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Subject : Business Economics – Macro Economics

Inflation

Inflation & Rate of Inflation

- **Inflation** is a sustained increase in the general price level.
- The **rate of inflation** refers to the **annual percentage increase in price levels**. By this is meant the percentage increase in a specific price index.

Different inflation rate measures

- The term **'rate of inflation**' is typically used to refer to the **annual percentage change in consumer prices.** The index that is normally used is the **consumer prices index (CPI).**
- Sometimes an older measure is used, **the retail price index (RPI).**
- Unlike CPI, **RPI includes housing costs**. The **CPI** is seen as **more sophisticated as it is based on a geometric mean of the basket of goods making up the index, whereas the RPI is based on an arithmetic mean.** The effect is to make the **RPI typically around 1.2 percentage points higher than the CPI.** People whose incomes are increased in line with inflation will thus fare better if this is based on the RPI rather than the CPI.
- A **broader measure of inflation is the GDP deflator.**
- **GDP deflator -** The price **index of all final domestically produced goods and services**, i.e. all those items that contribute towards GDP.

Calculating Annual Rate of Inflation

The inflation rate (π) is calculated from the following formula:

$$\pi = \frac{P_t - P_{t-1}}{P_{t-1}} \text{ x } 100$$

where P_t is the price index for year t and P_{t-1} is the price index for the previous year.

Question

If the price index for year 1 is 140.0 and that for year 2 is 149.1, then inflation in year 2 is ?

Ans. 6.5%

Causes: Demand-pull inflation

- **Demand-pull inflation -** Inflation caused by **persistent rises in aggregate demand**.
- **Firms will respond** to a rise in demand **partly by raising prices** and **partly by increasing output.** How much they raise prices depends on how much their costs rise as a result of increasing output. The closer actual output gets to potential output, and the less slack there is in the economy, the more will firms respond to a rise in demand by raising their prices and vice versa.
- Sometimes there may be **a single increase in demand** (or **a 'demand shock'**), for example, an increased level of government expenditure. The effect is to give a **single rise in the price level**. Although this **causes inflation in the short run**, **once the effect has taken place, inflation will fall back to zero.**
- For **inflation to persist, there must be continuing increases in aggregate demand** and thus **continuing rises in the price level.** If inflation is to rise, the rate of increase in aggregate demand must also rise.

Demand-pull inflation

- Demand-pull inflation is typically **associated with a booming economy**.
- Many economists therefore argue that it is the **counterpart of demand-deficient unemployment.**
- When the **economy is in recession**, **demand-deficient unemployment is high**, but **demand-pull inflation is low**. When, on the other hand, the economy is near the peak of the business cycle, demand-pull inflation is high, but demand deficient unemployment is low.

Causes: Cost-push inflation

- **Cost-push inflation** is associated with **continuing rises in costs which occur independently of aggregate demand.**
- If firms face a rise in costs, they will respond **partly by raising prices** and passing the costs on to the consumer, and **partly by cutting back on production**. **How much firms raise** prices and cut back on production **depends on the impact of price changes on aggregate demand.** The less responsive is aggregate demand to price changes, the less will sales fall as a result of any price rise. This allows firms to pass on more of the rise in their costs to consumers as higher prices.
- Note that **the effect on output and employment is the opposite of demand-pull inflation**. With demand-pull inflation, output and hence employment tends to rise.
- With **cost-push inflation, however, output and employment tends to fall.**

Cost push inflation

- We must **distinguish between one-off increases in cost (a 'supply shock')** from **continuing increases.**
- If there is a **one-off increase in costs, there will be a one-off rise in the price level**. For example, if the government raises the excise duty on petrol and diesel, there will be a single rise in fuel prices and hence in firms' fuel costs. This will **cause temporary inflation** while the **price rise is passed on through the economy**. Once this has occurred, **prices will stabilise at the new level** and the **rate of inflation will fall back to zero again.**
- If **cost-push inflation is to continue over a number of years, therefore, then costs must continually increase**. If cost-push inflation is to rise, the rate of increase in costs must also rise.

