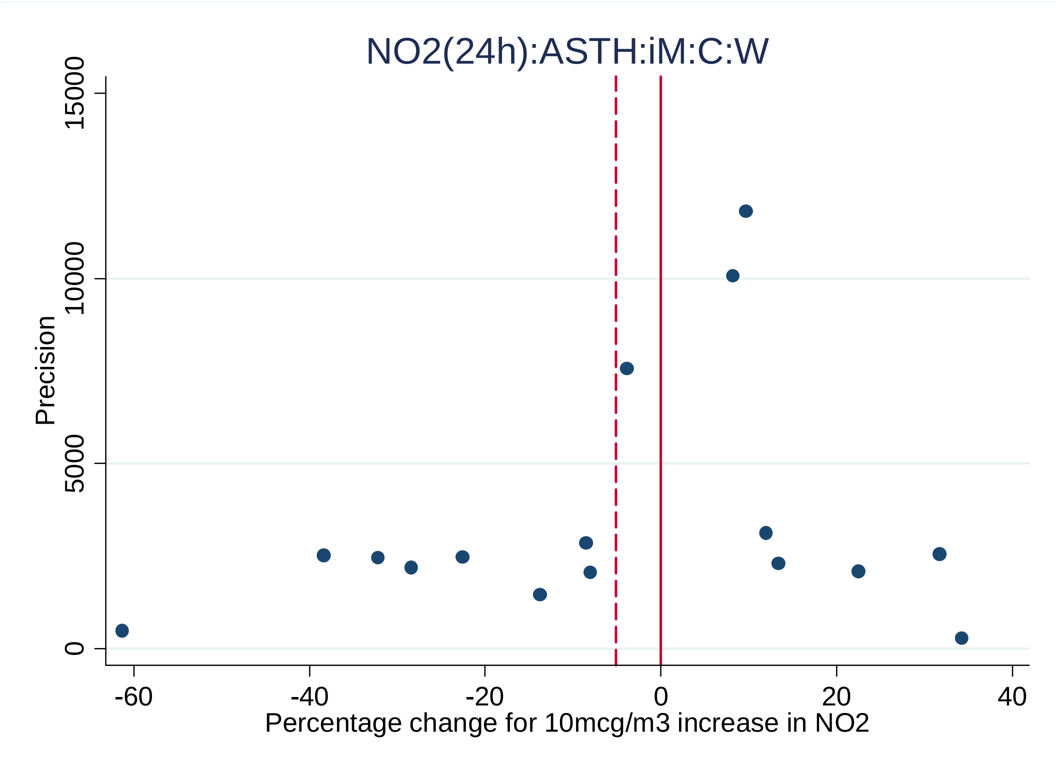

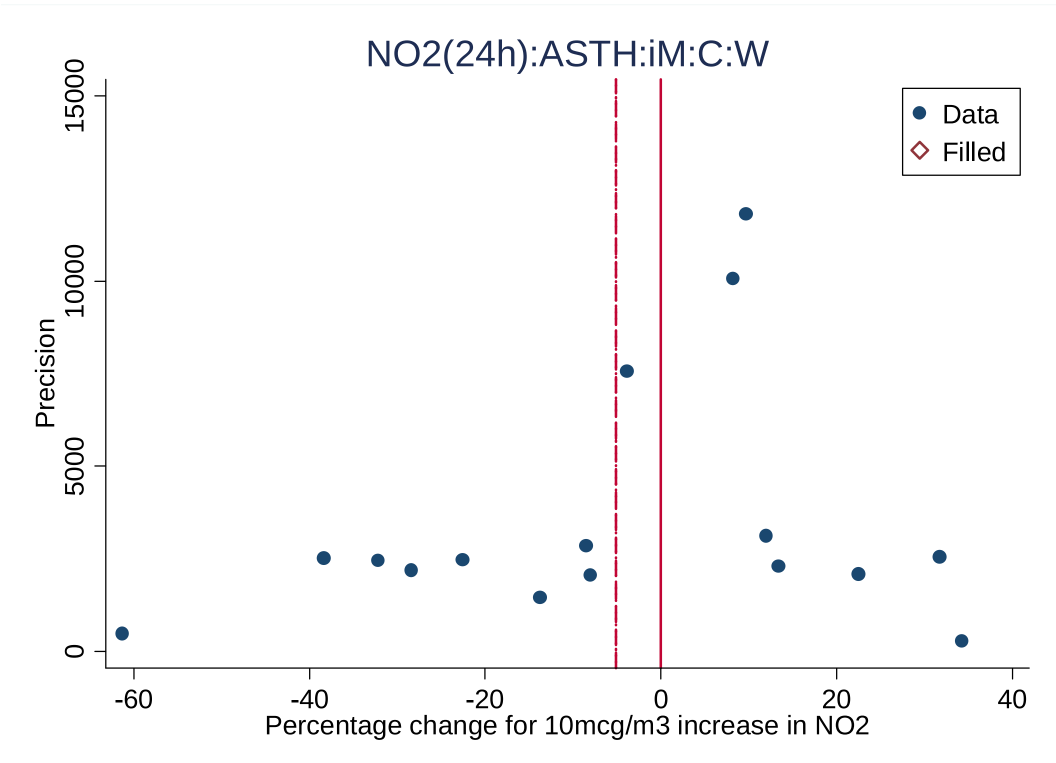

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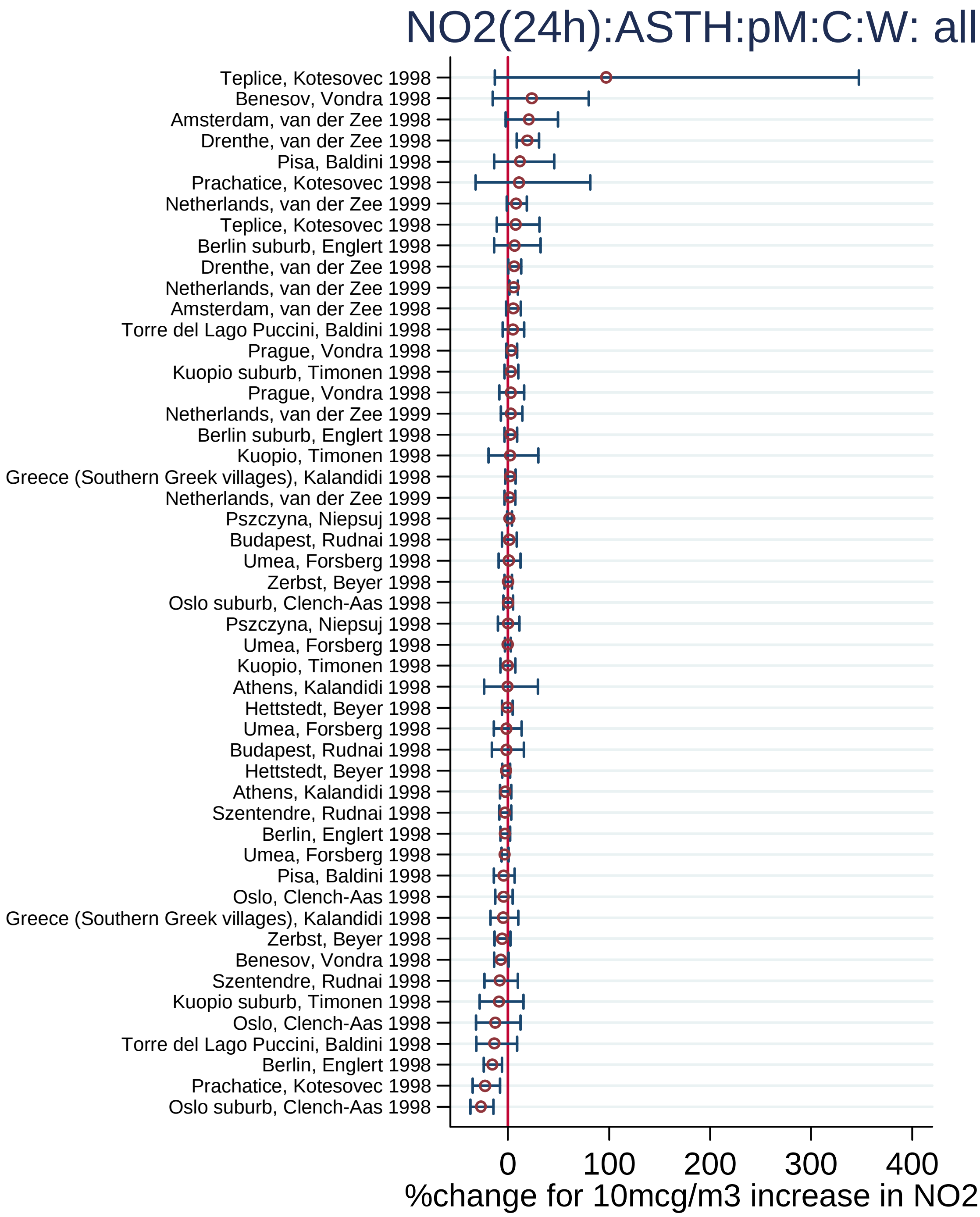
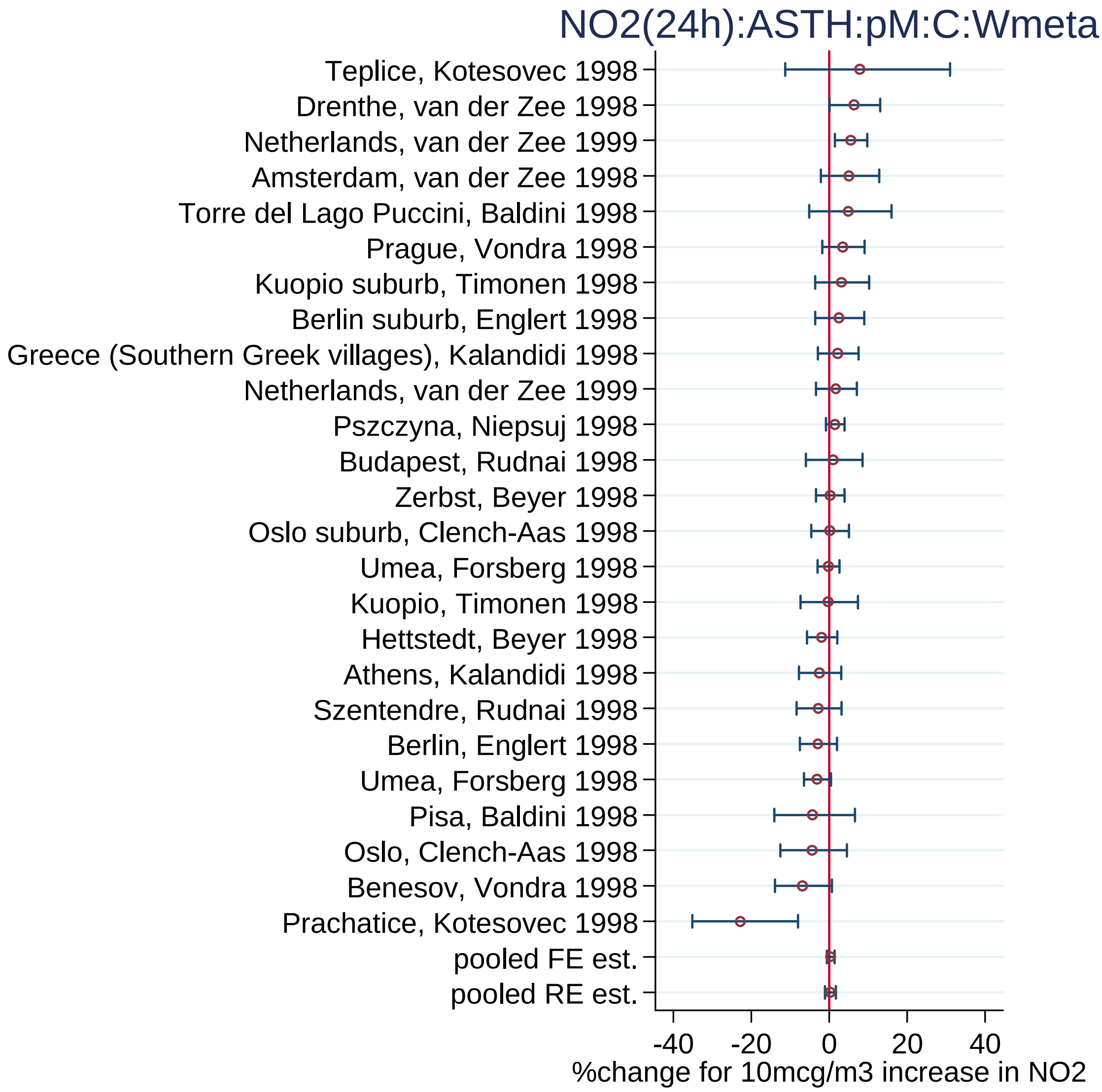


