# Department of Economics

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# INTERNATIONAL TRADE

## Only study guide for

## ECS302-E

**UNIVERSITY OF SOUTH AFRICA**
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## INTRODUCTION

Welcome to this module in international trade.

The study of international economics is usually divided into two parts: international trade and international finance. International trade concerns the exchange of goods, services, labour and capital between countries. International finance concerns the financial and monetary connections between different countries. International trade may be viewed as an extension of domestic trade based on microeconomic analysis, whereas the study of international finance is more concerned with macroeconomic theory and policy. It does not really matter too much which module you start with, although most books on international economics start with the trade aspects first.

This module in international trade tries to answer some basic questions about the international economy. Why do some countries export and import much more of some goods and services and less of others? Is international trade good or bad for the countries concerned? Do some countries benefit from trade at the expense of others? Should countries try to protect their domestic industries from foreign competition? Do cheap imports from low wage countries result in higher domestic unemployment? Do multinational corporations do more harm than good in developing countries? These and related questions are studied in this module.

## PRESCRIBED READING

The prescribed reading for this module comprises the textbook, the study guide and any tutorial letters sent to you. The prescribed textbook for this module is:

> Salvatore D. 2011. ***International Economics***: Trade and Finance
> 10th Edition. USA: John Wiley & Sons Inc.

The book is divided into two parts. Part I concerns this module in international trade. At the start of each study unit in the study guide, selected chapters and pages of the textbook are prescribed. A big advantage of the textbook is that all the main theories, principles and issues are explained clearly without first resorting to formal analysis. As suggested by the title, the textbook is more concerned with policy issues and implications, rather than the formal derivations and proofs of the different theories. This will be the approach taken in this module.

The textbook is written by an American author. Thus many of the examples and case studies are from the perspective of the United States. The study guide supplements the textbook in some chapters by including information about South Africa where pertinent. The study guide also adds to the textbook where it is felt that extra examples would be helpful, or where the textbook is deficient in some respects. At the end of each study unit are some true or false questions and some short-essay questions. The answers to the true or false questions are at the back of the study guide, but you should try hard to answer the questions first without peeking. The short-essay questions are similar to the type of questions you can expect in the examinations. The questions also give you the opportunity to assess your progress after completing a study unit. In answering the questions, you will probably find that you have to refer back to the relevant sections of the prescribed reading to refresh your memory. This is a good sign as the questions should help you to organise your studies for the examination.

**Keep in mind that this study guide is a guide to your reading of the prescribed textbook and not a substitute for it. The study units frequently refer you to the textbook, especially to tables, figures and diagrams which are not duplicated in the guide. Reading the study guide is not sufficient to ensure that you pass the assignments and the examination.**

We hope that you find this module interesting and informative and wish you success in the examination.

# Introduction

# 1

**PRESCRIBED READING**

Chapter 1 of the textbook is prescribed (Salvatore 2011: 1 - 17).

**AIM OF STUDY UNIT**

The aim of this study unit is to

- Understand the relationship between international trade and the nations' standard of living
- Describe the subject matter of international trade
- discuss the main features of South Africa's international trade

**LEARNING OUTCOMES**

Once you have worked through this study unit and completed the prescribed reading, you should be able to

- describe the growth of international trade in both goods and services in recent years
- explain the participation of national economies and regions in world trade
- identify the major international economic challenges facing the world today
- describe South Africa's participation in international trade

## 1.1 INTRODUCTION

International economics concerns the exchange of goods, services, factors of production and capital across national boundaries. This module in **international trade** focuses on the flows of goods, services, labour and direct foreign investment between countries. The module in international finance examines the exchange of financial assets and liabilities and the monetary aspects of international economics.

International trade is an extension of domestic trade and the basic motivation of each is the same. In both international and domestic trade, voluntary exchanges of goods and services increase the economic welfare of the parties concerned, whether they be individuals, companies or countries. The fundamental proposition of all trade and exchange, whether domestic or foreign, is that **voluntary trade is mutually beneficial**. Moreover, as with domestic trade, international trade widens the scope for increased output arising from **specialisation**. Just as there is domestic specialisation and division of labour, so is there an international pattern of trade based on specialisation in the different countries concerned. These and related propositions will be demonstrated throughout this module in international trade.

However, there are a number of important differences between domestic and international trade. The most obvious is that goods in different sovereign countries are priced in different national currencies. Thus the exchange of goods and services between countries also requires the exchange of different national currencies. Tourists need to exchange their domestic currencies for the currencies of their destinations. A further important difference is that governments can impose a wide range of commercial policies on imports and exports of goods and services which are absent from domestic trade. For example, the government may impose a tariff or tax on imported goods. Another difference is that factors of production such as labour and capital are more mobile domestically than they are internationally. This is because of natural cultural barriers such as differences in language and social customs, and imposed barriers such as immigration restrictions.

Some knowledge of international economics is necessary to understand what goes on in the world today and to be informed consumers and citizens.

## 1.2 The Globalization of the World Economy

The world is rapidly globalizing and this provides opportunities and challenges to the nations and people of the world. The textbook gives examples of transactions taking place in a globalized world. It also indicates how financial centres have been connected and how this can lead to a quick spread of financial crises.

Globalization has taken place since the 19$^{th}$ century. Today's globalization (since 1980) has been characterised by tremendous improvements in telecommunications and transport, massive international capital flows, as well as by the participation of most countries of the world. Today's globalization brings many benefits and advantages but it also with it some disadvantages. Globalization also has many social, political, legal and ethical aspects.

## 1.3 INTERNATIONAL TRADE AND THE NATION'S STANDARD OF LIVING

All countries developing and industrialised rely crucially on international trade. For developing countries exports provide employment opportunities and earnings to pay for the products that they cannot produce at home and for advanced technology that they need. A measure of nations' economic relationship is given by the ratio of imports and exports of goods and services to their gross domestic product (GDP) (index of openness). Figure 1.1 in the textbook shows that the shares of imports and exports in GDP are much larger for developing and small industrial countries than they are for large industrial countries like the USA and Japan.

Even though the USA relies to a relatively small extent on international trade, part of its high standard of living depends on it. This is because there are many commodities which they consume but cannot be produced domestically. They also do not have deposits for certain minerals which are needed in the industry. There are also commodities which the country can buy cheaper than can produce.

The economic interdependence among nations has been increasing over the years, as measured by the rapid growth of world trade than world production (see Figure 1.2 in the textbook). There are many other ways in which nations are interdependent, so that economic events and policies in one nation significantly affect other nations.

## 1.4 SOUTH AFRICA IN WORLD TRADE

South Africa, with an index of openness exceeding 20 percent, is a relatively **open economy**. However, the index declined between 1985 and 1994. How do we explain this? Does it indicate that South Africa became a more closed economy over this period? As already explained, the index measures exports as a percentage of GDP. During the 1980s, South Africa suffered increasingly severe international sanctions. Trade sanctions did not, however, affect the volume of exports significantly as South Africa remained the most important and reliable supplier of precious and base metals and minerals, which comprised the bulk of its exports.

Of far greater concern were financial sanctions. South Africa experienced large-scale capital flight and relatively low economic growth over this period. To finance the outflow of capital, the country was compelled to reduce imports by imposing restrictive monetary and fiscal policies, which led to slow growth. Exports in 1985 were thus high relative to GDP, which was reflected in a relatively high index of openness. By 1994 the picture had changed considerably. While exports continued to grow, the economy grew even more rapidly as financial sanctions were removed and foreign capital flowed into the country with the historic election of a nonracial government, hence the fall in the index. Above-average growth in South African exports coupled with sluggish GDP growth pushed the index significantly higher, to about 27 percent in 2001. The index has fluctuated around this value since then.

The **gravity model** postulates that the bilateral trade between two countries is proportional, or at least positively related, to the product of the two countries' GDPs and to be smaller the greater the distance between the two countries. That is, the larger and the closer the two countries are, the larger the volume of trade between them is expected to be. For South Africa its main trading partners are larger economies but not closer in geographical terms. For the USA the gravity model terms to explain the trade patterns. The USA trades more with its neighbours, Mexico and Canada and also with large economies such as China, Japan and Germany.

Table 1.1 below shows the division of imports and exports between South Africa's major trading partners:

**TABLE 1.1**
*South Africa's major trading partners, 2006*

| Country | % of SA imports | % of SA exports |
|---|---|---|
| Germany | 12,7 | 7,5 |
| China | 10,0 | 3,6 |
| USA | 7,6 | 11,5 |
| Japan | 6,6 | 11,7 |
| United Kingdom | 5,0 | 8,8 |

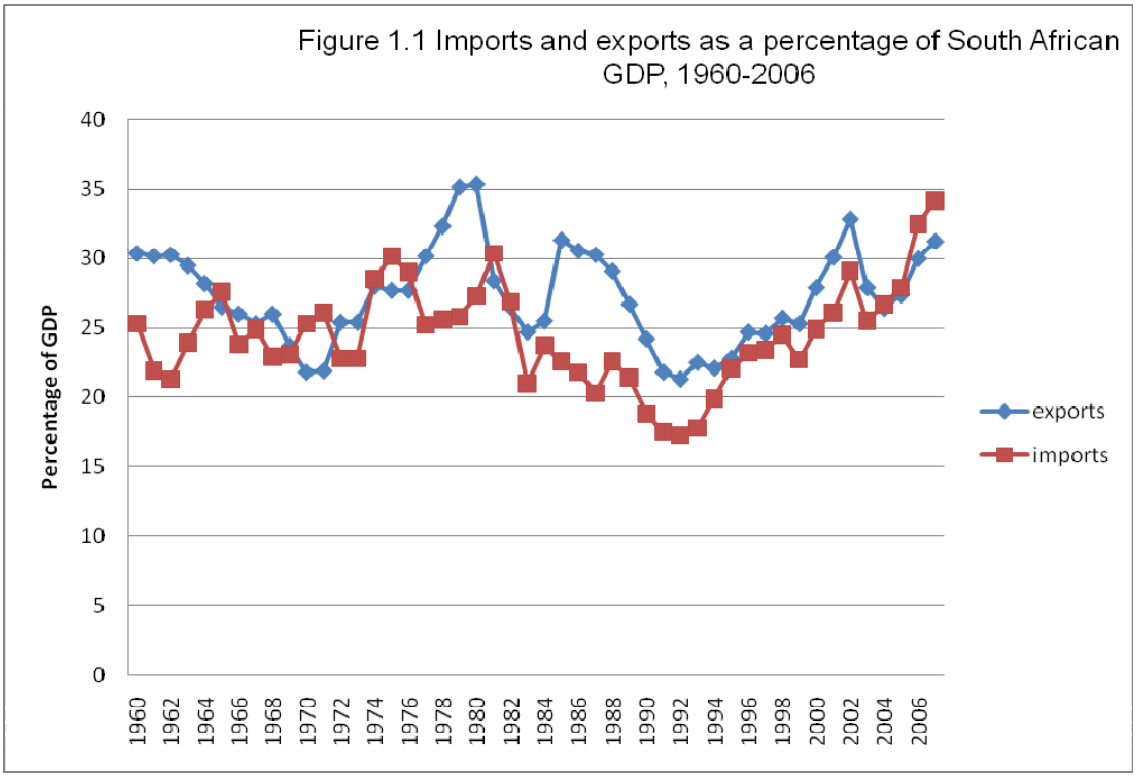
**Source**: Republic of South Africa (2006)

The United Kingdom, Japan, the United States and Germany have been South Africa's main trading partners for some time, although not always in that order. More recently, South Africa has increased its imports from China. Table 1.1 shows that in 2006, South Africa got more than 40 percent of its imports from these five countries and sent more than 40 percent of its exports to them. As regards trading blocs, South Africa sent more than 34 percent of its exports to the **European Union** (Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and the United Kingdom).

Since the mid-1980s, the US has diminished while the EU has increased in importance as regards trade with South Africa. Another important trend that has emerged recently is that South Africa is increasingly becoming the **port of entry** into Africa, with significant amounts of imports being **re-exported** to other parts of Africa. These are mainly manufactured goods including machinery and mechanical appliances, electrical equipment, television sets and video cassette recorders. Trade with mainland China has also grown significantly in recent years. Total trade in imports and exports with China increased by 109 percent between 1993 and 1996 and by 36 percent between 2002 and 2006.

South Africa remains partly dependent on primary sector commodities for its exports, but the contribution by manufactured and semi-processed goods has grown significantly. At present, roughly 35 percent of South Africa's exports are primary sector commodities such as gold, platinum group metals, coal, diamonds, chrome, and agricultural products. Unlike many developing countries which depend on the exports of a few primary products, South Africa can be classed as a **semi-industrialised country** and the contribution of the industrial sector to exports is increasing steadily, motor vehicle exports contributed about 5 percent to South Africa's exports in 2006. Machinery and equipment are, as is to be expected for a developing economy, the most important of South Africa's imports. South Africa also imports the bulk of its oil needs, despite having a significant oil from coal capability in Sasol (a private company regulated by the government).

Figure 1.1 below plots South African imports and exports as percentages of GDP for the period 1960 to 2007. No significant trend is visible for both exports and imports over the entire period. In the post 1994 period, however, an upward trend in both variables is evident. Generally, the share of exports and imports in GDP has averaged 25 percent over the period.




Source: South African Reserve Bank Quarterly Bulletin of statistics, various issues.

### 1.5 International Economic Theories and Policies

This course focuses on the first two aspects of international economics. **International trade theory** analyzes the basis and the gains from trade. **International trade policy** examines the reasons for and the effects of trade restrictions.

### 1.6 Current International Economic Problems and Challenges

Section 1.5 in the textbook discusses numerous economic problems and challenges being faced by the world economy. These include (1) the deep financial and economic crisis, (2) trade protectionism in advanced countries, (3) excessive fluctuations and misalignment in exchange rates and financial crises, (4) structural imbalances in the USA, slow growth in Europe and Japan, and insufficient restructuring in transition economies, (5) deep poverty in many developing countries, and (6) resource scarcity, environmental degradation, climate change, and unsustainable development.

**IMPORTANT CONCEPTS**

- anti-globalization movement
- closed economy
- developed country
- developing country
- direct foreign investment
- domestic component of output
- European Union (EU)
- export-competing industries
- export ratio
- globalization
- gravity model
- gross domestic product (GDP)
- import-competing industries
- import ratio
- index of openness
- international trade
- manufactured goods
- merchandise trade
- open economy
- port of entry
- primary sector
- re-exported goods
- secondary sector
- semi-industrialised country
- services
- specialisation
- tertiary sector
- trading partners
- voluntary trade is mutually beneficial

**TRUE OR FALSE QUESTIONS**

(1) Tourists need to exchange foreign currencies for their domestic currencies.

(2) Japan relies on international trade to a relatively small extent.

(3) International trade focuses on the flows of goods, services, labour and direct foreign investment between countries.

(4) The USA's standard of living does not depend of international trade.

(5) Economic events in one nation may significantly affect other nations.

(6) South Africa is a relatively closed economy as the imposition of sanctions during the apartheid era forced the country to be self-sufficient.

(7) South Africa is a significant importer of commodities that are re-exported to other countries in Africa.

(8) Neighbouring Southern African countries have always been South Africa's most important trading partners.

(9) South Africa, being a developing country is expected an index of openness greater than that of the United States.

(10) South Africa's trade pattern is in line with the gravity model.

