



Ipsos MORI  
Social Research Institute

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# Commercial Victimisation Survey

Head Office Feasibility Study: Pilot survey report



# Contents

- 1. Executive summary ..... 1**
  - 1.1 Background .....1
  - 1.2 The feasibility study .....1
  - 1.3 The pilot head office survey .....2
  - 1.4 Outcomes and conclusions .....3
- 2. Introduction ..... 5**
  - 2.1 About the Commercial Victimisation Survey .....5
  - 2.2 The need for a head office survey .....5
- 3. Outline of programme of work ..... 8**
  - 3.1 Timeline of work .....8
  - 3.2 The scoping interviews .....11
- 4. Development work ..... 13**
  - 4.1 Developing the specification .....13
  - 4.2 Developing the sampling strategy .....19
  - 4.3 Developing the data collection instruments .....23
  - 4.4 Developing the data collection method .....26
- 5. Methodology ..... 31**
  - 5.1 Sampling .....31
  - 5.2 Materials .....34
  - 5.3 Fieldwork .....37
- 6. Response tables ..... 40**
  - 6.1 Screening stage response .....40
  - 6.2 Final response (after screening) .....41
  - 6.3 Effectiveness of reminders/additional efforts .....45
  - 6.4 Fieldwork effort .....48
- 7. Data ..... 49**
  - 7.1 Purpose of data production .....49
  - 7.2 Data production .....49
  - 7.3 Weighting of survey data .....50
  - 7.4 Combining premises-level CVS and head office pilot survey data .....50
- 8. Appendices ..... 51**

## List of Tables

<b>Table 3.1: Analysis of interviews conducted by SIC section and number of premises .....</b>	<b>11</b>
<b>Table 5.1: Received sample by SIC section and turnover size band (reporting units) .....</b>	<b>32</b>
<b>Table 5.2: Sample sent for automatic telephone matching by SIC section and turnover size band .....</b>	<b>33</b>
<b>Table 5.3: Matched numbers for each SIC section, by turnover size band .....</b>	<b>33</b>
<b>Table 5.4: Matching rates for each SIC section, by turnover size band .....</b>	<b>34</b>
<b>Table 6.1: Successfully screened sample for each SIC section, by turnover size band .....</b>	<b>40</b>
<b>Table 6.2: Screening rates for each SIC section, by turnover size band .....</b>	<b>41</b>
<b>Table 6.3: Questionnaires returned for each SIC section, by turnover size band .....</b>	<b>41</b>
<b>Table 6.4: Questionnaires return rates for each SIC section, by turnover size band .....</b>	<b>42</b>
<b>Table 6.5: Questionnaire yield rates for each SIC section, by turnover size band .....</b>	<b>42</b>
<b>Table 6.6: Questionnaire yield rates for each SIC section, by turnover size band .....</b>	<b>43</b>
<b>Table 6.7: Questionnaire yield rates for the Financial and insurance activities SIC section, by SIC class .....</b>	<b>44</b>
<b>Table 6.8: Reminder rates for each SIC section, by turnover size band .....</b>	<b>45</b>
<b>Table 6.9: Questionnaires return rates for those reminded for each SIC section, by turnover size band .....</b>	<b>45</b>
<b>Table 6.10: Questionnaires returned by method of approach, for Wholesale and retail trade SIC section .....</b>	<b>46</b>
<b>Table 6.11: Questionnaires returned by method of approach, for Finance and insurance activities SIC section .....</b>	<b>46</b>
<b>Table 6.12: Questionnaire yield rates by method of approach .....</b>	<b>47</b>
<b>Table 6.13: Questionnaire return rate for each method of approach, by turnover size band, for Wholesale and retail trade SIC section .....</b>	<b>47</b>
<b>Table 6.14: Questionnaire return rate for method of approach, by turnover size band, for Finance and insurance activities SIC section .....</b>	<b>48</b>
<b>Table 6.15: Number of calls made to each business where a screening approach was employed, by SIC section and turnover size band .....</b>	<b>48</b>
<b>Table 7.1: Editing method for questions asking about proportions of crimes committed in a certain manner .....</b>	<b>50</b>



# 1. Executive summary

## 1.1 Background

The Commercial Victimisation Survey (CVS) is a well-established survey series. It has been commissioned by the Home Office annually since 2012 to record the nature and extent of crime committed against businesses in a number of Standard Industrial Classification (SIC) sections in England and Wales. The CVS has a random probability research design and interviews are conducted at a premises level: referrals to head offices cannot be taken.

Decisions about the survey series are guided by the CVS Steering Group, a voluntary body of sector representatives and key data users. They are invited by the Home Office to meet several times a year to advise on the design, reporting and overall direction of the CVS, as well as being consulted on an ad-hoc basis.

The *National Statistician's Review of Crime Statistics* of June 2011 identified fraud and cyber crime statistics as an area for future development in building the picture of crime committed in England and Wales. The Home Office assessed that the established premises-level CVS was unlikely to provide good coverage of crime types such as fraud and cyber crime, because such information that is held by businesses about these crimes is likely to be held by a head office, rather than at the premises level. The Home Office believed there was potential for the prevalence and incidence of these crime types to increase in future years, as well as the volume of losses incurred by businesses, and thus a robust head office survey would provide timely and useful data.

The Home Office recognised that evidence from previous research suggested that a head office survey of businesses was likely to present difficulties and achieving a good response rate was likely to be very challenging. In May 2015, Ipsos MORI was asked by the Home Office to undertake a feasibility study and a pilot survey, which this report describes. Ipsos MORI are grateful for the advice and support of the CVS Steering Group and a Virtual Working Group of internal and external experts, users and stakeholders, convened by the Home Office.

## 1.2 The feasibility study

Sections 3 and 4 of this report set out:

- A detailed description of the feasibility work undertaken;
- its timing;
- an account of the many issues considered; and
- the decisions made in arriving at a final proposed methodology for the head office survey.

The final head office survey specification was agreed in December 2015 and was as follows:

*The Home Office would like to be able to make statements about the incidence and prevalence of different kinds of fraud and online crime against enterprises, as well as the size and nature of losses associated with crimes of these types. The focus would be on enterprises (of varying sizes) with headquarters based in the UK, which operate in the Financial and Wholesale & Retail sectors.*

In this report we use the term 'business' to mean 'enterprise' where convenient.

Ipsos MORI researchers carried out scoping interviews with respondents from 22 different businesses. The purpose of the scoping interviews was to determine what required information head offices of businesses in the SIC sections of interest tend to hold. Fieldwork took place between 5 April 2016 and 25 May 2016. Respondents from a total of 22 businesses took part in the scoping interviews. Ipsos MORI prepared a full report and executive summary of the scoping interviews.

The report of the scoping interviews stated that it was feasible to collect data on fraud and cyber crime using a head office survey, but nine challenges to overcome were identified. In Ipsos MORI's view, six needed to be resolved prior to a pilot survey. These were:

- geographical jurisdiction;
- the population definition;
- the reference period;
- the range of offences;
- the definition of offences; and
- the method of data collection.

In Ipsos MORI's view the other three challenges could be overcome during or after the pilot survey. These were:

- the potential for double-counting of offences;
- the frequency of data collection; and
- duplication/overlap with other surveys.

At the time of writing further work needed to be done on each of these challenges.

### **1.3 The pilot head office survey**

Full details of the design and methodology of the pilot head office survey are set out in section 5 of this report.

We used a random probability sampling design, covering all turnover size bands in the Finance and insurance activities and Wholesale and retail trade SIC sections. The sample design involved us undertaking a census of:

- Businesses in the Financial and insurance activities SIC section with a turnover of £100 million+ per annum.
- Businesses in the Wholesale and retail trade SIC section with a turnover of £250 million+ per annum.

In addition a random sample of businesses in each of the two SIC sections was drawn from lower turnover size bands.

Prior to fieldwork the Home Office, supported by Ipsos MORI, engaged with relevant industry bodies to build awareness and support for the survey among potential respondents. The Home Office also asked some of these industry bodies to secure the permission of their members sampled for the survey for their contact details to be passed to Ipsos MORI.

We identified appropriate contacts at each sampled business either directly, whereby contact details were passed by industry bodies to Ipsos MORI, or, much more frequently, by use of a screening telephone survey. During the screening survey, Ipsos MORI interviewers attempted to identify the most relevant person in the sampled businesses to complete the survey, collected their contact details, and sent them an invitation email and instructions so they could download an electronic self-completion instrument to complete offline. The respondents could also download a guidance document.

During the fieldwork period we made reminder calls and sent reminder emails to encourage participation. Fieldwork lasted from 17 February 2017 (when the first business was contacted) to 12 April 2017 (when the last completed questionnaire was received).

## 1.4 Outcomes and conclusions

We had hoped to receive 50 completed questionnaires from businesses in each of the two sampled SIC sections, with 100 received in total. At the end of the pilot survey fieldwork we had received 46 completed questionnaires from businesses in the Finance and insurance activities SIC section and 10 completed questionnaires from businesses in the Wholesale and retail trade SIC section.

The response to the survey was very disappointing. The yield rate<sup>1</sup> for the Finance and insurance activities SIC section was 8 per cent and for the Wholesale and retail trade SIC section it was 2 per cent. The return rate from businesses that were successfully screened was 17 per cent in the Finance and insurance activities SIC section and 5 per cent in the Wholesale and retail trade SIC section.

The return and yield rates are low by any standard, including in comparison with the Cyber Security Breaches Survey, commissioned by the Department for Digital, Culture, Media and Sport (DCMS) and the ill-fated 2002 CVS postal survey of head offices in the manufacturing sector. The return and yield rates for the head office pilot survey are inadequate because the results from the data are likely to be subject to unacceptably large biases, making it impossible to justify making inferences about the survey population.

In our view, a longer fieldwork period might have led to higher yield and return rates, because we received 17 of the 56 completed questionnaires after the stated deadline of 29 March 2017. We do not believe, however, that a longer fieldwork period than that permitted would have led to a sufficient increase in the yield or return rates to change the conclusion set out above.

We had contact details passed to us by industry bodies for a small amount of the sample, and where this occurred we observed much higher return rates. Overall, the return rate from businesses that were successfully screened was 17 per cent in the Finance and insurance activities SIC section and 5 per cent in the Wholesale and retail trade SIC section, these were 42 per cent and 20 per cent, respectively, where contact details were passed to us by industry bodies. This suggests that our judgement that engagement with industry bodies would help us obtain responses from sampled businesses was correct.

Our conclusion is that the traditional methods usually employed for business surveys, involving a telephone screener survey, will not work for this study. The alternative – improved engagement with industry bodies with all contact details

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<sup>1</sup> This is the proportion of issued cases which are productive.



being provided by industry bodies – would be difficult to implement successfully. In any event, the return rates achieved where contact details were passed to us by industry bodies were still disappointing.

The low yield rates achieved in this survey suggest that either there is no appetite or perceived need among businesses for this data to be collected, or that existing data collection exercises carried out by industry bodies provide a sufficient evidence base for effective decision-making about fraud and cyber crime. We conclude that a survey of this kind is not feasible, or feasible only at disproportionate cost and effort.

There are a number of challenges we would need to overcome, related to the survey processes. These are:

- We would need to increase greatly the number of industry bodies passing contact details to us.
- Not all businesses, even in the highest turnover size bands, are necessarily members of industry bodies. This means that engagement directly with companies by the Home Office or Ipsos MORI researchers would be required.
- The nature of this engagement work would be highly resource intensive, involving Home Office and Ipsos MORI researchers, rather than telephone interviewers.
- We would need to consider carefully the appropriate Home Office staff to carry out this work. It may be that policy-makers are best placed to convince potential respondents that effective action would be taken following analysis of the survey results, but that the cost of adopting this approach would be disproportionate.

## 2. Introduction

### 2.1 About the Commercial Victimization Survey

The Commercial Victimization Survey (CVS) is a well-established survey series. It has been commissioned by the Home Office annually since 2012 to record the nature and extent of crime committed against businesses in England and Wales. The CVS questionnaire gathers detailed information about the following:

- Types, incidence and prevalence of crime experienced;
- Items stolen or damaged;
- Costs of crime, including financial loss or damage; and
- Action taken and reporting patterns: to the police, insurance companies and other bodies.

There are also sections in the questionnaire about cyber crime, experience of anti-social behaviour, and installation and use of crime prevention measures.

The CVS has a random probability research design and interviews are conducted with a representative sample of business premises in a minimum of three Standard Industrial Classification (SIC) sections each year. The sample is drawn from the Inter-Departmental Business Register (IDBR)<sup>2</sup> which is collated and maintained by the Office for National Statistics (ONS). Interviews are conducted using Computer Assisted Telephone Interviewing (CATI) at a premises level: referrals to head offices or other sites operated by the business cannot be taken.

The CVS has been carried out every year since 2012 and was conducted by Ipsos MORI for the first time in 2015. There were also survey waves in 1994 and 2002 but the more recent move to annual waves provides the Home Office with important trend data about the types, incidence and prevalence of crimes being experienced by business premises in England and Wales on a regular and timely basis.

