Economics 3AB

Study Notes

Richard Tien

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I GLOBAL MARKETS

It is common to link globalisation only with international trade in goods and services, however economies are linked together by more than just exports and imports. There are financial and capital flows, tourism, and technology. Since the second half of the 20th century globalisation has developed extraordinary amounts, as made clear in the rapid growth of world trade.

*We are currently in the **third wave** of globalisation; a wave that commenced in the 1980s and has been the most profound period of trade expansion.*

Based on the theory of comparative advantage the efficiency gains mean that there is great support for globalisation on economic grounds. Issues arise when there is an evaluation of the distribution of the benefits of globalisation – a belief that developed economies have prospered through the exploitation of developing or less developed countries; that MNC's internationally exploit lower wage rates and labour conditions in countries or damage the environment because of less stringent environmental regulations. There is also concern about the erosion of political sovereignty and cultural traditions.

1 DEFINITIONS

Globalisation refers to the opening of international boarders to the flows of trade, investment, immigration, information, and technology; the expansion of domestic markets and activities to a global system.

- "[Globalisation] is the closer integration of the countries and peoples of the world which has been brought about by the enormous reduction of costs of transportation and communication, and the breaking down of artificial barriers to the flows of goods, services, capital, knowledge, and people across borders." – **Joseph Stiglitz**, Nobel Prize Laureate

International competitiveness is defined as the degree to which a country can produce goods and services which meet the test of international markets, while simultaneously maintaining and expanding the real incomes of its people over the long term.

Factors affecting **international competitiveness** include:

- Inflation relative to trading partners
- Wages relative to trading partners (e.g. minimum wage may decrease competitiveness)
- Productivity (labour, multifactor)
- Changes in the exchange rate

Multinational Corporations (MNCs) Transnational Corporations (TNCs) are organisations that control productions of goods or services in one or more countries other than the home country. For example, when a corporation is registered in more than one country or has operations in more than one country, it may be attributed as MNC.

2   ORGANISATIONS

- o World Trade Organisation (WTO):
  - Promotion and liberalisation of world trade by discouraging protection.
- o World Bank:
  - Source of financial and technical assistance to developing countries around the world.
  - Provides low-interest loans, interest-free credits and grants to developing countries for various purposes including investments in education, health, infrastructure, private sector development, etc.
- o International Monetary Fund (IMF):
  - The IMF is an organisation of 186 countries
  - Foster global monetary cooperation, secure financial stability, facilitate international trade, promote high employment and sustainable economic growth, and reduce poverty around the world.
- o Department of Foreign Affairs and Trade (DFAT):
  - The department's role is to advance the interests of Australia and Australians internationally.
  - This involves working to strengthen Australia's security, enhancing Australia's prosperity, and helping Australian travelers and Australians overseas.

3   FACTORS FACILITATING GLOBALISATION

Factors promoting globalisation include:

- o **Trade liberalisation**: the deliberate efforts by governments around the world to reduce trade barriers.
- o **Organisations** that are set up through international efforts to encourage economic liberalisation such as the WTO, IMF, World Bank.
- o **Innovations** in transport/technology such as containerisation, storage, chemical preservatives for foodstuffs, and port handling. Exponentially improving **information technology** has also been a key factor, especially the use of the Internet.
- o **Telecommunications**: the Internet has facilitated greater commerce between nations especially in trade in goods where products are purchased online (e.g. online software). Communications between countries have become much faster and lower-cost.
- o **Deregulation** of domestic economies overall on a global scale have made countries more efficient and competitive and more open to trade liberalisation. E.g. MER in Australia, unilateral trade reforms.
- o **MNC/TNC**: large transnational or multinational corporations that have expanded to establish operations around the world have made supply chains (production and distribution) truly global and have been a powerful driver of economic integration. Greater access to the factor advantages of countries (e.g. cheap labour) has enabled MNCs to expand and achieve greater economies of scale.
- o **Media/Travel**: the influence of a global media network and greater travel has seen the transfer of culture and knowledge between countries. Barriers are being reduced (such as language and customs), and relationships and tolerance built. There is the creation of a global labour force with approximately 140 million people now working in countries outside their country of birth.

- o **Consumers/End Users**: in domestic markets there is now greater acceptance and demand for the goods and services provided through globalisation; familiar products in unfamiliar places.

4 BENEFITS AND COSTS OF GLOBALISATION

4.1 BENEFITS

- o Provides access to a wider range of goods and services.
- o Lowers prices, thereby placing downward pressure on inflation and increasing purchasing power.
- o Access to global markets will translate to increased output and employment.
- o Increases competition and efficiency.
- o Reduces global poverty.
- o Increases economic growth.
- o Increases overall living standards.
- o Results in technology and managerial expertise transfer.
- o Has enabled greater direct investment, particularly in less developed countries – a mechanism to break out of the poverty cycle.
- o It increases multiculturalism and racial tolerance.

4.2 COSTS

- o Increases unemployment amongst low-skilled workers.
- o Can increase structural unemployment as the rate of structural change is accelerated (those working in relatively inefficient industries will more likely become structurally unemployed).
- o Exploitation of workers in less developed countries with less stringent workplace regulations, e.g. child labour.
- o Can lower wages.
- o Can destroy local cultures (e.g. mining at sites that may have cultural significance to Indigenous Australians) if the profit motive becomes of greater priority than culture.
- o Volatile capital flows can have a destabilising effect on economies.
- o Increases the possible contagion effect of shocks. Examples are the 2008-09 GFC and the 2011-12 European Sovereign Debt Crisis. These contagion effects are not only limited to economic issues but also health issues, such as the Ebola epidemic that the world is currently facing as a major threat to human wellbeing.
- o It arguably increases environmental damage and resource depletion if regulatory measures are not in place to discourage or penalise firms that do this.

5 THE EXTENT OF GLOBALISATION

The progression of globalisation in recent decades is made clear in various statistics.

- o The value of exports as a percentage of world GDP increased from 19% in 1980 to 29% in 2010.

- o Foreign direct investment grew at 23% p.a. in the last decade.
- o Foreign direct investment has increased by a factor of 5 – increasing from 6% of world GDP in 1980 to 30% in 2010.
- o Internet users as a percentage of world population has increased from 0.1% in 1990 to 30% in 2010.
- o Mobile phone subscriptions have increased as a percentage of world population from 0.2% in 1990 to 78% in 2010.
- o International tourist arrivals have increased as a percentage of world population has quadrupled from 1980 to 2010.

6   THE AUSTRALIAN EXPERIENCE

Increased 'interconnectedness', decreasing transport costs and trade and travel market liberalisation have all contributed to opening of the Australian economy, and led to significant changes in the structure of its trade, output and employment.

Australia's linkages with overseas economies have steadily increased (see below). Over the past 50 years, Australia's trade intensity (the ratio of exports and imports to GDP) has nearly doubled, increasing from around 25% of GDP in 1975 to over 45% by 2010.
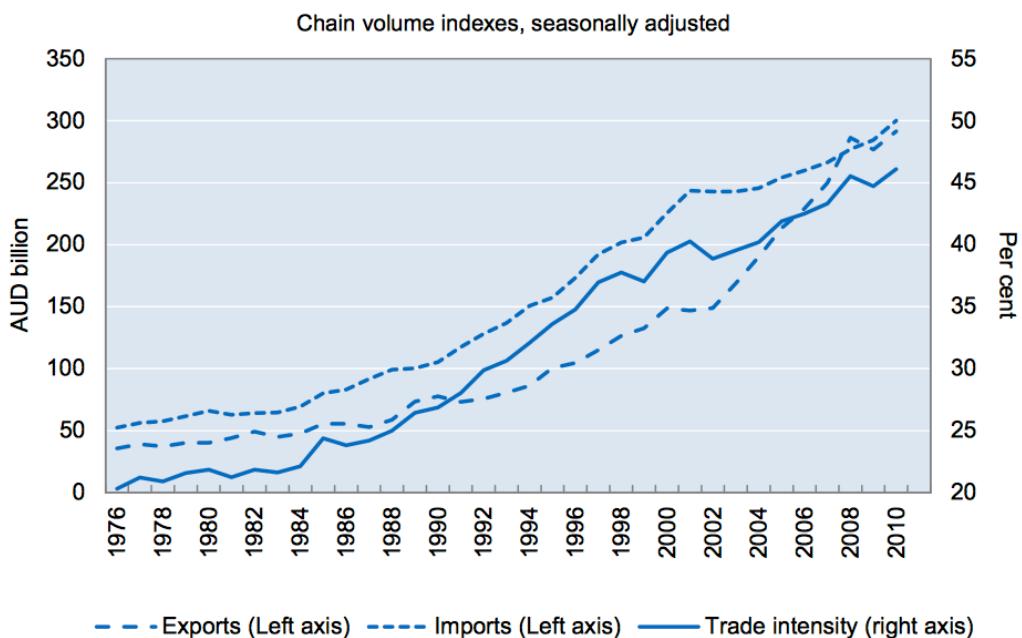
Source: ABS (Balance of Payments and International Investment Position, Australia, Cat. no. 5302.0);
ABS (Australian System of National Accounts, Cat. no. 5204.0); World Bank (2011).

Figure 1: Australia's Trade in Goods and Services, 1976-2010

II   FREE TRADE & PROTECTION

Australia is a small open economy dependent on international trade for its living standards. The removal of tariffs and other trade barriers has made Australia and the world economy much more economically integrated and interdependent; Australia has certainly, in recent decades, become much more trade-oriented.

1   FREE TRADE

1.1   DEFINITIONS

International trade is the exchange of goods and services between countries.

Imports refer to purchases of goods or services produced overseas.

Exports refer to the sale of a domestically produced good or service in overseas markets.

Absolute advantage: a country is said to have an absolute advantage in the production of a good over another country if it can produce more of that good than the other country using the same quantity of resources.

Comparative advantage: a country is said to have a comparative advantage over another country if it can produce the good or service at a lower opportunity cost.

1.2   RECOGNISING ABSOLUTE/COMPARATIVE ADVANTAGE
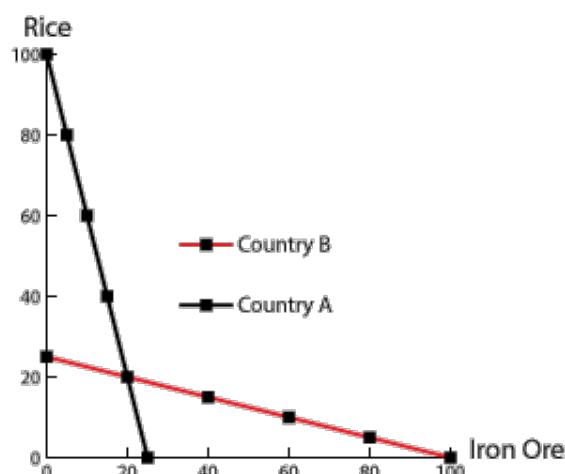
In the figure above, Country B has an absolute advantage in iron ore, while Country A has an absolute advantage in rice. This conclusion is drawn simply by seeing which country can produce more of a particular good if all its resources were devoted to the production of that good (i.e. comparing the axial intercepts). Essentially, the country with the larger x-intercept has an absolute advantage in good x, while the country with the larger y-intercept has an absolute advantage in good y.
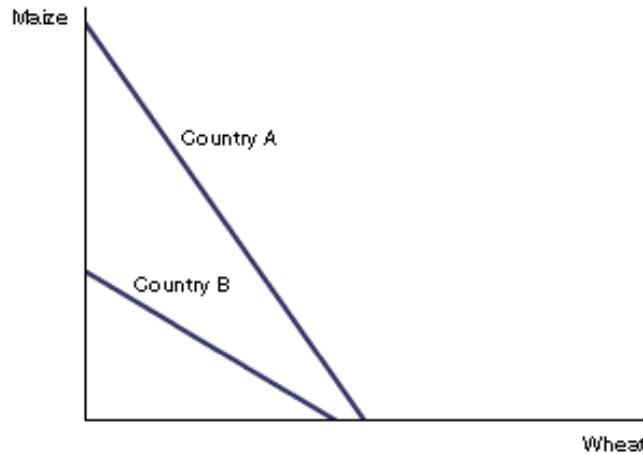
In the figure above, Country A holds the absolute advantage in both goods (Maize and Wheat). Country B has no absolute advantage. Furthermore, it can be concluded that Country B holds a comparative advantage in wheat, as it is less inefficient at the production of wheat than maize (graphically, the x-intercept of Country B's PPF is closer to that of Country A's than the y-intercept of Country B's PPF to that of Country A's). Determining comparative advantages by visual inspection must be known for multi-choice questions in which calculating opportunity costs to determine comparative advantages is inefficient and unnecessary.

1.3   COMPARATIVE ADVANTAGE PRACTISE ESSAY

Note: for more practice on comparative advantage calculations, see L.Q. Haskett's 'Comparative Advantage Template'. Work through the example to be thoroughly familiar with the procedure.

Q. Using a model, demonstrate and explain the gains from specialisation and trade. Include an explanation of the principle of comparative advantage.

[20 marks]

The principle of absolute advantage was first formulated by Adam Smith to justify trade; a country is said to have an absolute advantage in a certain good over another if it can produce that good with less resources than another country. Simply, if each country specialises in their absolute advantage, then trade will be beneficial to both. However realistically, this situation is rare as it is often the case that a country (e.g. USA, China) has an absolute advantage in multiple goods over their trading partners. In such situations David Ricardo's principle of comparative advantage becomes useful to justify trade. A country is said to have a comparative advantage in a good over another if it can produce that good at a lower opportunity cost than the other country. Ultimately, specialisation (or partial specialisation) and trading of surplus production based on comparative advantage leads consumption possibilities outside of a country's PPF, hence fundamentally increasing the satisfaction of wants in a country that leads to higher living standards.

A simple model can be used to demonstrate how countries can gain from specialisation and trade based on comparative advantage. The assumptions associated with this model are:

- o The world consists of two economies
- o Each country produces and consumes two goods
- o Resources are perfectly mobile (no displacement costs)
- o Trade is free between the two economies (no barriers to trade)

Suppose country A and B have production possibilities in goods iron ore and glass as shown in the table below:

	Iron ore	Glass
A	100	50
B	80	20

Their production possibility frontiers (PPFs):
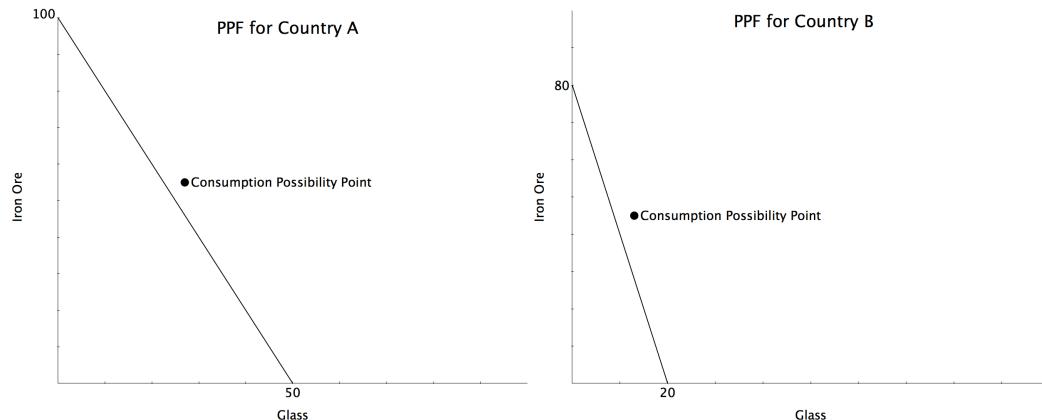
Further suppose that each country allocates 50% of their resources to the production of each good; i.e. that each country produces according to the table below:

Before Specialisation/Trade

	Iron ore	AND	Glass
A	50		25
B	40		10
Total Production	90		35

Clearly, country A has an absolute advantage in both iron ore and glass. However to determine each country's comparative advantage, opportunity costs must be calculated. This is done in the table below:

Opportunity Cost

	Iron ore	Glass
A	0.5	**2**
B	**0.25**	4

By definition (the country with the lower opportunity cost in a good has a comparative advantage in that good), it can be seen from the table above that country A has a comparative advantage in glass, while country B has a comparative in iron ore. Under trade based on comparative advantage, for total world production in both goods to increase, the country with no absolute advantage (in this case, country B) must completely specialise in the good in which it holds a comparative advantage, while the other country may either completely or partially specialise. If country A partially specialises in its comparative advantage, glass, and devotes 80% of its resources to it and 20% of its resources to iron ore production, while B specialises completely in iron ore, then the following production schedule is given by that shown below:

After Partial Specialisation

	Iron ore	AND	Glass
A₈₀% in glass, 20% in iron	20		40
B₁₀₀% in iron	80		0
Total Production	100 (up 10)		40 (up 5)

From the opportunity cost table shown previously, country A, logically, will trade 1 unit of glass for anything more than 2 units of iron, as this is more than what it costs A to make glass. Similarly, B will purchase 1 unit of glass for anything less than 4 units of glass. By the same logic, A will purchase 1 unit of iron ore for anything less than 0.5 units of glass while B will sell 0.1 units of iron ore for anything more than 0.25 units of glass.

Suppose that country A trades 13 units of glass for 35 units of iron. Thus the terms of trade are:

13 units glass = 35 units iron

1 unit glass = 2.7 units iron

1 unit iron = 0.4 units glass

As discussed above, this is a logical terms of trade as both countries either import a good for less than they could make it themselves, or export a good for more than its real (economic) cost (its opportunity cost). The table below shows the quantity of each good each country possesses after trade:

After Trade

	Iron ore	AND	Glass
A$_{\text{80\% in glass, 20\% in iron}}$	55		27
B$_{\text{100\% in iron}}$	45		13
Total Production	100		40

By comparison to the table shown earlier titled 'Before Specialisation/Trade', clearly country A and B have benefitted from trade as each country has now more of each good than before trade. Thus under this model, from specialisation and trade, each country has irrefutably benefited from trade as consumption in both goods has increased from the same quantity of resources. As a result, each country now consumes outside their PPF (which they are unable to do in isolation). See the PPFs on the previous page, marked with consumption possibility points outside the respective PPFs.

NOTE:

The benefits of exploiting comparative advantages and disadvantages can also be demonstrated on Supply/Demand curves with analysis of total welfare. This approach is discussed in II.4 – The Benefits of Trade Diagrammatically.

2   PROTECTION

Protection refers to any action by the government designed to give domestic producers an artificial advantage over foreign producers.

The objective of protection is to encourage domestic production in the protected industry; it does however impose costs on the economy. Based purely on theory, economists argue that protection supports inefficiency, while free trade (trade liberalisation) encourages competition, which enhances resource allocation, productivity, and leads ultimately to a higher standard of living. The complexities of the real world, however, result in various situations where protectionist policies can be valid.

1.1   DEFINITIONS

Protection refers to any action by the government designed to give domestic producers an artificial advantage over foreign producers.

A **tariff** is a tax placed on an import.

A **subsidy** is a grant or payment made by the government to domestic producers.

An **import quota** is a restriction on the quantity of a good that can be imported.

Deadweight Loss refers to a loss of economic surplus that occurs when the market's equilibrium position is moved away from the free market outcome.

2.2   TYPES OF PROTECTION

2.2.1   TARIFFS

- o   Tariffs are the most widely used protective measure in the manufacturing sector.
- o   They are designed to increase the price of the foreign good or service so that competing domestic industries can raise their prices and compete more effectively with imports by capturing and maintaining a higher market share than in the absence of protection.
- o   Tariffs also provide a source of revenue for the government [note that the reason for tariffs are to protect domestic industries; not raise tax revenue, this effect is secondary].
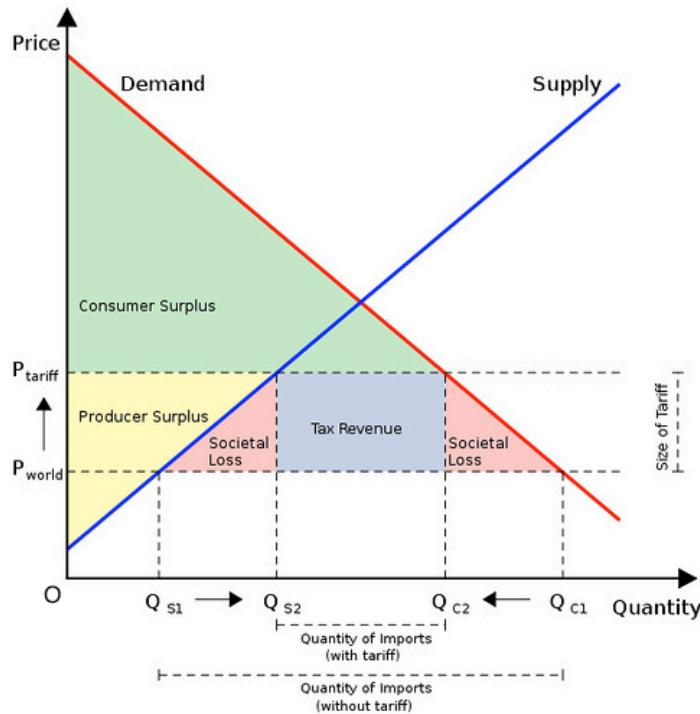
Figure 2: Market With A Tariff

What has happened:

- A tariff of size $P_{world}P_{tariff}$ has been imposed (but price received by importers is still P_{world})
- Domestic production expands from OQ_{S1} to OQ_{S2}
- Domestic demand contracts from OQ_{c1} to OQ_{c2}
- Imports fall from $Q_{S1}Q_{C1}$ to $Q_{S2}Q_{C2}$
- Government gains revenue equal to (imports×tariff size), as shown in the diagram
- Some consumer surplus is redistributed to producers.
- Society incurs a deadweight loss equal to the areas shown in the diagram (as the tax revenue does not fully compensate for the total loss of economic welfare due to the tariff)

Implications:

- Domestic consumer surplus is decreased, and domestic consumers pay more and consume less. This reduces their real incomes, which may indirectly reduce aggregate demand and spending on other goods and services (which may possibly negatively impact employment levels).
- Raises sales and profits in the protected domestic industries (which presumably protects or creates employment in the relevant domestic industry, despite inefficient resource allocation in that industry).
- Increases production costs for domestic firms that may require the imported good as a productive input. This may impact domestic export firms' competitiveness, as well as employment in other sectors due to increased production costs.
- Encourages retaliation from other countries.

2.2.2   SUBSIDIES

o   Subsidies are payments or grants to domestic producers by the government.
o   They result in lowering the domestic producers' costs so that they can better compete with imports.
o   Subsidies are often more politically popular than other forms of protection due to the fact that they offer protection to local producers without upsetting consumers (consumer surplus is not affected when a subsidy is introduced). However in reality, subsidies harm the economy just as much as other comparable forms of protection.
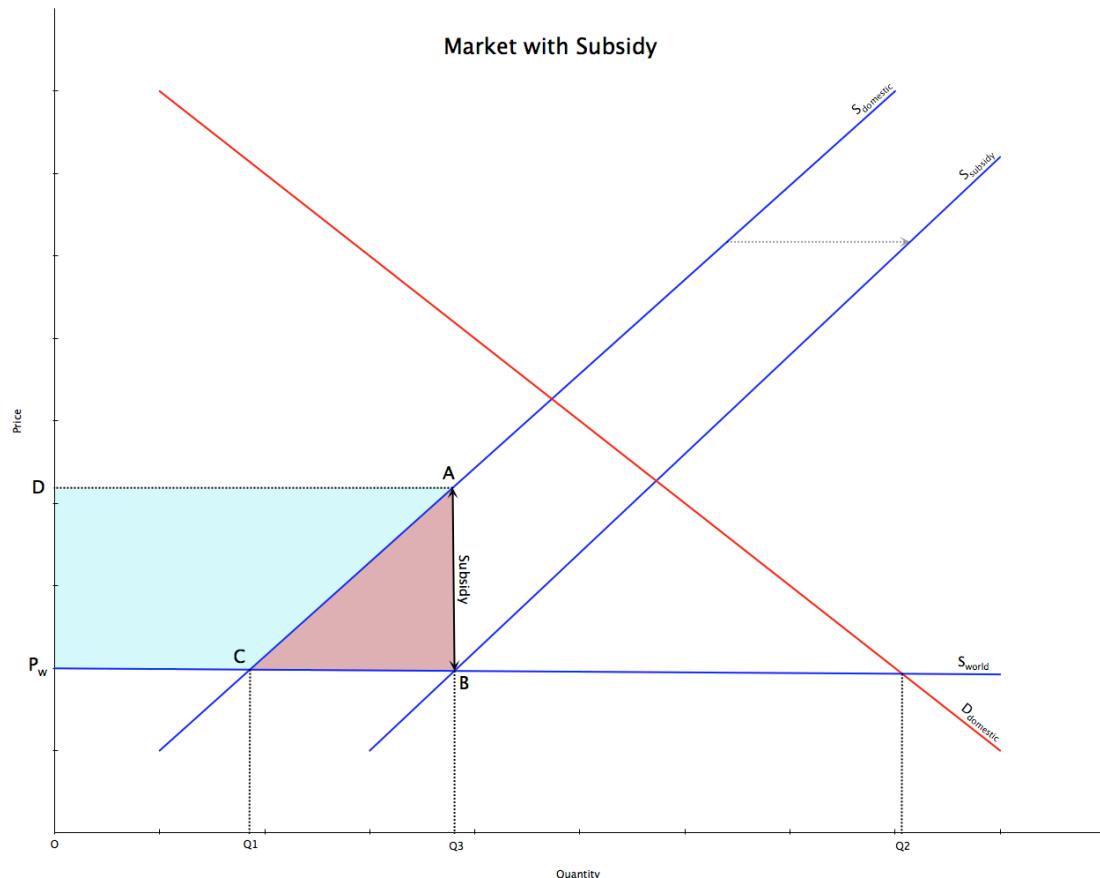
Figure 3: Market With A Subsidy

What has happened:

o   Government has provided a subsidy equal to AB (shown on diagram) per unit of good sold. The total cost of the subsidy is $DABP_w$ (the sum of the two coloured areas).
o   Producer surplus increases by $DACP_w$ (ice-blue area) [the subsidy can be thought of increasing the price domestic producers receive from OP_w to OD, hence the increase in producer surplus].
o   Thus the total cost of the subsidy exceeds the increase in producer surplus; a deadweight loss equal to area ABC is incurred.
o   Consumer surplus is not affected.
o   Subsidy shifts the domestic supply curve to $S_{subsidy}$ (increases domestic supply)
o   Domestic firms can now supply more at the same (world) price, OP_w – they supply OQ_3 as opposed to OQ_1 (before the subsidy). Domestic production increases by Q_1Q_3.
o   Imports are reduced to Q_3Q_2 (from Q_1Q_2 before the subsidy)

Implications:

- o Income is redistributed from taxpayers to the producer (consumers bear an indirect burden).
- o Spending government tax revenue on subsidies bears opportunity cost consequences (the money could have been spent, for example, on healthcare or public infrastructure).
- o Resources will redistribute towards the inefficient subsidised industry (as it grows due to the subsidy) from other potentially efficient industries; economically, resources are misallocated.
- o May provoke retaliation from other countries.

2.2.3 QUOTAS

- o An **import quota** is a restriction on the quantity of a good that can be imported.
- o A larger quota size allows a larger quantity of imports, and thus protects domestic industries less [this is in contrast to other types of protection, e.g. a larger tariff will protect more, a larger subsidy will protect more]. Be wary of this in certain multiple-choice questions.
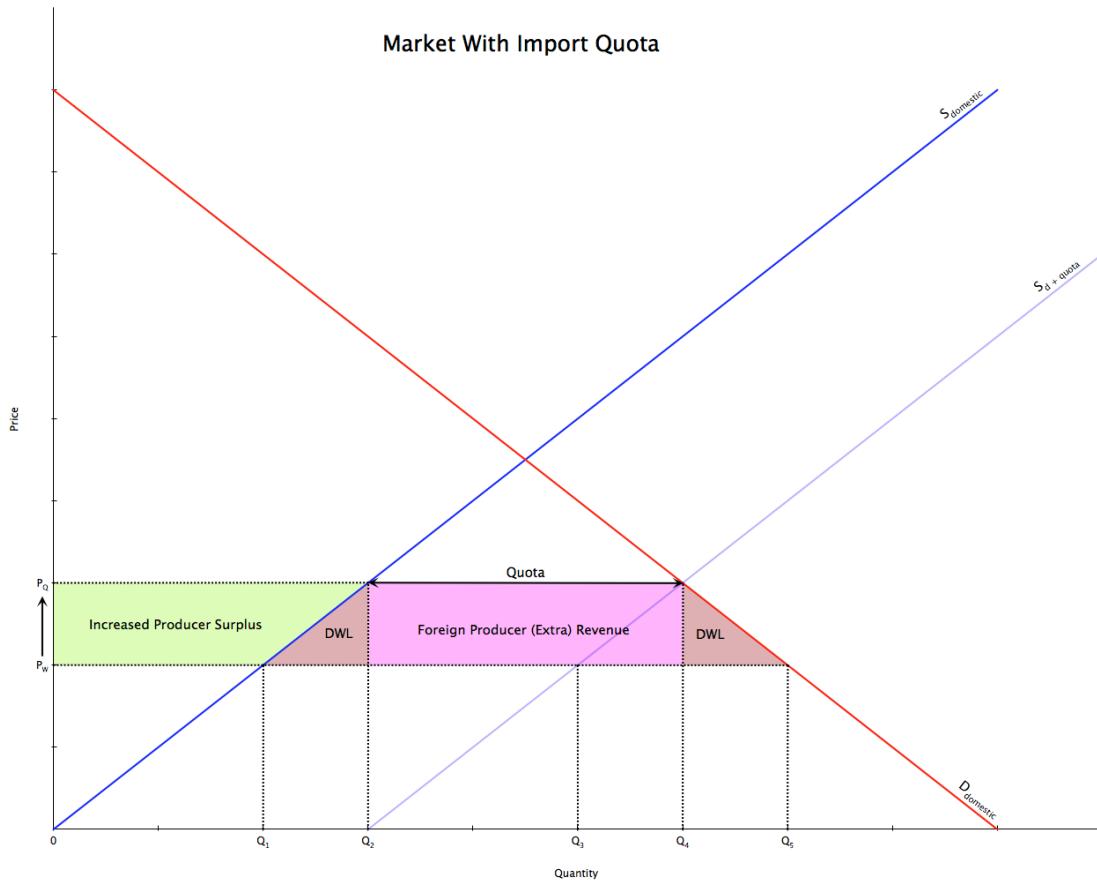
Figure 4: Market With An Import Quota

Quotas have very similar effects to tariffs; the graphs demonstrating the effects of the two are very similar.

What has happened:

- o An import quota of size Q_2Q_4 was imposed.
- o Market supply is no longer perfectly elastic due to the quota; as long as the price is above the world price, license holders import as much as they are permitted and the total supply in the market is equal to $S_{d+quota}$, as in the diagram above.
- o A shortage in the market equal to Q_3Q_5 initially exists; amongst themselves, buyers bid up the price from price OP_w to OP_Q. As the market price increases, profit-maximising domestic producers revise their production plans upward by Q_1Q_2, now producing OQ_2 (imports cannot increase due to the quota). Equilibrium is re-established at price OP_Q and quantity OQ_4, of which OQ_2 is domestically produced and Q_2Q_4 is imported.
- o Domestic producers benefit as they sell more at a higher price, while domestic consumers lose as they consume less at a higher price.
- o As shown in the diagram, some consumer surplus is redistributed to producer surplus (the area shown in green).
- o Consumer surplus is decreased by the coloured areas shown in the diagram.
- o Rather than tax revenue being raised as with the tariff, the area shown in pink instead represents (extra) revenue for foreign firms as they are able to sell their product at a price higher than the world price.
- o The areas shown in maroon represent deadweight loss.

