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**Intro: What is this Course About?**

*and*

**Lecture I: What Now?**

**They Can Try, but There is No Changing How  
the National Economy Works**

# Course Syllabus

Class	Date	Topic
I	31-Jan	Some Notes on the Vote and What It Tells Us. The Macroeconomy - Inflation, Jobs, and Unemployment. First Principles of How the US Economy Works that are Not Going to Change
II	7-Feb	
III	14-Feb	Economic Growth and the Mal Distribution of Income and Wealth
IV	21-Feb	Federal Finance: Deficits, Federal Debt, National Debt: What may be Proposed for "Keeping" Social Security from Cutting Benefits a Few Years from Now?
V	28-Feb	The Federal Reserve: Money, Interest Rates, and Inflation and Why the Fed Does What it Does. and Why Jerome Powell Said He Won't Resign
VI	7-Mar	Tariffs: Why Do Most Economists Give the Trump Tariff Proposals a Thumbs Down?
		Remote Work and the Bay Area Economy

Exact timing is estimated

# Initial Comments and Caveats

- 1) Economics is a **social** science, not a natural science!
  - There aren't labs to "test" hypotheses, only economic statistics and inferences drawn from those "observations," which are based on measures that may be frequently revised.
  - This is more true for macroeconomics because of the number of potential variables involved to fully model a national economy
    - ❖ And, in macroeconomics, much of the data is quarterly, beginning after World War II, limiting the number of observations.
- 2) Macroeconomics involves many analyses that directly involve public policies which economists and the public have strong priors about. In particular:

*The Role of Government in Managing the Economy*

*Most Importantly: Tax & Spending Policies*

# Macroeconomic Time Series and # of Observations

- Many critical questions in macroeconomics (e.g., size of fiscal multiplier) rely on time series data
  - ❖ For quarterly data 1946-2024, # of observations = 316
  - ❖ How many observations exist when there is a significant fiscal stimulus during recessions?
  - ❖ Results are usually sensitive to nuanced statistical assumptions

Real world: **prior biases** of researchers, model construction and data transformation choices can be a material factor in estimation of the impacts of critical policy questions.

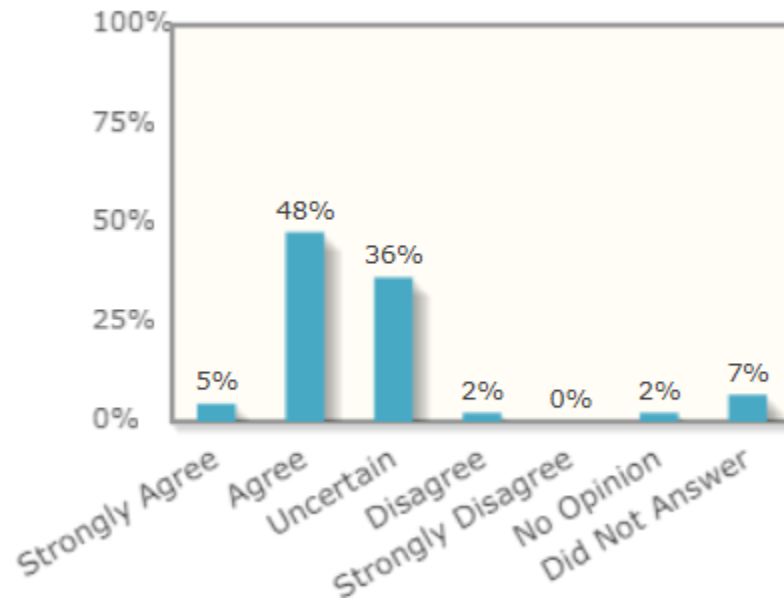
# What Do Economists Think about Major Federal Bailout During the Pandemic?



Kent A. Clark Center  
for Global Markets

Assuming that additional federal spending were to be structured as in the CARES Act, a substantial further spending program now will ultimately be less costly than a smaller program because it will better help to avoid long-term economic damage and promote a stronger recovery.

May  
2020



# What Do Economists Think about the 2009 Fiscal Stimulus?



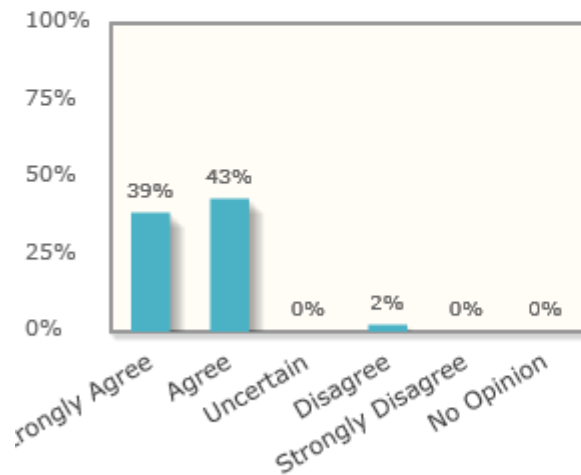
Kent A. Clark Center  
for Global Markets

Tuesday, July 29, 2014 12:03pm

## Economic Stimulus (revisited)

**Question A: Because of the American Recovery and Reinvestment Act of 2009, the U.S. unemployment rate was lower at the end of 2010 than it would have been without the stimulus bill. (The experts panel previously voted on this question on February 15, 2012. Those earlier results can be found here.)**

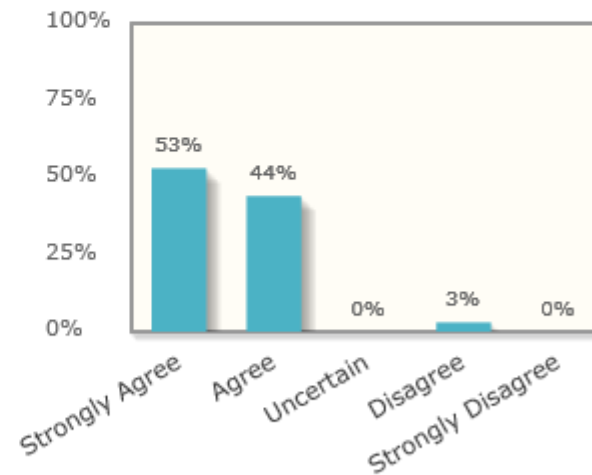
### Responses



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Source: IGM Economic Experts Panel  
[www.igmchicago.org/igm-economic-experts-panel](http://www.igmchicago.org/igm-economic-experts-panel)

### Responses weighted by each expert's confidence



© 2015. Initiative on Global Markets.

Source: IGM Economic Experts Panel  
[www.igmchicago.org/igm-economic-experts-panel](http://www.igmchicago.org/igm-economic-experts-panel)

# Two Quotes Illustrate the Internal Dynamics within the Economics Profession

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Robert Lucas and Tom Sargent in 1978 (both Nobel Prize winners)

*"Modern macroeconomic models are of no value in guiding economic policy and this condition will not be remedied by modifications..."*

Paul Krugman in 2012 (Nobel Prize winner)

*Freshwater economics became a kind of cult, ignoring and ridiculing any ideas that didn't fit its paradigm. By 1980 Robert Lucas, wrote approvingly of how people would giggle and whisper when facing a Keynesian. What's remarkable about that is that this was all based on the presumption that freshwater logic would provide a plausible, workable alternative to Keynes – a presumption that was not borne out by anything that had happened in the 1970s. And in fact it never happened.*

# Why the Debate over “Aggregate Supply Curve” Slopes Matter:

*Consider the situation when the unemployment rate is high and policies to combat unemployment are being considered*

- For a given stimulus policy ...

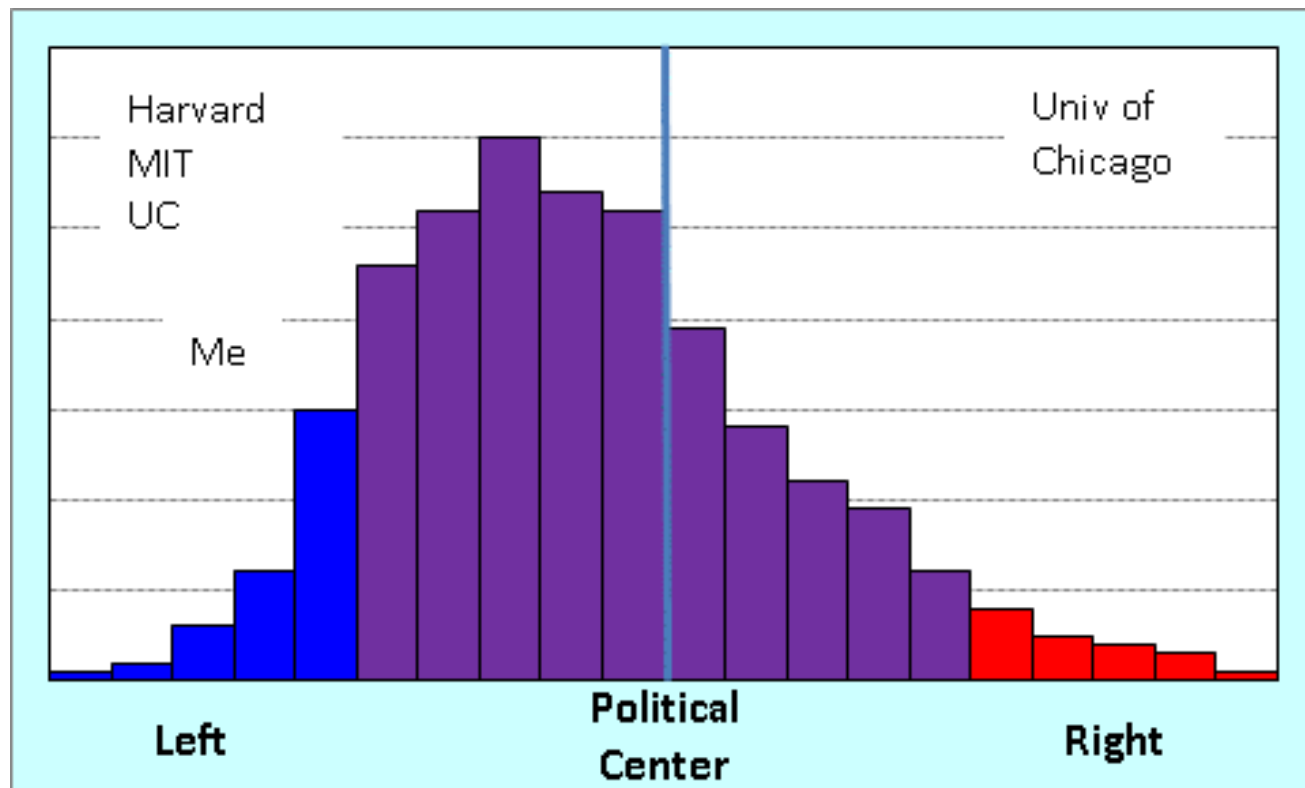
Conservatives will argue most of the effect will be in higher inflation with lead to very little reduction in unemployment

Liberals will argue most of the effect will be in reducing unemployment with very little effect on increasing inflation



# Economists and the Political Spectrum

% of Total Economists



# Initial Comments

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## As a consequence ...

- 1) There are ongoing debates within the economics profession over the effect of macroeconomic policies and whether they will improve or harm the economy in various economic conditions.
- 2) The media doesn't help: In setting up point-counter-point formats makes these disagreements appear more material than they actually are within the economics profession

## Surveys of Economists' Opinions

Surveys of professional economists indicate that about 70% of them trained in macroeconomics will agree with what I'll be teaching in this course.

# How to Email Me with Comments and Questions


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- Questions are encouraged, but not anecdotes.
- Feel free to email me questions not answered:

[arnold@alcopartners.com](mailto:arnold@alcopartners.com)

I will begin subsequent lectures with relevant questions from the prior lecture

Note: I like questions. So, if you have them, ask away.



# **Notes on Election Results**

# Peter Baker NY Times Jan. 7th

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- There will be no American troops at war overseas on Inauguration Day.
- Murder rates are way down and have fallen even below where it was when Mr. Trump left office
- Roaring stock market finished their best two years in a quarter-century.
- Jobs are up, wages are rising, and the economy is growing as fast as it did during Mr. Trump's presidency.
- Unemployment is as low as it was just before the Covid-19 pandemic and near its historic best.
- Domestic energy production is higher than it ever has been.
- The manufacturing sector has more jobs than under any president since Mr. Bush.
- Drug overdose deaths have fallen for the first time in years.
- Inflation has returned to normal.
- "President Trump is inheriting an economy that is about as good as it ever gets," said Mark Zandi, chief economist of Moody's Analytics.
- "The U.S. economy is the envy of the rest of the world, as it is the only significant economy that is growing more quickly post-pandemic than pre-pandemic.

# In Light of the Election Results ...

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So, why do so many voters think the economy is doing so poorly?

# A Pithy Quote

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On the “glorious” economy, Paul Krugman stated the Democratic ticket’s case: Growth is “a remarkable success,” inflation “looks beaten,” and “claims that we have a bad economy are about as credible as claims that armed migrants have taken over Times Square.”

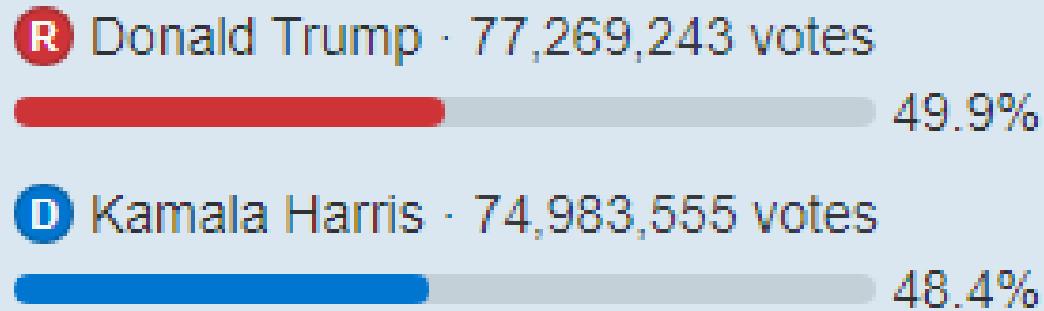
There was just one problem: checking their kitchens and their bank accounts, it appears that millions of voters disagreed.

Prof. James Galbraith (son of John Kenneth Galbraith)

# Vote Count as of Jan. 6th

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## National popular vote >



The Associated Press



# Is The Vote a Mandate?

Year	Vote (M)		%		Winner	By How Much?	
	Dem	Rep	Dem	Rep		Votes	%
1972	29	47	30.5	60.7	Nixon	18	30.2
1976	41	39	50.1	48.0	Carter	2	2.1
1980	35	44	41.0	50.7	Reagan	9	9.7
1984	38	54	40.6	58.8	Reagan	16	18.2
1988	42	49	45.7	53.4	Bush Sr.	7	7.7
1992	45	39	43.0	37.4	Clinton	6	5.6
1996	47	39	49.2	40.7	Clinton	8	8.5
2000	51	50	48.4	47.9	Bush (Jr)	-1	-0.5
2004	59	62	48.3	50.7	Bush (Jr)	3	2.4
2008	69	60	52.9	45.7	Obama	9	7.2
2012	66	61	51.1	47.2	Obama	5	3.9
2016	66	63	48.2	46.1	Trump	-3	-2.1
2020	81	74	51.3	46.8	Biden	7	4.5
2024	75	77	48.4	49.9	Trump	2	1.5

# Analysis of Votes

Issue	2020		2024		Δ	
	Biden	Trump	Harris	Trump	Harris	Trump
Total Votes	82.1	75.1	75.3	77.9	-6.8	2.8
States/Dist Won	28	28	22	34	-6	6
Democratic States*	40.9	26.0	23.6	13.4	-17.3	-12.6
<b>Six Swing States</b>	<b>12.7</b>	<b>12.4</b>	<b>12.7</b>	<b>13.2</b>	<b>-0.1</b>	<b>0.8</b>
Republican States*	28.5	36.7	39.1	51.3	10.6	14.6

\* Excluding six swing states: AZ, GA, MI, NV, PA, WI that Biden won in 2020 and Trump won in 2024

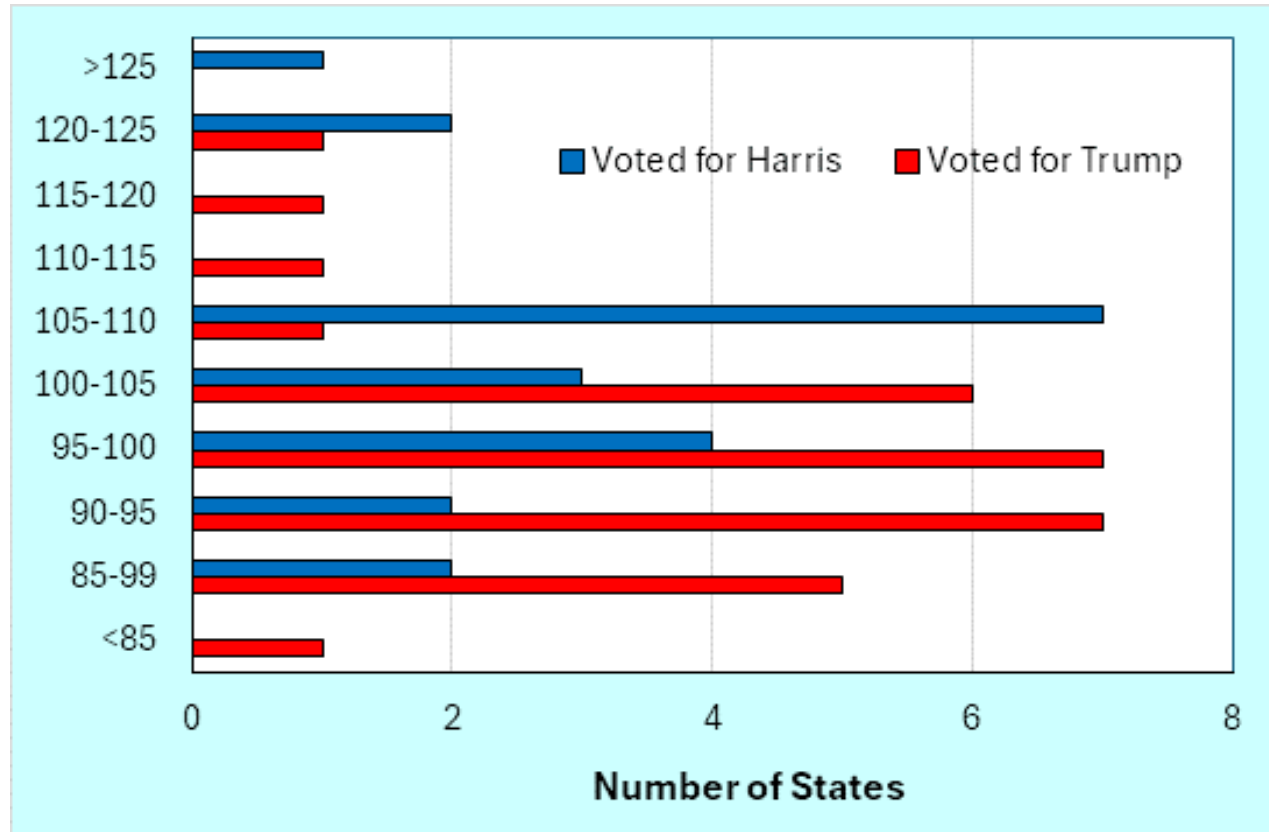
## Conclusion:

- 1) In terms of total votes, Harris lost lots of votes in states that she won.
- 2) Trump also got fewer votes in states that Biden (and later Harris) won. But he gained more votes in states that he won in 2020 and by a lot.
- 3) In the six swing states, Harris fared almost as well as Biden, but Trump did sufficiently better to win those states.

# A Result to Consider

## Election Results by State and Real Per-Capita Personal Income by State

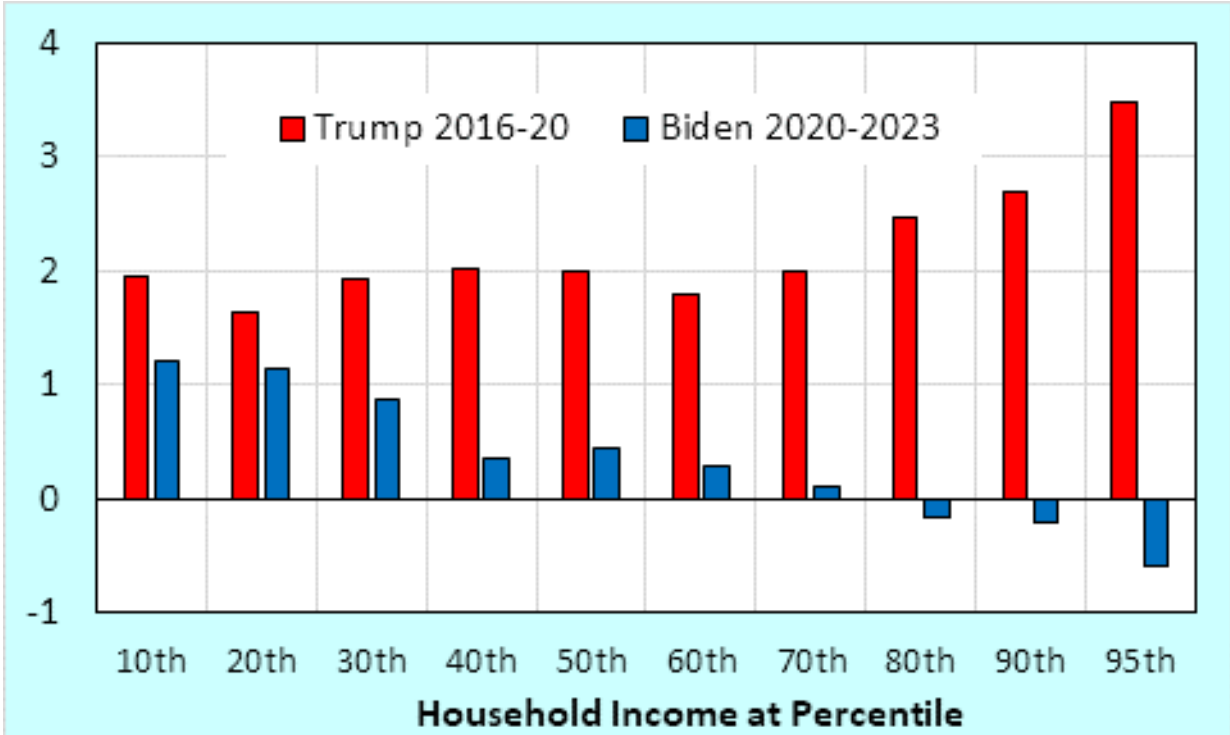
2023 Per  
Capita  
Personal  
Income as  
% of US  
National Per  
Capital  
Personal  
Income



