

Perspectives in Macroeconomics

Recessions Since 1954: Tests of Competing Theories: Blank Practice Pages

Test Summaries for Exam

| School | Test |
|-------------------|--|
| <i>Exogenous</i> | |
| Keynesian | Govt Budget and interest rates inversely related to GDP and both will rise over expansion. Govt Budget: Early-to-mid < Late Interest rate: Early-to-mid < Late |
| Monetarist | Accelerating inflation causes falling unemployment (and vice versa). CPI: Early-to-mid < Late > Recession |
| New Classical | Unexpected inflation causes falling unemployment (and vice versa). Unexpected inflation: Late > 0; Recession < 0 |
| RBC | Productivity inversely related to unemployment. Productivity: Late > 0; Recession < 0 |
| <i>Endogenous</i> | |
| Keynes | Investment and profits decline from early-to-mid to late expansion while optimism remains high. Investment: Early-to-mid > Late Profits: Early-to-mid > Late Optimism (PMI): Late ≥ 50 |
| Kalecki | Risk increases from early-to-mid to late expansion. Risk: Early-to-mid < Late |
| Minsky | Debt/income ratios rise from early-to-mid to late expansion. Household debt/income: Early-to-mid < Late Nonfinancial Corporate debt/income: Early-to-mid < Late |
| Mitchell | Producer prices, the cost of capital, and wages all rise from early-to-mid to late expansion. Raw materials prices: Early-to-mid < Late Price of physical capital: Early-to-mid < Late Labor costs: Early-to-mid < Late |

Business Cycle Assumptions

| | Early-to-mid | Late | Recession |
|--------------|--------------|---------|-----------|
| Real GDP | middle | highest | lowest |
| Unemployment | middle | lowest | highest |

KEYNESIAN: Fiscal and Monetary Policy

| Cycle | Early-to-mid | Late | Recession | Consistent? |
|---|---------------------|--------------------|---------------------|-------------|
| Ike I Exp 1954:3 to 1957:2 (12 qtrs) Rec 1957:3 to 1958:2 (4 qtrs) | \$3.99 1.55% | \$20.51 -0.70% | -\$41.90 -0.96% | |
| Ike II Exp 1958:3 to 1960:1 (7 qtrs) Rec 1960:2 to 1961:1 (4 qtrs) | -\$45.64 1.73% | \$5.43 2.25% | \$1.48 1.22% | |
| Vietnam Exp 1961:2 to 1969:3 (34 qtrs) Rec 1969:4 to 1970:4 (5 qtrs) | -\$20.91 1.63% | -\$1.75 1.92% | -\$118.77 1.79% | |
| Oil Shock I Exp 1971:1 to 1973:3 (11 qtrs) Rec 1973:4 to 1975:1 (6 qtrs) | -\$189.79 1.13% | -\$122.63 0.66% | -\$149.32 -1.54% | |
| Oil Shock II Exp 1975:2 to 1979:4 (19 qtrs) Rec 1980:1 to 1980:3 (3 qtrs) | -\$212.71 -0.84% | -\$89.02 -1.45% | -\$180.50 -0.36% | |
| Volcker Exp 1980:4 to 1981:2 (3 qtrs) Rec 1981:3 to 1982:4 (6 qtrs) | NA | -\$155.75 6.12% | -\$283.85 7.34% | |
| Desert Storm Exp 1983:1 to 1990:2 (30 qtrs) Rec 1990:3 to 1991:1 (3 qtrs) | -\$293.33 4.53% | -\$279.12 3.95% | -\$313.62 1.75% | |
| September 11 Exp 1991:2 to 2000:4 (39 qtrs) Rec 2001:1 to 2001:4 (4 qtrs) | -\$264.49 2.19% | \$203.42 2.79% | -\$60.07 2.00% | |
| Subprime Crisis Exp 2002:1 to 2007:3 (23 qtrs) Rec 2007:4 to 2009:2 (7 qtrs) | -\$474.68 -0.58% | -\$308.86 2.83% | -\$934.34 -0.14% | |
| Govt Budget AVG without Volcker | -\$187.20 | -\$71.50 | -\$224.63 | |
| Fed Funds Int | 1.42% | 1.53% | 0.51% | |

| Variable | Expected | Actual on Avg | Cycles Correct |
|---------------|--------------|------------------|----------------|
| Govt Budget | See page one | See calculations | |
| Fed Funds Int | See page one | See calculations | |

