

Inflation

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1. Definition

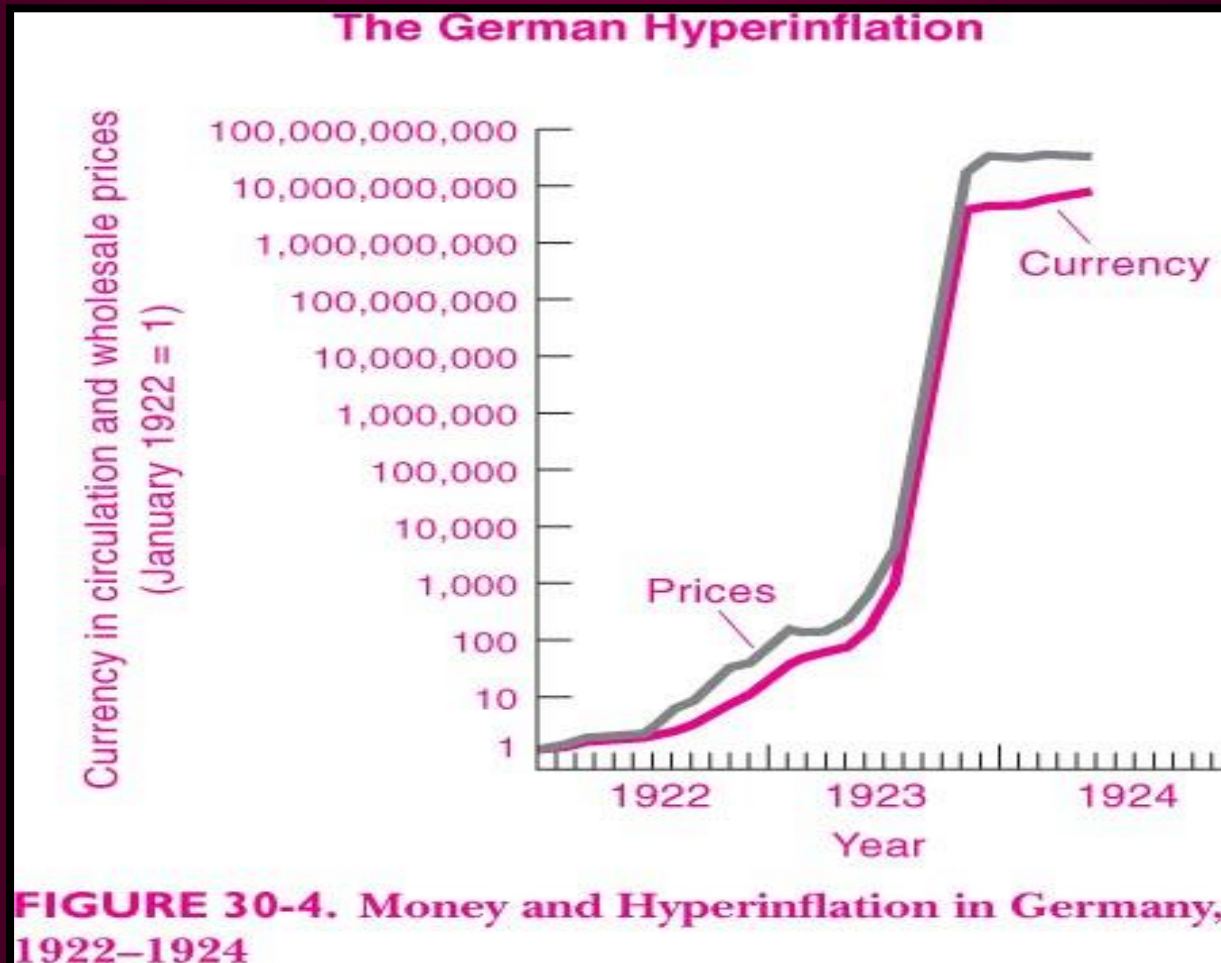
- Rate of ‘change’ in ‘general level’ of prices
- General Level of Prices: ‘Weighted Average of prices of a group of commodities and/or services over a sustained period of time.’
- Inclusion of items
- Choice of Weights
- Aggregation issues
- $[(P_t - P_{t-1}) / P_{t-1}] * 100$
- *Inflation* is not an increase in all prices. It is, instead, an increase in the *general* level of prices and costs.