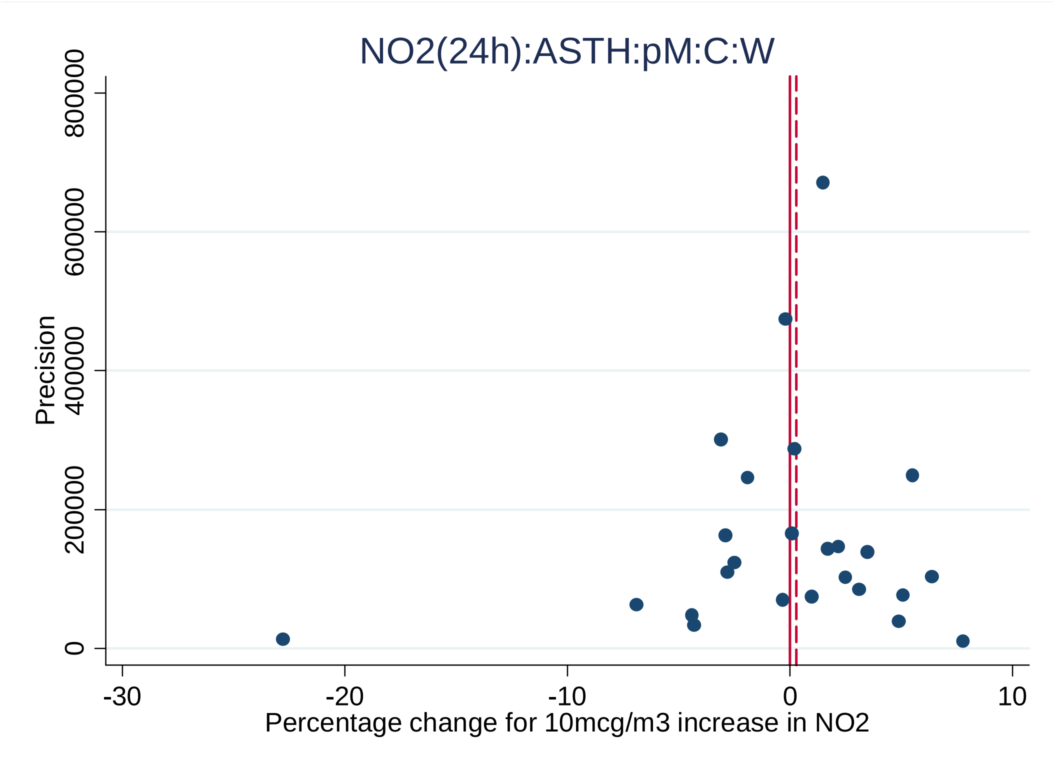
Panel Studies NO_2

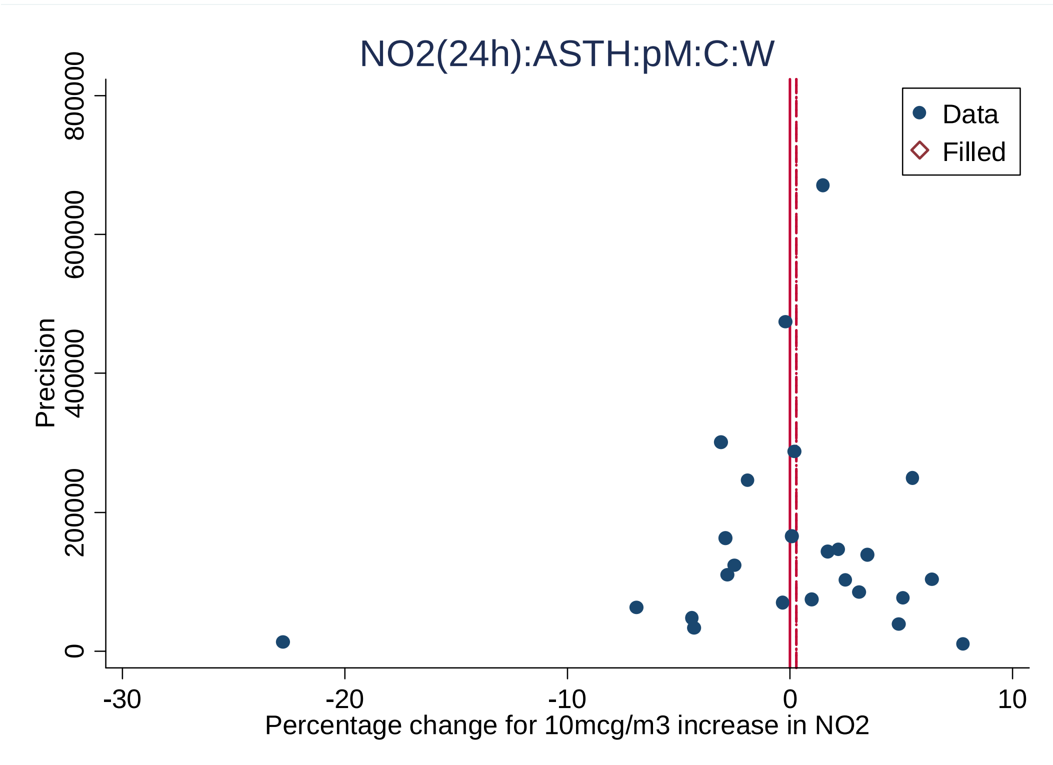
Set 4



Panel Studies NO_2

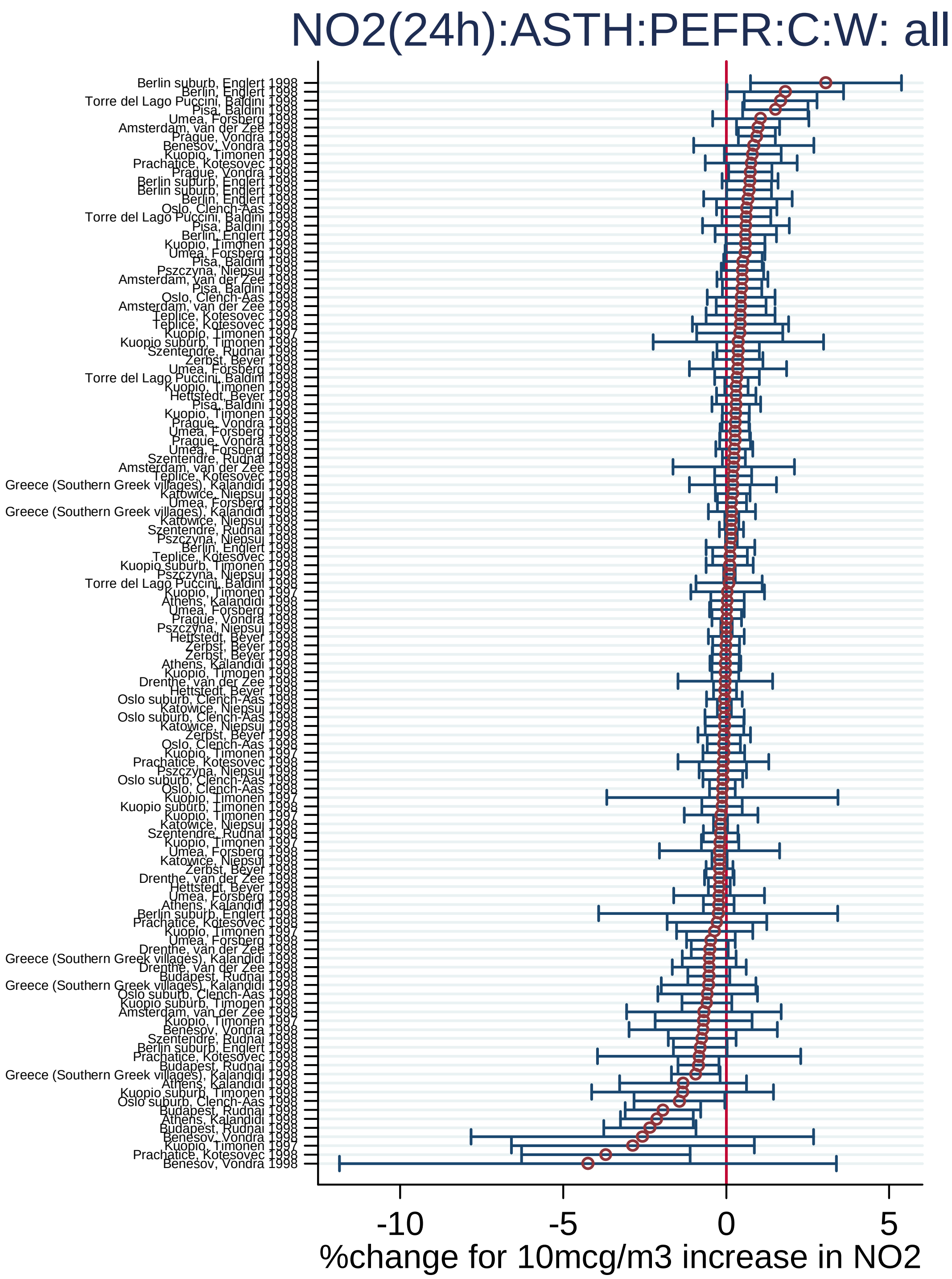
Set 4





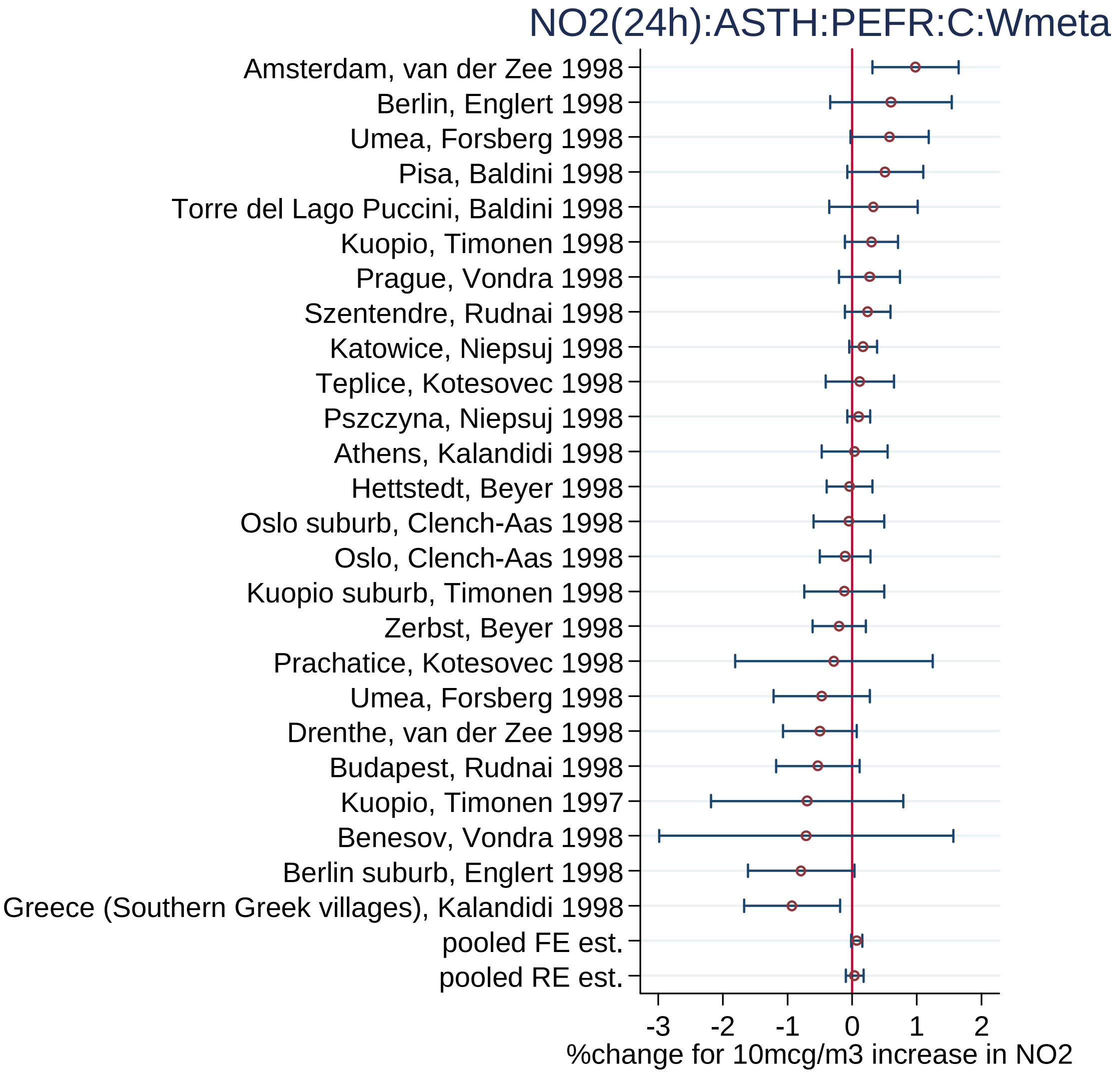
Panel Studies NO_2

Set 5



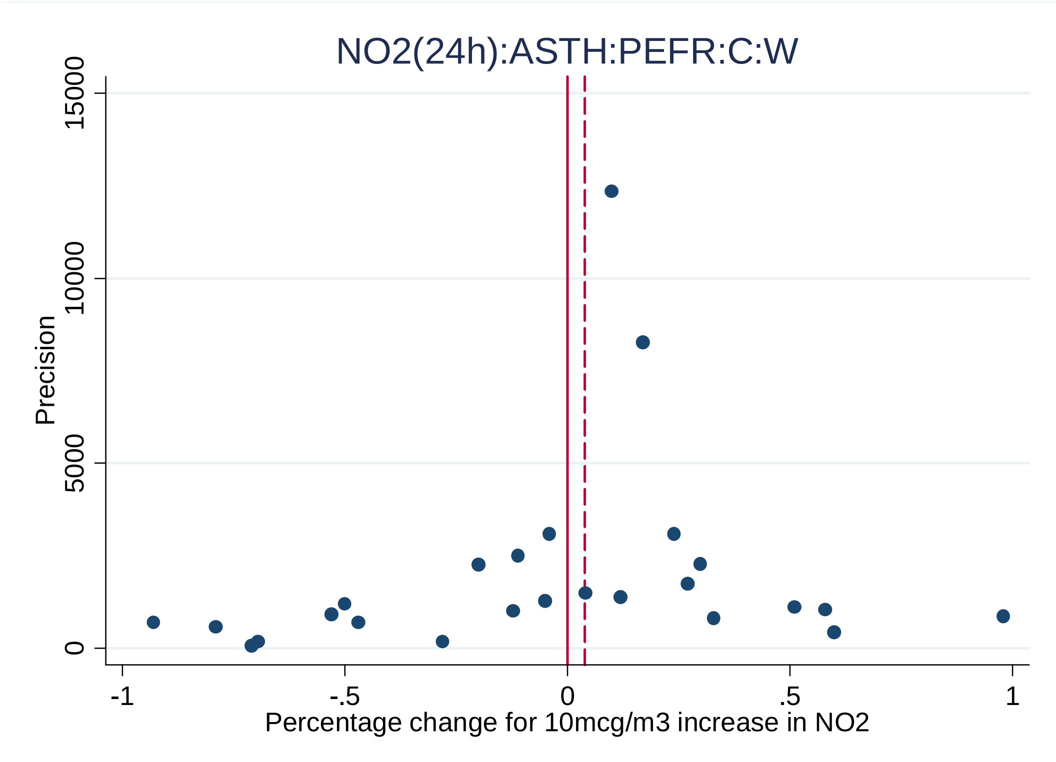
Panel Studies NO_2

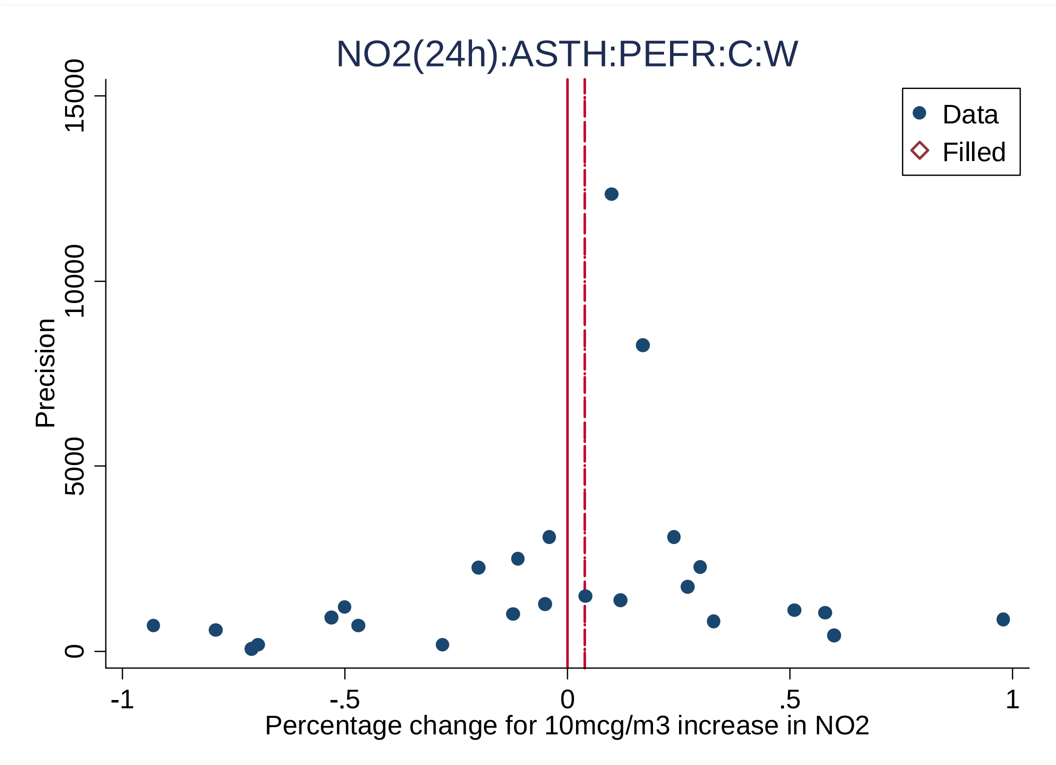
Set 5



Panel Studies NO_2

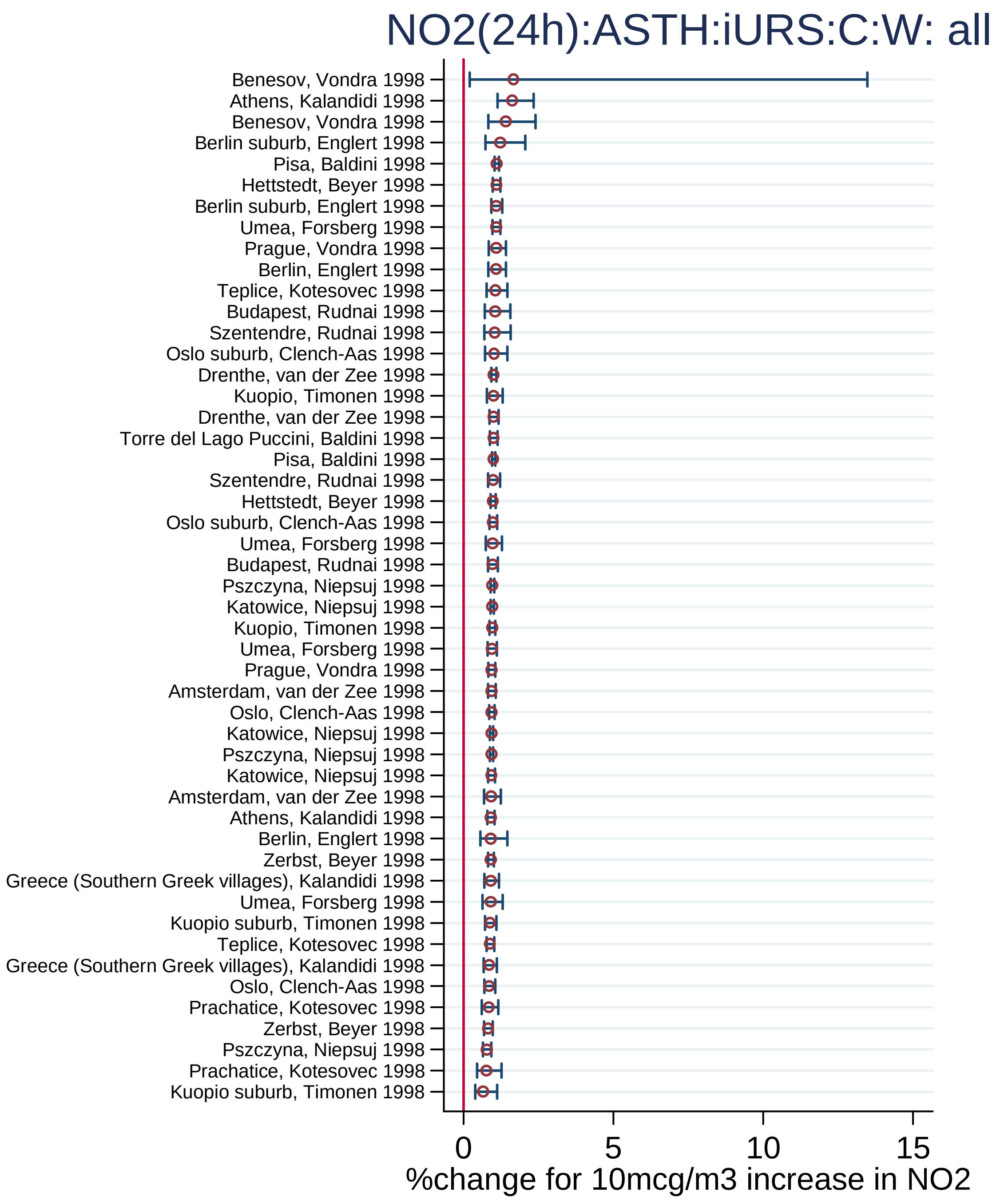
Set 5





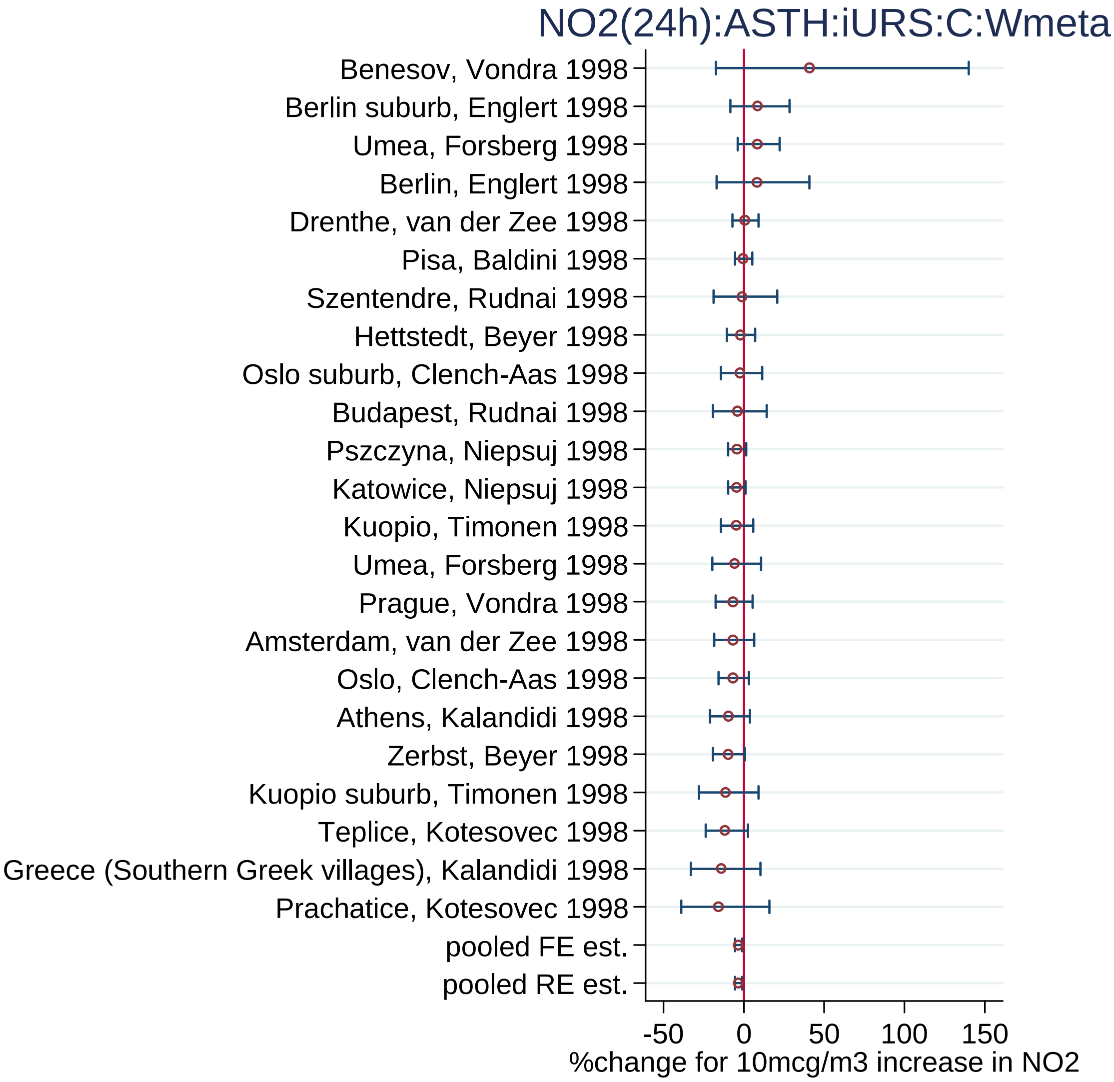
Panel Studies NO_2

Set 6



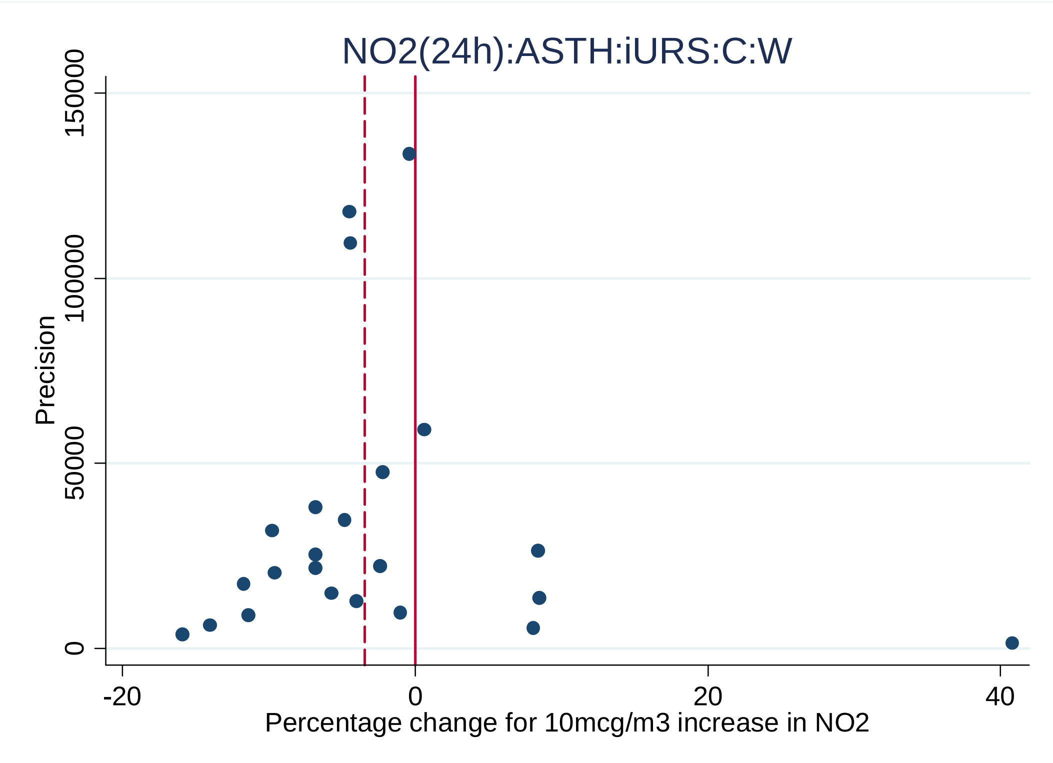
Panel Studies NO_2

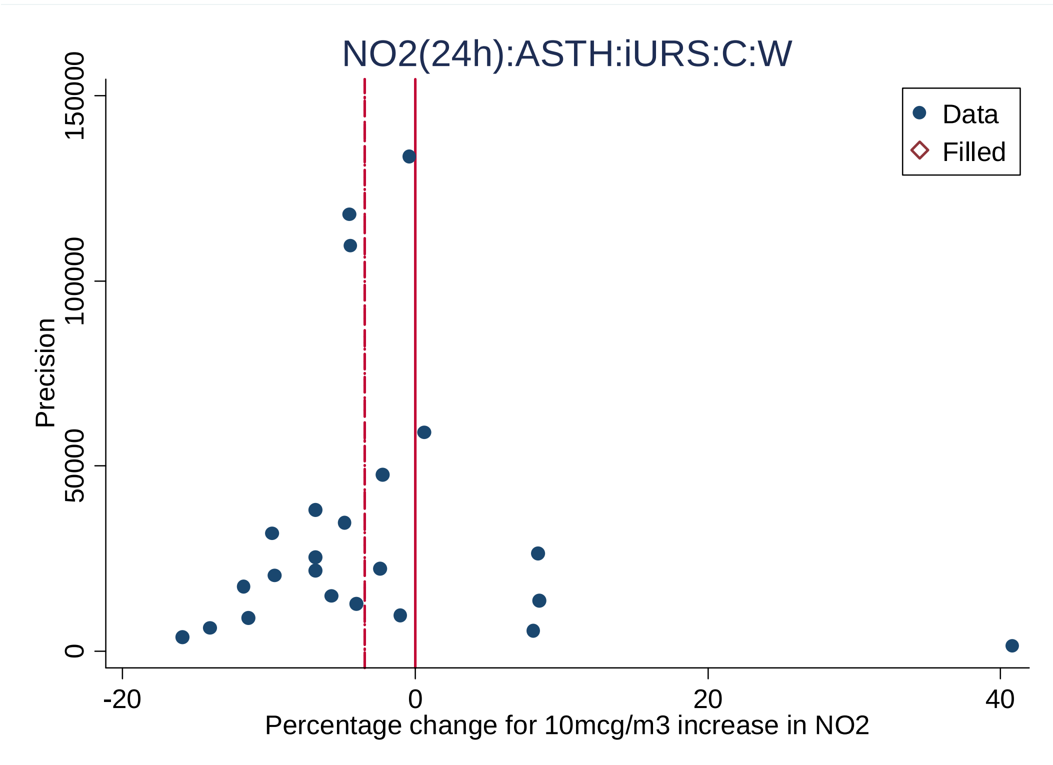
Set 6



Panel Studies NO_2

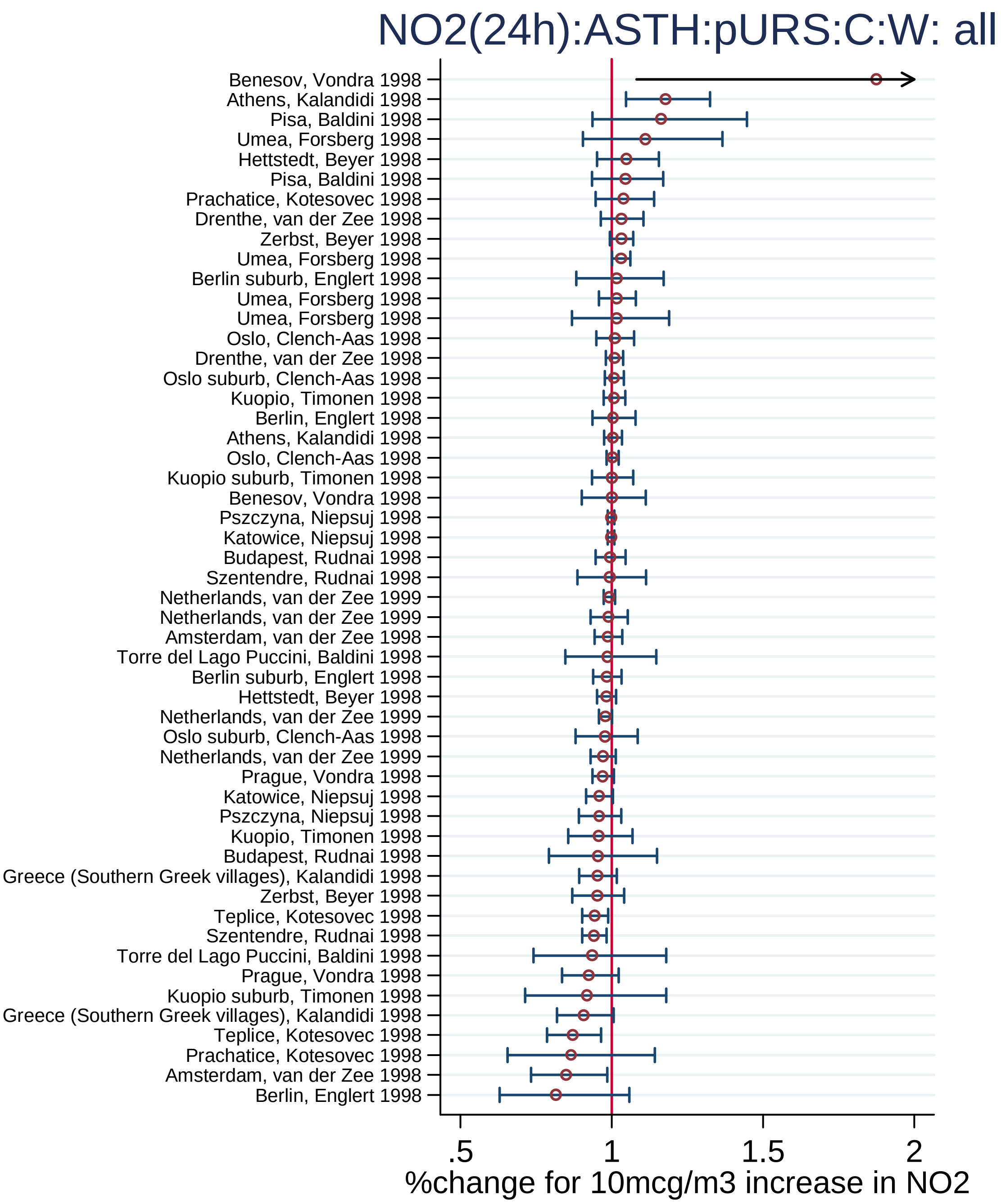
Set 6





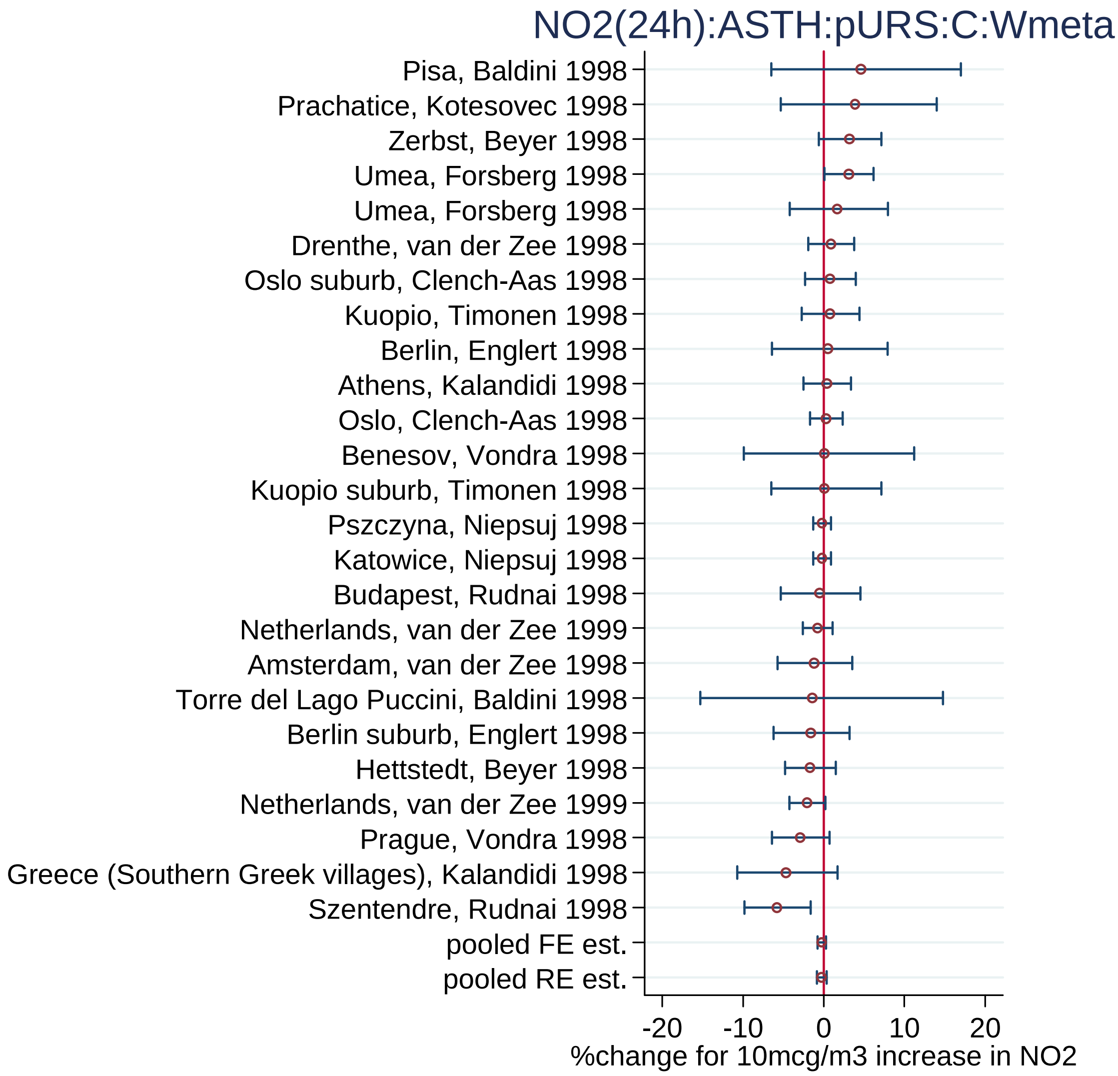
Panel Studies NO_2

Set 7



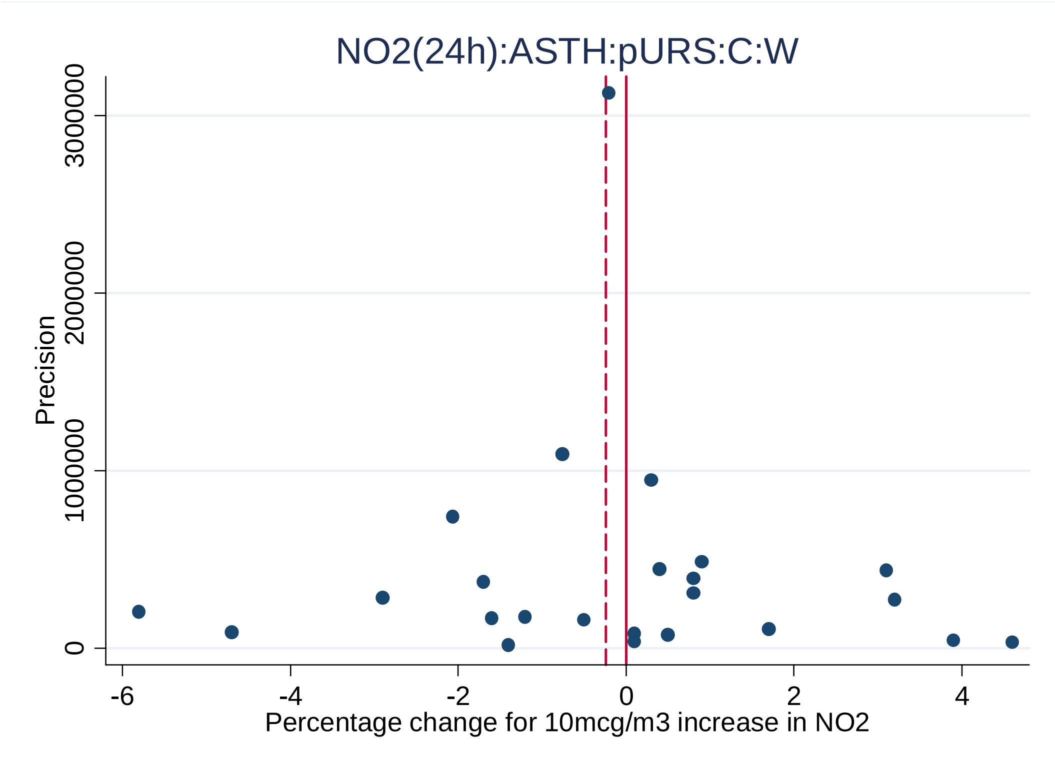
Panel Studies NO_2

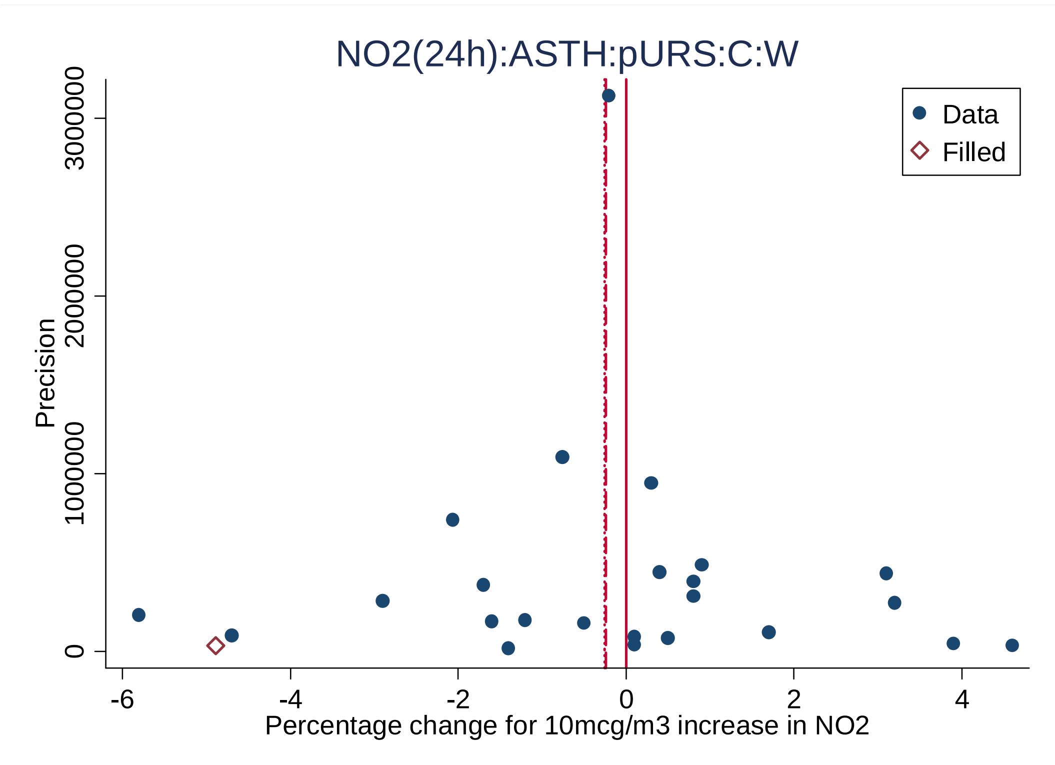
Set 7



Panel Studies NO_2

Set 7



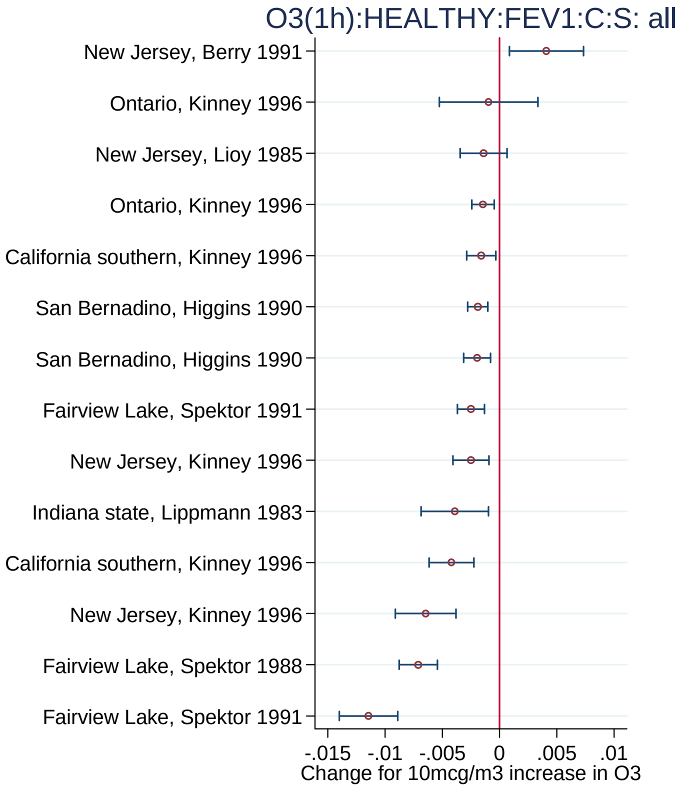


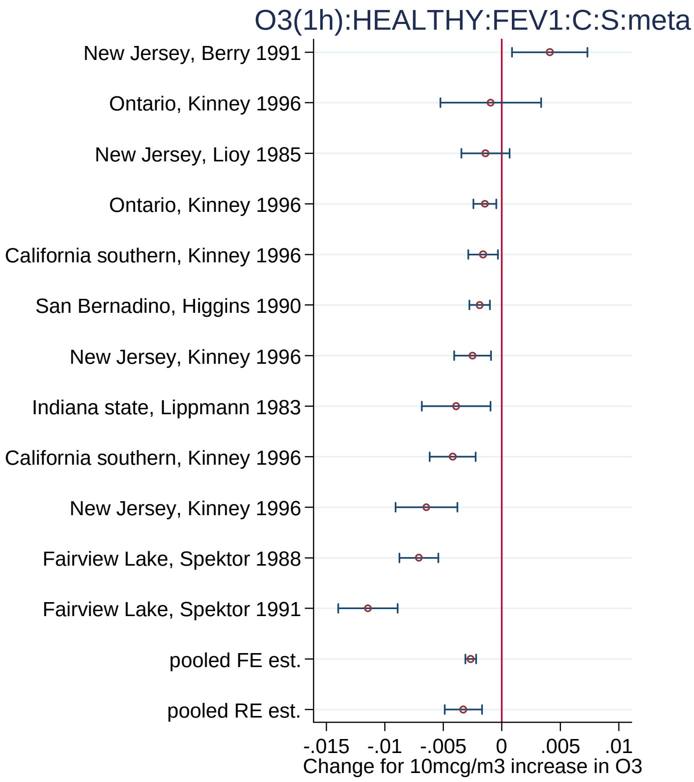
Panel Studies: O_3

Set No.	Refman id	Access id	Cities, author and date	Panel Group	Outcome	Age group	Averaging time	Lag	Random effects estimate and 95% cl Estimate	Lcl	Ucl
1	730	576	New Jersey, Berry 1991	Healthy	FEV1	child	1 hour	lag 0	0.00	0.00	0.01
	689	892	Ontario, Kinney 1996	Healthy	FEV1	child	1 hour	lag 0	0.00	-0.01	0.00
	736	1097	New Jersey, Lioy 1985	Healthy	FEV1	child	1 hour	lag 0	0.00	0.00	0.00
	689	893	Ontario, Kinney 1996	Healthy	FEV1	child	1 hour	lag 0	0.00	0.00	0.00
	689	895	California southern, Kinney 1996	Healthy	FEV1	child	1 hour	lag 0	0.00	0.00	0.00
	707	883	San Bernadino, Higgins 1990	Healthy	FEV1	child	1 hour	lag 0	0.00	0.00	0.00
	689	992	New Jersey, Kinney 1996	Healthy	FEV1	child	1 hour	lag 0	0.00	0.00	0.00
	720	1095	Indiana state, Lippmann 1983	Healthy	FEV1	child	1 hour	lag 0	0.00	-0.01	0.00
	689	894	California southern, Kinney 1996	Healthy	FEV1	child	1 hour	lag 0	0.00	-0.01	0.00
