

The global economy (4.1-4.10)

International Baccalaureate · IB Diploma · Economics · HL

The global economy

IB Diploma Programme Economics HL, Unit 4 *The global economy* (first assessment 2022). This topic covers sections 4.1 to 4.10: why countries trade, how they protect their industries, trading blocs, exchange rates, the balance of payments, and economic development. The trade examples use one market, with demand $Q_d = 140 - 2P$ and domestic supply $Q_s = 20 + 4P$, at a world price of 12. All numbers are original.

In 1980 China opened its first special economic zone in Shenzhen, then a small town near Hong Kong. Foreign firms could build factories there and export to the world. Today Shenzhen is a city of more than 17 million people, and China is the world's largest exporter of goods. Over the same years, hundreds of millions of Chinese people left extreme poverty. This topic asks how trade causes growth like this, who loses from it, and why some countries still struggle to develop.

Must-know for this topic:

Idea	Key relationship
comparative advantage	specialise in the good with the LOWER opportunity cost
tariff (worked model)	world price 12 → imports 48; tariff of 4 → price 16, imports 24, revenue 96, deadweight loss 48
integration	free trade area → customs union → common market → economic and monetary union
exchange rates	floating, fixed or managed; demand and supply of a currency
balance of payments	current account + capital account + financial account = 0 (with errors and omissions)
Marshall–Lerner (HL)	a depreciation helps the current account if PED for exports + PED for imports > 1

Idea	Key relationship
terms of trade (HL)	$ToT = \frac{\text{index of export prices}}{\text{index of import prices}} \times 100$
development	sustainable development; HDI; barriers; strategies

International trade

■ Why countries trade

International trade gives consumers lower prices and more choice. Firms can sell to bigger markets and gain **economies of scale**. Competition from abroad

pushes local firms to be more efficient. Trade also spreads new technology and ideas.

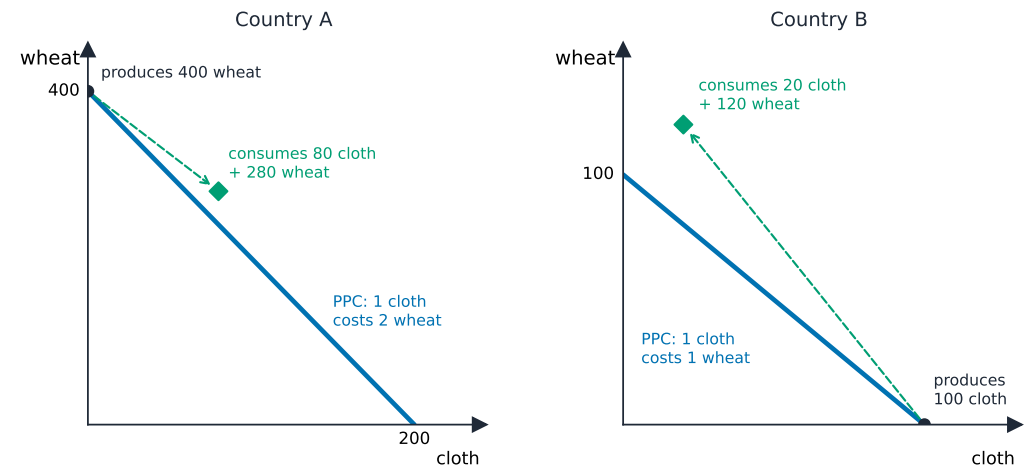
■ Absolute and comparative advantage

A country has an **absolute advantage** in a good if it can make more of it with the same resources. It has a **comparative advantage** if it can make the good at a lower **opportunity cost**. Trade is based on comparative advantage, not absolute advantage.

Worked example. In one day, one worker makes:

	Wheat	Cloth	Opportunity cost of 1 cloth	Opportunity cost of 1 wheat
Country A	4	2	2 wheat	0.5 cloth
Country B	1	1	1 wheat	1 cloth

1. A has an absolute advantage in BOTH goods: it makes more of each.
2. But one cloth costs A 2 wheat and costs B only 1 wheat. So B has the comparative advantage in cloth.
3. One wheat costs A only 0.5 cloth and costs B 1 cloth. So A has the comparative advantage in wheat.
4. A specialises in wheat and B in cloth. Any trade price between 1 and 2 wheat per cloth helps both: A gets cloth for less than 2 wheat, and B gets more than 1 wheat for each cloth.