Implications:

- o [same as those of a tariff]
- o Many domestic firms prefer quotas over other forms of protection as it provides a degree of certainty as to the exact quantity of imports that they must compete against (the quantity of imports under a tariff system, for example, will vary with domestic demand). Furthermore, since the market share of importers cannot increase due to the quota, domestic producers will reap all the benefits of an expanding market. This makes domestic advertising campaigns far more effective. Conversely, from an economic standpoint, due to other forms of protection being less restrictive, economists favour them over quotas.

2.2.4 OTHER

An **embargo** is a total ban on an imported product (consumers can only buy the locally made product).

A **voluntary export restraint** consists of an agreement between two countries in which the exporting country voluntarily limits the amount it exports to the importing country.

Technical Specifications refer to government-imposed minimal technical standards on imported goods (e.g. packaging standards, all goods must comply with health and safety standards).

Quarantine Regulations are restraints upon the transport of goods (exports and imports) designed to prevent the spread of disease or pests.

2.3 REASONS FOR PROTECTION

The theory of comparative advantage informs us that international trade can lead to considerable improvements in economic prosperity and living standards. However realistically, very few countries are happy to freely allow market forces to govern their patterns of international trade (and hence production in their own economies). From an economic standpoint, however, there in fact are valid reasons for protection in various circumstances due to the complexities of the real world. However it should be remembered that there is no justification for ongoing (indefinite) protection; protection should be applied for a predetermined period and should gradually decrease with time.

There are a number of reasons why countries adopt protectionist policies:

o   Prevent Dumping: dumping occurs when foreign manufacturers export a product to another country at a price either below the price charged in its domestic market or below its cost of production. This results in imports temporarily flooding the domestic market and endangers the survival of local industries. The price at which output is sold (in dumping) is not the price at which the foreign company intends to sell its goods in the long-term. Rather, a company may do this to simply shed excess stock, though some companies use dumping as a deliberate strategy to gain market share (they are able to sustain short run losses due to their size). This can destroy domestic competition, ultimately allowing the foreign firm to sell at higher prices after domestic competition is eliminated. Protection to prevent dumping is an economically valid reason for protection.

o   Protection of Infant Industries: these are potentially efficient industries that are only just starting up (hence 'infant'), which are inefficient due to their initial small size. Protecting these industries until they are able to develop sufficiently to become efficient (establish economies of scale and increase their capital stock) and compete against foreign producers is a valid reason for protection. This process can further lead to diversification of an economy's industry base. The issue associated with protection for this reason is that often the infant industries never 'grow up'; realistically, profit-seeking firms will never admit to not requiring protection. Infant industries can become accustomed to operating with reduced competition and little incentive to innovate and increase efficiency. Overall, infant industry protection is justifiable but must be implemented correctly, with frequent reviews and progressive reductions in protection over time.

o   Defence and National Security (sensitive and strategic industries): some industries that are vital for national protection should be protected to ensure that the country is able to defend itself in the event of war. Furthermore, certain industries are important for national security (e.g. agriculture, banking, insurance) and should be kept within the country. In the event of war or conflict, a country would not be able to rely on imports as they would take too much time to arrive and their transport could be interrupted. Foreign suppliers might even become enemies in conflict and refuse to trade. [Although it can be argued that free trade creates dependencies and discourages war, while protectionist policies do not, this is still irrelevant – if war arises national security is still at risk]. A problem that lies in this argument is the grey area of what industries should be protected on these grounds. Overall, this is not an economic argument, but realistically is valid as national security takes priority over economic benefits such as efficiency and productivity.

o   Reduce Structural Unemployment From Exogenous Shocks (short-term): protection (via subsidies, for example) may be used to minimise the potential for structural unemployment in domestic industries impacted by macroeconomic exogenous events such as the GFC.

Fallacious Argument of Domestic Employment: this argument asserts that buying imports means employing foreign workers, whereas buying domestic goods means employing domestic workers. Although protection will shift consumers' spending from foreign to domestic goods and thus increase employment in the protected industry, other domestic industries will suffer. Higher production costs due to higher import prices (that could be productive inputs) will harm other industries, and customers will also have their real incomes reduced, resulting in lower levels of aggregate demand. A gain in employment in the protected industry is a loss in employment in other industries. Although in the short term it might be difficult for workers to switch from one industry to another, in the long term the economy would adapt so that workers would be reallocated to more efficient sectors of the economy.

2.4   ARGUMENTS AGAINST PROTECTION

Basically, the main argument against protection is the theory of comparative advantage, and how free trade can lead to outcomes of higher living standards and consumption possibility points that are unattainable in isolation (outside the country's PPF). Indeed, in the long run protection detriments various key macroeconomic objectives.

It affects exports by:

- o   Encouraging retaliation by other countries
- o   Pushing up costs of production for domestic producers, thereby reducing competitiveness
- o   Reducing competition and allowing 'poor management' to survive, resulting in less incentive for innovation, efficiency, and productivity gains

It causes inflation by:

- o   Increasing costs of imported inputs (cost-push inflation)
- o   Tariffs and quotas directly increase price levels of imported goods
- o   Increased profits in the protected sector may lead to demands for higher wages, leading to a wage-price spiral

It causes net unemployment by:

- o   Causing inflation
- o   Reducing international competitiveness of export industries
- o   Reducing real incomes and spending power in the economy (increasing prices of goods in protected industries), leading to decreased aggregate demand

It hits growth by:

- o   Inefficient resource allocation
- o   Reducing aggregate demand
- o   Reducing competition and hence incentives for productivity gains

It hits overall welfare by:

- o   Reducing economic welfare

2.5   RECENT AUSTRALIAN EXPERIENCE

Australia has seven FTAs currently in force with New Zealand, Singapore, Thailand, US, Chile, the Association of South East Asian Nations (ASEAN) (with New Zealand) and Malaysia. The countries covered by these FTAs account for 26 per cent of Australia's total trade.

Australia signed an FTA with Korea in April 2014 and an EPA (Economic Partnership Agreement) with Japan in July 2014. These agreements will enter into force when domestic processes have been completed. Korea and Japan account for 5 and 11 per cent of Australia's total trade, respectively.

Australia is currently engaged in seven FTA negotiations, including bilateral FTA with China, India, and Indonesia, with particularly strong progress being made with the China FTA that could be signed by the end of this year.

FTAs are helping Australian exporters access new markets and expand trade in existing markets.

In recent decades, Australia has significantly decreased protectionism, acknowledging comparative advantage theory and the benefits of trade. This is seen below.
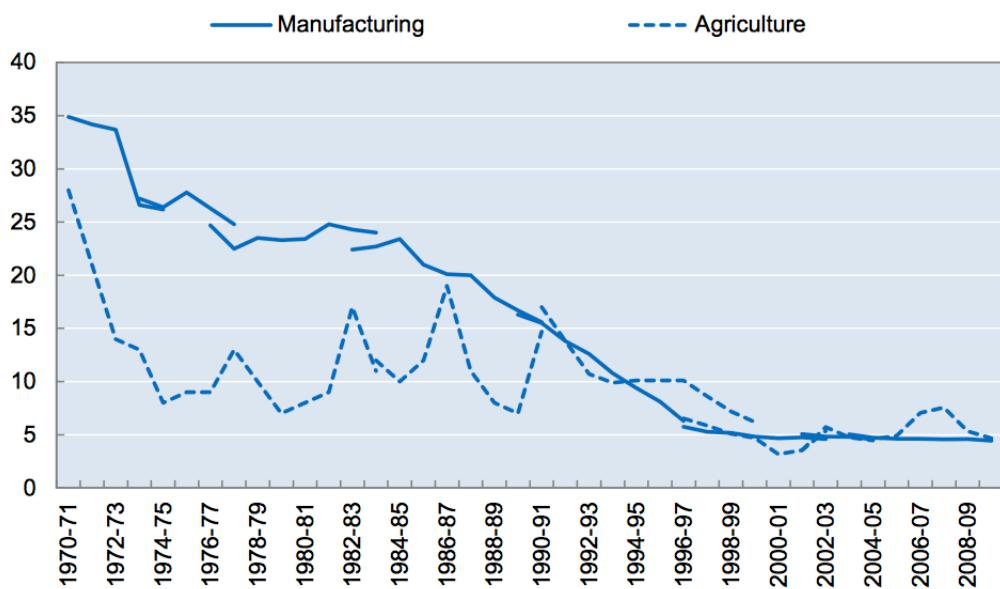
a) The effective rate of assistance is defined as the net assistance received per dollar of value added.
b) Overlapping observations arise from revisions to industry input and output measures used to estimate effective rates.

Source: PC (2011).

Figure 5: Effective Rates of Assistance in Australia, 1970/71 to 2009/10

Richard Tien

3   MEASUREMENT/CALCULATIONS

The importance of international trade to an economy can be measured by the trade openness ratio, otherwise known as the trade intensity ratio.

$$\text{trade openness} = \frac{X + M}{GDP} \times 100$$
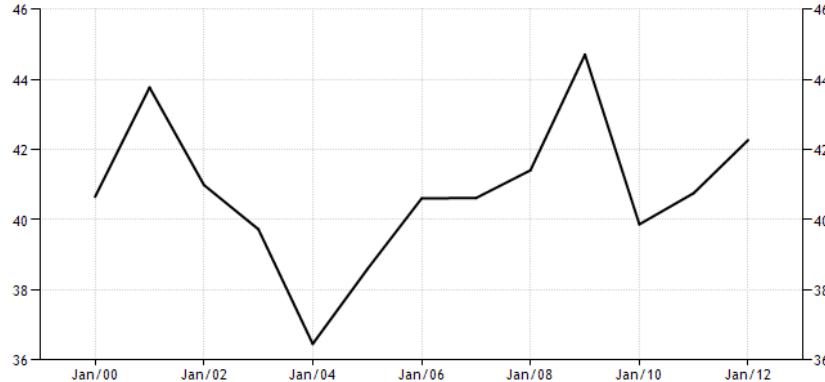
Figure 6: Australia's Trade Intensity Ratio

Australia's trade openness was 42.27 in 2012, according to the World Bank – a marked increase from approximately 25 in 1970. An economy's trade openness is determined by factors such as the relative size of the economy, its geographic location in relation to foreign markets, and the extent of barriers to trade (both natural and artificial). While Australia has been lowering its artificial barriers such as tariffs, it is hindered by more natural barriers such as high transport costs as a result of its geographic isolation. This has caused Australia's trade intensity ratio to be relatively low in comparison to other developed economies (e.g. Canada 64, Germany 88 and Sweden 100 in 2008). It should be noted that the economies of the US and Japan have particularly low trade intensity ratios due to the enormous size of their own domestic economies, which allows them to exploit economies of scale in various domestic industries and become more self-sufficient (Australia must produce for the world market in order to gain the same benefits of competition).

Another measure of the importance of trade to a country is its **import penetration ratio**. A country's import penetration ratio is defined as the value of imports as a percentage of total domestic demand. The import penetration rate shows to what degree domestic demand is satisfied by imports.

$$\text{Import Penetration Ratio} = \frac{M}{GDP - (X - M)} \times 100$$

For notes on calculations that demonstrate the advantages of trade, see L.Q. Haskett's 'Comparative Advantage Template' or refer to 'Comparative Advantage – The Crux of Trade' sub-chapter in these notes.

4   THE BENEFITS OF TRADE DIAGRAMMATICALLY

If a country can domestically produce a good (or service) at a price lower than the world price, then that country must have a comparative advantage in the production of that good. This is shown in the Demand and Supply model below:
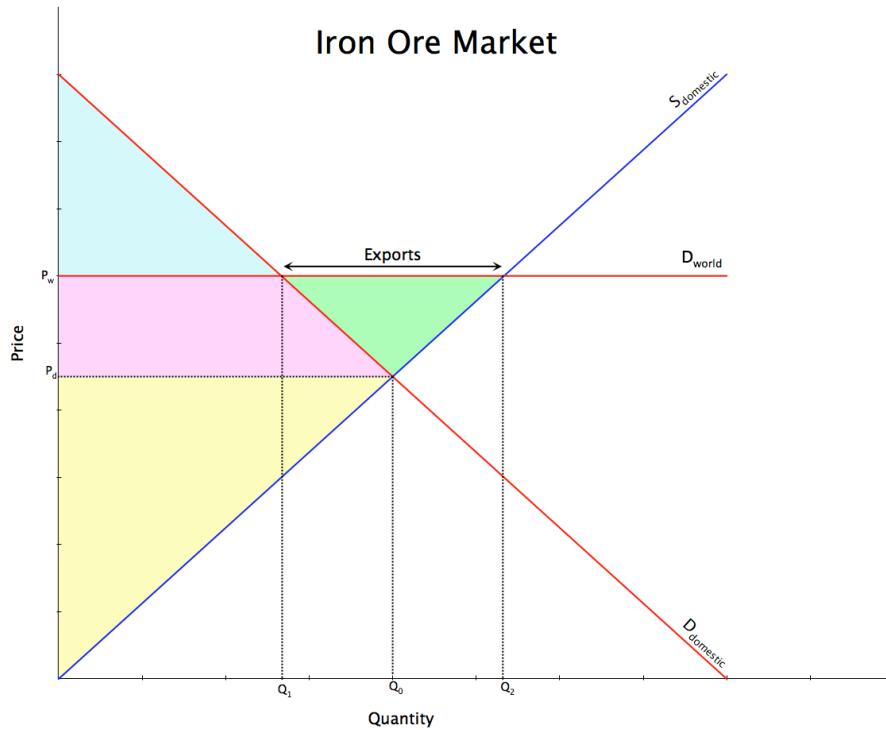
Figure 7: Supply/Demand Model - Welfare Analysis of Exporting

Although domestic consumer surplus is reduced by the amount shown in pink after exporting of iron ore occurs, producer surplus increases by more than this amount, such that there is a net gain in economic welfare represented by the area shaded in green.

Conversely, if the world price of a good is lower than the domestic price, the country has a comparative disadvantage in producing that good and should therefore import the good. The benefits of importing is shown below:

Manufactures Market
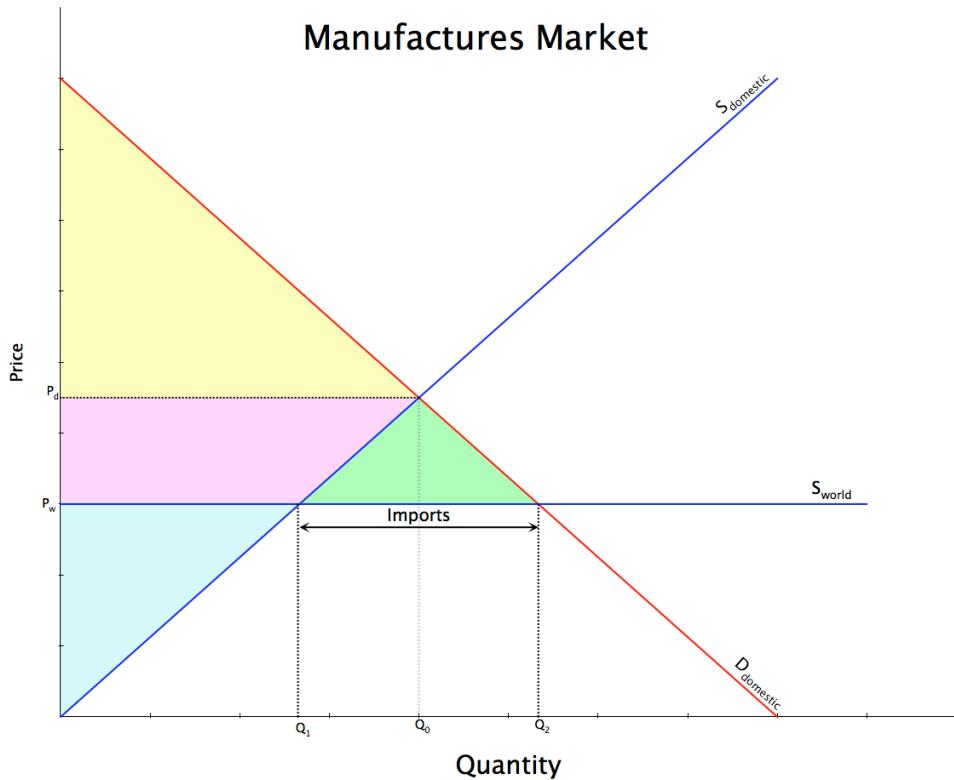
Figure 8: Supply/Demand Model - Welfare Analysis of Importing

Similarly, although domestic producer surplus is decreased by the area shown in pink, domestic consumer surplus increases by more than this amount, such that there is a net gain in economic welfare represented by the area shaded in green.

III   AUSTRALIA'S TRADE PATTERN

1   DIRECTION OF TRADE

Table 1: Main Export/Import Partners

Exports		Imports	
1. China	[31.6%]	1. China	[18.8%]
2. Japan	[18.8%]	2. USA	[11.8%]
3. South Korea	[7.7%]	3. Japan	[7.7%]
4. India	[4.6%]	4. Singapore	[6.1%]
5. USA	[3.6%]	5. Thailand	[4.7%]

Asia-Pacific countries now account for ~**75%** of Australia's exports, while over the past 40 years the share of exports to the UK and Europe has fallen from **45%** to **10%**. This reflects the shift from historic to geographic ties and growing markets.

1.1   AFFECTING FACTORS

Factors that have lead to the change in the direction of Australia's trade flows include:

- o   Australia is geographically closer to (and part of) the Asia-Pacific region than Europe, hence transport costs associated with trade are lower.
- o   Establishment of trade blocs through forums such as the Asia-Pacific Economic Cooperation (**APEC**) [of which Australia is a part]. Trade blocs between European economies (e.g. European Union), of which Australia was not a part, further encouraged Australia's shift from European markets.
- o   Fast-growing economies in East Asia (especially China) highly demand Australian resources such as coal, iron ore, and natural gas.
- o   Australia and East Asia have complementary trade compositions – our comparative advantage lies in minerals and energy resources, and we are relatively inefficient at manufacturing, while East Asia's comparative advantage lies in manufacturing, and have a limited endowment of natural mineral/energy resources relative to its demand for these resources.

2   COMPOSITION OF TRADE

Services in blue.

Table 2: Major Exports/Imports by Type

Exports		Imports	
1. Iron Ore & Concentrates	$57.2b	1. Personal Travel Services	$22.1b
2. Coal	$38.6b	2. Crude Petroleum	$20.2b
3. Gold	$15.3b	3. Passenger Motor Vehicles	$17.3b
4. Education-related travel services	$14.5b	4. Refined Petroleum	$16.9b
5. Natural Gas	$14.3b	5. Freight Transport Services	$9.2b

Source: https://www.dfat.gov.au/publications/trade/trade-at-a-glance-2013/trade_performance_at_a_glance/part03_australias_trade_and_economic_statistics.html,

http://www.dfat.gov.au/geo/fs/aust.pdf

Table 3: Major Exports/Imports by Type

Exports		Imports	
1. Minerals & Fuels*	48.5%	1. Intermediate & Other	34.0%
2. Services	17.0%	2. Consumption Goods	22.9%
3. Manufactures	13.4%	3. Capital Goods	21.9%

Source: https://www.dfat.gov.au/publications/trade/trade-at-a-glance-2013/trade_performance_at_a_glance/part01_profile_of_australias_trade_in_2012.html

*not including gold; including gold: 53.8%

2.1   TRENDS

Primary exports have seen a **general downward trend** between 1960-2010, falling from 77% of exports to 67%. This is largely due to a dramatic decline in rural exports from 56% in the 1960s to 11% in 2010, despite a significant increase in resource (minerals and fuels, including gold) exports from 21% in the 1960s to 56% in 2010.

Manufactures and services (non-commodities) have seen a **general upward trend** from 23% in the 1960s to 33% in 2010, with both manufactures and services trending upward (manufactures 9% to 15% and services 14% to 18%, from the 1960s to 2010).

ETMs (Elaborately Transformed Manufactures; e.g. cars, machinery) account for $\sim\frac{2}{3}$rds of manufactured exports with a slight upward trend.

2.2 EXPLANING OUR COMPOSITION OF TRADE

Ultimately, the composition of our trade is a reflection of the structure of our economy. We largely export primary goods due to our comparative advantage in the primary sector, and import manufactures, as we are relatively inefficient at manufacturing.

2.2.1 EXPORTS

The reasons for the changes in the composition of Australia's exports include:

- Australia has a comparative advantage (high land-to-population ratio and large mineral wealth) in minerals and hence has altered its composition of exports to reflect (and exploit) this comparative advantage.
- We are relatively inefficient at manufacturing (due to lower population, relatively high labour costs and minimum wage, more stringent environmental and health standards that must be met).
- Australian education (especially tertiary) has developed into a niche market (hence it is our fourth-largest export).
- Increasing world demand for energy/mineral resources (that have also increased their price) due to the economic emergence of fast-developing economies such as China and India.
- Increased foreign investment in Australia's mining sector particularly has lead to growth in that sector.

2.2.2 IMPORTS

The reasons for the changes in the composition of Australia's imports include:

- Australia is relatively inefficient at manufacturing (high labour costs, lower population, more stringent environmental/health standards that raise production costs) and hence we import many manufactured goods.
- Strong domestic demand for overseas imports (and Australia's inability to competitively produce substitutes due to our inefficiency at manufacturing) and the strong AUD make importing an attractive option for Australians.
- Government reforms that have reduced import tariffs (e.g. the Button car plan (1985) that aimed to decrease the level of protection for the domestic motor vehicle industry [very high at the time]). Currently, for the motor vehicle industry, there is an average tariff of 3.5% (5% from countries without FTA, 0% from countries with FTA) [note not including luxury tax of 33%]. In 1966 tariffs on completely built cars was 45%.

IV   THE BALANCE OF PAYMENTS

The Balance of Payments (BOP) is a systematic record of all economic transactions between the residents of Australia and the residents of the rest of the world.

It accounts for a country's trade flows, income flows, and investment flows to and from the foreign sector.

Credits entries *are recorded as a plus (+) on the BOP – they represent a flow of money into the country (e.g. export receipts, foreign borrowing by Australians).*

Debit entries *are recorded as a minus (-) on the BOP – they represent a flow of money out of the country (e.g. payments for imports, interest payments on foreign debt)*

1   CURRENT ACCOUNT

The current account includes all money flows in and out of a country arising from exports and imports of goods, services, income flows, and other net transfers.

$$CAB = S - I$$
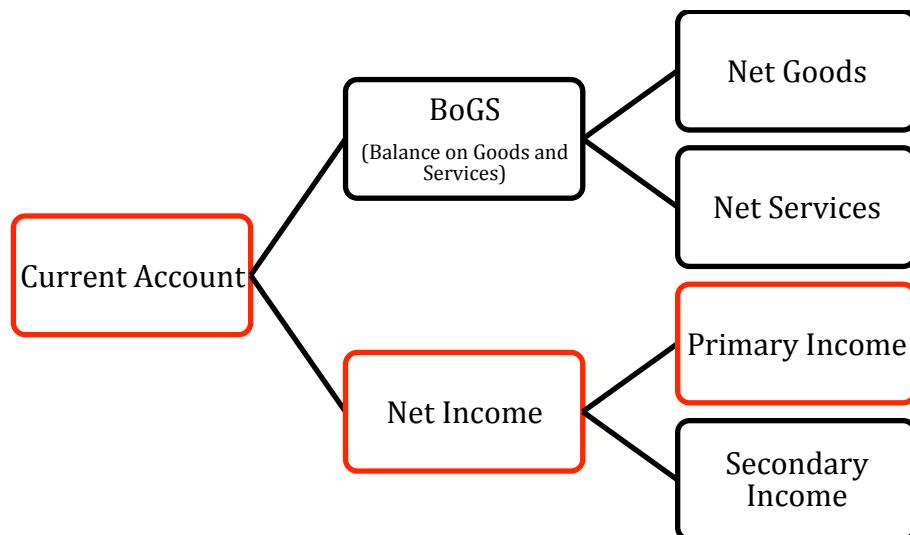
Figure 9: Structure of the Current Account

Categories in red are persistently in deficit.

Current Account Balance
Per cent of nominal GDP
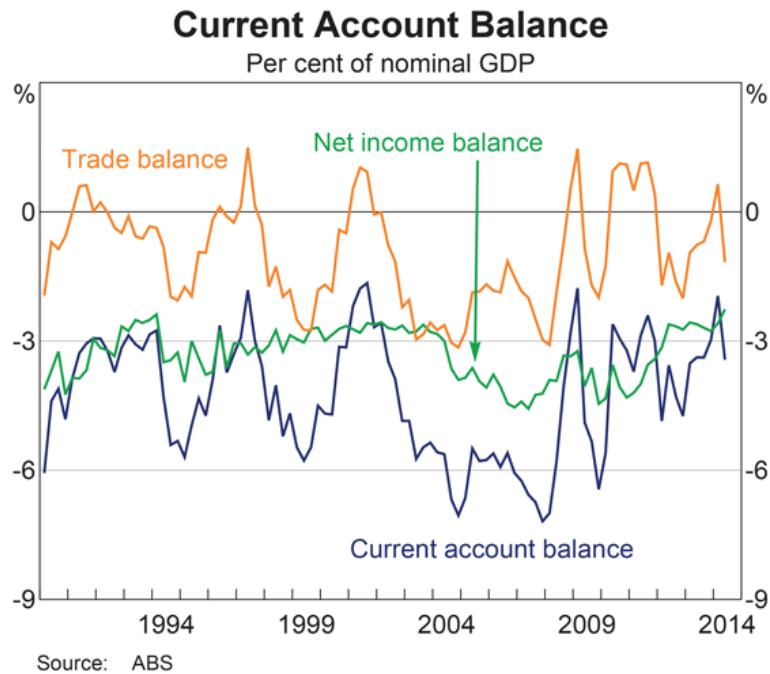
Figure 10: Current Account Balance

1.1   BALANCE OF GOODS AND SERVICES

Also known as the **Balance of Trade**. Since net income in Australia's BOP trends in a similar-sized deficit, the size of the CAD is largely determined by the BOGS.

1.1.1   GOODS ACCOUNT

The goods account records money flows for the international trade of goods.

Merchandise *is another term used for goods.*

- By value, exports and imports of merchandise are the largest inflows and outflows on the BOP respectively.
- *Net Goods = goods credits – goods debits*
- The goods account is the most volatile category of the Current Account because import levels move in line with Australia's position on the business cycle (i.e. import levels increase with economic growth), while global economic growth rates impact on export levels. Furthermore, exogenous events such as drought, terrorism, and exchange rates also add to the instability of the goods account.

e.g. Fortescue Metals Group sells iron ore iron ore to a Chinese steel mill – goods credit.

1.1.2   SERVICES ACCOUNT

The services account records money flows for the import or export of services.

- ~25% of the size of goods in terms of total money flows - i.e. $\frac{1}{4}(G_X + G_M) \approx (S_X + S_M)$

- o Trending in deficit in recent years due to the appreciation (high value) of the AUD, reducing international competitiveness in services sectors such as education and tourism and service imports (e.g. tourist expenditure abroad) cheaper and more attractive.
- o Tends to be relatively stable.
- o Education services contribute significantly to the large surplus in travel services category.
- o Australia's isolation results in transport services (freight) being a major debit item
- o Surplus from 2000-2007, but in deficit since.
- o Represents a potentially significant contributor of money inflow to the Australian economy in future (tourism).

e.g. BHP Billiton hires a bulk ore carrier to transport coal to South Korea – services debit.

1.2 NET INCOME

1.2.1 PRIMARY INCOME ACCOUNT

Primary income refers to income earned by Australian residents from non-residents (credits) and income paid to overseas residents (debits). It includes all transactions where payment is made for the use of another country's resources.

- o ~25% of the size of goods in terms of total money flows - i.e. $\frac{1}{4}(G_X + G_M) \approx (Y_{P\,C} + Y_{P\,D})$
- o Primary income consists of two consists of two categories: compensation of employees (for the use of labour) and investment income (for the use of financial capital).
  - o Compensation of employees refers to payment of wages and salaries to workers and is relatively small when compared with the flow of investment income.
  - o Investment income comprises income earned from the provision of financial capital or foreign investment.
- o >95% of primary income transactions are associated with investment income (e.g. payment of interest by an Australian firm to an overseas resident).
- o Investment income consists of three main categories: dividends, reinvested earnings, and interest.
- o There is a direct link between the primary income account and the financial account in the KAS due to necessary payments of interest or dividends (debits in the primary income account) on foreign investment/finances (credits in the financial account).

Primary Income Account → Compensation of Employees (small, insignificant)

Primary Income Account → Investment Income (>95% of primary income transactions)
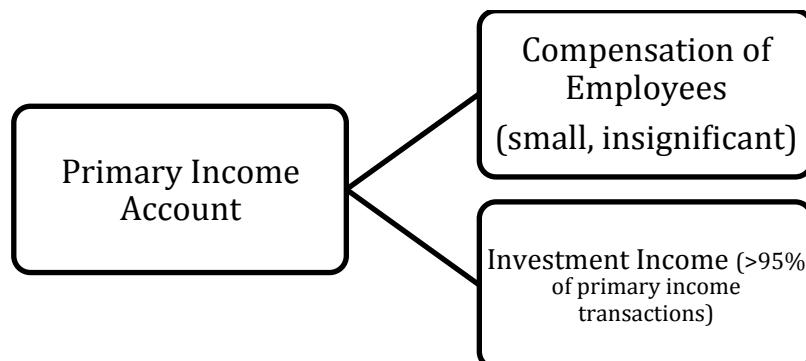
e.g. An Australian firm pays interest to an overseas resident – income debit.

1.2.2   SECONDARY INCOME ACCOUNT

Secondary income transfers, or net current transfers, are one-way transactions where real or financial resources are provided (goods, services, or financial assets) but nothing of economic value is received in return.

- o The secondary income account is relatively small and generally makes no significant difference to the CAD.

e.g. An Australian girl receives a gift of money from her grandmother in England – secondary income credit.

e.g. Australia provides foreign aid to Indonesia – secondary income debit.

1.3   FACTORS AFFECTING THE CAD

- o **Terms of trade**: if export prices increase relative to import prices (increase in terms of trade), ceteris paribus, export receipts will increase while import receipts will decrease. Hence BOGS will increase, and the CAD will move towards surplus (and vice versa).
- o **International competitiveness**: if international competitiveness increases, then export receipts will increase. Hence BOGS will increase, and the CAD will move towards surplus. Inflation, currency, wage, and productivity levels can impact international competitiveness.
- o **Domestic economic growth**: if domestic economic growth increases, then national income will increase, leading to increases in consumption and expenditure. Thus import receipts will increase, causing the BOGS to decrease and the CAD to worsen.
- o **Global economic growth**: if our export partners experience strong economic growth, then their national incomes will increase, boosting their demand for our exports. Hence export receipts will increase, causing the BOGS to increase and the CAD to move towards surplus.
- o **Foreign investment**: an increase in foreign investment will increase the KAS thus worsening the CAD. The servicing costs associated with foreign investment will cause future increases in the CAD as dividends, profits, and interest payments on borrowings will increase the primary income deficit in the current account.
- o **Exchange rate**: if the AUD depreciates, imports become more expensive (and less attractive to purchase) and export industries become more competitive. This will decrease the value of imports while increasing the value of exports. Although foreign debt levels will also rise (valuation effect), since the size of the primary income category is, in terms of money flows, approximately ¼ of that of goods and services flows, the overall impact of a depreciation will decrease the CAD.
- o $CAB = S - I$ if S increases, CAB increases. If I increases, CAB decreases. (S = national savings, I = national investment, CAB = current account balance).

1.4   INTERPRETING THE CAD

See Investigating Macroeconomics (Kemp et al.) p.80

2   CAPITAL AND FINANCIAL ACCOUNT

The capital and financial account includes transactions that result in future money flows in forthcoming accounting periods.

2.1   CAPITAL ACCOUNT

The capital account comprises capital transfers and the acquisition and disposal of non-produced, non-financial assets.

- o **Capital transfers**: Includes migrants' funds and types of aid funds related to fixed capital formation. These are the most dominant component of the capital account.
- o **Non-produced, non-financial assets**: refer to intangible assets such as patents, copyrights, trademarks, and franchises. Acquisitions of these assets are debits (can be thought of as importing the assets), whereas disposals of these assets are credits (can be thought of as exporting the assets).
- o [Usually in surplus due to net migration.]