(11) The USA's trade pattern is in line with the gravity model.

(12) According to the gravity model a country will trade more with its neighbours.

(13) According to the gravity model a country will trade more with countries with smaller GDPs.

(14) In a globalized world financial crises can quick spread throughout the major financial centres in the world.

(15) International trade theory examines the reasons for and the effects of trade restrictions.

(16) A large proportion of South Africa's exports is mining related.

(17) Most of South Africa's imports are manufactured goods.

(18) Not all goods imported into South Africa are consumed domestically.

(19) The US is the world's largest net importer of capital.

(20) The clothing industry is an example of an import-competing industry in South Africa.

**SHORT QUESTIONS**

Try to write about half a page in answer to each of these questions.

(1) Explain how a stimulation of the United States economy will affect the South African economy.

(2) Describe the main features of international trade in South Africa.

(3) Explain the main economic problems and challenges faced by the world economy.

(4) Discuss the advantage and disadvantages of globalization.

# Why nations trade: the classical theory 2

**PRESCRIBED READING**

Chapter 2 of the textbook is prescribed (Salvatore 2011: 31 - 53).

**AIM OF STUDY UNIT**

The aim of this study unit is to introduce you to the classical theories of international trade.

**LEARNING OUTCOMES**

Once you have worked through this study unit and the second chapter of the textbook, you should be able to explain

- the views of the mercantilists
- absolute and comparative advantage
- the meaning of equal advantage
- the relationship between opportunity costs and relative commodity prices
- the basis for trade
- the gains from trade under constant costs conditions
- terms of trade
- some of the main criticisms of the classical theory
- the importance of dynamic gains from international trade

## 2.1 INTRODUCTION

This study unit looks at the historical development of trade theory from the seventeenth century through the first part of the twentieth century. Chapter 2 of the prescribed textbook seeks to provide answers to the following questions: First, what is the basis for trade? Second, what are the gains from trade? Finally, what is the pattern of trade? This question asks about the commodities that are exported and imported by each nation. This study unit tries to answer these questions, first by summarising the historical development of trade theory and then by discussing the theoretical principles used to explain the effects of international trade.

## 2.2 MERCANTILISTS' VIEWS ON TRADE

Early explanations of international trade include the views of the **mercantilists** and the **classical theorists**. The most prominent classical theorists are David Hume (1711 - 1776), Adam Smith (1723 - 1790), David Ricardo (1772 - 1823), Robert Torrens (1780 - 1864) and John Stuart Mill (1806 - 1873). Mercantilists were a group of writers in Europe during the period 1500 to 1800. They were merchants, bankers, government officials and philosophers. Their views are discussed here as a precursor, and in contrast to those of the classical theorists.

International trade can be viewed as either a **zero sum game** or as a **positive sum game**. The mercantilists believed that trade was a zero sum game and for that reason they preached **economic nationalism**. For the mercantilists maintained that the way for a nation to become rich and powerful was to export more than it imported. Thus, their motivation for trade was self-interest and the gains of winners are offset by the losses of the losers, hence the expression "zero sum game". According to the mercantilists, the economic welfare of a country depends on a strong foreign trade surplus. If a country achieved a favourable trade balance (exports greater than imports), it would enjoy an inflow of precious metals (gold and silver). This, in turn, would contribute to greater spending and to an increase in domestic output, employment and prosperity.

Mercantilists argued that to achieve these objectives, governments should encourage exports and restrict imports by imposing tariffs, quotas and other commercial policies. Self-interest was therefore the driving force behind trade. In this respect, the mercantilists were no different from the classical theorists. However, mercantilism fails to comprehend the further effect of a trade surplus on the economy. It also fails to explain the welfare effects of trade satisfactorily. A better explanation of trade and its benefits came from the classical theorists.

For example, Hume showed that a favourable trade balance can only be a temporary phenomenon because it tends to lead to higher domestic inflation and reduced competitiveness and thus to greater imports in the long run. Smith attacked the mercantilists' view that the size of the world's economic pie is constant and that a nation's gain from trade is at the expense of its trading partners. According to Smith, world output is not a fixed quantity. Trade between countries allows them to take advantage of **specialisation** and the **division of labour** to improve their productivity and thereby increase world output. Smith's and Ricardo's suggestion that trading partners can simultaneously achieve higher levels of production and consumption with free trade is discussed next.

## 2.3 CLASSICAL THEORISTS

The classical theory of trade involves the principles of **absolute advantage** advanced by Smith and **comparative advantage** advanced by David Ricardo to explain international trade between countries. Ricardo's explanation based on the principle of comparative advantage is often referred to as Ricardian analysis and is still relevant even in the more advanced theories of today.

### 2.3.1 TRADE BASED ON ABSOLUTE ADVANTAGE (Adam Smith)

Adam Smith, a Scottish academic at the University of Edinburgh, advocated for free trade. In his book *An Inquiry into the Nature and Causes of the Wealth of Nations*, Smith (1776: 424) commented:

> It is the maxim of every prudent master of a family, never to attempt to make at home what it will cost him more to make than to buy ... What is prudence in the conduct of every private family, can scarce be folly in that of a great kingdom. If a foreign country can supply us with a commodity cheaper than we ourselves can make it, better buy it of them with some part of our produce of our own industry, employed in a way in which we have some advantage.

Smith started by stating the fact that for two nations to trade with each other *voluntarily*, both nations must gain. Thus, to him trade was not a zero-sum game. For Smith, the factories meant that workers could specialise in specific tasks resulting in a considerable increase in output and thus in trade. By this process, resources are utilized in the most efficient way and the output of both commodities will rise. This increase in the "world" output measures the **gains from specialisation**. He reasoned that nations could also be expected to concentrate on producing goods they make most cheaply. Accepting that cost differences would drive trade between nations, Smith sought to explain these differences. He believed that the productivity of labour was the main determinant of production costs. He therefore approached the determination of absolute advantage and trade from the supply side only and ignored the effects of changes in demand (which he believed could only be temporary).

Unlike the mercantilists, Adam Smith believed that all nations would gain from free trade and therefore strongly advocated a policy of laissez-faire. Free trade, with each nation specialising in that commodity in which it has absolute advantage would lead to an efficient allocation of world resources and would maximize world welfare.

The principle of absolute advantage explains both the **pattern of trade** and the **gains from trade**. However, the classical theory is based on a number of simplifying assumptions, some of which were not made explicit in the writings of Smith, Ricardo and the other classical theorists. Before explaining the pattern of trade and the gains from trade, it is worth stating these assumptions explicitly:

(1) Producers and consumers display rational behaviour.
(2) There are only two countries and two commodities. Each good has identical characteristics and some of each good is consumed in both countries.
(3) There is full employment.
(4) Labour is the only factor of production. This means that the value of a commodity is based entirely on its labour content. In other words, a good embodying four hours of labour is four times as expensive as a good using only one hour of labour.
(5) Each country has a fixed endowment of resources, and all units of each particular resource are identical.
(6) Perfect competition exists.
(7) Factors of production are mobile between the two commodities and within the country, but not between countries. This means that wages may differ between countries prior to trade.
(8) There are no barriers to trade.

(9) Production shows constant returns to scale. With labour as the only factor of production, this means that the hours of labour per unit of production of a good do not change, regardless of the quantity produced.
(10) There are no transport costs.
(11) The level of technology is fixed for both countries, although the technology may differ between them.

### 2.3.2 Illustration of Absolute Advantage

The following table shows the output per day of two countries on the basis of the above assumptions. Remember, in this model, each country produces either one or the other product.

**TABLE 2.1**
*Absolute Advantage: Illustrative Example*

| | **Country I** | **Country II** |
|---|---|---|
| **Good A (units/ hour)** | 24 | 42 |
| **Good B (units/ hour)** | 12 | 7 |
| **Autarky prices** | 2A:1B | 6A:1B |

Table 2.1 shows that one hour of labour time produces 42 units of good A in Country II but only 24 units of good A in Country. Country II is clearly the more **efficient** producer of good A. on the other hand; one hour of labour time produces 12 units of good B in Country I while it produces only 7 units in Country II. Thus, Country II has an absolute advantage in the production of good A and will specialise in the production of that good. Similarly, Country I is the more efficient producer of good B. It can produce 12B as against 7B by Country II, and will therefore specialise in good B. However, such specialisation does not automatically imply that the two countries will begin to trade with one another. Whether or not trade takes place depends on the **terms of trade**. Let us take a closer look at this concept.

Table 2.1 shows that Country I, using all its resources, can produce either 24 units of good A **or** 12 units of good B. This means that Country I, which has an absolute advantage in good B, can produce 2A if it gives up the production of 1B. **Autarky prices** (also known as **domestic terms of trade)** refer to the rate at which a unit of one good exchanges for the other good in each country in the absence of trade between the two countries. We say the autarky prices of Country I are 2A:1B. Country I will not participate in trade if it cannot get at least 2A for 1B. The more of A it can obtain, the better. Country II, by using all its resources, can produce 42A **or** 7B. This means that Country II, which has an absolute advantage in good A, will need to give up the production of 6A to release sufficient resources to produce 1B. Its domestic terms of trade are 6A:1B. This means that Country II will not be prepared to give up more than 6A to get 1B from Country I. It will be even better off if it can trade fewer than 6A for 1B. Clearly, for trade to take place between the two countries, the **international terms of trade** must fall between the two countries' domestic terms of trade, (2A<1B<6A).

### 2.3.3 RICARDIAN THEORY OF COMPARATIVE ADVANTAGE (David Ricardo)

Contrary to Adam Smith's illustration, Ricardo argued that even if one country is more efficient than the other in both lines of production, there is still a basis of **mutually beneficial trade** as long as each country has comparative advantage in one of the products. The principle of **comparative advantage** explains how a country can still gain from trade, even if it has an absolute disadvantage in both goods. This does not prevent trade, provided the country does not enjoy the *same advantage* in respect of all goods. According to Ricardian analysis, international specialisation must be based on comparative rather than absolute advantage. The crucial determinant of the commodity pattern of trade is the difference in the techniques of production which consists of the way in which labour (the only factor of production) is organized in the production process.

This is explained in section 2.4 of the textbook. Table 2.2 in the textbook illustrates comparative advantage between the United States of America and the United Kingdom. We use Table 2.2 below to illustrate the same point. This table shows that country I has absolute advantage in the production of both goods. The law of comparative advantage shows that mutually beneficial trade can still take place even under these circumstances. Country II's labour is almost as productive in good A but almost twice less productive as the labour in country I in good B. Country II therefore has a comparative advantage in good A. On the other hand country I has absolute advantage in both goods but its absolute advantage is greater in good B (12:7) than in good A (24:21), country I has a comparative advantage in good B. The other way of looking at it is to use the domestic terms of trade (autarky prices) of the two countries. These are 2A:1B and 3A:1B for the respective countries, as indicated in table 2.2. For every 1B produced in country I they forego 2A against 3A which is foregone in country II for each unit of good b they produce. It is therefore cheaper to produce good B in country I than in country II. It can also be said that it s cheaper to produce good A in country II than in country I since the sacrifice of good B is lower in country II (1/3) than in country I (1/2). The two countries can produce and exchange the surplus of the goods in which they have a comparative advantage. Country I, however, will only trade if it can import at least 2A for each unit of B that it exports. Country II will not trade if it has to export more than 3A for each unit of B it imports from country I. For trade to take place, the international terms of trade must once again fall between the domestic terms of trade that is, 2A<1B<3A.

**TABLE 2.2**
*Comparative Advantage: Illustrative Example*

| | **Country I** | **Country II** |
|---|---|---|
| **Good A (units/ hour)** | 24 | 21 |
| **Good B (units/ hour)** | 12 | 7 |
| **Autarky prices** | 2A:1B | 3A:1B |

### 2.3.4 Equal advantage

Where countries experience **equal advantage**, it means that the domestic terms of trade (domestic price ratios) are identical, for example 3A:1B in both countries. This is the case of no comparative advantage. In this situation, trade makes no sense. Both countries will want at least 3A for 1B but neither will be prepared to trade more than 3A for 1B.

## 2.4. Gains from Trade

Country I will be reluctant to trade if it received only 2A from country II for each unit of good B since it can produce exactly 2A by foregoing 1B. Country II will definitely not trade if it had to give up 3 units of A in exchange for 1 unit of B from country I. To illustrate that both nations gain from trade we suppose that the international terms are 1B: 2,5A, thus country I could exchange 12B for 18A with country II. Country I would gain 6A (or save ¼ hour of labour time). To see that country II would also gain, note that the 12B that country II receives from country I would require almost two hours (1,72) of labour time to produce in country II. Country II could use these 1,72 hours to produce 36 units of good A and give up only 18 units for the 12 units of good B from country I. Thus, country II would gain 18 units of good A

## 2.5 COMPARATIVE ADVANTAGE AND OPPORTUNITY COSTS

This section is discussed in the textbook in section 2.5. Ricardo based his law of comparative advantage on the simplifying assumptions given in section 2.3 of this study guide under Adam Smith's absolute advantage principle. The assumption that labour is the only **factor of production** is based on the **labour theory of value**.

### 2.5.1 Comparative Advantage and the Labour Theory of Value

According to the labour theory of value, the value of a commodity is determined by the value of labour that goes into the commodity. The amount of labour will determine the price. The labour theory of value implies (1) that either labour is the only factor of production or labour is used in fixed proportion in the production of all commodities and (2) that labour is homogeneous (i.e. all units are the same). We know in reality that labour is not the only factor of production and that labour is not uniform (i.e. there are different skill levels with different productivities). We are also aware of the presence of other factors such as capital. We cannot therefore base the explanation of comparative advantage on the labour theory of value.

### 2.5.2 The Opportunity Cost Theory

Haberler (1936) was the first person to base the theory of comparative advantage on the **opportunity cost theory**. The law of comparative advantage is also known as the **law of comparative cost.** The analysis is similar to what we explained in section 2.4. According to the opportunity cost theory, the cost of a commodity is the amount of a second commodity that must be given up to release just enough resources to produce one additional unit of the first commodity. This law does not make any assumptions about labour being the only factor of production nor being homogeneous. The country with a lower opportunity cost in the production of a commodity has a comparative advantage in that commodity.

Following our discussion in section 2.4 and our illustration in Table 2.4, the domestic terms of trade were 2A:1B and 3A:1B for countries I and II respectively. This means that in the absence of trade country I has to give up two units of good A for each unit of good B they produce. On the other hand country II would give up 3 units of good A for each unit of good B they produce. Thus, country I has comparative advantage in the production of good B over country II. In the same way, the respective opportunity costs of producing one unit of good A in the two countries are ½ of good B and 1/3 of good B. Thus, country II will produce good A and export some of it in exchange for country I's good B.

### 2.5.3 The Production Possibility Frontier under Constant Costs

The concept of the production possibilities frontier or curve was introduced in first level microeconomics. It shows the alternative combinations of the two goods that a nation can produce by fully utilizing all its resources with the best technology available to it. Table 2.4 on page 45 of the textbook illustrate the production possibility schedules for the United States and the United Kingdom under the assumption of constant opportunity cost. The opportunity cost of producing any good will be constant and will be given by the domestic terms of trade. Costs can be constant when (1) factors of production are perfect substitutes for each other or used in fixed proportion in the production of both commodities, and (2) all units of the same factor are of exactly the same quality. Under constant costs the production possibility frontier will be a straight line as illustrated in figure 2.1 on page 46 in the textbook.

