The expectations-augmented Phillips curve is a fundamental element of almost every macroeconomic forecasting model now used by government and business.
Kevin D. Hoover

THE PHILLIPS CURVE AND EXPECTATIONS THEORY

THE PHILLIPS CURVE

The Phillips Curve is a curve showing an *inverse* relationship between the inflation rate and the unemployment rate.

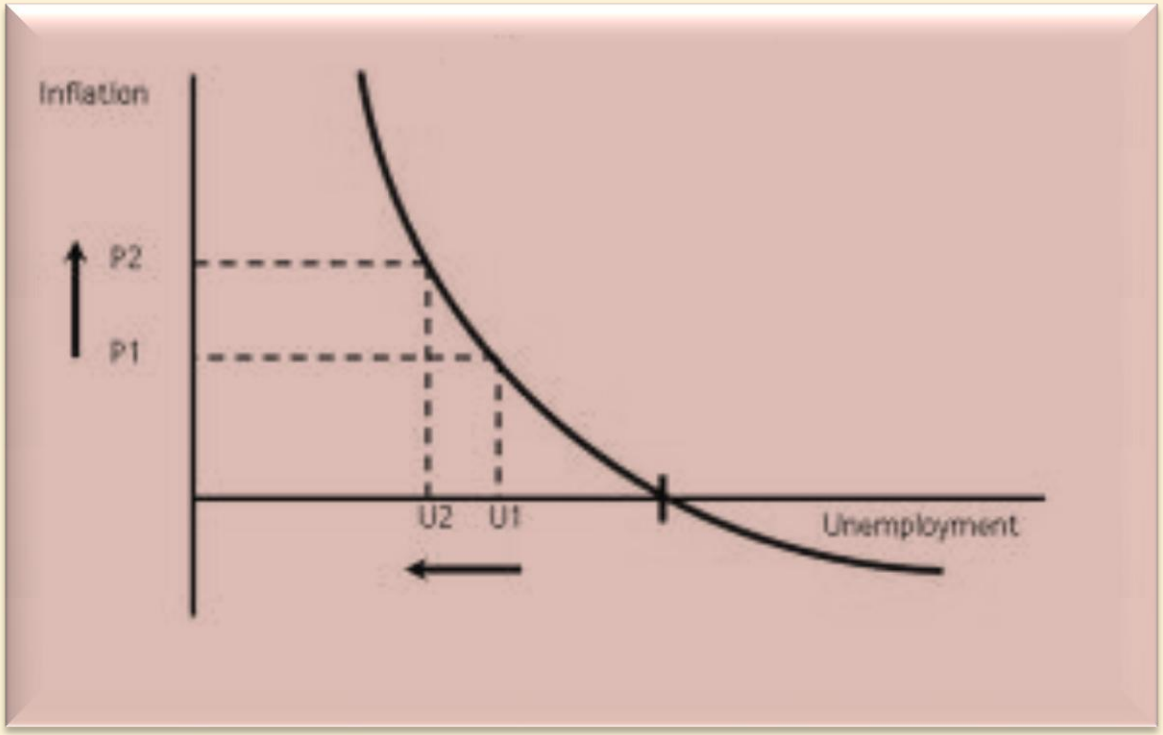
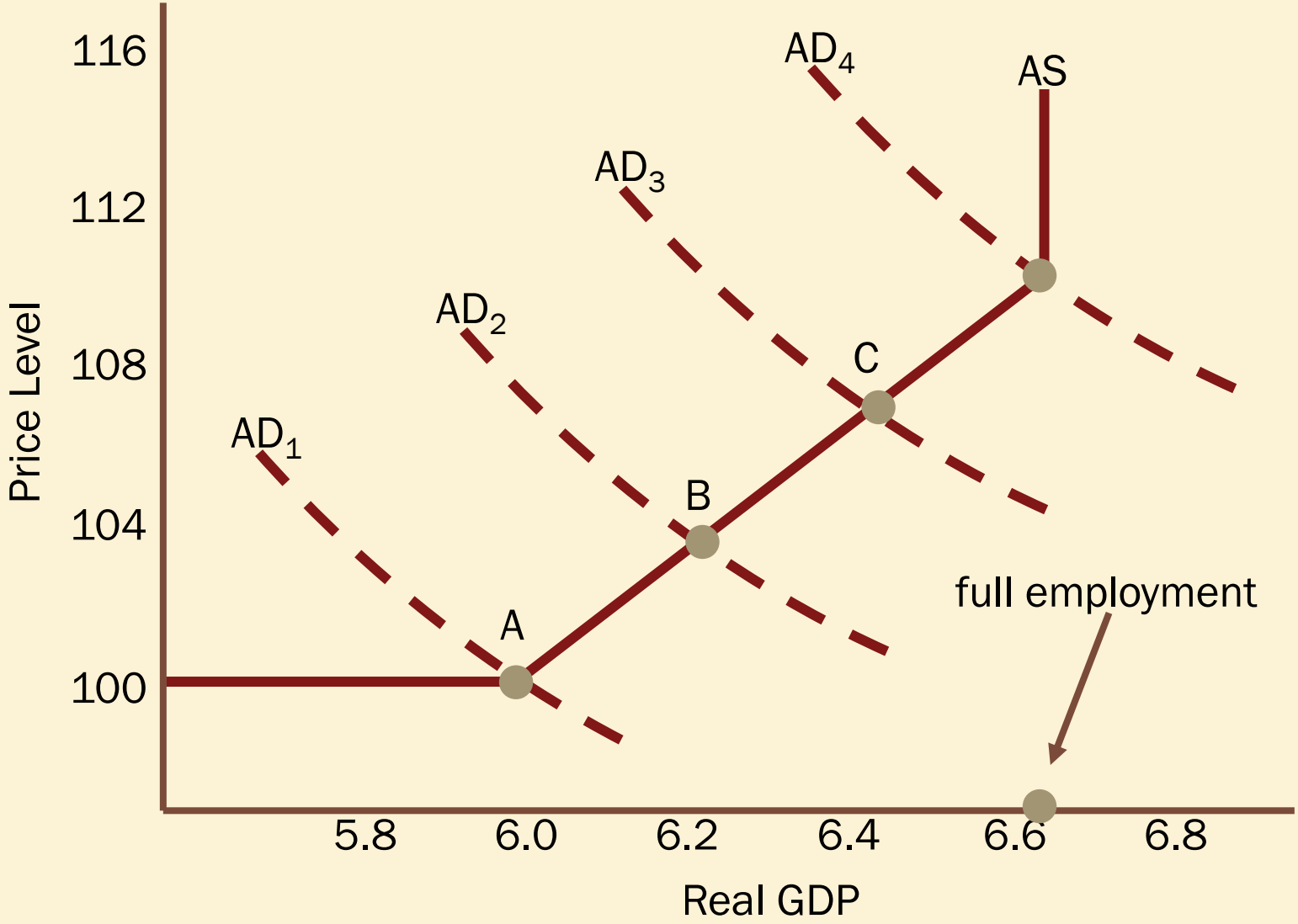


