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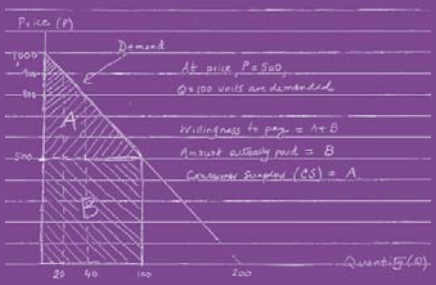
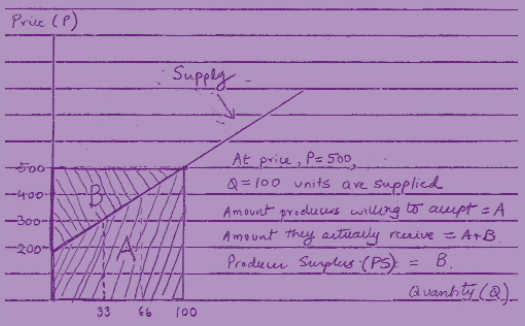


ABC of the Economics of Tariffs and Import Quotas

Shaghil Ahmed
Iffat Ara



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Prepared by Social Policy and Development Centre

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Contents

1. Introduction 1

2. Key Concepts 3
   2.1 The law of comparative advantage 3
   2.2 Consumer surplus 4
   2.3 Producer surplus 6
   2.4 World equilibrium: The power of markets 7

3. The Economics of Tariffs 9
   3.1 Situation without tariffs 10
   3.2 Effects of imposing a tariff 10
   3.3 Summary of the main results 13

4. The Economics of Import Quotas 14
   4.1 Situation without quotas 14
   4.2 Effects of quotas 15
   4.3 Effect on import prices of quota removal with more than one foreign supplier 17
   4.4 Summary of the main results 19

5. Concluding Remarks 20

Table and Figures:

Table 1: The law of comparative advantage 3

Figure 1: Consumer surplus 5

Figure 2: Producer surplus 7

Figure 3: World equilibrium 8

Figure 4: Effect of a tariff on importing country 11

Figure 5: Effect of an import quota on importing country 15

Figure 6: Effect of quota on import price with third-party competition 18

1. INTRODUCTION

Pakistan faces the important challenge of developing a comprehensive strategy for exports that can maximize long-run growth and per capita income without sacrificing the goal of poverty reduction and a more equitable distribution of wealth. An understanding of and debate on trade policy issues - such as the sources of the disagreements among countries with regard to the liberalization of agricultural trade that come up in World Trade Organization (WTO) negotiations, the effects of tariff reductions and the effects of removal of textile quotas starting January 1, 2005 - would seem to be of central significance in meeting this challenge satisfactorily. There are certainly experts in this area in Pakistan, including among policymakers. Nevertheless, there does seem to be some lack of a more widespread understanding of the basic economics of trade barriers like tariffs and quotas, among all the relevant parties that are engaged in debate. In particular, the discussion one sees in the press and in the electronic media, and even in some policy forums, could be better informed.

The objective of this booklet is to provide the basics on the economics of tariffs and quotas for the benefit of all those who wish to acquire a rudimentary, but analytical understanding of these issues. The idea is to encapsulate the gist of the analysis that would be found in a basic international economics textbook. In doing so, we have tried to follow the famous scientist Albert Einstein's maxim that "everything should be made as simple as possible, but not simpler." Thus, while we will avoid equations, we will make use of diagrams (an age-old teaching tool in economics), which facilitate the exposition of the key arguments. But no prior knowledge of economic theory or economic concepts is required. Any concepts that are used will be introduced and developed as we go along.

At the same time it should also be emphasized that the real world of international trade and trade policy is much more complex than the simple world found in textbooks. Many - and often heroic - assumptions have to be made in the textbooks to understand the key building blocks. In particular, our analysis here will all be done in a static and partial equilibrium framework. A static framework is one which does not take into account the dynamic feedbacks that can result in the future (e.g. the imposition of a tariff may be followed by retaliatory tariffs by other countries). And partial equilibrium analysis, as opposed to general equilibrium, analyzes the behavior of a particular sector or portion of the economy separately, without modeling the feedback effects that changes in one sector may have on prices, outputs and other economic variables in other sectors. Obviously, these are very simplistic notions, but the point is that the more subtle arguments and the finer points involved in the real world relationship cannot be understood without first understanding the simpler arguments which form the building blocks. It is the purpose here to apprise the reader of the key building blocks necessary for an analysis of the economic effects of tariffs and quotas.

The booklet deals with only a few issues and, in no way is it intended to be a substitute for a textbook or a course in international economics. Quite to the contrary, it is hoped that the intrests of the readers will be sparked enough by the discussion here to spur them into acquiring a deeper and even more technical knowledge of trade policy issues. The booklet is produced by the Social Policy and Development Centre (SPDC). It is part of a wider SPDC project on the elimination of textile quotas and Pakistan-EU (European Union) trade that is funded by the EU Commission under its Small Projects Facility (SPF) Programme for Pakistan.

