



# HIDING REALITY ...

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Applied Project Management Forum

UTD Jindal School of Management

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Fred Richards

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Fred Richards.

The confusion inspired by hope!



# Charles Anderson Bliss

- Professor, Business Cycles and Conditions, HBS
- Formerly with the NBER ...
- “Bad Data creates Bad Decisions!”
- “Faith in government statistics is often misplaced.”
- “You have to know what makes up the data and how it is collected before you can make an informed decision.”
- “Did you do the work?”

# Is there a better way to get the data?

- **Unemployment**
  - New Jobless Claims
  - Claims for Disability
- **Labor Force**
  - ADP Report
  - Payroll Deposits to the Federal Reserve

# WHY IS THE INFORMATION USEFUL AND OR NEEDED?

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Is the cost of the data proportional to its usefulness?

Is precision required to make effective decisions?

# Important Data Series

- GDP/GNP
- Unemployment/Labor Force
- CPI/PPPI
- These affect everything.

# Complicating Factors

- Sample Size & Frequency
- Raw Data and changes in how it is collected.
- Seasonal Adjustments
- Hedonic Adjustments
- Substitution Factors
- Independently vs. dependently adjusted data stream
- Benchmark Revisions
- Political Bias
- 2102 = 4891



# EMPLOYMENT STATISTICS

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Do they really tell us anything?

# Looking under the hood



# Different Series

- **Table A-1 – Household data**
  - Employment status of civilian population by sex and age
  - Civilian non-institutional population is used to calculate U-3 unemployment rate or the “headline” number.
- **Table B-1 - Establishment data**
  - Employees on non-farm payrolls by industry sector and selected industry detail
  - Provides the calculation on the number of jobs added or lost during a period of time.

# Unemployment

The Household Survey



## Household survey

- The household survey measures the number of people who have jobs from a sampling of about 60,000 households each month.
- In the household survey, people are classified as employed if they did any work at all as paid employees during the reference week; worked in their own business, profession, or on their own farm; or worked without pay at least 15 hours in a family business or farm. People are also counted as employed if they were temporarily absent from their jobs because of illness, bad weather, vacation, labor-management disputes, or personal reasons.

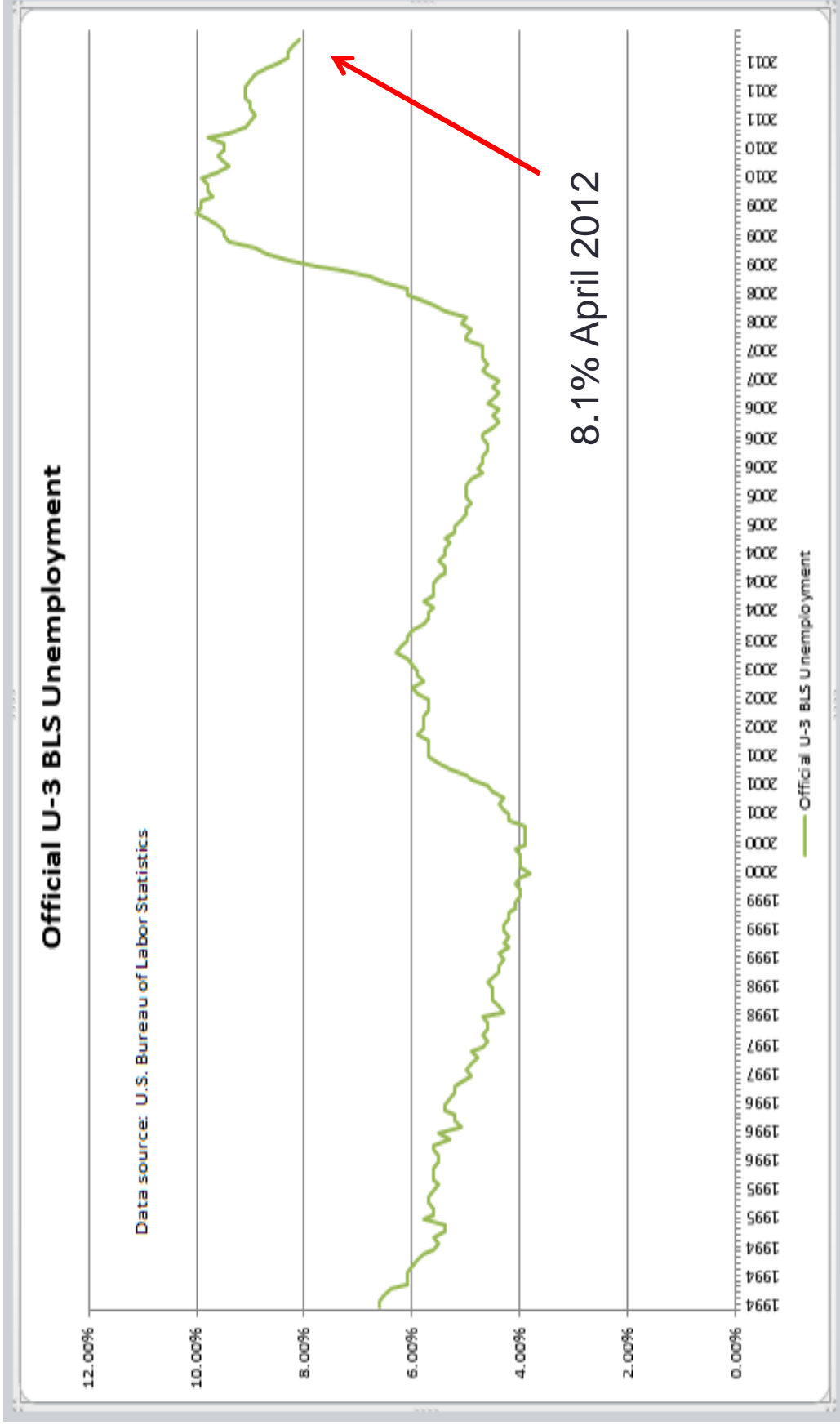
# Unemployment criteria

- People are classified as unemployed if they meet all of the following criteria:
  - they had no employment during the reference week;
  - they were available for work at that time; and
  - they made specific efforts to find employment sometime during the 4-week period ending with the reference week.
- Persons laid off from a job and expecting recall need not be looking for work to be counted as unemployed.

## Changes in U-3 Employment Criteria

- During the Kennedy administration, unemployment was redefined with the concept of "discouraged workers" so as to reduce the popularly followed unemployment rate.
- Up until the Clinton administration, a discouraged worker was one who was willing, able and ready to work but had given up looking because there were no jobs to be had. The Clinton administration in July 2004 dismissed to the non-reporting netherworld about five million discouraged workers who had been so categorized for more than a year.
- Seasonal or non-seasonally adjusted data.

# Household Survey - Unemployment





# Household data - Raw

2012	Household Data Not Seasonally Adjusted All data in '000's.	Mar		Apr	
		Mar	Change	Apr	Change
	Civilian noninstitutional population	242604	169	242784	180
	Civilian labor force	154316	202	153905	(411)
	Participation rate	63.6		63.4	
	Employed	141412	728	141995	583
	Employment-population ratio	58.3		58.5	
	Unemployed	12904	(526)	11910	(994)
	Unemployment rate	8.4		7.7	
	Not in labor force	88288	(34)	88879	591
	Persons who currently want a job	6041	(335)	6328	287
	Source: BLS Reports. Table A-1, NSA data				

# Summary

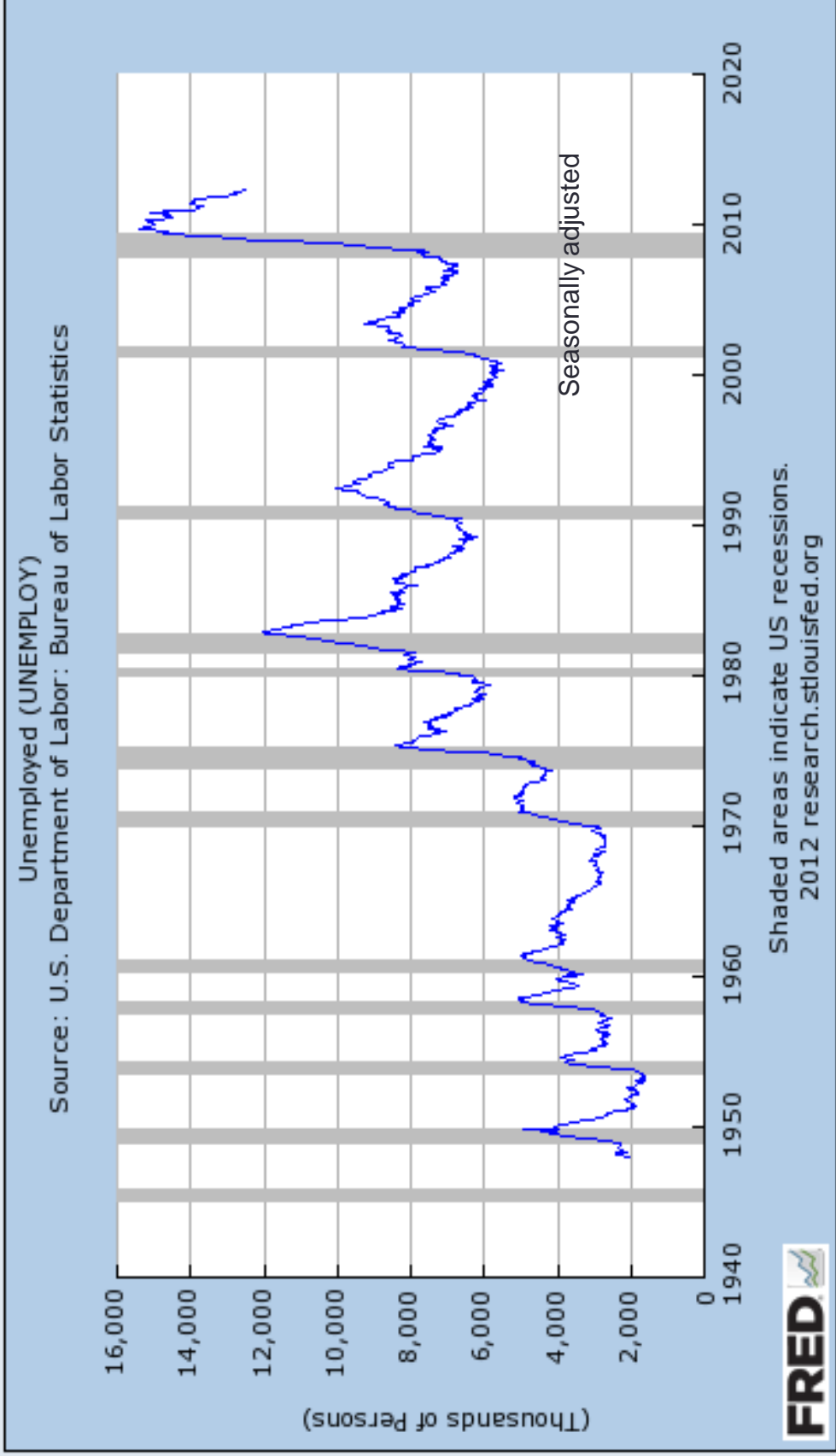
Table A-15. Alternative measures of labor underutilization											
Not seasonally adjusted						Seasonally adjusted					
Measure	Mar-11	Feb-12	Mar-12	Mar-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12		
U-1	5.7	4.9	4.9	5.3	5.0	5.0	4.9	4.8	4.6		
U-2	5.8	5.1	4.8	5.4	4.9	4.9	4.7	4.7	4.5		
U-3	9.2	8.7	8.4	8.9	8.7	8.5	8.3	8.3	8.2		
U-4	9.7	9.3	8.9	9.4	9.3	9.1	8.9	8.9	8.7		
U-5	10.6	10.2	9.7	10.3	10.2	10.0	9.9	9.8	9.6		
U-6	16.2	15.6	14.8	15.7	15.2	15.2	15.1	14.9	14.5		

