

ECONOMICS

10.2 HSC Topic Two – Australia’s Place in the Global Economy

25% of indicative time

The focus of this topic is an examination of Australia’s place in the global economy and the effect of changes in the global economy on Australia.

Outcomes

A student:

- H1 Demonstrates understanding of economic terms, concepts and relationships
- H2 Analyses the economic role of individuals, firms, institutions and governments
- H4 Analyses the impact of global markets on the Australian and global economies
- H5 Discusses policy options for dealing with problems and issues in contemporary and hypothetical contexts
- H7 Evaluates the consequences of contemporary economic problems and issues on individuals, firms and governments
- H8 Applies appropriate terminology, concepts and theories in contemporary and hypothetical economic contexts
- H9 Selects and organises information from a variety of sources for relevance and reliability
- H10 Communicates economic information, ideas and issues in appropriate forms
- H11 Applies mathematical concepts in economic contexts
- H12 Works independently and in groups to achieve appropriate goals in set timelines

Content

Students learn to:

Examine economic issues

- Assess the impact of recent changes in the global economy on Australia’s trade and financial flows
- Examine the effects of changes in trade and financial flows on Australia’s economic performance
- Analyse the effects of changes in the value of the Australian dollar on the Australian economy
- Discuss the impact of free trade and protection policies on the quality of life in Australia

- Propose likely changes to the structure of industry within Australia as a result of current trends in the global economy

Apply economic skills

- Calculate the main components of Australia's balance of payments
- Analyse the relationship between the balance of the capital and financial account and the net income balance
 - Explain the relationship between the current account balance and the balance of the capital and financial account
 - Use supply and demand diagrams to explain how the value of a currency is determined under different exchange rate systems
 - Analyse the impact of changes in the components of the balance of payments on the value of the Australian dollar

Topic 2: Australia's place in the Global Economy

Australia's Trade and Financial flows

Students learn about:

Australia's trade and financial flows

Value, composition and direction of Australia's trade and financial flows

- Trends in Australia's trade pattern
- Trends in financial flows – debt and equity

Understanding Australia's Place in the Global Economy

- Australia is ranked 2nd in the world in terms of quality of life according to HDI. Australia has a very high level of economic development.
- Australia's exports are very heavy reliant on commodities. Demand for these products does not grow quickly and are usually highly influenced by fluctuations in the world economy. More than half of Australia's main goods exports are comprised of metal and mineral products. Services contribute about the same to Australia's exports as rural and manufacturing output combined.
- In terms of imports, intermediate goods are the largest amount, followed by consumption goods, capital goods and services. The trend in our imports has changed from the UK and EU towards ASIA and the US. In context of global economy, Australia is sometimes referred to as a small, open economy. Australia produces less than 2% of gross world product.

Trends in Australia's trade patterns

Four features that characterize international trade and financial flows are:

- International trade and finance requires different currencies.
- Different institutions, regulations, multinational corporations

- Increased risk in the movement of funds from variable exchange rates
- The fluctuations of the international business cycle
- In the 1950s Australia mainly traded with European countries, however this has changed as the EU trade bloc was implemented and Japan became the major buyer of exports. More recently China, South Korea and ASEAN countries have been major trading partners.

Direction

- One of the key factors that changed the direction of Australian trade was when the UK joined the EU. This created a trading bloc, which led to Australia losing many of its traditional markets in the UK.
- Due to the difficulties of trading with the UK, Australia shifted towards areas such as north east Asia and ASEAN countries. In the 1960s Australia traded heavily with Japan due to rapid economic growth. However, in the 1980s Japan's growth began to slow, leading Australia to trade with other Asian countries, more recently the Asia-Pacific region.
- In 2010-11 China became Australia's largest source of imports, reflecting Australia's demand for manufactured imports from China. Due to the appreciation of Australia's dollar, the international competitiveness of Australia's services has diminished.

Composition

- The composition of Australia's trade has changed.
- Exports in minerals and metals have increased dramatically to a share of 54% (resource boom as Australia has a comparative advantage in commodities) however it is extremely unstable to rely on minerals and agriculture products due to their volatile prices. Also, due to rising protectionist policies in agriculture like the EU, it has reduced export markets Australian's can access.
- Manufacturing decreased to 9%. Manufacturing exporters have encountered difficult conditions recently, because of the high A\$ and competition of goods manufactured in China (devalue their exchange rate) and other low-cost economies in Asia.
- Australia's best long term alternative is to rely on increased service exports. Accompanying this is that 3/4 of Australia's labour force is employed in the service industry.

Trends in Australia's financial flows (Debt and equity)

- The rate of growth in financial flows has been much greater than the growth in trade flows. There has been a severe increase in both foreign investment however the shorter and more speculative growth of FPI has grown faster than FDI.
- FDI includes the establishment of a new company or the purchase of more than 10% of share in an existing company.
- FPI includes loans, securities and smaller shareholdings in companies for the short term and a speculative growth.
- Australia has traditionally been an importer of foreign direct investment. This is now changing with Australian investors seeking equity in businesses overseas.

- Australian FDI abroad is increasing faster than FDI into Australia. While a benefit of this trend is to increase the profitability of Australian corporations by expanding their markets, much of the finance required for equity in foreign market is debt. This is reflected by the financial account by increasing equity outflows and debt inflows. Thus, for Australian companies to invest overseas and have equity in a foreign company, they must allow foreigners to invest in Australia so they have the required funds.
- This shortfall has led to increased debt investment being required to finance the CAD. During the GFC there was a turnaround in this trend with increased equity inflows and reduced borrowing but global recovery is likely to lead to more Australian investment overseas and rising debt levels again.

Australia's Balance of Payments

- Structure
 - Current Account, debits and credits
 - Capital and Financial Account

Australia's Balance of Payments

- The Balance of Payments summarises the transactions between Australia and the rest of the world during a given period of time. It shows the trade and financial flows going in and out of Australia. An inflow = credit, outflow = debit.
- There are two accounts featured in the BOP including: Current account and the capital and financial account.

The Current Account

- The current account shows the receipts and payments for trade in g/s, transfer payments and income flows between Australia and the rest of the world in a given period of time.
- These transactions are non-reversible and external.
- The current account deficit is a result of the large net income deficit which reflects the servicing cost of Australia's net foreign liabilities of debt and equity borrowings.

Net goods

- The difference between what Australia receives for its exports and pays out for imports.

