

Part 7. Measuring the Impact of Trade Reform on Poverty for Dominica, St.Lucia and St.Kitts & Nevis

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7.1 Introduction

Under the Cotonou Agreement the EU and the ACP countries are committed to negotiating Economic Partnership Agreements (EPAs) due to come into force by 2008. The objective of these EPAs is to facilitate the integration of the ACP countries into the world economy. Specifically, it is intended that this will be achieved through: the EPAs fostering and supporting greater regional integration, allowing a flexible liberalisation of trade in goods and services, building up institutional capacities and the establishment of simple and transparent rules for business, and via development assistance provisions.

The aim of this part of the report is to consider the impact of the EPAs on poverty in the small island economies of the Caribbean, with particular reference to the less developed of these, namely Dominica, St Lucia, and St Kitts and Nevis. Following on the conceptual framework developed by Winters (2000), we focus on two principal possible reforms - namely the consequences for domestic prices of liberalising all trade with the EU, and secondly the consequences for domestic prices of the same liberalisation of tariffs, but coupled with the introduction of a revenue neutral consumption tax levied on all imports. Our focus on Dominica, St Lucia and St Kitts and St Nevis is determined largely by household survey data availability, but these three island economies also represent the banana/sugar economies of the region. The methodology involves using household survey data on household expenditures to estimate changes in the cost of living relative to a reference poverty bundle that arise in responses to simulated price changes of key consumption items. These simulated price changes are those predicted in Part 6 of the project report, i.e. those price changes that result firstly from reduction/removal of trade tariffs and secondly those that result from a revenue-neutral sales tax. We examine changes in the cost of living for different deciles of the per capita expenditure distribution, and for the poor and non-poor, and identify which types of households are more likely to gain or lose from the simulated price changes.

Section 2 of this paper discusses the data that is available on living standards in each country and highlights some limitations of the survey data available to us. Section 3 describes the methodology adopted in the study. Section 4 presents background

descriptives on poverty correlates and expenditure patterns in each island and section 5 presents the results. Section 6 concludes.

7.2 Data on Poverty in the Caribbean

In order to examine the possible effect of price changes on poverty in the Caribbean we rely on household survey data from three countries. From each survey, we are able to calculate total household expenditure per capita, expenditure on a range of food and a small set of non- food items,¹ and a range of characteristics of households such as age, gender, education, location and employment. We use household survey data from three Survey of Living Conditions.

The data used for the analysis of St Kitts and Nevis is drawn from the Survey of Living Conditions (SLC) during the last months of 1999 and the first three months of 2000 (Kairi, 2001). From the data collected in the SLC, our study used the information available for 894 households, 747 in St. Kitts and 147 in Nevis. The poverty line for St. Kitts calculated in the Poverty Assessment Report was derived from the cost of the minimum food needs of an individual (determined to be food requirements of 2400 calories per day) and the average non-food requirements of the poorest 40% of the sample in the survey. This figure was EC \$3360.59/year per adult. The poverty line for Nevis was derived in the same way and was calculated at EC \$3940.91/year per adult in 2000 EC\$.²

For Dominica, we use data collected in the Survey of Living Conditions (SLC) carried out on 953 households in July-August 2002 (Halcrow, 2003). Unfortunately, not all households in the sample reported expenditure on individual food and non-food items so we use a final sub-sample of 432 households which did. As in St. Kitts, the poverty

¹ A significant number of households in each survey did not report individual food expenditures, reporting only a monthly or weekly total. The resulting sample sizes are reported below.

² The difference between the poverty lines for the two islands arises from both higher food and non-food costs in Nevis compared to St Kitts. See Kairi (2001).

line in Dominica was derived from the minimum cost for an adult to achieve a daily diet of 2400 calories, plus the average per capita non-food expenditure of the poorest 40% of households in the survey. The adult poverty line was estimated to be EC \$3400/ year in 2002 EC\$.

The analysis of St Lucia is based on data collected from 600 households in a National Survey in 1995, and is thus the oldest data source (Kairi, 1996). It is likely that relative prices and preferences and therefore expenditure patterns have evolved since 1995 so our results should be treated with caution, and used qualitatively rather than as providing precise indications of poverty responses to price changes. As in the other two islands, the poverty line was derived from the minimum cost for an adult to achieve a daily diet of 2400 calories, plus the average per capita non-food expenditure of the poorest 40% of households in the survey. Thus was estimated to be EC \$1876/year per person, in 1995EC\$.

The two key limitations of the household survey data sets, in addition to those discussed above, are firstly the absence of price data and secondly the frequency of missing and or zero values for expenditure on individual goods and services. We discuss these in more detail here in order to justify our choice of methodology and the implications for our results.

Most household surveys collect data on expenditure, with household typically being asked to report, in diaries or through recall, their expenditure on a wide range of goods and services over a reference period, usually the preceding week or month. These are then aggregated up to provide a household total consumption, with adjustments often being made for the value of own consumption of household produce, imputed rents and sometimes even the value of government transfers such as school meals (see for example Deaton and Zaidl, 2002). In most surveys, households are asked either to report the price they paid per unit of each consumption item, or more usually, the quantity purchased or consumed, as well as expenditures. This means that the researcher then either has data on actual prices paid, or can calculate unit values from the reported quantities and expenditure data. The availability of both price and quantities can then be used to construct demand functions for different types of goods, and for different types of

households, enabling researchers to analyse directly the possible impact of price changes on household living standards.

Unfortunately, the three Caribbean surveys contain neither prices nor the quantity data that could be used to calculate unit values. Instead, the questionnaire only collects total expenditure per week and per month on a set of goods and services, with no questions relating to either the price per unit paid or the quantity purchased. As in other developing countries, community questionnaires accompany the household surveys but these focus on availability of public infrastructure and services and do not contain any data on local prices. The absence of price or unit value data limits our choice of methodology to calculation of cost of living indices, described below.

The second significant limitation with the household survey data is the high frequency of missing and/or zero values for individual expenditure items in each of the three household surveys, particularly for food items. Unfortunately missing values are indistinguishable from zeros: cell entries either contain a positive value or are blank, with the consequence that a priori it is impossible to tell if the blanks are missing data or are genuine zeros. However, the surveys also record total food expenditure. Comparing reported total food expenditure with the sum of expenditure on individual food items allows us to identify for each household whether a blank cell for expenditure on an individual food item refers to a genuine zero or to a missing value. To illustrate, 514 of the 946 households used in our analysis of Dominica have a reported total food expenditure in excess of the sum of expenditure on individual food types, suggesting that for these 513 households the blank cells are missing values for at least one of the 27 food types. The remaining 432 have reported total food expenditure equal to the sum of individual food expenditures, suggesting that the blank entries for these households are genuine zeros. The high frequency of missing and zero values raises two problems. Firstly, if we wish to examine patterns of expenditure shares then we considerably reduce the sample size, by more than half, to only 432 households. Secondly, dropping these households may bias any statistical and econometric analysis, since the reporting of missing values may not be random across households. Table 1 below shows the

distribution of households by poverty status³ and by whether or not they contain missing values. Indigent and Poor households are more likely to report missing values for food expenditure than the non-poor: among the sub-sample that reports no missing values just over 9% are indigent, compared to 12% of the sub-sample that reports missing values. Of the 432 households with no missing values, a further 17% are poor, while just over 20% of those with missing values are poor. The result of the Chi-squared test of equal distribution is marginal, rejecting the null hypothesis of equal distributions at a significance level of just 9%. Hence, there is some evidence that the reporting of missing values is not random and may be related to poverty status. Although the statistical basis of this is not overwhelming, the result does suggest we should proceed with caution.

Table 7.1 Dominican Frequency Distribution of Mission Values across Poverty Categories (%)

Poverty Status ^a	No missing values ^b	With missing values ^c	All sample
Indigent	9.24	12.09	10.78
Poor	16.63	20.27	18.80
Non-poor	74.13	67.64	70.61
N	432	514	946
Pearson chi2(2) = 4.8446 Pr = 0.089			

Notes to Table 1.

^a Households are defined as being indigent, poor or non-poor using the official poverty classification.

^b The 432 households in the column "No missing values" are those for which expenditure on individual food items sums to reported total food expenditure, suggesting that blank cells are genuine zeros.

^c The 514 households in the column "With missing values" are those for which expenditure on individual food items sums to less than reported total food expenditure, suggesting that blank cell are missing values.

