Business Cycles, Aggregate Demand and Multiplier model

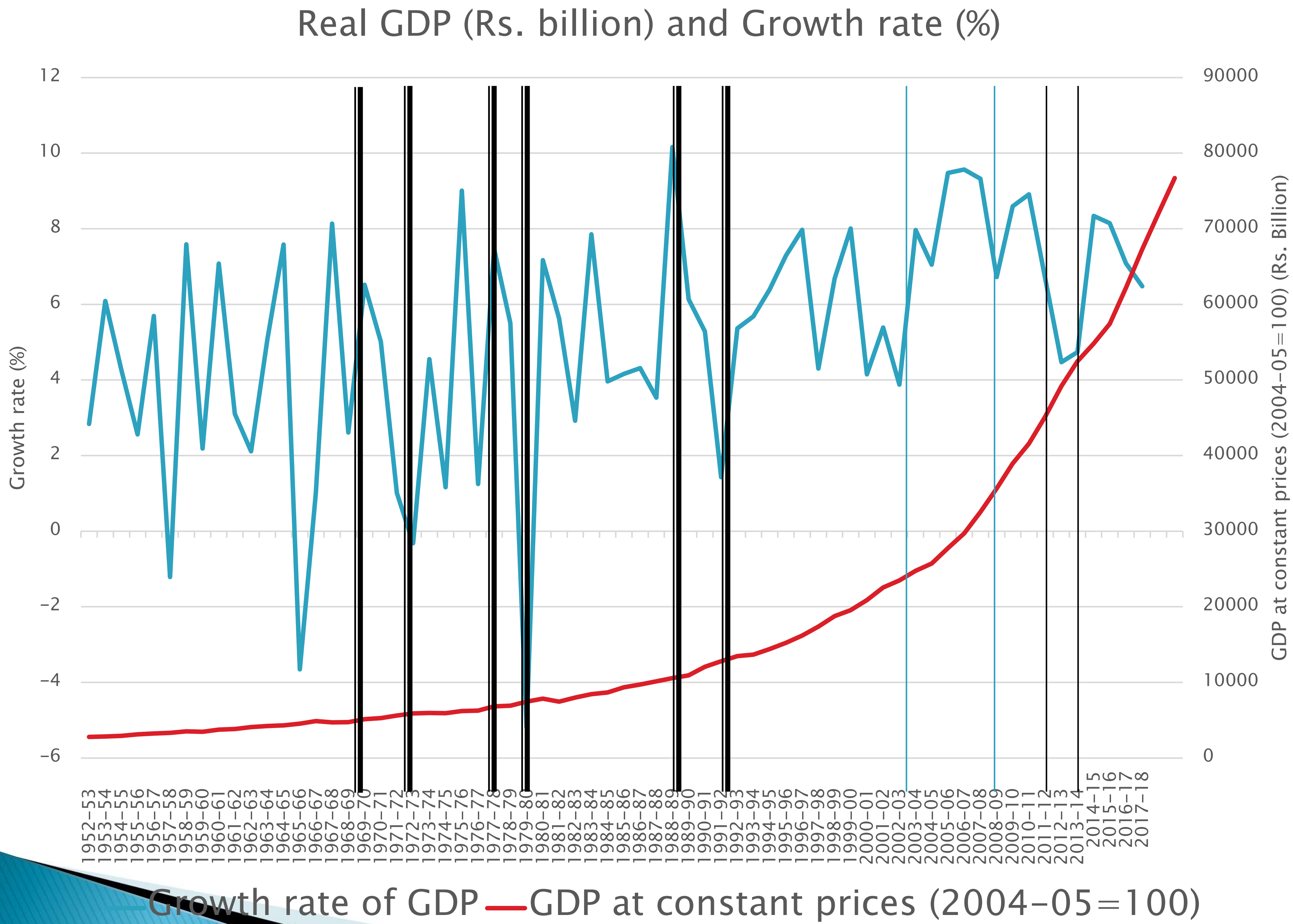
Prof. Aditi Chaubal
aditichaubal@iitb.ac.in

