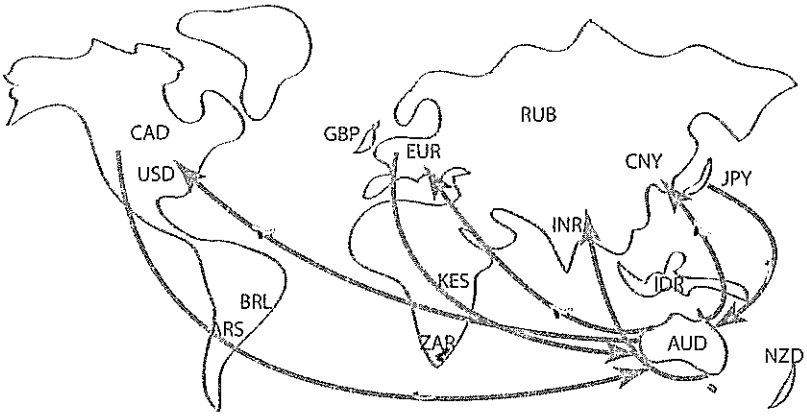


2 Free trade and protection

Introduction

This chapter will enable students to understand:

- the significance of trade to the Australian economy;
- how nations gain from specialisation and trade, and the sources of comparative advantage;
- the forms of protection from international competition, and the effect of protection on trade and market efficiency;
- arguments for and against trade liberalisation; and
- the influence of trade blocs, agreements, and organisations on world trade.

The significance of international trade

The Australian economy has always relied on the international sector - not just for the sale and purchase of goods and services, but also for funds for investment. Historically, Australia has been a great exporter of primary commodities (minerals and agricultural products); an importer of manufactured goods; and an importer of financial capital. This has meant that trade and foreign investment have played a very significant role in the economic development of our economy.

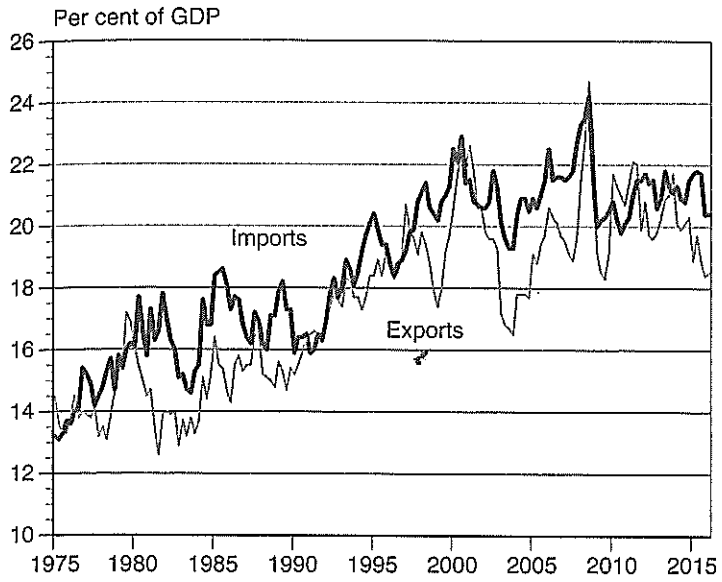
Traditionally, Australia has been described as a small open economy. The 'small' refers to the size of its economy in terms of both population and total production or Gross Domestic Product. But Australia could no longer be described as a small economy. Australia's population has now grown to over 24 million and Australia's annual GDP is now around $1.7 trillion.

Australia has in fact become the world's 13th largest economy. It would be more correct to refer to Australia as a medium size open economy. The 'open' means that the movement of goods, services and capital is generally unrestricted, that is, they can move freely between Australia and the rest of the world. Protectionist policies such as the use of tariffs, subsidies and quotas hamper the free movement of goods and services, and Australia has reduced its level of protection to domestic industry to historically low levels.

Trade is important because it can expand a nation's consumption possibilities by providing access to other countries' production through imports. Exporting increases a nation's production, while importing increases consumption. A country gains when it exports goods it can produce a relatively low cost and import goods it produces at a relatively high cost. Exports pay for the imports a country needs to enjoy high standards of living. Exporting enables Australia firms to reach a potential market over 7 billion people. Importing allows Australian households to consume goods and services that are either not produced in Australia or are too costly to produce. Engaging in trade permits increased specialisation, economies of scale, increased productivity and higher real incomes. There is a strong link between trade and economic growth. The countries that have experienced the fastest growth rates in trade have also achieved high rates of per capita income growth. Trade has been an important 'engine of growth' for many countries. This has certainly been the case for explaining the rapid growth of the East Asian region - economies such as Japan, Korea, Singapore and China.

International trade has become more important to the Australian economy over time. In 1970, exports and imports each accounted for around 13 per cent of Australia's GDP. By 2016, exports and imports had increased to over 20 per cent of GDP (refer to figure 2.1). This means that around one fifth of Australia's income is sourced from exports and that one in five jobs is directly linked to trade. On the world stage, Australia is a relatively small exporter - Australia accounts for just 1.3 per cent of global exports, compared with around 11 per cent for China, the world's leading exporter (refer to figure 2.2). Australia is ranked 22nd as a world exporter of goods and services and yet is the 13th largest economy. Does this mean that Australia is lagging in the trade stakes? No, not necessarily. Notice that of the countries shown, Australia is the only economy located in the southern hemisphere. Remember that most of the world's major economies are located in the northern hemisphere. So in a way, Australia is probably 'punching above its weight'.

A country's level of exports will be determined by a number of factors: the size and structure of the economy, its relative competitiveness and its location. Australia is an island continent, relatively isolated from the rest of the world. If Australia was located in Europe, or shared a border with the United States (similar to Canada), then its ranking in world exports would be much higher. In fact, on a per capita basis, Australia's export performance could be considered quite remarkable.



The importance of trade to the Australian economy has increased over time - both exports and imports as a proportion of GDP have increased from around 14% in 1975 to 20% in 2015.

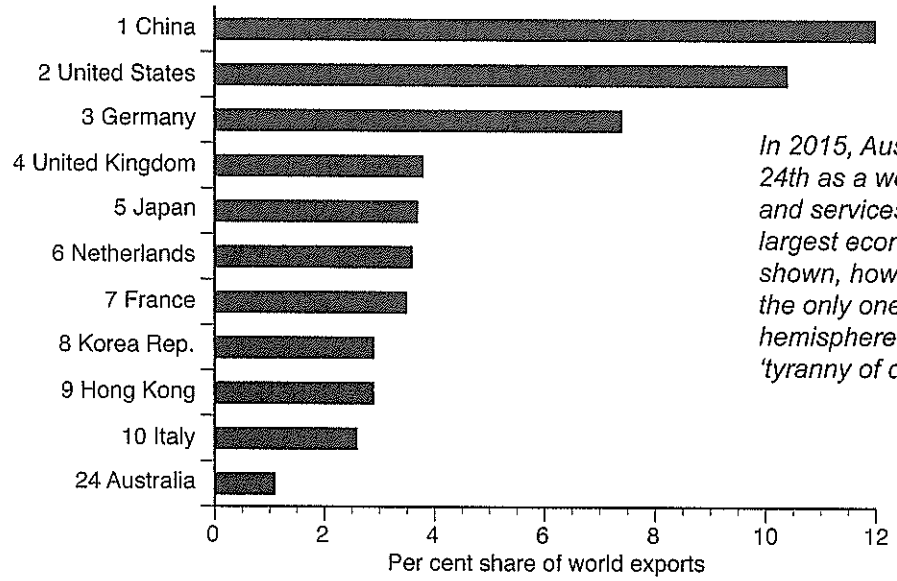
Figure 2.1 Australia's trade intensity

A useful way to measure the importance of international trade is to calculate the share of trade in its Gross Domestic Product (GDP). This trade-to-GDP ratio is often called the 'trade openness ratio' or the 'trade intensity ratio'. It is a measure of the average value of exports and imports (of both goods and services) as a percentage of GDP. The ratio can be expressed thus:

$$\text{Trade intensity} = [\tfrac{1}{2}(X + M)/GDP] \times 100$$

Australia's trade intensity has increased significantly over the past few decades, rising from 14 per cent in 1975 to 20 per cent by 2015. However, when compared with other developed economies, Australia's trade intensity

Figure 2.2 Australia's rank in global exports



In 2015, Australia was ranked 24th as a world exporter of goods and services and yet was the 13th largest economy. Of the countries shown, however, Australia is the only one in the southern hemisphere, highlighting Australia's 'tyranny of distance'.