DATA: Govt Budget = Net Government Budget Balance in Billions of 2009 Dollars.
Fed Funds Int = Federal Funds Interest Rate Deflated by CPI.

MONETARIST: Consumer Price Inflation

| Cycle | Early-to-mid | Late | Recession | Consistent? |
|---|---------------------|-------------|------------------|--------------------|
| Ike I Exp 1954:3 to 1957:2 (12 qtrs) Rec 1957:3 to 1958:2 (4 qtrs) | 0.24% | 3.61% | 3.28% | |
| Ike II Exp 1958:3 to 1960:1 (7 qtrs) Rec 1960:2 to 1961:1 (4 qtrs) | 0.29% | 1.39% | 1.51% | |
| Vietnam Exp 1961:2 to 1969:3 (34 qtrs) Rec 1969:4 to 1970:4 (5 qtrs) | 2.16% | 5.53% | 5.74% | |
| Oil Shock I Exp 1971:1 to 1973:3 (11 qtrs) Rec 1973:4 to 1975:1 (6 qtrs) | 3.33% | 6.58% | 11.26% | |
| Oil Shock II Exp 1975:2 to 1979:4 (19 qtrs) Rec 1980:1 to 1980:3 (3 qtrs) | 6.91% | 12.65% | 12.89% | |
| Volcker Exp 1980:4 to 1981:2 (3 qtrs) Rec 1981:3 to 1982:4 (6 qtrs) | NA | 10.61% | 6.02% | |
| Desert Storm Exp 1983:1 to 1990:2 (30 qtrs) Rec 1990:3 to 1991:1 (3 qtrs) | 3.66% | 4.59% | 5.69% | |
| September 11 Exp 1991:2 to 2000:4 (39 qtrs) Rec 2001:1 to 2001:4 (4 qtrs) | 2.58% | 3.44% | 1.89% | |
| Subprime Crisis Exp 2002:1 to 2007:3 (23 qtrs) Rec 2007:4 to 2009:2 (7 qtrs) | 2.89% | 2.38% | 1.66% | |
| AVG without Volcker | 2.76% | 5.06% | 5.49% | |

| Variable | Expected* | Actual on Avg | Cycles Correct |
|-----------------|------------------|----------------------|-----------------------|
| CPI | See page one | See calculations | |

*On the assumption that unemployment is lowest in late recession and highest in recession.

DATA: Consumer Price Index, All Urban Consumers, Annualized Rates of Change.