### 2.2 The need for a head office survey

The Home Office's requirement for the CVS waves covering 2015 – 2017 stated that

*In the case of the information and communication and financial and insurance services sectors, the Home Office have previously considered whether to run a head office (as opposed to a premises based) survey for these given the likely differing nature of crimes committed against these sectors. This is something we would like to consider again for the next iteration of surveys.*

A survey of head offices was carried out as part of the CVS in 2002. This head office survey had covered the Manufacturing SIC section, using a postal data collection methodology. The survey suffered a low response rate and the Home Office wished to see if the survey methodology could be improved upon and reliable data collected from head

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<sup>2</sup> The IDBR contains details for c.2.1 million businesses across all UK SIC sections and is generated from five main administrative sources including Her Majesty's Revenue and Customs' (HMRC) PAYE records.

offices. The idea of a head office survey had been discussed during the CVS development work over the period 2012 to 2014 and at CVS Steering Group meetings.

Both the Home Office and Ipsos MORI recognised the considerable challenges in carrying out a high quality survey of head offices. Following discussions with the Home Office, Ipsos MORI proposed a two-year programme of development work to assess the feasibility of a head office survey and to develop the survey design, protocols, and data collection instruments. For the first year, Ipsos MORI envisaged the following steps:

- Reviewing the evidence that already exists about the nature of crimes committed against SIC sections for which a head office survey might be the appropriate method of data collection.
- Considering the evidence gaps, drawing on the views of policy-makers.
- Consulting other stakeholders.
- Investigating in detail the feasibility of collecting the data, in particular establishing in what form the data required are held.

For the second year, the plan envisaged:

- A pilot of the data collection method.
- Undertaking detailed design work, including considering the various sampling options and working out the most efficient design, covering issues such as:
  - whether the premises-level survey and head office survey should be linked in some way or be completely independent.
  - whether premises that are head offices, and therefore eligible for both surveys, would be included in both samples.

It was agreed that any full head office survey would not be undertaken until 2017, the third year of the survey contract.

The need for a head office survey was set out in a paper drafted by the Home Office and presented to the CVS Steering Group in May 2015. The paper explained that while the established premises-level CVS provided good coverage of some of the more 'traditional' crime types, such as burglary and robbery, it was unlikely to provide such good coverage of crime types such as fraud and cyber crime, because such information that is held by businesses about these crimes is likely to be held by a head office, rather than at the premises level, as the scoping exercise for the 2012 – 2014 CVS had suggested<sup>3</sup>.

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<sup>3</sup> Patten Smith and Paul Harvey, (2010). Business Crime Scoping Exercise Methodological work to consider the scope and feasibility of a new survey to measure commercial victimisation. Home Office Research Report 33 at [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/116598/horr33-report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/116598/horr33-report.pdf) (Appendix C).

The paper noted there was considerable interest in fraud and cyber/online crime. Indeed the *National Statistician's Review of Crime Statistics* of June 2011 had identified fraud and cyber crime statistics as an area for future development in building the picture of crime committed in England and Wales<sup>4</sup>.

The Home Office paper suggested fraud and cyber crime will affect some SIC sections (such as Information and communication and Financial and insurance activities) more than others, but they were likely to affect all SIC sections to some extent. Further, there was potential for the prevalence and incidence of these crime types to increase in future years. The paper explained that the ONS were working to incorporate measures of these crimes into the Crime Survey for England and Wales (CSEW), which is a face-to-face victimisation survey in which adults aged 16+ and children aged 10 to 15 resident in private households in England and Wales are asked about their experiences of crime. Currently, questions about experiences of fraud and cyber crime are asked of the adult sample only.

The paper noted that previous experience (the 2002 CVS<sup>5</sup> and other surveys such as the Workplace Employment Relations Study (WERS)) suggested that a head office survey of businesses was likely to present difficulties and achieving a good response rate was likely to be very challenging.

The paper concluded by proposing that the Home Office and Ipsos MORI should investigate the SIC sections and crime types a head office survey might cover, and how the challenge of achieving a satisfactory response rate might be overcome. This work would enable a decision to be taken about whether to carry out a pilot survey of head offices in the second year of the CVS contract.

At the May 2015 CVS Steering Group meeting, some initial support was expressed for a study looking at the feasibility of undertaking a head office survey in the future, to explore new crime types in more detail, and to broaden the reach of the CVS. Ipsos MORI were asked to undertake the feasibility study.

At the start of the feasibility work, the Home Office convened a Virtual Working Group of internal and external experts, users and stakeholders, so that their advice and needs could be fully taken into account during the development of the head office survey.

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<sup>4</sup> Government Statistical Service (2011) National Statistician's Review of Crime Statistics: England and Wales, Annex F. See <https://www.statisticsauthority.gov.uk/archive/national-statistician/ns-reports--reviews-and-guidance/national-statistician-s-reports/national-statistician-s-review-of-crime-statistics.pdf>.

<sup>5</sup> This was a postal survey of manufacturing businesses, which had suffered a low response rate of 12 per cent. Further details can be found in Patten Smith and Paul Harvey, (2010). Business Crime Scoping Exercise Methodological work to consider the scope and feasibility of a new survey to measure commercial victimisation. Home Office Research Report 33 at [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/116598/horr33-report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/116598/horr33-report.pdf) (page 15).

## 3. Outline of programme of work

The development work was undertaken mainly by Ipsos MORI, working closely with Home Office researchers at all stages. A number of pieces of work were undertaken by Home Office researchers.

### 3.1 Timeline of work

A timeline of work undertaken is set out below.

	Task	Date
	Desk-based scoping exercise	
<b>A</b>	Ipsos MORI reviewed previous CVS reports, to determine the appropriate sample units to collect the data required from	16 October 2015
<b>B</b>	Ipsos MORI undertook some preliminary analysis of aggregate data from the IDBR, supplied by the ONS, to establish whether the distribution of local units within enterprises would make an enterprise-level survey more appropriate for one SIC section than another	16 October 2015
<b>C</b>	Ipsos MORI carried out a review of UK business surveys commissioned by Government Departments and Non-Departmental Bodies to establish how these surveys deal with the problem of defining the enterprise and securing co-operation at the enterprise level	22 October 2015
<b>D</b>	The Home Office carried out a review of head office surveys on crime, to establish what data collection methods had been used previously, and to learn lessons from these experiences which could be drawn upon in developing the new head office survey	23 October 2015
<b>E</b>	Ipsos MORI produced a short note about the suitability, for the head office survey, of the definition of the enterprise used on the IDBR	12 November 2015
<b>F</b>	The Home Office asked the Virtual Working Group for assistance in formulating precisely what statements the Home Office needed to be able to make about data collected by a head office survey. The Group were asked to consider crime types, measures, population coverage and the enterprise definition	13 November 2015
<b>G</b>	The Home Office produced a draft specification for the proposed head office survey which was communicated to the Virtual Working Group <sup>6</sup>	17 December 2015
<b>H</b>	Ipsos MORI and the Home Office agreed that the definition of cyber crimes (and the distinction between cyber-enabled and cyber-dependent crime) would be that used in paragraph 2.54 of the <i>Serious and</i>	22 December 2015

<sup>6</sup> The draft specification read "The Home Office would like to be able to make statements about the incidence and prevalence of different kinds of fraud and online crime against enterprises, as well as the size and nature of losses associated with crimes of these types. The focus would be on enterprises (of varying sizes) with headquarters based in England & Wales, which operate in the Financial and Wholesale & Retail sectors."

	<i>Organised Crime Strategy</i> <sup>7</sup> , and that the Counting Rules for Fraud <sup>8</sup> would be used to draw up a draft list of offence types to be covered by the head office survey	
<b>I</b>	The Home Office provided a draft list of costs potentially incurred by enterprises in relation to offline fraud, cyber-enabled and cyber-dependent crimes against the enterprise	5 January 2016
<b>J</b>	Ipsos MORI provided some initial thoughts on the list of proposed offences, the definition of the enterprise, and recommended measures for each offence type, potential overlap with other surveys	15 January 2016
	<b>CVS Steering Group Meeting</b>	<b>26 January 2016</b>
	<b>Preparation for the scoping interviews</b>	
<b>K</b>	A meeting was held with a representative of the National Fraud Intelligence Bureau (NFIB) to discuss the list of proposed offences	28 January 2016
<b>L</b>	The Home Office asked the Virtual Working Group whether all types of fraud and cyber crime of interest had been covered in the draft list of proposed offences, what kind of statements the Virtual Working Group would like to be able to make based on the survey findings, and how to treat enterprises which have premises in England and Wales but where the head office is outside England and Wales (whether in the UK or elsewhere)	2 February 2016
<b>M</b>	Feedback from the Virtual Working Group collated by the Home Office and sent to Ipsos MORI	12 February 2016
<b>N</b>	Ipsos MORI sent a proposed aide memoire for the scoping interviews to the Home Office, along with some thoughts around the definition of the enterprise for the purposes of sampling and the coverage of offences	24 February 2016
<b>O</b>	Ipsos MORI provided a further note about the definition of the enterprise	4 March 2016
<b>P</b>	The definition of the enterprise to use in scoping interviews was agreed	10 March 2016
<b>Q</b>	Correspondence regarding and agreement on an aide memoire for the scoping interviews	31 March 2016
	<b>Scoping interviews</b>	<b>5 April to 25 May 2016</b>
	<b>CVS Steering Group Meeting</b>	<b>29 June 2016</b>
<b>R</b>	Ipsos MORI and the Home Office agreed a programme of work to cover the second year of the feasibility work, covering geographical jurisdiction, the population definition, the reference period, the range of offences, the definition of offences, and the method of data collection	12 August 2016
<b>S</b>	The Home Office gathered feedback from policy colleagues concerning the priority of a head office survey	16 August 2016
<b>T</b>	The Home Office sent a consultation document to the CVS Steering Group setting out options for the potential scope and data collection mode of the head office pilot survey	16 August 2016

<sup>7</sup> HM Government, (October 2013). Serious and Organised Crime Strategy (Cm 8715)

<sup>8</sup> The Counting Rules for Recorded Crime are periodically updated and are available here: <https://www.gov.uk/government/publications/counting-rules-for-recorded-crime>.

<b>U</b>	The Home Office investigated other potential sources of information, such as data collection exercises carried out by Financial Fraud Action (FFA) UK, CIFAS, and the Association of British Insurers (ABI)	16 August 2016
<b>V</b>	Ipsos MORI produced a paper discussing the options for combining data from the premises-level CVS with that from the proposed head office survey	31 August 2016
<b>W</b>	Ipsos MORI produced a paper discussing miscellaneous issues, including data held by the ABI/Insurance Fraud Bureau, whether to cover crimes against customers as well as crimes against the businesses, analysis of the response rates to the 2016 Cyber Security Breaches Survey (CSBS), and a summary of a feasibility study, <i>The Cost of Cybercrime to Canadian Businesses: Measurement Feasibility Study</i> , conducted by Statistics Canada	20 September 2016
<b>X</b>	Ipsos MORI produced a paper setting out proposals for the data collection method	6 October 2016
<b>Y</b>	Ipsos MORI produced a further paper discussing the options for combining data from the premises-level CVS with that from the proposed head office survey	14 October 2016
<b>Z</b>	Ipsos MORI produced a paper discussing sampling options the head office survey	14 October 2016
<b>AA</b>	Ipsos MORI produced a paper discussing the design features of the proposed head office survey data collection instrument	15 November 2016
<b>AB</b>	Ipsos MORI produced a paper setting out the potential sample sizes for the head office survey in 2017, if the pilot survey was successful, and discussing further a potential sample design for the main stage	14 December 2016
	<b>CVS Steering Group Meeting</b>	<b>15 December 2016</b>
<b>AC</b>	Ipsos MORI agreed with the Home Office two data collection instruments (one for respondents in the Wholesale and retail trade SIC section and one for respondents in the Financial and insurance activities SIC section), guidance, and advance letters/emails to respondents	7 February 2017

### 3.2 The scoping interviews

The purpose of the scoping interviews was to determine which of the required data head offices of businesses in the SIC sections of interest tend to hold.

Ipsos MORI researchers carried out scoping interviews with respondents from 22 different businesses. The following table sets out an analysis of these businesses:

**Table 3.1: Analysis of interviews conducted by SIC section and number of premises**

Number of premises	Wholesale and retail trade (G)	Financial and insurance activities (K)
<b>Single-site</b>	3	1
<b>2 – 9 premises</b>	4	6
<b>10 – 99 premises</b>	1	1
<b>100+ premises</b>	2	4
<b>TOTAL</b>	<b>10</b>	<b>12</b>

A topic guide was designed by Ipsos MORI, in close consultation with the Home Office, for researchers to use during the scoping interviews, which typically lasted between 45 and 60 minutes. This topic guide covered:

- Background to the research;
- The characteristics of the participating business;
- The proposed offences;
- Fraud awareness, data collection and sharing; and
- The correct person in the business to talk to for the proposed survey.

The sample was drawn from four sources:

- Respondents who had participated in the 2015 CVS, were in the Wholesale and retail trade SIC section and who had agreed to participate in further research about crimes against business;
- A commercially available business database;
- A small number of businesses in the Wholesale and retail trade SIC section with whom the Home Office were in close touch with; and
- A number of businesses in the Financial and insurance activities SIC section who were kindly approached by FFA UK on behalf of the Home Office and Ipsos MORI. These businesses were members of fraud prevention committees with whom FFA UK liaise.



An advance letter was drafted by Ipsos MORI, approved by the Home Office, and sent to potential participants. Quotas for the interviews were developed by Ipsos MORI and approved by the Home Office, and were intended to ensure that sufficient numbers of businesses in both the Wholesale and retail trade and Financial and insurance activities SIC sections were interviewed, that small, medium sized, and large businesses were included, and that interviews were conducted with businesses which might experience crime types which might not apply to all businesses (for example, mortgage related fraud would apply to a subset of businesses in the Financial and insurance activities SIC section only).

