Introduction to Macro Policy and Models

The Policy Tradeoff: Unemployment vs. Changes in Inflation

Focus Today

◆ **Simple Micro: Prices, Demand and Supply**

◆ **Simple Dynamics: Disequilibrium Means Change**

◆ **An example central to policy choices: managing the economy to produce a desired outcome**

Simple Micro in the Labor Market : Prices, Demand and Supply

◆ *Demand*: More Workers/Hours Will Be Demanded by Employers the Lower the Real Wage, Other Things Equal

◆ *Supply*: More Hours Will Be Supplied by Individuals the Higher the Real Wage

◆ *Equilibrium*: Demand=Supply

> » **All Those Wanting to Work at the Current Real Wage Can Find Work after a Reasonable Period of Search**

Simple Micro in the Labor Market : Prices, Demand and Supply

REAL WAGE

DEMAND

SUPPLY
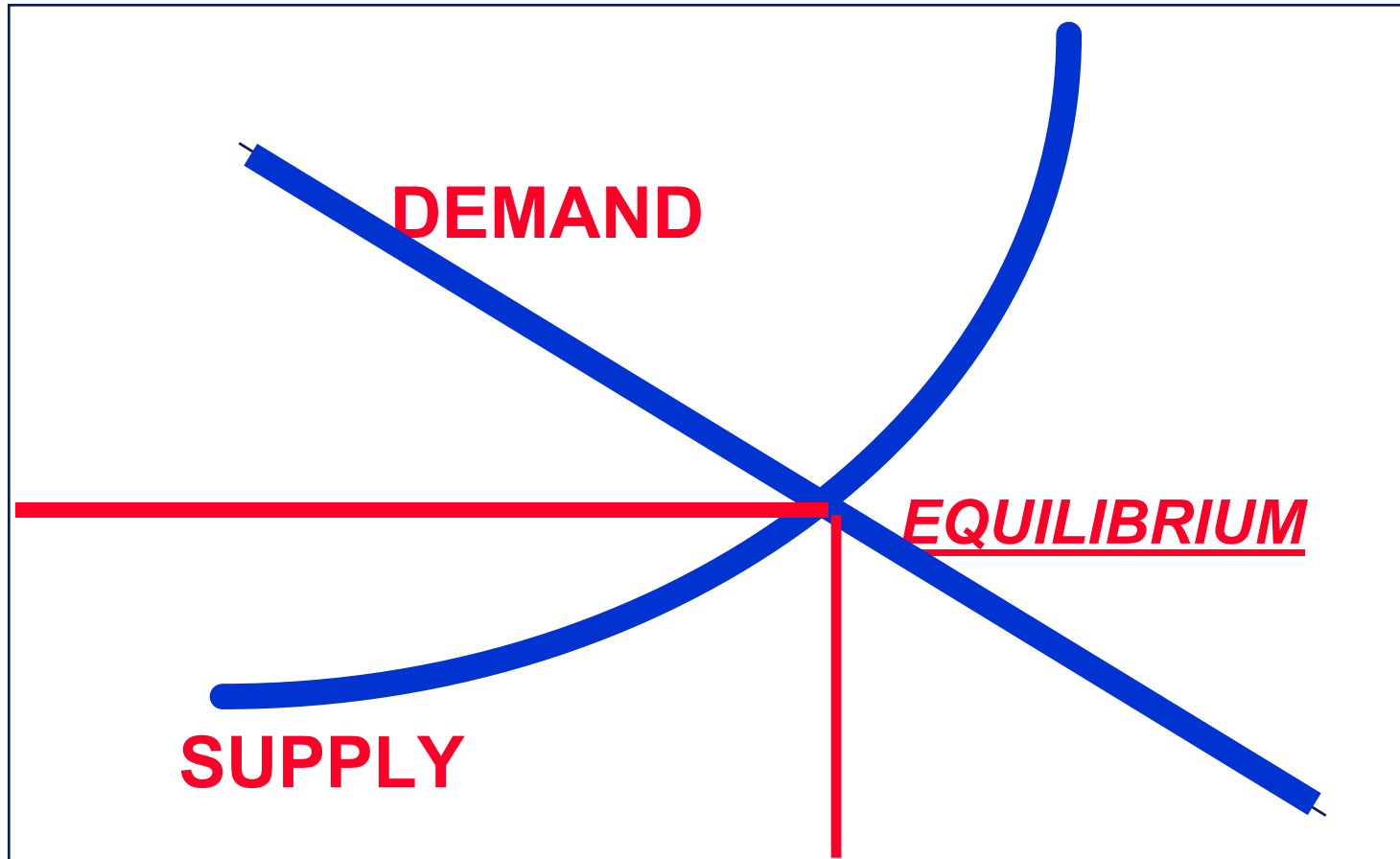
EQUILIBRIUM

WORKERS or HOURS DEMANDED AND SUPPLIED

Simple Dynamics: Disequilibrium Means Change in the Labor Market

◆ **Unemployed Workers:**

  – **Voluntary**, **as in searching for a job at a wage higher than they or their peers are being offered: not a sign of disequilibrium**