NEW CLASSICAL: Unexpected Consumer Price Inflation

| Cycle | Early-to-mid | Late | Recession | Consistent? |
|---|---------------------|-------------|------------------|--------------------|
| Ike I Exp 1954:3 to 1957:2 (12 qtrs) Rec 1957:3 to 1958:2 (4 qtrs) | -0.08% | 3.54% | 0.71% | |
| Ike II Exp 1958:3 to 1960:1 (7 qtrs) Rec 1960:2 to 1961:1 (4 qtrs) | -3.02% | -1.15% | 0.51% | |
| Vietnam Exp 1961:2 to 1969:3 (34 qtrs) Rec 1969:4 to 1970:4 (5 qtrs) | 0.52% | 1.94% | 0.62% | |
| Oil Shock I Exp 1971:1 to 1973:3 (11 qtrs) Rec 1973:4 to 1975:1 (6 qtrs) | -2.10% | 3.35% | 5.64% | |
| Oil Shock II Exp 1975:2 to 1979:4 (19 qtrs) Rec 1980:1 to 1980:3 (3 qtrs) | -1.26% | 5.54% | 2.77% | |
| Volcker Exp 1980:4 to 1981:2 (3 qtrs) Rec 1981:3 to 1982:4 (6 qtrs) | NA | -2.69% | -5.74% | |
| Desert Storm Exp 1983:1 to 1990:2 (30 qtrs) Rec 1990:3 to 1991:1 (3 qtrs) | -0.28% | 0.23% | 0.86% | |
| September 11 Exp 1991:2 to 2000:4 (39 qtrs) Rec 2001:1 to 2001:4 (4 qtrs) | -0.53% | 1.42% | -1.38% | |
| Subprime Crisis Exp 2002:1 to 2007:3 (23 qtrs) Rec 2007:4 to 2009:2 (7 qtrs) | 0.43% | -1.42% | -1.40% | |
| AVG without Volcker | -0.79% | 1.67% | 1.04% | |

| Variable | Expected* | Actual on Avg | Cycles Correct |
|-----------------|------------------|----------------------|-----------------------|
| Unexpected CPI | See page one | See calculations | |

*Early-to-mid expansion can be ambiguous, but there is a high likelihood of falling unemployment in late expansion and rising unemployment in recession.

DATA: Consumer Price Index, All Urban Consumers, Annualized Rates of Change. Unexpected portion determined by author calculations.

REAL BUSINESS CYCLE: Labor Productivity

| Cycle | Early-to-mid | Late | Recession | Consistent? |
|---|---------------------|-------------|------------------|--------------------|
| Ike I Exp 1954:3 to 1957:2 (12 qtrs) Rec 1957:3 to 1958:2 (4 qtrs) | 2.34% | 1.88% | 2.45% | |
| Ike II Exp 1958:3 to 1960:1 (7 qtrs) Rec 1960:2 to 1961:1 (4 qtrs) | 4.97% | 3.23% | -0.93% | |
| Vietnam Exp 1961:2 to 1969:3 (34 qtrs) Rec 1969:4 to 1970:4 (5 qtrs) | 3.58% | -0.15% | 1.70% | |
| Oil Shock I Exp 1971:1 to 1973:3 (11 qtrs) Rec 1973:4 to 1975:1 (6 qtrs) | 4.33% | 2.28% | -0.30% | |
| Oil Shock II Exp 1975:2 to 1979:4 (19 qtrs) Rec 1980:1 to 1980:3 (3 qtrs) | 2.52% | -1.35% | -0.37% | |
| Volcker Exp 1980:4 to 1981:2 (3 qtrs) Rec 1981:3 to 1982:4 (6 qtrs) | NA | 2.17% | 0.20% | |
| Desert Storm Exp 1983:1 to 1990:2 (30 qtrs) Rec 1990:3 to 1991:1 (3 qtrs) | 2.07% | 2.18% | -0.40% | |
| September 11 Exp 1991:2 to 2000:4 (39 qtrs) Rec 2001:1 to 2001:4 (4 qtrs) | 2.39% | 2.55% | 3.18% | |
| Subprime Crisis Exp 2002:1 to 2007:3 (23 qtrs) Rec 2007:4 to 2009:2 (7 qtrs) | 2.55% | 2.70% | 1.63% | |
| AVG without Volcker | 3.09% | 1.66% | 0.87% | |

| Variable | Expected* | Actual on Avg | Cycles Correct |
|-----------------|------------------|----------------------|-----------------------|
| Productivity | See page one | See page one | |

*On the assumption that unemployment is lowest in late recession and highest in recession.

DATA: Nonfarm Business Sector Real Output/hour, Annualized Rates of Change.

