Importer-Specific Elasticities of Demand:

Evidence from U.S. Exports

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Abstract

This paper investigates whether the elasticity of demand systematically changes from one importer country to another in an international trade context. Evidence from U.S. exports supports this view by suggesting that the elasticity of demand in an importer country among the products purchased from the U.S. significantly decreases in GDP per capita and distance to the U.S. of the importer country. In terms of policy implications, using a common elasticity measure would overestimate the gains from reducing trade costs with developed or distant countries and underestimate them with developing or remote countries.

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1 Introduction

In the context of the static applied general equilibrium trade literature, the elasticity of demand is a key parameter that is used by policy-makers to derive quantitative results, because the effects of an international trade policy change are evaluated by the conversion of policy changes into price effects.[1] These price effects (i.e., price changes) are the key in determining the effects of trade policies on the real macroeconomic variables such as output, employment, trade flows, and economic welfare, as well as other important variables of interest. Therefore, there is no question that the measurement of the elasticity of demand is of fundamental importance in determining the response of trade models to policy experiments.

This paper investigates whether the elasticity of demand, which corresponds to the (price) elasticity of demand in the context of CES aggregators under the assumption of a large number of varieties, systematically changes from one importer country to another in the context of international trade. In terms of modeling, a partial equilibrium trade model is introduced where each country has a distinct import demand for different countries' goods (represented by a sub-utility). For instance, the United Kingdom (U.K.) has a certain demand (and a corresponding elasticity of demand) among the goods imported from the United States (U.S.), while Germany has a different demand (and a corresponding elasticity of demand) among the very same U.S. goods. The sub-demand of each importer country is represented by a constant elasticity of substitution (CES) aggregator that is a combination of goods imported from the U.S.. Although the elasticity of substitution is constant for each importer, it is allowed to change across importers, which is the key to this paper.

Using the U.S. export data (at the SITC 4-digit good category) that cover the value and unit prices of exports from the United States to 237 destination countries around the globe between 1996-

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[1]Arkolakis et al. (2012a) show that, within a particular but important class of trade models, there exist two sufficient statistics for welfare analysis: (i) the share of expenditure on domestic goods; and (ii) the trade elasticity.

2013, this paper shows that the elasticity of demand varies significantly across importer countries. In the benchmark case that ignores zero-trade observations, the common elasticity is estimated as about 0.90, while it ranges between 0.75 and 1.32 across importers when importer specific elasticities are considered. Similarly, when zero-trade observations are also included in the analysis, the common elasticity is estimated about 0.86, while it ranges between 0.05 and 1.51 across importers when importer specific elasticities are considered. These results are shown to be robust to the consideration of endogeneity and good classification according to Rauch (1999).

The heterogeneity of importer specific elasticities corresponds to important policy implications: Individual responses of importers through importer-specific elasticities, rather than an imposed average response through a common elasticity, should be taken into account, because each importer has its own demand characteristics. Just to give two examples, among other importers, using a common elasticity would overestimate the gains from reducing trade costs (of organized exchange goods) with Finland and underestimate them with Ukraine, both by about twofold. When the reasons behind the heterogeneity of elasticities are further investigated, it is found that importer specific elasticity estimates decrease with the development level and the distance to the U.S. of the importer country. Therefore, a common elasticity measure would overestimate the gains from reducing trade costs with developed or distant countries and underestimate them with developing or remote countries.

Compared to the existing literature, this paper is not the first one analyzing variable elasticities across importers. There are studies in which market entry affects the elasticity of demand. Most of the trade theory literature with this feature has emphasized oligopoly and homogeneous goods as in Brander and Krugman (1982).[2] The literature on pricing-to-market is another one that shows

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[2]Broda and Weinstein (2006) empirically show how elasticities change across importers. In connection with this literature, more recently, Dekle et al. (2008) have shown that there is a difference between short-run and long-run

evidence for varying elasticities; this literature has shown that the same goods are priced with different markups and thus have different price elasticities of demand across importing markets.[3] For instance, Feenstra (1989) and Knetter (1993) belonging to this literature focus on the movements along the same, non-CES, demand curves so that variation in quantities caused by tariff or exchange rate shocks yields variation in the elasticity of demand. Broda et al. (2006) also estimate importer specific elasticities, and they surprisingly show that the median elasticities are the same across developing and developed countries by simply comparing the median estimates. However, this literature does not provide any systematic explanation for the difference in elasticities across importers. More recently, Hummels and Lugovskyy (2009) attempt to bridge this gap by showing that the elasticity of demand increases in importer GDP and decreases in importer GDP per capita. Compared to Hummels and Lugovskyy (2009), this paper shows that importer specific elasticity estimates decrease with GDP per capita and the distance to the U.S. of the importer country.

2 Methodology

A simple model is considered to motivate the empirical investigation. In particular, the international trade of U.S. exports is modeled by considering the preferences of importer countries and the profit maximization problem of U.S. producers. Since the focus of this paper is to show that using a common elasticity of demand (rather than importer specific elasticities) would lead into biased policy analysis, we consider two versions of the model, namely unrestricted (with importer specific elasticities) and restricted (with a common elasticity). In terms of the notation, for any variable X, $X_d^g(v)$ stands for variety v of good g imported by destination country d, and $\widetilde{X}$ is used for the

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elasticities due to trade stickiness.

[3]See Goldberg and Knetter (1997) for an excellent literature review. Also see Alessandria and Kaboski (2011) as a more recent study.

source value of X.

2.1 Preferences of Importers

We assume that the utility maximization problem of the representative agent in destination country d is separable across source countries; hence, we focus on her optimization problem for the U.S. products only for which we assume the following CES preferences:

$$C_d \equiv \left(\sum_g (\beta_d^g)^{\frac{1}{\varepsilon_d}} (C_d^g)^{\frac{\varepsilon_d - 1}{\varepsilon_d}} \right)^{\frac{\varepsilon_d}{\varepsilon_d - 1}}$$

where C_d is the composite index of U.S. products consisting of C_d^g's representing U.S. good g, ε_d is the elasticity of substitution across U.S. goods, and α_d^g is a destination-good specific taste parameter. C_d^g is further given by:

$$C_d^g \equiv \left(\sum_v (\beta_d^g(v))^{\frac{1}{\eta_d}} (C_d^g(v))^{\frac{\eta_d - 1}{\eta_d}} \right)^{\frac{\eta_d}{\eta_d - 1}}$$

where $C_d^g(v)$ is the variety v of good g imported from the U.S., η_d is the elasticity of substitution across the varieties of U.S. goods, and $\beta_d^g(v)$ is a destination-good-variety specific taste parameter.

The optimal conditions for expenditure on variety v of good g imported by destination country d from the U.S. imply:

$$C_d^g(v) = \beta_d^g(v) \left(\frac{P_d^g(v)}{P_d^g} \right)^{-\eta_d} C_d^g \tag{1}$$

and

$$C_d^g = \beta_d^g \left(\frac{P_d^g}{P_d} \right)^{-\varepsilon_d} C_d \tag{2}$$

where $P_d^g(v)$, P_d^g and P_d are unit prices of $C_d^g(v)$, C_d^g and C_d, respectively, which further satisfy:

$$P_d^g \equiv \left(\sum_v \beta_d^g(v) (P_d^g(v))^{1-\eta_d} \right)^{\frac{1}{1-\eta_d}} \tag{3}$$

and

$$P_d \equiv \left(\sum_g \beta_d^g (P_d^g)^{1-\varepsilon_d} \right)^{\frac{1}{1-\varepsilon_d}}$$

which further imply that $P_d^g C_d^g = \sum_v P_d^g (v) C_d^g (v)$ and $P_d C_d = \sum_g P_d^g C_d^g$.

We suppose that the unique producer of variety v of good g in the U.S. follows a pricing-to-market strategy and maximizes the following profit function:

$$\max_{P_{d,g,t}} Y_d^g (v) \left(\widetilde{P_d^g} (v) - M^g \right)$$

subject to Equation 1 and $Y_d^g (v) = C_d^g (v)$, where $Y_d^g (v)$ is the amount of production sold to destination country d, $\widetilde{P_d^g} (v)$ is the source price charged for good g, and M^g is the good-specific marginal cost of production (excluding trade costs). The profit maximization results in the following standard relation between source prices and marginal cost:

$$\widetilde{P_d^g} (v) = \mu_d M^g$$

where importer-specific gross markups are represented by $\mu_d \left(= \frac{\eta_d}{\eta_d - 1} \right)$'s. Source prices, $\widetilde{P_d^g} (v)$, are connected to destination prices, $P_d^g (v)$, through iceberg trade costs:

$$P_d^g (v) = \widetilde{P_d^g} (v) \tau_d$$

where τ_d represents multiplicative trade costs that are importer specific. It is implied by Equation 3 that:

$$\widetilde{P_d^g} \equiv \frac{P_d^g}{\tau_d} \equiv \mu_d M^g \left(\sum_v \beta_d^g (v) \right)^{\frac{1}{1 - \eta_d}} \tag{4}$$

where $\widetilde{P_d^g}$ is the unit price of C_d^g measured at the source (i.e., the U.S.). It is also implied that the source value of U.S. exports to destination country d in terms of good g is given by:

$$\widetilde{P_d^g} C_d^g = \beta_d^g \left(\widetilde{P_d^g} \right)^{1 - \varepsilon_d} \frac{(P_d)^{\varepsilon_d} C_d}{(\tau_d)^{\varepsilon_d}} \tag{5}$$

2.2   Importer-Specific versus Common Elasticities of Substitution

The objective of this paper is show that the estimates of gains from reducing trade costs may be biased when a common elasticity of substitution (rather than importer-specific elasticities of

substitution) is employed. Accordingly, we need to compare the implications of the simple model (i.e., the unrestricted version that has been introduced so far) with the model in which the elasticities of substitution are common across importers (i.e., the restricted version in which $\varepsilon_d = \varepsilon$ and $\eta_d = \eta$ for all d).

