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Reducing the Common External Tariff

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ABSTRACT

A two-sector, three-good model, developed by S. Devarajan et al. at the World Bank was used to analyze trade liberalization in Trinidad and Tobago as an example of the country-s new open economy policy. A 20% reduction in T&T's import tariff rate resulted in increased import volume, overall decline in consumer prices, investment level, tax revenue and government savings, and a positive growth in overall consumption.

Introduction

The Republic of Trinidad and Tobago (T&T) is an island country in the southern Caribbean Basin. Trinidad and Tobago has earned a reputation as a profitable investment site for international businesses. According to 1996 estimations, real GDP in T&T was about $13.2 billion and is growing at approximately 3 percent annually (Trinidad and Tobago Factbook [Online]). T&T economy relies primarily on petrochemical sector, producing methanol, ammonia, urea, natural gas liquids, and other petroleum products.

The agricultural sector is also an important source of national income. The main agricultural products in the country are cocoa, sugarcane, rice, citrus, coffee, some vegetables, and poultry. Sugar, cocoa, coffee, citrus and flowers are exported. The total value of exports reached $2.5 billion in 1996. Imports in the same year equaled $2.1

billion, mainly wheat, soybeans, feeds and fodders, rice, and dairy products. (Trinidad and Tobago Factbook [Online]). Trinidad's main trading partners are the United States, other CARICOM countries, Latin America, and European Union.

Trinidad and Tobago is currently a member of several international preferential trading agreements. As a member of CARICOM, Trinidad applies the Common External Tariff (CET) to imports from outside the CARICOM. Barriers to trade between CARICOM countries have been virtually removed by this agreement. Currently magnitude of CET varies between 5 and 20 percent (Trinidad and Tobago [Online]).

Trinidad is also one of the twenty-three Caribbean countries benefitting from the Caribbean Basin Initiative (CBI). CBI, a major effort to increase the economic and political climate in the Caribbean region through trade and investment, eliminates U.S. tariffs on a number of exports from selected Caribbean countries. Raw sugar is the primary agricultural commodity eligible for duty free entrance into the United States. Trinidad is also a signatory to the Lomé convention that allows duty free entry of goods of certain developing countries of African, Caribbean, and Pacific origin into the European Union. Additionally, Trinidad is a member of CARIBCAN, a free trade agreement between the Caribbean and Canada. Trinidad has a free trade agreement with Venezuela and is negotiating additional agreements with Mexico and Colombia.

Objectives

The objective of this research is to analyze the impacts of tariff reduction on consumers, producers, imports, exports, consumer prices and government revenue as an evaluation of Trinidad and Tobago=s trade liberalization policy in the 1990's.

Economic History and Policy

Trinidad and Tobago has gone through a long period of economic recession caused by the collapse of oil prices in the mid-1980s. The country recovered from the recession only in 1994. Since 1994, the government has managed to turn the state controlled economy into a market-controlled one by beginning an extensive divestment program and privatizing the majority of state owned companies. Most non-tariff trade barriers have been removed and only a few products still require import licenses or are subject to import tariffs (Trinidad and Tobago, [Online]).

In a small country like T&T, the consumer sector usually bears the entire impact of protectionist import policies. Tariffs and quotas increase government revenue, shield producers from foreign competition which results in higher prices for the consumer. Consumer welfare is maximized when the price distorting protectionist trade policies are eliminated through the trade liberalization. This process has already started in T&T.

The government of Trinidad has recently developed a Medium Term Policy Framework (MTPF) for 1998-2000 that will allow the country to continue the process of becoming a more developed nation. The MTPF outlines macroeconomic programs and policies that will be necessary to bring the country into the status of a "Total Quality Nation". MTPF aims to increase the level of investment and savings, liberalize trade, create greater employment opportunities and reduce the level of poverty. A number of trade reforms have been undertaken within the Medium Term Policy Framework. Facilitation of the process of trade liberalization and growth in exports will be achieved through the continued phased elimination of import surcharges, liberalization of trade with

the CARICOM countries, implementation of the fourth phase of the reduction of the CARICOM Common External Tariff (CET), and bilateral free trade agreements with targeted countries. Administering and enforcing antidumping legislation and elimination of unfair competition practices are other important goals of the Medium Term Policy Framework. One of the most important undertakings of MTPF is pursuing membership in the Free Trade Area of Americas (FTAA) through active participation in the discussions of the FTAA working groups. However, the FTAA initiative is currently stalled in the U.S. Congress which has not given President Clinton fast tract authority to negotiate further trade agreements.

The liberalization of trade involves reduction of import tariff burden resulting in lower prices for imported goods and increased competition for domestic producers. While consumers benefit from the competition and price reduction, government revenue may significantly decrease due to elimination or reduction of import tariffs.