Net services

- The difference between exports and imports of a service such as transport and tourism where a good is not received.

Balance on goods and services (BOGS)

- The amount derived by adding net goods and net services together.

Net primary income

- Earnings on investment covering interest payments on borrowings and returns on other foreign investments. Income in the form of rent, interest, profits and dividends are flows. Usually a deficit with more investment coming into Australia than domestic abroad. Main contributor to the CAD.
- It is the difference between all the income Australia earns from rent, interest, dividends and profit from overseas MINUS the income foreigners earn from rent, interest, dividends and profit from here.

Net secondary income

- Refers to non-market transfers when products or financial resources are provided without a specific g/s provided in return.

Balance on the current account

- Includes the addition of the balance on g/s, net primary income and net secondary income.

The capital and financial account

- Records the borrowing, lending, sales and purchases of assets between Australia and the rest of the world.
- Involves financial assets and liabilities.
- Transactions are reversible: Borrowing can be repaid, assets can be bought and sold again.
- The capital and financial account includes foreign debt and equity.

Capital account

- Includes two components:
- Capital transfers in the form of conditional aid grants (specific capital projects) or debt forgiveness.
- Entries for the purchase and sale of non-produced and non-financial assets e.g Intellectual property rights like copyrights

Financial account

- Shows Australia's transactions in foreign financial assets and liabilities.
- A credit on the financial account (increased foreign investment into Australia) requires more debit to be paid on the current account.
- Includes how much is going in and out as well as the type of investment:
- Direct investment: Establishment of a new company or the purchase of more than 10% of shares in an existing company. Positive=Surplus into Australia.

- Portfolio: Purchase of land, shares and other marketable securities for speculative growth. Positive=Surplus into Australia.
- Financial derivatives: Complex financial assets. Negative=More going out.
- Reserve assets: Financial assets available to and controlled by the RBA for financing or regulating payment imbalances. Negative=More going out.
- Other investment: Transactions not classified as any of the above. Negative=More going out.

Balance on capital and financial account

- Determined by adding the capital and financial account categories together. Should be approximately equal to the CAD.

Net errors and omission

- Refers to statistical discrepancies because under a floating exchange rate system, the BOP should equal to 0.

Statistics for the BOP are calculated in accordance with international standards developed by the IMF.

- Links between key Balance of Payments categories

Links between key balance of payments categories

- The deficit on the current account is equal to the surplus on the capital and financial account.
- An increase in the CAD will result in a rise in the capital and financial account surplus.
- Debt= Interest
- This is because when any flow comes in, interest must be paid out.
- Each year there is a CAD, this will increase the amount of borrowing needed to pay for it. This increases the foreign debt. As the foreign debt increases, this increases the interest bill on the debt. This increases the income deficit on the CAD. This increases the CAD and the cycle continues.
- The strongest link is seen through the net primary income category in the current account.
- We want foreign investment to fund our infrastructure and grow our economy because we don't have enough savings, however the money borrowed has to be paid back.
- In the long term a capital and financial account surplus will result in a larger deficit on the net primary income account. This is because any foreign financial flow coming into Australia must earn some kind of return for its owner, which is a debit recorded on the net primary income account.
- Financial inflows can create debits on the primary income category in two ways:

- International borrowing (foreign debt): This will require regular interest payments/servicing costs, which are recorded as debits on the net primary income category in the current account. Australia's high level of borrowing from overseas has contributed significantly to the CAD due to the servicing costs of foreign debt.
- Foreign investment (foreign equity): This requires returns on the equity invested. Equity financial inflows are related to the foreign purchase of Australian assets such as land, shares or companies. This also contributes to the CAD.
- In the long term, a high level of capital and financial account surpluses will result in a widening CAD due to the servicing costs associated with increased foreign liabilities. May lead to a 'debt trap'; an economy borrows from overseas to pay the interest on existing foreign debt.
- A further reason why Australia has a CAD is because we have low savings compared to investment demand, which makes it necessary to attract a large inflow on the financial account.
- Trends in the size and composition of Australia's Balance of Payments
 - international competitiveness, terms of trade, international borrowing, foreign investment
 - effects of these trends on Australia's Balance of Payments

4.5 Trends in Australia's balance of payments

- While Australia's Balance of Payments is always in balance, there may be considerable changes in the components that make up the BOP. The balance of goods and services is the most volatile component. Exports tend to change as a result of changes in global demand, Australia's relative exchange rate and commodity prices.
- Trends are usually shown in the current account deficit, BOGS and net primary income.
- CAD is measured as a % of GDP. It was 1.1% in the 1970s and has increased to 2.8% in 2011. Fluctuations have caused alarms and promoted a range of major structural reforms to restore the competitiveness of Australia's economy.
- Australia's CAD is among the highest of all advanced economies. Australia's CAD varies in accordance due to both cyclical and structural factors.
- The CAD increased in size and as a % of GDP between 2002-03 and 2004-05 because of the impact of the drought on rural exports and lower demand for exports resulting for a global slowdown.
- The CAD increased in size and as a % of GDP between 2002-03 and 2004-05 due to the impact of the drought on rural exports and lower demand for exports resulting from a global slowdown. However, the CAD fell in both 2005-06 and 2010-11 due to the impact of the global resources boom, which increased resource exports.

Cyclical Factors

Factors that vary with the level of economic activity. Includes:

- Changes in global demand for commodities
- Australia's terms of trade
- Value of the exchange rate

Structural factors

Factors that are underlying or persistent influences on the BOP. Includes:

- Structure of Australia's export base
- International competitiveness of Australia's exports
- Level of national savings
- Since the GFC the CAD has been much lower due to favourable cyclical factors including the global mining boom, lower global interest rates, increase in domestic savings and weaker domestic economic growth.

The balance on goods and services

- Australia has had a persistent deficit on BOGS before the GFC. As Australia didn't suffer from the GFC as much as overseas countries, BOGS has been a surplus in recent years.