The restricted version replaces Equations 1, 2, 4 and 5 with the following equations:

$$C_d^g(v) = \beta_d^g(v) \left(\frac{P_d^g(v)}{P_d^g} \right)^{-\eta} C_d^g \tag{6}$$

and

$$C_d^g = \beta_d^g \left(\frac{P_d^g}{P_d} \right)^{-\varepsilon} C_d \tag{7}$$

and

$$\widetilde{P_d^g} \equiv \mu M^g \left(\sum_v \beta_d^g(v) \right)^{\frac{1}{1-\eta}} \tag{8}$$

and

$$\widetilde{P_d^g} C_d^g = \beta_d^g \left(\widetilde{P_d^g} \right)^{1-\varepsilon} \frac{(P_d)^\varepsilon C_d}{(\tau_d)^\varepsilon} \tag{9}$$

where $\mu \left(= \frac{\eta}{\eta-1} \right)$ represents the common (gross) markup across importers.

3   Data and Empirical Strategy

The U.S. exports data are from the US. International Trade Commission (http://dataweb.usitc.gov/) covering exports to 237 destination countries at the SITC 4-digit good level between 1996-2013. The data set includes customs value (quantity times price charged by the U.S. measured at the U.S. dock) and quantity traded. Unit source prices of exports are calculated by dividing the customs value by the quantity traded for each good.

The data cover 1048 SITC 4-digit good categories; these goods have also been matched with the classification of SITC 4-digit good categories achieved by Rauch (1999) where they have been

spitted into organized exchange, reference priced, and differentiated goods in order to take into account the heterogeneity across good categories.[4] Supplementary data include GDP per capita, GDP, and population obtained from World Development Indicators for the very same time period; great circle distance between the U.S. and the destination countries have been calculated using the coordinates of the countries obtained from Google Maps.

Since the data are at the good (rather than variety) level, the customs values measured in the U.S. correspond to $\widetilde{P_d^g} C_d^g$'s, and unit source prices correspond to $\widetilde{P_d^g}$'s in the model introduced, above; similarly, the elasticity of substitution across U.S. goods (i.e., either ε_d or ε) corresponds to the price elasticity of demand at this level of aggregation.[5] Accordingly, for the unrestricted version of the model, we estimate the following log versions of Equations 4 and 5:

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\underbrace{\log \widetilde{P_d^g} C_d^g}_{\text{Log Trade Data}} = (1 - \varepsilon_d) \underbrace{\log \left(\widetilde{P_d^g} \right)}_{\text{Fitted Log Prices}} + \underbrace{\log \left(\frac{(P_d)^{\varepsilon_d} C_d}{(\tau_d)^{\varepsilon_d}} \right)}_{\text{Destination Fixed Effects}} + \underbrace{\log \beta_d^g}_{\text{Residuals}} \tag{10}
$$

and

$$
\underbrace{\log \widetilde{P_d^g}}_{\text{Log Price Data}} \equiv \underbrace{\log \mu_d}_{\text{Destination Fixed Effects}} + \underbrace{\log M^g}_{\text{Good Fixed Effects}} + \underbrace{\log \left(\sum_v \beta_d^g(v) \right)^{\frac{1}{1-\eta_d}}}_{\text{Residuals}} \tag{11}
$$

where destination fixed effects in Equation 10 effectively capture any importer country characteristics, including gravity-type variables such as trade costs, common language, border effects, etc., because the U.S. is the unique source country.[6]

For the restricted version of the model, we estimate the following log versions of Equations 8

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[4]See Baskaran et al. (2011) for a discussion on the classification of Rauch (1999).

[5]From this point on, we will simply refer ε as the elasticity.

[6]The usage of preferences (i.e., functions of β_d^g's or $\beta_d^g(v)$'s as residuals does not violate any assumptions of the model, and it is not new to this paper: Hillberry et al. (2005) and Yilmazkuday (2012) also employ similar empirical strategies.

and 9:

$$\underbrace{\log \widetilde{P_d^g} C_d^g}_{\text{Log Trade Data}} = (1-\varepsilon) \underbrace{\log \left(\widetilde{P_d^g} \right)}_{\text{Fitted Log Prices}} + \underbrace{\log \left(\frac{(P_d)^\varepsilon C_d}{(\tau_d)^\varepsilon} \right)}_{\text{Destination Fixed Effects}} + \underbrace{\log \beta_d^g}_{\text{Residuals}} \quad (12)$$

and

$$\underbrace{\log \widetilde{P_d^g}}_{\text{Log Price Data}} = \underbrace{\log \mu}_{\text{Constant}} + \underbrace{\log M^g}_{\text{Good Fixed Effects}} + \underbrace{\log \left(\sum_v \beta_d^g(v) \right)^{\frac{1}{1-\eta}}}_{\text{Residuals}} \quad (13)$$

where the only difference is due to the restricting assumptions of $\varepsilon_d = \varepsilon$ and $\eta_d = \eta$ for all d.

Due to endogeneity concerns, we estimate both versions of the model by using Two-Stage Least Squares (TSLS); i.e., we estimate Equation 11 or 13 in the first stage and further use the fitted values of prices to estimate Equation 10 or 12 in the second stage. In the first stage of TSLS, the price expressions (i.e., Equations 11 and 13) are estimated using Ordinary Least Squares (OLS). Since there are zero-trade observations in the data, in order to have a robust investigation, we consider two estimation methodologies in the second stage of TSLS (i.e., the estimation of Equations 10 and 12), namely OLS and Poisson Pseudo-Maximum Likelihood (PPML), where the latter effectively takes into account zero-trade values.

4   Empirical Results

The summary of the estimation results are given in Table 1, while the full list of estimates is given in the Appendix Table. As is evident, all elasticity estimates are significant at the 1% level. When all goods are used in the estimation, the common elasticity is estimated about 0.9, independent of using OLS or PPML, meaning that a 1% reduction in destination prices (say, due to a reduction in trade costs) would result in 0.9% of an increase in U.S. exports.[7] Yet, using this number (of

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[7]In the existing literature, Yilmazkuday (2012) estimates the elasticity of substitution across goods as 1.09 within the U.S. at 2-digit SCTG good classification.

$\varepsilon = 0.9$) would result in biased results when one wants to have an importer-specific analysis. For instance, what would be the change in U.S. exports to Iraq or North Korea if trade costs would go down by 1%? If one uses $\varepsilon = 0.9$ as the common elasticity measure, the answer would be the same for both destination countries. However, this number is biased compared to the case in which one uses importer-specific elasticities; e.g., if trade costs decrease by 1%, the increase in U.S. exports to Iraq and North Korea would be 0.75 and 1.32, respectively, which are significantly different from 0.9 when OLS is used according to Table 1. The heterogeneity across importers is even larger when PPML is used as the estimation strategy; e.g., for Seychelles, the elasticity estimate is only 0.05 compared to the common elasticity of 0.84 estimated by PPML. Therefore, using a common elasticity measure (rather than importer specific measures) would lead into biased policy analysis at the country level.

The results are similar when the analysis is restricted to alternative good classifications (that are achieved according to Rauch, 1999). One important detail is that, consistent with the expectations of homogenous goods having higher elasticities than differentiated goods, organized exchange goods have higher elasticity estimates compared to reference priced goods that have higher elasticity estimates compared to differentiated goods. Accordingly, the bias due to using a common elasticity measure is more severe for organized exchange goods relative to reference priced goods and for referenced priced goods relative to differentiated goods. Hence, policy makers should use more caution while conducting trade policies (e.g., trade negotiations) on organized exchange goods or reference priced goods.

Showing the effects of ignoring importer specific elasticities, the next question that we would like to answer is "What determines the heterogeneity across importer specific elasticities?" In order to answer this question, we consider standard characteristics of the importer countries such as their size, development level and geographical location. Accordingly, we consider the following regression

analysis:

$$\log \varepsilon_d = \beta_0 + \beta_1 \log (\text{GDP per capita}) + \beta_2 \log (\text{GDP})$$

$$+ \beta_3 \log (\text{Population}) + \beta_4 \log (\text{Distance to the U.S.}) + \text{Residuals}$$

where GDP per capita is considered to capture the development level, GDP is considered to capture the economic size, Population is considered for the overall size, and Distance to the U.S. is considered to capture the geographical characteristics of the importer countries. The results are given in Table 2, where we have run several different versions of this regression. As is evident, the elasticity estimates decrease with the development level and distance to the U.S., while the results based on the size of the importer countries are ambiguous (i.e., they depend on the estimation methodology). Therefore, on average, using a common elasticity measure would overestimate the gains from reducing trade costs with developed countries and underestimate them with developing countries, compared to using importer specific elasticities. Similarly, on average, using a common elasticity measure would overestimate the gains from reducing trade costs with distant countries and underestimate them with remote countries. Since the heterogeneity across importer specific elasticities is significant according to Table 1, these are important details to be considered by the U.S. policy makers.

