Application: International trade

Learning objectives

In this chapter you will:

- examine the gains and losses to a country from opening up trade
- examine the effects on a country's welfare of a tariff
- consider the arguments for restricting trade.

If you check the labels on the clothes you are now wearing, you will probably find that some of your clothes were made in another country. A century ago the textiles and clothing industry was a major part of the New Zealand economy, but that is no longer the case. Faced with foreign competitors who could produce quality goods at low cost, many New Zealand firms found it increasingly difficult to produce and sell textiles and clothing at a profit. As a result, they laid off their workers and shut down their factories. Today, much of the textiles and clothing that New Zealanders consume is imported from abroad.

The story of the textiles industry raises important questions for economic policy: How does international trade affect economic well-being? Who gains and who loses from free trade among countries, and how do the gains compare to the losses?

Chapter 3 introduced the study of international trade by applying the principle of comparative advantage. According to this principle, all countries can benefit from trading with one another because trade allows each country to specialise in doing what it does best. But the analysis in Chapter 3 was incomplete. It did not explain how the international marketplace achieves these gains from trade or how the gains are distributed among various economic actors.

We now return to the study of international trade and take up these questions. Over the past several chapters, we have developed many tools for analysing how markets work: supply, demand, equilibrium, consumer surplus, producer surplus and so on. With these tools we can learn more about the effects of international trade on economic well-being.
The determinants of trade

Consider the market for textiles. The textile market is well suited to examining the gains and losses from international trade: textiles are made in many countries around the world, and there is much world trade in textiles. Moreover, the textile market is one in which policymakers often consider (and sometimes implement) trade restrictions to protect domestic producers from foreign competitors. We examine here the textile market in the imaginary country of Isoland.

The equilibrium without trade

As our story begins, the Isolandian textile market is isolated from the rest of the world. By government decree, no one in Isoland is allowed to import or export textiles, and the penalty for violating the decree is so large that no one dares try.

Because there is no international trade, the market for textiles in Isoland consists solely of Isolandian buyers and sellers. As Figure O3.1 shows, the domestic price adjusts to balance the quantity supplied by domestic sellers and the quantity demanded by domestic buyers. The figure shows the consumer and producer surplus in the equilibrium without trade. The sum of consumer and producer surplus measures the total benefits that buyers and sellers receive from the textile market.

Now suppose that, in an election upset, Isoland elects a new government. The winning party campaigned on a platform of ‘change’ and promised the voters bold new ideas. The new Prime Minister’s first act is to assemble a team of economists to evaluate Isolandian trade policy. She asks them to report on three questions:

- If the government allowed Isolandians to import and export textiles, what will happen to the price of textiles and the quantity of textiles sold in the domestic textile market?
- Who will gain from free trade in textiles and who will lose, and will the gains exceed the losses?
- Should a tariff (a tax on textile imports) be part of the new trade policy?

After reviewing supply and demand in their favourite textbook (this one, of course), the Isolandian economics team begins its analysis.

Figure O3.1 The equilibrium without international trade

When an economy cannot trade in world markets, the price adjusts to balance domestic supply and demand. This figure shows consumer and producer surplus in an equilibrium without international trade for the textile market in the imaginary country of Isoland.
The world price and comparative advantage

The first issue our economists take up is whether Isoland is likely to become a textile importer or a textile exporter. In other words, if free trade were allowed, would Isolandians end up buying or selling textile in world markets?

To answer this question, the economists compare the current Isolandian price of textiles to the price of textiles in other countries. We call the price prevailing in world markets the world price. If the world price of textiles is higher than the domestic price, then Isoland would become an exporter of textiles once trade is permitted. Isolandian textile producers will be eager to receive the higher prices available abroad and will start selling their textiles to buyers in other countries. Conversely, if the world price of textiles is lower than the domestic price, then Isoland will import textiles. Because foreign sellers offer a better price, Isolandian textile consumers will quickly start buying textiles from other countries.

In essence, comparing the world price and the domestic price before trade indicates whether Isoland has a comparative advantage in producing textiles. The domestic price reflects the opportunity cost of textiles: it tells us how much an Isolandian must give up to obtain one unit of textiles. If the domestic price is low, the cost of producing textiles in Isoland is low, suggesting that Isoland has a comparative advantage in producing textiles relative to the rest of the world. If the domestic price is high, then the cost of producing textiles in Isoland is high, suggesting that foreign countries have a comparative advantage in producing textiles.

As we saw in Chapter 3, trade among nations is ultimately based on comparative advantage. That is, trade is beneficial because it allows each nation to specialise in doing what it does best. By comparing the world price and the domestic price before trade, we can determine whether Isoland is better or worse at producing textiles than the rest of the world.

The winners and losers from trade

To analyse the welfare effects of free trade, the Isolandian economists begin with the assumption that Isoland is a small economy compared to the rest of the world. This small-economy assumption means that Isoland’s actions have little effect on world markets. Specifically, any change in Isoland’s trade policy will not affect the world price of textiles. The Isolandians are said to be price takers in the world economy. That is, they take the world price of textiles as given. Isoland can be an exporting country by selling textiles at this price or an importing country by buying textiles at this price.