2. Types of Inflation

A. Classified by magnitude

- Low or moderate inflation: Slow and steady rise in prices, generally in single digit. People trust money and are willing to write long-term contracts in money terms. Moderate inflation is not considered to be ‘terribly problematic’, instead it is considered as elixir to growth.
- Galloping Inflation: Inflation rate in the range of 20 to 200 percent. It is not a desirable process.
- Hyperinflation: Undesirable, people lose faith in money and switch to alternative means of storing value or wealth. Dollarization.

Source: Samuleson & Nordhaus,
Economics



B. Classified by Causes

- **Modern Inflation Theory**
- Demand Pull Vs Cost Push

Demand-pull inflation is the result of excessive aggregate demand and can be associated with higher levels of real as well as nominal GDP. (If an economy is operating at its potential, then the increase in GDP will be entirely nominal.)

Cost-push inflation is caused by increased costs which push aggregate supply up; it is therefore associated with lower levels of real GDP, so nominal GDP can be higher or lower.

Either demand-pull or cost-push inflation can contribute to expected inflation, the best reflection of which is a simultaneous shifting up of both the aggregate supply curve and the aggregate demand curve.

Demand-Pull Inflation

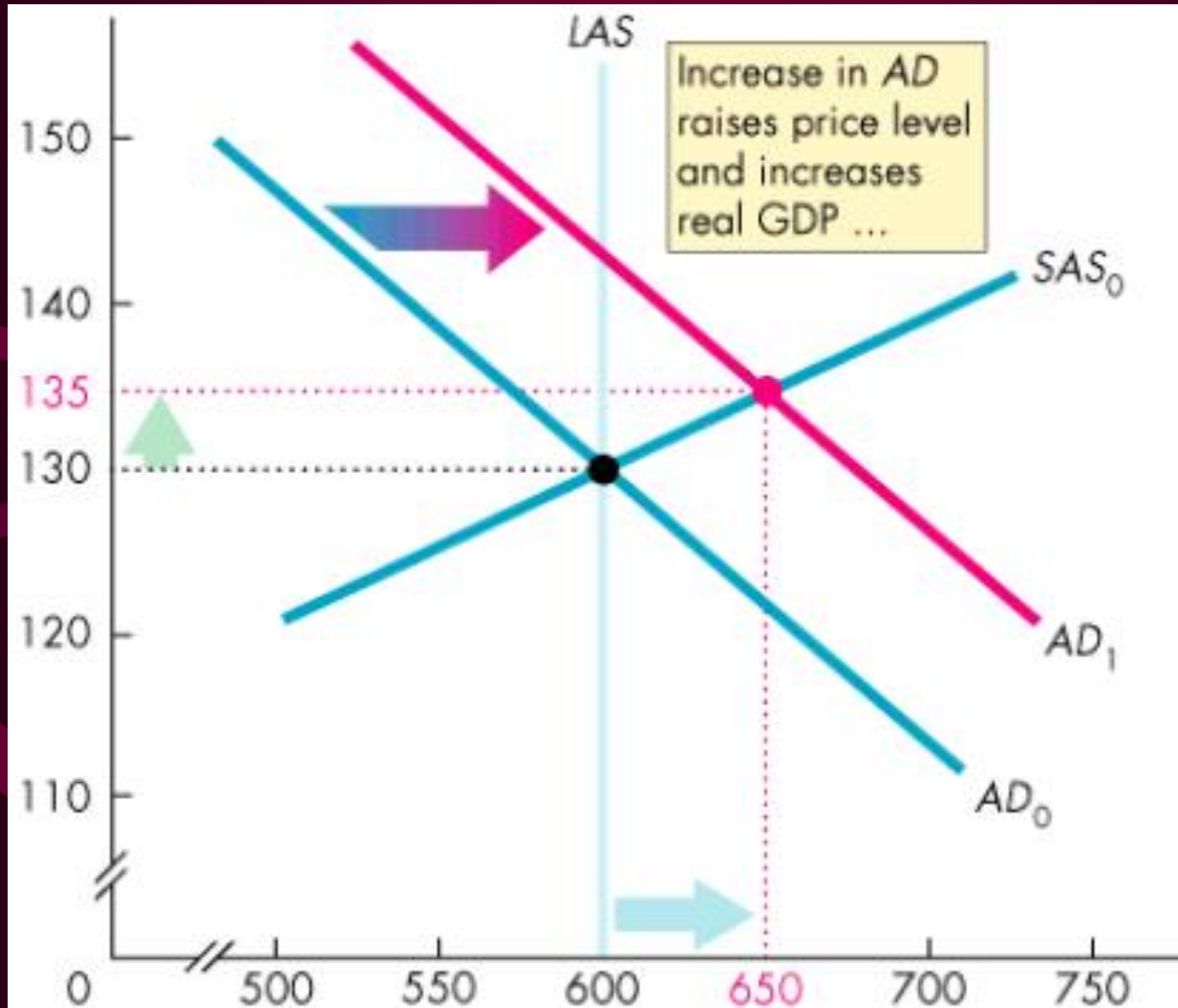
- A one-time increase in aggregate demand raises the price level but does not always start a demand-pull inflation.
- For demand pull inflation to occur, aggregate demand must persistently increase.
- The money supply must persistently grow at a rate that exceeds the growth rate of potential GDP.