Sources of cost-push inflation

- Rises in costs may originate from a number of different sources, such as **trade unions pushing up wages, firms with monopoly power raising prices in order to increase their profits, or increases in international commodity prices.**
- With the process of **globalisation and increased international competition**, cost-push pressures have tended to decrease in recent years.
- Temporary **supply shocks can come from bad harvests**. Longer-term supply-side problems can come from the **depletion of natural resources**, such as the gradual running down of North Sea oil, pollution of the seas and hence a decline in incomes for nations with large fishing industries.

The costs of inflation

- Why is inflation a problem? If people could **correctly anticipate the rate of inflation** and **fully adjust prices and incomes to take account** of it, then **the costs of inflation would indeed be relatively small.**
- For us as consumers, they would simply be the relatively minor inconvenience of having to adjust our notions of what a 'fair' price is for each item when we go shopping.
- For firms, they would again be the relatively minor costs of having to change price labels, or prices in catalogues or on menus, or adjust slot machines. These are known as **menu costs of inflation.**
- **In reality, people frequently make mistakes when predicting the rate of inflation** and are **not able to adapt fully to it**. This leads to serious problems.

The costs of inflation

- **Redistribution -** Inflation redistributes **income away from those on fixed incomes** and those in a weak bargaining position, **to those who can use their economic power to gain large pay, rent or profit increases.**
- **Uncertainty and lack of investment -** Inflation tends to cause **uncertainty among the business community**, especially when the rate of inflation fluctuates. If it **is difficult for firms to predict their costs and revenue**s, they may be **discouraged from investing**. This will **reduce the rate of economic growth**.

The costs of inflation

- **Balance of payments -** Inflation is likely to **worsen the balance of trade.** If a country suffers from relatively high inflation, its exports will become less competitive in world markets. At the same time, imports will become relatively cheaper than home-produced goods. Thus exports will fall and imports will rise. This is known an **international substitution effect.**

- **Resources -** Extra resources are likely to be used to cope with the effects of inflation. Accountants and other financial experts may have to be employed by companies to help them cope with the uncertainties caused by inflation.

The interaction of demand-pull and cost-push inflation

- **Demand-pull and cost-push inflation can occur together**, since wage and price rises can be caused both by increases in aggregate demand and by independent causes pushing up costs.
- Even when an inflationary process starts as either demand-pull or cost-push, it is often difficult to separate the two.
- An **initial cost-push inflation** may **encourage the government to expand aggregate demand to offset rises in unemployment**. Alternatively, **an initial demand-pull inflation** may **strengthen the power of certain groups, which then use this power to drive up costs.**

Expectations and inflation

Expectations play a crucial role in determining the rate of inflation. **The higher people expect inflation to be, the higher it will be.**

Workers and firms take account of the expected rate of inflation when making decisions.

Imagine that a union and an employer are negotiating a wage increase. Let us assume that both sides expect a rate of inflation of 5 per cent. The union will be happy to receive a wage rise somewhat above 5 per cent. That way the members would be getting a real rise in incomes. The employers will be happy to pay a wage rise somewhat below 5 per cent. After all, they can put their price up by 5 per cent, knowing that their rivals will do approximately the same. The actual wage rise that the two sides agree on will thus be somewhere around 5 per cent. Now let us assume that the expected rate of inflation is 10 per cent. Both sides will now negotiate around this benchmark, with the outcome being somewhere round about 10 per cent. Thus the higher the expected rate of inflation, the higher will be the level of pay settlements and price rises, and hence the higher will be the resulting actual rate of inflation.