2.2   FINANCIAL ACCOUNT

The financial account comprises transactions associated with changes of ownership of Australia's foreign financial assets and liabilities.

- o Largest account in capital and financial account and is essentially responsible for the surplus.
- o It records all foreign investment transactions into/out of Australia.
- o Transactions in the financial account are classified by type of investment:
    - o **Direct**: undertaken with the objective of obtaining a lasting interest in a foreign enterprise and exercising a significant degree of influence in its management. This occurs when an investor claims 10% or more equity of an asset. E.g. a resident investor obtains 10% of the ordinary shares or voting stock of a foreign enterprise.
    - o **Portfolio**: consists of international equity and debt securities not classified as either direct investment or reserve assets. Portfolio investment is more short-term and speculative. Includes all forms of debt (e.g. borrowing $1m from the Bank of New York).
    - o [Reserve assets]: those that are controlled by monetary authority e.g. RBA (includes monetary gold, Special Drawing Rights, and foreign exchange).
    - o [Other investment]: captures transactions not classified as direct or portfolio (e.g. loans, deposits, currency)

Tips:
- o Think of *equity* as equal in meaning to *ownership* (but use *equity* in essays – jargon!).
- o Dividend payments are those given to individuals as their share of a company's profit in which they own equity.

V   THE TERMS OF TRADE

The terms of trade is an index that measures the relative movements in the prices of exports and imports.

The absolute value of the terms of trade index is relatively unimportant; it is the movements in the index that are significant.

Movements in the terms of trade are used in assessing the changing purchasing power of exports over imports, analysing real income, and evaluating the level of consumption that can be sustained in the domestic economy.

1   CALCULATIONS

The terms of trade is a ratio of export prices to import prices:

$$\text{Terms of Trade} = \frac{\text{Export Price Index}}{\text{Import Price Index}} \times 100\%$$

1.1   EXPORT/IMPORT PRICE INDICES

- o The XPI/MPI are weighed average figures (i.e. they take into account the *relative importance* of each item in the index).
- o XPI/MPI are assigned the value of 100 on a chosen base year.
- o The XPI/MPI in future years are calculated by dividing the weighted average figure in that year by the weighted average figure in the base year.
  - ▪ e.g. base year had an export price weighted average of 600, which was assigned an index of 100. The next year had an export price weighted average of 630, hence its indexed figure is $\frac{630}{600} \times 100 = 105$. The year after had an export price weighted average of 672, hence its indexed figure is $\frac{672}{600} \times 100 = 112$.

2   MOVEMENTS

2.1   TYPES OF MOVEMENTS

Changes in the ToT index can be described as being either favourable (improvement) or unfavourable (deterioration).

- o A favourable movement occurs when the ToT index increases from one time period to the next (e.g. 107 to 115). This is described as *favourable* as it enables a country to purchase more imports for the same amount of exports. [this comes with the underlying assumption of price inelastic imports/exports, as is the case in Australia]
- o An unfavourable movement occurs when the ToT index decreases from one time period to the next (e.g. 95 to 81). This is described as *unfavourable* as it requires a country to export more to purchase the same amount of imports. [this comes with the underlying assumption of price inelastic imports/exports, as is the case in Australia]

2.1.1 REPRESENTING MOVEMENTS DIAGRAMMATICALLY

Graphically [although not vigorously mathematically true], favourable movements occur whenever the XPI increases by more than the MPI (i.e. $\frac{XPI_f}{MPI_f} > \frac{XPI_i}{MPI_i}$). The **most favourable** movement is that where the XPI increases while the MPI decreases (the first graph shown below).
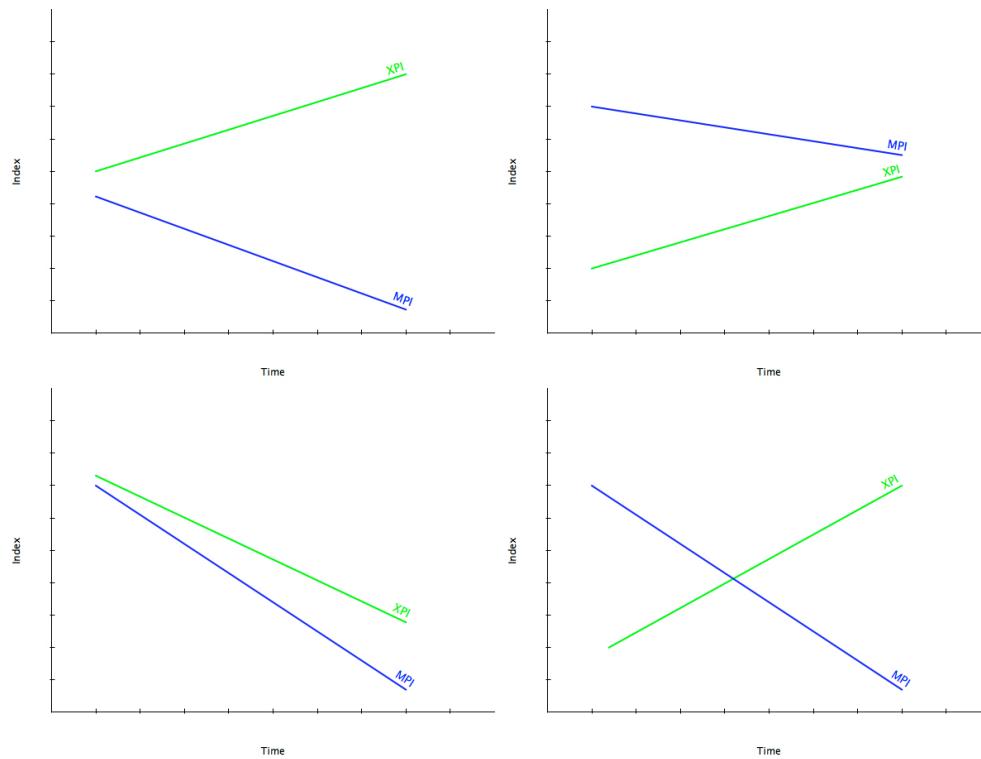
Figure 11: Favourable Terms of Trade Movements

Conversely, unfavourable movements occur whenever the MPI increases by more than the XPI (i.e. $\frac{XPI_f}{MPI_f} < \frac{XPI_i}{MPI_i}$). The **most unfavourable** movement is that where the XPI decreases while the MPI increases (the first graph shown below).
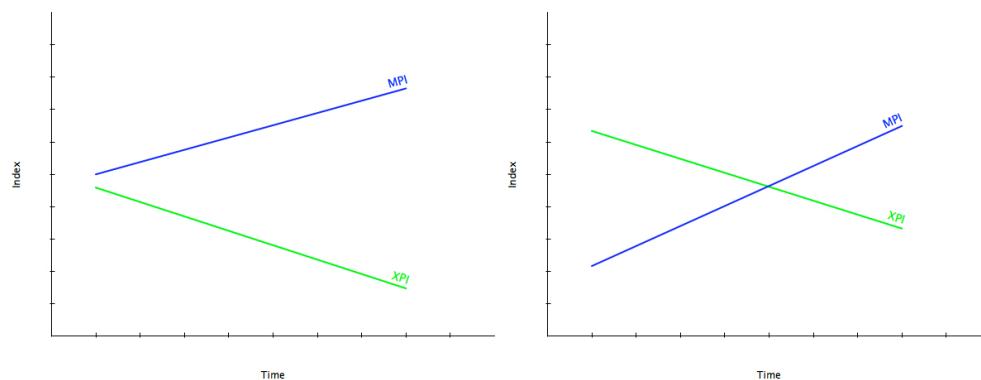
Figure 12: Unfavourable Terms of Trade Movements

2.3   CAUSES OF MOVEMENTS

Favourable movements in the terms of trade index can be caused by [and vice versa for unfavourable movements]:

- o [XPI] Rises in commodity prices due to increased demand by fast-developing Asian economies such as China (that has an average economic growth rate of ~10% p.a.) have contributed majorly to increases in our export price index (XPI) and hence terms of trade. E.g. ~40% increase in global coal consumption (our 2nd largest export) in the last decade, which has lead to increased coal prices (doubled in the last decade).
- o [XPI] Changes in our composition of trade (including the changes in weightings of items in the XPI), as we have shifted from rural exports to primary exports such as iron ore/coal/gold with relatively higher market prices compared to other exports (e.g. rural). Also, an increase in ETM exports (such as pharmaceuticals and ICT equipment) made possible through MER (microeconomic reform) has caused an increase in our XPI over time, as ETMs tend to increase in price over time.
    - ➢ [XPI] Successful MER policies (improving efficiency/productivity in Australia) have enabled some Australian manufactures to move up the 'value adding' chain, producing more valuable ETMs for exports (such as marine craft). Examples of MER include trade liberalisation and tax reform.
- o [MPI] Decreasing import prices due to trade liberalisation (esp. of ETMs, e.g. car industry), i.e. the removal of artificial trade barriers between economies, have contributed to decreases in our MPI.
- o [MPI] Emergence of fast-growing, low-cost producers such as China have pushed down the prices of manufactured goods (which we heavily import) globally, and hence lead to decreases in our MPI.
- o [MPI] Greater stability of the global environment and increased globalisation has resulted in increased international competition that has decreased our MPI.
- o [MPI] An AUD appreciation will decrease our MPI (no effect on the XPI).

2.4   EFFECTS/CONSEQUENCES OF MOVEMENTS

It is important to note that the impact of movements in the terms of trade index on an economy is determined by the price elasticity of demand for exports and imports. In Australia, both our exports and imports are considered price inelastic. Hence changes in price will induce proportionately smaller changes in quantity demanded. Thus when export prices increase, so too will the value of exports (and hence revenue and income; note *value* refers to *price×quantity*). This is why it is assume that an increase in the terms of trade index has a *favourable* impact on our economy.

Favourable movements in the terms of trade can affect the [and vice versa for unfavourable movements]:

- o Balance of trade (or BOGS):
    - ▪ ↑XPI will cause ↑XY (price inelastic exports). Hence, the BOGS (and CAD) will improve initially.
    - ▪ ↓MPI, then M expenditure ↓ (relatively price inelastic imports), hence the BOGS (and CAD) will improve.
        - ➢ However, due to price-elasticities increasing over time, in the long run a favourable ToT movement may ↓XY and ↑M expenditure, hence worsening the BOGS in the long run.

- BUT this (initial improved BOGS) is not always the case, although, ceteris paribus, it should be. Simply, the ToT serves as a measure of price, while the BOGS is a measure of value ($value = price \times quantity$). Quantity changes can impact the actual effect on the BOGS.
- BUT ↑ToT could lead to ↑ $Y_{national}$ and ↑ consumption. Hence ↑M (however this effect is only prominent over the long-term and relatively less significant; the overall 'main' effect is an improvement in our BOGS).

  o **Exchange rate:**
    - ↑XPI, then ↑X receipts (price inelastic exports). X receipts represent credits in our BoP, and hence demand for the AUD. Increased demand for our AUD will lead to an appreciation.
    - ↓MPI, then M expenditure ↓ (relatively price inelastic imports). Imports represent debits in our BoP, and hence supply of the AUD. Decreased supply of the AUD will lead to an appreciation.
    ➢ The AUD is often referred to as a 'commodity currency', suggesting its value follows world commodity prices.

  o **Economic growth:**
    - ↑XPI will cause ↑XY, which increases $Y_{national}$ and ↑ $O_{national}$, hence ↑E.G.
    - BUT growth patterns tend to be uneven (two-speed economy) as (primary) export industries thrive. The manufacturing sector may also suffer from 'Dutch disease': declining international competitiveness in the manufacturing sector from the booming commodities sector appreciating AUD.
    - BUT ↓MPI causes decreased international competitiveness for import-competing domestic industries, which leads to decreased output for these particular firms (appreciation of the AUD may compound this effect).

  o **Real national income:**
    - ↑XPI, ↑Y.
    - ↓MPI, real ↑ Y_{real}.

  o **Unemployment:**
    - ↑XPI will cause ↑XY, which ↑ $Y_{national}$ and ↑ $O_{national}$, which leads to ↑ use of FoP, hence ↑ employment (↓ cyclical UE).
    - BUT the uneven, 'two-speed' nature of E.G. and the appreciation of the AUD (Dutch Disease) can ↑ the rate of structural change and hence ↑ structural UE in the economy.

  o **Inflation:** The effect is somewhat indeterminate, as it depends on the sizes of the changes in the XPI/MPI that caused the movement. While ↓MPI will ↓CPI by decreasing the price levels of tradables (and appreciations in the AUD as a result of an ↑ToT will further decrease import prices), thus relieving inflationary pressures, a ↑XPI will ↑ $Y_{national}$ and hence increase AD and induce demand-pull inflation. If the economy is at full-employment, the effect of a terms of trade increase will likely be inflationary as the prices of exports rise with no corresponding output increase (due to full employment), hence leading to increases in nominal national income and aggregate demand while domestic output cannot be increased, resulting in inflationary pressures within the economy.

3   RECENT TRENDS

Figure 13: Terms of Trade Index

o   Clearly, Australia has experienced a significant terms of trade boom from 2003-2012.

o   Australia's terms of trade fell 9.8% in 2012-13 – this was a result of export prices falling 9.9% while import prices fell marginally by 0.1%. This is a result of slowing economic growth in Asian economies such as China (as shown by China's target growth rate cut from 8.0% to 7.5% in 2012; the lowest it has been for 8 years, and China's growth rate of 7.8% in 2012 and 7.7% in the 3rd quarter of 2013 – over 2% below its 30-year average of 10%).

o   However, since 2007-08, export prices have risen by an average rate of 1.7% p.a., while import prices have fallen by 1.9% p.a, with the ToT rising by ~11 index points over this period.

o   Fall in terms of trade in 2008-09 due to the GFC that caused a decrease in global economic activity and hence demand for our exports (thus decreasing our XPI and ToT). However a substantial recovery occurred, that took the ToT to record levels (106.5 in September Quarter of 2011 – historic high).

o   Terms of Trade in Australia decreased to 83.40 Index Points in the second quarter of 2014 from 87 Index Points in the first quarter of 2014.

o   The sharp fall in the ToT in the September quarter is due to plummeting iron ore prices (currently at a five-year low) as well as decreased demand for Australian coal, with China announcing a ban on 'dirty coal' that will be made effective on 1st January 2015. China is also moving to force power utilities to decrease coal import volumes in a bid to both increase air quality but also protect the domestic mining industry.

4   MODELS

An increase in Australia's terms of trade can be caused by either an increase in its XPI or a decrease in its MPI. As discussed, this has a positive impact on the Australian economy. This can be represented graphically via a Demand/Supply curve and analysis of total welfare, as shown below:

Manufactures Market
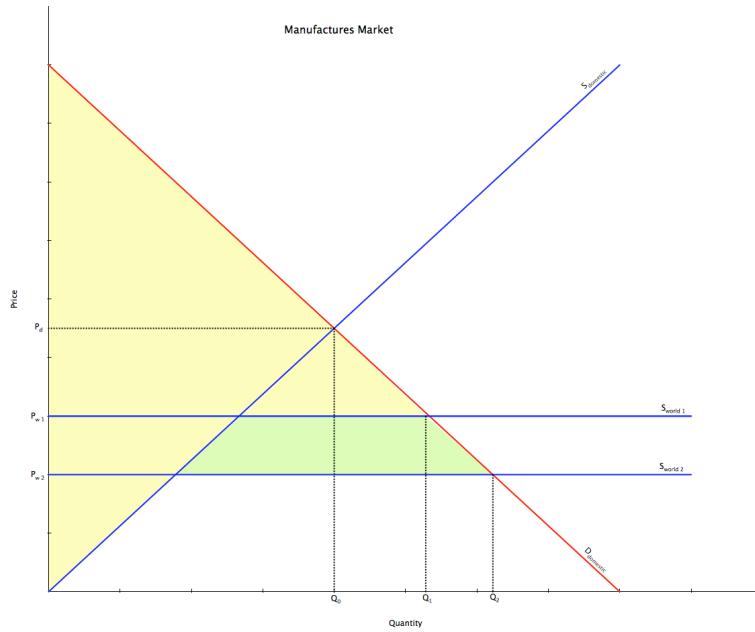
Figure 14: Benefits of a Decreased MPI

A favourable terms of trade movement caused by a decrease in Australia's MPI (as shown above by the decrease in the world price of manufactures from P_{w1} to P_{w2}) will result in increased economic welfare to society. Although domestic producer surplus is reduced, domestic consumer surplus increases by more than this amount (as they consumer more, Q_2 compared to the initial Q_1, at a lower price) such that total welfare increases by the amount shaded in green.

Iron Ore Market
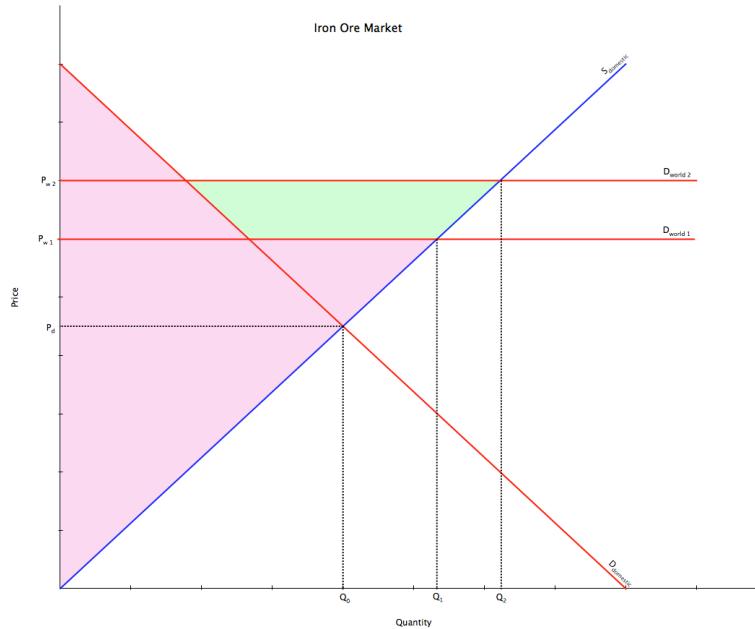
Figure 15: Benefits of an Increased XPI

Similarly, a favourable movement caused by an increase in Australia's XPI (as shown above by the increase in world price for iron ore, from P_{w1} to P_{w2}) will result in increased economic welfare to society. Although domestic consumer surplus is reduced, domestic producer surplus

increases by more than this amount such that total welfare increases by the amount shaded in green.

5 CONTROLLING THE TERMS OF TRADE?

Australia's terms of trade is affected by changes in the global economy. For example, an increase in world economic growth is likely to increase the demand for resource commodities that will increase their prices in the world market. In this sense, *the Australian government has very little direct influence over its export and import prices indices, and hence Australia's terms of trade*. Our government can, however, instigate MER that can reduce import prices and/or allow exporters to become more competitive and 'value-add' to their products, hence increasing our terms of trade. Obviously, though, the effect of this is minor compared to shifts in world prices. Australia is thus said to be a *price taker*.
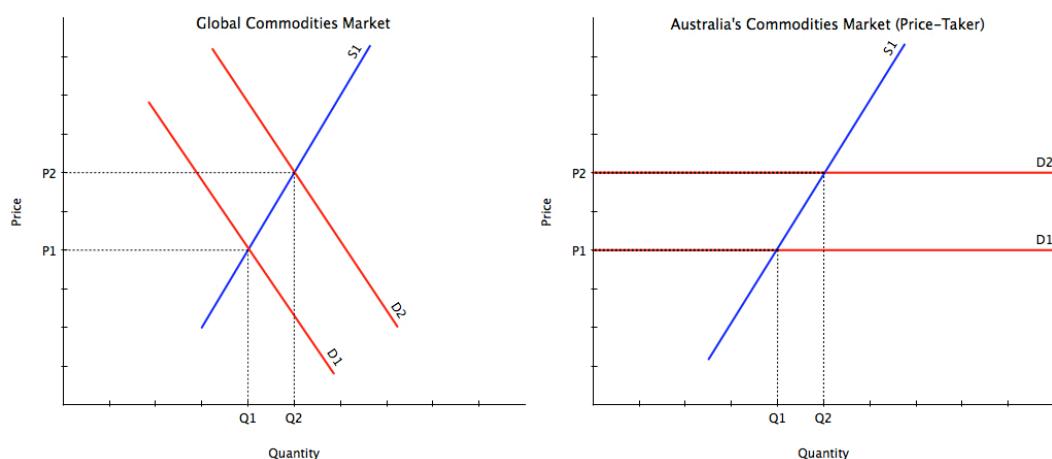
Figure 16: Australia's Commodities in the World Market

VI EXCHANGE RATES

Australians requires foreign currency to purchase goods and services overseas, make income payments to overseas residents, and undertake investment overseas.

1 DEFINITIONS

- An **exchange rate** is the price of one country's currency in terms of another country's currency.
- The **trade weighted index** (**TWI**) measures movements in the value of the AUD against a basket of foreign currencies weighted according to their importance in trade flows with Australia.
- A **bilateral exchange rate** (or **cross rate**) measures the value of a country's currency against one other country's currency. The most commonly quoted measure of the AUD is the **bilateral exchange rate** against the USD.

- **J-curve effect:** in the short run a depreciation of the exchange rate may not improve the CAD. This is due to the inelastic nature of demand for exports and imports in the immediate short run (after an exchange rate change).

2 CALCULATIONS

Exchange rate calculations are very simple and intuitive. For example:

$$1 \text{ AUD} = 0.90 \text{ USD}$$
$$1.11 \text{ AUD} = 1 \text{ USD} \quad \text{(divide both sides by 0.90)}$$

With these figures, if I were to purchase an item worth US$552.98:

Let x be the amount of AUD I require.

$$\frac{1 \text{ AUD}}{0.90 \text{ USD}} = \frac{x \text{ AUD}}{552.98 \text{ USD}}$$
$$x = 614.42$$

Therefore I would need 614.42 AUD.

Be wary of significant figures if doing the calculation in two steps (i.e. finding that 1 USD = 1.11 AUD; 552.98×1.11 = 613.81 AUD which is technically incorrect).

2.1 TRICKS!

Usually, exchange rates are given per AUD; e.g. $A1.00=$US0.93. However often multiple-choice questions will give exchange rates per USD (or other foreign currency) as a trick.

e.g. WACE 2012q8

> 8. Consider a change in the exchange rate from US$1 = A$1 to US$1 = A$0.95. The **most** likely cause of this change is
>
> (a) a reduction in interest rates in Australia.
> (b) higher inflation in Australia than in the United States.
> (c) a rise in commodity prices.
> (d) strong productivity growth in the United States.

It is easy to mistake this movement as a depreciation, but this is not the case. Since the AUD in fact appreciated (1 USD buys fewer AUD), the answer is c.

3 TYPES OF EXCHANGE RATES

3.1 FLOATING EXCHANGE RATE

A **floating exchange rate** is a type of exchange-rate regime in which a currency's value is allowed to fluctuate according to the foreign-exchange market (market forces of demand and supply dictate its price). A currency that is allowed to float free from interference by the central bank is referred to as a 'clean' float (RBA claims that the AUD is a "lightly managed float"). The advantages of a floating exchange rate include:

o The market value of the currency (in the long term) reflects the fundamentals of the Australian economy; particularly economic growth, inflation, and the balance of payments.
o Monetary policy (the process by which monetary authority controls the supply of money) becomes more effective (since BoP always balances, it does not affect the domestic money supply).
o The exchange rate helps absorb global shocks on the domestic economy and reduces swings in the CAB. For example, during the GFC the AUD (due to the floating exchange rate) lost a third of its value over a period of six months. However this deprecation reduced the prices of Australia's exports and provided Australian exporters with a price advantage in overseas markets. Thus the deprecation due to the floating exchange rate had an expansionary effect on the economy that helped 'insulate' the Australian economy from the impacts of the GFC.

The disadvantages:

o Uncertainty for buyers and sellers; e.g. exporters' profitability is dependent on the exchange rate and hence the risks associated with (international) business is larger.

3.1.1 LINK TO THE BALANCE OF PAYMENTS

In the balance of payments, all credits represent money flows into Australia. However, these money flows (in foreign currencies) must be converted to AUD to be used within Australia. In this sense, all credits in the balance of payments represent demand for the AUD. Similarly, all debts in the balance of payments represent supply of the AUD. Thus, an increase in export income, ceteris paribus, is synonymous with an increase in demand for the AUD. This can be shown graphically, on a demand and supply graph:
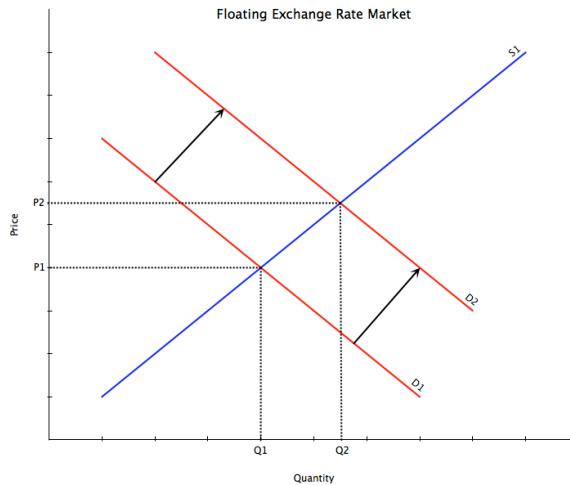
Figure 17: Floating Exchange Rate Market

An increase in export income, ceteris paribus, will increase demand for the AUD from D1 to D2, which will appreciate the AUD from price P1 to P2.

3.2   FIXED EXCHANGE RATE

A **fixed exchange rate** occurs when the currency value is fixed at a particular value and maintained by the central bank (RBA). A government wanting to maintain a fixed exchange rate does so by either buying or selling its own currency on the foreign exchange market. This can be illustrated graphically:
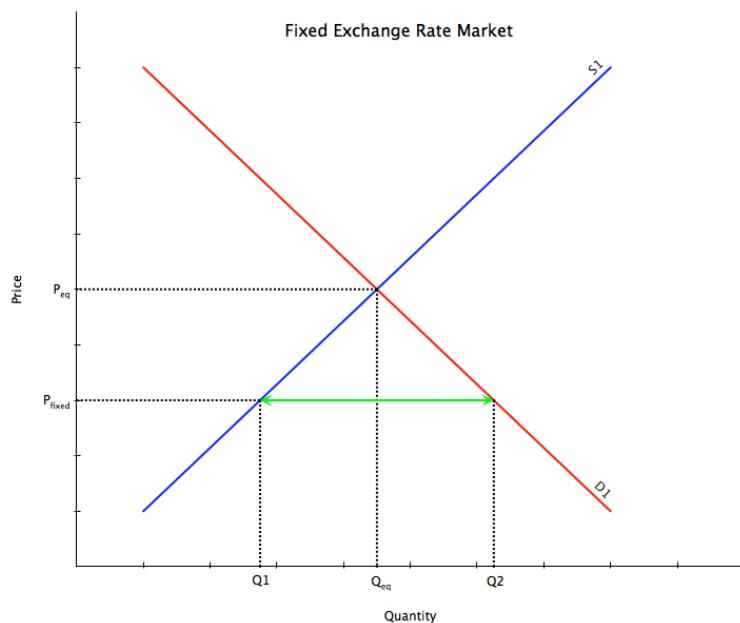
Figure 18: Fixed Exchange Rate Market

In the Fixed Exchange Rate Market graph above, in order to maintain fixed exchange rate P_{fixed}, the central bank must sell their currency to provide the shortage Q_1Q_2.

3.3   MANAGED EXCHANGE RATE

A **managed exchange rate** (or **dirty float**) occurs when the currency's value is allowed to fluctuate freely between an acceptable upper and lower level – i.e. within a desirable range. The central bank will intervene (by buying and selling currency) to keep the currency within this range when necessary. Monetary policy can also be used to manage a dirty float through the setting of interest rates.

4   CAUSES OF MOVEMENTS IN AUSTRALIA'S EXCHANGE RATE

o **Relative interest rates**. Australia was the first developed economy to tighten monetary policy post-GFC in October 2009. An increase in Australia's cash rate/market interest rates increases the interest rate differential in Australia's favour. This results in increased financial capital inflow to Australia's financial market (portfolio foreign investment), increasing demand for the AUD that will cause an appreciation. As at September 2014, Australia's cash rate stood at 2.5% whilst most other developed nations' rates were approximately 0.5% or lower. The current expansionary phase of monetary policy, however (maintenance of a relatively low cash rate), is limiting the impact of our positive interest rate differential.

o **International competitiveness**. Factors affect that international competitiveness include **relative inflation rates**, **MER**, **technological change**, and **multi-factor productivity**. Any factor that improves Australia's international competitiveness will, ceteris paribus, result in a greater value of exports (as our exports become more relatively more efficient) and increased import-substitution. This causes an increase in demand and decrease in supply of the AUD that will cause it to appreciate. For example, if Australia has a consistently higher inflation rate than overseas economies, then over time Australian exports become less competitive causing decreased demand for the AUD, while imports become comparatively cheaper causing increased supply of the AUD. This will cause a depreciation in the AUD. Recently, the impact of inflation, which has been well-maintained within the RBA's 2-3% target band, has not been a major influence on the value of the AUD.

o **Terms of trade**. An increase in the terms of trade will cause export income to increase (due to the price-inelastic nature of our exports, an increase in our XPI will increase the value of our exports) resulting in greater demand for the AUD, hence causing an appreciation. Alternatively, a decrease in our MPI (that could cause a rise in our terms of trade) will decrease import expenditure (due to the price-inelastic nature of our imports), hence decreasing the supply of the AUD and again causing an appreciation. The correlation between the AUD and our XPI, or more specifically, commodities prices, has lead to the AUD being referred to as a 'commodity currency'. Over the last decade this has been a significant contributor to the strength of the AUD relative to historic standards, however the current downward-trending price of iron ore (our largest export) that is currently at a five-year low, is acting as a heavy burden on the AUD and very much causing its current depreciating state.

o **Foreign investment**. Australia was the only developed economy to avoid technical recession during the GFC. Consequently, it has remained an attractive destination for foreign investors. This is highlighted by the Gorgon gas project, which at A$50b is one of the largest investment projects in Australian history. Foreign investment increases demand for the AUD causing it to appreciate (over 40% of the Australian stock market is owned by offshore investors; this indicates the significant amount of FI in Australia).

o **Global economic growth**. Strong world economic growth (that is occurring at the moment particularly in China, India, and south-east Asia) will result in increased demand for our exports (including our service exports such as tourism, provided our service industry is able

to overcome the impact of the appreciated AUD on its international competitiveness) that will increase demand for the AUD and thus appreciate it.

o **Domestic economic growth**. Strong domestic growth will increase import expenditure, as Australia has a high marginal propensity to import (our imports are income elastic). This will result in increased supply of the AUD and hence a depreciation.

   ▪ BUT strong domestic growth tends to attract foreign investment and higher domestic interest rates (impacts discussed above).

o **Speculation**. Australia's currency is significantly influenced by speculation in the short-term. Daily foreign exchange market turnover averages over $5 trillion in value, with the AUD being a heavily traded currency (ranking 5th heaviest in 2013). It is estimated that >80% of transactions in the AUD are speculation-based. Recently, speculators have viewed the AUD positively, increasing demand for the currency and hence appreciating it.

5   EFFECTS OF AN APPRECIATION

Australian Residents

o **Exporters:** An appreciation is harmful to Australian exporters as they become less internationally competitive due to their exports becoming more expensive to foreign buyers. This has been especially true for the agricultural and manufacturing sectors that have suffered from a 'Dutch-disease'-like situation in recent years.