^d The Chi squared test is for the hypothesis that the three distributions are equal. We reject this hypothesis at a significance level of 8.9%

Source: calculations from Dominica *Survey of Living Conditions*

7.3 Methodology

There are numerous studies examining the impacts of price changes on household welfare, in the context of trade liberalisation, changes in terms of trade or economic crises. Reimer (2002) provides a survey of methods ranging from CGE models and micro-simulation, to partial equilibrium/cost of living analysis. We adopt the later style of approach as we are keen to develop simple methodologies that use existing real yet

³ Throughout this paper we use the official classification of poverty status.

limited data contained in a typical household living standards survey. We summarise the cost of living approach and discuss how this method may be adapted to suit the data constraints we face.

An example of the cost of living approach is provided by Levinsohn, Berry and Friedman (1999), later revised as Friedman and Levinsohn (2002), who examine the impact of price changes on the poor in Indonesia as a result of the 1997 economic crisis. They calculate household specific cost-of-living indices and examine how this varies across key characteristics (urban/rural, household size, regions, income and education). They use consumption data before the crisis to compute a Laspeyres cost of living index for each household, defined as:

$$C_i = \frac{\sum_{j=1} P_{ij1} Q_{ij0}}{\sum_{j=1} P_{ij0} Q_{ij0}} \quad (1)$$

Where i refers to household, j to goods. Prices (p), were derived from a monthly price survey in numerous regions of the country, spanning pre- and post-crisis price surveys (time t=0 and t=1); expenditure (q) come from household surveys at time t=0 before the crisis. They then examine the cost of living index for households in different quintiles, urban/rural etc, so making links to poverty. They also estimate a model of the form:

$C_i = f(\text{income}; \text{location dummies, household size, education})$ to examine the characteristics of those households experiencing gains or losses in their cost of living.

The data available in the Caribbean household surveys lend themselves well to this methodology. The surveys provide us with the denominator of the Laspeyres index and we can simulate various values for the numerator using the price simulations from part 6. The main limitation of this approach is that it assumes that expenditure shares remain fixed, i.e. that no substitution occurs as a result of relative price changes that occur from the changes in OECS preferences to EU. This means we have to interpret the results as being upper-bound estimates of what happens to the cost of living. A second limitation for our analysis is that while Levinsohn et al had a much wider set of prices from their price surveys and can examine expenditures on a much wider range of

consumption items, we are limited chiefly to food items, with one or two exceptions. However, in the absence of disaggregated price and quantity information in any of the surveys we adopt the Levinsohn/Friedman method

7.4 Poverty and Expenditure Patterns in the Caribbean

The section examines the impact of simulated price changes on expenditure patterns in each country. Part 3 of the report provides an overview of poverty statistics from secondary sources and from the survey data, so we begin by examining the correlates of poverty in each island so as to understand better the nature of poverty in each country, and in particular the links between employment and poverty. We then examine expenditure patterns across poverty group in each country.

In order to examine the correlates of poverty in each island we estimate a probit model. The dependant model for each island is a binary variable that takes values of 0 if the household is not poor, and 1 if the household is poor, where poverty status is defined by the national poverty lines in use at the time of the survey. The set of correlates includes age, gender and education of the household head, location of the household, dependency ratio (i.e. number of children/household size), and a set of employment variables that capture the share of workers in different sectors.⁴ Table 7.2 shows the regression results for each country.

We observe that there are strong relationships between certain household characteristics and the probability of being poor. In Dominica, households with better educated heads are less likely to be poor, although few of the effects are statistically significant. Female headed households appear to be less likely to be poor than male headed households, although again this results is not statistically significant. Households located outside of Greater Rosseau and Portsmouth are more likely to be poor, particularly those in other urban areas (where households face a 23% increase in the probability of being poor, on average and *ceteris paribus*). Households with higher

⁴ For St Kitts and Nevis our employment data is limited to number of workers in the household.

dependency ratios are also much more likely to be poor: a rise of 1 percentage point in the dependency ratio increases the probability of being poor by 0.5 percentage points. Households with larger proportions of unemployed members are also more likely to be poor: a rise of 1 percentage point in the share of household members who are unemployed increases the probability of being poor by 0.26 percentage points, on average and *ceteris paribus*.

Table 7.2 Poverty Correlates in the Caribbean

	Dominica	St Kitts and Nevis	St Lucia
No education	f	f	-
Primary	-0.0634	0.2185**	f
Secondary	-0.1642	0.0987	-0.0702
Vocational	-0.1869*	-0.0297	-
University ^a	-0.1848	-0.0055	-0.1167*
Other	-0.0815	0.2077*	-
Female	-0.0592	-0.0050	-0.0012
Age	0.0008	0.0009	0.0020*
Greater Rosseau & Portsmouth	f	-	-
Other urban ^b	0.2383*	f	f
Rural	0.0552	0.0015	0.0707*
Dependency ratio/household size	0.5174**	0.5087**	0.2823**
Number of workers	0.0281	-0.0490**	-0.0143
Share of UE members of the household	0.2585*		
Share of workers in banana sector	-0.0233		
Share of workers in other agriculture	-0.0031		
Share of workers in government	-0.1781**		
Share of workers in Construction	0.0427		
Share of workers in hotels/restaurants	-0.1653		
Share of workers in manufacturing	0.0223		
Share of workers in wholesale/retail	-0.0719		
Share of workers in transport	-0.1955*		
Share of workers in other services	-0.0236		
N	432	897	525
Pseudo-R2	0.1787	0.3189	0.1050
Wald	72.53**	205.25**	47.54**
Observed Poor in sample	0.26	0.17	0.15
Predicted Poor by model	0.21	0.086	0.12

Notes: Table 7.2 shows the marginal impact on the probability of being poor in each country of a 1 unit change in the continuous variables, or a switch from 0 to 1 for the dummy variables. ** and * indicates coefficient is statistically significantly different from zero at the 1% and 5% level respectively. The Wald statistic tests the null hypothesis that the independent variables are jointly significant.

^a Education categories were specified differently for St Lucia, because of very small number in the no education category. Reference group is therefore primary; and university education for St Lucia is in fact all post secondary education, including university.

^bFor St Kitts and Nevis and for St Lucia, all urban is the reference category.

There is no statistical evidence of a link between poverty and employment in agriculture in general or in the banana sector in particular. However, some sectors are associated with reductions in the probability of being poor: households with more workers in transport and the government sector are less likely to be poor.

The results for St Kitts and Nevis, and for St Lucia are similar, although we do not have access to detailed employment data to fully explore the importance of sector of employment.⁵ Households with better educated are less likely to be poor; rural households are more likely to be poor and households with more dependants and fewer workers are generally more likely to be poor. It should be stressed that not all of these results are statistically significant so need to be treated with caution. However, they do provide some qualitative information about the nature of poverty in the Caribbean.

We turn now to examining expenditure patterns in each island. Since most of the detailed expenditure data in each survey is on food items, we concentrate on describing the food expenditure data. Table 7.3 shows food shares by poverty status for each country. The data broadly supports Engel’s law of declining food shares. The data suggest that reductions in prices of food are likely to have larger impacts on the cost of living of the poor than the non-poor. However, it is possible that the impacts will be more subtle because of different expenditure patterns on specific food items, and differences in the size of the price changes arising from changes in trade policy.

Table 7.3 Food Shares (%) by Poverty status, Dominica, St Kitts and Nevis, and St Lucia

Poverty Status ^a	Dominica	St Kitts and Nevis	St Lucia
Poor	43.9	66.3	45.8
Non-Poor	35.9	60.3	57.2
All	37.9	61.4	47.8
N	432	894	583

Notes to Table 7.3.

^a Poverty Status is defined by annual household expenditure per capita with reference to the national annual poverty line in each country at the time of the survey.

⁵ In order to preserve the anonymity of responding households in St Kitts and Nevis, employment data were not released. The St Lucia survey does contain employment data but we had serious difficulties reconciling the number of workers reported in each sector as their main job with the total number of workers and members of each household.

Tables A1, A2 and A3 in the Appendix show the detailed expenditure shares on specific food items for each country and reveal that expenditure patterns vary somewhat with poverty status. The poor in Dominica for example tend to spend a greater share on chicken and turkey, baby food, green bananas and sugar than the non-poor, and less on fish, tea and coffee and fruit and vegetables. Similar differences can be observed for St Kitts and Nevis and for St Lucia.