  – **Involuntary: Would accept the prevailing wage but no offer forthcoming.**

  » **By definition, Supply greater than Demand...at the prevailing wage**

◆ **Involuntary Unemployment Creates Pressure for (Real) Wages to Fall**
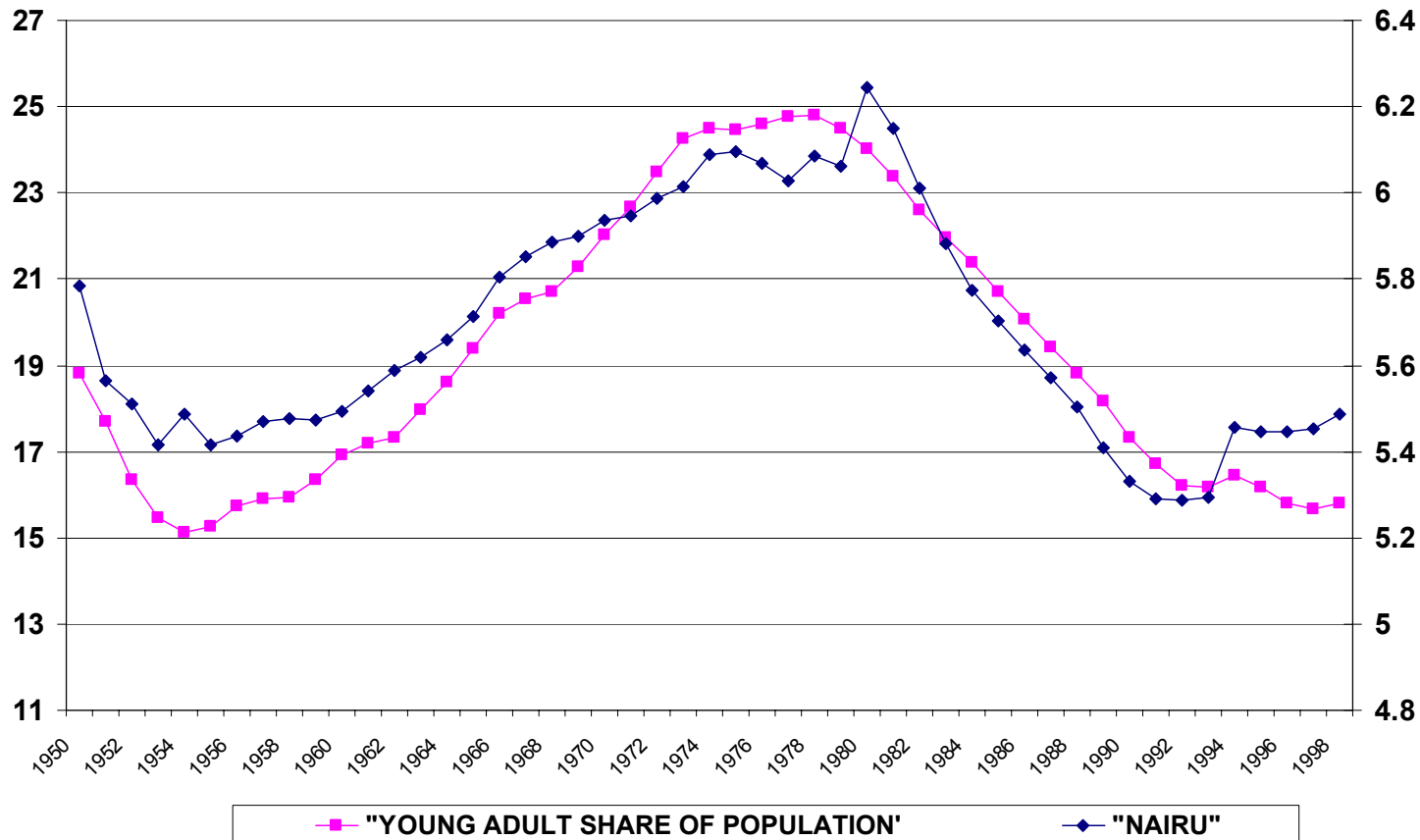