	689	891	New Jersey, Kinney 1996	Healthy	FEV1	child	1 hour	lag 0	-0.01	-0.01	0.00
	738	2687	Fairview Lake, Spektor 1988	Healthy	FEV1	child	1 hour	lag 0	-0.01	-0.01	-0.01
	739	3763	Fairview Lake, Spektor 1991	Healthy	FEV1	child	1 hour	lag 0	-0.01	-0.01	-0.01
2	730	639	New Jersey, Berry 1991	Healthy	FVC	child	1 hour	lag 0	0.00	0.00	0.01
	736	1096	New Jersey, Lioy 1985	Healthy	FVC	child	1 hour	lag 0	0.00	0.00	0.00
	707	885	San Bernadino, Higgins 1990	Healthy	FVC	child	1 hour	lag 0	0.00	0.00	0.00
	738	2686	Fairview Lake, Spektor 1988	Healthy	FVC	child	1 hour	lag 0	-0.01	-0.01	0.00
	720	1094	Indiana state, Lippmann 1983	Healthy	FVC	child	1 hour	lag 0	-0.01	-0.01	0.00
	739	3762	Fairview Lake, Spektor 1991	Healthy	FVC	child	1 hour	lag 0	-0.01	-0.02	-0.01
3	689	995	California southern, Kinney 1996	Healthy	PEFR	child	1 hour	lag 0	0.65	0.24	1.06
	689	993	Ontario, Kinney 1996	Healthy	PEFR	child	1 hour	lag 0	-0.03	-0.23	0.17
	707	887	San Bernadino, Higgins 1990	Healthy	PEFR	child	1 hour	lag 0	-0.04	-0.25	0.17
	730	642	New Jersey, Berry 1991	Healthy	PEFR	child	1 hour	lag 0	-0.30	-0.99	0.38
	689	994	California southern, Kinney 1996	Healthy	PEFR	child	1 hour	lag 0	-0.33	-0.79	0.13
	689	897	New Jersey, Kinney 1996	Healthy	PEFR	child	1 hour	lag 0	-0.60	-1.07	-0.13
	689	898	Ontario, Kinney 1996	Healthy	PEFR	child	1 hour	lag 0	-0.80	-1.57	-0.02
	736	1098	New Jersey, Lioy 1985	Healthy	PEFR	child	1 hour	lag 0	-0.90	-1.38	-0.41
	739	3764	Fairview Lake, Spektor 1991	Healthy	PEFR	child	1 hour	lag 0	-0.90	-1.26	-0.54
	738	2688	Fairview Lake, Spektor 1988	Healthy	PEFR	child	1 hour	lag 0	-2.03	-2.46	-1.60
4	742	4738	Wageningen, Hoek 1993	unselected	PEFR	child	1 hour	lag 1	-0.40	-1.07	0.27
	727	963	Deurne, Hoek 1993	unselected	PEFR	child	1 hour	lag 1	-0.91	-1.22	-0.59
	727	964	Enkhuizen, Hoek 1993	unselected	PEFR	child	1 hour	lag 1	-1.07	-2.18	0.03
	727	962	Zeist, Hoek 1993	unselected	PEFR	child	1 hour	lag 1	-1.27	-1.68	-0.86