# Changes in HH Income by Relative HH Income Level

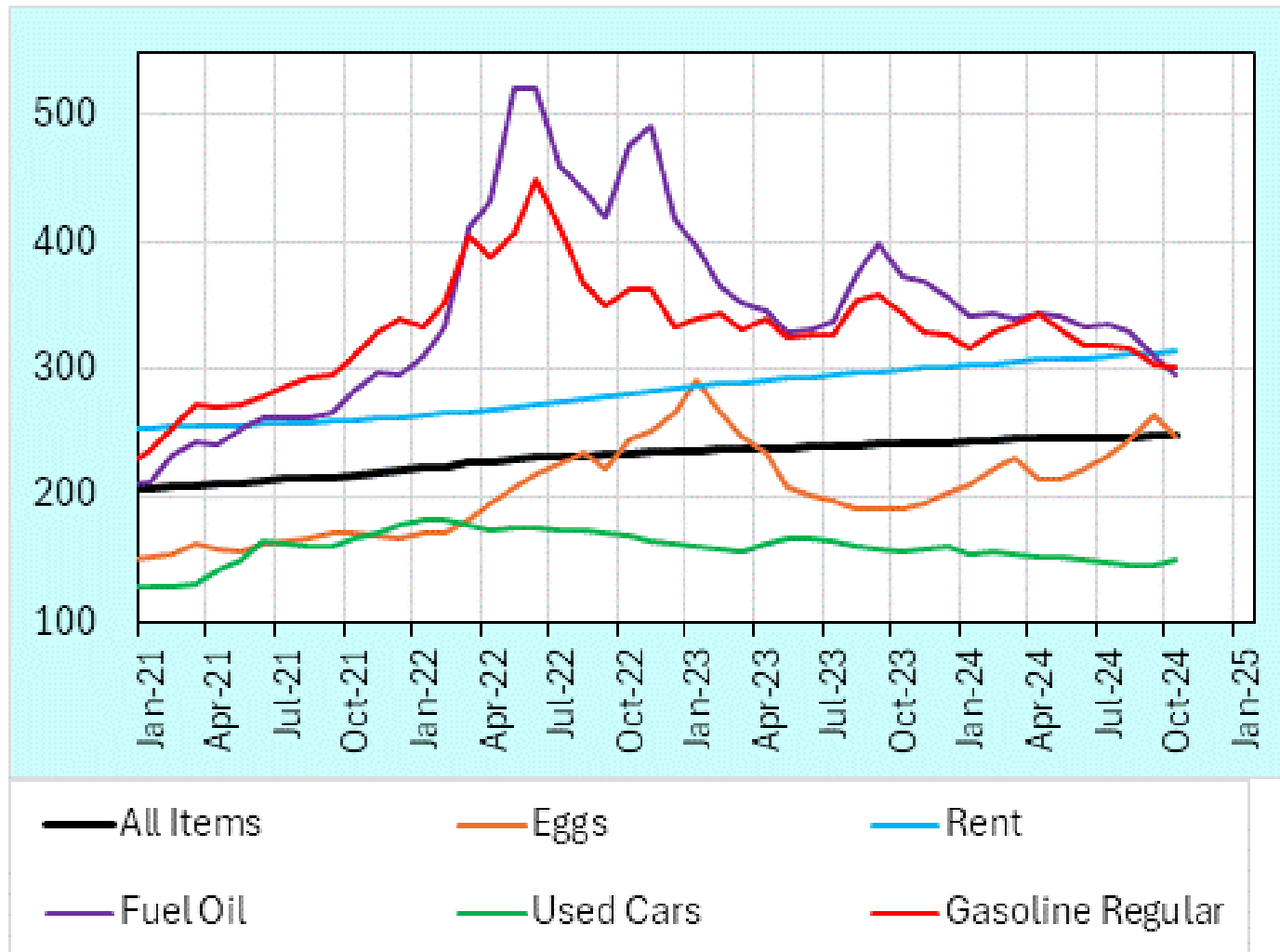
2016-2020 vs. 2020-2023  
2023 \$

Avg.  
Annual  
%  $\Delta$



# Recent Price Levels

Price Index  
Jan 1990  
=100



# How Important is Inflation to the Public?

Response	Biden Administration Focus	
	Economy	Inflation
Not Enough	58	65
Right Amount	35	28
Too Much	6	7
<b>Among Those Who Think the Economy is Bad: What's to Blame for the Bad Economy?</b>		
Inflation	80	
Supply Chain Issues	65	
Biden Policies	53	
Coronavirus Outbreak	53	

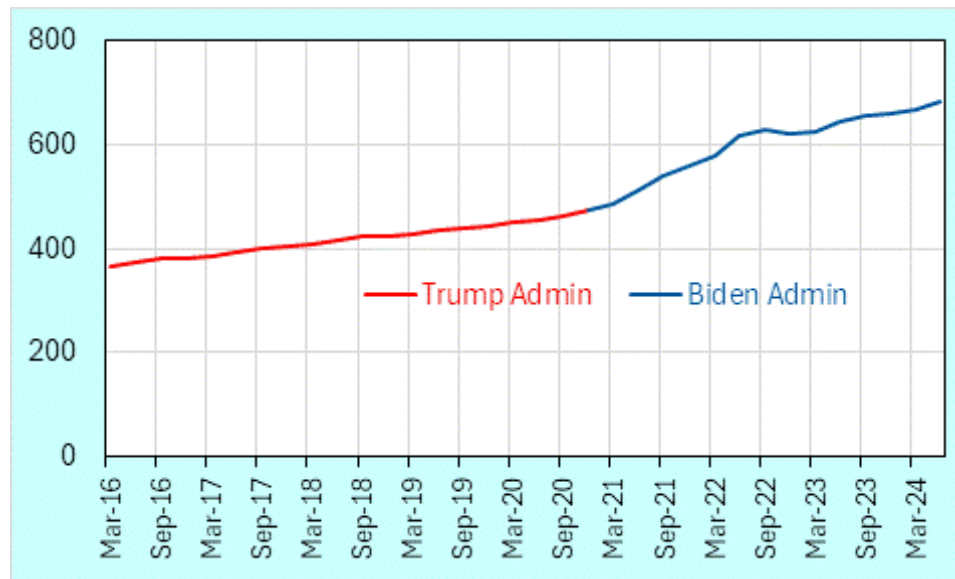
Source: *Face the Nation* Jan 16, 2022

# Recent Mortgage Rates and House Prices

Rate  
(%)



US  
Housing  
Price  
Index  
1980Q1  
= 100



# Housing Prices + Mortgage Rates

Calculation of How Higher Housing Prices Combine with Higher Mortgage Rates to Increase the Monthly Mortgage Cost of a New Loan

Variable	Date		% Δ
	Dec-20	Jun-24	
Mort Rate (%)	2.76	7.00	154
Mort Pay per \$100,000 Loan	412	672	63
HPI	472.38	682.18	44
<b>Mort Pay per \$144,000 Loan</b>	<b>412</b>	<b>970</b>	<b>135</b>



# Educational Attainment (2022)

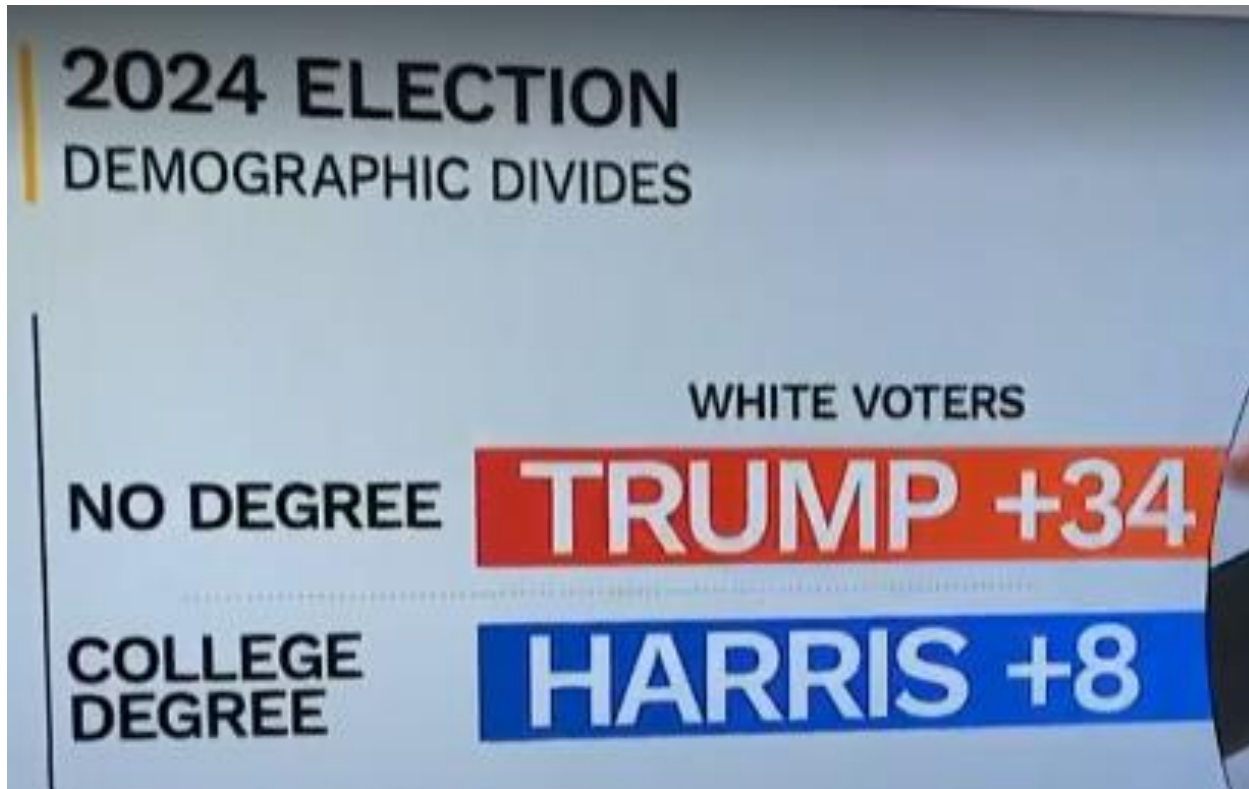


- No HS (10%)
- HS (29%)
- Some College (16%)
- Jr College (10%)
- BA (22%)
- MA + (13%)

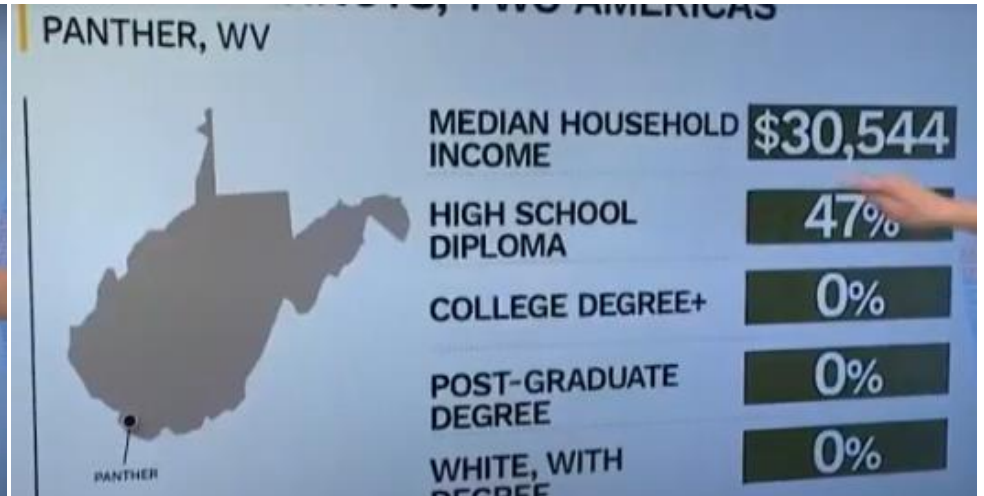
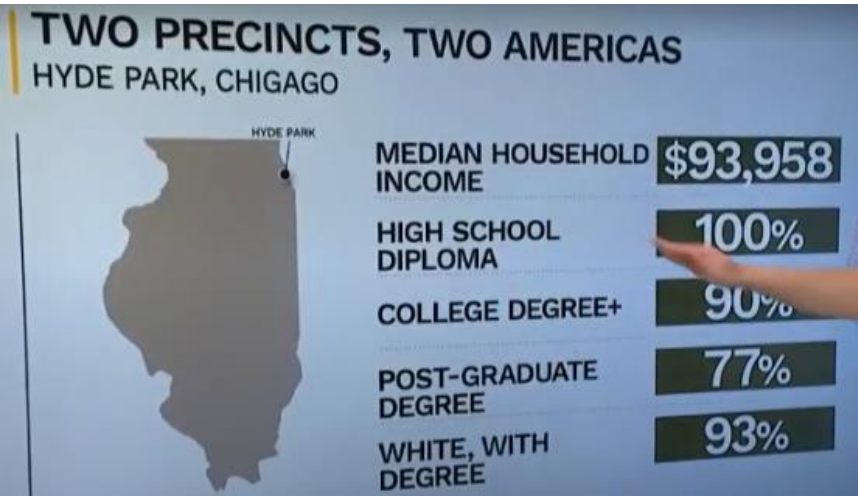
There are more adults **without** a junior or 4 year college degree than there are adults with college degrees, including advanced college degrees.

There are more adults w/o any college degree than there are those with at least a 4 yr college degree.

# NBC Exit Poll Result



# NBC – Two Precincts Compared



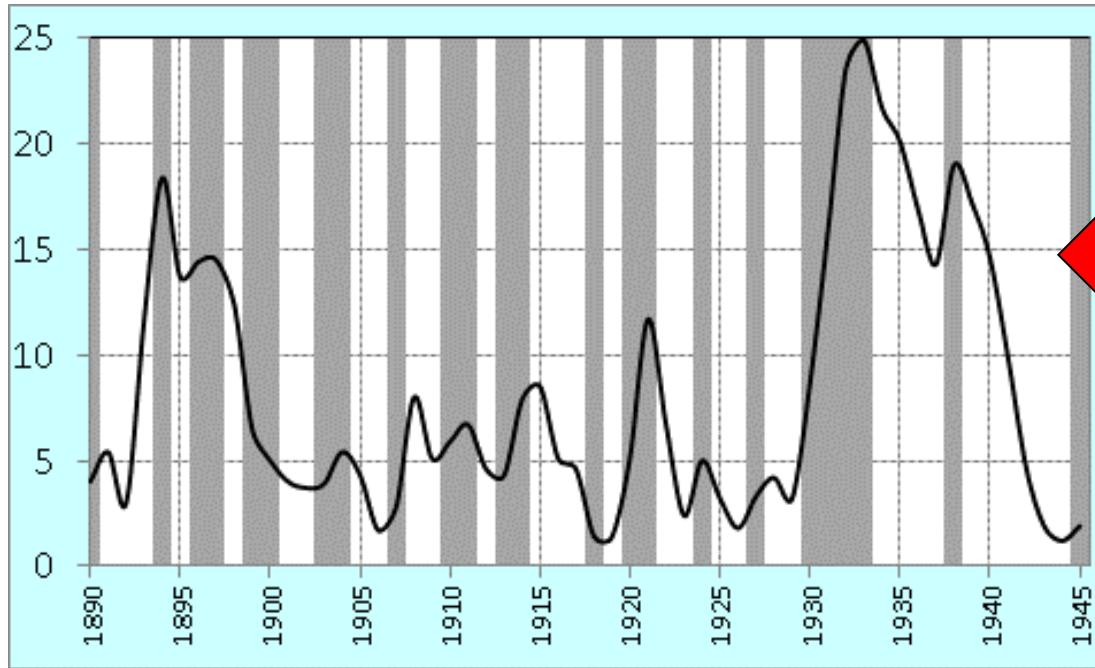
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# The Macroeconomy and How it Works

And why it's not going to change any time soon!

We start with the basics about how national economies work and why policies have been developed since World War II to address the underlying volatility.

# When Macroeconomics Began



25% of the US Labor Force was unemployed at the trough of the Great Depression

Gray shaded areas are recessions

It's not a coincidence that Keynes wrote the "General Theory of Employment Interest and Money" in 1936

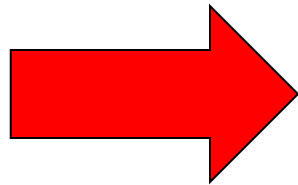
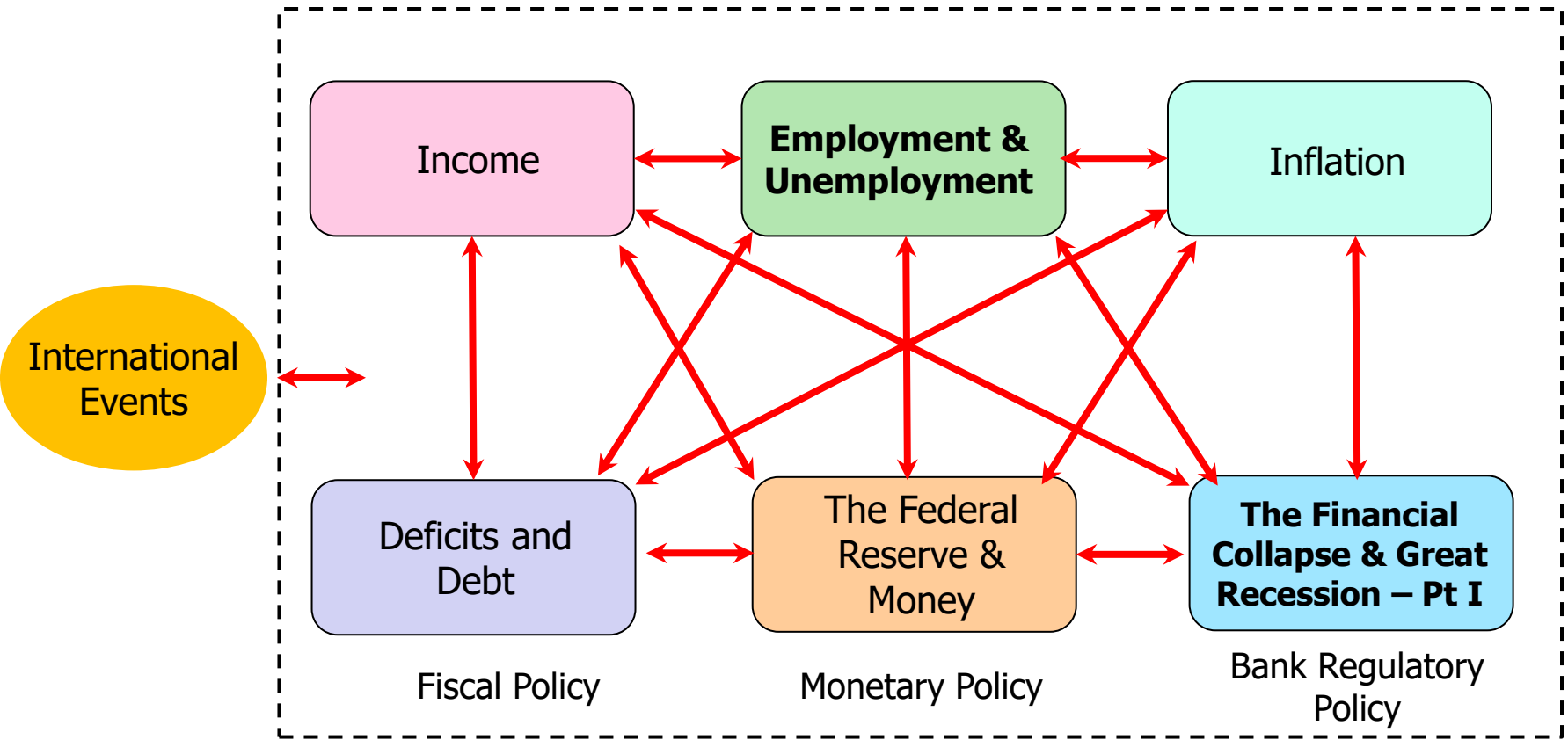
# "Selected" Macroeconomic Variables

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- Economic Growth in the Short run and Long run
- Employment and Unemployment
- Wages and Inflation
- Government Spending and Taxation
- Government Deficits and Debt
- Interest rates
- Investment and Savings Rates
- Money Supply
- Exchange Rates
- Balance of Payments and Balance of Current Accounts
- Productivity growth
- Financial Crises

It involves a lot of issues and we'll be discussing many of them over the next few weeks.

# The Macroeconomic System



The Macroeconomy: it's an interconnected **System**

# The System and Paradoxes: Example

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## **"Paradox of Thrift"**

- Every household decides to save more of their income
- Result:

*Total Savings Declines!*

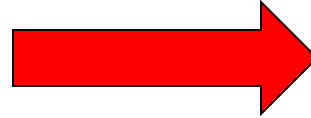
You'll understand why this is true before the series of lectures has completed.



# Macroeconomic Policy Matters!

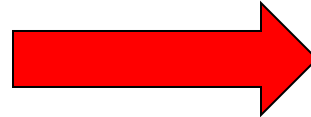
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Well Designed  
Macroeconomic Policies



Faster economic growth  
Stable economic growth  
Lower unemployment rates  
Low inflation rates

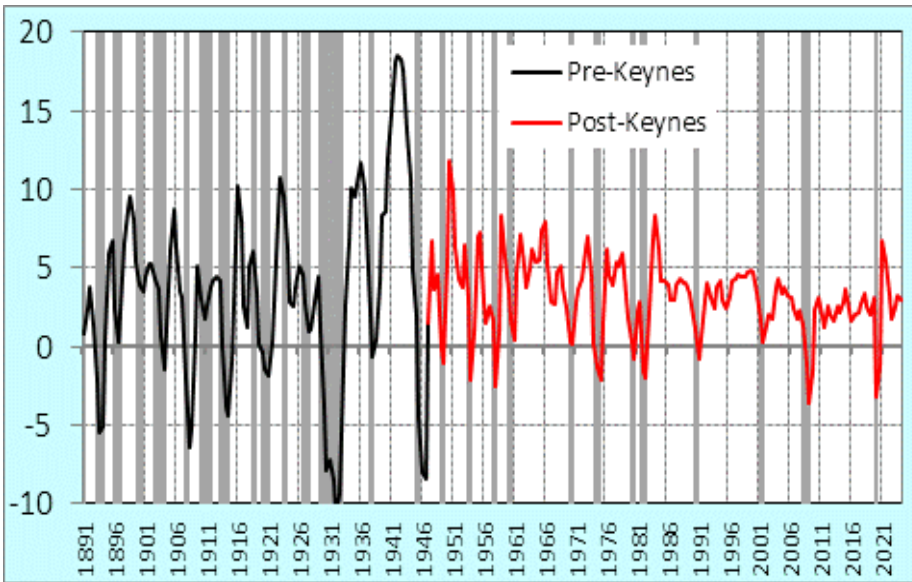
Poorly Designed  
Macroeconomic Policies



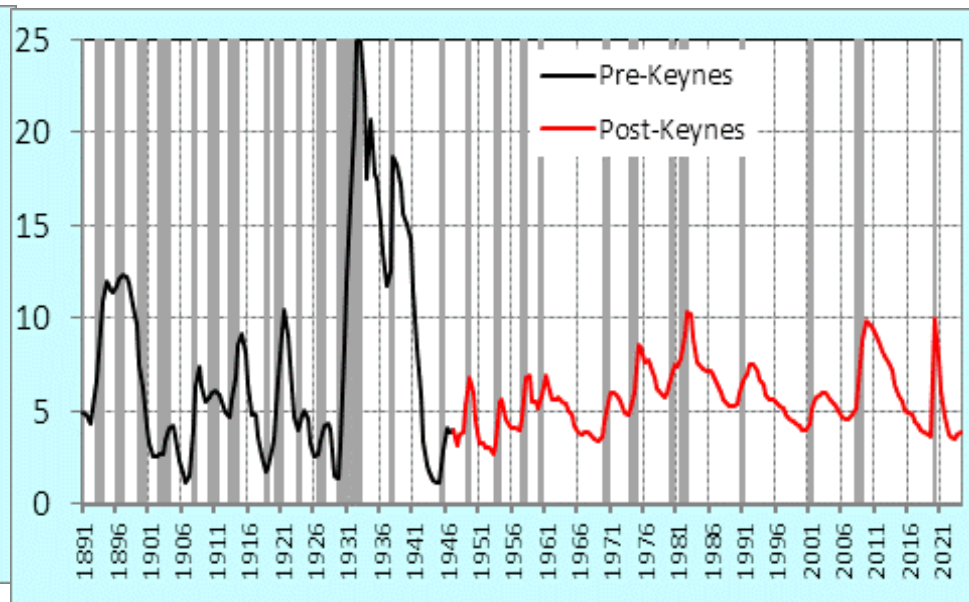
Slower economic growth  
Significant economic  
fluctuations  
Higher unemployment rates  
Higher inflation rates

# Keynes and Macroeconomic Policy

GDP Growth (%)



Unemployment Rate (%)

