The Goals of Stabilization Policy: Low Inflation and Low Unemployment

The Goals of Stabilization Policy

• The Costs and Causes of Inflation
  – While inflation is viewed as evil the degree of evilness is highly and hotly debated
  - Basic cause of inflation is excessive growth of nominal GDP
  - Why do governments allow this to happen?
  - Costs associated with reducing inflation
    - Lost output and jobs
    - Creeping inflation versus hyperinflation

The Goals of Stabilization Policy

• Money and Inflation
  – A permanent increase in the growth of nominal GDP will lead to a permanent increase in inflation

The Goals of Stabilization Policy

• Money and Inflation (continued)
  – Definitions Linking Money, Velocity, Inflation, and Output
    • The quantity theory of money
      \[ M(s) \times V = X = P \times Y \]
    • or in growth rate terms
      \[ m(s) + v = x = p + y \]
    • or, rearranging terms
      \[ p = x - y = m(s) + v - y \]

The Goals of Stabilization Policy

• Money and Inflation (continued)
  – Definitions Linking Money, Velocity, Inflation, and Output (continued)
    • What determines the excess growth of money plus velocity?
      - Central banks control \( m(s) \)
      - Velocity changes whenever there is a change in real GDP relative to the real money supply, \( M(s) / P \)
      - Or if the demand for money changes for reasons independent of changes in income

The Goals of Stabilization Policy

• Money and Inflation (continued)
  – Definitions Linking Money, Velocity, Inflation, and Output (continued)
    • In the long run, the inflation rate equals the excess growth rate of nominal GDP
    • or
    • In the long run, the inflation rate equals the excess growth rate of money plus velocity, relative to the long-run growth rate of real GDP
The Goals of Stabilization Policy

• Money and Inflation (continued)
  – Definitions Linking Money, Velocity, Inflation, and Output (continued)
    • Velocity can be highly volatile in the short run but over the long-run velocity growth tends to be stable
      – That is \( v = 0 \) in the long run
      – This implies that in the long-run, the inflation rate equals the excess growth rate of the money supply

The Goals of Stabilization Policy

• Money and Inflation (continued)
  – Why Do Central Banks Allow Excessive Monetary Growth?
    • Temptation of demand stimulation
    • Also generates a reluctance to stop inflation
    • Adverse supply shocks
    • Monetizing government deficits

The Goals of Stabilization Policy

• Interest Rates and Inflation
  – Introduction
    • Why do policymakers worry about inflation?
      – What if real wage growth were unaffected by inflation
    • Most of the costs associated with inflation are felt by the owners of financial assets
      – The importance of expected and unexpected (or surprise) inflation cannot be underestimated

The Goals of Stabilization Policy

• Interest Rates and Inflation (continued)
  – Nominal and Real Interest Rates
    • Nominal interest rate \( (i) \): the rate actually quoted by banks and negotiated in financial markets
    • Expected real interest rate \( (r) \): what people expect to pay on their borrowings or earn on their savings after deducting expected inflation
      \[ r(e) = i - p(e) \]
      – \( r(e) \) is what matters for investment and saving decisions
    • Actual real interest rate \( (r) \): \( r = i - p \)

The Goals of Stabilization Policy

• Interest Rates and Inflation (continued)
  – Nominal and Real Interest Rates (continued)
    • Saving and investment decisions will depend on real interest rates rather than nominal interest rates
      – Same real, different nominal interest rates still generate the same saving and investment decisions
    • This implies that the inflation does not matter if
      – Inflation is universally and accurately anticipated
      – All savings earn the nominal interest rate
      – The inflation premium is constant
      – Real, not nominal, interest income is taxable
      – Inflation is uniform and does not change relative prices

The Goals of Stabilization Policy

• Interest Rates and Inflation (continued)
  – Interest Rates in a Surprise Inflation
    • Unanticipated inflation occurs when the actual inflation rate, \( p \), differs from the expected inflation rate, \( p(e) \)
      – Actual real interest rates will also differ from expected real interest rates
    • Unanticipated inflation redistributes income from creditors to debtors without their knowledge or consent
The Goals of Stabilization Policy

• Interest Rates and Inflation (continued)
  – Interest Rates, Expected Inflation, and the Fisher Effect (continued)
    • If, in the long-run, expectations are accurate, i.e. \( p(e) = p \)
    • then, combining with the quantity equations yields
      \[ i = r(e) + m(s) + v - y \]
    • Since \( r(e), v, \) and \( y \) are all unaffected by a change in \( m(s) \), then the Fisher effect holds
    • This implies that rapid money growth will lead to both rapid inflation and high nominal interest rates