The small-economy assumption is not necessary to analyse the gains and losses from international trade. But the Isolandian economists know from experience (and from reading Chapter 2 of this book) that making simplifying assumptions is a key part of building a useful economic model. The assumption that Isoland is a small economy simplifies the analysis, and the basic lessons do not change in the more complicated case of a large economy.

The gains and losses of an exporting country

Figure O3.2 shows the Isolandian textile market when the domestic equilibrium price before trade is below the world price. Once free trade is allowed, the domestic price rises to equal the world price. No seller of textiles would accept less than the world price, and no buyer would pay more than the world price.

After the domestic price has risen to equal the world price, the domestic quantity supplied differs from the domestic quantity demanded. The supply curve shows the quantity of textiles supplied by Isolandian sellers. The demand curve shows the quantity of textiles demanded by Isolandian buyers. Because the domestic quantity supplied is greater than the domestic quantity demanded, Isoland sells textiles to other countries. Thus, Isoland becomes a textile exporter.
Although domestic quantity supplied and domestic quantity demanded differ, the textile market is still in equilibrium because there is now another participant in the market: the rest of the world. One can view the horizontal line at the world price as representing the rest of the world’s demand for textile. This demand curve is perfectly elastic because Isoland, as a small economy, can sell as many textiles as it wants at the world price.

Now consider the gains and losses from opening up trade. Clearly, not everyone benefits. Trade forces the domestic price to rise to the world price. Domestic producers of textiles are better off because they can now sell textiles at a higher price, but domestic consumers of textiles are worse off because they have to buy textiles at a higher price.

To measure these gains and losses, we look at the changes in consumer and producer surplus, which are shown in Table O3.1 and Figure O3.3. Before trade is allowed, the price of textiles adjusts to balance domestic supply and domestic demand. Consumer surplus, the area between the demand curve and the before-trade price, is area A + B. Producer surplus, the area between the supply curve and the before-trade price, is area C. Total surplus before trade, the sum of consumer and producer surplus, is area A + B + C.

| Table O3.1 Schedule for free trade effects on welfare in an exporting country |
|-----------------|-----------------|-----------------|
| Consumer surplus | A + B | A | – B |
| Producer surplus | C | B + C + D | + (B + D) |
| Total surplus | A + B + C | A + B + C + D | + D |

The area D shows the increase in total surplus and represents the gains from trade.

After trade is allowed, the domestic price rises to the world price. Consumer surplus is area A (the area between the demand curve and the world price). Producer surplus is area B + C + D (the area between the supply curve and the world price). Thus, total surplus with trade is area A + B + C + D.
These welfare calculations show who wins and who loses from trade in an exporting country. Sellers benefit because producer surplus increases by the area $B + D$. Buyers are worse off because consumer surplus decreases by the area $B$. Because the gains of sellers exceed the losses of buyers by the area $D$, total surplus in Isoland increases.

This analysis of an exporting country yields two conclusions:

- When a country allows trade and becomes an exporter of a good, domestic producers of the good are better off, and domestic consumers of the good are worse off.
- Trade raises the economic well-being of a nation in the sense that the gains of the winners exceed the losses of the losers.

The gains and losses of an importing country

Now suppose that the domestic price before trade is above the world price. Once again, after free trade is allowed, the domestic price must equal the world price. As Figure O3.4 shows, the domestic
quantity supplied is less than the domestic quantity demanded. The difference between the domestic quantity demanded and the domestic quantity supplied is bought from other countries, and Isoland becomes a textile importer.

In this case, the horizontal line at the world price represents the supply of the rest of the world. This supply curve is perfectly elastic because Isoland is a small economy and, therefore, can buy as many textiles as it wants at the world price.

Now consider the gains and losses from trade. Once again, not everyone benefits. When trade forces the domestic price to fall, domestic consumers are better off (they can now buy textiles at a lower price), and domestic producers are worse off (they now have to sell textiles at a lower price). Changes in consumer and producer surplus measure the size of the gains and losses, as shown in Table O3.2 and Figure O3.5. Before trade, consumer surplus is area A, producer surplus is area B + C, and total surplus is area A + B + C. After trade is allowed, consumer surplus is area A + B + D, producer surplus is area C, and total surplus is area A + B + C + D.

<table>
<thead>
<tr>
<th>Table O3.2 Schedule for free trade effects in an importing country</th>
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<td><strong>Before trade</strong></td>
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<tr>
<td>Consumer surplus</td>
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<td>Producer surplus</td>
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<td>Total surplus</td>
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The area D shows the increase in total surplus and represents the gains from trade.

These welfare calculations show who wins and who loses from trade in an importing country. Buyers benefit because consumer surplus increases by the area B + D. Sellers are worse off because producer surplus falls by the area B. The gains of buyers exceed the losses of sellers, and total surplus increases by the area D.

This analysis of an importing country yields two conclusions parallel to those for an exporting country:
• When a country allows trade and becomes an importer of a good, domestic consumers of the good are better off and domestic producers of the good are worse off.

• Trade raises the economic well-being of a nation in the sense that the gains of the winners exceed the losses of the losers.