Participants were recruited by Ipsos MORI, using a screening questionnaire to assist achieving the quotas. Respondents were mostly interviewed face-to-face, but occasionally by telephone if a face-to-face interview was not possible. A team of three experienced Ipsos MORI researchers carried out the interviews. Prior to each interview respondents were asked to consider for fifteen minutes an aide memoire drawn up by Ipsos MORI and approved by the Home Office, which covered the definitions of the crime types we told respondents were intended to be measured.

Fieldwork took place between 5 April 2016 and 25 May 2016. Respondents from a total of 22 businesses took part in the scoping interviews. Ipsos MORI prepared an interim report, based on scoping interviews with the first 14 businesses to participate in the research, and following the final interviews, Ipsos MORI prepared a full report and executive summary.

The report stated that it was feasible to collect data on fraud and cyber crime using a head office survey, but nine challenges to overcome were identified. In Ipsos MORI's view, six needed to be resolved prior to a pilot survey. These were: geographical jurisdiction, the population definition, the reference period, the range of offences, the definition of offences, and the method of data collection. In Ipsos MORI's view the other three challenges could be overcome during or after the pilot survey. These were: the potential for double-counting of offences, the frequency of data collection and duplication/overlap with other surveys. At the time of writing further work needed to be done on each of these challenges.

## 4. Development work

### 4.1 Developing the specification

#### The population definition: SIC sections

The Home Office paper explaining the need for a head office survey, presented to the CVS Steering Group in May 2015, anticipated that the offences of interest might be fraud and cyber crime. At that time the Home Office believed these crime types affect some SIC sections (such as Information and communication and Financial and insurance activities) more than others, but are likely to affect all SIC sections to some extent.

The Home Office asked the ONS to provide some information showing the distribution of local units within enterprises by the main SIC sections, to see if a head office survey might be more appropriate in some SIC sections than others. Ipsos MORI analysis of the information the ONS provided showed that the profiles of the Information and communication and Financial and insurance activities SIC sections (thought to be most appropriate to include in a head office survey) were not markedly different to SIC sections previously included in the premises-level CVS. We concluded there was nothing about the distribution of local units within enterprises which would make an enterprise-level survey more appropriate in one SIC section than another. We concluded that a decision about whether or not an enterprise-level survey would be appropriate should be based on the crime types of interest only.

During the consultation exercise with the Virtual Working Group, the Home Office suggested the head office survey should be limited to a maximum of two SIC sections, and tentatively suggested the Financial and insurance activities and Information and communication SIC sections should be covered. Following the consultation, the Home Office decided that the head office survey should cover the Financial and insurance activities and Wholesale and retail trade SIC sections.

Following the CVS Steering Group meeting of June 2016, which had discussed the findings of the scoping interviews, the Home Office consulted the Virtual Working Group about how the Home Office should use the limited resources available for a head office survey. The options the Virtual Working Group were asked to comment on were:

1. Continuing with the original plan to cover both the Wholesale and retail trade and Financial and insurance activities SIC sections and to cover fraud and cyber crime.
2. Focusing the survey solely on the Wholesale and retail trade SIC section, covering both fraud and cyber crime.
3. Focusing the survey on the Wholesale and retail trade SIC section but covering fraud only.
4. Stopping the research at this point and returning the focus fully to the premises-level CVS.

Following the consultation the Home Office decided that both the Wholesale and retail trade and Financial and insurance activities SIC sections should be covered in the head office survey, as there was clear demand for the coverage of both SIC sections.

## The population definition: the enterprise

Ipsos MORI reviewed previous CVS reports, to determine the appropriate sample units to collect the information of interest from. This review concluded that for cyber crimes it was appropriate to collect data at the head office (enterprise) level, whereas fraud data could be collected at either the premises or head office level. The review also concluded that while in an enterprise-level survey it ought to be straightforward to count the number of incidents (assuming we had clear definitions for all crime types), estimates such as the proportion of enterprises that are victims of certain crimes or the incidence of crimes per enterprise would be highly sensitive to the definition of an enterprise. The review recommended further work to develop clear rules which could be operationalised at the sampling and fieldwork stages. This would also be important as it would affect the statements the Home Office would be able to make about the results of the head office survey.

Ipsos MORI then reviewed other UK business surveys commissioned by Government Departments and Non-Departmental Bodies to try and establish how these surveys (if they do at all) deal with the problem of defining the enterprise. The review covered all the major business surveys commissioned by Government Departments/Non-Departmental Public Bodies, with the exception of the surveys of businesses carried out by the ONS.

The surveys covered were (by commissioning Department/Non-Departmental Public Body):

### Department for Business, Energy and Industrial Strategy (BEIS):

- Workplace Employment Relations Study (WERS)
- English Business Survey (EBS)
- Work-Life Balance Survey (WLB)
- Small Business Survey (SBS)

### Her Majesty's Revenue and Customs (HMRC):

- Large Business Panel Survey (LBPS)

### Department for Work and Pensions (DWP):

- Employers' Pension Provision Survey (EPP)

### UK Commission for Employment and Skills (UKCES):

- Employer Skills Survey (ESS)
- Employer Perspectives Survey (EPS)

The conclusions of the review were that in the surveys which are at the enterprise (or 'head office' level), the definition of the enterprise is *de facto* the definition adopted by the organisations compiling the sampling frames, rather than properly thought through in the context of the survey objectives.

Following this work, Ipsos MORI produced a short note about the suitability, for the head office survey, of the definition of the enterprise used on the IDBR. The definition of enterprises used in IDBR is:

*The smallest combination of legal units (generally based on VAT and/or PAYE records) that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit.*

An enterprise group is a group of legal units under common ownership. These definitions follow the relevant European Union Regulations. The key problem for the head office survey was identified as defining the enterprise in such a way that the respondents can produce answers. So that fieldwork was practicable, the note suggested that all sampled enterprises should have a controlling head office in the United Kingdom (even if there might be a global controlling head office in another jurisdiction). As the premises-level CVS covers England and Wales the note proposed that only enterprises that have some local units within England and Wales would be sampled, although in some cases their controlling head office might be elsewhere in the UK or overseas. A key issue identified was that for crime types such as fraud or cyber crime, it may not be possible for respondents to tell whether an offence of fraud (or losses from it) took place within England and Wales, or to know the location of the perpetrator. Nonetheless it would be vital to agree what offences should be covered, as respondents might ask, and, more importantly, there would be great potential for variation in data to be an artefact of the assumptions respondents chose to make about what to include, if this was not made explicit. Thus two separate issues were identified: the population definition required for sampling, and the population definition required to define the coverage of offences.

While drawing up a list of proposed offences for the head office survey, Ipsos MORI also reviewed the interviewer instructions for the CSBS but concluded further guidance for interviewers and respondents needed to be developed about what is and is not included when counting the number of offences.

#### *Population definition required for sampling*

Ipsos MORI sent the Home Office some further thoughts on the definition of the enterprise required for sampling. The note proposed defining an enterprise as an entity identified on IDBR with at least one local unit in England and Wales. It acknowledged that it might be difficult to operationalise a requirement that the head office of the selected enterprise should be in England and Wales (rather than the UK) because it may not be possible to identify reliably or in every case the head office of an enterprise on the IDBR and some enterprises may not be structured in a hierarchical manner. Accordingly, the sampling specification provided to the ONS asked them to draw a sample of enterprises in England and Wales.

#### *Population definition required to define the coverage of offences*

Ipsos MORI sent the Home Office some further thoughts on the definition of the enterprise required to define the coverage of offences. The principal problem identified was that a business can be located, at least partly, in England and Wales, but offences committed in other jurisdictions can have a very damaging impact on it (especially in the case of fraud, cyber-enabled and cyber-dependent offences).

The Ipsos MORI note proposed a 'broad' definition of the enterprise should be adopted so that respondents would be asked to provide data concerning fraud and cyber offences affecting any part of their business operating in England and Wales, regardless of where the offence was committed or where the perpetrator was located. This approach would

enable statements such as 'X number of retail enterprises in England and Wales were victims of crime type Y in 2017', but carried with it the disadvantage that it would over-estimate the number of the offences covered actually committed (and which could potentially be prosecuted) in England and Wales.

Ipsos MORI recommended against the adoption of a 'narrow' definition where respondents would be asked to provide data concerning fraud and cyber offences committed in England and Wales and which also affected a part of their businesses operating in England and Wales. This carried with it the serious disadvantage that it would under-estimate the number of offences of interest impacting on enterprises in England and Wales, which was a key concern of policy-makers. In particular, cyber-dependent offences such as server hacking, where the location of the perpetrator was likely to be unknown and/or overseas, could have a very damaging impact on a business operating in England and Wales.

Following further discussions with the Home Office, Ipsos MORI produced another note about the definition of the enterprise which could be operationalised at the sampling and fieldwork stages of any head office survey. The definition to use in the scoping interviews was then agreed. This was that respondents should be asked to include, when formulating their responses:

- Fraud and cyber offences committed in England and Wales which affect at least part of the business operating in England and Wales. Such crimes could be committed:
  - a.** Physically, that is a false representation could be made in person, at a local unit of the business in England and Wales. by post or on the telephone.
  - b.** Virtually, that is via the web, where the perpetrator is in England and Wales or their location is unknown.
- Fraud and cyber offences committed outside England and Wales which affect at least part of the business operating in England and Wales. Such crimes could be committed virtually, that is via the web, where the perpetrator is outside England and Wales or their location is unknown.

It was agreed that the following would not be covered by the head office survey:

- Fraud and cyber offences committed in England and Wales which affect businesses operating wholly outside England and Wales.
- Fraud and cyber offences committed outside England and Wales which affect at least part of the business operating in England and Wales. The crimes excluded would be those committed physically, that is a false representation made in person, at a local unit of the business outside England and Wales, by post or on the telephone.

The Home Office is responsible for reducing crime within England and Wales only, not the UK as a whole, but the devolution of this responsibility has no relevance to businesses. During the scoping interviews we found that while most retailers and financial institutions would be able to provide data for England and Wales only, chiefly because that is the only part of the UK they operate in, not all could and for some it would require the commitment of significant resources to produce England and Wales figures from UK-wide data they hold. The scoping interviews report recommended that the Home Office should decide whether the scope of data requested about offences should be UK-wide or England and Wales only.

Following the CVS Steering Group meeting of June 2016, which had discussed the findings of the scoping interviews, the Home Office consulted the Virtual Working Group about geographical jurisdiction. The Home Office asked the Virtual Working Group to comment on whether data should be collected about offences covering England and Wales or the UK.

Following the consultation the Home Office decided to ask businesses about crimes that have affected their UK operations (as opposed to asking about their operations in England and Wales only) in order to alleviate respondent burden. Most of those responding to the consultation had indicated this approach would be satisfactory.

The instructions given to respondents in the head office pilot regarding the coverage of offences were as follows:

*When giving your answers, please include all offences committed against your business, and where the victim was any of the following: your business, personal customers or corporate customers.*

*Please include all offences committed against the UK part of the business where either or both of the following apply:*

*The offence was committed in the UK by the fraudster in person, by post or by telephone OR*

*The offence was committed on the internet, regardless of the fraudster's location.*

*The UK is defined as England, Scotland, Wales and Northern Ireland.*

*Please include all incidents regardless of where funds were diverted.*

## **The population definition: appropriate offences for a head office survey**

Ipsos MORI reviewed previous CVS reports, to determine the appropriate sample units to collect the information of interest from. This review concluded that most data relating to the crime types measured in the CVS premises-level survey should be collected at the premises level regardless of the SIC section being covered.

The review also concluded that for cyber crimes it is appropriate to collect these data at head office ('enterprise') level, for two reasons. Firstly, as cyber crimes are not physical in nature it does not make sense to attribute them to a physical location, as most or almost all multi-site businesses are unlikely to maintain separate IT infrastructures or websites for different premises, and so cyber crime should properly be attributed to an enterprise. Secondly as almost all IT infrastructures or websites will be run at an enterprise level, it is likely that information about online crime will be held at a head office (enterprise) level, so that collecting information about cyber crime at the premises level is highly likely to produce under-estimates of the number of cyber crimes. The review concluded that data regarding certain types of fraud (for example, fraud by employees) could potentially be collected at either the premises or head office level, but that information would be likely to be held at a head office (enterprise) level.

Following the consultation exercise with the Virtual Working Group, the Home Office decided that the head office survey should cover fraud and cyber crime only. Ipsos MORI and the Home Office agreed to draw up a list of proposed offences and measures for the survey, to inform the scoping interviews with businesses.

Ipsos MORI and the Home Office agreed that the definition of cyber crimes (and the distinction between cyber-enabled and cyber-dependent crimes) would be that used in paragraph 2.54 of the *Serious and Organised Crime Strategy*<sup>9</sup>. This is:

*Cyber crime describes two distinct, but closely related, criminal activities: cyber-dependent crimes, and cyber-enabled crimes. In this strategy, we use 'cyber crime' when we are referring to both types: otherwise we distinguish between them.*

- *Cyber-dependent crimes can only be committed using computers, computer networks or other forms of information communication technology (ICT). They include the creation and spread of malware for financial gain, hacking to steal important personal or industry data and denial of service attacks to cause reputational damage.*
- *Cyber-enabled crimes (such as fraud, the purchasing of illegal drugs and child sexual exploitation) can be conducted on or offline, but online may take place at unprecedented scale and speed.*

Some of the offences of interest (computer viruses/malware/spyware, hacking of personal devices, social media/email accounts and computer hacking (PBX/Dial Through)) are attacks on specific devices which could be attributed to premises. We assumed, however, that data about these offences, even if they can be attributed to particular premises, were likely to be held by a head office, or by a central function of the business (for example an IT department).

