



# Aggregate Demand and Aggregate Supply Part I

In recessions the aggregate demand of economies  
falls.

John Maynard Keynes



# Aggregate, Not Individual

[Keep in mind that we will be talking about aggregate demand, aggregate supply, etc. Aggregate demand does not, for example, refer to the demand of an individual consumer or business but about the accumulated demand of an entire group.]



# Keynes' Questions

- ▶ What are the components of aggregate demand?
- ▶ What determines the level of spending for each component?
- ▶ Will there be enough demand to maintain full employment?



# Macro Equilibrium

Aggregate demand and aggregate supply confront each other in the marketplace to determine macro *equilibrium*.

[When we use *macro* in this presentation, it means very large, large quantities, large scale, etc.]



# Macro Equilibrium

**Aggregate demand (AD)** is the total quantity of output demanded at alternative price levels in a given time period, *ceteris paribus*.



# Macro Equilibrium

**Aggregate supply (AS)** is the total quantity of output producers are willing and able to supply at alternative price levels in a given time period, *ceteris paribus*.



# Macro Equilibrium

- ▶ *Equilibrium is established where AS and AD intersect.*
- ▶ **Equilibrium (macro)** is the combination of price level and real output that is compatible with both aggregate demand and aggregate supply.



# The Desired Adjustment

- ▶ All economists recognize that a short-run macro failure of unemployment is possible.
- ▶ The debate among economists is over whether the economy will self-adjust to full employment or will need some kind of intervention.

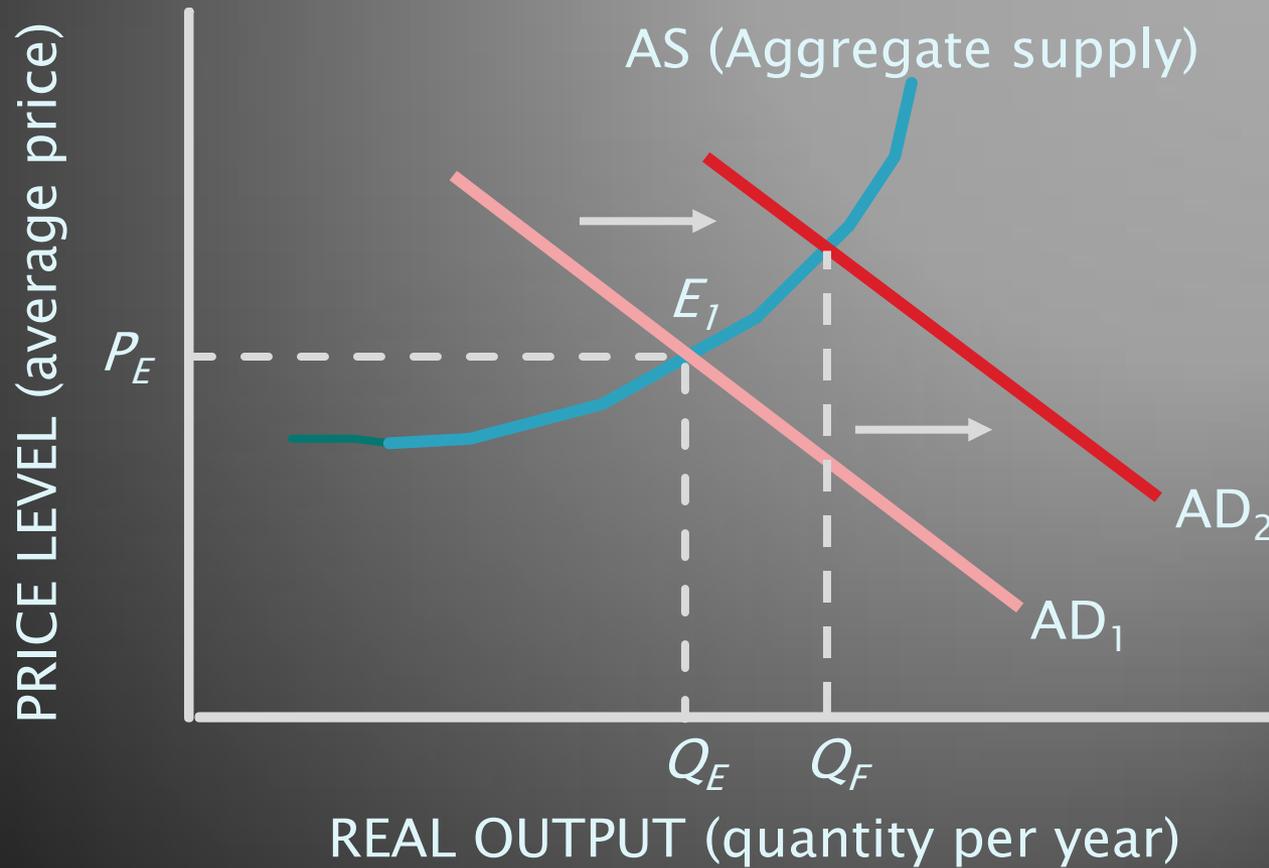


# The Desired Adjustment

If the economy cannot self-adjust to full employment, the government will have to intervene to shift the AD curve rightward to reach full employment.



