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HSC Economics

Topic 3: Economic Issues

Lesson 3: Inflation

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HSC Economics Topic 3: Economic Issues

Lesson 3: Inflation

Dot-points covered this lesson:

- *All of the Inflation topic*

Measurement of inflation - headline and underlying

Inflation: A sustained increase in the general level of prices in an economy over time

Consumer Price Index (headline)

- Summarises the movement in the prices of a basket of goods and services according to their significance for the average Australian household.

$$\text{Inflation rate (\%)} = \frac{CPI_{CY} - CPI_{PY}}{CPI_{PY}} \times \frac{100}{1}$$

Where CPI_{CY} = the value of the CPI in the current year
Where CPI_{PY} = the value of the CPI in the previous year

- Published every 3 months by the Australian Bureau of Statistics
- Used by the RBA for achieving the inflation target of 2-3%

Expenditure group	Weighting factor %
Food	15
Alcohol and tobacco	7
Clothing and footwear	4
Housing	20
Household contents and services	10
Health	5
Transportation	13
Communication	3
Recreation	12
Education	3
Financial and insurance services	9
All groups	100

Source: ABS Catalogue No 6440

Advantages

- Covers a wide selection of goods that reflects average household spending patterns
- Simplicity and widespread public recognition and understanding of the CPI as a measure of quarterly and annual inflation in the economy

Disadvantages/limitations

- Does not include all goods and services in the economy
- Excludes some items of household spending such as mortgage interest rates and consumer credit charges
- Does not include property prices
- Can be a misleading indicator of inflation as it includes goods and services whose prices may be one-off or highly volatile

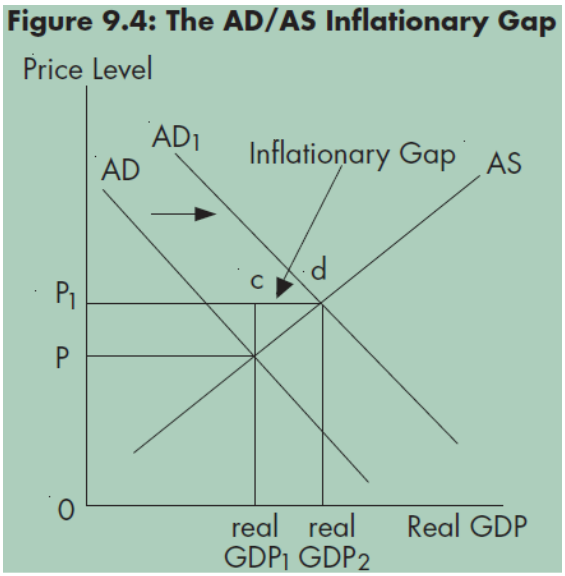
Underlying inflation (core inflation)

- Removes effects of one-off or volatile price movements (main difference vs headline) and as a result, is less volatile than headline inflation
- There are two measures of underlying inflation:
- **Trimmed mean**: excludes the 15% of items with largest price increases and 15% of items with smallest price increases (or largest price falls) from CPI
- **Weighted median**: the median inflation rate of every item in the CPI is calculated. Half the items in the CPI will be greater than weighted mean inflation rate and inflation of other half is less than it
- Provides a longer-term view of inflation trends in the economy, however RBA uses headline inflation level (to increase the transparency of the inflation targeting policy)
- There is also the third measure, which **excludes volatile items** such as seasonal price rises/falls (fruit and vegetables)

Causes of inflation – demand pull, cost push, inflationary expectations, imported inflation

Demand-pull inflation

Occurs when Aggregate Demand (AD) is growing while the economy is nearing its supply capacity, so that higher AD leads to higher prices rather than more output



- Aggregate demand increases from AD to AD1
- Higher level of expenditure in the economy results in consumers competing for limited g/s, so firms are able to charge higher prices
- Price Level increases from P to P1