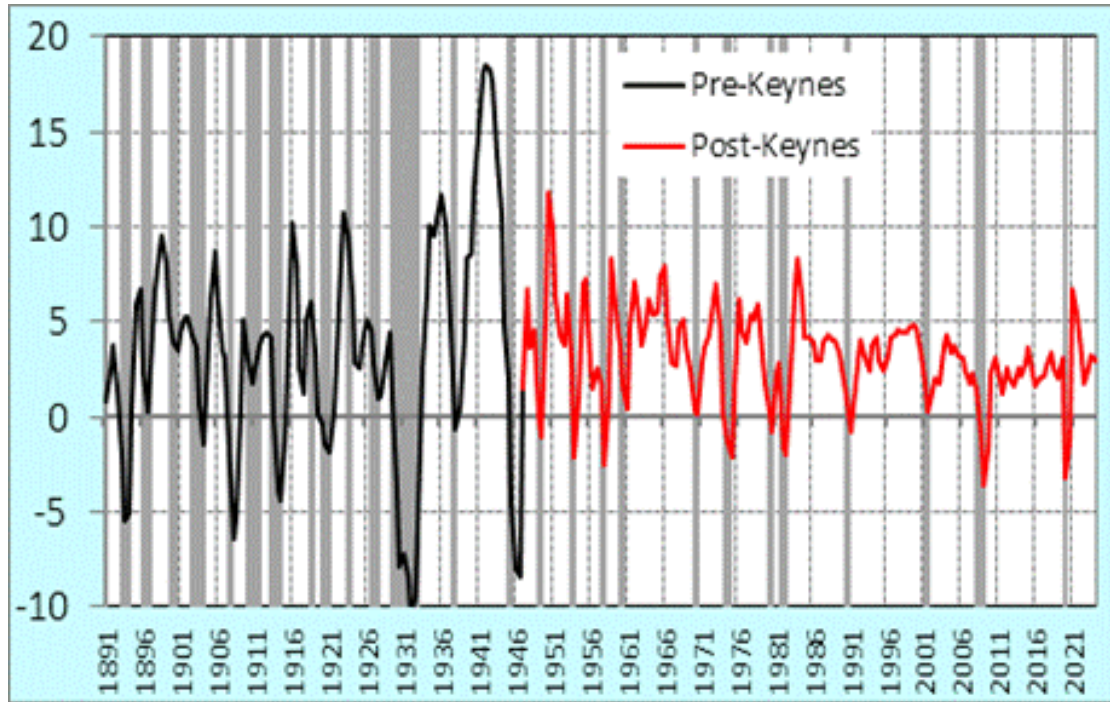


- Macroeconomic policies implemented **post-Keynes** have made a **huge** socially meaningful difference to macroeconomic performance and improving the lives of human beings in virtually all industrialized economies.
- Recessions have not been eliminated, but they have been less frequent and of shorter duration

Gray shaded areas are recessions

# Recession Stats Pre vs. Post Keynes

% Δ in  
GDP

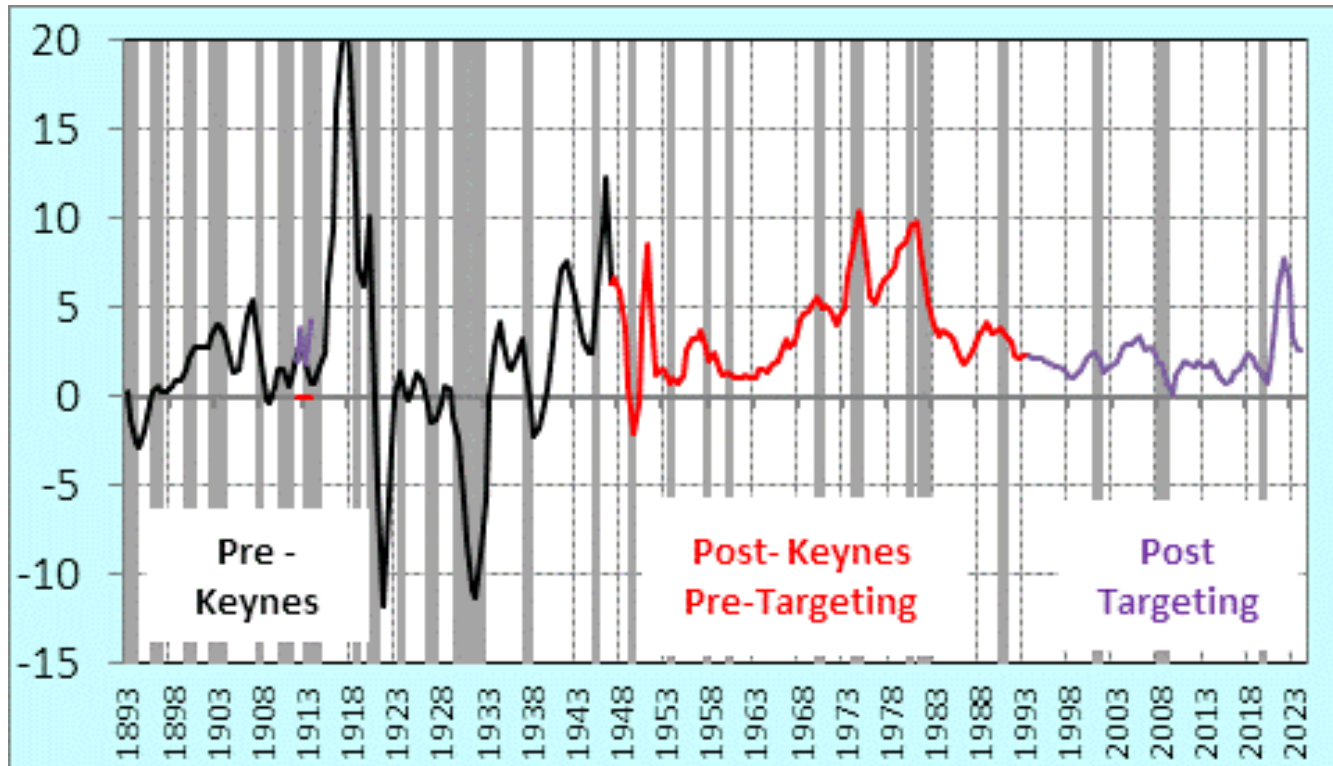


Period	Years	Frequency	Number	Decline in GDP
1890-1946	56	45%	15	-6.00%
1947-2024	78	13%	12	-2.41%

We live in a Post-Keynesian Macroeconomy!

# Keynes and Monetary Policy

Annual  
Inflation  
Rate (%)



In a later lecture, we'll be talking about the impact of the Fed's change in procedures beginning in about 1993 that fundamentally changed the behavior of the inflation rate and how the pandemic was a challenge.

Period	Avg.	Standard Deviation
1891-1947	1.95	5.27
1948-1993	3.90	2.60
1994-2019	1.87	0.65
2020-2024	4.39	2.20



# ***GDP Measurement, Recessions and Recoveries***

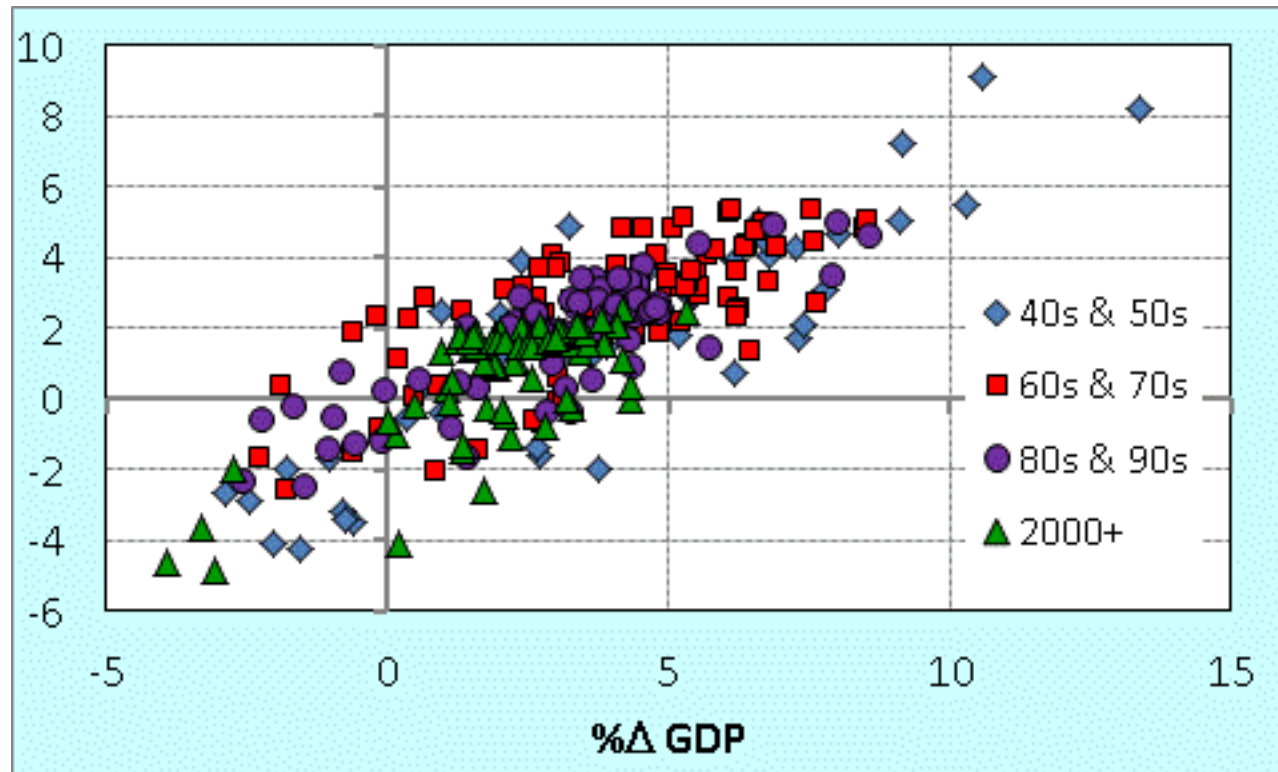
# Gross Domestic Product: Measurement

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- 1) Gross Domestic Product is the **international standard** used to measure nations' total production of goods and services
  - It was developed after the Great Depression as the basis for building what are called the National Income and Product Accounts (or NIPA)
  - It was developed in part to explain huge fluctuations of employment and unemployment that occurred during the Great Depression
  - It is not a perfect accounting measure of the target concept
    - ❖ There is no **perfect** measure of national in the real world

# GDP Growth vs. Employment Growth

% $\Delta$  Jobs



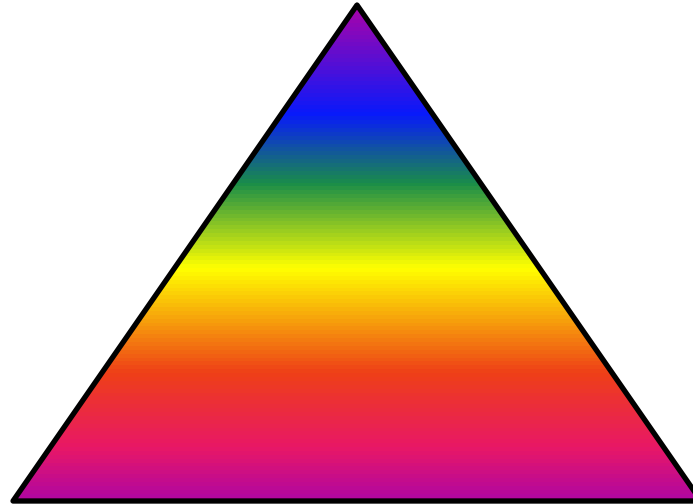
There has existed a strong positive relationship between economic growth and the growth in the number of jobs for a very long time

This is what "national income accounting" was designed to do

# ***GDP Measurement***

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**Total Production**



**Total Income**

**Total Expenditure**

**The *fundamental identity of national income accounting* is a triangle of identical measurement results**



# GDP: Production Approach

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## **GDP (Gross Domestic Product) is:**

- The current market value of all
- final goods and services
- newly produced
- in the domestic economy during a
- specified period of time

# GDP: Expenditure Approach

## GDP (Gross Domestic Product) is also:

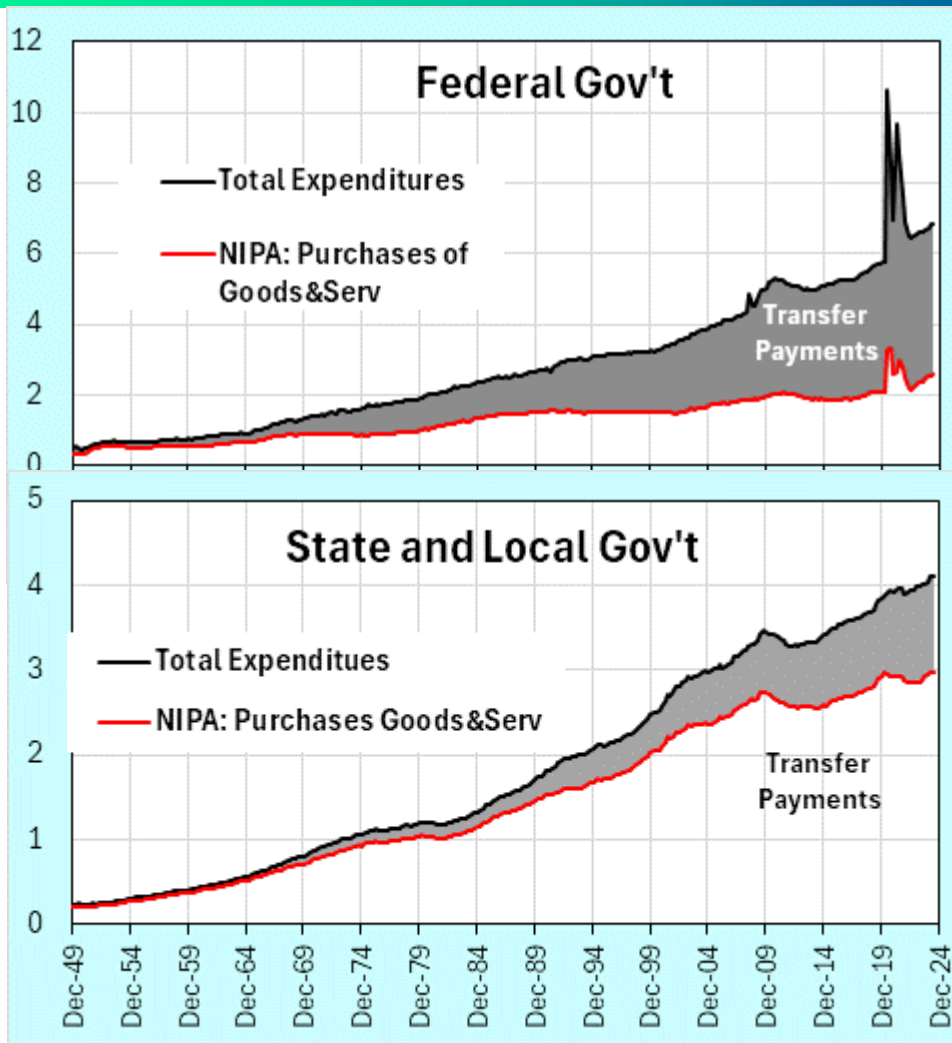
- The total spending on all
- final goods and services produced
- within the domestic economy during a
- specified period of time

$$\begin{aligned} \text{GDP} = & \text{C Consumption Expenditures} \\ & + \text{I Investment Expenditures} \\ & + \text{G Government Purchases} \neq \text{Government Expenditures} \\ & + \text{Net Exports (NX)} \end{aligned}$$

$$\text{GDP} = \text{C} + \text{I} + \text{G} + \text{NX}$$

# Government Purchases of Goods and Services vs. Total Expenditures

Trillions of  
\$2024



# GDP 2024 Q3 - Some Highlights

Item	\$B	% of GDP
<b>Personal consumption expenditures</b>	19,938	68
Goods	6,265	21
Durable goods	2,168	
Nondurable goods	4,097	
Services	13,673	47
<b>Gross private domestic investment</b>	5,345	18
Fixed investment	5,269	
Nonresidential	4,089	
Structures	909	
Equipment	1,548	
Intellectual property products	1,633	
Residential	1,180	
Change in private inventories	76	
<b>Net exports of goods and services</b>	-944	-3
Exports	3,220	
Goods	2,088	
Services	1,132	
Imports	4,164	
Goods	3,332	
Services	832	
<b>Government expenditures</b>	5,035	17
Federal	1,893	
National defense	1,091	
Nondefense	802	
State and local	3,142	11
<b>Gross Domestic Product</b>	<b>29,375</b>	

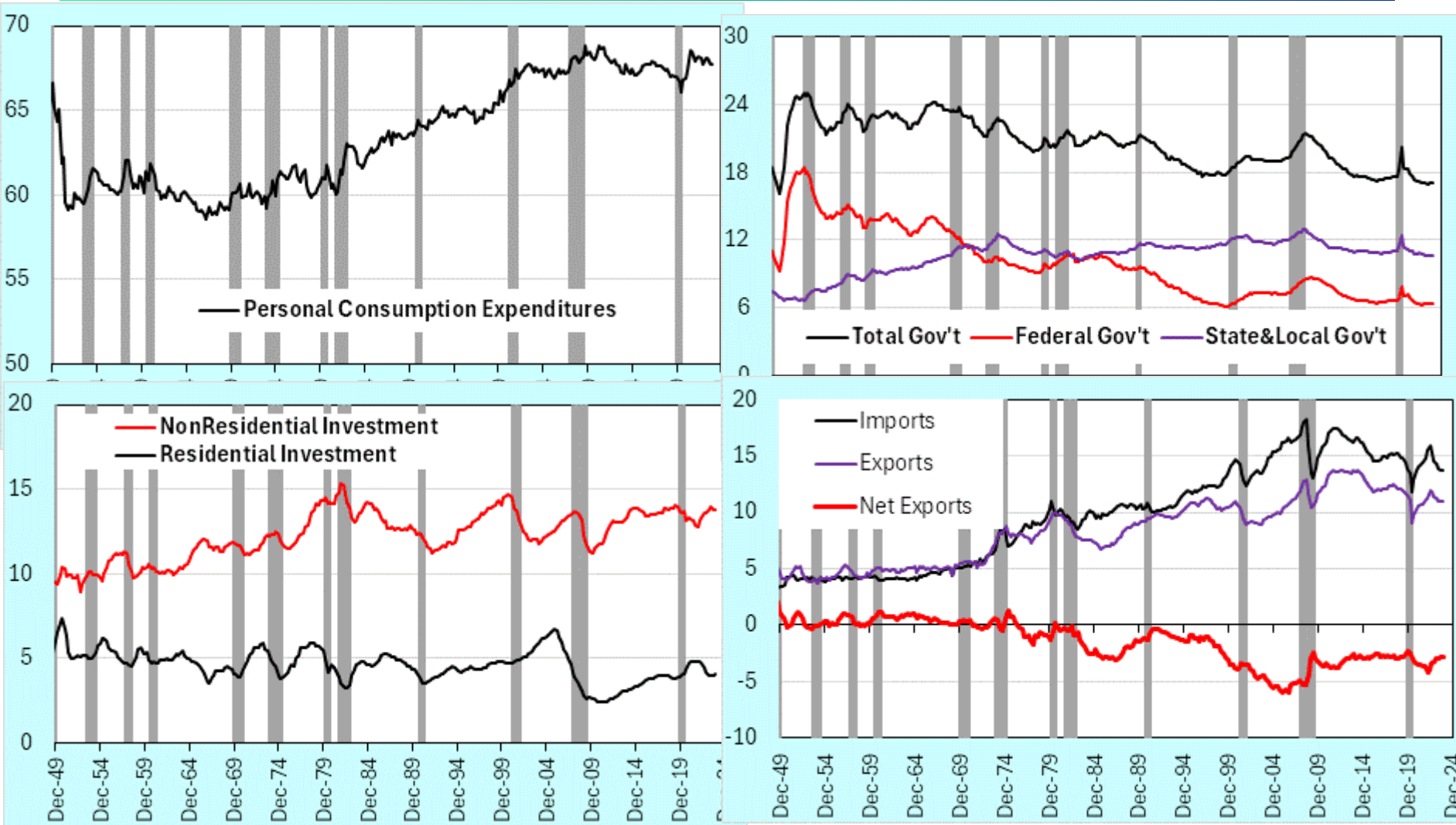
← 68% of GDP

← 118% of GDP

← Small because it's a net #.  
 Δ Gross flows → "globalization"

← 90,000 units.  
 Expenditures on infrastructure >> Federal expenditures

# Trends (% of GDP)



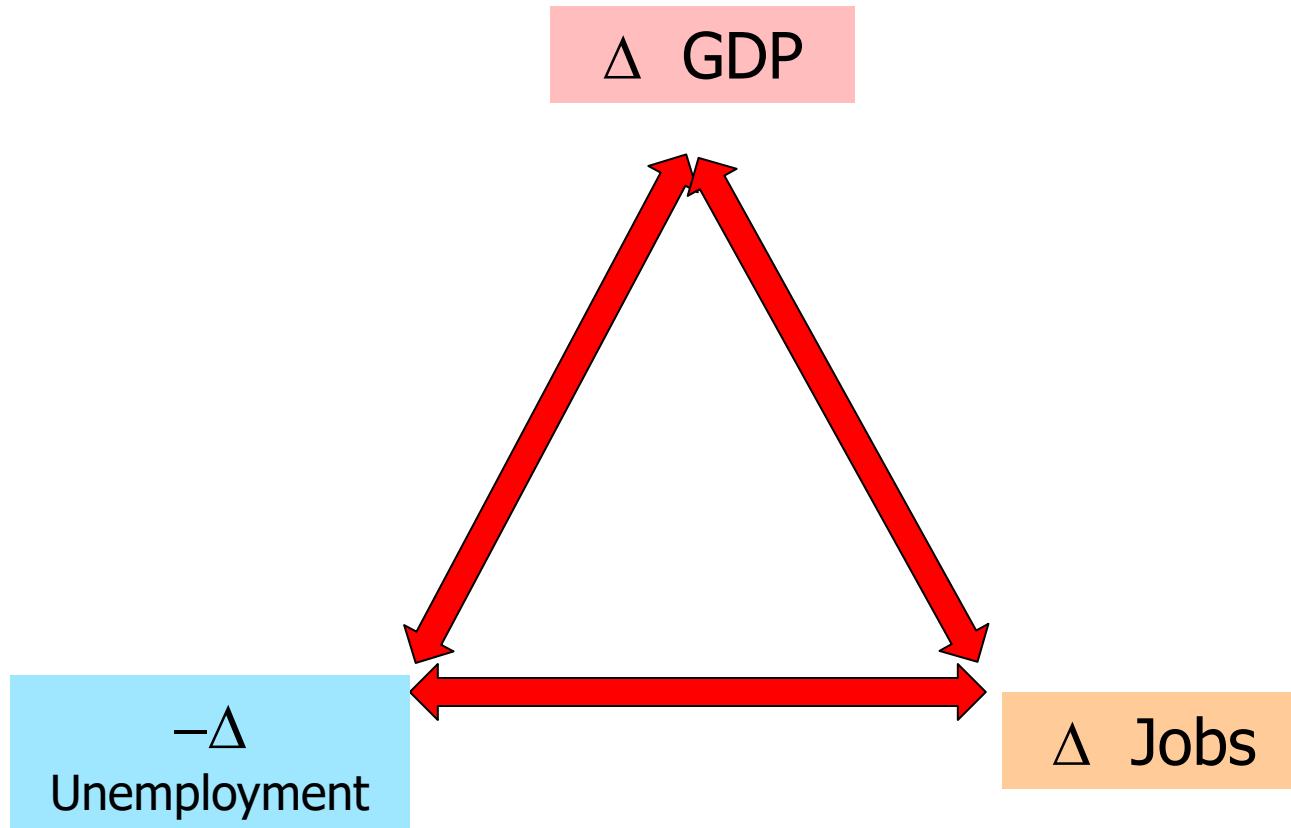
# What Does **Real** Mean?