Trade to GDP ratio	2015
Australia	20
Canada	32
China	22
Germany	47
Italy	30
Japan	18
Netherlands	83
Sweden	45
United Kingdom	27
United States	13

Source: World Bank

is relatively low. European economies tend to have a relatively high trade intensity because of the ease of trading within the Euro zone. For the countries shown in the table, only the USA and Japan have lower trade to GDP ratios than Australia. This is explained by the size of their domestic economies, which enables them to reap the advantages of economies of scale. Large economies such as the United States and Japan do not need to rely on trade as much as a smaller economy such as Australia because domestic competition is so strong. Australia needs to produce for the world market in order to gain the same benefits of competition.

What factors determine a country's trade intensity? Factors such as the relative size of the economy, its location relative to foreign markets and the extent of barriers to trade – both natural and artificial. While Australia has been lowering its artificial barriers such as tariffs, it is hindered by more natural barriers such as high transport costs as a result of its geographic isolation. A famous Australian author, Geoffrey Blainey, referred to the problem of Australia's isolation as its 'tyranny of distance'. Australia has also not had the opportunity of being part of a major regional trading bloc such as the European Union (EU) or ASEAN. The structure of Australia's economy is also a little different to other similar sized economies. Australia has relied more on primary industries (agriculture and mining) and less on manufacturing in terms of exports.

The purpose of economic growth is to enable a high level of consumption and a high standard of living. Exports add to national income, which can then be used to consume imports. Given that Australia has a small economic base in terms of labour and capital, producing for the world market is a rational strategy to promote economic growth and higher living standards.

The gains from specialisation and trade

Nations trade because it is advantageous to do so. Any form of trade or exchange involves gains to both buyer and seller, whether it be at the international or personal level. The exchange of goods and services is a necessary characteristic of a specialised economy. Specialisation is not possible unless trade takes place. Teachers, doctors, tradesmen and farmers are specialists. The income they earn is used to purchase the goods and services they require which they do not produce themselves. People specialise in tasks to which they are best suited, that is, in which they have an advantage.

Likewise, countries specialise in the production of certain goods and services to which they are best suited. Surplus production can then be exchanged or traded for other goods and services. The alternative to specialisation is self-sufficiency. This would be equivalent to people having to grow their

own food, make their own clothes, build their own houses, and provide for all their own medical and other professional services. In other words, a 'Robinson Crusoe'-type economy.

International trade involves specialisation and exchange. International specialisation is made possible because of the uneven distribution and quality of resources between countries. Australia for example is well endowed with natural resources such as arable land, forests, minerals and energy supplies. The United States has a large amount of capital and labour at its disposal. The Japanese economy is very rich in terms of capital and labour, but lacks natural resources. Differences in the distribution of resources in terms of both quantity and quality will affect the cost of supplying goods and services. If production costs differ, then countries will benefit by specialising in the goods and services in which they are most efficient, exporting the surplus and importing those goods and services in which they are least efficient at producing domestically.

In economics, relative efficiency is measured in terms of opportunity cost. Opportunity cost reflects the real cost of production - the value of all resources that must be used to produce a good or service. For example, an accountant may be highly skilled at two tasks - auditing and word processing. Should she divide her time between both tasks or employ a secretary to do the word processing, even though she is a better typist than the secretary? In this example, the accountant is said to have an absolute advantage over the secretary in both auditing and word processing, but her relative advantage is in auditing.

The secretary is not absolutely efficient in either task, but he is relatively more efficient than the accountant in word processing. Relative advantage is called comparative advantage. The accountant is said to have an absolute advantage in both tasks, but has a comparative advantage in auditing while the secretary has a comparative advantage in word processing. In other words, the accountant would gain if she devoted all her time to her best task - auditing - while employing another person to perform the other task. Novak Djokovic is an exceptional tennis player. He may also excel at cooking baklava and other desserts . Should Novak divide his time between tennis and cooking? Of course not, Novak is much better off by devoting his time to what he does relatively best - play tennis - and pay someone to cook his favourite desserts. In other words Novak's comparative advantage is in playing tennis.

At the international level, countries may also possess an absolute advantage or a comparative (relative) advantage in the production of goods and services. Countries will be better off if they export goods and services in which they possess a comparative advantage and import those goods and services in which they have a comparative disadvantage.

The principle of absolute advantage

A country is said to have an absolute advantage in the production of a good over another country if it can produce that good more efficiently than the other country. 'More efficiently' can be defined as using less resources to produce a given quantity of output; or to producing more output from a given quantity of resources. A simple model demonstrates how countries can gain through specialisation based on absolute advantage. The key assumptions for this model are:

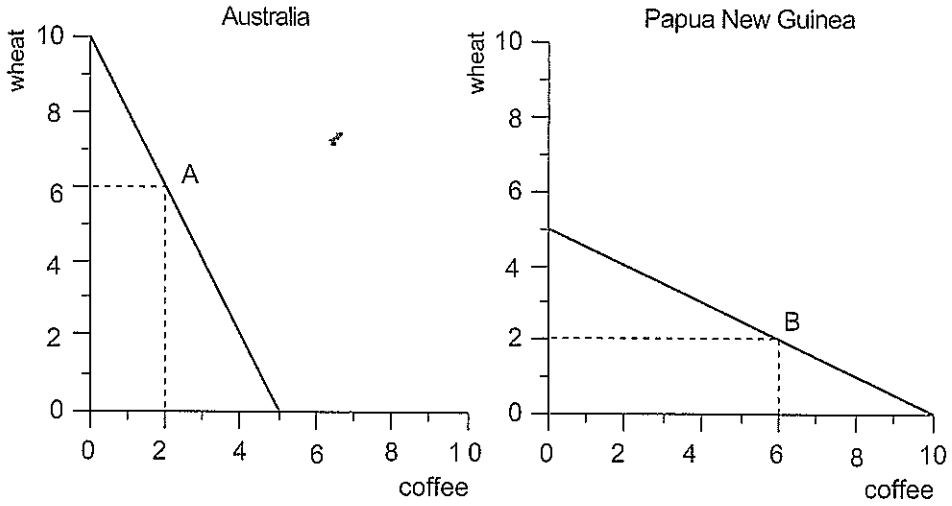
- the world consists of two countries - Australia and Papua New Guinea;
- each country produces and consumes two goods - wheat and coffee;
- resources are perfectly mobile - resources can be shifted between industries with zero displacement cost; and
- if trade takes place, there are no transport costs.