Panel Studies O_3

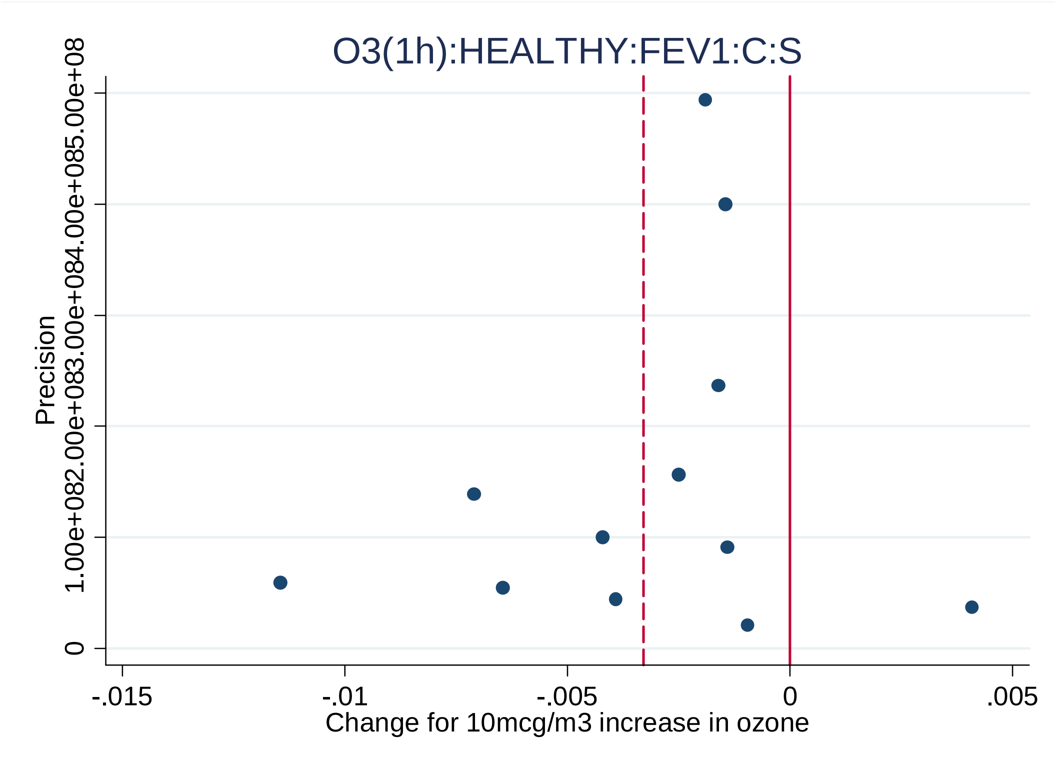
Set 1

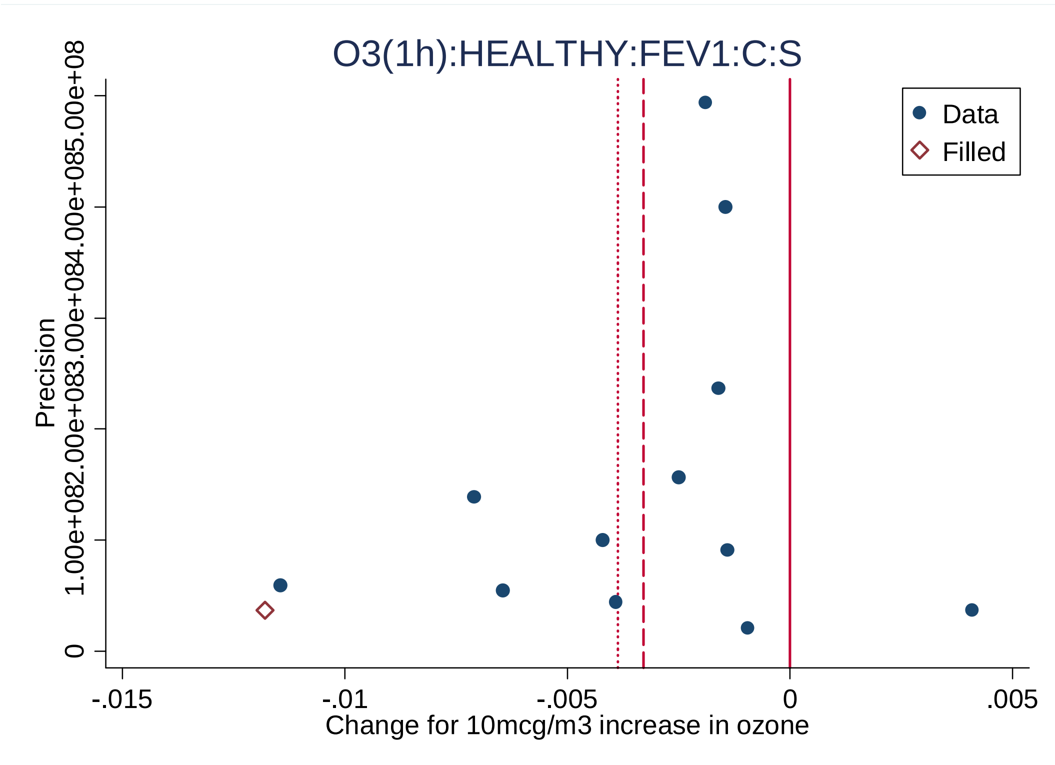




Panel Studies O_3

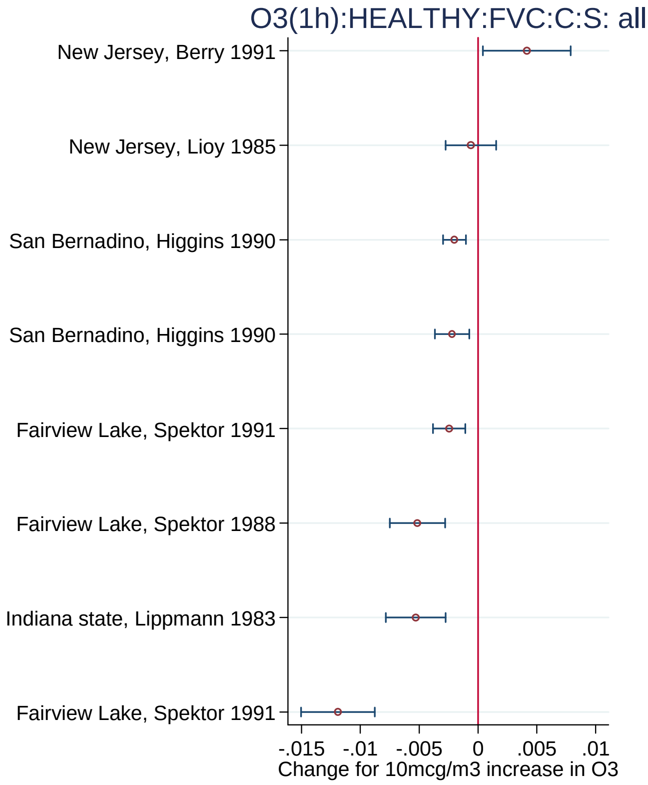
Set 1

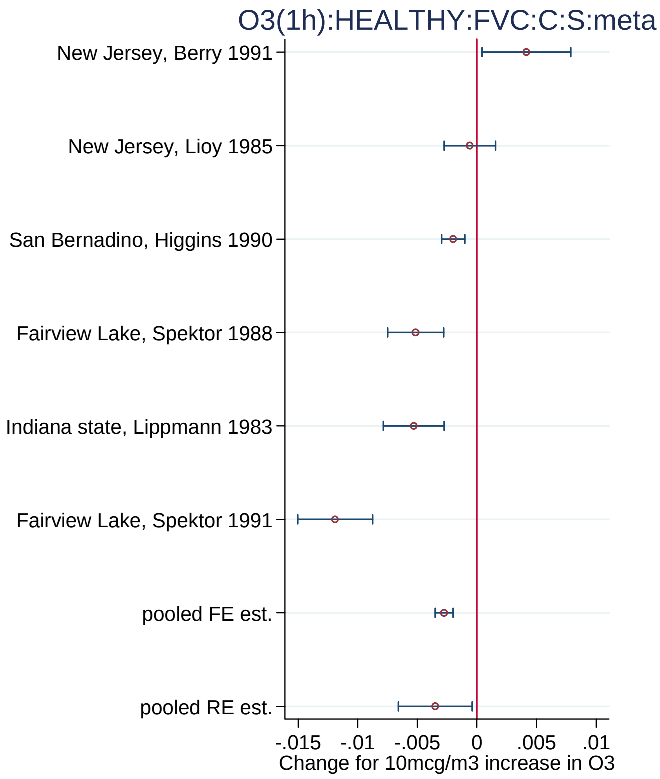




Panel Studies O_3

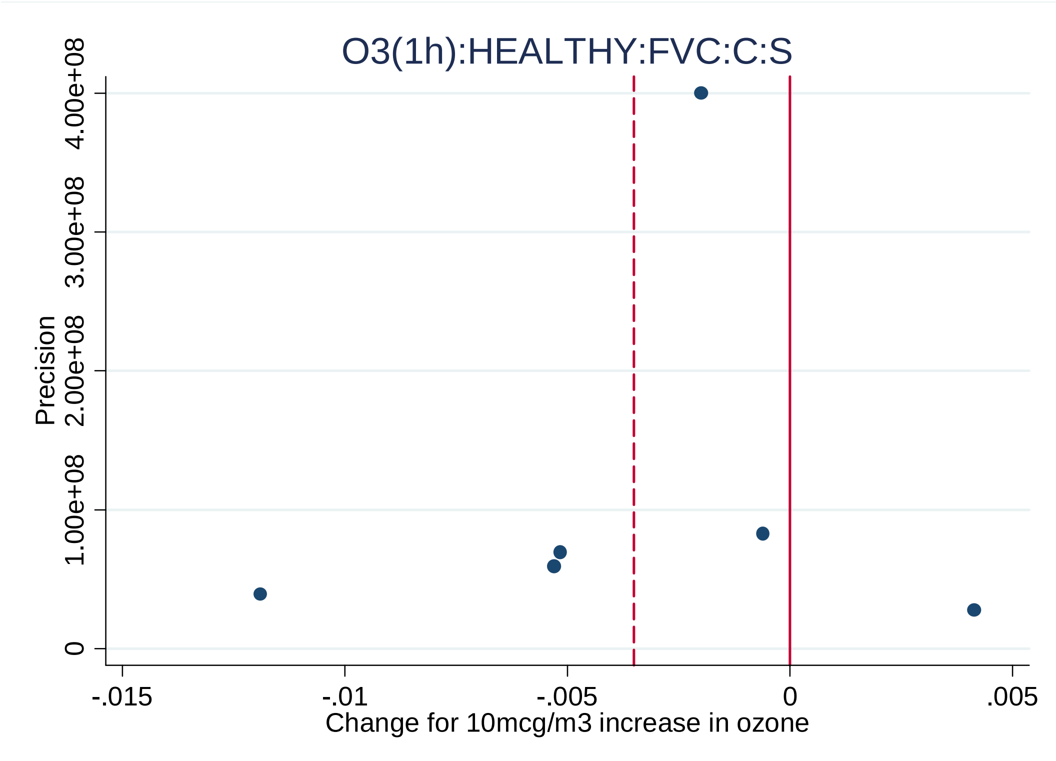
Set 2

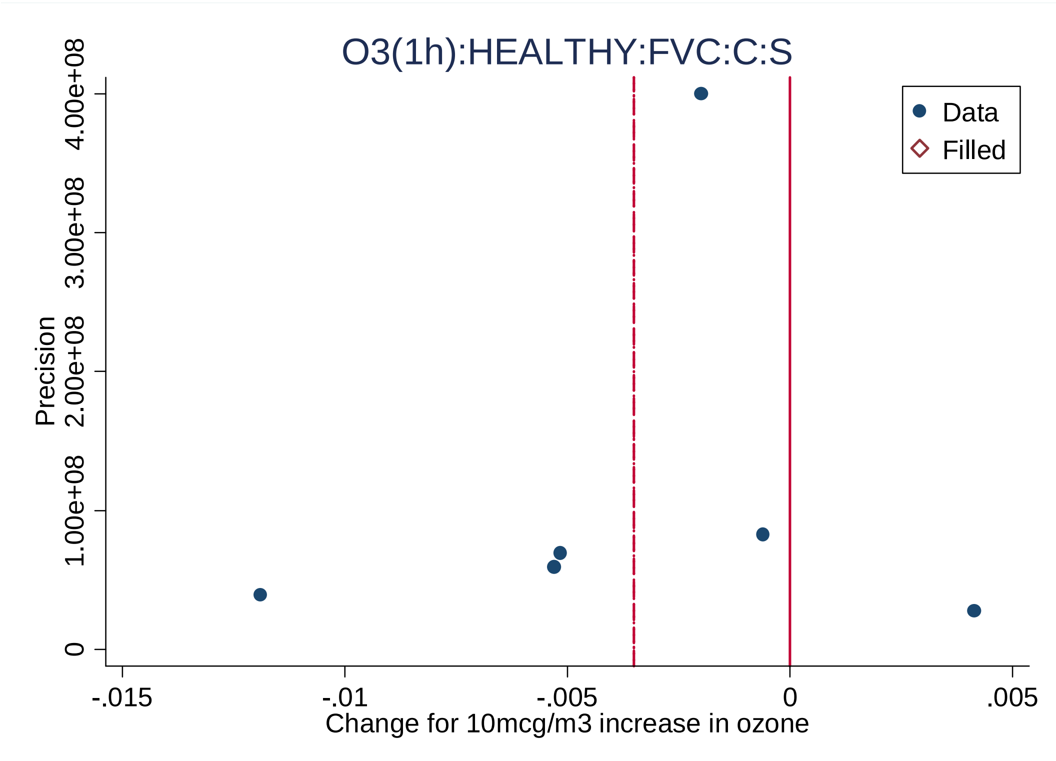




Panel Studies O_3

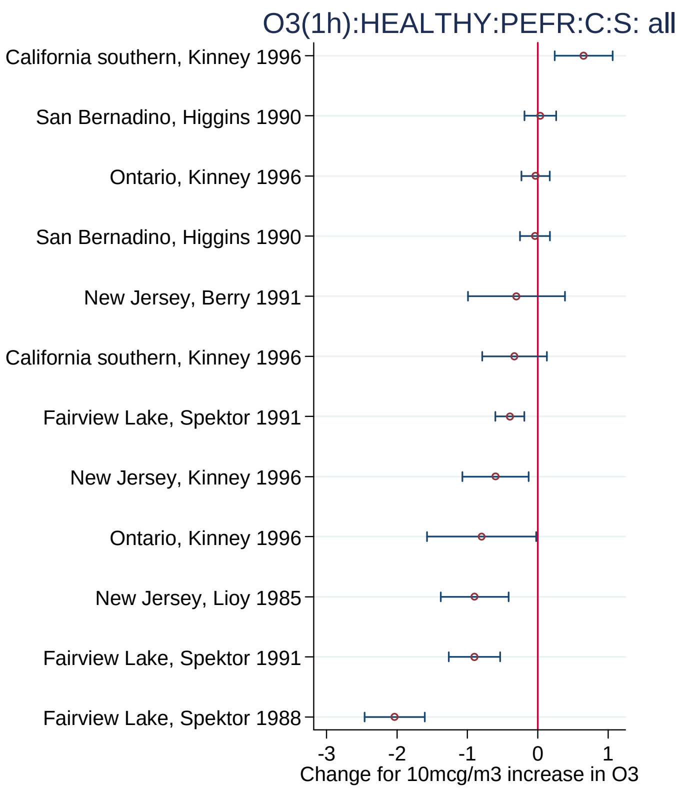
Set 2

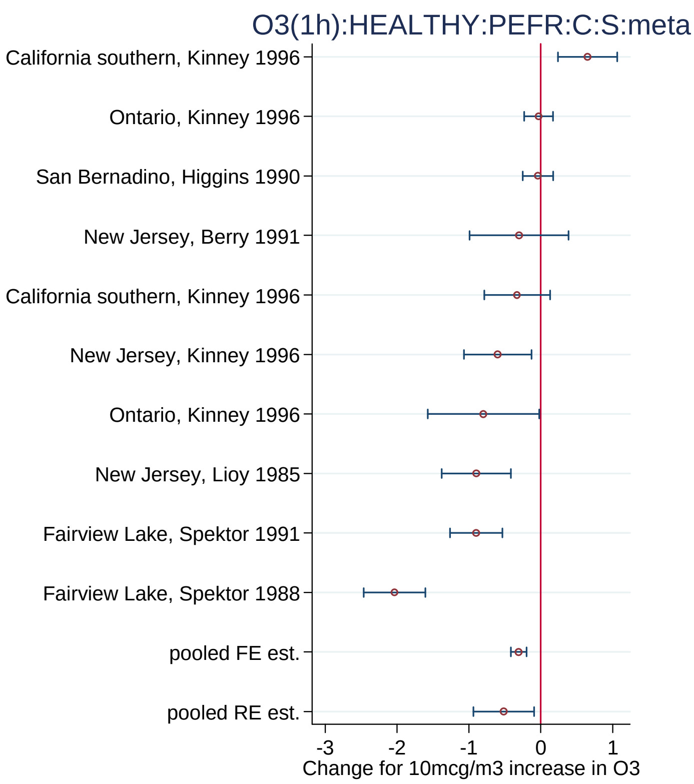




Panel Studies O_3

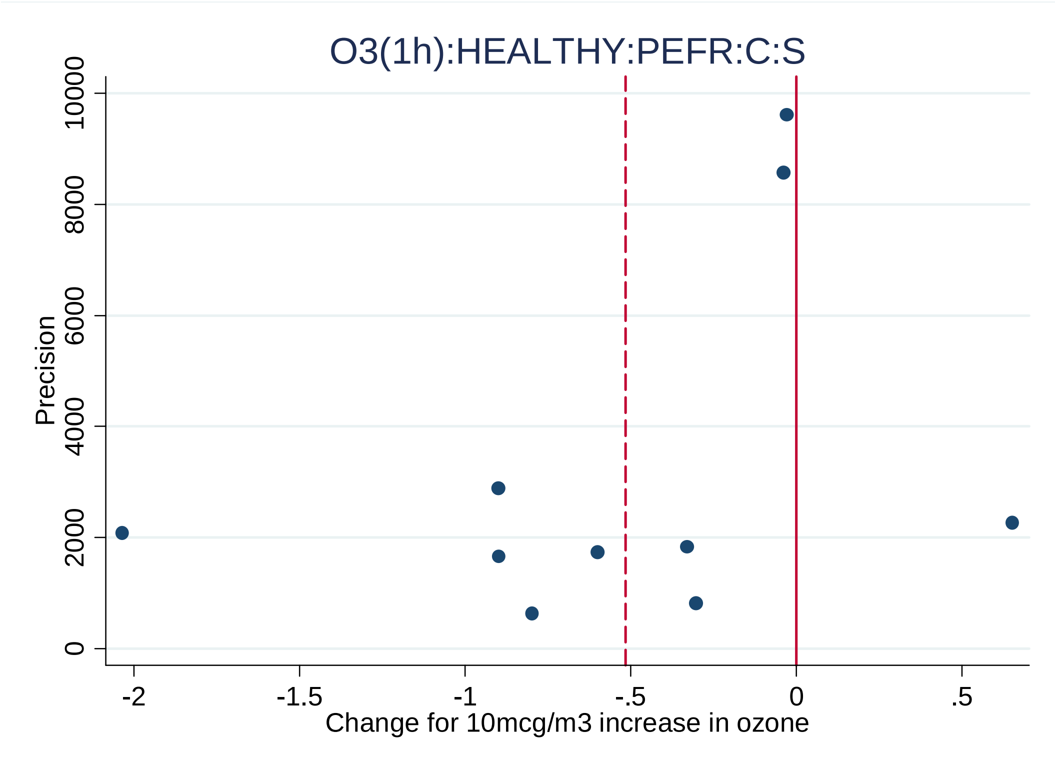
Set 3

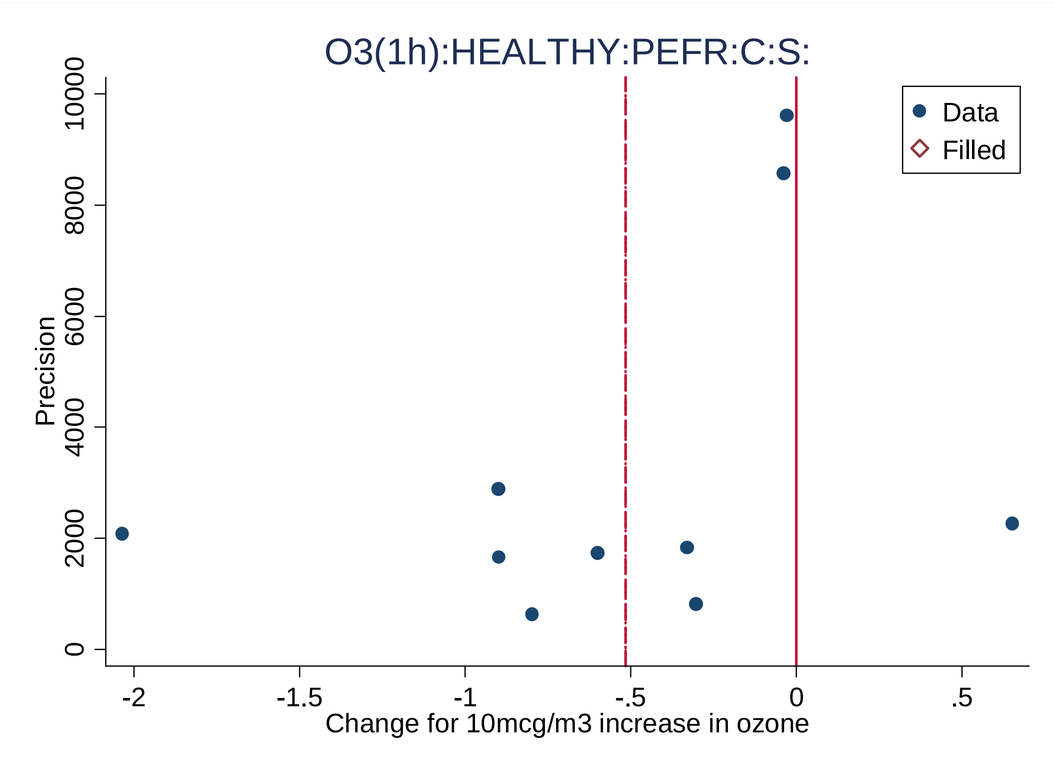




Panel Studies O_3

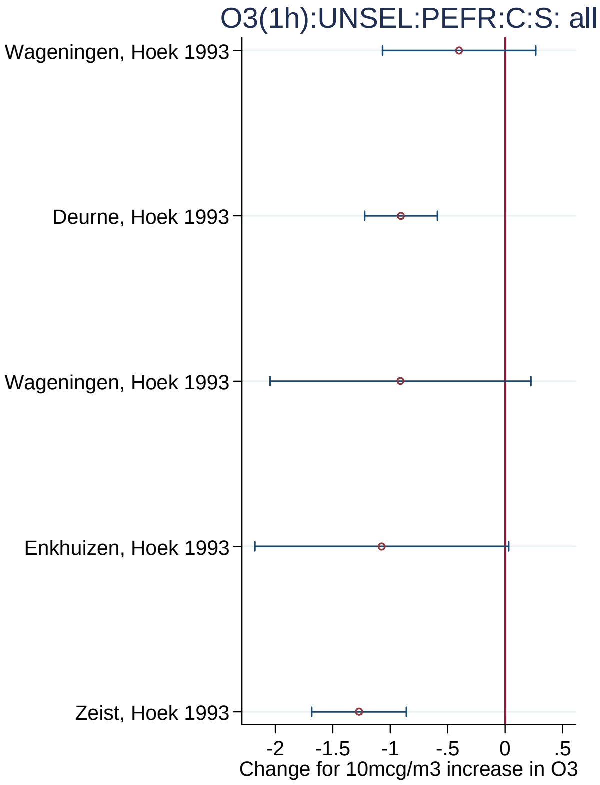
Set 3

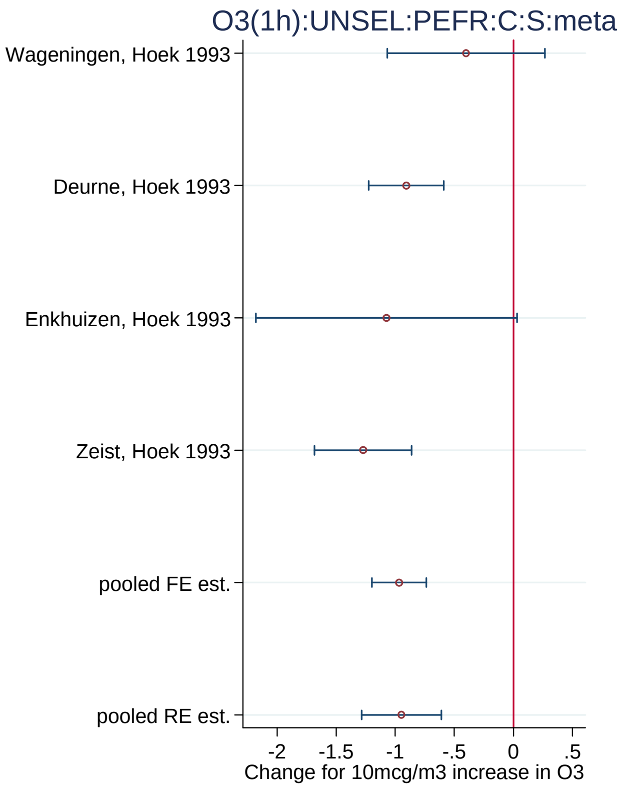




Panel Studies O_3

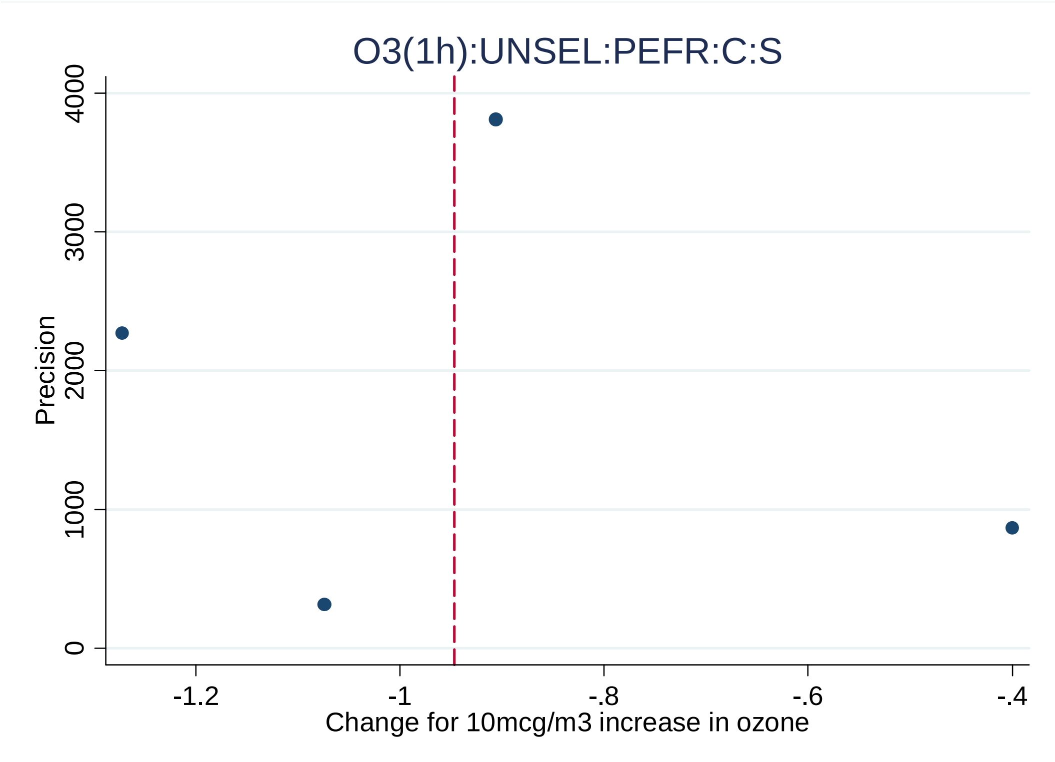
Set 4

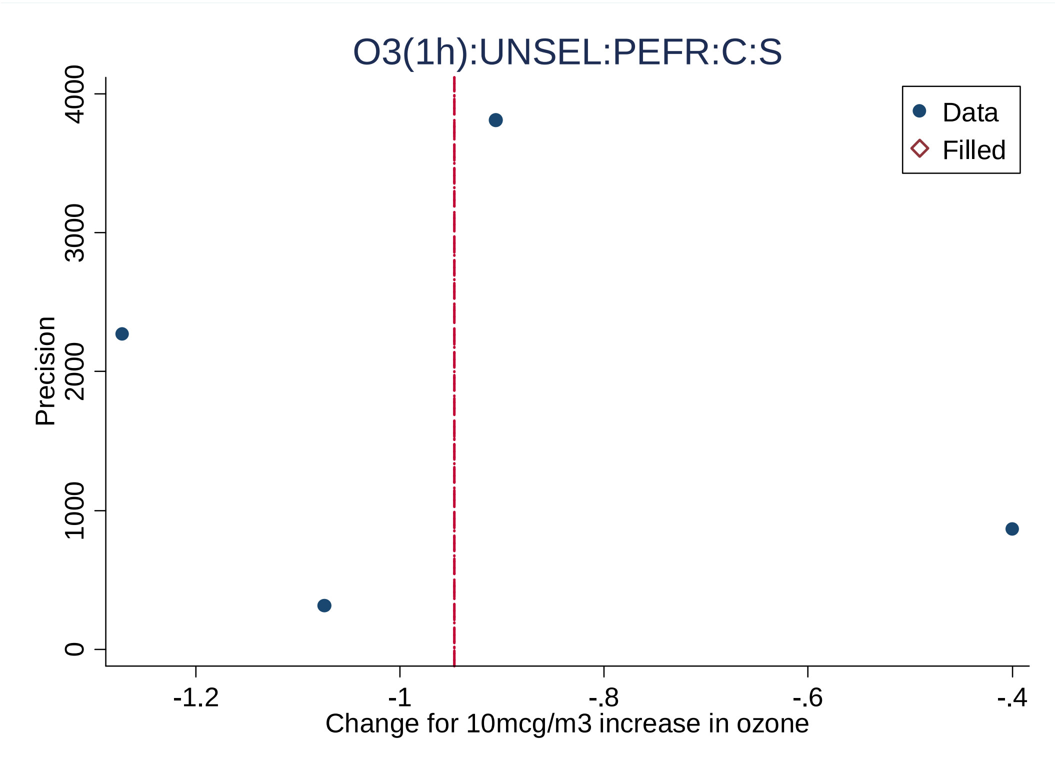




Panel Studies O_3

Set 4





Panel Studies: SO_2

Set No.	Refman id	Access id	Cities, author and date	Panel Group	Outcome	Age group	Averaging time	Lag	Random effects estimate and 95% cl: Estimate	Lcl	Ucl
1	486	1331	Oslo suburb, Clench-Aas 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	2.83	1.08	7.46
	486	628	Oslo, Clench-Aas 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.98	0.85	4.61
	477	2018	Torre del Lago Puccini, Baldini 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.27	0.99	1.62
	479	1029	Rabka, Haluszka 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.17	0.68	2.01
	484	2304	Berlin suburb, Englert 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.16	1.02	1.32
	485	3347	Drenthe, van der Zee 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.07	0.85	1.35
	480	4885	Katowice, Niepsuj 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.05	0.98	1.13
	478	124	Budapest, Rudnai 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.04	0.90	1.20
	481	3054	Prague, Vondra 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	1.02	1.00	1.05
	483	1938	Hettstedt, Beyer 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.99	0.97	1.01
	481	3086	Benesov, Vondra 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.97	0.84	1.13
	479	1023	Krakow, Haluszka 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.97	0.87	1.08
	483	1966	Zerbst, Beyer 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.96	0.89	1.03
	482	1623	Teplice, Kotesovec 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.96	0.84	1.09
	477	2010	Pisa, Baldini 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.95	0.79	1.14
	476	1753	Athens, Kalandidi 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.95	0.84	1.07
	480	4886	Pszczyna, Niepsuj 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.95	0.88	1.02
	484	2328	Berlin, Englert 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.94	0.83	1.06
	478	155	Szentendre, Rudnai 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.92	0.82	1.03
	485	3315	Amsterdam, van der Zee 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.90	0.70	1.16
	487	4069	Kuopio, Timonen 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.86	0.65	1.14
	482	1631	Prachatice, Kotesovec 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.85	0.66	1.09
	489	3547	Umea, Forsberg 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.75	0.37	1.48
	489	3436	Umea, Forsberg 1998	Symptomatic	iLRS(O)	child	24 hours	lag 1	0.28	0.06	1.24
2	486	1157	Oslo suburb, Clench-Aas 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.63	1.11	2.38
	477	2718	Torre del Lago Puccini, Baldini 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.37	0.67	2.78
	486	1133	Oslo, Clench-Aas 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.05	0.97	1.15
	711	2983	Netherlands, van der Zee 1999	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.05	0.98	1.13
	485	3901	Drenthe, van der Zee 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.03	0.97	1.08
	480	1195	Katowice, Niepsuj 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.03	1.00	1.06
	483	3798	Zerbst, Beyer 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.02	0.99	1.05
	484	2384	Berlin suburb, Englert 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.02	0.97	1.07
	482	1559	Teplice, Kotesovec 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.01	0.99	1.03
	479	1365	Krakow, Haluszka 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.01	0.99	1.02
	482	1551	Prachatice, Kotesovec 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.01	0.98	1.04
	92	4649	Sokolov, Peters 1997	Symptomatic	pLRS(O)	child	24 hours	lag 0	1.00	1.00	1.01
	481	3046	Prague, Vondra 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	1.00	1.00	1.01
	476	1809	Athens, Kalandidi 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.99	0.96	1.03
	483	2655	Hettstedt, Beyer 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.99	0.98	1.00
	485	1886	Amsterdam, van der Zee 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.99	0.89	1.10
	478	187	Budapest, Rudnai 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.99	0.96	1.01
	481	3654	Benesov, Vondra 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.99	0.96	1.01
	480	1203	Pszczyna, Niepsuj 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.98	0.94	1.01
	711	3862	Netherlands, van der Zee 1999	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.98	0.91	1.05
	478	219	Szentendre, Rudnai 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.97	0.95	1.00
	484	2408	Berlin, Englert 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.96	0.93	0.99
	479	1371	Rabka, Haluszka 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.95	0.88	1.03