7.5 The Impact of Price changes on Cost of Living

In this section, we apply the Levinsohn/Friedman methodology described in section 3 and calculate predicted expenditure under a number of price change scenarios. Finally, we examine the relationship between cost of living changes and a set of household characteristics. We estimate expenditure for two key price simulations, derived in Part 6. We first examine the changes in each households' cost of living for the price changes that arise from changes in the tariffs, firstly considering only the EEC15 effect (i.e. the change in the price of the good imported from the EU) and secondly the composite effect (i.e. the change in the composite price index of all imported goods. Since the price reduction is largest for EU exports, the EEC15 effects are likely to be much larger than the composite effects where the EEC15 price reduction is offset by smaller reductions, or increases, from other exporting countries. Under this simulation all prices are reduced, or have no change, hence we expect to observe reductions in each households' cost of living. The second simulation is for a revenue neutral sales tax, which generates price changes in both directions, again for firstly for the prices of goods imported from the EEC15 and secondly for the composite price index of all imports. Hence, it is possible that this simulation could generate increases in the cost of living. The precise price changes examined are shown in Table A4, A5 and A6 in the Appendix. Note that the set of goods that we are able to estimate the impact of simulated price changes is slightly different between the three countries. For Dominica, the price changes cover a range of food items, plus clothing, footwear and toiletries. For St Lucia, the set includes food items, plus toiletries, while for St Kitts and St Nevis the set includes food items plus clothing, footwear, kitchen supplies, toiletries, and furniture. The differences

are determined by availability of disaggregated non-food expenditure in each survey. Hence, comparisons between the countries should be made very cautiously. However, by limiting the research to changes chiefly in food prices we concentrate our analysis on the items of key importance to the poor in each island, given that food expenditure makes up much more of total expenditure than non-food items.

Table 7.4 shows the mean household expenditures for each country for the price changes for the tariff effects and the revenue-neutral sales tax. Most simulations result in falls in the average cost of living, with slightly larger reductions in mean total household expenditure for the EEC15 effect compared to the Composite effects. The exception is for St Lucia where there is a very slight increase, 0.14%, in total annual expenditure when we apply price changes for EEC15 imported goods that generate the revenue neutral sales tax.

Table 7.4 Actual and Simulated Total Annual Household Expenditures

Total Household Expenditure	Dominica		St Kitts		Nevis		St Lucia	
Actual	21247	% Δ	18825	% Δ	19959	% Δ	18811	
Simulated: EEC15 tariff effect	20148	-5.17	17468	-7.21	18552	-7.05	18236	-3.06
Simulated: Composite tariff effect	20956	-1.37	18606	-1.16	19727	-1.16	18563	-1.32
Simulated: EEC15 revenue neutral sales tax	20467	-3.67	18456	-1.96	19586	-1.87	18837	0.14
Simulated: Composite revenue neutral sales tax	20899	-1.64	18539	-1.52	19686	-1.37	18502	-1.65

Notes: Table 7.4 shows actual and simulated total annual household expenditure under the four price change scenarios estimated in Part 6 and shown in Appendix Tables A4, A5 and A6.

In order to assess the *real* reductions in the cost of living, the reduction in household specific cost of living need to be compared to a reference standard. In the absence of data on income, we estimate the cost of the consumption bundle used for setting the poverty line in each country. Specifically, for each of the four price change simulations we calculate a set of Laspeyres indices that measure the reduction in the cost

of attaining the minimum consumption bundle, i.e. that bundle that defines the poverty line.

$$z_i = \frac{\sum_{j=1} p_{j1} q_{j0}}{\sum_{j=1} p_{j0} q_{j0}} \quad (2)$$

where j refers to the set of goods included in the poverty consumption bundle, p and q their prices and quantities at time $t=0$ and $t=1$, where the denominator is the value of the poverty line at the time of the survey, and the numerator is calculated by applying the price changes under each simulation to the individual components of the poverty line. Tables A7, A8 and A9 show these calculations for each country, and Table 7.5 shows the resulting poverty lines.

Table 7.5 Estimated Poverty lines

Poverty Lines	Dominica	St Kitts	Nevis	St Lucia
Actual	3411	3361	3941	1876
Simulated: EEC15 tariff effect	3173	3200	3724	1740
Simulated: Composite tariff effect	3332	3342	3897	1856
Simulated: EEC15 revenue neutral sales tax	3328	3402	3953	1812
Simulated: Composite revenue neutral sales tax	3281	3365	3900	1803

Notes: Table 7.5 shows the set of estimated poverty lines for each country, calculated by revising the component costs by the price changes under each of the four simulations.

We can then define the *real* cost of living index for each household, RC_i , by dividing expression (1) by expression (2). That is we divide the index that captures the change in the cost of living for each household by the index that captures the change in the poverty line, and interpret the resulting index as a measure of a household's change in the cost of living relative to the poverty line. Resulting values of RC_i that are greater than 1 suggest that the cost of living index of household i , C_i , is greater than the poverty line index, and hence that there has been an increase in that household's *real* cost of living. In other words, the household's living costs have fallen by less than the reduced cost of meeting the poverty consumption bundle. Similarly, if the value of RC_i is less than 1, then household i has experienced a reduction in the cost of living that is greater than the reduction in the poverty threshold, i.e. a real reduction in the cost of living.

We summarise for each country the mean value of RCi by decile of the annual household expenditure per capita distribution, in Table 7.6. We can observe that in Dominica the poorest deciles generally experience greater reductions in the real cost of living on average, i.e. relative to the poverty threshold, for both the EEC15 simulations. However, under the more likely composite simulations, for either tariff reductions or a tax neutral sales tax, the whole distribution faces real increases in the cost of living, although the poorer groups face smaller increases. A similar story holds for St Kitts and Nevis, although there appear to real average gains experienced by almost the entire distribution. For St Lucia, gains and losses are spread relatively evenly across the distribution.

Table 7.6 Real Cost of Living Indices, mean per decile group

	Decile group									
	1	2	3	4	5	6	7	8	9	10
Dominica										
EEC15 Tariff Effect	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.01	1.02	1.04
Composite Tariff Effect	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.01	1.01	1.01
Revenue Neutral Sales Tax EEC15	0.96	0.97	0.98	0.97	0.97	0.97	0.98	0.99	0.99	1.00
Revenue Neutral Sales Tax Composite	1.01	1.02	1.02	1.01	1.01	1.01	1.02	1.02	1.02	1.03
St Kitts										
EEC15 Tariff Effect	0.96	0.97	0.96	0.97	0.96	0.97	0.97	0.97	0.97	0.99
Composite Tariff Effect	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	1.00
Revenue Neutral Sales Tax EEC15	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Revenue Neutral Sales Tax Composite	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.99
Nevis										
EEC15 Tariff Effect	0.98	0.98	0.97	0.98	0.98	0.97	0.98	0.98	0.99	0.99
Composite Tariff Effect	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Revenue Neutral Sales Tax EEC15	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Revenue Neutral Sales Tax Composite	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
St Lucia										
EEC15 Tariff Effect	1.03	1.03	1.03	1.03	1.04	1.04	1.04	1.04	1.04	1.06
Composite Tariff Effect	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00
Revenue Neutral Sales Tax EEC15	1.04	1.04	1.03	1.03	1.04	1.04	1.04	1.04	1.04	1.04
Revenue Neutral Sales Tax Composite	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.01	1.02	1.03

Notes. Table 7.6 shows the mean change in the household specific cost of living relative to the change in the poverty line for each country per decile group of the per capita expenditure distribution, using the four price simulations derived in Part 6. Values greater than 1 indicate that the average households' cost of living has risen relative to the poverty line, values less than 1 indicate that households' cost of living has fallen relative to the poverty line.

We also present the mean RCi for the poor and non-poor in the original per capita household expenditure distribution, in Table 7.7. These more aggregated figures confirm that the poor in Dominica, St Kitts and Nevis are predicted to experience greater reductions in the real cost of living, or at least smaller increases in the real cost of living as a result of reforms in trade policy, although the differences at this level of aggregation appear very slight. In fact, no differences are detected for the average value of the reduction in the cost of living per household relative to the poverty line for St Lucia.

Table 7.7 Real cost of living Indices, poor and non-poor.