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## **Nominal vs. Real GDP:**

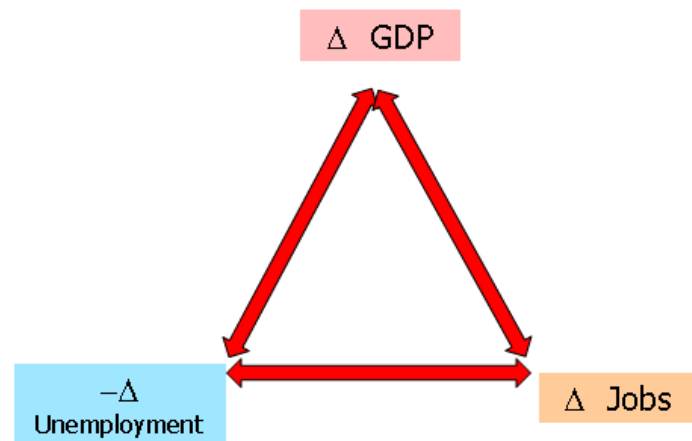
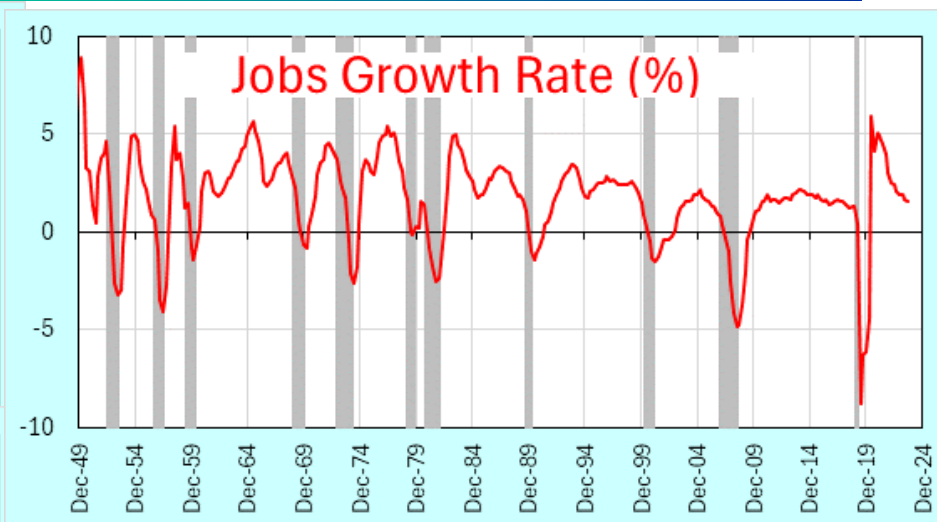
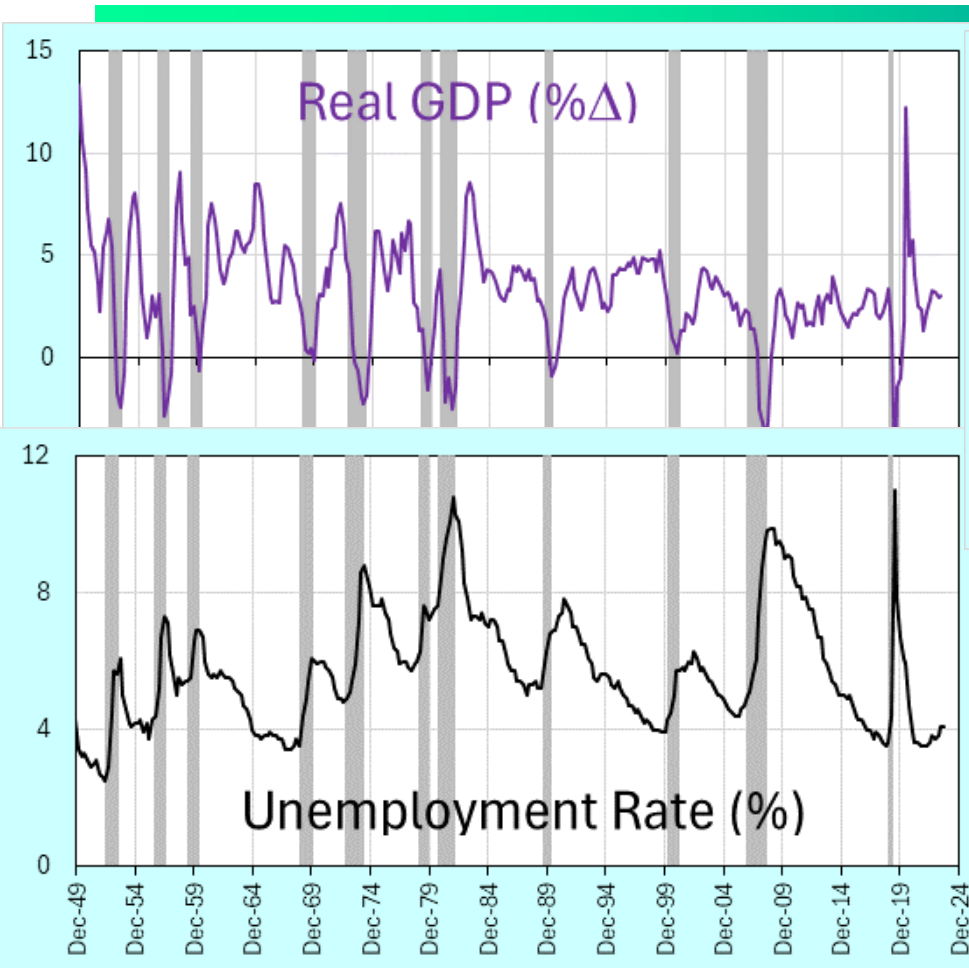
- Prior table was in current dollars
- In order to understand “real” increases in total production of goods and services requires measurement of price changes
- This is the world of “inflation measurement” which we won’t have a lot of time to discuss.
  - ❖ It’s highly mechanical and based on “Price Index Theory.”
- Macroeconomists are very focused on measurement of real GDP because it is what correlates to employment growth
  - ❖ Employment is the basis for improvement of individual and family standard of living

# Key Macroeconomic Relationships



They are ALL determined by similar macroeconomic forces

# GDP – Jobs – Unemployment Volatility





# Business Cycle: Basic Terminology

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- Business cycles are the short-run fluctuations in aggregate economic activity around its long-run growth path.
- Economic activity typically follows a wavy line over time with four phases:
  - ❖ Trough
  - ❖ Business cycle expansion (recovery)
  - ❖ Peak
  - ❖ Business cycle contraction (recession)

# Business Cycle Timing and the NBER

Peaks and troughs are officially designated by the National Bureau of Economic Research (NBER) Business Cycle Dating (BCD) Committee.

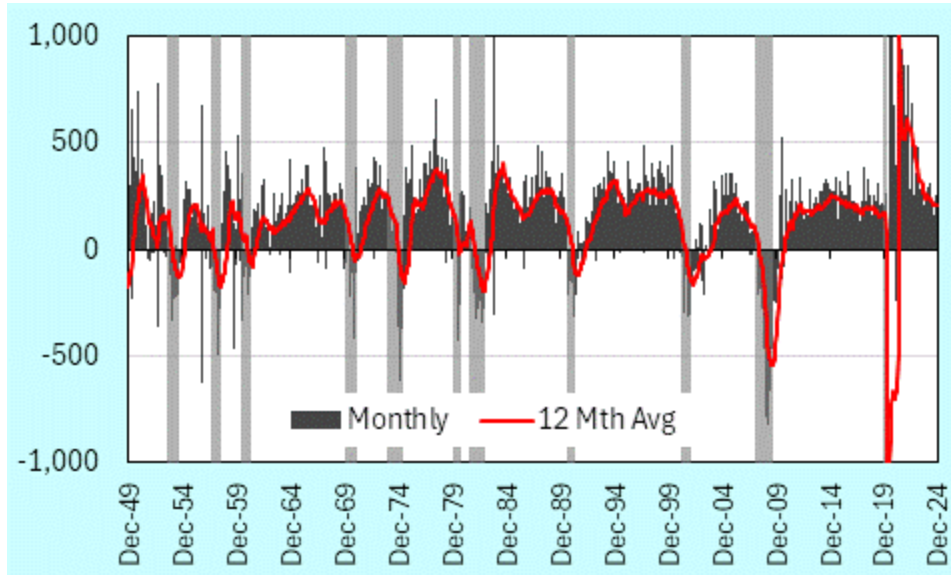
- Typically wait 9 – 24 months **after** the fact before deciding on turning points.
- Multiple factors are used by the committee used to determine dates of peaks and trough. (They publish a memo on [www.nber.org](http://www.nber.org))
- Members

*Valerie Ramey, Chair* -- UC San Diego  
*Robert J. Gordon* -- Northwestern  
*Robert Hall* -- Stanford  
*James Poterba* -- M.I.T.  
*Christina Romer* -- UC Berkeley  
*David Romer* -- UC Berkeley  
*James Stock* -- Harvard  
*Mark W. Watson* -- Princeton

Determine where the gray shaded areas that are in the graphs used in lecture

# Business Cycles and Jobs

$\Delta$   
Employment  
(000)



This graph is why there is macroeconomics:

65 years of data containing huge changes in technology, social institutions, politics, etc.

Yet, recessions still occur and can be triggered for different reasons like Lehman Bros. bankruptcy or worldwide pandemic.

# Recessions and Jobs

Peak	Trough	Length (Mths)	%Δ GDP	+Δ Un Rate	Jobs	
					Δ MM	%Δ
1948Q4	1949Q4	11	-1.5	4.1	-2.3	-5.0
1953Q2	1954Q2	10	-2.4	3.3	-1.6	-3.1
1957Q3	1958Q2	8	-3.0	3.3	-2.1	-4.0
1960Q2	1961Q1	10	-0.1	1.7	-1.3	-2.3
1969Q4	1970Q4	11	-0.2	2.4	-0.8	-1.2
1973Q4	1975Q1	16	-3.1	3.8	-1.3	-1.6
1980Q1	1980Q3	6	-2.2	1.5	-1.0	-1.1
1981Q3	1982Q4	16	-2.5	3.6	-2.8	-3.1
1990Q3	1991Q1	8	-1.4	1.3	-1.3	-1.1
2001Q1	2001Q4	8	0.5	1.2	-1.6	-1.2
2007Q4	2009Q2	18	-3.8	4.5	-7.4	-5.3
2019Q4	2020Q2	2	-9.2	11.3	-21.9	-14.4
<b>Average</b>		<b>10.3</b>	<b>-2.4</b>	<b>3.5</b>	<b>-3.8</b>	<b>-2.6</b>

**Great Recession**



**Pandemic**



# Recoveries and Job Creation

Trough	Peak	Length (Mths)	%Δ GDP	-Δ Un Rate	Jobs	
					Δ MM	%Δ
1949Q4	1953Q2	45	29.3	-5.3	7.6	17.7
1954Q2	1957Q3	39	13.7	-1.8	4.2	8.5
1958Q2	1960Q2	24	11.4	-2.2	3.8	7.4
1961Q1	1969Q4	106	51.9	-3.4	17.7	33.0
1970Q4	1973Q4	36	16.0	-1.1	7.5	10.7
1975Q1	1980Q1	58	23.2	-2.3	14.2	18.5
1980Q3	1981Q3	12	4.3	-0.6	1.8	2.0
1982Q4	1990Q3	92	38.2	-5.3	21.0	23.7
1991Q1	2001Q1	120	42.5	-2.5	24.2	22.3
2001Q4	2007Q4	73	18.7	-0.5	7.3	5.5
2009Q2	2019Q4	128	29.0	-6	21.3	16.3
2020Q2	2024Q2	48	21.9	-10.7	28.7	22.0
<b>Average</b>		<b>65.1</b>	<b>25.0</b>	<b>-3.5</b>	<b>13.3</b>	<b>15.6</b>

Recoveries are JOB CREATION ENGINES. The deeper the recession, the greater the jobs created once the recovery begins.

# Recessions vs. Recoveries

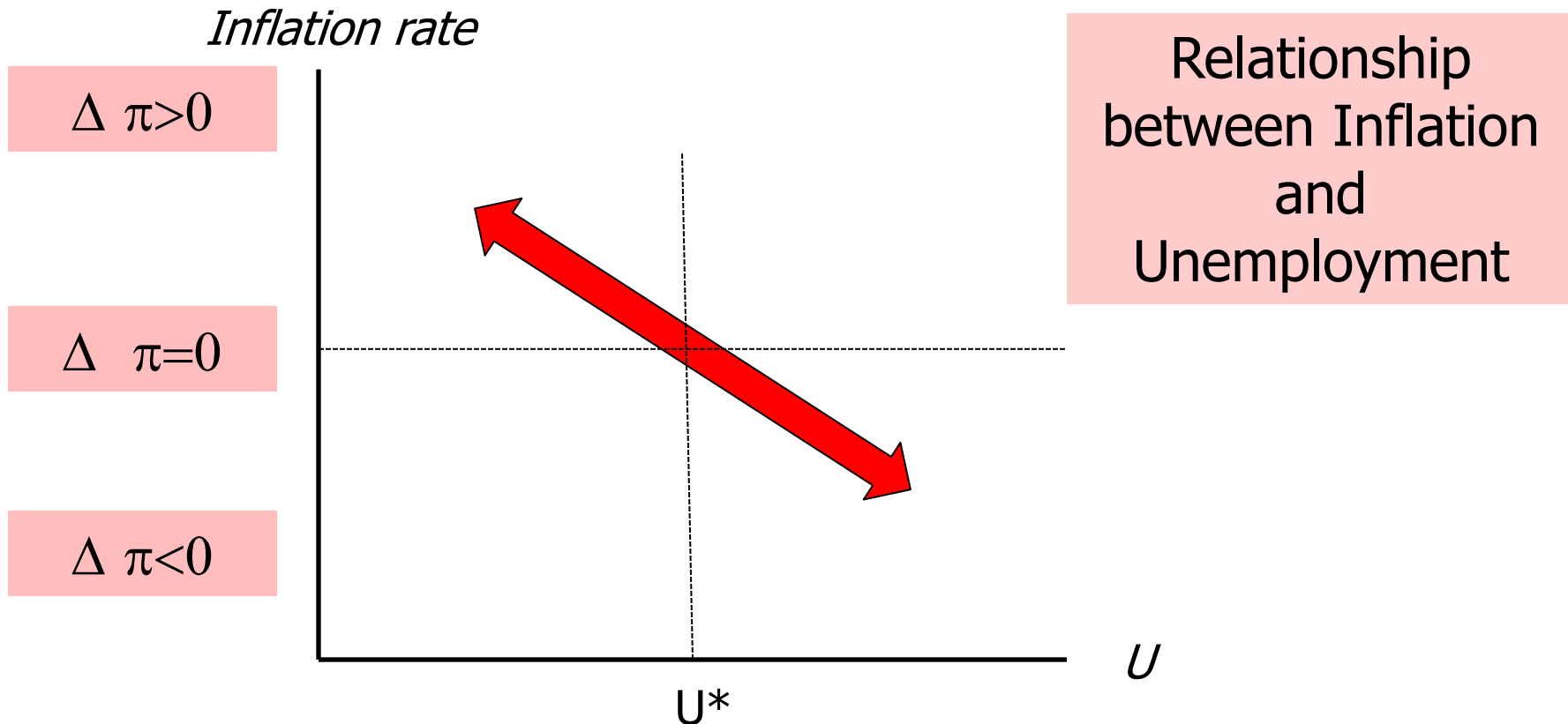
## Recessions

Peak	Trough	Length (Mths)	%Δ GDP	+Δ Un Rate
1948Q4	1949Q4	11	-1.5	4.1
1953Q2	1954Q2	10	-2.4	3.3
1957Q3	1958Q2	8	-3.0	3.3
1960Q2	1961Q1	10	-0.1	1.7
1969Q4	1970Q4	11	-0.2	2.4
1973Q4	1975Q1	16	-3.1	3.8
1980Q1	1980Q3	6	-2.2	1.5
1981Q3	1982Q4	16	-2.5	3.6
1990Q3	1991Q1	8	-1.4	1.3
2001Q1	2001Q4	8	0.5	1.2
2007Q4	2009Q2	18	-3.8	4.5
2019Q4	2020Q2	2	-9.2	11.3
<b>Average</b>		<b>10.3</b>	<b>-2.4</b>	<b>3.5</b>

## Recoveries

Trough	Peak	Length (Mths)	%Δ GDP	-Δ Un Rate
1949Q4	1953Q2	45	29.3	-5.3
1954Q2	1957Q3	39	13.7	-1.8
1958Q2	1960Q2	24	11.4	-2.2
1961Q1	1969Q4	106	51.9	-3.4
1970Q4	1973Q4	36	16.0	-1.1
1975Q1	1980Q1	58	23.2	-2.3
1980Q3	1981Q3	12	4.3	-0.6
1982Q4	1990Q3	92	38.2	-5.3
1991Q1	2001Q1	120	42.5	-2.5
2001Q4	2007Q4	73	18.7	-0.5
2009Q2	2019Q4	128	29.0	-6
2020Q2	2024Q2	48	21.9	-10.7
<b>Average</b>		<b>65.1</b>	<b>25.0</b>	<b>-3.5</b>

# Key Macroeconomic Relationship II



Frequently referred to as the Phillips Curve.

This relationship has evolved over time to a world of policy constraints and insights into how the Fed chooses to manage the US economy.

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## **If Recessions are So Costly, Why Do We Have Them?**

And How the Answer is Determined by...

## **Short-run Policies to Maintain Relative Inflation Stability**



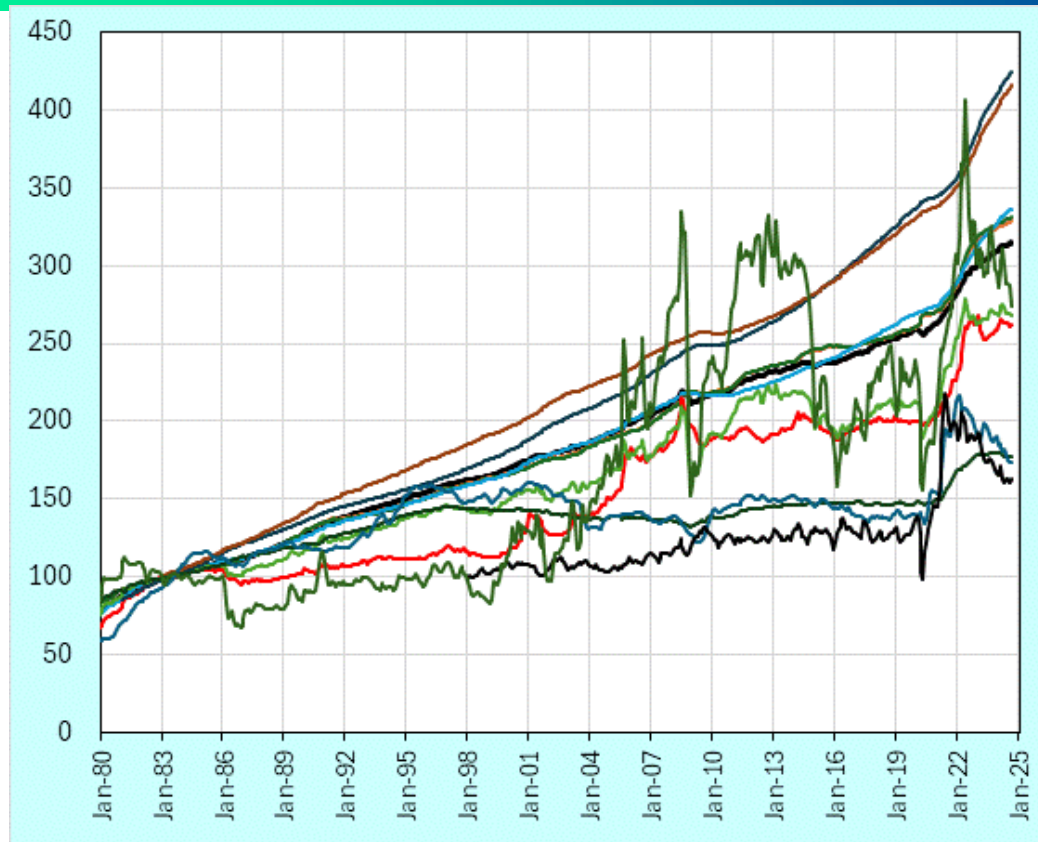
# Let's Talk about Inflation

---

- 1) Inflation is the  $\% \Delta$  in a measure of the "Price Level"
- 2) The price level conceptually is based on the widely accepted measurement of "the cost of living."
- 3) The methodology underlying measurement of the cost-of-living has over a centuries-long history in economic discussions and development of methodologies.
- 4) It is based on the measurement of "quality adjusted" prices and their weights in an individual purchaser's "basket of goods and services."
- 5) The US Bureau of Labor Statistics is the federal agency collecting data on the pricing of goods and services and employing "accepted methodologies" for producing and reporting the monthly Consumer Price Index.

# CPI Level

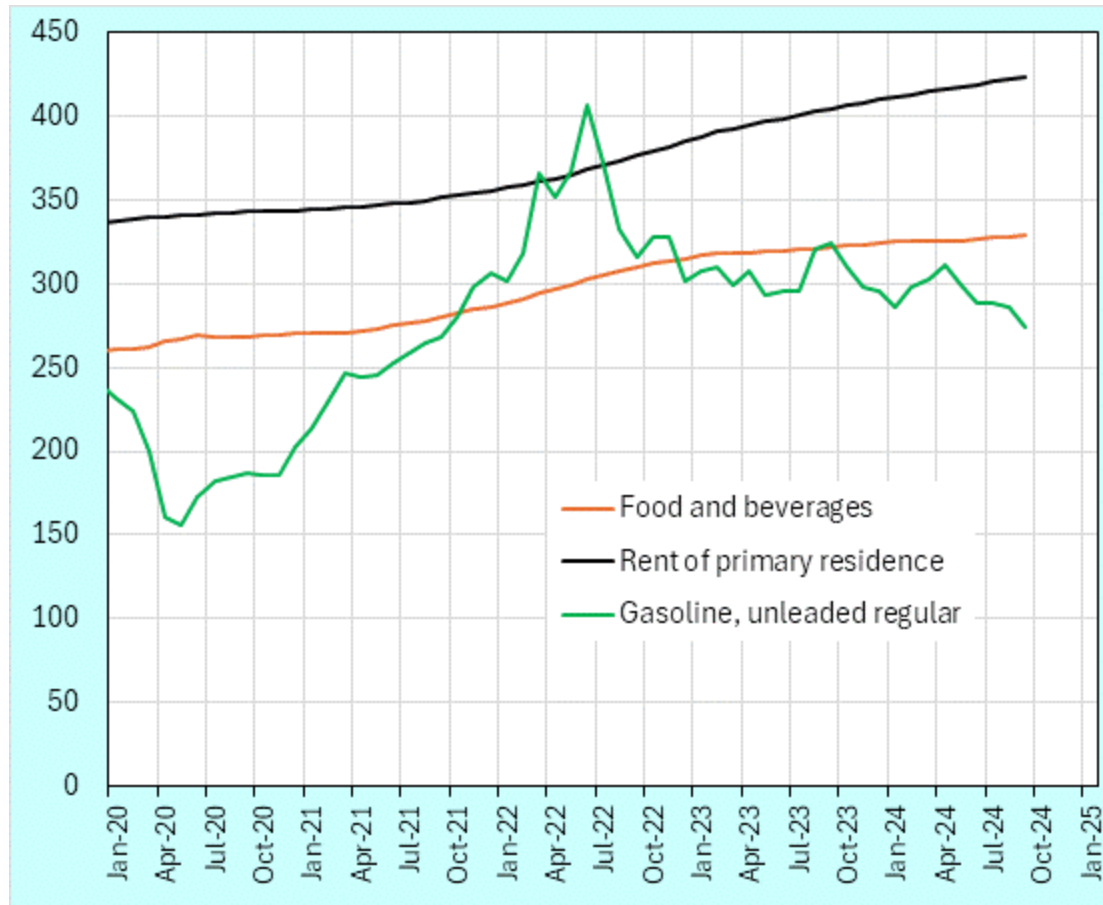
Index  
1983=100



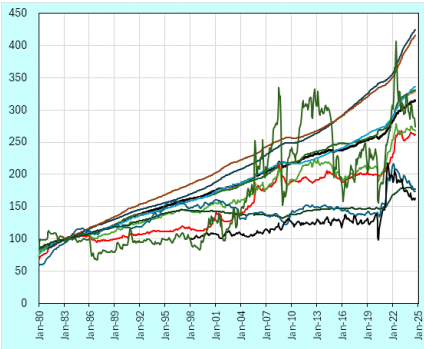
- All items in U.S.
- Food
- Household energy
- Rent of primary residence
- New vehicles
- Car and truck rental
- Food and beverages
- Housing
- Transportation
- Owners' equivalent rent
- Used cars and trucks
- Gasoline, unleaded regular

# Three Parts of the CPI with Political Impact

Index  
1983=100

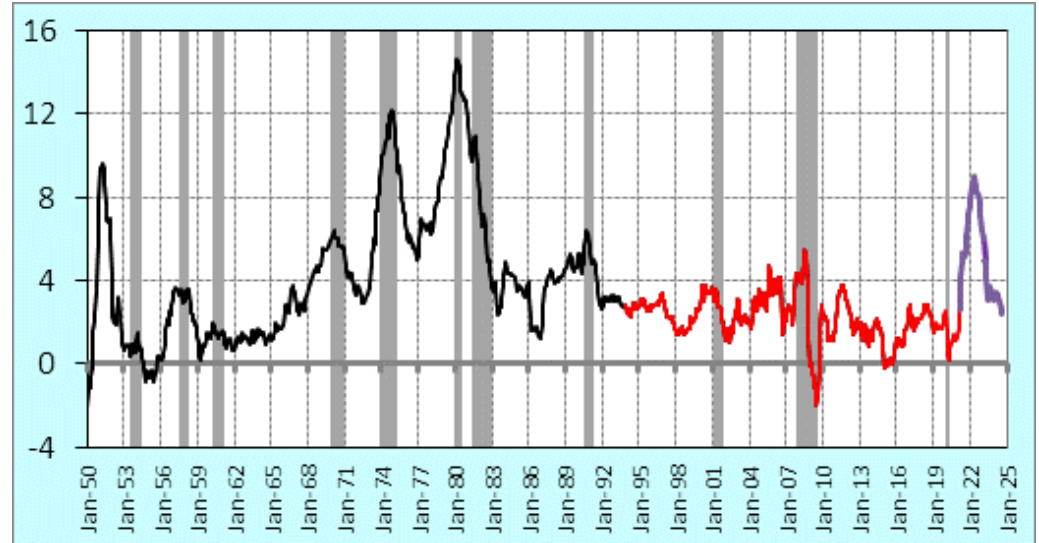
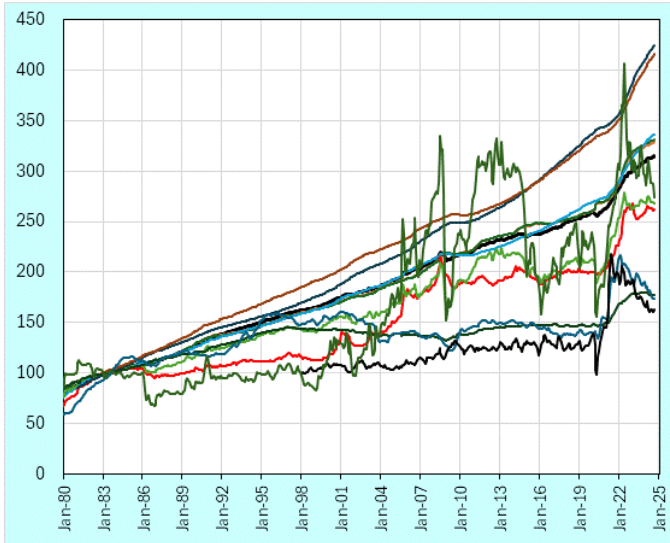


# Observations and Notes



- Only a few of the components are shown. BLS tracks many hundreds of items
- Note how for the most part, all are trended up over time
- Note how smooth some indices are and others aren't, particularly gasoline.
- And recall the level is rising.