Cyclical Factors

- Movements in exchange rate affect the international competitiveness of Australia's exports and relative price of imports.
- A depreciation decreases the foreign currency price of Australia's exports, increasing international competitiveness for Australian exports on the world market. However, a depreciation increases the Australian dollar price of imports and discourages consumers from buying imports. This explains why the BOGS went into surplus in 2008 after the Australian dollar depreciated due to a deteriorating global outlook.
- An appreciation however, worsens Australia's international competitiveness, decreasing demand for Australia's exports and increasing consumer demand for cheaper imports.
- Thus, the recent appreciation of the Australian dollar has been a factor in worsening the BOGS.
- Recently, terms of trade has impacted BOGS enormously.
- Terms of trade measures the movements in the prices of an economy's imports and exports over a period of time. It shows the relationship between the prices Australia receives for its exports and the prices it pays for imports.
- If export prices are increasing relative to import prices, Australia's terms of trade will improve. VISA VERSA.
- Improvements in terms of trade means that the same volume of exports can buy more imports, thus improving the BOGS. Since 2003, Australia has sustained a large terms of trade boom. Reflects the global commodities boom, which has been the strongest influence behind reducing the CAD.
- The low-cost manufacturing of China, reducing import prices has further increased Australia's terms of trade.
- Higher terms of trade means that exports receive higher prices for the same output. This however must be offset against the rising dollar.

- Increased terms of trade led to increased foreign investment into mining and increased demand for our dollar by speculators.
- High Australian dollar has weakened Australia's international competitiveness of non-exports.
- Appreciation of exchange rate has led to non-commodity exports decreasing also.
- 'DUTCH DISEASE' is where an increase in one export industry leads to a higher dollar, which decreases the international competitiveness of another export industry.
- The terms of trade shows the ratio of the export price index to the import price index.
- $\text{Export price index} / \text{import price index} \times 100$
- Level of domestic economic growth will clearly influence the BOGS by affecting the demand for imports. High domestic economic growth = higher disposable income to spend on imports which will worsen the BOGS. Visa Versa.
- Increase household income from commodities boom is a reason for poor BOGS.
- GFC led to a decrease in import spending and helped BOGS return to surplus.
- Recently, higher household savings levels has led to reducing import growth.
- International business cycle will impact BOGS by affecting demand for Australian exports.
- Strong global economic growth especially in Australia's trading partners will increase demand for exports, thus improving BOGS.

Structural factors

- Structure of Australia's export base will influence BOGS.
- Australia has a narrow export base with majority of primary commodities. Thus, our comparative advantage lies in low value-added goods.
- Australia lacks international competitiveness in manufacturing, thus importing high value-added imports such as consumer and capital goods which leads to a deficit of the BOGS.
- Global commodity prices are more volatile than manufacturing, leading to high fluctuations in the BOGS.
- Terms of trade has improved due to increased exports from global commodity boom and decreased price of import of manufacturing from increased competition.
- Australia would benefit by diversifying their its export base to ETMs as opposed to STMs.
- There is an opportunity for an expansion of Australia's service industry.
- Capacity constraints have occurred in Australia where there is a limit on the amount of commodities that can be transported due to poor infrastructure.

The primary income account

- Main cause for Australia's ongoing CAD.
- Comprised mainly of payments of interest and dividends on Australia's net foreign debt and equity.
- Recorded as a deficit of 3-4% of GDP.
- The net primary income deficit has narrowed since the GFC, reflecting lower servicing costs (paying back interest from debt owed) on foreign debt and the increase in household savings.
- Net primary deficit is expected to increase in the near future due to the repayments to overseas investors in Australia's mining industry.

Cyclical factors

- Net primary income deficit is a reflection of Australia's net servicing costs owed to overseas.
- Form of interest repayments of foreign debt, dividend payments or profits on foreign equity.
- The size of Australia's interest repayments are effected by two main cyclical factors:
- Changes in the value of the exchange rate: Movements in the exchange rate will affect how much Australia has to pay back; alter the Australian dollar value of debt dominated in foreign currencies. (Valuation Effect)
- Appreciation of A\$ will decrease debt service in Australian dollar terms, reducing the value of the net primary income outflows the net primary income deficit. This has been a clear factor improving the CAD when A\$ has been in surplus.
- On the other hand, a depreciation will increase the value of Australia's interest repayments.
- As a lot of Australia's foreign debt is 'hedged' meaning a fixed exchange rate, the valuation effect will not matter.
- Changes in domestic and global interest rates: As the servicing costs are set by an interest rate. A decrease in Australia's interest rates will decrease the value of Australia's interest rate obligations.
- The performance of the domestic business cycle is a huge cyclical factor affecting the net primary income account deficit through its influence on equity servicing costs.
- Equity – ownership of assets – entitles the owner to a share of the profits of that asset.
- Strong domestic growth will result in strong domestic profits for business owners. Thus, as 40% of public companies in Australia are owned by foreigners, there will be a larger portion of dividends going back overseas (higher equity servicing costs), worsening the net primary income deficit.

Structural factors

- The main reason for Australia's persistent CAD is the underlying gap between savings and investment. Thus, Australia has low savings and a high inflow of investment.
- Therefore, Australia funds its investment through international borrowing (increases foreign debt) or selling ownership of Australian assets (increases foreign equity). This creates future servicing obligations in the form of interest repayments (on debt) dividends (on equity).
- Australia's household savings ratio: proportion of household income that is not spent, has continually improved in recent years. Reflects consumer uncertainty and has led to improving the CAD.
- Government can address this through superannuation and fiscal consolidation (eliminating budget deficit).

We borrow=debt we pay back in interest = servicing cost

Equity= Overseas own an Aust company. Australia has to give back rent for land, dividend for share or the profit they make. Included in the primary income account.

Equity = rent profit dividend

Over time, a high level capital and financial account surpluses will result in a widening CAD. Explain why?

This is because of the servicing costs and returns on Aust assets associated with increased foreign liabilities higher foreign debt foreign equity

Another perspective on the links between the two sides of the BOP relates to Australia's low savings level, which makes it necessary to attract a large inflow on the capital and financial account.

Not enough savings is the cause of Aust BOP problems because low savings results in a need for foreign capital inflow to fund investment within Aust i.e. making it a capital and financial account problem.

It is because of a CAD and a capital and financial account surplus.

A lack of savings shows up on a reliance of foreign savings. Compulsory superannuation is a means of Australia's Government increasing savings.

Consumers and biz have been more frugal i.e. save more and spend less. Historically Aust has been big on spending and bad savers.

Household spending ratio is 10%, which is quite good for us.

Trends in Australia's Balance Of Payments

The CAD increased in size and as a % of GDP between 2002-03 and 2004-05 because of the impact of the drought on rural exports and lower demand for exports resulting for a global slowdown.

However the CAD fell in both 2005-06 and 2011-12 due the impact of the global resources booms which increased resource exports.