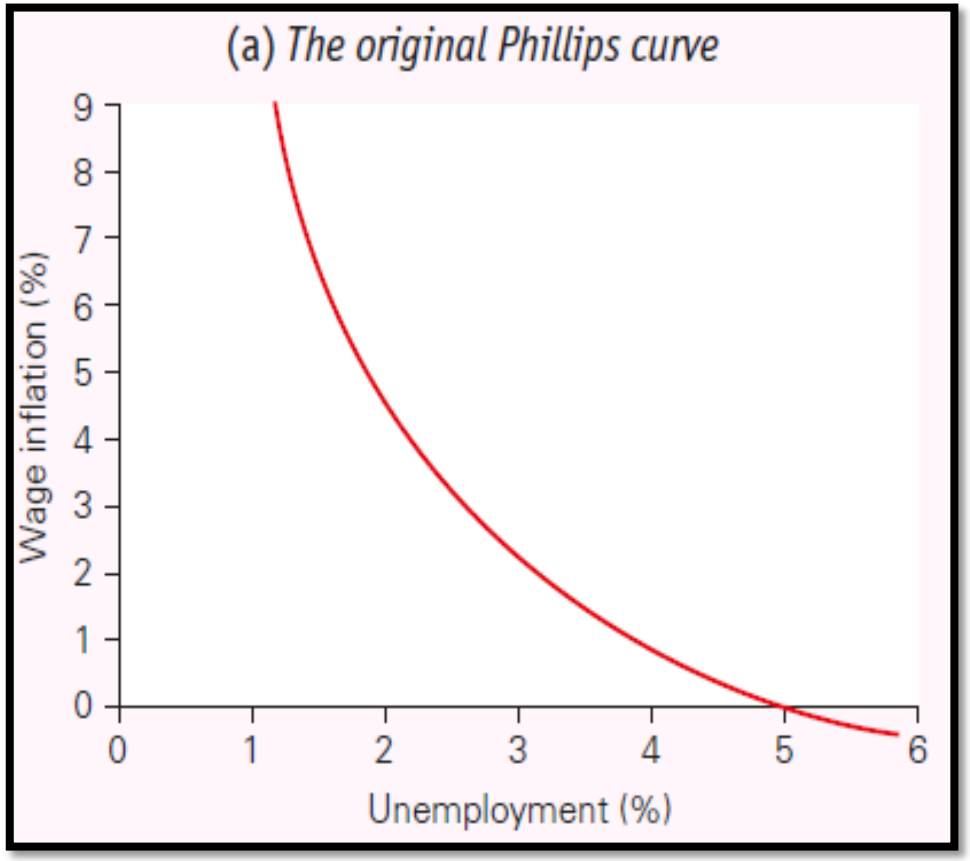
Philips Curve

Phillips curve - A curve showing the relationship between (price) inflation and unemployment.

- **The original Phillips curve**

In 1958, Phillips showed the statistical relationship between wage inflation and unemployment in the UK from 1861 to 1957.

It is illustrated in Figure below and shows an **inverse relationship** between inflation and unemployment.



Philips Curve – Features & Implications

- The curve has often been used to illustrate the effects of changes in aggregate demand. **When aggregate demand rose** (relative to potential output), **inflation rose** and **unemployment fell:** there was **an upward movement along the curve**. When aggregate demand fell, there was a downward movement along the curve.
- There was also a second reason given for the invers relationship. If **wages rose**, the **unemployed might have believed that the higher wages they were offered represented a real wage increase**. That is, they might not have realised that the **higher wages would be 'eaten up' by price increases**: they might have suffered from **money illusion**. They would thus have accepted jobs more readily. The average duration of unemployment therefore fell. This is a reduction in frictional unemployment.

Philips Curve – Features & Implications

- The Phillips **curve was bowed in to the origin**. The usual explanation for this is that, as **aggregate demand expanded**, at first there would be **plenty of surplus labour.** But **as labour became increasingly scarce**, firms would find they had **to offer increasingly higher wages to obtain the labour t**hey required, and the **position of trade unions would be increasingly strengthened.**

- The position of the Phillips curve **depended on non-demand factors** causing inflation and unemployment: frictional and structural unemployment; and cost-push, structural and expectations-generated inflation. If **any of these non-demand factors changed** so as to raise inflation or unemployment, **the curve would shift outwards to the right.** The **relative stability of the curve** over the hundred years or so observed by Phillips **suggested that these non-demand factors had changed little.**

Philips Curve – Features & Implications

- The Phillips curve **seemed to present governments with a simple policy choice**. They **could trade off inflation against unemployment**. Lower unemployment could be bought at the cost of higher inflation, and vice versa. Unfortunately, **the experience since the late 1960s has suggested that no such simple relationship exists beyond the short run.**