Simple Dynamics: Disequilibrium Means Change in the Labor Market
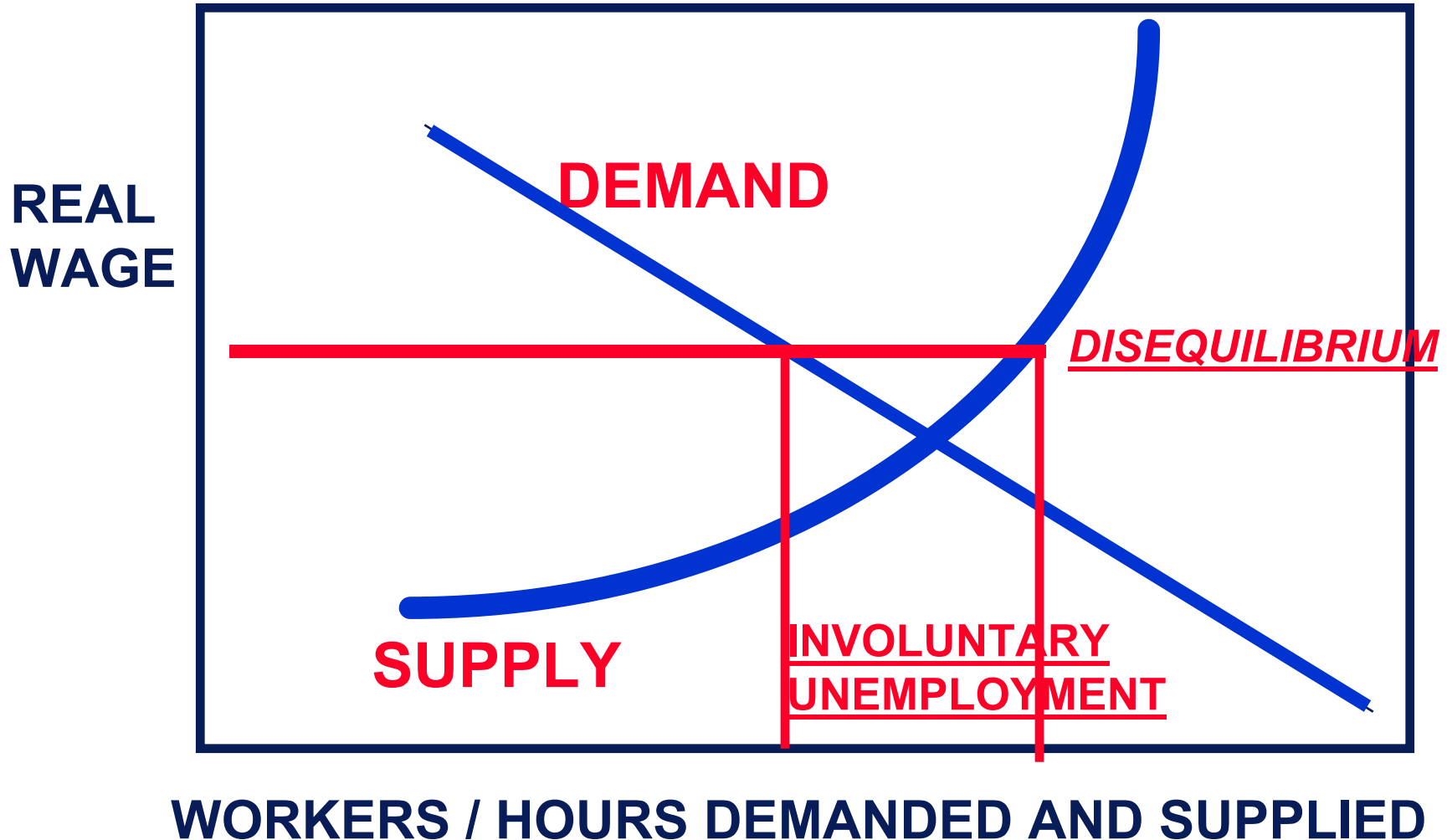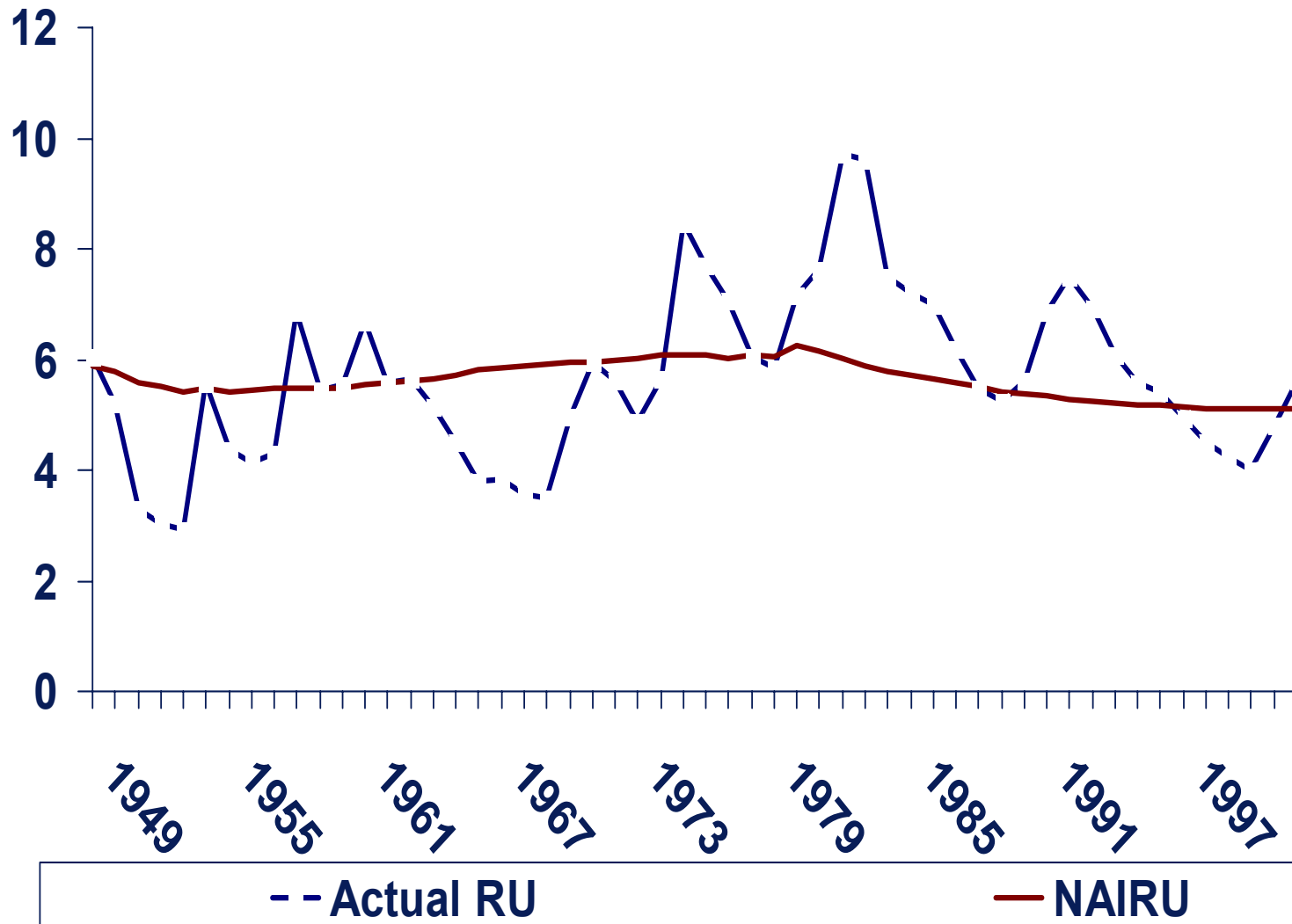
Fluctuations in Unemployment
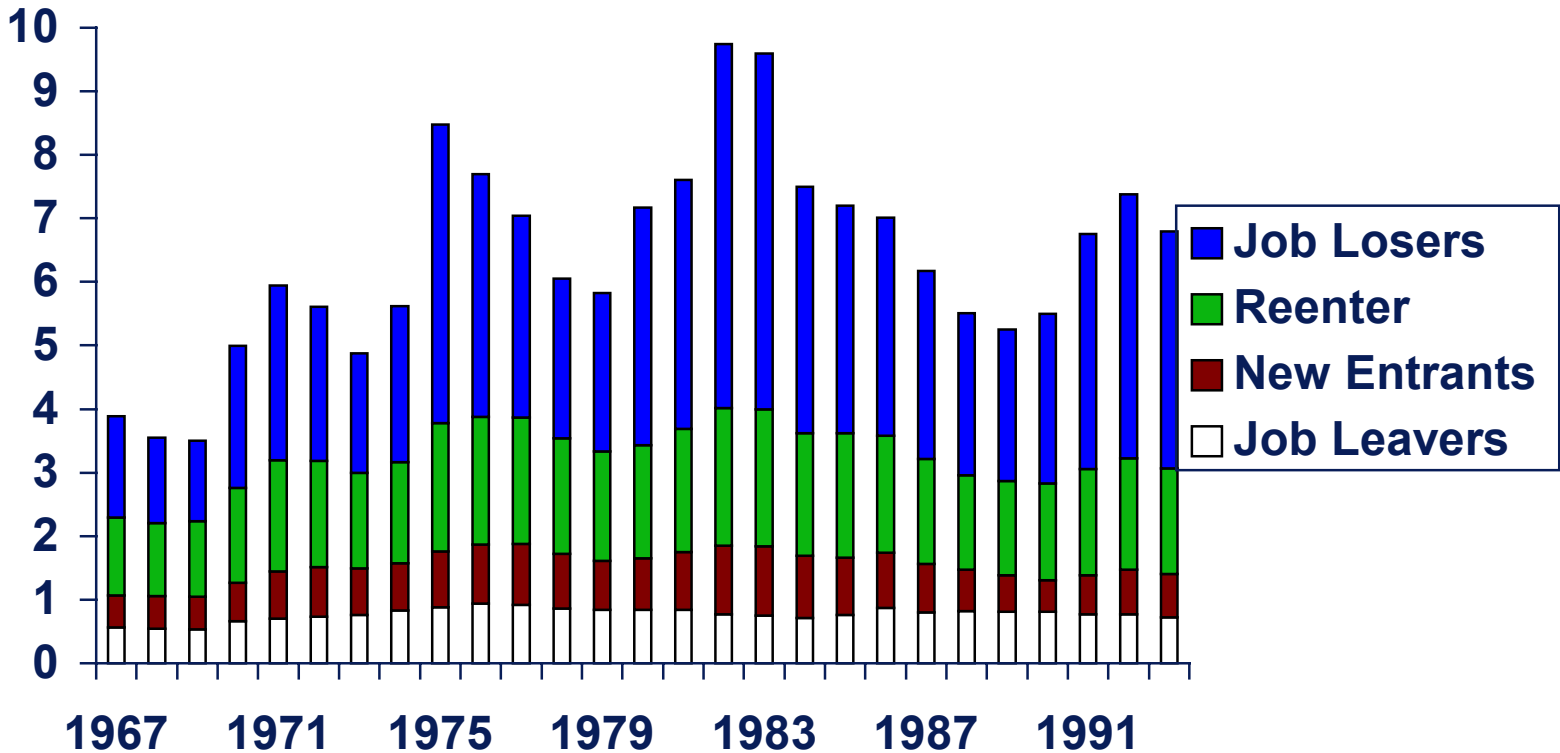
Fluctuations in Unemployment