Figure 2.3 illustrates the model of absolute advantage. It shows the production possibilities for the two countries, assuming that they devote all their resources to producing either wheat or coffee. If Australia only produced wheat its total output would be 10 units. If it used all its resources to produce just coffee, then its output would be 5 units. Papua New Guinea with its resources can produce either 5 units of wheat or 10 units of coffee. This information is used to construct a production possibility frontier for each country. Australia is said to have an absolute advantage in the production of wheat, while Papua New Guinea has an absolute advantage in the production of coffee. In isolation, each country can choose to produce at any point on their production possibility curve. This will depend on the country's preferences for the two products.

Assume that Australia chooses to produce at point A while Papua New Guinea chooses to produce at point B. Before specialisation the 'world' production of wheat is 8 units, while the total production of coffee is also 8 units. If both countries specialise in producing the goods in which they have an absolute advantage, then total production will increase. Australia will specialise in producing wheat and Papua New Guinea will specialise in producing coffee. The total production of both wheat and coffee will now increase to 10 units – a net increase of two units of output for each good. One possible trading position is shown in the bottom table of figure 2.3. Australia may choose to keep 7 wheat and export 3 to Papua New Guinea in return for 3 units of coffee. In this case the terms of trade would equal 1 unit of wheat to 1 unit of coffee.

The terms of trade represents the rate at which different commodities exchange for each other between countries. The terms of trade will always lie somewhere between the opportunity cost ratios for the two goods being traded. For example, the opportunity cost of 1 unit of wheat in Australia is 0.5 coffee, while in Papua New Guinea, the opportunity cost of 1 wheat is 2

Production possibilities			
Country	wheat		coffee
Australia	10	or	5
Papua New Guinea	5	or	10



			Australia	PNG	Total
A	Before specialisation	wheat	6	2	8
		coffee	2	6	8
B	After specialisation	wheat	10	0	10
		coffee	0	10	10
C	After trade	wheat	7	3	10
		coffee	3	7	10

Figure 2.3 Absolute advantage

coffee. Australia will export wheat as long as it can get more than 0.5 coffee. New Guinea, on the other hand will export coffee as long at it receives more than 0.5 units of wheat. After specialising and trading, each country is able to consume one more unit of both wheat and coffee. Each country is then able to enjoy a higher standard of living - to consume outside their production possibility frontier!

What if one country had the absolute advantage in both goods, that is, one country could produce both commodities more efficiently? Would it still be possible for both countries to gain in terms of higher consumption? To answer this question and show that it is possible for countries to gain even though they do not have an absolute advantage we need to look at the theory of comparative advantage.

The principle of comparative advantage

When a country has an absolute advantage in the production of both goods, its comparative advantage lies where its absolute advantage is greatest. The country that has no absolute advantage has a comparative advantage in the good where its absolute disadvantage is smallest. Comparative advantage refers to a country's relative advantage. To illustrate the theory of comparative advantage for a country we will employ the same assumptions we used for the model of absolute advantage, except the two countries will be Australia and Japan, and the two commodities will be computers and clothing.

Figure 2.4 illustrates the production possibilities frontiers for both Japan and Australia. Japan has an absolute advantage in the production of both computers and clothing. It can produce a greater output from a given quantity of resources than can Australia. Japan's greatest absolute advantage, however, is in computers, while Australia's least disadvantage is in clothing. In other words, Japan has a comparative advantage in computers and Australia has a comparative advantage in clothing.

Comparative advantage is in fact measured in terms of opportunity cost - the value of the alternative foregone. For Australia, the opportunity cost of producing six computers is the twelve units of clothing that cannot be produced. The opportunity cost of one computer therefore, is two units of clothing. In Japan, the opportunity cost of one computer is only one unit of clothing.

The real or opportunity cost of producing computers is lower in Japan than in Australia. Conversely, the opportunity cost of producing twelve units of clothing in Australia is the six computers foregone. The real cost of one unit of clothing in Australia, therefore is 0.5 of a computer. In Japan, the cost of a unit of clothing is one computer. Clothing is thus relatively cheaper to produce in Australia than in Japan (see figure 2.4).

Comparative advantage can now be defined in terms of opportunity costs. A country is said to have a comparative advantage in the production of a good over another country, if the opportunity cost of producing that good is lower than in the other country. In our example, Australia has a lower opportunity cost in producing clothing while Japan has a lower opportunity cost in producing computers. Australia should therefore specialise in producing clothing while Japan should devote its resources to producing computers. Both countries will gain if they specialise on the basis of comparative advantage and then trade their surplus production

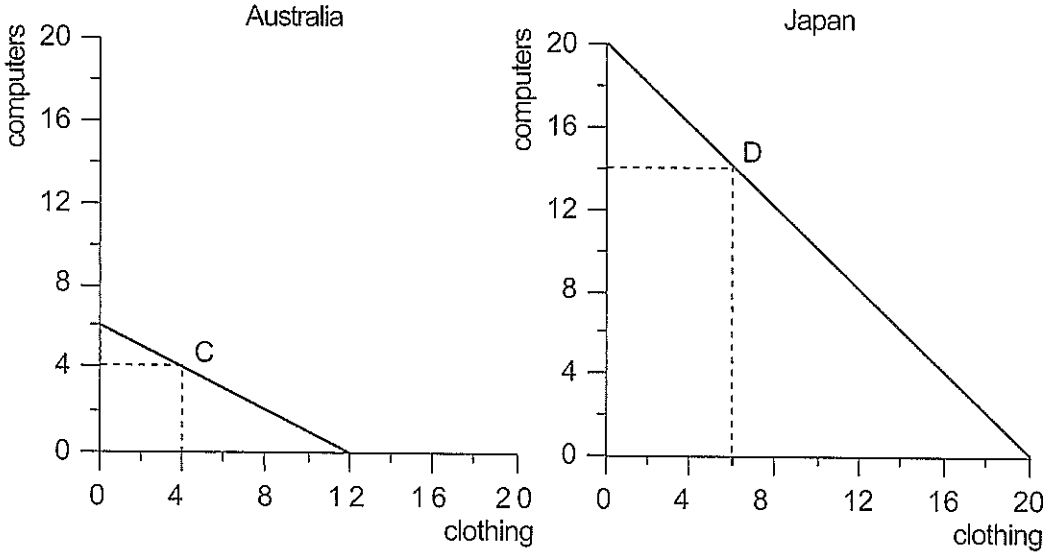
The results are summarised in figure 2.4, given that Australia chooses to produce and consume initially at point C on its production possibility curve, while Japan chooses point D on its production frontier. After specialisation, total production of both computers and clothing has increased by two units. Australia will export clothing to Japan and import computers. The terms

of trade will again lie between the opportunity cost ratios. Australia will want to receive more than 0.5 computers for each unit of clothing it sells to Japan, while Japan will want to receive more than 1 unit of clothing for each computer it exports to Australia. In figure 2.4, one possible term of trade is shown - 1 clothing equals 1.4 computers or 1 computer equals 0.71 clothing.

In our example Australia keeps 5 clothing and exports the remaining 7 units. Japan keeps 15 computers and exports the remaining 5 units. After trade, both Australia and Japan consume 1 more unit of both clothing and computers than before trade. Australia and Japan can now both consume outside their production possibility frontier. Our model demonstrates the gains from specialisation and trade – total consumption and living standards are higher compared with self-sufficiency.

