KAPLAN SCHWESER

Level I CFA
Economics

Economics

SS4: Economics (1)

12. Topics in Demand and Supply Analysis
13. The Firm and Market Structures
14. Aggregate Output, Prices, and Economic Growth
15. Understanding Business Cycles

SS5: Economics (2)

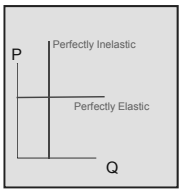
16. Monetary and Fiscal Policy
17. International Trade and Capital Flows
18. Currency Exchange Rates

Elasticity

Price elasticity of demand $= \frac{\%\,\Delta Q}{\%\,\Delta P_{Good}} = \Delta Q/\Delta P \times P_E/Q_E$

Cross price elasticity $= \frac{\%\,\Delta Q}{\%\,\Delta P_{Other\ good}} = \Delta Q/\Delta P_{OG} \times P_{OG}/Q_E$

Income elasticity $= \frac{\%\,\Delta Q}{\%\,\Delta Income} = \Delta Q/\Delta I \times Inc/Q_E$



Calculating elasticity

Assume $Q_E = 220$ $P_E = \$20$ Income = 30 $P_Y = \$10$

$QD_X = 240 - 5P_X + 2.2\ Income + 1.4P_Y - 1.2P_Z$

Price Elasticity = $-5 \times 20 / 220$

Income Elasticity = $2.2 \times 30 / 220$

Cross Price Elasticity $_Y = 1.4 \times 10 / 220$

Elasticity

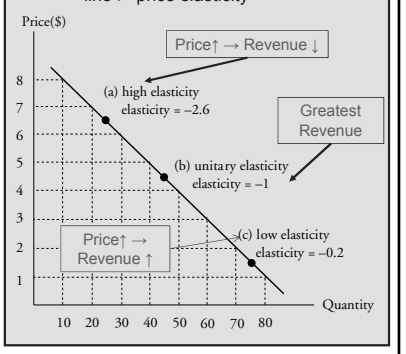
Elasticity of Demand – Factors
- Substitutes: Quality, availability
- Proportion of income spent on good
- Time elapsed since price change

Cross Price Elasticity of Demand
- **Substitutes:** Positive cross price elasticity
- **Complements:** Negative cross price elasticity

Income Elasticity of Demand
- **Normal good:** Elasticity > 0
- **Inferior good:** Elasticity < 0

Elasticity on a Straight-line Demand Curve

The slope of the price-demand line ≠ price elasticity



**Reference Level I CFA Curriculum,
Reading 14, Problem 8**

The market demand function for four-year private universities is given by the equation $Qd = 84 - 3.1P_{private} + 0.8Income + 0.9P_{public}$. Assume that $P_{private} = 38$, $Income = 100$, and P_{public} is equal to 18.

The price elasticity of demand for private universities is *closest* to:

A. –3.1.

B. –1.9.

C. 0.6.

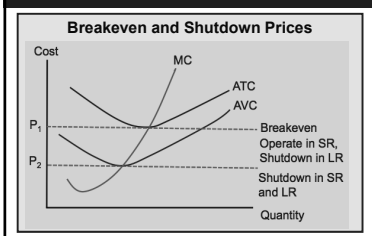
Elasticity of demand will be greater when:

A. The proportion of income spent on the good is relatively low.

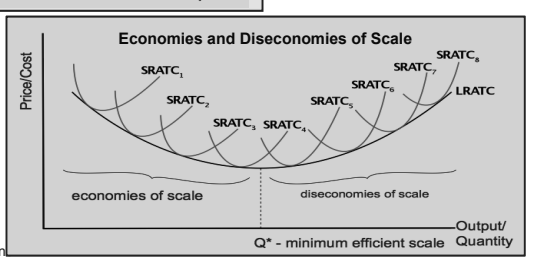
B. There are good substitutes for the good.