5   Conclusion

The U.S. exports are imported by 237 different destination countries that potentially have different preferences. This paper has shown that these different preferences are reflected in the heterogeneity of elasticities of demand that is significant across importers. Ignoring this heterogeneity (across importers) is shown to result in significant biases from a policy perspective. Just to give two examples, when organized exchange goods are considered, using a common elasticity would overestimate

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the gains from reducing trade costs with Finland and underestimate them with Ukraine, both by about twofold.

When the reasons behind the heterogeneity of elasticities are further investigated, it is found that importer specific elasticity estimates decrease with the development level and the distance to the U.S. of the importer country. Therefore, a common elasticity measure would overestimate the gains from reducing trade costs with developed or distant countries and underestimate them with developing or remote countries.

Many things remain to be done in future research. This includes an extension of the analysis in this paper depicting the short-run properties of the elasticity of demand in the context of international business cycle literature (as in Ruhl, 2008) and endogenizing the elasticity of demand in importer countries in the context of non-CES preferences (as in many methodologies covered in Arkolakis et al., 2012b).

6   Acknowledgements

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Table 1 - Elasticity Estimates

Elasticity	All Goods				Organized Exchange Goods				Reference Priced Goods				Differentiated Goods			
	OLS (s.e.)		PPML (s.e.)		OLS (s.e.)		PPML (s.e.)		OLS (s.e.)		PPML (s.e.)		OLS (s.e.)		PPML (s.e.)	
Restricted Model																
Common Elasticity	0.90	(0.00)	0.86	(0.00)	1.08	(0.01)	0.94	(0.00)	1.06	(0.00)	1.03	(0.00)	0.88	(0.00)	0.91	(0.00)
Unrestricted Model																
Minimum	0.75	(0.03)	0.05	(0.00)	0.61	(0.15)	0.47	(0.00)	0.81	(0.10)	0.55	(0.00)	0.72	(0.03)	0.41	(0.00)
	[Iraq]		[Seychelles]		[Bangladesh]		[Finland]		[Pitcairn Is]		[Cen African Rep]		[Egypt]		[Montserrat Is]	
10th Percentile	0.83	(0.02)	0.62	(0.00)	0.90	(0.12)	0.80	(0.00)	0.96	(0.13)	0.86	(0.00)	0.80	(0.03)	0.71	(0.00)
	[Chile]		[Mauritania]		[Thailand]		[Estonia]		[Faroe Islands]		[Kazakhstan]		[Turkey]		[Cyprus]	
25th Percentile	0.87	(0.02)	0.74	(0.00)	1.01	(0.16)	0.90	(0.00)	1.01	(0.09)	0.97	(0.00)	0.84	(0.03)	0.82	(0.00)
	[Pakistan]		[Aruba]		[Tunisia]		[Greece]		[Chad]		[Libya]		[French Guiana]		[Uganda]	
Median	0.93	(0.03)	0.84	(0.00)	1.09	(0.10)	1.01	(0.00)	1.06	(0.11)	1.06	(0.00)	0.90	(0.05)	0.89	(0.00)
	[Monaco]		[Venezuela]		[Chile]		[Br Virgin Is]		[Mauritania]		[Faroe Islands]		[Fr S & Ant land]		[New Zealand]	
75th Percentile	0.97	(0.02)	0.92	(0.00)	1.19	(0.10)	1.26	(0.00)	1.11	(0.15)	1.18	(0.00)	0.95	(0.06)	0.97	(0.00)
	[Hong Kong]		[Tunisia]		[Suriname]		[St Lucia Is]		[Timor-Leste]		[Tunisia]		[West Bank]		[Bermuda]	
90th Percentile	1.01	(0.06)	1.02	(0.00)	1.26	(0.12)	1.51	(0.00)	1.16	(0.12)	1.37	(0.00)	0.98	(0.04)	1.06	(0.00)
	[Kosovo]		[El Salvador]		[Martinique]		[Congo (ROC)]		[Sao Tome & Prin]		[Burkina Faso]		[Br Indian O Ter]		[Jamaica]	
Maximum	1.32	(0.08)	1.51	(0.00)	1.44	(0.16)	3.30	(0.00)	1.36	(0.13)	2.64	(0.00)	1.25	(0.09)	1.77	(0.00)
	[North Korea]		[North Korea]		[Lithuania]		[Fr Polynesia]		[Sudan]		[Somalia]		[North Korea]		[North Korea]	

Notes: Standard errors are in parenthesis and the corresponding country names are in brackets. Goods have been classified according to Rauch (1999). All estimates are significant at 1% level. The full list of country-level elasticity estimates are given in the Appendix.

Appendix Table - Importer Specific Elasticities of Demand

Country	All Goods				Organized Exchange Goods				Reference Priced Goods				Differentiated Goods			
	OLS	(s.e.)	PPML	(s.e.)	OLS	(s.e.)	PPML	(s.e.)	OLS	(s.e.)	PPML	(s.e.)	OLS	(s.e.)	PPML	(s.e.)
Afghanistan	0.78	(0.03)	0.72	(0.00)	1.08	(0.15)	1.31	(0.00)	1.10	(0.07)	1.17	(0.00)	0.78	(0.04)	0.69	(0.00)
Albania	0.94	(0.02)	0.93	(0.00)	-	-	-	-	1.07	(0.07)	1.20	(0.00)	0.87	(0.03)	0.84	(0.00)
Algeria	0.87	(0.03)	0.75	(0.00)	1.21	(0.22)	1.10	(0.00)	1.01	(0.07)	1.13	(0.00)	0.79	(0.04)	0.83	(0.00)
Andorra	1.06	(0.03)	1.04	(0.00)	-	-	-	-	1.19	(0.09)	0.99	(0.00)	0.98	(0.04)	1.02	(0.00)
Angola	0.85	(0.02)	0.70	(0.00)	0.97	(0.15)	1.42	(0.00)	1.05	(0.06)	1.10	(0.00)	0.86	(0.03)	0.89	(0.00)
Anguilla	0.94	(0.02)	0.91	(0.00)	1.10	(0.10)	1.45	(0.00)	0.94	(0.04)	0.88	(0.00)	0.93	(0.02)	0.94	(0.00)
Antigua Barbuda	0.94	(0.02)	0.90	(0.00)	1.20	(0.09)	1.27	(0.00)	1.06	(0.05)	1.00	(0.00)	0.93	(0.02)	0.93	(0.00)
Argentina	0.81	(0.02)	0.87	(0.00)	1.05	(0.09)	1.00	(0.00)	0.93	(0.07)	0.95	(0.00)	0.77	(0.03)	0.88	(0.00)
Armenia	0.95	(0.02)	0.65	(0.00)	0.88	(0.17)	0.73	(0.00)	1.07	(0.08)	1.18	(0.00)	0.92	(0.03)	0.84	(0.00)
Aruba	0.93	(0.02)	0.74	(0.00)	1.16	(0.09)	1.08	(0.00)	1.08	(0.06)	0.78	(0.00)	0.96	(0.03)	1.00	(0.00)
Australia	0.81	(0.02)	0.79	(0.00)	1.17	(0.10)	1.07	(0.00)	1.04	(0.07)	0.91	(0.00)	0.81	(0.03)	0.83	(0.00)
Austria	0.78	(0.02)	0.77	(0.00)	1.04	(0.10)	1.02	(0.00)	1.07	(0.06)	1.12	(0.00)	0.78	(0.03)	0.90	(0.00)
Azerbaijan	0.86	(0.02)	0.71	(0.00)	0.86	(0.23)	1.05	(0.00)	1.06	(0.07)	0.83	(0.00)	0.78	(0.03)	0.82	(0.00)
Bahamas	0.96	(0.02)	0.86	(0.00)	1.28	(0.10)	1.02	(0.00)	1.12	(0.06)	1.09	(0.00)	0.95	(0.03)	0.97	(0.00)
Bahrain	0.88	(0.02)	0.73	(0.00)	1.23	(0.11)	1.22	(0.00)	1.01	(0.05)	0.97	(0.00)	0.89	(0.03)	0.83	(0.00)
Bangladesh	0.93	(0.02)	0.90	(0.00)	0.61	(0.15)	0.90	(0.00)	1.02	(0.06)	0.85	(0.00)	0.86	(0.03)	0.87	(0.00)
Barbados	0.94	(0.02)	0.92	(0.00)	1.15	(0.10)	0.94	(0.00)	1.06	(0.05)	1.06	(0.00)	0.95	(0.03)	0.97	(0.00)
Belarus	0.89	(0.02)	0.61	(0.00)	-	-	-	-	1.06	(0.08)	1.01	(0.00)	0.87	(0.03)	0.83	(0.00)
Belgium	0.91	(0.03)	0.95	(0.00)	1.06	(0.12)	1.00	(0.00)	1.17	(0.07)	1.11	(0.00)	0.87	(0.03)	0.91	(0.00)
Belize	0.93	(0.02)	0.87	(0.00)	1.12	(0.09)	0.87	(0.00)	0.90	(0.05)	0.78	(0.00)	0.94	(0.03)	0.96	(0.00)
Benin	0.98	(0.03)	0.79	(0.00)	-	-	-	-	0.94	(0.08)	1.15	(0.00)	0.98	(0.03)	0.80	(0.00)
Bermuda	0.95	(0.02)	0.81	(0.00)	1.23	(0.10)	1.16	(0.00)	1.09	(0.06)	1.18	(0.00)	0.97	(0.03)	0.97	(0.00)
Bhutan	1.15	(0.05)	1.08	(0.00)	-	-	-	-	-	-	-	-	1.05	(0.06)	0.95	(0.00)
Bolivia	0.85	(0.02)	0.76	(0.00)	0.87	(0.12)	0.75	(0.00)	1.09	(0.06)	1.12	(0.00)	0.84	(0.03)	0.87	(0.00)
Bosnia-Hercegov	0.99	(0.03)	0.93	(0.00)	-	-	-	-	1.12	(0.07)	1.18	(0.00)	0.97	(0.03)	1.02	(0.00)
Botswana	0.87	(0.03)	0.65	(0.00)	-	-	-	-	0.81	(0.11)	0.86	(0.00)	0.88	(0.03)	0.68	(0.00)
Br Virgin Is	0.93	(0.02)	0.60	(0.00)	1.15	(0.11)	1.01	(0.00)	1.07	(0.05)	1.07	(0.00)	0.93	(0.03)	0.62	(0.00)
Br Indian O Ter	1.00	(0.04)	0.95	(0.00)	-	-	-	-	-	-	-	-	0.98	(0.04)	0.92	(0.00)
Brazil	0.81	(0.03)	0.83	(0.00)	0.92	(0.11)	0.95	(0.00)	0.98	(0.07)	0.90	(0.00)	0.79	(0.03)	0.89	(0.00)
Brunei	0.91	(0.02)	0.55	(0.00)	0.80	(0.15)	1.17	(0.00)	1.01	(0.05)	0.99	(0.00)	0.97	(0.03)	0.95	(0.00)
Bulgaria	0.87	(0.02)	0.84	(0.00)	1.12	(0.13)	1.19	(0.00)	1.10	(0.06)	1.17	(0.00)	0.81	(0.03)	0.82	(0.00)
Burkina Faso	0.98	(0.03)	0.89	(0.00)	-	-	-	-	1.18	(0.11)	1.37	(0.00)	0.93	(0.03)	0.85	(0.00)
Burma (Myanmar)	0.94	(0.02)	0.82	(0.00)	-	-	-	-	0.95	(0.08)	1.03	(0.00)	0.93	(0.03)	0.94	(0.00)
Burundi	0.99	(0.04)	1.00	(0.00)	-	-	-	-	1.27	(0.14)	1.83	(0.00)	0.97	(0.04)	1.05	(0.00)
Cambodia	0.90	(0.02)	0.68	(0.00)	1.32	(0.12)	1.64	(0.00)	0.92	(0.07)	0.85	(0.00)	0.84	(0.03)	0.81	(0.00)