Figure 2.4 Comparative advantage

Production Possibilities				Opportunity Costs		
Country	Computers		Clothing	Good	Australia	Japan
Australia	6	or	12	1 computer	2 clothing	1 clothing
Japan	20	or	20	1 clothing	0.5 computer	1 computer



			Australia	Japan	Total
A	Before specialisation	computers	4	14	18
		clothing	4	6	10
B	After specialisation	computers	0	20	20
		clothing	12	0	12
C	After trade	computers	5	15	20
		clothing	5	7	12

The theory of comparative advantage has demonstrated that countries gain by specialising in the production of goods in which they have an opportunity cost advantage. That is, in goods which they are relatively more cost efficient. In fact, it is comparative advantage and not absolute advantage that is the basis for international trade. It is the difference in relative and not absolute costs that is important.

Figure 2.5 provides a summary of the theory of international specialisation. In Case 1, Australia has an absolute advantage in wheat and Papua New Guinea has an absolute advantage in coffee. But the reason why both countries are able to gain as a result of specialisation and trade is because their opportunity costs differ. Australia has a lower opportunity cost in producing wheat (0.5 coffee) compared with Papua New Guinea (2 coffee), while the opportunity cost of producing coffee is lower in New Guinea (0.5 wheat) compared with Australia (2 wheat). This means that Australia actually has a comparative advantage in wheat and Papua New Guinea has a comparative advantage in coffee. This is why specialisation results in an increase in production. Absolute advantage is irrelevant in explaining why countries gain from trade.

In Case 2, Japan has an absolute advantage in the production of both goods but is relatively more efficient in computers while Australia is relatively more efficient in clothing. Again there is a difference in opportunity costs, that is, there is a difference in comparative costs. When both countries specialise based on comparative advantage they will increase their consumption. In Case 3, country A has an absolute advantage in the production of both goods but has no comparative advantage since opportunity costs are the same in both countries. In other words absolute advantage on its own is not sufficient to explain international specialisation. International trade hinges on comparative advantage.

Figure 2.5 The gains from specialisation

Case 1	Wheat		Coffee	Comment
Australia	10	or	5	Australia has an absolute (and comparative) advantage in wheat, Papua New Guinea in coffee.
Papua N.G	5	or	10	
Case 2	Computers		Clothing	Japan has an absolute advantage in both items. Australia has a comparative advantage in clothing, and Japan has a comparative advantage in computers.
Australia	6	or	12	
Japan	20	or	20	
Case 3	Good X		Good Y	Neither country has a comparative advantage, as opportunity cost ratios are the same
Country A	100	or	50	
Country B	60	or	30	

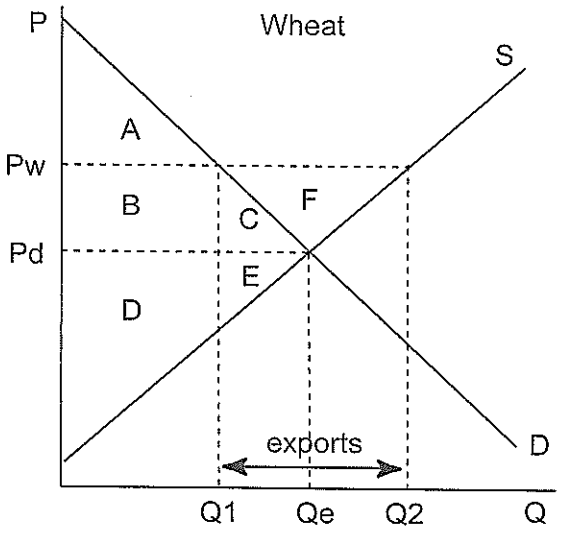
Using the demand/supply model

Comparative advantage and the gains from trade can also be illustrated using the model of demand and supply. A country will export a good or service if it has a comparative advantage in producing that good. Comparative advantage is measured using opportunity cost. The model of demand and supply determines the relative price of a good which is the same thing as opportunity cost. This means that by comparing the domestic price of a good with the world price we can determine whether a country has a comparative advantage. If the domestic price is lower than the world price, then the country must be relatively more efficient at producing this good. In other words, it has a lower opportunity cost - a comparative advantage - and it will benefit by exporting this good to the rest of the world.

Consider the market for wheat shown in figure 2.6. Australia is an efficient producer of wheat – the domestic price of wheat (Pd) is lower than the world price of wheat (Pw). Australia has a comparative advantage in wheat production. If Australia enters the international market it can sell its wheat at the higher world price. Wheat consumption in Australia will fall to Q1 but wheat production will increase to Q2. Australia will now export wheat equal to Q1Q2. Notice that after trade, wheat producers gain by selling more wheat and receiving a higher price. Wheat consumers in Australia however will lose because they consume less wheat and pay a higher price. Trade always results in one group gaining while another group loses. Is there any point in trading? Yes, because the gains always exceed the losses. Australian producers of wheat gain more than wheat consumers lose! Australia will be better off by exporting – economic welfare will increase as a result of exports.

We can use the concepts of consumer and producer surplus to show the welfare effects of exports using figure 2.6. Before trade, consumer surplus

Figure 2.6 The gains from exports



If the world price for wheat is above the domestic price for wheat, Australia has a comparative advantage in producing wheat and will export wheat. Wheat exports = Q1Q2.

Australian wheat producers gain, but domestic wheat consumers lose. Consumer surplus falls by areas B and C. Producer surplus increases by areas B, C and F. Notice that producers gain more than consumers lose. Area F is the net increase in total surplus or economic welfare.

equals the area A + B + C, while producer surplus equals the area D + E. After trade, consumer surplus decreases to area A - consumers lose areas B and C, due to the higher price, which is transferred to domestic producers. But not only do producers gain areas B and C, they also gain area F. Area F represents the net gain from exports. Exports therefore result in a net increase in economic welfare.

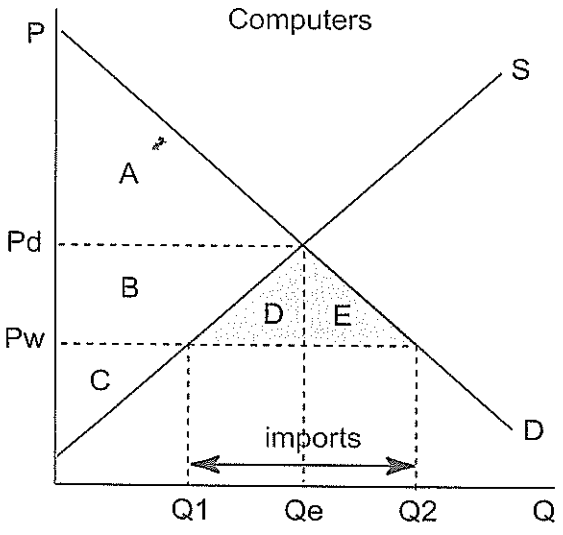
Can a country gain from imports? If a country does not have a comparative advantage in producing a good, then the domestic price will exceed the world price. This means that the rest of the world is relatively more cost efficient in producing the good. In this case, it will benefit the country by importing the good. Imports bring benefits in the same way as exports. Consider the market for computers in figure 2.7. The world price of computers (Pw) is lower than the Australian price of computers (Pd). This means that Australia is not as efficient in producing computers compared with the rest of the world. It will pay Australia to import computers at the lower world price. Consumption will increase to Q2 while domestic computer production will fall to Q1. Computer imports will equal Q1Q2. In the case of imports, domestic consumers gain from lower prices and increased consumption. Domestic producers of computers lose – they receive lower prices and sell less. However, consumers gain more than producers lose, so that overall economic welfare is again increased.