CHART: INCREASE IN AGGREGATE DEMAND



MOVEMENT ALONG THE PHILLIPS CURVE

Changes in *aggregate demand* cause movement along a stationary Phillips Curve.

Phillip's Curve for Dummies!

The Phillips Curve - 60 Second Adventures in Economics (3/6)

CHART: MOVEMENT ALONG THE PHILLIPS CURVE

THE PHILLIPS CURVE

The Phillips Curve illustrates that higher inflation is the opportunity cost of higher employment and vice versa.

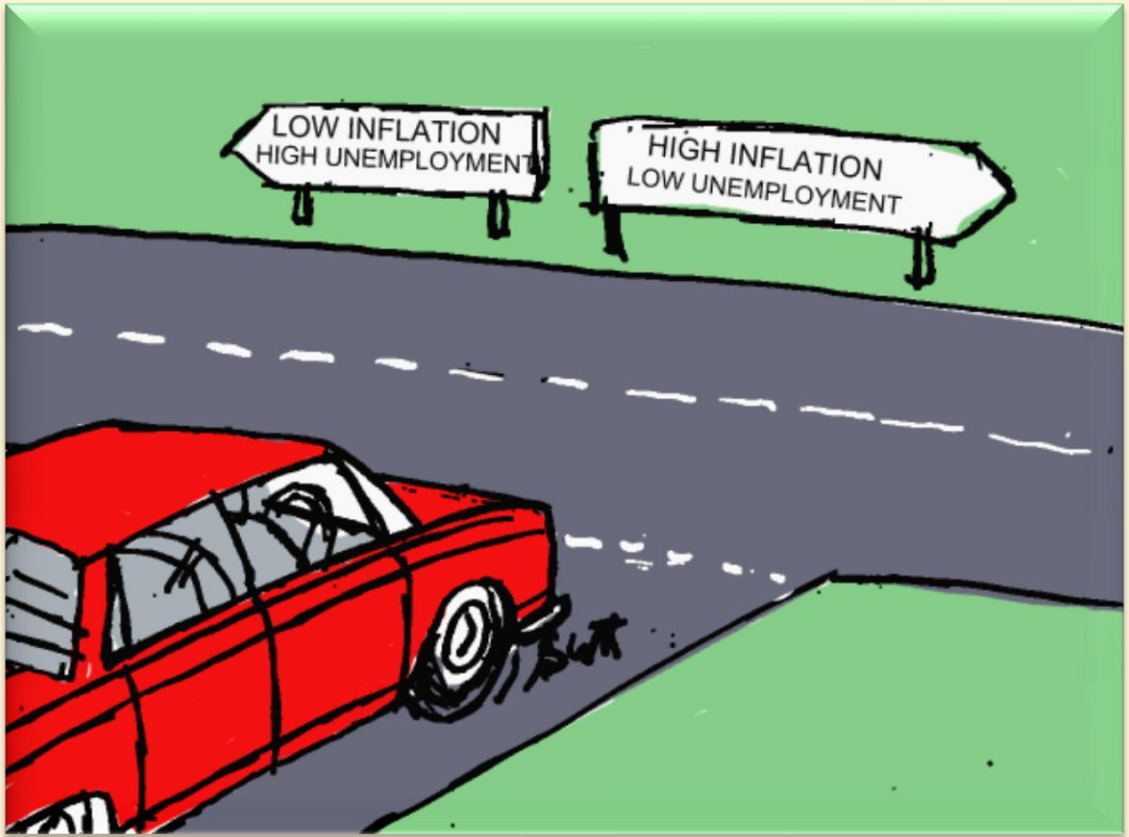