### 2.5.4 Opportunity Costs and Relative Commodity Prices

We have defined opportunity cost as the amount of a second commodity that must be given up to release just enough resources to produce one additional unit of the first commodity. Under constant costs opportunity cost is given by the slope (absolute) of the production possibility frontier and is sometimes referred to as the **marginal rate of transformation**. As illustrated in figure 2.1 in the textbook the slope of the production possibility frontier is 120/180= 2/3=opportunity cost of wheat in the United States, while it is 120/60=2 in the United Kingdom. Under the assumptions that prices equal costs of production and that each country produces both products, the opportunity cost of wheat is equal to the price of wheat relative to the price of cloth ($P_w/P_c$). Thus, $P_w/P_c$ =2/3 in the United States while it is equal to 2 in the United Kingdom. The difference in relative commodity prices between the two countries reflects their comparative advantage and provides the basis for mutually beneficial trade.

## 2.6 THE BASIS FOR AND THE GAINS FROM TRADE UNDER CONSTANT COSTS

In autarky a country's consumption bundle is restricted to what it produces. The actual product mix is determined by demand conditions or preferences.

### 2.6.1 An illustration of the Gains from Trade

With trade each country will completely specialise in the commodity of its comparative advantage and exchange some of the surplus. Each country will produce along its production possibility frontier but the **consumption frontier** is now beyond the production frontier. This is illustrated in figure 2.2 in the textbook.

## 2.7 EMPIRICAL TESTS OF THE RICARDIAN MODEL

These tests are discussed on pages 50-53. MacDougall (1951, 1952) was the first study to test the Ricardian theory of comparative advantage. The study uses US and UK exports for 1937 to check if there was a relationship between labour productivity and exports. His findings supported the Ricardian theory, that is, the actual pattern of trade seems to be based on the different labour productivities in different industries in the two nations. Other studies (Balassa, Stern and Golub) also confirmed his findings in the cases of the United States, the United Kingdom and for Japan.

## 2.8 CRITICISMS OF THE CLASSICAL THEORY

The textbook does not consider criticisms of the classical theory until discussion of the factor proportions theory of trade (which is based on the classical theory) is completed in chapter 3. However, it is helpful to consider some basic criticisms of the classical theory here. Much of this criticism is due to the theory being seriously incomplete in many ways. Thus, while the theory bases trade on differences in productivity, it does not explain the reasons for these differences. It also makes extreme predictions that are not fulfilled in the real world. It predicts, for example, that countries will specialise entirely in the production of export goods and ignore the production of import-competing goods. In the real world this does not often happen. For example, the United States produces steel yet also imports steel from South Africa. The theory also suggests that the greatest gains from trade occur between dissimilar countries. But the greatest proportion of international trade takes place between industrialised, developed countries which have similar standards of living and similar levels of technology.

Some criticisms are based on the unrealistic assumptions of the classical theory. However, all economic theories simplify reality to some extent, so this criticism does not necessarily invalidate the classical theory. The proof of the pudding is in the eating - how well does the classical theory explain the observed facts about international trade? More will be said about this in study unit 3. Also, some of the assumptions can be modified easily without having to discard the entire classical theory.

For example, the assumption that there are only two goods can be modified to allow for the more realistic case of trade in more than two commodities. When two countries produce a large number of commodities, comparative advantage requires that the products be **ranked** by their comparative cost. Each country will export the product(s) in which its comparative advantage is most pronounced and import the product(s) in which it has the least comparative advantage.

**IMPORTANT CONCEPTS**

- absolute advantage
- assumptions of classical theory
- autarky
- autarky prices
- classical economists
- classical theory
- comparative advantage
- comparative opportunity cost
- constant returns to scale
- consumption frontier
- criticism of classical theory
- division of labour
- domestic terms of trade
- economic nationalism
- efficiency
- factor of production
- gains from trade
- high wage rate protectionist fallacy
- international terms of trade
- labour theory of value
- law of comparative cost
- marginal rate of transformation
- mercantilism
- mutually beneficial trade
- opportunity cost theory
- output gains from specialisation
- pattern of trade
- productivity
- pure gains from trade
- ranking of comparative advantages
- relative cost
- relatively efficient production
- specialisation
- terms of trade
- zero sum game

**TRUE OR FALSE QUESTIONS**

(1) For the mercantilists, international trade was a zero sum game.
(2) Hume, Smith and Ricardo were followers of the mercantilist doctrine.
(3) According to the mercantilists, national economic welfare can only be increased if the government encourages exports and imports.
(4) According to Hume, it is an illusion to believe that building up gold stocks leads to prosperity.
(5) According to Smith, countries should specialise and trade in those commodities in which they have a comparative advantage.
(6) According to Smith, differences in commodity prices are attributed to differences in the productivity of capital.
(7) According to Ricardo, all countries can benefit from trade even if they do not enjoy an absolute advantage in the production of any commodity.
(8) The principle of comparative advantage suggests that a country can benefit from trade even if its economy is less developed than that of other countries.
(9) Ricardo was unable to refute conclusively the objection that free trade can harm some groups in a country.
(10) Classical theory is a demand-based explanation for trade which ignores the supply side.
(11) According to Smith and Ricardo, international trade does not encourage complete specialisation.
(12) Autarky means economic self-sufficiency.
(13) Under autarky, domestic consumption is necessarily less than domestic production.
(14) Classical theory gave reasons for differences in productivity, but not for differences in the relative prices of commodities.
(15) Equal advantage means that differences in domestic price ratios permit countries to gain equally from trade.
(16) Trade allows both countries to consume more of both goods than they can produce domestically.
(17) The gains from specialisation refer to the increased consumption of commodities resulting from trade.
(18) Comparative opportunity cost is expressed in quantities rather than as cost prices in money terms.
(19) Labour was the only factor of production considered by Smith, whereas Ricardo considered both labour and capital in devising his principle of comparative advantage.
(20) If wages in the clothing industry are higher in the United States than in Taiwan, it will not benefit the US to import clothing from Taiwan as domestic workers will become unemployed.
(21) A weakness of the classical theory is that it cannot explain why most international trade is between developed countries at a similar level of industrialisation and living standards.
(22) The classical theory assumes that transport costs are zero and that only two countries and two commodities are engaged in trade. These assumptions are clearly false in reality. Therefore, the classical theory is invalid.
(23) The pure gains from trade refer to the increase in consumption resulting from exchange based on specialisation according to comparative advantage.
(24) The pattern of trade refers to the commodities imported and exported by the countries concerned.
(25) If Country I domestic terms of trade are lower than the international terms of trade, while Country II domestic terms of trade are higher than the international terms of trade, then trade will benefit Country I more than it will Country II.

**ESSAY QUESTIONS**

(1) Explain, using numerical examples, the concepts of absolute, comparative and equal advantage. In your answer, explain how each principle accounts for the pattern of trade and the gains from trade.

(2) Critically discuss mercantilist trade policy compared to policy based on Ricardo's principle of comparative advantage.

(3) Evaluate the following statements:

(a) Trade is a zero sum game.
(b) Countries can only benefit from trade if they each have absolute advantage in one of the commodities.

(4) Explain some of the limitations of the classical theory.

# The standard Theory of International Trade 3

**PRESCRIBED READING**

Chapter 3 of the textbook is prescribed (Salvatore 2011: 61 – 80 except for the case studies).

**AIM OF STUDY UNIT**

The aim of this study unit is to

- introduce increasing costs
- introduce (demand preferences) community indifference curves in the analysis of gains from trade

**LEARNING OUTCOMES**

Once you have worked through this study unit and the relevant sections of the textbook, you should be able to

- explain why production possibility frontiers are concave from the origin
- illustrate graphically equilibrium before trade
- illustrate graphically the basis and gains from trade with increasing costs

## 3.1 INTRODUCTION

The previous study unit outlines trade under constant costs. Constant costs are unrealistic as they do not obtain in practice. This unit extends the previous unit by introducing increasing costs and demand preferences. The demand and supply conditions will be used to analyse the equilibrium-relative commodity price in each country in the absence of trade. The analysis will be extended to include gains from trade with increasing costs.

## 3.2 THE PRODUCTION FRONTIER WITH INCREASING COSTS

Increasing opportunity costs mean that a nation must give up more and more of one commodity to release just enough resources to produce each additional unit of another commodity. With increasing costs the production possibility frontier is concave from the origin. Production possibility frontiers reflecting the increasing opportunity costs are illustrated in figure 3.1 in the textbook. The slope of the production possibility frontier at each point is known as the **marginal rate of transformation** (MRT). It refers to the amount of one commodity that a nation must give up to produce each additional unit of the other commodity. Thus, it is the same as the opportunity cost of a good. The MRT (slope) increases as we move down (or up) the production possibility frontier. This shows increasing opportunity costs in each country in the production of both commodities. Increasing opportunity costs are explained by (1) the fact that factors of production are not homogeneous and (2) are not used in the same fixed proportion. It therefore means that some resources are less efficient or less suited for the production of a particular product. Further explanations and examples are given in subsection 3.2c of the textbook.

## 3.3 COMMUNITY INDIFFERENCE CURVES

Students are expected to know indifference curves from level 2 microeconomics. We will therefore not discuss section 3.3 of the textbook. We, however, want to highlight the fact that the higher the indifference curve the higher the level of satisfaction it represents. The slope (absolute) of the indifference curve is known as the **marginal rate of substitution** (MRS). It is defined as the amount of one good that a nation could give up for an extra unit of another good in consumption. This is a movement along the same indifference curve. The slope of the indifference curve decreases (in absolute terms) as we move down the curve.

## 3.4 EQUILIBRIUM IN ISOLATION

In this section we bring together the supply conditions (as indicated by the production possibility frontier) and the demand conditions (as indicated by the community indifference curves) in a nation. Before trade a nation attains equilibrium when it gets to the highest possible indifference curve subject to its production possibility frontier. Equilibrium occurs at the point of tangency between the production possibility frontier and the highest possible indifference curve. The common slope at the point of tangency gives the **internal equilibrium-relative commodity price** in the nation and reflects the nation's comparative advantage.

Figure 3.3 combines figures 3.1 and 3.2 and illustrates equilibrium in isolation for Nations 1 and 2. For Nation 1 equilibrium is at point A while for Nation 2 it is at point A'. Each nation consumes the commodity bundle that it produces. The respective equilibrium points maximize welfare in each nation. Looking at the respective equilibrium relative price of good X in both nations, we can see that is equal to ¼ in Nation 1 and equal to 4 in Nation 2. The lower equilibrium relative price of X in Nation 1 than in nation 2 indicates that Nation 1 has comparative advantage in the production of X while Nation 2 has comparative advantage in the production of good Y.

The fact that the internal equilibrium commodity prices are different between the two nations indicates differences in relative prices (comparative advantages). It follows that both nations can engage in mutually beneficial trade with each nation producing and exporting the commodity of its comparative advantage. Thus, nation 1 will be producing and exporting good X while nation 2 will produce and export good Y.

## 3.5 THE BASIS FOR AND THE GAINS FROM TRADE WITH INCREASING COSTS

The difference in relative prices indicates comparative advantage and is the basis for mutually beneficial trade between the two nations. Each nation will specialize in the commodity of its comparative advantage and export the surplus of that commodity for the other commodity. Specialization will continue until relative commodity prices in the two nations become equal at the level at which trade is in equilibrium. At that point each nation will be consuming more than before trade.

### 3.5.1 Illustrations of the Basis for and the Gains from Trade with Increasing Costs

The gains from trade are discussed in subsection 3.5A and illustrated in figure 3.4 in the textbook. In section 3.4 we saw that nation 1 has comparative advantage in commodity X while nation 2 has comparative advantage in commodity Y. In isolation the equilibrium relative price of X is $P_A$=1/4 in Nation 1 and $P_{A'}$ = 4 in Nation 2. With trade and specialization each nation produces more of the commodity of its comparative advantage and less of the other commodity. The international terms of trade are $P_x/P_y$=1 ($P_B$=$P_{B'}$ =1). Thus, Nation 1 moves from point A to point B in production. Each nation will now be consuming on the international terms of trade line. Nation 1 will now consume at point E, which is on a higher indifference curve compared to point A. On the other hand nation 2 ends up consuming at point E'. The lines $P_B$=$P_{B'}$=1 represent the equilibrium-relative price at which trade is balanced.

The **equilibrium-relative price with trade** is the common relative prices at which trade is balanced. This means that at that relative price the amount of X Nation 1 wants to export will be exactly equal to the amount nation 2 wishes to import. The same can be said about commodity Y. At any other relative price trade will not be balanced and that will force the relative price to change towards its equilibrium value. Please note that the equilibrium relative price used in this illustration was arrived at through trial and error.

Unlike what we saw in the previous study unit where countries were specializing completely, under increasing costs there is **incomplete specialization** in production in both nations, even in the case of a small country. This is because as nation 1 specializes in the production of X, it incurs increasing opportunity costs in producing good X. As Nation 2 specializes in producing Y it incurs increasing opportunity costs in producing Y (which means declining opportunity costs in X). Thus, as each nation specializes in the commodity of its comparative advantage, relative commodity prices move toward each other until they are identical in both nations and this happens before complete specialization.

### 3.5.2 The Gains from Exchange and from Specialization

A nation's gains from trade are made up of two components: the gains from exchange and the gains from specialization. Such gains are illustrated in figure 3.5 in the textbook. This figure illustrates the case of a small country with a domestic relative price of X of ¼ and facing a world relative price of $P_w$ =1.

Suppose for some reason Nation 1 could not specialize in the production of X with the opening of trade but continue to produce at point A (isolation equilibrium point). It could export some of its output of X (20 units) at the world relative price and get Y (20 units). It will be able to consume at point T which is on a higher indifference curve. The movement from point A to point T in consumption measures the **gains from exchange**.

If Nation 1 also specializes in the production of X, it would move to point B on its production possibility frontier and will be able to export more units of X (60) for Y(60) at the world relative price (PW=1). This will enable Nation 1 to move to an even higher indifference curve III and consume at point E. The movement from point T to point E measures the **gains from specialization** in production.

**IMPORTANT CONCEPTS**

- community indifference curves
- equilibrium-relative commodity price in isolation
- equilibrium-relative commodity price with trade
- gains from exchange
- gains from specialization
- incomplete specialization
- increasing costs
- marginal rate of substitution
- marginal rate of transformation

**TRUE OR FALSE QUESTIONS**

(1) Increasing opportunity costs mean that the production possibilities frontier is convex from the origin.

(2) Increasing opportunity costs mean that the slope of the production possibilities frontier decreases as one moves down to the right.

(3) A nation experiences increasing costs for only one of the two products.

(4) The marginal rate of transformation refers to the amount of one good that a nation must give up to produce each additional unit of another good.

(5) Community indifference curves can cross each other.

(6) The marginal rate of substitution is the same along an indifference curve.

(7) In the absence of trade, a nation is in equilibrium when it reaches the highest indifference curve possible given its production frontier.

(8) The equilibrium-relative commodity price is isolation is given by the slope of the common tangent to the nation's production frontier and the indifference curve.

(9) The difference in relative commodity prices between two nations is a reflection of their comparative advantage.

(10) Specialization will stop when relative commodity prices are equal in both nations and at that point trade is in equilibrium.

(11) With increasing costs, a nation is not able to consume beyond its production frontier.