The material covered is organized as follows. In section 2, the key relevant concepts are introduced and explained. Section 3 considers the economic effects of the imposition of tariffs while section 4 focuses on the effects of having import quotas and the consequences of removing them. Finally, section 5 provides some concluding remarks.

2. KEY CONCEPTS

It is difficult to grasp the case for free trade based on economic theory without understanding three key concepts - the law of comparative advantage, the notion of consumer surplus and the notion of producer surplus.

2.1 The Law of Comparative Advantage

The Law of Comparative Advantage, attributed to the 19th Century economist, David Ricardo, goes to the heart of the gains that countries will get from specializing in the production of some goods and trading with each other. The concept is best illustrated through an example.[1] Suppose there are two countries and they produce only two goods, wheat and cloth. By using one unit of labour, country A can produce either 6 bushels of wheat or 4 yards of cloth. Country B's technology is such that it can produce either 2 bushels of wheat or 2 yards of cloth with one unit of labour (see Table 1).

Table 1
The Law of Comparative Advantage

	Production Possibilities Production per unit of labour	
	Country A	**Country B**
Wheat (Bushels)	6	2
Cloth (Yard)	4	2

This example has been deliberately rigged so that country A is more efficient at producing both goods - that is, it has what economists call "an absolute advantage" in the production of both goods. However, country B has a *"comparative advantage"* in the production of cloth because this is the good in which it has least absolute disadvantage - it is only half as efficient as country A at producing cloth compared to one-third as efficient in producing wheat.

Both countries can gain if country B specializes in the production of the good in which it has comparative advantage (cloth) and country A produces the good in which it has comparative advantage (wheat). If country B specializes in the production of cloth, it would be willing to trade 1 yard of cloth for 1 bushel of wheat without being worse off. But this would represent a gain for country A. This is because if country A specializes in the production of wheat, it is willing to trade 1 bushel of wheat for 2/3 yard of cloth, but it is getting the more favourable terms of trade of 1 yard of cloth for 1 bushel of wheat. It should be clear that for any terms of trade in between 2/3 to 1 yard of cloth for 1 bushel of wheat, both economies would be better off by country A specializing in the production of wheat and country B specializing in the production of cloth and then trading with each other to get the good they do not produce.

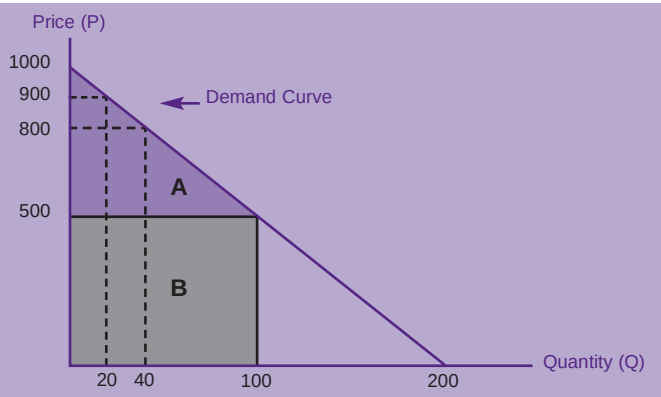
This example illustrates the basic argument for the gains from trade and how these gains depend not on absolute advantage in production of goods but on comparative advantage, which is a concept of relative efficiency. This does not mean that a country has to live with or cannot change its comparative advantage. Countries should certainly aim to move up the value chain and produce goods with higher value added so that their per capita incomes can increase faster. What the law of comparative advantage implies is that countries can only do so by increasing their competitiveness and being able to produce the high-value added items relatively more efficiently than others. In East Asia, for example, we can see how some countries are adjusting to the increased emergence of China by developing new areas of comparative advantage.

2.2 Consumer Surplus

Another key concept in understanding the basics of trade policy issues is the idea of consumer surplus (CS). To grasp this concept, we must start with a demand curve. The demand curve for a product shows the quantities of the good that will be demanded at different

prices. It is downward sloping, as shown in Figure 1. When the price is high (say, Rs900 per unit of the good), only those who value the good really highly will demand it and thus relatively less units will be demanded (say, 20 units as shown in the figure). As the price falls, some more consumers who place relatively lesser value on the good also are now able to afford it and find it worthwhile to buy it. Thus, the quantity demanded will increase.