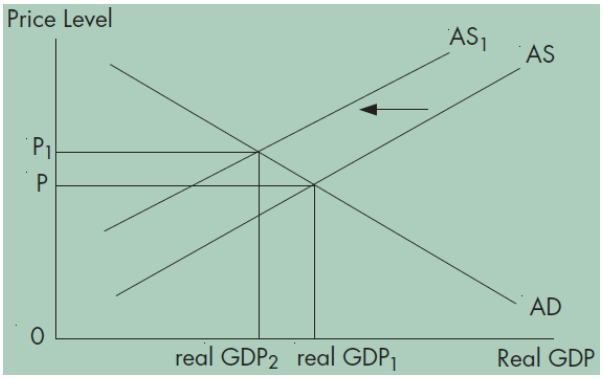
Rise in AD could be caused by:

- Increasing (C) due to: higher consumer confidence, wage increases, increased perceptions of wealth, tax cuts, falls in interest rates
- Increasing (I) - higher profits, higher business confidence, tax cuts, increased depreciation allowances or fall in interest rates
- Increases in money supply (Ms) caused by the RBA (such as interest rate cuts) to stimulate demand for credit, leading to increased spending
- Increased net government expenditure (G) - caused by a rise in the government's purchase of goods and services, tax cuts leading to a larger budget deficit/lower budget surplus
- Improvement in net exports (X-M) from higher terms of trade, causing higher incomes and investment and consumption expenditure in the domestic economy

Cost-push inflation

Cost-push inflation refers to increases in the general price level as a result of higher prices of the factors of production (e.g. rise in wages, rise in the cost of raw materials such as oil).

- Firms are compelled to raise prices in order to maintain profit margins, resulting in a higher price level for g/s.
- When wages increase faster than productivity, real unit labour costs increase.
- Represented in the AD/AS model by a decrease in AS.



- Decrease in AS (e.g. due to across the board wage increase or an increase in the price of oil) shifts equilibrium at a higher price level of P1 and a lower level of output at GDP2.
- Causes stagflation - economy experiences contraction in growth + rise in inflation + high unemployment

Causes of cost-push inflation:

- Across the board wage increases for workers not reflecting improvements in labour productivity
    - This has been limited by labour market decentralisation
- Rise in the price of domestic or imported raw materials such as oil or manufactured components or intermediate goods which raise production costs for businesses in the economy
- Depreciation of the exchange rate which may raise the cost of imports such as capital equipment and raw materials

- Rise in government charges including taxes (e.g. GST/Carbon tax), freight rates, royalties or workers' compensation premiums which raise production costs for firms
- Rise in the general level of interest rates caused by a tightening of monetary policy which raises the cost of borrowing and reduces firms' cash flows

Imported inflation

Imported inflation is caused by a rise in the prices of imported consumer goods, capital goods and intermediate goods. Often caused by a depreciation of the Australian dollar, which increases the prices of imports.

- More expensive imported consumer goods = higher inflation
- More expensive imported capital and intermediate goods = higher costs of production so firms raise prices, resulting in higher cost-push inflation
- However, if imports face competition from locally made products, importers may reduce profit margins and not pass the full effect of overseas price rise or depreciation
- Affected Australia in 1973-74 and in 1979-80 (due to OPEC restrictions on world oil supplies causing a rise in energy prices)
- Large depreciation in $A in 1986 also increased costs of imports. Importers pass impact of higher import costs to consumers through higher prices
- Recent depreciation (2019: AUD down from $0.78USD to $0.68USD) has *not* caused significant imported inflation as prices of tradeable goods has remained low due to low-cost manufacturers in Asia.

Inflationary expectations

Inflationary expectations refer to the level of future inflation anticipated by individuals and firms. Acts as a self-fulfilling prophecy - if individuals and firms expect higher inflation, they tend to act in ways that cause an increase in actual inflation.