Outline

- What are business cycles
- Features of business cycles
- Business cycle theories
- Aggregate demand (and business cycles)
  - Factors affecting aggregate demand

Recall…

- Real GDP growth rate: % growth of *real* GDP
- Economic growth: Economies generally exhibit a steady long-term growth in real GDP (*despite fluctuations seen in business cycles*) and an improvement in living standards; **this process is known as economic growth.**
- Potential GDP (Y*): Represents the maximum sustainable level of output that the economy can produce.
  - At potential GDP, high levels of utilization of the labor force and the capital stock
  - **Determinants**: Productive capacity of the factors of production, technological efficiency with which the inputs are combined



Ref: Reserve Bank of India Online Database on the Indian Economy (RBI-DBIE)

Business cycles

- **Business cycles**: Swings/(economic) fluctuations in total national output, income and employment lasting for 2-10 years marked by widespread expansion or contraction in most sectors of the economy
- Facts about business cycles:
  - Irregular and unpredictable
  - Most macroeconomic variables fluctuate together
  - Output-unemployment tradeoff
- 2 phases => recession & expansion
- ***Recession*****:** Downturn in a business cycle marked by recurring period of decline lasting for 6-12 months and marked by contractions in the economy
- ***Depression***: large scale recession lasting for longer duration

Business cycles …

- **Characteristics of a recession (opposite for expansions)**:
  - Sharp fall in **investment** → fall in **real GDP** (consumption, supply)
  - Sharp fall in **employment** initially; and recovery may be slow ("*jobless*" recovery)
  - Fall in **output** → **inflation** slows → fall in **demand**
  - **Wages & prices** – unlikely to fall (rise less rapidly)
  - Fall in **business profits**
  - **Intervention**:– government (fiscal) & central bank (monetary)

Business cycles …

- **Business cycle theories**
  - Exogenous vs. internal cycles (based on *causes of the cycle*)
    - Exogenous: Source of cycle is *external* to system
    - Internal: Cause lies *within* economic system
      - Every expansion breeds a contraction & recession (peak followed by trough)
      - Every contraction is followed by revival & expansion (trough followed by peak)
  - Financial crisis and business cycles
    - **Speculative booms and busts**: Spikes in asset values of an industry caused by speculation, not change in fundamentals

Tools and Instruments of Macroeconomic Policy

- ***Policy instrument**:* is an economic variable under the control of government which can affect (in order to attain) the macroeconomic goals.
- **Fiscal policy**: A government's program/policy used to affect and achieve long-term economic growth through its impact on national savings and investment; it is also used to stimulate spending in deep recessions.
- **Instruments**: (i) the purchase of goods and services and expenditure on transfer payments (Government expenditure) and (ii) the amount and type of taxes (Taxation) in order to achieve the macroeconomic goals.

Tools and Instruments of Macroeconomic Policy

- Government expenditure → (i) Government purchases, (ii) Government transfer payments
- **Government purchases** = spending by the government on goods and services, infrastructure, defence and salaries
- **Transfer payments** = payments made to targeted groups such as elderly, unemployed etc.
- **Government expenditure** influences the relative size of collective spending and private consumption.
- **Taxation** subtracts from incomes, reduces private spending, and affects private saving while affecting investment and potential output.

Tools and Instruments of Macroeconomic Policy

- **Monetary policy:** A policy (usually implemented by the central bank) which impacts the money supply (and thus, the credit, interest rates and output) in the economy to attain the macroeconomic goals.
- Monetary policy affects credit conditions, including asset prices such as stock and bond prices and exchange rates (exchange rates are a central part of the policy in open economies).
- Changes in interest rates, along with other financial conditions, affect spending in sectors such as business investment, housing, and foreign trade.

Tools and Instruments of Macroeconomic Policy

- Monetary policy has an important effect on both actual GDP and potential GDP.
  - **Instruments:** Money supply, open market operations, interest rates
  - Interactions between money supply, interest rates, output, inflation, external sector in the long- and short-run

Aggregate Demand

- **Aggregate demand (AD):** Aggregate demand consists of the total spending in an economy by households, businesses, governments, and foreigners. It represents the total output that would be willingly bought at each price level, given the monetary and fiscal policies and other factors affecting demand.