	Not Poor	Poor
Dominica		
EEC15 Tariff Effect	1.01	0.99
Composite Tariff Effect	1.01	1.00
Revenue Neutral Sales Tax EEC15	0.98	0.97
Revenue Neutral Sales Tax Composite	1.02	1.01
St Kitts		
EEC15 Tariff Effect	0.97	0.96
Composite Tariff Effect	0.99	0.99
Revenue Neutral Sales Tax EEC15	0.97	0.97
Revenue Neutral Sales Tax Composite	0.98	0.98
Nevis		
EEC15 Tariff Effect	0.98	0.98
Composite Tariff Effect	1.00	1.00
Revenue Neutral Sales Tax EEC15	0.98	0.98
Revenue Neutral Sales Tax Composite	1.00	1.00
St Lucia		
EEC15 Tariff Effect	1.04	1.03
Composite Tariff Effect	0.99	0.99
Revenue Neutral Sales Tax EEC15	1.04	1.04
Revenue Neutral Sales Tax Composite	1.02	1.02

Notes. Table 7.7 shows the mean change in the household specific cost of living relative to the change in the poverty line for each country for the poor and non-poor, using the four price simulations derived in Part 6. Values greater than 1 indicate that the average households' cost of living has risen relative to the poverty line, values less than 1 indicate that households' cost of living has fallen relative to the poverty line.

The figures above suggest that there will be winners and losers as a result of trade reform but aggregated as they are averages for decile groups and poor/non-poor, mask substantial variations with each group. We investigate now the effects that this may have on poverty headcounts in each country using actual and simulated expenditure distributions and actual and simulated poverty thresholds. Table 7.8 shows actual and simulated poverty Headcounts for each country. The analysis reveals that although the

households in the lower deciles gain on average by proportionately more than the reduction in the poverty line, poverty headcounts may rise. This is because either the gain is not sufficient to lift a poor household over the poverty line, or the loss of a non-poor household pushes it below the poverty line. The impact on poverty headcounts depends on the size of the household specific cost of living index relative to the poverty line index, under each simulation, and also on where that household was located in the original distribution of per capita annual expenditure. In Dominica, headcounts rise by as much as 2.31 percentage points. St Kitts experiences smaller increases, Nevis relatively little change under each simulation, while St Lucia sees poverty headcounts falling under most scenarios.

Table 7.8 Actual and Simulated Poverty Headcounts.

	Dominica	St Kitts	Nevis	St Lucia
Actual	25.93	17.49	16.89	17.0
EEC15 Tariff Effect	27.55	18.83	16.89	16.1
Composite Tariff Effect	27.78	17.89	16.89	17.2
Revenue Neutral Sales Tax EEC15	28.24	18.69	16.89	16.0
Revenue Neutral Sales Tax Composite	27.08	18.02	16.22	16.6

Notes: Table 7.8 shows the percentage of households below the poverty threshold in each country, for the actual distribution of per capita household expenditure at the time of the household survey and under the four simulations determined in Part 6 and described above. Poverty thresholds are those prevailing at the time of the survey and simulated under the price changes predicted to occur.

The final step in our analysis of the possible impact of the EPAs on poverty is to explore the characteristics of the winners and losers in each country under each simulation. We regress the real cost of living index, RC_i , of each household on a set of household characteristics, including age, gender, education, location and employment. We adopt a relatively parsimonious specification for each country, as our intention is not to frame this as an analysis of the determinants of the real cost of living index but rather to examine its correlates.

For Dominica we regress using OLS each RC_i against variables that capture the education,⁶ gender and age of the household head, the location of the household,⁷ the dependency ratio defined as the number of children as a proportion of household size, the number of workers in the household and the share of unemployed members of the household.⁸ Table 9 shows the regression results for each simulated RC_i . Positive (negative) coefficients suggest that those characteristics are associated with higher (lower) cost of living indices, on average and *ceteris paribus*, and so enable us to identify winners and losers from each simulated price change: a positive coefficient on variable X_i indicates that RC_i is positively associated with X_i . Generally, households with better educated heads of household do less well than those with no education, and these effects are statistically significant. Female headed households and older heads also appear to do less well than male headed households and younger heads, although the coefficients are not well defined in any of the regressions. Households outside of the main urban areas of Greater Rosseau and Portsmouth are predicted to experience lower RC_i , i.e. greater reductions in the real cost of living, although only the rural coefficient is statistically significant. The results for the effect of dependency ratio are a little mixed: while the coefficient is usually negative, it is only statistically significant, but positive, in the final simulation, i.e. for the revenue-neutral sales tax. This suggests that households with large number of dependants are likely to experience larger RC_i s, hence smaller reductions in the real cost of living. Finally, households with more workers and with smaller proportions of unemployed members are predicted to experience smaller real improvements in the cost of living.

⁶ The reference category for education of household head is “No Education”.

⁷ Urban areas in Dominica are split into Greater Rosseau and Portsmouth, the reference category in our regressions, and “Other urban” areas identified by facilities and infrastructure.

⁸ We tried various specifications of the model to capture employment effects by including variables that proxy for employment sector of household workers, as in the poverty probits above. However none of the coefficients on the employment variables were statistically significant and our model was not improved.

Table 7.9 Correlates of real cost of living indices: Dominica

	EEC15	Tariff	Composite	Revenue	Revenue
	Effect		Tariff Effect	Neutral	Neutral
				Tax EEC15	Tax Sales
	Coef.		Coef.	Coef.	Coef.
Education of head					
None	F		F	F	F
Primary	0.0142		0.0049*	0.0089	0.0042
Secondary	0.0224*		0.0064*	0.0127	0.0077
Vocational	0.0259*		0.0083**	0.0100	0.0093
University	0.0287**		0.0081**	0.0176*	0.0092
Other	0.0431**		0.0124**	0.0284**	0.0136*
Female Head	0.0015		0.0008	0.0001	0.0010
Age of head	0.0000		0.0000	0.0000	0.0000
Greater Rosseau & Portsmouth	F		F	F	F
Other urban	-0.0114		-0.0016	-0.0146**	-0.0009
Rural	-0.0096**		-0.0019	-0.0069*	-0.0042*
Dependency ratio	-0.0015		0.0031	-0.0050	0.0066*
Number of workers	0.0068**		0.0028**	0.0023	0.0040**
HH share of unemployed	-0.0093		-0.0019	-0.0125*	0.0028
Constant	0.9867**		0.9955**	0.9752**	1.0048**
R2	0.1253		0.1414	0.0813	0.1222
N	432		432	432	432

Notes: Table 7.9 shows the OLS estimates of RCi regressed on a set of household characteristics. ** and * indicates coefficient is statistically significantly different from zero at the 1% and 5% level respectively

Turning to the regression analysis for St Kitts and Nevis we estimate a similar model of the RCi. We run a pooled sample as the Nevis sample is rather small and enter a country dummy to capture possible differences between the two islands. The results are similar to those obtained for Dominica and are shown in Table 7.10. Households with better educated heads have generally higher RCis, hence smaller reductions in the real cost of living, although fewer of the coefficients are well determined. Again, female heads do less well than male headed households, but this time the result is generally statistically robust. The age of the household head does not seem to be related to the household RCi and there seems to be no significant difference between urban and rural areas. Households with more workers are predicted to experience smaller reductions in the cost of living. Finally, there appear to be significant differences between the two islands, with gains from trade reform likely to be greater in St Kitts.

Table 7.10. Correlates of real cost of living indices: St Kitts and Nevis

	EEC15	Tariff	Composite	Revenue	Revenue
	Effect		Tariff Effect	Neutral Tax EEC15	Neutral Tax Composite
No education		f	f	f	f
Nursery		0.0002	0.0001	-0.0019*	-0.0012
Primary		0.0067	0.0020**	0.0011	0.0040**
Secondary		0.0157**	0.0034**	0.0011	0.0045**
Post Secondary		-0.0003	0.0000	-0.0015	-0.0002
University		0.0000	0.0008	-0.0005	-0.0004
Other		-0.0005	0.0002	-0.0003	0.0015
Female Head		0.0061**	0.0009**	0.0019**	-0.0005
Age of Head		0.0001	0.0000	0.0001**	0.0000
Rural		0.0029	0.0004	0.0012	0.0004
Dependency ratio		-0.0072*	-0.0006	-0.0055**	-0.0067**
Number of workers		0.0016*	0.0006**	-0.0002	0.0005
Nevis		0.0129**	0.0064**	0.0108**	0.0134**
Constant		0.9608**	0.9908**	0.9658**	0.9820**
R2		0.1044	0.2768	0.2253	0.3006
N		897	897	897	897

Notes: Table 7.10 shows the OLS estimates of RC_i regressed on a set of household characteristics.

