# CHAP 20

> fluctuations, the influence of money and fiscal policy on AD?, (AD-AS) ,short-long term fluc'n

💡 philips curve → inflation v unemp (common graph)

- Over the long run, real GDP grows on a trend
- In the short run, GDP fluctuates around its trend.

***fluctuations are often called business cycles***

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**Recessions and Depressions:**

Periods of falling real incomes and rising unemployment called recessions.

Severe recessions are depressions.

## ~ The classical dichotomy:

(separation of real and nominal variables)

### ~and money neutrality:

(changes in money supply only affect nominal variables) are argued to hold in the long run but not in the short run.

• "In the short run, changes in nominal variables (like the money supply or P ) can affect real variables (like Y or the unemployment rate [EXOGENOUS])."

## ~The AD-AS Model:

*explains short-run fluctuations by the interaction of aggregate demand and aggregate supply.*

> • "The AD-AS framework postulates that there is no classical dichotomy and no money neutrality in the short run."

No, supply and demand don't always grow together. They have an inverse relationship

💡 **Aggregate Demand (AD):** Downward-sloping due to:

- **Wealth effect** → ↓P ⇒ ↑Real wealth ⇒ ↑C
- **Interest-rate effect** → ↓P ⇒ ↓r ⇒ ↑I
- **Exchange-rate effect** → ↓P ⇒ ↓r ⇒ ↓Currency ⇒ ↑NX

▼ 🔻 **Why Does the AD Curve Slope Down?**

We're looking at how a change in the **price level (P)** affects **GDP (Y)**, which is made of:

$Y = C + I + G + NX$

Y=C+I+G+NX

(where **C = consumption**, **I = investment**, **G = government spending**, and **NX = net exports**).

Assume **G is fixed**, so we focus on how **C, I, and NX** respond to changes in **P**.

✅*Key idea: If something outside of the price level (P) changes C, I, G, or NX, the AD curve shifts.*

**~AD CURVE SHIFT DIRECTION:**

| 📌 Cause | 💥 Component Affected | 🔁 AD Shift Direction |
|---|---|---|
| 🏦 Lower interest rates | ↑ Consumption (C), ↑ Investment (I) | 👉 Shift Right |
| 💼 Business pessimism | ↓ Investment (I) | 👈 Shift Left |
| 📈 Stock market boom | ↑ Consumption (C) | 👉 Shift Right |

| | | |
|---|---|---|
| 🌍 Rise in foreign demand for exports | ↑ Net Exports (NX) | 👉 Shift Right |
| 🏛️ Increase in government spending | ↑ Government spending (G) | 👉 Shift Right |

## 1. 💰 Wealth Effect (Affects C: Consumption)

**What happens when prices go up?**

- Your money doesn't stretch as far.
- Example: ₹100 used to buy 10 candies, now it buys only 5.
- So, even though you still have ₹100, it **feels like less**.

➡️ People **feel poorer** and spend less.

✅ **Result: Consumption (C) falls.**

## 2. 💸 Interest-Rate Effect (Affects I: Investment)

**When prices go up:**

- People need **more cash** for daily shopping (groceries, gas, etc.).
- So they **hold more money** and **save less**.
- This **reduces the supply of loanable funds** in banks.

➡️ With fewer funds to lend, **interest rates go up**.

➡️ When borrowing gets expensive (higher interest), businesses and people **invest less** in things like new machines or homes.

✅ **Result: Investment (I) falls.**

- **Exchange-Rate Effect (on NX):** A rise in P increases the domestic interest rate, attracting foreign investment, appreciating the domestic currency, making exports more expensive and imports cheaper, thus decreasing net exports. "Result: NX ≡ X-M falls."
- **Shifts in AD:** Caused by "Any exogenous event — unrelated to a change in P — that changes C, I, G, or NX". Examples include changes in perceived wealth (stock market booms/crashes), technology affecting investment,

business expectations, interest rates, monetary policy, government spending, and changes in foreign economies or exchange rates.