The Goals of Stabilization Policy

• Interest Rates and Inflation (continued)
  – Interest Rates, Expected Inflation, and the Fisher Effect
    \[ r(e) = i - p(e) \]
  • or
    \[ i = r(e) + p(e) \]
    • \( i \) can rise either if \( r(e) \) rises or \( p(e) \) rises
    • This equation is called the Fisher equation
    • The implication that a change in expected inflation will cause a similar change in nominal interest rates is call the Fisher effect

The Goals of Stabilization Policy

• The Government Budget Constraint and the Inflation Tax
  – The government must finance its budget deficits by either
    • issuing additional government bonds, \( \delta B \), or
    • issuing additional government monetary liabilities, \( \delta H \)
  – Both \( B \) and \( H \) are part of government debt
    • \( B \) pays interest
    • \( H \) does not

The Goals of Stabilization Policy

• The Government Budget Constraint and the Inflation Tax (continued)
  – The Government Budget Constraint Equation
    \[ G - T + \frac{(i + B)}{P} = \frac{(\delta B)}{P} + \frac{(\delta H)}{P} \]
    • \( G - T \) is called the basic, or primary, deficit

The Goals of Stabilization Policy

• The Government Budget Constraint and the Inflation Tax (continued)
  – Bond Creation versus Money Creation
    • The government can only finance its debt through:
      – Bond creation, \( \delta B \), or
      – Money creation, \( \delta H \)
      • Tends to increase the \( M(s) \)
    • Money creation is more stimulative than bond creation
      – Accommodative monetary policy
      – Better used when the economy is weak than strong
The Goals of Stabilization Policy

- The Government Budget Constraint and the Inflation Tax (continued)
  - Effects of Inflation
    \[ G - T + \left( \frac{i \cdot B}{P} \right) = \frac{\delta B}{P} + \frac{\delta H}{P} \]
  - Rearranging
    \[ G - T + \left( \frac{i \cdot B}{P} \right) = \left( \frac{\delta B}{B} \right) + \left( \frac{\delta H}{H} \right) \]
  - Now
    \[ \frac{\delta B}{B} = b = \frac{\delta H}{H} = h = p \]

The Goals of Stabilization Policy

- Starting and Stopping a Hyperinflation
  - Introduction
    - Hyperinflation: inflation rates of 1,000% or more per year
    - An economy experiencing hyperinflation would collapse if wages and salaries did not grow as rapidly and if interest rates were less than the inflation rate
    - Fortunately, hyperinflation is an unusual event
    - The essence of a hyperinflation is its cumulative dynamic character, best described as a vicious circle

The Goals of Stabilization Policy

- The Government Budget Constraint and the Inflation Tax (continued)
  - Effects of Inflation (continued)
    - Growth rate of bonds (b) and the growth rate of high-powered money (h) equal the inflation rate (p)
      - Real value of bonds remains fixed
      - Real value of high-powered money remains fixed
    - If this is true, then
      \[ G - T = \left( \frac{p \cdot H}{P} \right) - \left( \frac{(i - p) \cdot B}{P} \right) \]
The Goals of Stabilization Policy

• Starting and Stopping a Hyperinflation
  – How to End a Hyperinflation
    • Stopping a hyperinflation is a complex and difficult task
  – Stabilization strategy almost always includes a sharp reduction in the budget deficit
  • Introducing some types of controls on wages
    – An incomes policy
    – Reestablishing the government’s credibility
    – Usually takes several dramatic actions all at once to achieve

• Costs of a Fully Anticipated Inflation:
  Creeping Inflation versus Hyperinflation
  – Welfare Cost of Lower Real Money Balances
    • Money does not receive a market interest rate
      – No interest is paid on currency
      – No interest is paid on required reserves
      – Below market rates are subsidized by deposit insurance
    • Several consequences
      – Convenience use of money is reduced
      – "Shoe-leather" costs
      – Costs of an anticipated hyperinflation

• Indexation and Other Reforms to Reduce the Costs of Inflation
  – Introduction
    • There are a number of reforms that can substantially cut the costs imposed by inflation
  – Decontrol of Financial Institutions
  – Indexed Bonds
    • \( i = r(0) + p \)
  – Index Tax System
    • Institute an inflation-neutral tax system