Figure 1
Consumer Surplus



At price, P = 500; Q = 100 units are demanded
Willingess to pay = A+ B; Amount actually paid = B
Consumer Surplus (CS) = A

For a given consumer, CS represents the difference between the amount the consumer is willing to pay to acquire the good and the amount she actually pays. The willingness to pay is represented by the vertical distance to the demand curve from the horizontal axis - the willingness to pay is what any point on the demand curve represents. Thus, the willingness to pay for the 20th unit of the good is Rs900; for the 40th unit, it is Rs800; and for the 100th unit, it is Rs500. If the good sells for Rs500, say, the total willingness to pay for all of the consumers taken together is the area under the demand curve, which is equal to the sum of the shaded areas A and B, as shown in the figure.

What is the amount that the consumers actually pay for the good? At a price of Rs500, 100 units of the goods will be bought so that the amount paid will be Rs500 x 100 = Rs50,000, which is represented by the area of the shaded rectangle B in the figure. The CS, then, is given by:

CS = Willingness to pay - amount actually paid
= (A+B) - B = A

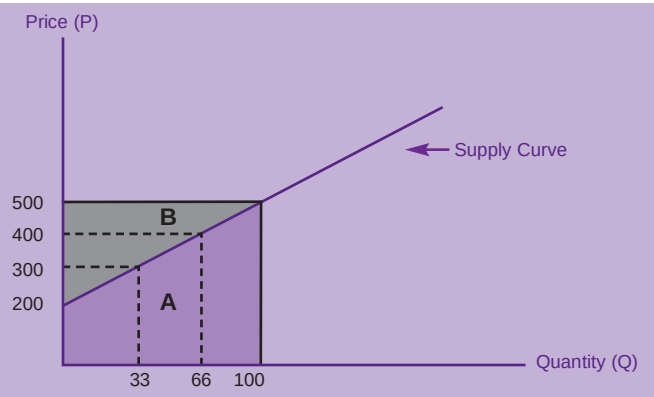
Thus the CS represents the sum of the gains to all the consumers as a result of purchasing the good at a market price that is lower than the value they place on the good.

2.3 Producer Surplus

There is a similar concept of a Producer Surplus (PS), which is also crucial to gain a basic understanding of the effects of trade policy. To illustrate it, let's first consider the industry supply curve for a particular good. The industry supply curve is upward sloping, as shown in Figure 2. The cost of producing an extra unit of the good by the industry (the marginal cost) rises with the quantity produced. Thus, producers in the industry need a higher price to produce more to cover their costs and that is why the supply curve slopes up.

For a given producer, PS represents that difference between the amount received for producing the good and the minimum amount the producer would be willing to accept to produce it. Suppose the industry price is Rs500 and 100 units of the goods are supplied, as shown by the supply curve in the figure. What is the minimum amount that the producers would be willing to accept to produce 100 units of the good? This would be the area under the supply curve represented by the shaded area A. This is because any point on the supply curve represents the amount the producers would be willing to accept to produce a particular unit. For example, as shown, to produce the 33rd unit, producers would need Rs300; to produce the 66th unit, they would need Rs400; and to produce the 100th unit, they would need Rs500.

Figure 2
Producer Surplus



At price, P = 500; Q = 100 units are supplied
Amount producers willing to accept = A; Amount they actually receive = A + B
Producer Surplus (PS) = B

The amount that the producers actually receive for producing 100 units is the price multiplied by the quantity supplied, or Rs500 x 100 = Rs50,000, which is represented in the figure by the areas of the rectangle which forms the sum of the shaded areas A and B. The PS is, then, given by:

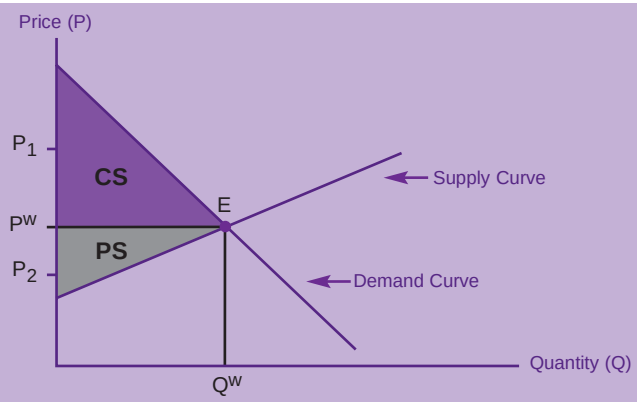
PS = Amount received for producing - amount willing to accept to produce
= (A+B) - A = B

Thus, the PS represents the sum of the gains to all the producers as a result of selling the good at a price higher than the amount they would be willing to accept to produce it. In other words, PS could be thought of as producer's profit.