KEYNES: Investment, Profits, Expectations

| Cycle | Early-to-mid | Late | Recession | Consistent? | |
|---|---------------------------|----------------------------|-----------------------------|----------------------------|--|
| Ike I Exp 1954:3 to 1957:2 (12 qtrs) Rec 1957:3 to 1958:2 (4 qtrs) | 14.27% 16.51% 60.64 | -3.42% 1.25% 49.68 | -12.53% -18.06% 41.88 | | |
| Ike II Exp 1958:3 to 1960:1 (7 qtrs) Rec 1960:2 to 1961:1 (4 qtrs) | 32.26% 44.12% 61.74 | 17.96% 9.83% 57.04 | -15.02% -12.83% 45.02 | | |
| Vietnam Exp 1961:2 to 1969:3 (34 qtrs) Rec 1969:4 to 1970:4 (5 qtrs) | 8.93% 9.62% 57.05 | 9.04% -12.79% 55.70 | -8.29% -15.95% 47.63 | | |
| Oil Shock I Exp 1971:1 to 1973:3 (11 qtrs) Rec 1973:4 to 1975:1 (6 qtrs) | 17.36% 27.65% 56.70 | 8.14% 4.93% 66.68 | -12.45% -16.05% 50.71 | | |
| Oil Shock II Exp 1975:2 to 1979:4 (19 qtrs) Rec 1980:1 to 1980:3 (3 qtrs) | 14.88% 19.49% 55.86 | -3.30% -18.41% 52.49 | -18.84% -31.33% 40.86 | | |
| Volcker Exp 1980:4 to 1981:2 (3 qtrs) Rec 1981:3 to 1982:4 (6 qtrs) | NA | 23.30% 17.90% 52.53 | 9.15% -0.78% 39.62 | | |
| Desert Storm Exp 1983:1 to 1990:2 (30 qtrs) Rec 1990:3 to 1991:1 (3 qtrs) | 9.07% 6.66% 54.58 | -0.57% 3.59% 47.74 | -13.57% 16.47% 42.42 | | |
| September 11 Exp 1991:2 to 2000:4 (39 qtrs) Rec 2001:1 to 2001:4 (4 qtrs) | 8.82% 5.49% 52.51 | 4.47% -14.43% 51.66 | -10.94% 16.25% 43.41 | | |
| Subprime Crisis Exp 2002:1 to 2007:3 (23 qtrs) Rec 2007:4 to 2009:2 (7 qtrs) | 5.59% 15.22% 54.01 | -2.41% -9.12% 51.43 | -18.58% 16.82% 44.29 | | |
| AVG without Volcker | Inv π PMI | 13.89% 18.10% 56.64 | 3.74% -4.39% 54.05 | -13.78% -5.58% 44.53 | |

| Variable | Expected | Actual on Avg | Cycles Correct |
|-----------------|-----------------|----------------------|-----------------------|
| Inv | See page one | See page one | |
| π | See page one | See page one | |
| PMI | See page one | See page one | |

DATA: Inv = Real Gross Private Domestic Investment, Annualized Rate of Change.

π = Corporate Profits After Tax with Inventory Valuation Adjustment (IVA) and Capital Consumption Adjustment (CCAdj), Deflated, Annualized Rate of Change.

PMI = Purchasing Managers' Index (measure of their optimism, with 50 being average)