** and * indicates coefficient is statistically significantly different from zero at the 1% and 5% level respectively

Finally, we run a similar model for St Lucia. Note that the R2 for the St Lucia models are extremely low and so our model does not provide a very good basis for identifying winners and losers. However, we do observe similar patterns as for other countries: the better educated relative to primary or less experience smaller gains in their cost of living relative to the poverty line. Interestingly, those with larger numbers of children experience relative gains under the simulations that only involve price changes of EEC15 imports, but relative losses under those that take into account all imports. This may be partially explained by the very large differences in the predicted price change for baby food and cereal products under the two types of simulations (see table A6). Rural households are expected to experience relative gains, although the coefficients are not statistically significant in any regression. Finally, the only other factor with statistically significant coefficients is the number of workers: households with more workers are predicted to experience relative losses, i.e. smaller reductions in their cost of living relative to the poverty line.

Table 7.11. Correlates of real cost of living indices: St Lucia

	EEC15 Effect	Tariff	Composite Tariff Effect	Revenue Neutral Sales Tax EEC15	Revenue Neutral Sales Tax Composite
Primary or less	f		f	f	F
Secondary	0.0084		0.0024*	0.0013	0.0007
post secondary	0.0106		0.0058**	-0.0080	0.0073**
Female head	0.0044		0.0012	0.0060	0.0038**
Age of head	-0.0002		0.0000	-0.0002	0.0000
Urban	f		f	f	F
Rural	-0.0086*		-0.0008	-0.0039	-0.0008
Dependency ratio	-0.0120		0.0040**	-0.0140*	0.0054*
Number of workers	0.0036*		0.0013**	0.0012	0.0015*
Constant	1.0464**		0.9914*	1.0482**	1.0165**
R2	0.0441		0.0965	0.0179	0.0579
N	525		525	525	525

Notes: Table 7.11 shows the OLS estimates of RCi regressed on a set of household characteristics. ** and * indicates coefficient is statistically significantly different from zero at the 1% and 5% level respectively

7.6 Conclusions

This part of the report has examined the potential impact of the EPAs on poverty in Caribbean. Although we have been unable to explore possible employment effects, we have been able to investigate the impact of price changes, both those arising directly from trade liberalisation of EU imports and those that might arise to compensate for the fall in import tax revenue. Our analysis has used data from three Caribbean countries and a methodology that constructs a measure of the change in a household's cost of living relative to the change in the poverty line.

Our results show that generalising about the potential impacts of trade liberalisation should be done with caution and further underline the need for country specific studies. Our results show that the pattern of relative gains and losses varies across countries. For Dominica, the poor and lower decile groups appear to do relatively better than the non-poor, on average, since on average, their cost of living falls by proportionately more than the poverty line under each simulation. However, there are sufficient numbers of households experiencing relative losses to result in a small increase in poverty. In St Kitts and Nevis, we find a similar story but of smaller magnitudes. For St Lucia we find that the poor and non-poor, and all deciles experience similar relative

losses on average, but that enough poor households experience a relative gain sufficient to lift them over the poverty line, and results in slightly lower poverty headcounts under each simulated price change. One generalisation is possible however: the potential impact of the EPAs on poverty in the Caribbean via price changes is likely to be small.

We also identify the key characteristics of those more likely to gain or lose relative to the poverty line. Generally speaking, rural households stand to gain from the general falling prices that are predicted to result from trade liberalisation, as are those with poorly educated household heads, and households with fewer workers and/or more unemployed members. This is in line with the evidence presented above that these are common characteristics of the poor and that it is usually the poor who stand to gain more from the price reductions. However, the results are more nuanced than this and depend on which price simulation is used and for which country. As St Lucia demonstrates, families with children stand to gain under the narrow simulation of changing EEC15 prices, but to lose under the broader, and more likely scenario of changes in all prices. The nuances arise because different households gain or lose to different extents depending on the weight of each item in their consumption bundle, and the structure of imports from different countries.

Once again, the results suggest caution in making sweeping generalisations about the likely impact of trade liberalisation on poverty in developing countries.

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Appendix

Table A1: Food expenditure shares by commodity and poverty status, Dominica, %

Food share	Indigent	Poor	Non-poor
Whole Chicken/Parts	9.49	11.09	7.89
Turkey Meat	3.57	3.25	2.30
Other Meats	1.04	1.66	1.72
Fresh/Frozen Fish/Sea Foods	7.37	8.61	9.34
Smoked/Salted/Dried Fish	2.12	2.00	3.17
Sardines and other Canned Fish	3.75	1.98	3.14
Eggs	2.01	1.83	2.47
Milk, Cheese, Margarine and other dairy products	4.65	9.51	7.88
Baby Foods	1.50	1.62	0.83
Rice, Macaroni and other cereals	5.42	5.28	6.15
Flour, bread, biscuits and other bakery products	15.93	14.63	11.49
Ground provisions	3.13	4.32	3.52
Green bananas, plantains	4.35	1.69	1.53
Vegetables	2.92	3.64	5.88
Fresh Seasonings and Spices	3.18	3.20	3.61
Fresh, Dried and canned fruits	0.56	1.07	2.09
Cigarette, tobacco and alcoholic beverages	2.03	1.45	2.32
Non-alcoholic beverages	1.85	1.21	2.48
Tea, coffee, cocoa	3.93	3.59	4.05
Sugars, Syrups, sweeteners	6.67	5.39	3.65
Sweets, Mints, Candies	0.07	0.14	0.50
Edible Oils	5.61	4.34	3.93
Peas, Green Peas and Beans	2.69	3.33	3.37
Nuts, peanuts, cashews	0.12	0.12	0.63
Mayo, ketchup, relishes	1.94	1.54	2.17
Snacks	1.53	1.52	0.82
Meals out, takeaway	2.58	2.00	3.06
Sum	100.00	100.00	100.00

Table A2: Food expenditure shares by commodity and poverty status for St Kitts and Nevis, %.

Item	St. Kitts (n=747)		Nevis (n=147)	
	Poor	Non-Poor	Poor	Non-Poor
Whole chicken/legs	3.75	3.67	3.88	3.68
Chicken neck/back	1.59	1.28	1.02	0.91
Chicken Wings	4.09	3.94	4.30	4.31
Turkey Meat	1.45	1.33	1.02	0.82
Other Fresh/Frozen Meats	2.44	2.72	2.71	2.90
Smoked/Salted Meats	0.83	0.89	0.89	0.79
Fresh/Frozen Fish	3.46	3.89	3.67	4.16
Smoked/Salted Dried Fish	1.90	2.14	1.86	2.16
Sardines and other Canned Fish	1.95	2.13	2.10	2.05
Other Sea Foods	0.52	0.63	0.51	0.68
Eggs	1.93	1.86	1.91	2.08
Powdered Milk	1.06	0.90	0.68	0.77
Cheese	2.21	2.16	2.32	2.07
Fresh Milk	0.36	0.48	0.34	0.50
Full Cream Milk	4.01	3.66	4.13	3.77
Lite Milk	0.31	0.44	0.34	0.33
Other Dairy Products	0.73	0.92	0.72	0.72
Baby Foods	1.69	1.60	1.50	1.28
Rice	3.50	2.92	3.25	2.75
Other Cereal (Oats etc.)	1.44	1.43	1.34	1.72
Cornmeal/ Corn Flour	0.80	0.71	0.77	0.73
Cornflakes	2.38	2.28	2.04	1.93
Cassava Flour	0.00	0.02	0.00	0.01
Flour	1.55	1.26	1.52	1.28
Bread	8.12	6.62	8.30	6.39
Other baked products (pastries)	1.32	1.45	1.37	1.46
White Irish Potatoes	1.86	1.84	2.05	2.16
Ground Provisions	2.47	2.66	3.31	2.85
Green Bananas	0.76	0.78	0.71	0.80
Plantain	0.74	0.87	0.67	0.77
Other Starchy Foods	0.37	0.49	0.43	0.38
Vegetables	3.11	2.85	3.24	3.51
Fresh Seasonings	1.88	1.82	2.14	2.38
Spices and Herbs (Curry, Ginger)	0.79	0.79	0.74	0.82
Citrus	1.36	1.57	1.48	1.60
Mangoes	0.15	0.13	0.17	0.13
Other Fresh Fruits	1.80	2.01	1.74	2.29
Canned Fruits	0.52	0.68	0.51	0.49
Dried Fruits	0.42	0.48	0.34	0.46
Cigarettes, Tobacco	0.33	0.27	0.00	0.13
Alcoholic Beverages	2.19	2.55	2.19	2.33
Non-alcoholic beverages	4.37	4.78	4.78	5.06
Brown Sugar	1.70	1.37	1.43	1.42
White Sugar	2.04	1.86	2.03	1.76
Other Syrups and Sweeteners	0.17	0.23	0.17	0.29