Appendix Table - Importer Specific Elasticities of Demand

Country	All Goods				Organized Exchange Goods				Reference Priced Goods				Differentiated Goods			
	OLS	(s.e.)	PPML	(s.e.)	OLS	(s.e.)	PPML	(s.e.)	OLS	(s.e.)	PPML	(s.e.)	OLS	(s.e.)	PPML	(s.e.)
Cameroon	0.93	(0.02)	0.65	(0.00)	1.05	(0.14)	1.00	(0.00)	1.03	(0.07)	0.91	(0.00)	0.93	(0.03)	0.95	(0.00)
Canada	0.95	(0.02)	0.88	(0.00)	1.16	(0.11)	1.02	(0.00)	1.09	(0.05)	1.09	(0.00)	0.91	(0.03)	0.92	(0.00)
Cape Verde	0.90	(0.03)	0.33	(0.00)	-	-	-	-	1.12	(0.15)	1.24	(0.00)	0.87	(0.04)	0.68	(0.00)
Cayman Is	0.92	(0.02)	0.71	(0.00)	1.15	(0.09)	1.30	(0.00)	1.11	(0.05)	1.22	(0.00)	0.93	(0.03)	0.97	(0.00)
Cen African Rep	0.96	(0.03)	0.83	(0.00)	-	-	-	-	0.96	(0.11)	0.55	(0.00)	0.94	(0.03)	0.80	(0.00)
Chad	0.97	(0.03)	0.77	(0.00)	-	-	-	-	1.01	(0.09)	1.05	(0.00)	0.91	(0.03)	0.80	(0.00)
Chile	0.83	(0.02)	0.80	(0.00)	1.09	(0.10)	0.96	(0.00)	1.02	(0.07)	0.97	(0.00)	0.81	(0.03)	0.83	(0.00)
China	0.87	(0.03)	0.83	(0.00)	0.77	(0.14)	0.80	(0.00)	1.06	(0.07)	0.98	(0.00)	0.80	(0.03)	0.96	(0.00)
Christmas Is	0.96	(0.03)	0.96	(0.00)	-	-	-	-	0.95	(0.12)	1.07	(0.00)	0.89	(0.04)	0.92	(0.00)
Cocos Is	0.98	(0.04)	0.67	(0.00)	-	-	-	-	1.09	(0.11)	1.20	(0.00)	0.86	(0.06)	0.53	(0.00)
Colombia	0.88	(0.02)	0.88	(0.00)	1.11	(0.11)	0.99	(0.00)	1.05	(0.07)	1.00	(0.00)	0.84	(0.03)	0.90	(0.00)
Comoros	0.99	(0.05)	0.90	(0.00)	-	-	-	-	-	-	-	-	0.84	(0.06)	0.71	(0.00)
Congo (DROC)	0.96	(0.02)	0.94	(0.00)	-	-	-	-	1.07	(0.07)	1.52	(0.00)	0.93	(0.03)	1.00	(0.00)
Congo (ROC)	0.94	(0.02)	0.82	(0.00)	1.27	(0.19)	1.51	(0.00)	0.96	(0.06)	1.04	(0.00)	0.93	(0.03)	0.94	(0.00)
Cook Is	1.01	(0.03)	0.91	(0.00)	-	-	-	-	1.00	(0.13)	1.14	(0.00)	1.00	(0.04)	0.89	(0.00)
Costa Rica	0.91	(0.02)	0.95	(0.00)	1.11	(0.11)	0.92	(0.00)	1.00	(0.06)	1.07	(0.00)	0.96	(0.03)	1.11	(0.00)
Cote d`Ivoire	0.96	(0.02)	0.90	(0.00)	1.06	(0.14)	1.51	(0.00)	0.96	(0.07)	1.03	(0.00)	0.94	(0.03)	0.91	(0.00)
Croatia	0.90	(0.02)	0.87	(0.00)	1.06	(0.18)	0.97	(0.00)	1.07	(0.07)	1.37	(0.00)	0.87	(0.03)	0.82	(0.00)
Cuba	1.15	(0.05)	1.35	(0.00)	1.18	(0.22)	1.32	(0.00)	0.96	(0.12)	1.14	(0.00)	1.08	(0.05)	1.18	(0.00)
Curacao	0.98	(0.03)	0.90	(0.00)	1.27	(0.13)	1.92	(0.00)	1.09	(0.08)	0.69	(0.00)	0.98	(0.04)	1.02	(0.00)
Cyprus	0.90	(0.02)	0.64	(0.00)	1.06	(0.13)	0.89	(0.00)	0.97	(0.05)	0.79	(0.00)	0.88	(0.03)	0.71	(0.00)
Czech Republic	0.83	(0.02)	0.75	(0.00)	1.06	(0.11)	1.10	(0.00)	1.05	(0.06)	1.07	(0.00)	0.84	(0.03)	0.91	(0.00)
Denmark	0.84	(0.02)	0.76	(0.00)	1.21	(0.11)	1.08	(0.00)	1.08	(0.06)	1.02	(0.00)	0.86	(0.03)	0.87	(0.00)
Djibouti	0.95	(0.03)	0.97	(0.00)	-	-	-	-	1.12	(0.11)	0.73	(0.00)	0.88	(0.03)	0.82	(0.00)
Dominica Is	0.98	(0.02)	0.96	(0.00)	1.15	(0.09)	1.09	(0.00)	1.03	(0.05)	1.03	(0.00)	0.97	(0.02)	0.99	(0.00)
Dominican Rep	0.98	(0.02)	0.99	(0.00)	1.31	(0.11)	1.31	(0.00)	1.03	(0.06)	0.99	(0.00)	1.02	(0.03)	1.12	(0.00)
Ecuador	0.86	(0.02)	0.85	(0.00)	0.93	(0.11)	0.91	(0.00)	1.02	(0.06)	1.05	(0.00)	0.84	(0.03)	0.89	(0.00)
Egypt	0.79	(0.02)	0.85	(0.00)	0.93	(0.14)	0.86	(0.00)	1.01	(0.07)	1.06	(0.00)	0.72	(0.03)	0.80	(0.00)
El Salvador	0.96	(0.02)	1.02	(0.00)	1.23	(0.11)	1.15	(0.00)	1.02	(0.06)	0.91	(0.00)	1.01	(0.03)	1.24	(0.00)
Eq Guinea	0.85	(0.02)	0.61	(0.00)	1.20	(0.14)	1.61	(0.00)	1.08	(0.05)	1.09	(0.00)	0.87	(0.03)	0.90	(0.00)
Eritrea	0.98	(0.03)	0.62	(0.00)	-	-	-	-	0.97	(0.14)	1.18	(0.00)	0.98	(0.04)	1.07	(0.00)
Estonia	0.91	(0.02)	0.80	(0.00)	1.00	(0.16)	0.80	(0.00)	1.13	(0.07)	1.13	(0.00)	0.85	(0.03)	0.81	(0.00)
Ethiopia	0.85	(0.02)	0.39	(0.00)	-	-	-	-	1.13	(0.08)	2.13	(0.00)	0.83	(0.03)	0.86	(0.00)
F St Micronesia	0.98	(0.02)	1.02	(0.00)	1.28	(0.12)	2.72	(0.00)	1.00	(0.06)	1.03	(0.00)	0.97	(0.03)	1.04	(0.00)
Falkland Is	0.99	(0.03)	0.90	(0.00)	-	-	-	-	-	-	-	-	0.99	(0.05)	1.00	(0.00)