Having completed our analysis of trade, we can better understand one of the Ten Lessons from Economics in Chapter 1: trade can make everyone better off. If Isoland opens its textile market to international trade, the change will create winners and losers, regardless of whether Isoland ends up exporting or importing textiles. In either case, however, the gains of the winners exceed the losses of the losers, so the winners could compensate the losers and still be better off. In this sense, trade can make everyone better off. But will trade make everyone better off? Probably not. In practice, compensation for the losers from international trade is rare. Without such compensation, opening an economy to international trade is a policy that expands the size of the economic pie, while perhaps leaving some participants in the economy with a smaller slice.

We can now see why the debate over trade policy is so often contentious. Whenever a policy creates winners and losers, the stage is set for a political battle. Nations sometimes fail to enjoy the gains from trade because the losers from free trade are better organised than the winners. The losers may turn their cohesiveness into political clout, lobbying for trade restrictions, such as tariffs or import quotas.

The effects of a tariff

The Isolandian economists next consider the effects of a tariff—a tax on imported goods. The economists quickly realise that a tariff on textiles will have no effect if Isoland becomes a textile exporter. If no one in Isoland is interested in importing textiles, a tax on textile imports is irrelevant. The tariff matters only if Isoland becomes a textile importer. Concentrating their attention on this case, the economists compare welfare with and without the tariff.

Figure O3.6 shows the Isolandian market for textiles. Under free trade, the domestic price equals the world price. A tariff raises the price of imported textiles above the world price by the amount of the tariff. Domestic suppliers of textiles, who compete with suppliers of imported textiles, can now sell their textiles for the world price plus the amount of the tariff. Thus, the price of textiles—both imported and domestic—rises by the amount of the tariff and is, therefore, closer to the price that would prevail without trade.

The change in price affects the behaviour of domestic buyers and sellers. Because the tariff raises the price of textiles, it reduces the domestic quantity demanded from \( Q^D_1 \) to \( Q^D_2 \) and raises the domestic quantity supplied from \( Q^S_1 \) to \( Q^S_2 \). Thus, the tariff reduces the quantity of imports and moves the domestic market closer to its equilibrium without trade.

Now consider the gains and losses from the tariff. Because the tariff raises the domestic price, domestic sellers are better off, and domestic buyers are worse off. In addition, the government raises revenue. To measure these gains and losses, we look at the changes in consumer surplus, producer surplus and government revenue. These changes are summarised in Table O3.3.

Before the tariff, the domestic price equals the world price. Consumer surplus, the area between the demand curve and the world price, is area \( A + B + C + D + E + F \). Producer surplus, the area between the supply curve and the world price, is area \( G \). Government revenue equals zero. Total surplus, the sum of consumer surplus, producer surplus and government revenue, is area \( A + B + C + D + E + F + G \).

Once the government imposes a tariff, the domestic price exceeds the world price by the amount of the tariff. Consumer surplus is now area \( A + B \). Producer surplus is area \( C + G \). Government revenue, which is the quantity of after-tariff imports times the size of the tariff, is the area \( E \). Thus, total surplus with the tariff is area \( A + B + C + E + G \).
To determine the total welfare effects of the tariff, we add the change in consumer surplus (which is negative), the change in producer surplus (positive), and the change in government revenue (positive). We find that total surplus in the market decreases by the area D + F. This fall in total surplus is called the **deadweight loss** of the tariff.

A tariff causes a deadweight loss simply because a tariff is a type of tax. Like most taxes, it distorts incentives and pushes the allocation of scarce resources away from the optimum. In this case, we can identify two effects. First, when the tariff on textiles raises the price of textiles above the world price, it encourages them to increase production of textiles from $Q^{S1}$ to $Q^{S2}$. Even though the cost of making these incremental units exceeds the cost of buying them at the world price, the tariff makes it profitable for domestic producers to manufacture them nonetheless. Second, when the tariff raises the price that domestic consumers have to pay, it encourages them to reduce consumption from $Q^{D1}$.
to $Q^d$. On Figure O3.6, area D represents the deadweight loss from the overproduction of textiles, and area F represents the deadweight loss from the under consumption. The total deadweight loss of the tariff is the sum of these two triangles.

**FYI**

**Import quotas: Another way to restrict trade**

Beyond tariffs, another way that nations sometimes restrict international trade is by putting limits on how much of a good can be imported. In this book, we will not analyse such a policy, other than to point out the conclusion: import quotas are much like tariffs. Both tariffs and import quotas reduce the quantity of imports, raise the domestic price of the good, decrease the welfare of domestic consumers, increase the welfare of domestic producers and cause deadweight losses.

There is only one difference between these two types of trade restriction: a tariff raises revenue for the government, whereas an import quota creates a surplus for those who obtain the licences to import. The profit for the holder of an import licence is the difference between the domestic price (at which he/she sells the imported good) and the world price (at which he/she buys it).

Tariffs and import quotas are even more similar if the government charges a fee for the import licences. Suppose the government sets the licence fee equal to the difference between the domestic price and the world price. In this case, all the profit of licence holders is paid to the government in licence fees, and the import quota works exactly like a tariff. Consumer surplus, producer surplus and government revenue are precisely the same under the two policies.