CHART: THE US PHILLIPS CURVE, 1960s

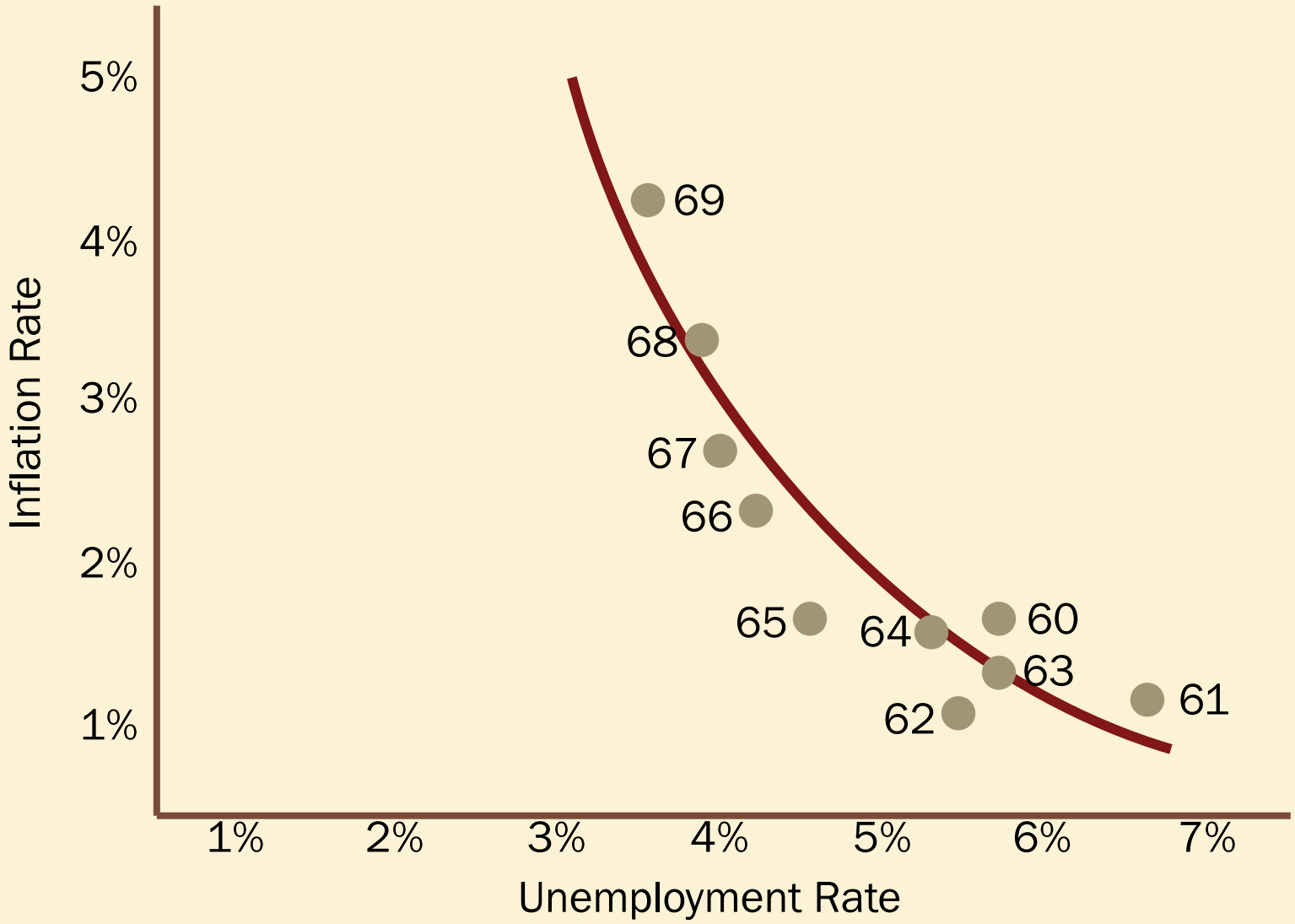


CHART: THE US PHILLIPS CURVE, 1970-2005

THE NATURAL RATE HYPOTHESIS

The *Natural Rate Hypothesis* says that an economy will always self-correct to a natural rate of unemployment.

What Has Happened to the Vertical Phillips Curve?

THE LONG-RUN PHILLIPS CURVE

According to The Natural Rate Hypothesis, the *Long-Run* Phillips Curve is a vertical line positioned at the natural rate of unemployment.