Figure 2.7 uses the concepts of consumer and producer surplus to show the welfare effects of imports. Before trade, consumer surplus equals the area A, while producer surplus equals the area B + C. After trade, consumer surplus increases to area A + B + D + E - consumers gain areas B, D and E due to the lower price. But after trade, producer surplus falls to area C - domestic producers lose area B to consumers. Area D + E represents the net gain from imports.

Figure 2.7 The gains from imports

If the world price for computers is below the domestic price for computers then Australia does not have a comparative advantage in producing computers and will import computers. Computer imports = Q1Q2. Australian consumers of computers will gain, but domestic computer producers will lose.

Consumer surplus increases by areas B, D & E. Producer surplus decreases by area B. Notice that consumers gain more than producers lose. Area D+E is the net increase in total surplus or economic welfare.



The surprising result is that imports also create a net increase in economic welfare - just like exports. It is important to realise that countries gain from both exports and imports. Both result in a net increase in total surplus. In the case of exports, producers gain more than consumers lose, while in the case of imports, consumers gain more than producers lose. By this analysis, countries should try to increase both exports and imports over time.

The sources of comparative advantage

What determines a country's comparative advantage? What are the sources of comparative advantage? Comparative advantage is determined by the quantity and quality of the nation's human, natural and capital resources, and by technological progress. The table below shows the areas of specialisation for several countries. Comparative advantage can be based on differences in climate and endowment of natural resources. Australia has traditionally had a comparative advantage in many primary industries such as agriculture and mining: wheat, wool, beef, coal iron, ore and natural gas. The Middle East is endowed with vast oil supplies, Canada has extensive forests and Brazil produces most of the world's coffee. Comparative advantage is not just limited to endowments of natural resources. It is also determined by the quantity and quality of a country's labour and capital resources. For example, Switzerland is renowned for its watch making industry and the provision of banking services. The United States has developed a comparative advantage in the television and film industry as well as computer software. Comparative advantage can and does change over time with improvements in technology and productivity. Japan became a major manufacturing nation post World War II. Over time Japan developed a comparative advantage in many industries, including motor vehicles and electronics. China has become a major producer of clothing and households appliances. Australia has now developed a comparative advantage in education services.

Country	*Specialisation*
Australia	*iron ore, coal, education*
Brazil	*coffee*
China	*textiles, shoes, electronics*
France	*wine*
Germany	*motor vehicles*
Korea	*motor vehicles, electronics*
Saudi Arabia	*oil*
Switzerland	*watches, banking services*
United States	*software, aircraft, movies*

Not all countries take advantage of the theory of comparative advantage. Countries may choose to support and protect industries that are not economically efficient for cultural or political reasons - the tradeoff is a lower level of national income. The theory of comparative advantage is the theory of free trade. It is one of the most important principle of economics. Specialisation and trade has enabled the spectacular increase in global living standards witnessed over the past century. Many people attempt to criticise the theory of comparative advantage by arguing that it is based on simple assumptions such as zero transport costs. But transport costs can easily be incorporated in the model without affecting the validity of the theory. The model also assumes that the resources in the trading nations are relatively

mobile. This means that resources such as workers and capital equipment could be transferred from one industry to another at a constant cost (straight line PPCs). Again this is just a convenient simplification and has no relevance to the model's conclusions. Despite the critics of free trade, the theory of comparative advantage does actually help to explain global trade patterns. Countries will in the long run achieve a higher standard of living if they pursue policies that promote free trade and competition.

Protection

The theory of comparative advantage demonstrated that countries could increase their consumption of goods and services and hence their standard of living by specialising in the production of those commodities for which the opportunity cost was lowest compared to other countries (or when the domestic price was lower than the world price). Similarly, countries would import those goods and services in which they had a comparative disadvantage. In this section, we investigate the types of protection that countries employ to restrict international trade.

Protection refers to any action by the government designed to give the domestic producer an artificial advantage over a foreign producer. Protective measures can be classified into three main types:

- those that increase the domestic price of the foreign product, such as tariffs;
- those that provide domestic producers with a cost advantage, for example subsidies; and
- those that impose a quantitative restriction on imports, such as quotas.

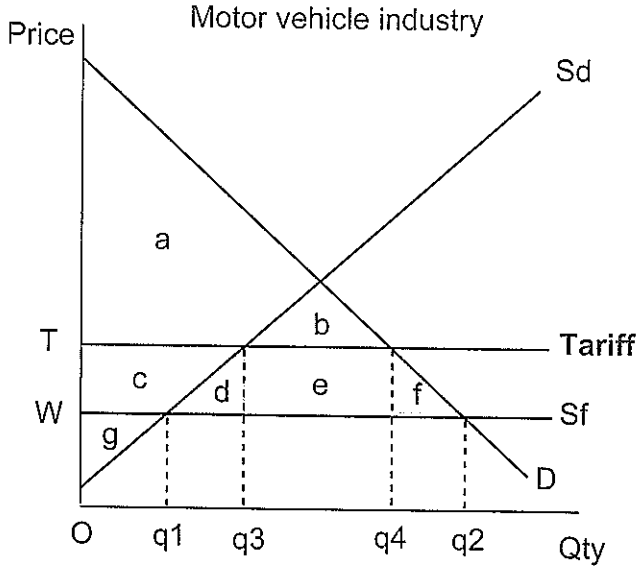
The goal of protection is to increase domestic production in the protected industries and decrease the consumption of imported goods and services. Those that benefit from protection include the owners and workers in the protected industries and sometimes the government in the case of tariff revenue. Protection does however, impose a cost or burden on the economy. The industries given protection will expand production and consume resources that other industries could have used. Production in non-protected industries will fall. These industries may also have to pay higher prices for imported inputs which will reduce their competitiveness. Protection, while decreasing imports, will also decrease exports. Consumers are also disadvantaged since they will have to pay higher prices for both domestic and imported goods and the quantity of goods they can consume will decrease. In other words consumers 'pay more and get less'. The important point to note is that all forms of protection result in a net welfare loss for the economy. The losses from protection always outweigh the gains.

Tariffs

Tariffs are the most widely used protective measure in the Australian manufacturing sector. Tariffs have been frequently applied on imported motor vehicles. A tariff is simply a tax placed on an import. It is designed to increase the price of the foreign good or service so that the competing domestic good receives a price benefit. The tariff is also an important source of revenue for the government. The effects of a tariff imposed on the motor vehcile industry are illustrated in figure 2.8. The world price of cars (OW) is lower than the domestic equilibrium price. The economy will import cars because it has a comparative disadvantage in producing cars.