With 100 workers each and a price of 1.5 wheat per cloth, both countries consume outside their own PPC

Suppose each country has 100 workers and they trade 120 wheat for 80 cloth (1.5 wheat per cloth). A makes 400 wheat and ends with 280 wheat and 80 cloth; working alone, it could have 80 cloth and only 240 wheat. B makes 100 cloth and ends with

20 cloth and 120 wheat; alone, it could have 20 cloth and only 80 wheat. Both gain. The theory has limits. It assumes no transport costs, constant opportunity costs, and workers who can move easily from one industry to another. In reality, the workers in a closing cloth factory may not find new jobs quickly. And a country may become too dependent on one or two goods.

■ The World Trade Organization

The **World Trade Organization** (WTO), set up in 1995 and now with more than 160 members, sets rules for world trade. It runs rounds of talks to lower trade barriers, and it settles **trade disputes** between members. Critics say its rules favour rich countries, and its dispute system has been weak since its appeals body stopped working in 2019.

Trade protection

Trade protection means government action that limits imports to help domestic producers. Most tools make foreign goods dearer or scarcer.

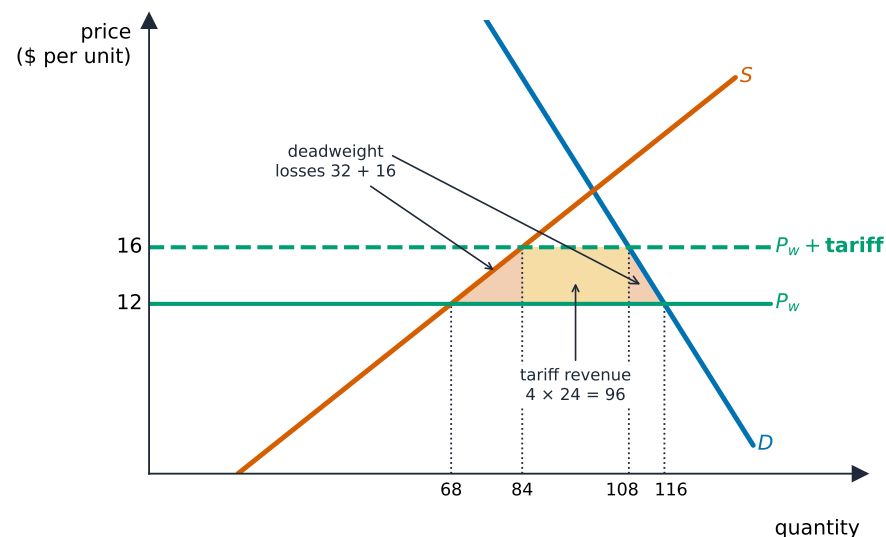
■ Types of protection

- **Tariffs** : taxes on imports.
- **Quotas** : limits on the quantity of a good that can be imported.
- **Production subsidies** : payments to domestic producers, which lower their costs.
- **Export subsidies** : payments to firms for each unit they export.
- **Administrative barriers** : slow customs checks, strict product standards, or long paperwork that make importing harder.

■ The effects of a tariff (HL calculation)

Worked example. Domestic demand is $Q_d = 140 - 2P$ and domestic supply is $Q_s = 20 + 4P$. The country can import as much as it wants at the world price of 12.

1. *Free trade.* At $P = 12$: $Q_d = 140 - 24 = 116$ and $Q_s = 20 + 48 = 68$. Imports $= 116 - 68 = 48$.
2. *Tariff of 4.* The domestic price rises to 16: $Q_d = 108$ and $Q_s = 84$. Imports $= 108 - 84 = 24$.
3. *Government revenue* $= 4 \times 24 = 96$.
4. *Deadweight loss.* Domestic firms now make 16 extra units that foreign firms made more cheaply: $\frac{1}{2} \times 4 \times (84 - 68) = 32$. Consumers give up 8 units they valued above the world price: $\frac{1}{2} \times 4 \times (116 - 108) = 16$. Total: 48.