In practice, however, countries that restrict trade with import quotas rarely do so by selling the import licences. When New Zealand adopted import licensing in 1938 the government gave licences to those companies that had previously been importing the goods.

Import licensing was introduced in New Zealand in 1938 as a ‘temporary measure’ to deal with a currency crisis. Rather than being temporary, however, it became a major part of economic policy, protecting New Zealand manufacturers from overseas competition. Quotas were relaxed in the early 1950s but tightened again in 1958 when all imports again became subject to a quota.

Policymakers debated the benefits and costs of import licensing for decades. Decisions to remove quotas were made in the 1960s and 1970s, but some New Zealand industries argued that their very survival depended on retaining them. Proposals to replace quotas with equivalent tariffs led to an industry response that some New Zealand industries would need a 500 per cent tariff. Restricting imports through quotas can have a very large effect on the price of imported goods if the quotas are very small. To find out how large this price effect really was, in 1981 the New Zealand Government auctioned small quantities of licences to import to the highest bidders. Importers were prepared to pay high prices for the privilege of importing some goods. Eventually the quotas were increased to the point where it wasn’t worth paying much for a licence.

**IN THE NEWS**

**Confessions of a manufacturer**

Holders of import licences sometimes became quite rich doing what New Zealand governments wanted them to do, but what did they contribute to society?

Does protection cost jobs?

*By Alan Gibbs*

I have been involved in manufacturing almost everything – stapling machines, forklift trucks, washing machines, refrigerators, crockery, TV sets, bricks and bras.

I have to tell you that many of these businesses never made a contribution to the New Zealand economy.

In fact, worse than that, many were a deadweight cost.

Naturally, I and other manufacturers didn’t rush out and tell you that. No fear. We told you how indispensable we were to the New Zealand economy. In addition to enlisting the Manufacturers’ Federation
in our service, one of my businesses had a whole floor of people in a building on The Terrace who did nothing but tell politicians, bureaucrats and anyone else who would listen how valuable we were.

I am afraid, however, that the truth is that most of those businesses relied on heavy protection, they were a disaster for the economy, and ultimately when we had to shut them down, they were a disaster for us also.

A typical example was the television assembly industry.

We would go to Japan and explain to wide-eyed Japanese that our government wanted us to assemble their TV sets in New Zealand.

They could hardly believe their ears. They said no one assembles Japanese TV sets. ‘Do you have cheaper labour?’ they asked. ‘Make your own tubes? Transistors? Anything?’

‘No,’ we said, ‘we just have to make them in New Zealand, and because there are only a few of us permitted to do this, we make good money doing it.’

After much time and explanation and shaking of heads, the Japanese finally agreed to sell us the bits to assemble their sets in New Zealand.

However, they explained this was very costly.

They were making tens of thousands of sets a day and we only wanted parts for a few thousand each year.

At great cost they contracted outside people to come in, sort out all the pieces we needed and put them in boxes.

They got engineers to write out all the instructions in English for reassembly, and shipped them on their way.

Naturally, someone had to pay for this, and on average they charged us, as a special favour, 110 percent of the price of the finished goods – all boxed ready to go to the retailer – for the parts.

We then opened a factory, imported much machinery, paid the highest wages in the neighbourhood, employed the most intelligent engineers to decipher the instructions, used a great deal of electricity, and finally produced a TV set with negative New Zealand content at twice the imported price.

Thanks to Roger Douglas and David Caygill, that nonsense has gone in the TV industry and many others.

As a result, TV sets and many other goods have halved in price.

I think the saddest party in this story is not really the consumer who got ripped off but the people in that industry who worked their guts out but, due to no fault of their own, made no contribution to the society in which they worked in exchange for the goods and services they consumed.

They may as well have been digging holes and filling them in.

They were, in fact, on welfare and the welfare cost was much higher to society than the dole.

New Zealand is not a rich enough society to waste our talents this way. We must do what we are good at and buy what others are better at.


The lessons for trade policy

The team of Isolandian economists can now write to the new prime minister:

Dear Prime Minister,

You asked us three questions about opening up trade. After much hard work, we have the answers.

Question: If the government allowed Isolandians to import and export textiles, what will happen to the price of textiles and the quantity of textiles sold in the domestic textile market?

Answer: Once trade is allowed, the Isolandian price of textiles will be driven to equal the price prevailing around the world.

If the world price is now higher than the Isolandian price, our price will rise. The higher price will reduce the amount of textiles Isolandians consume and raise the amount of textiles that Isolandians produce. Isoland will, therefore, become a textile exporter. This occurs because, in this case, Isoland has a comparative advantage in producing textiles.

Conversely, if the world price is now lower than the Isolandian price, our price will fall. The lower price will raise the amount of textiles that Isolandians consume and lower the amount of textiles that Isolandians produce. Isoland will, therefore, become a textile importer. This occurs because, in this case, other countries have a comparative advantage in producing textiles.

Question: Who will gain from free trade in textiles and who will lose, and will the gains exceed the losses?