# Chart: Escaping a Recession



# Four Components of Aggregate Demand



- ▶ consumption (C)
- ▶ investment (I)
- ▶ government spending (G)
- ▶ net exports ( $X - IM$ )



# Consumption

- ▶ **Consumption** expenditures are spending by consumers on final goods and services.
- ▶ Consumer expenditures account for two-thirds of total spending.



# Income and Consumption

- ▶ Most consumers spend most of whatever income they have.
- ▶ **Disposable income** is the after-tax income of consumers – personal income less personal taxes.

$$Y^d = Y + \overline{TR} - \overline{TA}$$

↓                      ↓                      ↓                      ↓

disposable income    income    government transfers    taxes



# Income and Consumption

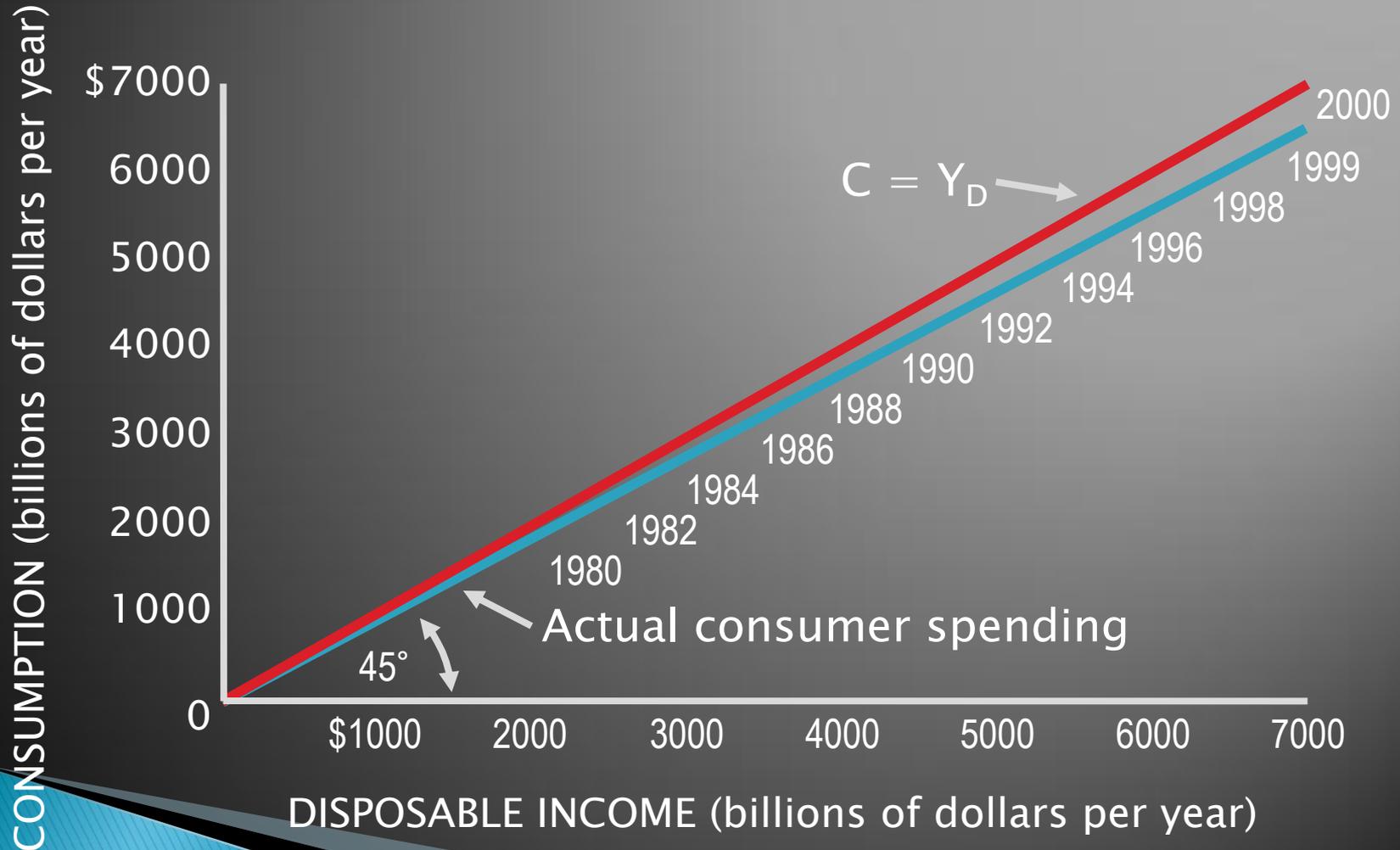
By definition, all disposable income is either consumed (spent ) or saved (not spent).