   ▪ BUT producers may benefit from cheaper inputs that are used in the production process, however this effect should not be overstated and is secondary to the overall decrease in competitiveness.

o **Import-Competing Firms:** Domestic import-competing firms also suffer as import prices become less expensive (which they must compete against in price), which may result in decreased demand for domestically-produced goods. This has been especially evident in the car industry and tourism sector of the Australian economy.

o **Consumers:** Australian consumers benefit from an appreciation as they enjoy decreased import prices, and those travelling internationally will benefit from increased purchasing power overseas.

o **Australian Overseas Investors:** Australian residents with financial capital overseas will (ceteris paribus), after an appreciation, 'lose out' as their savings in foreign currency is worth less AUD when exchanged back.

Balance of Payments

o **BOGS:** As a result of more attractive (cheaper) imports and decreased competitiveness in export industries, in the long term the value of imports will increase and the value of export receipts will decrease, ceteris paribus. Thus an appreciation will likely increase a trade deficit (or reduce a trade surplus). However, due to the inelastic nature of exports and imports in the short run (due to trade contracts and such that may last over several months), an appreciation may improve the BOGS in the short run as exports are sold at higher prices and imports purchased at lower prices. This situation may give rise to an inverted J-curve effect on the BOGS.

o **Primary Income Account:** A stronger AUD will make equity-based foreign investment into Australia more expensive, reducing potential dividend and profit flows out of Australia. As a significant portion of Australia's foreign debt (40-60%) is denominated in foreign currency the valuation effect reduces the interest payments flowing overseas.

Overall, the incomes category is positively impacted by the appreciation and the primary income category deficit should decrease.

- o **CAD:** An appreciation is expected to (in the long run) deteriorate the BOGS but improve the incomes category. However, given the fact that the exports and imports categories in the current account are approximately four times larger (in dollar value terms) than the income category, this means that the likely effect of an appreciation, ceteris paribus, is the CAD increasing.

Australian Economy

- o **Foreign debt** (**valuation effect**): as a significant proportion of Australia's foreign debt is denominated in foreign currency, the instant the AUD appreciates there is a decrease in the size of Australia's foreign debt in AUD terms. This is known as the valuation effect.
- o **Inflation:** *tradables inflation* (inflation in goods that are traded internationally and have prices determined on world markets such as clothing or electronics) decreases as imported products become cheaper. Given that tradables represent a significant proportion of the basket upon which the CPI is calculated, an appreciation will decrease the CPI and hence decrease the inflation rate. Cheaper input costs for domestic producers can also decrease cost-push inflation. The decrease in net exports and any reverse multiplier effects can act to reduce *non-tradables* and demand-pull inflationary pressures.
- o **Economic growth:** Due to increased import expenditure (and hence decreased import substitution) and decreased export receipts, aggregate demand for domestic goods will decrease and hence will slow economic growth within an economy.
- o **Employment** (in export and import-competing industries)**:** With slower growth and a lack of international competitiveness due to a persistently high AUD, structural unemployment in export (especially manufacturing and agriculture) and import-competing industries may occur (e.g. Ford stopped production of cars in 2016, Holden/Toyota 2017). The reduction in aggregate demand may also cause a rise in cyclical unemployment or underemployment (reduction in total hours worked).

6   RECENT AUSTRALIAN STATISTICS
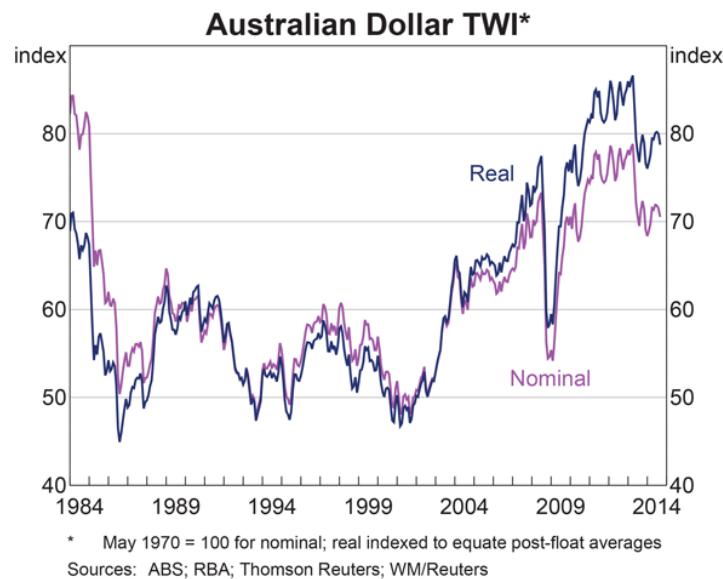
Figure 19: AUD Trade-weighted Index

For interactive graph of Australia's TWI, see http://fxtrade.oanda.com/analysis/economic-indicators/australia/indices/trade-weighted-index

As at December 2013, the four largest 'weights' in Australia's Trade-weighted Index were the:

1. Chinese yuan   (25%)

2. Japanese yen   (13%)

3. United States dollar   (10%)

4. European euro   (9%)

Australian Dollar against US Dollar, Euro and Yen

Yen per A$
(LHS)

US$ per A$
(RHS)

Euro per A$*
(RHS)

* ECU per A$ until 31 December 1998
Sources: Thomson Reuters; WM/Reuters
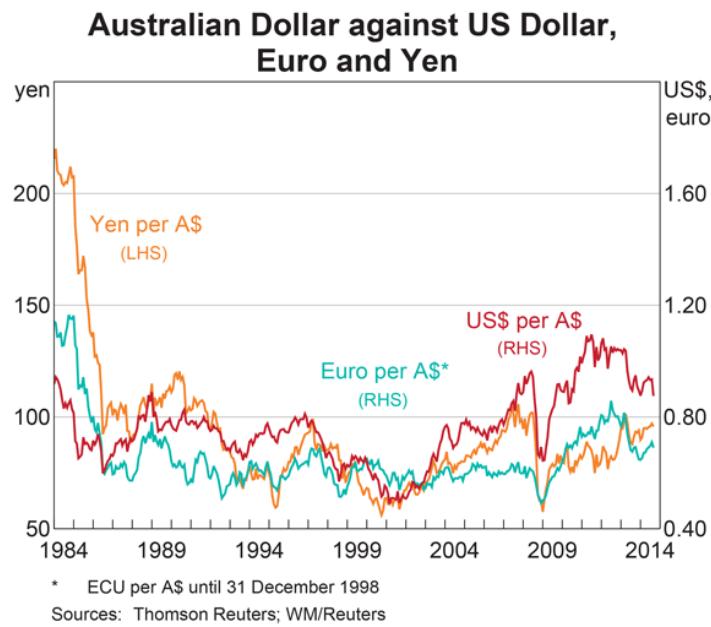
Figure 20: AUD Bilateral Rate Against USD, Euro, Yen

The Australian Dollar decreased to 0.88 US dollars in September from 0.93 in August of 2014. Australian Dollar averaged 0.76 from 1993 until 2014, reaching an all time high of 1.10 in May of 2011 and a record low of 0.48 in March of 2001.

VII   AUSTRALIA'S FOREIGN LIABILITIES

Although Australia is very resource-rich, large quantities of investment into capital equipment is required to exploit these resources effectively; the resources industry is very capital-intensive in nature. However due to Australia's relatively small population, its domestic savings pool is insufficient to finance its private sector's investment plans – there exists a domestic savings-investment imbalance in Australia. Foreign investment is used to remedy this imbalance, so that the private sector can realise its investment plans. Thus Australia has used foreign financial capital to drive much of its investment and in this sense, foreign investment has been of great benefit to the Australian economy.

0   EXTERNAL STABILITY

One of the Australian Government's key macroeconomic objectives is external stability or external balance. **External stability is achieved when Australia is able to meet its financial obligations with the rest of the world.** This is considered to be the case when:

o   export income is sufficient to finance import spending (a CAD <5% of GDP is considered by the IMF as unsustainable in the long-run)
o   stability exists in the exchange rate
o   a manageable level of foreign debt exists (IMF considers a public sector debt of >50% of GDP to be of concern; in Australia this figure is currently at 20.5%)

1   DEFINITIONS

➕ **Foreign Investment** refers to the stock of financial assets in Australia owned by foreign residents and financial transactions in the balance of payments that increase or decrease this stock.

➕ **Foreign equity** represents the extent to which foreign residents own Australian assets.
➕ **Foreign debt** (or **external debt**) is the amount of money that Australian residents, both private and public, owe to the rest of the world.

Foreign investment can take different forms:
    ➕ **Borrowing**, that increases the level of **foreign debt**.
    ➕ **Equity** (the purchasing of ownership of Australian assets) that increases the level of **foreign equity**.

➕ Australia's **net foreign liabilities** refer to gross foreign liabilities (gross foreign equity plus gross foreign debt) minus Australian holdings of overseas assets.
➕ Australia's **net international investment position** refers to Australia's stock of foreign assets minus its foreign liabilities (i.e. equal but opposite in sign to net foreign liabilities).

An important distinction to make in this topic:

➕ **Investment** refers to the attainment of capital goods. **Foreign investment** should not be confused with **investment** (in this sense).

2 TYPES OF FOREIGN INVESTMENT

2.1 CLASSIFYING FOREIGN INVESTMENT

All foreign investment transactions, regardless of type, are recorded in the **financial account**. Foreign investment can be classified by either size or by type.

In terms of **type**, foreign investment can be in the form of:

- o **borrowing**, or foreign debt. This leads to **interest payments** (in the primary income account).
- o **equity**, or foreign ownership. This leads to **dividend payments and remittance of profits** (in the primary income account).

In terms of **size**, FI can be in the form of:

- o **portfolio** (which includes all forms of borrowing and all forms of equity investment in which less than 10% of ownership is purchased). This is generally volatile, short term, and speculative.
- o **direct** – this occurs when an investor obtains a **significant controlling interest** over the enterprise in question (considered >10% equity), or an overseas firm establishes a subsidiary firm in Australia. Borrowing or debt can never classified as direct (no significant controlling interest).
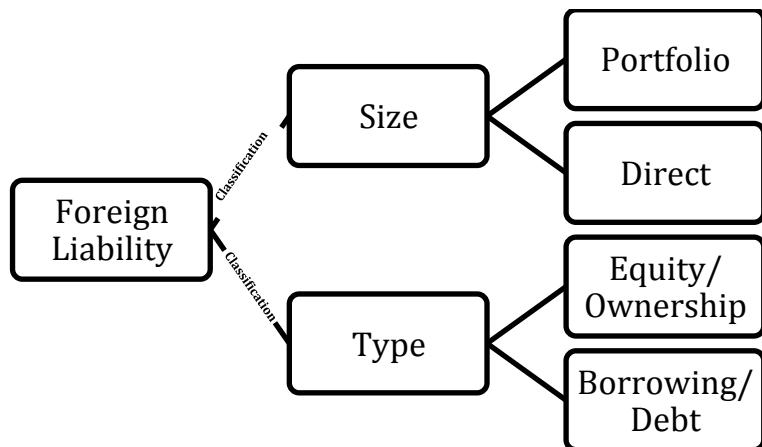
2.2 FOREIGN INVESTMENT/LIABILITIES IN AUSTRALIA

- o **Portfolio investment** is the dominant type of FI into Australia, accounting for nearly **60%** of the total.
- o Most FI into Australia is in the form of debt securities, or borrowings (~**65%**), with equity comprising the other **35%**.
- o Most DFI (**direct** foreign investment) is directed into the mining and manufacturing (mining>manufacturing) sectors, which together account for **over half** of all DFI [note that Finance & Insurance attracts the largest amount of **total** foreign investment].
- o The US (28%), UK (24%), and Japan (6%) are Australia's largest sources of foreign investment (in terms of **total** foreign investment).

- o The largest component of Australia's foreign liabilities is **foreign debt**, which accounts for ~**85%** of the total (the remaining ~**15%** being **foreign equity**).
- o Most of Australia's foreign debt is **private debt** (~**80%** of total), with government or **public debt** amounting to ~**20%** of the total.
- o Australia has one of the lowest government (public) sector debts in the developed world.
  - ➢ Private debt is considered far superior to public debt in that it is incurred with the profit motive as the guiding hand, that will likely lead to increased investment and future income to service the debt, ultimately benefitting the economy (Pitchford Thesis).
  - ➢ Public debt, on the other hand, can result in a burden on future generations if it is used to fund government current expenditure rather than public infrastructure.

3 WHY INVEST IN AUSTRALIA?

- o Political stability
- o Effective, fair, and reliable legal system that ensures that contractual obligations are honoured (which may not be the case in other economies such as China).
- o Highly skilled, (relatively) productive labour force.
- o Infrastructure support
- o Significant natural resource wealth
- o Strong, consistent economic growth
- o Positive interest rate differential between Australia and other economies

4 EFFECTS OF FOREIGN INVESTMENT

4.1 BENEFITS OF FOREIGN INVESTMENT

- o Foreign investment that is directed towards productive activities has a multiplier effect on national income, output (EG and employment). When FI is used to finance investment, it will increase both **aggregate demand** and **aggregate supply**. Being a component of AD, investment will increase the level of **economic activity**, **employment**, and **national income**. Hence AD will increase. But investment will also expand the **productive capacity** of an economy by increasing the **stock of physical capital**; hence it will increase the economy's AS (and push its **PPF** outwards). As **national output** increases, so too will (again) **economic activity**, **employment**, **economic growth**, and **living standards**.
- o Provides a source of finance for industries – it allows Australian industries to access and **invest** in new **capital** which would otherwise be unattainable due to Australia's large **domestic savings** and **investment imbalance**. This (investment) leads to **increases in productivity** and the **capacity** of **export industries** that will improve our **trade balance in time**.
- o [DFI] Introduces new **technologies**, **skills**, and **management techniques** to Australia (from overseas) that may increase **productivity** in the workforce.
- o The government collects **tax revenue** from the higher level of economic activity.

Recently, the most important benefit of foreign investment for Australia has been the development of our industries, especially that of the mining (and to a lesser extent, manufacturing) sector. Without the large amount of foreign investment that has flowed into Australia, the mining and manufacturing sectors would be much smaller and hence our national income smaller, unemployment higher, and economic growth slower.

4.2   COSTS OF FOREIGN INVESTMENT

o   DFI (equity) involves a **loss of control and ownership** of Australian resources and industry; **decision-making can occur overseas** (by non-Australian residents) **without the considerations of implications for Australia** (e.g. car industry that is leaving Australia). This can also lead to **operations being shifted outside of Australia** such as **research** and **development** that reduce domestic employment opportunities.

o   Portfolio (borrowing) investment is characteristically **short-term** and **speculative**; it tends to have **no** (positive) **multiplier effects** on the economy but can have a **de-stabilising** effect.

o   Large companies can undertake **transfer pricing** to take advantage of different tax rates in different countries in which they operate. This is essentially exploiting loopholes in the law to legally minimise tax on profits. Recently [March 2014], technological giant Apple has been under investigation in Australia for transfer pricing, with reports revealing Apple paying a mere 0.7% of its Australian turnover to the ATO.

o   Interest, dividends, and profit payments flow out of the Australian economy, contributing to the incomes category deficit on the CA (which may lead to a debt trap).

4.3   FOREIGN INVESTMENT/DEBT – A PROBLEM?

It is also important to note that, while foreign debt is often graphed as a proportion of GDP, this is a very misleading representation of our foreign debt. Foreign debt is a **stock variable** – it represents the accumulation of debt over time (and increases with each KAS, or CAD), whereas GDP is a **flow variable** – it represents an economy's output for a single year. Foreign debt should be compared with another **stock variable** such as Australia's **total wealth**. When foreign liabilities is compared to Australia's **total assets** (in Australia's **national balance sheet**), it is in fact true that our assets have increased at a faster rate than liabilities, so that Australia's **net worth** or **net wealth** has been **rising** over time (per capita wealth has also increased). This shows that the build-up of foreign liabilities has been used to increase Australia's net worth (used productively). Thus rather than being a burden, foreign liabilities have enabled Australia to expand its productive capacity and increase its level of real income.

Statistics that indicate that Australia's foreign debt level is not an issue:

o   Australia's national balance sheet: Australia's net worth rising (discussed above).

o   Debt service ratio: $\text{DSR} = \frac{\text{foreign debt service payments}}{\text{export income}} \times 100\%$ - The DSR is a ratio of debt service payments to that country's export earnings; it indicates the burden of debt on export income flows at a given point in time. Over the past **20** years, Australia's debt service ratio has decreased from approximately **20%** to **10%**. This means that Australia is **finding it easier to finance current debt levels** despite the level of foreign debt continuing to rise throughout this period. Therefore, export income has been increasing at a faster rate than **debt servicing obligations**.

- o Ownership of foreign debt: ~**80%** of our foreign debt is due to **private sector borrowings**. This is considered to be undertaken for the purpose of **investment** that increases **productive capacity** in export industries, import-competing industries, increases employment, taxation revenue, and improves the overall standard of living.
- o Debt turnover rate: approximately **50%** of Australia's **total foreign debt** is **repaid each year**. This suggests that Australian borrowers are **managing debt obligations easily** and use overseas sources of finance to drive **successful business investment**.

5 TRENDS IN AUSTRALIA'S FOREIGN INVESTMENT/LIABILITIES

5.1 RECENT TRENDS

Net Foreign Liabilities
Per cent of nominal GDP

Source: ABS
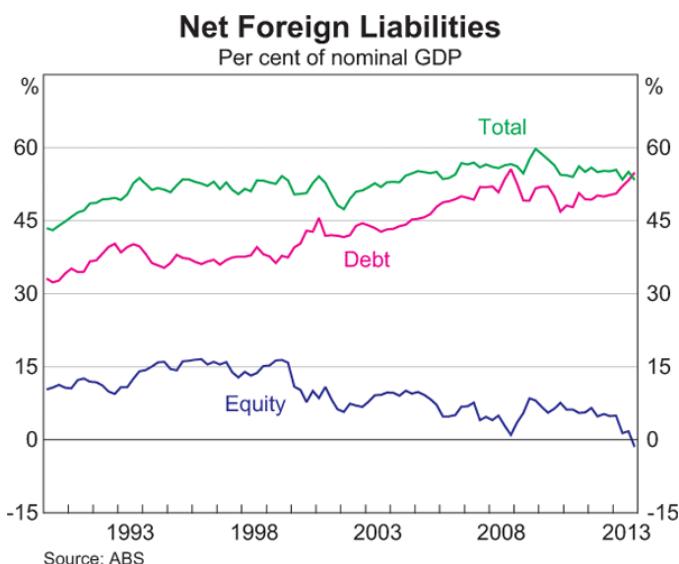
Figure 21: Australia's Net Foreign Liabilities

As shown above, Australia's net foreign debt has had an upward trend, and Australia's net foreign equity has had a downward trend.

External Position
Composition after hedging, quarterly*

* Hedge ratios inferred from ABS Foreign Currency Exposure surveys
Sources: ABS; RBA
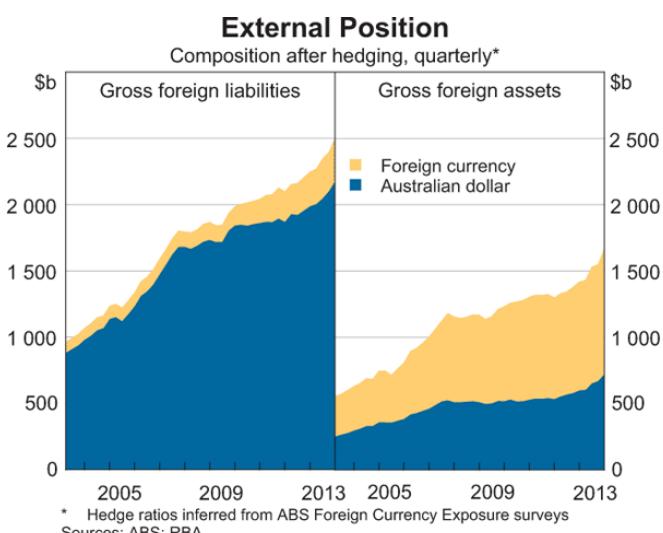
Figure 22: Australia's Gross Foreign Assets and Liabilities

As shown above, Australia's gross foreign liabilities have been growing faster than its gross foreign assets. As a result, our net foreign liabilities have been growing in size. This **accumulation of foreign liabilities** over time is a result of **persistent CADs** (and hence **KAS**s).

5.2   HISTORICAL TRENDS

During the 1980s portfolio investment was the dominant form of investment due to deregulation of financial markets. With the recession in the early 1990s direct investment established itself as the dominant form until 1995-1996 when portfolio investment drastically increased.

VIII   THE BUSINESS CYCLE

It's a recession when your neighbour loses his job; it's a depression when you lose yours.
    Harry S. Truman

0   A BRIEF OVERVIEW
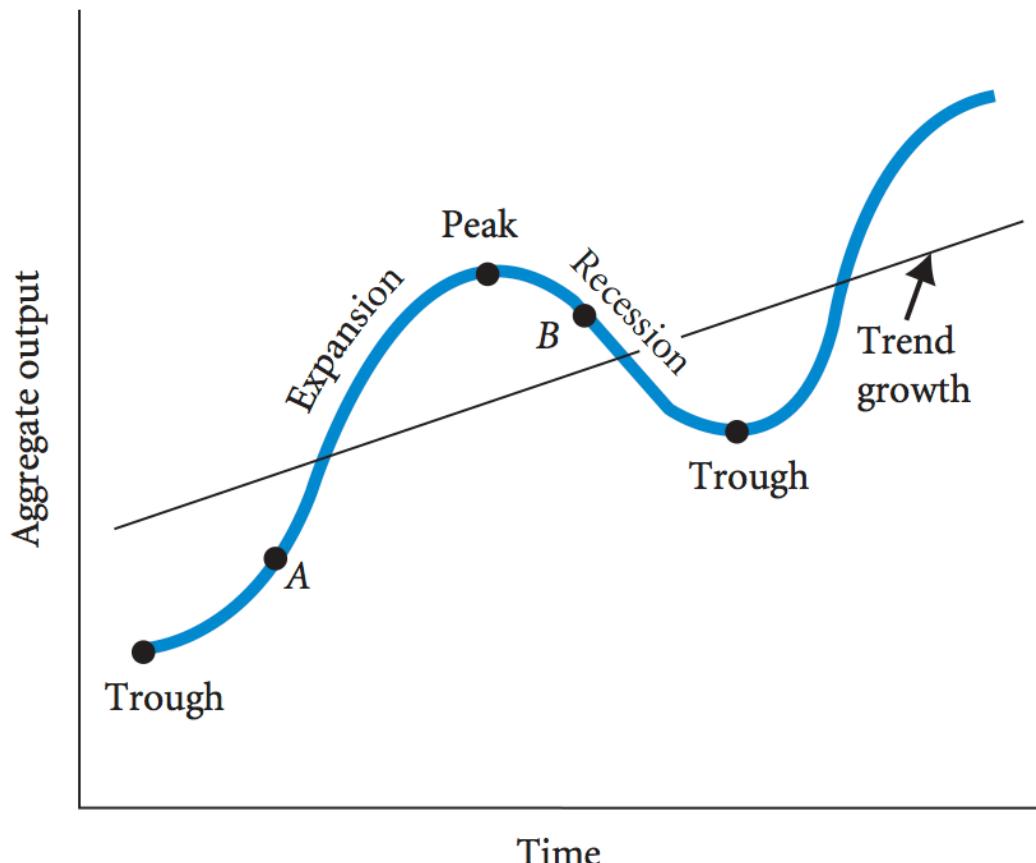
Figure 23: The Business Cycle

In this business cycle, the economy is expanding as it moves through point *A* from the trough to the peak. When the economy moves from a peak down to a trough, through point *B*, the economy is in a downswing.

Like all models, however, the business cycle simplifies reality – in reality, the actual path of economic activity is of course not a smooth and predictable curve. However, a cyclical pattern undeniably exists in economic activity levels, as predicted by the business cycle.

1   DEFINITIONS

The term **business cycle** (or **economic cycle** or **trade cycle**) refers to fluctuations in economic activity around a long-term trend over a period of time in an economy.

A **recession** (or **downswing** or **contraction**) refers to the period in the business cycle from a peak down to a trough during which the level of economic activity is falling.

Strictly speaking, however, a **recession** is technically defined as two consecutive quarters of negative economic growth.

A **depression** refers to a prolonged and deep recession.

An **expansion** (or **upswing**) refers to the period in the business cycle from a trough up to a peak during which the level of economic activity is rising.

A **peak/boom** occurs where economic activity reaches a maximum above the long-term trend, when the business cycle transitions from expansion to contraction. At the peak, the economy has reached the highest level of production in recent times.

A **trough** occurs where economic activity reaches a minimum below the long-term trend, and occurs when the business cycle transitions from contraction to expansion. At the trough, the economy has reached the lowest level of production in recent times.

A **deflationary gap** refers to the amount of aggregate spending below what is required to achieve a full employment level of output.

An **inflationary gap** refers to the amount of aggregate spending above what is required to achieve a full employment level of output.

An **economic indicator** refers to data or information that allow for analysis of economic performance.

1.1 THE ACCELERATOR

Accelerator Effect: the tendency for investment to increase when aggregate output increases and to decrease when aggregate output decreases, accelerating the growth or decline of output.

$$I = w\Delta Y$$

Accelerator theory: if aggregate output (income) is rising, investment will increase even though the level of national income may be low. Higher investment spending leads to an added increase in output, further "accelerating" the growth of aggregate output. If Y is falling, expectations are dampened and investment spending will be cut even though the level of Y may be high, accelerating the decline.

• **accelerator model**: [not in syllabus]

  o A simple accelerator model can be used to demonstrate the instigation of a lower turning point.

o As the economy is in a downswing, income and consumption will fall, however there exists a minimum level of consumption that is required for subsistence (autonomous consumption, in the Keynesian model). Suppose that this minimum level is $400m$.

o Further suppose that the accelerator, or capital-output ratio, w, is 4.

o If $w = 4$ and the minimum level of consumption is $100m$, then the associated minimum requirement for capital stock is $400m$.

o As disinvestment due to deprecation of existing capital proceeds during a downswing (as firms with excess capital stock after the peak phase are not undertaking deprecation investment so long as the capital stock exceeds the required $400m$), there will come a time when the actual capital stock falls below the required minimum of $400m$.

o At this point investment will take place. This investment will instigate multiplier effects on the economy, raising national income and hence bringing about further investment via the accelerator effect, and this interplay between the accelerator and multiplier will repeat itself over and over. This will mark the beginning of the recovery/upswing phase.

The multiplier-accelerator model

Consists of:

■ *a multiplier effect* – whereby a change in investment spending (ΔI) causes a multiple change in national output (national income, ΔY);

■ *an accelerator effect* – whereby a change in national output causes a further change in investment expenditure;

■ *a combined multiplier-accelerator interaction* – whereby the multiplier and accelerator effects feed back on each other, as shown:

$$\underbrace{\Delta I \quad \rightarrow \quad \Delta Y}_{\text{Multiplier effect}} \quad \underbrace{\rightarrow \quad \Delta I}_{\text{Accelerator effect}} \ldots, \text{etc.}$$

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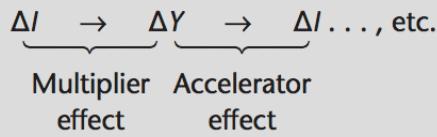
2 FORMULAE

• $\%\Delta GDP = \left(\dfrac{GDP_2}{GDP_1} - 1\right) \times 100$

• $AE = C + I + G + (X - M)$

3 PHASES & CAUSES

3.1 SUMMARY OF PHASES

The business cycle is usually characterised as having four phases: peak, recession, trough, and expansion.

Table 4: Business Cycle Phases Summary

Phase	Characteristics
Peak	- interest rates peak - inflation peaks - consumption levels peak - CAD peaks (as imports peak) - employment peaks - labour/product market shortages peak - maximum productive capacity of the economy achieved (production bottlenecks exist) - profit share of GDP is relatively high - participation rate peaks - productive investment overtaken by speculative investment
Downswing	**Pre-downswing:** - inflation rates are high - interest rates are high **Early downswing** - AE falls - inventories rise - production falls - investment levels fall - output/income levels fall - employment levels fall [underemployment rises and overtime work hours fall first] - CAD falls (as % of GDP) **Late downswing** - inflation falls (disinflation or even deflation) - interest rates fall - CAD falls (as imports fall) - AE falls as C and I fall - employment levels fall - investment levels fall
Trough	- employment bottoms - interest rates bottom - inflation rate bottoms - consumption bottoms
Upswing	**Pre-upswing:** - inflation rates low - interest rates low **Early upswing** - consumption rises - GDP begins to rise - inventories low and need to be increased due to increased C - production rises - multiplier/accelerator interact to end recession and drive the economy into growth - demand for resources increase - output/income increases - employment levels begin to rise [overtime work hours rise first, and underemployment falls] **Late downswing** - inflation begins to increase - relatively high GDP - interest rates rise - employment continues to rise - strong level of consumption

	o CAD rises as imports rise
	o investment increases

3.2   TEST-STYLE EXPLANATIONS

In tests/exams, depth may be required in explaining the characteristics of each phase of the business cycle and why each phase of the business cycle has such characteristics. The characteristics of each phase are largely intuitive however it is important to address key aspects and factors affecting each characteristic that markers may be looking for.

Unemployment

• unemployment occurs due to $\Delta AD \Rightarrow \Delta O \Rightarrow \Delta(resources\ required)$

• consider changes in underemployment and overtime hours worked that occur before changes in unemployment

Inflation

• consider level of AD & hence demand-pull inflation (esp. in peak where it may be that $AD > AS$)

• consider price of labour/resources due to shortage/surpluses (e.g. in downswing, due to weak AD there is less demand for labour/resources leading to lower labour prices and hence lower cost-push inflation)

Interest Rates

• combination of market forces (e.g. $\uparrow I \Rightarrow \uparrow interest\ rates$) and RBA [contractionary/expansionary] monetary policy

3.3   CAUSES OF PHASES

It is important to understand that, at the most basic level, what predominantly drives the level of economic activity and hence the business cycle is the level of aggregate demand in the economy. Although it is true that aggregate supply can also influence the business cycle significantly, this occurs relatively rarely and in the form of supply shocks.

Of all the components of aggregate demand (consumption, investment spending, government spending and net exports) that could be a source of volatility, one crucial variable stands out in all research on the causes of business cycles, namely *investment spending*.

The importance of investment spending in this context gives rise to the *multiplier-accelerator model*, drawing from Keynesian economics. Keynesians tend to argue that changes in investment spending represent a primary cause of business cycles.

3.3.1   UPSWINGS/DOWNSWINGS

• An initial rise in investment expenditure leads to higher income through the multiplier effect.
• The rise in income in turn leads to more consumer demand and, through the accelerator effect,

a further increase in investment expenditure, and so on.
• This process occurs in upswing phase of the business cycle.

Similarly, during the recession and bust stages, a reduction in investment leads to a fall in national income via multiplier implications, which leads to less aggregate demand.
• This then, by the accelerator principle, will result in further discouragement for investment expenditure and possibly cancellation of intended investment projects.
• Together the multiplier and accelerator effects exaggerate the consequences for economic activity (real GDP) of any initial small changes in consumer demand, hence accounting for the nature of upswings and downswings.

3.3.2   THE PEAK

Less obvious, perhaps, is why a boom, once it is underway, comes to an end or why, once an economy goes into a slump, the end result is not total economic collapse. The explanation relates to *turning points* in the business cycle.

First it must be established that, in the short run, there *is* a maximum level of output – that associated with full employment. This is why there is a classical stage of the AS curve, whereafter further increases in AD lead only to increases in price levels and not real output.

• **bottlenecks/shortages**: in a period of economic expansion economic bottlenecks eventually emerge. Notably shortages in labour and certain labour skills occur as full employment is neared, and shortages in raw materials may also arise. Infrastructure bottlenecks can also restrict growth to a short-term maximum level, as experienced by Australia in the form of clogged ports in 2007/08 particularly.

• **high interest rates**: a combination of high domestic investment and the RBA's contractionary policy should result in high interest rates. This increases the opportunity cost of consumption and investment, hence encouraging saving and discouraging investment, leading to a fall in AD.

• **inflation**: as the cost of credit increases and labour/resource shortages arise, the overall effect is firms facing rising production costs – cost-push inflation. High levels of aggregate demand are also likely to drive demand-pull inflation. Eventually the rate of inflation will outpace the rate of growth in income, leading to falls in consumption and aggregate demand.