- **Formally:** Total planned or desired spending in the economy during a given period. It is determined by the aggregate price level, and influenced by domestic investment, net exports, government spending, consumption function and money supply.

- **AD curve:** graphs the relation between the quantity of goods and services that people are willing to buy at the aggregate price level, other things equal; with the dynamics driven by government spending, consumption function and money supply.

Aggregate Supply

- **Aggregate Supply (AS)**: is the quantity output businesses would willingly to produce and sell at each price level (given prices, costs and market conditions).

- **Formally**: Total value of goods and services that firms would willingly produce in a given time period. It is a function of available inputs, technology and price level.

- **AS curve:** graphs the relation between the output which firms would willingly supply and the aggregate price level, other things equal. The curve tends to be vertical at potential output but may be relatively flat in the short run.

AD and AS curves vs. (Microeconomic) Market demand and supply curves

• Microeconomic demand (DD) and supply (SS) curves show the *quantities and prices of individual commodities*, with factors such as national income and prices of other commodities held as a given.	• AD and AS curves represent the *determination of total output and price level,* with factors such as money supply, fiscal stance, and capital stock held constant.

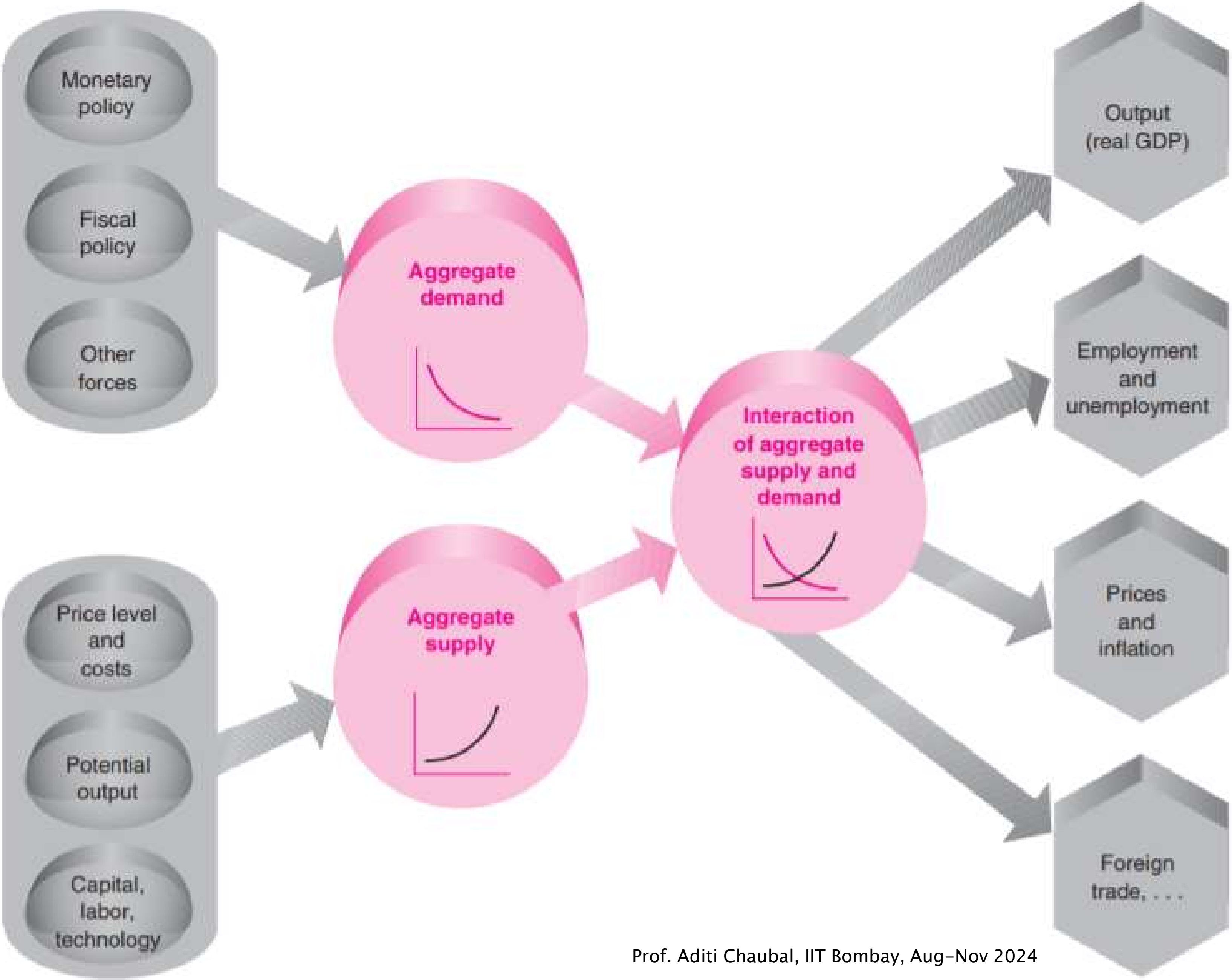
AD and AS curves vs. (Microeconomic) Market demand and supply curves…