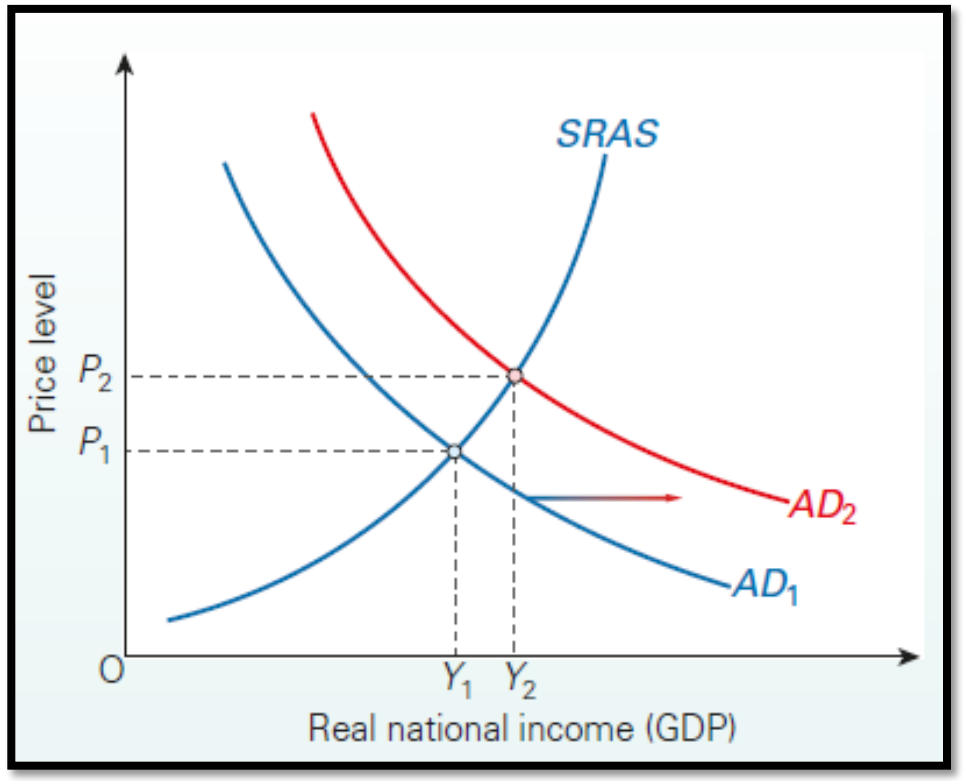
AD / AS and Inflation

We can use our aggregate demand and supply framework to further our understanding of demand-pull and cost-push inflation.