• **fiscal policy**: inflationary pressures may also prompt government action to deflate demand through contractionary fiscal measures, which again will incite reverse multiplier and accelerator implications.

• **import levels**: as import levels rise with national income, a period of economic expansion will result in increased import expenditure, thus reducing aggregate demand.

• **exchange rate**: strong economic performance may attract foreign investment into Australia, appreciating the AUD. Furthermore, export-driven economic upswings and booms (as was the case for Australia in 2007/08 and the 2009/10 upswing) may further appreciate the AUD. This harms international competitiveness for export industries and also makes imports more attractive, hence overall harming AD.

3.3.3   THE TROUGH

• **subsistence consumption/capital stock**: there exists a minimum level of national output required for subsistence – national output cannot fall below this level. There is also a minimum level of capital stock required by firms to produce this minimum output. Throughout a downswing, disinvestment (due to deprecation of capital) will occur as firms cease investment in response to weakening economic conditions. However, as time progresses there will come a point where the level of capital stock falls below that required to produce the output necessary for subsistence. At this point investment will take place.

• **interest rates**: after a period of economic contraction, a combination of market forces and the RBA's expansionary policy setting should result in reduced market interest rates that encourage credit-financed growth in spending, thus stimulating aggregate demand.

• **↓AUD/↓ inflation ⇒ ↓M/↑X**: the AUD is likely to be relatively low during a period of weak economic activity due to a lack of foreign confidence and hence decreased net investment into Australia. This will make imports more expensive and less attractive, while increasing export industry competitiveness. Low inflation over a period of weak growth may also benefit export competitiveness. Overall, net exports will improve and hence so too will AD.

• **fiscal policy**: expansionary fiscal policy (e.g. the Rudd government's praised fiscal stimulus packages offered in 2008/09 in response to the GFC), also aid in beginning an upswing, as increased G will begin multiplier/accelerator effects on the economy.

3.3.4   FURTHER CONTRIBUTORS TO INSTABILITY

External shocks, e.g.:

- GFC in 2008/09
- 2010/11 Queensland Floods
- 2011 Cyclone Yasi – billions of dollars worth of sugar cane and banana crops lost

4   MODELS

4.1   AD/AS

The AD/AS framework can be used to demonstrate changes in price levels and real GDP in response to a change in AD or AS.

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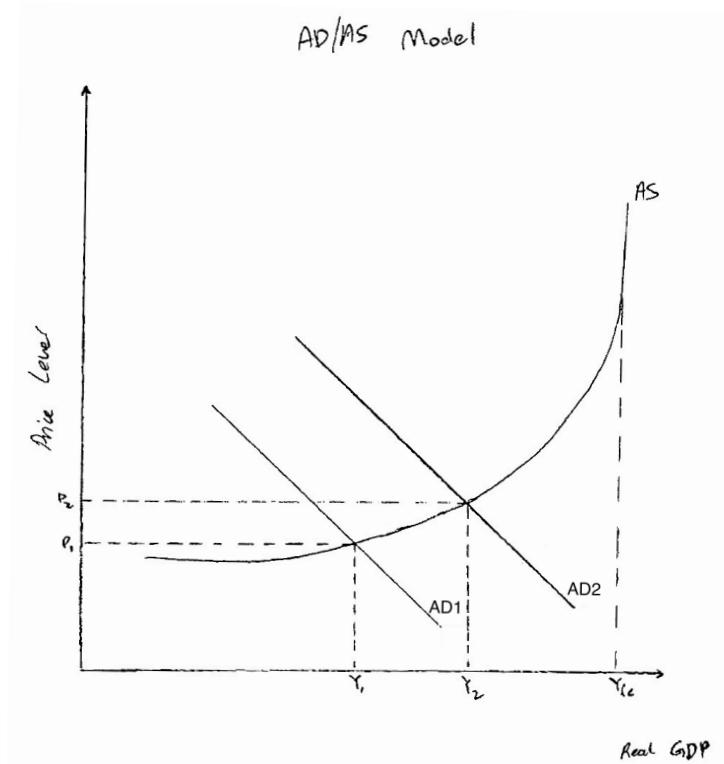
Figure 24: AD/AS Model – Lower Turning Point
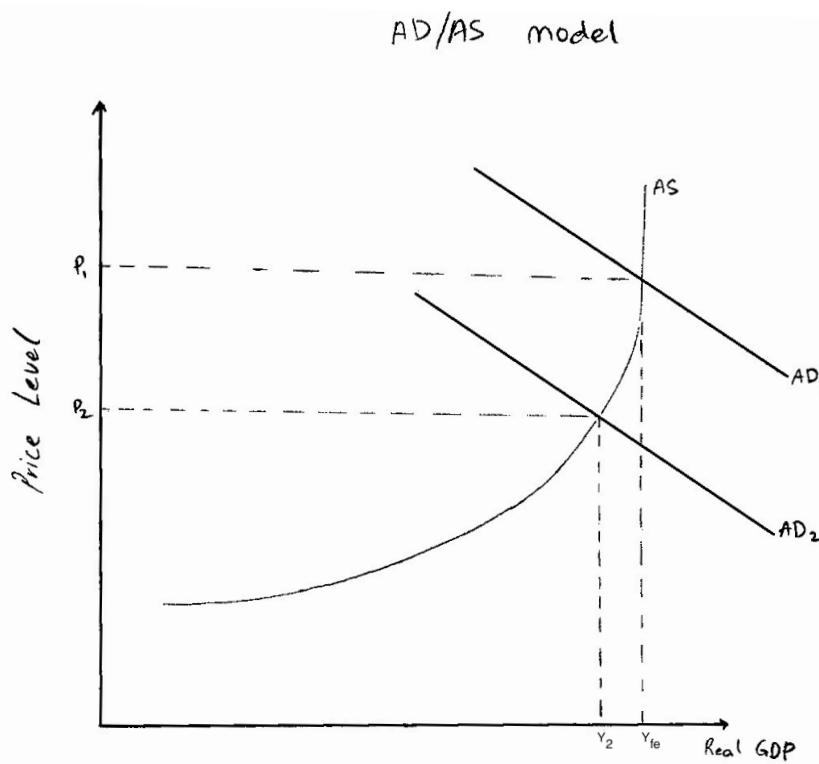
Figure 25: AD/AS - Upper Turning Point

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4.2   AE

Note that in AE models, inflationary/deflationary gaps arise when the equilibrium level of income does not equal that associated with full employment. Thus, the level of full employment must be specified to analyse whether a level of aggregate expenditure is inflationary or deflationary or neither.
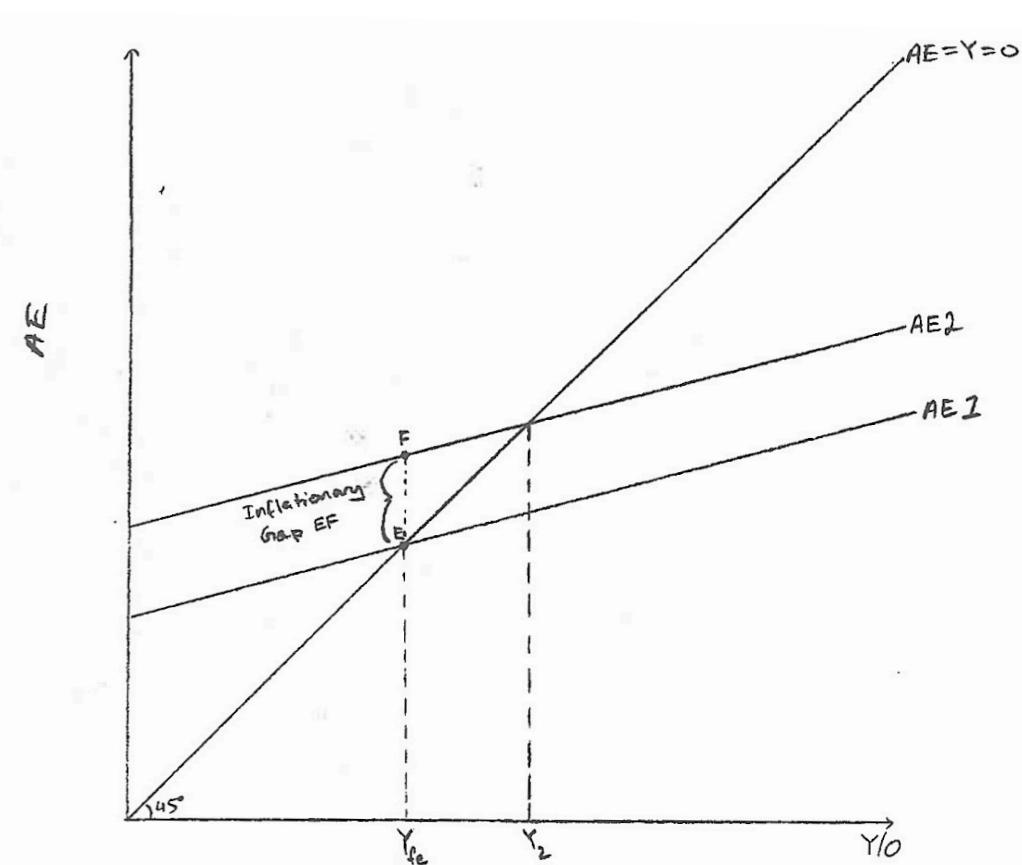
Figure 26: AE Model - Inflationary Gap

5 AUSTRALIAN STATISTICS

5.1 GDP GROWTH

Figure 27: Annual GDP Growth Rate

The Gross Domestic Product (GDP) in Australia expanded 3.1 percent in the second quarter of 2014 over the same quarter of the previous year.

Note the sharp falls in 2008/09 and 2010/11 were due to the GFC and the Queensland and Victoria floods respectively. Such exogenous events, although unaccounted for in the model, can significantly disturb business cycles, as shown above.

5.2 BUSINESS CYCLE

In Australia, the average length of a business cycle from 1960 to 2009, according to the Melbourne Institute of Applied Economic and Social Research, was 52 months. The average duration of a contraction period (peak to trough) was 19 months and the average expansion period was 32 months. The period of a downswing is often shorter than the period of an upswing.

Why Downswings Periods are Shorter than Upswing Periods

It is a much faster and easier decision to save or cancel/postpone an investment project as this the 'safe' alternative that involves little risk; any slight negative sentiment on the state of the economy may easily defer consumption/investment decisions. On the other hand, a comparatively larger level of confidence in the economy is required for large investment or durable consumption decisions to be undertaken, hence the time required for multiplier/accelerator effects to fully take place is longer than in a downswing.

6 INDICATORS

6.1   LEADING INDICATORS

Leading indicators are indicators that usually change before the economy as a whole changes. They are therefore useful as short-term predictors of the economy.

Examples include: building approvals, share prices, firms' inventory levels, business confidence.

6.2   COINCIDENT INDICATORS

Coincident indicators change at approximately the same time as the whole economy, thereby providing information about the current state of the economy.

Examples include: GDP, manufacturing output, production of building materials, sales of consumer durables, retail sales, interest rates.

6.3   LAGGING INDICATORS

Lagging indicators are indicators that usually change after the economy as a whole does. Lagging indicators react to developments that occurred some time in the past.

Examples include: unemployment levels, consumer debt levels, wages growth.

6.4   OTHER CLASSIFICATIONS

Economic indicators can also be categorised by their relationship to other economic data.

A procyclical indicator is one that moves in the same direction as the level of economic activity; a positive relationship exists between the level of economic activity and a procyclical indicator. GDP is an example of a procyclical indicator.

Countercyclical indicators move in the opposite direction to the level of economic activity; a negative relationship exists between the level of economic activity and a countercyclical indicator. The unemployment rate is an example of a countercyclical indicator.

IX   THE AGGREGATE EXPENDITURE MODEL

John Maynard Keynes (1883-1946) was a British economist whose ideas have had an overwhelming influence on modern macroeconomics. He advocated interventionist government policy, by which governments would use fiscal and monetary policies to smooth out the adverse effects of business cycles, economic recessions, and depressions. His ideas are the basis of the school of thought known as Keynesian economics.

1   DEFINITIONS

Aggregate Demand is the total demand for final goods and services in the economy at a given time and price level.

Savings refer to that part of income that is not spent on current consumption (deferred consumption).

Consumption refers to household spending on goods (both durable and non-durable) and services.

Investment refers to spending on new capital goods and additions to inventories (non-residential investment), in addition to spending on new housing (residential investment).

Government expenditure refers to total government expenditure on final goods and services and investment in capital equipment and infrastructure (but excludes transfer payments, e.g. welfare).

> - **G1**: government current expenditure; acquisition of goods and services for current use, to directly satisfy the individual or collective needs of the community.
>
> - **G2**: government capital expenditure; acquisition of goods and services intended to create future benefits, such as infrastructure investment or research spending.
>
> - $G = G1 + G2$

Net Exports refers to the difference between the value of exports and imports (X-M).

Autonomous expenditures refer to expenditures that do not vary with the level of real income.

Induced expenditures refer to expenditures that vary with the level of real income.

The **multiplier** is a factor of proportionality that measures how much the level of real income changes in response to a change in an autonomous expenditure. It is numerically defined as the ratio of the change in income to the change in expenditure (that caused the income change).

The **accelerator principle** is an economic concept that draws a connection between output and capital investment. According to the accelerator principle, if demand for consumer goods increases, then the percentage change in the demand for machines and other investment

necessary to make these goods will increase even more (and vice versa). In other words, if income increases, there will be a corresponding but magnified change in investment.

2 FORMULAE

- $GDP = C + I + G + (X - M)$ note I refers to actual investment

- $AE = C + Ip + G + (X - M)$ Ip refers to planned investment

- $Y = C + S$

- $C = f(Y) = bY_d + a$ consumption is a function of income [b=MPC, a=autonomous component of consumption, Y_d=disposable income]

- $S = (MPS)Y_d - a$
       $= (1 - b)Y_d - a$

- $MPC = \frac{\Delta C}{\Delta Y}$ [MPC≡marginal propensity to consume]

- $MPS = \frac{\Delta S}{\Delta Y}$ [MPS≡marginal propensity to save]

  - $MPC + MPS = 1$

- $MEC = \frac{Expected\ Rate\ of\ Return\ from\ Investment}{Cost\ of\ Investment}$ [MEC≡marginal efficiency of capital]

  - the MEC is compared to the rate of interest

- $APC = \frac{C_{total}}{Y_{total}}$ [APC≡average propensity to consume]

- $APS = \frac{S_{total}}{Y_{total}}$ [APC≡average propensity to save]

  - $APC + APS = 1$

Note that as income rises, APS increases (and APC falls) [$APC \to MPC, APS \to MPS$] as the autonomous component of consumption becomes less significant.

Investment Multiplier:

- $k = \frac{1}{1 - MPC} = \frac{1}{MPS}$ [3 sector]

Complex multiplier:

• $k = \frac{1}{1-MP[spend]} = \frac{1}{MPW} = \frac{1}{MPS+MPT+MPM}$ [5 sector]

MPW=MP[withdraw], MPS=MP[save], MPT=MP[tax], MPM=MP[import]

From a circular flow model perspective (5 sector), equilibrium occurs when savings equal injections:

• $S + T + M = I + G + X$

3   COMPONENTS OF AGGREGATE EXPENDITURE

Component	Symbol	Size [volatility]	Description
Consumption	C	54% [most stable]	Expenditure on durables, non-durables, and services.
Planned Investment	I_P	14-26% [most volatile]	Spending on capital goods, including machinery, and new housing (excludes addition to inventories).
Government	G	23% [quite stable]	G1 – current exp. which provides for day-to-day functions of gov't (operating costs) [stable]. G2 – capital expenditure for future needs (social infrastructure) [volatile].
Net Exports	NX	$\pm 2\%$ [quite volatile]	Value of exports less the value of imports.

Table 5: Overview of the Components of Aggregate Expenditure

3.1   CONSUMPTION EXPENDITURE

The largest component of GDP (AE) is **consumption expenditure**, which comprises ~54% of the total [2009-2012 has been 54%]. C (consumption expenditure) is the largest and most stable category of aggregate expenditure, fluctuating between 52-55% of GDP.

In the Keynesian cross model, essential consumption (on needs such as food) constitutes autonomous consumption (hence the non-zero y-intercept of the consumption function), while discretionary consumption is induced.

3.1.1   TYPES OF CONSUMPTION EXPENDITURE

• **non-durable goods** refer to goods consumed within a short period after purchase (up to three years)

• e.g. food, petrol, clothing, footwear

• mostly comprised of **essential spending** (not discretionary)

• fairly stable over time

• **~35% of C**

• **durable goods** refer to goods that last for long periods of time (are not consumed in one use), with an expected lifespan of over three years.

• e.g. fridges, ovens, furniture, cars

• spending on durable goods is termed **discretionary** (non-essential; can be postponed or brought forward depending on economic circumstances).

• **~15% of C**

• **services** refer to intangible products (intangible economic goods).

• e.g. health [e], rent [e], travel [d], entertainment [d]   [e=essential d=discretionary]

• **~50% of C**

3.1.2   FACTORS AFFECTING

Expenditure on household necessities is generally stable, regardless of the state of the economy. In depressed times, households may draw on savings to maintain basic consumption. However expenditure on durable goods and luxuries is more likely to vary according to the state of the economy, as discretionary spending is influenced by factors such as expectations about future job security, income, wealth, and the capacity to borrow.

The level of consumption is the economy is influenced by:

• **cost of credit/interest rates**: credit enables consumers to purchase expensive items by being able to pay for them over time. Interest rates represent the price of money – the cost of borrowing or the gain from saving. Falling interest rates would increase C as:

• repayments on borrowed funds fall (taking a small slice of disposable income; for many households, the monthly mortgage payment is the largest part of their budget),

• and the opportunity cost of consumption falls (saving becomes less attractive due to lower return).

Rising interest rates, on the other hand, will provide more incentive to save rather than spend, due to the higher opportunity cost of consumption.

• **assets**: households that hold property or shares tend to feel wealthier when the value of their assets are rising. This may result in a perceived stronger financial position for asset owners, and hence lead to increased consumption and reduced emphasis on savings. E.g. spending on durable goods increased during the boom in share and house prices during the early 2000s. Conversely, if

assets values fall, households will increase their savings to consolidate their financial position (e.g. GFC 2008-09).

• **disposable income levels (LARGEST factor)**: disposable income refers to the income households receive, less government income tax. There is a positive, linear relationship between disposable income and consumption (intuitively, households will consume more at a higher level of income, to satisfy more wants). The **consumption function** represents this relationship graphically.

• **distribution of income**: households individually have different marginal propensities to consume (MPCs). Lower income households have a higher MPC (than high-income households) due to the greater proportion of income spent on necessities. A redistribution of income towards this group will thus increase aggregate consumption.

• **consumer expectations**: expectations are positive or negative sentiments that people have about the state of the economy. Individual attitudes to the functioning of the economy affect the level of aggregate consumption. Their expectation will be shaped by numerous factors including personal debt levels, job security, and economic conditions. News reports are a driver of expectations. Consumer expectations are likely to only affect discretionary spending (non-essential) on items such as holidays or durable goods.

• **taxation**: a change in the level of personal income tax will effectively alter household disposable income levels. Changes in GST or excise taxes will also impact on consumption. [note changes in monetary policy are encompassed under the 'cost of credit/interest rates' point]

3.2 PRIVATE INVESTMENT

Keynes argued that, in the short run, investment is best viewed as an **autonomous expenditure**; one that is independent of people's income. In other words, business investment decisions, at least in the short run, don't hinge on people's current income and spending. Instead, investment is primarily a function of current sales relative to plant capacity, expected future sales, and the interest rate. To isolate the forces pushing an economy toward an equilibrium level of output, the Keynesian model assumes that the planned level of investment expenditure is constant with respect to current income.

3.2.1 TYPES OF PRIVATE INVESTMENT

• **investment** refers to spending on new capital goods and additions to inventories (non-residential investment), in addition to spending on new housing (residential investment).

> • a **capital good** refers to one that is used in the production process to make other goods.

• **planned investment** refers specifically to spending on capital goods (that are used by firms to produce final goods and services). This includes purchase of machinery, buildings, and residential investment (new housing).

• Most volatile component of AE; 14-26% of GDP in the last 40 years. 23% in 2010-11.

• Net Investment = Gross Investment – Deprecation Investment

> • deprecation investment, or replacement investment, refers to replacement of deprecated capital goods.

• gross private investment includes three categories:

- o Business investment: privately funded expenditure on capital goods.
- o Housing investment: private expenditure on new housing
- o Inventories: unsold goods [note that inventories are excluded from investment spending in the AE equation]. AE includes *Ip*, *planned investment*, while *actual investment* comprises planned investment plus inventories.

3.2.2   FACTORS AFFECTING

• **profitability**: investment is linked to profitability in the business sector. Many firms retain a portion of their profits for expansion (e.g. to purchase the most technologically up-to-date capital equipment), hence investment will usually follow periods of high profits. In Australia, levels of business fixed investment lags approximately a year behind the level of corporate profitability.

• **risk**: the returns from investment come in the future; since the future is unknown, investment entails a risk factor. In economics, risk is defined as the chance that the actual outcome from an investment will be different from the expected outcome. Lower risk environments encourage investment. The level of risk is influenced by domestic political conditions/decisions, overseas events, and changes in consumer tastes. For example, a stable macroeconomic environment provided by the government may decrease perceived risk and encourage investment.

• **business expectations**: business expectations are the main determinant of investment levels (see final point made under 'real interest rates'). Business expectations refer to what businesses think about the current level of economic activity, likely trends for the future, and the impact these will have on profitability. Positive business expectations, perhaps based on high current economic activity, levels of sales, and enquiries from consumers, will increase the level of investment (and vice versa).

• **real interest rates**: the real rate of interest and the level of investment are inversely related, ceteris paribus. This is due to two reasons:

> • higher real interest rates increase the cost of borrowing and lead to higher repayments

> • higher real interest rates increase the opportunity cost of money, hence the opportunity cost of investment increases when interest rates are increased (e.g. if business interest rates were 12% p.a., the prospective rate of return on capital equipment must exceed 12% p.a. before a rational firm would consider investment)

However, this is not always the case. When business expectations are positive (e.g. during an upswing), investment may occur despite rising interest rates. On the other hand, during a trough phase, negative expectations may reduce investment spending despite low interest rates (e.g. GFC 2008-09; despite low interest rates, private investment spending fell).

• **government activities**: governments can also enact MER (microeconomic reform) to increase efficiency, competitiveness, and profit levels for firms and hence encourage investment.

Furthermore government policy can also directly influence investment expenditure by providing tax incentives to firms to invest in new technology.

3.3   GOVERNMENT EXPENDITURE

Government spending includes all federal, state, and local government expenditure on final goods and services and public investment in capital equipment and infrastructure.

• ~23% of GDP/AE

• 70% on consumption [G1], 30% on capital [G2]

> - G1: current expenditure that provides for the day-to-day needs of the government (similar to operating expenses), e.g. wages for public servants. More stable than G2.

> - G2: government capital expenditure (on social overhead capital), e.g. spending on schools, hospitals, roads, sewage systems. More volatile than G1.

• tends to be stable due to the essential roles that the government must fulfill on a year-to-year basis.

3.3.1   FACTORS AFFECTING

• G1 spending is usually associated with programs that have ongoing current funding requirements (salaries, operating costs) such as programs in health, education, defence, as well as the government's own operating costs. This makes G1 quite a stable category. However some types of G1 vary in line with economic conditions and automatically change with the business cycle (known as *automatic stabilisers*) such as welfare payments.

• the government will also alter expenditure levels to stabilise the business cycle (e.g. after the GFC in 2008-09, the government introduced a stimulus package to try and boost the overall level of economic activity in order to prevent potential recession).

3.4   NET EXPORTS

$$NX = (X - M)$$

• imports must be subtracted in the AE equation since some C, I, and G is on foreign products, and AE measures expenditure on domestic goods and services.

• individually, the X and M categories are large, however NX is relatively small.

• NX tends to fluctuate around ±2% of Australia's GDP. In 2010-11, NX was +1.7% of GDP.

• Note that in the Keynesian AE model, exports are assumed to be autonomous while imports are induced. Thus, Keynes theorized that there is a negative relationship between a nation's net exports and its aggregate income.

Richard Tien

3.4.1   FACTORS AFFECTING

• **domestic/overseas conditions [x]**: export levels are influenced by economic conditions overseas, as well as domestic climatic conditions (domestic agricultural production rises and falls due to the vagaries of seasons, such as drought). Overseas demand for Australian commodity exports fluctuates according to overseas economic conditions (e.g. strong demand for Australia's resource exports due to high growth in India/China, however this growth in recent times has been dampening and so too have our mineral export prices). Strong world economic growth will increase X and hence also increase NX, ceteris paribus.

• **domestic levels of economic growth [m]**: domestic economic growth influences import expenditure. Australian imports are relatively elastic with respect to GDP (e.g. 5 % increase in GDP leads to a greater than 5% increase in imports), due to the small size of Australia's manufacturing sector. In periods of high economic activity, consumers import goods that cannot be sourced locally, and businesses purchase capital not available domestically. This increases M and hence decreases NX, ceteris paribus.

• **exchange rate [x/m]**: the exchange rate is an important determinant of the value of X and M. When the AUD appreciates, Australian export industries become less internationally competitive as their export prices in foreign markets rise. At the same time, an appreciation will decrease the price of imported goods and services, hence making imports more attractive and increasing the value of imports. Thus an appreciation will have a contractionary effect on the economy, decreasing NX (and vice versa).

• **terms of trade [x/m]**: the terms of trade also affects the value of NX. An increase in Australia's XPI will increase the value of X while the (short-run) inelastic nature of Australia's imports will see a decrease in the value of M if the MPI decreases. A rise in Australia's terms of trade will tend to increase Australia's NX and has an expansionary effect on the economy (and vice versa).

4   THE AE MODEL

4.1   THE CONSUMPTION FUNCTION

The largest component of planned aggregate expenditures is consumption (C). Keynes believed that people's current income primarily determines their consumption spending. According to Keynes, disposable income—one's income after taxes—is by far the most important determinant of current consumption. If disposable income increases, consumers will increase their expenditures.

• $C = f(Y) = bY_d + a$ consumption is a function of income [b=MPC, a=autonomous component of consumption, Y_d=disposable income]

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Exhibit 1

Aggregate Consumption Function

The Keynesian model assumes that there is a positive relationship between consumption and income. However, as income increases, consumption expands by a smaller amount. Thus, the slope of the consumption function (line C) is less than 1 (less than the slope of the 45-degree line).
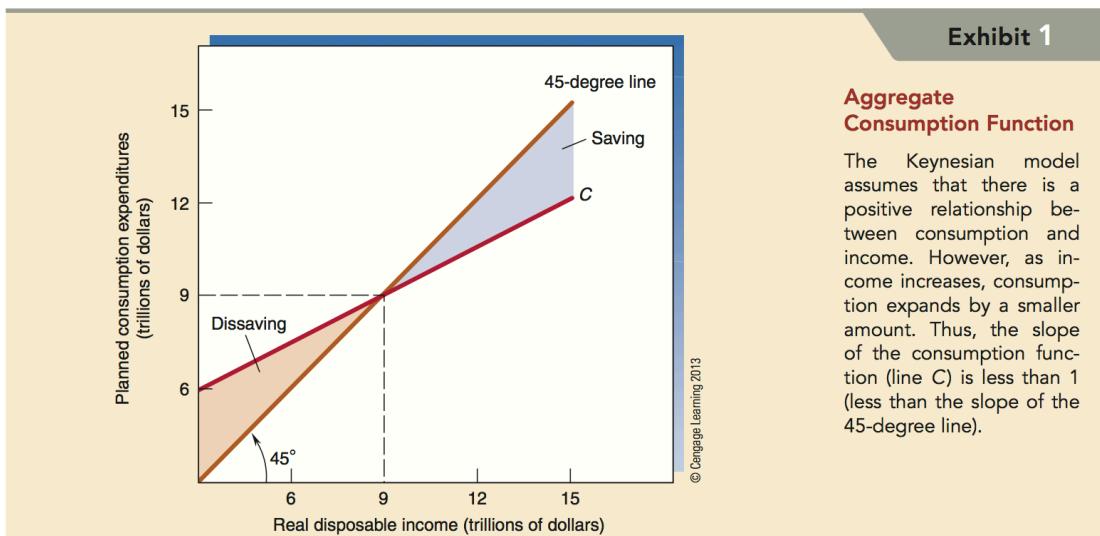
Figure 28: The Consumption Function

At low levels of aggregate income (less than $9 trillion), the consumption expenditures of households will exceed their disposable income. When income is low, households *dissave*—they either borrow money or draw from their past savings to purchase essential consumption goods. As income increases, consumption will also increase, but not as rapidly as income. This indicates that the marginal propensity to consume is less than one; some fraction of additional income is allocated to saving.

At $9 trillion consumption and income are equal; this is often referred to as the 'breakeven' point. As income expands beyond $9 trillion, household income will exceed consumption and saving will be positive. Note that the consumption function is flatter than the 45-degree line. This indicates that as income expands, households increase their consumption by less than their increase in income.

• Note that a savings function, S, can also be added to the graph. Since $Y = C + S$

$$S = Y - C$$

 i.e. the savings function is equal to the 45° line less C. When S is below the x-axis, dissaving occurs, and vice versa. The point at which $S = 0$, obviously, is the breakeven point.

Furthermore,

$$• S = (MPS)Y_d - a$$

4.2   THE AGGREGATE EXPENDITURE FUNCTION

When the investment and government expenditure, as well as net exports, are added to the consumption function, the aggregate expenditure curve is the result.
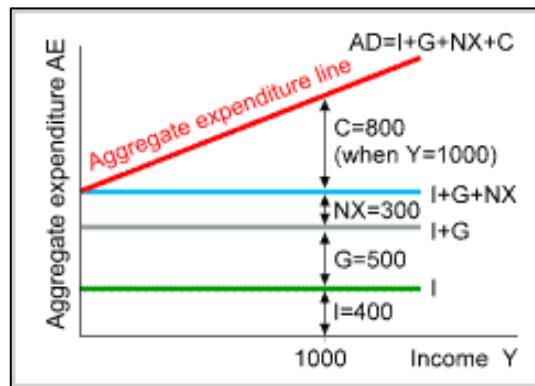
Figure 29: Aggregate Expenditure Curve & Components

4.3   EQUILIBRIUM

Equilibrium is present in the Keynesian AE ***model when planned aggregate expenditures equal the value of actual output.*** When this is the case, businesses are able to sell the total amount of goods and services that they produce. There are no unexpected changes in inventories. Thus, producers have no incentive to either expand or contract their output during the next period. This meets the definition of equilibrium – no tendency for change in the levels of income or output at that point in time. In equation form, Keynesian macroequilibrium is attained when

$$\underbrace{\text{Total output}}_{\text{Real GDP}} = \underbrace{\text{Planned } C + I + G + NX}_{\text{Planned aggregate expenditures}}$$

Hence the 45° line represents possible equilibrium points.

Aggregate Expenditures and Keynesian Equilibrium

Here the data of Exhibit 3 are presented within the Keynesian graphic framework. The equilibrium level of output is $14.0 trillion because planned expenditures $(C + I + G + NX)$ are just equal to output at that level of income. At a lower level of income, $13.7 trillion, for example, unplanned inventory reduction would cause business firms to expand output (right-pointing arrow). Conversely, at a higher income level, such as $14.3 trillion, accumulation of inventories would lead to lower future output (left-pointing arrow). Given current aggregate expenditures, only the $14.0 trillion output would be sustainable in the future. Note that the $14.0 trillion equilibrium income level is less than the economy's potential of $14.3 trillion.