KALECKI: Increasing Risk

| Cycle | Early-to-mid | Late | Recession | Consistent? |
|---|---------------------|-------------|------------------|--------------------|
| Ike I Exp 1954:3 to 1957:2 (12 qtrs) Rec 1957:3 to 1958:2 (4 qtrs) | 1.33% | 0.68% | 1.47% | |
| Ike II Exp 1958:3 to 1960:1 (7 qtrs) Rec 1960:2 to 1961:1 (4 qtrs) | 1.65% | 0.83% | 1.84% | |
| Vietnam Exp 1961:2 to 1969:3 (34 qtrs) Rec 1969:4 to 1970:4 (5 qtrs) | 1.03% | 0.50% | 1.34% | |
| Oil Shock I Exp 1971:1 to 1973:3 (11 qtrs) Rec 1973:4 to 1975:1 (6 qtrs) | 3.22% | 0.94% | 1.01% | |
| Oil Shock II Exp 1975:2 to 1979:4 (19 qtrs) Rec 1980:1 to 1980:3 (3 qtrs) | 2.68% | -0.44% | 0.93% | |
| Volcker Exp 1980:4 to 1981:2 (3 qtrs) Rec 1981:3 to 1982:4 (6 qtrs) | NA | -0.98% | 2.57% | |
| Desert Storm Exp 1983:1 to 1990:2 (30 qtrs) Rec 1990:3 to 1991:1 (3 qtrs) | 3.19% | 1.36% | 2.38% | |
| September 11 Exp 1991:2 to 2000:4 (39 qtrs) Rec 2001:1 to 2001:4 (4 qtrs) | 2.99% | 1.81% | 3.69% | |
| Subprime Crisis Exp 2002:1 to 2007:3 (23 qtrs) Rec 2007:4 to 2009:2 (7 qtrs) | 3.50% | 0.79% | 4.23% | |
| AVG without Volcker | 2.45% | 0.81% | 2.11% | |

| Variable | Expected* | Actual on Avg | Cycles Correct |
|-----------------|------------------|----------------------|-----------------------|
| Risk | See page one | See page one | |

*On the assumption that unemployment is lowest in late recession and highest in recession.

DATA: Moodys Seasoned AAA Corporate Bond Yield minus 3-Month Treasury Bill: Secondary Market Rate.

MINSKY: Debt-to-Income Ratio

| Cycle | Early-to-mid | Late | Recession | Consistent? |
|---|---------------------|-------------------|-------------------|--------------------|
| Ike I Exp 1954:3 to 1957:2 (12 qtrs) Rec 1957:3 to 1958:2 (4 qtrs) | 45.39% 31.78% | 48.81% 33.15% | 50.33% 34.18% | |
| Ike II Exp 1958:3 to 1960:1 (7 qtrs) Rec 1960:2 to 1961:1 (4 qtrs) | 51.40% 35.43% | 54.07% 35.65% | 56.96% 36.70% | |
| Vietnam Exp 1961:2 to 1969:3 (34 qtrs) Rec 1969:4 to 1970:4 (5 qtrs) | 62.93% 40.27% | 63.58% 44.25% | 60.44% 46.50% | |
| Oil Shock I Exp 1971:1 to 1973:3 (11 qtrs) Rec 1973:4 to 1975:1 (6 qtrs) | 59.71% 48.39% | 60.55% 50.20% | 60.55% 52.17% | |
| Oil Shock II Exp 1975:2 to 1979:4 (19 qtrs) Rec 1980:1 to 1980:3 (3 qtrs) | 61.53% 50.41% | 67.46% 50.75% | 67.75% 51.27% | |
| Volcker Exp 1980:4 to 1981:2 (3 qtrs) Rec 1981:3 to 1982:4 (6 qtrs) | NA | 66.08% 51.47% | 64.53% 52.80% | |
| Desert Storm Exp 1983:1 to 1990:2 (30 qtrs) Rec 1990:3 to 1991:1 (3 qtrs) | 72.18% 60.13% | 80.55% 64.38% | 81.95% 63.10% | |
| September 11 Exp 1991:2 to 2000:4 (39 qtrs) Rec 2001:1 to 2001:4 (4 qtrs) | 86.37% 54.70% | 94.04% 63.75% | 97.33% 64.35% | |
| Subprime Crisis Exp 2002:1 to 2007:3 (23 qtrs) Rec 2007:4 to 2009:2 (7 qtrs) | 114.15% 62.80% | 130.64% 66.58% | 129.06% 71.66% | |
| Household AVG without Volcker | 69.21% | 74.96% | 75.55% | |
| Nonfinancial Corp | 48.33% | 51.09% | 52.49% | |

| Variable | Expected | Actual on Avg | Cycles Correct |
|-------------------|-----------------|----------------------|-----------------------|
| Household | See page one | See page one | |
| Nonfinancial Corp | See page one | See page one | |

DATA: Household = United States - Households and NPISHs - All sectors - Market value - US Dollar - Adjusted for breaks, as a percent of Personal Disposable Income
 Nonfinancial Corp = United States - Non financial sector - All sectors - Market value - Percentage of GDP - Adjusted for breaks.

