LSE


CENTRE for ECONOMIC PERFORMANCE

*Lionel Robbins Memorial Lectures*

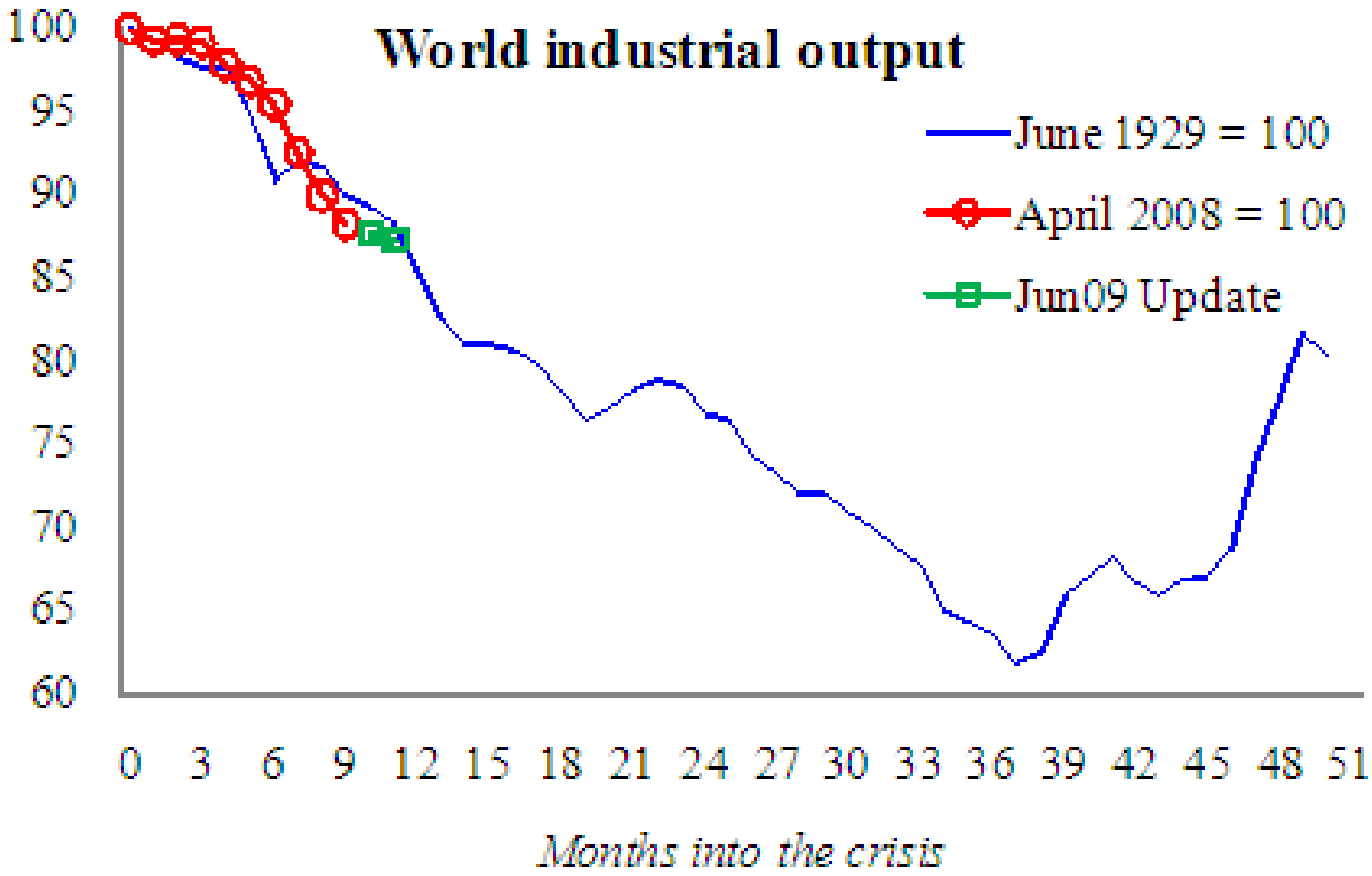
# The Return of Depression Economics
# Part 1: The Sum of all Fears

Professor Paul Krugman
*Centenary Professor At LSE*
*Professor of Economics and International Affairs, Woodrow Wilson School, Princeton University*

Howard Davies
*LSE, Chair*

# Lecture 1: The sum of all fears

Paul Krugman




From Eichengreen and O'Rourke


From Eichengreen and O'Rourke

This wasn’t supposed to be possible:

“The central problem of depression-prevention has been solved, for all practical purposes.”