Ipsos MORI and the Home Office agreed that the coverage of fraud should include frauds committed by any method, including cyber-enabled fraud. This strengthened the argument for carrying out a head office survey, as we assumed that data for these types of offences would normally be held by a central function of the business (for example an IT department). If this was so, measuring fraud at the premises level only was highly likely to result in an under-estimate of the prevalence and incidence of fraud.

## Potential overlap of coverage with other surveys

While drawing up a list of proposed offences for the head office survey, Ipsos MORI also assessed the extent to which the proposed list would overlap with other surveys.

This review found that data covering Cheque, Plastic Card and Online Bank Accounts (not PSP) fraud, mandate fraud and business trading fraud are collected during the premises-level CVS. The review concluded that as these offences can be cyber-enabled, and thus difficult to attribute to specific premises, they also merited inclusion in a head office survey. The review also found that the premises-level CVS collected data about some cyber offences: Computer Viruses/Malware/Spyware, Denial of Service Attack, and Hacking – Server. The review concluded that as these offences are difficult to attribute to premises they should be covered in the head office survey.

With regard to the CSBS, the review found that data were collected at the head office (enterprise) level for both the Wholesale and retail trade and Financial and insurance activities SIC sections for: Business Trading Fraud, Computer Viruses/Malware/Spyware, Denial of Service Attack, Hacking – Server, Hacking – Personal and Computer Hacking – PBX/Dial Through. Despite the potential overlap with the head office survey, the review recommended covering these

<sup>9</sup> HM Government, (October 2013). *Serious and Organised Crime Strategy* (Cm 8715).

offences in the head office survey. This was because, at the time the review reported, the CSBS covered 15 SIC sections<sup>10</sup> but the overall sample size means that the sample sizes in the Wholesale and retail trade and Financial and insurance activities SIC sections are small, resulting in large confidence intervals around these estimates. At that time<sup>11</sup> the CSBS was not designed to allow robust analysis by sector. If the proposed head office survey had a relatively large sample size, it might produce much more precise estimates than the CSBS for the Wholesale and retail trade and Financial and insurance activities SIC sections.

## The final survey specification

The final survey specification was agreed in December 2015 and was as follows:

*The Home Office would like to be able to make statements about the incidence and prevalence of different kinds of fraud and online crime against enterprises, as well as the size and nature of losses associated with crimes of these types. The focus would be on enterprises (of varying sizes) with headquarters based in UK, which operate in the Financial and Wholesale & Retail sectors.*

### 4.2 Developing the sampling strategy

Following the consultation exercise with the Virtual Working Group in November 2015, the Home Office decided that the IDBR was an appropriate sampling frame.

Ipsos MORI submitted a paper discussing options for sampling the head office survey to the Home Office. The first issue was the choice of stratification variables to use. Ipsos MORI proposed drawing the samples of enterprises in the Wholesale and retail trade and Financial and insurance activities SIC sections proportional to turnover, but giving enterprises with higher turnover higher selection probabilities, in effect skewing the sample towards higher turnover enterprises.

While we recognised that the varied nature of the offences of interest means that turnover is unlikely to be the optimal stratification variable for all offences, our view was that for most fraud and cyber crimes it was the optimal variable to use<sup>12</sup>. The paper pointed out that choice of stratification variable should be determined by which offences are of most interest to policy-makers and data users.

The second issue was whether to sample disproportionately within SIC section by turnover size band. Ipsos MORI's analysis of the ONS aggregate data showed that in both SIC sections which would be covered by the head office survey a high proportion of turnover was accounted for by a very small number of enterprises. In the Wholesale and retail trade SIC section 0.03 per cent of the enterprises (115 enterprises) account for 54.8 per cent of the turnover in the SIC section. In the Financial and insurance activities SIC section 88.7 per cent of the total turnover in this SIC section is generated by

<sup>10</sup> Manufacturing; Electricity, gas, steam and air conditioning supply; Water supply; Construction; Wholesale and retail trade; Transportation and storage; Accommodation and food service activities; Information and communication; Financial and insurance activities; Real estate activities; Professional, scientific and technical activities; Administrative and support service activities; Education; Human health and social work activities; Arts, entertainment and recreation; Other service activities.

<sup>11</sup> The design of the CSBS was changed in 2017. The number of interviews increased from 1,008 to 1,523, and the sample design was changed so that analysis could be carried out by specific sector groupings assumed to have very different approaches to cyber security based on the 2016 survey. For this reason the Finance and insurance activities SIC section, but not the Wholesale and retail SIC section, was over-sampled.

<sup>12</sup> Note the incidence of corporate employee and corporate procurement fraud is more likely to be related to number of employees than number of premises or turnover. Further, frauds which are probably mostly committed in person, such as label fraud, voucher fraud and refund fraud, are most likely to be related to the number of premises.



just 115 enterprises (the 175 enterprises in the two highest turnover bands account for 0.36 per cent of enterprises in the SIC section but 92 per cent of the total turnover).

The third issue was that, for the Financial and insurance activities SIC section, a number of classes were of importance, because businesses in these classes were likely to be victims of certain offences such as Application Fraud, Mortgage Related Fraud, Insurance Related Fraud, and Pension Fraud by Pensioners (or their Estate). Thus it might make sense to sample in such a way to ensure a sufficient sample size was achieved among businesses in the following SIC classes:

- Suppliers of credit: SIC 64191, 64192, 64921, 64922, 64929.
- Suppliers of insurance: SIC 65110, 65120.
- Suppliers of pensions: SIC 65300.
- Suppliers of other financial products/services: All other SIC classes.

The paper proposed sampling disproportionately within SIC section by turnover size band, because enterprises with lower turnover must suffer a smaller proportion of all fraud. Fraud is obtaining money by deception and lower turnover businesses have less money for fraudsters to obtain. Further, we assumed that the motivation for most cyber crime is not disruption of enterprises, but obtaining money, and that fraudulent activity would be a common method of doing this. Further, with regard to offences most likely to be correlated with the number of employees or premises, our view was that for the Wholesale and retail trade SIC section turnover was still a reasonable proxy for the number of employees and premises. While we recognise that this may not be the case for retail enterprises which generate online sales only, generating a very large retail turnover in most cases requires a large number of premises, which in turn requires a high number of employees.

Following discussions with the Home Office, Ipsos MORI submitted a further paper setting out the potential sample sizes for the head office survey in 2017, if the pilot survey was successful. The paper discussed further a potential sample design for the main stage as set out below.

Based on the experience of the CSBS, which has a similar population definition but uses a very different data collection methodology, the paper assumed:

- The yield for the Financial and insurance activities SIC section would be between 15 per cent to 30 per cent.
- The yield for the Wholesale and retail SIC section would be between 17 per cent to 40 per cent.

Turning to the Financial and insurance activities SIC section first, the paper proposed a census of all enterprises in the Financial and insurance activities SIC section with a turnover of more than £100 million per annum, yielding between 66 and 132 interviews. The assumption underpinning this proposal was that, as fraud is obtaining money by deception, most fraud against the Financial and insurance activities SIC section must be committed against the 440 enterprises whose turnover makes up 96.55 per cent of the total turnover in this SIC section.

The paper discussed including enterprises with a turnover of less than £100 million per annum in the survey. These enterprises might suffer a significant number of (low value) incidents of fraud, the proportion of frauds committed against them that are cyber-enabled might vary greatly from high turnover enterprises in this SIC section, and the cost of fraud to

these enterprises might be low relative to high turnover enterprises in this SIC section, but might still be significant for the enterprises affected.

The paper pointed out that the normal rules around confidence intervals for a large population would apply to a sample of enterprises with a turnover of less than £100 million per annum in the survey, and achieving a reasonable confidence interval for survey estimates would require a large sample size. This would involve the commitment of relatively substantial resources to a part of the survey population which was likely to experience a very small proportion of all fraud committed against the Financial and insurance activities SIC section. A further problem would be that the results could not be combined with answers from enterprises with a turnover of more than £100 million per annum, because the weights required to make the sample representative of the whole Financial and insurance activities SIC section would make the achieved sample grossly inefficient in statistical terms. For these reasons the paper recommended against the inclusion of enterprises with a turnover of less than £100 million per annum in the sample covering the Finance and insurance activities SIC section.

Turning to the Wholesale and retail trade SIC section, the paper proposed a census of enterprises with a turnover of £1 billion per annum or more, yielding between 20 and 46 interviews. A decision would then be required as to whether to draw a sample including enterprises from all remaining turnover size bands (skewing this part of the sample to higher turnover enterprises) or carrying out a census of the 835 enterprises with a turnover of more than £100 million per annum. The paper recommended allocating some fieldwork resources to smaller retail enterprises (turnover less than £100 million per annum) that may experience significant rates of certain types of retail-specific fraud such as voucher or refund fraud.

### Combining data from the premises-level CVS and the head office survey

The Home Office's review of head office surveys of crimes against businesses concluded that while it is difficult for the premises-level CVS to measure crimes 'without location' such as online fraud and cyber crime against large multi-site businesses, it remains a robust measure of these crime types against single-site businesses. Thus the main objective of any potential head office survey should be to measure the *incidence and cost* of fraud and cybercrime against multi-site businesses, which are likely to be under-counted on the premises-level CVS.

During the scoping interviews we found that single-site retailers, who make up a large part of the Wholesale and retail trade SIC section, experience little fraud or cyber crime and are unlikely to provide much more detailed data than that which can be collected via the premises-level CVS. The scoping interviews report recommended that the Home Office should consider whether to restrict coverage of the Wholesale and retail trade SIC section in the head office survey to multi-site businesses only, to minimise overlap with the premises-level CVS. The report recommended considering the possibility of combining findings from the premises-level CVS and the proposed head office survey for this SIC section.

Following the decision to proceed with detailed design work on the head office survey at the CVS Steering Group meeting in June 2016, at the Home Office's request Ipsos MORI prepared a memorandum discussing the possibility of combining data from the premises-level CVS, which already contained questions about fraud and cyber crime, and the head office survey.

The memorandum recommended that, if the proposed head office survey was undertaken it should be run in addition to (although not necessarily at the same time as) the premises-level CVS. As a consequence, fraud and cyber crime could be measured using the head office survey only, or by combining data on fraud and cyber crime from both the premises-level

CVS and the head office survey. This would depend on questions collecting data about fraud and cyber crime being harmonised across the premises-level CVS and head office survey.

The options considered in the memorandum were:

- Option 1: Converting fraud and cyber crime estimates from the premises-level CVS survey into enterprise-level estimates (whole sample).
- Option 2: Converting fraud and cyber crime estimates from the premises-level CVS survey into enterprise-level estimates (single-site enterprises only).
- Option 3: Measuring fraud and cyber crime using the head office survey only (single- and multi-site enterprises).
- Option 4: Combining fraud and cyber crime data from the premises-level CVS (single-site enterprises only) and head office survey (multi-site enterprises only).
- Option 5: Combining fraud and cyber crime data from the premises-level CVS (single-site enterprises only) and head office survey (single- and multi-site enterprises).

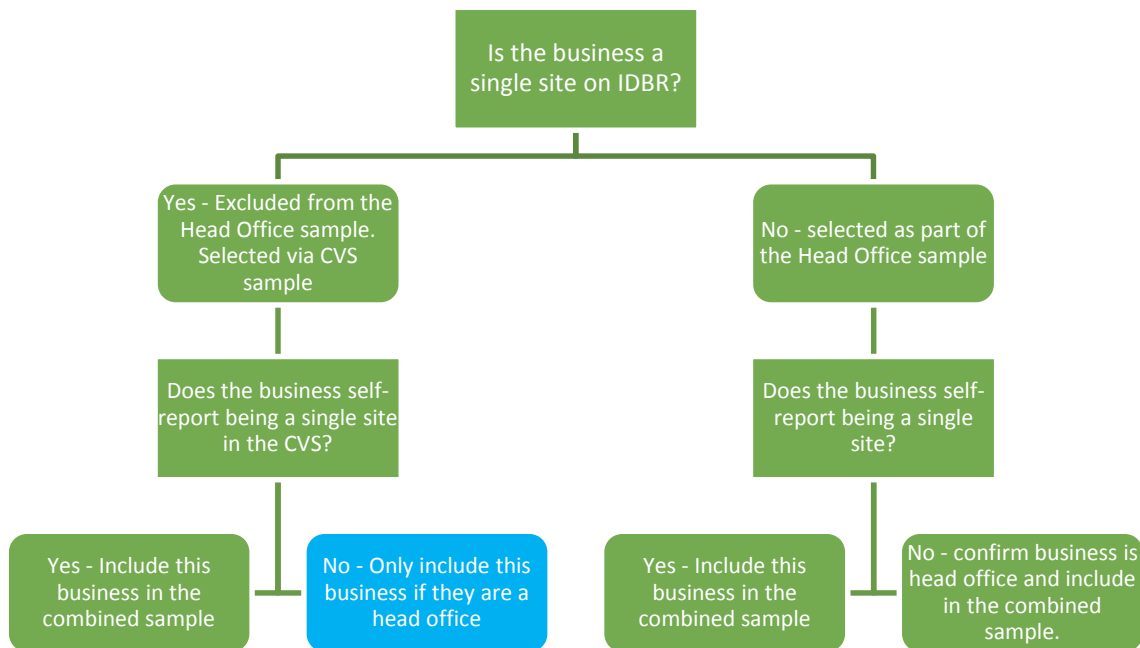
The conclusion reached was that it would be possible to combine fraud and cyber data from the premises-level CVS and head office surveys, and indeed that there would be advantages in doing so. This depended on two conditions being met:

1. The premises-level CVS and head office surveys being run concurrently.
2. Questions on fraud and cyber crime being harmonised across the two surveys.