## Seasonal adjustments lower rate.

NSA-SA	
Feb-12	Mar-12
0.1	0.3
0.4	0.3
0.4	0.2
0.4	0.2
0.4	0.1
0.7	0.3

**But only if they have  
been unemployed for  
Less than 1 year.**

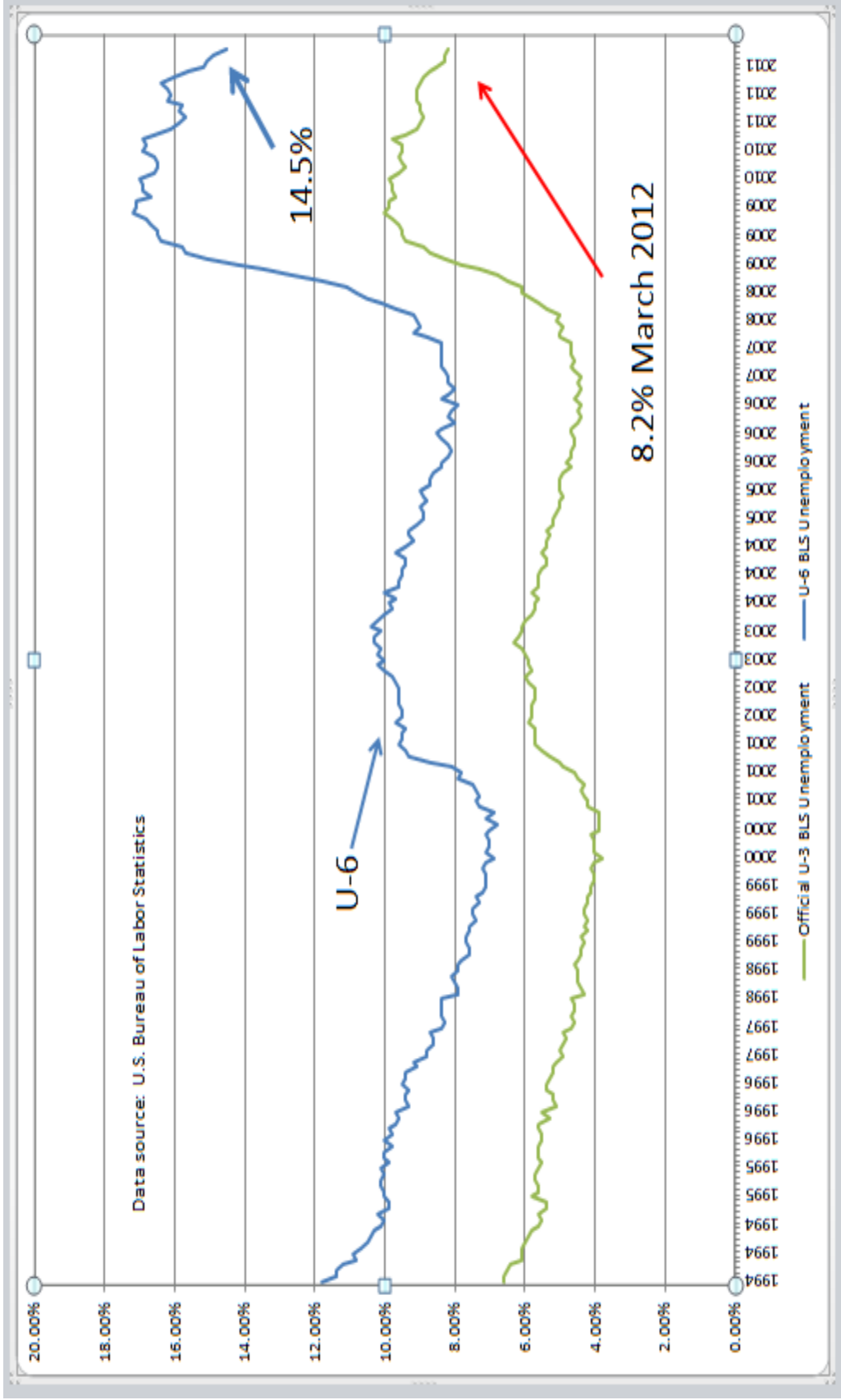
# Number of workers unemployed



## Alternative measures of unemployment

- U-1 Persons unemployed 15 weeks or longer, as a percent of the civilian labor force
- U-2 Job losers and persons who completed temporary jobs, as a percent of the civilian labor force
- **U-3 Total unemployed, as a percent of the civilian labor force (official unemployment rate)**
- U-4 Total unemployed plus discouraged workers, as a percent of the civilian labor force plus discouraged workers
- U-5 Total unemployed, plus discouraged workers, plus all other persons marginally attached to the labor force, as a percent of the civilian labor force plus all persons marginally attached to the labor force
- **U-6 Total unemployed, plus all persons marginally attached to the labor force, plus total employed part time for economic reasons, as a percent of the civilian labor force plus all persons marginally attached to the labor force**

# U-6 Unemployment



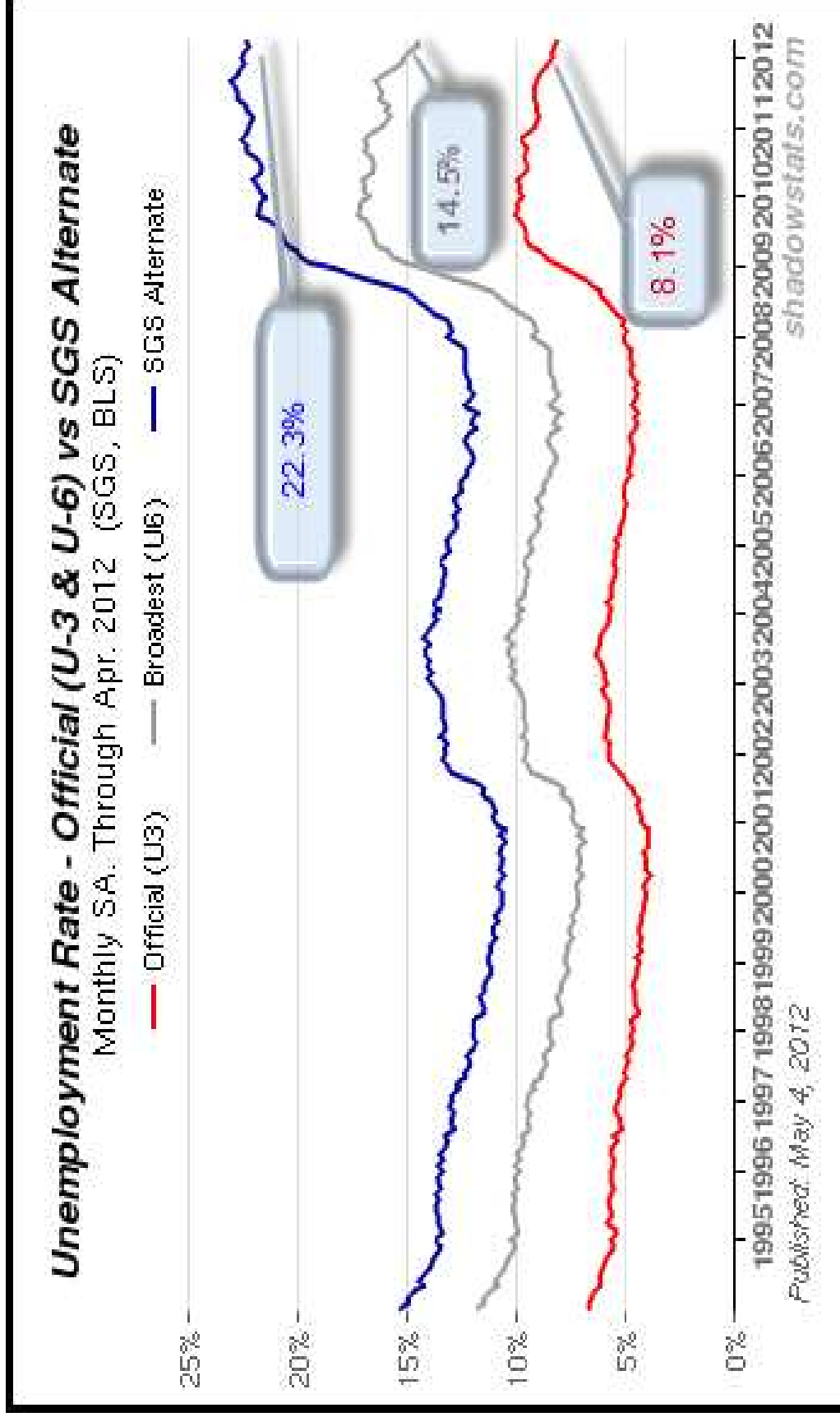
BUT WHAT HAPPENS IF  
YOU CALCULATE  
UNEMPLOYMENT LIKE IT  
WAS DONE IN THE 1930'S?

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That brings us to Shadow Government Statistics!



# Which rate reflects your experience?



# Establishment Survey

The jobs number



## Establishment survey

- The establishment survey is based on a monthly non-random sampling of payroll tax filings of about 141,000 corporations and government agencies counting jobs.

# The Fudge Factor

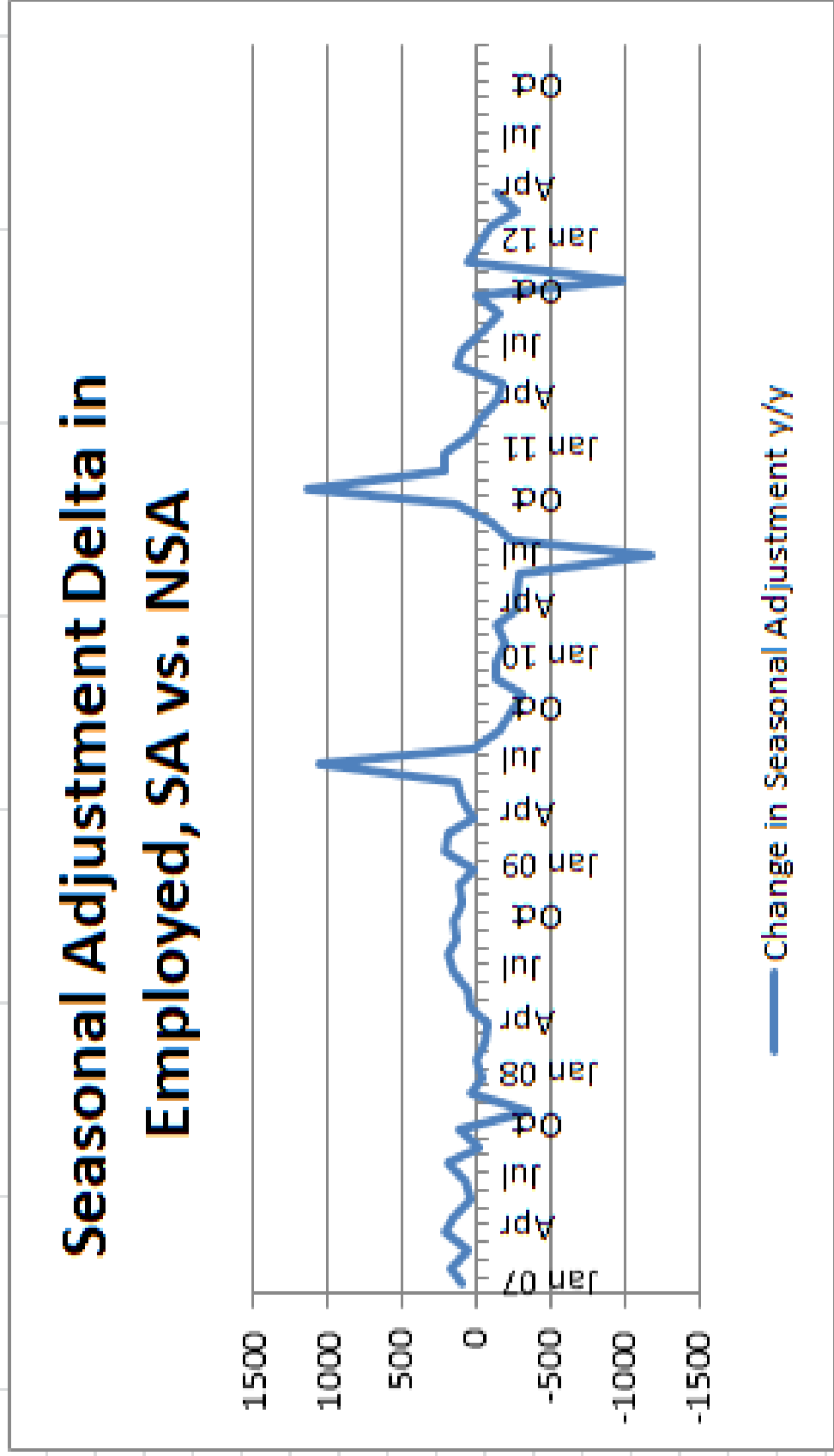
**2012 Net Birth/Death Adjustment, not seasonally adjusted (in thousands)**