2.4 World Equilibrium: The Power of Markets

Consider the world equilibrium for a single good in the absence of any trade restrictions, illustrated in Figure 3. The price would adjust to equate world demand to world supply and, as shown in the figure,

Figure 3
World Equilibrium



Equilibrium is at point E with $P = P^w$, $Q = Q^w$

Higher price i.e. $P_1 > P^w$ => excess supply => price will fall

Lower price i.e. $P_2 < P^w$ => excess demand => Price will rise

Equilibrium price P^w maximizes the sum of consumer surplus (CS) and producer surplus (PS)

this happens at the price $P = P^w$. Now that we are talking about world prices, it should be noted that for our purposes it does not matter here so much whether they are expressed in Rs or US dollars or Euros, or some other currency since throughout our analysis we will be abstract from exchange rate issues and might as well treat the exchange rate as fixed.[2]

The remarkable thing about the equilibrium market-clearing price in the absence of any distortions is that it maximizes the sum of consumer surplus and producer surplus, shown by the shaded areas CS and PS in the figure. At a price higher than P^w, say $P_1 > Pw$, there is excess supply. If price was lower than this, more consumers would be willing to buy the good and there would be producers that are willing to produce it at that price. Thus, the price would fall in this case until the price P^w is reached again. On the other hand, at a price lower than P^w, say $P_2 < P^w$, there is excess

demand. If price was higher than this, more producers would be willing to produce the good, and there would be consumers that are willing to buy it at that price. Thus, the price would rise in this case until the price P^w is reached again.

The above equilibrium is for the world, and it does not imply that demand will equal supply in each country. In the case of those goods in which a country has a comparative advantage in production over other countries, domestic supply will likely exceed domestic demand and the excess supply will be exported. But the world market would still clear, with excess supply in countries with comparative advantage being matched by equal excess demand in other countries. Similarly, in the case of goods in which a country does not have a comparative advantage it is likely that domestic demand will exceed domestic supply and the excess will be imported. Again, the world market will clear, with the excess demand in countries having a comparative disadvantage in production being matched by excess supply in other countries.

In sum, the key result here is that the world equilibrium market-determined price maximizes the sum of consumer and producer surpluses. Moreover, countries specialize in the production of goods in which they have comparative advantage in, and they are likely to become a net exporter of these goods and a net importer of those goods in which they do not have a comparative advantage.

3. THE ECONOMICS OF TARIFFS[3]

A tariff is a tax on the imports of goods. It is one important element of trade policy for any country. There are two main types of tariffs - *a specific tariff*, which is a fixed tax for each unit of the good imported (e.g. $2 per barrel of imported oil), or an *Ad valorem tariff*, which is levied as a fraction of the imported value of a particular good (e.g. 20 percent of the value of all imported automobiles). Tariffs are imposed both for the purposes of adding to government revenue as well as to try and protect certain domestic sectors of the economy. Generally, the revenue and protective effects of tariffs occur simultaneously. However, in some special

cases only one of these effects occurs at a time. For example, a tariff that is imposed on an import when no domestic producer exists would be a pure revenue tariff; also, a tariff that is imposed is so high that it becomes prohibitive and no goods are imported would be a pure protective tariff. In such a case no government revenue is collected.[4]

3.1 Situation without Tariffs

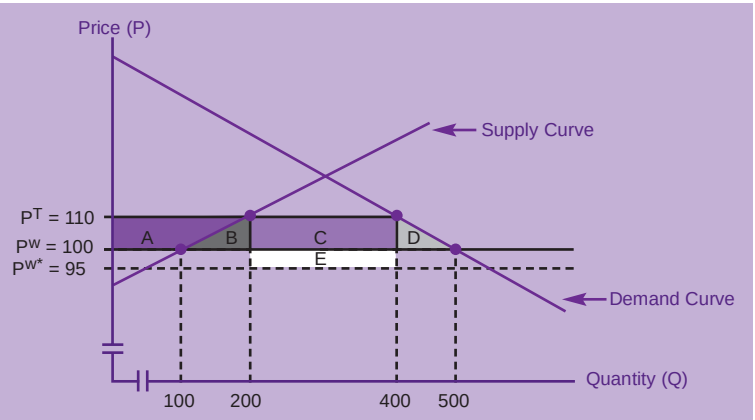
In order to consider the effects of tariffs from the viewpoint of the importing country, let's first set up what the situation might look like without any tariffs. Suppose the world price (P^w) of a good is determined from the equality of world demand and world supply, as shown in Figure 3 (Note that we have expressed the price here in dollars, but given a fixed exchange rate, we could speak interchangeably about the rupee price which would just be a multiple of this). Since we want to focus on a country importing the good, let's suppose that at this world equilibrium price, the country in question has excess demand for the good and is, therefore, a net importer of the good. Recall that other countries would have to have excess supply and be a net exporter for world equilibrium to hold.

The initial situation without any tariffs is shown in Figure 4. At the world price of $100, the domestic demand for the good in this particular country is 500 units. 100 units of this good are supplied by domestic producers, who are efficient at producing this good. However, after 100 units have been produced domestically, it is more efficient to import additional units of the good at a cost of $100, since supply curve shows that domestic producers would demand a higher price to produce more than 100 units. Thus, 400 units of the good are imported from abroad.