**Disposable income = Consumption + Saving**

$$Y_D = C + S$$



# Chart: US Consumption and Income





# Consumption vs. Saving

**Saving** is that part of disposable income not spent on current consumption; disposable income less consumption.



# Consumption vs. Saving

- ▶ Keynes described the consumption–income relationship in two ways.
  - the ratio of *total* consumption to *total* disposable income
  - the relationship of *changes* in consumption to *changes* in disposable income

# Average Propensity to Consume



The **average propensity to consume (APC)** is total consumption in a given period divided by total disposable income.

$$APC = \frac{\text{total consumption}}{\text{total disposable income}} = \frac{C}{Y_D}$$



# Average Propensity to Save

By definition, disposable income is either consumed (spent on consumption) or saved.

$$APS = \frac{\text{total saving}}{\text{total disposable income}} = \frac{S}{Y_D}$$

$$APS = 1 - MPS$$

# The Marginal Propensity to Consume



The **marginal propensity to consume (MPC)** is the fraction of each additional (marginal) dollar of disposable income spent on consumption.



The relationship between **consumption** and **disposable income**

**Autonomous consumption** determines the Y intercept

**Marginal propensity to consume** determines the slope

$$C = \bar{C} + cY^d$$

# The Marginal Propensity to Consume



It is the change in consumption divided by the change in disposable income.

$$\text{MPC} = \frac{\text{change in consumption}}{\text{change in disposable income}} = \frac{\Delta C}{\Delta Y_D}$$

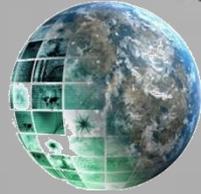


# Marginal Propensity to Save

The **marginal propensity to save (MPS)** is the fraction of each additional (marginal) dollar of disposable income not spent on consumption.

$$\text{MPS} = \frac{\text{change in saving}}{\text{change in disposable income}} = \frac{\Delta S}{\Delta Y_D}$$

$$\text{MPS} = 1 - \text{MPC}$$



# Diagram: The MPC and MPS



$$\text{MPS} = 0.20$$



$$\text{MPC} = 0.80$$



# The Consumption Function

The **consumption function** is a mathematical relationship that helps to predict consumer behavior.



# Autonomous Consumption

- ▶ Some consumption is autonomous (independent of income).
- ▶ The non-income determinants of consumption include:
  - expectations
  - wealth
  - credit
  - taxes
  - price levels



# Expectations

- ▶ People who anticipate a pay raise often increase spending before extra income is received.
- ▶ People who expect to be laid off tend to save more and spend less.



# Wealth

- ▶ The amount of wealth an individual owns affects his/her willingness and ability to consume.
- ▶ The **wealth effect** is a change in consumer spending caused by a change in the value of owned assets.



# Credit

- ▶ Availability of credit allows people to spend more than their current income.
- ▶ The need to pay past debt may limit current consumption.



# Taxes

- ▶ Taxes are the link between total and disposable income.
- ▶ Tax cuts give consumers more disposable income. Tax increases give consumers less.



# Price Levels

Rising price levels reduce the real value of money and may cause people to curtail spending.

# Income-Dependent Consumption



- ▶ Keynes distinguished two kinds of consumer spending.
  - spending not influenced by current income
  - spending that is determined by current income

# Income-Dependent Consumption



Determinants of consumption are summarized in the equation called the **consumption function**.

$$\text{total consumption} = \text{autonomous consumption} + \text{income-dependent consumption}$$

# Income-Dependent Consumption



The **consumption function** is the mathematical relationship indicating the rate of desired consumer spending at various income levels.

# Income-Dependent Consumption



The consumption function provides a precise basis for predicting how changes in income ( $Y_D$ ) effect consumer spending (C).

$$C = a + bY_D$$

where:

C = current consumption

a = autonomous consumption

b = marginal propensity to consume

$Y_D$  = disposable income



# One Consumer's Behavior

- ▶ We expect that even with an income level of zero, there will be some consumption.
- ▶ We expect consumption to rise with income based on the consumer's MPC.



# One Consumer's Behavior

**Dissaving** occurs when current consumption exceeds current income – a negative saving flow.



# The 45-Degree Line

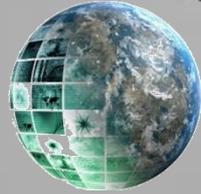
The 45-degree line represents all points where consumption and income are exactly equal.

$$C = Y_D$$



# The 45-Degree Line

The **slope** of the consumption function is the marginal propensity to consume.



# Continued in Aggregate Demand and Aggregate Supply Part II



"My wife's a Keynesian — she's always spending herself out of depressions."