MITCHELL: Raw Materials Costs, Capital Equipment Costs, Labor Costs

| Cycle | Early-to-mid | Late | Recession | Consistent? |
|---|-------------------------|---------------------------|----------------------------|--------------------|
| Ike I Exp 1954:3 to 1957:2 (12 qtrs) Rec 1957:3 to 1958:2 (4 qtrs) | 1.55% 4.76% 2.63% | 2.76% 6.53% 3.88% | 1.84% 3.12% 1.36% | |
| Ike II Exp 1958:3 to 1960:1 (7 qtrs) Rec 1960:2 to 1961:1 (4 qtrs) | 0.29% 1.68% 0.18% | -0.10% 1.14% 1.43% | 0.43% 0.11% 3.73% | |
| Vietnam Exp 1961:2 to 1969:3 (34 qtrs) Rec 1969:4 to 1970:4 (5 qtrs) | 1.04% 1.66% 1.22% | 4.29% 3.23% 7.14% | 2.99% 5.33% 4.89% | |
| Oil Shock I Exp 1971:1 to 1973:3 (11 qtrs) Rec 1973:4 to 1975:1 (6 qtrs) | 4.56% 2.73% 2.05% | 15.85% 3.53% 5.61% | 15.60% 17.96% 11.29% | |
| Oil Shock II Exp 1975:2 to 1979:4 (19 qtrs) Rec 1980:1 to 1980:3 (3 qtrs) | 6.48% 7.15% 5.57% | 14.55% 8.77% 12.03% | 13.98% 11.91% 11.41% | |
| Volcker Exp 1980:4 to 1981:2 (3 qtrs) Rec 1981:3 to 1982:4 (6 qtrs) | NA | 10.53% 10.67% 7.72% | 1.41% 5.40% 6.86% | |
| Desert Storm Exp 1983:1 to 1990:2 (30 qtrs) Rec 1990:3 to 1991:1 (3 qtrs) | 1.89% 2.40% 2.33% | 1.40% 3.35% 4.10% | 4.03% 3.91% 4.17% | |
| September 11 Exp 1991:2 to 2000:4 (39 qtrs) Rec 2001:1 to 2001:4 (4 qtrs) | 1.03% 1.06% 1.39% | 5.94% 1.04% 4.26% | -4.29% 0.08% 0.72% | |
| Subprime Crisis Exp 2002:1 to 2007:3 (23 qtrs) Rec 2007:4 to 2009:2 (7 qtrs) | 5.61% 1.13% 1.06% | 4.47% 1.91% 1.97% | 1.65% 2.64% 0.95% | |
| Raw Materials | 2.81% | 6.15% | 4.53% | |
| AVG without Volcker Price of K | 2.82% | 3.69% | 5.53% | |
| Labor Costs | 2.05% | 5.05% | 4.81% | |

| Variable | Expected | Actual on Avg | Cycles Correct |
|-----------------|-----------------|----------------------|-----------------------|
| Raw Materials | See page one | See page one | |
| Price of K | See page one | See page one | |
| Labor Costs | See page one | See page one | |

DATA: Raw Materials = Producer Price Index, Annualized Rate of Change.
 Price of K = Producer Price Index, Capital Equipment, Annualized Rate of Change.
 Labor Costs = Nonfarm Business Sector: Unit Labor Cost, Annualized Rate of Change.