(12) With increasing costs specialization is always complete in both nations.

(13) With trade each nation will produce more of the commodity of its comparative advantage.

(14) With increasing costs, there is no basis for mutually beneficial trade if the two nations have identical production frontiers.

(15) The gains from exchange are synonymous with the gains from specialization.

**ESSAY QUESTIONS**

(1) Briefly explain why increasing opportunity costs arise. Why do the production frontiers of different nations have different shapes?

(2) Explain with the aid of a diagram the gains from trade with increasing costs.

# The basis of trade: the factor proportions theory

# 4

**PRESCRIBED READING**

Chapters 5 and 6 of the textbook is prescribed (Salvatore 2011: 119 – 152; 169- 194).

**AIM OF STUDY UNIT**

The aim of this study unit is to

- introduce the factor proportions theory of international trade
- examine some alternative trade theories

**LEARNING OUTCOMES**

Once you have worked through this study unit and the relevant sections of the textbook, you should be able to

- explain how comparative advantage is based on differences in factor endowments across countries
- compare and contrast the classical and factor proportions theories of trade
- explain the pattern of and the gains from trade according to the factor proportions theory
- explain how international trade affects relative factor prices within and across nations
- illustrate graphically the welfare gains from trade
- critically evaluate the factor proportions theory
- explain some alternative approaches (theories) to international trade

## 4.1 INTRODUCTION

The classical theory discussed in study unit 2 says that (a) trade based on absolute or comparative advantage is mutually beneficial (the gains from trade) and that (b) a country will export goods in which it has such an advantage and import goods which can be produced more efficiently by other countries (the pattern of trade). This pattern of trade is determined by the differences in relative commodity prices between nations. The classical theory, however, does not explain the reasons for the differences in relative commodity prices between nations (hence absolute or comparative advantage). According to the classical theory comparative advantage was based on the differences in labour productivity (the only factor of production) among nations. But they provided no explanation for such a difference in productivity. The factor proportions theory studied in this study unit extends the classical theory of trade by (1) explaining the reason for the differences in relative commodity prices and comparative advantage between nations and (2) enables us to analyse the effect of international trade on factor prices within and across nations.

## 4.2 Assumptions of the Theory

The Heckscher- Ohlin theory is often called the factor proportions theory. It is based on a number of simplifying assumptions (some are implicit). These assumptions will be relaxed in the next study unit in order to make the theory more realistic.

### 4.2.1 Basic assumptions

The **factor proportions theory** is based on the following assumptions:

(1) There are two countries, two homogeneous commodities (X and Y) and two homogeneous factors of production (capital and labour) whose initial levels are fixed and assumed to be relatively different for each country (models based on this assumption are often called 2 x 2 x 2 models).
(2) Technology is the same in both countries. The two countries use identical production techniques in producing identical commodities.
(3) The two commodities have different factor intensities. Commodity X is labour intensive and commodity Y is capital intensive in both countries. Thus, the two goods are produced with different and uniquely-ordered intensities which are not subject to reversals over all relative factor prices.
(4) The production function of either good incorporates both factors and is subject to constant returns in both countries.
(5) Tastes and preferences are the same in both countries.
(6) Perfect competition exists in both commodities and factor markets in the two countries.
(7) Factors are perfectly mobile within each country, but not between the countries.
(8) There are no transport costs, tariffs, or other impediments to the free flow of international trade.
(9) All resources are fully employed in both nations.
(10) International trade between the two countries is balanced.

### 4.2.2 Meaning of the Assumptions

**Assumption 1** is made just for illustrative purposes. If it is relaxed the conclusions of the theory will remain unchanged. **Assumption 2** (same technology) means that the two countries have access to the same production techniques. Thus, if factor prices were the same in the two countries producers will use same quantities of each factor. With different factor prices cost minimization entails producers in each country using more of the relatively cheaper factor in the country. **Assumption 3** (different **factor intensities**, good X is labour intensive while good Y is capital intensive) means that commodity X requires relatively more labour than commodity Y in both nations. Thus, the labour-capital ratio (L/K) is higher for commodity X than for commodity Y in both nations at the same relative factor prices. It does not mean that the L/K ratio is the same in the two nations. **Assumption 4** (constant returns to scale) means that increasing the amount of the two factors used in the production of a commodity will increase the output in the same proportion. For example if both capital and labour are doubled output of the particular commodity will also double. **Assumption 5** (equal tastes in both nations) means that demand preferences, as reflected by the shape of indifference curves, are identical in both nations. **Assumption 6** (**perfect competition** in both markets) means that all economic agents are too small to affect the factor and commodity prices in both nations. It also means that there is perfect information of commodity prices and factor earnings in all parts of each nation. **Assumption 7** (**perfect factor mobility** within each nation but not internationally) means that capital and labour move quickly between industries, to those industries offering higher rewards. But international factor price differences will persist indefinitely. **Assumption 8** (**no barriers** to trade) means that specialization continues in production until relative (and absolute) commodity prices are the same in both nations with trade. **Assumption 9** (**full employment**) means that there are no unemployed factors of production in either nation. **Assumption 10** (**balanced trade**) means that the total value of each nation's exports equals the total value of the nation's imports.

## 4.3 FACTOR INTENSITY, FACTOR ABUNDANCE, AND THE SHAPE OF THE PRODUCTION FRONTIER

### 4.3.1 Concept of Factor Intensity

The concept of factor intensity gives the Heckscher-Ohlin (H-O) theory its distinctive identity. This concept is a relative concept. If commodity X is capital intensive relative to commodity Y, then commodity Y is labour intensive relative to commodity X. A commodity is said to be relatively intensive in the use of a given factor if the commodity uses more units of the particular factor per unit of the other factor than the other commodity.

For example if 4 units of capital (4K) and 2 units of labour (2L) are required to produce one unit of commodity Y, the capital-labour ratio is 2. That is, 4/2 in the production of Y. If at the same time 6 units of capital (6K) and 4 units of labour (4L) are required to produce one unit of commodity X, the capital-labour ratio is 1,5 that is, 6/4. In this case we say Y is capital intensive and X is labour intensive.

Figure 5.1 in the textbook illustrates the factor intensities of producing commodities X and Y in the two nations. The K/L ratio is given by the slope of the ray through the origin. The figure shows that commodity Y is the capital intensive in both nations since its ray is steeper than that of commodity X. Nation 2 uses a higher K/L ratio in the production of both goods because the relative price of capital (r/w) is lower in nation 2 than in Nation 1. If the relative price of capital

decreases, producers will substitute K for L in the production of both commodities to minimize costs of production, but Y remains the K-intensive commodity.

### 4.3.2 Concept of Factor Abundance

The concept of factor abundance is the second major element that gives the H-O model a logical interpretation. As with the concept of factor intensity, factor abundance is also a relative concept. There are two basic approaches to the measurement of **factor abundance**:

(1) physical definition (supply side)
(2) relative factor price definition (both demand and supply)

It has to be noted from the start that the two approaches are often not consistent with each other.

According to the physical approach Nation 2 is capital abundant if TK/TL in Nation 2 exceeds TK/TL in Nation 1, that is,

$(TK/TL)_1 < (TK/TL)_2$.

This also means that Nation 1 is labour abundant. It has to be noted that it is not the absolute quantities of factors that matter. A small country with less capital than a large country can still be the capital abundant country, provided the amount of capital relative to labour is greater than in a larger country.

According to the factor prices definition, Nation 2 is capital abundant if the ratio of the rental price of capital to the price of labour time ($P_K/P_L$) is lower in Nation 2 than in Nation 1. This ratio is usually denoted by (r/w) where r is the interest rate and w is the wage rate.

Factor prices are determined by both demand and supply. From principles of economics we have learnt that the demand for factor services is a **derived demand**. With identical demand preferences in both nations, the two definitions of factor abundance give the same conclusions in our case. That is, if TK/TL is greater in Nation 2 than in Nation 1, $P_K/P_L$ will be smaller in Nation 2. Thus, Nation 2 is the K-abundant nation in terms of both definitions. As pointed out above, this is not always the case. When the two definitions contradict, it is the definition according to factor prices that should be used. Relative factor endowments differ considerably between countries, see table 5.2 in case Study 5-2 in the textbook, which compares developed and developing countries.

### 4.3.3 Factor Abundance and the Production Frontier

In our analysis Nation 2 is K-abundant and commodity Y is **K-intensive**, Nation 2 can produce relative more of commodity Y than Nation 1. On the other hand Nation 1 is L-abundant and will therefore produce relative more of the **L-intensive** commodity, X. The respective production frontiers for the two nations are illustrated in figure 5.2 in the textbook. The production frontier for Nation 1 is flatter than that of Nation 2.

## 4.4 FACTOR ENDOWMENTS AND THE FACTOR PROPORTIONS THEORY

In the early 1900s Eli Heckscher and Bertil Ohlin, both Swedish economists, proposed a theory based on factor proportions. Heckscher laid the foundations for the model in a paper first published in 1919. In 1933, his student Ohlin elaborated on the theory in a doctoral thesis. From the early 1930s, the ideas of Heckscher and Ohlin rapidly gained adherents. The fundamental simplicity of their theory and its logical completeness appealed to economists. The model was found to be capable of providing insights into such issues as the effect of international trade on factor prices and the effect of economic growth on the pattern of international trade. Because of the seminal contributions of the two Swedish economists, the factor proportions theory is often simply called the **Heckscher-Ohlin (H-O) theory (model)** (note that the terms "model" and "theory" do not always mean the same thing in economics, but they will be used interchangeably throughout this module).

The **H-O** theory can be presented in the form of two theorems: the **H-O theorem** (which predicts the pattern of trade) and the ***factor price equalisation theorem*** (which deals with the effect of international trade on factor prices). The second theorem is discussed in section (5.5).

### 4.4.1 The Heckscher-Ohlin Theorem

If all the assumptions stated in section 5.2 hold the H-O theorem can be stated as follows: *A nation will export the commodity whose production requires the intensive use of the nation's relatively abundant and cheap factor and import the commodity whose production requires the intensive use of the nation's relatively scarce and expensive factor*. Thus, a capital abundant country will export capital intensive commodities. From our previous discussion Nation 1 (L-abundant) will export commodity X (L-intensive) while Nation 2 (K-abundant) will export commodity Y (K-intensive).

The H-O theorem singles out differences in factor abundance, or factor endowments among nations as the reason for differences in relative commodity prices, and hence the basis for comparative advantage and international trade. For this reason the H-O model is often called the factor-proportions or factor endowment theory. The H-O theorem explains comparative advantage rather than assume it as is the case in classical theory.

For example, South Africa is relatively well endowed with unskilled labour and land (including natural resources). Because it is a developing country, capital and skilled labour are relatively scarce and expensive in South Africa. According to the factor proportions theory, South Africa should export commodities that embody relatively large amounts of unskilled labour and land, while importing goods that make intensive use of skilled labour and capital. The observed pattern of trade between South Africa and the rest of the world is broadly consistent with these implications of the theory. South Africa exports mainly mining and agricultural products which embody relatively large amounts of unskilled labour and, of course, natural resources. Most imports into South Africa are more sophisticated manufactured goods which need relatively large amounts of capital and skilled labour to produce.

### 4.4.2 Illustration of the Heckscher-Ohlin Theory

Figure 5.4 in the textbook illustrates the welfare gains from trade in the two nations using the H-O theory. **Students are expected to be able to illustrate such gains in the case of a single nation**. We maintain our assumption regarding factor abundance and factor intensities in the two nations. Given that tastes are identical, the two nations face the same indifference map. Before trade each nation produces and consumes at the point of tangency between its production frontier and the highest indifference curve (I). The internal relative commodity prices are given by the slopes of the tangents at the point of autarky equilibria (that is, point A and A'). With trade each nation specializes in and produces more of that commodity which is relative intensive in the relatively more abundant factor. Thus, Nation 1 specializes in commodity X and produces at point B, while Nation 2 produces at point B'. At these points the respective transformation curve are tangent to the common relative price line $P_B$ (international terms of trade). Nation 1 will export commodity X for commodity Y and will now consume at point E on a higher indifference curve II. Nation 2 will also benefit from trade as it will be able to move to a higher indifference curve (II). At this equilibrium nation 2's exports of commodity X are exactly equal to Nation 2's imports of the same commodity.

## 4.5 FACTOR - PRICE EQUALIZATION AND INCOME DISTRIBUTION

The factor price equalisation theorem follows directly from the H-O theorem and holds only when the H-O theorem holds. This theorem was developed by Paul Samuelson and hence, it is sometimes referred to as the Heckscher-Ohlin-Samuelson (H-O-S) theorem.

### 4.5.1 The Factor price Equalisation Theorem

This theorem can be stated as follows: *International trade will bring about equalisation in the relative and absolute returns to homogenous factors of production across nations*. As such international trade is a substitute for the international mobility of factors. This theorem says that international trade will cause the wage rate of homogenous labour to be the same in all trading nations. The same can be said for the rental price of capital (interest rate). Both relative and absolute factor prices will be equalised.

In our discussion so far, we know that in the absence of trade the relative price of commodity X (L-intensive) is lower in Nation 1 (L-abundant) than in Nation 2, while that for commodity Y (K-intensive) is lower in Nation 2 (K-abundant). Labour is relatively cheaper in Nation 1 than in Nation 2 while capital is relatively cheaper in Nation 2. With trade and specialisation, Nation 1 will produce more of commodity X and less of commodity Y. More labour will be demanded and this will raise the wage rate (w) and the relative demand of capital will fall which reduces the interest rate (r). In Nation 2 the opposite will happen, more capital will be demanded and hence interest rate (r) will rise. If all the assumptions hold, international trade keeps expanding until relative commodity prices are completely equalised, which also means equal relative factor prices in the two nations.

### 4.5.2 Effect of trade on the Distribution of Income: The Stolper-Samuelson Theorem

In the previous section we saw that international trade tends to equalize factor prices between the two trading nations. Section 5.5C of the textbook discusses how international trade affects real factor prices and real incomes of the owners of the factors of production within each nation. We have seen that international trade raises the price of the abundant and cheap factor of production and reduces the price of the scarce and expensive factor of production. In our example, the wage rate (w) rises and the interest rate (r) falls in Nation 1, while the opposite happens in Nation 2. Since both factors of production are assumed to remain fully employed before and after trade, the real income of labour and the real income of the owners of capital move in the same direction as the movement in factor prices. Thus, trade causes the real income of labour to rise and the real income of the owners of capital to fall in Nation 1 (the nation with cheap labour and expensive capital). On the other hand, trade causes the real income of labour to fall and the real income of the owners of capital to rise in Nation 2 (the nation with expensive labour and cheap capital). This is known as the **Stolper-Samuelson theorem**. *In short, this theorem states that the internal distribution of income will change in favour of each country's relatively abundant factor of production*.

### 4.5.3 The Specific-Factors Model

The discussion in the previous section assumes that factors of production are mobile between sectors or industries. If one of the factors is specific to a particular commodity (can only be used to produce that product) the conclusions regarding the income distribution effect of trade becomes ambiguous. There will be two real wages in the economy ($W/P_X$ and $W/P_Y$). The welfare change of the workers will depend on their consumption patterns. This is discussed in section 5.5D in the textbook.