A tariff of 4 halves imports, raises 96 for the government and wastes 48

Who gains and who loses? Consumers lose: they pay more and buy less. Domestic producers gain: they sell more at a higher price. The government gains revenue. Foreign producers lose sales. Society as a whole loses the deadweight loss of 48.

A **quota** of 24 units would raise the domestic price to 16 in the same way. But there is no tariff revenue. The extra 4 per unit goes to whoever holds the import licences, often foreign firms. A **production subsidy** of 4 per unit would raise domestic output to 84 while the price stays at 12, so consumers do not lose. But the government pays $4 \times 84 = 336$.

■ Arguments for and against protection

For protection	Against protection
protect an infant industry until it can compete	higher prices and less choice for consumers
protect jobs in industries facing cheap imports	other countries may retaliate , leading to a trade war
stop dumping (selling abroad below cost)	protected firms have little reason to become efficient
national security: food, energy, weapons	resources stay in industries without a comparative advantage
raise tax revenue (important in some low-income countries)	higher costs for firms that use imported inputs
diversification away from a few exports	it can lead to corruption around licences

Many economists accept some of these arguments in a few cases, such as a real infant industry for a limited time. They reject most others, because the losses to consumers are usually larger than the gains to producers.

Economic integration

Countries can agree to lower barriers with each other. This is **economic integration**

- A **bilateral** agreement is between two countries. A **multilateral** agree-ment is among many (such as the WTO’s rules).
- A **preferential trade agreement** lowers barriers on some goods only.

Trading blocs go further, in stages:

Stage	What members do	Example
free trade area	no barriers between members; each keeps its own barriers against others	RCEP (China and 14 Asia-Pacific countries), USMCA
customs union	a free trade area plus a common external tariff	Southern African Customs Union
common market	a customs union plus free movement of labour and capital	the EU single market
economic and monetary union	a common market plus one currency and one central bank	the euro area

Integration brings bigger markets, economies of scale, more competition and more investment. But it can also cause **trade diversion** : a member buys from a higher-cost partner inside the bloc instead of a lower-cost country outside it. When integration lets a member buy from a lower-cost partner instead of its own higher-cost producers, that is **trade creation** , which raises efficiency.

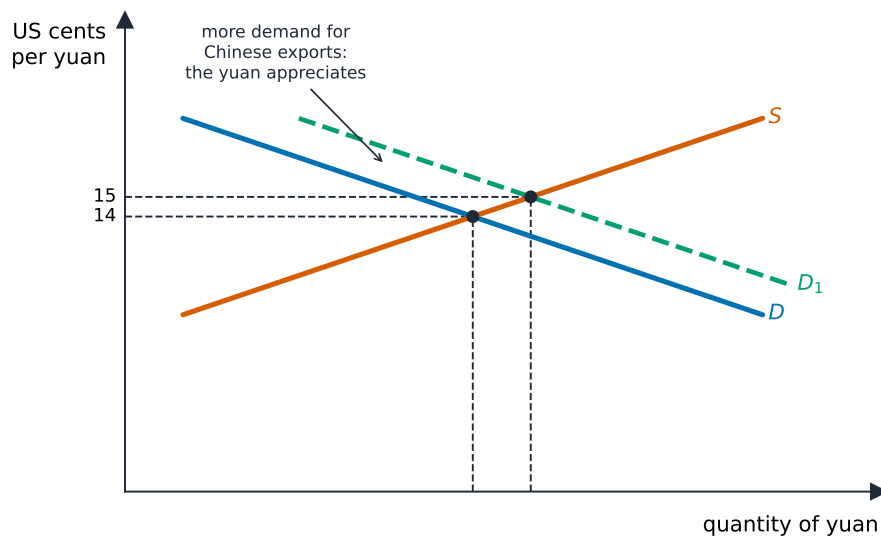
A monetary union removes exchange-rate costs and risks, and makes prices easy to compare. But each member loses its own interest rate and exchange rate. In the euro crisis after 2010, countries such as Greece could not devalue or cut interest rates to escape recession.