At the world price of OW, foreign supply (Sf) is perfectly elastic - any quantity of imports can be supplied at this price. The effect on the domestic industry of an open economy is that local production of cars contracts to Oq1, while demand expands to Oq2. The shortfall between production and consumption - q1q2 - is made up by imports. If the government imposes a tariff on imports, then it has the same effect as placing a tax on the imported good. The tariff has the effect of decreasing the foreign producers' supply curve - Sf moves up by the amount of the tax. This will mean that less imports will be sold on the domestic market, and they will be sold at a higher price. In figure 2.8, the tariff is equal to WT and the new price of the good on the domestic market is OT. The higher price benefits local producers because they can now compete more favourably against the imports. Remember the tariff is only placed on imported goods, but this raises the effective price for both imports and locally produced goods. Domestic production expands from Oq1 to Oq3, consumption contracts from Oq2 to Oq4 and imports are reduced to q3q4. The tariff thus results in domestic producers gaining a bigger slice of the market. They now sell more at a higher price. The

Figure 2.8 The effects of a tariff



Tariffs are a tax on imports. They result in higher prices for consumers and decreased domestic consumption. Tariffs protect the domestic industry by switching consumption away from imports to domestic goods. Domestic producers gain by increasing output. But other domestic producers, including exporters, suffer because tariffs increase their costs.

Economists are opposed to tariffs because they distort resource allocation and result in a net welfare loss for the economy. A tariff creates a deadweight loss equal to areas d + f.

Motor vehicle tariffs in Australia are 5%, one of the lowest in the world. India has tariffs between 60% and 100%; Thailand 80%, Brazil 35% and China 25%.

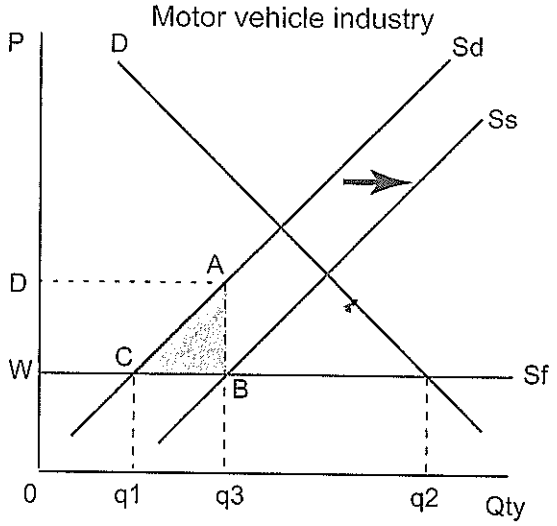
government receives revenue from the tariff equal to area e. The revenue is equal to the size of the tax (WT) multiplied by the number of imports (q3q4).

If both domestic producers in this particular industry and the government gain from the imposition of a tariff, why all the fuss? Does anybody lose? The answer is that consumers lose in a big way! Consumers are getting less of the product and have to pay a higher price. Their loss more than offsets the gain to producers and the government. We can use the concepts of consumer and producer surplus to analyse the welfare effects of a tariff. In figure 2.8, consumer surplus before the tariff equals areas a+b+c+d+e+f. Producer surplus is represented by area g. After the tariff, consumer surplus falls to areas a+b. Consumers lose a significant amount - areas c+d+e+f - because they now must pay more and receive less. Some of the consumer surplus lost has been transferred to domestic producers and the government - producer surplus increases by area c and area e is transferred to the government as tax revenue. But areas d and f are not accounted for - this is the lost consumer surplus or the deadweight loss of the tariff.

The welfare or total surplus of society as a whole is reduced whenever a tariff is imposed. The deadweight loss in figure 2.8 may appear small, however it will be multiplied across the entire economy given that every other industry uses motor vehicles, and will have to pay higher prices for them. This will mean that their costs will increase. The adverse effects of a tariff will ripple through the economy lowering production and consumption in other sectors of the economy. Tariffs, while decreasing imports in the protected industry may actually result in lower exports for other producers and will result in a net decrease in employment. The higher the tariff, the greater the protection afforded to domestic producers since imports would contract while domestic production would increase. One might think that as the tariff rate was increased government revenue would also increase, but, this is not the case. If the tariff was so large as to raise the price up to the old equilibrium price, then imports would fall to zero. There would be 100 per cent protection for the domestic industry but government revenue would fall to zero.

Subsidies

Subsidies are grants or payments made by the government to domestic producers. They are paid for out of general taxation revenue and directly lower a producer's costs of production. Subsidies worth billions of dollars have been used by the Australian government to support the motor vehicle industry. A subsidy enables a domestic producer to sell their product at a lower price to compete against imports. Figure 2.9 shows the effects of a subsidy granted to domestic producers. We begin with the world price for the good at OW. Total demand for the good is Oq2 of which Oq1 is locally supplied and q1q2 is imported. If the government pays a subsidy to local



Subsidies are a payment or a grant to domestic producers by the government. They result in lowering the domestic producers' costs so that they can compete more favourably against imports. The subsidy shifts the supply curve to Ss. Domestic production increases from q1 to q3 while imports are reduced to q3q2. While subsidies do not reduce consumer surplus, they still result in a welfare loss for society. The cost of the subsidy (DABW) exceeds the increase in producer surplus (DACW) resulting in a deadweight loss = ABC.

Figure 2.9 The effect of a subsidy

firms, then their supply curve effectively increases - it shifts to the right. A subsidy has the same effect as a decrease in costs. Domestic firms can now supply more at the same price. They expand production to Oq3 gaining a larger share of the market while imports are reduced to q3q2.

If we compare the economic effects of the subsidy with a tariff it is easy to see why many people favour subsidies as a means of protection over tariffs. With a subsidy there are no direct adverse effects on consumers. Consumers pay the same price and purchase the same quantity of the good. Consumers do however bear an indirect burden in that the cost of the subsidy has to be paid for from government taxation revenue. There is an opportunity cost here because this revenue could have been used to spend on other goods and services, such as education or health. Resource allocation in the economy is also affected. Inefficient producers are being rewarded at the expense of efficient producers. Subsidies represent a type of hidden or 'invisible' tax on consumers. It might appear that no-one loses with a subsidy because producer surplus increases and there is no decrease in consumer surplus, but this is wrong. In figure 2.10, the cost of the subsidy is equal to area DABW but the increase in producer surplus is equal to area DACW. Notice that the cost is greater than the benefit by area ABC - this the deadweight loss of the subsidy. So even though a subsidy does not decrease consumer surplus and actually increases producer surplus, it still results in a welfare loss for society.

Many countries use subsidies because they are perceived to be less restrictive than tariffs. They don't raise prices or reduce overall consumption. They are politically popular because they favour local producers without upsetting consumers. But this is what makes them dangerous! The 'invisible tax' often hurts the economy more than the visible tax. Subsidies distort resource

allocation and cause just as much harm to world trade as tariffs do. It is important to remember that all forms of protection are inefficient - they all reduce total surplus and create a deadweight loss for the economy.

Arguments for protection

It is very rare to find an economist who agrees with protectionist trade policies. The case for free trade based on comparative advantage is very strong. The case for free trade is the case for competition, high quality goods, economic growth and lower prices. Free trade enables countries to increase their real income and living standards. Free trade allows consumption to be greater than production. Through specialisation and trade, countries can consume beyond their production possibility frontier. Yet many countries still use various measures to protect certain industries. How can this paradox exist? The simple answer is that protection benefits a small group of special interests whereas free trade benefits the general public. Protection is politically motivated - it brings significant gains to a select group of producers, but imposes costs on consumers, other producers and taxpayers.

In the United States, industries such as sugar, beef, wheat and steel are heavily protected. Japan imposes high barriers on imported rice and other food products. France heavily protects its wheat producers. Governments use protection to gain political advantage – they 'buy' the votes of those industries that lobby for protection against foreign competition. There are many specific arguments raised in defence of protection. Our purpose is to assess these arguments from an economic perspective. The economist would argue that no protection is good protection, but there may be circumstances when a case can be made for temporary protection.

