A Half Century of Changes in Monetary Policy

John B. Taylor
Under Secretary of Treasury for International Affairs

Conference in Honor of Milton Friedman
University of Chicago

November 8, 2002

Purpose

- Review monetary policy since World War II
  - United States and Rest of World
- Or since Milton Friedman's first papers on monetary economics—at U.S. Treasury?
- Intertwined with Milton Friedman's influential research and policy advice on:
  - Monetary policy rules
  - Case for flexible exchange rates
  - Natural rate theory
  - Money growth (Monetary History)

Dramatic Changes

- Accord of 1951
  - Fed must now decide about instrument setting
  - Start of Martin era
- End of fixed exchange rate system
  - Bundesbank, other central banks, must now decide about instrument setting
- Great variety now
  - Flexible exchange rates—inflation targets, systematic policy for instrument setting
  - Currency unions, dollarizations, currency boards
  - Managed pegs

Three Broad Developments

- Rise and fall of inflation
  - Price stability, Great Inflation, price stability
- More transparent, systematic, rule-like operations and analysis
  - Interest rate instrument
  - Changing coefficients
- Diffusion of monetary ideas, experiences

U.S. Inflation

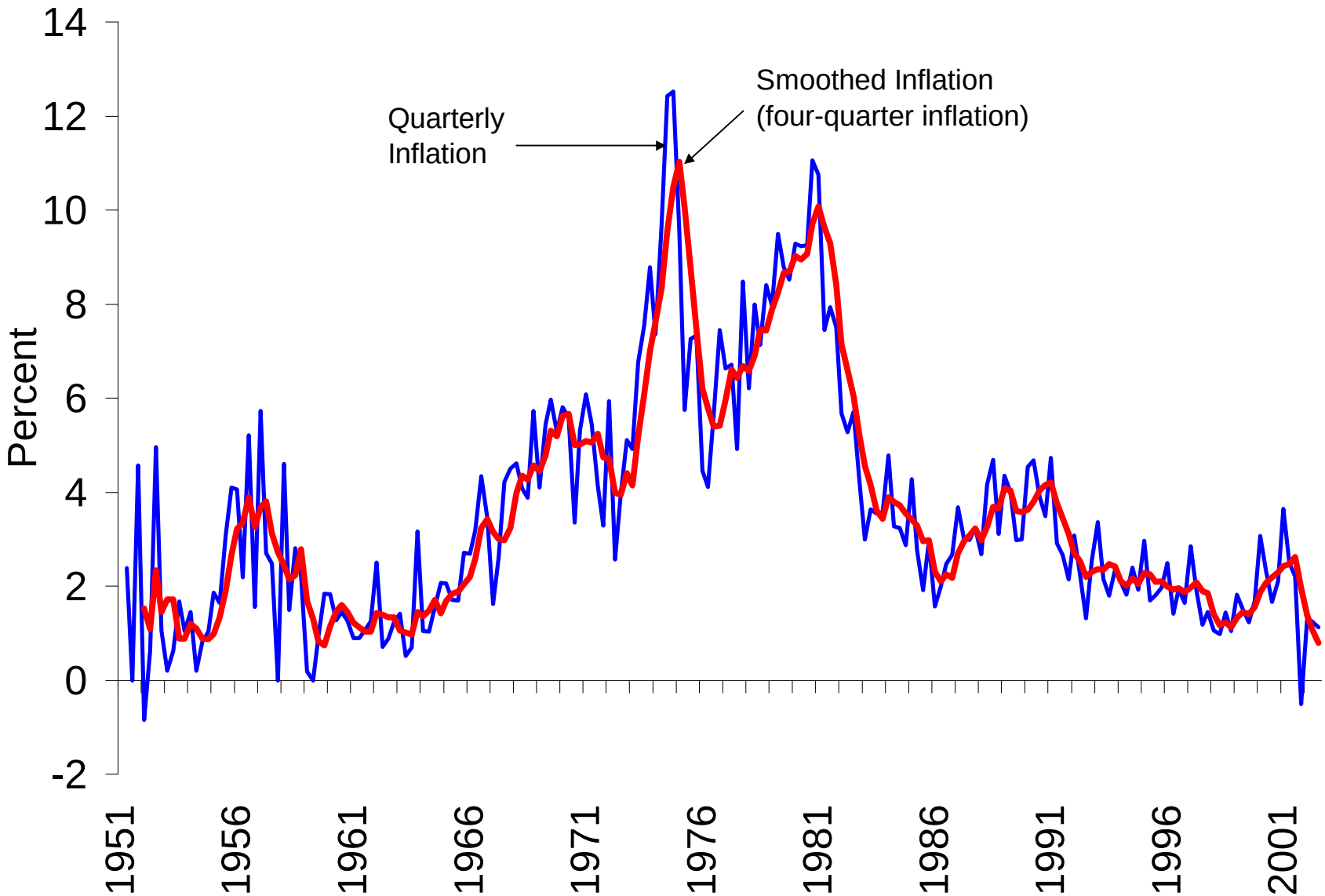

FIGURE 1

U.K. Inflation

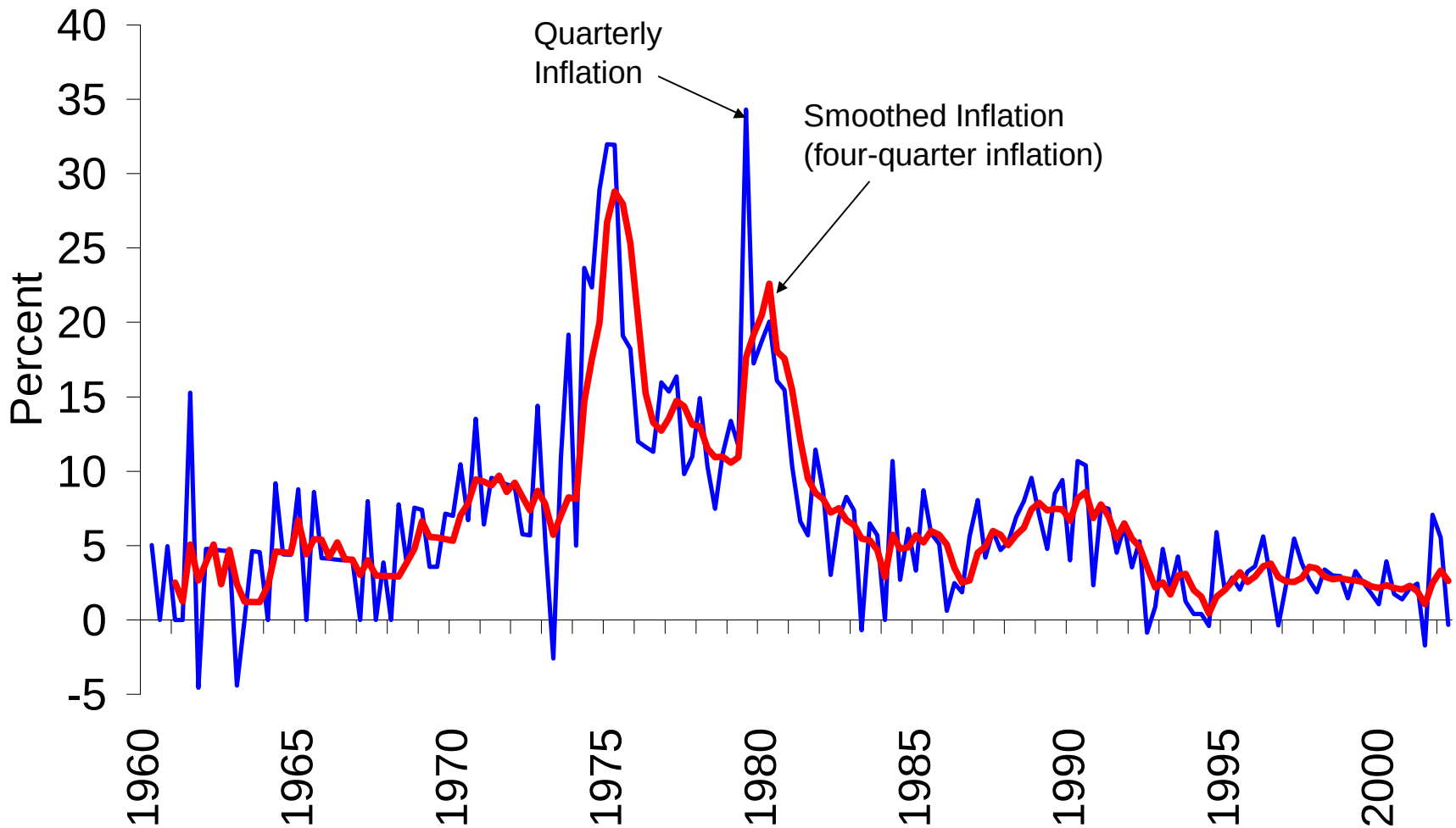

FIGURE 2

Australia Inflation

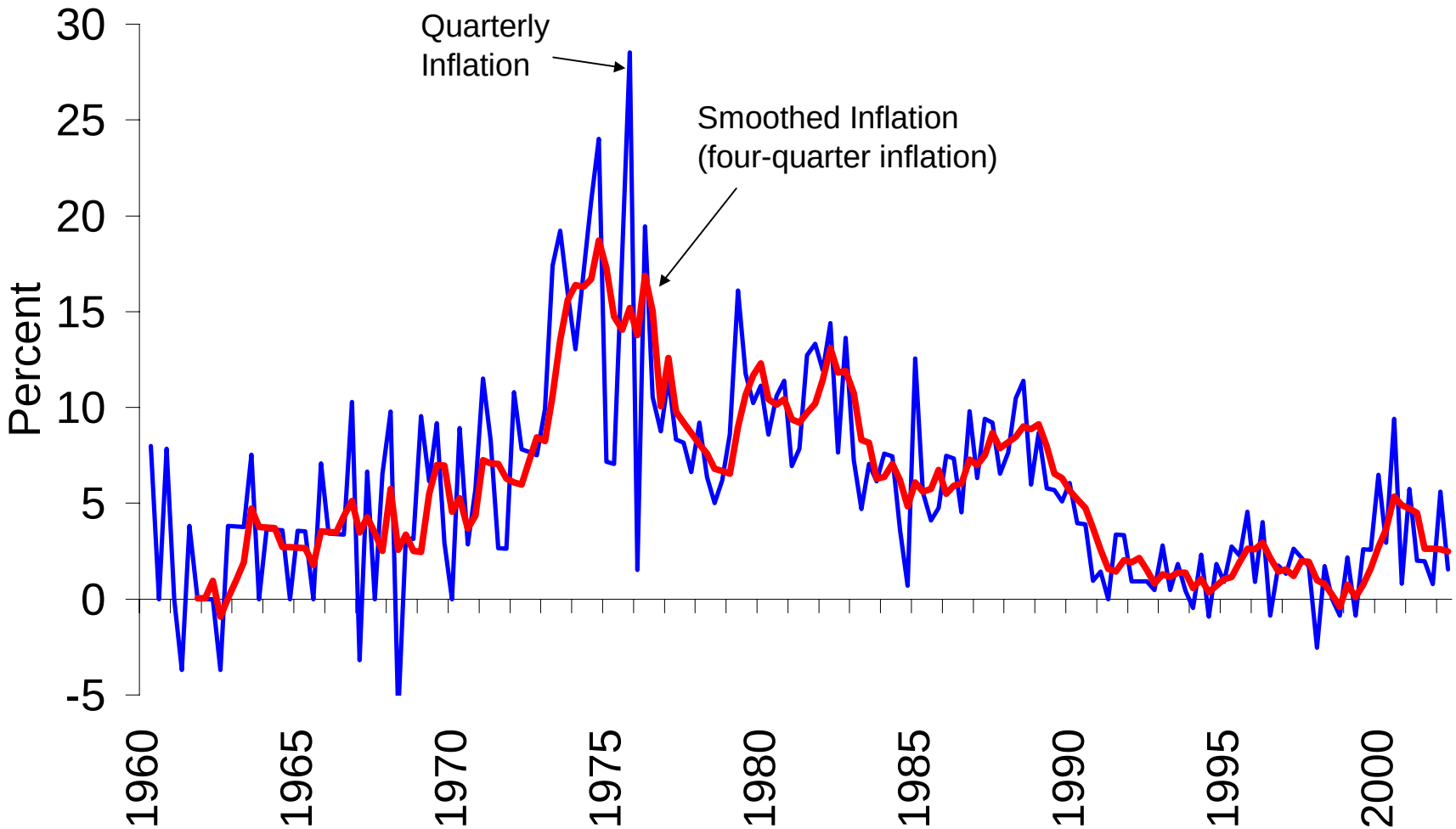

FIGURE 3

Canada Inflation

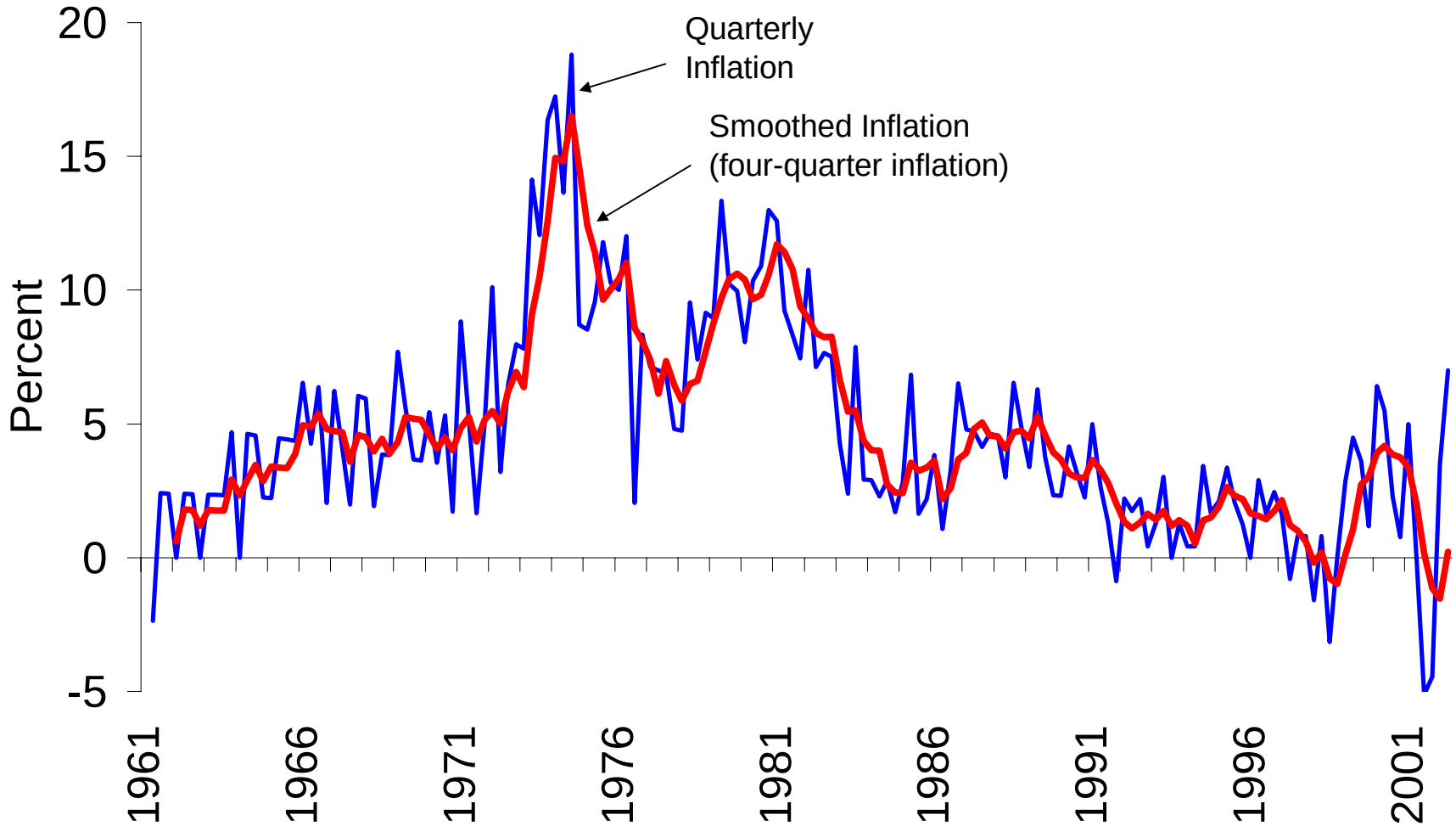

FIGURE 4

Median Inflation

5-Year Periods by Region

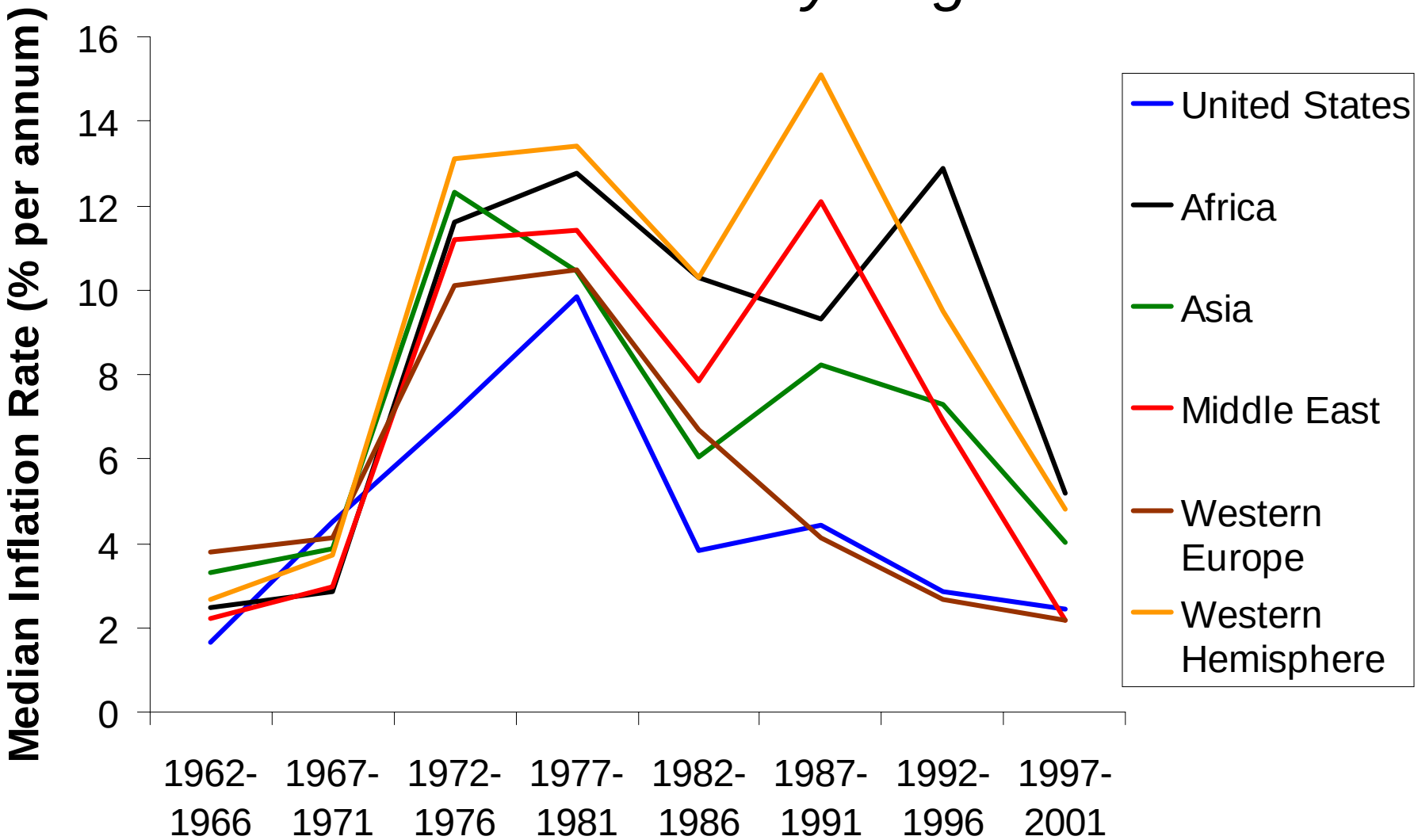

FIGURE 5

Money Growth and Inflation

1971-2001

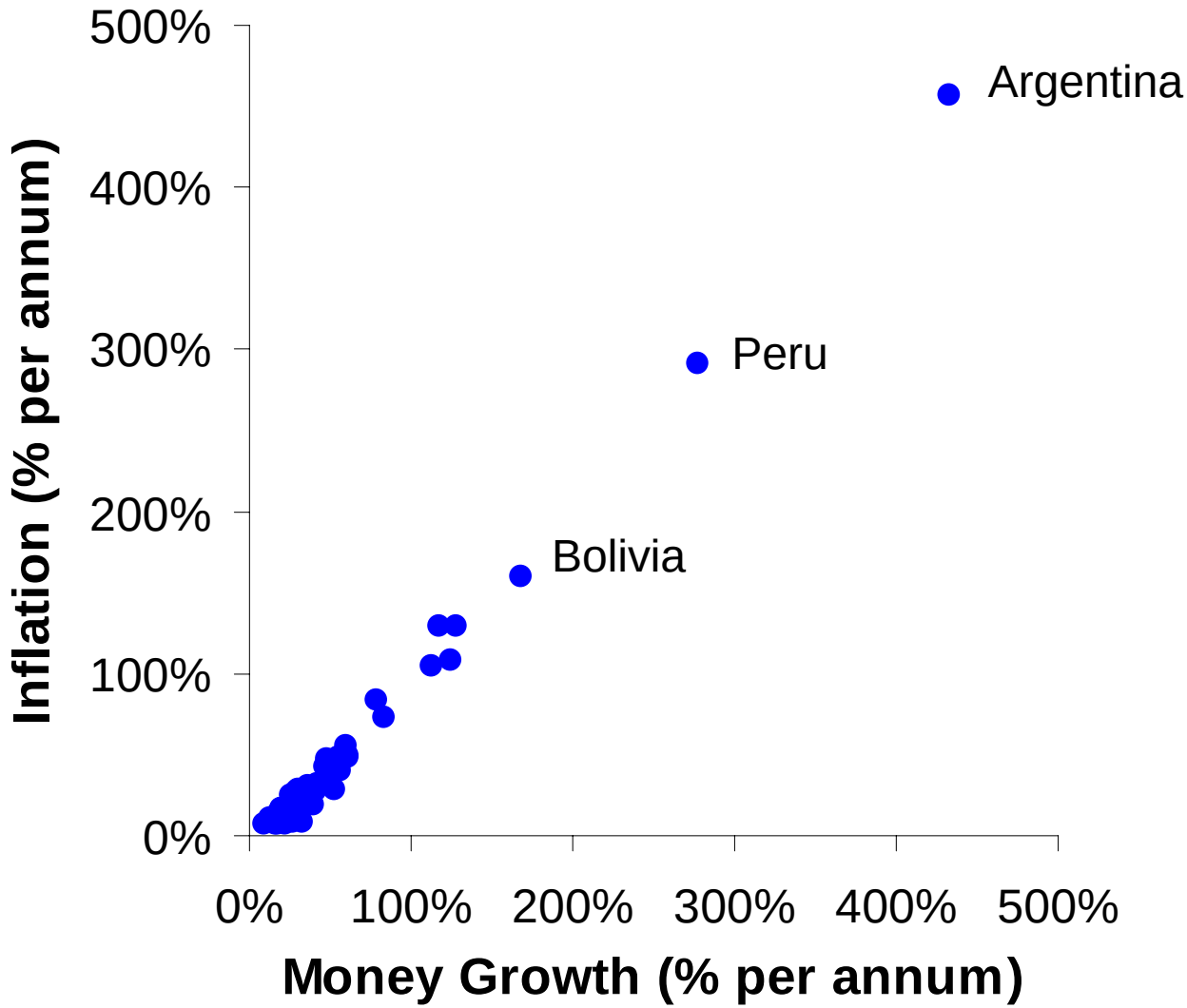

FIGURE 6A

Money Growth and Inflation

1971-2001 (close-up)