- If prices of goods and services are expected to increase in the economy, consumers will attempt to purchase products before price increases. This will cause an increase in consumption, leading to a higher demand-pull inflation.
- If firms expect that prices for their inputs will increase, they will pre-emptively increase prices to maintain profit margins, resulting in higher cost-push inflation.
- As workplace contracts are negotiated in advance, an employee who expects higher inflationary pressures will ask for a higher wage rise to preserve purchasing power of their wages. Higher wage increases may be passed on, leading to cost-push inflation
- Economy can also experience demand pull and cost push inflation through a **wage price spiral** - excess AD leads to demand pull. Wage earners anticipate a rise in price level and seek higher nominal wages to maintain their real wages. If successful, AS falls causing a further increase in prices.
- This can continue leading to an acceleration in inflation - known as runaway or galloping inflation.
    - This may lead to hyper-inflation, as experienced I the German Weimar Republic in the early 1930s (inflation excess of 1000%/annum)
- Inflationary expectations have been anchored by the RBA's use of a credible 2-3% inflation target. This has allowed Australia to avoid the wage-price spiral since its introduction in 1993. Average inflation rate since 1993 = 2.5%.

Other causes of inflation:

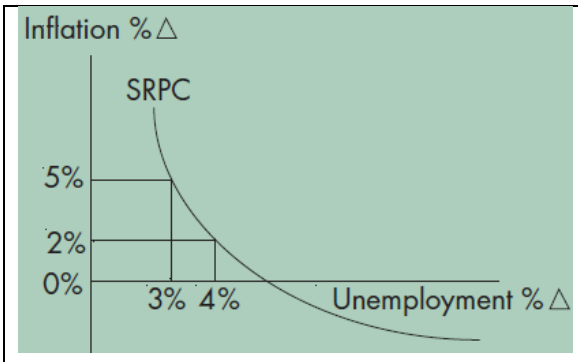
Discretionary Government policies:

- Increasing indirect tax can have an impact on general level of prices. e.g. 25% increase in tobacco excise in 2010 temporarily raised rate of inflation.
- Other measures: deregulating an industry, changing tariff rates, imposing price controls or price monitoring and increasing charges for goods and services provided by the Australian government

Excessive increases in money supply (monetary inflation):

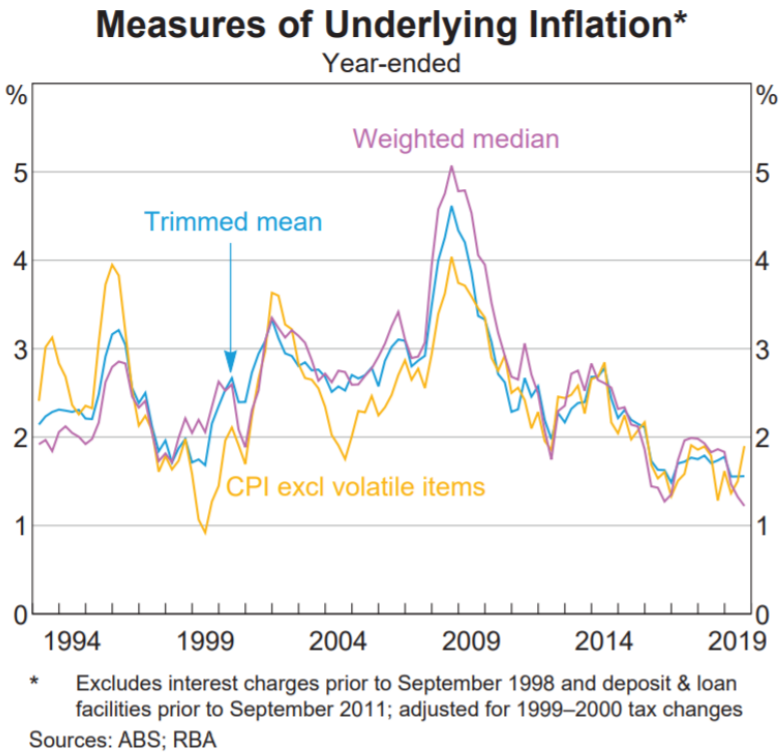
- When increase in money supply outstrips growth rate, an increased volume of money chases the same amount of goods and services and prices are likely to rise.
- Increase in money supply without an increase in real production may cause 'monetary inflation'.