3.2 Effects of Imposing a Tariff

Now consider the imposition of a $15 tariff on each unit of imports by the home country (This is 15 percent of the original price of $100). If the domestic price remained at $100, no one will be willing to

Figure 4
Effect of a Tariff on Importing Country



At equilibrium without tariff: $P^W = 100$, domestic supply = 100 units,
domestic demand = 500 units => Imports = 400 units

At equilibrium with 15% tariff: world price drops (say, to $P^{W*} = 95$)
domestic price inclusive, of tariffs rises (say to $P^T = 110$)
quantity of Imports falls to 400-200 = 200 units

Net welfare loss = loss of consumer surplus - gain in producer surplus
- rise in government revenue
= (A + B + C + D) - A - (C + E) = B + D - E

export the good at the world price of $100. The price difference between the home market and the world market will have to rise to $15 for someone willing to ship the good to the home country from abroad, given the import tax of $15. In other words, at the old world price of $100, there is now excess supply in the world market (since the demand for imports from the domestic country has fallen). The world price would have to drop and the domestic price inclusive of tariffs would have to rise until the price differential between the two markets was exactly equal to $15. Suppose this happens at a new world price of P^{W*} = $95 and a domestic price inclusive of tariffs of P^T = $110. At this new higher domestic price, domestic supply rises to 200 units from the previous 100 units, and domestic demand falls to 400 units from the previous 500 units. Therefore, 200 units are now imported, which is less than the previous imports of 400 units.

What are the welfare effects of the imposition of the $15 specific tariff? Let's start with what happens to a consumer surplus. Recall from Figure 1 that the consumer surplus is the area of the triangle that is formed by the vertical axis, the demand curve and the horizontal line at the price at which the good sells. With the domestic price rising from $100 to $110, it is easy to verify that the consumer surplus falls by the amount of the sum of the shaded areas A, B, C and D in Figure 4.

Now consider what happens to producer surplus. Again, recall from Figure 2, that this was the area of the triangle formed by the vertical axis, the supply curve and the horizontal line at the sale price of the good. With the price rising to $110 from $100, the producer surplus increases by the amount of the shaded area A, shown in Figure 4.

In addition to these effects, the government now has tariff revenue of the amount shown by the area of the rectangle which forms the sum of the shaded areas C and E. This is equal, of course, to the tax per unit ($15) multiplied by the quantity of imports (200 units), or $3,000.

Thus, the net welfare loss from the imposition of the tariff is given by:

Net welfare loss = loss of consumer surplus - gain in producer surplus - rise in government revenue

= (A+B+C+D) - A - (C+E) = B+D-E

Domestic producers gain because the tariff increases the domestic price, allowing some domestic producers to compete with the more efficient foreign producers. Consumers lose because the price rises, causing them both to consume less and pay more per unit for the amount that they still consume. The government gains because it has revenue now that it did not have before.

Part of the loss of the consumers becomes the producers gain and washes out on net - this is the area A. Part of the loss of the consumers becomes the government's gain and also washes out on net - this is the area C. However, there are net efficiency losses

amounting to the sum of the triangle areas B and D because of the distortions to the incentives to consume and produce caused by the imposition of the tariff. It should be emphasized that the areas B and D represent net welfare losses that go to nobody. These net losses are caused by the distortion or wedge created by the tariff. Part of this net loss (the area D) is because consumption of the good falls from 500 to 400 units; and part of it (the area B) is because more costly domestic production to the tune of 100 units is being substituted for less costly foreign production. Offsetting this is a net gain to the domestic economy, arising from the fact that the tariff causes the world price of the good to fall to $95 from $100, which is represented by the area E. If the domestic country is relatively small, as in the case of Pakistan, its decrease in import demand resulting from the higher tariff would be expected to have only a negligible downward effect on the world price and the area E would be very small. Most of the burden of the tariff would then be borne by domestic consumers, and the imposition of the tariff would represent a net welfare loss to the nation.

3.3 Summary of the Main Results

To summarize, the main results from the imposition of a tariff on the importing country are the following:

1. Quantity of imports falls and domestic prices inclusive of tariffs rise.
2. Domestic producers gain.
3. Domestic consumers lose.
4. Government gains.
5. Domestic economy also gains as a result of lower world price (a terms of trade gain).
6. If the country is relatively small, effect 5 above is very small, and there are net welfare losses because consumers lose more than producers and the government gain.