Supersector	Jan	Feb	Mar	Apr	May
Mining and logging	-1	1	1	1	
Construction	-89	3	18	29	
Manufacturing	-24	3	3	-4	
Trade, transportation, and utilities	-60	7	11	11	
Information	-12	5	0	2	
Financial activities	-32	3	2	2	
Professional and business services	-95	30	14	61	
Education and health services	-6	12	-2	22	
Leisure and hospitality	-35	23	38	74	
Other services	-13	4	5	8	
Total nonfarm birth/death adjustment	-367	91	90	206	

# Establishment Survey – S.A.

	2012	Jan	Feb	Mar	Apr
<b>Establishment Survey</b>					
Total non-farm payroll, S.A.		132461	132720	132874	132989
Change from Previous Month		275	259	154	115
YTD Change		275	534	688	803
Birth/Death Adjustment		-367	91	90	206
YTD Change		-367	-276	-186	20
<b>-91</b>					
Source: BLS Employment Reports					
Table B-1. Employees on nonfarm payrolls					

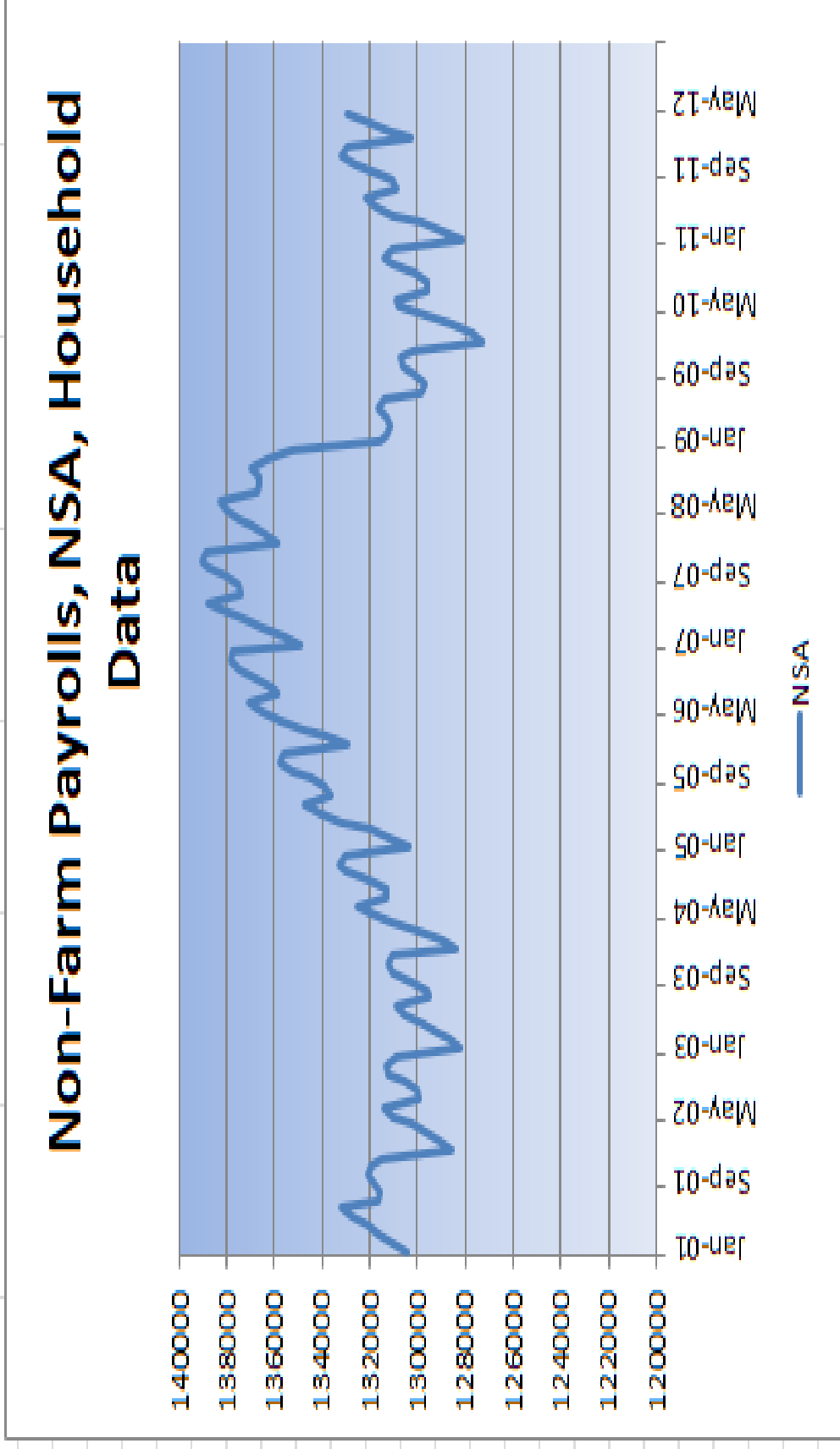
# Changes in Seasonality Adjustments



## Differences

- Where the household survey includes farm workers, the self-employed and workers in private homes, the establishment survey does not.
- The household survey counts people on unpaid leave as being employed. The establishment survey does not.
- The household survey is limited to workers 16 or older. The establishment survey does not.
- The establishment survey counts jobs, making no adjustment for multiple jobholders. The household survey only counts workers once.
- Yet, adjusting for all differences, the BLS never has been able to reconcile the two series within one million jobs.

