

# ECON 1002 SUMMARY

## Measuring macroeconomic performance: output & prices

### When is the economy performing well?

1. Raises living standards in the long run
2. Avoids extremes of short-run macroeconomic performance
3. Maintains the real value of the currency
4. Ensures sustainable levels of public & foreign debt
5. Balances current expenditure against the need to provide resources for the future
6. Provides employment for all individuals seeking work

### Gross domestic product (GDP)

- A nation's GDP is a measure of the market value of the final goods and services produced in a country during a given time period, usually a quarter of a year
- The 2 most important measures in the economy are the quantity of G/S produced, and the price they are sold for
  - Nominal GDP measures the value of output in current prices  
Real GDP (quantities) x GDP deflator (prices)
  - Real GDP measures it in constant prices (measuring the actual physical volume of production)  
Actual quantities x prices for those quantities in base year  
GDP in 'chain volume measures' → from the raw GDP data, a series is obtained reflecting only production volume

There are 3 ways of measuring a country's GDP:

1. The value of PRODUCTION (value added)
  - Calculated by the market value: the quantity traded times the price it is traded for
    - This means it measures only market goods and services e.g. TVs and education, but does not account for non-market goods and services e.g. forest growth and volunteering
  - GDP measures only the final value of goods and services – the ultimate good sold after all production processes
  - Production method involves adding up the value added (revenue-costs) by each firm along the production chain
2. The value of EXPENDITURE
  - The expenditure method adds up everything spent by final consumers in the economy

$$Y = C + I + G + NX$$

GDP              Household consumption              Investment              Government spending              Net exports  
( $C_G + I_G$ )              (Exports – imports)

### 3. The value of INCOME

- The income method traces who earns the income from the sale of all G/S in the economy
- Revenues from sale of a G/S are distributed to the workers & the owners of the capital involved in production
- GDP = labour income (wages, salaries etc.) + capital income (payments to physical & intangible capital, profits)
- There is a circular flow of income btn households & firms: households supply labour to & buy goods from firms

### Flaws of GDP

- GDP does not calculate all things that contribute to economic wellbeing, such as:
  - Leisure time
  - Non-market activities e.g. the underground economy
  - Environment quality and resource depletion
  - Quality of life
  - Economic inequality → whilst a nation's GDP may be high, output is often not distributed equally
- Yet GDP is believed to be positively related to these factors, thus gives some insight into economic wellbeing
- Moreover, GDP is positively correlated with life expectancy, availability of goods and resources and happiness

### The consumer price index (CPI)

- The CPI is a measure of the average price level in an economy, measured by comparing the cost of living in a certain period to the cost of living to the base year

$$CPI = \frac{\text{cost of base year consumption basket of goods and services in current year}}{\text{cost of base year consumption basket of goods and services in base year}}$$

Credibility depends on:

1. **Central bank independence:** when central bankers are insulated from short-term political considerations and are allowed to take a long-term view of the economy
  - o Also: lengthy appointments, independence from government, reputation as 'hawks'
2. Announcing a numerical inflation target – reduces uncertainty
  - o Targets >0 because deflation is costly, and small inflation allows real wages to fall if needed
3. Central bank reputation
  - o **Inflation hawk**-committed to achieving and maintaining low inflation and accepts some short-run cost

### Fiscal policy and the supply side

- **Supply-side policy:** a policy that affects potential output
  - o E.g. Public spending on roads- shifts AD outward but also increases potential output in long-run
- Taxes/transfer payments- lower tax rate on interest income increases people's willingness to save, lower tax rates on earnings increase output by inducing people to work more hours, however can work the other way
- Drop in **marginal tax rates** – the amount by which taxes rise when before-tax income rises by one dollar
  - o Affect labour supply decisions e.g. person may not pursue becoming a doctor if high marginal tax rate

### **Money, prices and the reserve bank**

#### **Bonds**

- A bond is a legal promise to pay a debt, and consists of (a) the principle amount (b) coupon payments
- Market value of a particular bond depends on how the current interest rate in financial markets compares with the interest rate at the time the bond was issued
- **Bond prices & interest rates are inversely related** –interest rate on new bonds rises, WTP for existing bonds fall

#### **EXAMPLE**

On 1 Jan 2012 Tanya buys a 2-year Gov. bond with principal of \$1000 and a coupon rate of 5%, paid annually.