# CPI Level vs. Inflation Rate



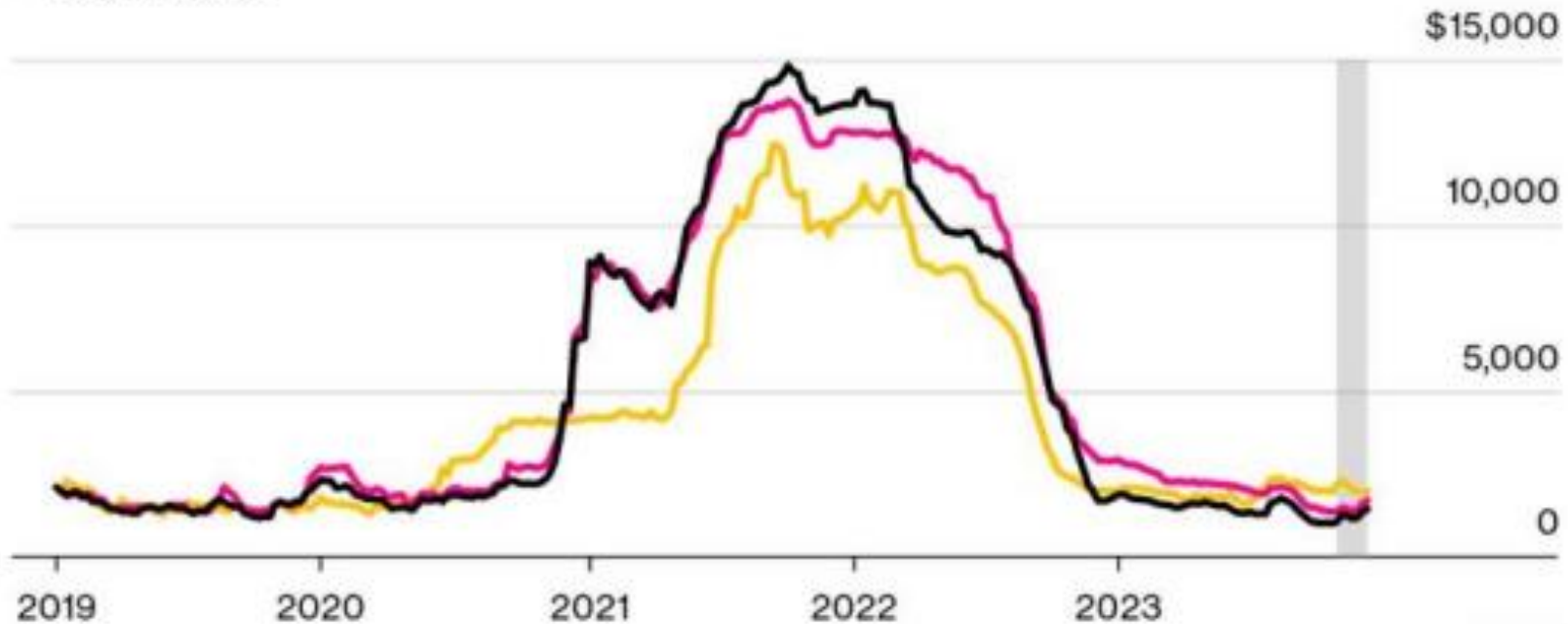
There are political consequences.

- Those out of power refer to the left panel
- Those in power that want to be re-elected refer to the right panel

## Cost of Shipping to Europe From China Rising Again

But nowhere near the levels hit during the pandemic

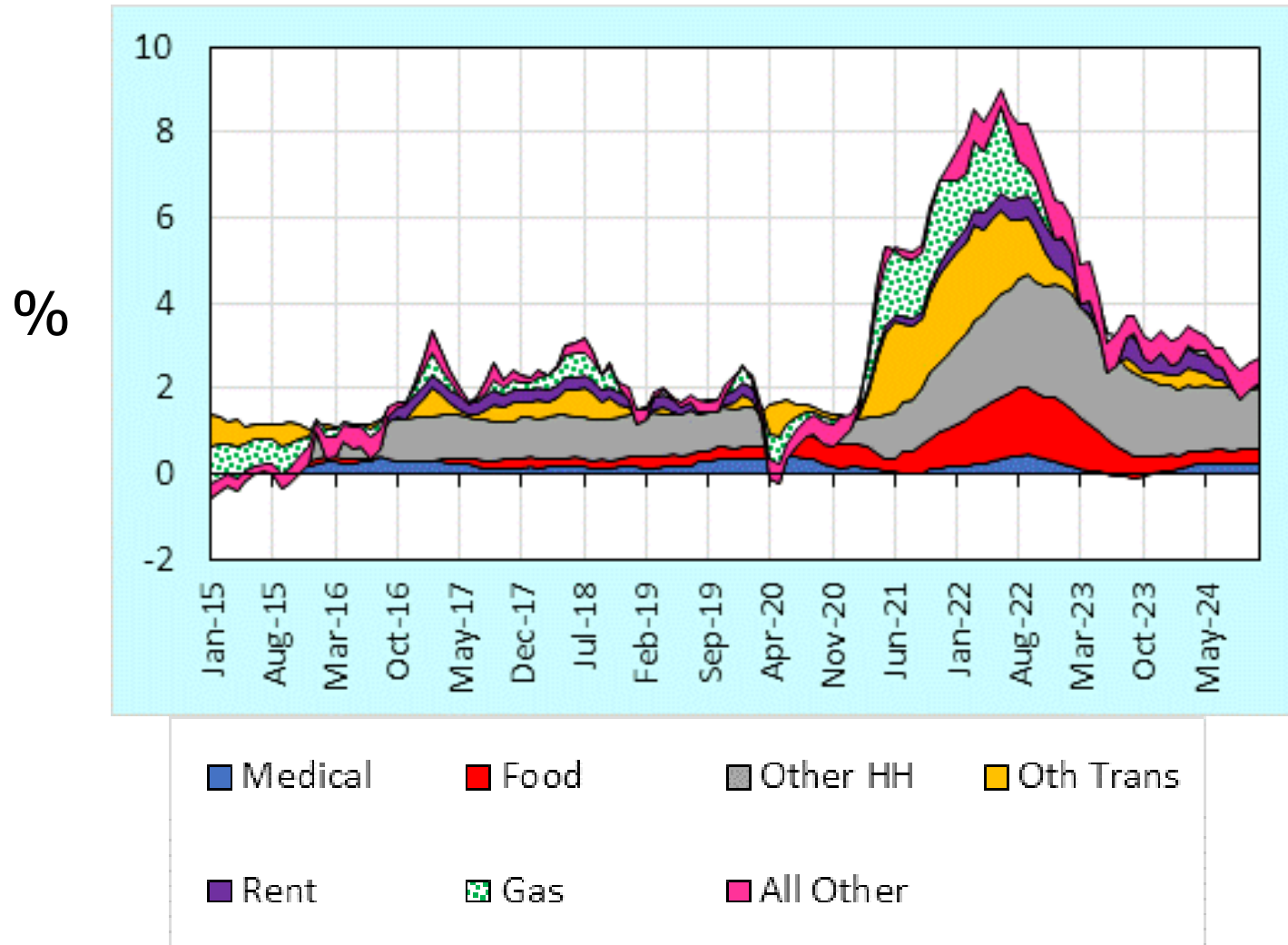
— Shanghai to Rotterdam — Shanghai to Genoa — Shanghai to Los Angeles  
■ Past 6 weeks



Source: Drewry World Container Index, shows freight rate for 40-foot container

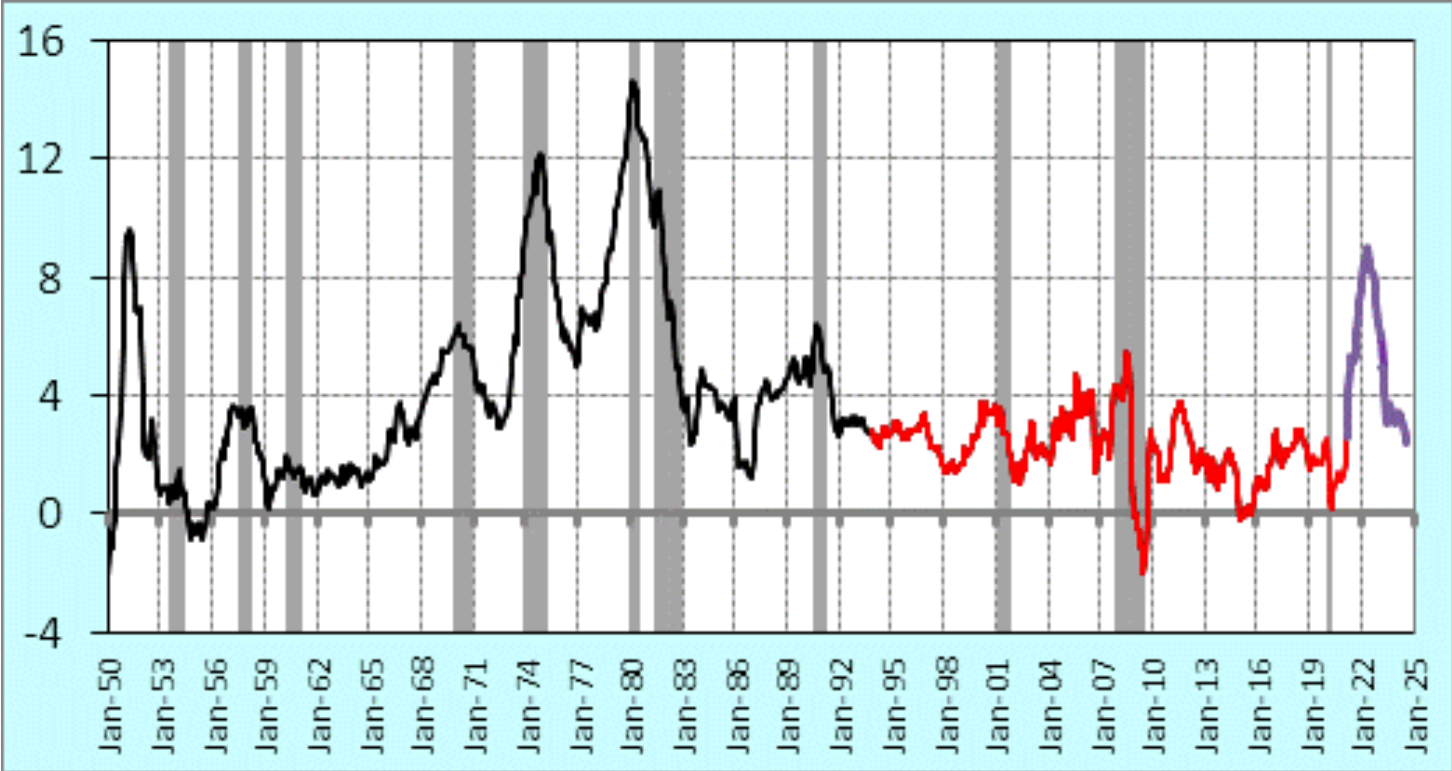
Bloomberg

# CPI Inflation & Components



# Inflation Rate Over Time

CPI  
Inflation  
Rate (%)



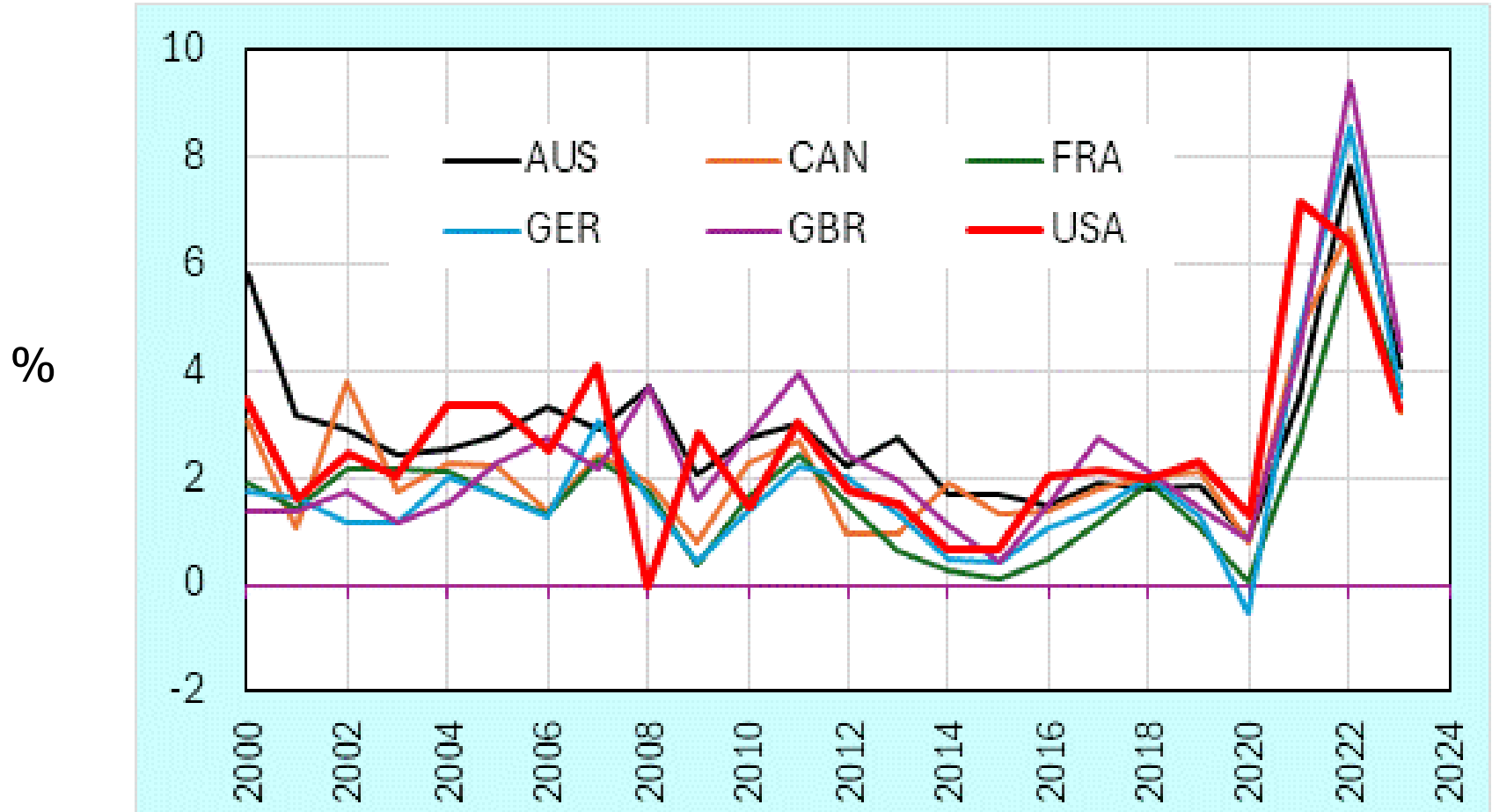
— Before Inflation Targeting

— After Inflation Targeting

— Pandemic



# Int'l CPI Inflation – Selected Countries



# Inflation

CPI  
Inflation  
Rate (%)



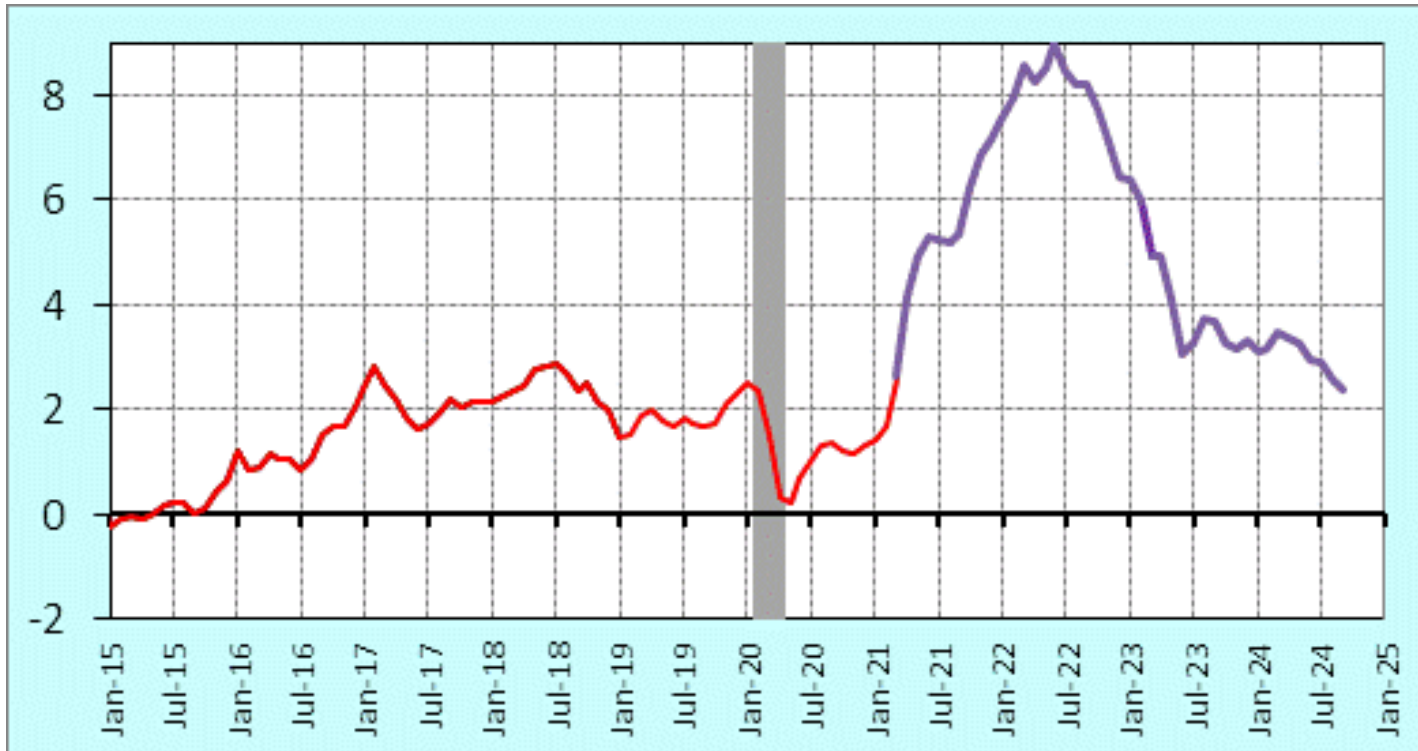
Post WWII &  
Korean War

There may be a  
message in these  
two periods for  
future crises.

Pandemic

# Inflation and the Pandemic

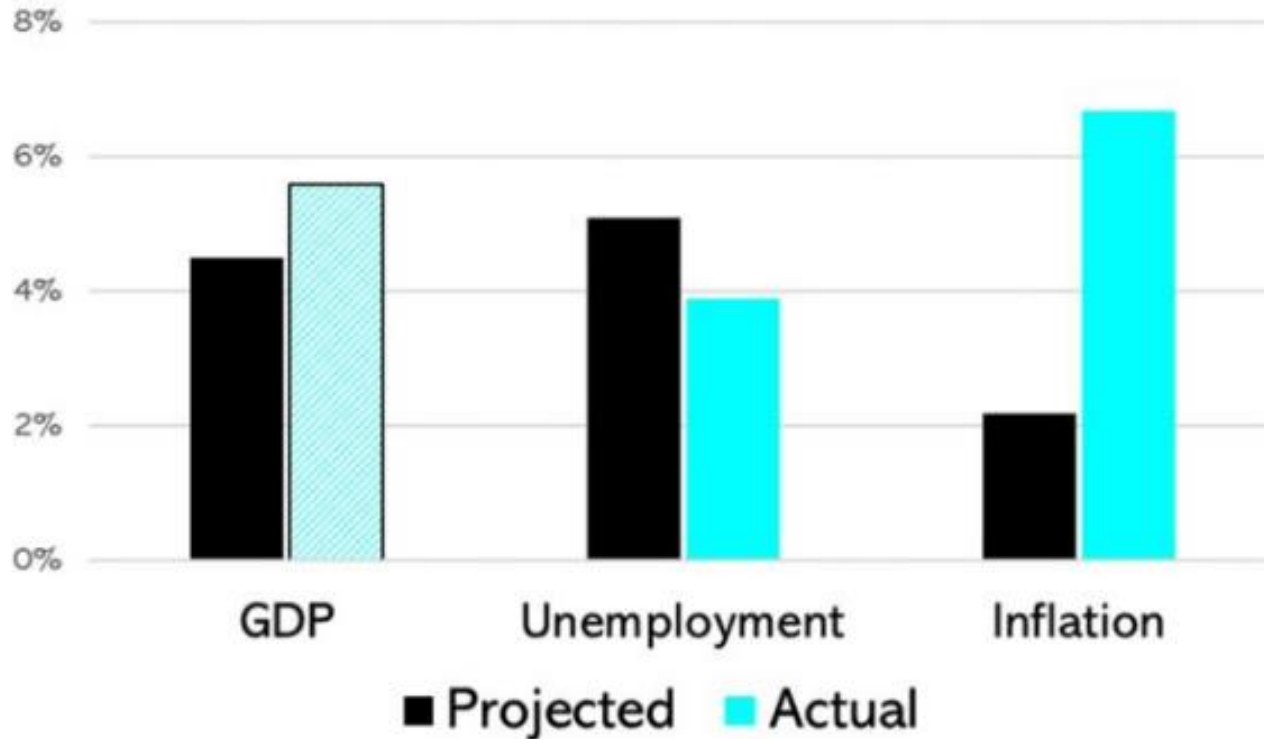
CPI  
Inflation  
Rate (%)



It's useful to remember the entire economics profession in early 2021 did NOT predict the run up in prices.

This is when you heard repeatedly the term "transitory."