Sweets, Candies, Chocolates	0.99	1.22	1.01	1.07
Edible Oils	1.28	1.28	1.21	1.34
Margarine/butter	1.17	1.13	1.22	1.20
Dried peas, Green peas and Beans	1.47	1.39	1.30	1.16
Canned peas and beans	0.99	0.98	0.90	0.81
Dressings (mayo, ketchup)	1.60	1.48	1.58	1.58
Other canned/prepared foods	2.13	2.19	2.80	2.34
Snacks	1.63	1.79	1.49	1.57
Nuts, Peanuts	0.71	0.66	0.56	0.66
Cashew Nuts	0.33	0.42	0.34	0.46
Meals out	3.70	4.20	3.55	4.46
Dried Package foods (macaroni etc.)	1.92	1.81	1.94	2.06
Peanut Butter, Jam	0.87	0.84	0.68	0.65
Other foods, meals.	0.78	1.21	0.85	0.72
Sum	99.99	99.99	99.99	99.99

Table A3 food share for St Lucia

	Non poor	Poor
Whole chicken/chicken legs	6.92	7.78
Chicken back and Neck	2.02	4.22
Turkey meat	1.82	2.07
Other Fresh and frozen meats	4.62	2.27
Smoked/salted meats	1.08	0.45
Fresh and frozen fish	6.23	4.30
smoked/salted/dried fish	0.83	0.50
Sardines and other canned fish	1.62	1.28
Other sea foods	0.42	0.20
Eggs	2.02	1.63
Powdered milk	2.66	5.16
Evaporated or skimmed milk	3.10	2.68
fresh milk	0.70	0.63
condensed milk	0.30	0.19
Other dairy	1.14	0.46
Baby Foods	0.98	2.01
Rice	2.66	4.85
Other cereal	1.26	0.80
Cornmeal/Corn flour	0.50	0.72
Arrowroot flour	0.11	0.07
Cassava flour	0.32	0.15
Flour	2.30	2.98
Bread	6.74	10.67
Other Baked products	0.55	0.40
Potatoes	1.25	2.80
Ground Provisions	6.96	6.18
Green Bananas	2.10	2.47
Plantain	1.78	1.68
Other starchy foods	1.30	0.77
Vegetables	4.61	2.46
Fresh Seasonings	2.19	1.99
Spices and Herbs	0.75	2.21
Citrus	2.23	1.52
Mangoes	0.34	0.05
Other fresh fruit	0.84	0.39
Canned fruits	0.17	0.10
Dried fruits	0.53	0.10
Cigarettes, Tobacco	1.34	0.58
Alcoholic beverages	2.46	1.65
Non-alcoholic beverages	3.05	1.36
Sugar	3.13	5.30
Other syrups and sweeteners	0.33	0.00
Sweets, candies and chocolate	0.64	0.57
Edible oils	1.66	2.01
Margarine	1.19	1.56
Dried Peas, green peas and beans	1.76	1.91
Canned Peas and Beans	0.56	0.29

Relishes	1.43	1.75
Other canned and prepared food	0.37	0.05
Snacks	0.87	0.73
nuts, peanuts	0.55	0.37
cashew nuts	0.34	0.04
meals out	1.83	0.28
dried package food	1.72	2.17
other food or meals	0.83	0.16
Sum	100	100

Source: St Lucia Survey of Livings Conditions, 1996.

Table A4: Price change simulations for Dominica

Item	Tariff Effects		Revenue Neutral Sales Tax	
	EEC15	Composite	EEC15	Composite
Chicken, Whole or Parts	-14.67	-2.61	-7.66	-4.91
Turkey Meat	-14.67	-2.61	-7.66	-4.91
Other meats (Fresh, frozen, Smoked, Salted)	-14.67	-2.61	-7.66	-4.91
Fresh and Frozen Fish/Sea Foods	-16.15	-5.44	-9.30	-11.10
Smoked/Salted/Dried Fish	-16.15	-5.44	-9.30	-11.10
Sardines, Tuna, Mackerel and other canned fish	-16.15	-5.44	-9.30	-11.10
Eggs	-4.50	-2.64	3.44	3.61
Milk, Cheese, margarine, butter, yoghurt and other dairy products	-4.50	-2.64	3.44	3.61
Baby Foods	-18.62	-1.99	-11.92	-2.71
Rice, Macaroni, Oats, corn flakes and other cereals	0.00	0.00	8.32	6.87
Flour (all types), bread, biscuits and other bakery products	-18.62	-1.99	-11.92	-2.71
Ground provisions, Irish Potatoes and other root crops	-11.11	-6.28	-3.81	-7.82
Green Bananas, Plantains, Cocoy	-11.11	-6.28	-3.81	-7.82
Vegetables (tomatoes, carrots, cabbages etc)	-11.11	-6.28	-3.81	-7.82
Fresh Seasonings and Spices	-7.30	-2.16	0.43	5.90
Fresh Fruits, Dried and Canned Fruits	-20.16	-10.98	-13.65	-17.05
Cigarettes, Tobacco and Alcoholic beverages	-30.68	-13.99	-25.04	-21.68
Non-Alcoholic Beverages	-30.93	-8.95	-25.23	-7.26
Tea, coffee, cocoa, drinking chocolate etc	-16.42	-3.84	-0.80	-13.94
Sugars, Syrups and Sweeteners (honey, jams, jellies etc)	-20.64	-11.01	-14.06	-6.71
Sweets, mints, candies and Chocolate	-20.64	-11.01	-14.06	-6.71
Edible Oils	-12.82	-0.26	-5.81	-16.05
Peas, Green Peas and Beans	-11.11	-6.28	-3.81	-7.82
Nuts, peanuts and Cashews, etc	-28.29	-1.92	-22.49	-14.41
Relishes, Mayonnaise, ketchup, vinegar, mustard)	-30.93	-8.95	-25.23	-7.26
Snacks (corn curls, potato chips, popcorn etc)	-28.29	-1.92	-22.49	-14.41
Clothing	-16.09	-0.67	-9.31	-6.99
Footwear	-20.83	-2.23	-14.51	-13.37
Toiletries	-24.11	-5.36	-17.96	-9.71

Table A5: Simulated price changes for St Kitts and Nevis

	Tariff Effects		Revenue Neutral Sales Tax	
	EEC15	Composite	EEC15	Composite
Prices				
Whole chicken/chicken legs	-5.03	-1.26	4.71	3.04
Chicken back and Neck	-5.03	-1.26	4.71	3.04
Chicken Wings	-5.03	-1.26	4.71	3.04
Turkey meat	-5.03	-1.26	4.71	3.04
Other Fresh and frozen meats	-5.03	-1.26	4.71	3.04
Smoked/salted meats	-5.03	-1.26	4.71	3.04
Fresh and frozen fish	-11.78	-0.98	-2.80	-2.45
smoked/salted/dried fish	-11.78	-0.98	-2.80	-2.45
Sardines and other canned fish	-11.78	-0.98	-2.80	-2.45
Other sea foods	-11.78	-0.98	-2.80	-2.45
Eggs	-7.44	-1.51	2.02	0.29
Powdered milk	-7.44	-1.51	2.02	0.29
Cheese	-7.44	-1.51	2.02	0.29
fresh milk	-7.44	-1.51	2.02	0.29
full cream milk	-7.44	-1.51	2.02	0.29
Lite Milk	-7.44	-1.51	2.02	0.29
Other Dairy Products	-7.44	-1.51	2.02	0.29
Baby Foods	-15.28	-1.40	-6.68	-5.15
Rice	0.00	0.00	10.18	-1.46
Other cereal	0.00	0.00	10.18	-1.46
Cornmeal/Corn flour	-4.69	-0.95	5.13	8.15
Cornflakes	-15.28	-1.40	-6.68	-5.15
Cassava flour	-4.69	-0.95	5.13	8.15
Flour	-4.69	-0.95	5.13	8.15
Bread	-15.28	-1.40	-6.68	-5.15
Other Baked products	-15.28	-1.40	-6.68	-5.15
Potatoes	-2.99	-0.49	6.93	1.33
Ground Provisions	-2.99	-0.49	6.93	1.33
Green Bananas	-17.66	-1.10	-9.36	-10.60
Plantain	-17.66	-1.10	-9.36	-10.60
Other starchy foods	-4.69	-0.95	5.13	8.15
Vegetables	-2.99	-0.49	6.93	1.33
Fresh Seasonings	-2.99	-0.49	6.93	1.33
Spices and Herbs	-4.68	-0.20	4.86	-15.60
Citrus	-17.66	-1.10	-9.36	-10.60
Mangoes	-17.66	-1.10	-9.36	-10.60
Other fresh fruit	-17.66	-1.10	-9.36	-10.60
Canned fruits	-17.66	-1.10	-9.36	-10.60
Dried fruits	-17.66	-1.10	-9.36	-10.60
Cigarettes, Tobacco	-19.77	-10.95	-11.56	-8.23
Alcoholic beverages	-18.10	-4.18	-10.89	4.34
Non-alcoholic beverages	-18.10	-4.18	-10.89	4.34
Brown Sugar	-22.00	-15.18	-14.02	-12.49
White Sugar	-22.00	-15.18	-14.02	-12.49
Other syrups and sweeteners	-22.00	-15.18	-14.02	-12.49
Sweets, candies and chocolate	-14.09	-4.44	-5.36	-7.80