Two-Sector, Three-Good Model

The model utilized to quantitatively evaluate the impact of trade policy changes is described in the following section, based on Devarajan et al. (1994).

The basic model refers to one country with two producing sectors and three goods. The two commodities that the country produces are (1) an export good, E, which is sold to foreigners and is not demanded domestically, and (2) a domestic good, D, which is only sold domestically. The third good is an import, M, which is not produced domestically. There is one consumer who receives all income. The country is small in world markets, facing fixed world prices for exports and imports (Devarajan et al., 1994).

The model has four actors: a producer, a household, the government, and the rest of the world. The equation system is presented in Table 1. Equation (1) defines the domestic production possibility frontier, which gives the maximum achievable combinations of E and D that the economy can supply. The function is assumed to be concave and will be specified as a constant elasticity of transformation (CET) function with transformation elasticity Ω. The constant X defines aggregate production and is fixed. Since there are no intermediate inputs, X also corresponds to the real GDP. The assumption that X is fixed is equivalent to assuming full employment of all primary factor inputs. Equation (4) gives the efficient ratio of exports to domestic output (E/D) as a function of relative prices. Equation (13) defines the price of the composite commodity and is the cost-function dual to the first order condition, equation (4). The composite good price P^x corresponds to the GDP deflator.

Equation (2) defines a composite commodity made up of D and M which is consumed by the single consumer. Consumers maximize utility, which is equivalent to maximizing Q in this model, and equation (5) gives the desired ratio of M to D as a function of relative prices. Equation (14) defines the price of the composite commodity. It is the cost-function dual to the first order condition underlying equation (5). The price P^q corresponds to an aggregate consumer price or cost-of-living index.

Equation (3) defines household demand for the composite good. Equation (3) stands in for the more complex system of expenditure equations found in multisector models and reflects an important property of all complete expenditure systems: The value of the goods demanded must equal aggregate expenditure. Equation (7) determines

household income.

In Table 1, the price equations define relationships among seven prices. There are fixed world prices for E and M; domestic prices for E and M; the price of the domestic good D; and the prices for the two composite commodities X and Q.

Equations (16), (17), (18), (19), and (20) define the market clearing equilibrium conditions. Supply must equal demand for D and Q, savings must equal investment, and the balance of trade constraint must be satisfied. In this setup, four tax instruments are included: an import tariff t^m, an export subsidy t^e, an indirect tax on domestic sales t^s, and a direct tax rate t^y. The single household saves a fixed fraction of its income. Public savings (budgetary deficit or surplus) is the balance of tax revenue plus foreign grants and government expenditures (all exogenous) such as government consumption and transfers to households. The current account balance, taken to represent foreign savings, is the residual of imports less exports at world prices, adjusted for grants and remittances from abroad. Foreign savings is fixed so that the model is savings-driven; aggregate investment adjusts to aggregate savings. The complete model has twenty equations and nineteen endogenous variables. By Walras=s Law, however, one of the equations, say the savings-investment identity, is implied by the others and may be dropped.

Data

The 1-2-3 CGE model data requirements are rather modest. The data was obtained from T&T=s national, fiscal and balance-of-payments accounts published by International Monetary Fund and World Bank. The base year was 1993. Data were measured in billions of TT dollars and then scaled with respect to output which was set to 1.00.

Analysis and Results

The experimental system was shocked with a 20% reduction in tariff rate. Then the Solver was asked to find the optimal values of the endogenous variables while maximizing consumption. The results of the experiment are presented in Table 2. Just as expected, lower tariff rate led to the growth in the import volume by approximately 3%, and exports remained unaffected by the change. Overall tax revenue went down by 4% due to the loss of tariff revenue. Total national income and aggregate savings remained unchanged. Aggregate consumption, however, increased slightly due to relatively lower consumer prices. Export prices remained unchanged, while import prices declined by 2%. Prices of supply (cost of living index) and output have also declined by the same magnitude. Exchange rate has not changed. Investments declined by approximately 9% which could be explained by unwillingness of the domestic producers to invest in a relatively more competitive environment. The 9% decrease in the government savings is explained by the significant loss in import revenue. Overall, trade liberalization proved to be beneficial to consumers.

Conclusions

This analysis shows how two-sector models can be used to derive policy lessons about adjustment in developing countries. Starting from a small, one-country, two-sector, three-good (1-2-3) model, we show how the effects of tariff reduction can be analyzed. The results of this analysis indicate that many small countries in the Caribbean and elsewhere should embrace trade liberalization which they did not do at the end of the

Uruguay Round of Multilateral Trade Negotiations (UR). The Adirty tariffication@ of the UR, in which many developing countries selected the highest tariff possible and the longest adjustment period (10 years), only prolongs the burden on consumers and protects domestic producers. Clearly, domestic consumers, the largest segment in society gain substantial welfare as trade liberalization becomes the accepted government policy.