C. More time has passed since the price change.

Breakeven, Shutdown, and Scale



Law of Diminishing Returns
At some point, using more of one factor of production (e.g., labor, capital) increases output at a decreasing rate (each additional unit of the factor produces less additional output)



**CFA Curriculum Vol. 2,
Reading 12, Question 25**

The short-term shutdown point of production for a firm operating under perfect competition will *most likely* occur when:

A. price is equal to average total cost.

B. marginal revenue is equal to marginal cost.

C. marginal revenue is equal to average variable costs.

The Firm and Market Structures

	Perfect Competition	Monopolistic Competition	Oligopoly	Monopoly
Number of sellers	Many firms	Many firms	Few firms	Single firm
Barriers to entry	Very low	Low	High	Very high
Nature of substitute products	Very good substitutes	Good substitutes but differentiated	Very good substitutes or differentiated	No good substitutes
Nature of competition	Price only	Price, marketing, features	Price, marketing, features	Advertising
Price power	None	Some	Some to significant	Significant

A market where individual producers face downward sloping demand, barriers to entry are low, and producer pricing decisions are not directly affected by decisions of other producers is referred to as:

A. an oligopoly.

B. perfect competition.

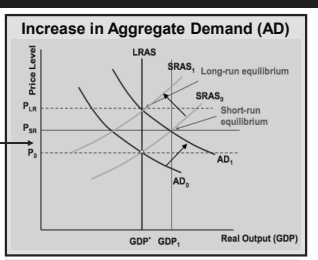
C. monopolistic competition.

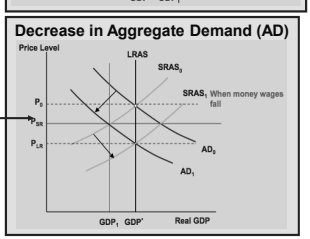
Aggregate Demand

Aggregate Demand (AD) = C + I + G + $_{net}$X

Shifts in Aggregate Demand:

- Increases in wealth increase C
- Increases in expectations for economic growth increase C, I
- Capacity utilization > ~85%→ increase I
- Decreases in tax rates increase disposable income and C
- Increases in government spending, G
- Increases in the money supply reduce real rates and increase I, C
- Depreciation of currency increases $_{net}$X imports prices up, export prices down
- Growth of foreign GDP increases $_{net}$X





When the economy is operating at full-employment GDP, the short-run and long-run effects of an increase in the rate of growth of the money supply are to:

A. decrease real interest rates in the short run and increase real GDP in the long run.

B. increase real GDP in the short run but not in the long run.

C. increase the price level and real GDP in both the short and long run.

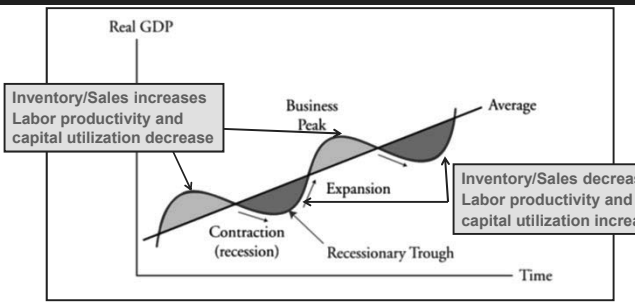
For a domestic economy operating at full employment GDP, the *most likely* effect of falling incomes in foreign countries on the domestic economy in the short run will be a decrease in:

A. both the price level and real GDP.

B. the price level but not in real GDP.

C. real GDP but not in the price level.

Business Cycles



Business Cycle Indicators

- **Leading:** Turning points tend to precede peaks, troughs (stock prices, manufacturing hours worked)
- **Coincident:** Turning points tend to coincide with peaks, troughs (industrial production, non-agricultural employees)
- **Lagging:** Turning points tend to follow peaks, troughs (labor costs, prime rate, consumer credit-to-income)

CFA Curriculum Vol. 2,
Reading 15, Question 4

Based on typical labor utilization patterns across the business cycle, productivity (output per hours worked) is *most likely* to be highest:

A. at the peak of a boom.

B. into a maturing expansion

C. at the bottom of a recession.

Monetary and Fiscal Policy

Fiscal Policy

- Government spending, taxation
- **Budget surplus:** Tax revenue > spending
- **Budget deficit:** Spending > tax revenue
- *Expansionary:* Increase deficit or decrease surplus
- *Contractionary:* Decrease deficit or increase surplus

Monetary Policy

- Central bank actions that affect money supply, interest rates
- **Neutral interest rate:** Trend growth rate of real GDP + inflation target
- *Expansionary:* Policy rate < neutral rate
- *Contractionary:* Policy rate > neutral rate