4.6 The consequences of a high CAD

There are clear risks associated with a persistently high CAD, including:

- Growth of foreign liabilities: A high CAD will lead to an increase in foreign liabilities. Lenders may become more reluctant to invest in Australia.
- Increased servicing costs associated with high levels of foreign liabilities will worsen the CAD. High levels of foreign debt may lead to investors demanding a 'risk premium' on loans, forcing up interest rates.
- Increased volatility for exchange rates: A high CAD will undermine the confidence of investors, thus reducing the demand for Australia's dollar.
- Constraint on future economic growth. In the long term a high CAD may result in a speed limit on economic growth. High levels of economic growth is associated with increased imports and a deterioration of the CAD.
- More contractionary policy to reduce the high CAD.
- Loss of international investor confidence.

There hasn't been much concern over Australia's persistently large CAD because of globalisation and Australia's strong economic growth. However, the continual strain on external accounts, makes Australia dependent on financial inflows to fund its servicing costs of high foreign liabilities.

Exchange Rates

- The exchange rate is the price of Australia's currency in terms of another country's currency. It is the purchasing power between a domestic currency and foreign currency.
- Allows for international trade, financial flows etc
- It is a base of conversion
- The Australian dollar is the world's fifth most traded currency after the US dollar, Euro, Japanese Yen and British pound.
- Australia has 4% of global foreign exchange transactions.
- We measure exchange rates by looking at one currency in relation to another.
- Foreign exchange dealers in Australia, banks overseas and their customers trade foreign exchange in both spot and forward markets.
- The spot exchange rate refers to the current exchange rate.
- Forward market is the futures/derivative. You promise to exchange a certain amount at a later date. Provides certainty and acts as a hedge fund.

- Exchange rates are determined by the demand and supply for currencies in foreign exchange markets. This reflects the use of floating exchange rate systems by most countries in the world. Foreign exchange = conversion of currencies.
- What causes the demand and supply of a particular dollar. Thus, this explains why an upward or downward movement occurs.
- China does not use a floating exchange rate system. They keep it artificially low. Thus, their value of exports is cheap on the global market.
- Australia's dollar can be measured by bilateral rates/cross rates or in terms of movements in the Trade Weighted Index (TWI).
- TWI is the A \$ in relation to the currencies of its major trading partners. 21 trading partner countries fill the basket. The more important trading partners like China or Japan are weighted more.
- Every member of the IMF must have money in the IMF.
- The dollar can rise and fall quite dramatically over time.
- Appreciated = Australian dollar has increased in what it can buy in relation to a particular country being compared to. Overall, there has been a general coloration (experience similar trends) in the trends measuring currencies between each other.
- There are many variables that cause changes in the value of a currencies exchange rate. Examples include the GFC and the mining boom resulting in an increase in the demand for Australia's currency
- Australia's terms of trade and long term export performance is strong effected by the prices of commodities.
- Economic growth, commodity prices and returns on investment have significantly effected the value of the exchange rate.

Direct and indirect methods of quoting the exchange rate for the Australian dollar against the US dollar

Indirect: 1 Australian dollar buys how many US dollars

Direct: 1 US dollar buys how many Australian dollars

Factors that create demand and supply of foreign exchange

All those people who want to buy A\$ represent the demand for a foreign exchange.

Demand is affected by:

- The size of financial inflows as foreigners need to convert their currency into A\$.
- The level of Australia's interest rate compared to overseas interest rates.
- Availability of investment opportunities in Australia will attract demand.
- Expectations for future appreciation of a particular dollar will increase demand from speculators.

- Demand for Australia's exports since foreigners need to convert currency before buying imports.
- Changes in commodity prices and the terms of trade will have an immediate effect on the dollar. Increase in commodity prices = increase in exports = financial markets responding to appreciate the value of the dollar.
- Measure of Australia's international competitiveness (ability of domestic producers to compete with overseas producers in both domestic and global markets).
- Changes in global economic conditions e.g. Commodity prices and the GFC.
- Tastes and preferences of overseas consumers
 - The demand for Australian exports = Current account credit on BOGS
 - The demand for Australian assets (portfolio and direct investment) = Credit in the financial account

All those people who wish to sell A\$ represent the supply for a foreign exchange.

Supply is affected by:

- The size of financial outflows as Australian investors need to purchase foreign currency.
- Level of Australia's interest rates relative to overseas interest rates e.g. Lower domestic IR will make investing savings overseas more attractive.
- Availability of investment opportunities overseas will increase supply/ outflow
- Speculators who expect A\$ to go down in value will sell A\$, increasing supply as more A\$ is available leading to anticipated depreciation.
- Domestic demand for imports: Australian importers need to sell A\$ to obtain foreign currency to make payments
- Level of domestic income: If domestic income rises from increased growth, demand for imports rise, increasing the supply.
- The domestic inflation rate and competitiveness of domestic firms. If domestic inflation is high and domestic is uncompetitive, then imports will be cheaper.
- Tastes and preferences: Increasing preference for overseas products will raise the supply of Australian dollars on the foreign exchange market.
- The demand for foreign imports = Current account, debit on BOGS.
- The demand for foreign assets (portfolio and direct investment) = Debit in the financial account.

Exchange appreciation and depreciation

Current account surplus = capital and financial account deficit = appreciation of exchange rate

Current account deficit = capital and financial surplus = Depreciation of exchange rate (Australia)

Causes and effects of changes in exchange rates

- A decrease in the demand for A\$ (shift in the demand curve to the left) will lead to depreciation.
- An increase in supply of A\$ (shift in the supply curve to the right) will also cause depreciation.
- An increased in the demand for A\$ (shift in the demand curve to the right) will lead to an appreciation.
- A decrease in the supply of A\$ (shift in the supply curve to the left) will cause an appreciation.