	487	4133	Kuopio, Timonen 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.94	0.86	1.02
	489	3412	Umea, Forsberg 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.92	0.69	1.22
	477	3725	Pisa, Baldini 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.88	0.58	1.35
	489	3404	Umea, Forsberg 1998	Symptomatic	pLRS(O)	child	24 hours	lag 1	0.53	0.28	0.99
3	479	4828	Krakow, Haluszka 1998	Symptomatic	iM	child	24 hours	lag 1	2.16	0.74	6.31
	489	3579	Umea, Forsberg 1998	Symptomatic	iM	child	24 hours	lag 1	1.54	0.55	4.28
	489	3571	Umea, Forsberg 1998	Symptomatic	iM	child	24 hours	lag 1	1.50	0.24	9.60
	485	1874	Drenthe, van der Zee 1998	Symptomatic	iM	child	24 hours	lag 1	1.20	0.84	1.72
	477	2734	Torre del Lago Puccini, Baldini 1998	Symptomatic	iM	child	24 hours	lag 1	1.12	0.42	2.96
	482	1498	Prachatice, Kotesovec 1998	Symptomatic	iM	child	24 hours	lag 1	1.12	0.74	1.69
	485	1873	Amsterdam, van der Zee 1998	Symptomatic	iM	child	24 hours	lag 1	1.10	0.65	1.88
	481	3126	Prague, Vondra 1998	Symptomatic	iM	child	24 hours	lag 1	1.01	1.00	1.02
	481	3127	Benesov, Vondra 1998	Symptomatic	iM	child	24 hours	lag 1	0.95	0.68	1.33
	484	2352	Berlin suburb, Englert 1998	Symptomatic	iM	child	24 hours	lag 1	0.92	0.72	1.18
	483	1970	Hettstedt, Beyer 1998	Symptomatic	iM	child	24 hours	lag 1	0.91	0.77	1.08
	478	237	Szentendre, Rudnai 1998	Symptomatic	iM	child	24 hours	lag 1	0.91	0.68	1.21
	484	2344	Berlin, Englert 1998	Symptomatic	iM	child	24 hours	lag 1	0.90	0.71	1.14
	483	2643	Zerbst, Beyer 1998	Symptomatic	iM	child	24 hours	lag 1	0.87	0.69	1.09
	476	1823	Athens, Kalandidi 1998	Symptomatic	iM	child	24 hours	lag 1	0.83	0.65	1.06
	477	2726	Pisa, Baldini 1998	Symptomatic	iM	child	24 hours	lag 1	0.82	0.28	2.42
	478	236	Budapest, Rudnai 1998	Symptomatic	iM	child	24 hours	lag 1	0.81	0.64	1.03

4	486	1013	Oslo suburb, Clench-Aas 1998	Symptomatic	pM	child	24 hours	lag 1	1.16	0.87	1.54
	477	2034	Torre del Lago Puccini, Baldini 1998	Symptomatic	pM	child	24 hours	lag 1	1.13	0.78	1.64
	485	3926	Drenthe, van der Zee 1998	Symptomatic	pM	child	24 hours	lag 1	1.12	0.98	1.28
	711	3842	Netherlands, van der Zee 1999	Symptomatic	pM	child	24 hours	lag 1	1.10	1.03	1.17
	487	2850	Kuopio, Timonen 1998	Symptomatic	pM	child	24 hours	lag 1	1.10	0.93	1.29
	482	1482	Teplice, Kotesovec 1998	Symptomatic	pM	child	24 hours	lag 1	1.06	0.90	1.24
	711	4355	Netherlands, van der Zee 1999	Symptomatic	pM	child	24 hours	lag 1	1.04	0.95	1.15
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	480	1251	Pszczyna, Niepsuj 1998	Symptomatic	pM	child	24 hours	lag 1	1.01	0.98	1.05
	478	259	Budapest, Rudnai 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.97	1.04
	481	3110	Prague, Vondra 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.99	1.02
	483	3806	Zerbst, Beyer 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.99	1.01
	478	260	Szentendre, Rudnai 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.96	1.04
	483	3802	Hettstedt, Beyer 1998	Symptomatic	pM	child	24 hours	lag 1	1.00	0.99	1.00
	476	1837	Athens, Kalandidi 1998	Symptomatic	pM	child	24 hours	lag 1	0.99	0.95	1.03
	479	1059	Krakow, Haluszka 1998	Symptomatic	pM	child	24 hours	lag 1	0.99	0.95	1.03
	481	3111	Benesov, Vondra 1998	Symptomatic	pM	child	24 hours	lag 1	0.99	0.97	1.00
	484	2432	Berlin suburb, Englert 1998	Symptomatic	pM	child	24 hours	lag 1	0.98	0.94	1.02
	484	2424	Berlin, Englert 1998	Symptomatic	pM	child	24 hours	lag 1	0.95	0.93	0.98
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	482	1490	Prachatice, Kotesovec 1998	Symptomatic	pM	child	24 hours	lag 1	0.95	0.87	1.03
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	477	2026	Pisa, Baldini 1998	Symptomatic	pM	child	24 hours	lag 1	0.90	0.66	1.22
	486	1673	Oslo, Clench-Aas 1998	Symptomatic	pM	child	24 hours	lag 1	0.89	0.64	1.24
5	489	3955	Umea, Forsberg 1998	Symptomatic	PEFR	child	24 hours	lag 1	2.93	-0.32	6.18
	489	3989	Umea, Forsberg 1998	Symptomatic	PEFR	child	24 hours	lag 1	2.12	-0.57	4.81
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	486	1291	Oslo suburb, Clench-Aas 1998	Symptomatic	PEFR	child	24 hours	lag 1	1.12	-2.94	5.18
	479	1353	Rabka, Haluszka 1998	Symptomatic	PEFR	child	24 hours	lag 1	0.89	-0.72	2.50
	477	3693	Torre del Lago Puccini, Baldini 1998	Symptomatic	PEFR	child	24 hours	lag 1	0.89	-2.50	4.28
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	480	5	Pszczyna, Niepsuj 1998	Symptomatic	PEFR	child	24 hours	lag 1	0.21	-0.03	0.45
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	484	2192	Berlin, Englert 1998	Symptomatic	PEFR	child	24 hours	lag 1	0.13	-0.32	0.58
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	479	830	Krakow, Haluszka 1998	Symptomatic	PEFR	child	24 hours	lag 1	0.04	-0.33	0.41
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	81	735	Budapest, Agocs 1997	Symptomatic	PEFR	child	24 hours	lag 1	0.00	-0.66	0.67
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	483	1930	Zerbst, Beyer 1998	Symptomatic	PEFR	child	24 hours	lag 1	-0.03	-0.13	0.07
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	485	3903	Drenthe, van der Zee 1998	Symptomatic	pURS	child	24 hours	lag 1	0.95	0.91	1.00
	477	2702	Torre del Lago Puccini, Baldini 1998	Symptomatic	pURS	child	24 hours	lag 1	0.93	0.48	1.79
	489	3388	Umea, Forsberg 1998	Symptomatic	pURS	child	24 hours	lag 1	0.90	0.70	1.18
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Panel Studies SO_2

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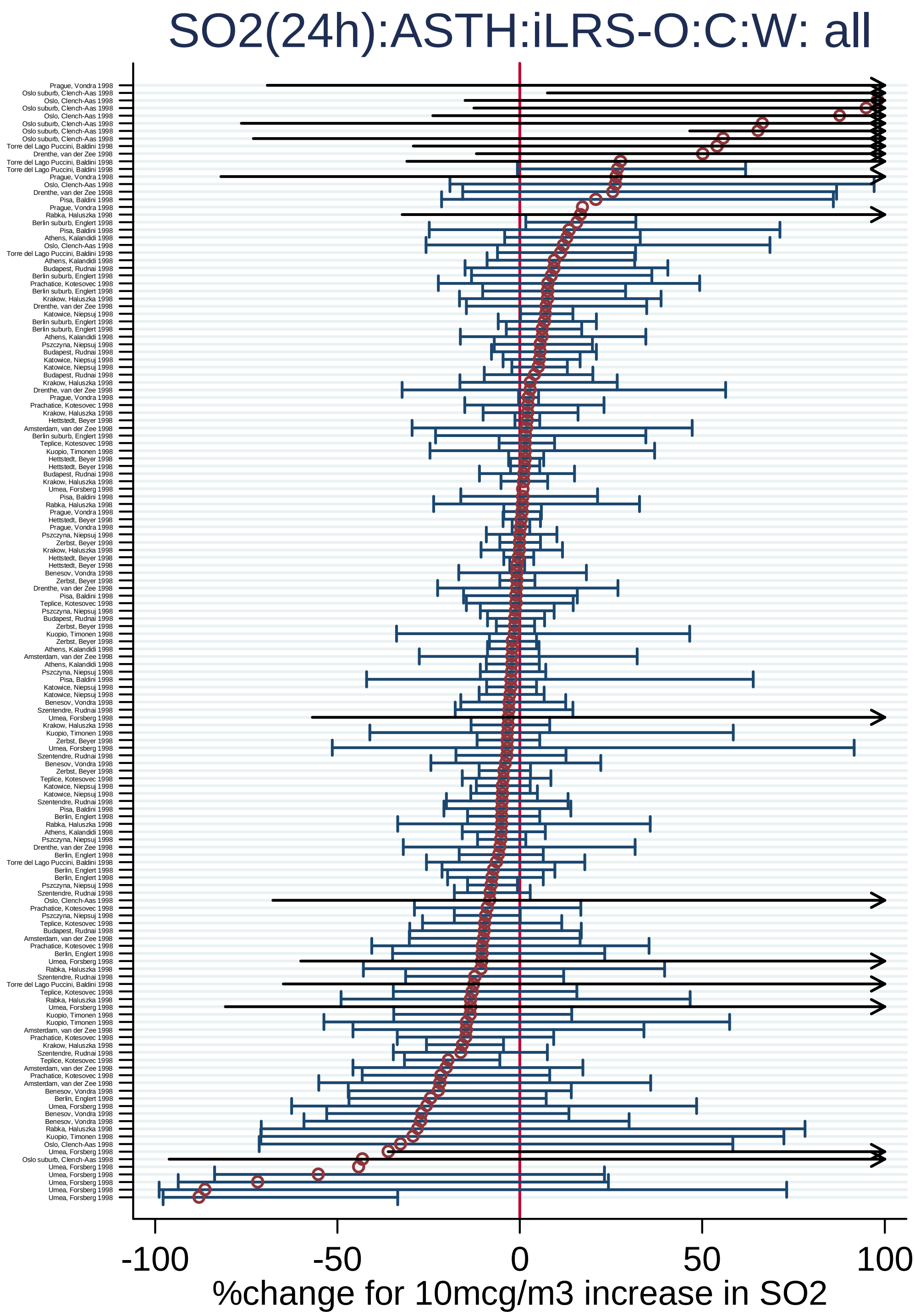

Panel Studies SO_2

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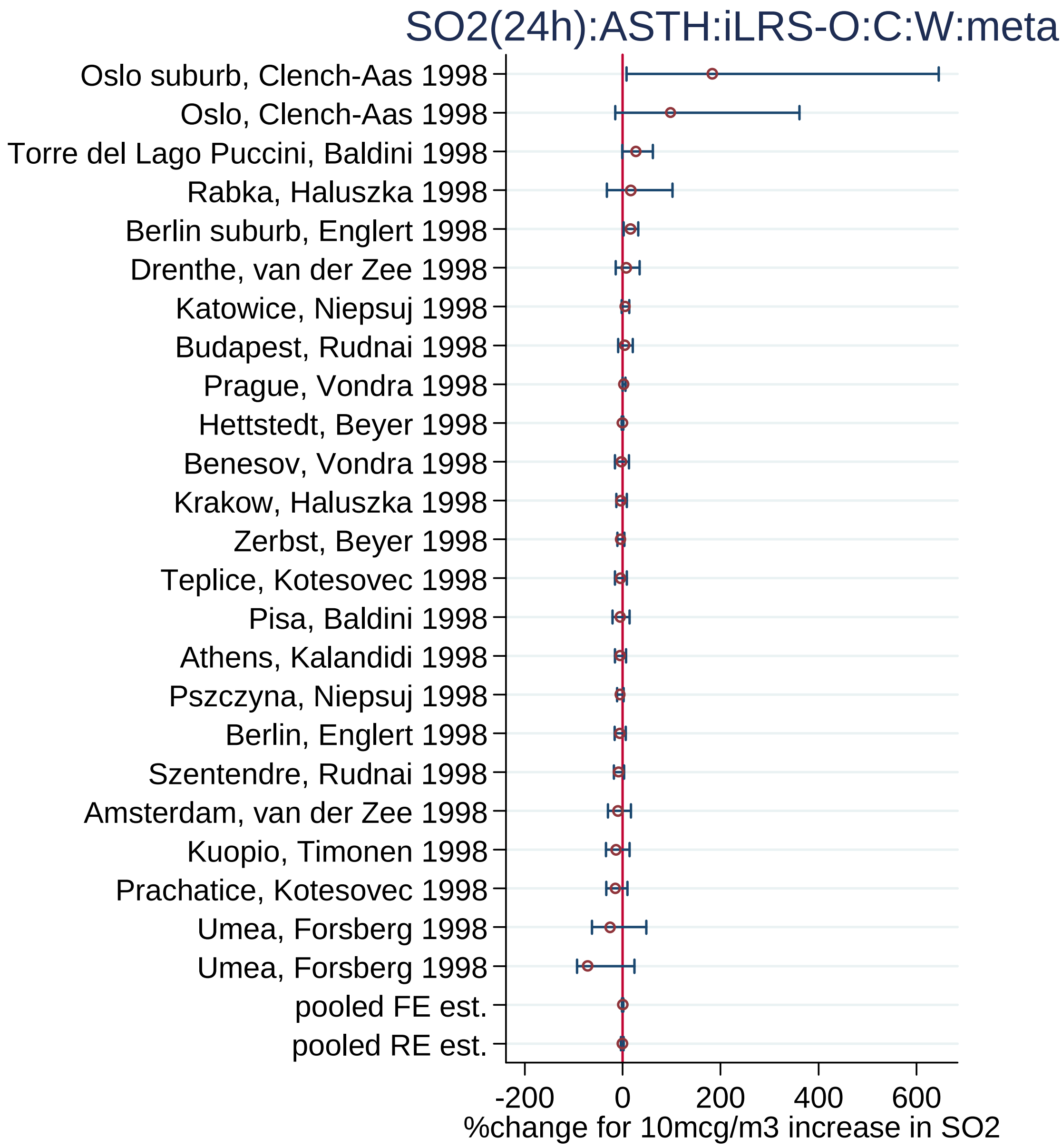