Functions of Money

- Medium of exchange
- Unit of account
- Store of value

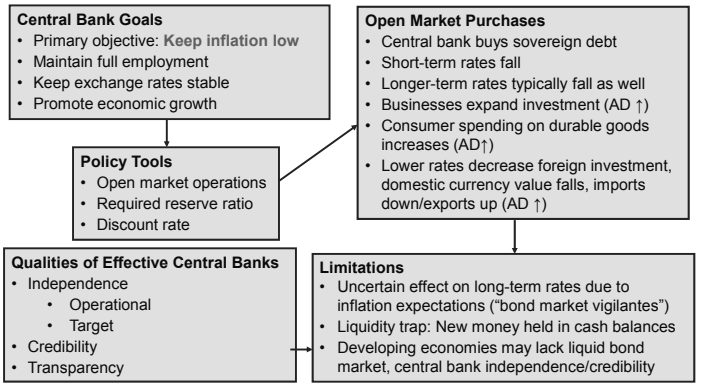
How Banks Create Money

- Fraction of deposits held in reserves
- Remainder can be loaned (excess reserves)
- Quantity of money increases with a multiplier effect
- **Money multiplier** = 1 / reserve ratio

Measures of Money

- M1 → currency + travellers' checks + checking accounts
- M2 → M1 + time and saving deposits + money market mutual funds

Monetary Policy



**CFA Curriculum Vol. 2,
Reading 16, Question 22**

The *least likely* limitation to the effectiveness of monetary policy is that central banks cannot:

A. accurately determine the neutral rate of interest.

B. regulate the willingness of financial institutions to lend.

C. control amounts that economic agents deposit into banks.

Fiscal Policy

Spending Tools
- Transfer payments
- Current spending (gov. purchases)
- Capital spending (infrastructure)

Revenue Tools
- Direct taxes (income, wealth)
- Indirect taxes (sales, VAT)

Discretionary Fiscal Policy
- **Expansionary**: Increase government spending and reduce tax rates during recession
- **Contractionary:** Cut government spending and raise tax rates during inflationary expansion

Automatic Stabilizers
- Expansion: Tax revenue ↑, transfer payments ↓
- Contraction: Tax revenue ↓, transfer payments ↑

Multiplier Effects

- Fiscal multiplier = $\frac{1}{1 - MPC(1 - t)}$

w/MPC = 0.8, tax@30%, FM = 2.27

Spending ↑ 100, impact = 227

Taxes ↑ 100, spending ↓ 80, impact = – 80(2.27) = –182

Balanced budget multiplier positive

Arguments for Concern about Deficits
- Higher future taxes → disincentive to work
- At some point, cannot refinance debt
- *Crowding out* decreases private investment

Arguments against Concern about Deficits
- Debt may be held mostly by citizens
- Infrastructure investment could increase future productivity
- No crowding out if economy is at less than full capacity

Ricardian Equivalence: Taxpayers increase savings in anticipation of higher future taxes in an amount to just offset higher spending

Limitations
- Recognition lag
- Action lag
- Impact lag
- Crowding out

**CFA Curriculum Vol. 2,
Reading 16, Question 32**

Which statement regarding fiscal deficits is *most* accurate?

A. Higher government spending may lead to higher interest rates and lower private sector investing.

B. Central bank actions that grow the money supply to address deflationary conditions decrease fiscal deficits.

C. According to the Ricardian equivalence, deficits have a multiplicative effect on consumer spending.

International Trade

Absolute Advantage(AA) and Comparative Advantage(CA)

Labor Costs	Cloth	Wine
England	100	110
Portugal	90	80

Opportunity cost England: C100/110, W110/100
Opportunity cost Portugal: C90/80, W80/90
England: CA in cloth
Portugal: AA in both goods, CA in wine

Ricardian Model
Comparative advantage results from differences in labor productivity; labor is only factor considered

Heckscher-Ohlin Model
- Comparative advantage results from different relative amounts of labor and capital in each country
- International trade increases price of, and wealth of owners of, less scarce factor

Benefits of International Trade
- Increased consumption
- Greater efficiency through specialization/competition

Costs of International Trade
Losses to workers in, and owners of, domestic industries

International Trade Organizations
- **International Monetary Fund**: Promotes trade growth, exchange rate stability
- **World Bank**: Assists developing countries
- **World Trade Organization**: Resolves trade disputes, trade rules/agreements

If Country A has relatively more labor than Country B, which produces many labor-intensive goods, the *most likely* result of opening their economies to free trade will be to increase:

A. wealth of the owners of capital and wages in Country B.
B. wealth of the owners of capital in Country B.
C. wages in Country B.