Appendix Table - Importer Specific Elasticities of Demand

Country	All Goods OLS (s.e.)		PPML (s.e.)		Organized Exchange Goods OLS (s.e.)		PPML (s.e.)		Reference Priced Goods OLS (s.e.)		PPML (s.e.)		Differentiated Goods OLS (s.e.)		PPML (s.e.)	
Faroe Islands	0.89	(0.04)	0.74	(0.00)	-	-	-	-	0.96	(0.13)	1.06	(0.00)	0.78	(0.04)	0.42	(0.00)
Fiji	0.95	(0.02)	0.53	(0.00)	-	-	-	-	1.10	(0.06)	1.17	(0.00)	0.93	(0.02)	0.95	(0.00)
Finland	0.80	(0.02)	0.79	(0.00)	1.00	(0.12)	0.47	(0.00)	1.09	(0.06)	0.92	(0.00)	0.80	(0.03)	0.84	(0.00)
Fr Polynesia	0.97	(0.02)	1.02	(0.00)	1.20	(0.09)	3.30	(0.00)	1.11	(0.06)	1.19	(0.00)	0.95	(0.03)	0.94	(0.00)
Fr S & Ant land	0.93	(0.04)	0.88	(0.00)	-	-	-	-	-	-	-	-	0.90	(0.05)	0.89	(0.00)
France	0.83	(0.03)	0.81	(0.00)	1.08	(0.12)	0.97	(0.00)	1.09	(0.07)	1.05	(0.00)	0.81	(0.03)	0.95	(0.00)
French Guiana	0.87	(0.02)	0.37	(0.00)	-	-	-	-	1.13	(0.08)	1.21	(0.00)	0.84	(0.03)	-	-
Gabon	0.88	(0.02)	0.69	(0.00)	-	-	-	-	0.99	(0.07)	0.80	(0.00)	0.85	(0.03)	0.88	(0.00)
Gambia	1.00	(0.02)	0.98	(0.00)	-	-	-	-	0.88	(0.10)	1.05	(0.00)	0.99	(0.03)	0.89	(0.00)
Gaza Strip	0.93	(0.05)	1.20	(0.00)	-	-	-	-	-	-	-	-	0.98	(0.06)	1.52	(0.00)
Georgia	0.92	(0.02)	0.86	(0.00)	1.08	(0.14)	1.41	(0.00)	1.12	(0.06)	1.02	(0.00)	0.87	(0.03)	0.81	(0.00)
Germany	0.85	(0.03)	0.82	(0.00)	1.20	(0.11)	0.97	(0.00)	1.12	(0.07)	1.12	(0.00)	0.83	(0.03)	0.89	(0.00)
Ghana	0.86	(0.02)	0.81	(0.00)	1.01	(0.14)	1.39	(0.00)	1.03	(0.07)	1.04	(0.00)	0.86	(0.03)	0.80	(0.00)
Gibraltar	0.91	(0.04)	0.83	(0.00)	-	-	-	-	1.14	(0.13)	1.45	(0.00)	0.88	(0.04)	1.10	(0.00)
Greece	0.86	(0.02)	0.82	(0.00)	1.17	(0.12)	0.90	(0.00)	1.13	(0.06)	1.32	(0.00)	0.83	(0.03)	0.82	(0.00)
Greenland	0.99	(0.03)	0.95	(0.00)	-	-	-	-	1.21	(0.12)	0.95	(0.00)	0.90	(0.04)	0.96	(0.00)
Grenada Is	0.96	(0.02)	0.95	(0.00)	1.11	(0.09)	1.02	(0.00)	1.03	(0.04)	0.96	(0.00)	0.96	(0.02)	1.00	(0.00)
Guadeloupe	0.96	(0.02)	0.83	(0.00)	0.97	(0.12)	1.09	(0.00)	0.96	(0.06)	0.84	(0.00)	0.95	(0.02)	0.85	(0.00)
Guatemala	0.98	(0.02)	0.95	(0.00)	1.28	(0.12)	1.10	(0.00)	1.10	(0.06)	1.00	(0.00)	0.98	(0.03)	1.02	(0.00)
Guinea	0.93	(0.02)	0.88	(0.00)	1.25	(0.19)	1.09	(0.00)	1.02	(0.09)	0.95	(0.00)	0.91	(0.03)	0.87	(0.00)
Guinea-Bissau	1.03	(0.05)	1.21	(0.00)	-	-	-	-	-	-	-	-	0.91	(0.06)	1.48	(0.00)
Guyana	0.93	(0.02)	0.87	(0.00)	1.08	(0.09)	0.90	(0.00)	0.99	(0.05)	0.93	(0.00)	0.92	(0.03)	0.88	(0.00)
Haiti	1.00	(0.02)	1.13	(0.00)	1.34	(0.12)	1.71	(0.00)	1.14	(0.06)	1.23	(0.00)	1.00	(0.03)	1.17	(0.00)
Heard & McDn Is	1.00	(0.06)	0.92	(0.00)	-	-	-	-	-	-	-	-	1.01	(0.09)	0.98	(0.00)
Honduras	0.99	(0.02)	1.05	(0.00)	1.34	(0.12)	1.30	(0.00)	1.03	(0.06)	0.94	(0.00)	1.02	(0.03)	1.24	(0.00)
Hong Kong	0.97	(0.02)	0.93	(0.00)	1.14	(0.12)	1.34	(0.00)	1.21	(0.07)	1.00	(0.00)	0.99	(0.03)	1.04	(0.00)
Hungary	0.83	(0.02)	0.54	(0.00)	1.19	(0.10)	1.24	(0.00)	1.03	(0.06)	1.11	(0.00)	0.84	(0.03)	0.91	(0.00)
Iceland	0.90	(0.02)	0.69	(0.00)	1.05	(0.11)	0.95	(0.00)	1.06	(0.06)	1.00	(0.00)	0.90	(0.03)	0.86	(0.00)
India	0.81	(0.03)	0.82	(0.00)	0.82	(0.13)	0.82	(0.00)	0.95	(0.07)	0.62	(0.00)	0.78	(0.04)	0.90	(0.00)
Indonesia	0.89	(0.02)	0.88	(0.00)	1.02	(0.14)	0.89	(0.00)	1.09	(0.07)	1.01	(0.00)	0.82	(0.03)	0.87	(0.00)
Iran	1.02	(0.07)	0.91	(0.00)	-	-	-	-	0.92	(0.15)	1.00	(0.00)	1.03	(0.08)	1.01	(0.00)
Iraq	0.75	(0.03)	0.73	(0.00)	1.19	(0.19)	1.10	(0.00)	1.08	(0.07)	1.84	(0.00)	0.76	(0.04)	0.76	(0.00)
Ireland	0.86	(0.03)	0.71	(0.00)	1.01	(0.11)	0.95	(0.00)	1.05	(0.07)	1.10	(0.00)	0.86	(0.04)	0.85	(0.00)
Israel	0.87	(0.02)	0.79	(0.00)	1.09	(0.11)	0.81	(0.00)	1.06	(0.06)	0.59	(0.00)	0.87	(0.03)	0.86	(0.00)
Italy	0.84	(0.02)	0.86	(0.00)	0.96	(0.12)	0.90	(0.00)	1.08	(0.06)	1.11	(0.00)	0.83	(0.03)	0.91	(0.00)