She will receive a coupon payment of \$50 on 1 Jan 2013, another on 1 Jan 2014 + \$1000. On 1 Jan 2013, she sells bond.

- Buyer will receive \$1050 on 1 Jan 2013. Interest rate on 1 Jan 2013 is 6%- thus, someone who buys a new one-year bond on 1 January 2013 with a 6% coupon rate for \$1000 will receive \$1060 on 1 January 2014
- Coupon payment on Tanya's bond does not rise when interest rates rise, thus bond owner will only receive \$1050
- To sell the used bond, Tanya has to reduce the price to below \$1000- they must get a 6% return  
$$\text{Bond price} \times 1.06 = \$1050$$
- Bond will thus sell for \$1050/1.06, just under \$991

### Money and its uses

- Barter economy- don't use money and just exchange what they produce
- Highly inefficient- requires that each party has something that other party wants- **double coincidence of a wants**
- Money solves problems of a barter economy, especially the 'double coincidence of wants.' Plays 3 roles:
  1. **Medium of exchange**- requires everyone to accept money: 'trust'/'confidence'
  2. **Unit of account**- Basic yardstick for measuring economic value – easy comparisons, divisible
  3. **Store of value**- retain its value in a reasonably predictable way (doesn't disintegrate)
- Commodity money- when goods or assets valuable for other purposes are used as money (e.g. gold standard)
- Fiat money – money that is not convertible to any other asset. Debt can only be repaid in more fiat money
- With fiat money, changes in demand for money can be matched by changes in amount of money available. When the amount of money is linked to a commodity this places a limit on how much money there can be. Thus abandoning the gold standard allowed Britain to regain more control of amount of money in the economy
- **Broad money:** CURRENCY (banknotes and coin) and BANK deposits (consumer money)
- **Base money:** IOUS from the central bank – CURRENCY and CENTRAL bank reserves (CB money)
- Money has no inherent value, other than the fact that people trust and accept it
- Modern money is a set of IOUs between three groups: the central bank, commercial banks and consumers
- In a modern economy bank deposits make up the vast majority of money held by households
- Notes and coins (fiat money) are IOUs from the central bank to households (households claim over CB assets)
- Bank deposits are IOUs from commercial banks to consumers- more convenient, safer, earn interest
- Central Bank reserves are IOUs from the CB to commercial banks. They are used to settle transactions b/w banks
  - o If buyer and seller from same bank – cancel out, if diff, settle at end of day electronically using reserves
- **Fractional reserve banking:** if commercial banks are only required to hold 10% in reserves, the rest can be loaned out for higher interest. In equilibrium, the 90% loaned to farmers is spent, so ends up back in banks as more deposits, which can be loaned. It will multiply the money supply by a factor of 10

$$\text{Bank deposits} = \frac{\text{bank reserves}}{\text{desired reserve} - \text{deposit ratio}}$$

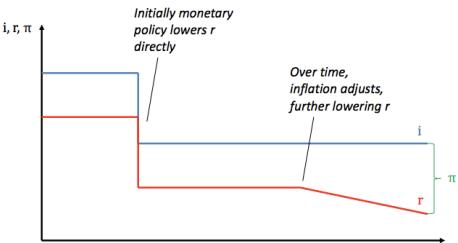
E.g. reserves = 1 000 000 , reserve-deposit ratio= 0.10, then bank deposits equal (1 000 000/0.10) or 10 million

## Can the reserve bank control interest rates?

The Fisher Equation:  $i = r + \pi$

- In the short run: it takes time for a change in  $i$  to feed through to  $\pi$ , so the initial effect is on  $r$
- In the medium run: higher  $i$  will eventually lower  $\pi$ , so the effect on  $r$  gets larger over time