Appreciation	Depreciation
<ul style="list-style-type: none">• Increase in Australia's interest rates or a decrease in overseas interest rates.	<ul style="list-style-type: none">• Decrease in Australia's interest rates or an increase in overseas interest rates.
<ul style="list-style-type: none">• Improved investment opportunities in Australia or a deterioration in investment opportunities overseas.	<ul style="list-style-type: none">• Deterioration of investment opportunities in Australia or improvements overseas.
<ul style="list-style-type: none">• A rise in commodity prices and an improvement in Australia's terms of trade.	<ul style="list-style-type: none">• Fall in commodity prices and deterioration in Australia's terms of trade.
<ul style="list-style-type: none">• An improvement in Australia's international competitiveness	<ul style="list-style-type: none">• Deterioration in Australia's competitiveness
<ul style="list-style-type: none">• Lower inflation in Australia	<ul style="list-style-type: none">• Higher inflation in Australia
<ul style="list-style-type: none">• Increased demand for Australia's exports	<ul style="list-style-type: none">• Increased demand for overseas imports
<ul style="list-style-type: none">• Expectations for a future appreciation	<ul style="list-style-type: none">• Expectations for a future depreciation

2. Discuss the possible causes and effects of exchange rate appreciation.

When IR is high there is less money out there which increases the demand

CAUSES

EFFECTS

- A shift to the right of the demand curve (increase in demand) will appreciate the \$AUS.
- A shift to the left in the supply curve (decrease in supply) will appreciate the \$AUS.
- An increase in Australian IR or a decrease in overseas IR.
- Improved investment opportunities in Australia or deterioration in foreign investment opportunities.
- A rise in commodity prices and an improvement in Australia's terms of trade.

An improvement in Australia's international competitiveness

- Lower inflation in Australia
- Increased demand for Australia's exports
- Expectations of a currency appreciation

Australia's Place In The Global Economy

Exchange Rates

- The influence of the Reserve Bank of Australia on exchange rates

5.3 Reserve bank intervention in the foreign exchange market

1. Discuss the reasons for the Reserve Bank of Australia intervention in the foreign exchange market to affect the value of the exchange rate for the Australian dollar.
 - Interventions are defined as transactions undertaken with the sole objective of influencing market conditions.
 - The Reserve Bank of Australia sometimes plays a role in influencing the value of the currency. Through dirty float and monetary policy, the RBA can successfully soften sharp appreciations and depreciations.
 - If there is a future expectation that there will be a large short term change in the exchange rate (due to excessive speculation) that will be harmful on the domestic economy, it may decide to step into the foreign exchange market as either a buyer or seller.
 - In order to curb a rapid depreciation on the currency, the RBA will buy A\$, putting upward pressure on the exchange rate.
 - In order to curb a rapid appreciation on the currency, the RBA will sell A\$, putting downward pressure on the exchange rate.
2. Distinguish between direct and indirect intervention in the foreign exchange market by the Reserve Bank of Australia.
 - Indirect intervention in the foreign exchange market is considered as actions that will indirectly influence the exchange rate as well as the economy, include altering the monetary policy. Rarely used for this purpose, only effective in the short term.
 - Higher interest rates will attract more investment = increased demand = appreciation.
 - Lower interest rates will discourage investment = decrease demand = depreciation.
 - Unusual for monetary policy to be used to effect currency, as its primary focus is to influence the domestic economy, particularly interest rates.
 - Direct intervention: The RBA conducting foreign exchange transactions (buying or selling of A\$) to directly affect the exchange rate.

3. Distinguish between sterilised and unsterilised intervention in the foreign exchange market by the Reserve Bank of Australia.
- An attempt by a country's monetary authorities to influence exchange rates and its money supply by not buying or selling domestic or foreign currencies or assets. This is a passive approach to exchange rate fluctuations, and allows for fluctuations in the monetary base.
 - If the central bank purchases domestic currency (appreciation) by selling foreign assets, the money supply will shrink because it has removed domestic currency from the market; this is an example of a sterilized policy.
 - Sterilised policy = direct intervention (RBA buying or selling foreign currencies).
 - An unsterilised policy allows for the foreign-exchange markets to function without manipulation of the supply of the domestic currency; therefore, the monetary base is allowed to change.
 - Unsterilised policy = indirect intervention (monetary policy).

5.4 Fixed exchange rate systems

- Fixed exchange rate system = Government or RBA sets the exchange rate.
- Maintain a fixed exchange rate by either buying or selling foreign currency.
- In order to intervene, government or RBA would need foreign reserves, foreign currency or gold.
- The RBA would need to obtain the necessary foreign reserves by insisting that all foreign exchange holdings be lodged with them.
- An alternative is for the government to change the exchange rate 'officially' so that it is closer to the real market value.
- Devalue the A\$ when it lowered the exchange rate.
- Revalue the A\$ when it increased the exchange rate.
- China sets their currency artificially low so that their exports are cheaper, thus increasing demand, and that imports are dearer, thus discouraging imports.

The managed flexible peg

- System operated in Australia from 1976 to 1983.
- RBA would 'peg' the value of the A\$ at 9am each day and the price would operate through the day.
- Provides more flexibility than a fixed exchange rate.

5.5 Exchange rates and the balance of payments

- An important influence on the exchange rate is the performance of the BOP. Thus, the value of the dollar can also influence BOP.

How the BOP influences the exchange

- Under a floating exchange rate, supply must = demand.
- Thus, net outflow of funds on the current account (supply of A\$) = the net inflow of funds on the capital and financial account (demand for A\$).
- Any disequilibrium on the BOP is automatically corrected by a movement in the exchange rate.
- There are two ways in which the BOP influences the exchange rate: Direct or perceptions of the CAD.
- An increase in imports and a decrease in exports = worsen the CAD = an increase in the supply of A\$ (importers will be selling more A\$ in order to buy foreign currency) = depreciation in the currency. Thus, a depreciation means that a given inflow buys more A\$.
- Likewise, an increase in outflow of funds on the CA (payment of services, income payments or current transfers) = increase in capital and financial account surplus = depreciation.
- However, an increase in exports and a decrease in imports (increase in demand for A\$ as foreigners need to purchase A\$ to buy our exports) = improvement in CAD from and increased demand for A\$ (decrease in A\$ supply) = appreciation of the A\$ and a decrease in the surplus of the capital and financial account.
- A significant influence on the value of the exchange rate is how financial markets perceive developments in the BOP, rather than the figures.
- If financial markets are concerned that an increase in the CAD is not sustainable, then they will be less willing to buy Australian assets, reducing capital inflow.
- If financial markets believe that a high CAD is due to other factors, this will not affect the currency.