Demand-Pull Inflation

- In a demand-pull inflation, initially
 - aggregate demand increases
 - real GDP increases above potential GDP and the price level rises
 - money wages rise
 - the price level rises further and real GDP decreases toward potential GDP (if there is no money illusion).
 - If there is money illusion, then it can result in increase in employment and output.

Demand-Pull Inflation

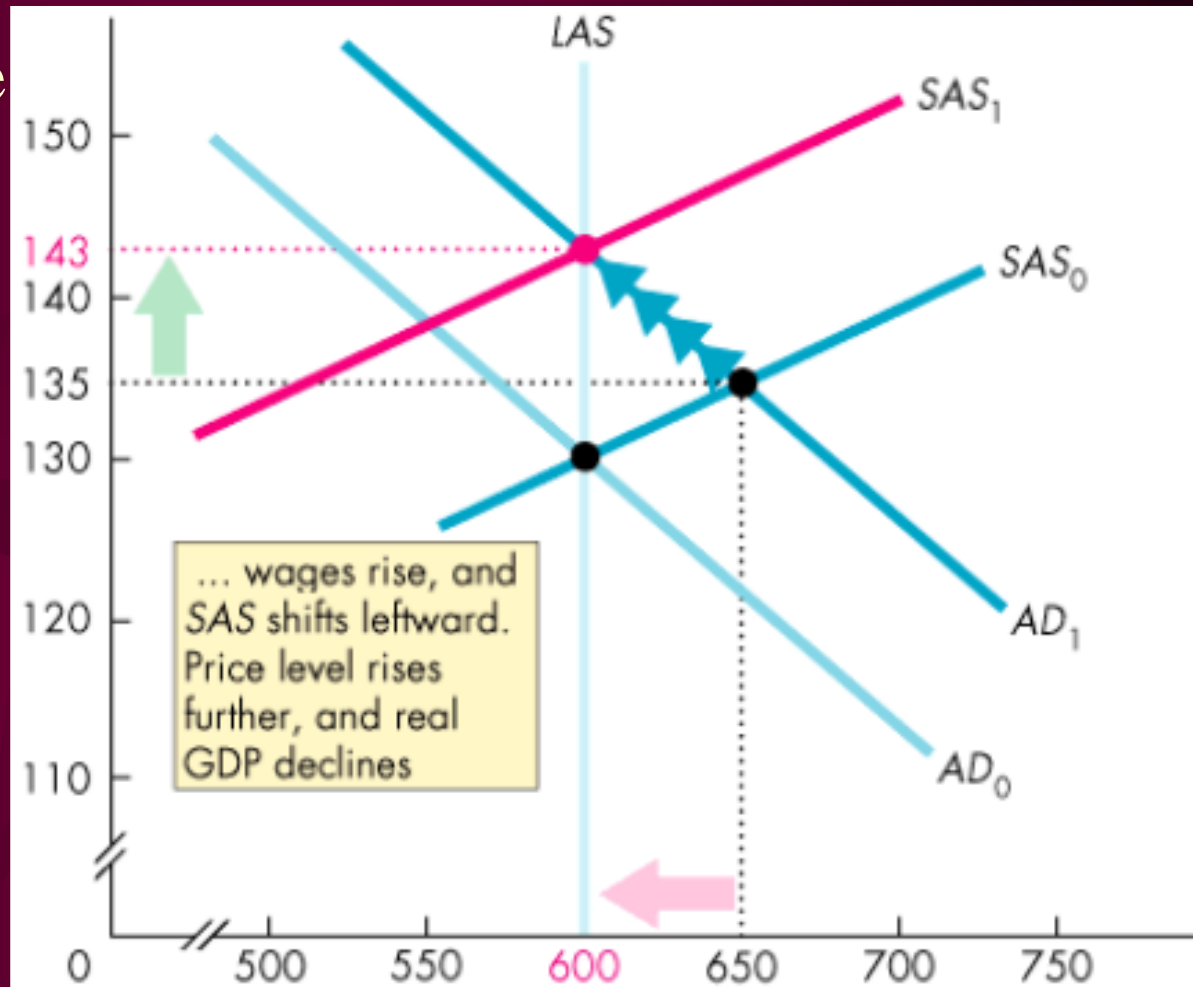
Price index on Y axis and Real GDP on X Axis