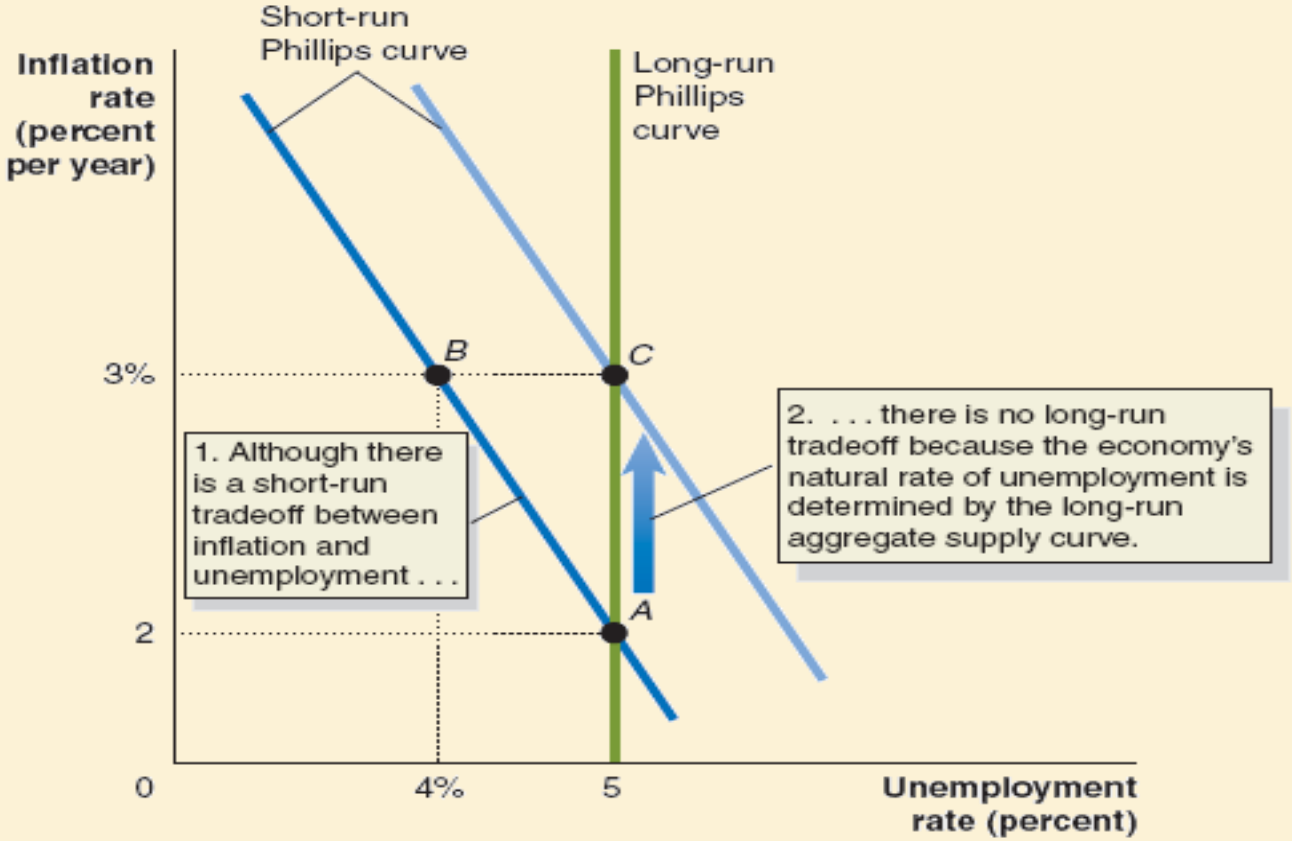
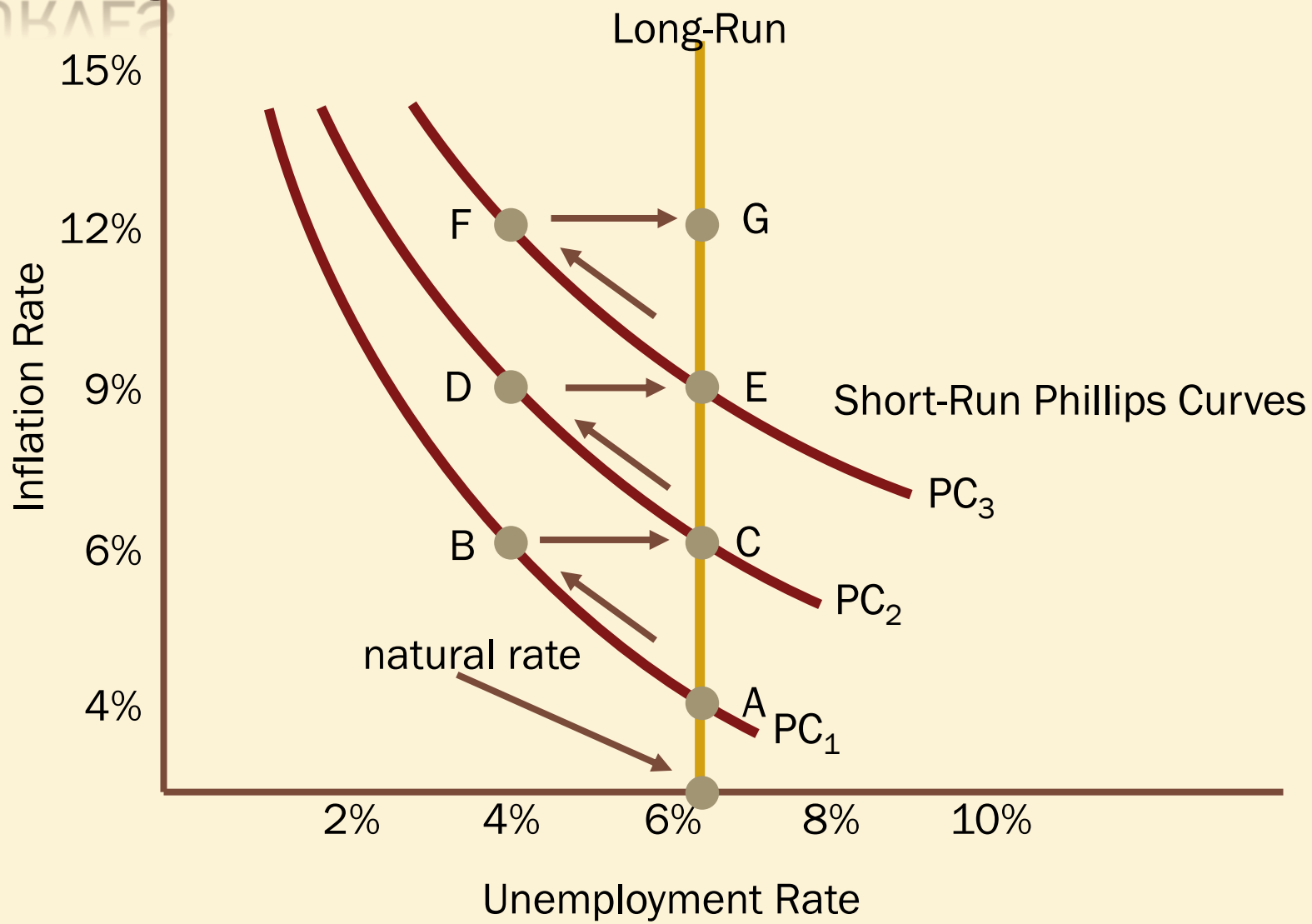