Appendix Table - Importer Specific Elasticities of Demand

Country	All Goods OLS (s.e.)		PPML (s.e.)		Organized Exchange Goods OLS (s.e.)		PPML (s.e.)		Reference Priced Goods OLS (s.e.)		PPML (s.e.)		Differentiated Goods OLS (s.e.)		PPML (s.e.)	
Jamaica	0.95	(0.02)	0.91	(0.00)	1.26	(0.12)	0.98	(0.00)	1.08	(0.06)	1.02	(0.00)	0.96	(0.03)	1.06	(0.00)
Japan	0.94	(0.03)	0.87	(0.00)	1.18	(0.13)	1.02	(0.00)	1.12	(0.07)	0.97	(0.00)	0.92	(0.03)	0.95	(0.00)
Jordan	0.87	(0.02)	0.84	(0.00)	1.14	(0.14)	0.86	(0.00)	1.01	(0.05)	1.06	(0.00)	0.85	(0.03)	0.81	(0.00)
Kazakhstan	0.81	(0.02)	0.69	(0.00)	1.09	(0.18)	1.25	(0.00)	1.06	(0.07)	0.86	(0.00)	0.74	(0.03)	0.62	(0.00)
Kenya	0.88	(0.02)	0.64	(0.00)	0.77	(0.14)	0.74	(0.00)	1.09	(0.06)	0.74	(0.00)	0.85	(0.03)	0.90	(0.00)
Kiribati	0.93	(0.03)	0.82	(0.00)	-	-	-	-	1.10	(0.13)	1.36	(0.00)	0.92	(0.04)	0.79	(0.00)
Korea	0.91	(0.02)	0.88	(0.00)	1.09	(0.13)	0.87	(0.00)	1.11	(0.07)	1.05	(0.00)	0.88	(0.03)	1.07	(0.00)
Kosovo	1.01	(0.06)	1.15	(0.00)	-	-	-	-	-	-	-	-	0.91	(0.06)	0.88	(0.00)
Kuwait	0.84	(0.02)	0.67	(0.00)	1.12	(0.11)	1.22	(0.00)	1.11	(0.06)	1.06	(0.00)	0.84	(0.03)	0.85	(0.00)
Kyrgyzstan	0.92	(0.03)	0.90	(0.00)	-	-	-	-	1.09	(0.11)	1.19	(0.00)	0.86	(0.03)	0.74	(0.00)
Laos	0.98	(0.03)	0.88	(0.00)	-	-	-	-	1.16	(0.09)	0.88	(0.00)	0.92	(0.03)	0.80	(0.00)
Latvia	0.92	(0.02)	0.94	(0.00)	1.26	(0.12)	2.33	(0.00)	1.13	(0.06)	1.13	(0.00)	0.87	(0.03)	0.88	(0.00)
Lebanon	0.92	(0.02)	0.82	(0.00)	1.09	(0.11)	0.95	(0.00)	1.00	(0.05)	0.83	(0.00)	0.92	(0.03)	0.80	(0.00)
Lesotho	1.02	(0.06)	1.05	(0.00)	-	-	-	-	-	-	-	-	0.94	(0.07)	0.95	(0.00)
Liberia	0.96	(0.02)	0.95	(0.00)	0.90	(0.14)	0.90	(0.00)	1.00	(0.08)	1.52	(0.00)	0.96	(0.03)	0.97	(0.00)
Libya	0.84	(0.03)	0.67	(0.00)	1.17	(0.20)	1.35	(0.00)	1.00	(0.08)	0.97	(0.00)	0.78	(0.04)	0.76	(0.00)
Liechtenstein	0.96	(0.03)	0.72	(0.00)	-	-	-	-	1.06	(0.11)	1.05	(0.00)	0.95	(0.04)	0.60	(0.00)
Lithuania	0.88	(0.02)	0.90	(0.00)	1.44	(0.16)	3.23	(0.00)	1.19	(0.07)	1.56	(0.00)	0.82	(0.03)	0.81	(0.00)
Luxembourg	0.85	(0.03)	0.54	(0.00)	1.16	(0.20)	1.00	(0.00)	0.98	(0.08)	0.92	(0.00)	0.85	(0.03)	0.68	(0.00)
Macao	0.92	(0.02)	0.68	(0.00)	1.18	(0.10)	1.30	(0.00)	1.04	(0.07)	1.13	(0.00)	0.90	(0.03)	0.70	(0.00)
Macedonia	0.93	(0.02)	0.74	(0.00)	-	-	-	-	1.08	(0.09)	1.57	(0.00)	0.93	(0.03)	1.05	(0.00)
Madagascar	0.91	(0.03)	0.68	(0.00)	-	-	-	-	1.02	(0.07)	1.01	(0.00)	0.89	(0.03)	0.83	(0.00)
Malawi	0.99	(0.03)	0.80	(0.00)	-	-	-	-	1.14	(0.10)	1.39	(0.00)	0.97	(0.04)	0.88	(0.00)
Malaysia	0.87	(0.02)	0.92	(0.00)	0.93	(0.12)	0.79	(0.00)	1.13	(0.06)	1.14	(0.00)	0.82	(0.04)	1.18	(0.00)
Maldive Is	0.91	(0.02)	0.83	(0.00)	-	-	-	-	1.02	(0.09)	1.23	(0.00)	0.90	(0.03)	0.79	(0.00)
Mali	0.96	(0.02)	0.91	(0.00)	-	-	-	-	1.15	(0.09)	1.18	(0.00)	0.89	(0.03)	0.89	(0.00)
Malta	0.94	(0.02)	0.80	(0.00)	0.99	(0.15)	0.78	(0.00)	1.04	(0.06)	1.19	(0.00)	0.96	(0.03)	1.26	(0.00)
Marshall Is	0.96	(0.02)	0.57	(0.00)	1.08	(0.16)	0.77	(0.00)	1.07	(0.06)	1.16	(0.00)	1.00	(0.03)	1.00	(0.00)
Martinique	0.95	(0.02)	0.82	(0.00)	1.26	(0.12)	1.63	(0.00)	1.00	(0.06)	0.89	(0.00)	0.93	(0.03)	0.84	(0.00)
Mauritania	0.87	(0.03)	0.62	(0.00)	-	-	-	-	1.06	(0.11)	0.83	(0.00)	0.86	(0.04)	0.60	(0.00)
Mauritius	0.92	(0.02)	0.83	(0.00)	0.89	(0.15)	0.55	(0.00)	0.98	(0.06)	0.76	(0.00)	0.90	(0.02)	0.78	(0.00)
Mayotte	1.07	(0.03)	1.05	(0.00)	-	-	-	-	1.12	(0.08)	1.22	(0.00)	0.97	(0.04)	1.10	(0.00)
Mexico	0.96	(0.02)	0.92	(0.00)	1.03	(0.12)	0.97	(0.00)	1.09	(0.06)	1.11	(0.00)	0.95	(0.03)	1.00	(0.00)
Moldova	1.02	(0.03)	1.00	(0.00)	-	-	-	-	1.23	(0.08)	1.53	(0.00)	0.91	(0.03)	0.85	(0.00)
Monaco	0.93	(0.03)	0.79	(0.00)	-	-	-	-	0.99	(0.07)	1.09	(0.00)	0.90	(0.03)	0.62	(0.00)