DEMOGRAPHICS AND THE UNEMPLOYMENT RATE

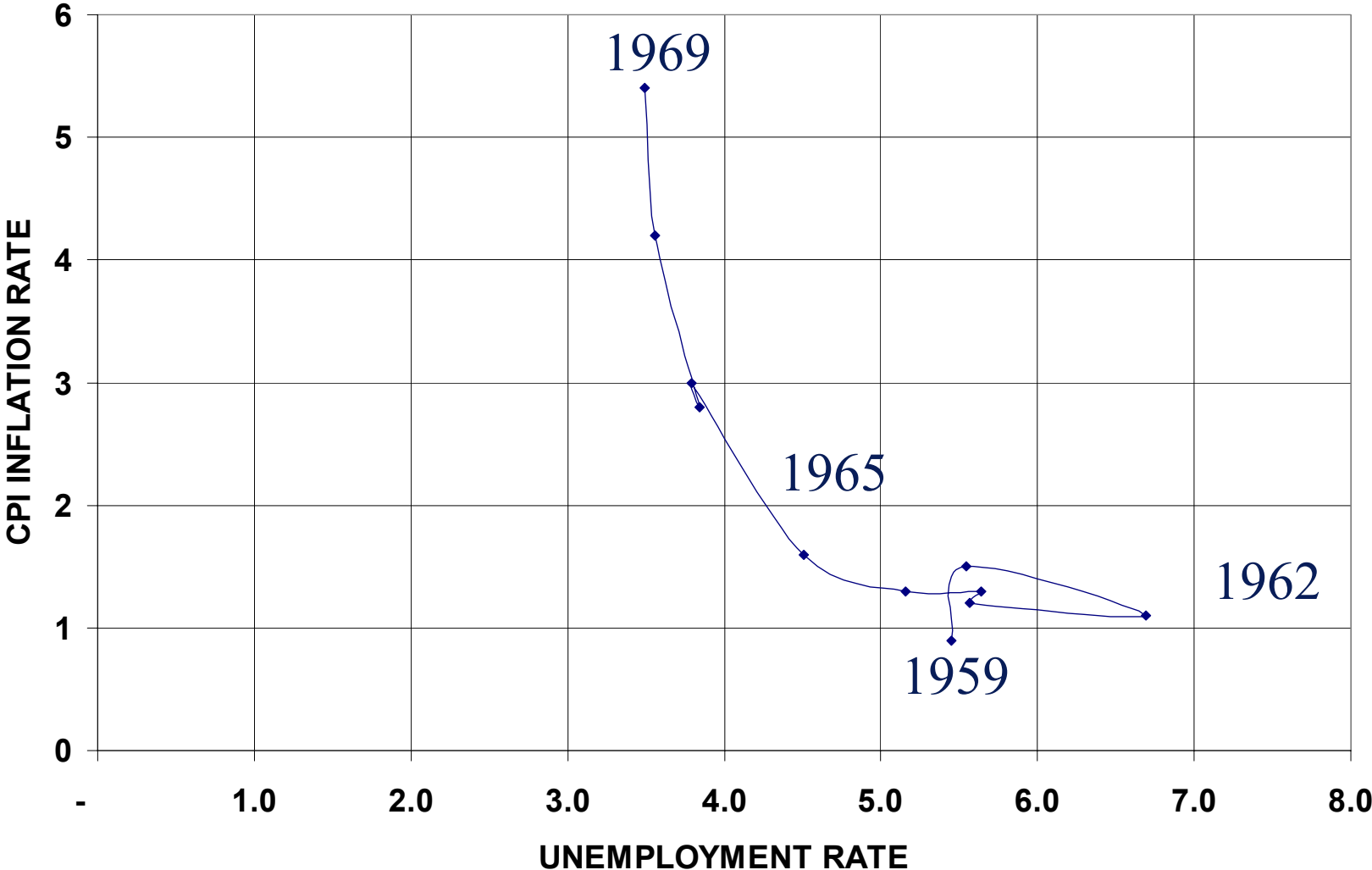Legend: ■ "YOUNG ADULT SHARE OF POPULATION'   ◆ "NAIRU"

Fluctuations in Unemployment

Changes in Nominal and Real Wages

(Annual Change)