Our analysis is, of course, conducted with many simplifying assumptions. In particular, it is done in a partial equilibrium framework and under the assumption that markets are perfectly competitive. However, economic analysis shows that in most cases the results of partial equilibrium analysis still carry through to a general equilibrium framework.[5]

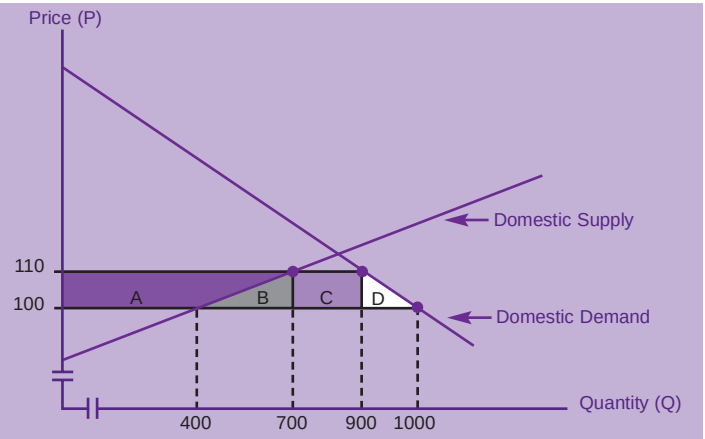
4. THE ECONOMICS OF IMPORT QUOTAS

An import quota is a direct restriction on the quantity that may be imported of a good. An example of this is the case of textile quotas. Many industrial countries, including the United States (US) and the major European countries, imposed quotas on the imports of textile and clothing products from developing countries in 1974 under the Multi-Fibre Agreement (MFA). In 1995, the MFA was replaced by the Agreement on Textiles and Clothing (ATC), which scheduled a gradual phase-out of the quantitative restrictions in several stages over a ten-year period, with quotas finally completely eliminated starting January 1, 2005. This has led to serious concerns about how Pakistan's export performance will fare in the now quota-free environment. To understand the implications for Pakistan, it is first necessary to know what economic theory has to say about the implications of quotas - and their removal - for both the importing and the exporting countries.

4.1 Situation without Quotas

For the importing country, the initial situation is very much like the one discussed in the previous section before the introduction of tariffs. We reproduced it in Figure 5, but for the sake of change with slightly different illustrative numbers. The initial world price is $100, which is the price at which the domestic country can import the good. At this price, domestic production is 400 units of the goods and domestic demand is 1,000 units, so that 600 units are imported from abroad.

Figure 5
Effect of an Import Quota on Importing Country



At initial equilibrium: domestic price = world price = 100,
domestic production = 400 units, domestic demand = 1000 units
=> Imports = 600 units

With imposition of import quota of 200 units,
domestic price has to rise to 110 to reduce imports to 200 units

Net welfare loss = loss of consumer surplus - gain in producer surplus
= (A+B+C+D) - A = B+C+D

4.2 Effects of Quotas

Now suppose we are talking about the textiles and clothing market and the US (say) imposes a quota of 200 units on the imports of these items.[6] The exact implications depend on how the quota is enforced. One example is the imposition of quota by the US on imports of foreign cheese. In this case, import licenses are given to certain trading firms, each of which is allocated the right to import a maximum quantity of cheese each year. In other important cases, such as quotas on imports of sugar or imports of apparel under the MFA or ATC, the right to sell in the importing country is given directly to the government of exporting countries. Since we want to

focus on the textiles example, which is more pertinent to Pakistan, we will assume that the license is issued directly to foreign exporters.

The domestic price has to rise to reduce desired imports of textiles and clothing by the US to the quota amount of 200 units. In the example shown in Figure 5, the domestic price has to rise to $110 to reduce imports to 200 units. When the price has risen to $110, domestic producers increase their production from 400 units to 700 units and domestic demand falls to 900 units. Note, that an import quota always increases the domestic price, so we should not be under the misconception that import quotas somehow restrict imports without causing a rise in the domestic price.

What are the welfare effects of this quota imposition in the importing country - the US in our example? Again, we can add up the gains and losses of the different groups. When the price rises to $110, there will be loss of consumer surplus in the US amounting to the sum of the shaded areas A, B, C and D. At the same time, there will be an increase in producer surplus from the price rise, amounting to the shaded area A. There is no effect on government revenues. The quota rents being generated as a result of the rise in price to $110, which amount to the shaded area C, accrue to the foreign exporters who hold the export licenses.

The net welfare loss is, then, given by:

Net welfare loss = Loss of consumer surplus - gain in producer surplus
= (A+B+C+D) - A = B+C+D > 0

For the importing country (US), there is thus unambiguously a net welfare loss. Part of the consumers' loss is due to more costly domestic textiles being substituted for cheaper foreign textiles and part of it is due to less quantity being consumed. Domestic producers gain because they sell more and at a higher price. Note, that only a part of the losses of the consumers are offset by the gains of the producers (the area A). The rest of the area (B+C+D) represent net efficiency losses to the importing country from

distortions of domestic incentives to consume and produce and from accrual of quota rents to the foreign exporters.

How do these quota restrictions by the importing country (the US in our example) impact on the exporting country (Pakistan, say)? First, those exporters that are able to still export - namely, the holders of the 200 unit quota licenses to sell in the US market - gain by the amount of the quota rents, as already discussed. Second, those exporters who were exporting before (recall 600 units were exported before the quota restriction came into place), but are no longer able to export, will lose out.