- **Vertical AS:** AD shifts affect only price, not output or employment.
- **Classical Dichotomy (Vertical AS):** Holds true; nominal changes don't impact real variables.
- **Upward-Sloping AS:** AD shifts affect both output and employment.
- **Classical Dichotomy (Upward-Sloping AS):** Breaks down; nominal changes have real effects.

summary of **Long-Run Aggregate Supply (LRAS)** in table form:

→ shifting to the right causes

| 🧱 **Key Concept** | 📌 **Explanation** |
|---|---|
| **Shape of LRAS** | Vertical line at **Natural Rate of Output ($Y^N$)** |
| **$Y^N$ Meaning** | Also called **Potential Output** or **Full-Employment Output** |
| **Why Vertical?** | In the **long run**, output is determined by **real factors** (not price level) |
| **Determinants of $Y^N$** | - Labor (workers) [immigration]<br>- Capital (machines, tools)<br>- Natural resources [finding mines]<br>- Technology |
| **What shifts LRAS?** | Any **change in labor, capital, resources, or technology** |

▼ 📈 **Short-Run Aggregate Supply (SRAS)**: Why It's **Upward-Sloping**

| Theory/Concept | Core Idea | Impact on Output (Y) |
|---|---|---|
| **Sticky-Wage Theory** | Wages are slow to adjust. If actual price level PP > expected PEPE, firms earn more profit. | Firms increase output → Y↑ |
| **Sticky-Price Theory** | Some firms can't quickly change prices due to | Demand for their goods rises → Y↑ |

| | | |
|---|---|---|
| | menu costs. If P>PEP > PE, their goods are cheaper. | |
| **Misperceptions Theory** | Firms mistake overall PP increase as higher relative price for their product. | They produce more → Y↑ |
| **Common Idea in All** | Output deviates from potential output Y & YN when P≠PE | $Y = YN + a(P - PE)$<br><br>Y : o/p;<br>YN : Natural rate of o/p(long-run)<br>a > 0 : freq of Y resp to P<br>PE: expected price |
| **Shifts in SRAS** | Caused by changes in: • Determinants of LRAS (e.g., labor, capital, technology) • Expected price level PEPE | ↑ PE → SRAS shifts **left** / Y falls<br>↓ PE → SRAS shifts **right** |

> ~In the short run, ($Y = YN + a(P - PE)$) → [slope line]
>
> ~In the long run,
> PE = P
> and
> Y = YN [perp line]

| Cause | Effect on SRAS |
|---|---|
| Change in natural resources, labor, capital, technology (i.e. same as LRAS) | Shifts SRAS **right or left** |
| Increase in **expected price level (PE)** | SRAS shifts **left** (costs rise) |
| Decrease in **expected price level (PE)** | SRAS shifts **right** (costs fall) |

## 🔄 Example 1: AD Shifts Left (Like in a Stock Market Crash)

- People feel poorer → spend less → **AD shifts left**
- **Short run**: Output (**Y**) falls, Prices (**P**) fall, **Unemployment** rises
- **Over time**: People expect lower prices → PE falls → **SRAS shifts right**
- **Result**: Output and unemployment return to normal, but at a **lower price level**

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## 🔺 Example 2: AD Shifts Right (Like Government Spending Increases)

- More spending boosts demand → **AD shifts right**
- **Short run**: Output (**Y**) rises, Prices (**P**) rise, **Unemployment** falls
- **Over time**: People expect higher prices → PE rises → **SRAS shifts left**
- **Result**: Output and unemployment return to normal, but with a **higher price level**

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## 🕰️ Real-World Examples

| Event | Type of AD Shift | Effect |
|---|---|---|
| **Great Depression** | Left shift (↓AD) | Output and prices fell; unemployment rose |
| **WWII Spending Boom** | Right shift (↑AD) | Output and prices rose; unemployment fell |

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## 🎯 Final Point:

- In the **short run**, the economy fluctuates due to shocks (like spending changes or price expectations).
- But in the **long run**, it tends to come back to **full employment output (YN)**.
- This is why economists say:

  **"The short run is messy, but the long run is stable."**