Example: loosening monetary policy



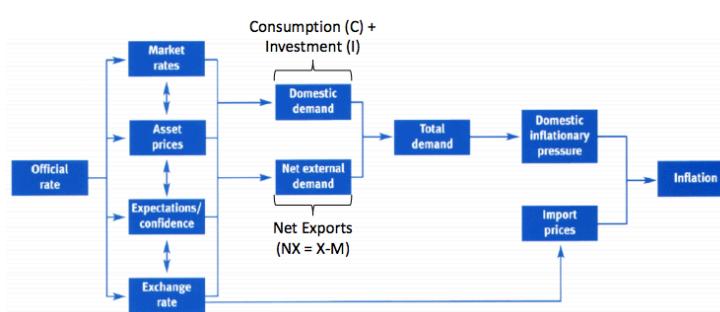
In the short run inflation expectations are sticky, so changing  $i$  just changes  $r$ . Over time inflation expectations change, further changing  $r$ . In the long run, the real interest rate will be determined by the balance between saving and investment

Also, because interest rates tend to move together, an action by the RB to change the overnight cash interest rate generally causes other interest rates to change in the same direction

## The effects of the reserve bank's actions on the economy

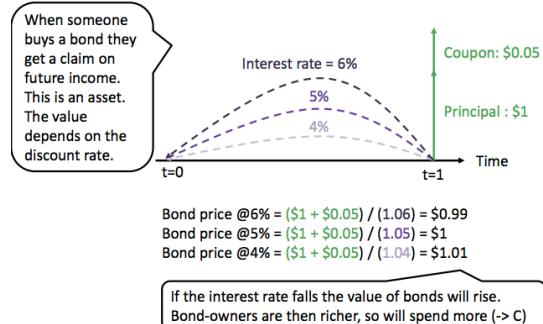
When the Central Bank changes interest rates it affects the economy through a variety of 'transmission channels'

### Transmission channels of monetary policy

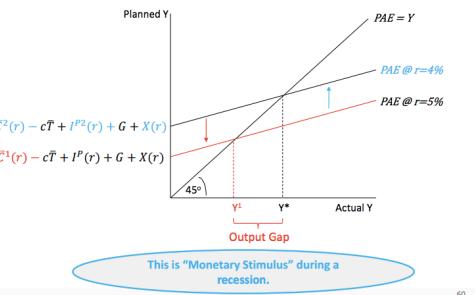
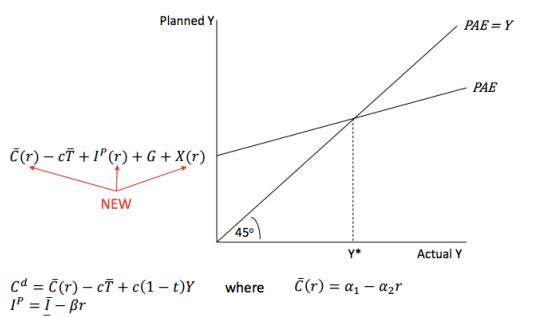


- The **Market Rate channel** works through deposit rates ( $> C$ ) and loan rates ( $> C$  and  $I$ )
- In Australia saving has gone up despite low interest rates since the GFC, due to precautionary savings/rebuilding wealth
- The **expectations channel** happens through 'open mouth' operations, which influences how confident people are about the future ( $> C$  and  $I$ )
- The **exchange rate channel** works because a lower  $i$  will depreciate the exchange rate, all else equal

### The price of a bond varies inversely with interest rates



We can represent these effects on the Keynesian Cross by 'endogenizing'  $C$ ,  $IP$  &  $X$  with respect to  $r$  (LHS). Together the four channels can correct a fall in aggregate demand, and be used to manage recessions (RHS)



### Planned aggregate expenditure and the real interest rate

- Consumption spending and planned investment spending decline when  $r$  increases
- A fall in  $r$  tends to stimulate consumption and investment spending by reducing financing costs