Real Wage Growth
Employment Cost Index
GDP Price Deflator (lagged one year)
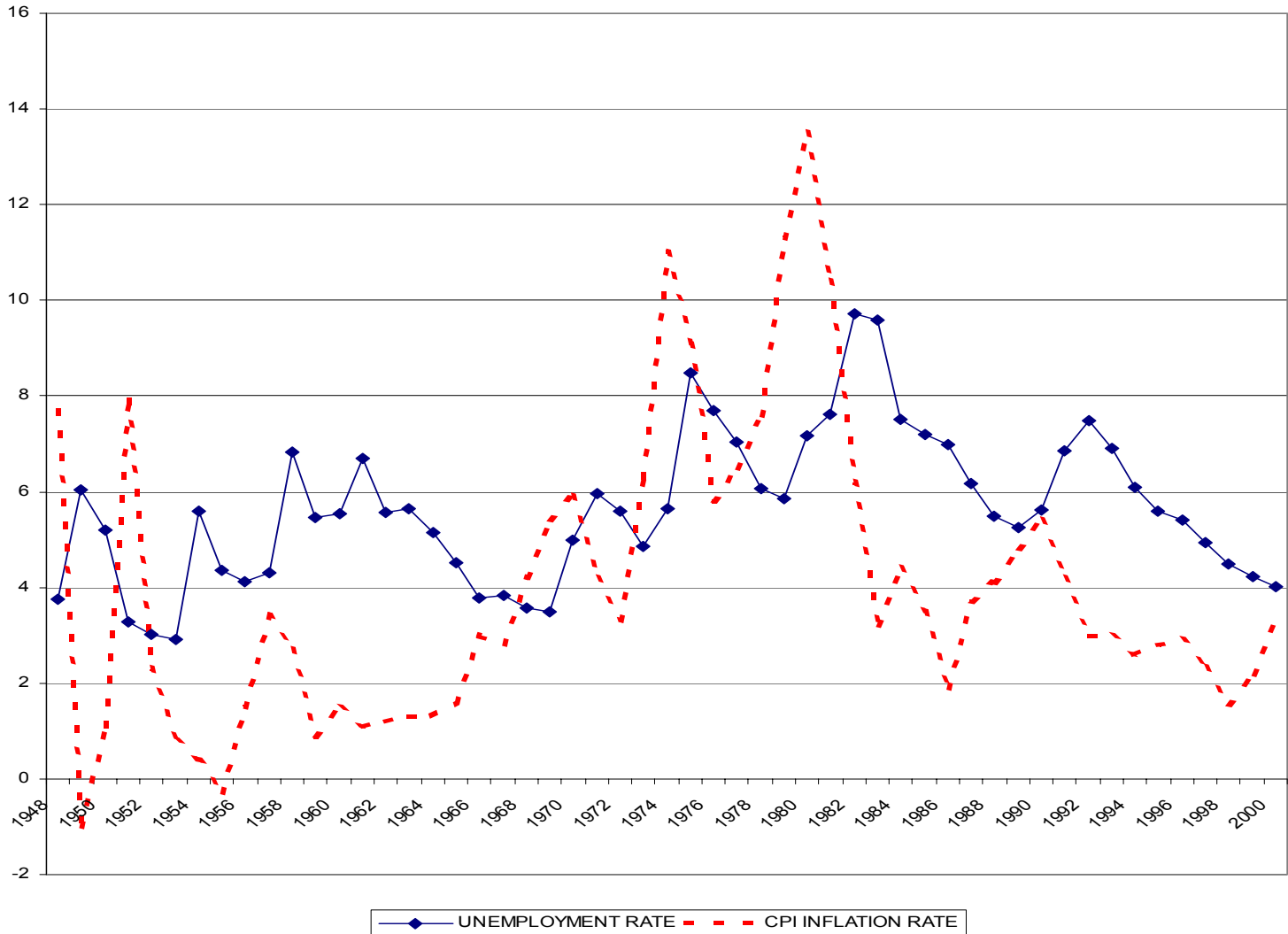