Following the CVS Steering Group meeting of June 2016, which had discussed the findings of the scoping interviews, the Home Office consulted the Virtual Working Group about population definition. The Home Office asked the Virtual Working Group to comment on whether, for the Wholesale and retail trade SIC section, the head office survey should cover all retail businesses regardless of size, or focus only on multi-site enterprises, potentially making the head office survey in effect a panel survey for some respondents whereby the same (large) businesses were covered each year.

Following the consultation, the Home Office decided that, for the Wholesale and retail trade SIC section, multi-site enterprises only would be included in the pilot head office survey. The feedback from the Virtual Working Group was mixed as some respondents wanted the whole Wholesale and retail trade SIC section covered in the pilot survey. The Home Office decided that to accommodate this requirement, should the pilot survey be successful and a head office survey carried out in 2017/18, the results for single-site retailers from the premises-level CVS would be combined with the results for multi-site enterprises from the head office survey, resulting in full coverage of the Wholesale and retail trade SIC section.

Following discussions with the Home Office, we recognised that this approach would lead to some under-coverage of businesses caused by discrepancies between the number of premises recorded for each enterprise on the IDBR and the number of premises a business reports it has during the survey. The pale blue box in the flow diagram below indicates businesses that are likely to be under-represented in the combined sample.



We agreed to select the premises-level CVS sample first, identify any head offices in the selected sample and ask the ONS to exclude these from the head office sample. We discussed seasonality and agreed that ideally the two surveys should be run concurrently and the resulting data combined to avoid any possible impact from seasonality. We recognised, however, that for practical reasons this may prove difficult to implement in the short term.

### 4.3 Developing the data collection instruments

Following the consultation exercise with the Virtual Working Group, the Home Office found there was consensus that incidence, prevalence and costs associated with such crimes should be measured.

Using the Home Office's Counting Rules for Fraud, Ipsos MORI provided some initial thoughts on the list of proposed offences. The Counting Rules for Fraud were used because they provide comprehensive coverage of fraud and cyber crime types, and also provide definitions and worked examples which could be helpful for respondents. Ipsos MORI studied the rules and identified offences which in our view might be committed against businesses in the Financial and insurance activities and Wholesale and retail trade SIC sections. This gave us a list of potential offences the head office survey might cover. This enabled us to identify what offences are currently covered by either the premises-level CVS or the CSBS (which covers enterprises in both the Financial and insurance activities and Wholesale and retail trade SIC sections, among many others). We hoped to assist the Home Office in identifying 'gaps' in the survey data relating to offences committed against businesses, as well as identify potential overlaps with our proposed survey. To assist in identifying the 'gaps', the list of proposed offences was also discussed at a meeting with a representative of the NFIB on 28 January 2016.

Ipsos MORI also recommended that the measures adopted for the head office survey should be:

- Number of enterprises that experienced incidents in the last 12 months.
- Number of incidents experienced in the last 12 months.

- How many of the fraud incidents were offline and cyber-enabled.
- Cost of all incidents.

This would allow the calculation of incidence rates, the proportion of enterprises experiencing an offence in the last 12 months, and the average number of incidents experienced by each enterprise victimised in the last 12 months.

The Home Office provided a draft list of costs potentially incurred by enterprises in relation to 'offline' fraud, cyber-enabled and cyber-dependent crimes against the enterprise. This was intended to inform the development of the content of the head office survey. This grouped a wide range of costs an enterprise might face under three headings: anticipation and/or prevention of crime, the consequences of crime and the response to crime.

Initially the proposed reference period for the head office survey was the last 12 months prior to interview, as used in the premises-level CVS and other crime surveys such as the CSEW. During the scoping interviews we found that a reference period this long might be problematic for businesses where respondents are reliant on short-term or patchy record-keeping (which we found was more likely to be the case for smaller retailers). The scoping interviews report recommended that the Home Office should consider the trade-off between a short reference period (which ought to improve accuracy and minimise burden on businesses) or a longer reference period (making data comparable with the premises-level CVS). The Home Office subsequently decided that respondents would be asked to provide data covering the calendar year 2016, as the decision to include multi-site enterprises only in the coverage of the Wholesale and retail trade SIC section meant the problem of short-term or patchy record-keeping was unlikely to be significant. Further, given completion of the head office survey might involve multiple individuals within an enterprise, and a self-completion data collection instrument would be used, a calendar year reference period would be easier for respondents to understand and use, than the last 12 months prior to interview.

During the scoping interviews we found that data about some offences were regarded as much more sensitive than others by businesses in both the Wholesale and retail trade and Financial and insurance activities SIC sections. Ipsos MORI suggested it would be unfortunate if respondents refused to take part in the head office survey because of concerns about the disclosure of data relating to one or two offence types only. The report recommended that the Home Office should consider the value of data about each offence type and decide whether to include the offence type in the proposed survey after taking account of respondents' perceptions of the sensitivity of data relating to the offence type.

During the scoping interviews we found that some respondents had difficulty understanding the definitions of some offences, which were based on terminology used in the Home Office Counting Rules for Fraud. The report recommended that the Home Office should carry out further work to develop specific questions which are understood by as wide a range of potential respondents as possible. In doing so, the Home Office should have regard for the existing collection of data on fraud and cyber crime in the premises-level CVS and the desirability of harmonising definitions across that survey and the proposed head office survey.

During the feasibility study, both Ipsos MORI and the Home Office were acutely conscious of the need to identify and take into account the potential overlap with other surveys, such as the CSBS, and data collection exercises carried out by private industry bodies.

During the scoping interviews, we found many respondents in the Financial and insurance activities SIC section perceived that some of the data a head office survey might collect are already collected by other bodies, including:

- Financial Fraud Action (FFA) UK;
- the Prudential Regulation Authority (PRA);
- CIFAS;
- the Financial Conduct Authority (FCA);
- the Association of British Insurers (ABI);
- the Council of Mortgage Lenders (CML); and
- the Information Commissioner's Office (ICO).

The report recommended that the Home Office should establish what data these bodies collect, to ensure any survey organisation carrying out the head office survey can explain to potential respondents how this data collection exercise does not overlap with those carried out by others. It recommended the Home Office establish whether existing data collection exercises might (for some offence types) be likely to provide equal or better quality data than the proposed survey (and, if so, whether the Home Office might be able to co-operate with external bodies so the content of such data collection exercises satisfies Home Office requirements as well as those of other bodies).

Part of the programme of work therefore involved an investigation of other potential sources of information, such as data collection exercises carried out by FFA UK, CIFAS, and the ABI. The Home Office undertook most of this work.

In general, the data collection exercises undertaken by industry bodies shared a number of characteristics. Each of them were private initiatives which exist independent of government to provide information for the memberships of these industry bodies. They were not designed to be representative of any defined business population, though it may well be that the nature of the membership means their data collection exercises cover most economic activity among the type of businesses the bodies represent, or that the response rates to these exercises are high. In other words, their coverage of the prevalence of certain crimes and associated losses may well be excellent and the data collected robust, even if the population coverage is ill-defined. A key consideration for the Home Office is that the quality of each data collection exercise is difficult to assess because the publicly available information is partial or opaque, and often minimal. Without transparency and the ability to scrutinise the results in detail, this inevitably diminishes the value of the evidence such exercises generate in the eyes of policy-makers.

To inform the design of the data collection instrument, the Home Office asked Ipsos MORI to review the notes made during the scoping interviews to consider whether it would be feasible for respondents in the Financial and insurance activities SIC section to distinguish 'crimes against the business' from 'crimes against customers' in their data. During the scoping interviews most respondents said their business did not currently make a distinction, in general, between crimes against the business and crimes against customers. If this was a requirement of the proposed Head Office survey to provide these data, it might create an additional burden on respondents.

The Home Office provided a skeleton questionnaire to Ipsos MORI to assist the data collection instrument design process. Ipsos MORI then provided a draft data collection instrument to the Home Office, along with a paper discussing the issues that needed to be considered during the design of the instrument. These included:

- The advantages and disadvantages of using separate data collection instruments for respondents in the Wholesale and retail trade and Financial and insurance activities SIC sections.
- A proposal that the number of data items collected in the pilot survey should be minimised so the pilot survey response rate achieved would represent a 'best case' scenario.
- A proposal to use a specific reference period which is appropriate where respondents must consult records. This has two key advantages: it enables a consistent response within any responding business and reduces the likelihood of queries.
- There might be a 'lag' between when the offence was committed, and when the offence became apparent to the business, and we recommended appropriate instructions were included in the survey guidance.
- How to deal with instances where product-related fraud (such as Mortgage Related Fraud and Insurance Related Fraud) was not relevant to the responding business.
- How to encourage the reporting of summary data, if detailed data cannot be provided. This enables businesses with a very limited reporting capability to provide some useful information. For some questions, we proposed allowing respondents to report the actual number of these incidents or the proportion of these incidents.
- Whether to require businesses to report the number of incidents reported to Action Fraud, CIFAS and FFA UK separately, or to ask instead about reporting to any external organisation.
- Whether to harmonise the descriptions of fraud and cyber offences used in the Home Office skeleton questionnaire with those used in the premises-level CVS.

A draft data collection instrument was agreed by Ipsos MORI and the Home Office. In January 2016, the Home Office sent the draft to CIFAS, the Building Societies Association (BSA), and the ABI for comment. We were grateful for the valuable feedback received from these industry bodies and amendments to the data collection instruments were made as a result.

#### 4.4 Developing the data collection method

Ipsos MORI reviewed other UK business surveys commissioned by Government Departments and Non-Departmental Bodies to try and establish how these surveys (if they do at all) deal with the problem of securing co-operation at the enterprise level. The review covered all the major business surveys commissioned by Government Departments/Non-Departmental Public Bodies, with the exception of the surveys of businesses carried out by the ONS. This was because as most ONS business surveys are conducted under Section 1 of the Statistics of Trade Act 1947, they are obligatory for sampled businesses to complete, unlike those commissioned by Government Departments/Non-Departmental Public Bodies which must rely on voluntary co-operation by selected businesses. Details of the review are set out above in section 4.1.

The conclusions of the review were:

- Whether sampling is conducted at the premises or enterprise level, in general most surveys do not adapt their procedures much (if at all) to deal with the particular challenges of securing participation among multi-site organisations. Some of the adaptations to procedures appear tokenistic and unlikely to prove successful.

- With one exception no information is presented in any of the technical documentation of response rates by single-site and multi-site organisations. It could well be the case that differential response rates among single-site and multi-site organisations are an important source of bias in the estimates for some of the surveys, but we can draw no conclusions.

The Home Office reviewed head office surveys of crimes against businesses. The surveys covered were (by commissioning organisation):

- Home Office: 2002 CVS (postal element)
- British Retail Consortium (BRC) survey
- Scottish Business Crime Survey (head office element)
- PwC – Global Economic Crime Survey
- Ernst & Young – Global Fraud Survey

The review of the most relevant survey – the 2002 CVS – concluded:

- Initial contact needs to be made with the businesses, to emphasise the importance of the survey and persuade respondents to take part.
- A screening stage should identify respondents who are willing to participate; can provide some or all of the information required; and are allowed by their businesses to disclose it.
- The experience of the 2002 survey suggests that more engagement and resources are required, to increase the chance that the responding businesses are representative of the population.
- A survey approach that allows routing to relevant questions (for example, about crime types where information is available) would be beneficial. A web or telephone survey may work better than a postal one.
- The survey should be focused on key crime types that are cannot be measured reliably by a premises-level survey (for example, online fraud and other cyber crime).
- Questions on the amount of losses due to crime are more likely to be answered than questions about incidence.
- In general, it appears difficult for any organisation to obtain survey responses from a large representative sample of business headquarters.

During the scoping interviews we found that data collection for the head office survey required three stages to be completed: firstly, contacting the right person or people at each business and securing participation; at some large businesses this may be more than one person, as responsibility regarding fraud and cyber crime may be split across teams. Secondly, the respondent needed to be told what data are required and afforded the time and tools to collect them (as this will often require input from a number of individuals within the business). Thirdly, the respondent will need to transmit the data in some form to the survey organisation. Each of these stages of data collection might utilise a



different mode, due to the diversity of business structures within each SIC section. The scoping interviews report recommended that the Home Office should consider the best method for each of these stages.