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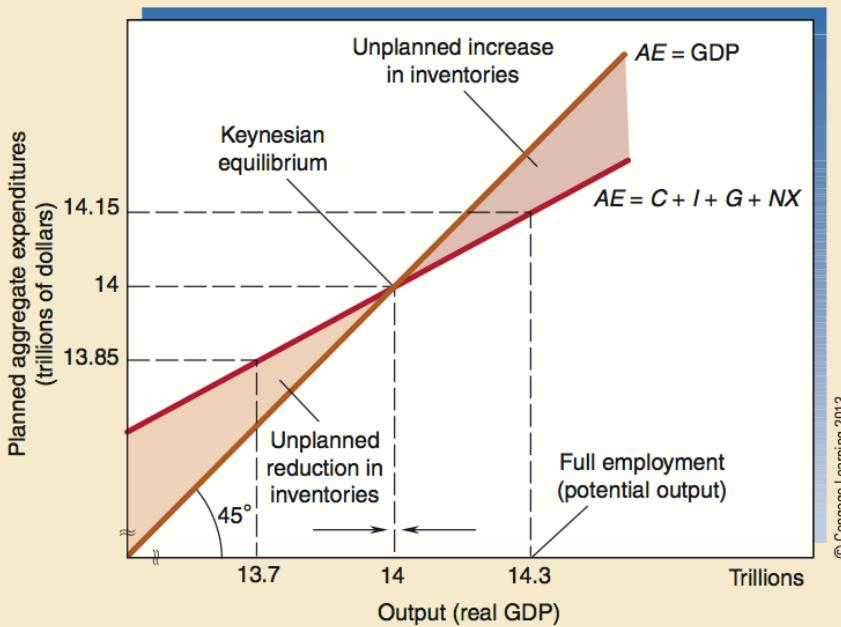
Figure 30: Keynesian Model

Equilibrium in the Keynesian model occurs where AE equals output or income. This is where the AE curve intersects the 45° line.

If the level of income is either above or below the equilibrium level, then planned AE will not equal aggregate output and firms' inventories will change, signalling them to increase or decrease production. The economy will automatically move towards the equilibrium level.

4.3.1   INCOME LEVEL HIGHER THAN EQUILIBRIUM

If the level of income/output is at $14.3 trillion (above the equilibrium level of $14 trillion), aggregate expenditure is equal to $14.15 trillion; insufficient to purchase the output produced by firms. Thus firms will have unsold output of $0.15 trillion, which will add to their stock of inventories. In response to accumulating inventories, firms will reduce their future production. Subsequently, employment will decline and national output/income will fall until equilibrium is established.

4.3.2   INCOME LEVEL LOWER THAN EQUILIBRIUM

Suppose output is temporarily at $13.7 trillion. At that output level, AE=$13.85 trillion, thus aggregate expenditures exceed aggregate output (by $0.15 trillion). Firms thus sell more than they currently produce by drawing from inventories. Firms will react to falling inventories by

hiring more workers and expanding output. This will increase national income/output until equilibrium is re-established.

Cheat! The 45° line can be thought of as a 'supply' curve, and the AE curve can be thought of as the 'demand' curve; whenever S>D, a surplus exists and inventories will increase, and whenever S<D, a shortage exists and inventories will fall.

4.3.3   EQUILIBRIUM & FULL EMPLOYMENT

It is important to note that there is nothing particularly special about the 45° line, other than it representing possible equilibrium points. Note that in the AE model above, the economy's equilibrium output of $14 trillion is less than the income/output level associated with full employment ($14.3 trillion). At $14.3 trillion aggregate expenditures are insufficient to purchase the output produced; output will remain below its potential and unemployment will persist. Within the Keynesian *AE* model, equilibrium need not coincide with full employment. If full employment is to be attained, there must be an increasing in AE. As in the model below, full employment can be achieved in AE increases from AE1 to AE2. Expansionary fiscal policy, for instance, can be used to achieve this objective.

Shifts in Aggregate Expenditures and Changes in Equilibrium Output

When equilibrium output is less than the economy's capacity, only an increase in expenditures (a shift in *AE*) will lead to full employment. If consumers, investors, governments, or foreigners would spend more and thereby shift the aggregate expenditures schedule to AE_2, output would reach its full-employment potential ($14.3 trillion). Once full employment is reached, further increases in aggregate expenditures, like those shown by the shift to AE_3, will lead only to higher prices. Nominal output will expand (the dotted segment of the *AE–GDP* schedule), but real output will not.
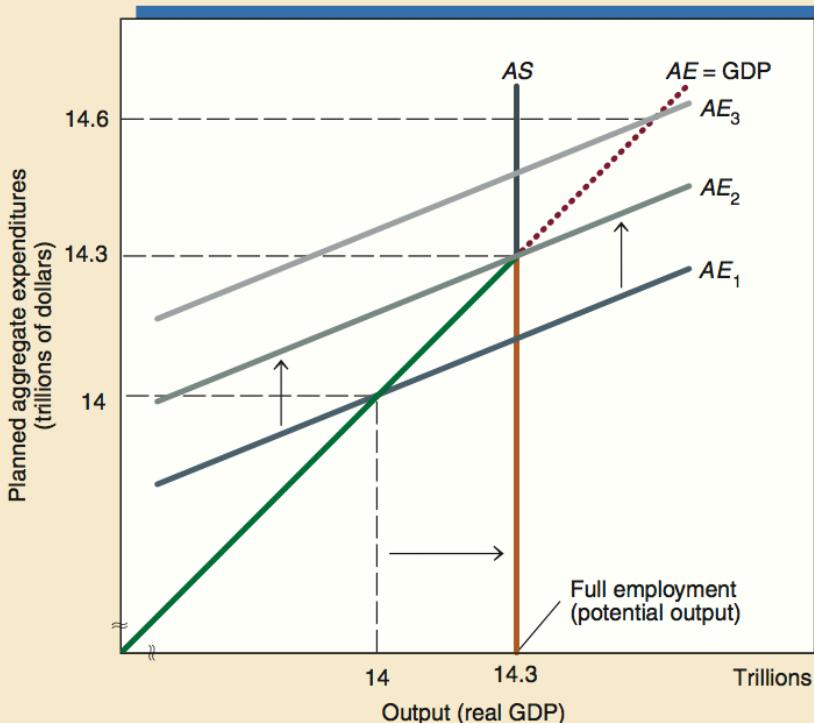
Figure 31: Shift in AE in the Keynesian Model

Note that after full employment is achieved, further increases in AE lead only to inflationary pressures.

Keynesians argue that control of aggregate expenditures is the crux of sound macroeconomic policy. If we could ensure that aggregate expenditures were large enough to achieve capacity output, but not so large as to result in inflation, then maximum output, full employment, and price stability could be attained. This central point of Keynesian analysis is easily observable within the framework of the aggregate expenditure model.

5   THE MULTIPLIER

Changes may occur in any of the components of AE. To understand how such changes affect the rest of the economy, it is necessary to understand that expenditure does not just have a 'one-off' impact on the economy. Economists use a model called the multiplier to explain this process. The **multiplier** is a factor of proportionality that measures how much the level of real income changes in response to a change in an autonomous expenditure. It is numerically defined as the ratio of the change in income to the change in expenditure (that caused the income change).

Examples of events that have had significant multiplier implications in the Australian economy include the Sydney Olympic Games (2000), Millennium drought (2000s Australian drought), and the Elizabeth Quay development in Perth (2013).

5.1   INTUITIVELY

Suppose a mining company decides to spend $10b on a new mining venture in WA. The initial (new) investment creates income for other contracted firms and workers (e.g. engineers, architects, construction workers). These people will then spend part of that income on various goods and services (e.g. food, clothing, entertainment). This spending will then flow to other groups in the economy as income; this spending cycle will continue indefinitely. The initial increase in investment is said to cause a multiplied change in income.

Note that the full implications of the multiplier do not come into effect immediately, as there are time delays between spending cycles.

5.2   MATHEMATICALLY

Suppose the MPC is 0.6. The investment in the mining venture ($10b) will create new income of $10b for people working on the project. These people will then go on to spend $10b×0.6 = $6b on goods and services (and save the other $4b). This $6b spent will flow to other people as income in the next time period. $6b×0.6 = $3.6b of this income will further be spent on goods and services (and the other $2.4b saved), which becomes income for another group of people. In the following time period, another $3.6b×0.6 = $2.16b will be spent on goods and services, and so on. This cycle of 'one man's spending creating another man's income' will continue indefinitely (although eventually the change in income will be negligible in size).

The formula of the multiplier (k) can also be mathematically derived:

$$let\ m = MPC, x = \Delta AE$$
$$\Delta Y = x + mx + m^2x + m^3x + \cdots$$
$$\Delta Y = x + m(x + mx + m^2x + m^3x + \cdots)$$
$$\Delta Y = x + m\Delta Y$$

$$\Delta Y = \frac{x}{1-m}$$

$$k = \frac{\Delta Y}{\Delta AE}$$

$$k = \frac{\frac{x}{1-m}}{x}$$

$$k = \frac{1}{1-m}$$

$$\therefore \ k = \frac{1}{1-MPC} = \frac{1}{MPS}$$

5.3   GRAPHICALLY

The multiplier can also be demonstrated graphically, as an increase in aggregate expenditure causes the equilibrium level of income to increase by a larger amount.
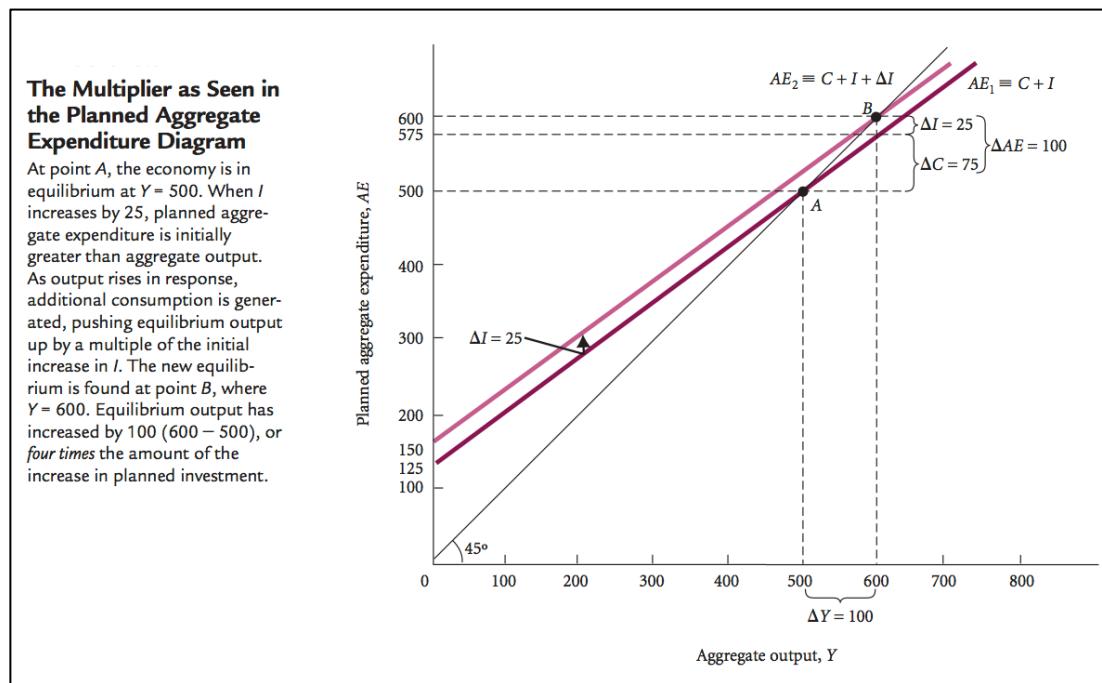
Figure 32: The Multiplier in the Keynesian Model

5.4   SUMMARY/MISC

• clearly (both from the mathematical formula and intuitively), the higher the MPC, the higher the re-spending effect, and hence the higher the multiplier (k)

• the multiplier always has a value greater than one, as the MPC must be greater than zero

• the multiplier process also applies for any decrease in autonomous spending. E.g. if investment falls, then the level of income in the economy will fall by a greater amount.
• the size of the multiplier in the Australian economy is estimated to be between 2 and 2.5

• the multiplier applies to any autonomous change in expenditure (could be autonomous consumption, investment, government spending, or net exports). E.g.

    - increase in mining exports from resources boom

- increase in government expenditure on new roads

- increase in housing construction

• generally, any autonomous increase in one of the components of AE will be multiplied to result in a higher level of real GDP (and vice versa)

• when we adjust the MPC for taxes and imports, we can refer to it as the marginal propensity to spend. Thus $k = \dfrac{1}{1 - MP[\text{spend}]} = \dfrac{1}{MPS + MPT + MPM}$

X   AGGREGATE DEMAND & AGGREGATE SUPPLY

Note:

- The AD model is very useful in illustrating the **impact** of changes in AD on the macroeconomy as it directly addresses the effect on inflation.
- On the other hand, the AE model is very useful in illustrating a **change in a specific component of AE** and the multiplier implication of such a change of the equilibrium level of income/output.

It is often your choice as to which model you choose to use. Although it does not matter much, the guidelines above are useful in determining the better-suited model to aid your discussion.

1   AGGREGATE DEMAND

The **aggregate demand curve** shows the quantity demanded of real GDP at different price levels, holding all other factors constant.

$$AD = C + I + G + (X - M)$$

1.1   DOWNWARD-SLOPE

The AD curve is downward-sloping due to the:

- Income effect: at higher price levels, the real purchasing power of money falls. This leads to a smaller quantity of goods demanded and therefore a lower real GDP.
- Interest rate effect: a rise in the general price level will normally lead to a rise in r, ceteris paribus. This is because given higher prices households and firms face less real purchasing power and hence they will tend to lend less and will wish to borrow more. This decrease in the supply of loanable funds alongside a rise in the demand to borrow will tend to cause interest rates to rise. This will lead to a contractionary affect through various transmission channels (e.g. consumption, investment, asset prices, net exports), hence decreasing AD.
- International economy effect: if the domestic inflation rises relative to other countries, domestic goods and services become less competitive, while imports become more competitive in the domestic market. Hence import expenditure will rise and export expenditure will fall, overall causing a fall in net exports and hence AD.

2   AGGREGATE SUPPLY

Aggregate Supply refers to the total supply of goods and services produced within an economy at a given price level over a given time period. It is represented by the **AS curve**, which describes the relationship between price levels and the quantity of output that firms are willing to provide.

2.1   UPWARD-SLOPE
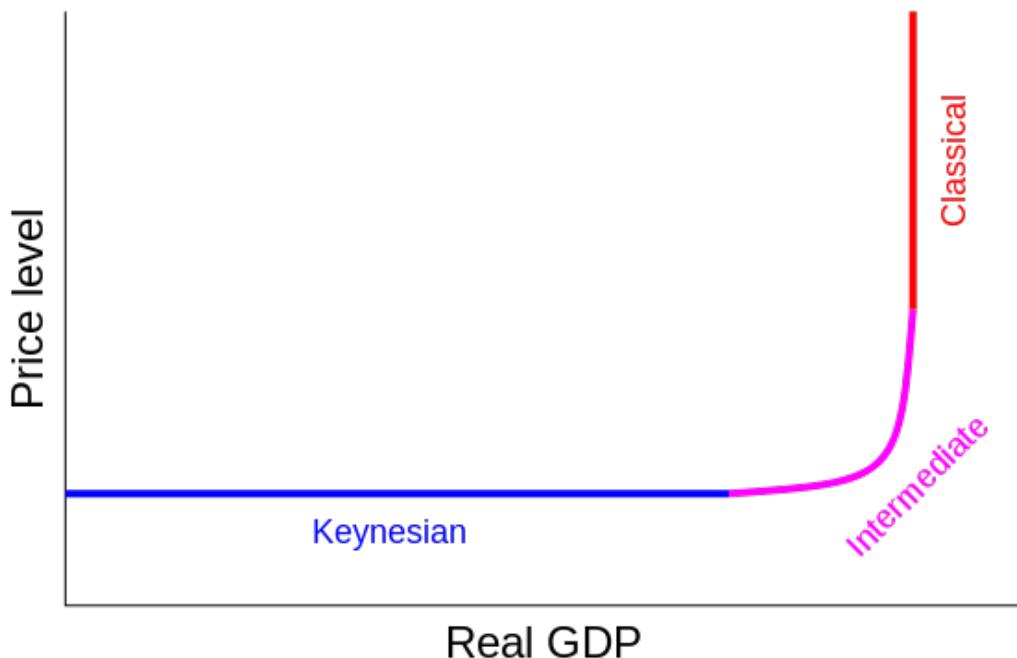
Figure 33: Aggregate Supply Curve

Any economy involves a large number of heterogeneous types of inputs, including both capital equipment and labour. Both main types of inputs can be unemployed. The upward-rising AS curve arises because:

o   Some nominal input prices are fixed in the short run
o   As output rises, more and more production processes encounter bottlenecks

At low levels of demand, there are large numbers of production processes that do not use their fixed capital equipment fully. Thus, production can be increased without much in the way of diminishing returns and the average price level need not rise much, if at all, to justify increased production [Keynesian range].

On the other hand, when demand is high, few production processes have unemployed fixed inputs. Thus, bottlenecks increase as demand increases, thus increasing the price level [intermediate range]. At full employment, any increase in demand and production induces increases in prices [the classical range].

2.1   STAGFLATION

A supply shock (for example an oil shock) can reduce the AS of an economy and in doing so, decrease economic growth whilst increasing cost push inflation. The extreme case of this scenario is known as stagflation where despite low economic growth levels, inflation is high.

3   THE MODEL
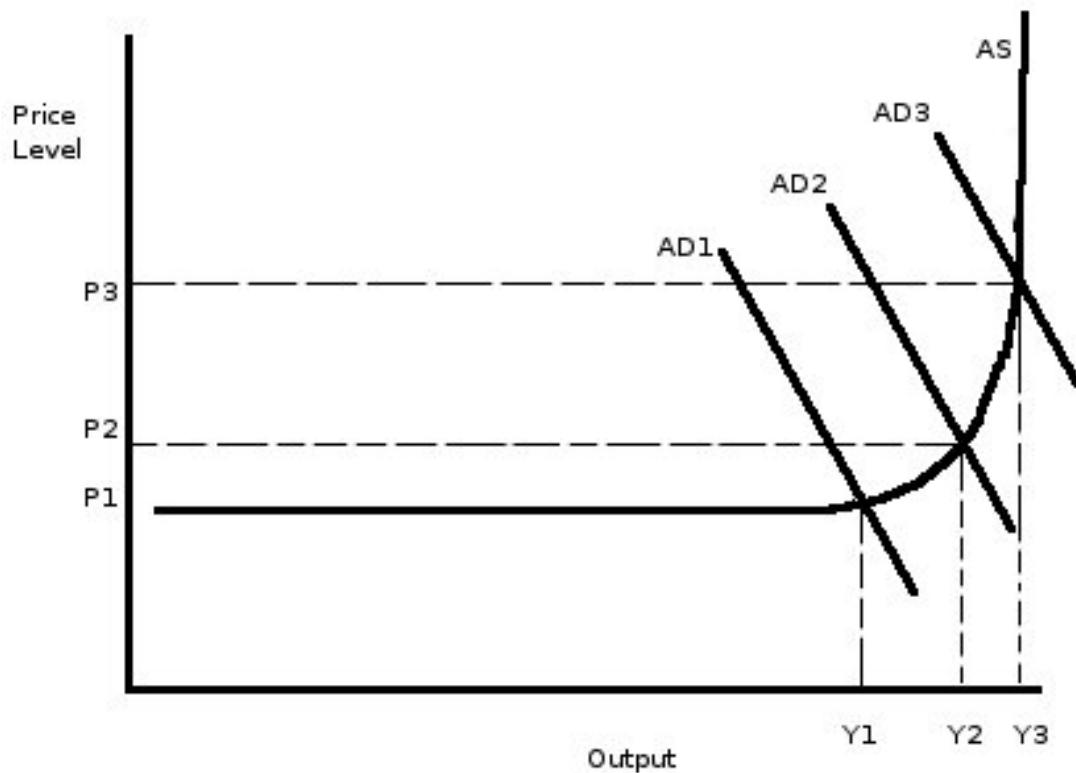
Figure 34: AD/AS Model

The above model illustrates the impact of different levels of AD on the economy.

- o At AD3 full employment is achieved and a higher price level, P3, is incurred. This may be associated with successful expansionary fiscal policy, increasing AD from AD2→AD3.
- o At AD1 there is an underutilisation of resources and a lower price level, P1, exists. This may be associated with a trough phase of the business cycle, where the level of AD has fallen from AD2→AD1.

Price
Levels

Classical
Range

AS

Intermediate
Range

Contractionary
Gap

P_{Eq}

Keynsian Range

AD

Y_{Eq} Y_{FE}

rGDP, Y, O
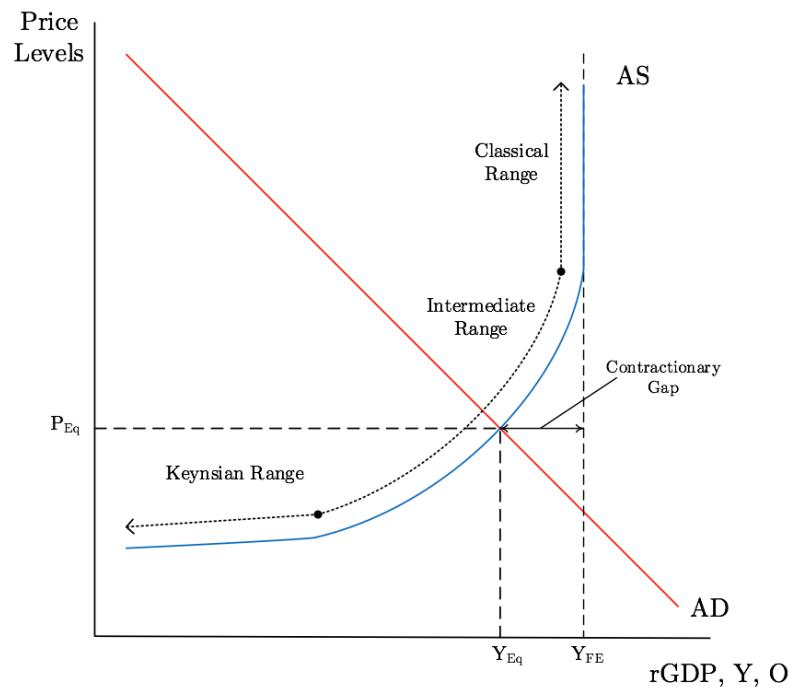
Figure 35: AD/AS Model Showing A Contractionary Gap

XI   ECONOMIC POLICY & OBJECTIVES

1   DEFINITIONS

Internal stability is considered to be achieved when the economy is operating at a rate of economic growth sufficient to achieve full employment whilst maintaining price stability.

External stability refers to the capacity of a country to meet its international financial obligations.

Economic growth is defined as the increasing capacity of the economy to satisfy the wants of its members.

Inflation refers to a sustained increase in the general price level of goods and services in an economy over a period of time.

Price stability occurs when there is little increase in the general price level – i.e. low inflation.

Full employment occurs when all those in the workforce who are willing and able to work are employed. It occurs where there is zero cyclical unemployment.

2   OBJECTIVES

2.1   INTERNAL STABILITY

Measurement	Target	2014
%ΔCPI	2-3%	3.0% September
%ΔGDP	3-4%	3.1% September
Unemployment Rate	4-5%	6.1% September
Gini Coefficient	(no target)	
Multi Factor Productivity	(any improvement)	

2.2   EXTERNAL STABILITY

Measurement	Target	Current Statistics
CAD	2-5% of GDP	2.90% (2013)

| AUD | Stable exchange rate | Stable |
| Government Debt | <50% of GDP | 20.5% (2013) |

3 COMPATIBLE AND CONFLICTING OBJECTIVES

3.1 COMPATIBLE OBJECTIVES

Two (or more) economic objectives are said to be **compatible** when promoting one economic objective assists in better achieving the other objective.

Compatible policy objectives include:

- o economic growth & full employment
- o full employment & a more equitable distribution of income
- o efficient resource allocation/productivity & economic growth

3.2 CONFLICTING OBJECTIVES

Two (or more) economic objectives are said to be **conflicting** when improving one economic objective undermines the achievement of the other.

Conflicting policy objectives include:

- o price stability & full employment
- o economic growth & price stability
- o economic growth & structural unemployment
- o economic growth & income distribution

XII FISCAL POLICY

1   DEFINITIONS

Fiscal Policy refers to the manipulation of the Government's revenue collection and expenditure to affect the level of economic activity, resource allocation, and income distribution.

The **cyclical component** of the budget accounts for government revenue and expenditure that is affected by the current state of the economy and the business cycle (e.g. automatic stabilisers).

The **structural component** of the budget accounts for deliberate, discretionary decisions made by the government when planning expenditure and revenue and deciding whether the budget will be in deficit or surplus.

A **government bond** is a bond issued by a national government, with a promise to pay periodic interest payments and to repay the face value on the maturity date.

Fiscal consolidation is a term that is used to describe the creation of strategies that are aimed at minimising budget deficits, curtailing the accumulation of (more) debt.

Automatic stabilisers refer to fiscal instruments that respond to and partially offset fluctuations in a nation's economic activity without deliberate action by policymakers.

Recognition lag occurs because the economic indicators that provide data about economic performance, after being compiled and released, often lag behind real trends. Hence it is difficult for policy makers to ascertain the current state of the economy and hence there is often a time lag between when policy makers recognise the need for a certain fiscal stance (when the data of various indicators are released) and the time at which that fiscal stance was first needed.

Decision lag refers to the time that passes whilst the appropriate policy action is being decided on.

Implementation lag (**action lag**) refers to the time taken to implement a policy decision.

Effect lag refers to the time taken for the policy to have an impact on the level of economic activity.

Inside lag refers to time lag associated with the analysis of data and decision-making on the appropriate action within the government.

Outside lag refers to the time taken for implemented policy to take effect (same as **effect lag**).

Crowding out is said to occur when increased government borrowing used to finance a budget deficit (expansionary fiscal policy) increases the demand for funds in the money market, raising interest rates. Increased interest rates lead to reduced private consumption and investment. The increased public sector borrowing 'crowds out' the private sector, paradoxically causing a contractionary effect.

Crowding in is said to occur when the government runs a budget surplus (contractionary fiscal policy) and retires debt with surplus funds by repurchasing previously issued bonds, increasing liquidity and hence consumption and investment in the economy – an expansionary effect. The financial market may also react to increased saving of money from liquidated bonds by lower interest rates (an expansionary effect).

2   AN INTRODUCTION TO THE BUDGET

The main instrument of fiscal policy is the Federal Budget that is released in May that year. The budget is an annual statement of expected government expenditure and revenue for the forthcoming year (July 1st → June 30th). The government's fiscal stance is best measured by the structural component of the budget.

Note:

- o   discretionary changes in fiscal policy alter the structural component of the budget. For example, the government decided to spend $22b on infrastructure in 2009/10 to stimulate AD in response to the GFC.
- o   cyclical or non-discretionary changes in fiscal policy are automatic adjustments in the levels of revenue and expenditure due to changes in the level of economic activity, known as automatic stabilisers. These affect the cyclical component of the budget.

> Budget Outcome = Structural Component + Cyclical Component

2.1   FUNCTIONS OF THE BUDGET

There are three main functions of the budget:

- o   **R**edistribution of Income: through progressive income tax/welfare systems
- o   **B**usiness Cycle Stabilisation: the budget is used as a counter-cyclical mechanism to reduce the volatility of the business cycle and achieve certain macroeconomic objectives.
- o   **A**llocation of Resources: through changes to the tax system and changes in spending decisions. It attempts to promote the production and consumption of goods & services that generate positive externalities (e.g. in education: Higher Education Loan Program (HELP) schemes and government supported placements), whilst limiting goods and services that generate negative externalities (e.g. the rising excise on cigarettes)

2.2   MEASUREMENT

The budget outcome can be measured in terms of:

- o   Headline – *total revenue − total expenditure*

- Underlying cash balance – headline cash balance minus 'one off' payments or receipts such as the proceeds of asset sales. $Headline - asset\ sales = underlying\ cash\ balance$.
- Fiscal balance – the accrual accounting equivalent of the underlying cash balance [most accurate]. For example, it includes the superannuation owed by the government to its workers, even if they are not actually paid out until their retirement.

2.3   FISCAL STANCE

The *fiscal stance* refers to the intended overall impact of the Budget on the level of economic activity in the coming and future years.

There are three possible fiscal stances:

Type	Formula	Effect
Deficit	$T < G$ or $B_2 < B_1$	Expansionary
Surplus	$T > G$ or $B_2 > B_1$	Contractionary
Balanced	$T = G$ or $B_2 = B_1$	Neutral

In questions, if only given information about the government spending (G) and revenue (T) figures for one year, then use the formulae in green (above) to determine the fiscal stance. However, if additional information is provided, namely the previous year's budget outcome, then the current year's budget outcome must be compared to this figure to determine the fiscal stance according to the formulae in magenta.

Note that determining fiscal stance based solely on the budget outcome can be somewhat unreliable, as various factors may impact on the budget outcome. In fact, an actual budget outcome is likely to be different to the planned outcome. Affecting factors include unexpected levels of economic activity, which may impact on the cyclical component of the budget (e.g. unanticipated high growth may lead to a surplus outcome from the increased taxation revenue and decreased welfare payments), as well as exogenous events (exchange rate movements, rapid terms of trade changes, non-economic events [Queensland floods] requiring government relief). This is why the government's fiscal stance is best measured by the structural component of the budget.

2.4   AUTOMATIC STABILISERS

As the name suggests, automatic stabilisers will, to some extent, automatically stabilise the business cycle, dampening large fluctuations and causing growth along the business cycle to oscillate nearer to the long-term trend. Automatic stabilisers are non-discretionary changes in fiscal policy.

For example, income tax serves as an automatic stabiliser – as national income rises during a period of high growth (due to higher employment, more part-time hours worked, more overtime), so too will income tax paid, hence dampening growth (as taxes represent a leakage in the circular flow of income). Similarly, in a period of low growth and national income, income tax will fall.

Another example of an automatic stabiliser is unemployment benefits – during a boom and where unemployment is low, welfare payments to the unemployed will fall, decreasing government expenditure (contractionary effect). On the other hand, during a trough where unemployment is at its peak, welfare payments will also peak, thus automatically increasing government expenditure into the economy (expansionary effect).

Note that various other non-fiscal automatic stabilisers exist, such as import expenditure.
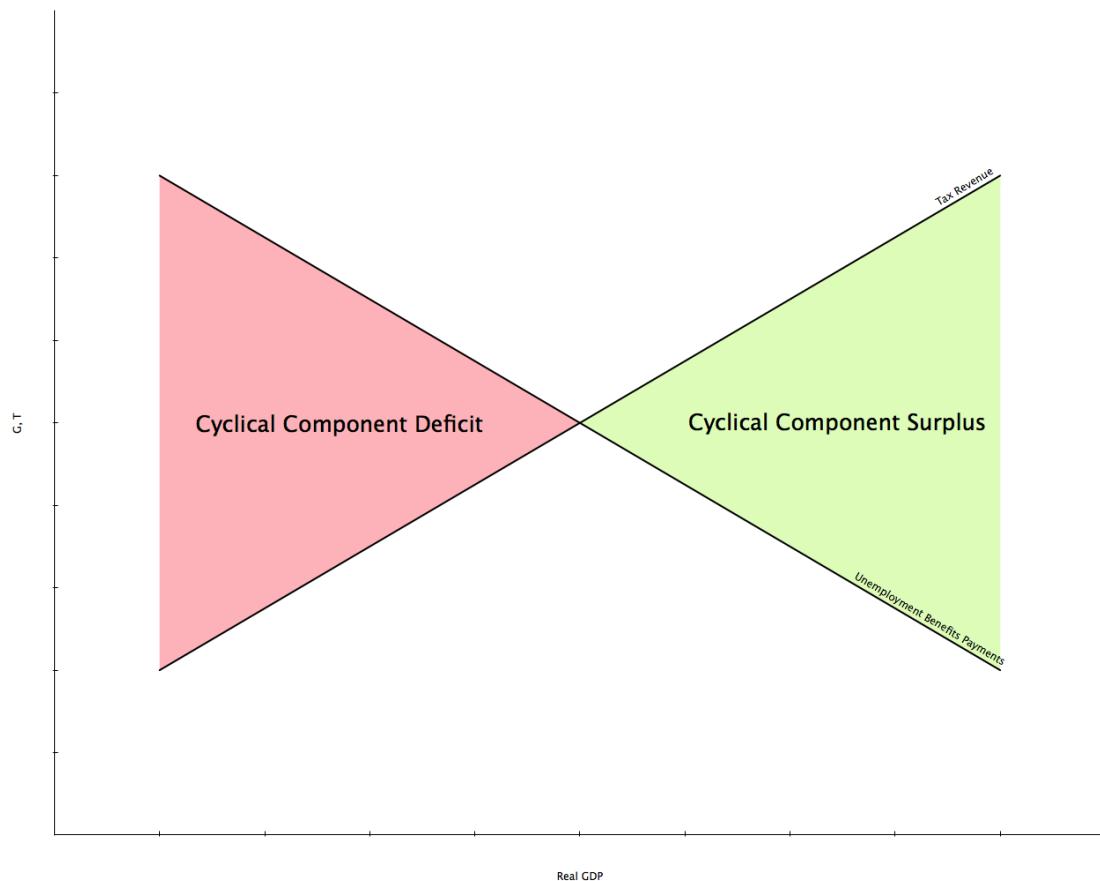

Figure 36: Automatic Stabilisers the Budget's Cyclical Component

Generally, the action of automatic and discretionary stabilisers will be complementary, although this is not the case if discretionary policy decisions are poorly timed.