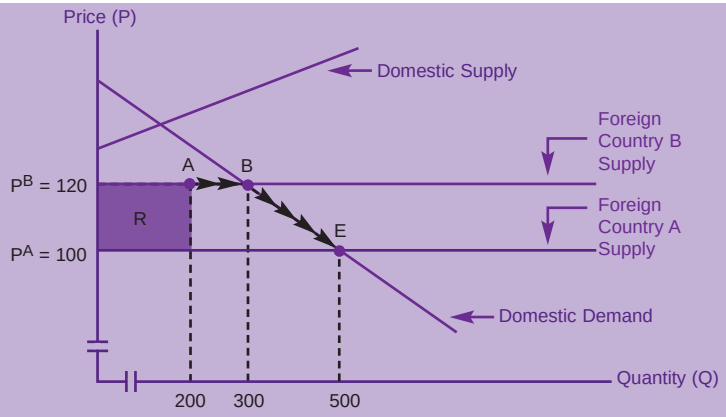
4.3 Effect on Import Prices of Quota Removal with More Than One Foreign Supplier

Now we consider the effect on import prices of imposing a quota on the most efficient supplier and its implications, as the quota is then gradually relaxed and then finally eliminated, as in the case of textile quotas under the ATC. The example is stylized, but meant to illustrate the consequences for the less efficient producers.

Suppose the situation is as depicted in Figure 6. There are two potential foreign country suppliers, supplying goods that are perfect substitutes in the import basket of the domestic country.[7] Country A is a more efficient supplier than country B and can supply imports to the importing country at a price of $100, which is lower than the price of $120 at which country B can supply imports. All domestic producers are assumed to be less efficient than either foreign supplier, which follows because the domestic supply curve is assumed to hit the vertical axis at a price higher than $120.[8]

Equilibrium without an import quota is represented by point E. All 500 units of the good consumed are imported at $100 a unit from country A. Country B and domestic producers being less efficient provide none of the goods consumed. Now suppose an import quota of 200 units is imposed on country A only.[9] This will raise the import price to the price at which the next efficient supplier can

Figure 6
Effect of Quota on Import Price with Third-Party Competition



Equilibrium without Quota will be at point E_1 with P = 100, Q = 500. The entire 500 units are imported from country A since that country is a more efficient producer than either country B or domestic producers.

Import Quota of 200 units imposed on country A only. This will raise the price to that of the next efficient producer, country B. Thus, price increases to P_1 = 120, quantity declines to Q = 300 units. All 300 units are still imported but 200 from A (quota limit) and 100 from B. Country A producers who are still able to export get quota rents of area R.

As quota increases we move in direction shown by arrows. First there is no change in price, then for quota > 300 price falls until at point E, quota becomes non-binding, A recaptures the market.

supply the goods, which is country B at a price of $120. Intuitively, this is because the quota on the most efficient producer implies that the importing country will inevitably have to turn to other less efficient producers. At the new price of $120, 300 units will be demanded, which will still all be imported - 200 units imported from country A (up to its quota limit) and 100 units imported from country B. The producers in country A who still hold the licenses to export the 200 units will get quota rents of the amount shown by area R.

Suppose now the import quota of 200 units on country A is gradually relaxed. The price effects will be as shown by the arrows in the figure. Until the quota reaches 300 units, nothing will happen to the price and the amount of imports will shift in source from country B to country A. Once the quota of 300 units is reached, the import price will start to fall and we will gradually move along the part of the demand curve represented by the segment BE and country A's quota rents will gradually decline. Once we reach point E we are back to the equilibrium without quotas, since the quota becomes non-binding. Country A would have recaptured the whole market at that point.

Thus, we can see that the presence of quotas may have allowed some countries like country B that were not as efficient as country A to remain in the market. However, in the absence of quotas, the third party competition may lead these countries to lose their market share unless a competitive edge is developed and maintained against the most efficient producers.[10] This result underscores the importance of third-party competition and the difficulties that some countries might face in the post-quota environment for textile trade. If a country like China, say, is more efficient like country A in the examle above, it might be difficult for other countries (perhaps Pakistan, hypothetically) that are like country B to compete without becoming as efficient.

4.4 Summary of the Main Results

The main results with respect to the effects of the imposition of an import quota may be summarized as follows:

1. Domestic price rises and obviously the quantity of import falls because of the quota.
2. Domestic producers gain.
3. Domestic consumers lose.
4. The losses of domestic consumers are more than the gains of the domestic producers, thus leading to a net welfare loss in the importing country.

5. Those foreign exporters who are still able to export and hold quota licenses gain, but other exporters who potentially could be exporting without the quotas lose.
6. Quota restrictions may allow some inefficient exporters to survive, which will be difficult to do (without matching the efficiency of the most efficient producers) when the quotas are removed.