- **Demand-pull inflation**

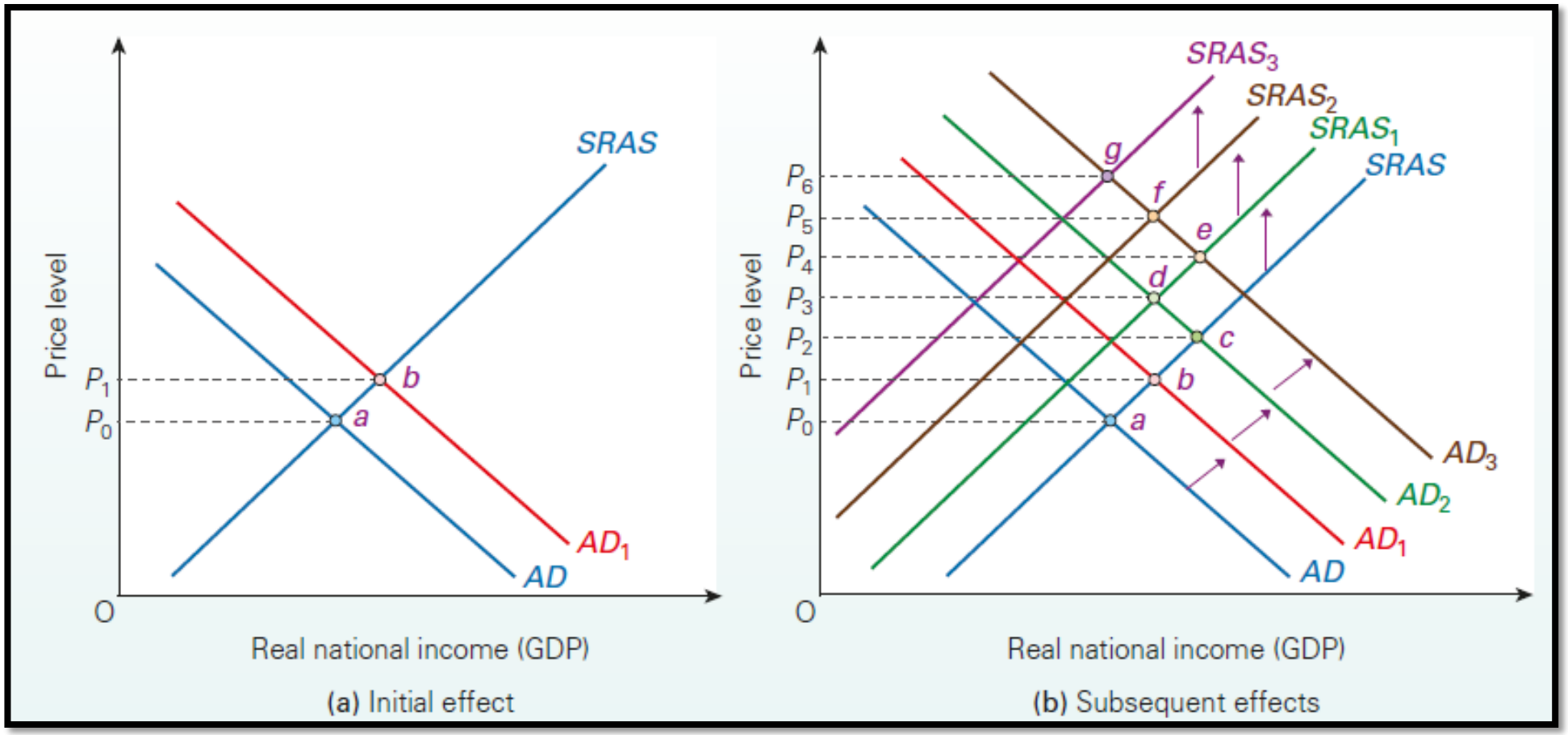
Demand-pull inflation can be represented by **continuous shifts of the AD curve to the right.**

For demand-pull inflation to continue, the rightward shifts of the AD curve must also continue; for demand-pull inflation to rise, the rightward shifts must get faster.



Subsequent effects

Crucially, we have assumed that the factors taken as given in constructing the short-run aggregate supply curve remain constant. But eventually the SRAS curve will start shifting. We now analyse how this might happen and what this could mean subsequently for the economy's price level and output.



Subsequent effects

- As before, assume that **aggregate demand rises**, there is **some increase in output**, and the **price level rises** from P0 to P1. If **demand goes on rising, so that the AD curve goes on shifting to the right,** the **price level will go on rising** and there will **be demand-pull inflation.** There will be a movement from point a to b to c in figure above.
- An important part of the subsequent adjustment process comes from the **interdependence of firms**. **Rising aggregate demand will lead firms** throughout the economy **to raise their prices their prices,** this will **raise the costs of production** further up the line. At the same time, workers, experiencing a rise in demand for labour, and seeing the prices of goods rising, **will demand higher wages**. Firms will be relatively willing to grant these wage demands, since they are experiencing buoyant demand.
- The effect of all this is to **raise firms' costs, and hence their prices.** As prices rise for any given level of output, the **short run AS curve shifts upwards**.
- All other things being equal, this **will lead to a falling back of output** but a further **rise in prices** as the economy moves to point d.