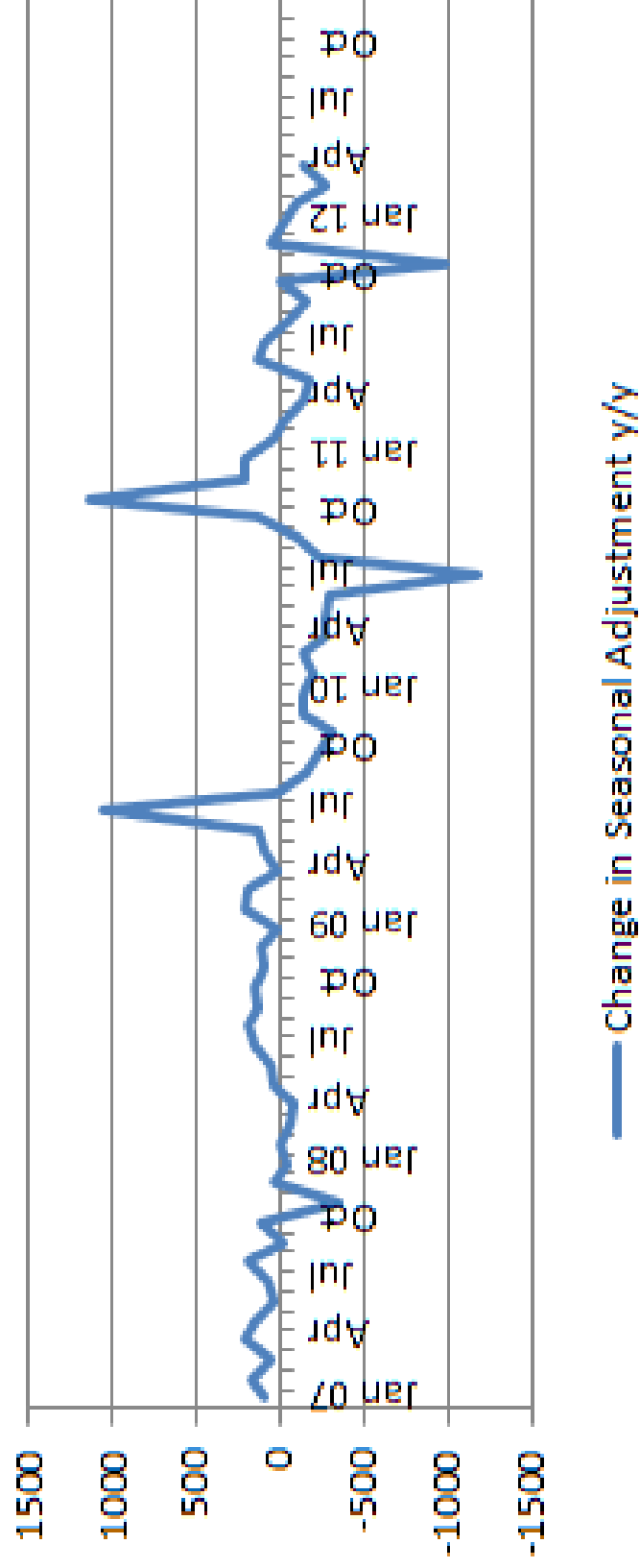
# Non-Farm Payrolls, NSA



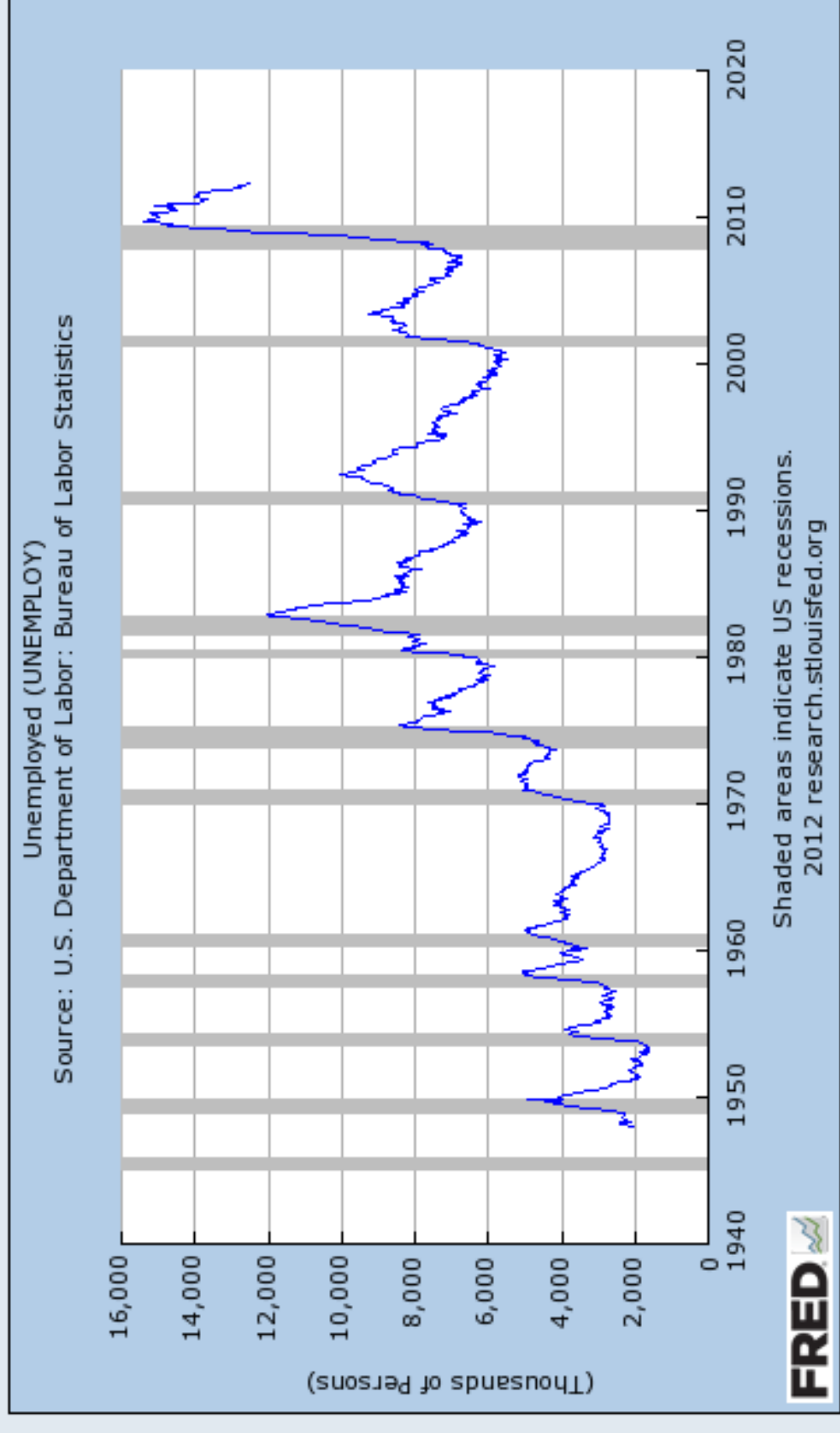


# Fudge Factor Seasonal Variations

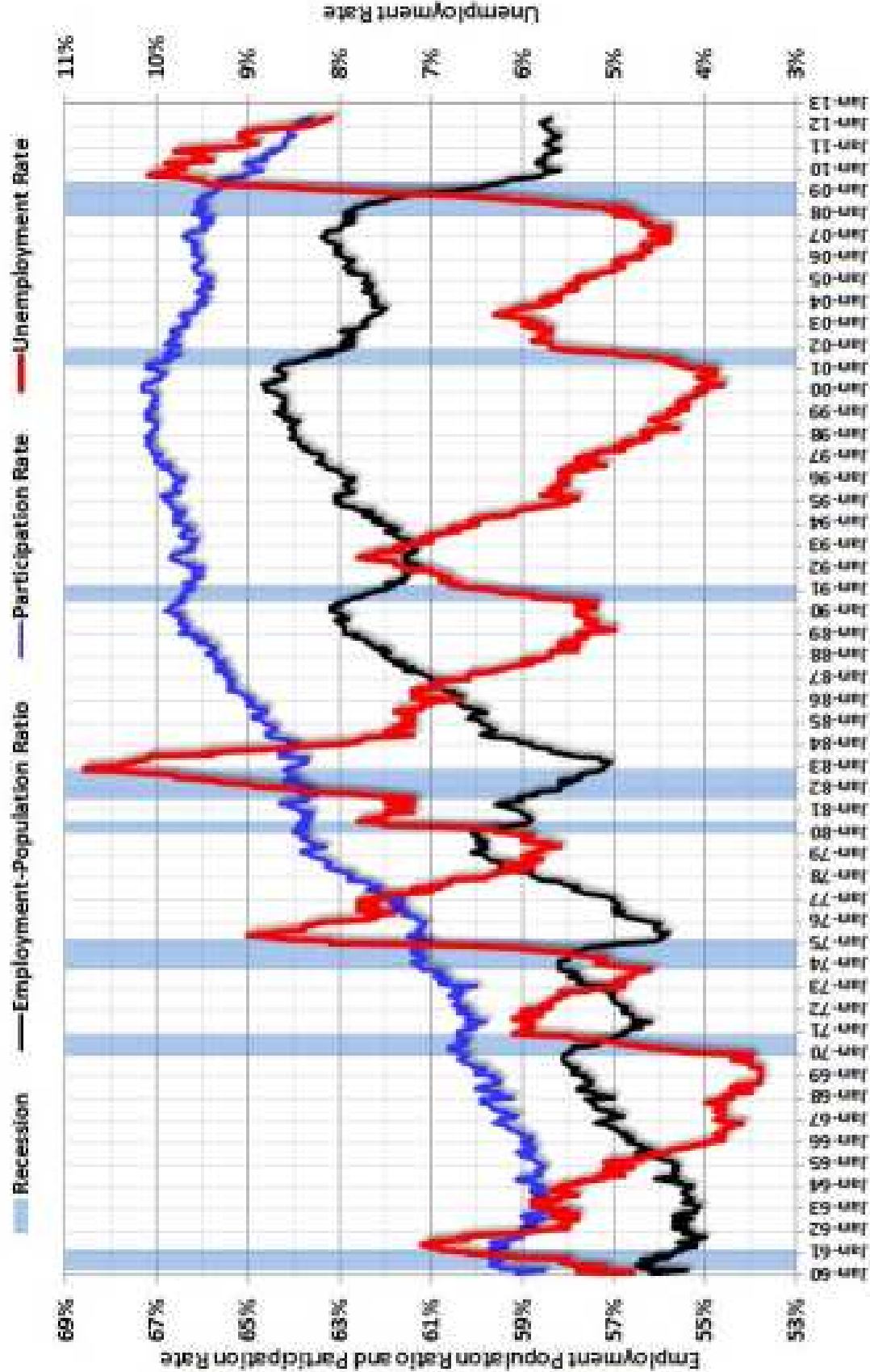
## Seasonal Adjustment Delta in Employed, SA vs. NSA



