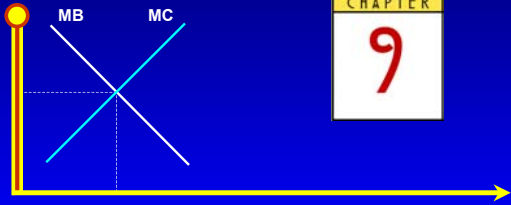


Saving and Capital Formation

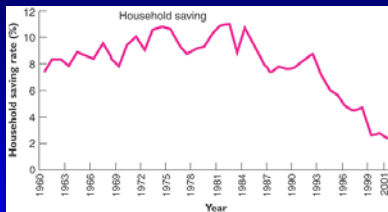
CHAPTER 9




Introduction

- Motives for Saving
 - To meet future expenditures
 - Protect against an economic emergency
 - Produce capital goods

Household Saving Rate in the United States, 1960 - 2001




- Observations**
- Household saving has fallen dramatically
 - National saving has not declined in recent years



Savings and Wealth

- Saving
 - Current income minus spending on current needs
- Saving Rate
 - Saving divided by income


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Savings and Wealth

- Wealth
 - The value of assets minus liabilities
- Assets
 - Anything of value that one owns
- Liabilities
 - The debts one owes

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Consuelo's Balance Sheet

Assets		Liabilities	
Cash	\$ 80	Student loan	\$3,000
Checking account	1,200	Credit card balance	250
Shares of stock	1,000		
Car (market value)	3,500		
Furniture (market value)	500		
Total	\$6,280		\$3,250
		Net worth	\$3,030


•Earnings (\$300/wk) - Expenditures (\$280/wk) = Saving (\$20/wk)
 •Saving Rate = $\$20/\$300 = 6.7\%$
 •Wealth (\$3,030) = Assets (\$6,280) - Liabilities (\$3,250)

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 **Savings and Wealth**


- Flow
 - A measure that is defined per unit of time
- Stock
 - A measure that is defined at a point in time

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 **Savings and Wealth**

- Stocks and Flows
 - Saving is a flow and is defined per unit of time (saving/week).
 - Wealth is a stock and is defined at a point in time (wealth on a given date).
 - Flow is the rate of change in the stock.

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 **Savings and Wealth**

- Stocks and Flows
 - Saving is a flow.
 - Wealth is a stock.
 - Every dollar a person saves adds to their wealth.
(Saving increases Wealth)

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Savings and Wealth

- Example
 - The link between saving and wealth
 - ◆ Consuelo's saving (\$20) is a flow that increases her assets or reduces her liabilities by \$20 and increases her wealth (stock) by \$20.

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Savings and Wealth

- Capital Gains
 - Increases in the value of existing assets (increases Wealth)
- Capital Losses
 - Decreases in the value of existing assets (decreases Wealth)

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Consuelo's Balance Sheet After An Increase in the Value of Her Stocks

Assets		Liabilities	
Cash	\$ 80	Student loan	\$3,000
Checking account	1,200	Credit card balance	250
Shares of stock	1,500		
Car (market value)	3,500		
Furniture (market value)	<u>500</u>		
Total	\$6,780		\$3,250
		Net worth	\$3,530

Capital Gains
 • Stock value increases from \$1,000 to \$1,500
 • Assets increase by \$500
 • Wealth increases by \$500
Capital Loss
 • Reduces wealth

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Savings and Wealth

- Change in Wealth
 - Saving + Capital gains - Capital loss

NOTE THAT

Wealth \neq Saving + Capital gains - Capital loss

IT IS THE CHANGE IN WEALTH

△ Wealth = Saving + Capital gains - Capital loss
Remember the difference between Stock and Flow



The Bull Market of the 1990s




Observations

- During the 1990s, household saving fell while wealth rose
- Households acquired stocks in the 1990s and stock prices rose
- 2000 - 2001 the fall in stock prices was offset by rising home values




Types of Saving

- Life-Cycle
- Precautionary
- Bequest

 **Why Do People Save?**


- Life-Cycle Saving
 - Saving to meet long-term objectives, such as retirement, college attendance, or the purchase of a home

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 **Why Do People Save?**

- Precautionary Saving
 - Saving for protection against unexpected setbacks, such as the loss of a job or a medical emergency

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 **Why Do People Save?**

- Bequest Saving
 - Saving done for the purpose of leaving an inheritance

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Why Do People Save?

- Saving and the Real Interest Rate
 - The higher the real rate the greater the reward from saving.