The infant industry argument

It is argued that infant industries need protection in their early years until they mature and can take advantages of economies of scale. It is argued that infant industries will over time become internationally competitive and develop a comparative advantage. This argument has been used extensively in support for Australian manufacturing industries. The problem with the argument is that protection tends to become long term rather than short term as it was originally designed. The infant industry becomes accustomed to operating with very little competition and the incentive to innovate and increase efficiency is removed. Infant industry protection maybe justified in the short term, but it is crucial that the level of protection be frequently reviewed and progressively reduced over time. What tends to happen is that the infant industry assistance eventually turns into an old age pension.

The diversification argument

If a country completely applied the principle of comparative advantage, then it may specialise in a narrow range of products. In Australia's case, we would specialise in rural and mineral products. If all resources were employed in just these industries, then changes in world demand and prices could have significant effects on the economy. The crux of this argument is that rather than 'place all of one's eggs in the same basket', a country may benefit by diversifying its industrial base. Protection may then be justified to establish a range of diversified industries. Over time, the industry may increase its efficiency and become competitive so that in the long run, the level of protection could be reduced. This argument is weakened by the fact that no countries just have a comparative advantage in only one or two industries. Economies are also dynamic and change over time as world demand and technology change. Should the government be trying to predict which industries will expand or contract into the future? The simple answer is no.

The anti-dumping argument

The World Trade Organisation (WTO) defines dumping as: *"If a company exports a product at a price lower than the price it normally charges on its own home market, it is said to be 'dumping' the product."* It is argued that the foreign firm is engaging in unfair competition in order to drive out the domestic producers. The overseas firm may be large enough to sustain short run losses by selling at abnormally low prices and then increase its price in the long run. Dumping may also occur when firms have large surpluses they cannot sell in their own market or their product has been banned because it is injurious to health or it is illegal. The firm may then try to off-load the product in an overseas market for whatever price it can get. One difficulty with this argument is proving whether dumping is actually taking place. Foreign goods may be lower priced because of productive efficiencies. If dumping does cause harm to domestic producers, then temporary protection may deter this type of activity.

The national defence argument

It is argued that import barriers are necessary to protect those industries that are vital to the economy in case of a wartime emergency. The problem with this argument is identifying those industries that are 'vital' to the economy. Every industry could probably present a case for why they are important the national interest. This argument was popular in the era of global conflict but seems outdated now. Furthermore, trade fosters international cooperation, while protectionist policies reduce it.

The increased employment argument

This argument asserts that protection will shift consumers' spending from the foreign goods to the domestic good and thus increase employment in the protected industry. This sounds like an appealing argument but it suffers from a basic flaw in logic. While, in the short run, employment in the protected industry may rise or may be prevented from falling, employment in other domestic industries will suffer - industries that use the products of the protected industry as inputs will face higher production costs. Consumers will also have less to spend on the output of other industries. A gain in employment in the protected industry is a loss in employment in other industries.

The cheap foreign labour argument

This is another fallacious argument similar to the employment argument. It is often claimed that Australian industries need to be protected from countries where wages are much lower. This argument could be turned around to say that less developed countries need protection from countries like Australia because it has superior capital equipment and technology. The level of wages is a function of productivity. The reason why Australian workers receive a higher wage is because their productivity is higher. The theory of comparative advantage showed that the gains from trade occur because of the differences in the relative costs of production. Countries that have an abundance of labour relative to other resources will have a comparative advantage in labour intensive goods. Countries like Australia should reap the benefits by importing these goods and producing those goods in which we are relatively more efficient.

The favourable balance of trade argument

It is argued that a trade deficit could be eliminated or reduced by restricting imports through protective measures. This argument assumes that there is something wrong with a trade deficit - that imports are 'bad' and exports are 'good'. It implies that a trade surplus is favourable and that a trade deficit is unfavourable. But again this is incorrect. Protectionist policies designed to decrease imports will cause exports to decrease as well. Protection raises the costs of other domestic industries which reduces their competitiveness and therefore their exports. Other countries may also retaliate and impose restrictions on their imports.

It is important to remember that both exports and imports bring gains to the economy. Over time, a country should aim to increase both exports and imports. Exports bring gains to producers, while imports bring gains to consumers. To argue that exports are more important than imports is to argue that supply is more important than demand, or that producers are more important than consumers.

Trade liberalisation and the WTO

The World Trade Organization (WTO) is the only international organization dealing with the global rules of trade between nations.

Trade liberalisation has been a major trend in the world economy since the Second World War. Trade liberalisation is the opposite of protection. Liberalising trade is achieved by removing or reducing any restrictions which limit trade in goods and services. The World Trade Organization (WTO) is the only global international organization dealing with the rules of trade between nations. The World Trade Organisation promotes trade liberalisation by helping to lower trade barriers and by discouraging 'unfair' practices such as export subsidies. The WTO was established in 1995 as the successor to the General Agreement on Tariffs and Trade. Since 1948, the GATT had provided the rules for the international trading system. Whereas GATT had mainly dealt with trade in goods, the WTO now covers trade in services and in intellectual property. The WTO's main activities are negotiating the reduction or elimination of obstacles to trade (e.g. import tariffs) and agreeing on rules governing the conduct of international trade. Trade is vital to the world economy and the WTO tries to ensure that it flows freely.

The WTO has 164 members (2016), accounting for over 97% of world trade. The WTO promotes multilateralism - trying to persuade all countries to lower or remove their trade barriers together. Since 1945 there have been a number of rounds of multilateral trade negotiations which have been successful in cutting tariffs from an average of around 40 per cent to around 4 per cent on industrial goods in developed economies. By opening world markets, the WTO (and its predecessor the GATT) have enabled world trade to increase by a factor of 22 since 1950.

There are two key principles of the WTO trading system
- *most favoured nation, and*
- *national treatment.*

One of the key principles of the WTO trading system is that trade should be conducted free of discrimination. This means that member countries cannot discriminate between their trading partners - all countries should be treated equally. This principle is known as the 'most-favoured-nation' (MFN) treatment. For example, if Australia improves the benefits that it gives to one trading partner, it has to give the same treatment to all the other WTO members. In other words every member country has to be given the same 'best' treatment. There are some exceptions

Learning activity

Economic research - World Trade Organisation

Access the web site of the World Trade Organisation at wto.org. Why was the WTO established, and what are its objectives? Who are its members?

Find out what the following terms or phrases mean:
- multilateral trade agreements
- Doha Round
- anti-dumping rules

Access the World Trade Outlook Indicator (WTOI) for information on current tarde trends.

to this rule - countries can set up a free trade agreement that applies only to goods traded within the group (for example, the European Union and NAFTA).

A second important principle of the WTO trading system is called 'national treatment'. This means that imported goods and services should be treated the same as domestic goods and services. This means that there should be no discrimination between foreign goods and domestic goods, once the foreign goods have entered the country. Notice that this does not prevent a country from applying a tariff to an imported good or service before the good enters the market.

Arguments for trade liberalisation

There is a very strong link between economic growth and international trade. The best way to increase world incomes and living standards is through economic growth. It is no mere coincidence that the period of fastest growth in world trade (1950-73) was also the period of highest global economic growth. It is a simple economic fact that when barriers to international trade fall, living standards rise. Trade liberalisation delivers a more productive, outward-looking economy with higher incomes and more job opportunities. It delivers more appropriate use of resources, lower prices for consumers and lower input costs for producers.