Answer: The answer depends on whether the price rises or falls when trade is allowed. If the price rises, producers of textiles gain, and consumers of textiles lose. If the price falls, consumers gain, and producers lose. In both cases, the gains are larger than the losses. Thus, free trade raises the total welfare of Isolandians.

Question: Should a tariff be part of the new trade policy?
Answer: A tariff has an impact only if Isoland becomes a textile importer. In this case, a tariff moves the economy closer to the no-trade equilibrium and, like most taxes, has deadweight losses. Although a tariff improves the welfare of domestic producers and raises revenue for the government, these gains are more than offset by the losses suffered by consumers. The best policy, from the standpoint of economic efficiency, would be to allow trade without a tariff.

We hope you find these answers helpful as you decide on your new policy.

Your faithful servants,
Isolandian economics team

Other benefits of international trade

The conclusions of the Isolandian economics team are based on the standard analysis of international trade. Their analysis uses the most fundamental tools in the economist’s toolbox: supply, demand, and producer and consumer surplus. It shows that there are winners and losers when a nation opens itself up to trade, but the gains to the winners exceed the losses of the losers.

The case for free trade can be made even stronger, however, because there are several other economic benefits of trade beyond those emphasised in the standard analysis. Here, in a nutshell, are some of these other benefits:

- **Increased variety of goods** – Goods produced in different countries are not exactly the same. Australian wine, for instance, is not the same as New Zealand wine. Free trade gives consumers in all countries greater variety from which to choose.

- **Lower costs through economies of scale** – Some goods can be produced at low cost only if they are produced in large quantities—a phenomenon called economies of scale. A firm in a small country cannot take full advantage of economies of scale if it can sell only in a small domestic market. Free trade gives firms access to larger world markets and allows them to realise economies of scale more fully.

- **Increased competition** – A company shielded from foreign competitors is more likely to have market power, which in turn gives it the ability to raise prices above competitive levels. This is a type of market failure. Opening up trade fosters competition and gives the invisible hand a better chance to work its magic.

- **Enhanced flow of ideas** – The transfer of technological advances around the world is often thought to be linked to the trading of the goods that embody those advances. The best way for a poor agricultural nation to learn about the computer revolution, for instance, is to buy some computers from abroad rather than trying to make them domestically.

Thus, free international trade increases variety for consumers, allows firms to take advantage of economies of scale, makes markets more competitive and facilitates the spread of technology. If the Isolandian economists also took these effects into account, their advice to their prime minister would be even more forceful.

The arguments for restricting trade

The letter from the economics team persuades the new Prime Minister of Isoland to consider allowing trade in textiles. She notes that the domestic price is now high compared to the world price. Free trade would, therefore, cause the price of textiles to fall and hurt domestic textile producers. Before implementing the new policy, she asks Isolandian textile companies to comment on the economists’ advice.

Not surprisingly, the textile companies oppose free trade in textiles. They believe that the government should protect the domestic textile industry from foreign competition. Let’s consider
some of the arguments they might give to support their position and how the economics team would respond.

**The jobs argument**

Opponents of free trade often argue that trade with other countries destroys domestic jobs. In our example, free trade in textiles would cause the price of textiles to fall, reducing the quantity of textiles produced in Isoland and thus reducing employment in the Isolandian textile industry. Some Isolandian textile workers would lose their jobs.

Yet free trade creates jobs at the same time that it destroys them. When Isolandians buy textiles from other countries, those countries obtain the resources to buy other goods from Isoland. Isolandian workers would move from the textile industry to those industries in which Isoland has a comparative advantage. The transition may impose hardship on some workers in the short run, but it allows Isolandians as a whole to enjoy a higher standard of living.

Opponents of trade are often sceptical that trade creates jobs. They might respond that everything can be produced more cheaply abroad. Under free trade, they might argue, Isolandians could not be profitably employed in any industry. As Chapter 3 explains, however, the gains from trade are based on comparative advantage, not absolute advantage. Even if one country is better than another country at producing everything, each country can still gain from trading with the other. Workers in each country will eventually find jobs in the industry in which that country has a comparative advantage.

**The national-interest argument**

When an industry is threatened with competition from other countries, opponents of free trade often argue that the industry is vital for national security or national interest. For example, if Isoland were considering free trade in steel, domestic steel companies might point out that steel is used to make guns and tanks. Free trade would allow Isoland to become dependent on foreign countries to supply steel. If a war later broke out and the foreign supply was interrupted, Isoland might be unable to produce enough steel and weapons to defend itself.

Economists acknowledge that protecting key industries may be appropriate when there are legitimate concerns over national security. Yet they fear that this argument may be used too quickly by producers eager to gain at consumers’ expense.

One should be wary of the national-security argument when it is made by representatives of industry rather than the military establishment. Companies have an incentive to exaggerate their role in national defence to obtain protection from foreign competition. A nation’s generals may see things very differently. Indeed, when the military is a consumer of an industry’s output, it would benefit from imports. Cheaper steel in Isoland, for example, would allow the Isolandian military to accumulate a stockpile of weapons at lower cost.