### 4.5.4 Empirical Relevance

The empirical relevance of the H-O–S theory is discussed on pages 143-145 in the textbook. This section discusses why the returns for homogenous factors of production are not equalized in the real world. The reason why trade has not equalized factor returns is that the simplifying assumptions on which the theory is based do not hold in the real world.

## 4.6 Empirical Tests of the Heckscher-Ohlin Model

There have been many tests of the H-O model. The first such test of the H-O model was done by Wassily Leontief (1951).

### 4.6.1 The Leontief Paradox

Leontief used U.S data for 1947. The USA was believed to be the most K-abundant nation in the world. Leontief expected the USA to export K-intensive commodities and import L-intensive commodities. He estimated K/L ratios for U.S import substitutes and U.S exports using input-output tables for 1947. His results were startling. U.S import substitutes were about 30 percent more K-intensive than U.S exports. Thus, U.S.A seemed to export L-intensive commodities and import K-intensive commodities. This was the opposite of what the H-O model predicted and it became known as the **Leontief paradox**.

### 4.6.2 Explanations of the Leontief paradox and Other Empirical Tests of the H-O Model

There have been a number of explanations to the Leontief's findings. Some of them were provided by Leontief himself. Most of these explanations and other subsequent empirical tests are discussed in section 6.6B in the textbook. The possible explanations of the paradox include (1) the superiority of U.S labour, (2) the human capital (Kenen (1965)), (3) technology explanation (R & D), (4) natural resources, (5) factor intensity reversals, (6) inter-country differences in demand or consumption patterns, and (7) influence of tariffs.

### 4.6.3 Factor Intensity Reversal

Factor intensity reversal occurs when a given commodity is capital intensive in one nation and L-intensive in the other nation. This concept has been explained under the assumptions on which the H-O model is based in section 4.2.2.

## 4.7 CRITICISMS OF THE FACTOR PROPORTIONS THEORY

Criticism of the factor proportions theory has been directed at both the assumptions of the theory and its inconsistencies with the empirical evidence. The main thrust of these criticisms is that the theory has little relevance to the real world. A major blow to the theory began with empirical tests carried out by Leontief in 1951. Given the relative capital abundance of the US, the factor proportions theory predicts that the USA should specialise in and export capital intensively produced goods and import labour intensive commodities. Using input-output tables for the US as his data source, Leontief found exactly the opposite: on average, the US was exporting labour intensive commodities and importing capital intensive goods. This contradiction of the theory became known as the **Leontief paradox** and gave rise to much further research attempting to explain it, as summarised on page 46 of the textbook.

A strong assumption of the factor proportions theory is that tastes are identical in the trading countries. When tastes and demand conditions are not identical, they may cause the prices of the same goods to differ substantially from what would be expected on the basis of their relative factor intensities. This is called **demand reversal** and results in a contradiction of the factor proportions theory. For example, Country A, with abundant capital, produces wheat cheaply and Country B, with abundant labour, produces cheap cloth. According to the factor proportions theory, Country A will export wheat and country B, cloth. However, a disproportionate demand for the two commodities in each country may lead to expensive wheat in Country A and expensive cloth in Country B. This results in the pattern of trade taking an unexpected course, with Country A exporting cloth and Country B exporting wheat. This is contrary to the predictions of the theory.

A further possibility that leads to a contradiction of the theory is **factor intensity reversal**, as mentioned above. For example, if commodity X produced using labour intensive methods becomes a capital intensively produced commodity, this is an instance of factor intensity reversal. In such cases, both countries will want to specialise in and export the same commodity. No trade will take place, since the countries concerned cannot export the same commodities to each other. The theory is thus unable to predict the pattern of trade under these circumstances.

Demand and factor intensity reversals weaken the conclusions of the factor proportions theory but do not necessarily invalidate it. This would depend on how widespread such contradictions to the theory are in the real world. The evidence here is mixed but does not seem to be sufficiently widespread to discard the factor proportions theory. Criticism has also been levelled at the simplifying assumption of zero transport costs. Clearly this is an unrealistic assumption but the theory can be modified to include positive transport costs fairly easily. The textbook does not discuss demand and factor intensity reversals and non-zero transport costs and their implications for the theory. However, you should be aware of and study them to the extent that they have been explained in this study unit. They are part of this module and questions on them may be included in the assignments and the exams.

Also of concern are the assumptions of perfect competition, constant returns to scale and identical technology. Relaxing these assumptions gives rise to alternative explanations of international trade, which are discussed next.

## 4.8 ALTERNATIVE THEORIES OF TRADE

We have seen in the preceding section that the H-O theory based comparative advantage of differences in factor endowments between nations. This theory is not able to a significant portion of today's international trade. Alternative (**new**) trade theories base international trade flows on economies of scale, imperfect competition and differences in the development and spread of new technologies over time among nations. These theories are discussed in chapter 6 of the prescribed textbook.

### 4.8.1 International Trade and Economies of scale

Assumption number 4 of the H-O model was that both goods are produced under conditions of constant returns to scale in the two nations. It is here argued that with increasing returns to scale mutually beneficial trade between two countries is still possible. Section 6.3 in the textbook explains fully and also illustrates how this happens. **Increasing returns to scale** refers to a production situation where output grows proportionately more than the increase in inputs or factors of production. A larger scale of operation may lead to increased labour productivity as a result of greater division of labour and specialization. Specialized and more productive machinery may become feasible only at a large scale of operation. Economies of scale are usually accompanied by extensive **product differentiation**. Some industries in certain countries specialise in a particular brand and acquire a comparative advantage in that segment of the market. Figure 6.1 illustrates how complete specialization due to economies of scale results in higher consumption possibilities in both countries.

### 4.8.2 International Trade and Imperfect Competition

An increasingly significant part of international trade is **intra-industry trade**. Intra-industry trade occurs when countries both export and import goods from the same industry to and from each other. For example, Germany exports motor cars (BMW, Mercedes Benz etc) to France, but it also imports motor cars (Renault, Puegeot etc) from France. The imports and exports are similar. It is difficult for the factor proportions theory to explain this because it relies on differences in comparative advantage derived from differences in factor endowments. Germany and France are both developed countries at similar levels of industrialisation. Their factor endowments of skilled versus unskilled labour, capital and land are broadly the same. Thus according to the factor proportions theory, they should have the same advantages and trade between them should be minimal. The factor proportions theory can explain inter-industry trade based on different goods from different industries, but cannot easily explain the growing volume of intra-industry trade.

Intra-industry trade arises in order to take advantage of economies of scale in production. It benefits consumers because of the wider range of choices at lower prices made possible by economies of scale in production. There are a number of differences between the H-O model and intra-industry trade and these are discussed on page 182 in the textbook. The level of intra-industry trade is measured by the **intra-industry trade index** (T):

$$T = 1 - \frac{|X - M|}{X + M}$$

Where X and M represent respectively, the value of exports and imports of a particular industry or commodity group and the vertical bars in the numerator denote the absolute value. The value of the index varies from zero to one. The high the T index the higher the level of intra-industry trade in a particular industry. You do not have to go through the formal models of intra-industry trade discussed in the textbook.

### 4.8.3 Trade based on dynamic technological differences

Apart from the relative factor endowments stressed by the H-O theory and the existence of economies of scale and product differentiation discussed in the preceding section dynamic changes in technology among nations can be a separate determinant of international trade. These changes are examined by the technological gap and the product cycle models.

#### 4.8.3.1 The Technological Gap Model

This was developed by Posner (1961). It says a lot of international trade is based on the introduction of new products and production processes. Technological innovation will give the innovating firm and nation a temporary monopoly based on patents and copy rights. The model is based on the hypothesized impact of technological lags and leads in product innovation on the pattern of international trade in manufactured products. The technological gap between nations may be a basis of profitable trade between them. The models argue that comparative advantage is not static but shifts over time as a result of technical change through sustained innovative activity (through R & D). There is a time lag in the imitation process, both domestically and by foreign competitors. This is a supply-based theory and contends that the technologically-abundant countries would possess relative advantages in new products over less technologically developed nations.

#### 4.8.3.2 The Product Cycle Model

This model is very similar to the technological gap model. It was developed by Vernon (1966). The main difference between them is that this model stresses product **standardization**. According to this model when a new product is introduced, it usually requires highly skilled labour to produce. As the product matures and acquires mass acceptance, it becomes standardized; it can be produced by mass production techniques and less skilled labour. Figure 6.4 in the textbook illustrate the five stages of the product cycle model from the point of view of the innovating and imitating country. Over time comparative advantage in the product shifts from the advanced nation that originally introduced it to less advanced nations, where labour is relatively cheap. The innovating country ends up as a net importer of the product they initially introduced on the market.

Do these alternative new trade theories completely discredit the traditional factor proportions theory? In the textbook, the author makes the point that the two approaches explain different aspects of international trade and are thus not mutually exclusive. The factor proportions theory explains inter-industry trade between developed and developing countries reasonably well, whereas the new trade theories are better equipped to explain intra-industry trade between countries at the same level of industrialisation. Also, the basic principle of comparative advantage is still at work in the new trade theories, but they can explain **dynamic changes in comparative advantage** better than the essentially static analysis of the factor proportions theory. It is argued that the new trade theories are dynamic extensions of the basic H-O model.

**IMPORTANT CONCEPTS**

- capital abundance
- capital/labour ratio
- constant returns to scale
- criticism of factor proportions theory
- economies of scale
- demand reversal
- factor abundance
- factor endowments
- factor intensities
- factor intensity reversal
- factor price equalisation
- factor proportions (or endowment) theory
- factors of production
- gains from trade
- Heckscher-Ohlin model
- identical taste patterns
- increasing returns to scale
- innovation and changes in technology
- inter-industry trade
- internal distribution of income
- intra-industry trade
- intra-industry trade index
- K/L ratio
- labour abundance
- Leontief paradox
- monopolistic competition
- new trade theories
- pattern of trade
- product life-cycle
- product differentiation
- r/w ratio
- relative factor endowment
- relatively factor intensive
- standardization
- Stolper-Samuelson theorem
- 2 x 2 x 2 model

**TRUE OR FALSE QUESTIONS**

(1) Unlike Ricardo, who never explicitly considered the reasons for relative commodity price differences between countries before trade, providing the answer to this question is central to the factor proportions theory.
(2) Different commodities need not necessarily use different combinations of factors of production, according to the factor proportions theory.
(3) The factor proportions theory assumes that the relative prices of factors of production differ between countries.
(4) In a country with relatively abundant labour and little capital, wage levels are higher relative to the price of capital.
(5) The factor proportions theory assumes that goods can generally be classified according to the factor proportions used in their production.
(6) According to the factor proportions theory, international differences in factor endowments result in differences in relative prices and comparative advantage in production.
(7) According to the price definition of factor endowment, Country I is relatively well endowed with capital and Country II with labour if the price of a unit of capital relative to the price of a unit of labour is higher in Country II than in Country I.
(8) Demand reversals mean that a commodity which was capital intensive may become labour intensive.
(9) Factor intensity reversals are quite common and thus invalidate the factor proportions theory.
(10) The factor proportions theory assumes that production functions show decreasing returns to scale.
(11) Constant returns to scale means that output increases in the same proportion as an increase in the factors of production.
(12) The factor proportions theory predicts that relative factor intensities differ between commodities and that this difference is consistent between countries.
(13) The Leontief paradox corroborates the factor proportions hypothesis.
(14) Leontief found that the US's imports are relatively more labour intensive in production than the country's exports.
(15) Factor intensity reversal means that the labour abundant country switches to producing the capital intensive commodity and vice versa for the capital abundant country.
(16) Factor price equalisation implies that, through trade, the price of labour equals the price of capital in the countries concerned.
(17) Factor price equalisation is the result of the migration of factors of production from where their returns are relatively low to where they are higher.
(18) The Stolper-Samuelson theorem is that trade changes the internal distribution of income towards the relatively scarce and expensive factor of production.
(19) The capital/labour ratio has been rising in most developed countries while falling in most developing countries.
(20) The factor proportions theory predicts that a country will export commodities which require intensive use of its relatively scarce factor of production and import commodities which require intensive use of its relatively abundant factor.
(21) Unlike the classical theory, the factor proportions theory implies that the gains from trade accrue only to the country with the lower comparative opportunity costs of production.
(22) Standardisation is the way in which developed countries mass produce new products embodying the latest technology, for export to developing countries.
(23) A weakness of the factor proportions theory is that it cannot easily account for inter-industry trade between developed and developing countries.

(24) Decreasing returns to scale may permit an industry to acquire a comparative advantage over time.
(25) Product differentiation occurs when countries specialise in different products.
(26) The more similar the factor endowments are, the more important are comparative advantage and inter-industry trade.
(27) With the H-O model, unlike intra-industry trade, it is possible for all factors to gain from trade.
(28) The more broadly an industry is defined the higher the intra-industry trade index.
(29) The technological gap model emphasizes standardization while the product cycle stresses the time lag in the imitation process.
(30) In stage 5 of the product cycle model the innovating country is a net importer of the product.

**ESSAY QUESTIONS**

(1) Compare and contrast the classical and factor proportions theories of trade as regards their assumptions, the pattern of trade, and the gains from trade.

(2) Explain how comparative advantage and international trade may arise from differences in factor endowments between countries and differences in factor intensities between commodities.

(3) Compare and contrast the factor proportions theory and intra-industry trade based on product differentiation and economies of scale.

(4) Briefly explain the following:

(a) The definitions of factor intensity.
(b) Demand reversal.
(c) The Leontief paradox.
(d) The factor price equalisation theorem.
(e) The product life-cycle hypothesis.

(5) Explain the significance of increasing returns to scale and product differentiation for international trade.

(6) Explain the product cycle and technological models of international trade.

# Tariff and nontariff barriers to trade 5

**PRESCRIBED READING**

Chapters 8 and 9 of the textbook are prescribed (Salvatore 2011: 239 – 252 and section 8.6A and Salvatore 2011: 279 - 300)

**AIM OF STUDY UNIT**

The aim of this study unit is to

- introduce trade policy
- understand why governments intervene in trade

**LEARNING OUTCOMES**

Once you have worked through this study unit and the relevant parts of the textbook, you should be able to

- explain why governments intervene in trade
- describe tariff and nontariff barriers to trade
- describe the effects of a tariff on consumers and producers
- illustrate graphically the effects of a tariff
- describe an optimum tariff and retaliation
- evaluate the main arguments for and against protectionism

## 5.1 INTRODUCTION

So far we have seen that free trade maximizes world output and benefits all nations. The greater the volume of international trade, the greater the opportunities for growth and the greater the economic welfare of the countries concerned. However, practically all nations impose some restrictions on the free flow of international trade. Most countries have sought to impose trade barriers of various kinds. Different organisations and interest groups continually pressure governments to restrict imports. Protectionists say that free trade is not always mutually beneficial. This study unit tries to explain the reasons for this view. We start by examining the main barriers to trade and their effects.

## 5.2 TARIFFS

### 5.2.1 Specific and *ad valorem* tariffs

Tariffs are taxes levied on products that cross international boundaries. They may be imposed for purposes of protection or revenue. Tariffs for protection are designed to shield domestic producers from foreign competition in the home market. Tariffs for revenue are imposed to generate income for government and can be levied on both imports and exports. Tariffs can be specific, *ad valorem* or *compound* as explained in section 8.1 of the textbook. A **specific tariff** is a fixed tax or duty per physical unit of the traded commodity. R1 000 levied on every motor car that is imported is an example of a specific tariff. Far more widespread is the ***ad valorem*** tariff, which is a percentage tax on the value of the goods or services imported. A 10 percent duty on the import price of a motor car is an example of an *ad valorem* tariff. A **compound tariff** is a combination of an ad valorem and a specific tariff.