• DD and SS represent the impact of a policy measure or shock (say, increase in tax on a commodity) on *the demand and supply of that commodity or related commodities.*	• AD and AS represent the impact of a policy measure or shock (say, increase in taxes) *on national output and aggregate price levels.*

Macroeconomic equilibrium is the combination of overall price and quantity at which neither buyers nor sellers wish to change their purchases, sales or price levels.

Aggregate Supply and Aggregate Demand determine major macroeconomic variables

(Ref: Samuelson & Nordhaus: *Economics*, 19th Ed.)



AD-AS model

- Basic macroeconomic tool for studying output fluctuations and determination of price levels and inflation rate in the short-run

- Tool to understand why economy deviates from path of smooth growth over time; and explore consequences of government policies intended to smooth output fluctuations, reduce unemployment and maintain price stability

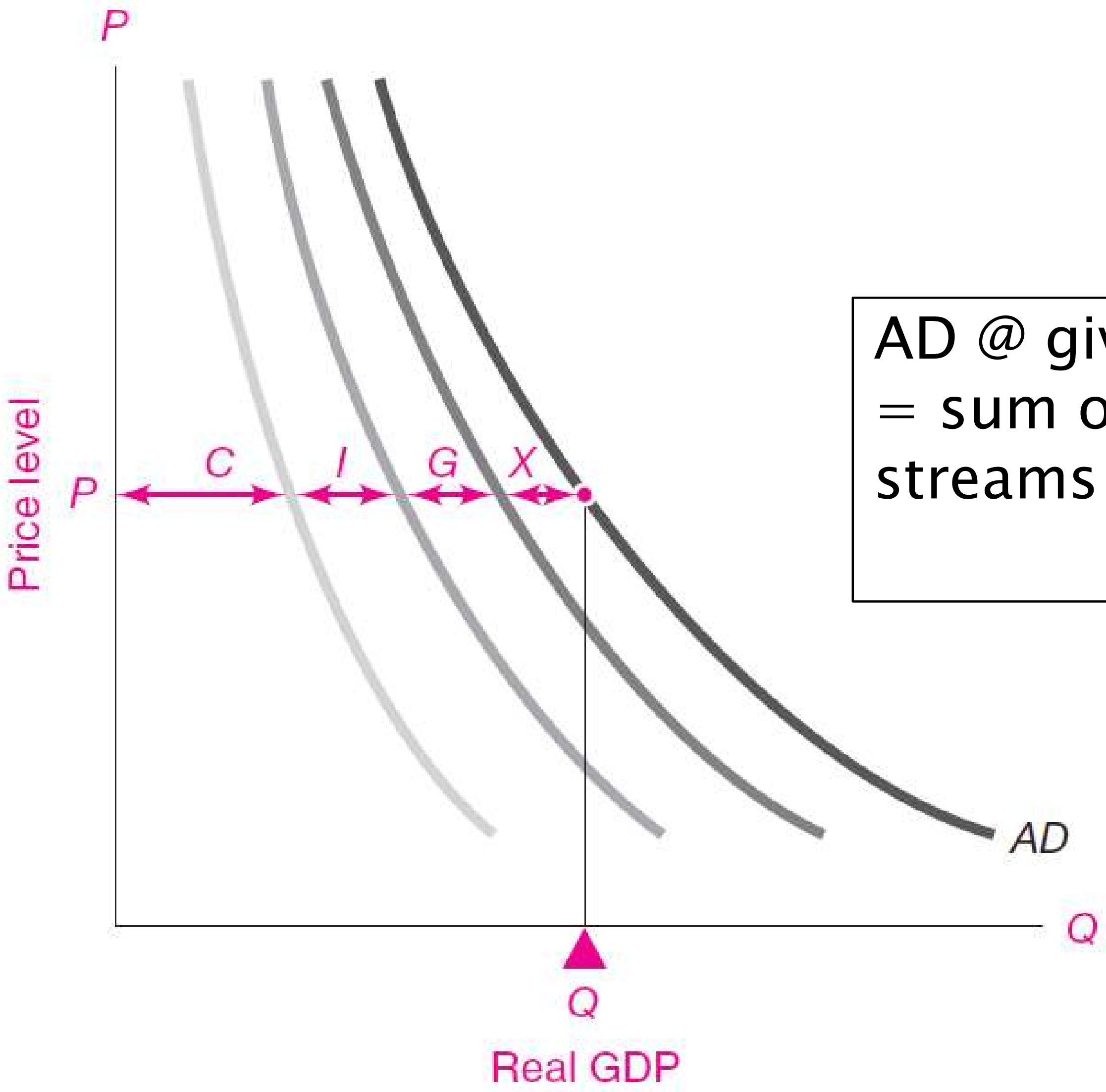
Aggregate Demand Components

- **Consumption**: Determinants of C – disposable income, long-run trends in income, wealth, aggregate price level
  - AD focuses on determinants of ***real*** consumption.
- **Investment:** Determinants of I – Output level, cost of capital, business expectations.
  - Major economic policy affecting investment: **monetary policy**
- **Government expenditure:** Determined by government purchases which add directly to the GDP
- **Net exports (NX):**
  - Determinants of **exports**: Foreign incomes and outputs, relative prices, and foreign exchange rates