The stabilising effect of automatic and discretionary stabilisers on the business cycle is shown below.

2.5   REVENUE SOURCES

Revenue sources include:

- o Direct tax (e.g. personal tax, company tax)
- o Indirect tax (e.g. GST, customs duties, excise tax)
- o Other revenues (such as from public trading enterprises)
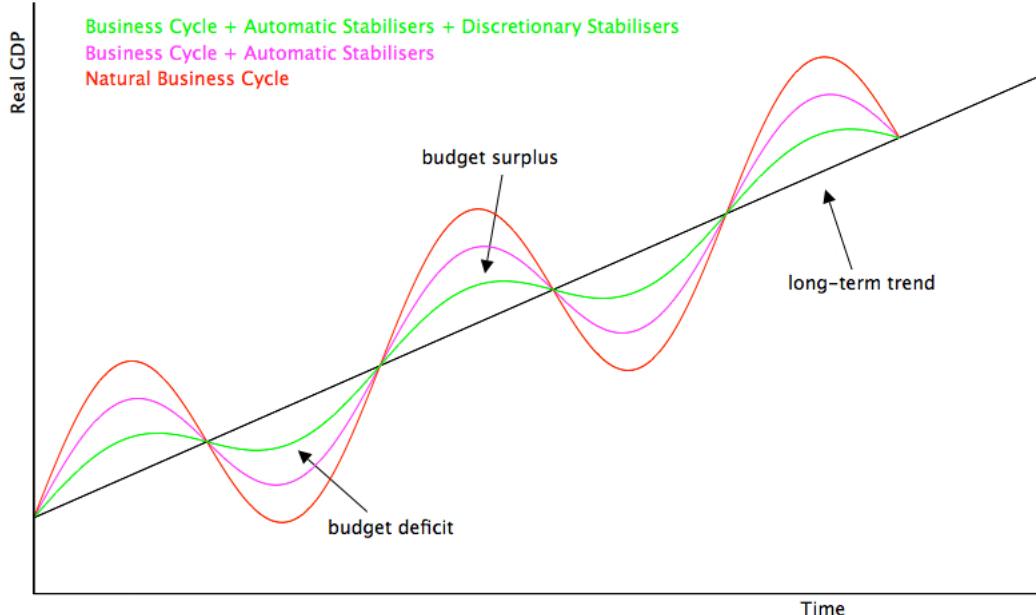
Figure 37: Effect of Automatic/Discretionary Stabilisers on the Business Cycle

2.6   GOVERNMENT SPENDING VS TAXATION

In terms of stimulating the economy, an increase in government spending (G) is more effective than a decrease in taxation. This is because an increase in government expenditure leads *directly* to increased expenditure and multiplier effects, whereas a decrease in taxation is first subject to the MPS before re-entering the circular flow of income. For example, if the MPS were 0.2:

- ↑G by $100m   → $\Delta AE = \$100m$ → $\Delta Y = \frac{\Delta AE}{MPS} = \frac{\$100m}{0.2} = \$500m$
- ↓T by $100m   → $\Delta C = \Delta AE = \$80m$ → $\Delta Y = \frac{\Delta AE}{MPS} = \frac{\$80m}{0.2} = \$400m$

Note that both alternatives (↓T and ↑G) cost the government the same amount, however ↑G has a larger overall effect. This is often the subject of tricky multiple-choice questions.

e.g.

17. Assume that the marginal propensity to save is 0.2. Also assume that the government simultaneously increases the taxes of high-income earners by $50m and increases government spending by $45m. As a result of this policy

   (a) real GDP will fall.
   (b) unemployment will fall.
   (c) total spending will remain unchanged.
   (d) interest rates are likely to be increased by the RBA.

Figure 38: 2011 WACE MCQ17

$50m \uparrow T \qquad \rightarrow \Delta AE = -(50 \times 0.8) = -\$40m$

$45m \uparrow G \qquad \rightarrow \Delta AE = +\$45m$

$\therefore \Delta AE = +\$5m$ so the level of economic activity would rise. (b) is the most correct option [(d) is slightly more dubious; what if the economy required stimulation?].

2.6.1   A VERY TRICKY SUBTLETY!

A *very tricky* subtlety of government spending/taxation can be used as a strong discriminator in multi-choice questions. It exploits the fact that, mathematically:

$$\text{If } \Delta G = \Delta T$$
$$\text{Then } \Delta Y = \Delta G = \Delta T$$

That is to say, if both government spending and tax change by the same amount x, then the multiplied change in income is equal to the x, regardless of the value of the multiplier.

This can be proven mathematically. For simplicity, assume both G and T increase.

$$\text{let } \Delta G = \Delta T = x$$
$$\text{Note } k = \frac{1}{MPS}$$

An increase in government spending by x will lead to a multiplied impact on Y:

$$\Delta Y_G = k \cdot x = \frac{1}{MPS} \cdot x = \frac{x}{MPS}$$

An increase in taxation will decrease consumption by:

$$\Delta C_T = -x \cdot MPC = -x(1 - MPS)$$

Hence an increase in taxation will have a multiplied impact on Y:

$$\Delta Y_T = k \cdot \Delta C_T = \frac{-x(1 - MPS)}{MPS}$$

Overall the impact on Y is:

$$\Delta Y = \Delta Y_G + \Delta Y_T$$
$$= \frac{x}{MPS} + \frac{-x(1 - MPS)}{MPS}$$

$$= \frac{-x + x \cdot \text{MPS} + x}{\text{MPS}}$$
$$= \frac{x \cdot \text{MPS}}{\text{MPS}}$$
$$= x$$

Therefore, if government spending and taxation change by the same amount (e.g. both increase or decrease by the same amount) then national income will also change by that same amount.

e.g. If government spending is increased by \$700m and taxes are increased by \$700m, then the equilibrium level of income will:

> (a) decrease by \$700m
>
> (b) increase by \$700m
>
> (c) not change
>
> (d) cannot be determined

Note that if government spending and taxation both **decreased** by \$700m, then the equilibrium level of income would also **decrease** by \$700m.

3 DEALING WITH BUDGET OUTCOMES

3.1 BUDGET DEFICIT

A budget deficit exists when government expenditure exceeds revenue.

3.1.1 FINANCING A BUDGET DEFICIT

There are three main ways through which a government can finance a budget deficit:

- o Borrow from the RBA (similar to printing money). This approach avoids the issue of crowding-out but can be inflationary if the growth in money supply exceeds the rate of growth of output.
- o Selling bonds.
  - If sold to the domestic economy, large bond issues may cause ↑r due to ↑demand for funds in financial (money) markets. Economists call this competition for loanable funds crowding out – the private sector is crowded out of the finance market by government borrowing. This ↑r will decrease private sector ↓C and ↓I. Thus the expansionary effect of the deficit (if financed via bonds) is offset to some degree by private sector ↓C/↓I due to ↑r. However, in deregulated financial markets with access to global funds this factor should not be overstated.
  - If sold to foreign residents, since the bonds must be purchased in AUD, this will ↑demand for AUD → ↑AUD. This will ↓NX due to ↓X (competitiveness) and ↑M. Thus the expansionary effect of the deficit (if financed by bonds sold to overseas residents) is offset by some degree by the increased AUD harming NX.

- Borrowing from overseas. This avoids financial crowding out but creates the issue of foreign debt and may ↑AUD, which could ↓NX.

3.1.2 TWIN DEFICITS HYPOTHESIS

The twin deficits hypothesis proposes that there is a link between the domestic economy and the international economy, in that budget deficits also contribute to the CAD.

In equilibrium:

$$S + T + M = I + G + X$$
$$\Rightarrow (M - X) = (I - S) + (G - T)$$
$$\text{i.e. } CAD = (I - S) + (G - T)$$

Thus the CAD is equal to the budget deficit plus the private sector investment-savings gap.

3.2 BUDGET SURPLUS

The government is a net saver when it produces a budget surplus. When the government faces surplus funds, they can be used in different ways:

- **Idle Funds**: the surplus funds are held and stored by the RBA, which for example could be used to finance future tax cuts or infrastructure projects.
- **Develop Special Funds**: surplus funds can be put towards certain initiatives/financial funds such as the Future Fund (used to pay for the superannuation liability of the public sector workforce), Education Investment Fund (universities), and Building Australia Fund (fund infrastructure in sectors such as transport, communications, energy, water).
- **Retire Public Sector Debt** (aka Sovereign Debt): surplus funds can be spent by re-purchasing issued bonds. This method can create crowding in, a policy paradox.

3.3 BALANCED BUDGET

Note that aiming to balance the budget every year has a destabilising effect on the economy. For example, during a boom the government will likely face relatively more excess funds due to the effects of automatic stabilisers (decreased payments of unemployment benefits and increased tax revenue). In order to balance this, discretionary spending will rise, furthering the boom. On the other hand, during a trough the government will be faced with relatively fewer funds due to increased payments of unemployment benefits and lower tax revenue (automatic stabilisers) and hence will decrease discretionary spending, further contracting the economy during a trough.

4 STRENGTHS & WEAKNESSES OF FISCAL POLICY

4.1 STRENGTHS

- Selective: can directly target different sectors of the economy, especially those with highest multiplier/accelerator ratios (e.g. construction industry). This also allows influence of resource allocation (e.g. excise taxes on tobacco or subsidising solar panel purchases).
- Short Impact Lag: the time taken for policy to take effect once implemented is relatively short – there is little *outside* or *impact time lag*. For example, revenue or spending

measures announced in the budget can be implemented immediately; a certain cigarette excise tax could be made effective immediately after an announced date, and such actions impact on revenue and savings patterns as soon as they are implemented.

- o **Stabilising**: automatic stabilisers, when complemented by sound discretionary fiscal policy, can greatly reduce the severity of business cycle fluctuations. Automatic stabilisers are particularly effective in that they require no deliberate government action to have a stabilising effect on the economy.
- o **Very Effective in Trough**: during a trough the government can act as a large 'spending tap' to increase the level of AD (e.g. Rudd government's fiscal stimulus packages 2008/09), which is then subject to multiplier/accelerator effects. This eases the economy back into an upswing, thereby significantly reducing the duration of the trough.

4.2   WEAKNESSES

- o **Inside Time Lags**: there may be a considerable lag between when fiscal policy is actually enacted and when it is needed to be enacted to have most effect.
    - o **Recognition Lag**: the current state of the economy is very difficult to ascertain; compiling data of various economic indicators is often a lengthy process and by the time they are released even coincident indicators such as GDP are effectively lagging. Due to this there is often a time lag between when policy makers recognise the need for a certain fiscal stance and the time at which that fiscal stance was first needed.
    - o **Decision Lag**: fiscal policy decisions can take a significant period of time to establish, as the views of many groups may be canvassed as part of the political process.
    - o **Implementation Lag**: due to the budget being an annual document, alongside the fact that budget decisions must be approved by parliament before being enacted, means that fiscal policy decisions often incur a significant implementation lag.
    - • **Impact Lag**: fiscal policy has a relatively short impact lag and this is a *strength* of fiscal policy (discussed above).
- o **Boom/Inflexibility**: the government has limited opportunities for large variations in G and T especially during a boom when lower government spending is required for a contractionary effect on the economy. This is due to previous inflexible commitments to spending programmes and the operating costs of the government-funded services (e.g. hospitals, schools, defence) and government operating costs (G1 spending). Furthermore, significant spending cuts in certain sectors such as education may instigate strikes and complaints from unions. A similar course of events may take place with rises in a tax such as the GST (giving consumers more incentive to buy online to avoid the GST).
- o **Political Factors**: in a three-year electoral cycle, in election years politicians are often reluctant to enact economic policy that will leave them in a politically difficult position (even though they may be in the long-term best interests of the country), for example tax increases. Rather, politicians often offer tax cuts or increase spending in election years to "buy votes" even though these may not be the most economically sound fiscal actions at that current time.
    - • In fact, the political business cycle suggests that governments will, in the first year of its term, apply tough fiscal measures but in the lead-up to the end of its term increase discretionary spending or decrease tax rates.
- o **Unintended Private Sector Impacts**: crowding out / crowding in.

5 MODELS

Note that when asked about impacts on the *current state* of the economy, the AE framework can still be used however inflationary/deflationary gap models should not be employed. For example, if asked to demonstrate the impact of an increase in G to stimulate the economy, it is not appropriate to specify whether or not this increase in G will lead necessarily to full employment (unless, of course, if indicated otherwise in the question).

Also, generally the impact on the level of economy activity of an increase in G or decrease in T should be shown in the AE model framework, in which the multiplier effect can be suitably addressed. The AD/AS model, although it can be used, is more aptly applied to questions that ask for the *effect* of changes of AD/AS on the economy in which the impact on price levels can explicitly be shown alongside the impact on GDP.

5.1 CLOSING A DEFLATIONARY GAP
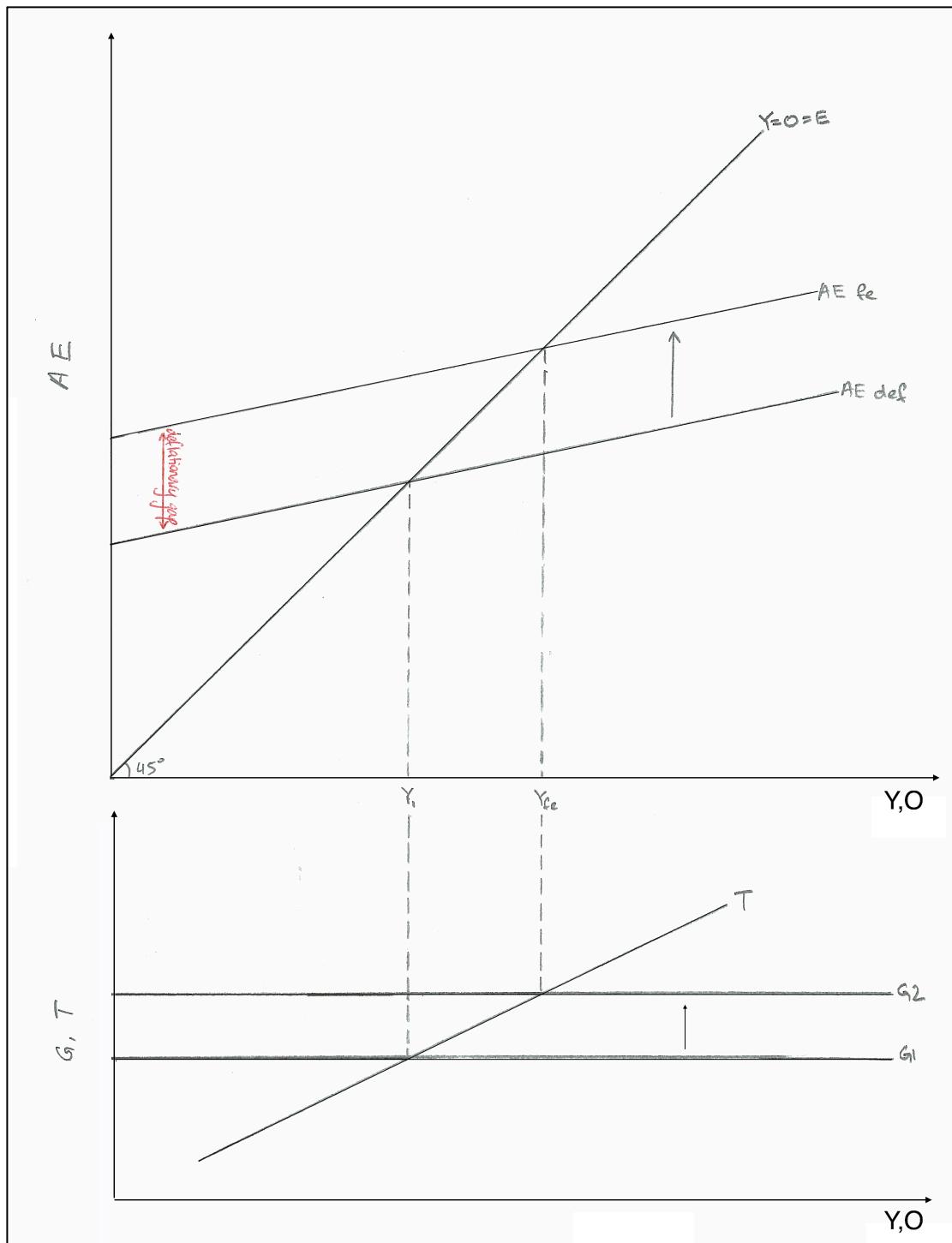
Figure 39: Closing a Deflationary Gap With Increased Government Spending
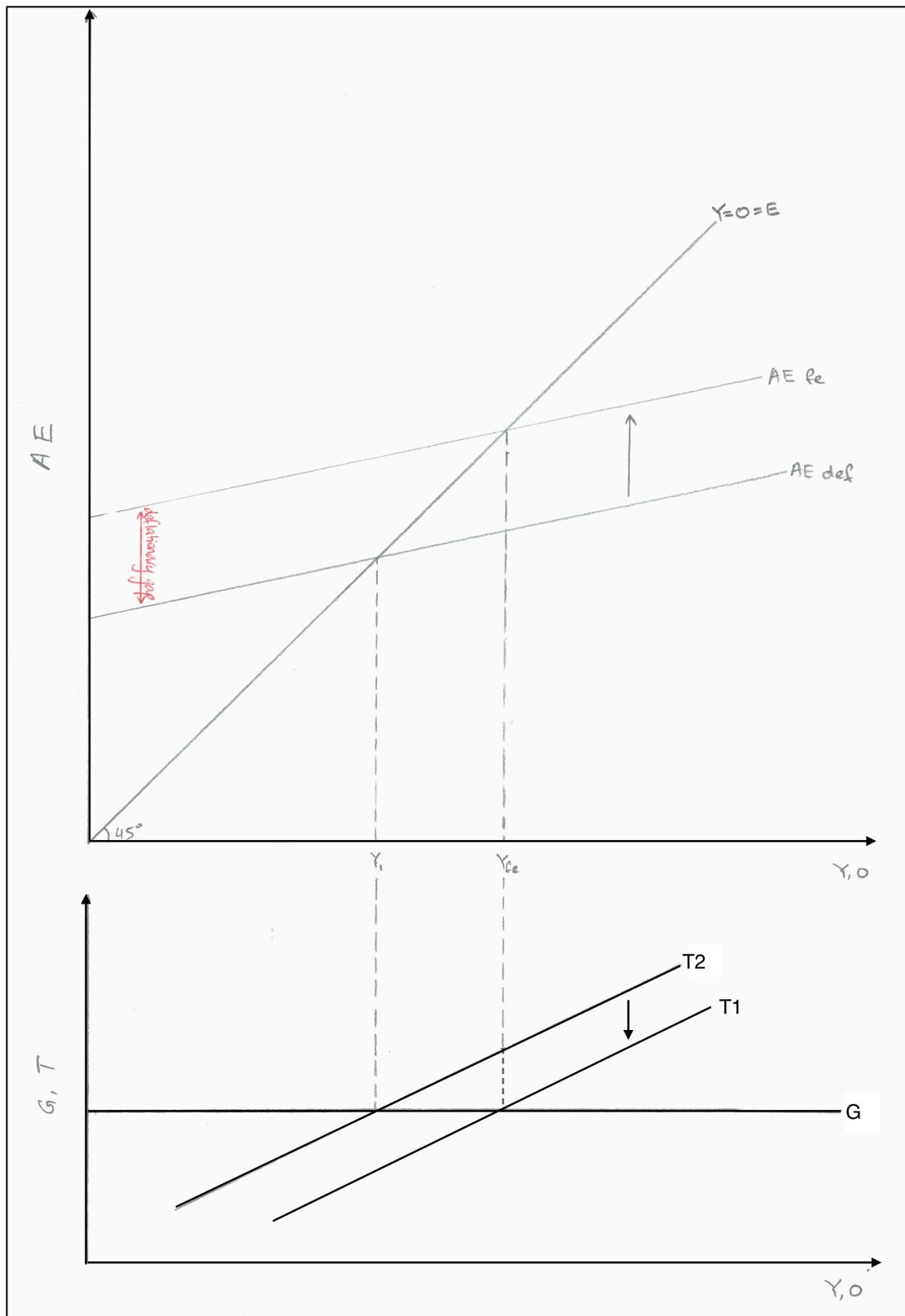
Figure 33: Closing a Deflationary Gap With Decreased Taxation

5.2   CLOSING AN INFLATIONARY GAP
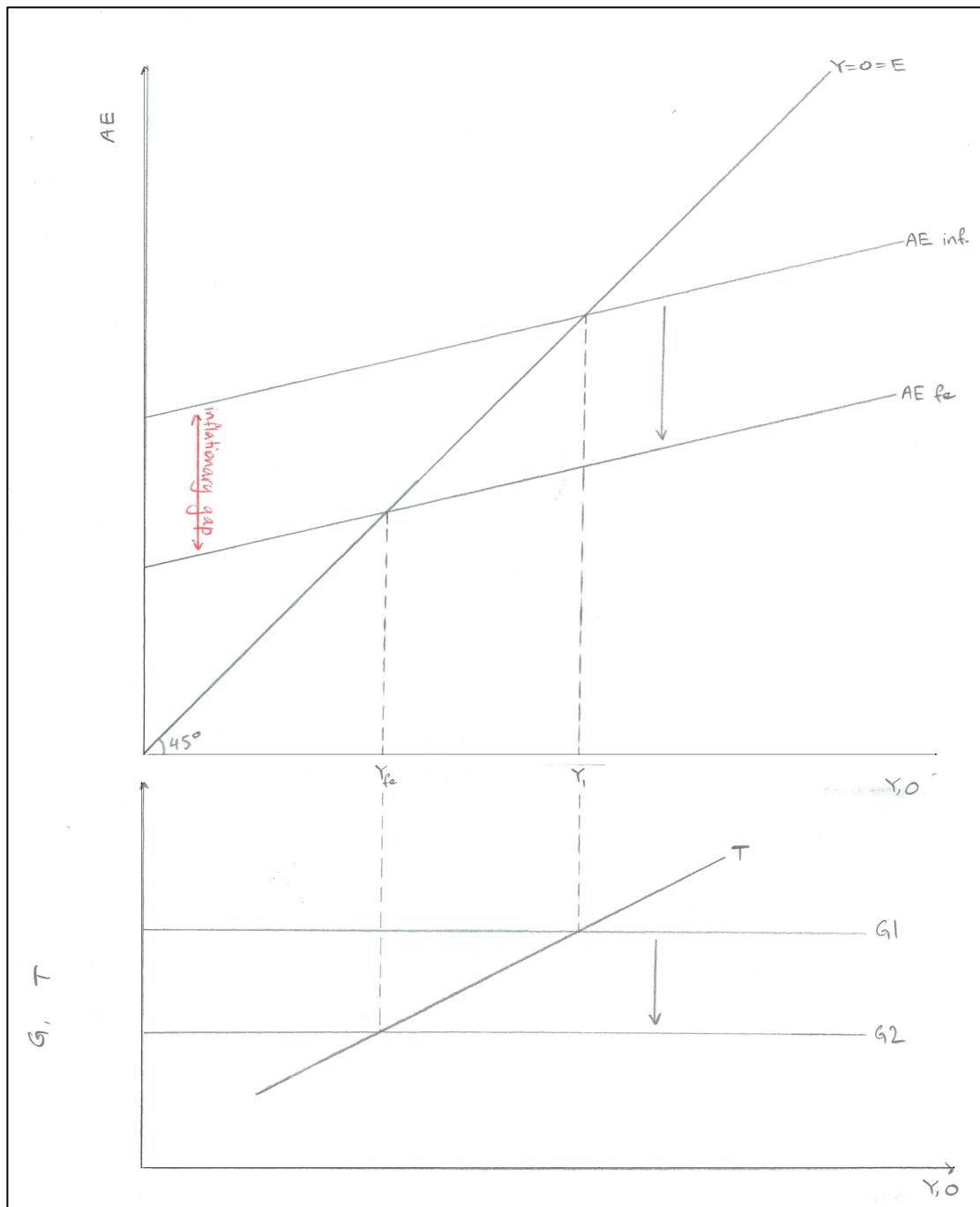
Figure 40: Closing an Inflationary Gap With Decreased Government Spending
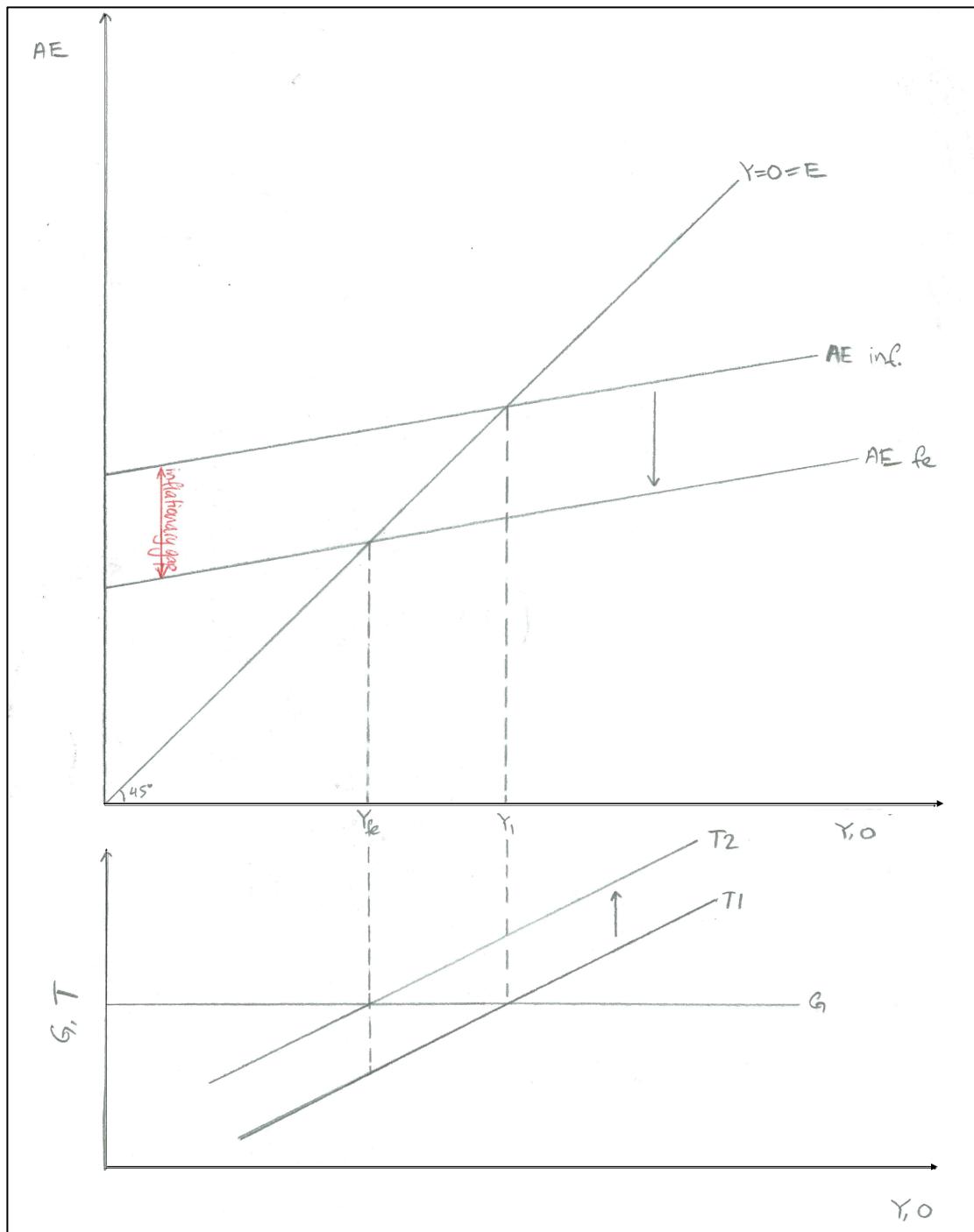
Figure 35: Closing an Inflationary Gap With Increased Taxation

5.3   AD/AS FRAMEWORK

Note that an AD/AS framework can also be used to show how government spending (changes in AD) can affect the level of economic activity. However, it is more advisable to use the AE framework (with inflationary/deflation gap models if appropriate) to analyse the impact of fiscal policy on the level of economic activity. Furthermore, it should be noted that in the AD/AS model, the terminology used is a *GDP gap* (marked on the x-axis) as opposed to *deflationary gap* in the AE model (that is marked on the y-axis). The term *inflationary gap* is also unnecessary, as inflationary levels of AD are clearly shown in the Keynesian range of the AS curve.

6   THE GOVERNMENT'S MEDIUM TERM FISCAL STRATEGY

6.1   THREE GOALS

The three goals of the Australian government's medium term fiscal strategy are:

1. Achieve budget surpluses, on average, over the course of the economic (business) cycle.
2. Keep taxation as a share of GDP, on average, below the level for 2007-08 (23.7%).
3. Improve the Government's net financial worth over the medium term.

Currently the Australian government is undertaking contractionary fiscal policy in the 2014/15 budget. This contractionary stance was made with the aim of **fiscal consolidation** in mind, minimising the budget deficit (and eventually, with time, moving into budget surpluses) in order to achieve the medium term fiscal goal of achieving budget surpluses on average over the course of the business cycle.

XIII MONETARY POLICY

"Most of the operations the RBA undertakes in financial markets are for the purpose of implementing monetary policy. Monetary policy changes are announced in terms of a target for the cash rate – the interest rate on overnight interbank loans in the monetary market – and domestic money market operations are undertaken each day to maintain the cash rate around the target level… The cash rate is determined in the market each day by the interaction of the demand for and supply of Exchange Settlements (ES) funds – funds banks use to settle transactions with each other and with the RBA. The RBA's ability to influence this rate rests on the fact that it is the sole supplier of these funds. It can increase or decrease the supply of ES funds by undertaking domestic market operations." (p5, Reserve Bank Annual Report, August 2000).

Glenn Stevens, Governor of the RBA, stressed the main role of the RBA when he said, *"preserving the purchasing power of money is the most important contribution that monetary policy can make to sustainable prosperity".* (October 2006)

RBA Objectives (1959)

- o   Sustainable level of economic growth
- o   Price stability
- o   Full employment

[i.e. internal stability]

1   DEFINITIONS

Monetary Policy refers to actions taken by the Reserve Bank to affect monetary and financial conditions within the economy with the aim of achieving low inflation (price stability) and sustainable economic growth.

Market Operations refers to the sales and purchases of Commonwealth Government Securities (CGSs) by the RBA in the money market for the purpose of influencing interest rates.