Real Interest Rate (r) = nominal interest rate (i) - inflation (π)

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National Saving and Its Components

- The Measurement of National Saving
 - Real income or expenditures (Y) = Consumption (C) + Investment (I) + Government (G) + Net exports (NX)
 - Assume $NX = 0$, therefore:
 - ◆ $Y = C + I + G$
 - ◆ Saving = Y - spending on current needs

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National Saving and Its Components

- The Measurement of National Saving
 - Determining spending on current needs
 - ◆ I = spending on capital goods and residential housing
 - ◆ C includes durable goods which may be current and future needs
 - ◆ G may also include current and future needs
 - Assume that all C and G are current need expenditures

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National Saving and Its Components

- The Measurement of National Saving
 - National Saving (S) = $Y - C - G$

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U.S. National Saving Rate, 1960 - 2001

Year	National saving rate (%)
1960	15.5
1963	16.5
1966	17.5
1969	15.5
1972	17.5
1975	15.5
1978	18.5
1981	17.5
1984	14.5
1987	14.5
1990	13.5
1993	14.5
1996	15.5
1999	15.5
2001	12.5

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National Saving and Its Components

- Private and Public Components of National Saving
 - National Saving (S) = $Y - C - G$
 - T (net taxes) = private-sector tax payments - *transfer payments* and interest payments
 - $S = Y - C - G + T - T$
 - $S = (Y - T - C) + (T - G)$
 - Private saving = $S_{private} = Y - T - C$
 - Public saving = $S_{public} = T - G$

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National Saving and Its Components

- Private and Public Components of National Saving
 - Two components of private saving ($S_{private} = Y - T - C$)
 - ◆ Household (personal) saving
 - ◆ Business saving

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National Saving and Its Components

- Private and Public Components of National Saving
 - $S_{public} = T - G$
 - Includes
 - ◆ Federal
 - ◆ State
 - ◆ Local

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National Saving and Its Components

- Private and Public Components of National Saving
 - $S = \underbrace{(Y - T - C)}_{\text{Private}} + \underbrace{(T - G)}_{\text{Public}}$
 - $S = S_{private} + S_{public}$
 - National Saving (S) is composed of saving by households, businesses, and government (federal, state, and local)

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National Saving and Its Components

- Government Budget Deficit
 - The excess of government spending over tax collections ($G - T$)

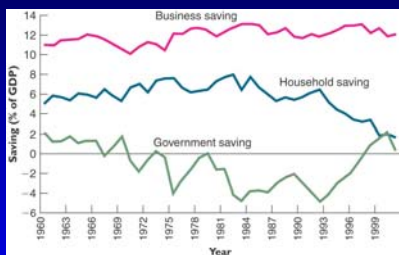



National Saving and Its Components

- Government Budget Surplus
 - The excess of government tax collections over government spending ($T - G$)
 - The government budget surplus equals public saving




The Three Components of National Saving, 1960- 2001



 **National Saving and Its Components**


- Is Low Household Saving a Problem?
 - Observations: Macroeconomic Perspective
 - ◆ National saving, not household saving, determines the capacity of the economy to invest in new capital goods.

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 **National Saving and Its Components**

- Is Low Household Saving a Problem?
 - Observations: Macroeconomic Perspective
 - ◆ National saving has been reasonably stable despite the decline in household saving.

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 **National Saving and Its Components**

- Is Low Household Saving a Problem?
 - Observations: Macroeconomic Perspective
 - ◆ National saving, while relatively low, has been sufficient to allow the U.S. to become one of the world's most productive economies.

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National Saving and Its Components

- Is Low Household Saving a Problem?
 - Observations: Microeconomic Perspective
 - ◆ The low household saving rate signals a problem of growing inequality in wealth among U.S. households.

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Investment and Capital Formation

- Investment
 - Investment -- the creation of new capital goods and housing -- is necessary to increase average labor productivity.
 - National saving is the source of funding for investment.

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Investment and Capital Formation

- Investment
 - Investment spending is undertaken if it is expected to be profitable (i.e., the benefit, or value of marginal product, exceeds the cost of the investment)

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Investment and Capital Formation

- Factors that Determine the Investment Decision
 - Measuring the costs
 - ◆ Real interest rate (opportunity cost)
 - ◆ Price of capital goods

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Investment and Capital Formation

- Factors that Determine the Investment Decision
 - Measuring the benefits
 - ◆ Value of marginal product
 - Operating expense
 - Maintenance expense
 - Tax liability
 - ◆ Influenced by the relative price of the good or service produced by the capital

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Saving, Investment, and Financial Markets

- Supply of Savings (S)
 - The quantity supplied of saving is directly related to the real interest rate (r)
- Demand for Saving (I)
 - The quantity demanded for saving is inversely related to r .

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Saving, Investment, and Financial Markets

- Market for Savings
 - The market will determine the equilibrium (r).
 - If r is above equilibrium, a surplus of savings will exist.
 - If r is below equilibrium, a shortage of savings will exist.

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