### 5.2.2 Partial Equilibrium Analysis of a Tariff

This analysis is presented in section 8.2 of the prescribed textbook.

#### 5.2.2.1 Effects of a tariff

In explaining the effects of a tariff, it is important to distinguish between a **small country** and a **large country**. The effects are different in each case. In this course we focus on partial equilibrium analysis which is based on a small country case. In the small country case, the tariff will affect neither world prices nor the rest of the economy and the import price rises by the full amount of the tariff. Figure 8.1 in the textbook illustrates the partial equilibrium effects of a tariff.

This figure illustrates the following effects:

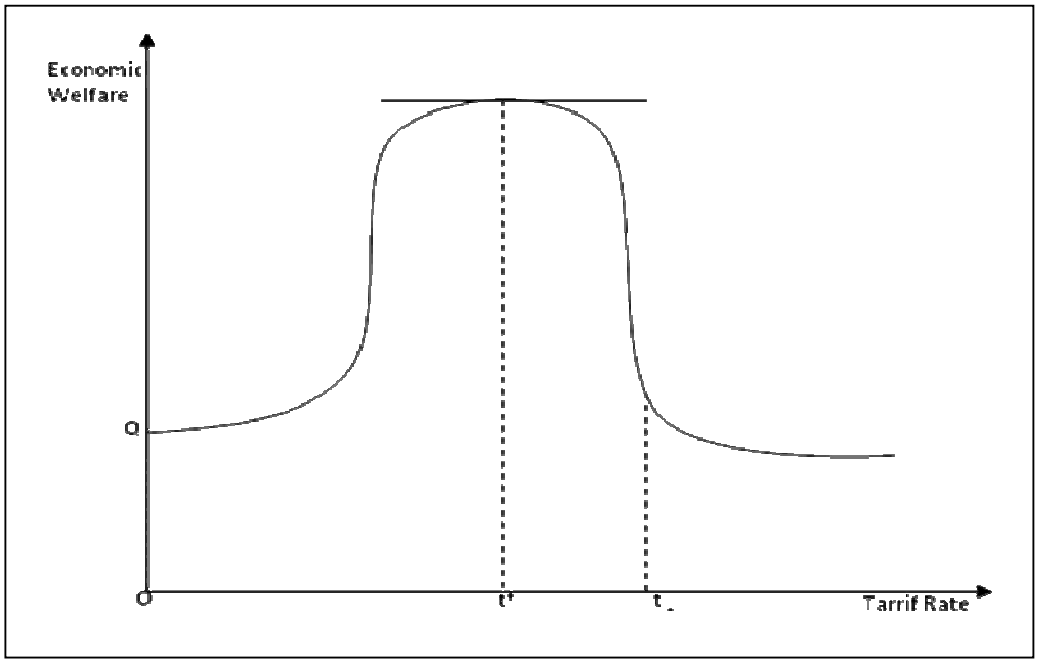
- the **consumption effect** of a tariff (i.e., the reduction in domestic consumption)
- the **production effect** of a tariff (i.e., the expansion of domestic production)
- the **revenue effect** of a tariff (i.e., the revenue collected by the government)
- the **trade effect** of a tariff (i.e., the decline in imports)

The welfare effects of a tariff are explained in sub-sections 8.2B and 8.2C in the textbook. The most important concept from these sections is the **protection cost** or **deadweight loss.** This is a welfare loss suffered by the nation that is imposing the tariff. There are also **redistributive effects** of the tariffs. Income is redistributed from domestic consumers to domestic producers of the commodity and from the nation's abundant factor (producing the exportables) to the nation's scarce factor (producing the importables). These redistributions lead to inefficiency and consequently result in the deadweight loss.

## 5.3 The Optimum Tariff

The textbook briefly defines the concept of an optimum tariff in section 8.6A. It has to be pointed out that the analysis followed in the textbook is in general equilibrium framework which is beyond the level of this course. When a large country imposes a tariff there are two opposing effects. The volume of trade declines as a result of a tariff but the terms of trade improve. The reduction in the volume of trade adversely affects the nation's welfare, while the improvement in terms of trade tends to increase the nation's welfare. The **optimum tariff** is the rate of tariff that maximizes the net benefit resulting from the improvement in terms of trade and the reduction in the volume of trade. For a small country the optimum tariff is always zero because there is no improvement in terms of trade. The optimum tariff can be illustrated simply by figure 5.1 below.

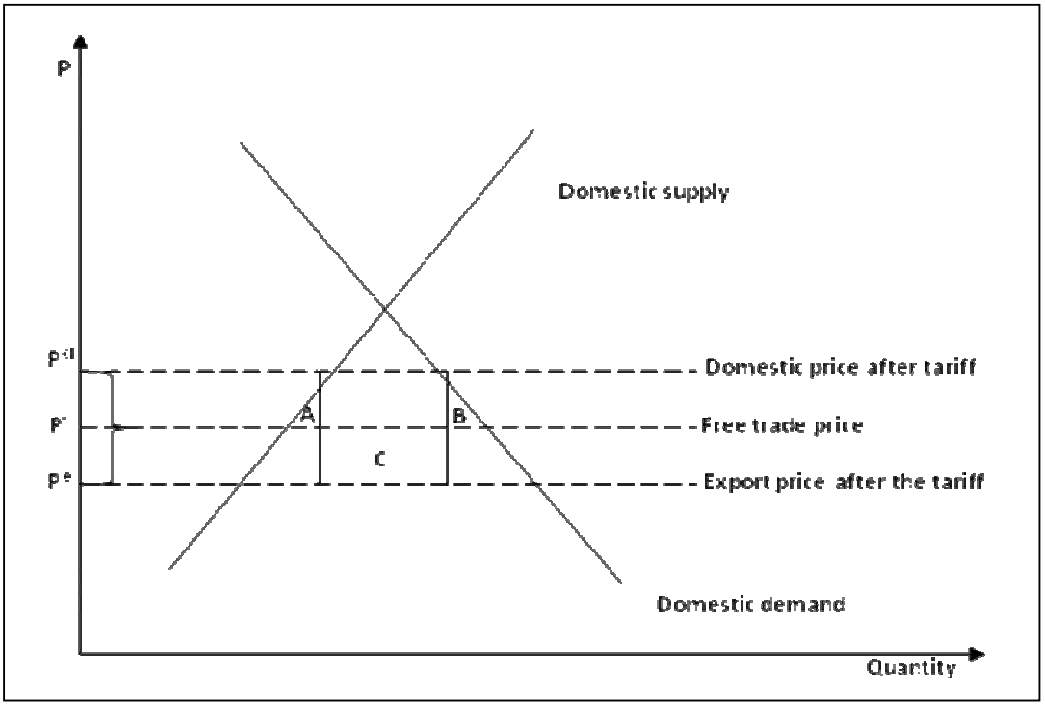
Figure 5.1: The Optimum tariff and welfare



Q is the free trade welfare level. As the tariff rate is increase from zero the level of welfare initially increases and gets to its maximum at a tariff rate t* (optimum tariff) then decreases to the autarky level as the tariff rate reaches the prohibitive level ($t_1$). As can be seen from the diagram the country becomes worse off compared to the free trade situation when the tariff becomes prohibitive.

Figure 5.2 below illustrates the welfare effects of a tariff for a large country. A tariff of magnitude t is imposed on imports of a particular product. This raises the domestic price of the product to $P^d$ and lowers the foreign (exporter) price to $P^e$. Since the importing country is large it can force foreign suppliers to pay part of the tariff in the form of a cut in export price. Triangles A and B show the decline in domestic welfare as a result of the reduction in the volume of trade. Rectangle C represents the improvement in the terms of trade, which is the part of the tariff which is paid by the foreign exporters. If area C is greater than A + B, then there is a net gain. The optimum tariff is the tariff rate which maximizes the net gain, that is, [C – (A + B)]

Figure 5.2 The welfare effects of a tariff for a large country



## 5.4 The rate of Effective Protection

The theory of tariff structure is discussed in section 8.3 of the prescribed textbook. One of the main reasons for imposing a tariff is to protect local industries. How to measure the degree of protection afforded by a tariff is not a simple matter because the **nominal tariff rate** is generally not a good measure of such protection. If imported goods are used as inputs for the local production of final goods, then the nominal tariff rate is not the same as the **effective tariff rate**. The effective tariff rate of protection is the percentage increase in domestic value added per unit of output made possible by the tariff structure. See textbook pages 249 - 252.

As explained in the textbook, the effective protective rate for a final product *increases* as the nominal rate on it *increases*, and as the nominal rate on imported inputs *decreases*. Also, the greater the proportion of imported inputs in the final value of the locally produced good, the greater the difference between the nominal rate and the effective tariff rate. A further implication is that to impose tariffs on both imported inputs and the final products of the industry which the tariff policy seeks to protect, is self-defeating. This is because the tariff on the imported inputs reduces the effective tariff protection on the final goods.

## 5.5 NONTARIFF BARRIERS TO TRADE

The nontariff trade barriers (NTBs) are discussed in chapter 9 of the prescribed textbook. The use of tariffs to protect local industries has been restricted by successive rounds of multilateral trade negotiations. Countries that are members of the World Trade Organisation (WTO) and signatories to successive agreements on tariffs and trade, have thus sought other means of protection. These are called **nontariff barriers (NTBs)**. The main NTBs that you should be aware of are import quotas, voluntary export restraints, international cartels, anti-dumping provisions, and export subsidies.

### 5.5.1 Import quotas

A **quota** is a direct quantitative limit on the amount of a product that may enter a country. Import quotas on manufactured goods are prohibited by the WTO. However, many developed countries, including the US and those of the European Union (EU), impose import quotas on agricultural produce. Such quotas usually accompany price support for such products, to prevent foreign suppliers benefiting from the artificially high prices in the domestic market. Farmers in countries such as the US, Japan and in the EU are politically powerful and have successfully lobbied their respective governments for such protective measures. You must know what the economic effects of a quota are compared to those of a tariff and be able to illustrate graphically (figure 9.1) as explained on pages 280 - 281 in the textbook. The explanation on the effects of an import quota also compares it to an ad valorem tariff. Further comparisons are discussed in section 9.2B.

### 5.5.2 Other Nontariff Barriers

Apart from the import quota the other nontariff barriers are voluntary export restraints, international cartels, local content requirements, anti-dumping provisions, and export subsidies.

**Voluntary export restraints (VERs)** are bilateral agreements between two governments in which the exporting country agrees to limit its exports to the importing country. The importing country refrains from imposing more restrictive measures while the VER is adhered to. VERs became quite significant and covered about 10 percent of world trade. However, VERs have been phased out (end of 1999) under the Uruguay Round multilateral trade agreement and may no longer be used. When voluntary export restraints are successful, they have all the economic effects of an equivalent import quota. The only difference being that they are administered by the exporting country and therefore the revenue effect or rents are captured by foreign exporters. The disadvantages of the VERs are discussed on page 283 in the textbook.

**International cartels** (see pages 285 - 286 in the textbook) are agreements between foreign companies or governments to restrict output and exports of a commodity with the aim of maximizing or increasing the total profits of the group. The most famous example is the Organisation of Petroleum Exporting Countries, or OPEC. Such cartels are able to raise prices by restricting output and exports of the commodity concerned, as OPEC did to the oil price in the 1970s. The producer countries gain at the expense of the consumer countries. However, cartels are difficult to maintain in the long run (especially if there are many members) because there is always an incentive for individual member countries to cheat and to raise exports above the agreed limits. Moreover, non-member countries (free riders) benefit from the higher prices and increase output accordingly. These factors led to a dramatic decline in the oil price in the 1980s, for example.

**Anti-dumping import duties** (see pages 286 - 287 in the textbook, including the additional insight) are taxes on goods that are deemed to have been imported at prices lower than those for the same good in the exporting country's domestic market. There are three categories of dumping which you should be aware of: sporadic, predatory and persistent dumping, as explained in the textbook (includes the additional insight). It is not always easy to decide whether or not dumping has occurred, or to distinguish between the different types of dumping in practice. Anti-dumping import duties are permitted by the WTO, but the importing country has to prove that dumping has taken place and show injury to the competing domestic industry. This is a long and complicated procedure. South Africa has both imposed such duties on certain imports and had anti-dumping duties imposed on its exports to other countries.

**Export subsidies** (see pages 287 - 292 in the textbook) are direct payments made by government to a nation’s exporters or potential exporters and or low interest loans to foreign buyers to stimulate the nation’s exports. It is thus not a restriction on trade but gives domestic companies an unfair advantage, helping them to increase their exports at the expense of foreign competitors in world markets. They can be regarded as a form of dumping. Such subsidies are common, despite being prohibited by the WTO. In South Africa, various exporters benefited from the General Export Incentive Scheme (GEIS) during the 1980s and early 1990s. However, South Africa has ended such subsidies as part of its commitment to the most recent Uruguay Round of multilateral trade negotiations concluded in 1994. As mentioned above, farmers in

many developed countries continue to be subsidised. Some large projects that are believed to be of strategic importance also benefit from subsidies, such as the aircraft industries in the US and the EU. The economic effects of an export subsidy are explained on pages 291-292. Figure 9.2 is used to illustrate such effects. Make sure you are able to illustrate and explain these effects.

You should be able to compare and contrast the different NTBs as regards their economic effects, and compare their effects with those of tariffs, as explained in the textbook. NTBs are more harmful to the economy than are tariffs. Amongst the different NTBs, VERs and export subsidies are probably more harmful than are import quotas.

## 5.6 ARGUMENTS FOR PROTECTION

The analysis above shows that a tariff leads to a misallocation of resources and deadweight efficiency losses. Are there any serious arguments for protection, beyond the special pleading and lobbying of specific interest groups? Arguments for protection in **competitive markets** are discussed on pages 292 - 294 in chapter 9 of the textbook. The textbook distinguishes between fallacious arguments ((1) ***protection of domestic labour*** *against cheap foreign labour*, (2) the **scientific tariff**), questionable arguments ((1) to reduce domestic unemployment and (2) to cure a BOP deficit) and those arguments which can be qualified ((1) the ***infant industry argument,*** (2) to *protect* ***strategic industries*** like national defence, (3) some tariffs are "**bargaining tariffs**" to force other nations to agree to a mutual reduction in tariffs, and the ***optimum tariff*** argument).

In each of the above, you should also be aware of the counter-arguments to protection, as explained in the textbook.