The effects of a change in the exchange rate

Appreciation

Negative effects	Positive effects
<ul style="list-style-type: none">Increasing the A\$ in relation to other currencies, Australia's exports become more expensive and difficult to sell, leading to a <u>decrease in export</u> income and a deterioration of the CAD.	<ul style="list-style-type: none">Australian consumers benefit through increased 'purchasing power': Buy more overseas goods for the same quantity of A\$, <u>increase imports</u>.
<ul style="list-style-type: none">Imports are less expensive, encouraging import spending, thus worsening the CAD. Domestic production of import substitutes may fall.	<ul style="list-style-type: none">Appreciation decreases the interest servicing costs on Australia's foreign debt as Australia can buy more foreign currency with A\$. Reduces the outflow of funds on the net primary income component, reducing the CAD.
<ul style="list-style-type: none">Higher import spending and reduced exports will reduce Australia's economic growth.	<ul style="list-style-type: none">Appreciation will reduce the A\$ value of foreign debt borrowed, (valuation effect).
<ul style="list-style-type: none">Discourage foreign investors to invest in Australia, leading to lower financial inflows, however if currency keeps on rising then they will jump on board.	<ul style="list-style-type: none">Inflationary pressures in Australia will be reduced as imports become cheaper.
<ul style="list-style-type: none">Appreciation reduces the A\$ value of income earned on Australia's investments overseas, causing a deterioration in the net primary income component of the CAD.	
<ul style="list-style-type: none">Appreciation will decrease the value of foreign assets in Australian dollar terms.	

Depreciation

- As Australia relies on substantial financial inflows to deal with its large external imbalances, the A\$ is seen as a 'hot money' currency, subject to intense speculation and fluctuations.
- Speculative trade in A\$ is much larger than trade in the exchange of g/s.

Negative effects	Positive effects
<ul style="list-style-type: none"> • Australian consumers suffer 'purchasing power' as they can buy fewer overseas produced products for the same quantity of A\$. 	<ul style="list-style-type: none"> • Australia's exports become cheaper on the world market, leading to an increase in exports and an improvement in Australia's CAD.
<ul style="list-style-type: none"> • Increase in servicing costs on Australia's foreign debt because Australia can buy less foreign currency with its domestic currency to pay interest. Increases income outflow on the net primary income component, worsening the CAD. 	<ul style="list-style-type: none"> • Imports will be more expensive, thus discouraging imports. CAD should improve and domestic production of import substitutes should rise.
<ul style="list-style-type: none"> • Level of foreign debt expressed in A\$ will rise (valuation effect). 	<ul style="list-style-type: none"> • Lower import spending, increased domestic products and higher exports will increase economic growth.
<ul style="list-style-type: none"> • Inflationary pressures will increase as imports are more expensive making the cost of living rise. 	<ul style="list-style-type: none"> • Increase the value of A\$ of foreign income earned on Australian investments overseas, improving the net primary income account.
	<ul style="list-style-type: none"> • Increase the value of foreign assets in A\$ terms (valuation effect).
	<ul style="list-style-type: none"> • Foreign investors find it less expensive to invest in Australia however if the currency keeps falling it will discourage investment.

Exchange rates

- Measurement of relative exchange rates
 - To other individual currencies
 - Trade Weighted Index
- Factors affecting the demand for and supply of Australian dollars
- Changes in exchange rates – appreciation/depreciation
- Determination of exchange rates including fixed, flexible and managed rates
- The influence of the Reserve Bank of Australia on exchange rates
- The effects of fluctuations in exchange rates on the Australian economy

Free trade and protection

- Australia's policies regarding free trade and protection

Protection in Australia

6.1 Introduction

6.2 Government initiatives to reduce protection

The Government's main Aims in reducing protection are to:

Reduced protection allows for greater integration.

- Structural change: Shifts away from firms who can't compete and are replaced by those who have a comparative advantage.
- Access to more goods and services on the global market.
- Give them an artificial advantage
- To develop a manufacturing sector in Australia
- To shield domestic industries from international competition
- To promote infant industries
- It will create jobs

Australia's policies regarding free trade and protection.

- Historically, Australia has had relatively high levels of protection.
- Protection in the manufacturing industry where tariffs and quotas have been used to shield domestic firms from import competition.
- We are now one of the least protected countries in the world.

Reasons for protection

- Infant industry argument
- Self-sufficiency argument
- Dumping argument: The only reason why protection is seen as a fair strategy to implement.

Forms of protection

- Tariffs: Putting a tax on imports.
- Quotas: Restricting the amount of imports.
- Local contents rule:
- Subsidies: Government giving money directly to the industry.

Changes in the levels of protection in manufacturing from the 1980s to the 2000s.

- At the beginning of the 1980s it was imperative to protect Australian manufacturers because they found it difficult to compete with a low production output and consumer market.

- During the 1980s when tariff levels were high in the manufacturing industry (Australia had the highest levels out of any OECD country) output was low and exports to the global market were minimal in all areas of manufacturing. However, when the tariffs were reduced by up to 25% in the early 1980s, manufacturing exports quadrupled and elaborately manufactured goods skyrocketed in terms of volume being exported.
- Governments were spending too much money in these industries
- Disadvantaging consumers – too high priced products
- 1988 Industry Statement – reducing tariffs, phasing in over a number of years - leave out plan industries
- 1991 Industry Statement specifically targeted the plan industries

The Australian government implement policies to reduce protection in 1988 due to:

- Increase international competitiveness – restructure the industry to make it more efficient.
- Reducing costs - passed on to the consumer (allocative efficiency, technical efficiency, dynamic efficiency) - forcing industries to adapt to change.

Measures taken in the 1988 and 1991 Industry Statements to dismantle the protection of manufacturing include:

- These statements were seen as the end to a century of protection.
- These tariffs cuts were suggested to be at the same reduction right across all sectors, instead of proportional base.
- Many groups opposed tariff liberalisation
- Influence from Sweden - they had become a big player in the international market and their businesses had succeed with no tariffs - this influenced the Labor government
- Australia was already in recession and the unemployment level was at 8.4% - union members were strongly against the reduction of tariffs as it would have jeopardised businesses and increased the unemployment rate
- 1988 statements aimed to reduce manufacturing industry tariffs
- 1991 statements aimed to reduce plan industry tariffs

What are the 'plan' industries? Why were they given more time to adjust to lower levels of protection? What adjustment costs did plan industries face?