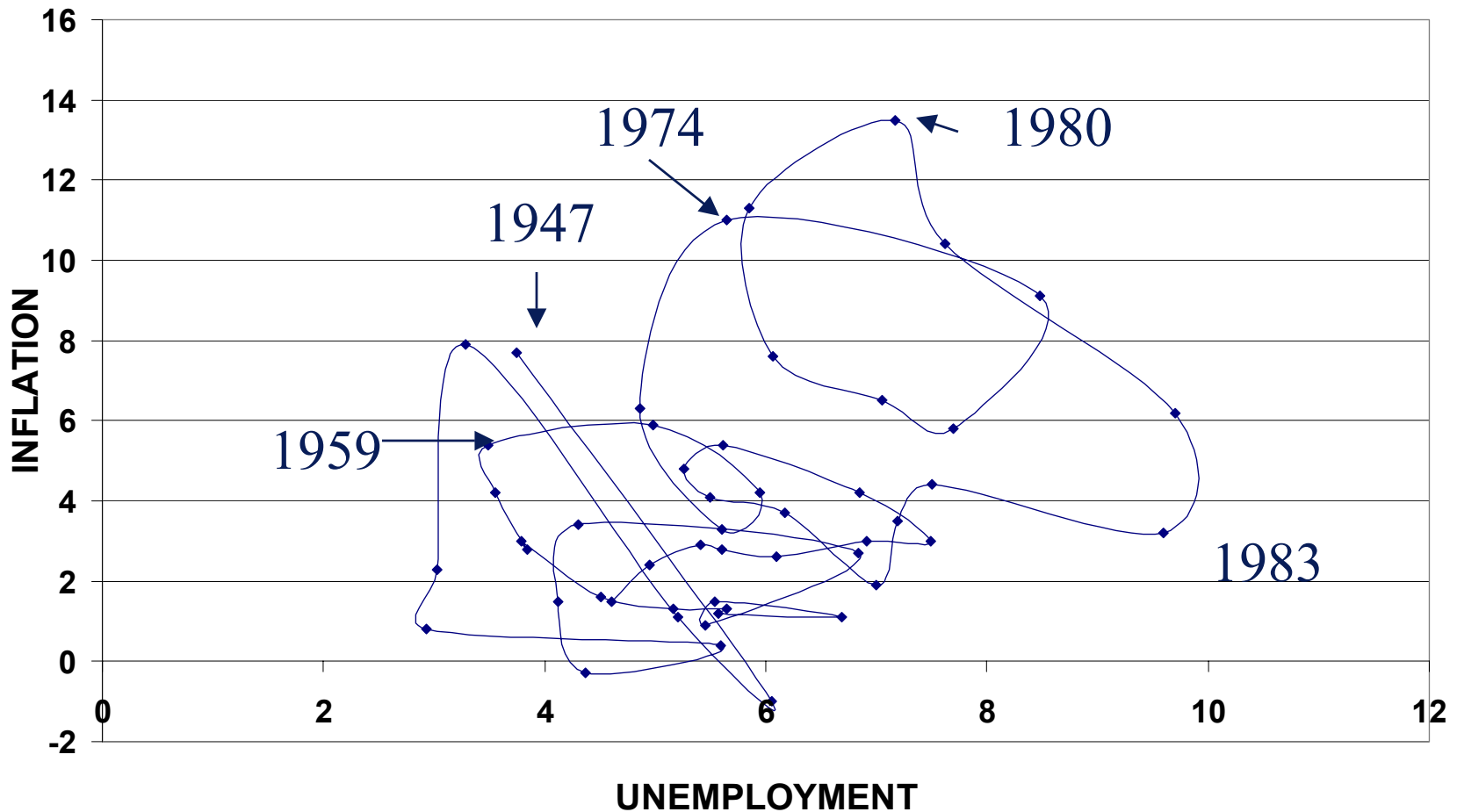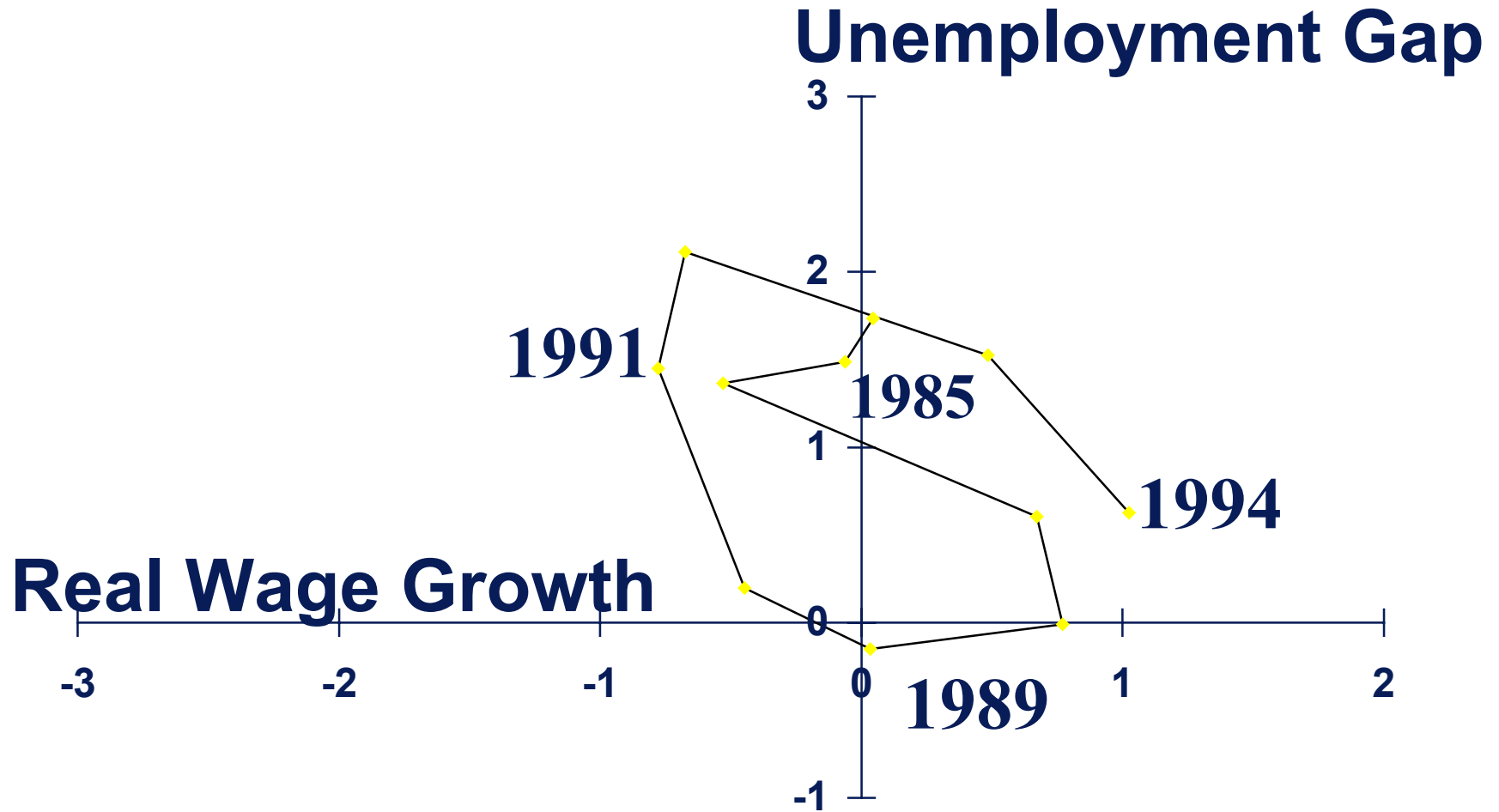
THE APPARENT POLICY OPTIONS IN THE 1960s