# Number of people not in labor force

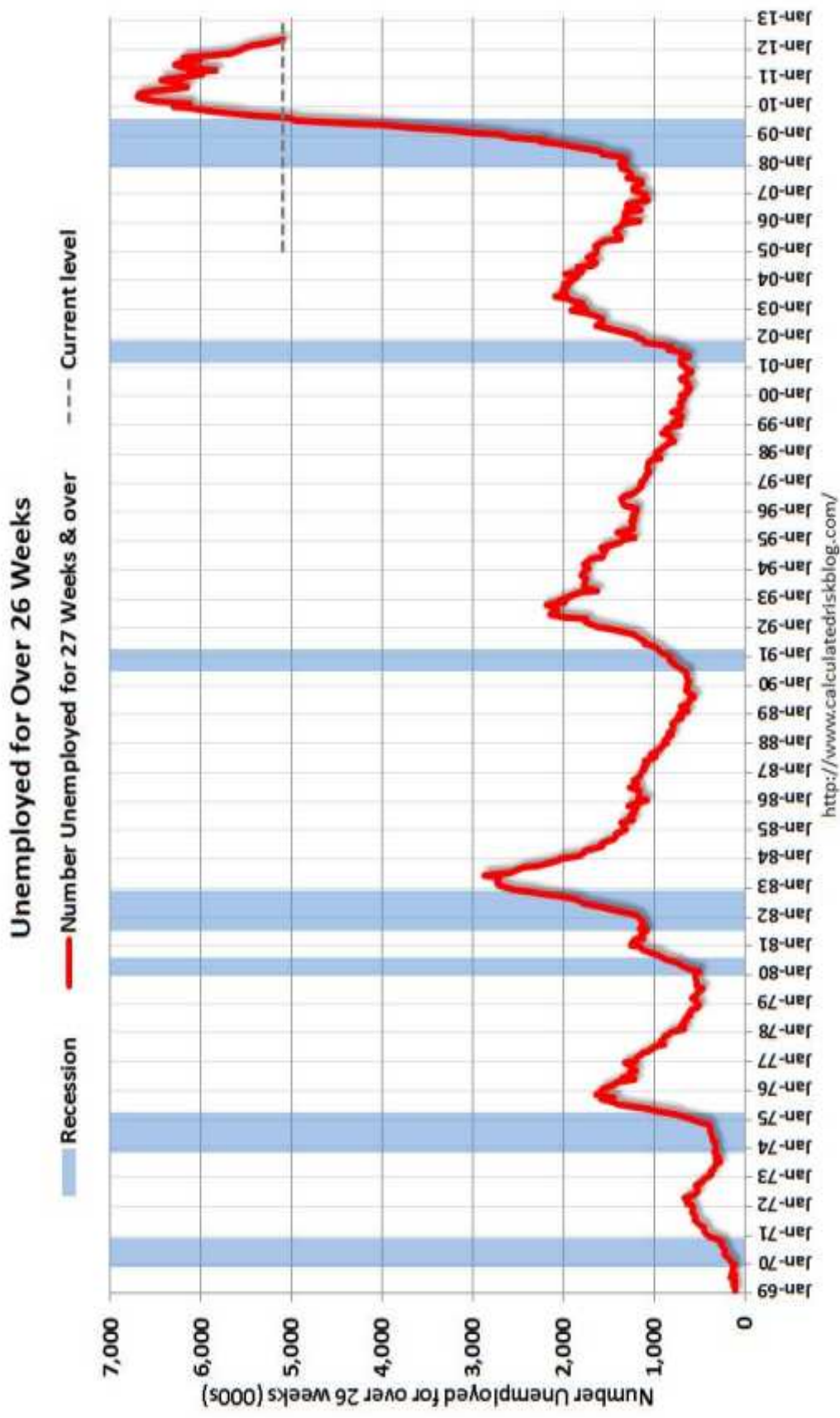


### Employment Population Ratio, Participation and Unemployment Rates

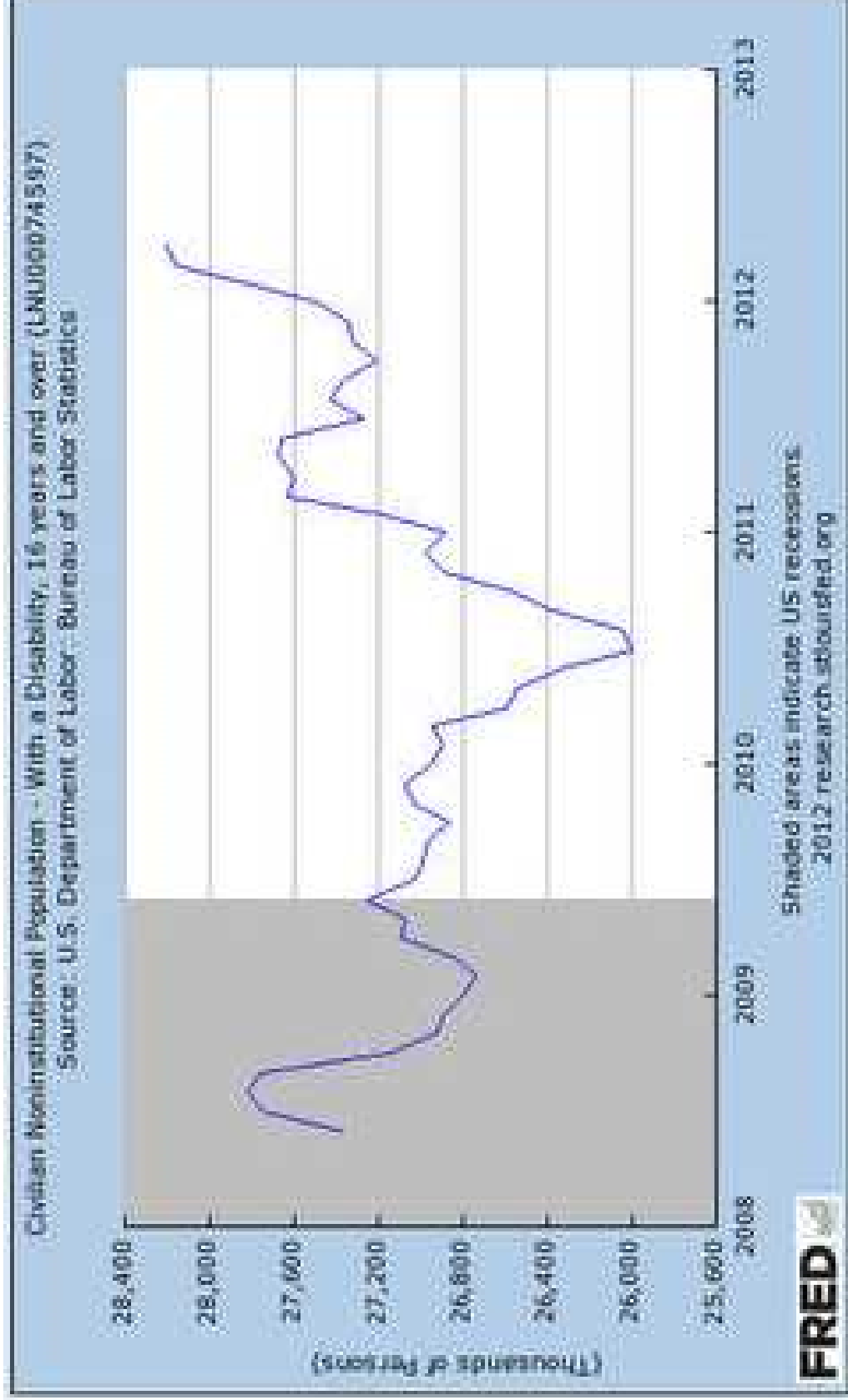


<http://www.calculatedriskblog.com/>

# A major problem for the economy

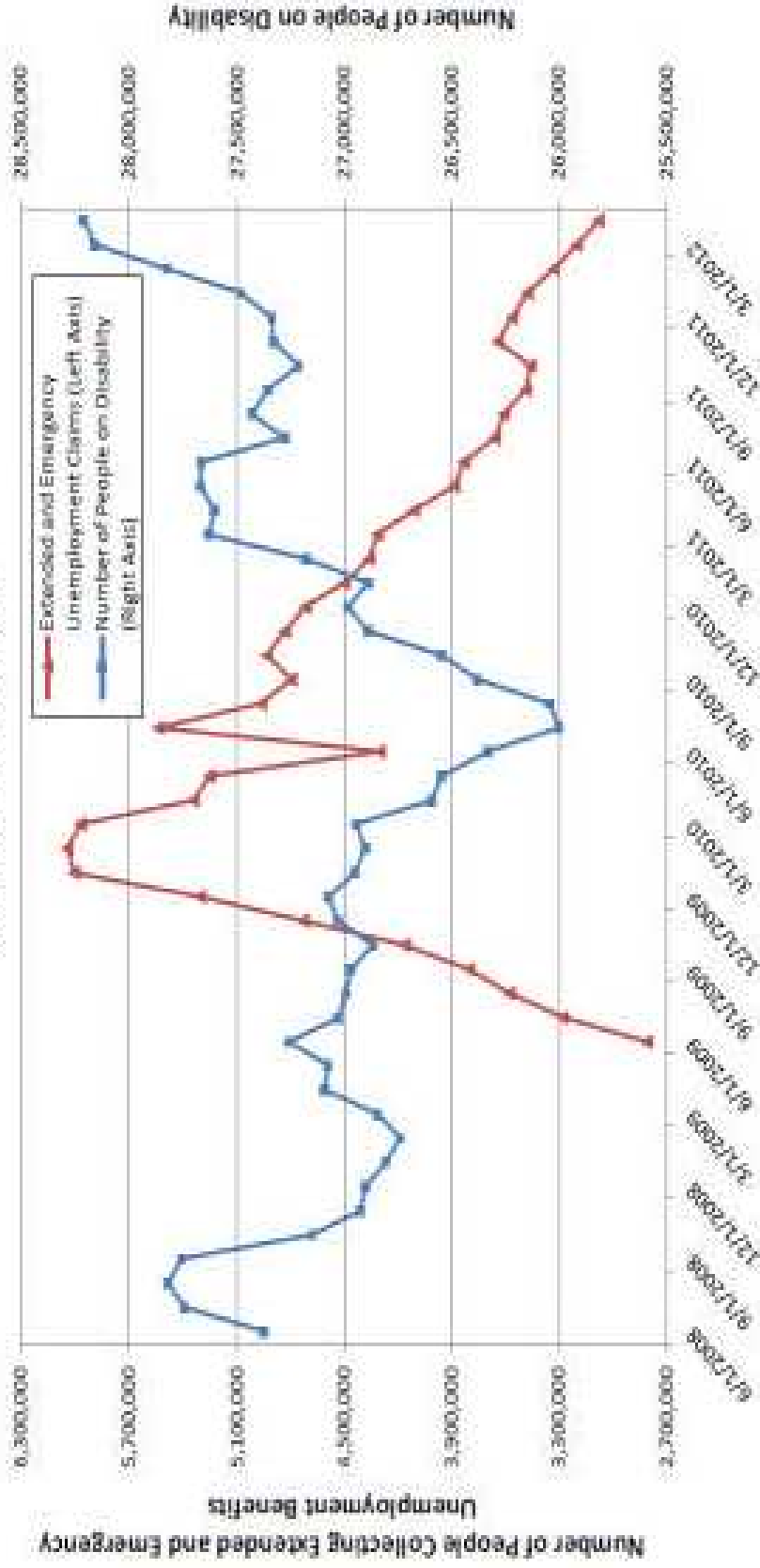


# Civilians on Disability



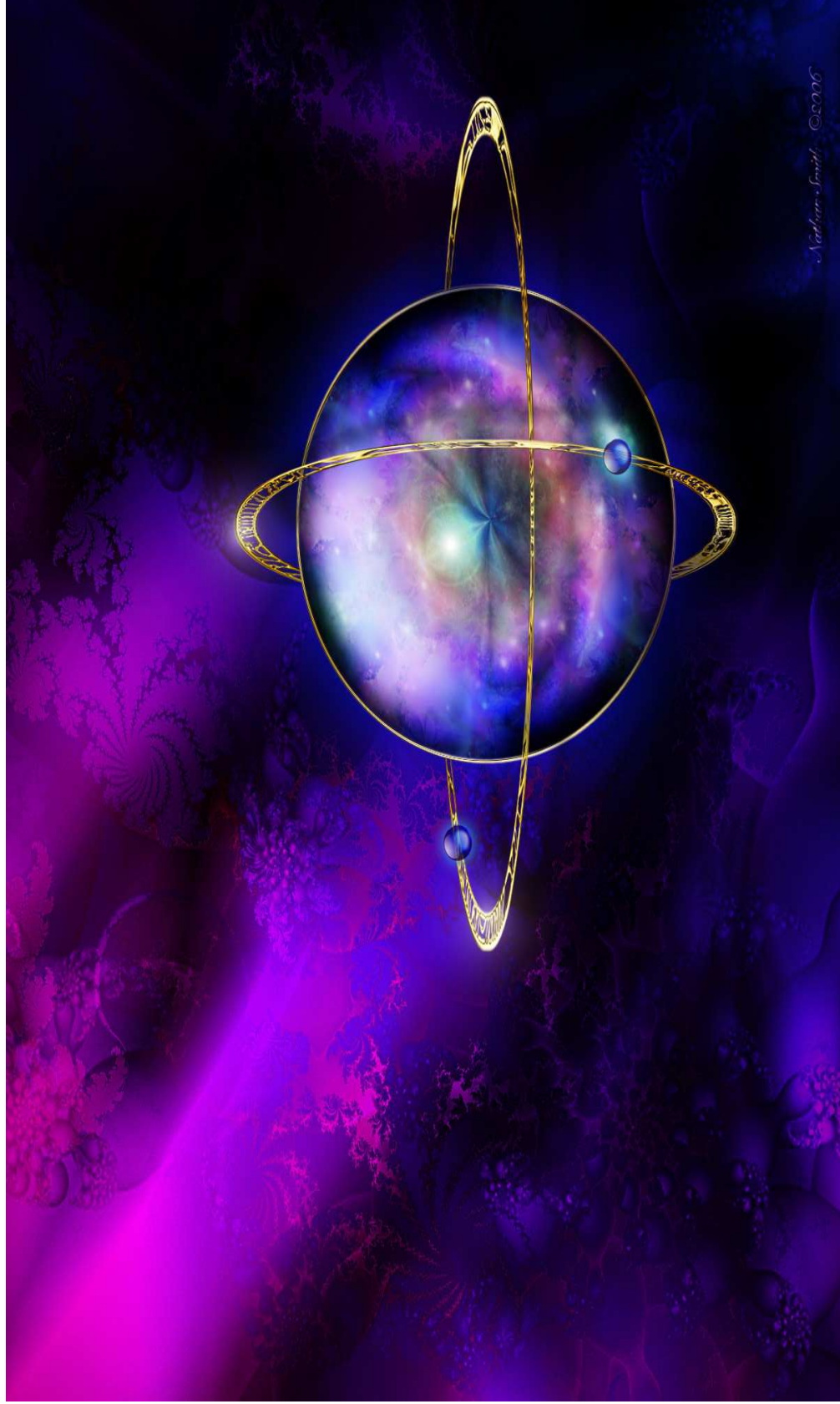
# Off one Dole onto another!

Monthly Trend of Extended and Emergency Unemployment Claims Compared to Number of People on Disability June 2008 through April 2012



Source: TrimTabs

# Seeing reality



# GROSS DOMESTIC PRODUCT AND GROSS NATIONAL PRODUCT

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Adam Smith in 1776 stated in *The Wealth of Nations*.

“a nation’s wealth is really the stream of goods and services that it creates.”

Today, we would call it gross national product or GDP.

# Definition of Gross Domestic Product

- A country's Gross Domestic Product, or GDP, is the amount of goods and services, measured at market prices, produced within the country during a particular time period (usually a year).
- Gross National Product, or GNP, is the amount of goods and services produced by residents of a country, regardless of where that production takes place.
- GDP measures production, not exchange.
- Government agencies are continuously revising the data and occasionally find sizable errors in GDP or GDP components. Keeping GDP current and accurate is no mean feat.