Appendix Table - Importer Specific Elasticities of Demand

Country	All Goods OLS (s.e.)		All Goods PPML (s.e.)		Organized Exchange Goods OLS (s.e.)		Organized Exchange Goods PPML (s.e.)		Reference Priced Goods OLS (s.e.)		Reference Priced Goods PPML (s.e.)		Differentiated Goods OLS (s.e.)		Differentiated Goods PPML (s.e.)	
Mongolia	0.80	(0.02)	0.49	(0.00)	0.89	(0.17)	0.82	(0.00)	0.92	(0.05)	0.98	(0.00)	0.79	(0.03)	0.68	(0.00)
Montenegro	1.02	(0.03)	0.78	(0.00)	-	-	-	-	1.02	(0.09)	1.11	(0.00)	0.99	(0.04)	0.71	(0.00)
Montserrat Is	0.94	(0.02)	0.67	(0.00)	1.09	(0.13)	1.47	(0.00)	0.94	(0.06)	1.15	(0.00)	0.91	(0.03)	0.41	(0.00)
Morocco	0.88	(0.02)	0.81	(0.00)	0.86	(0.14)	0.91	(0.00)	1.04	(0.07)	0.96	(0.00)	0.83	(0.03)	0.86	(0.00)
Mozambique	0.95	(0.03)	0.91	(0.00)	-	-	-	-	1.17	(0.08)	1.62	(0.00)	0.91	(0.04)	0.95	(0.00)
Namibia	0.87	(0.02)	0.36	(0.00)	0.77	(0.15)	0.81	(0.00)	0.99	(0.06)	0.86	(0.00)	0.87	(0.03)	0.85	(0.00)
Nauru	1.04	(0.04)	1.11	(0.00)	-	-	-	-	-	-	-	-	1.02	(0.05)	1.26	(0.00)
Nepal	0.98	(0.02)	0.83	(0.00)	-	-	-	-	1.14	(0.09)	1.32	(0.00)	0.92	(0.03)	0.68	(0.00)
Netherlands	0.92	(0.03)	0.88	(0.00)	1.23	(0.12)	0.90	(0.00)	1.18	(0.07)	1.18	(0.00)	0.85	(0.04)	0.91	(0.00)
Netherlands Ant	0.95	(0.02)	0.77	(0.00)	1.26	(0.10)	0.91	(0.00)	1.14	(0.06)	0.98	(0.00)	0.96	(0.03)	0.97	(0.00)
New Caledonia	0.90	(0.02)	0.84	(0.00)	-	-	-	-	0.91	(0.06)	0.86	(0.00)	0.88	(0.03)	0.85	(0.00)
New Zealand	0.86	(0.02)	0.77	(0.00)	1.19	(0.09)	1.31	(0.00)	1.04	(0.06)	1.01	(0.00)	0.87	(0.03)	0.89	(0.00)
Nicaragua	0.95	(0.02)	0.99	(0.00)	1.34	(0.10)	1.17	(0.00)	1.02	(0.06)	0.89	(0.00)	0.95	(0.03)	1.07	(0.00)
Niger	1.03	(0.02)	0.97	(0.00)	1.11	(0.14)	1.44	(0.00)	1.21	(0.07)	1.13	(0.00)	0.98	(0.03)	0.96	(0.00)
Nigeria	0.78	(0.02)	0.73	(0.00)	1.05	(0.13)	0.54	(0.00)	1.00	(0.07)	0.99	(0.00)	0.76	(0.03)	0.77	(0.00)
Niue	1.05	(0.07)	0.87	(0.00)	-	-	-	-	-	-	-	-	0.93	(0.11)	0.81	(0.00)
Norfolk Is	1.03	(0.04)	0.97	(0.00)	-	-	-	-	1.14	(0.13)	1.06	(0.00)	1.05	(0.06)	1.08	(0.00)
North Korea	1.32	(0.08)	1.51	(0.00)	-	-	-	-	-	-	-	-	1.25	(0.09)	1.77	(0.00)
Norway	0.80	(0.02)	0.73	(0.00)	1.14	(0.10)	1.03	(0.00)	1.07	(0.06)	1.04	(0.00)	0.78	(0.03)	0.83	(0.00)
Oman	0.84	(0.02)	0.60	(0.00)	1.11	(0.14)	0.92	(0.00)	1.05	(0.06)	1.34	(0.00)	0.79	(0.03)	0.45	(0.00)
Pakistan	0.87	(0.02)	0.63	(0.00)	0.86	(0.14)	0.83	(0.00)	1.05	(0.06)	1.07	(0.00)	0.82	(0.03)	0.85	(0.00)
Palau	0.99	(0.02)	1.08	(0.00)	1.39	(0.15)	2.29	(0.00)	1.03	(0.07)	1.15	(0.00)	0.95	(0.03)	1.09	(0.00)
Panama	0.89	(0.02)	0.83	(0.00)	1.25	(0.10)	0.97	(0.00)	0.99	(0.06)	0.98	(0.00)	0.91	(0.03)	0.94	(0.00)
Papua New Guin	0.85	(0.02)	1.11	(0.00)	-	-	-	-	0.83	(0.08)	0.99	(0.00)	0.85	(0.03)	0.86	(0.00)
Paraguay	0.86	(0.02)	0.82	(0.00)	1.09	(0.08)	1.18	(0.00)	0.99	(0.07)	0.85	(0.00)	0.89	(0.03)	0.89	(0.00)
Peru	0.86	(0.02)	0.88	(0.00)	1.14	(0.12)	0.92	(0.00)	1.03	(0.07)	0.91	(0.00)	0.81	(0.03)	0.87	(0.00)
Philippines	0.93	(0.02)	1.06	(0.00)	1.12	(0.12)	0.82	(0.00)	1.16	(0.06)	1.13	(0.00)	0.92	(0.03)	1.26	(0.00)
Pitcairn Is	0.99	(0.03)	1.04	(0.00)	-	-	-	-	0.81	(0.10)	0.95	(0.00)	0.97	(0.04)	1.04	(0.00)
Poland	0.85	(0.02)	0.76	(0.00)	1.17	(0.11)	0.94	(0.00)	1.08	(0.06)	1.11	(0.00)	0.83	(0.03)	0.90	(0.00)
Portugal	0.87	(0.02)	0.77	(0.00)	0.97	(0.14)	0.83	(0.00)	1.09	(0.06)	1.06	(0.00)	0.86	(0.03)	0.72	(0.00)
Qatar	0.79	(0.02)	0.38	(0.00)	1.04	(0.10)	1.69	(0.00)	1.02	(0.05)	0.98	(0.00)	0.79	(0.03)	0.83	(0.00)
Reunion	0.92	(0.03)	0.83	(0.00)	-	-	-	-	1.02	(0.09)	1.12	(0.00)	0.90	(0.04)	0.88	(0.00)
Romania	0.86	(0.02)	0.82	(0.00)	1.13	(0.14)	1.12	(0.00)	1.06	(0.06)	0.88	(0.00)	0.81	(0.03)	0.86	(0.00)
Russia	0.83	(0.02)	0.86	(0.00)	1.19	(0.13)	1.64	(0.00)	1.09	(0.06)	1.06	(0.00)	0.74	(0.03)	0.79	(0.00)
Rwanda	1.04	(0.03)	1.06	(0.00)	-	-	-	-	1.34	(0.13)	2.24	(0.00)	0.97	(0.03)	0.98	(0.00)

Appendix Table - Importer Specific Elasticities of Demand

Country	All Goods				Organized Exchange Goods				Reference Priced Goods				Differentiated Goods			
	OLS	(s.e.)	PPML	(s.e.)	OLS	(s.e.)	PPML	(s.e.)	OLS	(s.e.)	PPML	(s.e.)	OLS	(s.e.)	PPML	(s.e.)
Samoa	0.99	(0.02)	0.38	(0.00)	-	-	-	-	1.01	(0.08)	1.17	(0.00)	0.99	(0.03)	0.99	(0.00)
San Marino	0.97	(0.03)	0.85	(0.00)	-	-	-	-	0.99	(0.08)	0.99	(0.00)	0.90	(0.04)	0.69	(0.00)
Sao Tome & Prin	0.94	(0.03)	0.56	(0.00)	-	-	-	-	1.16	(0.12)	1.33	(0.00)	0.95	(0.04)	0.54	(0.00)
Saudi Arabia	0.82	(0.02)	0.79	(0.00)	1.13	(0.12)	1.26	(0.00)	1.05	(0.06)	1.06	(0.00)	0.81	(0.03)	0.84	(0.00)
Senegal	0.92	(0.02)	0.64	(0.00)	1.10	(0.13)	1.18	(0.00)	0.95	(0.07)	0.68	(0.00)	0.90	(0.03)	0.82	(0.00)
Serbia	0.91	(0.03)	0.85	(0.00)	-	-	-	-	1.15	(0.10)	0.89	(0.00)	0.86	(0.04)	0.85	(0.00)
Serbia Pre-2009	0.82	(0.03)	0.69	(0.00)	-	-	-	-	1.12	(0.09)	1.10	(0.00)	0.81	(0.04)	0.59	(0.00)
Serbia/Monteneg	0.94	(0.02)	0.79	(0.00)	0.91	(0.18)	0.94	(0.00)	1.15	(0.08)	1.13	(0.00)	0.91	(0.03)	0.95	(0.00)
Seychelles	0.97	(0.02)	0.05	(0.00)	-	-	-	-	1.05	(0.08)	1.01	(0.00)	0.96	(0.03)	0.95	(0.00)
Sierra Leone	0.93	(0.02)	0.82	(0.00)	1.16	(0.18)	1.20	(0.00)	1.07	(0.07)	1.44	(0.00)	0.97	(0.03)	0.98	(0.00)
Singapore	0.85	(0.03)	0.80	(0.00)	1.06	(0.12)	0.90	(0.00)	1.11	(0.07)	1.14	(0.00)	0.85	(0.04)	1.02	(0.00)
Sint Maarten	0.97	(0.03)	0.85	(0.00)	1.33	(0.11)	2.00	(0.00)	1.10	(0.06)	1.06	(0.00)	0.95	(0.04)	0.93	(0.00)
Slovak Republic	0.86	(0.02)	0.70	(0.00)	0.97	(0.16)	0.79	(0.00)	1.19	(0.06)	1.30	(0.00)	0.82	(0.03)	0.77	(0.00)
Slovenia	0.90	(0.02)	0.91	(0.00)	1.00	(0.14)	1.01	(0.00)	1.04	(0.06)	1.07	(0.00)	0.89	(0.03)	0.88	(0.00)
Solomon Is	0.94	(0.03)	0.53	(0.00)	-	-	-	-	-	-	-	-	0.92	(0.04)	0.75	(0.00)
Somalia	1.09	(0.04)	1.19	(0.00)	-	-	-	-	1.34	(0.11)	2.64	(0.00)	1.08	(0.05)	1.30	(0.00)
South Africa	0.85	(0.02)	0.78	(0.00)	1.05	(0.13)	1.07	(0.00)	1.12	(0.06)	1.14	(0.00)	0.82	(0.03)	0.81	(0.00)
South Sudan	0.93	(0.05)	0.85	(0.00)	-	-	-	-	-	-	-	-	0.89	(0.05)	0.80	(0.00)
Spain	0.86	(0.02)	0.85	(0.00)	0.96	(0.13)	0.85	(0.00)	1.17	(0.06)	1.27	(0.00)	0.80	(0.03)	0.89	(0.00)
Sri Lanka	0.99	(0.02)	0.95	(0.00)	1.02	(0.12)	0.66	(0.00)	1.12	(0.06)	1.21	(0.00)	0.96	(0.03)	1.01	(0.00)
St Helena	0.96	(0.03)	0.99	(0.00)	-	-	-	-	0.94	(0.11)	0.87	(0.00)	0.89	(0.03)	0.95	(0.00)
St Kitts-Nevis	0.94	(0.02)	0.97	(0.00)	1.07	(0.08)	1.26	(0.00)	0.97	(0.04)	0.99	(0.00)	0.97	(0.02)	1.06	(0.00)
St Lucia Is	1.00	(0.02)	0.90	(0.00)	1.26	(0.09)	1.26	(0.00)	1.10	(0.05)	1.02	(0.00)	0.99	(0.02)	1.00	(0.00)
St Pierre & Miq	1.14	(0.04)	1.23	(0.00)	-	-	-	-	-	-	-	-	1.03	(0.05)	1.19	(0.00)
St Vinc & Gren	0.97	(0.02)	0.97	(0.00)	1.05	(0.12)	1.03	(0.00)	1.03	(0.04)	1.07	(0.00)	0.97	(0.02)	1.04	(0.00)
Sudan	1.02	(0.10)	1.15	(0.00)	-	-	-	-	-	-	-	-	0.83	(0.11)	1.04	(0.00)
Sudan prior2011	1.04	(0.04)	0.95	(0.00)	-	-	-	-	1.36	(0.13)	2.00	(0.00)	0.98	(0.05)	0.89	(0.00)
Suriname	0.90	(0.02)	0.89	(0.00)	1.19	(0.10)	1.62	(0.00)	1.05	(0.05)	0.95	(0.00)	0.88	(0.03)	0.90	(0.00)
Svalbard,May Is	0.97	(0.05)	0.96	(0.00)	-	-	-	-	-	-	-	-	0.94	(0.06)	0.98	(0.00)
Swaziland	0.99	(0.03)	0.89	(0.00)	-	-	-	-	1.16	(0.09)	0.96	(0.00)	0.90	(0.03)	0.79	(0.00)
Sweden	0.81	(0.02)	0.75	(0.00)	1.03	(0.09)	1.07	(0.00)	1.10	(0.06)	0.93	(0.00)	0.78	(0.03)	0.82	(0.00)
Switzerland	0.84	(0.02)	0.88	(0.00)	1.05	(0.13)	0.82	(0.00)	1.06	(0.07)	0.87	(0.00)	0.84	(0.03)	0.77	(0.00)
Syria	0.99	(0.02)	0.96	(0.00)	1.13	(0.20)	1.02	(0.00)	1.06	(0.07)	1.00	(0.00)	0.95	(0.03)	0.98	(0.00)
Taiwan	0.92	(0.03)	0.86	(0.00)	1.08	(0.13)	0.85	(0.00)	1.19	(0.07)	1.10	(0.00)	0.87	(0.03)	1.05	(0.00)
Tajikistan	1.04	(0.04)	0.79	(0.00)	-	-	-	-	1.26	(0.15)	1.47	(0.00)	0.91	(0.04)	0.54	(0.00)