  - Determinants of **imports**: Domestic income and output, exchange rates (ratio of *domestic to foreign* prices), and by the foreign exchange rate of the dollar
  - Determinants of **NX**: domestic and foreign outputs, relative prices, and exchange rates

AD curve

- **AD curve**: gives the total quantity of output (real GDP) demanded (willingly bought) at various price levels. Desired spending in all product sectors.
  - Relation between the quantity of goods and services that people are willing to buy at the aggregate price level, other things equal.
- **Why downward sloping**?
  - Factors which do not rise with price; or fixed in nominal terms
  - Real spending declines with higher price level primarily due to effect of higher prices on real incomes and wealth
  - ↑ price levels => ↓ real disposable **income** (thus, real consumption expenditure)
  - ↑ price levels => ↓ real value of **wealth** (thus, real consumption expenditure)
- Movement *along* the AD curve:
  - Higher price levels (other factors remaining constant) => fall in real disposable income => fall in real spending

Constructing the AD curve



AD @ given price level P
= sum of the 4 spending
streams @ P

FIGURE 22-3. Components of Aggregate Demand

Ref: Samuelson & Nordhaus: Economics, 19th Ed.

Shifts in the AD curve

- **Policy variables**:
  - Monetary policy – Money supply (M^{ss}), interest rates (i)
  - Fiscal policy – Government expenditure (G), taxes (T)
- **Exogenous variables**: foreign output, asset values, technology advances, other factors (political, international trade policies, wars, etc.)