Our conclusion is that small economies will likely experience special adjustment challenges by virtue of their limited range of policy options and resource base. On the one hand, the rules of the trade liberalization seem to spell potential losses of preferential margins and market access, and reductions in protective tariff and domestic support. These have provided justifiable grounds for fear and apprehension about the full force of the effects of these rules. On the other hand, critical analysis of the rules also suggests that substantial negotiating space exists for countries to maneuver and to make adjustments as a basis for their short-term survival strategy. The case of Trinidad and Tobago seems to indicate that the country is pursuing a strategy for a long-term survival in a competitive world market place.

Table 1. The 1-2-3 Model

Real Flows	Prices
(1) $X = G(E, D^s; \Omega)$	(10) $P^m = (1 + t^m) \cdot R \cdot pw^m$
(2) $Q^s = F(M, D^d; \sigma)$	(11) $P^e = (1 + t^e) \cdot R \cdot pw^e$
(3) $Q^d = C + Z + G$	(12) $P^t = (1 + t^s) \cdot P^q$
(4) $E/D^s = g_2(P^e, P^d)$	(13) $P^x = g_1(P^e, P^d)$
(5) $M/D^d = f_2(P^m, P^t)$	(14) $P^q = f_1(P^m, P^t)$
	(15) $R = 1$

Nominal Flows	Equilibrium Conditions
(6) $T = t^m \cdot R \cdot pw^m \cdot M + t^s \cdot P^q \cdot Q^d + t^y \cdot Y - t^e \cdot R \cdot pw^e \cdot E$	(16) $D^d - D^s = 0$
	(17) $Q^d - Q^s = 0$
(7) $Y = P^x \cdot X + tr \cdot P^q + re \cdot R$	(18) $pw^m \cdot M - pw^e \cdot E - ft - re = B$
(8) $S = s \cdot Y + R \cdot B + S^g$	(19) $P^t \cdot Z - S = 0$
	(20) $T - P^q \cdot G - tr \cdot P^q - ft \cdot R - S^g = 0$
(9) $C \cdot P^t = (1 - s - t^y) \cdot Y$	

Accounting Identities
(21) $P^x \cdot X \equiv P^e \cdot E + P^d \cdot D^s$
(22) $P^q \cdot Q^s \equiv P^m \cdot M + P^t \cdot D^d$

Endogenous Variables	**Exogenous Variables**
E: Export good	pw^m: World price of import good
M: Import good	pw^e: World price of export good
D^s: Supply of domestic good	t^m: Tariff rate
D^d: Demand for domestic good	t^e: Export subsidy rate
Q^s: Supply of composite good	t^s: Sales/excise/value-added tax rate
Q^d: Demand for composite good	t^y: Direct tax rate
P^e: Domestic price of export good	tr: Government transfers
P^m: Domestic price of import good	ft: Foreign transfers to government
P^d: Producer price of domestic good	re: Foreign remittances to private sector
P^t: Sales price of composite good	s: Aggregate savings rate
P^x: Price of aggregate output	X: Aggregate output
P^q: Price of composite good	G: Real government demand
R: Exchange rate	B: Balance of trade
T: Tax revenue	Ω: Export transformation elasticity
S^g: Government savings	σ: Import substitution elasticity
Y: Total income	S: Aggregate savings
C: Aggregate consumption	Z: Aggregate real investment

Table 2. Results of a 20% reduction in tariff rate

Endogenous Variables	Original Value	Final Value
Export Good (E)	0.41	0.41
Import Good (M)	0.37	0.38
Supply of Dom. Good (Ds)	0.59	0.59
Demand of Dom. Good (Dd)	0.59	0.59
Supply of Composite Good (Qs)	0.97	0.97
Demand of Comp. Good (Qd)	0.97	0.97
Tax Revenue (TAX)	0.27	0.26
Total Income (Y)	1.02	1.02
Aggregate Savings (S)	0.11	0.11
Consumption (Cn)	0.72	0.73
Import Price (Pm)	1.00	0.98
Export Price (Pe)	1.00	1.00
Price of a Composite Good (Pt)	1.05	1.04
Price of Aggregate Good (Pq)	1.00	0.98
Price of Output (Px)	1.00	0.99
Price of Dom. Good (Pd)	0.99	0.99
Exchange Rate (Er)	1.00	1.00
Investment (Z)	0.11	0.10
Government Savings (Sg)	0.11	0.10

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