To inform the design of the head office survey, Ipsos MORI carried out analysis of the response rates to the 2016 CSBS. The data collection methodology for this survey was similar to those deployed in other UK business surveys detailed above. This analysis found:

- In the Financial and insurance activities SIC section, a yield of 15 per cent was achieved. Once allowance is made for businesses that had closed and for any failure to establish whether the business is eligible for the survey, the response rate was 24 per cent. Looking at SIC classes where companies could be victims of activity-dependent fraud<sup>13</sup> (such as Mortgage Related Fraud or Insurance Related Fraud) the yield was 11 per cent, and the response rate 18 per cent.
- In the Wholesale and retail trade SIC section, we analysed response rates among businesses with 250 or more employees (that is, restricting the analysis in effect to multi-site enterprises). The yield was 7 per cent and the response rate 10 per cent.

The conclusion we reached was that standard methods used for enterprise-level surveys generate low response rates resulting in samples where the risk of non-response bias is high. This implied a different approach would be needed for the head office survey to be able to generate data that comes near to being as robust as the premises-level CVS.

Subsequently Ipsos MORI prepared a paper setting out proposals for the data collection method for the head office survey. The discussion of the data collection method was broken down into four separate components:

- contact;
- securing participation;
- the data collection instrument; and
- the data collection process.

After detailed discussion of the issues, a set of recommendations was made, broken down by whether we proposed they should be implemented in the pilot survey or at the main stage. They were:

	Pilot survey	Main stage
<b>Contact</b>		
We recommend asking to speak to one target respondent who is the senior member of staff who has the most day-to-day responsibility for dealing with fraud against the business	Yes	Yes
We recommend investigating screening the sample of enterprises against lists of contacts held by industry bodies such as the BRC, FFA UK, British Bankers Association (BBA) and ABI	Yes	Yes

<sup>13</sup> 64191: Banks, 64192: Building societies, 64921: Credit granting by non-deposit taking finance houses and other specialist consumer credit grantors, 64922: Activities of mortgage finance companies, 64929: Other credit granting not elsewhere classified, 65110: Life insurance, 65120: Non-life insurance, and 65300: Pension funding.

We recommend writing to the chief executive of each business where we have been unable to identify a target respondent during the screening survey, asking them to identify the correct target respondent for their business	No	Yes
We recommend approaching the target respondent directly	Yes	Yes
We recommend approaching the target respondent by both letter and email	Yes	Yes
We recommend that we approach the target respondent by telephone shortly afterwards	Yes	Yes
We recommend the guidance and/or communications about the survey from the Home Office and Ipsos MORI should make it clear that businesses will need to provide a lead contact, which should be assumed to be the contact identified during the screening survey unless they indicate otherwise	Yes	Yes
<b>Securing participation</b>		
We recommend that the Home Office develops a convincing narrative about what the results of the head office survey will be used for	Yes	Yes
We recommend that the Home Office commits to agreeing to take part in the process of persuading the largest businesses to take part by offering meetings to a carefully defined category of businesses, representing a small sub-set of the issued sample	Yes	Yes
We recommend that, initially, the Home Office collect the minimum amount of information required, to reduce the burden on business. This could be achieved by focusing on key gaps in existing evidence, and avoiding offences where some data, even if imperfect, is already available from other sources	Yes	Yes
We recommend that the Home Office, via survey FAQs, is able to demonstrate convincingly that the survey is not duplicating information requests made by other bodies	Yes	Yes
We recommend that the Home Office commits to attempting to secure the buy-in of the following industry bodies, by attending meetings similar to the one at the British Retail Consortium: CIFAS, FFA UK, and the ABI. Other potential groups worth approaching might be the Federation of Small Businesses, BBA and CML	Yes	Yes
We recommend that the Home Office considers the use of non-monetary incentives for the proposed head office survey, such as anonymous data sharing	No	Yes
We recommend that the Home Office divide the instrument into two parts: a "core" which all respondents are expected to complete, collecting data about less sensitive offences and an "optional" section collecting data about the most sensitive offences	Yes	Yes
<b>The data collection instrument</b>		
We recommend using an electronic self-completion instrument	Yes	Yes
We recommend providing businesses with an Excel workbook, available to download from a website	Yes	Yes
We recommend separate guidance should be available on the internet in the form of FAQs or a document that can be downloaded	Yes	Yes
We recommend that businesses are asked to provide data for the UK, and, if they can without difficulty, provide data also for England and Wales	Yes	Yes
We recommend the Home Office uses FAQs to set out crime definitions	Yes	Yes
We recommend presenting questions about 'top level' data first, before questions at a more granular level are posed further down in the worksheet	Yes	Yes

The data collection process		
We would recommend including a reference to Ipsos MORI's accreditation to ISO 27001: 2005 in survey materials	Yes	Yes
We recommend Ipsos MORI collect the data via a telephone call, if target respondents worry about the security of returning their completed survey via the portal	Yes	Yes
We recommend sending reminder emails or make reminder phone calls to the target respondent throughout the fieldwork period until a completed instrument was received	Yes	Yes

# 5. Methodology

## 5.1 Sampling

### Sample design

The sampling frame for the pilot survey was obtained from the IDBR, several weeks prior to fieldwork beginning.

The sample frame comprised enterprises in the Financial and insurance activities and Wholesale and retail trade SIC sections in England and Wales, and was stratified prior to selection using IDBR information on turnover within SIC section. Five turnover size bands were used to draw the sample: £0-<£100m, £100m-<£250m, £250m-<£500m, £500-£1bn and >£1bn.

The pilot survey sampling strategy differed from that proposed for the main stage (see section 4.2 for further details) as our main concern was to pilot the survey among all types of businesses in the Financial and insurance activities and Wholesale and retail trade SIC sections and among all turnover size bands. As our expected yield rate was low (see section 4.2 for further details) this implied a census of all businesses in the Financial and insurance activities SIC section with a turnover of over £100 million per annum and all businesses in the Wholesale and retail trade SIC section with a turnover of over £250 million per annum.

### Sample request

The sampling process began with a request to the ONS for the latest counts of business enterprises held on the IDBR in each of the two SIC sections, by turnover size band. Based on the counts supplied, assumptions were made about the size of the sample that needed to be drawn to achieve 25 interviews in each of the SIC sections (after the sample was ordered the Home Office agreed to fund an increase in the pilot survey sample size to 50 interviews in each of the SIC sections). Assumptions were based on the yield rates achieved for these SIC sections during the fieldwork for the 2016 CSBS (see section 4.2). A sample specification was sent to the Home Office for approval, before being sent by them to the ONS. This requested that sample should be provided at an enterprise level.

### Sample cleaning, matching and batching

Details for 1,881 reporting units<sup>14</sup> were received from the ONS as the sample frame for the pilot survey. This was unfortunate as the sample specification had requested an enterprise-level sample, and there was insufficient time for the sample to be drawn again. We understand that the IDBR is built to select samples at reporting unit level, as this suits the method by which the ONS administers surveys it conducts under Section 1 of the Statistics of Trade Act 1947, which are obligatory for sampled businesses to complete. We also understand that in the majority of cases (approximately 99%) an enterprise is linked to one reporting unit only.

We understand that the ONS must put in place an additional *ad hoc* process to draw enterprise-level samples, which increases the amount of time necessary to draw the sample. We would recommend this is done in future, as reporting

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<sup>14</sup> The IDBR definition of an enterprise is set out in section 4.1. A reporting unit the mailing address to which the survey questionnaires are sent. An enterprise may comprise of more than one reporting unit. For example, for an enterprise, turnover is the sum of the turnovers of the Reporting Units within the enterprise structure.

unit level samples do require additional and time-consuming manual processing work to convert them to enterprise-level samples, which would significantly increase the cost to the Home Office of employing a contractor to carry out a head office survey.

The table below details the total sample received by Ipsos MORI for each SIC section, by turnover size band.

**Table 5.1: Received sample by SIC section and turnover size band (reporting units)**

	Turnover unknown	£0-£100m	£100m - £1bn	£1bn+	Total
Wholesale and retail trade	-	26	754	106	886
Financial and insurance activities	156	43	684	112	995
<b>Total</b>	<b>156</b>	<b>69</b>	<b>1,438</b>	<b>218</b>	<b>1,881</b>

As well as taking steps to identify unique enterprises, several steps were taken to 'clean' telephone numbers in the database and prepare the sample file for fieldwork. These were:

- Removing characters such as spaces, hyphens and brackets and adding in missing leading zeros to form a full UK telephone number suitable for automated diallers;
- Removing '08' and premium rate telephone numbers to avoid any breach of the Market Research Society Code of Conduct (in the case of Freephone numbers) and cost issues (fixed/premium rate numbers);
- Removing cases with duplicate telephone numbers (that is, multiple premises of the same business);
- Removing telephone numbers with an invalid format;
- Screening against Ipsos MORI's 'do not call' list and removing any numbers included on it. This is an essential compliance procedure that ensures people who have previously asked us not to call them ever again were removed from the sample; and
- Recoding sample variables such as SIC section and company size into a format suitable for the CATI script.

Once the database had been prepared, a process of auto-matching of telephone numbers was undertaken. The IDBR does not always possess a telephone number for each business recorded: depending on SIC section and size band, usually between 15 and 35 per cent of cases have a telephone number. However, where there are telephone numbers, the proportion that is inaccurate can also be high. To increase the number of telephone numbers in the database – and therefore the number of businesses that can be contacted and given a chance of taking part in the survey – matching is essential. Furthermore, matching can help reduce biases in survey estimates, since businesses with an existing or easily matched number may differ to other businesses in that SIC section with regard to the key variables of interest.

Before automatic telephone matching, 188 businesses were removed from the sample frame, following a manual inspection of the database. This was because they were found to be either trustees of pension funds or other financial accounts, with no registered staff or turnover, or businesses that appeared to be sole traders, with only a named person in the enterprise name field. The remaining sample, consisting of unique enterprises (and excluding those recorded as 'Do

Not Contact') was sent for automatic telephone matching against a publicly available database). The cases sent for automatic telephone matching are presented in the table below for each SIC section, by turnover size band.

**Table 5.2: Sample sent for automatic telephone matching by SIC section and turnover size band**

	Income unknown	£0-£100m	£100m - £1bn	£1bn+	Total
Wholesale and retail trade	-	247	444	91	782
Financial and insurance activities	82	365	300	94	841
<b>Total</b>	<b>-</b>	<b>612</b>	<b>744</b>	<b>185</b>	<b>1,623</b>

Additionally, manual matching was undertaken for 69 enterprises with more than one sampled reporting unit. This was first to establish which was the primary, or original, reporting unit and, secondly, to try to find a telephone number for that unit and so avoid calling the enterprise at multiple locations or in rapid succession using the same telephone number. This was done by looking for the business website or by searching online for any other information that would help to establish which reporting unit should be used.

Finally, contact details (named person, job title, email address and/or telephone number) for 34 enterprises were provided by the industry bodies of which the business was a member, with the permission of the member concerned. These were contacted directly by the Ipsos MORI research team, rather than being issued for screening at the Ipsos MORI Telephone Interviewing Centre.

The sample that was issued for fieldwork consisted of 1,003 cases; 53 per cent of the received sample. The matching produced 14 per cent of these. The tables below show how many telephone numbers were achieved through matching for each SIC section, by turnover size band and the matching rates.

**Table 5.3: Matched numbers for each SIC section, by turnover size band<sup>15</sup>**

	Income unknown	£0-£100m	£100m - £1bn	£1bn+	Total
Wholesale and retail trade	-	31	40	8	79
Financial and insurance activities	4	31	19	4	58
<b>Total</b>	<b>4</b>	<b>62</b>	<b>59</b>	<b>12</b>	<b>137</b>

<sup>15</sup> This excludes instances where a Freephone/Fixed rate or mobile number was matched.

**Table 5.4: Matching rates for each SIC section, by turnover size band**

	Income unknown	£0-£100m	£100m - £1bn	£1bn+	Total
Wholesale and retail trade	-	13%	9%	9%	10%
Financial and insurance activities	5%	8%	6%	4%	7%
<b>Total</b>	<b>5%</b>	<b>10%</b>	<b>8%</b>	<b>6%</b>	<b>8%</b>

Following cleaning, the total matched sample file was divided into batches of various sizes before being loaded into the interviewing system for screening. Batching ensured that a steady flow of work was delivered to the interviewers and, more importantly, that each case in the sample received the attention needed to reach a final outcome (whether a completed interview or another final outcome such as a refusal). This is particularly important in a random probability survey because all cases must have the same chance of ending in a successful interview: if they do not the risk of non-response bias is increased. This ensures that part of the sample can be held in reserve if needed where response rates exceed expectations, without compromising sample representativeness.

Enterprises were allocated to batches by carrying out a random selection within each SIC section, by turnover size band, so that batches consisted of businesses from the Wholesale and retail trade SIC section only or businesses from the Financial and insurance activities SIC section only. On average, the batches consisted of c.100 businesses, as this batch size was flexible enough to allow fieldwork to progress and response to be monitored. All batches for the pilot survey were ultimately allocated to interviewers.

## 5.2 Materials

### Invitation letter

During the screening stage (after the eligibility of the business was established) an invitation letter was sent to the person that the interviewer had identified during the screening as being the most appropriate contact within the business to complete the data collection instrument, or to liaise internally with their colleagues to complete it. This letter was issued electronically directly from the CATI interviewing script, by the interviewer. The invitation letter was designed by Ipsos MORI in consultation with the Home Office. The invitation letters differed slightly by SIC section but they both contained:

- The aims of the survey;
- A statement about the importance of collecting the data by the Minister of State for Policing, Brandon Lewis MP;
- The names of the industry bodies endorsing the survey;
- Links to download the data collection instrument and guidance document from;
- Instructions for securely returning a completed data collection instrument to Ipsos MORI;
- The email addresses for the members of the Ipsos MORI research team, for queries; and

- Reassurances by Ipsos MORI of anonymity and confidentiality.