Variable	Impact on AD
Monetary policy	(Expansionary)↑Money supply ⇒ ↓ interest rates => ↑ credit availability ⇒ ↑ investment and consumption => AD shifts out
Fiscal policy	↑ Government spending => ↑ spending => AD shifts out ↑ Taxes => ↓ Disposable income => ↓ consumption => AD shifts left
Foreign output	↑ Foreign output growth => ↑ NX => AD shifts out
Asset values	↑ Stock prices => ↑household wealth (and ↓ cost of capital) => ↑ consumption => ↑ investment => AD shifts out
Technological advances	Technological advances (e.g. mobile, computers, etc.) => ? => AD shifts out
Others	E.g. positive oil price shocks, end of wars, good monsoon => AD shifts out

Shifts along and in the AD curve

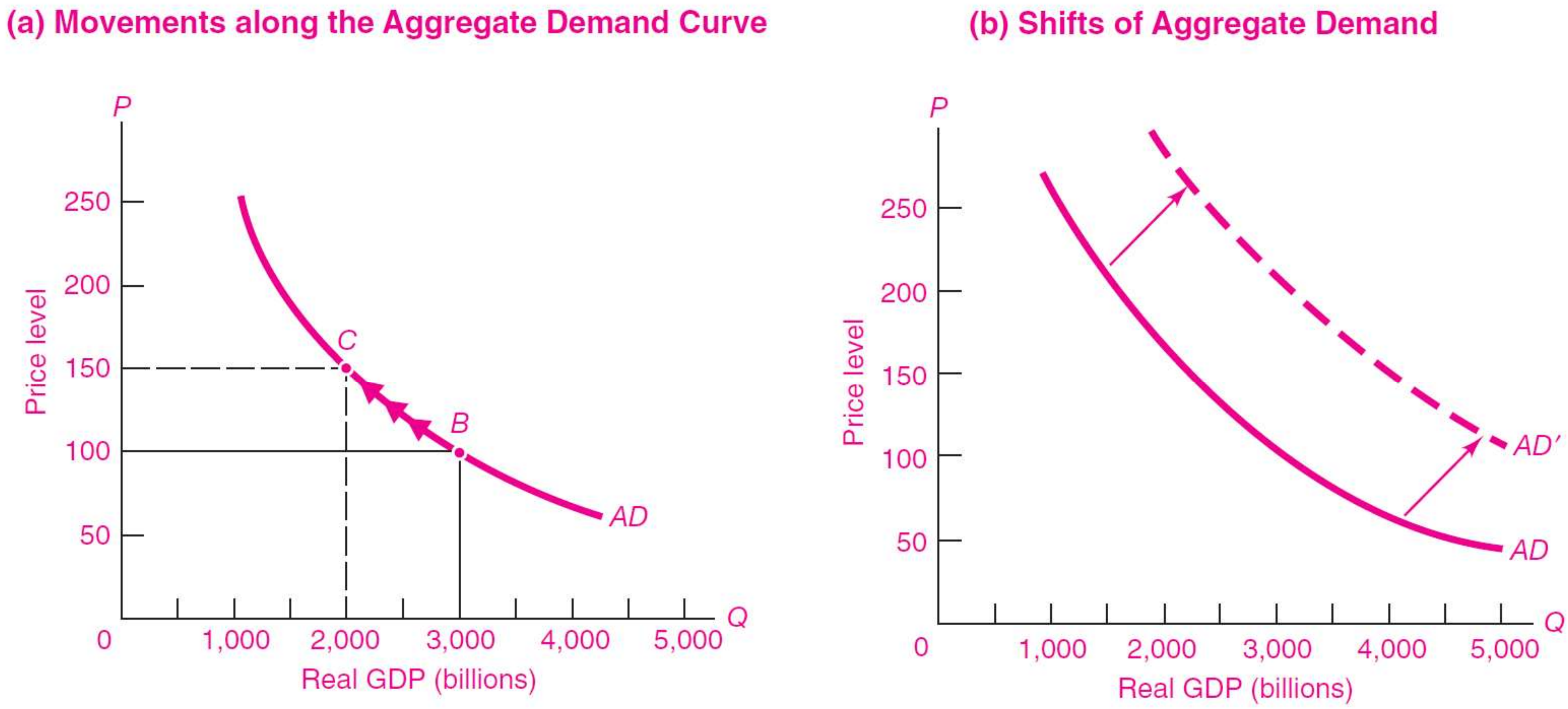


FIGURE 22-4. Movement along vs. Shifts of the Aggregate Demand Curve

Thank you