**IMPORTANT CONCEPTS**

- *ad valorem* tariff
- anti-dumping import duty
- bargaining tariffs
- border tax adjustments
- competitive markets
- compound tariff
- consumer surplus
- consumption effect
- deadweight loss effect
- dumping
- effective tariff rate
- export subsidy
- externalities
- import quotas
- infant industry argument
- international cartel
- large country
- nominal tariff rate
- non-tariff barriers
- oligopolistic markets
- optimum tariff
- producer surplus
- production effect
- prohibitive tariff
- protection
- protective tariff
- $P_x/P_m$
- revenue effect
- scientific tariff
- small country
- specific tariff
- strategic trade policy
- terms of trade effect
- trade effect
- voluntary export restraints

**TRUE OR FALSE QUESTIONS**

(1) An *ad valorem* tariff is a fixed amount levied on the volume, number or weight of an item.
(2) The revenue from an *ad valorem* tariff changes as the value of imports changes.
(3) The revenue from a specific tariff changes only as the physical amount imported changes.
(4) In times of inflation, an *ad valorem* tariff benefits the government more than a specific tariff.
(5) In times of inflation, a specific tariff costs importers less then an ad valorem tariff, provided the physical quantities imported remain unchanged.
(6) Only a large importing country can improve its terms of trade by levying a tariff.
(7) A tariff increases the income of the factor used intensively in the production of the export-competing product.
(8) A developing country can improve its terms of trade by means of a tariff.
(9) Protecting an economy from imported goods produced in countries with cheap foreign labour is a justifiable reason for tariffs.
(10) A tariff benefits domestic producers and the government at the expense of consumers, so the net welfare effect of the tariff is roughly zero.
(11) Import duties are an economically efficient means of raising government revenue.
(12) If a large country like the US improves its terms of trade by imposing a tariff, then its economic welfare increases.
(13) A quota is less harmful than a specific tariff, but more harmful than an *ad valorem* tariff.
(14) A voluntary export restraint agreement is less harmful than other NTBs because it is a bilateral agreement negotiated freely between the countries concerned.
(15) The World Trade Organisation prohibits quotas on manufactured goods.
(16) Predatory dumping occurs when a monopolist charges a higher price for its product in its home market than in its export markets.
(17) The most prevalent NTBs today are those which restrict trade in manufactured goods.
(18) An international cartel is more likely to achieve the objective of raising its prices in the long run than in the short run.
(19) International commodity agreements are negotiated between producer countries to stabilise the prices of certain commodities.
(20) The scientific tariff is the tariff rate which maximises the effective rate of protection.
(21) The optimum tariff is the tariff which puts producers in a relatively high wage country on an equal footing with those in a foreign low wage country.
(22) The effective tariff increases as the nominal tariff on imported inputs decreases.
(23) The infant industry argument only applies to industries which can eventually acquire a comparative cost advantage.
(24) An argument for tariffs on certain goods is that they help to reduce the pricing power of local monopolies over domestic consumers.
(25) Strategic trade policy may justify protection in some highly competitive markets where local producers need time to acquire a comparative cost advantage.

**ESSAY QUESTIONS**

(1) A nominal tariff applied to an imported commodity may overstate or understate the effective rate of protection. Explain how this may occur.

(2) Evaluate the following statement: "A country which imposes tariffs on imported commodities will improve its welfare."

(3) Compare and contrast the effects of tariffs and quotas.

(4) Explain the effect of a tariff on a country's terms of trade.

(5) Evaluate the main arguments for and against tariff protection.

(6) Name and describe the main forms of nontariff barriers.

# Trade liberalization and Economic integration

# 6

**PRESCRIBED READING**

Chapters 9 and 10 of the textbook is prescribed (Salvatore 2011: 306-315 only section 9.7 and Salvatore 2011: 327-350).

**AIM OF STUDY UNIT**

The aim of this study unit is to

- introduce international and regional approaches to trade liberalisation
- study some of the world's main economic integration units
- examine the role played by the WTO in international trade

**LEARNING OUTCOMES**

Once you have worked through this study unit and the relevant sections of the textbook, you should be able to

- distinguish between international and regional approaches to trade liberalisation
- explain the role of the WTO in international trade
- describe the world's main economic integration units
- describe the main forms of economic integration
- explain the effects of economic integration

## 6.1 INTERNATIONAL AND REGIONAL APPROACHES TO FREE TRADE

In previous study units, the main conclusion was that import protection is harmful and that its objectives can be achieved with less damage to economic welfare by other means. As the costs of protection became more apparent in the long run, many countries began lowering such barriers to trade unilaterally, especially from the early 1980s. Yet many countries have taken the view that improving access to domestic markets must be matched by similar access in foreign markets and have demanded reciprocity in the liberalisation of trade.

There have been two basic approaches in this regard. Globally, the **World Trade Organisation (WTO)** as an international organisation gives a framework to multilateral efforts to liberalise trade. The formal WTO succeeded the informal General Agreement on Tariffs and Trade (GATT) in 1995. Regionally, a number of organisations have sought to liberalise trade between selected member countries, thereby increasing the level of economic integration between them. Each of these approaches is discussed briefly below, starting with the WTO.

## 6.2 THE INTERNATIONAL APPROACH AND THE WTO

The WTO is a global organization that was established in 1995 which sets ground rules for international trade and provides a framework for liberalizing trade. It has a membership of 147 countries. It is devoted to the promotion of international trade in general and the reduction of tariff barriers in particular. The member countries hold periodic negotiating conferences in which tariff “concessions” are exchanged. One of its rules is the non-discrimination between sources of supply known as the **unconditional most favoured nation (MFN) principle**. This means that reductions in tariffs agreed upon by any two or more partners are then extended to all member nations. The WTO sets and regulates a code of international trade conduct, which contains three fundamental principles: the principle of non-discrimination; a general prohibition of export subsidies (except for agriculture) and import quotas, from which developing countries are exempt; and a requirement that any new tariff be offset by a reduction in other tariffs. The organization also monitors national trade policies and provide assistance and training for developing countries. Member WTO/GATT completed eight major conferences (known as rounds) and several minor ones to negotiate tariff concessions, the most recent being the Uruguay Round (1986-1993).

The functions of WTO are much broader than those of GATT, which it replaced. In addition to overseeing rules relating to international commodity trade, it deals with transactions in commercial services, intellectual property rights, foreign investments among others.

The fundamental principles on which the WTO is based include the following:

- the unconditional **most favoured nation (mfn)** principle
- equal and fair national treatment
- reciprocity
- mutual recognition
- fast track voting procedure (trade promotion)

The ***Most Favored nation (MFN*)** principle requires a country to treat all its trading partners alike (no discrimination between sources of supply). The tariff rate levied on a given commodity by a country must be the same for all supply countries and tariff concessions exchanged between any two countries must be extended to all member countries of the WTO. Customs unions and free trade areas are exceptions to the MFN principle.

***National treatment*** requires a country to treat foreign firms operating within its borders in the same way it treats its own firms. This is a principle of non-discrimination between domestic and foreign firms. ***Reciprocity*** involves "our" country will treat "your" country's firms in the same way that "your" country will treat "our" country's firms. ***Mutual recognition*** means that each EU member recognizes the product standards applied by other member countries. The "**fast track**" rule relates to trade promotion. This talks about the U.S Congress voting on negotiated trade agreements without amendments.

Developing countries are treated differently in three respects. First, they receive preferences in the industrial country markets- a modification of the MFN rule. Second, the rule of reciprocity in the WTO negotiations does not apply to them. They obtain concessions exchanged among the developed countries without having to reciprocate themselves. Third, they are exempt from the prohibition on quotas and export subsidies.

You must also know the main provisions of the **Uruguay and Doha Rounds** of trade negotiations as explained in the textbook on pages 306-312. You should also be aware of the main problems and sticking points experienced during the Uruguay Round.

## 6.3 THE REGIONAL APPROACH

Besides international attempts at liberalising trade, some countries have sought to increase economic integration at the regional level. Economic integration refers to the commercial policy of discriminatively reducing or eliminating trade barriers only among the nations joining together. The liberalisation of trade under such an arrangement discriminates between member and non-member countries. The main forms of regional economic integration and their effects are explained on pages 327 - 336 in the textbook. The degree of integration range from preferential trade areas, customs unions, common markets and economic unions.

(1) **Preferential trade agreements (PTAs)** reduce tariffs or other trade barriers between the member countries concerned. Each country retains its own trade barriers with non-member countries. A good example is the British Commonwealth Preference Scheme, established in 1932 by the United Kingdom with members and some former members of the British Empire.

(2) **Free trade areas (FTAs)** are similar to PTAs, but trade barriers between the member countries are removed completely. As with a PTA, each member country retains its own tariffs and other trade barriers with non-member countries. A recent example is the **North American Free Trade Agreement (NAFTA)** between the United States, Canada, and Mexico which took effect in 1994. A local example is the Southern African Development Community **(SADC)** which intends to reduce tariffs and to become eventually a free trade area.

(3) **Customs unions** are FTAs which, in addition, harmonise their trade policies with the rest of the world, for example by having a common tariff on trade with non-member countries. The present day **European Union (EU)** began as a customs union with fewer members in 1957. It subsequently became a common market (see below) in 1993 and a full economic union (see below) in 2002. The South African Customs Union (SACU) is a local example which presently includes South Africa, Swaziland, Lesotho, Botswana and Namibia. South Africa sets the common external tariff and administers the customs revenue pool. A feature of the SACU is that such revenues are shared unequally between the member countries. The smaller economies get a disproportionately larger share of the pooled revenues. This is to compensate them for the external tariff being decided by South Africa and for the polarisation of industrialisation towards South Africa.

(4) A **common market** is a customs union which, in addition, also allows factors of production (labour and capital) to move freely between the member countries. As noted above, Europe achieved this status in 1993 (then called the Economic Community or EC).

(5) An **economic union** is the tightest (or most advanced) form of economic integration. Besides free trade and mobility of the factors of production, the member countries harmonise or even unify monetary and fiscal policies. As noted above, the EU achieved this status in 2002 with the adoption of a common currency, the euro, managed by a single central bank. The **USA** is an example of an even more complete economic union between the member states.

You must learn the definitions of the different forms of regional economic integration and the main examples of each. The most important are the **SADC**, **SACU**, **European Union (EU)** and the **North American Free Trade Agreement (NAFTA)**. You should be aware of some of the problems associated with the different levels of economic integration, particularly free trade areas and customs unions. In this regard, partial attempts at trade liberalisation at a regional level do not necessarily lead to an improvement in world economic welfare. This is because they discriminate against non-member countries.

As explained in the textbook, the effects of economic integration on allocative efficiency and welfare can be shown using the example of a customs union. The formation of a customs union has both static and dynamic effects. The **static effects** on economic welfare depend on the extent of opposing **trade- creation** and **trade- diversion** effects, as explained using figures 10.1 and 10.2 in the textbook. Trade creation occurs when some domestic production in a nation that is a member of a customs union is replaced by lower-cost imports from another member nation. The welfare effects of such a trade- creating customs union are illustrated in Figure 10.1 in the textbook. The net welfare gains are represented by the shaded areas. Trade diversion occurs when a nation starts importing a good from a member nation at a higher cost than from a non-member nation. Thus, a country shifts from a low-cost to a high-cost member country. Trade diversion implies a reduction of welfare in the customs union as it shifts production from more efficient producers outside the union to less efficient producers inside the union. The welfare effects of such a trade- diverting customs union are illustrated in Figure 10.2 in the textbook. A trade-diverting customs union has both **trade creating** and **trade diverting** effects. The net welfare position depends on the magnitudes of the two opposing effects. In Figure 10.2 the trade creation welfare gains are represented by the two shaded triangles. However, the nation losses welfare equal to the shaded rectangle. In this case there is a net welfare loss. You should be able to illustrate graphically the economic effects discussed above. There are also potential **dynamic effects** as a result of a customs union, and they are discussed in section 10.5 of the textbook. They include increased competition, the scope for greater economies of scale from an enlarged market, stimulus to investment and better utilization of economic resources.

**IMPORTANT CONCEPTS**

- common market
- customs union
- dynamic effects of integration
- economic integration
- economic union
- European Union (EU)
- Doha Round
- free trade area
- international approach to trade liberalisation
- most favoured nation principle
- Mutual recognition
- North American Free Trade Agreement (NAFTA)
- preferential trade agreement
- Reciprocity
- regional approach to trade liberalisation
- South African Customs Union (SACU)
- South African Development Community (SADC)
- static effect of integration
- tariff factories
- trade liberalisation
- trade creation
- trade diversion
- Uruguay Round
- World Trade Organisation (WTO)

**TRUE OR FALSE QUESTIONS**

(1) The WTO is the main forum for the negotiation of regional trade agreements.
(2) The unconditional most favoured nation principle says that if Country I lowers trade barriers against Country II, then Country II must do the same for Country I.
(3) An important provision of the Uruguay Round was the replacement of NTBs with tariffs.
(4) The WTO is not concerned with environmental issues as it is concerned with products, not processes and externalities of production.
(5) A free trade area removes all tariffs and other government barriers to trade between the member countries.
(6) A free trade area has a common external tariff.
(7) Individual members of a customs union are allowed to determine their own level of protection against non-member countries.
(8) A common market allows for the free movement of labour and capital between member countries.
(9) An economic union features a common currency and a single central bank, such as the euro and the European Central Bank in the EU
(10) The higher the level of economic integration between countries, the greater the loss of economic sovereignty.
(11) Trade creation occurs when a customs union leads to higher cost domestic production being replaced by lower cost imports.
(12) In trade diversion, imported goods enter a high tariff country through a low tariff member country.
(13) The higher the initial tariff rate, the more likely the effect of integration is to be positive.
(14) If a tariff imposed by a country is initially prohibitive, there will be no welfare loss from trade diversion.
(15) The bigger the similarity between the member countries and the smaller the differences in production costs, the greater the welfare gains resulting from a customs union.
(16) A customs union diminishes market segmentation and leads to scale economies.
(17) The free movement of factors of production in a common market increases welfare by causing the marginal rates of output to move closer together between the member countries.
(18) The present day EU is an example of a customs union.
(19) NAFTA is an example of a preferential free trade agreement.
(20) The WTO is an example of an economic union.
(21) Trade creation is an example of the dynamic benefits of a customs union.
(22) Trade deflection is a potential disadvantage of a customs union.
(23) Customs unions and free trade areas are exempt from the WTO's most favoured nation rule.
(24) Regional economic integration leads to an increase in economic welfare.
(25) Customs unions are to a large extent explicitly trade diverting.

**ESSAY QUESTIONS**

(1) Describe and explain the main principles on which the WTO is based.

(2) "Countries should follow the path of nondiscriminatory reductions in trade barriers worldwide rather than form selective discriminatory economic coalitions". Evaluate this statement.

(3) "The formation of a customs union leads to greater economic welfare". Evaluate this statement.

(4) Describe and explain the various forms of regional economic integration agreements. Which arrangement do you think would be best suited to South Africa?

(5) Explain and graphically illustrate the economic effects of a trade creation customs union.

(6) Explain the dynamic effects of a customs union.

# 7 International Resource movements and multi-national corporations

**PRESCRIBED READING**

Chapter 12 of the textbook is prescribed (Salvatore 2011: 399 - 417).

**AIM OF THE STUDY UNIT**

The aim of this study unit is to

- examine the mobility of the factors of production
- examine the effects of direct foreign investment
- discuss the role played by multinational corporations

**LEARNING OUTCOMES**

Once you have read this study unit and the relevant sections of the textbook, you should be able to

- explain the mobility of capital
- describe the motives for international direct investments
- understand the reasons for the existence of multinational corporations and their effects on the home and host countries
- explain the effects of direct foreign investment on investing and host country
- evaluate the activities of multinational corporations

## 7.1 MOBILITY OF THE FACTORS OF PRODUCTION

Trade theory only looks at the movement of commodities between national borders. The factor proportions theory assumes that factors of production are mobile between industries within a country but that they are completely immobile between countries. However, although factors of production are certainly more mobile within countries, there is significant mobility of both labour, capital and technology between countries. Of the three, capital is the most mobile. This is because it is affected less by barriers to migration such as differences in language, immigration control measures, legal restrictions, social norms, patents and cultural differences.