# GDP = NI – NFI - CDF

## INCOME APPROACH

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NI = Wages + Interest + Rent + Profits  
(National Income received via production)

NFI = Net Income from rest of world

CDF = Capital depreciation adjustment


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

# SPENDING CALCULATION

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C = Consumption

G = Government Spending

I = Investment

N = Net Exports

# GROSS DOMESTIC PRODUCT

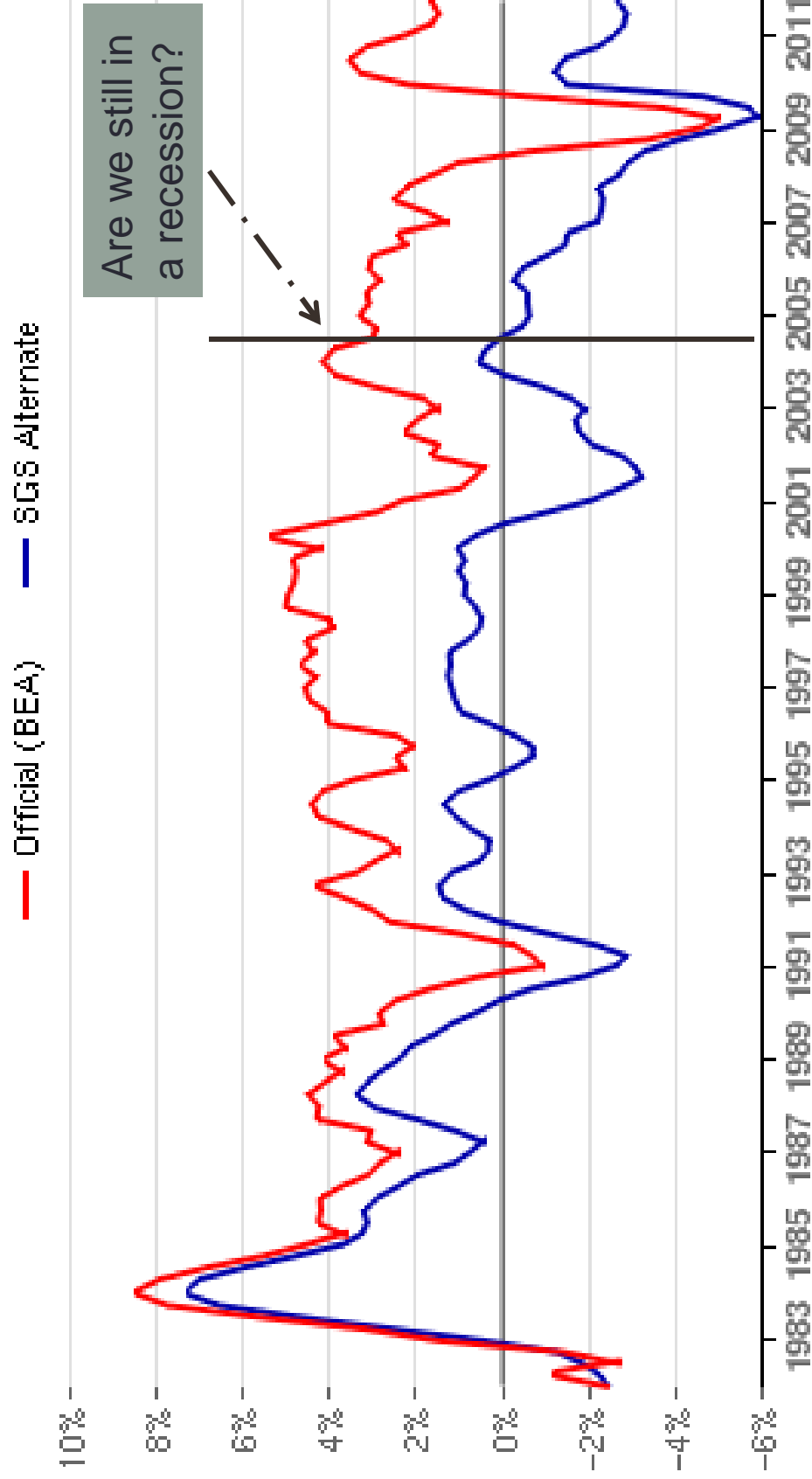
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How PCE affects final data ...

# Stumble and Minors

## GDP Annual Growth - Official vs SGS

Annual Change through 2011q4 (SGS, BEA)



Published: Mar. 29, 2012

shadowstats.com

# PCE Quarterly Changes

GDP 2011 PCE Comparison	
Quarter ending	Percent
March	2.50%
June	2.50%
September	2.60%
December	0.90%
Source: U.S. Commerce Department	

- 2011 GDP was 2.2% in Q4.
- What effect did the 0.90% PCE have on the reported number.
- The lower the inflation rate that is used in deflating the GDP, the stronger is the resulting inflation-adjusted number and vice versa.





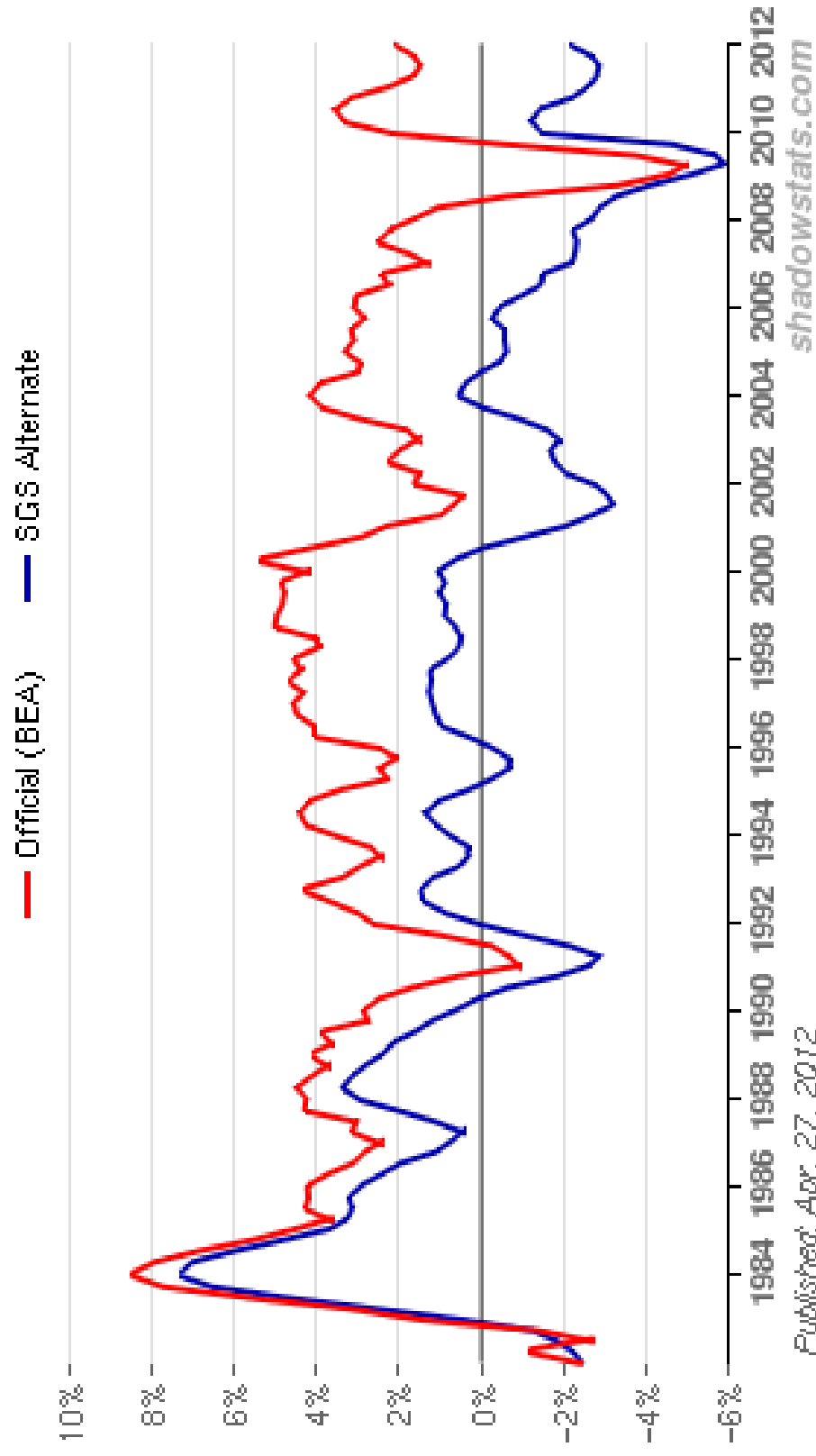
# CURRENT GDP 1ST QTR 2012

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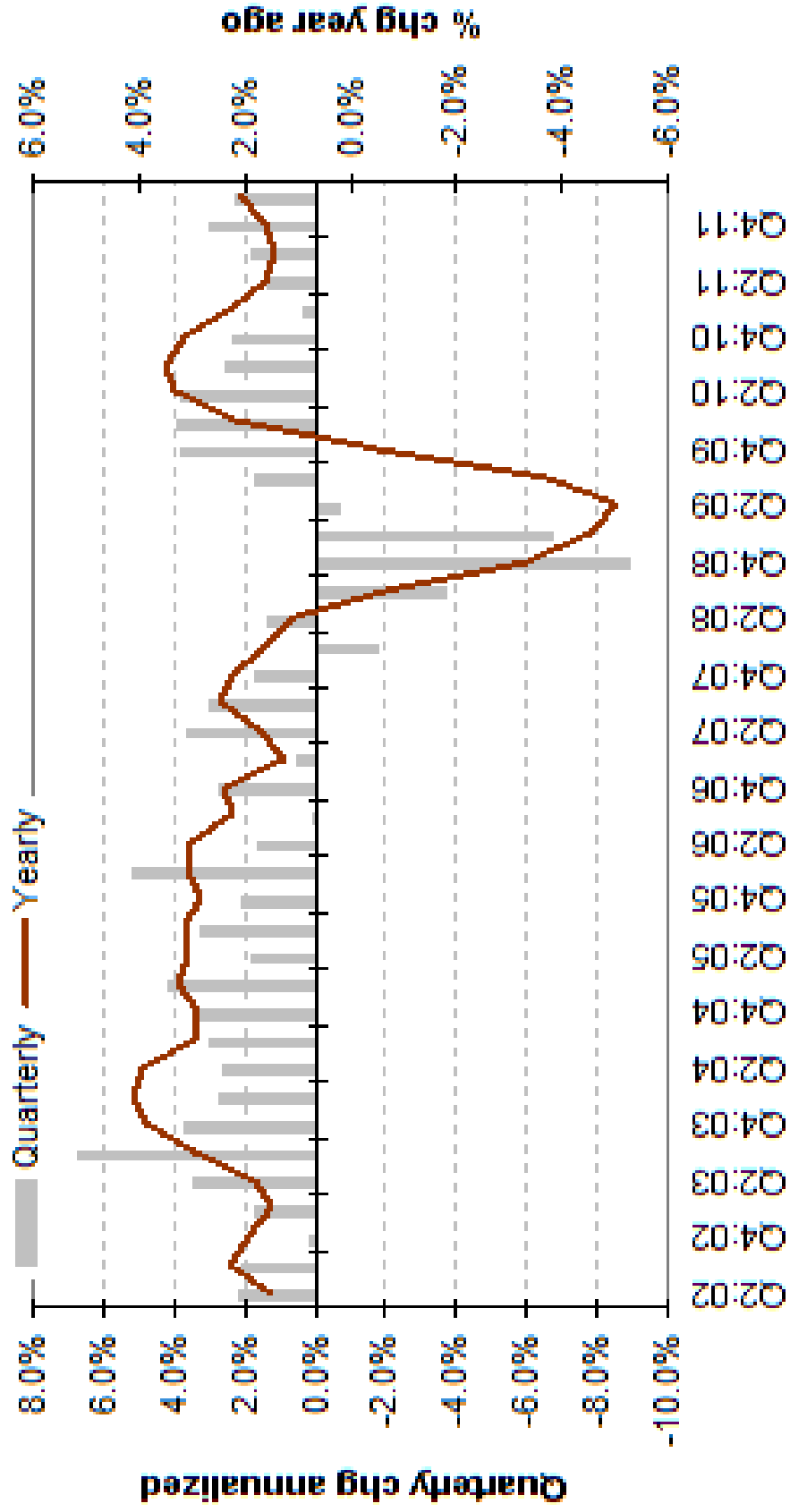
What questions should you ask?