CHART: SHORT-RUN AND LONG-RUN PHILLIPS CURVES



EXPLAINING THE NATURAL RATE MODEL

- Two versions of *Expectations Theory* explain The Natural Rate Model.
  - adaptive expectations
  - rational expectations

ADAPTIVE EXPECTATIONS

- The "Old" Classical Economists saw the *natural rate* as a unique point of equilibrium, a self-regulating level.
- Milton Friedman, one of the New Classical Economists, said that is unrealistic.
  - Friedman redefined the natural rate as *the long-run sustainable level.*
  - There will always be some unemployment. At equilibrium, the natural rate of unemployment (NRU) is the self-sustaining level.
- The NRU is not constant. It changes with changing labor market conditions.

ADAPTIVE EXPECTATIONS

- Friedman's Adaptive Expectations Hypothesis ("fooling" model) deals with the effect of short-run changes.
  - Wage-earners' expectations of movements in price take time to adapt.
  - Price goes up and wage-earners underestimate the change.
  - They supply more labor than they would have if they had realized how much their real wage had been eroded by inflation – overestimation.
- Model works symmetrically in reverse.

ADAPTIVE EXPECTATIONS

People believe the best indicator of the future is *recent* (past) information.

Short-Run Adaptive Expectations Theory:

Aggregate demand increases. → Inflation rate rises, real wages fall and profits rise. → The unemployment rate falls.

Long-Run Adaptive Expectations Theory:

Inflation rate is constant at higher rate, workers' nominal wage rate rises and profits fall. → The unemployment rate is restored to full employment.

ADAPTIVE EXPECTATIONS

According to Adaptive Expectations Theory, expansionary monetary and fiscal policies to reduce unemployment are useless in the long run.

After a short-run reduction in unemployment, the economy will self-correct to the natural rate of unemployment, but at a higher inflation rate.

RATIONAL EXPECTATIONS

Rational Expectations Theory was developed by Nobel laureate Robert Lucas of The University of Chicago along with Thomas Sargent of Stanford and Robert Barrow of Harvard.

It provides a sharp contrast to the notion of adaptive expectations.

Lucas and colleagues say that people with rational expectations anticipate the *future* impacts of current government policy decisions and react immediately.

RATIONAL EXPECTATIONS

According to Rational Expectations Theory, people will use *all* available information to predict the future, including what they believe will be future monetary and fiscal policies.

Rational Expectations Theory:

Aggregate demand increases. → Inflation rate rises and nominal wages quickly adjust equal to the inflation rate. → The inflation rate rises on a vertical line at full employment.

And, if macroeconomic policies are *not* predictable, an economy will self-correct to restore the economy to full employment.

RATIONAL EXPECTATIONS

The effects of systematic and predictable macroeconomic policies can be negated when businesses and workers anticipate the effects of those policies.

People acting on their expectations of predictable expansionary policies can actually cause inflation … something like a self-fulfilling prophecy.

RATIONAL EXPECTATIONS

With *adaptive expectations* people tend to assume that inflation will continue to be what it already is. If inflation was 3% last year, adaptive expectations leads you to predict it will be 3% next year.

In contrast, *rational expectations* takes into account all available information including the future effects of activist fiscal and monetary policies. The idea behind rational expectations is that such policies might be able to fool people for a while but they learn from their experiences and then you can't fool them at all.