# How Good at Forecasting Inflation Have Economists Been?



Source: Steve Rattner, *Morning Joe* Jan 27, 2021

# And How Good are Professional Forecasts?

## Forecasts for 2021 (Q4/Q4) inflation



	Private Forecasts, Core PCE (SPF May 2021)	FOMC, Core PCE (SEP March 2021)	Markets, CPI (TIPS Breakeven March 11, 2021)
Median	2.3%	2.2%	2.7%
Top of Range	3.2%	2.5%	N/A
Probability > 4%	0.5%	N/A	N/A
Likely Outcome	4.5%	4.5%	6.7%

# Inflation and Recessions

Peaks	Trough	Inflation Rate		$\Delta$
		Peak	Trough	
Nov-48	Oct-49	4.8	-2.6	-7.4
Jul-53	May-54	0.4	0.9	0.4
Aug-57	Apr-58	3.6	3.6	0.1
Apr-60	Feb-61	1.9	1.5	-0.5
Dec-69	Nov-70	5.9	5.6	-0.3
Nov-73	Mar-75	8.3	10.5	2.2
Jan-80	Jul-80	13.9	13.2	-0.7
Jul-81	Nov-82	10.8	4.5	-6.3
Jul-90	Mar-91	4.8	4.8	0.0
Mar-01	Nov-01	3.0	1.9	-1.1
Dec-07	Jun-09	4.1	-1.2	-5.3
<b>Average</b>				<b>-1.7</b>
<b>Feb-20</b>	<b>Apr-20</b>	<b>2.3</b>	<b>0.3</b>	<b>-2.0</b>

— Arab Oil Embargo

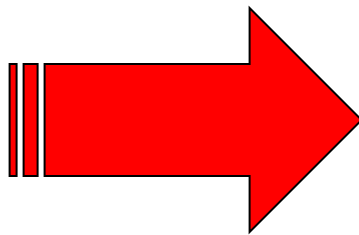
— Pandemic

Most recessions have been generated by the Federal Reserve in order to reduce inflation

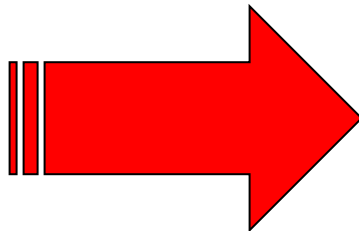
# The Fear: Stair Steps to Higher Inflation

## Core Policy Beliefs Regarding Inflation

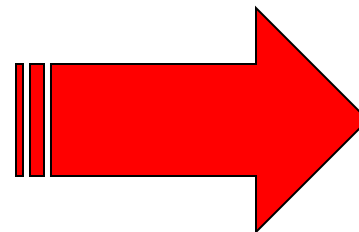
If the Federal Reserve allows inflation to become higher, economic agents (you and me and others) will begin to expect it and the higher rate will be incorporated in economic decisions.



Ever higher inflation



Economic agents will learn this their policy and reset inflationary expectations



Even higher inflation

# The Costs of Inflation

## Inflation imposes costs whether inflation is:

### Anticipated

- ❖ Shoe-leather costs
- ❖ Menu costs
- ❖ Tax distortions
- ❖ Increased variability of relative prices
- ❖ Loss of the dollar yardstick

### Unanticipated

- ❖ Increased uncertainty
- ❖ Increased variability of relative prices, and
- ❖ Inflation uncertainty is higher when the level of inflation is already high.

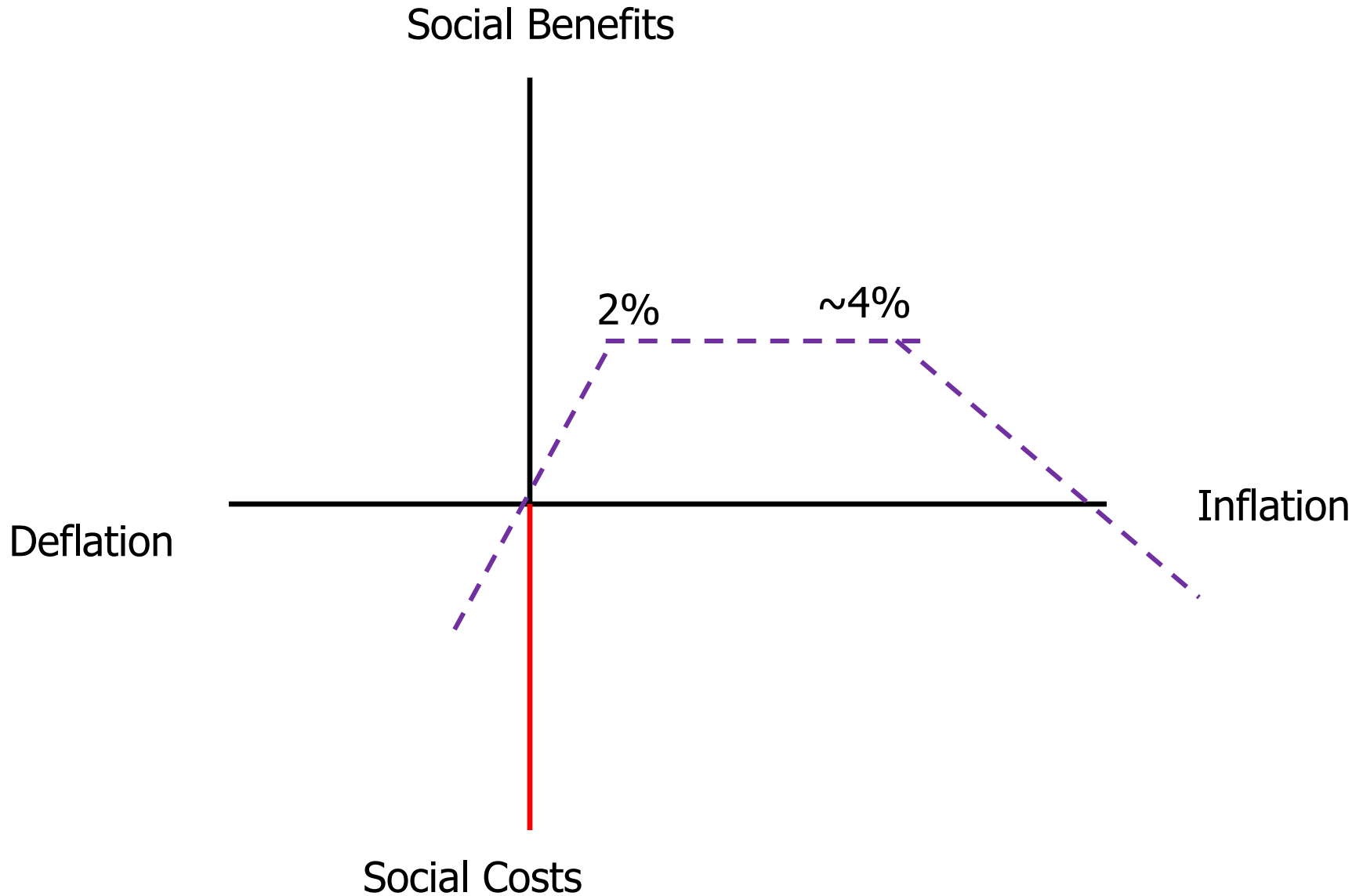


# However, It is Important to Remember

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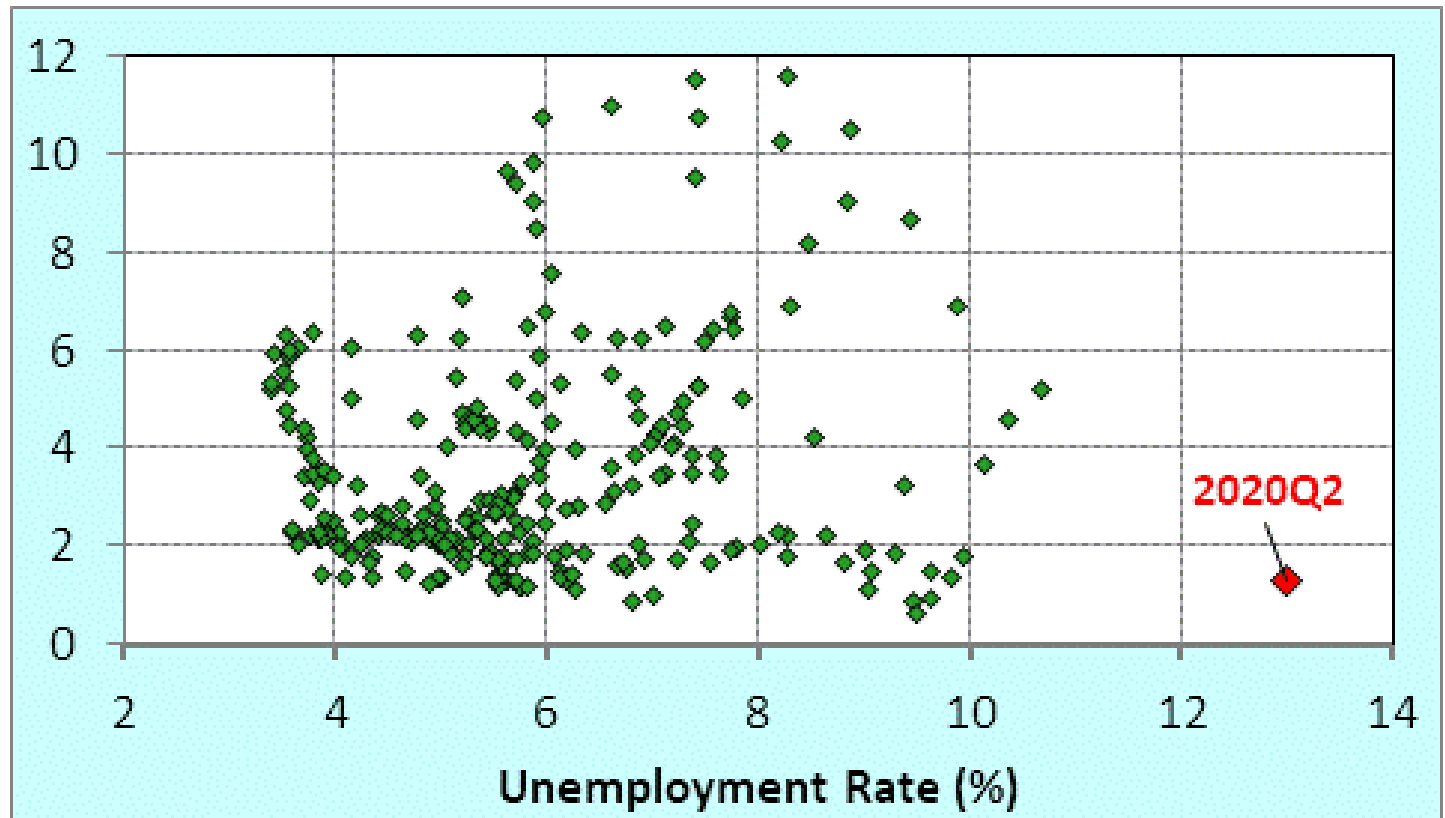
- There doesn't exist a magic threshold inflation rate at which "inflation becomes too high"
- There DOES EXIST a magic lower bound that no good economist wants to drop below: 0% i.e., "deflation"
  - ❖ This is when the **price level** declines
  - ❖ Costs / benefits of inflation are not symmetric
  - ❖ Because of credit, **deflation** will create incentive for behavioral responses that have negative macroeconomic repercussions

# Asymmetric Social Benefits/Costs of Inflation



# Unemployment vs. Inflation

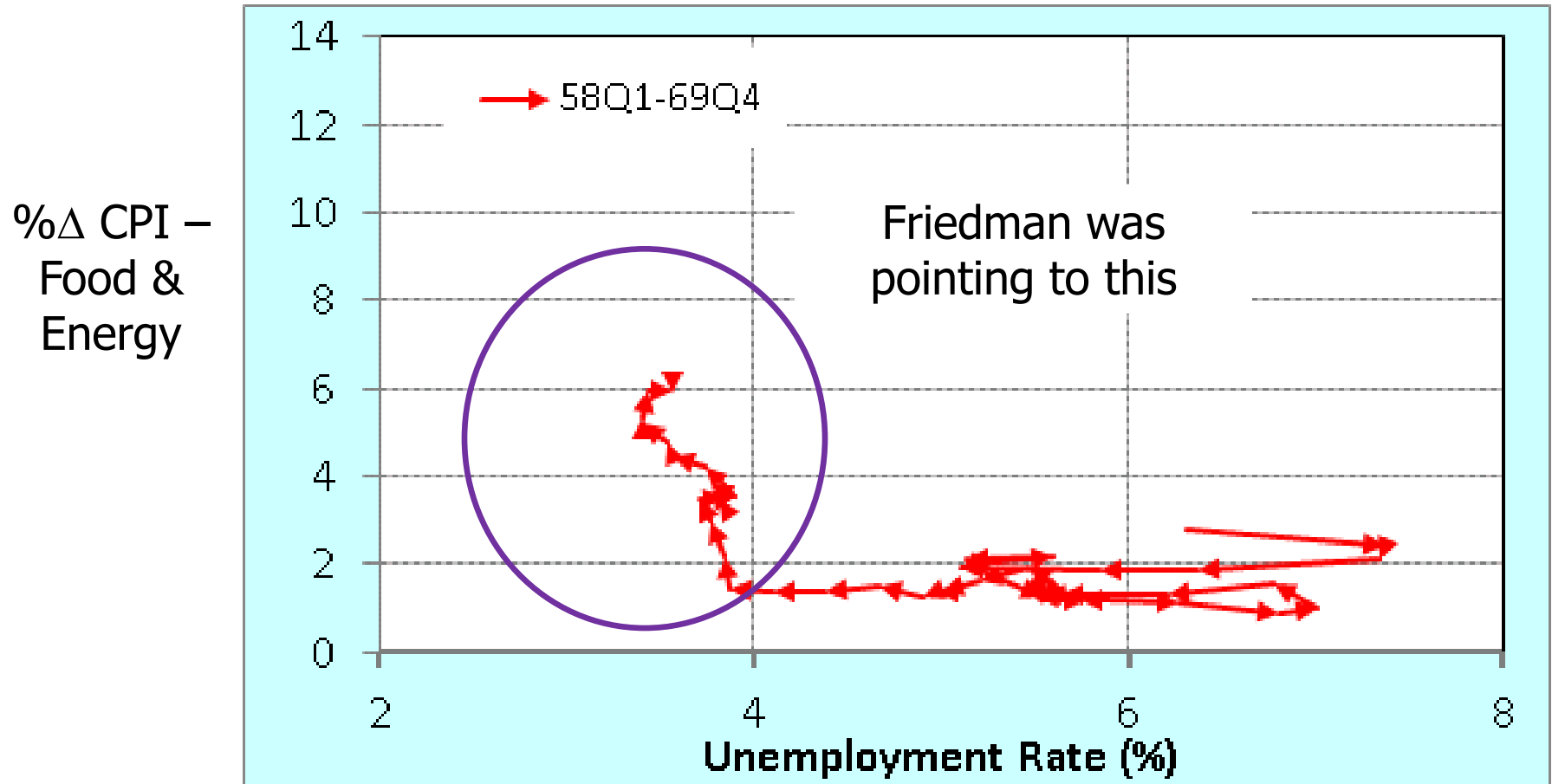
% $\Delta$  CPI –  
Food &  
Energy



What is the relationship?

If these are the data, how can there be a trade-off?

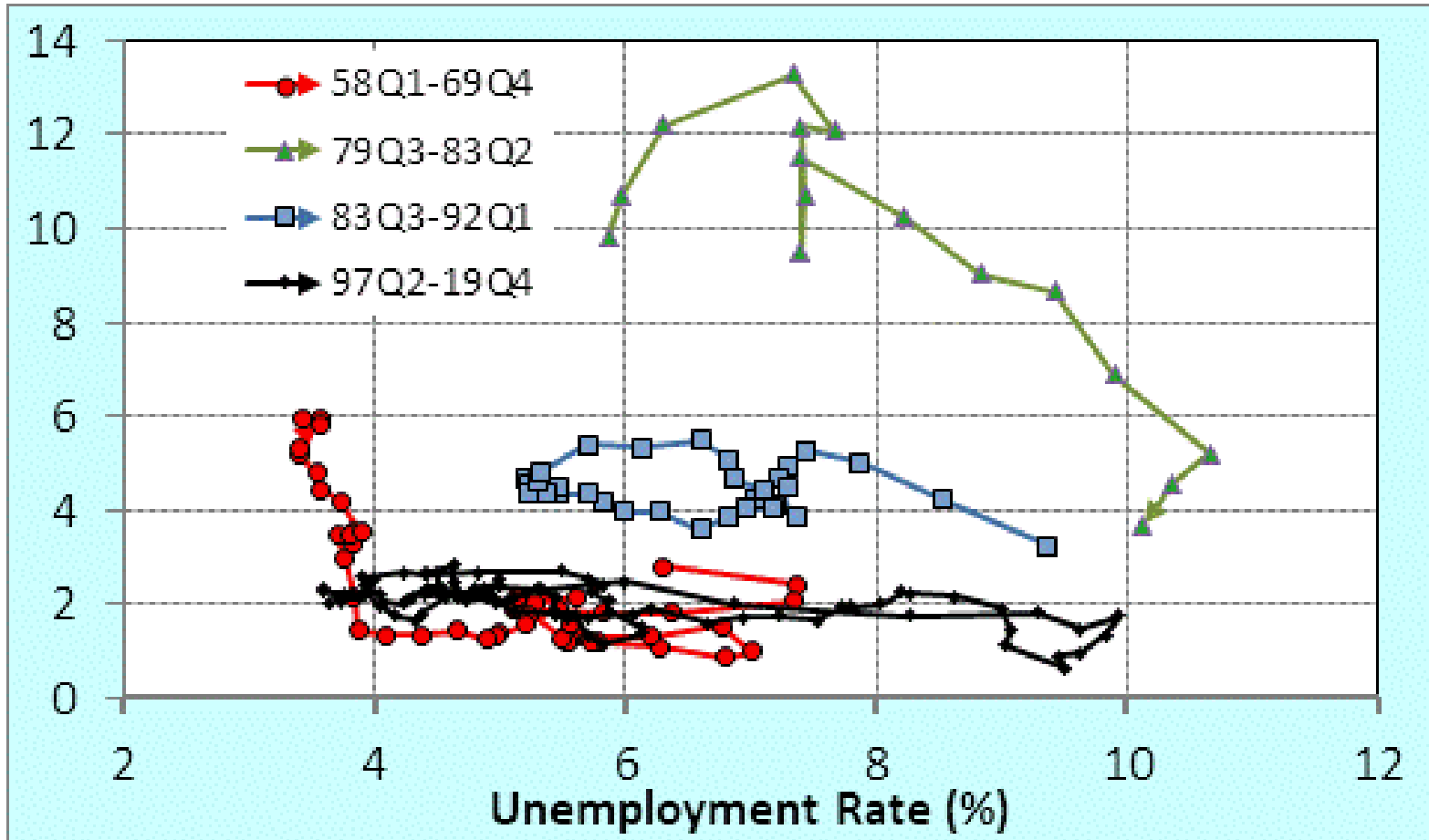
# Unemployment vs. Inflation



This is what the Federal Reserve is Worried About

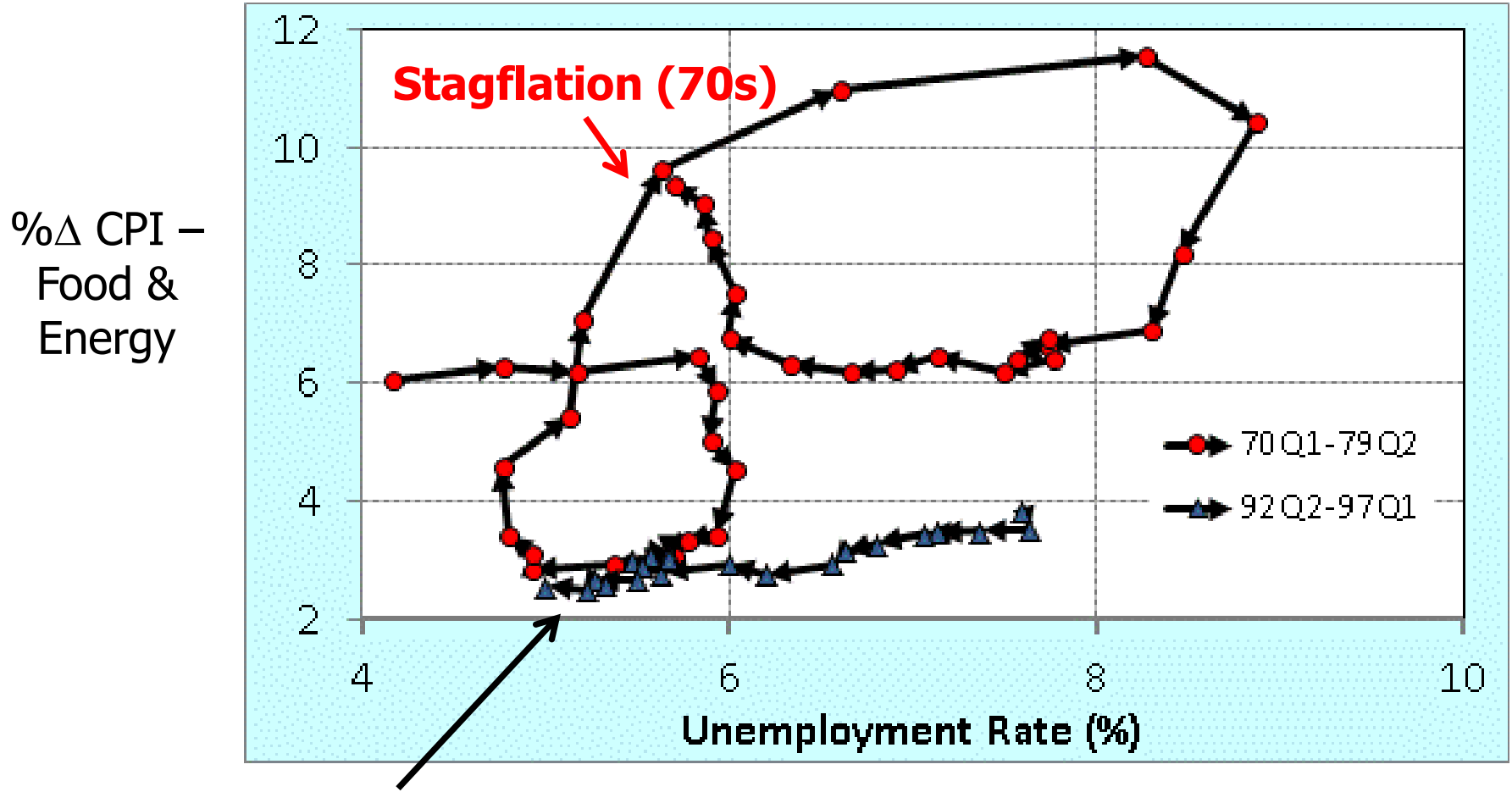
# Unemployment vs. Inflation

% $\Delta$  CPI –  
Food &  
Energy



What explains these different periods?