The arguments for free trade are based on the theory of comparative advantage and the theory of competitive markets. Countries gain when they specialise in producing those goods and services that they can produce at a lower opportunity cost than other nations. By exporting goods and services that can be produced more efficiently and importing goods and services that other nations produce at a lower opportunity cost, a country can increase both its production and consumption. Specialisation and trade results in a higher level of real income, greater consumption and higher living standards. It is important to realise that countries gain through both exports and imports. Exports add to production while imports add to consumption. Free trade helps to increase both exports and imports. Industries benefit from exporting

Arguments for trade liberalisation
Increases real incomes and living standards
Increases efficiency through greater competition
Increases productivity through efficient resource allocation
Consumers gain through lower prices, greater variety and quality of goods
Exporters gain through higher prices and increased market access
Domestic producers gain through lower input prices
Enables greater specialisation and economies of scale
Openess to trade and investment is a major catalyst for economic growth

Effective rate of tariff protection	1980-81	1990-91	2000-01	2015-16
Agriculture	12%	13%	6%	0
White goods	30%	8%	2.5%	2.5%
Motor vehicles	96%	60%	15%	5%
Clothing	140%	176%	25%	5%
General manufacturing	23%	16%	5%	5%

Figure 2.10 Changing rates of tariff protection: Australia

in terms of greater output and employment. Consumers benefit from imports in terms of a greater variety of goods at lower prices.

As shown in figure 2.10, the level of protection on Australian industry has been reduced significantly over time as Governments have realised the high costs that protective measures impose on both consumers and producers. The average level of tariff protection across all manufacturing industries was 23 per cent in 1980-81 while today it is just 5 per cent. In Australia consumers have benefitted from the significant falls in the real price of many traded goods over the past 30 years. Clothing and footwear and motor vehicles are much less expensive now in real terms than they were 30 years ago when high tariffs and tight quotas were applied to imports. Men's footwear, for example, has fallen in price by over 50 per cent. The real price of whitegoods has fallen by 47 per cent, consumer electronics by half and motor vehicles by almost 40 per cent. Studies show that the gains from trade liberalisation in Australia amount to around $4,000 per year to the average Australian family. Lowering trade barriers reduces costs for all industries in the economy making them more efficient and competitive.

Australians are beginning to understand the large burden that high protection has imposed on the economy. The problem with protection is that inefficient industries benefit at the expense of efficient industries. Protection results in resources being attracted away from efficient sectors of the economy to the less efficient. The advantage of removing or reducing protection levels is that the industries concerned must increase their efficiency in order to compete.

Reducing or dismantling protection does have short term costs in terms of creating unemployment in the affected industries, but over time these resources would be absorbed by the more efficient sectors. What is forgotten is that by reducing trade barriers employment in export and the non-protected industries actually increases. Reducing trade barriers will lead to a net increase in employment. By lowering protection, consumers benefit, input costs are lowered and efficient industries are able to grow and prosper. The net result is a more productive and competitive economy.

Regional trade agreements and trade blocs

Regional trade agreements (RTAs) cover more than half of international trade and operate alongside global multilateral agreements under the World Trade Organization. Regional trade agreements have become more popular as multilateral trade negotiations often break down since trying to reach agreement between all member countries of the WTO is sometimes difficult. For this reason many countries have opted to participate in bilateral agreements. Regional trade agreements imply both trade liberalisation and trade discrimination. They are certainly favourable to increasing trade between the specific member countries by removing or lowering trade barriers. In this way, RTAs are meant to complement the multilateral trading system. But at the same time, regional trade agreements are discriminatory and go against the 'most favoured nation' (MFN) principle.

RTAs can be attractive because it may be easier for a small group of neighbouring countries with similar concerns to agree on market opening in a particular area than to reach agreement in a wider forum such as the WTO. But regional agreements also risk making it harder for countries outside the region to trade with those inside and may discourage further opening up of markets, ultimately limiting growth prospects for all. In this way a regional trade agreement acts as a 'trade bloc'. Multilateral negotiations, on the other hand, deal with more players and more sectors, and so offer greater potential for mutual gain than limited bilateral or regional deals.

A trade bloc is a group of countries that agree to reduce trade barriers between themselves but impose barriers on countries outside the 'bloc'. The most important trade blocs include the European Union (EU), the North American Free Trade Agreement (NAFTA) and the Association of South East Asian Nations (ASEAN). These three groups account for nearly 60 per cent of world trade. The European Union EU has become the most powerful trading bloc in the world with a GDP as large as that of the United States. The EU consists of 27 countries and has eliminated trade barriers between the member countries so they can trade freely with each other. A trade bloc typically applies a common external tariff on goods and services imported from countries outside the bloc.There is an important debate about whether trade blocs are 'trade creating' or 'trade diverting'.

Removing trade barriers will help to increase the volume of trade - this is trade creation. But trade blocs are about establishing preferential trade between specific countries. Often they will cause trade diversion, rather than trade creation. Trade diversion occurs when trade is diverted from a low cost producer outside the trade agreement, to a higher cost producer within the group. Trade diversion is seen as a potential disadvantage of trade agreements. According to the Department of Foreign Affairs and Trade (DFAT) the research on free trade agreements suggests there has been little trade diversion and that regional agreements have been effective in encouraging wider trade liberalisation. DFAT points out that a practical

advantage of regional TAs is that they are quicker and easier to negotiate than multilateral agreements because fewer parties are involved.

Australia's free trade agreements

In 2016, Australia had ten free trade agreements (FTAs) in force with New Zealand, Singapore, Thailand, US, Chile, ASEAN, Malaysia, Korea, Japan and China. The countries covered by these FTAs accounted for around 80 per cent of Australia's total trade. China and Japan are Australia's two largest trading partners, while Korea is ranked fourth. The agreements with China, Japan and Korea are expected to reap significant benefits for Australian exporters and Australian consumers.

The agreement with Japan for example, will deliver significant benefits for Australian farmers, manufacturers, exporters, service providers and consumers. More than 97 per cent of Australia's exports to Japan will receive preferential access or enter duty-free. At the same time, the agreement will benefit Australian consumers. Australian tariffs on Japanese imports will be eliminated. This includes removing the five per cent tariff on Japanese motor vehicles, electronics and white goods. Australian manufacturers can also gain because access to cheaper inputs reduces production costs.

The China-Australia FTA is particularly significant given that China is Australia's largest export market for both goods and services. Some of the key outcomes include the removal of Chinese tariffs on Australian dairy, beef, seafood and wine exports; the removal of tariffs on all Australian resource and energy exports; new or significantly improved market access into China for Australian banks, insurers, law firms and professional services suppliers, education services exporters, as well as health, aged care and construction companies. The Australian government believes that securing free trade agreements with the large Asian economies of China, Japan and Korea is crucial for Australia's future economic growth and prosperity.

Worksheet - free trade

Read chapter 2 of Investigating Macroeconomics to answer these questions.

1. Why do nations trade?
2. In the example in figure 2.3 which country has the absolute advantage in (a) producing coffee (b) producing wheat?
3. Explain the difference between absolute and comparative advantage.
4. In the example in figure 2.4 in which product does Australia have an absolute advantage; a comparative advantage?
5. In the following example identify the comparative advantage for each country by determining opportunity costs. The figures represent output.

	Good A	Good B
Country X	240	480
Country Z	150	450

6. Under what circumstances would two countries not possess a comparative advantage?
7. Use the model of demand and supply to explain why Australia exports coal.
8. Who gains from exports and who loses?