Short Run Phillips Curve

	• Illustrates the trade-off between unemployment and inflation • Govt can reduce unemployment (e.g. from 4% to 3%) at the expense of higher inflation (e.g. 2% to 5%) • When the govt uses expansionary macroeconomic policies to decrease unemployment, AD will increase and this will result in higher demand-pull inflation. • Vice versa, reduction in government spending to reduce inflation may also increase cyclical unemployment

Trends in inflation

NOTE: You should familiarise yourself with the recent trends (last 5-10 years), as these are most useful for short answers/essays. We have also included older historical stats to illustrate the wider context of Australia's changing inflation picture.



1970s-80s: Relatively high inflation due to inflationary expectations, cost-push inflation (wage-induced), demand-pull inflation. Average of 6-10%.

1991: Recession - Australia emerged from this recession with low inflation levels (decrease in Aggregate Demand resulted in lower demand-pull inflation) Below 5%.

1993: RBA introduced a 2-3% inflation target to credibly guide monetary policy decisions.

1990s-2000s: CPI and underlying stayed below 3%.

2005-2008: High inflation - underlying inflation peaked at 4.7% - due to higher global prices (for food, energy and other commodities) and strength of economy activity.

Australia was close to 'full capacity' - causing high production costs feeding through to higher consumer prices.

2008-2010: Onset of GFC caused slower economic growth and incomes growth, reducing ability of businesses to increase prices of g/s (lower demand-pull inflation). Around 2.2% average.

2010-2013: Appreciation of AUD (historic high of $1.1USD) resulted in lower imported inflation. Fluctuated between 2.5-3%.

2013-2019: Consistently low inflation. Has largely fluctuated between 1-2%.

2019-20: Inflation remains slow and steady. Has increased back to 1.7% YoY. Decline in the housing market has led to a reverse "wealth-effect", weighing on consumer discretionary spending and leading to weaker house price inflation. Although, higher prices for food and consumer durables have pushed inflation up slightly.

Reasons for current trend of low inflation

- Low wages growth leading to subdued cost-push inflation (wages growth has been around 2% in the last 3 years)
- Low imported inflation (Australia continues to access low-cost manufactured imports from Asia)
- Low inflation in consumer goods (due to higher online and retail competition)
- Although the RBA's expansionary monetary policy (0.75% cash rate) has remained supportive of demand-pull inflation, it has not had enough impact yet. Further monetary loosening may be required – markets expect this in 2020.

Positive and negative effects of inflation

Negative effects of high inflation

- **Consumers** lose purchasing power and real income. Unless incomes rise with inflation, cost of living would rise, reducing income and living standards.
- High inflation **distorts economic decision making** – individuals tend to buy assets that retain their real value over time (e.g. real estate, gold) rather than invest in income-producing activities to minimise effect of inflation on themselves
- **Workers** suffer a fall in real wages if their money wages do not rise by the same percentage as the rate of inflation and cost of living over time. This means a **redistribution of income** away from wage earners and fixed income earners to those receiving profit and dividend income. This may also cause higher nominal wage demands - employees seek larger wage increases to be compensated by high inflation. This leads to **wage-price inflationary spirals** (rising inflation leads to high wage demands and so on).
- **Producers** react to higher costs or lowered demand by increasing prices. This may cause higher 'menu' costs. Producers may also cut labour costs, leading to **higher unemployment**
- **Unemployment** - Refer to above. Also, higher inflation results in more contractionary fiscal and monetary policies, resulting in slower economic growth and higher unemployment in short-medium term. See short run Phillips curve.
- **Stagflation** can occur were there are simultaneous high rates of inflation and unemployment
- **Exporters** and **import competitors** may need to pass on higher production costs in the form of higher prices and may suffer temporary or permanent loss

of international competitiveness (since export prices rise relative to import prices). This results in a worsening of the BoGS.