The central policy implication of this idea is profound: *Rational expectations render fiscal and monetary policies completely ineffective and so they should be abandoned.*

RATIONAL EXPECTATIONS

Suppose, for example, the Fed undertakes expansionary monetary policy to close a recessionary gap. Repeated experiences with such policy have taught people that increases in the money supply fuel inflation. To protect themselves in a world of rational expectations, businesses immediately respond to the Fed's expansion by raising prices. Workers demand higher wages and the attempted stimulus will be completely offset by the contractionary effects of inflation.

Alternatively, suppose the government undertakes expansionary fiscal policy to stimulate the economy. People with rational expectations will respond by increasing their savings and reducing consumption and, thereby, likewise offset any expansionary effect. They do this because they know that a larger budget deficit now means higher taxes later. So, they prepare for that future burden by saving more.

Or, so the argument goes.

CRITICISMS OF RATIONAL EXPECTATIONS

Critics of rational expectation say that most people are not as sophisticated in their economic thinking as the theory requires. Therefore, adjustments will not take place with anywhere near the speed they're supposed to.

However, this criticism should not detract from the central point of rational expectations, namely that people's behavior may partially or completely counteract the goals of fiscal monetary policy.

RATIONAL EXPECTATIONS

Given the criticisms, then, the best way to maintain low inflation in a rational expectations world is with preannounced, stable policies to achieve a low and constant money supply growth and a balanced federal budget.

ADAPTIVE EXPECTATIONS VS. RATIONAL EXPECTATIONS

The core difference between adaptive expectations and rational expectations is *aggregate demand* and *aggregate supply*, as illustrated on the next two slides.