Exchange rates

■ What sets the exchange rate

The **exchange rate** is the price of one currency in another currency. Under a **floating exchange rate** , demand and supply in the foreign exchange market set it.

- Demand for yuan comes from foreigners buying Chinese exports, tourists visiting China, and foreign investors buying Chinese assets.
- Supply of yuan comes from Chinese people and firms buying imports, travelling abroad, and investing abroad.



More demand for Chinese exports raises the demand for yuan, so the yuan appreciates

A rise in a currency's value is an **appreciation** ; a fall is a **depreciation** .
The exchange rate changes when:

- foreign demand for a country's exports changes;
- interest rates change (higher rates attract **hot money** , short-term money looking for the best return);
- inflation differs between countries (high inflation makes exports less competitive);
- investors **speculate** that a currency will rise or fall;
- the central bank buys or sells its own currency.

■ Effects of a change

If the yuan appreciates, Chinese exports become dearer abroad and imports become cheaper in China. Exporters may lose sales, but import prices and inflation fall. A depreciation does the opposite: it helps exporters but raises the price of imported fuel and food.

Worked example (HL). One US dollar buys 7.00 yuan. A Chinese phone is priced at 2,100 yuan. In the US it costs $2,100 \div 7.00 = 300$ dollars. If the yuan appreciates to 6.00 per dollar, the same phone costs $2,100 \div 6.00 = 350$ dollars.

■ Fixed and managed systems

- Under a **fixed exchange rate** , the government or central bank sets the currency's value against another currency and buys or sells to keep it there. The Hong Kong dollar has been fixed to the US dollar since 1983. A deliberate cut in a fixed rate is a **devaluation** ; a deliberate rise is a **revaluation** .
- A **managed exchange rate** floats, but the central bank steps in to limit big moves. The People's Bank of China sets a daily central rate and lets the yuan move only within a band around it.

Fixed rates give certainty to traders and investors. But the central bank must hold large **foreign currency reserves** , and it gives up control of its own interest rate. Floating rates adjust by themselves, but they can swing sharply and make planning hard.

The balance of payments

The **balance of payments** records all of a country's money transactions with the rest of the world in one year.

Account	What it records
current account	trade in goods and in services; primary income (wages, profits, interest and dividends from abroad); secondary income (transfers such as money workers send home, and foreign aid)
capital account	small items such as debt forgiveness and the sale of patents or land
financial account	foreign direct investment (FDI), portfolio investment (buying shares and bonds), changes in reserve assets

The accounts must add to zero. So a current account deficit is matched by a surplus on the capital and financial accounts: the country pays for extra imports by borrowing or by selling assets to foreigners.

■ Current account deficits and surpluses

A small deficit can be harmless, for example if it pays for imported machines that raise output later. A large, long-lasting deficit is a problem. The country builds up foreign debt, may need higher interest rates to attract money, and its currency may fall suddenly.

Policies to reduce a deficit:

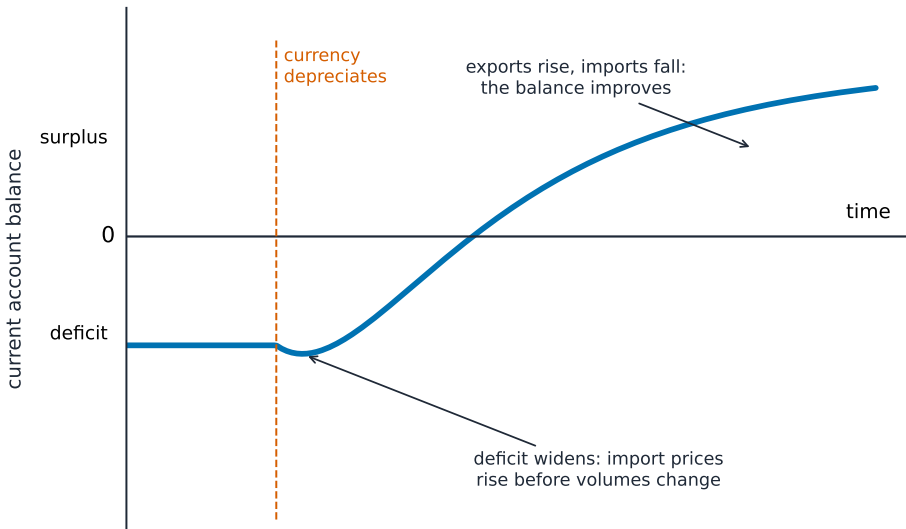
- **Expenditure-switching policies** move spending from imports to domestic goods: protection, or a lower exchange rate.
- **Expenditure-reducing policies** cut total spending, and so imports: contractionary fiscal or monetary policy. These can cause unemployment.
- **Supply-side policies** make exports more competitive over the long run.