Initial impact,, real GDP and Price levels rise, resulting in real GDP exceeds potential GDP.

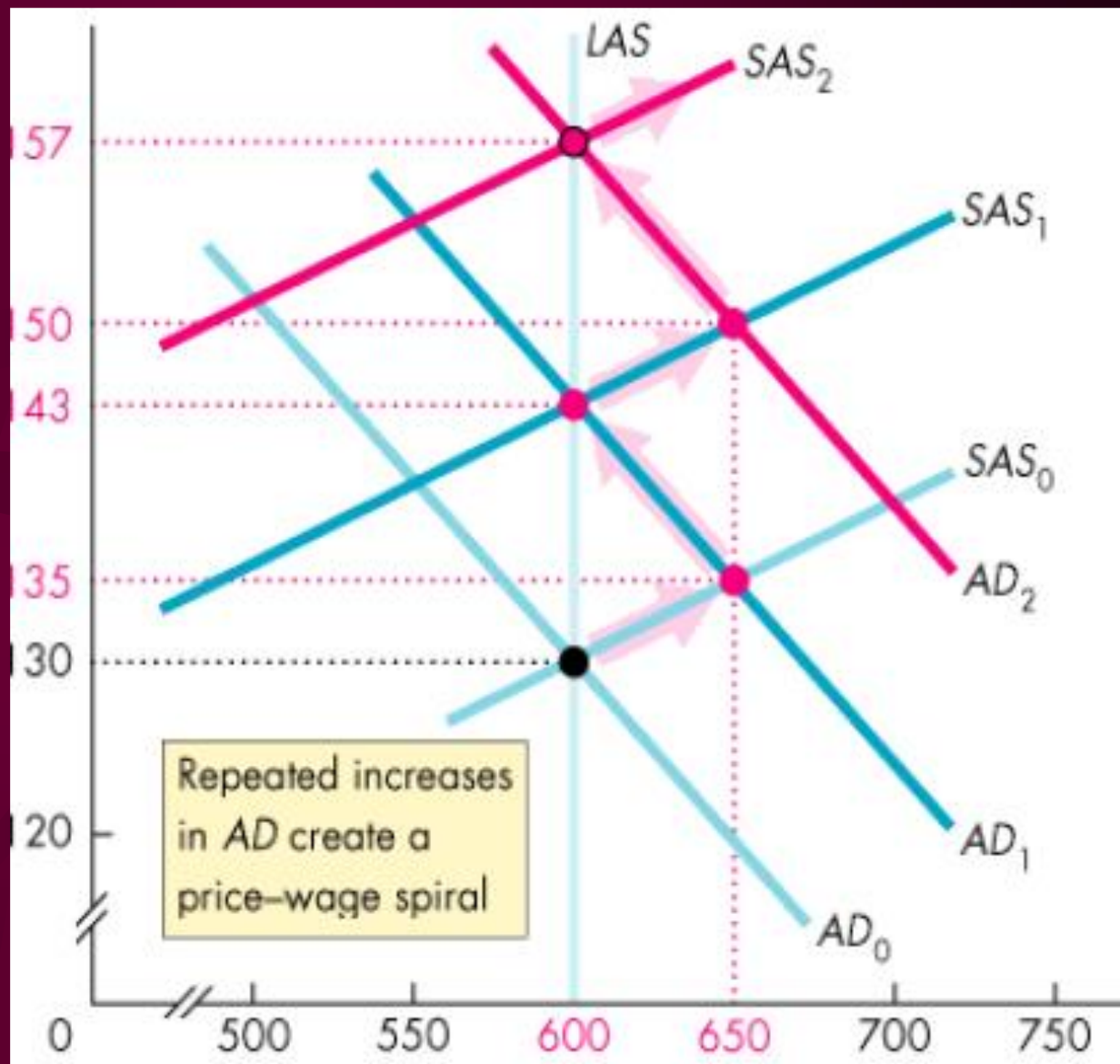
Demand-Pull Inflation

- There is an inflationary gap.
- The money wage rate begins to rise.
- And the SAS curve shifts leftward.
- SAS may shift adequately to SAS_1 :
(i) Weak bargaining position of workers and/or (ii) money illusions of workers



Demand-Pull Inflation

- Real GDP decreases toward potential GDP.
- The price level rises further.