## GDP Annual Growth - Official vs SGS

Annual Change through 2012q1 (SGS, BEA)



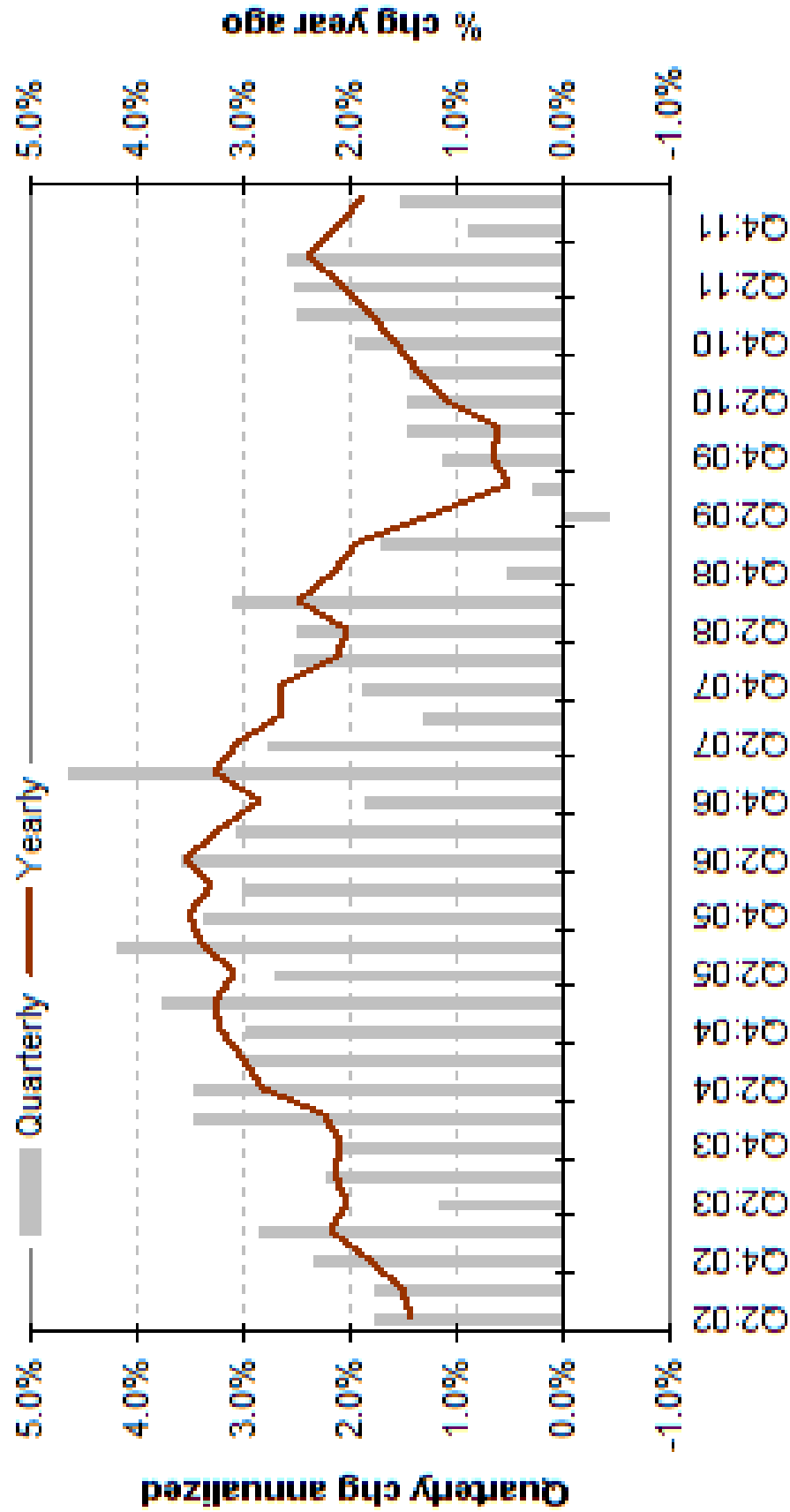
### Real GDP Growth



updated 4/27/12

ECONODAY™

### GDP Price Index



updated 4/27/12

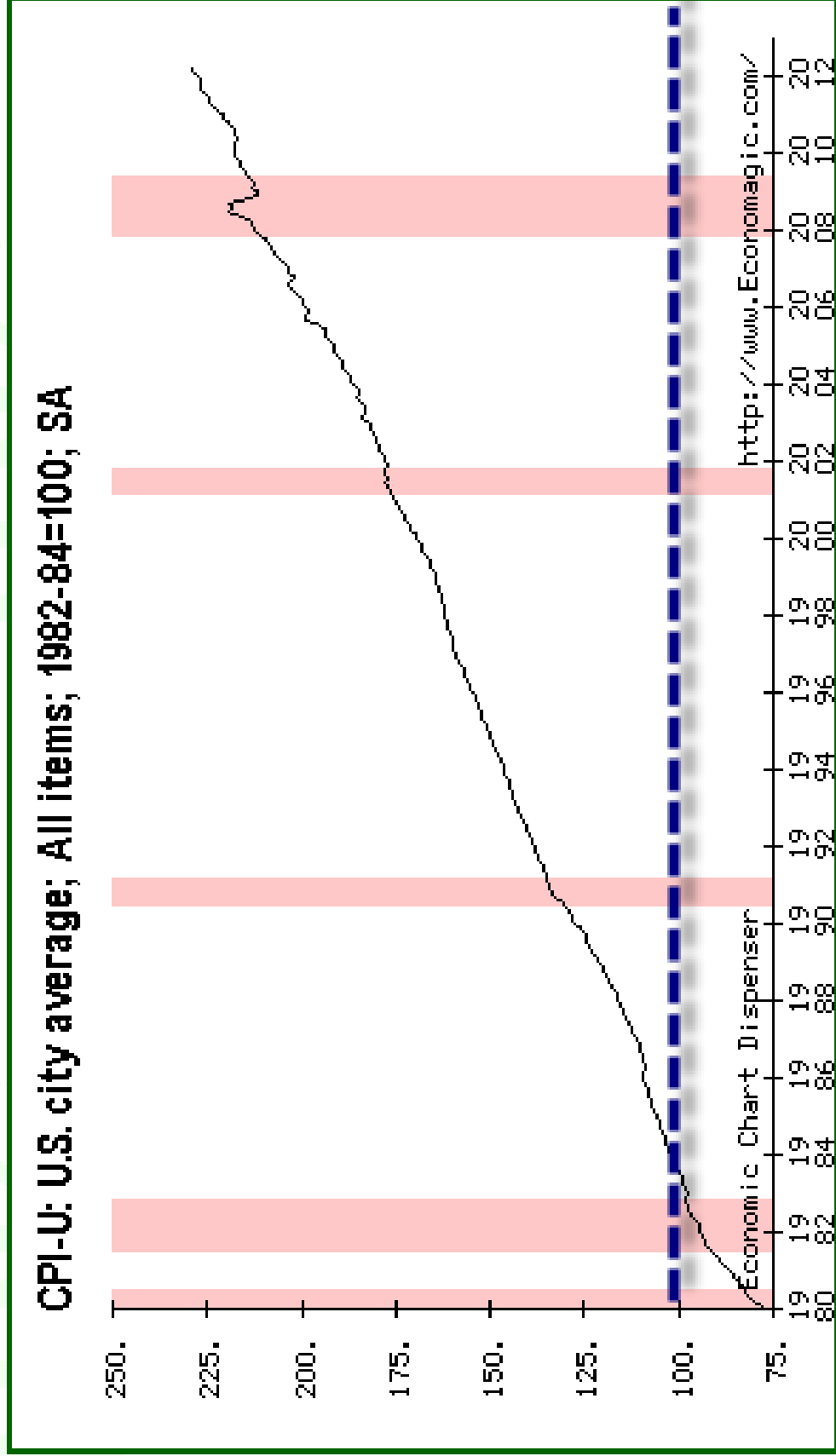
EGONODAY™

# COST OF LIVING (CPI)

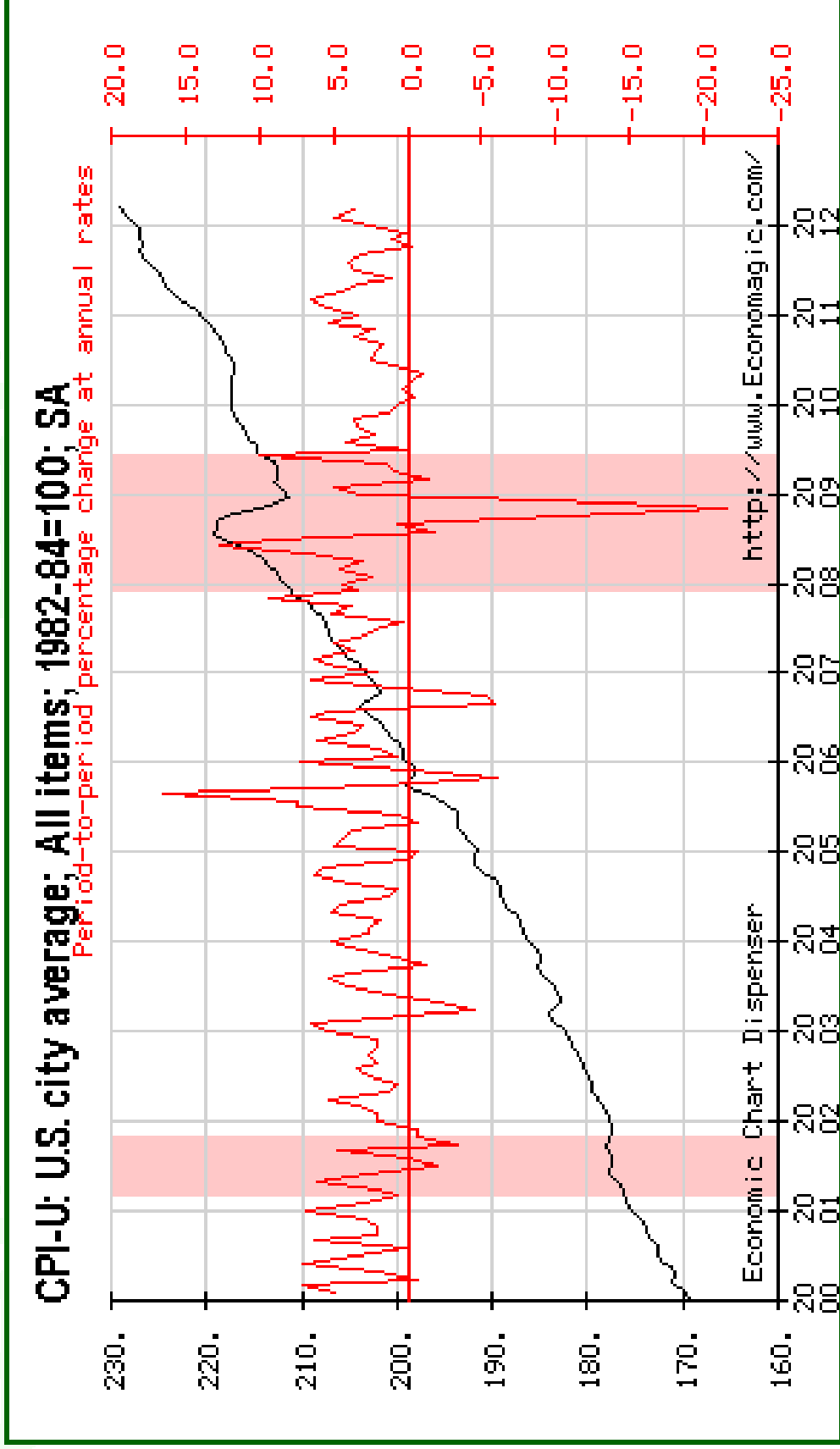
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Is it representative of the real world?