A persistent surplus can also cause problems: a rising currency, less consumption at home, and trade disputes with deficit countries.

■ Marshall–Lerner and the J-curve (HL)

A depreciation makes exports cheaper and imports dearer. It improves the current account only if buyers respond enough. The **Marshall–Lerner condition** - says this happens when the price elasticity of demand for exports plus the price elasticity of demand for imports is greater than 1.

In the short run, demand is inelastic. Contracts are already signed, and buyers take time to find new suppliers. So right after a depreciation the country pays more for the same imports, and the deficit gets WORSE. Later, volumes adjust and the balance improves. The path looks like a “J”.



After a depreciation the current account gets worse before it gets better

■ The terms of trade (HL)

The **terms of trade** compare the prices of a country’s exports with the prices of its imports:

$$\text{terms of trade} = \frac{\text{index of average export prices}}{\text{index of average import prices}} \times 100$$

Worked example. From the base year, a country’s export price index rises to 128.9 and its import price index to 117.1. The terms of trade are $128.9 \div 117.1 \times 100 \approx 110.1$. They have improved by about 10%: each unit of exports now buys about 10% more imports.

Better terms of trade are not always good news. If exports become dearer because of domestic inflation, sales may fall. For many low-income countries that export **primary products** (food, metals, oil), prices swing a lot. Over the long run their terms of trade have often fallen against manufactured goods, so they must export more just to buy the same imports.

Economic development

■ Sustainable development

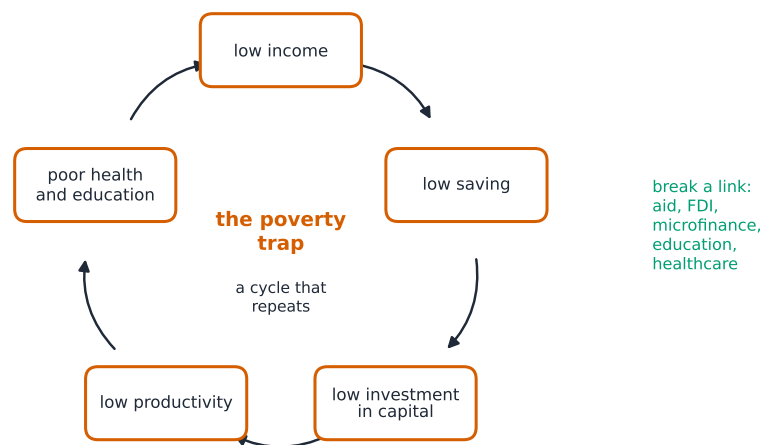
Economic development is broader than growth. It means better living standards: less poverty, better health and education, more freedom and choice. **Sustainable development** meets the needs of people today without harming the ability of future generations to meet their own needs. In 2015 the United Nations agreed 17 **Sustainable Development Goals** (SDGs) for 2030, including no poverty, zero hunger, quality education, clean water and climate action. Poverty and environmental damage are linked: very poor people may have no choice but to cut forests or overuse land.