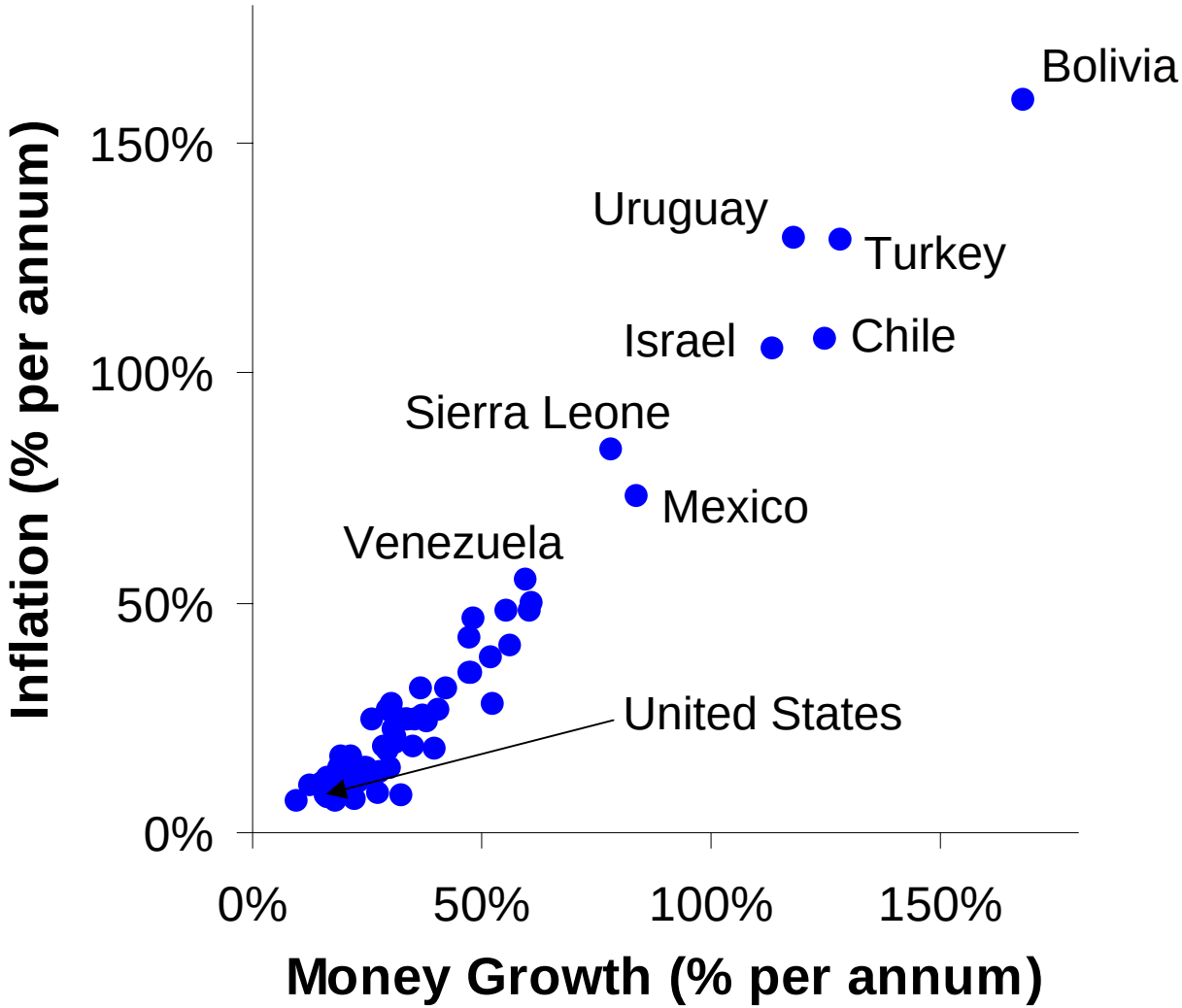

FIGURE 6B

Causes of the Great Inflation, Disinflation, and Price Stability

- Price shocks
  - Early explanation, but timing is off, and dependent on policy (later shocks, Japan)
- Historical bias from Great Depression
  - But why not in the 1950s?
- Time inconsistency bias
  - Theory of Kydland-Prescott, Barro-Gordon
  - Parkin version, Christiano et al version
- Over-estimates of potential GDP
  - Orphanides' real time approach, useful
  - But difficult to get real time estimate of potential
  - Official series unlikely to have been used by Burns

Change in Theories

- Phillips curve
  - 1958 paper, 1960s CEA, textbooks, everywhere!
- Friedman's natural rate theory
  - 1966 commentary, 1967 presidential address
  - Controversial, but then dramatic empirical validation
- Augmentation with adaptive expectations by early 1970s
  - Implies large cost of disinflation
  - 1974 White House conference
- Rational expectations
  - Lucas models
  - Sargent-Wallace, perfectly flexible prices, zero cost of disinflation
  - Staggered wage and price setting, smaller cost of disinflation
- Dangers of least squares learning without theory
  - Forgetting Sargent's a = 1 lesson when there is price stability

Leadership

- Changes in people—from Arthur Burns and Richard Nixon to Ronald Reagan—are the main cause
- Excerpts from an interview with Milton:

  JBT: Why did inflation rise in the late 1960s and 1970s in the United States?

  MF: Arthur Burns deserves a lot of the blame, and he deserves the blame because he know better.

  JBT: What about the end of the Great Inflation?

  MF: Well, there's no doubt what ended it. What ended it was Ronald Reagan….No other president in the post-war period would have accepted that [huge decline in public opinion in 1981 and 1982] without bringing pressure on the Fed to reverse course.

Changes in Operating Procedures and Rules

- Increased focus on the interest rate as the instrument
  - FOMC public statements about Fed Funds rate start in 1994
  - Similar for other central banks
  - Greater transparency
- Increased use of monetary policy rules with interest rate as the instrument
  - Motivated by rational expectations
  - Relation with Friedman's constant money growth rule
  - Need for "failsafe" money bounds for deflation, hyperinflation, and rudimentary financial systems