These results suggest that when existing quotas were eliminated, as in the case of the textile quotas starting January 1, 2005, the import price in the importing countries, such as the US and the EU countries should have fallen and there should have been a net welfare gain in these countries, with the losses of domestic producers being more than made up for by the gains of domestic consumers. Moreover, among the producers and exporters there will be gainers and losers. The less efficient exporters will lose market share to the more efficient exporters, unless they can improve their efficiency and international competitiveness.

5. CONCLUDING REMARKS

The purpose of this booklet was to provide a flavour of the textbook economic arguments for the benefits of free trade and for why trade restrictions such as tariffs and import quotas are likely to lead to net welfare losses. It was shown that under standard textbook assumptions, the imposition of both tariffs and import quotas lead to net efficiency losses. There are some gainers - domestic producers in the importing country gain, the government also gets more revenue in the case of a tariff, those exporters in the exporting country who manage to get the quota licenses also gain - but these gains are more than offset by the large losses that consumers suffer. Consumers face these losses because the distortions resulting from these restrictions mean that they have to consume less and at a higher price because of the substitution of some production from the most efficient producers to less efficient ones.

Often the argument for free trade does not get a fair hearing because the interest groups who stand to lose from free trade are very vocal, visible and influential. By contrast the large aggregate gains which occur from free trade are often very diffuse and made up of rather small gains per consumer but summed over millions and millions of consumers. This makes the formation of special interest groups and political influence more difficult.

It should be emphasized, though, as was noted when we began, that the world of textbooks is a very simplified one. In the real world, which is more complex, many other issues arise. For example, tariffs are distortionary but so is any other tax that is not lump-sum and yet some amount of government revenue has to be raised. The existence of some tariffs may be optimal as part of a general package of taxes and public finance considerations. Moreover, for free trade to work best, it must operate from both sides involved in any international trade. This raises concerns having to do with perceptions of the lack of a level playing field being provided by "the other side," which is the source of complications and stalling of WTO negotiations, for example. There can be problems related to efficiency versus equity as well. What should be done when the inefficient domestic producers going out of business leads to large employment losses, particularly of low-skilled relatively poorer workers? The free trade argument often rests on the principle that there are net efficiency gains, so that the gainers could in principle compensate the losers and still be better off on balance. But redistributions required to prevent the poor from becoming poorer hardly ever occur.

There are other political economy considerations as well.[11] For example, there is an argument for deviating from free trade that rests on domestic market failures. If some domestic market fails to function as it should, deviating from free trade might help reduce the consequences of this malfunctioning. This rests on the *theory of second best*, which states that if one market does not work properly it may no longer be optimal for the government to abstain from intervention in other markets. Some also argue for the protection of key infant industries until they can get beyond their baby steps and

for protection of key strategic industries (which might involve national security considerations) from foreign competition.

In this booklet, we do not take particular positions on these complex issues. The goal rather was more modest; the main point was that, in order to understand these more complex issues and appreciate the debate on them, one must first understand the textbook case for free trade and why trade restrictions could cause national welfare to fall in principle. It is hoped that after reading the booklet carefully, the reader can better follow and appreciate the basics of the economics of tariffs and import quotas, which is a crucial starting point for an understanding of the issues involved in the debate about free trade.

NOTES:

1. The particular example used here is taken from SPDC (2006), p.38, Box 2.1.
2. Alternatively, we can think of the exchange rate adjusting but assume that the exchange rate and domestic prices always change in such as way as to equate domestic and world prices when expressed in common currency units.
3. The economic analysis of tariffs can be found in standard international economics textbooks, such as Krugman and Obstfeld (2005). Here we have simplified the textbook analysis a bit further.
4. For a discussion of how tariff revenues change when a tariff rate is increased, first rising but ultimately falling, see SPDC (2006), p.6, Box 1.1.
5. See, for example, the appendices to Chapter 8 in Krugman and Obstfeld (2005).
6. For a similar example applied to the effects of quotas on steel imports into the US, see Mansfield (1991), pp. 485-488.
7. The example draws on the example given in Evans and Harrigan (2004). They also consider an example, in which goods of the two foreign suppliers are only imperfect substitutes in the import basket of

the domestic country. In that case, the predictions for import prices are less clear-cut.

8. This is done for simplicity only and the assumption does not affect the main result.
9. Qualitatively the results would not change much if the quota was imposed on both countries, as long as the quota on country A was relatively more restrictive.
10. Alternatively, when imports are imperfect substitutes, countries may try to respond by moving their production up the value chain or to goods (perhaps within textiles) that are not the comparative advantage of the most efficient producers.
11. See, for example, Chapter 9 of Krugman and Obstfeld (2005), for a discussion of these political economy considerations.

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