Panel Studies SO_2

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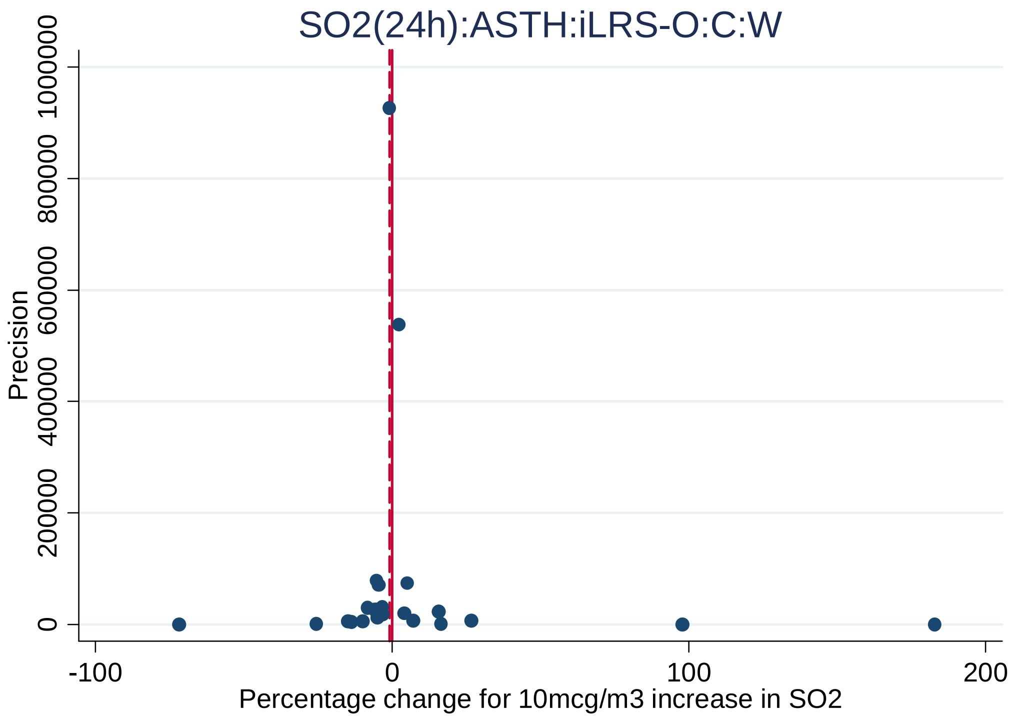

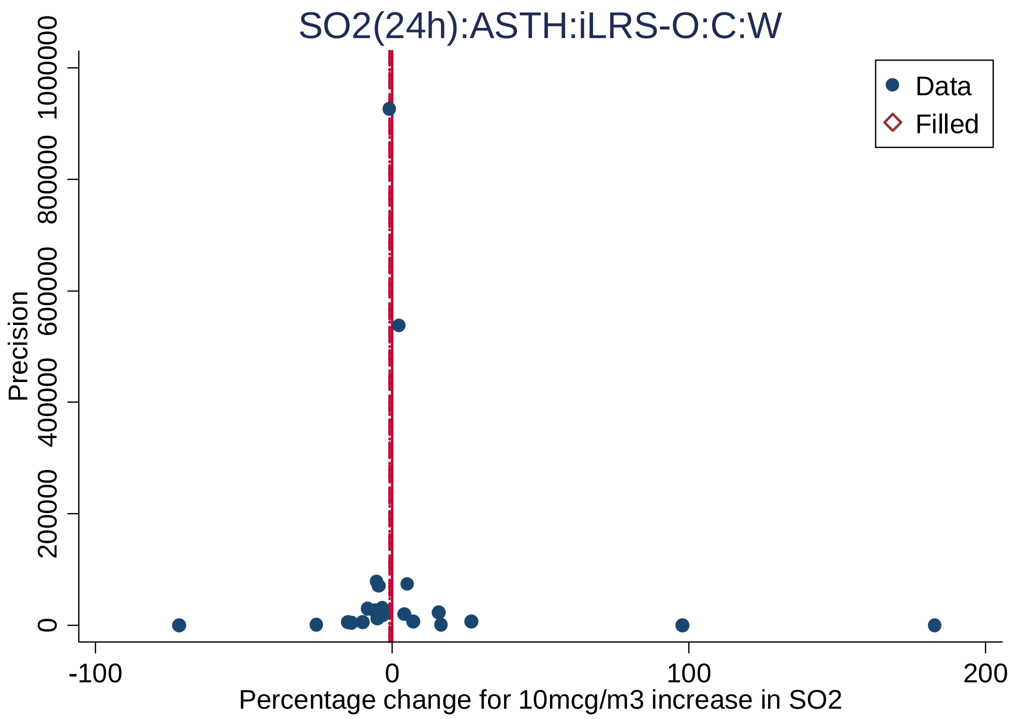

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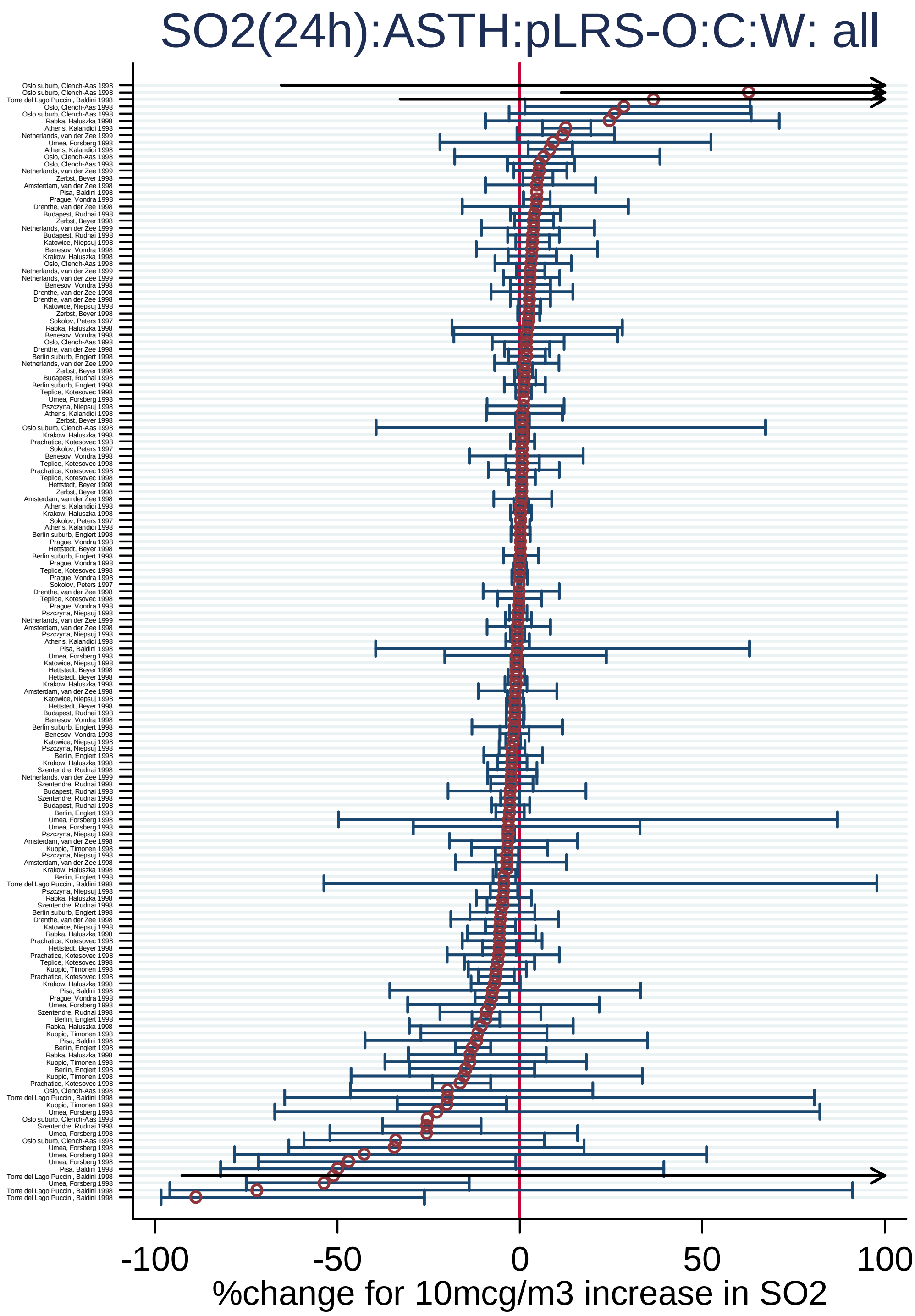

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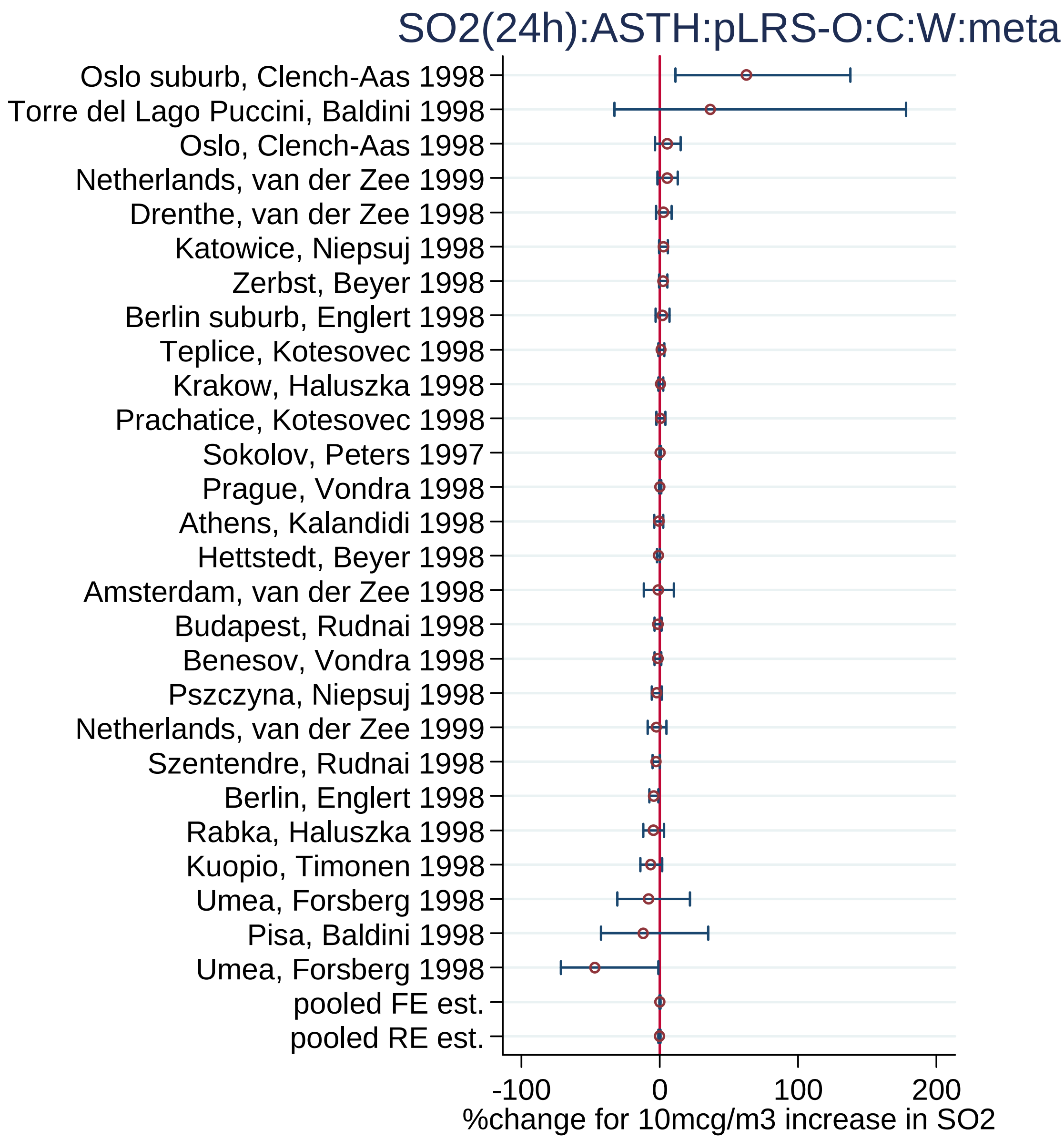

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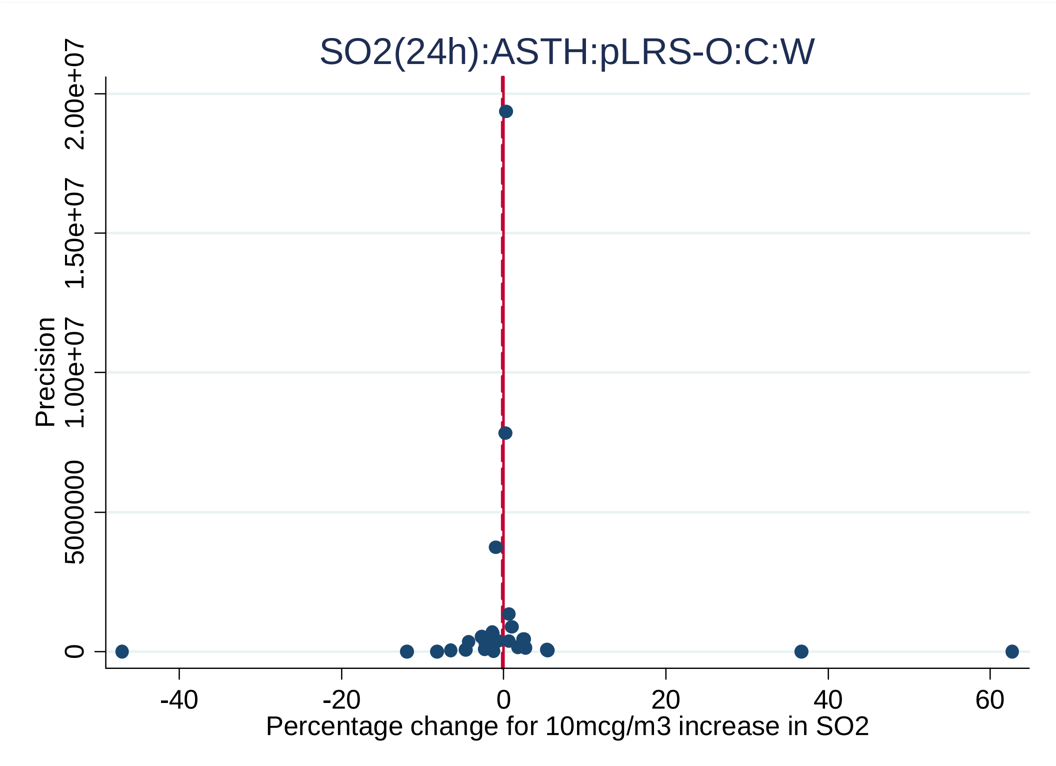

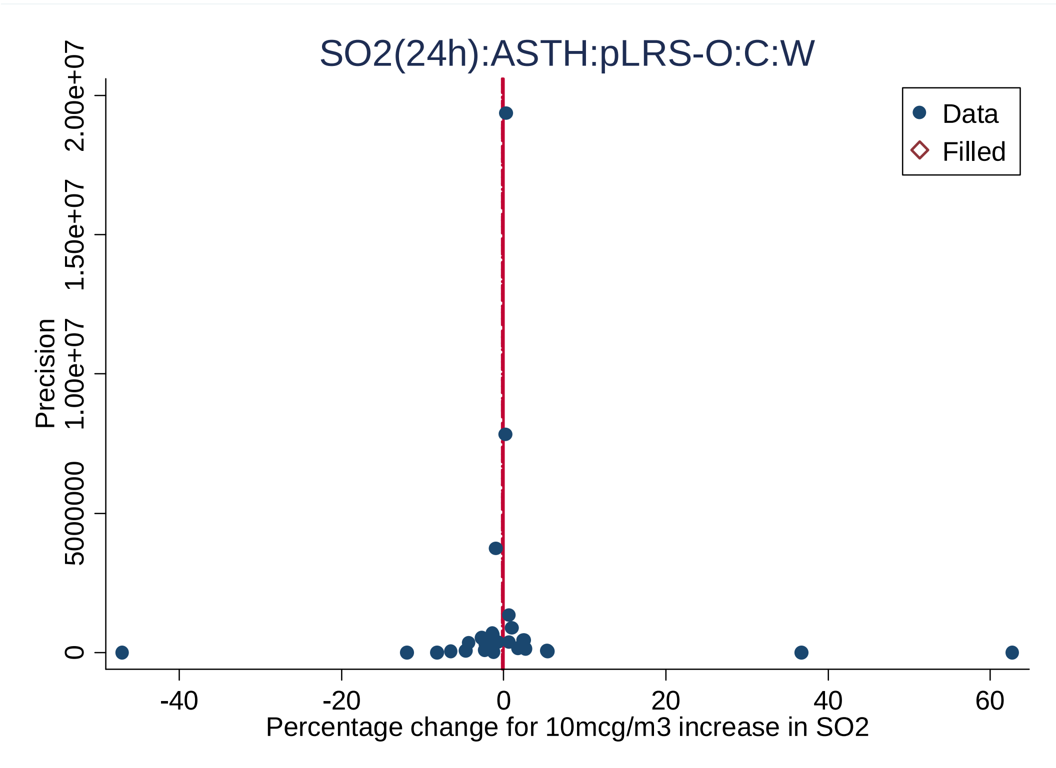

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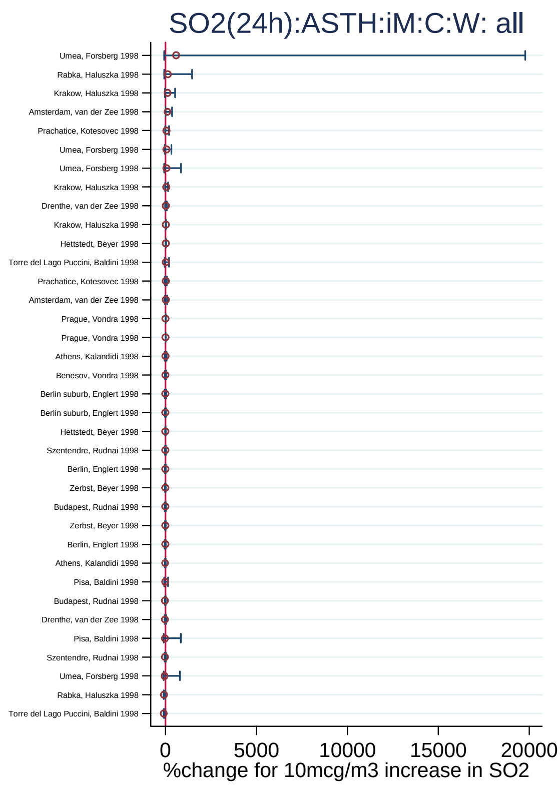

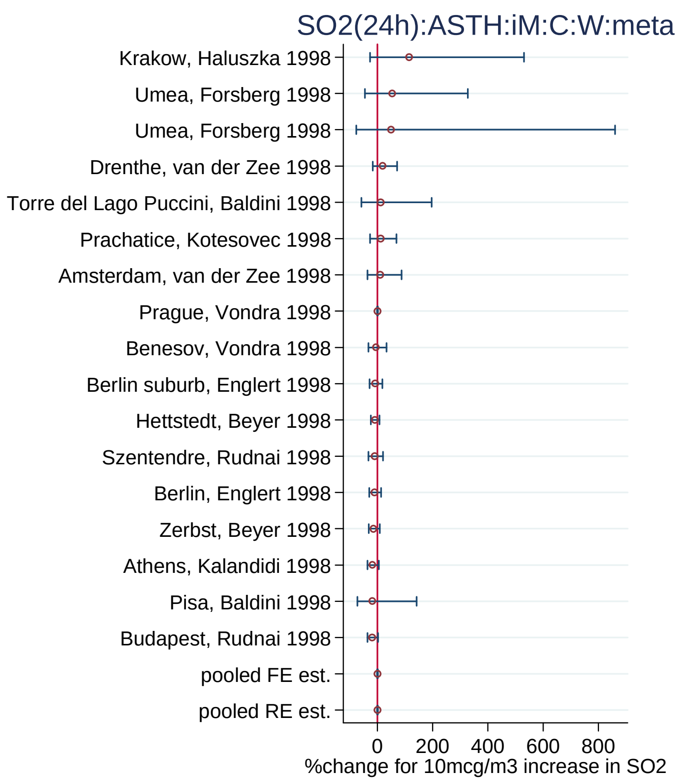

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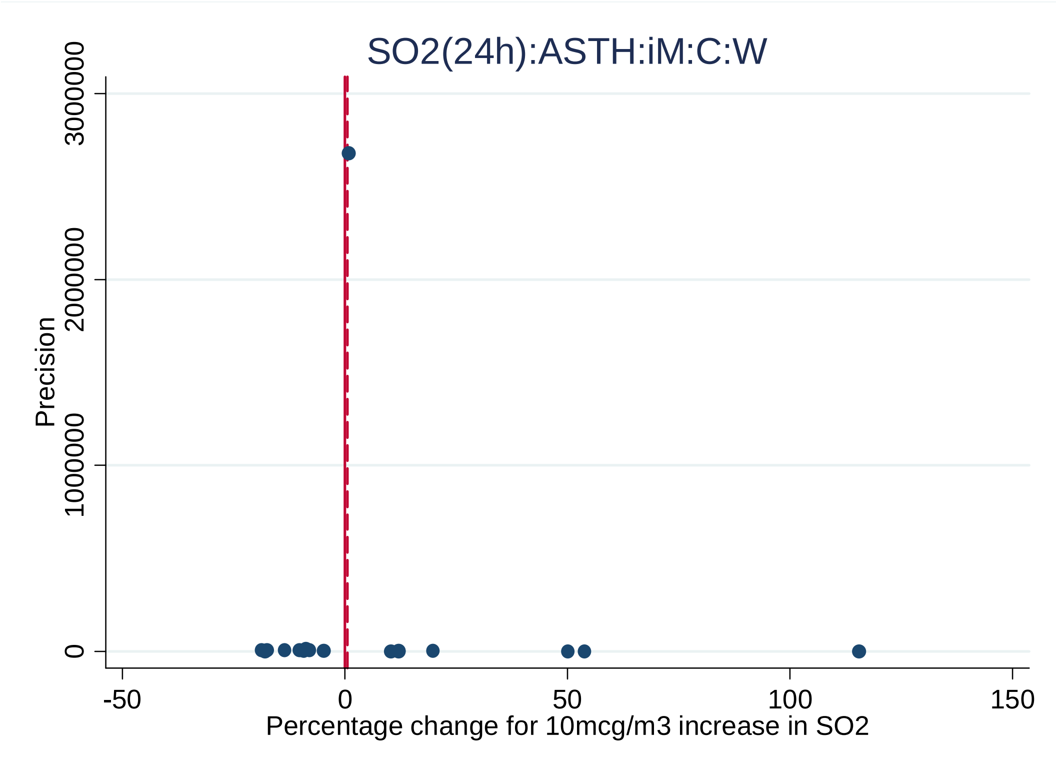