CHART: ADAPTIVE EXPECTATIONS THEORY

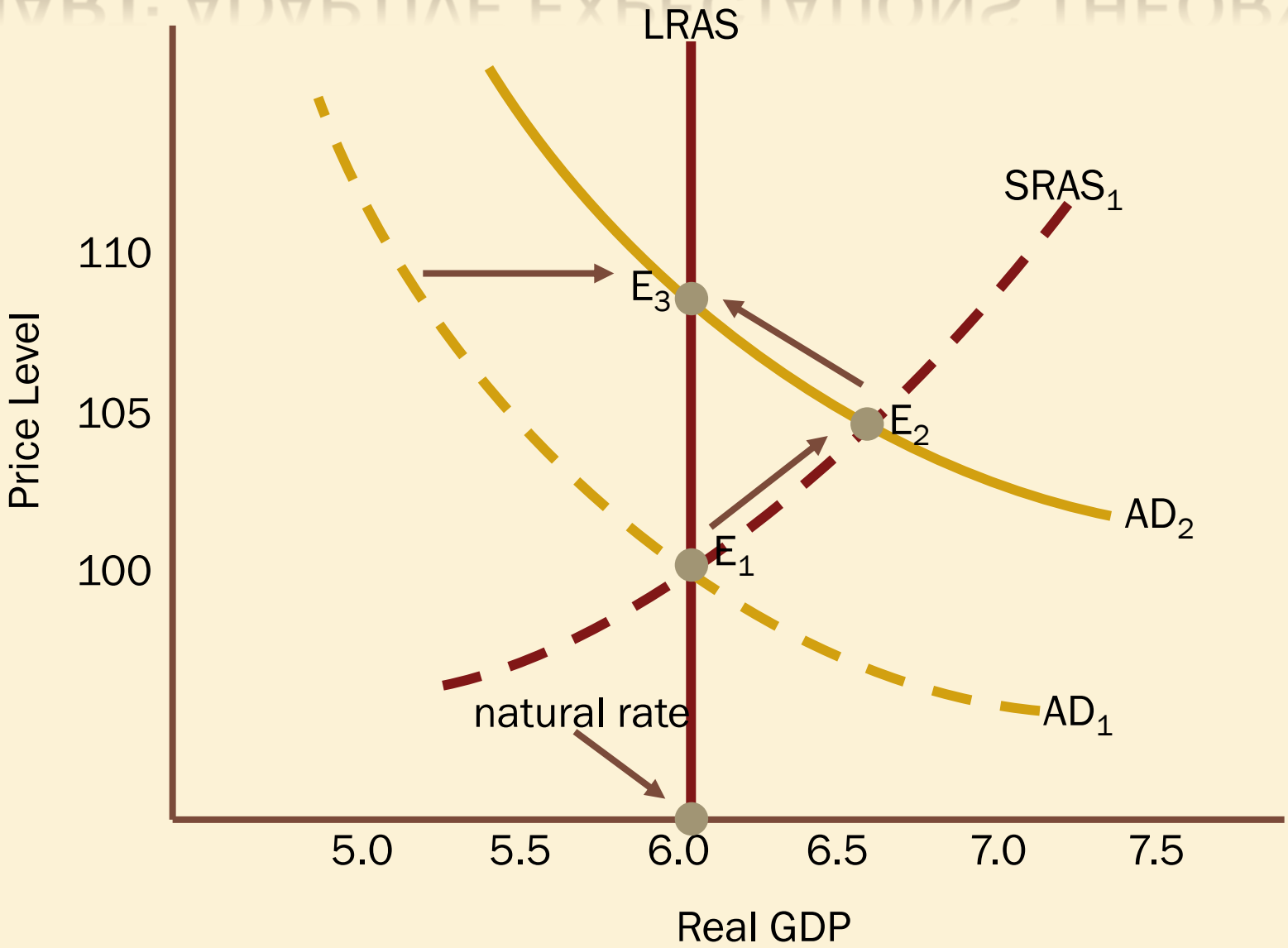
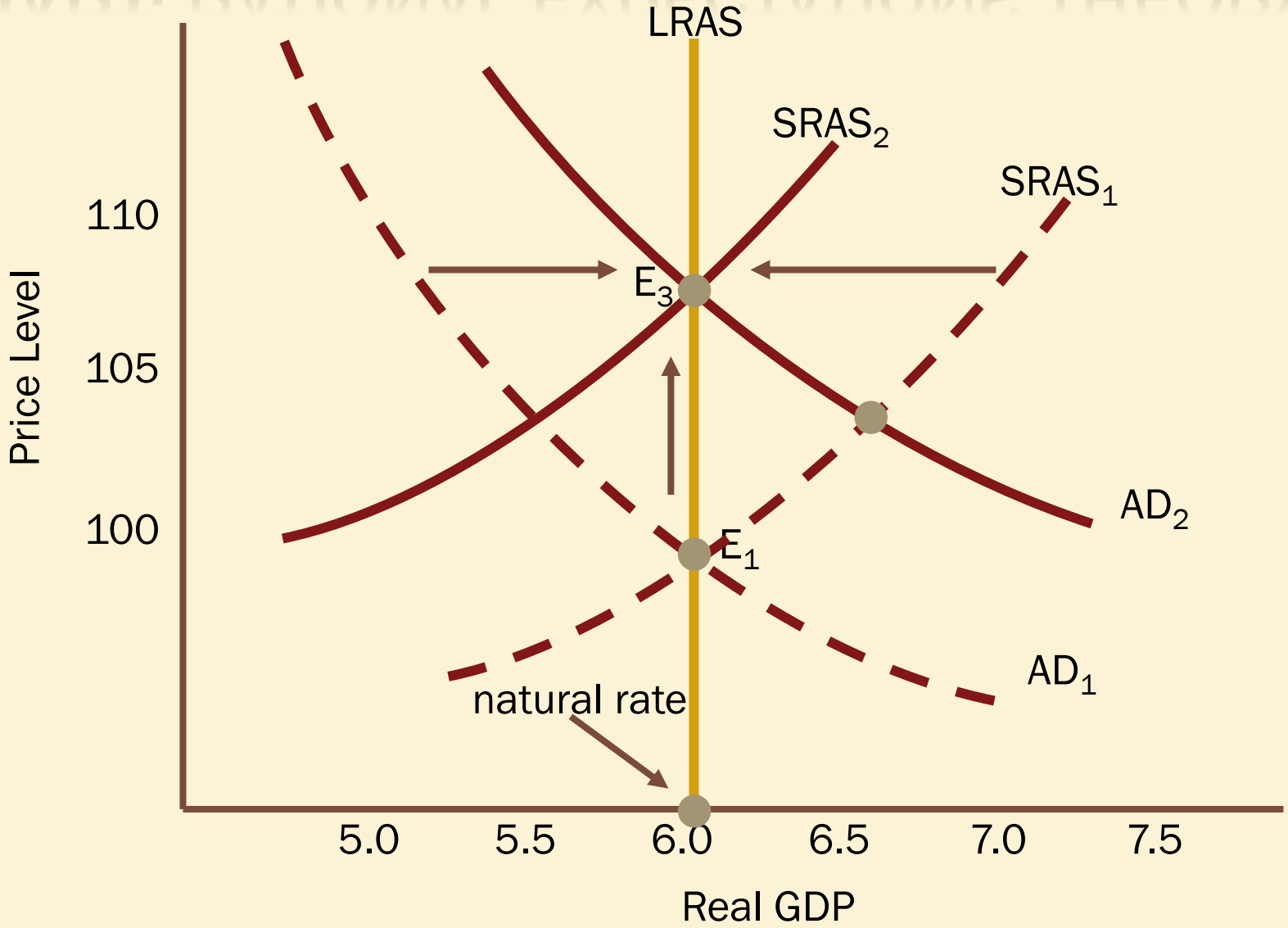