Changes in Monetary Policy Rules

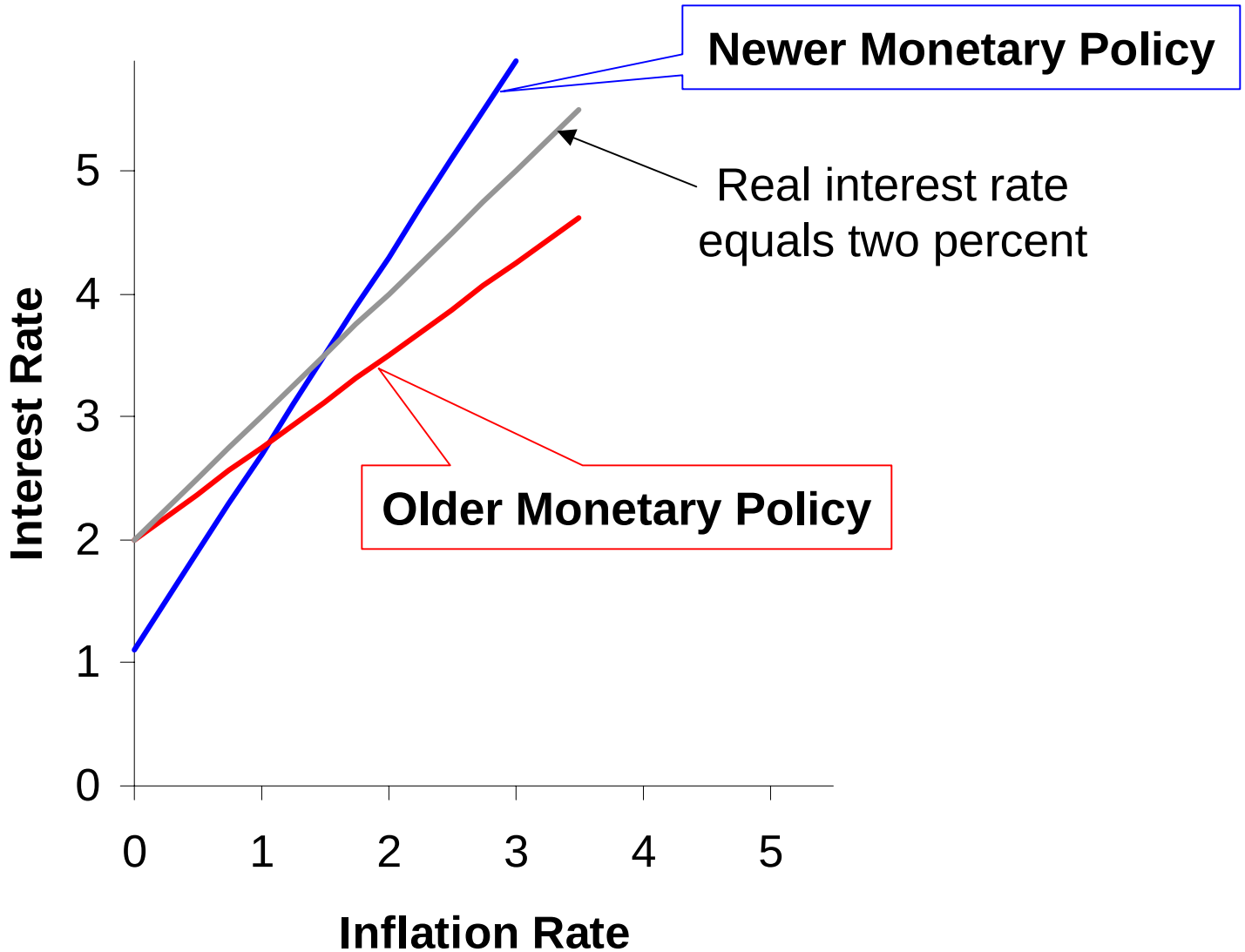

FIGURE 7

U.S. Inflation

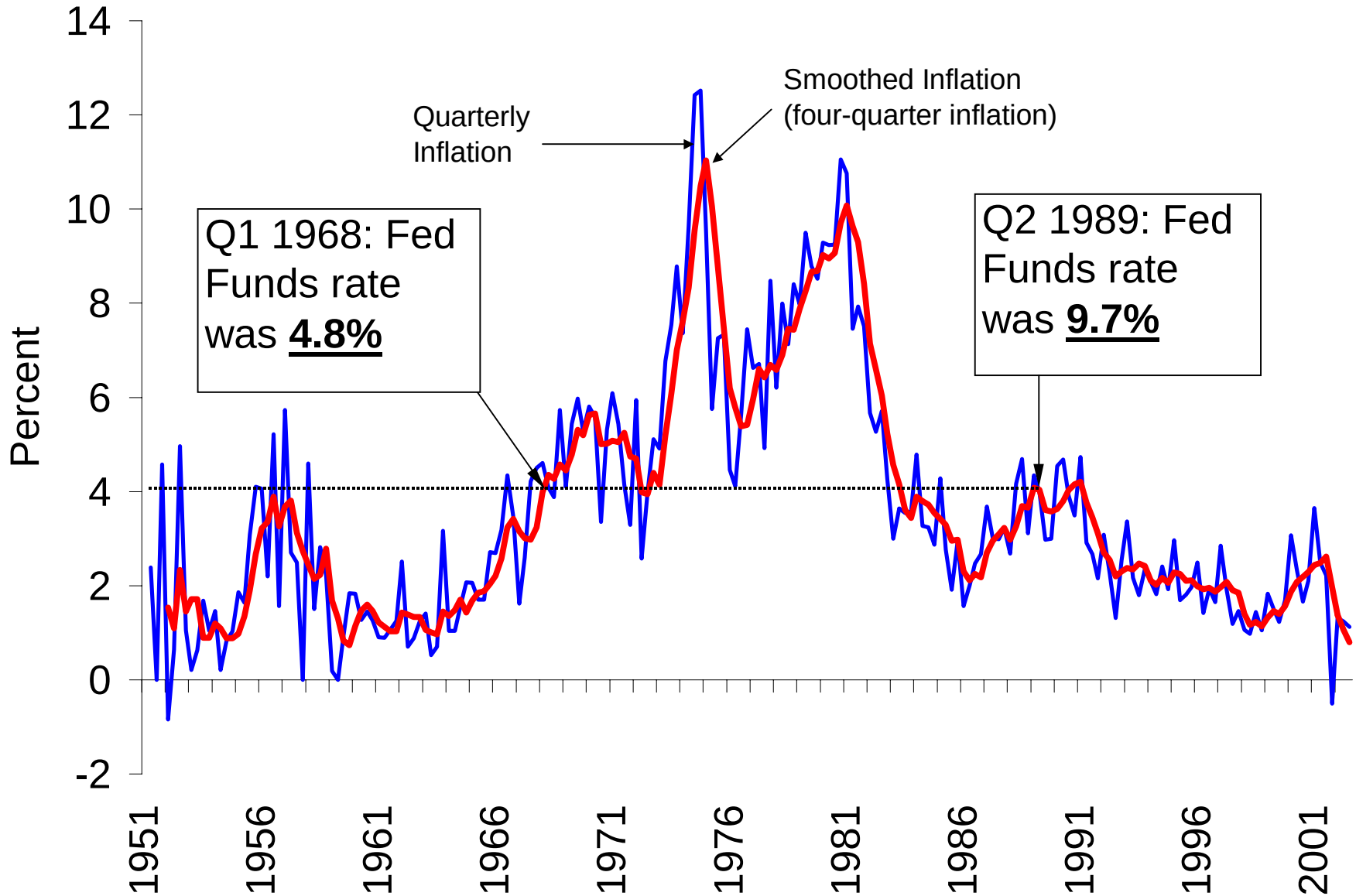

FIGURE 8

U.K. Inflation

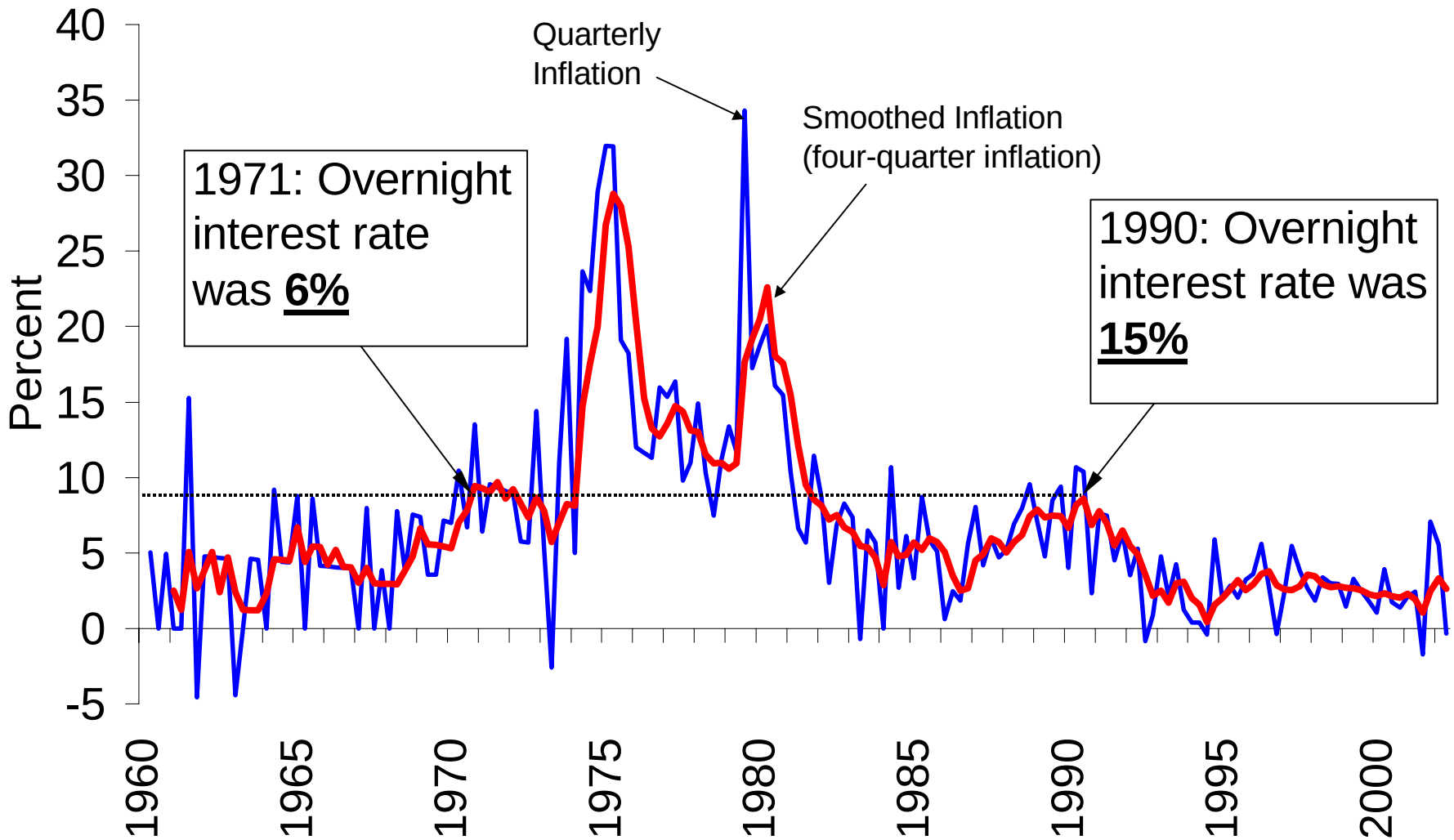

FIGURE 9

Australia Inflation

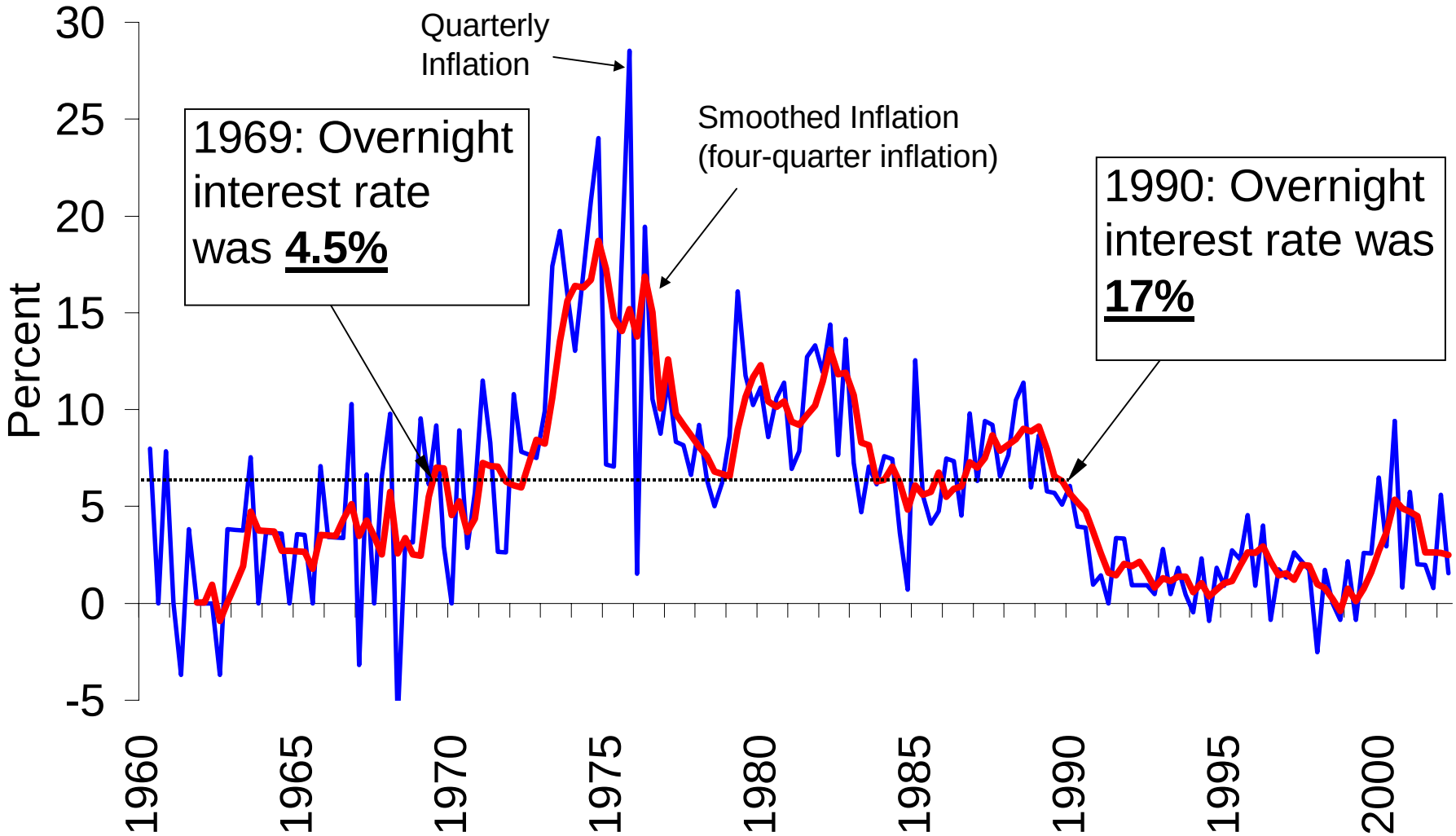

FIGURE 10

Canada Inflation