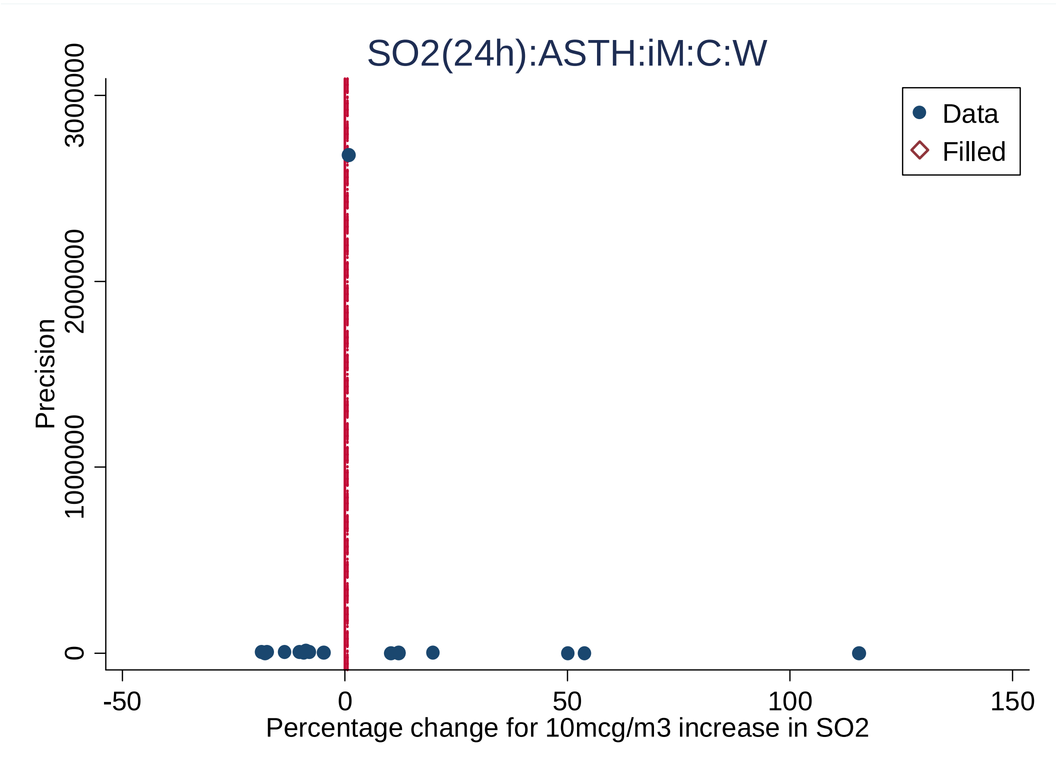

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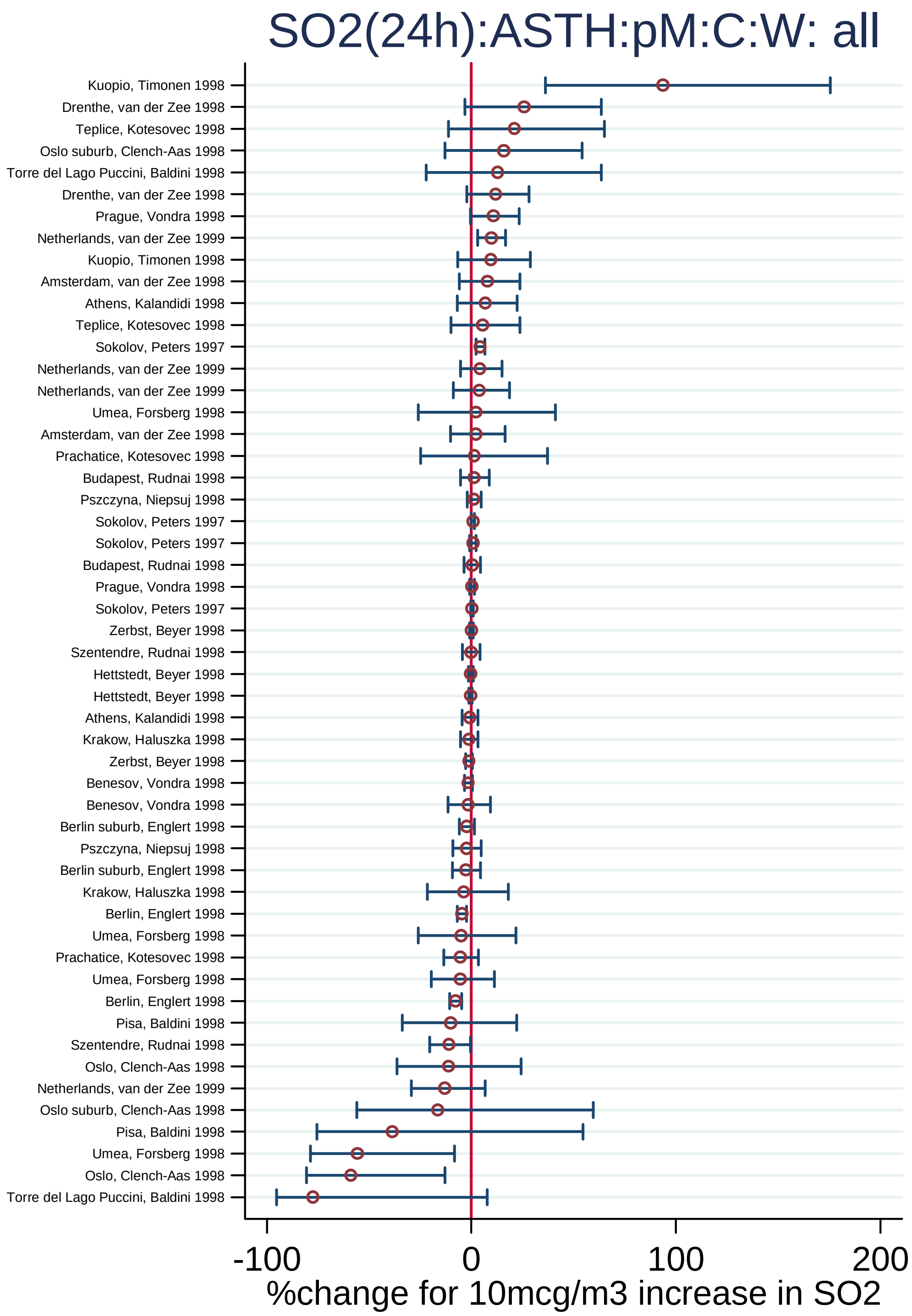

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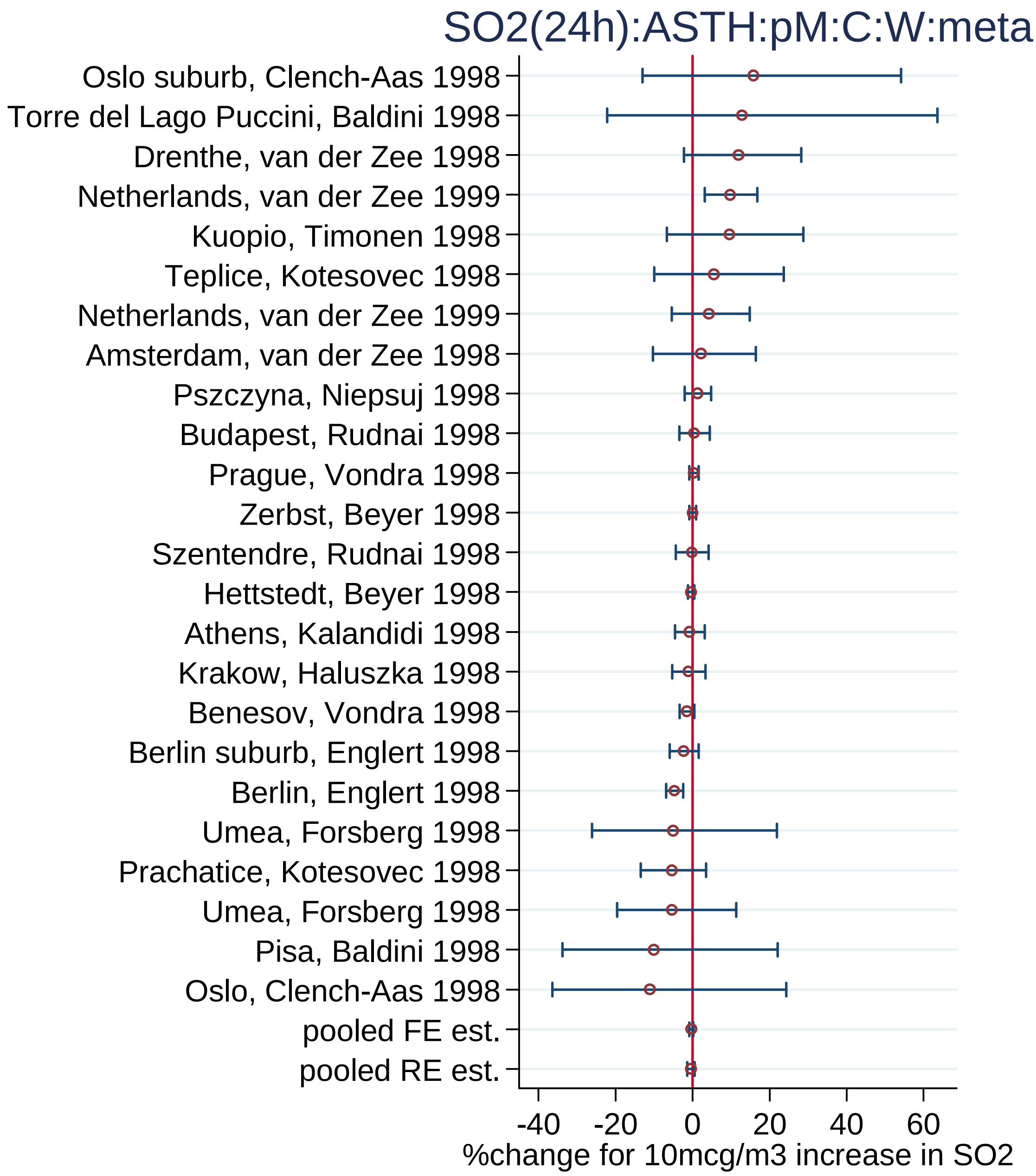

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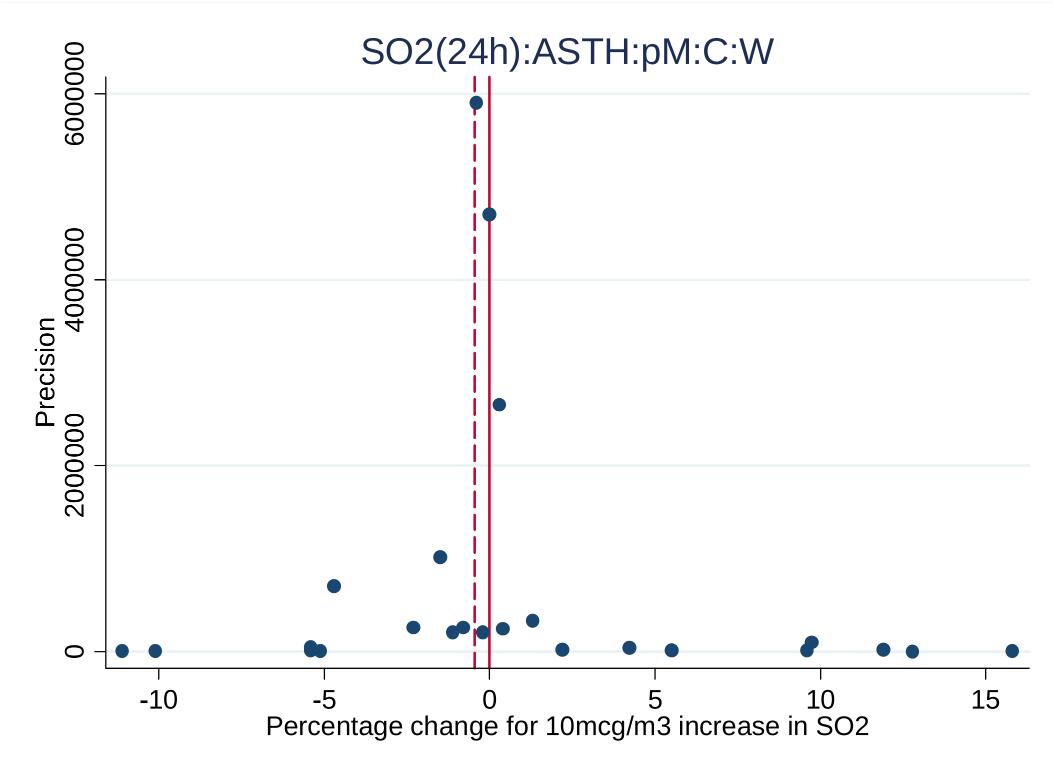

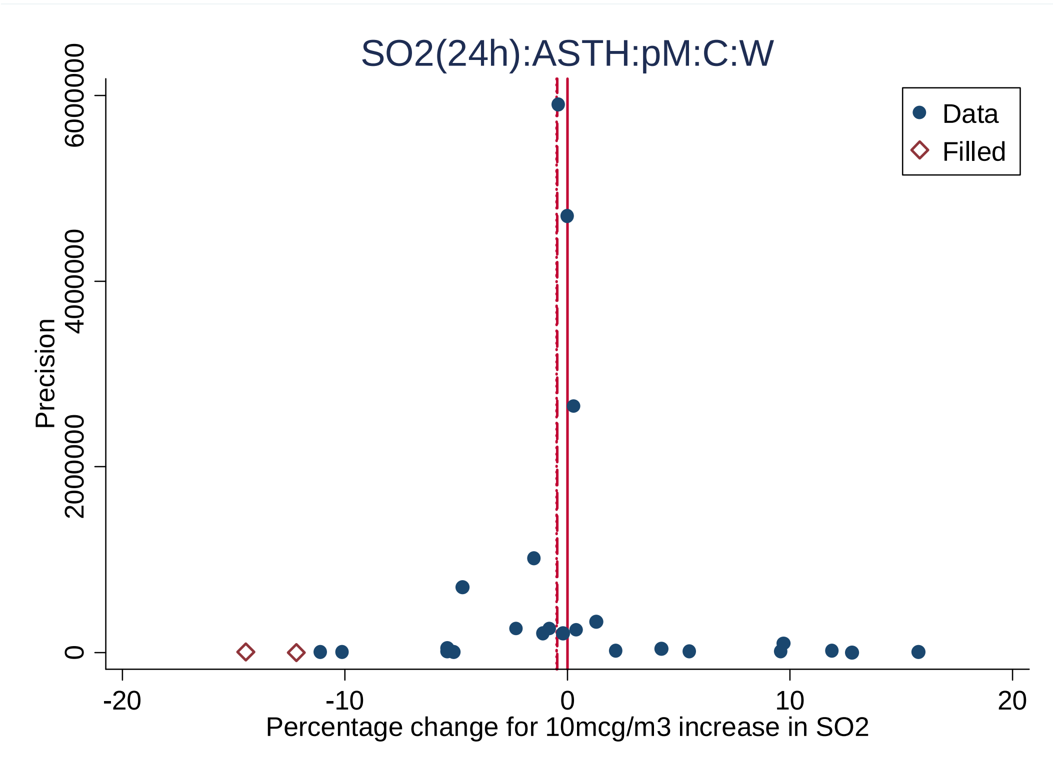

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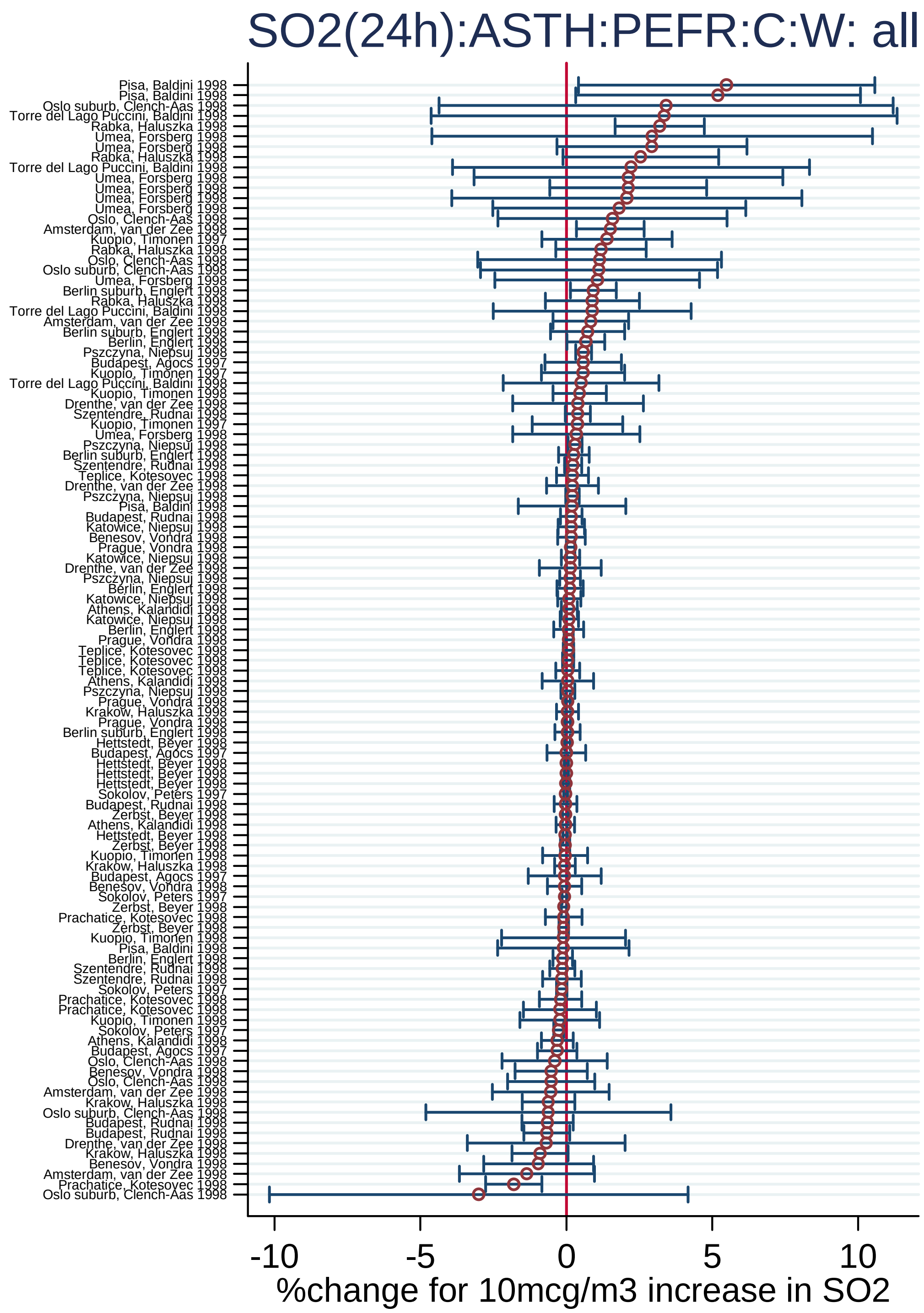

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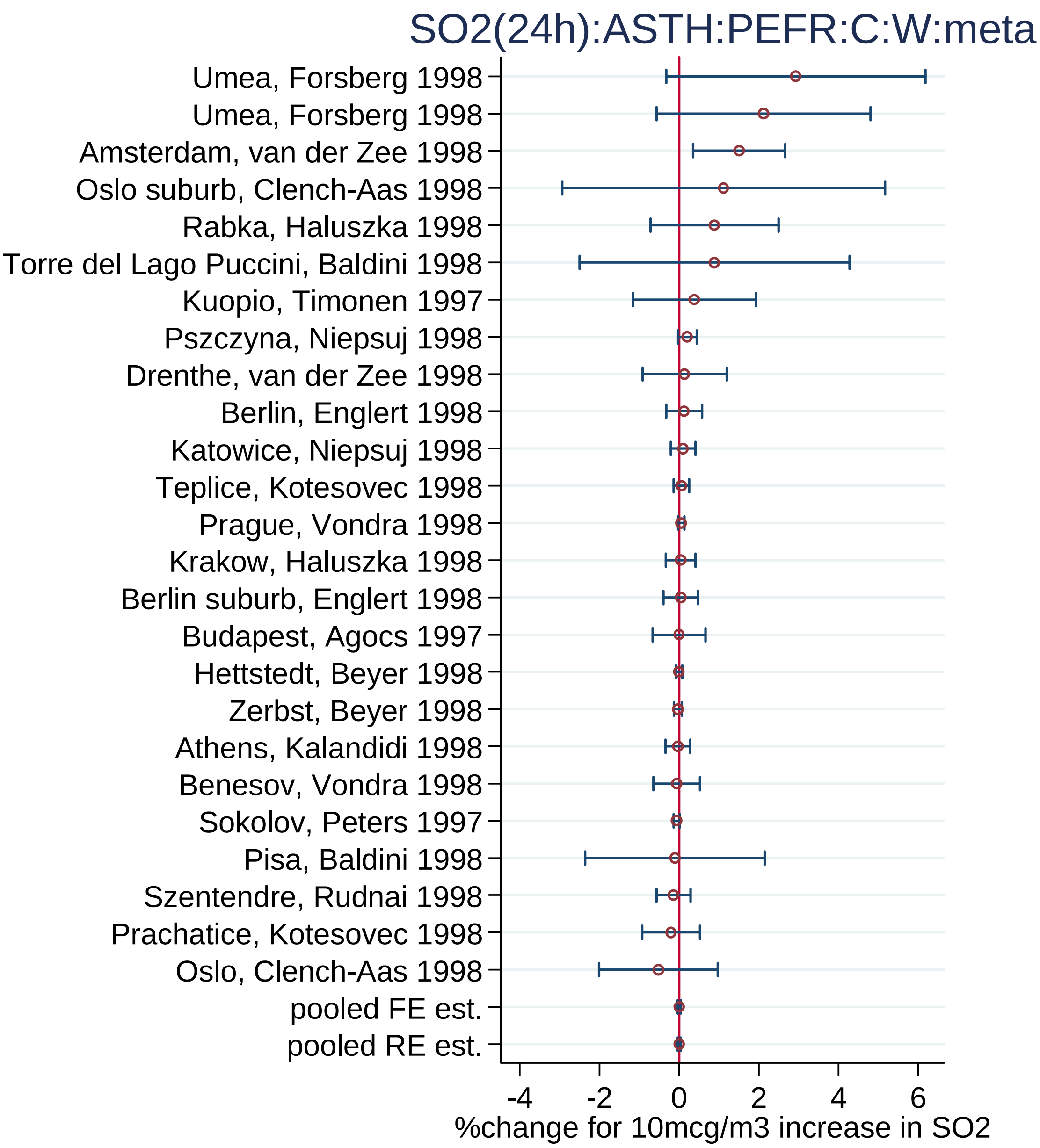