- Textile
- Steel
- Motor Vehicles
- Their levels of protection were higher - it would take them longer to adapt to lower tariffs
- They were big industries - it would take them time to change their operation process (structural change)

- Would have increased redundancies
- Recent trends in reducing protection. (Support your answer with relevant sources/evidence)
- Motor industries - lowering tariffs to 5% as of 2010 lowering by 10% over 10 years - review on decreasing in 2015
- Textiles and footwear - to 10% and looking to go lower in a few years
- Most manufacturing industries have tariffs of around 3%

The role of AUSTRADE and EMDC is:

- Give them guidance - government body to assist in exporting
- Grant to a number of businesses to get them into export markets

Tariff Levels

- Since 1968 where tariff levels were at 36% there has been a decline to 1.9% in 2010.
- Back then, industries weren't updating machinery and policies. Thus, they weren't efficient and comparatively advantage in this.

Textiles and clothing industry

- Expected to decrease from 10% to 5% in 2015.
- Structural unemployment occurred and retrenchments due to an increase in technology/machinery at the time of 1991. Added to the cyclical unemployment in the economy at that time.
- Historically, the agriculture industry has fluctuated significantly because of its volatility.
- \$8.6 billion in 2010-2011 is the value of protection the government contributed to Australia's industries.
- Short term costs of reducing protection include structural employment and the funds needed to re-train employees.
- Australia's multilateral and bilateral free trade agreements – (overview of two examples of each type of agreement)

6.3 Australia's free trade agreements

Policies	Features
Unilateral	<ul style="list-style-type: none">• A government introduces a policy to reduce their protection on a particular industry. This will benefit only the particular industry for future preferences. (Acting alone) as it isn't involved with any other group of nations
Bilateral	<ul style="list-style-type: none">• Bilateral trade agreements involve two nations only. They are considered the easiest trade agreements to negotiate because they can be designed to suit the conditions of two participants.• Australia's most significant bilateral trade agreement is the 1983 Closer Economic Relations agreement with New Zealand (CERTA). Led to free trade and increased standardisation of laws, business practices and commercial structures.
Regional	<ul style="list-style-type: none">• Refers to a free trade agreement between a number of countries within a particular area or region. Examples include: European Union (EU), North American Free Trade Agreement (NAFTA).
Multicultural	<ul style="list-style-type: none">• Multilateral trade agreements provide free trade or preferential trade between some countries, usually on a regional bases.

Examples of Bilateral Trade Agreements

The Singapore-Australia free Trade Agreement (SAFTA):

- Australia's first free trade agreement with an Asian country, introduced in 2003.
- The agreement covers the elimination of tariffs and improves market access for services exporters such as telecommunications and financial services.
- Also provides cooperation through competition policy and professional standards.

The Australian-United states Free Trade Agreement:

- Introduced in 2005.
- Provides significant tariff reductions on a number of goods in manufacturing and agriculture.
- Exports to US has significantly increased, US is now the third largest trading partner, accounts for 9.5% of Australia's two-way trade.
- Automotive tariffs were immediately eliminated.

Examples of Multilateral Trade Agreements

ASEAN (Australia and South East Asian Nations)

- Came into effect in 2010.
- Covers 20% of Australia's trade and effectively creates a free trade area of over 600m people.
- Complementary economies: Nature of goods Australia exports is of high demand in the industrializing nations of South East Asia. Visa Versa.
- Forecast to boost Australia's economy to \$US 19b.

APEC (Asia Pacific Economic Cooperation)

- In 1994, the APEC forum set up a target of free trade by 2020.
- Focus has shifted away from trade liberalization, acting as a forum for discussion on issues such as terrorism and climate change.
- Doesn't want to exclude countries like the EU.
- Supports the WTO and addresses problems centered around free trade.

WTO (World Trade Organisation)

- The WTO promotes free trade between economies in the world.
- It also, oversees free trade agreements to make sure members of the WTO abide by their regulations. If not, it will step in to resolve disputes to achieve its aim of global free trade.
- Continue multilateralism member of WTO, still try to undertake bilateralism to reduce barriers.
- Howard went away from Asia to Europe and emphasized on bilateral trade agreements that were quick and easy to access.
- Gillard has aimed at increasing the importance of multilateralism and the region of Asia.

Outline the trade strategy principles adopted by the government

- The five trade strategy principles adopted by the government include: unilateralism; non-discrimination; separation; transparency; and the grand unifying principle of trade policy as an indivisible part of overall economic reform.
- Unilateralism: It is where pro-economic reform is pushed as increased competition will lead to greater national prosperity.
- Non-discrimination: Offers to one country to reduce trade barriers shouldn't exclude any other country.
- Separation: Entering into bilateral and multilateral trade agreements can exclude other countries and lead to repercussions.
- Transparency: It is where any modeling of a trade agreement is the actual and final decision. Keeps the public aware.

- Invisibility of trade policy and economic reform: Australia will not wait for other countries to reform before we reform. Economic reform is good for jobs and prosperity.

Outline the key features of WTO agreements (i.e. The Key Trade Rules):

- All agreements set out by the WTO have three key aspects which must be addressed, those are; the broad principles, extra agreements and annexes and a schedule of commitments.
- The broad principles contain the General Agreement on Tariffs and Trade (GATT which is designed for goods), the General Agreement on Trade in Services (GATS designed for services) and the Trade Related Aspects of Intellectual Property Rights (TRIPS).
- The second section is the extra agreements and annexes which deals with specific requirements that arise with certain issues and sectors.
- The third component is the schedules of commitments which individual countries mandate on specific foreign products or service providers to access their market.

Implications of a reduction in protection levels for the Australian economy

- Australia’s decision to remove protection policies has caused a significant structural change and increased Australia’s integration into the world economy.

Propose likely changes to the structure of industry within Australia as a result of current trends in the global economy.

	Positive impacts	Negative impacts
Individuals	<p>Long Run</p> <ul style="list-style-type: none"> • Prospects for employment levels may be brighter. • Benefit as consumers in buying products at lower prices. • Improved customer service. • Improved living standards as biz try to be innovative and produce high quality goods. 	<p>Short Run</p> <ul style="list-style-type: none"> • Structural unemployment will increase.
Firms	<p>Short Run</p> <ul style="list-style-type: none"> • Lower tariffs provide lower input costs for firms. • Makes exporting more competitive. <p>Long Run</p> <ul style="list-style-type: none"> • Efficient firms will restructure their operations to compete on global stage. • Growth in service industries to counter act the decline in manufacturing. 	<ul style="list-style-type: none"> • Import competing firms will go out of business unless able to improve their competitiveness. • Production may cease altogether like in manufacturing consumer electronic products that require low skill labour.