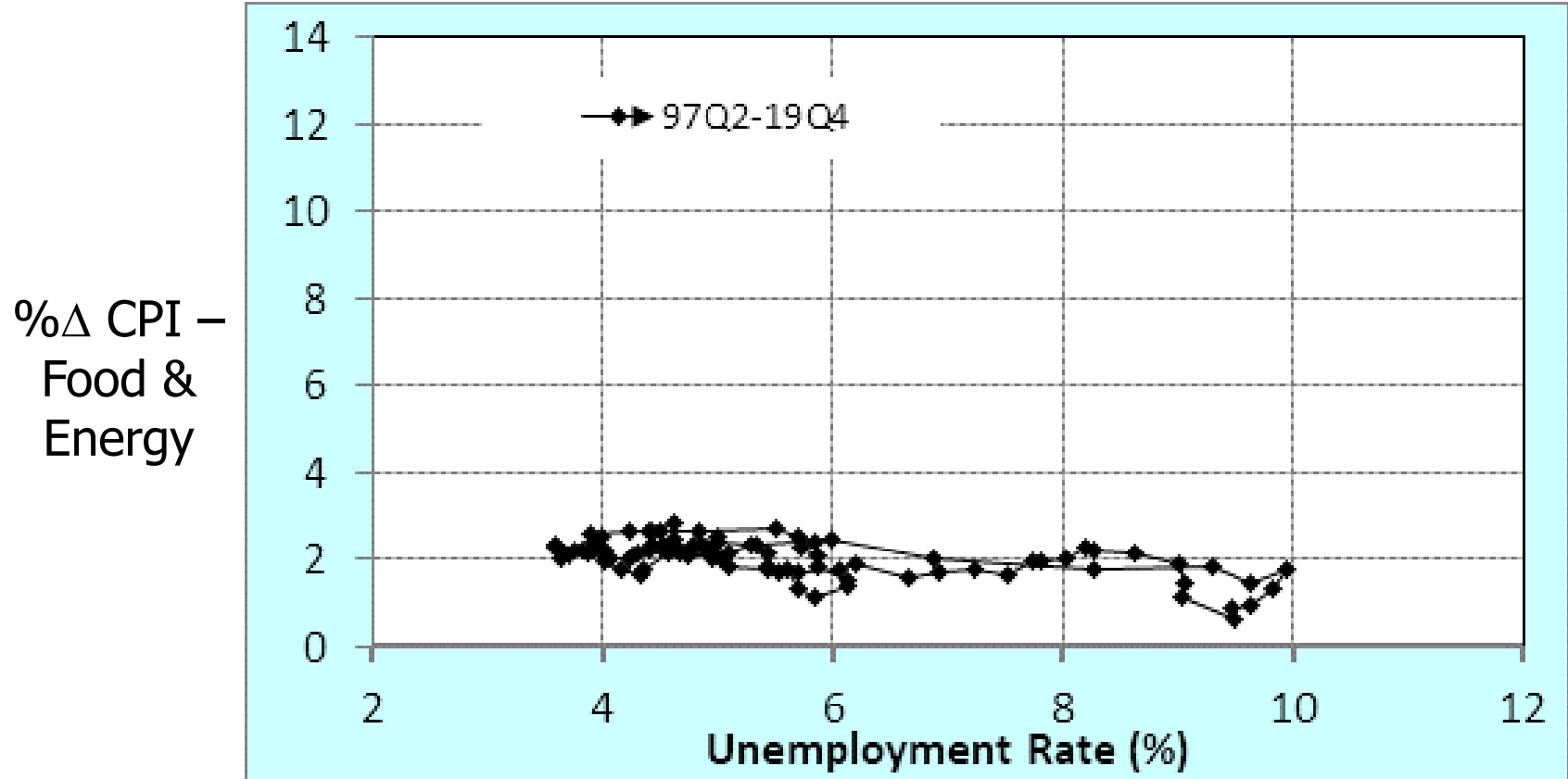
# Unemployment vs. Inflation: Missing Periods



**Internet  
Revolution**

What relationship?

# Unemployment vs. Inflation



Connecting the data points

# Unemployment vs. Inflation

## in the Pandemic

% $\Delta$  CPI –  
Food &  
Energy





# Milton Friedman and the Natural Rate of Unemployment

- This is the unemployment rate consistent with the economy's long-run **steady state**.
- Milton Friedman (1968 AEA Presidential Address) defined it as follows:

*The "natural rate of unemployment" ... is the level that would be ground out by the Walrasian system of general equilibrium equations, provided there is imbedded within them the actual structural characteristics of the labor and commodity markets, including market imperfections, stochastic variability in demands and supplies, the cost of gathering information about job vacancies and labor availabilities, the costs of mobility, and so on*

# Friedman's Address Changed Economic Theory

The "Natural Rate of Unemployment" became

NAIRU = **N**on **A**ccelerating **I**nflation **R**ate of **U**nemployment

NAIRU = The "Full Employment" unemployment rate

Potential GDP is the amount of GDP that is produced  
when  $U = \text{NAIRU}$

## Friedman (and Phelps) Insight Led to This:

---

### Supply Side vs. Demand Side of the Economy:

- GDP is based on measurement of **what was produced**
- We also need a measure of what can “potentially be produced when resources are fully employed.”
- This is called “**Potential GDP**”
- “**GDP Gap**” =  $(\text{Actual GDP} - \text{Potential GDP}) / \text{Potential GDP}$
- Potential GDP is calculated by estimating the rate of unemployment such that the inflation RATE has no propensity to change -- that is, @ NAIRU

# Congressional Budget Office and NAIRU

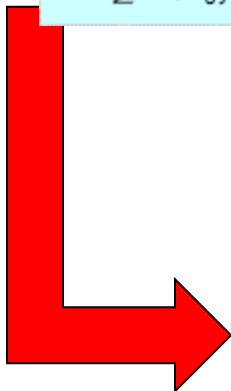
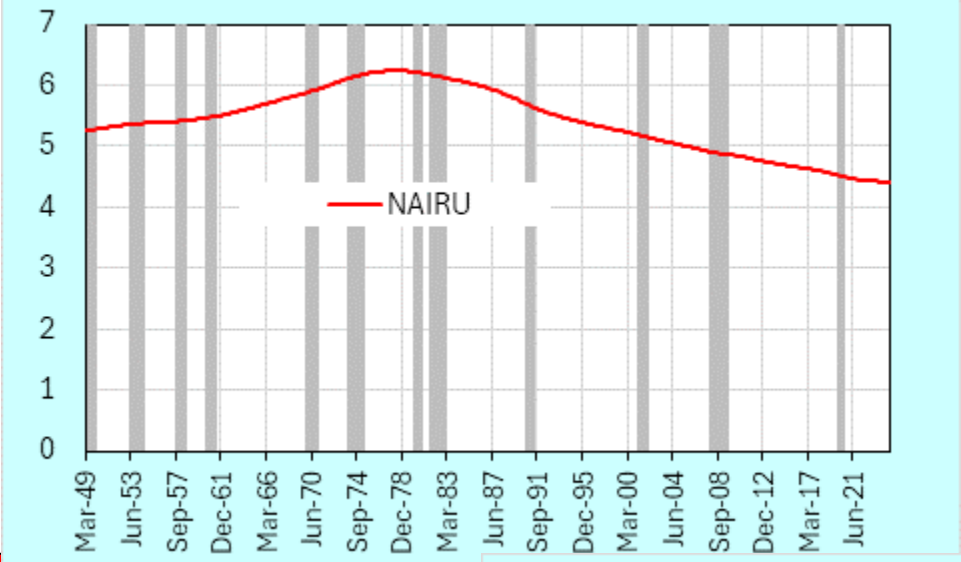
From CBO: The Budget and Economic Outlook: Fiscal Years 2012–2022 (Jan 2012):

- The natural rate of unemployment (NAIRU) is the rate of unemployment arising from all sources except fluctuations in aggregate demand.
- Estimates of potential GDP are based on NAIRU, which is a key input into CBO's projections of inflation.

Potential GDP is the amount of GDP that is produced when  $U = \text{NAIRU}$

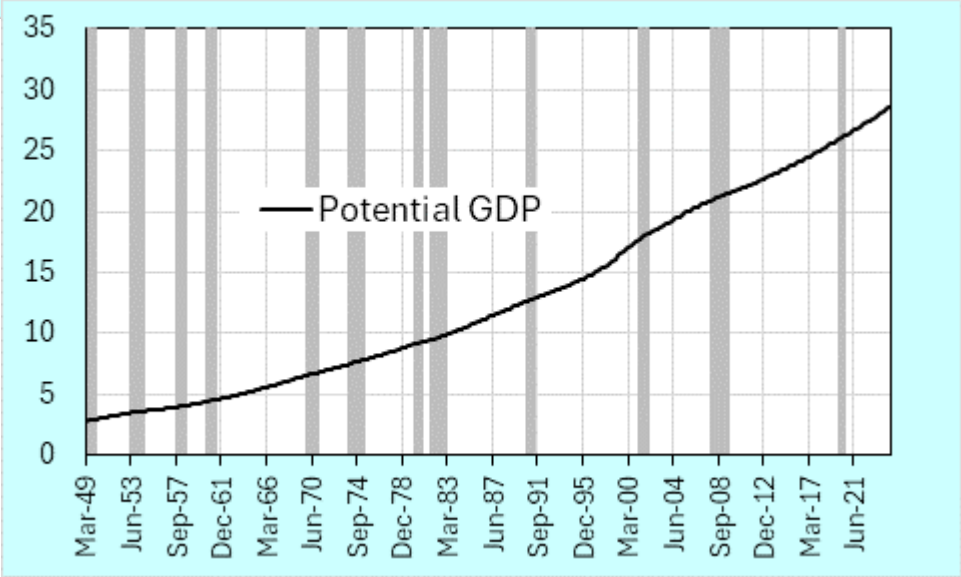
# NAIRU → Potential GDP

NAIRU (%)



Real Potential GDP (\$T)

2024\$



# NAIRU Potential GDP

Labor Force \* (1-NAIRU) = Level of Employment @ Full Employment

Level of Employment \* GDP/Employed = Full Employment GDP

Potential GDP is CBO's estimate of the maximum sustainable output of the economy. Growth of real GDP and of real potential GDP is measured from the fourth quarter of one calendar year to the fourth quarter of the next.

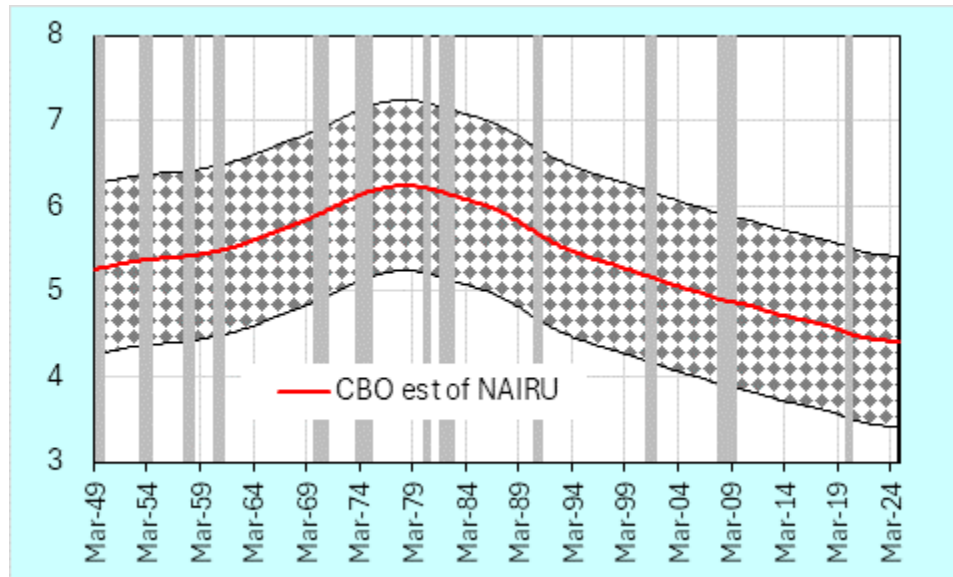
# NAIRU Potential GDP

## Checklist:

- ✓ Measures of Labor Force
- ✓ Measures of Output per Worker
- \* NAIRU

\* NAIRU is estimated by the Congressional Budget Office but there it can only be estimated within a range

NAIRU  
(%)



# Measurement of NAIRU and Potential GDP

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- Extraordinarily controversial to measure because of policy implications and politics
- The Congressional Budget Office **MUST** calculate Potential GDP in order to provide guidance to Congress regarding impacts of policy decisions on future budgets, deficits, and debt



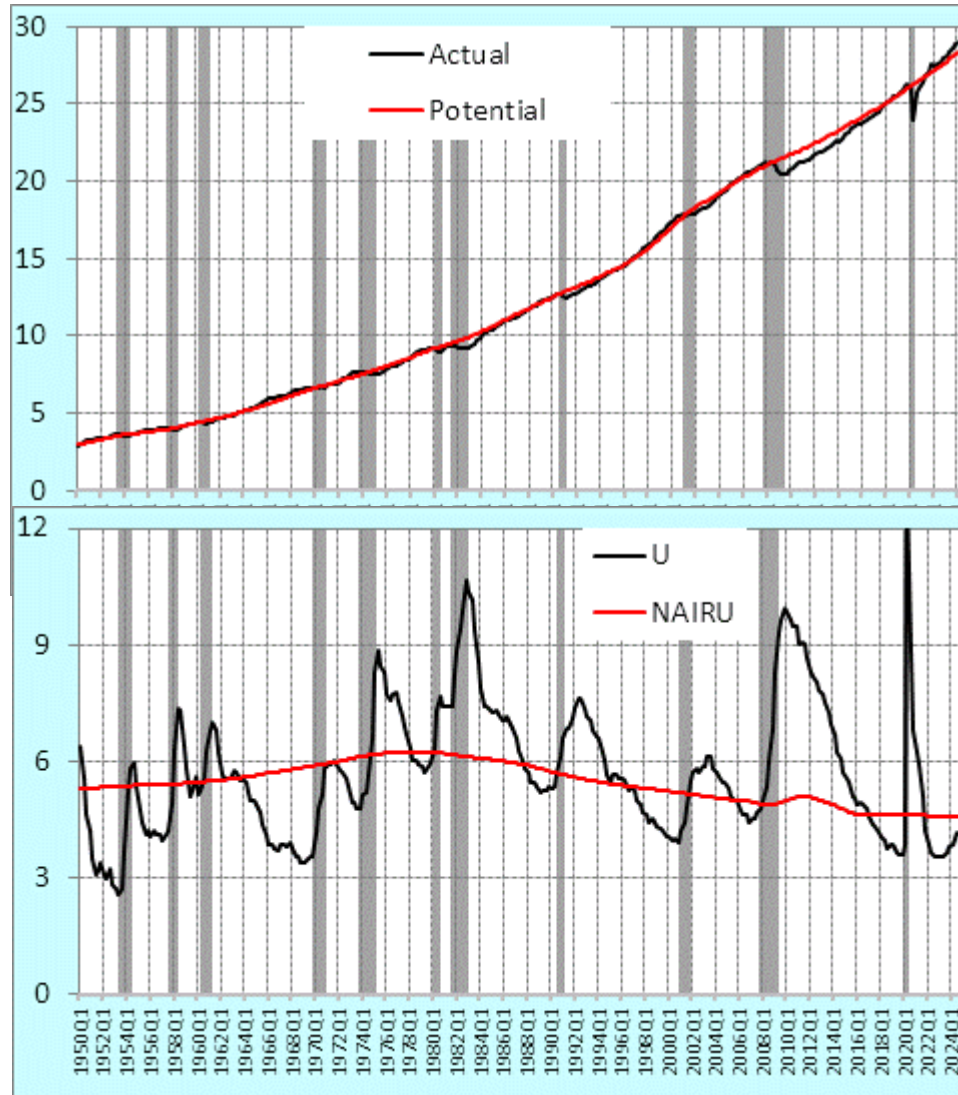
# Changes in the NAIRU

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- The NAIRU can vary over time for several reasons that impact precisely where there exists an “equilibrium” in national aggregate demand and supply:
  1. Demographics and Labor Force Participation Rates
  2. Composition of the labor force
  3. Surprises in productivity growth
  4. Other supply side shocks (e.g., world oil prices)

# Potential vs Actual GDP

Real & Potential  
Real GDP  
in  
Trillions of \$2024



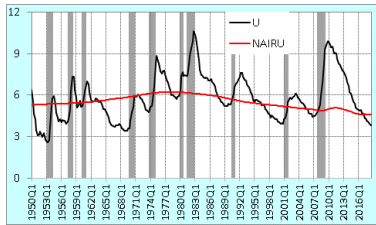
When  
Actual GDP <  
Potential GDP

$U > \text{NAIRU}$

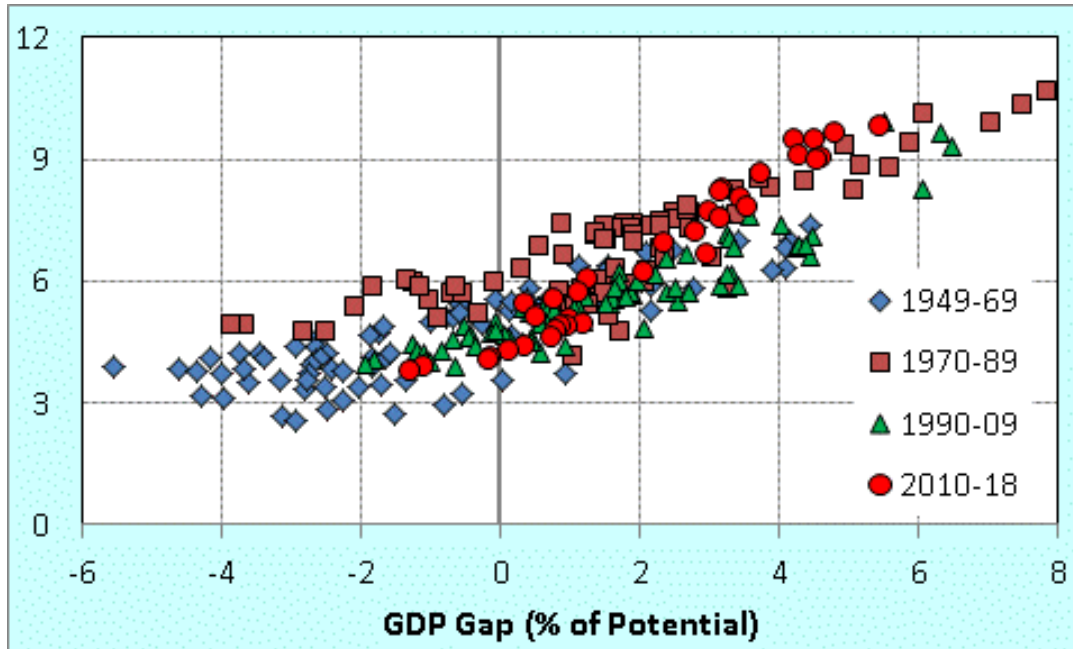
Unemployment Rate  
and NAIRU  
%

# Why Potential GDP?

1949Q1 – 2018Q3



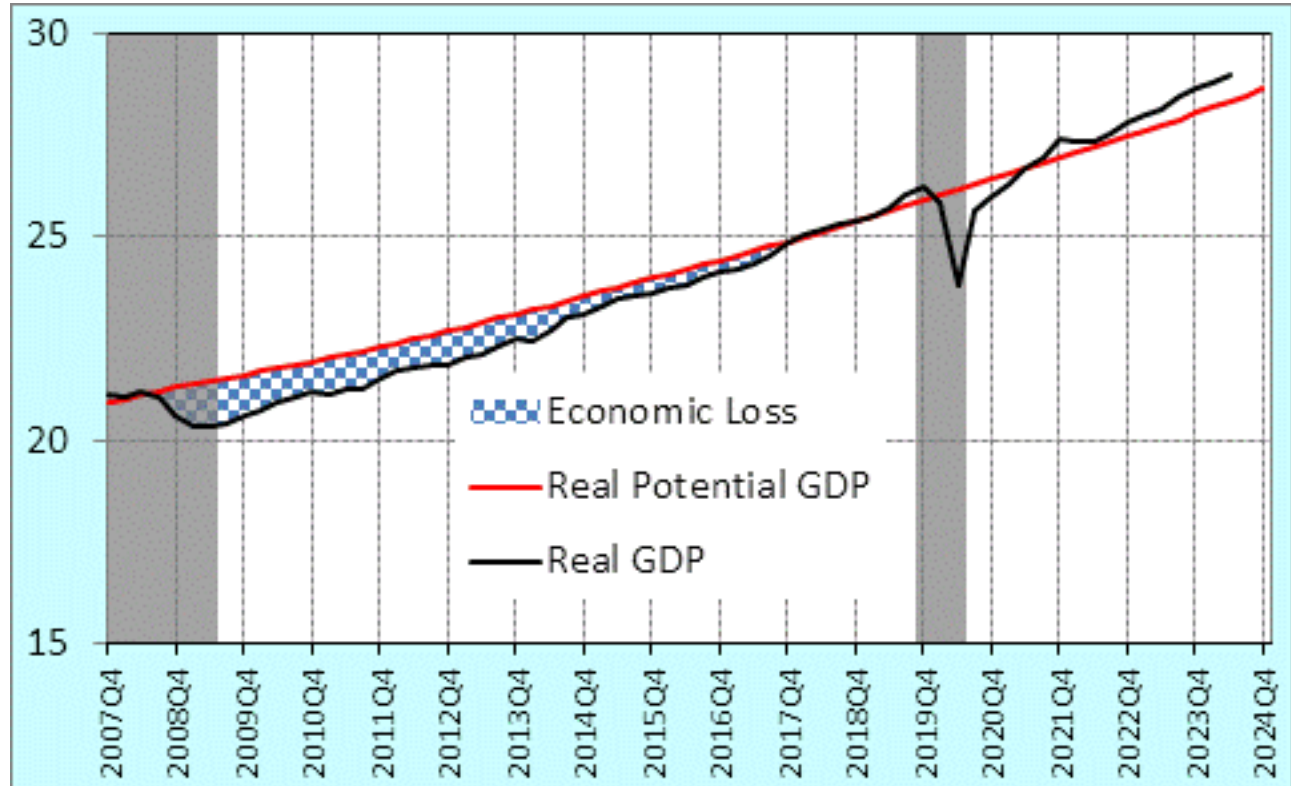
Unemployment Rate "Gap" (%)



Directly addresses whether macroeconomic policies should be used to stimulate economic growth in order to reduce unemployment

# Potential Real GDP vs. Actual Real GDP

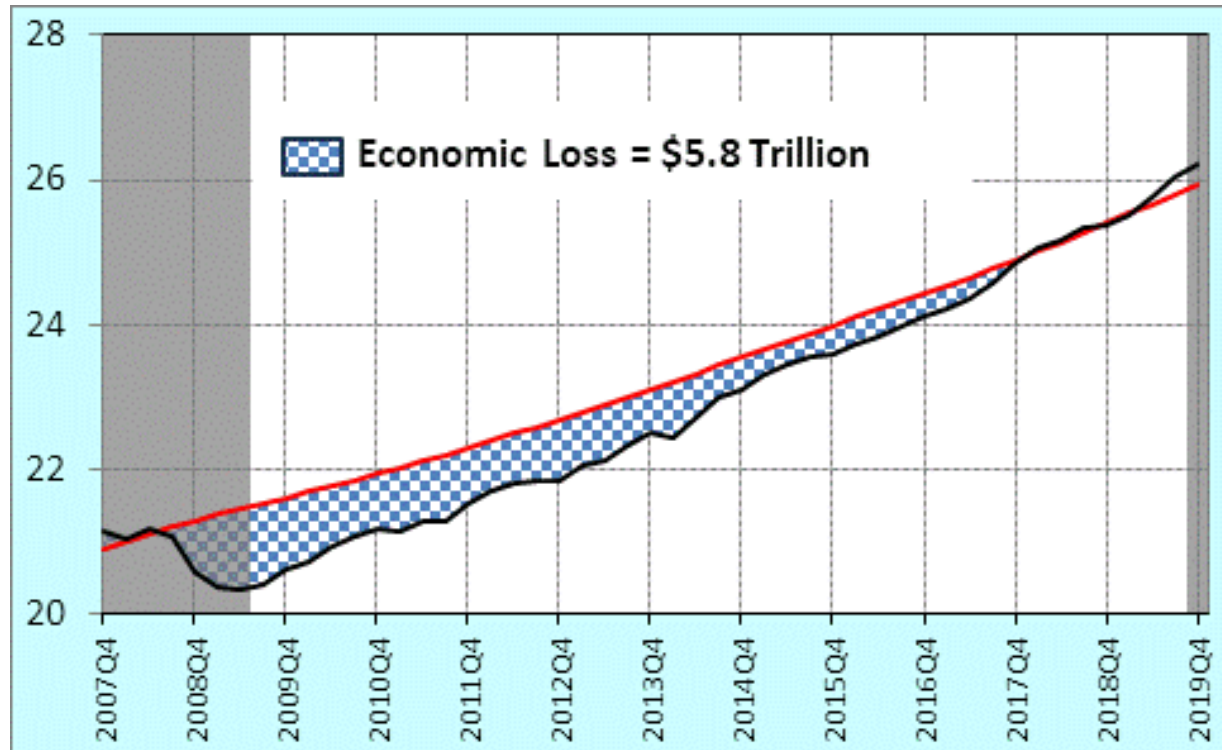
Real  
Potential  
and Real  
GDP in  
\$Trillions  
2024  
Dollars