Cost-Push Inflation

- Cost-push inflation is an inflation that results from an initial increase in costs.
- The two main sources of cost-push inflation are:
 - an increase in the money wage rate
 - an increase in the money prices of raw materials

Cost-Push Inflation

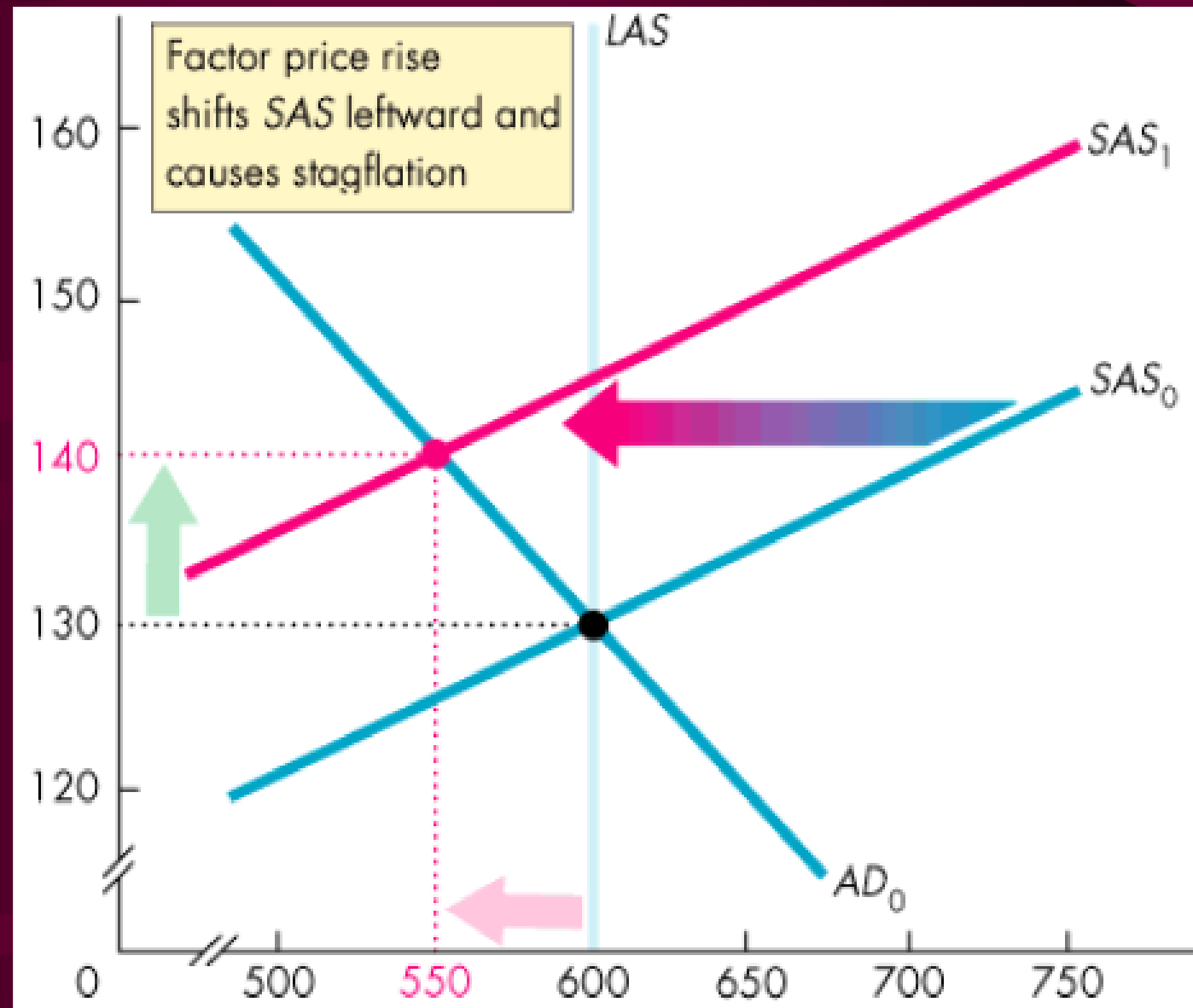
- In a cost-push inflation, initially
 - short-run aggregate supply curve (shifts to the left)
 - real GDP decreases below potential GDP and the price level rises
 - the economy could get trapped in a stagflationary situation.