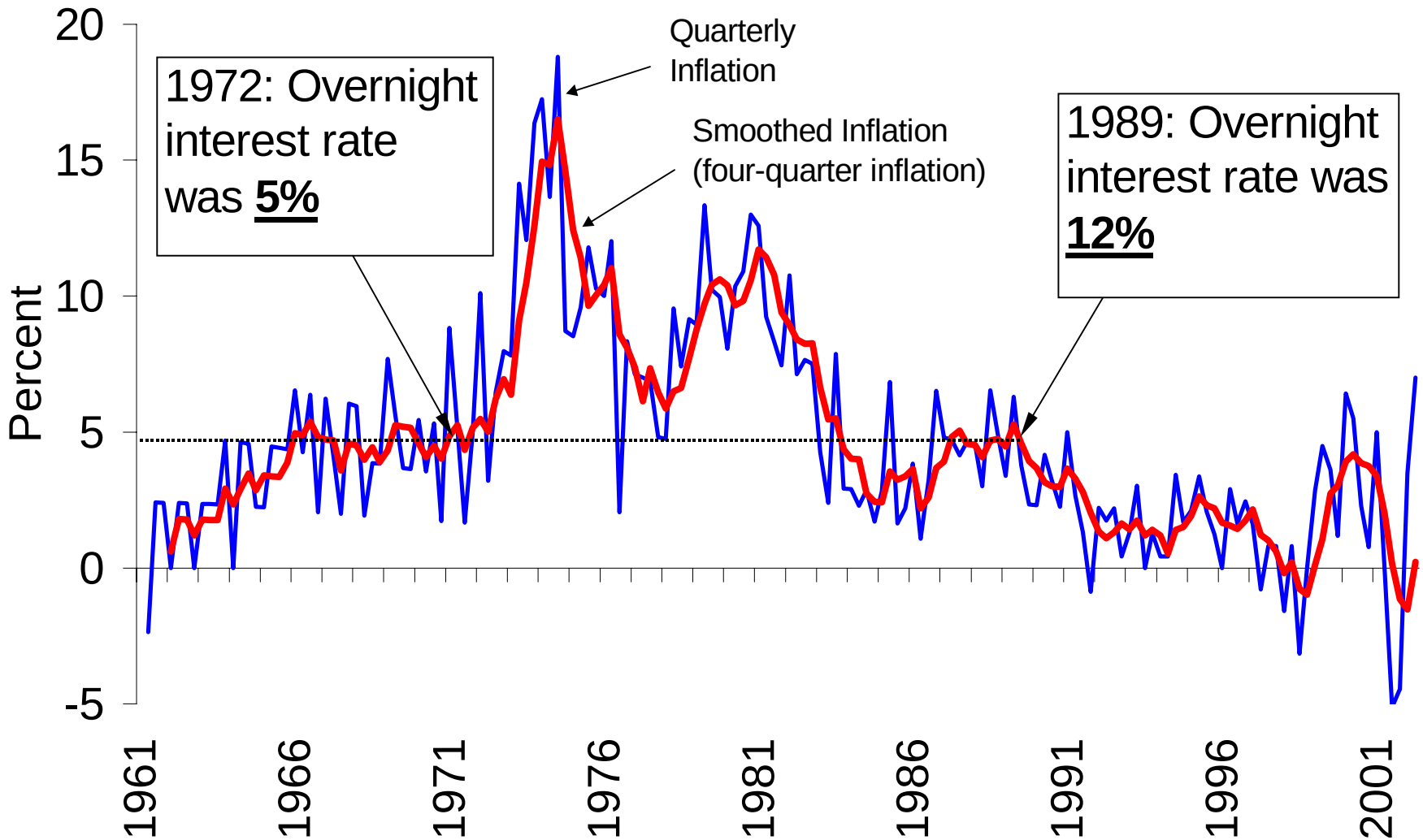

FIGURE 11

The Greater Than One Principle

- Response less than one:
  - Real interest rate declines when inflation increases
  - Instability
- Response greater than one:
  - Real interest rate rises when inflation increases
  - Stability
- Fact:
  - Coefficient less than one during Great Inflation