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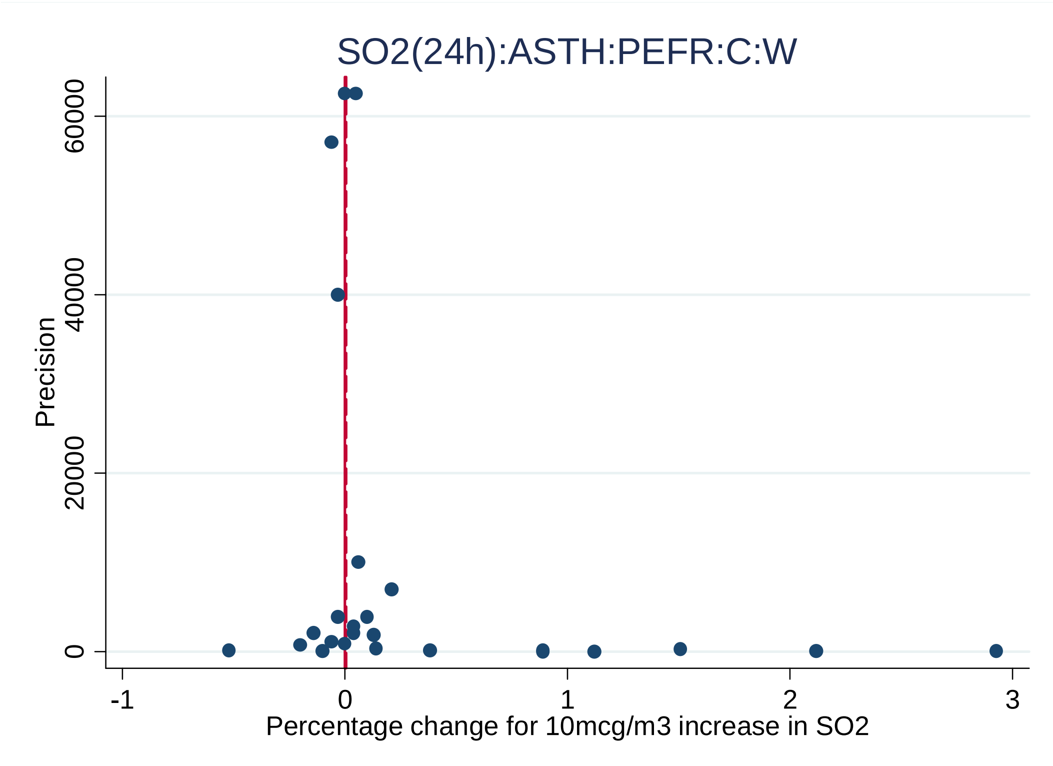

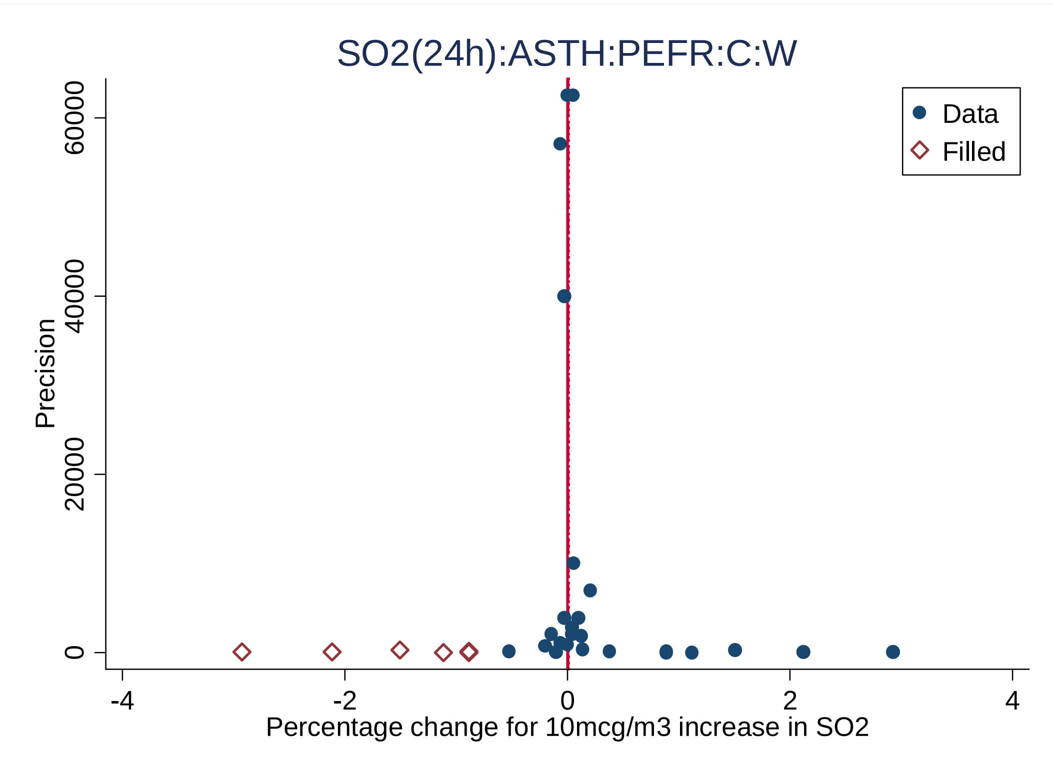

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Panel Studies SO_2

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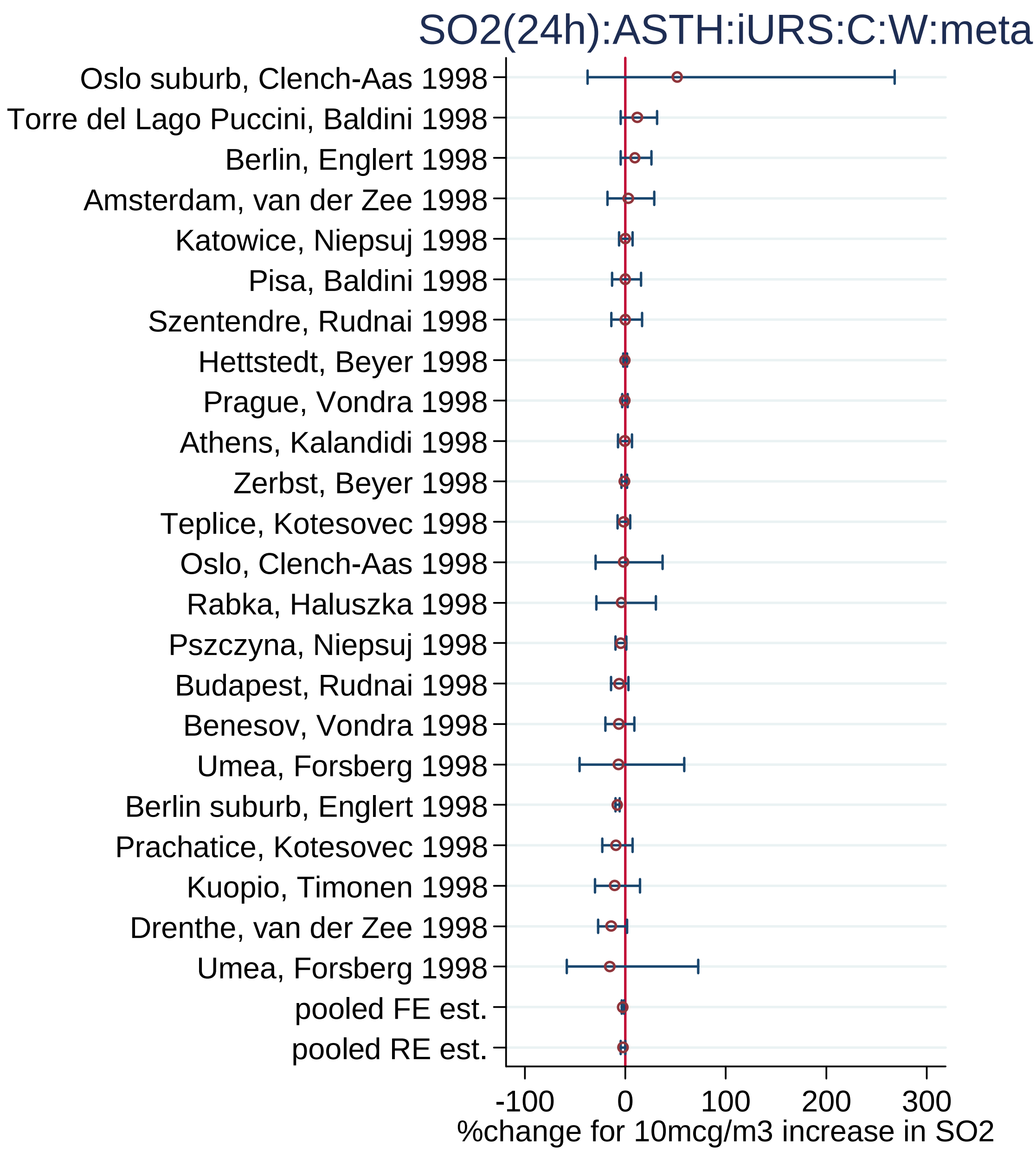

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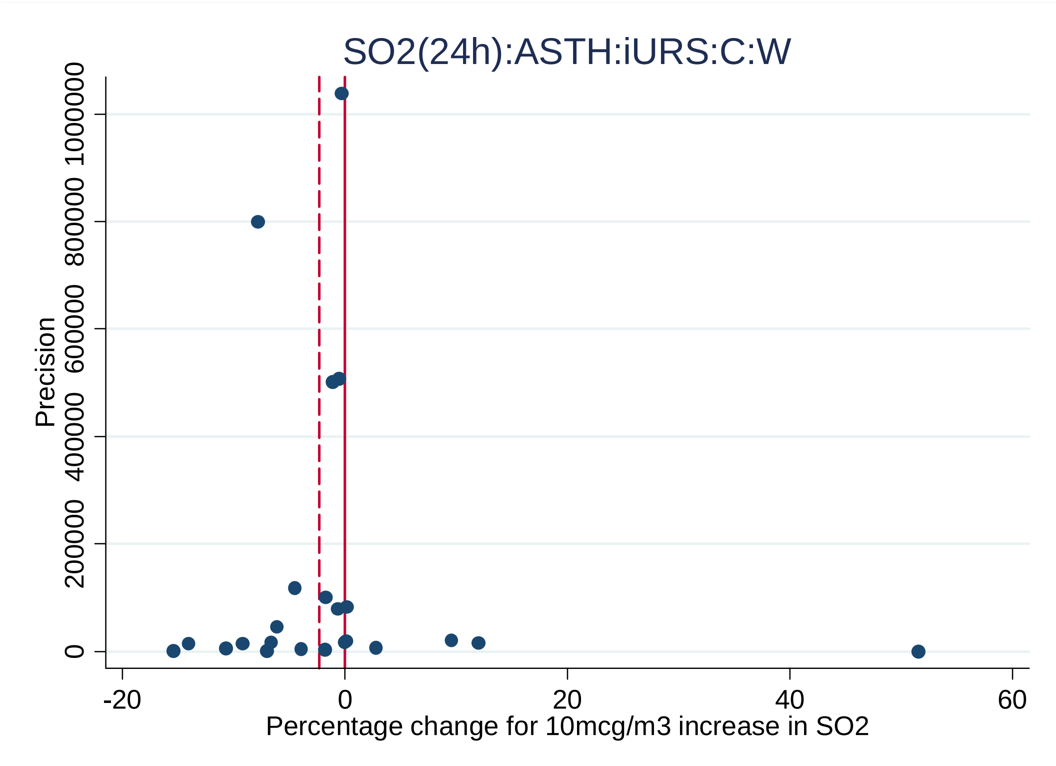

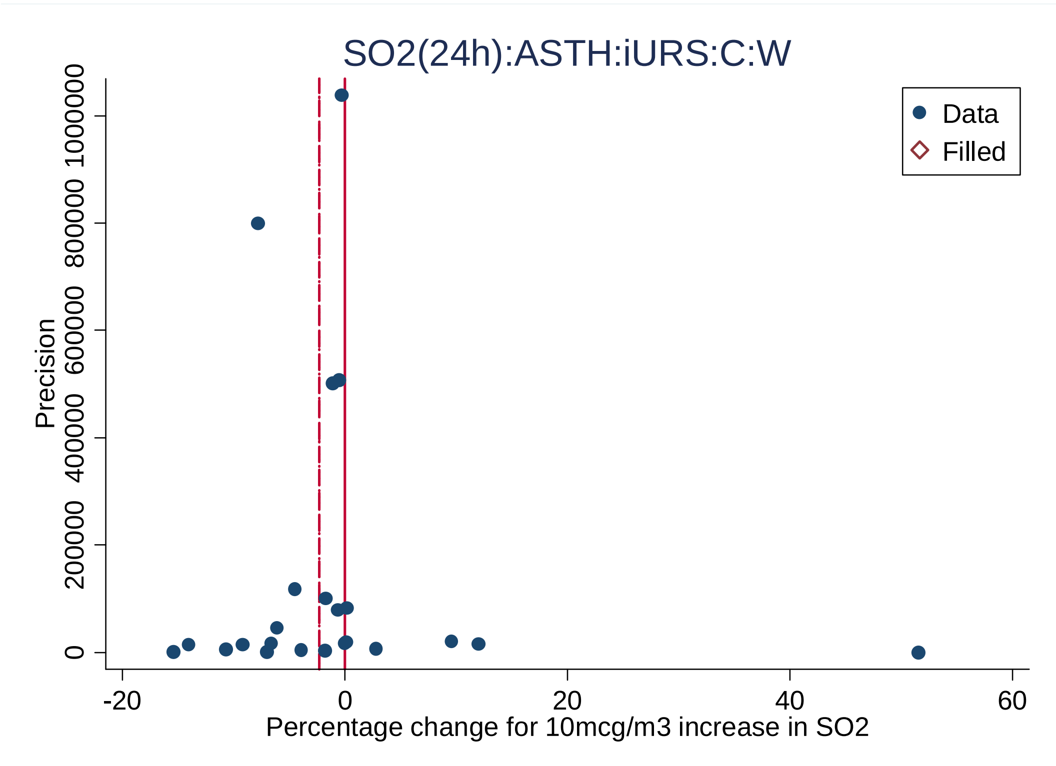

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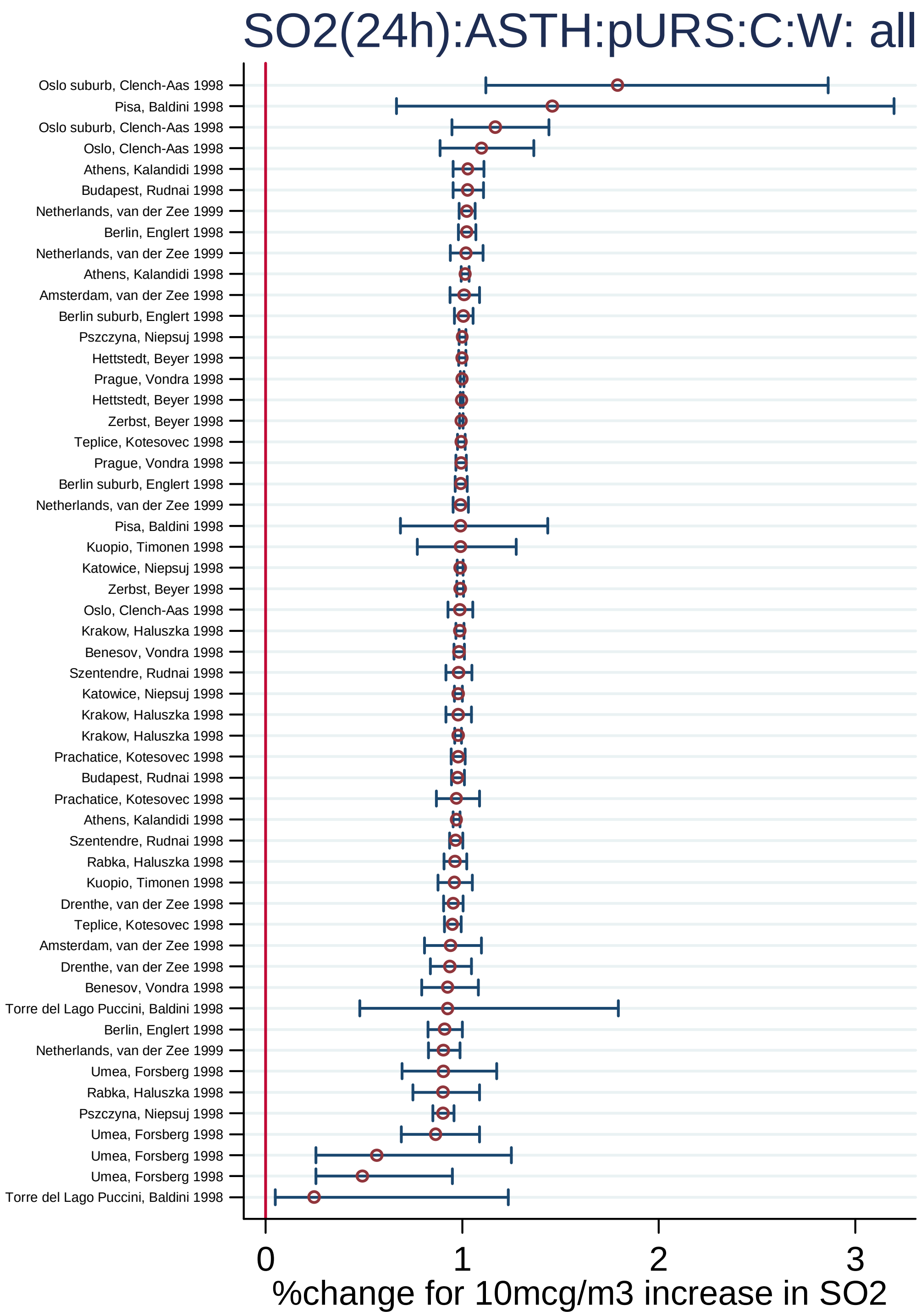

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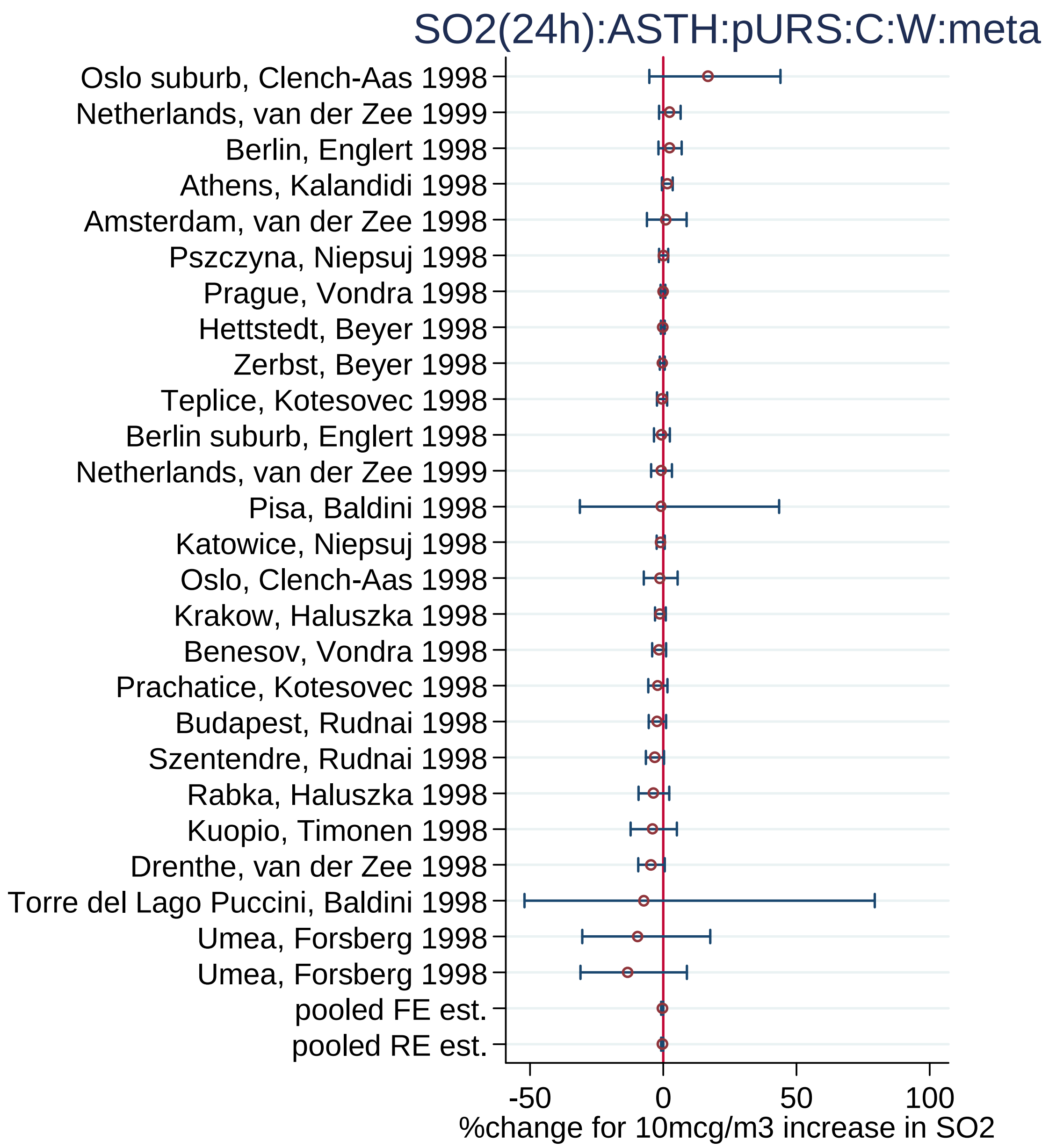

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