# Cost of Living – BLS



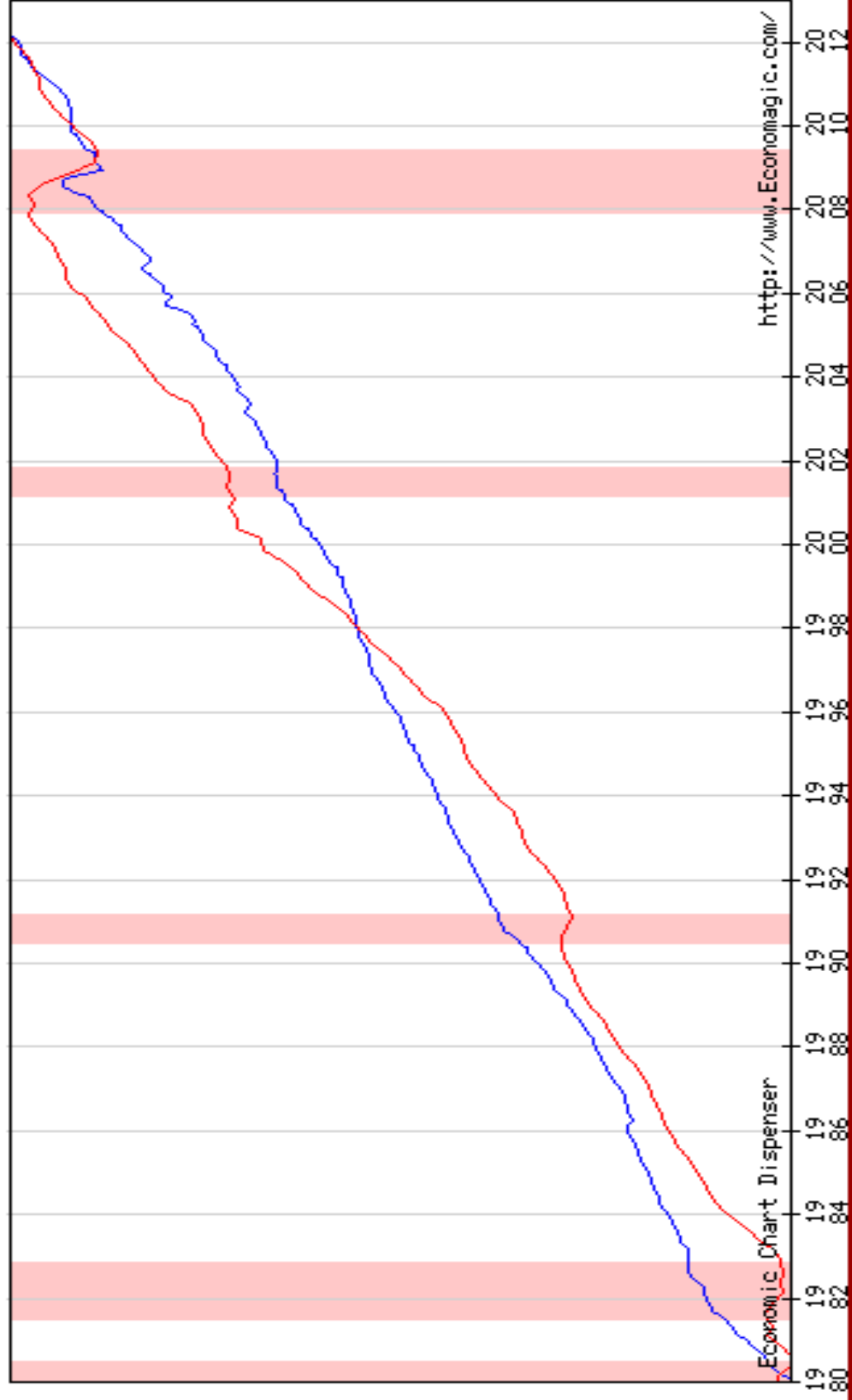
# CPI – Annual percentage change



## GDP and CPI 1990 - 2013

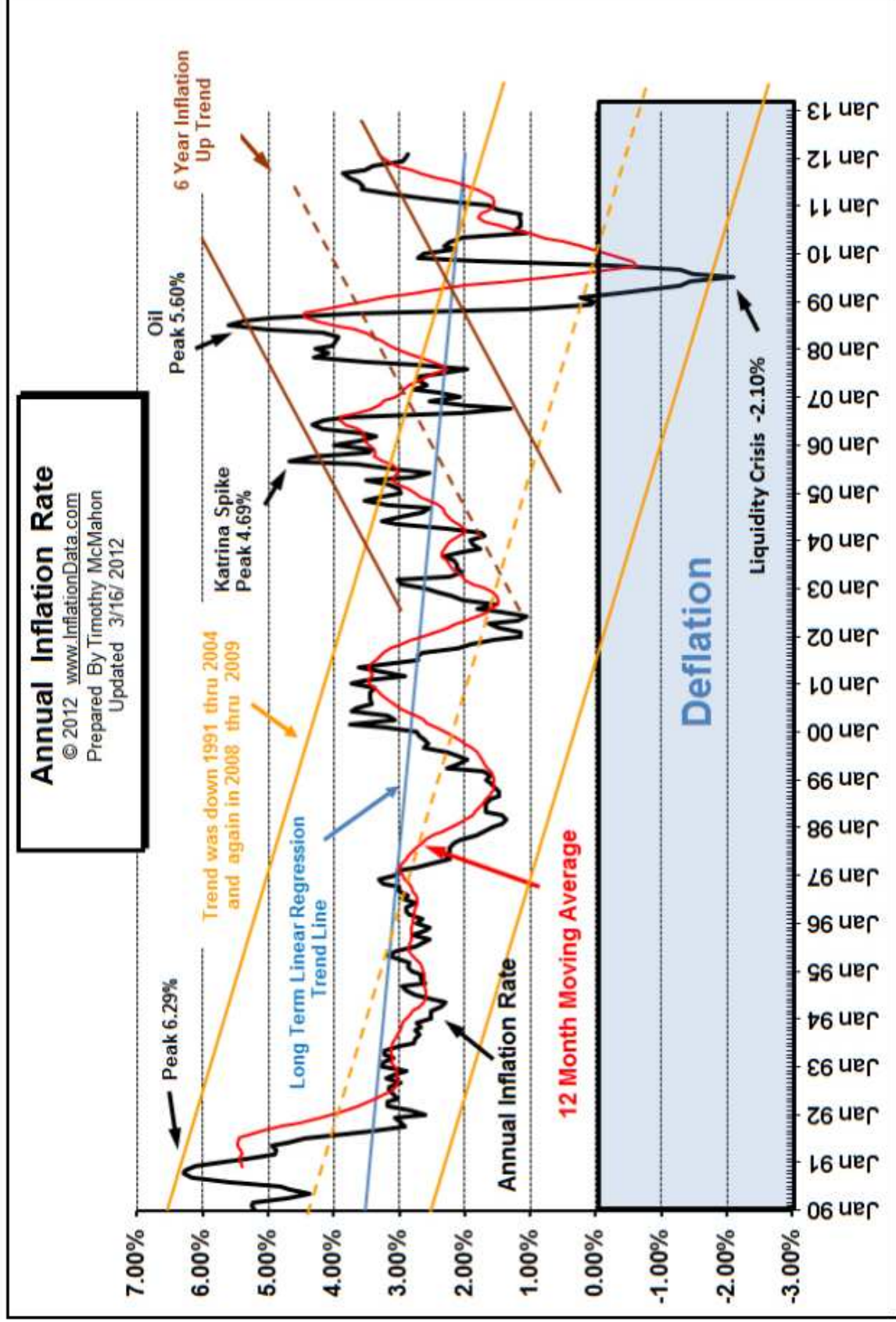
— CPI-U: U.S. city average; All items; 1982-84=100; SA

— Gross domestic product: Real Gross Domestic Product, Chained Dollars: Billions of chained 2005 dollars; Seasonally adjusted at annual rates (quarterly)





# Consumer Price Index



# Apples and Oranges



# Games played with data

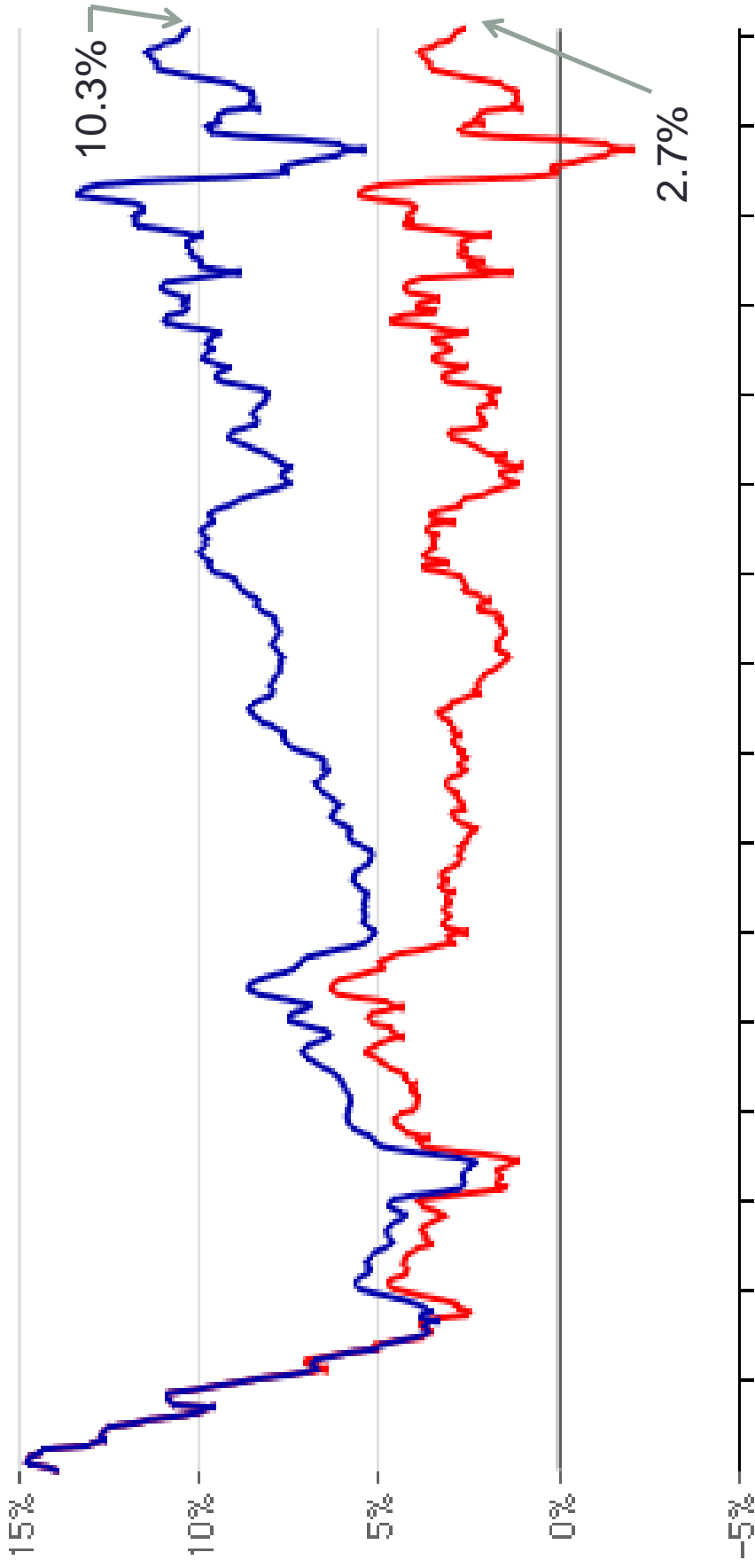
- Seasonal vs. raw data
- Substitution ... steak vs. hamburger
- Arithmetic weighting of CPI components to geometric
- Laspeyres estimator vs. geometric weighting.
- Hedonic offsets
- Intervention analysis to reduce violent swings
- Rental Expense vs. Owner's Equivalent rent
- Core inflation ... ex food and energy.

**So what's the result?**

### Annual Consumer Inflation - Official vs SGS (1980-Based) Alternate

Year to Year Change. Through Mar. 2012. (BLS, SGS)

— SGS Alternate CPI, 1980-Based    — CPI-U



Published: Apr. 13, 2012

shadowstats.com

# Summary

- You must understand how the data is massaged and collected.
- Historical comparisons are often flawed.
- Bad data makes bad decisions
- Using raw data is best in my opinion!



THAT'S ALL!

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**Fred Richards**