■ Measuring development

Type	Measures	Limits
single indicators	GDP or GNI per capita at PPP; life expectancy; infant mortality; years of schooling	each shows only one side of development
composite indicators	the Human Development Index (HDI): income (GNI per capita at PPP), health (life expectancy) and education (years of schooling), on a scale from 0 to 1	HDI hides inequality and the environment
adjusted indices	the Inequality-adjusted HDI (IHDI) and the Gender Inequality Index (GII)	data can be old or poor in low-income countries

A country whose HDI rank is much higher than its GNI rank turns its income into health and education well. A country whose HDI rank is much lower may have high income from oil but poor public services or great inequality.

■ Barriers to development



Each link in the poverty trap keeps the next one weak

- The **poverty trap** : people with low incomes cannot save, so there is little money for investment, so productivity and incomes stay low.
- **Economic barriers**: high inequality; poor infrastructure (roads, power, internet); little access to credit and markets; a large informal economy that pays no taxes; **capital flight** (rich people moving money abroad); and unsustainable foreign debt.
- **Dependence on primary products**: for example, copper makes up most of Zambia's exports, so a fall in the world copper price cuts national income sharply.
- **Geography**: being **landlocked** raises transport costs; tropical disease and climate shocks hurt health and farming.
- **Political and social barriers**: weak institutions, corruption, poor legal and property rights, political instability and conflict, and **gender inequality** (when girls cannot go to school, half the country's talent is wasted).

■ Strategies for development

Strategy	How it helps	Problems
export promotion	uses comparative advantage; China, South Korea and Singapore grew this way	depends on world demand; may need cheap labour
import substitution	protects new domestic industries (Latin America, 1950s–1980s)	firms stayed inefficient; high prices for consumers
diversification	less risk from one export price	needs skills and investment
foreign direct investment (FDI) by multinational corporations	brings capital, jobs, technology and skills	profits leave the country; firms may use low wages or weak environmental rules
foreign aid	grants and cheap loans for health, schools and emergencies	can be tied to the donor's goods; corruption; dependency
multilateral help (World Bank, IMF)	long-term loans; help in a crisis	loan conditions may force spending cuts
debt relief	frees money for schools and hospitals	may encourage new borrowing
microfinance	small loans to people banks ignore, often women (the Grameen Bank)	high interest rates; loans may pay for consumption, not business
fair trade	guaranteed minimum prices for farmers	reaches only a small share of producers
better institutions, education and health	raise productivity and attract investment	take many years and need good government

Most successful countries have used a mix: market reforms and open trade, together with strong government investment in education, health and infrastructure. Every strategy should be judged by the barrier it removes, and by whether the gains are equal and sustainable.

Checklist

- The benefits of trade; absolute against comparative advantage; the 4/2 against 1/1 table; trade at 1.5 wheat per cloth puts both countries outside their PPCs; the limits of the theory; the WTO (4.1).
- Tariffs, quotas, production and export subsidies, administrative barriers; the tariff worked example: imports $48 \rightarrow 24$, revenue 96, deadweight loss $32 + 16 = 48$; who gains and who loses; quota and subsidy compared (4.2).
- The arguments for and against protection, with evaluation (4.3).
- Bilateral, multilateral and preferential agreements; free trade area, customs union, common market, economic and monetary union with examples; trade creation and trade diversion; the costs of a monetary union (4.4).
- Floating, fixed and managed exchange rates; what shifts the demand and supply of a currency; appreciation and depreciation and their effects; the phone priced at 2,100 yuan; devaluation and revaluation; reserves (4.5).
- The current, capital and financial accounts; why they balance; the problems of persistent deficits and surpluses; expenditure-switching, expenditure-reducing and supply-side corrections; HL Marshall–Lerner and the J-curve; HL terms of trade $128.9 / 117.1 \rightarrow 110.1$ and why primary exporters lose (4.6).
- Development against growth; sustainable development and the 17 SDGs (4.7).
- Single and composite indicators: GNI per capita at PPP, HDI, IHDI, GII; comparing HDI and GNI ranks (4.8).
- Barriers: the poverty trap, economic barriers, primary-product dependence, geography, political and social barriers (4.9).
- Strategies: export promotion, import substitution, diversification, FDI, aid, multilateral help, debt relief, microfinance, fair trade, institutions and human capital, each with its problems (4.10).