A LONGER PERSPECTIVE

THE LONG-TERM POLICY CHOICES AREN'T AS OBVIOUS

Changes in Real Wages vs. Unemployment

The Equation for Wage Inflation

RW=RP\1+A0-A1*(U-U@VOL)

The rate of change of wages (RW) equals

◆ **the rate of change in prices (RP) in the past year ("\1") as a proxy for expected inflation**

◆ **plus a constant (A0) for productivity growth and other factors not defined here**

◆ **minus an adjustment for the existence of involuntarily unemployed workers:total unemployment (U) - voluntary (U@VOL)**

A Companion Equation for Price Inflation

◆ **If prices are a simple "mark-up" on unit labor costs, i.e. wages(W) relative to productivity(A)..**

  ◆ **P = K * (W/A)**

  ◆ **hence RP = RK + RW - RA**

◆ **..and this markup falls when the economy is sluggish**

  » **RK = - B1 * (U-U@VOL)**

◆ **Then:**

  RP = - B1 * (U-U@VOL) + RW - RA

The Final Form Model of Price Inflation

◆ **RP = - B1 * (U-U@VOL) + RW - RA**

◆ AND, EARLIER,

RW=RP\1+A0-A1*(U-U@VOL)
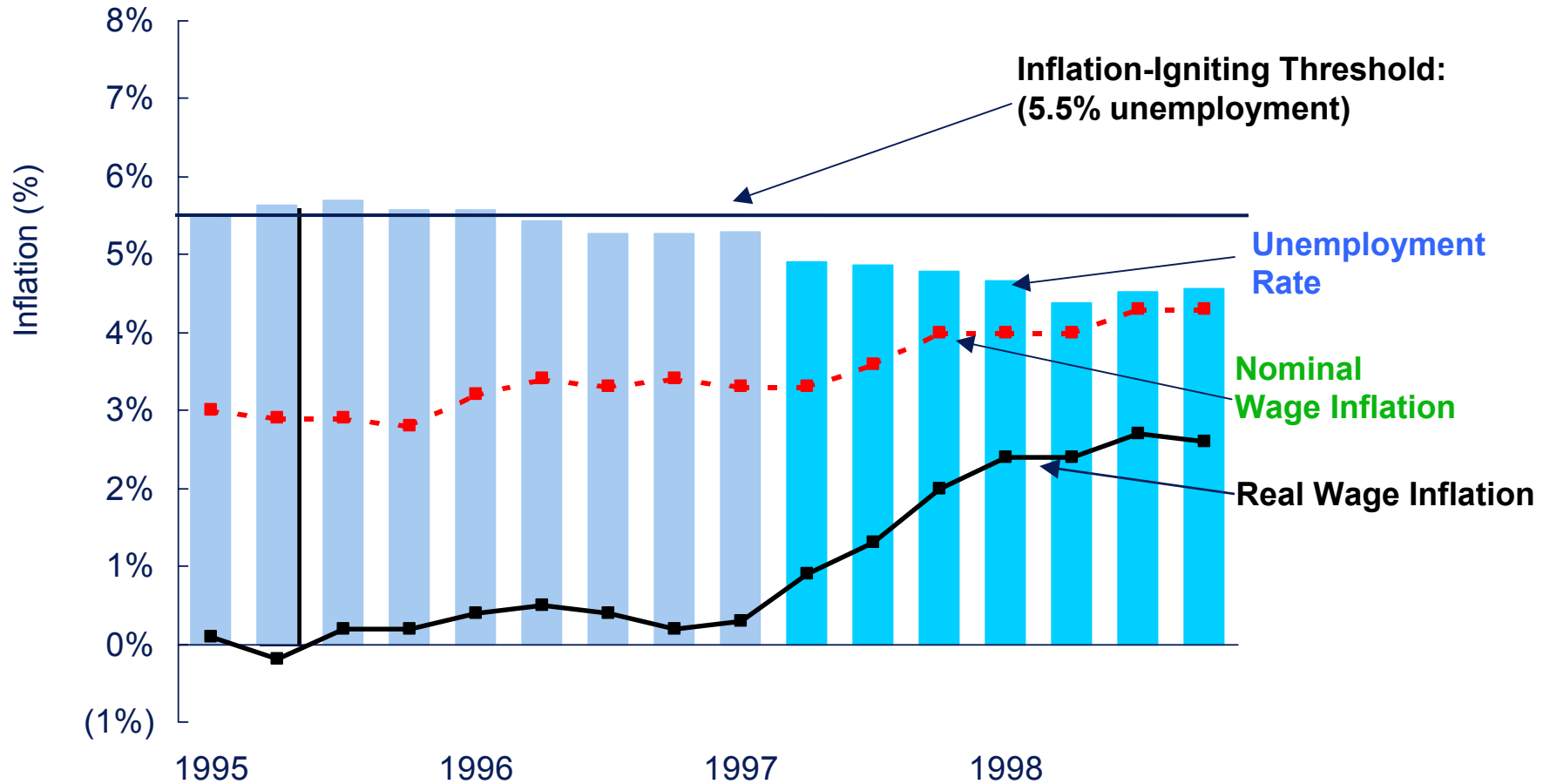
◆ THUS

RP=(A0-RA)-(A1+B1)*(U-U@VOL)+RP\1
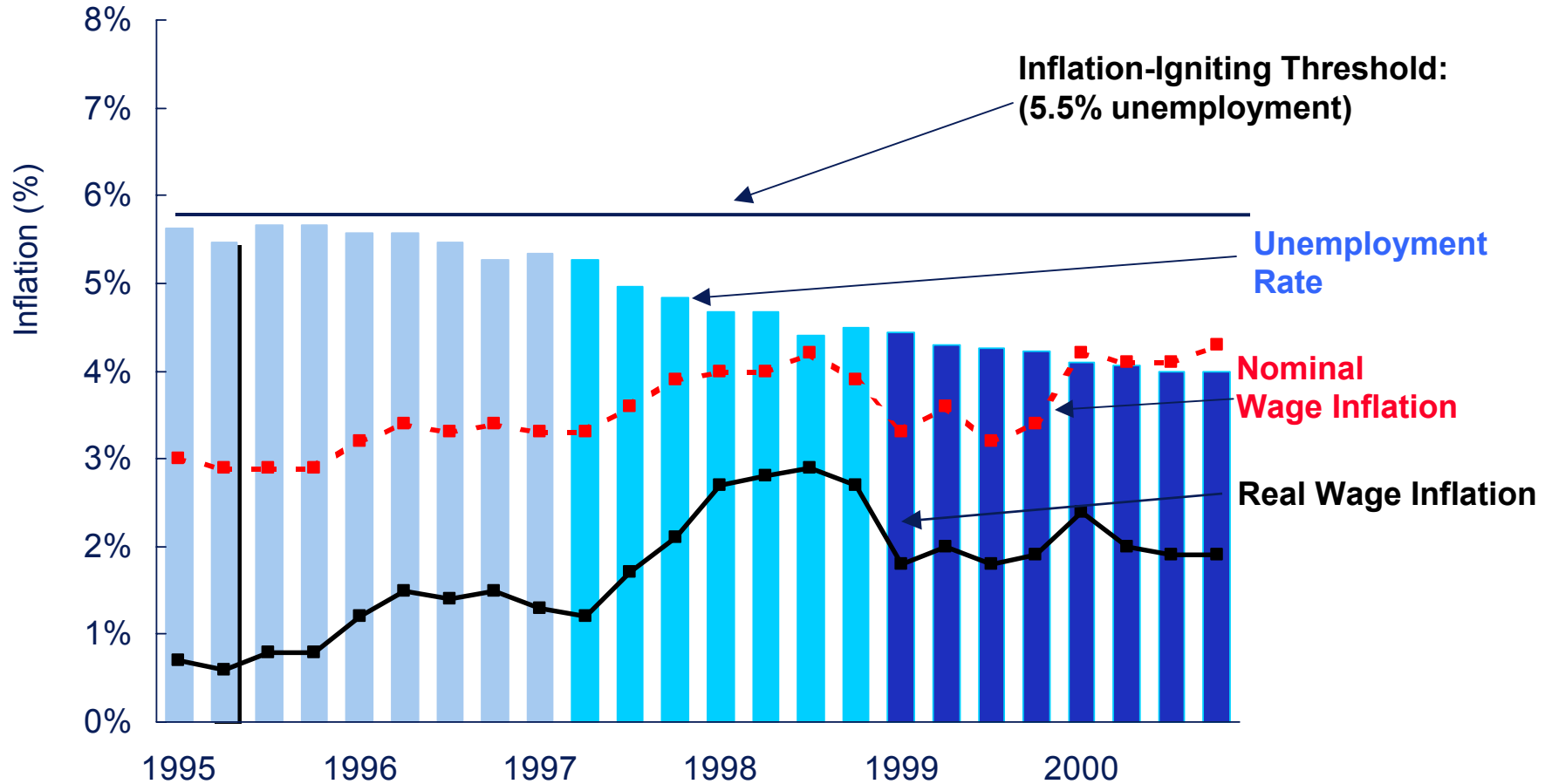
◆ **OR RP-RP\1 =**

THE CHANGE IN INFLATION=

(A0-RA) - (A1+B1)*(U-U@VOL)

The *acceleration* in prices is tied to the level of excess demand.