- **Reduction in real savings** and **real investment** which reduces the rate of capital accumulation. Only if nominal interest rates do not keep up with inflation
- **Negative impact on distribution of income and wealth**: Incomes of lower income earners do not usually rise as quickly as prices, resulting in a decline in the purchasing power of their income. To combat inflation, the RBA may raise interest rates, which further benefits high income earners as they are more likely to be savers. In contrast, lower income earners will be hurt by higher interest rates as they are more likely to be borrowers, and thus loan repayments increase. On the hand, higher inflation will reduce real interest rates (Real interest rate = Nominal interest rate - Inflation rate). This will redistribute income from lenders towards borrowers.
- **Economic growth** - constrained as high inflation results in the RBA raising interest rates, which reduces growth
- **Economic uncertainty** – When inflation is high and variable, firms are reluctant to make investments; reduces growth in AS.
- **Appreciation in exchange rate** as interest rates rise in response to high inflation, attracting greater financial inflows. However, over time, currency depreciates due to loss of international competitiveness
- **Interest rates** - high inflation causes high interest rates, as RBA tries to reduce demand pressures in the economy and avoid negative consequences of high inflation

Positive effects of inflation

- Reduces likelihood of **deflation** (falling prices), which has negative consequences.
    - Deflation gives consumers an incentive to delay purchases, which can cause a fall in consumer spending (lower AD) and economic downturn
    - E.g. Japan suffered 15 years in deflation due to being trapped in a deflationary spiral.
- Rising prices on asset prices such as shares and real estate.
    - Speculators can gain from asset price inflation if they sell their financial or real assets at inflated prices before the collapse of the speculative boom.
    - However, this may lead to resource misallocation as capital is directed to speculative and not productive assets

Policies to contain inflation (This is part of Topic 4: Economic Policies and Management)

- **Monetary policy** - by tightening monetary policy, the RBA contains growth in aggregate demand, resulting in a lower level of AD and therefore lower inflation. This was used from to October 2009 (0.25%) to November 2010 (4.75%). The RBA's use of a credible and transparent inflation target of 2-3% also reduces inflationary expectations.
- **Fiscal policy** - By increasing revenue and decreasing spending, demand-pull inflation is reduced.
- **Microeconomic policies**
    - **Reduced protection** - lowered prices of imports, increasing competition faced by domestic producers. This makes it difficult for domestic producers to raise prices
    - **Reforms to the labour market** - ensure that wage increases are linked to productivity improvement (Principle of workplace or productivity bargaining through enterprise agreements). Contained wage pressures not based on productivity improvements
    - **Spending on infrastructure** such as roads, railways and ports - reduce capacity constraints faced by businesses that increase production costs and contribute to inflation
    - **National competition policy** - promote competitive conduct roles in markets
    - **Taxation reform** - remove indirect taxes such as sales tax which distorted prices and raised cost structures for firms
    - **Reform of public utilities and trading enterprises** - increase their efficiency and lower prices
    - **Deregulation of markets** - increase levels of competition and lower prices

Sample Exam Questions

The table shows selected data for a hypothetical economy

Year	Consumer Price Index (CPI)
1	100
2	105
3	115

1. *Calculate the inflation rate for year 3.* (1)

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2. *Distinguish between demand inflation and cost inflation.* (2)

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3. *Explain* ***TWO*** *possible impacts of high inflation within an economy.* (2)

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4. *Explain how inflationary expectations could influence the rate of inflation in the Australian economy. (3)*

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Answers:

1. Calculate the inflation rate for year 3. **(1)**

(115 – 105) / 105 = 9.5%

2. Distinguish between demand inflation and cost inflation. **(2)**

Demand inflation arises due to excess demand over supply for goods and services pulling prices up as buyers compete for a limited supply. Cost push inflation occurs when the cost of production increases forcing businesses to raise their prices, so profits are not eroded.

3. Explain TWO possible impacts of high inflation within an economy. **(2)**

International competitiveness is reduced due to higher prices, making it harder for domestic goods to compete on the global stage. Purchasing power of fixed income is eroded as consumers can now buy less physical / real items. Higher levels of inflation also encourage more savings in capital investments that generate a return equal to inflation. Higher levels of inflation also advantage creditors over debtors.

4. Explain how inflationary expectations could influence the rate of inflation in the Australian economy. (3)

Inflationary expectations are what businesses and individuals believe will happen to inflation in the future. The expectations influence their behaviour and this ends up translating into actually occurring. For example, if a consumer is expecting prices to rise, they may purchase goods now. This results in an immediate increase in demand which may cause demand pull inflation.