Government	<p>Short Run</p> <p>Long Run</p> <ul style="list-style-type: none"> Kept inflation down because of a high dollar and decreased protection = Keeps firms producing efficiently. 	<p>Short Run</p> <ul style="list-style-type: none"> Reduction in government revenue. Political consequences as the costs of protection are highly visible but the benefits are less visible. <p>Long Run</p> <ul style="list-style-type: none"> Effects levels of government spending through structural unemployment programs needed to retrain staff.
Economic effects	<p>Long Run</p> <ul style="list-style-type: none"> Labour and capital reallocate to productive areas of the economy, higher rates of return = higher economic growth and living standards. International competitiveness will reduce CAD as exports grow. 	<p>Short Run</p> <ul style="list-style-type: none"> Increased import spending = negative for standard of living. CAD will worsen as imports increase

What firms can do to curb change:

- Restructure their operations; focus on one particular aspect of production.
- Consolidate to one single plant.
- Eliminate less profitable product lines.
- Seek opportunities to export their products in response to a decline in domestic share.
- Adopt new production technologies.
- Import competing industries have been most affected by reductions in protection like SA and VIC where there are few alternative to manufacturing. (regional economies)
- Relatively low-skilled jobs and production-line jobs were reduced due to protection.
- Due to this massive structural unemployment, the Government has implemented programs to retrain people to develop other skills.
- The structural change should be more than recouped by the growth experienced by those sectors in the economy that are efficient and internationally competitive.
- A gradual phasing out of protection makes it easier to manage the problems associated.
- The aim of removing tariff protection for local industries is to force them to develop the innovation and efficiency necessary to compete globally. This should result in higher levels of investment as Australia's biz invest to improve technology and expand operations.
- Productivity Commission said that reduced protection spurs on innovation and productivity through increased competitive pressure.

- Lower tariffs in one industry will benefit firms in another industry as lower tariffs = lower input costs. This will make exporting firms more internationally competitive. Has also led non competitive industries being eliminated but a growth in manufacturing industries that are efficiently competitive.
- There has been substantial growth in export volumes, 1990-\$61b and 2012-\$316b.
- International protection has affected Australian exports particularly agriculture goods. Eu impacted this as Europe and US are heavily protected.
- Made our costs higher, lost potential export revenue due to reduced access to export markets.
- CAIRNS Groups and WTO forum: Push our case to reduce subsidies on agriculture goods as they promote inefficiencies.
- The Doha Round is still unfinished. As the GFC hit, some economies thought they should protect their economies to soften the impact of the GFC.
- Aimed at reducing protection on manufacturing, agriculture goods and recently services.
- Australia is a serviced based economy.
- Australia is increasingly signing preferential/bilateral agreements in response to the failure of the Doha Round. Occurring most in emerging and developing economies who were continually looked over in multilateral agreements.

6.5 The impact of international protection levels on Australia

	Implications for Australia
GATT and the Uruguay Round	<ul style="list-style-type: none"> • Tariffs on manufactured goods were cut from 40% in 1947 to 5% in 1985. • WTO replace the GATT in 1994. • The Uruguay Round of GATT 1986 to 1994 led to the conclusion of agreements that affected Australia's trade: • Trade in agriculture provided for a 36% reduction in agriculture subsidies and a 21% reduction in the volume of production. • Introduced rules on trade in services. • Introduced a framework governing intellectual property rights. • Led to increased output and faster economic growth in export volumes than import volumes for most sectors.
The WTO and the Doha Round	<ul style="list-style-type: none"> • If trade liberalisation was made successful by the WTO's Doha Round, it could boost Australia's agricultural exports by US\$9 billion by 2020. • After the Doha Round Australia hoped to achieve substantial improvement in market access for agriculture, manufacturing and services. • Aiming to raise the net export share of GDP through increasing the efficiency of Australian industry. • These reductions which Australia made unilaterally have had a negative short term impact on the growth of the economy

<p>The July 2008, April 2011 and December 2011 Meetings in Geneva</p>	<ul style="list-style-type: none"> • Some progress was made towards concluding the Doha round in 2007 and 2008 through ongoing negotiations between the G6. • US needed to cut its domestic farm protection. • EU would need to eliminate trade barriers on agricultural products. • The meeting held in July 2008 was aimed at working towards the conclusion of the Doha Round. The goal was to successfully agree on the methods needed to cut tariffs and agricultural subsidies. • After nine days however, talks collapsed even though 18 out of the 20 topics were agreed upon. Economists argued that the failure was due to China stubborn nature and refusal to reduce farm subsidies because of global food shortages and the threat of increased imports. • The WTO trade negotiations committee met in Geneva in December 2011 where people called for a fresh approach to negotiation. The director believed that if the Doha round wasn't completed in 2011 then there would be a lost opportunity to boost world trade and a loss of faith in multilateral trading agreements. • Members of G20 and APEC attended.
<p>The GFC and the Doha Round</p>	

- When other countries put tariffs on Australia's g/s, Australia's exports become less competitive and struggle to penetrate foreign markets.
- Ultimately, international protectionism reduces the output of the Australian economy.
- Productivity Commission Report from 2010, estimates that Australia's GDP would rise by 1% if international protection policies were reduced.
- EU heavily subsidises agriculture production, which provides 1/5 of EU farmer's income. Thus, Australian farmers are competing on global markets at a severe disadvantage.
- If the DOHA Round was successful, Australia's agriculture exports would increase by US\$9b by 2020.
- Non-agriculture industries face fewer barriers to trade.
- Mining and resource sector faces few barriers.
- Like Australia, most industrialized economies have low tariffs on manufacturing.
- Australia's service industries accounting for 3/4 of the Australian economy but less than 1/4 of exports, face the most severe barriers to international trade.

- Main barriers to services trade are not tariffs, but a range of government regulations and practices that have the effect of restricting services trade.
- Australia's financial services are restricted due to foreign protection policies for overseas banks.

6.6 The future of Australian industry in the global economy

- Australia's approach to protection is likely for us to become increasingly integrated into the world economy.
- Service industry will continue to grow, parallel to global trends.
- Manufacturing sector base has narrowed. Older manufacturing have been replaced by smaller manufacturing industries that produce to a niche market.
- Mining is likely to continue to play a central role in Australia's trade patterns, undermined by its past economic growth experience.
- The implications of Australia's policies for individuals, firms and governments
- Implications for Australia of protectionist policies of other countries and trading blocs.