Subsequent effects

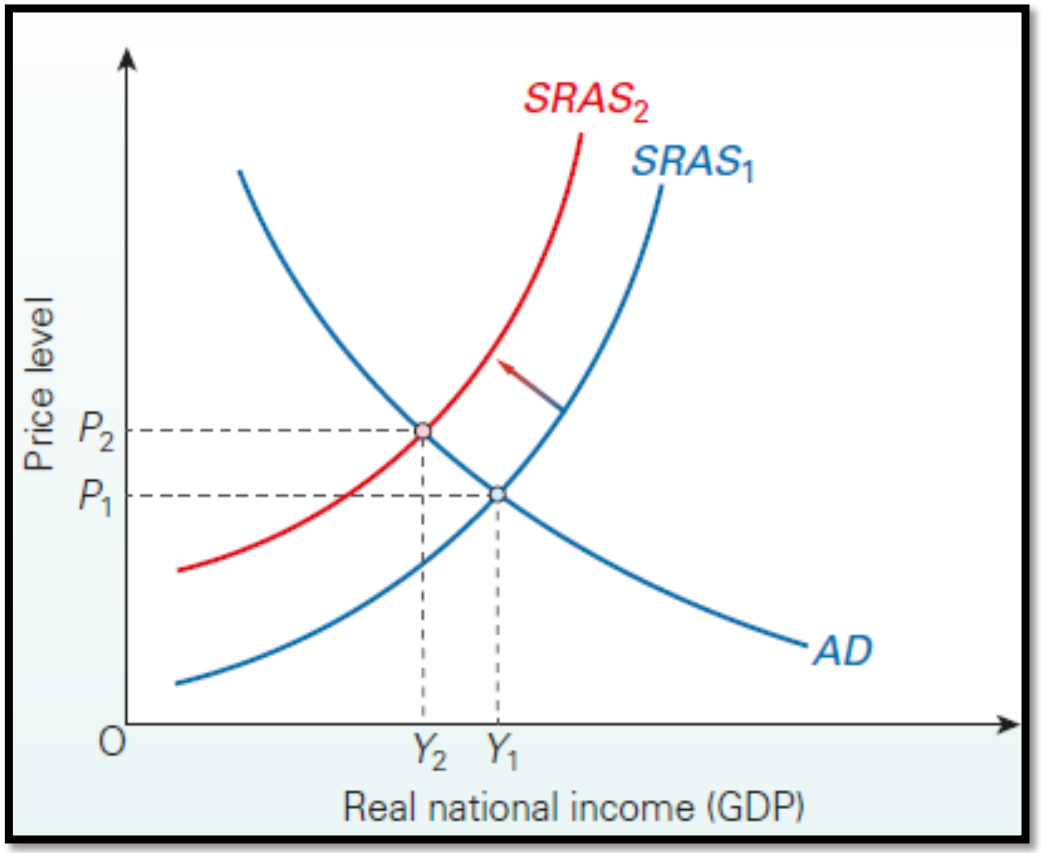
- If there was to be a **further rise in demand**, we might perhaps observe a further **outward movement of the *AD* curve,** say to point *e*, but a **further rise in prices**. Then the ***SRAS* curve will probably continue shifting upwards** and the economy will move to point *f*.
- If the **source of the increase in demand** was to cease or **government now makes the control of inflation its main policy** objective, then **this may stop further increases in aggregate demand. Aggregate supply may continue shifting upwards** for a while as cost increases and expectations feed through. The economy moves to point *g*.
- In the extreme case, point *g* may be vertically above point *a*. **The only effect of the shift in *AD* to *AD*3 has been inflation**.

AD / AS and Inflation

- **Cost-push inflation**

Cost-push inflation can be represented by **continuous shifts of the SRAS curve upwards to the left.**