Real Wages Accelerated As Usual after Q1 1997, As Unemployment Fell Below 5.5%

But Surprising Moderation Occurred in 1999-2000

Useful Inflation Rules of Thumb

<u>Consumer price inflation</u> will rise...

• **...By 0.5 for each percentage point the unemployment rate falls below the full employment norm.**

• **...By 0.1 for each percentage point increase in wholesale energy prices.**

<u>Wholesale price inflation</u> (for finished goods

• **...By the same 0.4 for each percentage point the unemployment rate falls below the full employment norm.**

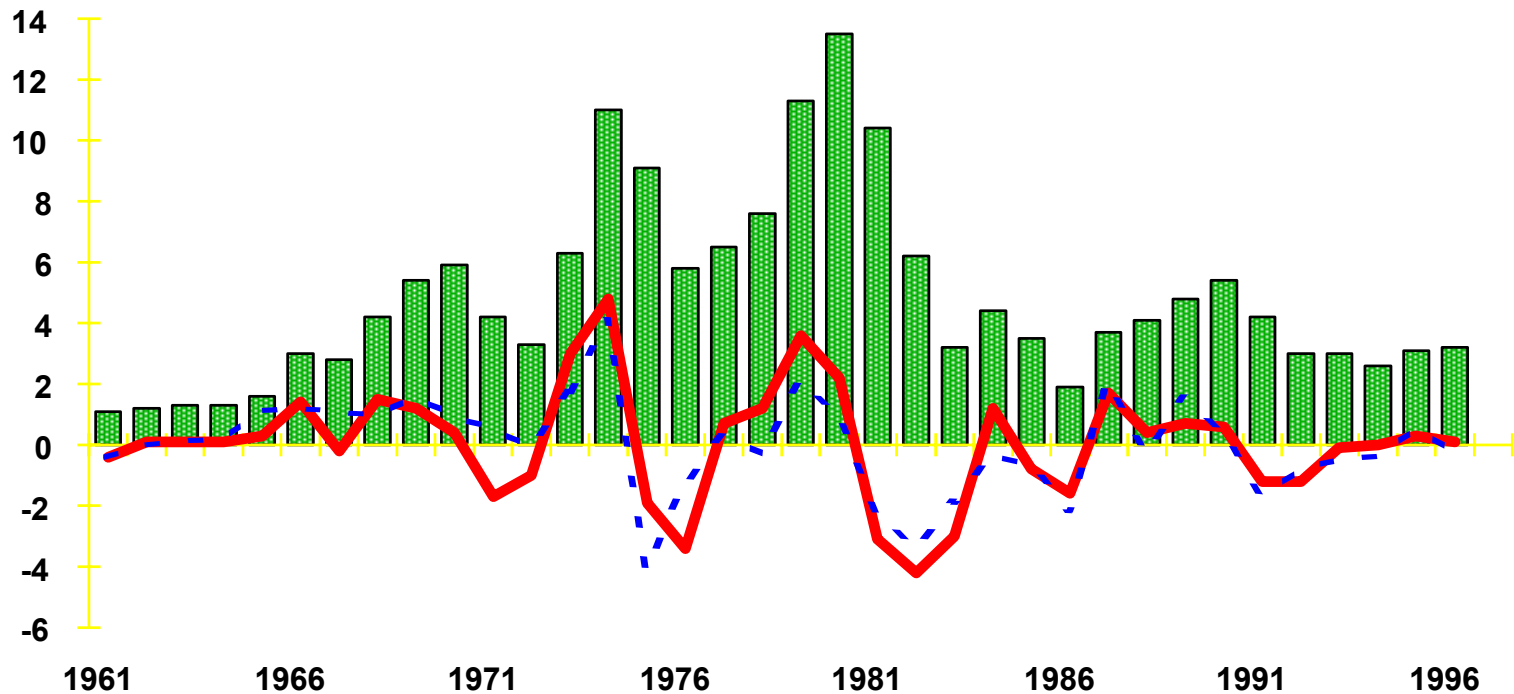• **...By 0.2 for each percentage point increase in wholesale energy prices.**

The Track Record for the CPI Rule

(The Actual and Predicted Changes in CPI Inflation)

(Percentage points)

Legend: Consumer Price Inflation · Actual · Predicted

The Policy Tradeoff: Unemployment vs. Changes in Inflation

◆ **RP-RP\1=**

THE CHANGE IN INFLATION=

-0.5 * (U-U@VOL)

◆ **THIS IS THE TRADEOFF FACING ANY POLICY-MAKER WITH TARGETS INVOLVING BOTH THE INFLATION RATE AND THE UNEMPLOYMENT RATE**

The Policy Tradeoff: Unemployment vs. Changes in Inflation

◆ **Two endogenous variables: RP and U**

◆ **In terms of the earlier model, think of U as varying inversely with GNP, hence the endogenous variables are RP and GNP**

◆ **If these are the only targets policy-makers care about, then they need only two policy instruments to achieve them...**

....if we achieve perfect coordination..

....and have perfect system knowledge.

The Policy Tradeoff: Unemployment vs. Changes in Inflation

◆ **The first priority of the Federal Reserve, the manager of one instrument--credit policy, is one target--inflation control.**

  – **The second priority/target is growth.**

◆ **The first priority of elected officials, the managers of other instruments--taxes and government spending, is usually unemployment / growth**

  – **Their second priority is inflation control.**

◆ **In practice, they do not collaborate well.**

The Policy Tradeoff: Unemployment vs. Changes in Inflation

◆ **Other problems, beyond lack of collaboration, preventing simple achievement of inflation and growth goals.**

  – **Political disagreement on targets.**

  – **Scientific disagreement on, or stubborn refusal to recognize, the "model"**

  – **External shocks without adequate warning.**

  – **Desire for policy stability.**

  – **.....**

The Policy Tradeoff: Unemployment vs. Changes in Inflation

◆ **Short-term interest rates, managed by the Fed, reveal Fed sensitivity to inflation, unemployment. and policy stability. They also reveal a lack of complete foresight.**

THE FED REACTS PREDICTABLY TO THE ECONOMY