The endorsements were obtained from relevant organisations and trade bodies by the Home Office. The letter to businesses in the Wholesale and retail trade SIC section carried endorsements by the Association of Convenience Stores, the Federation of Wholesale Distributors and ORIS forums. The letter to businesses in the Financial and insurance activities SIC section was endorsed by CIFAS, FFA UK and the BSA. The letters can be found in the Appendices.

## Data collection instrument

The data collection instrument was designed by Ipsos MORI in consultation with the Home Office. The instrument was also sent to a small number of industry bodies, and valuable feedback was received. The factual nature of the information required, the likelihood that respondents would need to consult records, the granularity of the data being requested, and the level of accuracy required by the Home Office, necessitated the development of an electronic self-completion data collection instrument that the respondent(s) could take time to complete offline. An Excel spreadsheet with data collected from multiple tabs meant that the parts of the instrument could be distributed to the most relevant departments within the business if necessary.

Further detail about the data collection instrument design process is included in section 4.3. The pilot survey instrument covered the full range of first party, third party and other types of fraud against businesses and their customers. For each fraud type, for example identity fraud (opening a bank account) or transaction fraud, the instrument asked for four pieces of information:

- Number of incidents experienced by the business in 2016.
- The total gross loss resulting from the incidents experienced.
- The number or proportion of incidents that were cyber-enabled (if applicable for fraud type)
- The number or proportion of incidents that were reported to an external body.

Generally, respondents were asked to provide exact figures. For a small number of questions which the report of the scoping interviews had suggested were perceived as more sensitive, respondents were presented with a number of bands to choose from.

The survey also covered a range of cyber offences, asking for similar information to that above. For cyber offences, respondents were asked about the number or proportion of incidents where customer data were stolen or that resulted in a fraud being committed. Businesses were asked to provide some information about their business for use in analysis, and to answer questions about the impact of cyber attacks on their business and preventative measures. They were given an opportunity to provide feedback on the survey.

Two data collection instruments were created: one to be administered to businesses in the Wholesale and retail trade SIC section and another to businesses in the Financial and insurance activities SIC section.

The Wholesale and retail trade SIC section data collection instrument consisted of six tabs:

- Your business.



- Fraud by customers.
- Fraud by employees and others.
- Cyber attacks.
- Cyber impacts and prevention.
- Feedback to the Home Office.

The Financial and insurance activities SIC section data collection instrument consisted of seven tabs:

- Your business.
- 1<sup>st</sup> party fraud.
- 3<sup>rd</sup> party fraud.
- Other fraud.
- Cyber attacks.
- Cyber impacts and prevention.
- Feedback to the Home Office.

## Guidance document

The full report of the scoping interviews stated that respondents had difficulty with the definitions of some offences. Sometimes this was because respondents had difficulty perceiving how an offence type might apply in the context of their business activities, and sometimes this was due to lack of a relevant example or examples. Other respondents, even if they were aware of the Counting Rules for Fraud, used different concepts such 'first party', 'second party' and 'third party' fraud which appeared to have the effect of making it difficult for them to perceive the differences between certain types of offences, or to realise that their business would cover a number of offences in the Counting Rules for Fraud in a category in their own data.

The data collection instruments were designed so that respondents could complete them without referring to guidance. We recognised, however, that the level of familiarity with the concepts may vary considerably among respondents. As a result, the Home Office and Ipsos MORI decided to develop detailed guidance for respondents to use when completing the survey.

The Home Office took responsibility for developing guidance documents for the respondents, in close consultation with Ipsos MORI. Each guidance document was over 20 pages in length. The guidance document for the Wholesale and retail trade SIC section was structured as follows:

- Overview.
- Confidentiality and data protection.

- Introduction.
- Further advice.
- Your business.
- Fraud by customers.
- Fraud by employees and others.
- Cyber attacks.
- Cyber impacts and prevention.
- Feedback to the Home Office.

The guidance document for the Financial and insurance activities SIC section was structured as follows:

- Overview.
- Confidentiality and data protection.
- Instructions.
- Further advice.
- Your business.
- First party fraud.
- Third party fraud.
- Other fraud.
- Cyber attacks.
- Cyber impacts and prevention.
- Feedback to the Home Office.

## 5.3 Fieldwork

### Engagement with industry bodies

A key part of the fieldwork effort was the engagement with industry bodies before fieldwork began. This was one of the key recommendations Ipsos MORI had made in a paper setting out proposals for the data collection method for the head office survey. The Home Office took the lead on this part of the work, with support from Ipsos MORI. The Home Office carried out engagement work with the following industry bodies:

- British Bankers Association (BBA).
- Building Societies Association (BSA).
- BRC (British Retail Consortium).
- Association of British Insurers (ABI).
- CIFAS.
- Federation of Wholesale Distributors (FWD).
- Financial Fraud Action (FFA) UK.

This engagement work took the form of meetings with the industry bodies where representatives of a number of major companies were in attendance, and telephone conferences. The Home Office also asked some of these industry bodies to secure the permission of their members sampled for the survey for their contact details to be passed to Ipsos MORI.

### Interviewer briefings

Two briefings were conducted by the Ipsos MORI researchers with the telephone interviewers. The first took place before the screening stage commenced, and the second before the reminder calls. The briefings were designed to inform the telephone interviewers about the:

- Survey purpose;
- SIC section coverage;
- Different elements making up the survey including the screening interview and materials;
- Data collection instrument structure and content; and
- Target sample size.

Feedback about the script and fieldwork progress was submitted formally by the telephone interviewing centre to the researchers after the first day of interviewing and then on an informal basis regularly throughout the fieldwork period.

### Sample issued for screening

All of the successfully matched sample (1,003 enterprises) was released for screening in batches between 17<sup>th</sup> February and 2<sup>nd</sup> March, 2017. There are tables in Section 6 showing the cases released in each SIC section, by turnover size band. Screening calls continued until 17<sup>th</sup> March, although reminder calls started to be made from 13<sup>th</sup> March. Careful attention was paid to the timing of the release of each batch, to allow a good interval of time between the first and second calls about the survey and to allow respondents a reasonable time to look at the data collection instrument and materials.

## Screening and reminder calls

The screening calls were made by Ipsos MORI's Telephone Interviewing Centre in Edinburgh between 17<sup>th</sup> February and 17<sup>th</sup> March 2017. The CATI script was based on that used for the 2016 premises-level CVS. The purpose of the screening calls was to:

1. Establish the eligibility of the sampled enterprise;
2. Obtain contact details for someone who could take the lead in completing the data collection instrument; and
3. Issue an invitation letter to the identified contact, with instructions how to complete the survey.

Later calls were made to the successfully screened businesses to remind the respondent to complete the data collection instrument and to return it to the Ipsos MORI research team. The reminder calls began on 13<sup>th</sup> March: the batches that were first released for screening were called first, with the latter batches receiving a reminder call later and before the fieldwork deadline.

## Fieldwork management

Fieldwork for the pilot survey took place between 17<sup>th</sup> February and 5<sup>th</sup> April 2017 (the original deadline given to respondents was 29<sup>th</sup> March) with an extension of up to two weeks being negotiated with several businesses. Fieldwork consisted of telephone screening, during which an invitation letter was issued containing instructions about how to complete the survey. A later reminder call was then attempted to all of the successfully screened businesses.

Decisions about when to release the batches were made by the Ipsos MORI researchers in conjunction with the Telephone Interviewing Centre supervisors. Various automated queues were used within the CATI system to control the batches and to pause leads between the screening and reminder stages.

The 'minimum try count' denotes the number of attempts any one lead must receive before it is abandoned, unless a final outcome is received before (for example a refusal, or invalid number). There is more detail on the final outcome codes for the Screening stage in Section 6. The minimum try count for the pilot survey before an attempt to make contact was abandoned was set to 10 to ensure that sample would be called throughout the fieldwork period. The minimum try count does not mean that a lead is necessarily abandoned if all attempted calls have gone unanswered 10 times. For example, if the tenth call ends in a 'soft appointment' then another attempt will be made.

The CATI system has restrictions built in which mean that a business will not be called again too soon if the outcome of the previous call was unsuccessful. As well as distributing the attempted calls across the week, calls were also distributed across different parts of the day, an efficient strategy to ensure that respondents were not always called at the same time every day.

## Return of data collection instruments

Businesses which had completed the survey emailed the Ipsos MORI team to indicate this. They were then informed how to transfer their completed data collection instrument securely to Ipsos MORI.

## 6. Response tables

In this section we refer to completed data collection instruments as questionnaires.

Prior to issuing the sample some businesses were removed from the sample received from the ONS for a number of reasons, including:

- They were found to be either trustees of pension funds or other financial accounts, with no registered staff or turnover.
- They appeared to be sole traders, with only a named person in the enterprise name field.
- We were unable to trace a telephone number for them.

There is a risk that the businesses removed were different to those that remained, with regard to characteristics which have a significant relationship with what we were attempting to measure – experiences of fraud and cyber crime. As noted earlier, the sample that was issued for fieldwork consisted of 1,003 cases; 53 per cent of the received sample, and so this risk is not negligible.

### 6.1 Screening stage response

Note that at the screening stage single-site enterprises in the Wholesale and Retail trade SIC section were screened out, as these were ineligible as a result of decisions made during the survey design process (see section 4.2 for more details).

**Table 6.1: Successfully screened sample for each SIC section, by turnover size band<sup>16</sup>**

	Income unknown	£0-£100m	£100m - £1bn	£1bn+	Total
Wholesale and retail trade	-	9	161	23	247
Financial and insurance activities	24	71	116	36	193
<b>Total</b>	<b>24</b>	<b>80</b>	<b>277</b>	<b>59</b>	<b>440</b>

<sup>16</sup> The turnover figures for each business are those provided on the IDBR.

As can be seen in Table 6.2, apart from the categories 'income unknown' and Wholesale and retail trade SIC section businesses with a turnover of under £100 million per annum, the screening rate did not vary greatly by turnover size band. The screening rate was lowest among Wholesale and retail trade SIC section businesses with a turnover of under £100 million per annum. During the scoping interviews we found these businesses may not perceive fraud and cyber crime as a problem for their business, and this may mean their motivation to co-operate was lower than for other types of businesses covered.

**Table 6.2: Screening rates for each SIC section, by turnover size band**

Conversion rate (total completed screeners / total issued sample)

	Income unknown	£0-£100m	£100m - £1bn	£1bn+	Total
Wholesale and retail trade	-	18%	44%	37%	41%
Financial and insurance activities	5%	47%	49%	43%	47%
<b>Total</b>	<b>44%</b>	<b>40%</b>	<b>46%</b>	<b>40%</b>	<b>44%</b>

## 6.2 Final response (after screening)

Table 6.3 sets out the number of questionnaires returned for each SIC section. Overall, 56 questionnaires were returned to Ipsos MORI. Most (46) came from the Financial and insurance activities SIC section, whereas only 10 came from the Wholesale and retail trade SIC section.

**Table 6.3: Questionnaires returned for each SIC section, by turnover size band<sup>17</sup>**

	Income unknown	£0-£100m	£100m - £1bn	£1bn+	Total
Wholesale and retail trade	0	1	7	2	10
Financial and insurance activities	2	7	26	11	46
<b>Total</b>	<b>2</b>	<b>8</b>	<b>32</b>	<b>12</b>	<b>56</b>

<sup>17</sup> The table includes the questionnaires received from leads that were contacted directly by the Ipsos MORI research team, as well as those received via the traditional telephone screening method.

The return rates set out in Table 6.4 are, unfortunately, low by any standard. They are similar to the response rate achieved during the head office survey undertaken as part of the 2002 CVS. The risk of non-response bias in the samples achieved for each SIC section will be high. The response rate is the one single measure that is available across all surveys and is very often used as an indicator of a survey's quality. There is a debate among academics, survey methodologists and practitioners about how appropriate that might be, but the reality is that a response rate of about 10 to 20 per cent would be considered by the research community to be very low. We believe they would view the results from the survey data as likely to be subject to unacceptably large biases, making it impossible for them to justify generalising from any findings to the population as a whole, which clearly will affect the credibility of the data collected.

**Table 6.4: Questionnaires return rates for each SIC section, by turnover size band**

Questionnaires returned / successfully screened

	Income unknown	£0-£100m	£100m - £1bn	£1bn+	Total
Wholesale and retail trade	-	11%	4%	8%	5%
Financial and insurance activities	8%	10%	20%	24%	17%
<b>Total</b>	<b>8%</b>	<b>10%</b>	<b>11%</b>	<b>18%</b>	<b>12%</b>

The yield rates set out in Table 6.5 are also low. In 2016 the CSBS achieved a yield of between 15 per cent to 30 per cent for the Financial and insurance activities SIC section, and between 17 per cent to 40 per cent for the Wholesale and retail trade SIC section. The yield rates for the head office pilot survey are significantly below these achieved yield rates which is disappointing.

It is important to bear in mind that the CSBS does enjoy a number of advantages the head office pilot survey does not. The principal one is that it is possible for the survey to be completed by the respondent over the telephone, which was not possible for the pilot head office survey because of the nature of the data required. As a result, the time required to complete the CSBS is likely to be much less than for the pilot head office survey.