The Goals of Stabilization Policy

• Costs of a Fully Anticipated Inflation:
  Creeping Inflation versus Hyperinflation
  – Conditions for no effect
    • Accurate anticipations
    – No financial assets at below market rates
    – Nominal rates change point for point with inflation
    – Real, not nominal, interest income is taxed and real, not nominal, interest costs are tax deductible
    – Inflation causes no changes in relative prices

The Goals of Stabilization Policy

• Costs of a Fully Anticipated Inflation:
  Creeping Inflation versus Hyperinflation
  – Interest Rates and Taxation
    • Nominal interest rates do not always change point-for-point with inflation; changes in real interest rates redistributes income
    • If nominal interest income is taxed and nominal interest costs are tax deductible then income is redistributed

The Goals of Stabilization Policy

• Costs of a Fully Anticipated Inflation:
  Creeping Inflation versus Hyperinflation
  – Summary: Costs of Inflation
    • From unanticipated inflation
      – Redistribution of income from creditors to debtors
    • From anticipated inflation
      – "Shoe-leather" costs from minimizing real cash balances
      – Changes in relative costs
      – Redistribution of income if real interest rates change
      – Redistribution of income from non-inflation neutral tax system
The Goals of Stabilization Policy

• Why the Unemployment Rate Cannot Be Reduced to Zero
  – Distinguishing the Types of Unemployment
    • Cyclical unemployment
      – Difference between actual and natural unemployment
        – Can be negative
    • Turnover unemployment
      – Frictional unemployment
    • Mismatch unemployment
      – Structural unemployment
    • Turnover and mismatch = natural unemployment

The Goals of Stabilization Policy

• Sources of Mismatch Unemployment
  – Causes of and Cures for Mismatch
    Unemployment: Mismatch Skills
      • Lack of job training
      • Inflexibility of relative wages
      • Discrimination
    – Causes of and Curves for Mismatch
      Unemployment: Mismatch Location

The Goals of Stabilization Policy

• Turnover Unemployment and Job Search
  – Reasons for Turnover Unemployment
    • The Economics of Job Refusal
      – Theory of “search” unemployment
      – Job search theory treats unemployment as a socially
        valuable, productive activity as unemployed individuals
        “invest” in their job search
      – Cost is cost of search plus loss wages
        » Benefit is “better” job and higher wages
      – Government’s ability to reduce is limited
    • Effects of Unemployment Compensation
      – The Human Costs of Recessions

The Goals of Stabilization Policy

• New Theories to Explain High European
  Unemployment
  – Introduction
    • The natural rate of unemployment in Europe has
      quintupled between the 1960s and the 1990s
    • The natural rate of unemployment in the U.S. has
      hardly changed between the 1960s and the 1990s

The Goals of Stabilization Policy

• New Theories to Explain High European
  Unemployment (continued)
  – Introduction (continued)
    • Why the difference?
      – Structuralist hypothesis – specific impediments
        » excessive real wages
        » high unemployment benefits
        » excessive government spending
        » excessive government regulations
        » high marginal tax rates
        » regional imbalances

The Goals of Stabilization Policy

• New Theories to Explain High European
  Unemployment (continued)
  – Introduction (continued)
    • Why the difference? (continued)
      – Hysteresis hypothesis – discouraged workers
        » The natural rate follows automatically in the path of
          the actual unemployment rate
        » If the actual rate were lowered by stimulative policies,
          the natural rate would automatically decline as well
The Goals of Stabilization Policy

- New Theories to Explain High European Unemployment (continued)
  - The Structuralist and Hysteresis Views
    » Figure 12-1

The Goals of Stabilization Policy

- Assessing the Structuralist Hypothesis
  - Eurosclerosis
    - Excessive government regulations
    - The welfare state
  - High real wages

- Assessing the Hysteresis Hypothesis
  - Discouraged workers
  - Implications of the Debate for Macroeconomics

The Goals of Stabilization Policy

- Conclusion: Solutions to the Inflation and Unemployment Dilemma
  - Options for Reducing Inflation
    - Restrictive monetary and fiscal policy
    - Wage and price controls
    - Cost-reducing policies
    - Inflation-neutralizing policies

The Goals of Stabilization Policy

- Conclusion: Solutions to the Inflation and Unemployment Dilemma (continued)
  - Options for Reducing the Unemployment Rate
    - Cyclical unemployment can be reduced through appropriate monetary and fiscal policies
    - Turnover unemployment can be reduced by making job search more efficient
    - Mismatch unemployment can be reduced enhanced incentives for promoting job skills and job mobility