**The infant-industry argument**

New industries sometimes argue for temporary trade restrictions to help them get started. After a period of protection, the argument goes, these industries will mature and be able to compete with foreign competitors. Similarly, older industries sometimes argue that they need temporary protection to help them adjust to new conditions.

Economists are often sceptical about such claims, largely because the infant-industry argument is difficult to implement in practice. To apply protection successfully, the government would need to decide which industries will eventually be profitable and decide whether the benefits of establishing these industries exceed the costs of this protection to consumers. Yet ‘picking winners’ is extraordinarily difficult. It is made even more difficult by the political process, which often awards protection to those industries that are politically powerful. And once a powerful industry is protected from foreign competition, the ‘temporary’ policy is hard to remove.
In addition, many economists are sceptical about the infant-industry argument in principle. Suppose, for instance, that an industry is young and unable to compete profitably against foreign rivals, but there is reason to believe that the industry can be profitable in the long run. In this case, the owners of the firms should be willing to incur temporary losses to obtain the eventual profits. Protection is not necessary for an industry to grow. History shows that start-up firms often incur temporary losses and succeed in the long run, even without protection from competition.

**FYI**

Are trade restrictions always harmful?

Sometimes economists are portrayed as denying the right of a government to impose any restrictions on international trade even in the face of goods or services that are harmful to people. There are many cases, however, in which economists do approve of restrictions. Banning imports of harmful substances, such as hard drugs, or restricting the import of birds from areas of the world with outbreaks of bird flu, for instance, appear justified.

The overriding objective of all policy, including international trade policy, is the well-being of people. The existence of large deadweight losses arising from tariffs and quotas mean these will rarely be appropriate policies. Indeed, often the deadweight losses from these polices will more than offset the benefits of reducing the availability of the good or service. The benefits to producers protected by trade barriers create incentives to recommend restrictions on trade. These considerations suggest the following rules:

- Where a good or service is causing harm, use that policy which causes the smallest deadweight loss.
- Always treat foreign goods in the same way as domestic goods. If an imported good is causing harm, it is probable that a similar good produced in New Zealand is also causing harm.

It is very unlikely that a tariff would ever be the best policy.

**The unfair-competition argument**

A common argument is that free trade is desirable only if all countries play by the same rules. If firms in different countries are subject to different laws and regulations, then it is unfair (the argument goes) to expect the firms to compete in the international marketplace. For instance, suppose that the government of Neighbourland subsidises its textile industry by giving textile companies large tax breaks. The Isolandian textile industry might argue that it should be protected from this foreign competition because Neighbourland is not competing fairly.

Would it, in fact, hurt Isoland to buy textiles from another country at a subsidised price? Certainly, Isolandian textile producers would suffer, but Isolandian textile consumers would benefit from the low price. The case for free trade is no different: the gains of the consumers from buying at the low price would exceed the losses of the producers. Neighbourland’s subsidy to its textile industry may be a bad policy, but it is the taxpayers of Neighbourland who bear the burden. Isoland can benefit from the opportunity to buy textiles at a subsidised price.

**The protection-as-a-bargaining-chip argument**

Another argument for trade restrictions concerns the strategy of bargaining. Many policymakers claim to support free trade but, at the same time, argue that trade restrictions can be useful when we bargain with our trading partners. They claim that the threat of a trade restriction can help remove a trade restriction already imposed by a foreign government. For example, Isoland might threaten to impose a tariff on textiles unless Neighbourland removes its tariff on wheat. If Neighbourland responds to this threat by removing its tariff, the result can be freer trade.

The problem with this bargaining strategy is that the threat may not work. If it doesn’t work, the country faces a choice between two bad options. It can carry out its threat and implement the trade restriction, which would reduce its own economic welfare. Or it can back down from its threat, which would cause it to lose prestige in international affairs. Faced with this choice, the country would probably wish that it had never made the threat in the first place.
Case study

Trade agreements and the World Trade Organization

A country can take one of two approaches to achieving free trade. It can take a **unilateral** approach and remove its trade restrictions on its own. This is the approach that Great Britain took in the 19th century and that New Zealand has taken since the mid-1980s. Alternatively, a country can take a **multilateral** approach and reduce its trade restrictions while other countries do the same. In other words, it can bargain with its trading partners in an attempt to reduce trade restrictions around the world.

One example of the multilateral approach is the Australia–New Zealand Closer Economic Relations Trade Agreement (ANZCERTA), which in 1983 lowered trade barriers between Australia and New Zealand. Another is the General Agreement on Tariffs and Trade (GATT), which is a continuing series of negotiations among many of the world’s countries with the goal of promoting free trade. GATT was founded after the Second World War in response to the high tariffs and quotas imposed during the Great Depression of the 1930s. Many economists believe that the high tariffs contributed to the economic hardship during that period. GATT has successfully reduced the average tariff among member countries from about 40 per cent after the Second World War to about 5 per cent today.

The rules established under GATT are now enforced by an international institution called the World Trade Organization (WTO). The WTO was established in 1995 and has its headquarters in Geneva, Switzerland. As of July 2008, 153 countries have joined the organisation, accounting for 97 per cent of world trade. The functions of the WTO are to administer trade agreements, provide a forum for negotiations, and handle disputes that arise among member countries.