Output/worker day	Leather	Machine tools
Poland	80	90
Spain	70	85

Based on the information in the table above, if trade is allowed between the two countries:

A. Poland should export both leather and machine tools to Spain.
B. Spain should specialize in producing leather.
C. Poland should specialize in producing leather.

Balance of Payments

Current Account
- Merchandise and services
- Income receipts
- Unilateral transfers

Must balance

Capital Account
- Capital transfers
- Sales, purchases of non-financial assets

Financial Account
- Government-owned assets abroad
- Foreign-owned assets in the country

- Current account deficit: imports > exports
- Current account surplus: exports > imports

Trade Balance, Fiscal Deficit, Domestic Saving, and Investment
- X – M = private savings + government savings – domestic investment
- Current account deficit (X – M < 0) associated with low private savings, fiscal deficit (government savings < 0), high domestic investment
- Productive capacity increases if current account deficit results from high investment rather than from high consumption (low savings)

CFA Curriculum Vol. 2,
Reading 17, Question 15

The sale of mineral rights would be captured in which of the following balance of payments components?

A. Capital account.

B. Current account.

C. Financial account.

Currency Exchange Rates

Exchange Rate Quotations

$/£: U.S. Dollars per GBP

- $ is the *price currency,* £ is the *base currency*
- Take reciprocal to change which currency is price and which is base

Appreciation and Depreciation

- Change from1.54 $/£ to 1.58 $/£ is appreciation of £ and depreciation of $
- Calculate percent changes for base currency
- 1.58 /1.54 – 1 = 2.6% appreciation of £

Currency Cross Rates

$$\frac{USD}{GBP} \times \frac{EUR}{USD} = \frac{EUR}{GBP}$$

Real Exchange Rate

- Adjusts for relative inflation rates
- $\text{Real} = \text{nominal} \times \left(\frac{\textit{base}\text{ currency CPI}}{\textit{price}\text{ currency CPI}}\right)$

$$\text{Or: Real} = \text{nominal} \Big/ \left(\frac{\text{price currency CPI}}{\text{base currency CPI}}\right)$$

Foreign Exchange Market

- *Sell side:* Dealers, large multinational banks
- *Buy side:* Corporations, investment accounts, governments, retail
- *Hedgers*: Reduce existing FX risk
- *Speculators*: Take on more FX risk

The EUR/USD exchange rate fell from 0.897 to 0.874. Relative to the USD, the euro has appreciated by:

A. 2.36%.

B. 2.56%.

C. 2.63%.

Since 20X1, the price index in Island has increased by 22.4%, while the price index in Mainland has increased by 33.4%. Over the period, the nominal exchange rate (ISL/MAI) has decreased by 10%. The real exchange rate over the period has:

A. decreased by approximately 17%.

B. increased by approximately 1%.

C. decreased by approximately 2%.

Spot and Forward Exchange Rates

Spot exchange rate is for immediate exchange of currencies

Forward exchange rate is for exchange of currencies in the future

Arbitrage-free Forward Rate

Forward premium/discount should reflect difference in interest rates between two countries:

$$\text{Forward} = \frac{\left(1 + i_{\text{price currency}}\right)}{\left(1 + i_{\text{base currency}}\right)} \times \text{Spot}$$

Forward Quotations

Points: Whole number corresponds to rightmost digit of exchange rate quotation

- Four-digit quotation: 3.0000 + 18.5 points = 3.00185
- Two-digit quotation: 300.00 + 18.5 points = 300.185

Percentage: Expressed as percent of spot rate

3.0000 + 0.2% = 3.0060

The 90-day euro Libor is 3% and the 90-day AUD Libor is 4% (both annualized rates).

The spot EUR/AUD rate is 0.7276. The 90-day forward AUD/EUR no-arbitrage rate is *closest* to:

A. 1.3877.

B. 1.3778.

C. 1.3710.