**Table 6.5: Questionnaire yield rates for each SIC section, by turnover size band**

Questionnaires returned / total issued sample for screening

	Income unknown	£0-£100m	£100m - £1bn	£1bn+	Total
Wholesale and retail trade	-	2%	2%	3%	2%
Financial and insurance activities	4%	5%	10%	12%	8%
<b>Total</b>	<b>4%</b>	<b>4%</b>	<b>5%</b>	<b>8%</b>	<b>5%</b>

The yield rates in Table 6.5 are based on the sample issued for screening. This was, however, not the whole sample received from the ONS.

Table 6.6 presents yield rates as a proportion of the sample received from the ONS.

**Table 6.6: Questionnaire yield rates for each SIC section, by turnover size band**

Questionnaires returned / total sample received from the ONS

	Income unknown	£0-£100m	£100m - £1bn	£1bn+	Total
Wholesale and retail trade	-	4%	1%	2%	1%
Financial and insurance activities	1%	16%	4%	10%	5%
<b>Total</b>	<b>1%</b>	<b>12%</b>	<b>2%</b>	<b>6%</b>	<b>3%</b>

Table 6.7 presents the yield within the Financial and insurance activities SIC section by SIC class. We have carried out this analysis as many of the offences in the instrument for this SIC section were product-related, such as Mortgage Related Fraud and Insurance Related Fraud, and so were only relevant to a sub-sample of businesses in the Financial and insurance activities SIC section.



**Table 6.7: Questionnaire yield rates for the Financial and insurance activities SIC section, by SIC class**

Questionnaires returned / total sample received from the ONS

	SIC code	Number of questionnaires received	Sample received	Yield <sup>18</sup>
<b>Financial service activities, except insurance and pension funding</b>				
Bank	64191	5	78	6.4%
Building Society	64192	5	10	50.0%
Activities of financial services holding companies	64205	1	5	20.0%
Activities of investment trusts	64301	1	30	3.3%
Financial leasing	64901	1	18	5.6%
Credit granting by non- deposit taking finance houses and other grantors	64921	7	35	20.0%
Other - except insurance and pension funding	64999	3	62	4.8%
<b>All financial service activities SICs</b>	<b>All</b>	<b>23</b>	<b>336</b>	<b>6.8%</b>
<b>Insurance, reinsurance and pension funding, except compulsory social security</b>				
Non-life insurance	65120	3	46	6.5%
Non-life reinsurance	65202	1	3	33.3%
<b>All insurance, reinsurance and pension funding SICs</b>	<b>All</b>	<b>4</b>	<b>120</b>	<b>3.3%</b>
<b>Activities auxiliary to financial services and insurance activities</b>				
Security and commodity contracts brokerage	66120	1	45	2.2%
Other - except insurance and pension funding	66190	4	254	1.6%
Activities of insurance agents and brokers	66220	6	72	8.3%
Other insurance and pension funding activities	66290	3	88	3.4%
Fund management activities	66300	5	64	7.8%
<b>All auxiliary service SICs</b>	<b>All</b>	<b>19</b>	<b>539</b>	<b>3.5%</b>
<b>Total</b>	<b>-</b>	<b>46</b>	<b>995</b>	<b>4.6%</b>

<sup>18</sup> Questionnaires returned as a proportion of sample received.

### 6.3 Effectiveness of reminders/additional efforts

Reminder rates for those successfully screened are presented in Table 6.8. These figures suggest that even when businesses are screened and sent the survey, considerable effort is needed merely to re-establish contact to remind them to complete the survey.

**Table 6.8: Reminder rates for each SIC section, by turnover size band**

Successfully reminded / Successfully screened

	Income unknown	£0-£100m	£100m - £1bn	£1bn+	Total
Wholesale and retail trade	-	56%	32%	43%	34%
Financial and insurance activities	33%	39%	40%	39%	39%
<b>Total</b>	<b>33%</b>	<b>41%</b>	<b>35%</b>	<b>41%</b>	<b>37%</b>

The questionnaire return rates for those who we were able to reach with a reminder call are presented in Table 6.9. These return rates are higher than the return rates for all those successfully screened. This suggests that the reminder calls were a worthwhile use of resources, although it could be the case that those we were able to reach on a reminder call had a higher propensity to respond in any event.

**Table 6.9: Questionnaires return rates for those reminded for each SIC section, by turnover size band**

Questionnaires returned / Successfully reminded

	Income unknown	£0-£100m	£100m - £1bn	£1bn+	Total
Wholesale and retail trade	-	20%	12%	10%	12%
Financial and insurance activities	25%	25%	39%	57%	36%
<b>Total</b>	<b>25%</b>	<b>24%</b>	<b>38%</b>	<b>25%</b>	<b>27%</b>

Tables 6.10 and 6.11 show the number of questionnaires returned by method of approach, for each SIC section in turn. Overall, 15 questionnaires were received from businesses where the contact details of target respondents had been passed to Ipsos MORI by industry bodies, while 43 questionnaires were received from businesses where a screening approach, typical of that used in business surveys, was employed.

**Table 6.10: Questionnaires returned by method of approach, for Wholesale and retail trade SIC section**

	Details passed by industry bodies	Traditional screening approach	Total
£0-£100m	-	1	1
£100m-£1bn	1	6	7
£1bn+	1	1	2
<b>Total</b>	<b>2</b>	<b>8</b>	<b>10</b>

**Table 6.11: Questionnaires returned by method of approach, for Finance and insurance activities SIC section**

	Details passed by industry bodies	Traditional screening approach	Total
Income unknown	-	2	2
£0-£100m	-	7	7
£100m-£1bn	8	18	26
£1bn+	3	8	11
<b>Total</b>	<b>13</b>	<b>35</b>	<b>46</b>

The questionnaire return rates by method of approach are presented in Table 6.12. It is striking that where a screening approach typical of those used in other business surveys had to be employed, the return rates were much lower than when contact details of potential respondents had been passed to us by industry bodies. This suggests that our judgement that engagement with industry bodies would help us obtain responses from sampled businesses was correct. In any event, the return rates achieved where contact details were passed to us by industry bodies were still disappointing. It does however also suggest that a far higher level of resource than that available to the Home Office for the pilot head office survey (see section 5.3 for further details of efforts to engage with industry bodies) is required to build support for the survey among large businesses whose co-operation is vital for robust estimates of the prevalence and incidence of fraud and cyber crimes against businesses to be obtained.

**Table 6.12: Questionnaire yield rates by method of approach**

Questionnaires returned / total issued sample for screening

	Details passed by industry bodies	Traditional screening approach	Total
Wholesale and retail trade	20.0%	1.7%	2.0%
Financial and insurance activities	41.7%	6.6%	8.2%
<b>Total</b>	<b>35.3%</b>	<b>4.3%</b>	<b>5.3%</b>

In Table 6.13 we analyse the method of approach used by turnover size band for the Wholesale and retail trade SIC section. Note that all respondents were sent a final reminder email whether or not we were able to make a successful reminder call. The return rates are calculated as a percentage of those where we had obtained contact details, either by screening or from industry bodies. The return rates from those contacted were very low and screening as an approach achieved a return rate of over 10 per cent only among businesses with a relatively low turnover. Return rates where we received contact details passed by industry bodies were higher, but even among the highest turnover businesses only 33 per cent of questionnaires were received.

**Table 6.13: Questionnaire return rate for each method of approach, by turnover size band, for Wholesale and retail trade SIC section**

	£0-£100m	£100m - £1bn	£1bn+	Total
Screened but not reminded	25%	5%	8%	6%
Screened and reminded	11%	4%	4%	4%
Details passed by industry bodies	-	14%	33%	20%

In Table 6.14 we analyse the method of approach used by turnover size band for the Financial and insurance activities SIC section. As with the Wholesale and retail trade SIC section, the return rates were much lower where a screening approach was employed. Where details were passed by industry bodies to Ipsos MORI, almost half (46%) of businesses responded.

**Table 6.14: Questionnaire return rate for method of approach, by turnover size band, for Finance and insurance activities SIC section**

	Income unknown	£0-£100m	£100m - £1bn	£1bn+	Total
Screened but not reminded	13%	17%	26%	36%	23%
Screened and reminded	8%	10%	16%	22%	14%
Details passed by industry bodies	-	53%	33%	-	46%

## 6.4 Fieldwork effort

In Table 6.15 we analyse the number of calls made to each business where a screening approach typical of those used in other business surveys had to be employed. As can be seen below, an average of 7.8 calls was made to businesses in the Financial and insurance activities SIC section, and an average of 6.5 calls to businesses in the Wholesale and retail trade SIC section.

**Table 6.15: Number of calls made to each business where a screening approach was employed, by SIC section and turnover size band**

	Income unknown	£0-£100m	£100m - £1bn	£1bn+	Total
Wholesale and retail trade	6.1	5.9	6.8	6.9	6.5
Financial and insurance activities	-	5.1	8.1	8.0	7.8
<b>Total</b>	6.1	5.7	7.6	7.3	7.1

The average number of calls made to businesses which were successfully screened was 7.0, and an average of 7.2 calls was made to businesses which were not successfully screened. An average of 11.6 calls was made to businesses where the number was answered by an answering machine, was always engaged or busy, was never answered or a refusal was given before eligibility could be established.

# 7. Data

## 7.1 Purpose of data production

We produced two datasets containing the data collected for the head office pilot survey. The purpose of producing these datasets was to assist Home Office researchers in their evaluation of the quality of data produced during the head office pilot survey. The Home Office researchers developed a set of evaluation criteria, many of which, for example whether the respondents answered questions relevant to them, or whether the data were of good quality, required analysis of the data.

## 7.2 Data production

The data were collected in self-completion Excel data collection instruments, as described in section 5.2.

The first step was to create two flat Excel data files<sup>19</sup> from the completed Excel data collection instrument each respondent sent to us, using a separate software programme. Ipsos MORI researchers produced a mapping document which specified the variable names and labels to be used in the Excel data files. For example, we specified how 'Not applicable', 'Don't know', and 'Refused' codes should be transformed to standardised system missing codes. We also specified how other value labels should be produced, appropriate for each question.

Once this work was complete the two flat Excel data files were imported into SPSS. We developed SPSS syntax which performed the following functions:

1. Set the variable labels for every variable.
2. Edited variables where respondents had provided a verbatim response rather than the required numeric response. Where possible, we transformed the verbatim responses into a numeric or coded response. For example, if a respondent put '£7,000 approximately for x and £2,000 for y' and we imputed their response as £9,000. Where we were unable transform a verbatim response, we changed the response to -98 'Other unexpected response' and created a variable to hold the verbatim comment. All verbatim comments were read by Ipsos MORI researchers to avoid any inadvertent disclosure of the identity of the responding business to the Home Office.
3. We produced simple derived variables which can be used to analyse questions which were asked in each tab under the heading 'priority two' (cyber-enabled crime) or 'priority three' (reporting to external bodies). These variables were edited variables ensuring that answers outside the permitted range were transformed to an appropriate 'system missing' code. These variables provided the number of incidents, and were derived from the number and/or proportion given.
4. We appended the SIC class in the sample file to the dataset.

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<sup>19</sup> A flat data file presents one business per row, with the question responses presented in columns. This is the same structure used for the premises-level CVS dataset. As the questionnaires for the Financial and insurance activities and Wholesale and retail trade SIC sections were very different, we produced two separate data files.

Questions asking about proportions needed to be recoded as some respondents had answered them inconsistently and, in many instances, unnecessarily as they had already given the number of incidents. Table 7.1 illustrates how we edited variables relating to questions asking about proportions of crimes committed in a certain manner:

**Table 7.1: Editing method for questions asking about proportions of crimes committed in a certain manner**

	Value at derived, cleaned variable
0	0
20 (%)	20
105 (or other value outside of expected range 0-100% range) -98 (Other, unexpected response that is not numeric)	-92 (Implausible answer)
-1 (Unanswered/ system missing) -94 (Not possible to commit cyber enabled fraud) -95 (Don't provide or offer this online) -96 (No applicable) -97 (Don't know)	-93 (Valid missing)
-99 (Prefer not to say)	-99 (Prefer not to say)

The final step in the process was to ensure that the identity of the responding business could not be obtained by analysing the dataset. During the head office pilot fieldwork, we promised respondents that all datasets produced would not include 'data that might identify a responding business'.

The main way a business might be identified in a dataset, once its name and contact details have been removed, is by analysis of questions in the tab 'your business'. Although no individual variable could disclose the identity of a responding business, we wanted to ensure that no combination of these variables might potentially disclose the identity of the responding business. As the time for such consideration was short, we agreed with the Home Office a procedure which would ensure this, while enabling us to pass the dataset to the Home Office for analysis.

### 7.3 Weighting of survey data

We did not weight the head office survey pilot data, as the achieved sample size in each sector was small (46 in the Finance and insurance activities SIC section and 10 in the Wholesale and retail trade SIC section), so that confidence intervals would be extremely wide making weighting an ineffective use of the available budget.

### 7.4 Combining premises-level CVS and head office pilot survey data

It was only possible to combine premises-level CVS and head office pilot survey for the Wholesale and retail trade SIC section. The very small sample size achieved in this SIC section meant no useful purpose would be served by combining the head office pilot survey data with the 2016 CVS premises-level data.

## 8. Appendices