Gray shaded areas are recessions

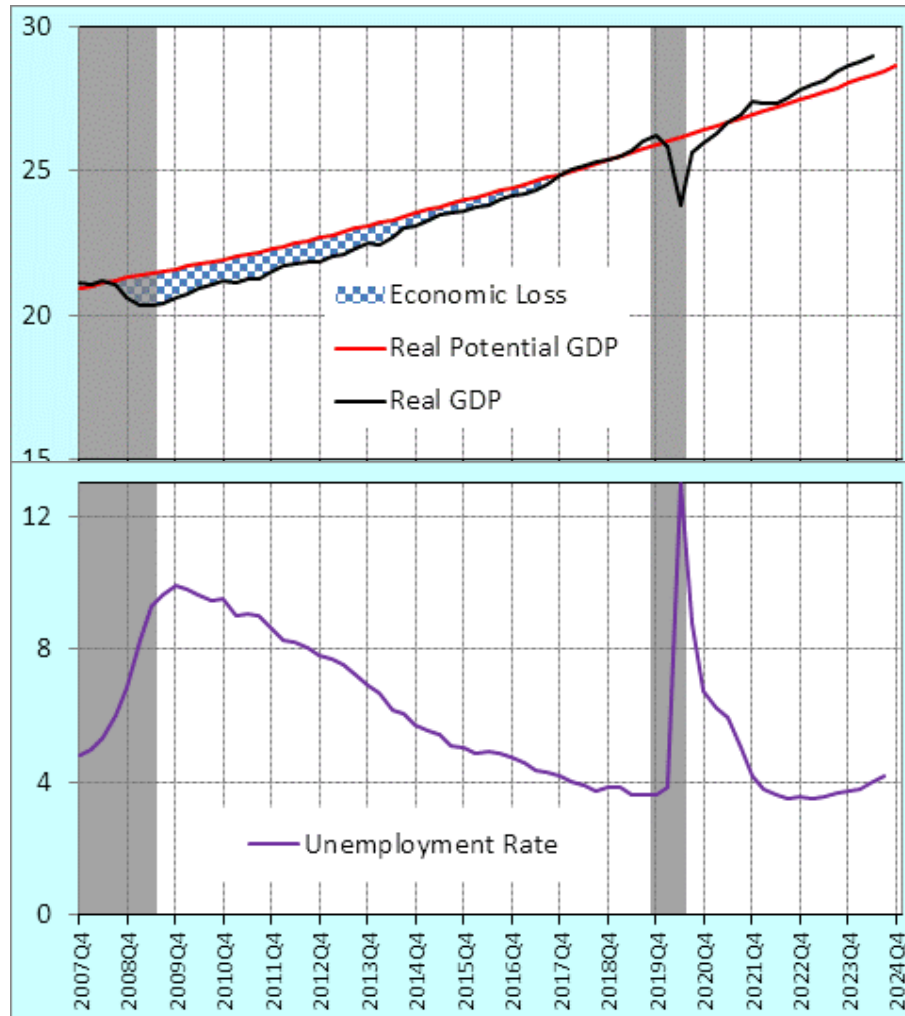
# GDP GAP During the Great Recession

Real  
Potential  
and Real  
GDP in  
\$Trillions  
2024  
Dollars



# Recent Trends

Real &  
Potential  
GDP  
\$2024  
Trillions

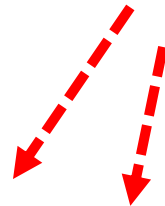


Unemployment  
Rate (%)

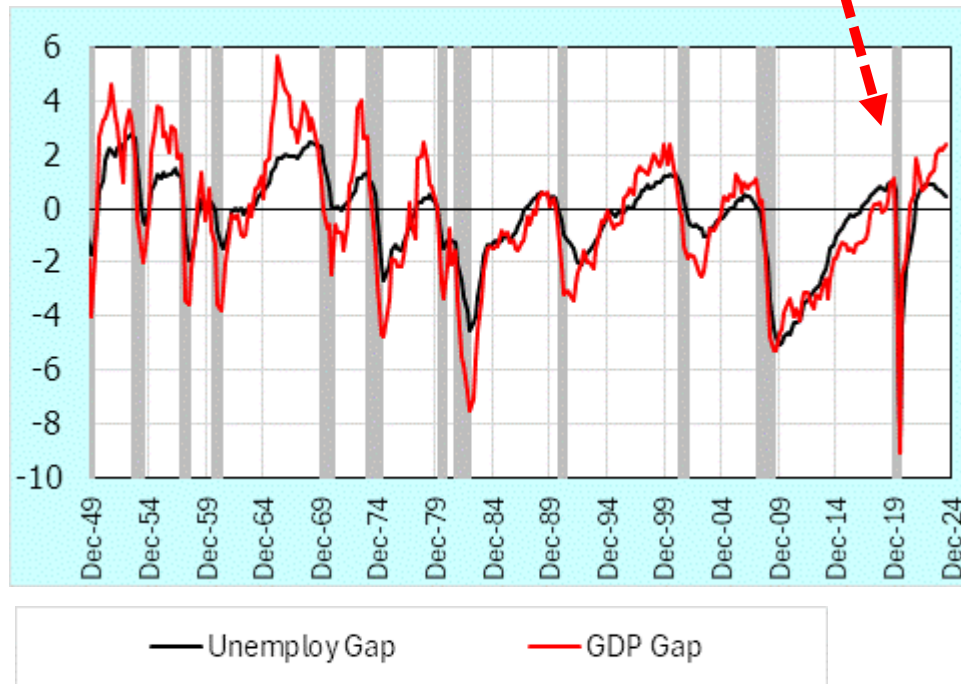
Periods following troughs are usually when Real GDP grows faster than potential and the unemployment rate is lowered

# Can There Be "Positive Gaps?"

"positive gaps?"

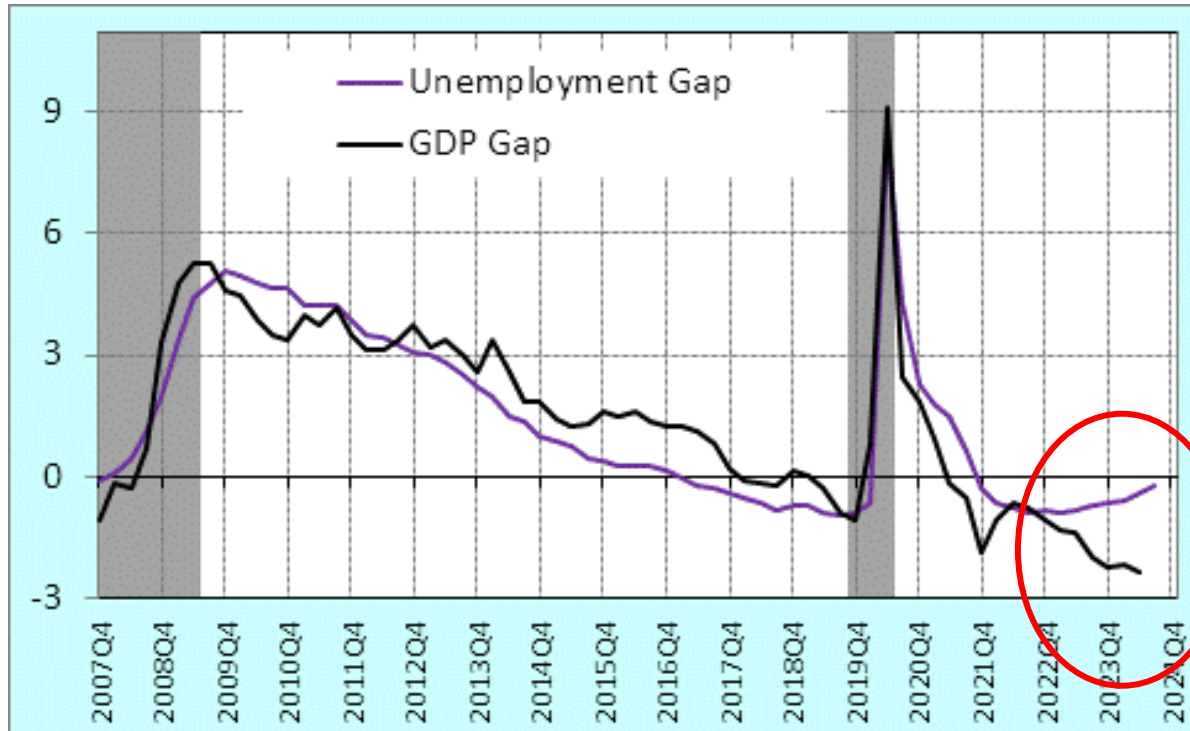


GDP and  
Unemployment  
"Gap" (%)



when  $U < \text{NAIRU}$  then  $\text{GDP} > \text{Potential}$

# What about Today?



GDP and Unemployment "Gap" (%)

The difference is large and still not totally understood



---

# Short Term Macroeconomic Policy

# Objectives of Macro Policies

Economic Position	Appropriate Policy
Recessions: Economy is shrinking	Stimulate economic growth
Early Recovery: Economy is growing but unemployment is high	
Late recovery: inflation exceeding policy target	Constrain economic growth

# Economic Policies that Stimulate Total Spending

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## *Fiscal Stimulus:*

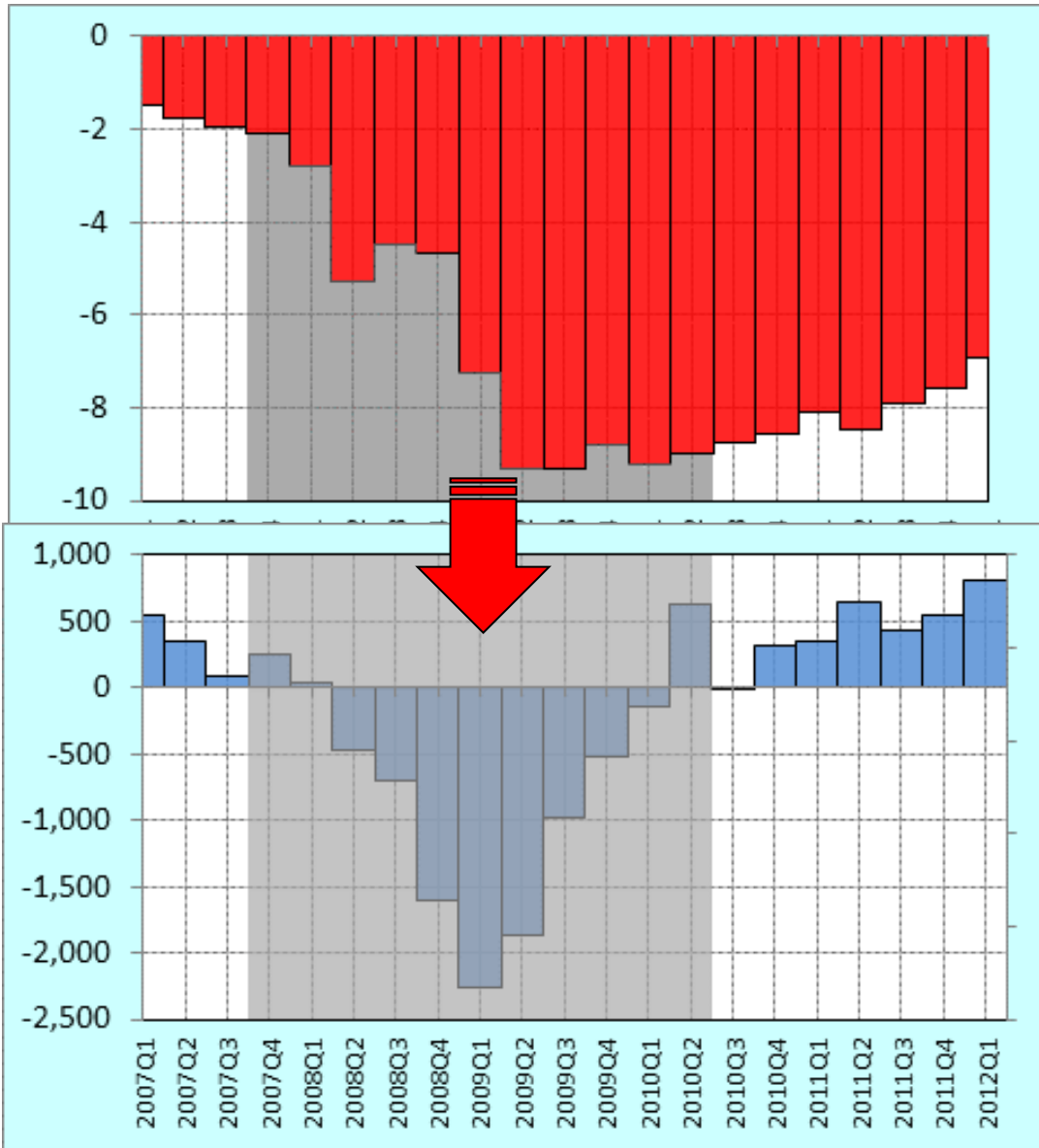
- Government purchases of goods and services (e.g., highways)
- Reductions in tax rates to stimulate consumer demand
- Automatic stabilizers (e.g., unemployment insurance, food stamps, other safety net programs)

## *Monetary Stimulus:*

- Reductions in the real level of interest rates to stimulate consumer demand and private investment

# 2009 Fiscal Stimulus Worked!

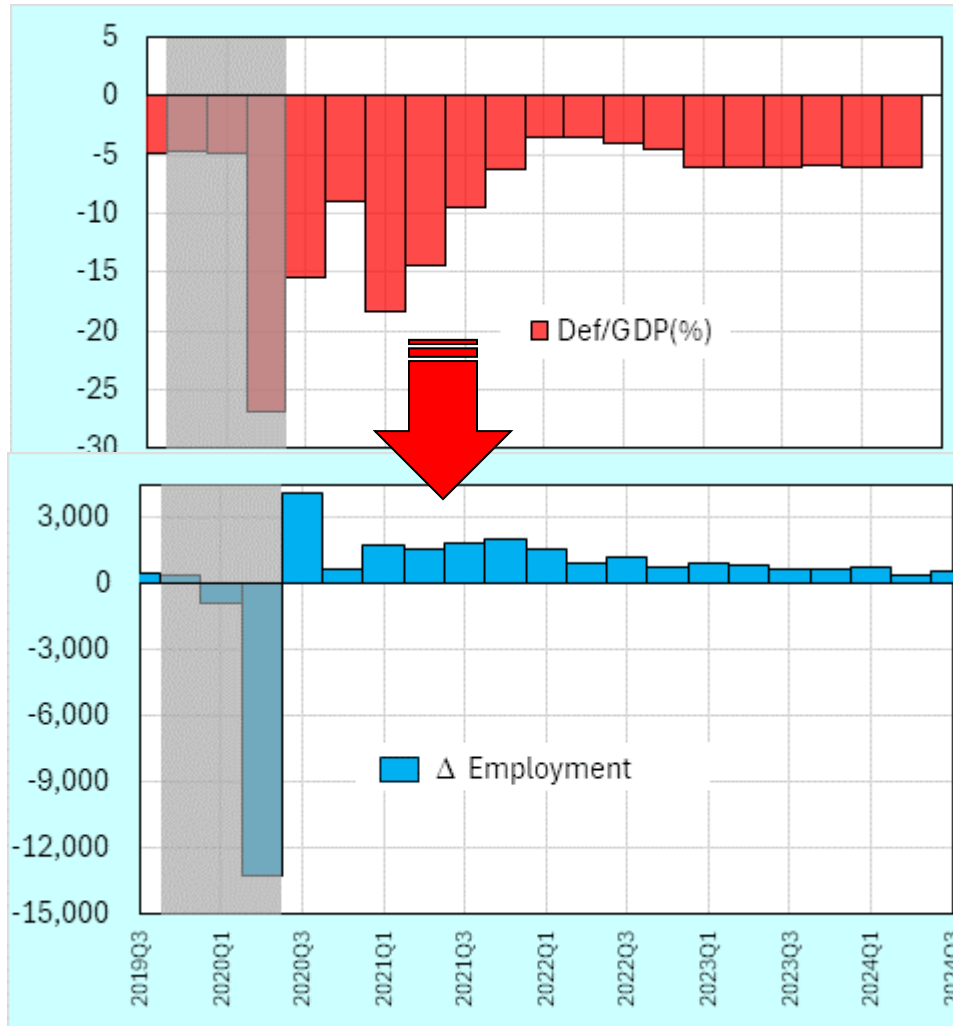
Deficit/GDP  
Ratio (%)



Δ  
Employment  
(000)

# 2020-22 Fiscal Stimulus Worked!

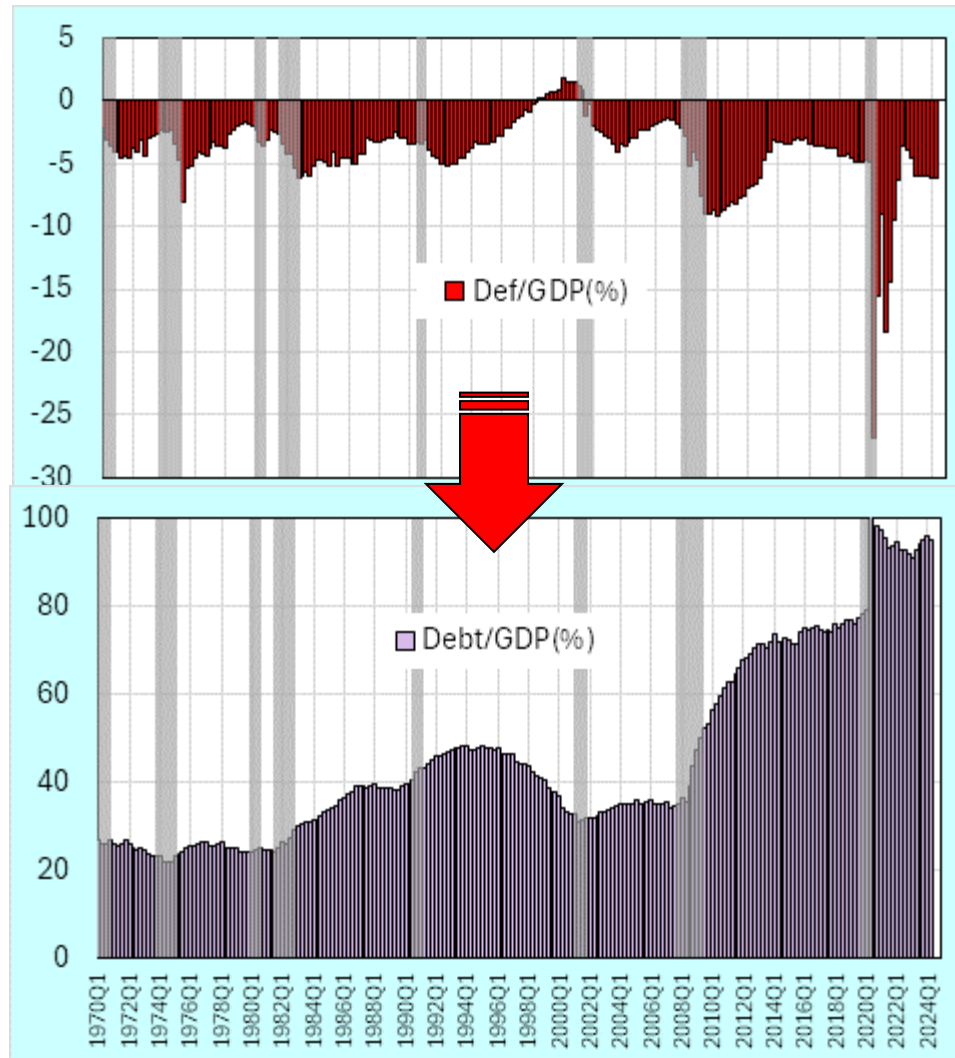
Deficit/GDP  
Ratio (%)



Δ  
Employment  
(000)

# But, There is a Consequence!

%



We'll be talking about this later

# Understanding Macroeconomic Policy Debates

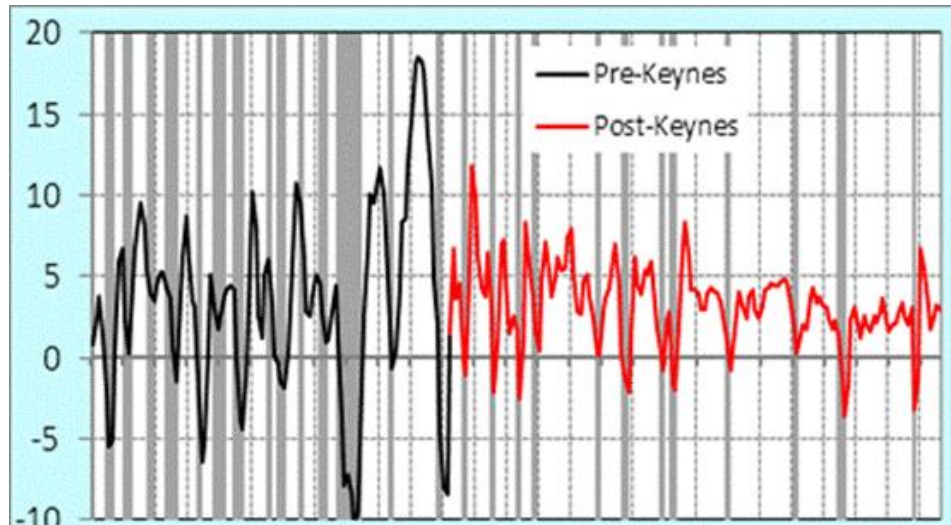
## ■ It's a social science

- ❖ We have “official” (CBO) **estimates** of where the economy is that are used to guide Congress
- ❖ Ongoing debate within the Federal Reserve between those that think the economy has great propensity to inflate and so we should accept higher levels of unemployment AND
- ❖ Those that see economic slack and very low inflation rates as indicating that we can push the economy even more

This debate is a key component to what the Federal Reserve says and does with regard to interest rates last year and just before Xmas!

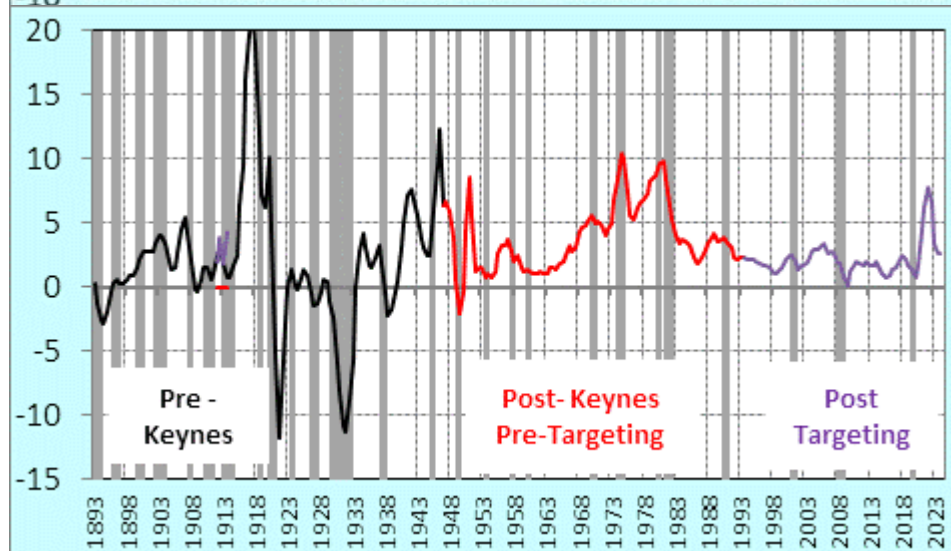
# Results of Short – Term Economic Policies

Unemployment (%)



Recessions continue to occur

Inflation (%)



Except Post-Pandemic Inflation has largely stabilized



# Results of Short – Term Economic Policies

Period	Average		Standard Deviation		
	U-NAIRU	$\pi$	U	$\pi$	% $\Delta$ GDP
1949Q1-1959Q4	-0.7	1.8	1.3	2.5	3.9
1960Q1-1969Q4	-0.9	2.4	1.2	1.5	2.1
1970Q1-1979Q4	0.1	7.1	1.1	2.8	2.7
1980Q1-1989Q4	1.2	5.5	1.4	3.5	2.7
1990Q1-1999Q4	0.3	3.0	1.0	1.1	1.5
2000Q1-2007Q4	0.0	2.8	0.7	0.9	1.2
2008Q1-2019Q4	1.7	1.8	2.0	1.3	1.7
2020Q1-2024Q3	0.5	4.3	2.4	2.6	3.7