Appendix Table - Importer Specific Elasticities of Demand

Country	All Goods				Organized Exchange Goods				Reference Priced Goods				Differentiated Goods			
	OLS	(s.e.)	PPML	(s.e.)	OLS	(s.e.)	PPML	(s.e.)	OLS	(s.e.)	PPML	(s.e.)	OLS	(s.e.)	PPML	(s.e.)
Tanzania	0.89	(0.02)	0.69	(0.00)	0.99	(0.19)	0.82	(0.00)	1.08	(0.07)	1.46	(0.00)	0.90	(0.03)	0.98	(0.00)
Thailand	0.86	(0.02)	0.85	(0.00)	0.90	(0.12)	0.86	(0.00)	1.06	(0.06)	0.98	(0.00)	0.82	(0.03)	1.02	(0.00)
Timor-Leste	1.01	(0.04)	1.14	(0.00)	-	-	-	-	1.11	(0.15)	1.29	(0.00)	0.87	(0.05)	0.89	(0.00)
Togo	0.93	(0.03)	0.80	(0.00)	-	-	-	-	0.95	(0.11)	0.74	(0.00)	0.94	(0.03)	0.81	(0.00)
Tokelau Is	0.95	(0.02)	0.92	(0.00)	-	-	-	-	1.09	(0.09)	1.28	(0.00)	0.94	(0.03)	0.92	(0.00)
Tonga	1.00	(0.02)	0.98	(0.00)	-	-	-	-	1.19	(0.09)	1.45	(0.00)	0.99	(0.03)	0.98	(0.00)
Trin & Tobago	0.91	(0.02)	0.71	(0.00)	1.13	(0.10)	0.96	(0.00)	1.11	(0.05)	1.10	(0.00)	0.89	(0.03)	0.97	(0.00)
Tunisia	0.94	(0.02)	0.92	(0.00)	1.01	(0.16)	0.80	(0.00)	1.04	(0.07)	1.18	(0.00)	0.89	(0.03)	0.95	(0.00)
Turkey	0.83	(0.02)	0.85	(0.00)	0.91	(0.14)	0.95	(0.00)	1.04	(0.06)	1.21	(0.00)	0.80	(0.03)	0.82	(0.00)
Turkmenistan	0.81	(0.03)	0.40	(0.00)	-	-	-	-	1.03	(0.10)	0.90	(0.00)	0.82	(0.04)	0.73	(0.00)
Turks & Caic Is	0.91	(0.02)	0.89	(0.00)	1.18	(0.09)	1.30	(0.00)	1.01	(0.05)	1.00	(0.00)	0.90	(0.03)	0.95	(0.00)
Tuvalu	1.08	(0.07)	1.33	(0.00)	-	-	-	-	-	-	-	-	-	-	-	-
Uganda	0.93	(0.02)	0.87	(0.00)	-	-	-	-	1.07	(0.08)	1.43	(0.00)	0.88	(0.03)	0.82	(0.00)
Ukraine	0.88	(0.02)	0.82	(0.00)	1.36	(0.11)	2.16	(0.00)	1.15	(0.06)	1.09	(0.00)	0.78	(0.03)	0.82	(0.00)
United Arab Em	0.82	(0.02)	0.72	(0.00)	1.16	(0.11)	1.04	(0.00)	1.11	(0.06)	0.98	(0.00)	0.79	(0.03)	0.78	(0.00)
United Kingdom	0.86	(0.03)	0.84	(0.00)	1.21	(0.12)	0.87	(0.00)	1.09	(0.07)	1.09	(0.00)	0.86	(0.03)	0.92	(0.00)
Uruguay	0.86	(0.02)	0.86	(0.00)	0.97	(0.08)	0.97	(0.00)	0.94	(0.06)	0.74	(0.00)	0.87	(0.03)	0.90	(0.00)
Uzbekistan	0.84	(0.03)	0.52	(0.00)	-	-	-	-	1.09	(0.08)	1.11	(0.00)	0.81	(0.04)	0.78	(0.00)
Vanuatu	0.89	(0.03)	0.32	(0.00)	-	-	-	-	1.09	(0.12)	1.30	(0.00)	0.87	(0.04)	0.58	(0.00)
Vatican City	1.00	(0.03)	0.91	(0.00)	-	-	-	-	1.12	(0.08)	1.20	(0.00)	0.97	(0.04)	0.93	(0.00)
Venezuela	0.80	(0.02)	0.84	(0.00)	1.01	(0.11)	0.99	(0.00)	1.03	(0.06)	1.10	(0.00)	0.77	(0.03)	0.87	(0.00)
Vietnam	0.92	(0.02)	0.81	(0.00)	0.86	(0.12)	0.85	(0.00)	1.12	(0.06)	1.11	(0.00)	0.83	(0.03)	0.82	(0.00)
Wallis & Futuna	1.03	(0.04)	1.01	(0.00)	-	-	-	-	-	-	-	-	1.04	(0.07)	1.05	(0.00)
West Bank	1.03	(0.05)	1.08	(0.00)	-	-	-	-	-	-	-	-	0.95	(0.06)	1.08	(0.00)
Yemen	0.93	(0.02)	0.70	(0.00)	0.99	(0.19)	0.52	(0.00)	1.11	(0.07)	1.29	(0.00)	0.91	(0.03)	0.88	(0.00)
Zambia	0.92	(0.02)	0.87	(0.00)	-	-	-	-	1.20	(0.10)	1.53	(0.00)	0.89	(0.03)	0.89	(0.00)
Zimbabwe	0.94	(0.02)	0.95	(0.00)	0.96	(0.17)	0.98	(0.00)	1.26	(0.10)	1.80	(0.00)	0.87	(0.03)	0.82	(0.00)

Notes: Standard errors are in parenthesis. Goods have been classified according to Rauch (1999).