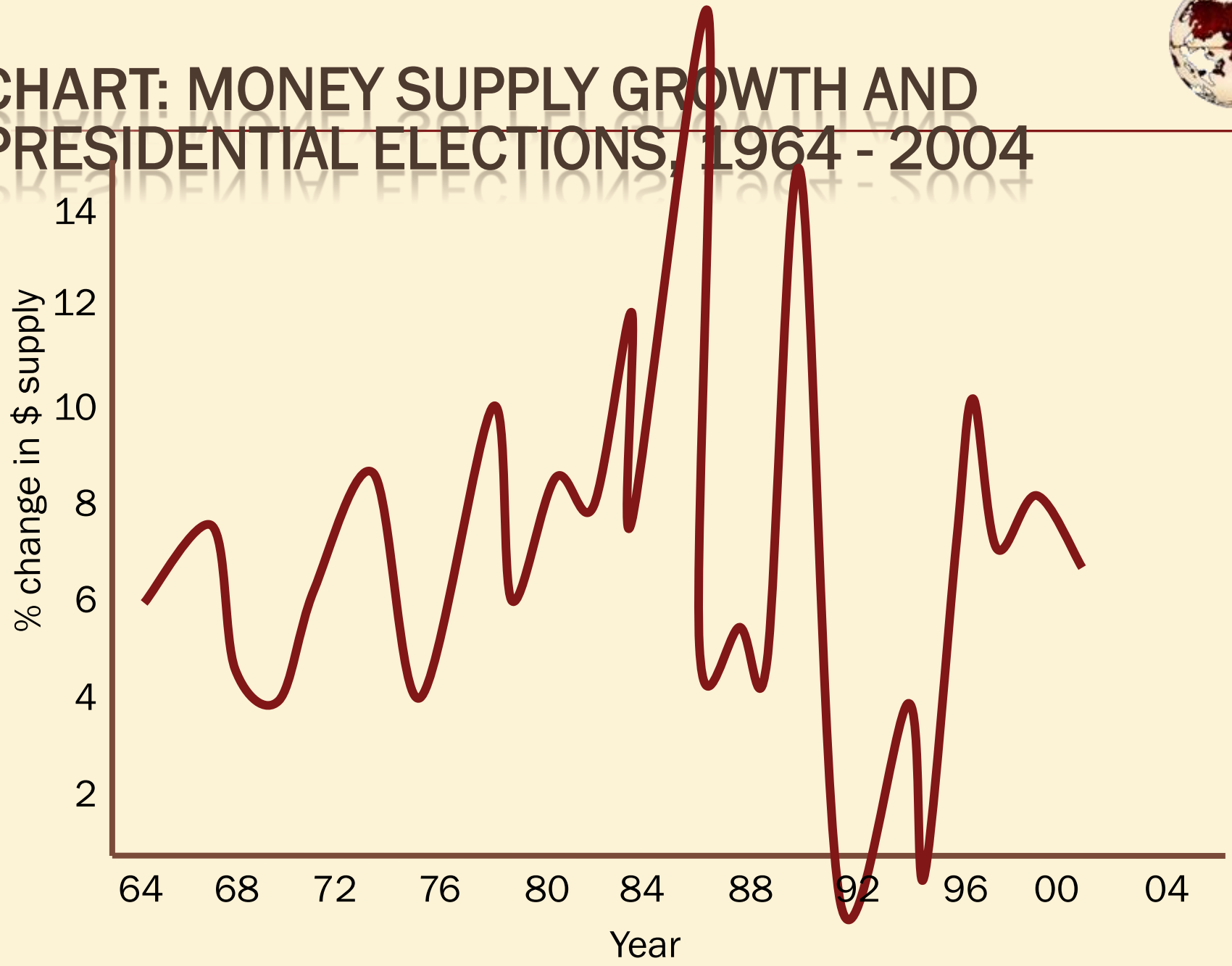
CHART: RATIONAL EXPECTATIONS THEORY



POLITICAL BUSINESS CYCLE

The political business cycle is a business cycle caused by policymakers to improve politicians' reelection chances.

CHART: MONEY SUPPLY GROWTH AND PRESIDENTIAL ELECTIONS, 1964 - 2004



POLITICAL BUSINESS CYCLE

- Besides controlling the money supply, another way to fight inflation is to use *incomes policies.*
  - Incomes policies are federal government policies effecting the real incomes of workers by controlling nominal wages and prices.
- Examples of incomes policies are:
  - jawboning
  - wage and price guidelines
  - wage and price controls

INCOMES POLICIES

Jawboning is oratory intended to pressure unions and businesses to reduce wage and price increases.

INCOMES POLICIES

Wage and price guidelines are voluntary standards set by the government for “permissible” wage and price increases.

INCOMES POLICIES

Wage and price controls are legal restrictions on wage and price increases.

HOW DO DIFFERENT MACROECONOMIC MODELS CURE INFLATION?

MONETARISTS

- See the cause of inflation as “too much money chasing too few goods,” based on the quantity of money theory (MV = PQ).
- To cure inflation, they would cut the money supply and force the Fed to stick to a fixed money supply growth rate.
- In the short run, the unemployment rate will rise, but in the long-run, it self-corrects to the *natural rate*.

KEYNESIANS

- Believe in using contractionary fiscal and monetary policies to cool an overheated economy.
- To decrease aggregate demand, they advocate that the government use tax hikes and/or spending cuts.
- The Fed should reduce the money supply and cause the rate of interest to rise.
- The opportunity cost of reducing inflation is greater unemployment.

SUPPLY-SIDE ECONOMISTS

- View the cause of inflation as “not enough goods.”
- Approach is to increase aggregate supply by cuts in marginal tax rates, government regulations and import barriers.
- The effect provides incentives to work, invest and expand production capacity.
- Both inflation rate and unemployment rate fall.

NEW CLASSICAL SCHOOL

- The theory of *rational expectations* asserts that the public must be convinced that policy-makers will stick to restrictive and persistent fiscal and monetary policies.
- If policy-makers have credibility, the inflation rate will be anticipated and quickly fall without a rise in unemployment.

THE END