Cost-Push Inflation

- A one-time leftward shift in aggregate supply raises the price level but does not always start a cost-push inflation. It has to be accompanied by policy response in terms of expansionary monetary, fiscal policies. In other words, for cost-push inflation to occur, aggregate demand must increase in response to the cost push. As in the case of demand-pull inflation, the money supply must persistently grow at a rate that exceeds the growth rate of potential GDP, if an inflation is to persist.

Cost-Push Inflation

Short-run aggregate supply shifts to the left, indicating that the same supply will come forth at a higher price level.

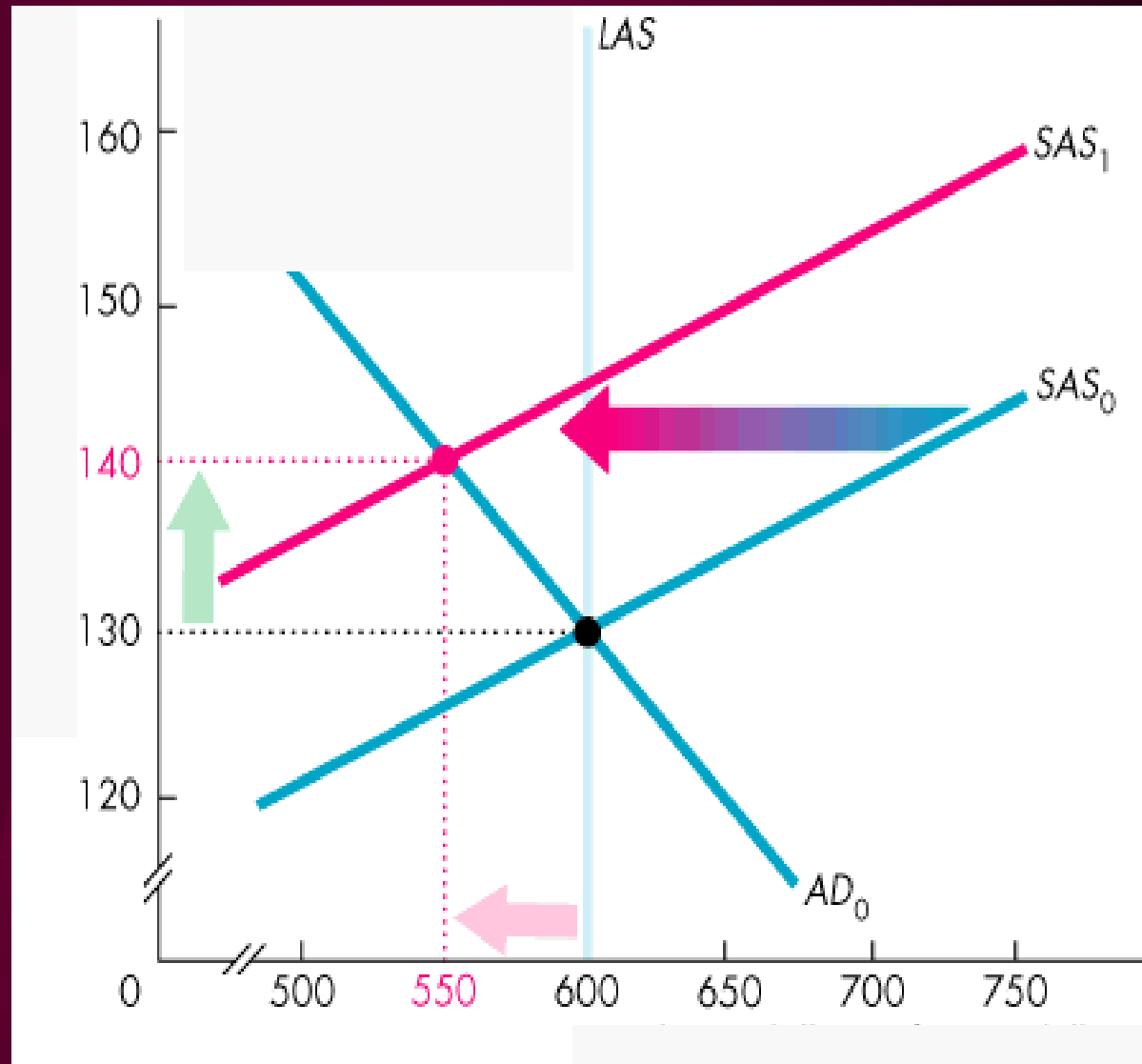


Cost-Push Inflation resulting in stagflation

- Stagflation is contraction in output accompanied by increase in price level.
- Stagflation is not compatible with Keynesian d theory.