What are the pros and cons of the multilateral approach to free trade? One advantage is that the multilateral approach has the potential to result in freer trade than a unilateral approach because it can reduce trade restrictions overseas as well as at home. If international negotiations fail, however, the result could be more restricted trade than under a unilateral approach.

In addition, the multilateral approach may have a political advantage. In most markets, producers are fewer and better organised than consumers—and thus wield greater political influence. Reducing the Isolandian tariff on textiles, for example, may be politically difficult if considered by itself. The textile companies would oppose free trade, and the users of textiles who would benefit are so numerous that organising their support would be difficult. Yet suppose that Neighbourland promises to reduce its tariff on wheat at the same time that Isoland reduces its tariff on textiles. In this case, the Isolandian wheat farmers, who are also politically powerful, would back the agreement. Thus, the multilateral approach to free trade can sometimes win political support when a unilateral reduction cannot.

Conclusion

Economists and the public often disagree about free trade. For 50 years from 1938 successive New Zealand governments maintained import quotas and tariffs. Each time economists proposed removing the trade restrictions, businesses and other groups argued so persuasively that the protection remained in place. Eventually New Zealanders came to realise how much more they were paying for tradable goods than were people in the rest of the world and accepted a rapid removal of both quotas and tariffs. By 2000 the quotas had all been removed and tariffs remained only on a few sensitive items produced by low-wage workers. New Zealand is committed to removing the remaining tariffs by 2010.

To better understand economists’ view of trade, let’s continue our parable. Suppose that the Prime Minister of Isoland ignores the advice of her economics team and decides not to allow free trade in textiles. The country remains in the equilibrium without international trade.

Then, one day, some Isolandian inventor discovers a new way to make textiles at very low cost. The process is quite mysterious, however, and the inventor insists on keeping it a secret. What is odd is that the inventor doesn’t need traditional inputs such as cotton or wool. The only material input he requires is wine. And even more oddly, to manufacture textiles from wine, he hardly needs any labour input at all.

The inventor is hailed as a genius. Because everyone buys clothing, the lower cost allows all Isolanders to enjoy a higher standard of living. Workers who had previously produced textiles experience some hardship when their factories close, but eventually they find work in other industries. Some become wine makers and make the wine that the inventor turns into textiles. Others enter...
new industries that emerge as a result of higher Isolandian living standards. Everyone understands that the displacement of workers in outmoded industries is an inevitable part of technological progress and economic growth.

After several years, a newspaper reporter decides to investigate this mysterious new textiles process. She sneaks into the inventor’s factory and learns that the inventor is a fraud. The inventor has not been making textiles at all. Instead, he has been smuggling wine abroad in exchange for textiles from other countries. The only thing that the inventor had discovered was the gains from international trade.

When the truth is revealed, the government shuts down the inventor’s operation. The price of textiles rise, and workers return to jobs in textile factories. Living standards in Isoland fall back to their former levels. The inventor is jailed and held up to public ridicule. After all, he was no inventor. He was just an economist.

### Summary

- The effects of free trade can be determined by comparing the domestic price without trade to the world price. A low domestic price indicates that the country has a comparative advantage in producing the good and that the country will become an exporter. A high domestic price indicates that the rest of the world has a comparative advantage in producing the good and that the country will become an importer.
- When a country allows trade and becomes an exporter of a good, producers of the good are better off, and consumers of the good are worse off. When a country allows trade and becomes an importer of a good, consumers are better off, and producers are worse off. In both cases, the gains from trade exceed the losses.
- A tariff – a tax on imports – moves a market closer to the equilibrium that would exist without trade and, therefore, reduces the gains from trade. Although domestic producers are better off and the government raises revenue, the losses to consumers exceed these gains.
- There are various arguments for restricting trade: protecting jobs, defending national security, helping infant industries, preventing unfair competition and responding to foreign trade restrictions. Although some of these arguments have some merit in some cases, economists believe that free trade is usually the better policy.

### Key concepts

- world price, p. 30
- tariff, p. 34

### Questions for review

1. What does the domestic price that prevails without international trade tell us about a nation’s comparative advantage?
2. When does a country become an exporter of a good? An importer?
3. Draw the supply and demand diagram for an importing country. What is consumer surplus and producer surplus before trade is allowed?
4. What is consumer surplus and producer surplus with free trade? What is the change in total surplus?
5. Describe what a tariff is, and its economic effects.
6. List five arguments often given to support trade restrictions. How do economists respond to these arguments?
7. What is the difference between the unilateral and multilateral approaches to achieving free trade? Give an example of each.