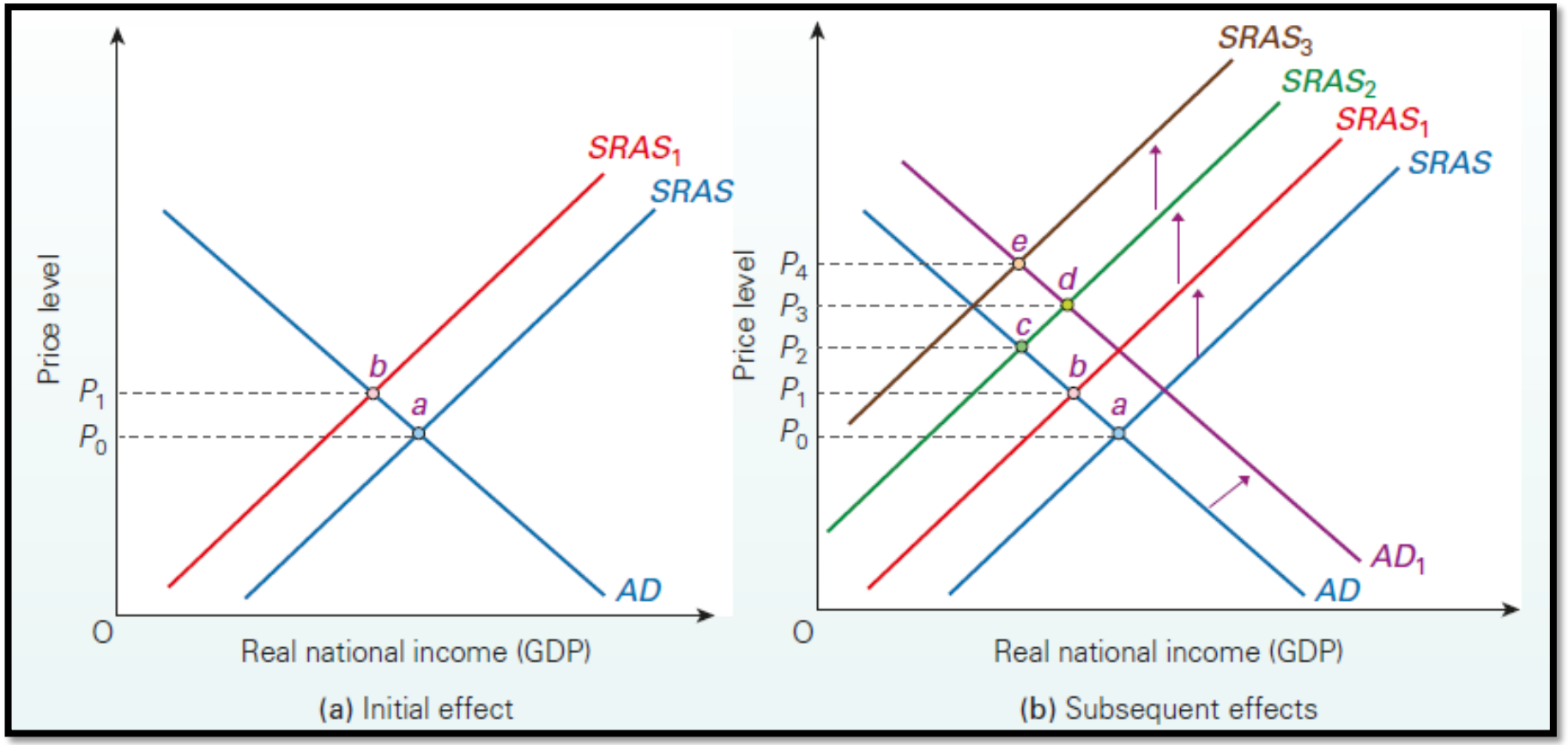
We can see that **demand-pull and cost-push inflation have the opposite effect on output**. This is because it is positive demand shocks but negative supply shocks that cause price levels to rise.



Subsequent effects

Up till now in the analysis, the aggregate demand curve has been unaffected by the shifts in the *SRAS* curve. After a time, this is unlikely to remain the case.

We now consider how the *AD* curve might be affected subsequently.



Subsequent effects

- Assume that there is **some exogenous increase in costs,** the ***SRAS* curve shifts to *SRAS*1**. **Prices rise** to *P*1 and there is a **fall in national output.**
- If these **increases in costs continue** for some time, the ***SRAS* curve will go on shifting upwards**. **Price rises will continue** and **there is cost-push inflation**. The economy will move from point *a* to *b* to *c* in Figure.
- After a time, **aggregate demand is likely to rise**. This may be **due to the government using expansionary fiscal and monetary policies** to halt the falling output and employment or other reasons. **Aggregate demand shifts to *AD*1** and there is a movement to point *d*.
- There may be a **further increase in costs** and a movement to point *e,* and **then a further increase in aggregate demand and so on.**