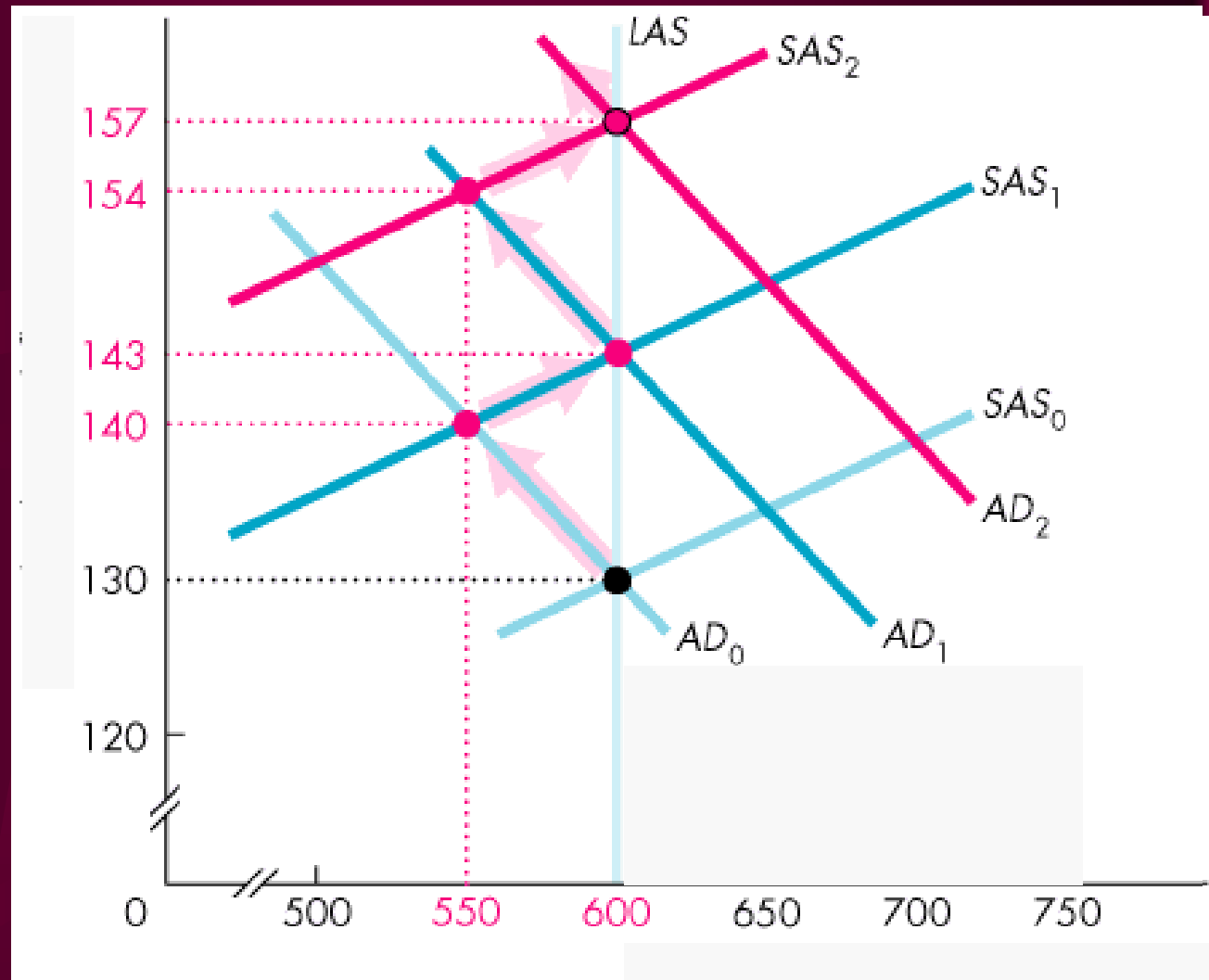
Cost-Push Inflation

- There is no inflation.
- For cost-push inflation to take hold, aggregate demand must increase.