U.S. Real GDP

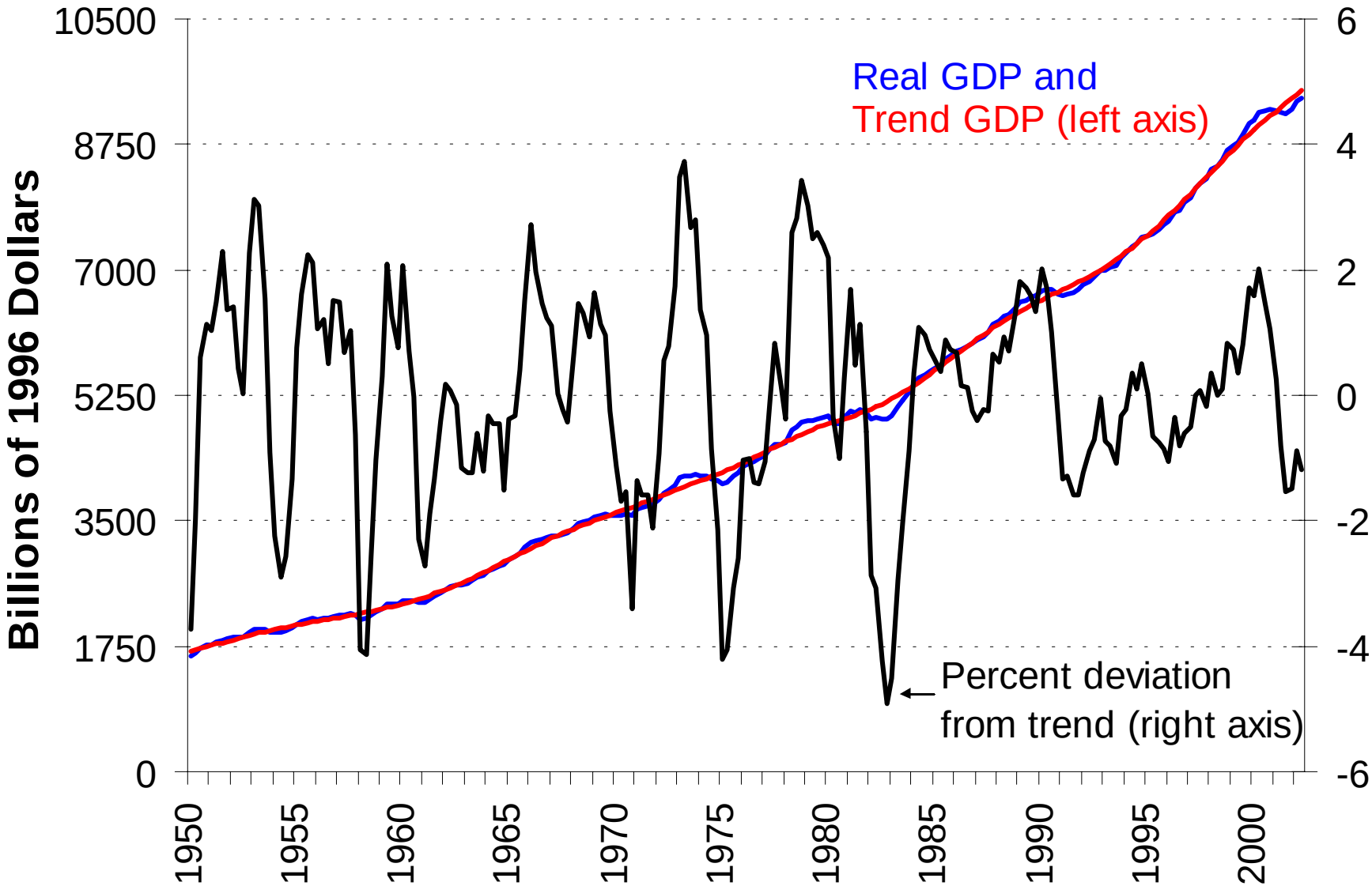

FIGURE 12

U.K. Real GDP

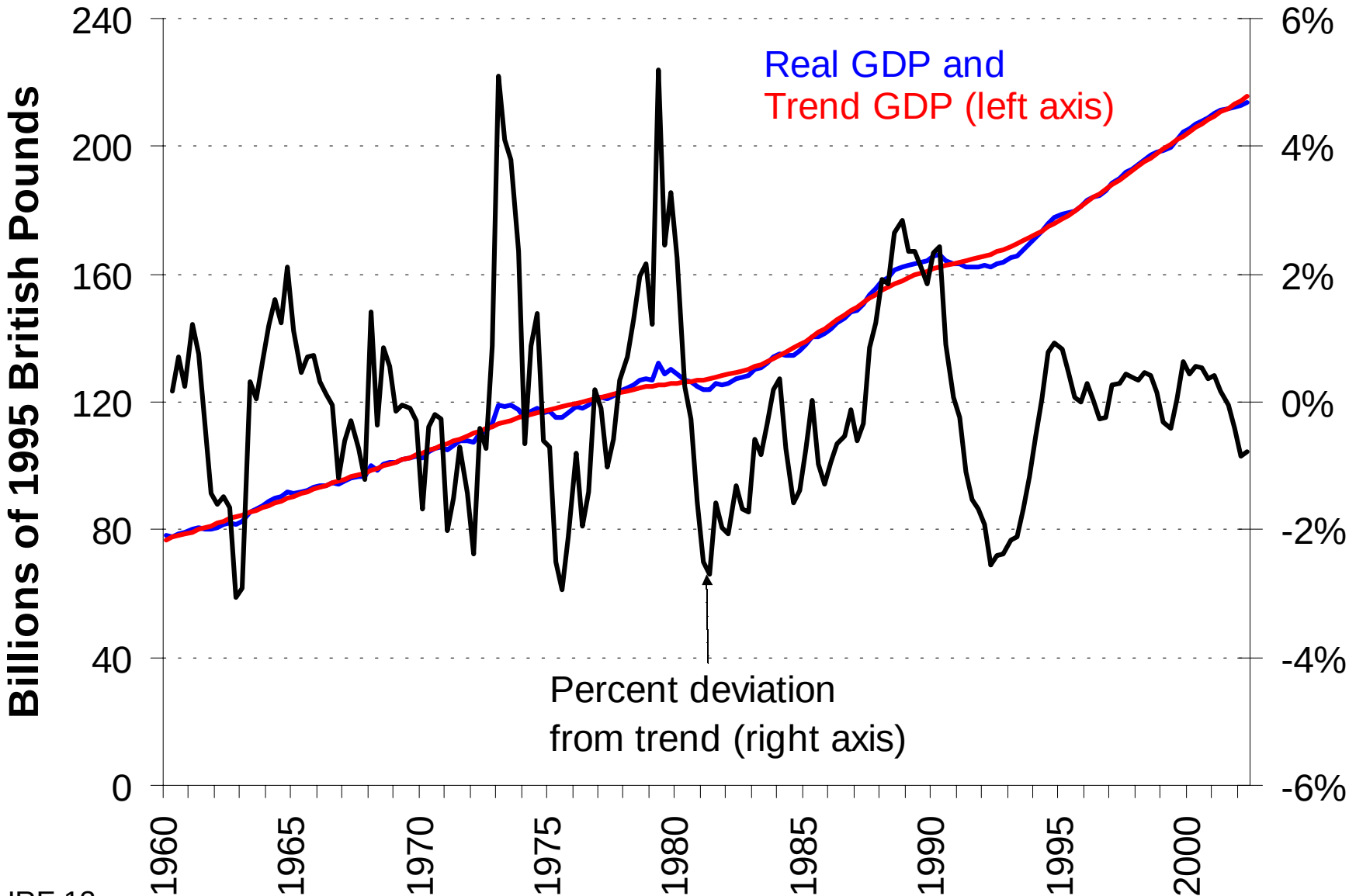

FIGURE 13

Australia Real GDP

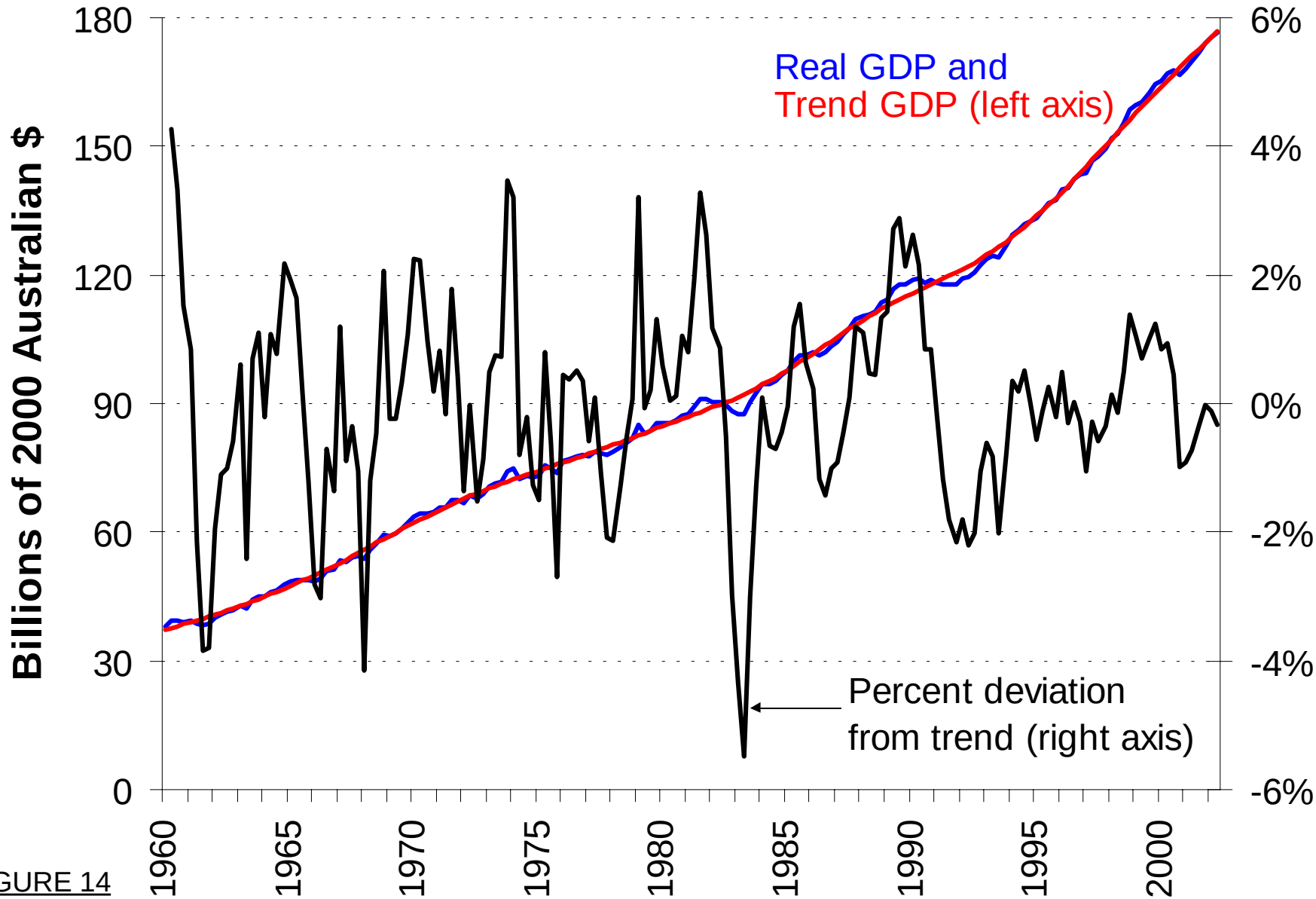

FIGURE 14

Canada Real GDP

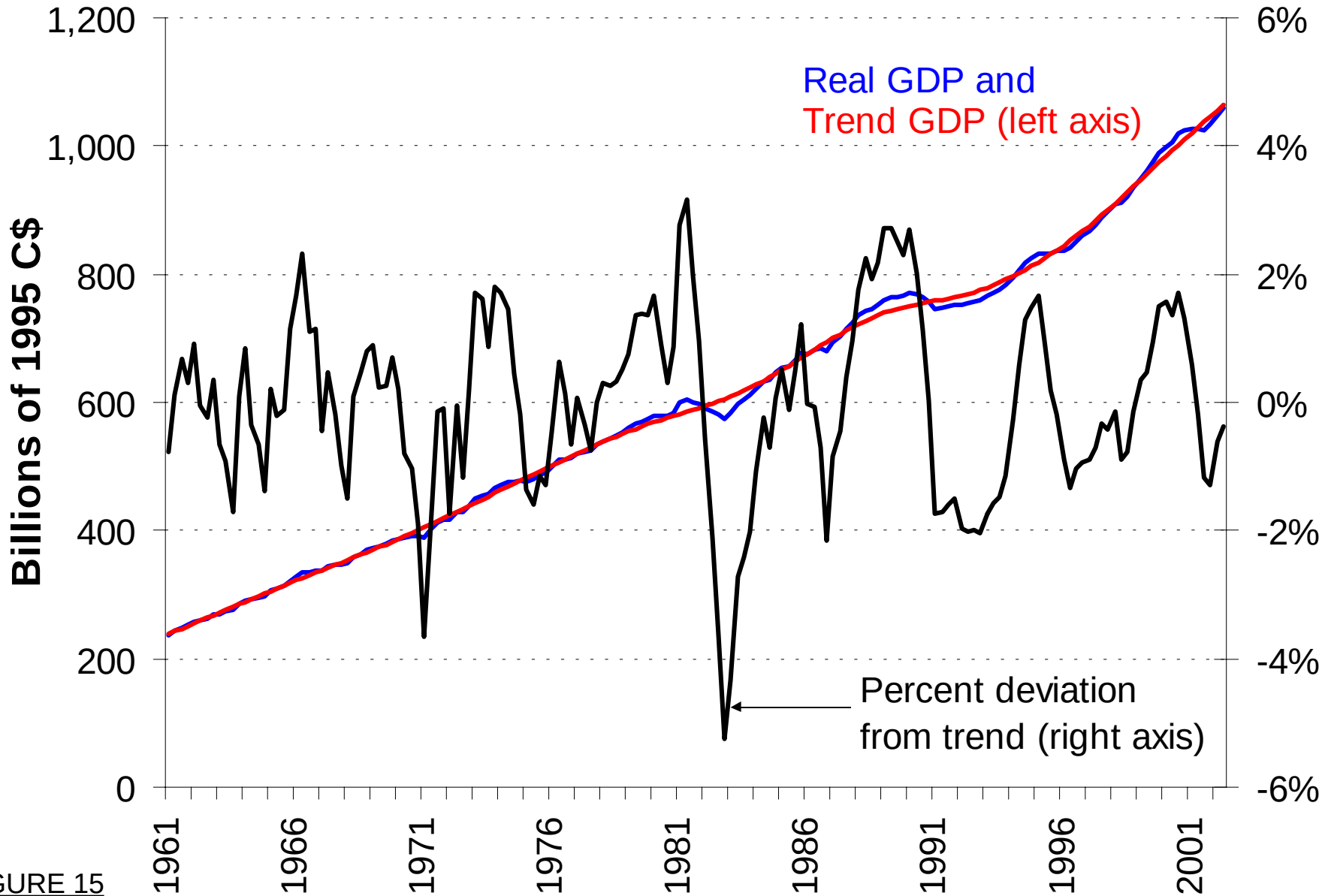

FIGURE 15

Learning about the Correct Response Coefficient

- Leaning against the wind was way too vague
  - Which instrument? Which wind?
  - When to lean? How much to lean?
- Maisel 1965:
  - "After 12 FOMC meetings I began to realize how far I was from understanding the theory the Fed used"
- Friedman, Schwartz, Meltzer, Jones, St. Louis Fed
  - Endeavor to specify with models, money data, and monetary history
- Emphasis on real interest rate
- Role of money growth in the disinflation
- Policy evaluation research with interest rate rules
  - New variability tradeoff
- Surprising benefits of newer policy rule:
  - ***Improved output stability <u>and</u> improved inflation stability***

International Diffusion of Ideas and Experience

- Great Inflation: “Change in theories” explanation works here too
  - First Phillips curve; but then natural rate, rational expectations ideas spread around the world
  - New Zealand adopts “measurable results” approach
- Inflation targeting frameworks spread
  - Svensson, Bernanke, central bank networks
- Monetary policy rules spread
  - McCallum, market analysts, flexible rates

Monetary Policy Today

- **47** countries with flexible exchange rates, inflation goals, and monetary policy instruments (interest rate or monetary base) aimed at the goals
- **50** countries either dollarized, in currency unions, or using currency boards
- **75** with fixed or heavily managed exchange rates
- **7** with multiple exchange rate regimes (way down)