Edible oils	-22.71	-0.23	-14.91	-8.94
Margarine/butter	15.08	0.87	-6.45	4.32
Dried Peas, green peas and beans	-2.99	-0.49	6.93	1.33
Canned Peas and Beans	-2.99	-0.49	6.93	1.33
Dressings	-17.36	-1.89	-8.98	-6.47
Other canned and prepared food	-12.85	-2.86	-3.96	-3.25
Snacks	-13.39	-0.41	-4.59	-4.42
nuts, peanuts	-13.39	-0.41	-4.59	-4.42
cashew nuts	-13.39	-0.41	-4.59	-4.42
meals out	0.00	0.00	0.00	0.00
dried package food	-15.28	-1.40	-6.68	-5.15
peanut butter, jam	-13.39	-0.41	-4.59	-4.42
other food or meals	0.00	0.00	0.00	0.00
laundry supplies	-17.19	-0.70	-8.82	-1.23
Toiletries	14.97	-0.82	-10.16	-4.86
cooking gas	-9.38	-0.08	-0.15	-4.77
kitchen supplies	-13.85	-1.44	-5.11	-0.14
gasoline, motor oil	-9.08	-0.06	0.25	9.45
adult shoes	-16.85	-1.36	-8.55	-9.44
adult clothing	-16.92	-0.56	-8.60	-7.38
children shoes	-16.85	-1.36	-8.55	-9.44
children clothing	-16.92	-0.56	-8.60	-7.38
clothing materials	-16.92	-0.56	-8.60	-7.38
furniture and furnishings	-20.73	-4.80	-12.79	-10.40
Household appliances and equipment	-11.94	-1.70	-3.04	-3.04
kitchen utensils and cutlery etc	-10.30	-0.61	-1.22	-0.23

Table A6: Simulated price changes for St Lucia

	Tariff Effects		Revenue Neutral Sales Tax	
	EEC15	Composit e	EEC15	Composit e
Whole chicken/chicken legs	-3.13	-0.48	4.98	2.83
Chicken back and Neck	-3.13	-0.48	4.98	2.83
Turkey meat	-3.13	-0.48	4.98	2.83
Other Fresh and frozen meats	-3.13	-0.48	4.98	2.83
Smoked/salted meats	-3.13	-0.48	4.98	2.83
Fresh and frozen fish	-19.55	-8.05	-12.89	-12.89
smoked/salted/dried fish	-19.55	-8.05	-12.89	-12.89
Sardines and other canned fish	-19.55	-8.05	-12.89	-12.89
Other sea foods	-19.55	-8.05	-12.89	-12.89
Eggs	-6.65	-2.68	1.19	2.24
Powdered milk	-6.65	-2.68	1.19	2.24
Evaporated or skimmed milk	-6.65	-2.68	1.19	2.24
fresh milk	-6.65	-2.68	1.19	2.24
Condensed milk	-6.65	-2.68	1.19	2.24
Other dairy	-6.65	-2.68	1.19	2.24
Baby Foods	-17.66	-0.20	-10.73	6.67
Rice	-17.66	-0.20	-10.73	6.67
Other cereal	-17.66	-0.20	-10.73	6.67
Cornmeal/Corn flour	-7.29	-1.02	0.52	6.62
Arrowroot flour	-7.29	-1.02	0.52	6.62
Cassava flour	-7.29	-1.02	0.52	6.62
Flour	-7.29	-1.02	0.52	6.62
Bread	-13.04	-1.63	-5.76	0.42
Other Baked products	-13.04	-1.63	-5.76	0.42
Potatoes	-11.29	-2.49	-3.98	-10.11
Ground Provisions	-11.29	-2.49	-3.98	-10.11
Green Bananas	-18.78	-2.21	-12.14	-15.27
Plantain	-18.78	-2.21	-12.14	-15.27
Other starchy foods	-11.29	-2.49	-3.98	-10.11
Vegetables	-11.29	-2.49	-3.98	-10.11
Fresh Seasonings	-11.29	-2.49	-3.98	-10.11
Spices and Herbs	-11.23	-3.43	-3.86	-6.47
Citrus	-18.78	-2.21	-12.14	-15.27
Mangoes	-18.78	-2.21	-12.14	-15.27
Other fresh fruit	-18.78	-2.21	-12.14	-15.27
Canned fruits	-18.78	-2.21	-12.14	-15.27
Dried fruits	-18.78	-2.21	-12.14	-15.27
Cigarettes, Tobacco	-30.68	-14.36	-24.86	-10.29
Alcoholic beverages	-24.35	-11.34	-18.04	-11.03
Non-alcoholic beverages	-15.70	-2.21	-8.71	-5.29
Sugar	-17.66	-7.04	-10.75	-3.23
Other syrups and sweeteners	-17.66	-7.04	-10.75	-3.23
Sweets, candies and chocolate	-16.00	-6.09	-8.97	-3.55
Edible oils	-24.96	-1.52	-18.74	-5.85
Margarine	-24.96	-1.52	-18.74	-5.85

Dried Peas, green peas and beans	-11.29	-2.49	-3.98	-10.11
Canned Peas and Beans	-11.29	-2.49	-3.98	-10.11
Relishes	-11.29	-2.49	-3.98	-10.11
Other canned and prepared food	-15.65	-2.70	-8.66	-6.22
Snacks	-14.37	-1.92	-7.24	-2.43
nuts, peanuts	-0.25	-0.03	8.10	2.59
cashew nuts	-18.78	-2.21	-12.14	-15.27
meals out	0.00	0.00	0.00	0.00
dried package food	-13.04	-1.63	-5.76	0.42
other food or meals	0.00	0.00	0.00	0.00
Toiletries	-17.51	-10.93	-10.71	-4.12

Table A7: Poverty line estimations for Dominica

Item	Actual cost	EEC15 Tariff effect	Composite Tariff effect	Revenue Neutral Sales Tax EEC15	Revenue Neutral Sales Tax Composite
Flour	0.13	0.11	0.13	0.13	0.12
Rice	0.14	0.14	0.14	0.13	0.13
Corn meal	0.29	0.24	0.28	0.25	0.27
Green banana	0.08	0.07	0.07	0.09	0.09
Dasheen	0.13	0.12	0.12	0.14	0.14
Yams	0.25	0.22	0.23	0.24	0.23
White sugar	0.1	0.08	0.09	0.10	0.09
Dry red beans	0.24	0.24	0.24	0.23	0.22
Lentils	0.1	0.10	0.10	0.10	0.09
raw carrots	0.14	0.12	0.13	0.12	0.12
Raw cabbage	0.09	0.08	0.08	0.08	0.07
Green lettuce	0.2	0.18	0.19	0.17	0.17
Fresh cucumber	0.05	0.04	0.05	0.04	0.04
Citrus	0.06	0.05	0.05	0.06	0.06
ripe banana	0.03	0.02	0.03	0.03	0.03
Guava, nectar	0.04	0.03	0.04	0.04	0.04
Passion fruit	0.06	0.05	0.05	0.06	0.06
Milk	0.14	0.13	0.14	0.13	0.12
Cheese	0.47	0.45	0.46	0.49	0.49
Chicken	0.23	0.20	0.22	0.21	0.20
Turkey	0.36	0.31	0.35	0.33	0.32
Salted fish, cod	0.46	0.39	0.43	0.43	0.39
Egg	0.34	0.32	0.33	0.32	0.29
Sardine	0.67	0.56	0.63	0.67	0.67
Smoked herring	0.25	0.21	0.24	0.25	0.25
veg oil	0.17	0.15	0.17	0.17	0.17
Margarine	0.29	0.25	0.29	0.29	0.29
Daily indigence line	5.51	4.86	5.29	5.28	5.15
Annual indigence line	2011.15	1772.90	1932.31	1927.88	1881.16
Non food	1400	1400	1400	1400	1400

Poverty line	3411.15	3172.90	3332.31	3327.88	3281.16
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Notes: The second column refers to the cost of the item in the consumption bundle that defines the poverty line at the time of the survey. Columns three and four are the simulated costs under the price changes occurring in response to reduction/removal of tariffs for the EEC15 and composite effect. Columns five and six show the simulated costs under the revenue neutral sales tax, EEC15 and Composite, respectively.