The **cash rate** refers to the rate of interest charged on overnight loans between financial intermediaries.

Exchange Settlement Funds (**ESFs**) refer to funds that banks hold with the RBA in Exchange Settlement Accounts (ESAs). These accounts are used to settle transactions between banks and between banks and the RBA. Each bank holds enough of these funds to meet their settlement requirements and these funds must be held in credit balance.

2   MONEY & THE FINANCIAL SECTOR

2.1   FINANCIAL MARKETS

There are three main types of financial markets:

- o **Loan markets**: normal borrowing money by firms/households. Banks, finance companies, and credit unions are part of the loan market.
- o **Bond markets**: firms/governments often sell bonds to raise finance.
- o **Share markets**: firms can obtain finance or expansion by issuing new shares through the stock market.

A well-functioning financial sector is critical to an economy's health because of its role in providing credit.

2.2   MONEY

Money performs three key functions:

- o A means of exchange – used for purchasing goods and services.
- o A unit of measurement – used to compare prices, incomes, and profit.
- o A store of value – money can be saved and used for future transactions.

Inflation erodes the value of money and undermines the ability of money to fulfill these three functions. This is why the goal of price stability is so important – to protect the value of money and promote the stability of the financial system.

3   INTEREST RATES

Interest rates represent both the price of credit and the reward on saving. Essentially, interest rates represent the price of money or the opportunity cost of money. Savers influence the supply of funds and borrowers influence the demand for funds.

3.1   WHY INTEREST RATES VARY

Interest rates vary due to reasons associated with the risk and maturity period of any given loan.

- o Risk: risks arise because the future is uncertain. Generally, a higher risk loan is charged a higher interest rate, as lenders require a higher rate of return to compensate them for taking that risk.
- o Time: longer term interest rates are usually higher than short term rates. Lenders need to be compensated more if they part with their funds over a longer period; a longer time period corresponds to greater risk and uncertainty and therefore the interest rate should be higher than for a short term loan.

3.2   CHANGES IN INTEREST RATES

Determination of the equilibrium interest rate
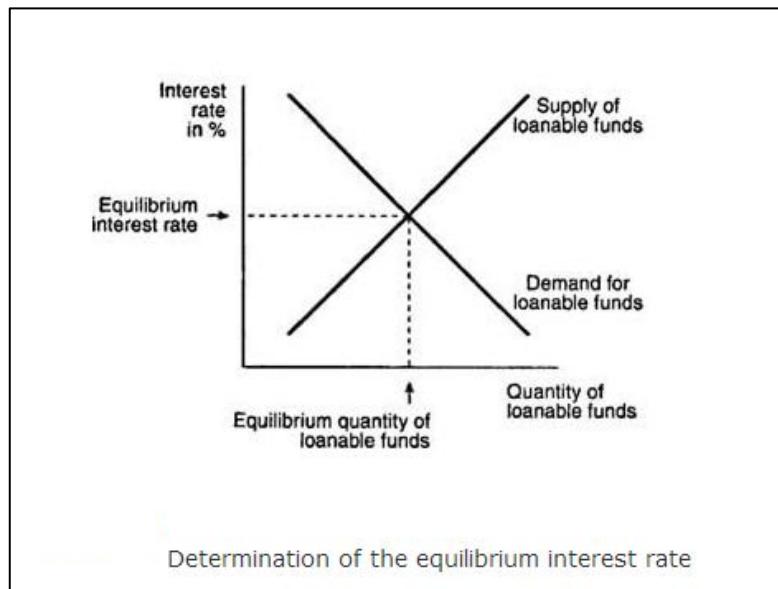
Figure 41: Market for Loanable Funds

Factors that influence the demand and/or supply of funds will influence the interest rate. Such factors include:

- Economic activity/business cycle position:
  o Demand-side: during a late upswing/peak, as business confidence and profit expectations are high, firms will increase their demand for funds in order to finance increased investment. When employment and incomes are high, households are also likely to increase their demand for housing and consumer durables, which will also boost the demand for loanable funds and shift the DLF (demand for loanable funds) curve to the right. An increase in demand for funds by the private sector will increase real interest rates and the quantity of funds invested.
  o Supply-side: a fall in economic activity will lead to a fall in profits of firms and an increase in UE and national income. Lower real incomes will decrease the overall level of saving in the economy and raise interest rates. Conversely, an increase in HH income will often lead to an increase in saving, while an increase in business profits may lead to an increase in corporate saving.
    - BUT Australia's HH saving rate has been at historically high levels in recent years and this may be the result of cautious behaviour in the post-GFC era, which spawned a degree of uncertainty in borrowing and debt. When people are uncertain about the future, they are more likely to save.
- Government Budget Outcome:
  o Deficit: when the government's planned spending exceeds its revenue. The government must borrow to meet the shortfall and this will shift the DLF curve right and raise interest rates. [private investment decreases and is said to be crowded out by the increase in government spending]
  o Surplus: will occur when the government's planned revenue exceeds its spending. If the government chooses to retire previous debt with its surplus funds, this will increase liquidity and encourage saving. This will increase the supply of loanable funds, hence decreasing the interest rate. [this has a positive effect on private investment; private investment increases and is said to be crowded in].

4 MARKET OPERATIONS

The Reserve Bank conducts monetary policy by changing short term interest rates through its domestic market operations. Market operations is the primary function of the RBA and refers to the sales and purchases of Commonwealth Government Securities (CGSs), or bonds, by the RBA in the short-term money market for the purpose of influencing interest rates. These transactions between the RBA and the financial sector alter the supply of funds in the short-term money market (Exchange Settlement Funds, ESFs) and hence the cash rate.

- o Market <u>sales</u> of securities by the RBA will ↓supply of funds. If the RBA supplies fewer funds to the market than the banks require, they will respond by borrowing more to build up their ESFs putting upward pressure on the cash rate.
- o Market <u>purchases</u> of securities by the RBA will ↑supply of funds. If the RBA supplies more funds to the market than the banks wish to hold, banks will try to lend these funds, putting downward pressure on the cash rate.
  - • e.g. RBA ↓ r by 0.25% in August 2013 to historic low of 2.50% by purchasing CGSs causing ↑ S_{money} →↓ r.

4.1 TIGHTENING THE STANCE OF MONETARY POLICY

- o Contractionary monetary policy
- o RBA wishes to ↑ cash rate
- o Market <u>sales</u> of CGS into the short-term money market
- o Banks will face insufficient ESFs
- o There is less liquidity in the short-term money market
- o Competition between the banks to ration the available funds forces the prices of those funds up
- o The cash rate rises

4.2 LOOSEN THE STANCE OF MONETARY POLICY

- o Expansionary monetary policy
- o RBA therefore wishes to lower the cash rate
- o Market <u>purchases</u> of CGS from financial institutions in the short-term money market
- o The banks face surplus ESFs
- o There is surplus liquidity in the short-term money market
- o The excess liquidity forces the prices of these funds to fall
- o Cash rate falls

4.3 MONETARY STANCE

- o A cash rate below 4% is considered an expansionary stance.
- o A cash rate from $\approx 4 - 4.5\%$ is considered a neutral stance.
- o A cash rate above 4.5% is considered a contractionary stance.

However it should be noted that regardless of stance:

- o A decrease in the cash rate will have an expansionary impact on the economy.

o   An increase in the cash rate will have a contractionary impact on the economy.

5   TRANSMISSION MECHANISM

When the RBA changes the cash rate it attempts to influence the expectations of the private sector and affect the level of AD. How changes in interest rates affect the level of economic activity is referred to as the **transmission mechanism**. There are a number of different components of the transmission mechanism. Changes in interest rates affect:

- o   HH Consumption: $\downarrow$r → $\downarrow$incentive to save due to $\downarrow$rate of return on savings (opportunity cost of spending decreases), hence encouraging consumption. $\downarrow$r also decreases the cost of borrowing funds and so will $\uparrow$credit-financed spending by households and hence AD. Furthermore, since overall the household sector in Australia is a net borrower of funds and hence a net payer of interest, a fall in interest rates will effectively increase Y_d as the amount of income spent on periodic debt repayments will fall (e.g. mortgage repayments). Rises in Y_d will likely increase consumption and hence $\uparrow$AD.
- o   Investment: Firms often borrow to finance investment. As Keynes outlined in his The General Theory of Employment, Interest, and Money, theoretically investment decisions are determined by the MEC (marginal efficiency of capital) and the interest rate. Firms will undertake investment if the MEC>r; clearly if interest rates fall, ceteris paribus, investment will rise. Heuristically, this is due to a lower interest rate increasing the profitability of investment projects, making more projects economically viable and hence increasing investment. In terms of cash flows, as most firms are significant net borrowers, a $\downarrow$r will see firms facing lower periodic debt repayments (e.g. on overdraft and loan accounts) and hence increased cash flows and profits, which encourage business expansion and investment.
- o   Wealth and Asset Prices: interest rates can change asset values, which in turn affect people's wealth and therefore their spending decisions. Theoretically, lower interest rates (ceteris paribus) can be expected to raise the price of assets, as the opportunity cost of holding those assets falls (return on saved money falls); i.e. the incentive to store wealth in assets rises when returns on savings are lower. The types of asset through which this mechanism works are collectively known as 'stores of value' including real estate, shares, and precious metals. A rise in asset prices would result in asset owners' wealth levels rising, increasing their financial confidence and ultimately level of consumption, especially on consumer durables. Furthermore, the borrowing capacity of asset-owners will rise if their wealth rises (due to increased collateral), hence further encouraging credit-driven consumption. This was seen during the 2004-2007 boom, where the strong growth in asset prices over this period contributed further to robust consumption growth.
  - ✚   HOWEVER it should be noted that asset prices do not by any means respond mechanically to changes in interest rates; the determination of their prices is complex with many contributing factors that should not be overlooked.
- o   Net Exports: fluctuations in the exchange rate affect the relative prices of domestically produced and foreign-produced goods and services. A fall in the interest rate will lead to a decrease in relative interest rate differentials which will decrease net foreign investment into Australia as Australia becomes a less attractive destination to deposit funds. This will reduce demand for the AUD (less foreign investment) and increase its supply (funds are shifted from Australia into overseas financial institutions), hence

resulting in a depreciation. This will decrease export prices, making them more competitive, and increase import prices, encouraging domestic import-substitution. Hence NX, and therefore AD, will increase.

6 STRENGTHS & WEAKNESSES OF MONETARY POLICY

6.1 STRENGTHS

- o **Flexibility**: arguable the greatest strength of MP is its flexibility. Decisions about appropriate domestic market operations can be made every day by the RBA, and enacted monthly. Fiscal policy necessities such as budget statements and parliamentary approval are avoided, and as a result monetary policy also has a short inside time lag (short decision and implementation lag). This means that decisions can be made and implemented very quickly.
- o **Political Neutrality**: the RBA is an independent authority and is not aligned to the government in power and hence independent of political processes. Decisions made by the RBA are based entirely on economic rather than political reasons. Furthermore, as interest rates affect the economy as a whole and its effects are not directed at any given sector, people do not tend to see policy changes directed at 'them'. Hence monetary policy changes tend to not incite upheaval or protest in certain groups, as fiscal policy decisions have the capacity to. This further adds to the unbiased nature of monetary policy decisions, as it is not targeted by protest groups to change its actions.
- o **Effective during Booms**: it is recognised that monetary policy is more effective in the control of high levels of AD and inflation than during the recession phase of the business cycle. Tighter money policy has greater force than easy money policy because higher interest rates have more direct effect on economic decisions than do lower rates.
- o **Made Most Effective Under Floating Ex. Rate**: there is an important link between interest rates and the exchange rate. Changes in interest rates affect the interest rate differential between Australia and other countries that influences financial capital movements. A cut in interest rates will cause a fall in net capital inflow causing a depreciation. This will increase net exports as exporters gain competitiveness and imports become less competitive against domestic producers. Thus MP will not only increase C and I, but also NX.

6.2 WEAKNESSES

- o **Blunt instrument**: the Australian economy is not completely balanced or performing at the same level in all sectors – indeed Australia is very much considered a multi-speed economy. However changes to monetary policy cannot be targeted at specific sectors and instead have a general impact over the entire nation. This leads to issues where a certain monetary stance may be appropriate for some sectors of the economy and not others. For example, an export-driven boom may lead the RBA to adopt a contractionary monetary stance, despite the manufacturing sector struggling (which will dampen aggregate demand and hence exacerbate weakness in this sector).
- o **Significant outside time lag** (effect lag): monetary policy works indirectly through interest rates, and then through various transmission channels, to affect the level of AD in the economy. The overall effects of changes in monetary policy take extended periods of time (6-12 months) to be fully realised in an economy. For example, after the GFC of 2008-09 the cash was slashed from 7.25% to 3.0%, but there was a significant outside

time lag before the private sector began to respond to lower interest rates by increasing investment and borrowing. This is in contrast to fiscal policy that can work to directly influence the level of AD by altering G or T.

o **Less Effective During a Trough**: Low interest rates may not be sufficient to stimulate private spending or investment when economic conditions are weak and business sentiments pessimistic. Businesses need to be confident in future earnings before they undertake investment; during times of deteriorating economic growth, investment becomes inelastic to interest rates as businesses view positive net returns on investment unlikely. This can be seen in the current economy to some extent, which has been shocked into a state of circumspect following the GFC. Since the GFC, the cash rate has been cut from 7.25% to a current historic low of 2.5%, however the household saving ratio has remained steady at over 10% (from about 2% before the GFC). This has prompted the RBA Governor Glenn Stevens in August 2014 to say that "the thing that is most needed now is something monetary policy can't directly cause: more of the sort of 'animal spirits' needed to support an expansion".

o **Ineffective at Combatting Cost-Push Inflation**: while higher interest rates can reduce demand-pull inflation, it is rather ineffective at combatting cost-push inflation; a rise in interest rates will lead to an increase in business costs, further contributing to cost-push inflation.

8   DIAGRAMS
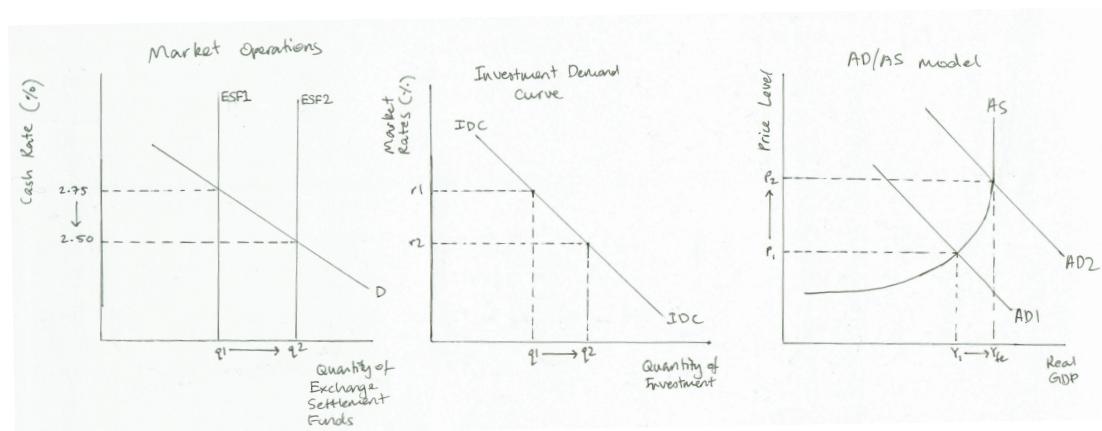
Figure 42: Monetary Policy Diagrams

## 9   RECENT AUSTRALIAN STATISTICS
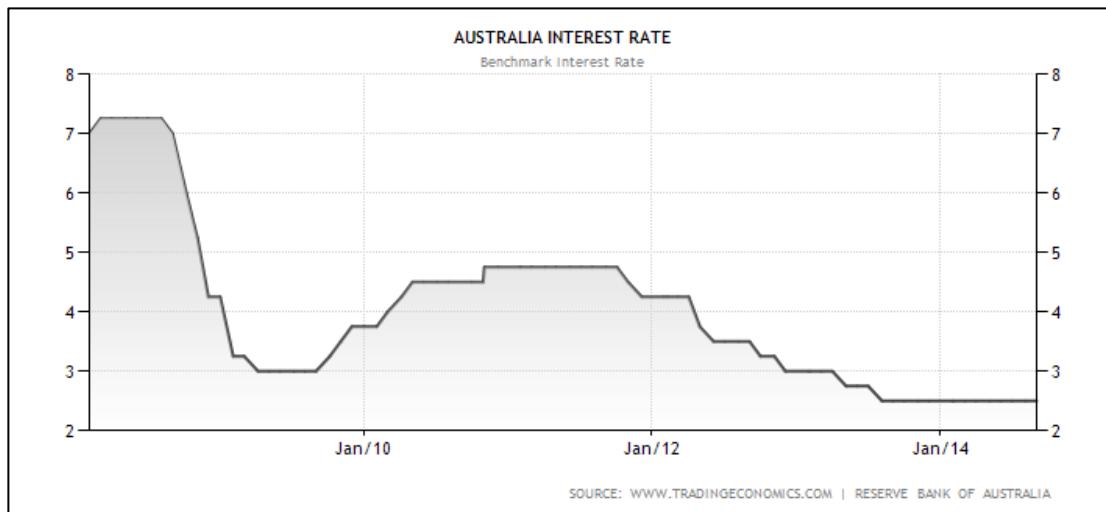
Figure 43: Australia's Cash Rate

Expansionary Stance: The RBA began its expansionary phase in November 2011, which saw the cash rate being cut from 4.75% to 2.5% in August 2013. The cash rate has remained at 2.5% since August 2013 to present (06/09/14).

RBA governor Glenn Stevens describes current monetary conditions are "very accommodative".

XIV MICROECONOMIC REFORM

"Productivity isn't everything, but in the long run it is almost everything. A country's ability to raise its standard of living over time depends almost entirely on its ability to raise its output per worker."
Paul Krugman, Age of Diminished Expectations (1992).

MER primarily affects the supply-side of the economy by focusing on increasing efficiency in the economy.

1 DEFINITIONS

Microeconomic reform describes all of the government's actions to reduce institutional and regulatory impediments in order to increase productivity and efficiency in the economy.

Economic efficiency is the use of resources so as to maximise the production of goods and services. There are three types of economic efficiency:

- **Technical efficiency**: the production of output at the lowest possible cost (the cost-effectiveness of inputs).
- **Allocative efficiency**: resources are directed to purposes with the least opportunity cost.
- **Dynamic efficiency**: the ability of an economy to initiate and adapt to change over time and take advantage of new opportunities as they arise (e.g. exploit technological advances or accommodate for changing consumer preferences).

Productivity is an average measure of the efficiency of production. It can be expressed as the ratio of output to inputs used in the production process, i.e. output per unit of input.

Capital Widening occurs when capital stock is increasing at the same rate as the labour force, thus the capital per worker ratio remains the same. The economy will expand in terms of aggregate output however productivity per worker, ceteris paribus, will remain constant.

- this is known as quantitative growth (↑GDP but no ↑productivity)

Capital Deepening occurs when the capital to labour ratio increases (i.e. capital stock grows faster than labour force). The economy will expand in terms of aggregate output and productivity per worker will increase. [note capital deepening can also be the result of improved technology]

- this is known as qualitative growth (↑GDP due to ↑productivity)

Technological progress is an economic measure of innovation.

- **Embodied** technological change refers to technological change that is tangible (e.g. NBN, robotics).
- **Disembodied** technological change refers to technological change that is intangible (e.g. improvements in education, government regulations).

2   FORMULAE

Productivity Formulae:

- Productivity $= \frac{\text{output}}{\text{input}}$ /time
- Labour Productivity $= \frac{\text{output}}{\text{labour inputs}}$ /time
- Capital Productivity $= \frac{\text{output}}{\text{capital inputs}}$ /time
- Multifactor Productivity $= \frac{\text{output}}{\text{MF inputs}}$ /time

3   MODELS

3.1   APF MODEL
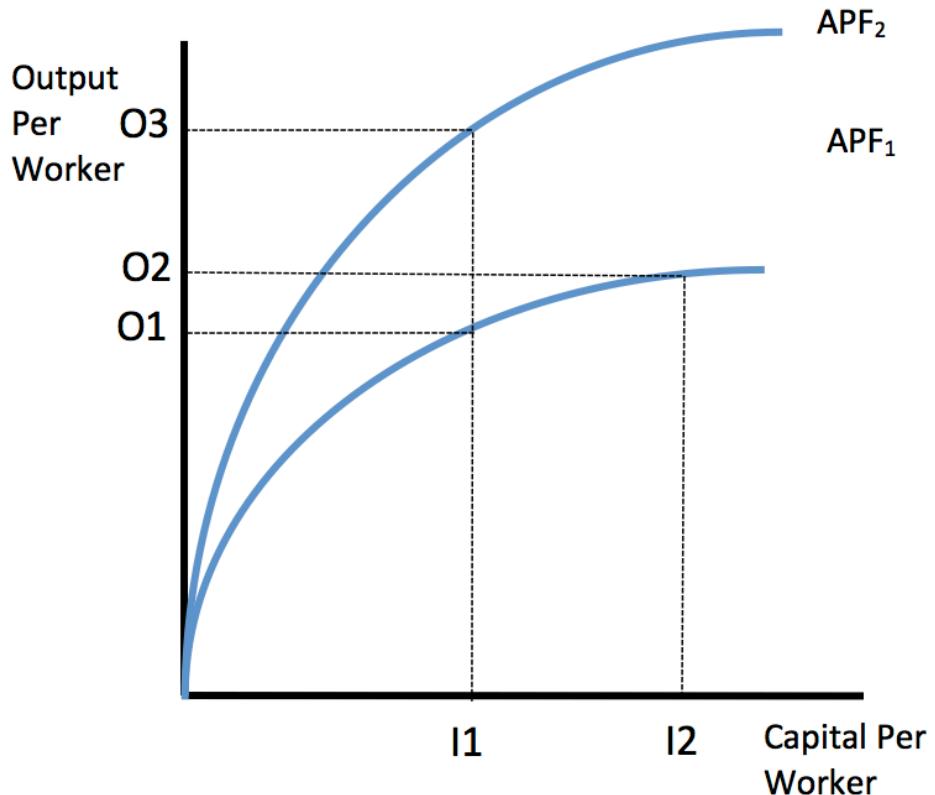
Figure 44: APF Model

The APF function shows the relationship between capital stock per worker and output per worker. The gradient falls as a result of diminishing returns. A movement along the existing APF reflects an increase in capital stock. A transition from APF1 to APF2 reflects in increase in productivity possibly as a result of successful MER. At APF2 a higher level of GDP can be achieved for the same level of inputs. More productive labour also incurs higher wage costs.

3.2   AD/AS MODEL
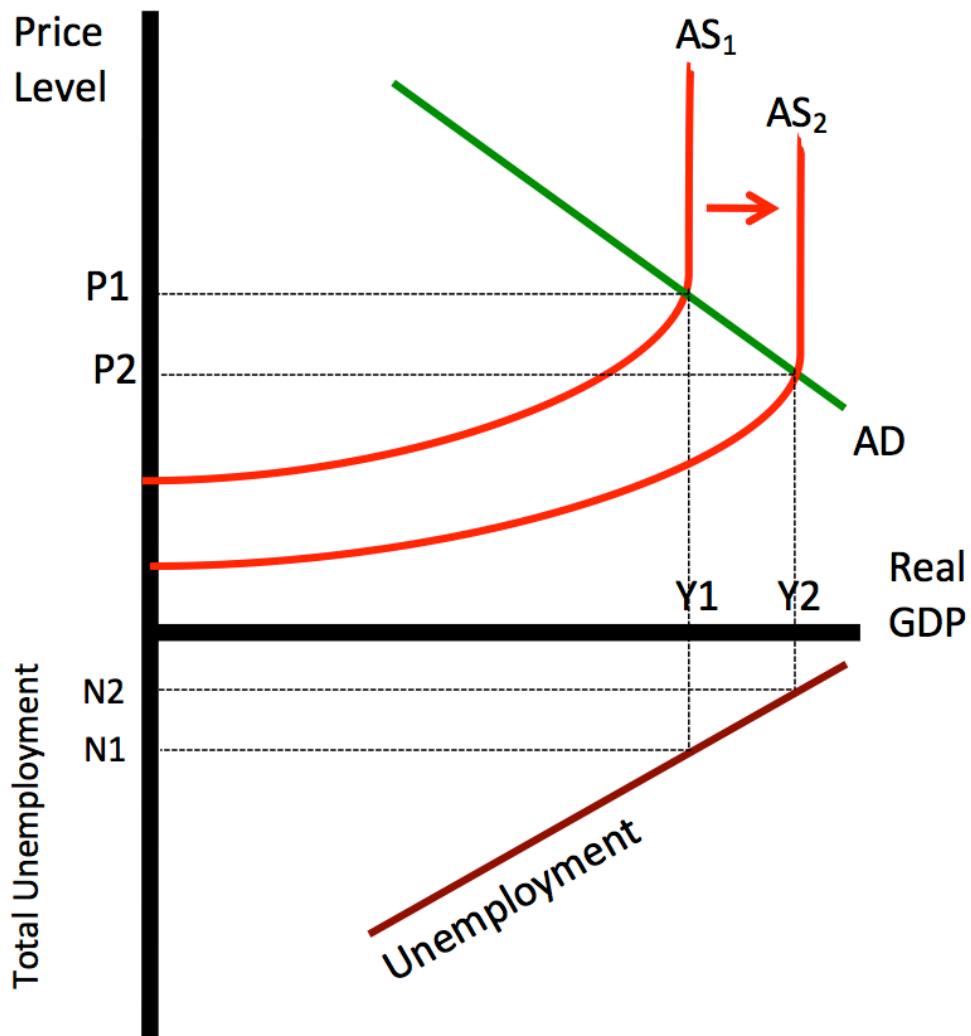
Figure 45: AD/AS Model for MER

MER affects the supply-side of the economy; successful MER will shift AS1 to AS2, reflecting improved resource allocation and efficiency gains. This will aid in the achievement of government policy objectives:

- o Sustainable economic growth: productivity gains contribute to the objective of sustainable economic growth by increasing the productive capacity of the economy.
- o Price stability: due to ↑competition in markets or technical or allocative efficiency gains that ↓production costs, there is downward pressure on inflation. This further contributes to sustainable economic growth.
- o External stability: productivity and efficiency gains will increase Australia's competitiveness, encouraging growth in export and import-competing industries. Furthermore, a lower relative inflation rate will, over time, provide Australian firms a price-advantage over foreign firms, again increasing exports and domestic import-substitution.
- o Full employment: the increase in AS from AS1→AS2 will drive economic growth, increasing real GDP from Y1→Y2. AD will expand and increase the derived demand for labour. Further, productivity improvements reduce the average cost of labour, limiting

capital/labour substitution, overall decreasing the level of cyclical unemployment resulting in unemployment falling from N1→N2.

- BUT the MER process by nature leads to structural change, inducing structural unemployment as labour is displaced from inefficient sectors of the economy. Theoretically this is a short-term issue, which can be remedied by re-training that will enhance resource allocation in the long-term. However, in practice re-training is far easier said than done, and the MER process unfortunately can lead to growth in long-term unemployment.

o More equitable distribution of income: increased employment (UE falling from N1→N2) will see more people transitioning from welfare to work. Furthermore, increased growth and an overall stronger economy, will lead to increased tax revenue and improve the government's ability to provide support, through e.g. welfare, training programs, tax relief.

- BUT the benefits of MER are not evenly distributed and growth patterns can increase the Gini coefficient.

4 CURRENT MICROECONOMIC REFORM

The government's set of microeconomic reform policies include:

- Labour market reform
- Taxation reform
- Protection reform
- Competition policy

4.1 LABOUR MARKET REFORM

Labour Market Reform: the introduction of policies that seek to increase the efficiency and productivity of the labour market.

Work Choices was made effective in 2006, and extended deregulation of the labour market:

- Reduced the numbers of awards available to workers
- Encouraged direct negotiation between employers and employees to determine pay and work conditions
- Established a flexible industrial relations system (reduced power of trade unions to bargain on behalf of workers)

However *Work Choices* was extremely disfavoured by the public and after the Howard government lost office to the Rudd government, it was repealed in its entirety.

Fair Work Act (2009):

- Provided a safety net of working conditions to all employees in the national system with annual adjustments to the minimum wage and 10 National Employment Standards introduced.
- Fair Work Australia and the Fair Word Obudsman (an official appointed to investigate individuals' complaints against maladministration, esp. that of public authorities) to regulate and enforce the national workplace relations systems.

- Restore the role of unions as bargaining between employers and employees.
- Main advantage is improving the level of equity in the distribution of income through a stronger safety net for low paid workers.
- Overall it can be argued that the *Fair Work Act* has made the industrial relations system fairer, but more regulated and less flexible.

4.2   THE 1983 DEREGULATION OF THE FINANCIAL SYSTEM

Prior to 1983 banks were subject to tougher regulations than non-banks, putting them at a competitive disadvantage. Controls on banks were the instrument by which monetary policy was implemented, whereas building societies, credit unions, and fringe financiers had more freedom with their lending limits and interest rates. The result of this was the non-banking sector expanding faster than the tightly controlled banking sector. Financial deregulation reduced the distinction between banks and non-banks and opened up financial markets to foreign institutions as well. As a result, Australians gained access to a wider range of financial services, and greater competition in finance markets.

1. Removal of direct controls over interest rates – *abolition of all direct RBA controls of interest rates over the volume and direction of bank lending*

2. Improved efficiency and competition in the allocation of funds between banks and NBFIs – *entry of 16 new foreign banks allowed to compete with the domestic financial industry*

3. Floating exchange rate – *abandonment of the crawling peg system*. Eliminated the need for the Reserve Bank to clear the foreign exchange market and gave the central bank more power to control domestic financial conditions.

4. Use of Open Market Operations – *new monetary policy instrument*

One result of deregulation was the large number of housing loan financiers that entered the market in competition to the banks during the mid 1990s. They brought effective competition as they were able to offer interest rates several points lower than the banks – they specialised in one type of business and had few of the overheads involved in retail banking. The increased competition encouraged banks to lower their housing interest rates in order to retain market share.

4.2   TRADE AND INDUSTRY POLICY

The major policy initiative to promote exports and trade intensity was the reform of industry assistance announced in the **1988** and **1991 Industry Statements**. The dismantling of industry protection in the form of tariffs and quotas occurred on a large scale to promote import competition; raise industry efficiency; and increase the volume of exports by Australian industry. The key unilateral government measures undertaken in the **1988** and **1991 Industry Statements** included:

- The reduction of the majority of tariffs for manufacturing to 5% by 1996
- The abolition of quotas and the reduction of tariffs for the car industry to 15% by 2000
- Abolition of quotas for textiles, clothing, and footwear in 1993, and a reduction in tariffs to a maximum of 25% by 2000

- Zero rating for GST of exporters under *The New Tax System* in 2000 which meant tax credits could be claimed on inputs but exports were GST exempt, helping to lower export production costs.

The **Button car plan (1985)** aimed to decrease the level of protection for the domestic motor vehicle industry [very high at the time]. Currently, for the motor vehicle industry, there is an average tariff of 3.5% (5% from countries without FTA, 0% from countries with FTA) [note not including luxury tax of 33%]. In 1966 tariffs on completely built cars was 45%.

Economic Shorthand Key

Abbreviation	Meaning
AD	Aggregate Demand
AE	Aggregate Expenditure
AS	Aggregate Supply
AUD	Australian Dollar
BOGS	Balance of Goods and Services
C	Consumption
CAB	Current Account Balance
CAD	Current Account Deficit
D	Demand
E	Expenditure
FI	Foreign Investment
G	Government Expenditure
GDP	Gross Domestic Product
I	Investment
KAB	Capital and Financial Account Balance
KAS	Capital and Financial Account Surplus
M	Imports
MER	Microeconomic Reform
NX	Net Exports $(X - M)$
O	Output
r	Interest Rate
S	Savings
T	Taxation
ToT	Terms of Trade

X	Exports
Y	Income