Cost-Push Inflation

- This process repeats to create an unending cost-price inflation spiral.



Inertial inflation Rate: The inflation rate itself has some inertia —that is, a tendency not to move unless pushed—only because prices have a consistent momentum that translates into a stable rate of increase.

Expected inflation: It is an internal rate of inflation with which an economy seems to be comfortable. Individuals expect it, and the expectations tend to become self-fulfilling prophecies. Policies are written in acceptance of those expectations; interest rates include premiums to accommodate those expectations; transfer payments are amended to keep up with those expectations; and so on. Thus the expected rate of inflation is the rate that people's expectations have adapted to – and a rate that will persist until a shock shifts it up or down.

Either demand-pull or cost-push inflation can contribute to expected inflation, the most likely case is that of simultaneous shifting up of both the aggregate supply curve and the aggregate demand curve.

3. Measurement

1. PPI (WPI)
2. CPI
3. National income deflator

Choices to be made

1. Purpose of compilation
2. Frequency for which the index is needed
3. Inclusion of items
4. Choice of base year (normal, free from political and economic upheavals)
5. Methodology to be used
 - Assigning of weights
 - Fixed weight (base year weights used) vs chain-based weights
 - Average to be used (weighted Arithmetic mean used in India)
 - Index number formula to be used

Price index compilation

- **Laspeyres Price Index (L)**
- Price relatives (current price index /price index in the base year) with base year (fixed) weights Base year quantities serve as weights (Q, P indicate quantity and price. 't' , '0'and 'i' indicate time, base year and item chosen for compilation of price index

$$\text{Laspeyres Price Index} = \frac{\sum (P_{i,t}) \times (Q_{i,0})}{\sum (P_{i,0}) \times (Q_{i,0})} \times 100$$

- **Paasche's Price Index (P)** : Price relatives with current year quantities are used as weights

$$\text{Paasche Price Index} = \frac{\sum (P_{i,t}) \times (Q_{i,t})}{\sum (P_{i,0}) \times (Q_{i,t})} \times 100$$

- **Fisher's Price Index** = $L * P / 100$

Major Price Indices Currently Published in India

- | |
|--|
| 1 Consumer Price Index (2012=100) Combined |
| 1.1 Rural |
| 1.2 Urban |
| 2 Consumer Price Index for Industrial Workers (2001=100) |
| 2.1 Consumer Price Index for Industrial Workers (2016=100) |
| 3 Wholesale Price Index (2011-12=100) |
| 3.1 Primary Articles (2011-12=100) |
| 3.2 Fuel and Power (2011-12=100) |
| 3.3 Manufactured Products (2011-12=100) |

Besides these, data on National income published by the CSO, MOSPI is used for compilation of national income/GDP deflator index.

4. Theories and Approaches to Explanation of Inflation

- Classical, Neo Classical Quantity theory of money (M, Q and P)
- Keynes and Keynesians
 - Less than Full Employment, Phillips Curve, Growth-inflation trade-off
- Monetarism and the role of expectations
 - Restatement of quantity theory of money, Adaptive and rational expectations
- Rules vs discretion debate
- Structuralists' explanations of inflation (developed and developing countries)
- Sociological explanations of inflation (conflicts of share in national income)

5. Effects of Inflation

1. Economic efficiency: Distorts price signals and reduces efficiency of the system.
 - **menu costs:** The cost to a firm resulting from changing its prices.
 - **Shoe-leather costs:** The cost of time and effort that people spend trying to counteract the effects of inflation.
2. Redistribution of income and wealth
 - From consumers to producers
 - Within labourers from unorganized to organized
 - From labourers to capital owners
 - From lenders to debtors (in absence of inflation indexing)

Redistribution of income and wealth

- A low rate of inflation is good as it provides incentive to producers and helps in promoting growth. The danger is if it is not monitored well, it can escalate into galloping inflation or even worse than that.
- Inflation can redistribute income against those whose contracts are in nominal terms (and not inflation indexed). Inflation is said to rob the poor to enrich the rich.
- Casual labourers whose incomes are not neutralized for price variations tend to lose. Income is redistributed in favour of rich. Those who cannot protect themselves against price rise, tend to lose. Their real incomes (money income/price index) falls.
- It can distort the relative prices and outputs of different goods and employment for the economy as a whole. People tend to hoard the goods rather than save and invest.
- Real interest rate (Nominal interest rate – expected rate of inflation) may become negative and adversely affect the savings.

Thank You!