Sources: Actual poverty line costs from Dominica Poverty Assessment Report; simulated poverty line costs from Part 6, details in Tables A4..

Table A8: Poverty line estimations for St Kitts and Nevis

	St Kitts					Nevis				
	Actual	Tariff effects		Revenue Neutral		Actual	Tariff effects		Revenue Neutral	
Food Item /Cost (EC\$/serving)	1	EEC15	Compos ite	EEC15	Compos ite		EEC15	Compos ite	EEC15	Compos ite
Flour	0.33	0.31	0.33	0.3469	0.3569	0.18	0.17	0.18	0.19	0.19
Rice	0.25	0.25	0.25	0.2755	0.2463	0.18	0.18	0.18	0.20	0.18
Corn Meal	0.22	0.21	0.22	0.2313	0.2379	0.18	0.17	0.18	0.19	0.19
Green Banana	0.21	0.17	0.21	0.1903	0.1877	0.67	0.65	0.67	0.72	0.68
Sweet potato	0.29	0.28	0.29	0.3101	0.2939	0.67	0.65	0.67	0.72	0.68
Irish potato	0.84	0.81	0.84	0.8982	0.8512	0.53	0.51	0.53	0.57	0.54
brown sugar	0.12	0.09	0.10	0.1032	0.1050	0.15	0.12	0.13	0.13	0.13
Split peas	0.18	0.17	0.18	0.1925	0.1824	0.22	0.21	0.22	0.24	0.22
lentils	0.21	0.20	0.21	0.2246	0.2128	0.27	0.26	0.27	0.29	0.27
bottled tomato catsup	0.16	0.13	0.16	0.1456	0.1496	0.1	0.08	0.10	0.09	0.09
corn	0.08	0.08	0.08	0.0855	0.0811	0.15	0.13	0.15	0.14	0.14
tomato paste	0.21	0.18	0.21	0.2004	0.2007	0.15	0.15	0.15	0.16	0.15
carrot	0.11	0.11	0.11	0.1176	0.1115	0.2	0.19	0.20	0.21	0.20
raisins	0.08	0.07	0.08	0.0725	0.0715	0.09	0.07	0.09	0.08	0.08
ripe banana	0.06	0.05	0.06	0.0544	0.0536	0.52	0.43	0.51	0.47	0.46
orange juice	0.17	0.14	0.16	0.1534	0.1620	0.13	0.11	0.12	0.12	0.12
pawpaw	0.04	0.03	0.04	0.0363	0.0358	0.18	0.15	0.17	0.16	0.17
heart mutton, lamb	0.14	0.13	0.14	0.1466	0.1443	0.08	0.08	0.08	0.08	0.08
kidney, goat, sheep	0.22	0.21	0.22	0.2304	0.2267	0.09	0.09	0.09	0.09	0.09
liver	0.25	0.24	0.25	0.2618	0.2576	0.23	0.20	0.23	0.22	0.22
beef feet, trotters,	0.16	0.15	0.16	0.1675	0.1649	0.18	0.17	0.18	0.19	0.19
pork	0.2	0.19	0.20	0.2094	0.2061	0.35	0.31	0.34	0.34	0.34
chicken thigh	0.29	0.28	0.29	0.3037	0.2988	0.55	0.51	0.54	0.56	0.55
tongue	0.29	0.28	0.29	0.3037	0.2988	0.55	0.51	0.54	0.56	0.55
beef	0.41	0.39	0.40	0.4293	0.4225	0.15	0.14	0.15	0.16	0.15
beef	0.41	0.39	0.40	0.4293	0.4225	0.15	0.14	0.15	0.16	0.15

retail chicken neck back margari ne not fortifie d margari ne daily indigen ce	0.16	0.15	0.16	0.1675	0.1649	0.12	0.11	0.12	0.12	0.12
Annual Indigen ce	2142. 55	1974.7 4	2116.52	2176.4 6	2139.91	2441.8 5	2236.3 0	2408.53	2464. 48	2412.21
Non- food Poverty line	1218	1218	1218	1218	1218	1218	1218	1218	1218	1218
	3360. 55	3192.7 4	3334.52	3394.4 6	3357.91	3659.8 5	3454.3 0	3626.53	3682. 48	3630.21

Notes: The second and seventh columns refer to the cost of the item in the consumption bundle that defines the poverty line at the time of the survey in each island. Columns three and four, and eight and nine, are the simulated costs under the price changes occurring in response to reduction/removal of tariffs for the EEC15 and composite effect in each island. Columns five and six, and ten and eleven show the simulated costs under the revenue neutral sales tax, EEC15 and Composite, for each island respectively.

Sources: Actual poverty line costs from St Kitts and Nevis Poverty Assessment Report; simulated poverty line costs from Part 6, details in Tables A4.

Table A9: Poverty Line estimation for St Lucia

Food item /Cost per serving in EC\$	Actual Poverty Line	Tariff effects		Revenue neutral sales tax	
		EEC15	Composite	EEC15	Composite
Flour	0.22	0.20	0.22	0.22	0.23
Rice	0.24	0.20	0.24	0.21	0.26
Corn Meal	0.44	0.41	0.44	0.44	0.47
Green Plantain	0.52	0.42	0.51	0.46	0.44
Green Banana	0.44	0.36	0.43	0.39	0.37
Breadfruit, fresh fruit	0.44	0.36	0.43	0.39	0.37
Sugar	0.20	0.16	0.19	0.18	0.19
Split peas	0.26	0.23	0.25	0.25	0.23
Lentils	0.28	0.25	0.27	0.27	0.25
frozen peas and carrots	0.80	0.71	0.78	0.77	0.72
Christophine	0.28	0.25	0.27	0.27	0.25
Melongene	0.32	0.28	0.31	0.31	0.29
Pumpkin	0.34	0.28	0.33	0.30	0.29
ripe banana	0.68	0.55	0.66	0.60	0.58
Soursop	0.68	0.55	0.66	0.60	0.58
Grapefruit	0.68	0.55	0.66	0.60	0.58
Raisins	0.82	0.67	0.80	0.72	0.69
chicken neck, back	0.18	0.17	0.18	0.19	0.19
chicken thigh	0.26	0.25	0.26	0.27	0.27
chicken drumstick	0.28	0.27	0.28	0.29	0.29
Lamb	0.36	0.35	0.36	0.38	0.37
Cheese	0.46	0.43	0.45	0.47	0.47
Beef	0.40	0.39	0.40	0.42	0.41
Powdered milk	0.70	0.65	0.68	0.71	0.72
Evaporated milk	0.18	0.17	0.18	0.18	0.18
Margarine	0.34	0.26	0.33	0.28	0.32
Margarine not fortified	0.34	0.26	0.33	0.28	0.32
Daily Total family of 4	11.14	9.63	10.92	10.42	10.33
Monthly indigence line/person	83.55	72.20	81.87	78.17	77.45
monthly NFOOD	72.82	72.82	72.82	72.82	72.82
monthly poverty line	156.37	145.02	154.69	150.99	150.27
Annual Poverty Line	1876.44	1740.19	1856.22	1811.88	1803.22

Notes: The second column refers to the cost of the item in the consumption bundle that defines the poverty line at the time of the survey. Columns three and four are the simulated costs under the price changes occurring in response to reduction/removal of tariffs for the EEC15 and composite effect. Columns five and six show the simulated costs under the revenue neutral sales tax, EEC15 and Composite, respectively.

Sources: Actual poverty line costs from St Lucia Poverty Assessment Report; simulated poverty line costs from Part 6, details in Tables A4.