The greater **mobility of capital** means that it can migrate more easily in search of the highest expected **return on investment** in different countries. The greater the mobility of a factor of production, the greater the tendency for the returns thereon to be equalised between countries and industries (remember that trade in commodities achieves the same result indirectly, as suggested by the factor price equalisation theorem - see study unit **4**). For example, if the return on investment in the same industry differs between two countries, then capital will tend to migrate away from the country where the returns are relatively low (the source country) and towards the country where they are relatively high (the host country). Market forces thus ensure that returns increase in the former country and fall in the latter until they are equal. Of course, other considerations such as the risk of the investment may also play a role. Investors usually compare differences in expected **risk-adjusted returns** in deciding where to invest their capital.

This study unit focuses on the reasons for and the effects of the international mobility of capital as regards **foreign investment** (sometimes also called foreign direct investment). There are two main forms of foreign investments: **portfolio investments** and **direct investments**. Direct foreign investment (DFI) aims at gaining control over a foreign company. By contrast, portfolio investors look purely at the expected returns on their investments in foreign financial markets and do not intend to gain control over the companies concerned. DFI tends to be less volatile and contributes to greater transfers of skills and technology than the more speculative portfolio investments in financial markets. Direct foreign investments are generally more stable, long-term investments, whereas foreign portfolio investments can easily be withdrawn as fickle investor sentiment changes. For these reasons, host countries generally prefer DFI to portfolio investment, particularly developing countries wanting to establish sustainable increases in economic growth rather than a boom-bust growth pattern.

## 7.2 MOTIVES FOR INTERNATIONAL CAPITAL FLOWS

The motives for international capital flows (both portfolio and direct investments) are discussed in section 12.3 in the textbook. International portfolio investments are generally explained by the need to take advantage of higher returns abroad. This explanation, however, does not explain the observed two-way capital flows. Such flows are explained by **risk diversification** as individuals try to maximize their returns at the lowest risk possible. The other explanation is in terms of the fact that investors do not know the precise average returns and their variability. They base their individual decisions on expectations, which are different. It is possible that some investors in each nation may think that stocks in the other nation are a better buy.

Apart from the need to earn a higher return direct foreign investments are motivated by a number of other reasons. These include: (1) large corporations often have unique production knowledge that they want to retain direct control over. They will engage in **horizontal integration**, which is the production abroad of a differentiated product that is also produced at home, (2) to obtain control of a needed raw material and thus ensure an uninterrupted supply at the lowest possible cost. This is called **vertical integration**. Vertical integration can also go *forward* into the ownership of sales or distribution networks; (3) to avoid tariffs and other restrictions on trade; (4) to take advantage of government subsidies to encourage direct foreign investments; (5) to enter a foreign oligopolistic market so as to share in the profits; (6) to buy a promising foreign firm to avoid its future competition; and (7) possibly, it is a large foreign multinational corporation which can obtain the necessary financing to enter the market.

Case Study 12-2 in the textbook shows the outward and inward stock of foreign direct investment in various regions and selected countries and years. The US was the largest **host and source country** at the end of 2004 with a total stock of **inward foreign investments** of roughly $1,5 trillion and a stock of **outward foreign investments** of $2,0 trillion. Important **source countries** of DFI (outward investments) were the US, the UK, France and Germany.

Despite the relatively small size of our economy, DFI has also played an important role in South Africa, especially in the mining industry. South Africa is typical of a developing country where capital is scarce and the returns on inward foreign investments are relatively high. Most developing countries are much larger host countries for such investment than they are source countries. This tendency was even more pronounced in South Africa as a result of the imposition of exchange controls. Such controls greatly curtailed the amount of outward foreign investment that might otherwise have taken place (exchange controls were probably also a disincentive to inward foreign investment, but this was still higher than the very limited amounts of outward investment). The liberalisation of exchange controls in the 1990s has led to a significant increase in offshore investments by South African companies.

Between 1970 to 1985, South Africa relied heavily on foreign saving (that is, a net inflow of foreign capital including both DFI and portfolio investments), averaging about 2 percent of gross domestic product (GDP) a year. However, with the worsening political situation and the imposition of financial sanctions in the mid-1980s, this pattern reversed itself and the country became a net exporter of capital as foreign investors withdrew their capital. Between 1985 to 1993, annual capital outflows averaged 2,5 percent of GDP.

International investor confidence in South Africa has gradually improved following the historic 1994 non-racial election. For example, net capital inflows amounted to R14,7 billion in 1998, R3,8 billion in 2002 and R45,7 billion in 2004. These inflows were, however, largely for portfolio investment. Such inflows of financial capital affect the balance of payments rather than production or income directly. They are easily reversed when sentiment towards emerging markets like South Africa turns negative, as happened during the emerging markets crisis in 1997 and 1998, and the local foreign exchange liquidity crisis in 2001.

However, in 2005, South Africa experienced significant foreign direct investment in the banking sector as the result of a UK domiciled bank obtaining the controlling interest in a local bank (SARB 2006a:28). In that year the net capital inflow was recorded as R68,4 billion.

## 7.3 WELFARE EFFECTS OF INTERNATIONAL CAPITAL FLOWS

The welfare effects of international capital flows can be split between those that can be illustrated graphically and those that are not revealed in graphical analysis. We first discuss those which can be shown graphically.

### 7.3.1 Effects on the Investing and host countries

In this section we examine the welfare effects of international capital flows that can be shown graphically. Such effects, in the case of a two-nation world are illustrated in Figure 12.1 in the textbook. As discussed on pages 408-411 in the textbook, international capital flows have a number of effects. First, they equalize the return on capital in the two nations by lowering the return in the host country and increasing the return in the investing country. Second, they increase "world" output by the shaded area. Third, the return to host country's owners of capital decreases, but raises the return on other **cooperating factors** (like labour and land). In the investing country, the opposite occurs. Forth, for the world as a whole, international capital flows increase the efficiency in the allocation of resources internationally and increase output and welfare. You must be able to draw and explain Figure 12.1.

### 7.3.2 Other Effects on the Investing and host countries

International capital flows also have other effects. These are discussed in section 12.4B in the textbook. From Figure 12.1 it can be seen that international capital flows lead to redistribution of domestic income in both the investing and the host countries. The total and average return to labour falls in the investing country. While the investing country as a whole gains from investing abroad, income is redistributed from labour to capital. For this reason trade unions are opposed to investing abroad. In the host country, income is redistributed from capital to labour. With less than full employment, foreign investments reduce employment level in the investing country and increase employment in the host country. International capital flows also influence a country's balance of payments position. Another welfare effect on both the investing and the host countries results from different rates of taxation, with the amount of tax collected decreasing in the investing country and rising in the host country. Foreign investments may also affect the terms of trade, but such effects would depend on the conditions in each country. The other effects relate to the host country's control over its economy and economic policy.

## 7.4 MULTINATIONAL CORPORATIONS

Multinational corporations (MNCs) are the vehicle for most DFI worldwide. These are firms that own, control, or manage production facilities in several countries. The argument whether MNCs do more harm than good in developing countries has thus already been partly answered as regards the costs and benefits of DFI discussed above. However, as explained in the textbook on pages 411-417, MNCs also engage in certain practices that may be harmful to the countries concerned. One important example is the practice of **transfer pricing**. This occurs when foreign subsidiaries of a MNC adjust the prices of goods sold between them to profit from differences in taxation between the countries concerned. Prices of components and goods sold by a subsidiary in a high tax country to a subsidiary in a low tax country are decreased, thereby lowering taxable income where the taxes are high and increasing such income where the taxes are low.

This leads to lower tax revenues in the host countries than would otherwise have been the case. Similar price adjustments may be made to take advantage of differences in tariff rates between countries.

The significant role played by MNCs in international trade raises the question of whether the factor proportions theory is still relevant in explaining the pattern of trade. It is argued that the theory is still relevant in explaining the pattern of trade based on factors of production which remain relatively immobile (land and natural resources, unskilled and some skilled labour, patented technologies etc).

### 7.4.1 Reasons for the existence of Multinational Corporations

The reasons for the existence of multinational corporations are discussed in section 12.5A in the textbook. The basic reason being the competitive advantage of a global network of production and distribution. This is achieved through horizontal and vertical integration, as well as through economies of scale in production, financing, research and development (R&D) and the gathering of market information. MNCs also invest abroad when expected profits on additional invests in its industry are higher abroad. MNCs are also in a better position to control or change to their advantage the environment in which they operate than purely national firms. Because of their sizes in relation to most host nations, MNCs can influence the policies of local governments and extract benefits. MNCs, through greater diversification, also face lower risks and generally earn higher profits than purely national firms. Finally, by artificially overpricing components shipped to an affiliate in a higher- tax nation and underpricing products shipped from the affiliate in the high-tax nation, an MNC can minimize its tax bill. This is called **transfer pricing** and can arise in **intrafirm trade**. Case study 12-3 shows the world's largest MNCs.

### 7.4.2 Problems created by Multinational Corporations in the Home and host Countries

Although MNCs can increase world output and welfare, they can create serious problems in both the home and host countries. In the home country, some of the alleged harmful effects of MNCs include: (1) the loss of domestic jobs, especially unskilled and semi-skilled production jobs; (2) the export of advanced technology which can undermine the home country's technological superiority; (3) transfer pricing and similar practices may reduce tax revenues and erode the tax base of the home country; (4) because of their access to international capital markets, MNCs can circumvent domestic monetary policies and make government control over the economy in the home country more difficult.

For the host country there are even more serious complaints against MNCs. First, it is alleged that MNCs dominate the economies of host countries. This domination takes various forms which are discussed on pages 416-417 in the textbook. Another alleged harmful effect in the siphoning off of R&D funds to the home country. This makes the host country technologically dependent (true and serious for developing countries). MNCs may also absorb local savings and entrepreneurial talent, taking them away from national priorities. In LDCs MNCs may use highly capital intensive production techniques which are not suitable for labour abundant LDCs. The other complaints include lack of training for local labour; overexploitation of natural resources and the creation of dualistic economies.

Chapter 12 of the textbook concludes by examining the international migration of labour which is covered in Labour economics at second level and the extent to which global economic integration has taken place. Despite big advances in the integration of markets in different countries, **globalisation** is far from complete. Most national economies and markets remain largely segmented from one another. Thus, there is considerable scope for yet further expansion of international trade in goods, services and the factors of production, and for commensurate increases in world economic welfare.

**IMPORTANT CONCEPTS**

- cooperating factors
- creditor nation
- debtor nation
- direct foreign investment
- equalisation of returns
- financial capital
- foreign investor control
- foreign portfolio investment
- globalisation
- horizontal integration
- host country
- immobile factors of production
- intrafirm trade
- investing country
- inward foreign investment
- location bound industries
- marginal productivity of capital
- migration of factors of production
- mobility of capital
- multinational corporations (MNCs)
- net direct foreign investment (net DFI)
- outward foreign investment
- portfolio investments
- recipient country
- return on investment
- risk-adjusted returns
- risk diversification
- source country
- sovereignty
- transfer pricing
- vertical integration
- world economic welfare

**TRUE OR FALSE QUESTIONS**

(1) China is the world's largest investor of foreign capital.
(2) Direct foreign investment implies control or influence over foreign business concerns.
(3) Direct foreign investment is often seen in the source country as the export of employment opportunities, whereas in the host country it is perceived as harming the return on capital.
(4) Foreign portfolio investments can have a bigger effect on a country's balance of payments than direct foreign investment.
(5) Multinational corporations engage in vertical integration.
(6) Moving capital, technology and managerial skills from countries where they are relatively abundant to countries where they are relatively scarce, lowers returns in the former and raises them in the latter.
(7) With direct foreign investment, rates of return in different countries are brought closer together and world economic welfare is increased.
(8) Multinational corporations contribute significantly to breaking down barriers and equalising demand preferences between countries.
(9) International factor movements and international trade are often supplementary mechanisms for adjustments in market prices.
(10) A multinational corporation usually undertakes direct foreign investment before it has obtained a strong position in its own domestic market.
(11) Direct foreign investment is typically industry-specific.
(12) Direct foreign investment is not so much the transfer of capital from a specific industry in one country to the same industry in another country, as the transfer of capital between countries.
(13) Both DFI and foreign portfolio investment may be measured as a stock or as a flow.
(14) The US is a bigger host for DFI than South Africa, but South Africa is a bigger source of DFI than the US.
(15) In recent years, foreign capital flows to South Africa have largely been for portfolio investment.
(16) Transfer pricing is the sale of higher priced goods and the purchase of lower priced goods between subsidiaries of the same multinational corporation.
(17) Globalisation has led to the almost complete economic integration of the world's developed countries, but not the developing countries.
(18) The main reason for DFI is to escape higher taxes and stricter environmental regulations in the source countries concerned.
(19) Multinational corporations are generally harmful to the developing countries that they invest in.
(20) Relatively low wages in host countries provide a clear cost advantage to MNCs, when compared to the much higher wages of skilled labour in the source country.
(21) Labour is more mobile than capital between countries.
(22) Net DFI is the difference between inward and outward flows or stocks of foreign direct investment.
(23) DFI is not important to the South African economy.
(24) A country like South Africa would prefer DFI to portfolio investment.
(25) One reason for DFI is to avoid tariffs on exports to host countries.

**ESSAY QUESTIONS**

(1) Explain the reasons for direct foreign investment.

(2) Explain the effects of direct foreign investment on source and host countries.

(3) Illustrate graphically and explain fully the welfare effects of international capital flows on the investing and host countries.

(4) Briefly explain why trade unions will be opposed to investing in other countries.

(5) Evaluate the major issues concerning multinational corporations as a source of conflict between source and host countries.

(6) Critically discuss the problems caused by multinational corporations in home and host countries.

## ANSWERS TO THE TRUE OR FALSE QUESTIONS

**Study unit 1**
1F 2T 3T 4F 5T 6F 7T 8F 9T 10F 11T 12T 13F 14T 15F 16T 17T 18T 19T 20T

**Study unit 2**
1T 2F 3F 4T 5F 6F 7T 8T 9T 10F 11F 12T 13F 14F 15F 16T 17F 18F 19F 20F 21T 22F 23T 24T 25F

**Study unit 3**
1F 2F 3F 4T 5F 6F 7T 8T 9T 10T 11F 12F 13T 14F 15F

**Study unit 4**
1T 2F 3T 4F 5T 6T 7T 8F 9F 10F 11T 12T 13F 14F 15F 16F 17F 18F 19F 20F 21F 22F 23F 24F 25F 26F 27F 28T 29F 30T

**Study unit 5**
1F 2T 3T 4T 5T 6T 7F 8F 9F 10F 11F 12F 13F 14F 15T 16F 17F 18F 19T 20F 21F 22T 23T 24F 25F

**Study unit 6**
1F 2F 3T 4T 5T 6F 7F 8T 9T 10T 11T 12F 13T 14T 15F 16T 17T 18F 19F 20F 21F 22F 23T 24F 25T

**Study unit 7**
1F 2T 3T 4T 5T 6F 7T 8T 9T 10F 11F 12T 13T 14F 15T 16F 17F 18F 19F 20T 21F 22T 23F 24T 25T

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