### Problems and applications

1. New Zealand represents a small part of the world lemon market.
   a. Draw a diagram depicting the equilibrium in the New Zealand lemon market without international trade. Identify the equilibrium price, equilibrium quantity, consumer surplus and producer surplus.
   b. Suppose that the world lemon price is below the New Zealand price before trade, and that the New Zealand lemon market is now opened to trade. Identify the new equilibrium price, quantity consumed, quantity produced domestically and quantity imported. Also show the change in the surplus of domestic consumers and producers. Has domestic total surplus increased or decreased?
2. The world price of wine is below the price that would prevail in New Zealand in the absence of trade.
   a. Assuming that New Zealand imports of wine are a small part of total world wine production, draw a graph for the New Zealand market for wine under free trade. Identify consumer surplus, producer surplus and total surplus in an appropriate table.
   b. Now suppose that an unusual shift of the Gulf Stream leads to an unseasonably cold summer in Europe, destroying much of the grape harvest there. What effect does this shock have on the world price of wine? Using your graph and table from part (a), show the effect on consumer surplus, producer surplus and total surplus.
surplus in New Zealand. Who are the winners and losers? Is New Zealand as a whole better or worse off?

3 Suppose that the government imposes a tariff on imported washing machines to protect the New Zealand washing machine industry from foreign competition. Assuming that New Zealand is a price taker in the world washing machine market, show on a diagram: the change in the quantity of imports, the loss to New Zealand consumers, the gain to New Zealand manufacturers, government revenue and the deadweight loss associated with the tariff. The loss to consumers can be divided into three pieces: a transfer to domestic producers, a transfer to the government and a deadweight loss. Use your diagram to identify these three pieces.

4 When China’s clothing industry expands, the increase in world supply lowers the world price of clothing.
   a Draw an appropriate diagram to analyse how this change in price affects consumer surplus, producer surplus and total surplus in a nation that imports clothing, such as New Zealand.
   b Now draw an appropriate diagram to show how this change in price affects consumer surplus, producer surplus and total surplus in a nation that exports clothing, such as Fiji.
   c Compare your answers to parts (a) and (b). What are the similarities and what are the differences? Which country should be concerned about the expansion of the Chinese textile industry? Which country should be applauding it? Explain.

5 Imagine that banana growers lobbied for a tariff on imported bananas. They argue that this tariff would both raise tax revenue for the government and raise employment in the New Zealand banana industry. Do you agree with these claims? Is it a good policy?

6 Consider the arguments for restricting trade.
   a Assume you are a lobbyist for paper, an established industry suffering from low-priced foreign competition. Which two or three of the five arguments do you think would be most persuasive to a parliamentary select committee? Explain your reasoning.
   b Now assume you are an astute student of economics. Although all the arguments for restricting trade have their shortcomings, name the two or three arguments that seem to make the most economic sense to you. For each, describe the economic rationale for and against these arguments for trade restrictions.

7 Suppose that a technological advance in Japan lowers the world price of refrigerators.
   a Assume the New Zealand is an importer of refrigerators and there are no trade restrictions. How does the technological advance affect the welfare of New Zealand consumers and New Zealand producers? What happens to total surplus in New Zealand?
   b Now suppose New Zealand has a quota on refrigerator imports. How does the Japanese technological advance affect the welfare of New Zealand consumers, New Zealand producers and the holders of import licences?

8 Although New Zealand removed most of its tariffs during the 1990s, it still responds to ‘dumping’ complaints (for example, that South Korean manufacturers are ‘dumping’ washing machines and refrigerators at unfair prices) by imposing tariffs (‘anti-dumping duties’) on such goods. But who bears the cost of an anti-dumping duty?

9 The nation of Textilia does not allow imports of clothing. In its equilibrium without trade, a T-shirt costs $20, and the equilibrium quantity is three million T-shirts. One day, after reading Adam Smith’s The Wealth of Nations while on holiday, the president decides to open the Textilian market to international trade. The market price of a T-shirt falls to the world price of $16. The number of T-shirts consumed in Textilia rises to four million, while the number of T-shirts produced declines to one million.
   a Illustrate the situation just described in a graph. Your graph should show all the numbers.
   b Calculate the change in consumer surplus, producer surplus, and total surplus that results from opening up trade. (Hint: Recall that the area of a triangle is \( \frac{1}{2} \times \text{base} \times \text{height} \).)

10 Kawmin is a small country that produces and consumes jelly beans. The world price of jelly beans is $1 per bag, and Kawmin’s domestic demand and supply for jelly beans are governed by the following equations:

\[
\begin{align*}
\text{Demand:} & \quad Q^D = 8 - P \\
\text{Supply:} & \quad Q^S = P
\end{align*}
\]

Where \( P \) is in dollars per bag and \( Q \) is in bags of jelly beans.
   a Draw a well-labelled graph of the situation in Kawmin if the nation does not allow trade. Calculate the following (recalling that the area of a triangle is \( \frac{1}{2} \times \text{base} \times \text{height} \)): the equilibrium price and quantity, consumer surplus, producer surplus and total surplus.
   b Kawmin then opens the market to trade. Draw another graph to describe the new situation in the jelly bean market. Calculate the equilibrium price, quantities of consumption and production, imports, consumer surplus, producer surplus and total surplus.
   c After a while, the President of Kawmin responds to the pleas of jelly bean producers by placing a $1 per bag tariff on jelly bean imports. On a graph, show the effects of this tariff. Calculate the equilibrium price, quantities of consumption and production, imports, consumer surplus, producer surplus, government revenue and total surplus.
   d What are the gains from opening up trade? What are the deadweight losses from restricting trade with the tariff? Give numerical answers.