## 202 WEEK 8

Keynesian Model – Part 2

## Say's Law

#### Key Assumption of Classical Model

- Leakages = Injections
- $\square S + (T_x T_r) = I + G$
- Equality guaranteed by equilibrium in loanable funds market via interest rate.
- No shortfall of expenditures possible.
- Therefore, main focus is on output.

# **Classical Model**

#### Assumption of Say's Law

- Recession or Depression can only be explained as a drop in output.
- The only reason for a drop in output is a problem in the labor market.
- But, classical model assumes the labor market will adjust.
- So a prolonged slowdown in economic growth or long-term unemployment cannot be explained in the Classical Model.

## Three reasons Say's Law may not hold

- 1. Not all Savings supplied to loanable funds market
  - S + (Tx Tr) > I + G
  - Funds not supplied to financial institutions or financial markets
  - Individuals put funds into cash and hold them

## Three reasons Say's Law may not hold

2. Not all Savings are loaned out.

- S + (Tx Tr) > I + G
- Savings <u>are</u> supplied to financial institutions
- But, financial institutions hold cash rather than make loans.

## Three reasons Say's Law may not hold.

#### 3. Interest rate does not adjust

- Interest rate too high leads to excess savings.
- Interest rate affected by forces outside the loanable funds market

- Savings <u>not</u> determined primarily by the interest rate.
- Savings are residual from Consumption

$$\bullet Y_d = C + S$$

- where Yd = Y Tx + Tr
- Or Disposable Income = Income Taxes + Transfers

$$\Box S = Y_d - C$$

Savings = Disposable Income - Consumption

#### Consumption function:

$$\Box C = a + bY_d$$

- Most important determinant of C is Y<sub>d</sub>
- Therefore, most important determinant of S is also Y<sub>d</sub>

#### Autonomous consumption

Consumption unrelated to Y<sub>d</sub>

Wealth, expectations and interest rate.

C is inversely related to interest rate.

• i.e. interest rate  $\uparrow$ , C  $\checkmark$  and S  $\uparrow$ 

- So supply of savings is positively related to interest rate
- But, interest rate is not the <u>primary</u> determinant of savings.

#### Investment Spending

- Planned Investment (Ip)
  - Spending on new plant & equipment (capital).
  - Purchases of new homes.
- Unplanned Investment
  - Changes in inventories.

#### Planned Investment Spending

- Spending on new plant & equipment (capital) depends on
  - <u>Current</u> interest rate.
  - Expectations of <u>future</u> sales.

#### Planned Investment Spending

- Firms produce in order to make profits.
- Profits = Total Sales Revenue Total Costs
- Profits A if Sales Revenue A and Costs
- Total Costs include:
  - Borrowing
  - Opportunity Costs
- Total Sales Revenue
  - Demand by consumers and other business firms.

#### Planned Investment Spending

- For Keynes, most important factor is profits.
- Current profit and expected future profit.

#### Expectations

- "Animal spirits."
- Subjective opinion of future economic conditions.
- Subject to change.
- Volatile

#### Exports and

- Exports depend on purchases by consumers in other countries.
- Major trading partners for US other industrialized countries.

#### Imports

Included in spending (C + I<sup>p</sup> + G)

#### 🗆 Equilibrium

Planned spending = Output

### Disequilibrium

- Planned spending < Output</p>
- Planned spending > Output

#### 16

#### Planned spending

- $\blacksquare AE = C + I^{P} + G + NX$ 
  - AE = Aggregate Expenditure
  - C = consumption
  - I<sup>P</sup> = planned investment
  - G = Government purchases of goods & services\*
  - NX = Net Exports (exports minus imports).

#### Output

#### **GDP**

- Planned vs Actual
  - By definition,
    - actual aggregate spending = GDP
  - But,
    - planned aggregate spending may not equal GDP

- Planned vs. Actual spending.
- Difference = Changes in Inventories
  - Example:
  - A business produces 1.2 million units based on projected demand. Plans to sell 1 million and put 200,000 into inventories.
  - Sells only 900,000. Puts 300,000 into inventories (instead of 200,000).
  - Business then <u>reduces</u> output to meet lower demand.

## Equilibrium

#### If total spending > planned output

- Inventory levels fall.
- Business expands production to meet higher demand.
- GDP rises.

#### If total spending < planned output</p>

- Inventory levels fise.
- Business cuts back production to meet lower demand.
- GDP falls.

## **Multiplier Effect:**

When firms increase investment by \$1,000 billion, sales at capital goods manufacturers will increase by \$1,000 billion.



The increased sales of \$1,000 billion will be distributed as payments to those supplying resources necessary to produce capital goods. Hence the change in spending generates \$1,000 billion in income.



Households now have \$1,000 billion in additional income. Spending increases by the MPC times the change in income:  $\Delta C = .6 \times \$1,000 = \$600$ .

Households spend \$600 billion and save \$400 billion



When other firms see increased sales, this \$600 billion is distributed in wages, salaries, rental income, and profits to those who supplied resources necessary to produce the additional consumer goods.



Those who earned additional income in consumer goods industries will now increase their spending. By how much?  $\Delta C = .6 \times $600 = $360.$ 



This will result in additional production and factor payments. Spending will then increase. And so on. And so on.

## **Classical Model**

42

2 3 Labor Production GDP Market Function determines determines determines spending employment GDP

To increase GDP, increase employment

Planned Spending determines planned output

Planned Output determines employment

2

To increase employment, increase planned output