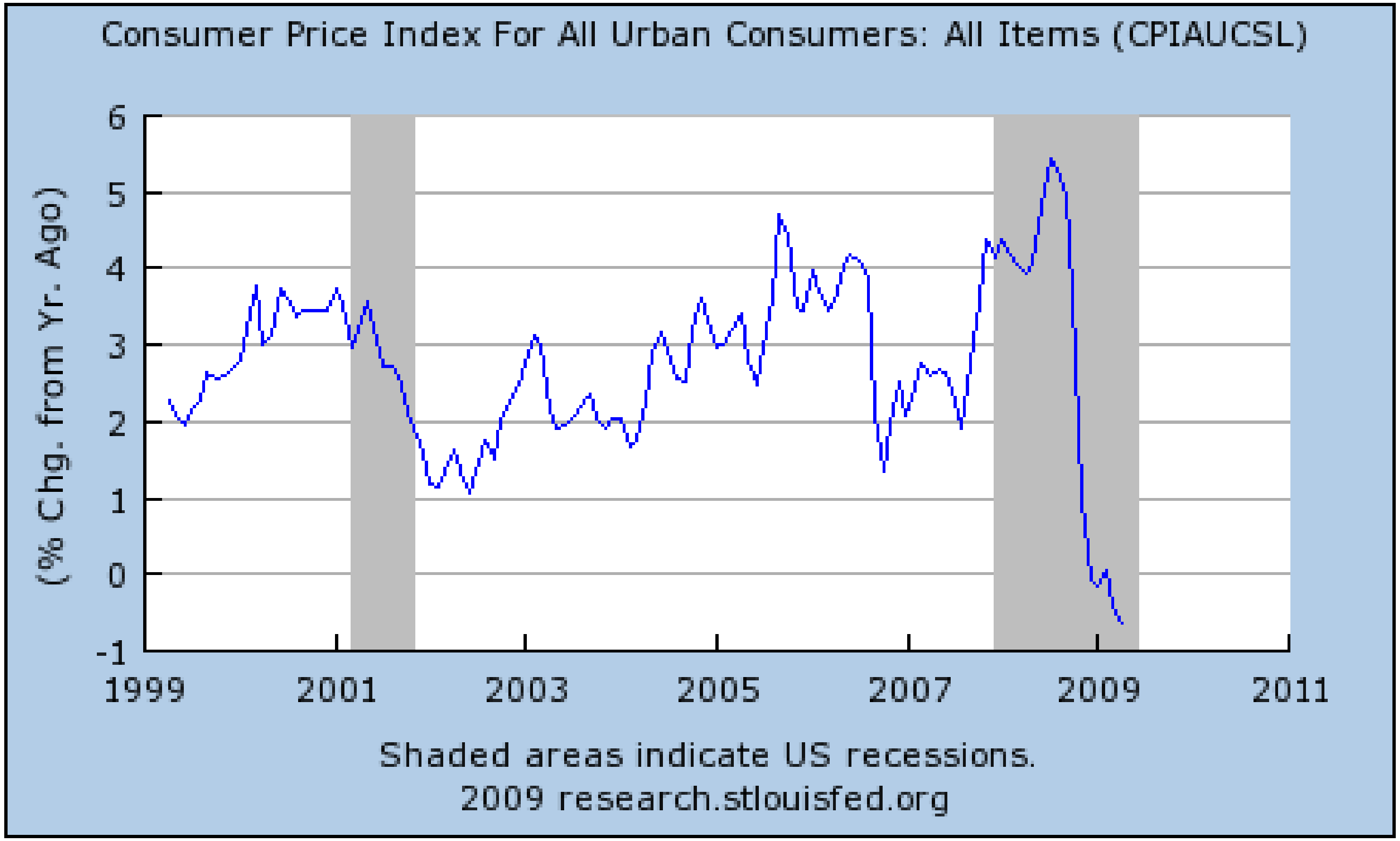
Robert Lucas, 2003

And many people said things that look stupid in retrospect …

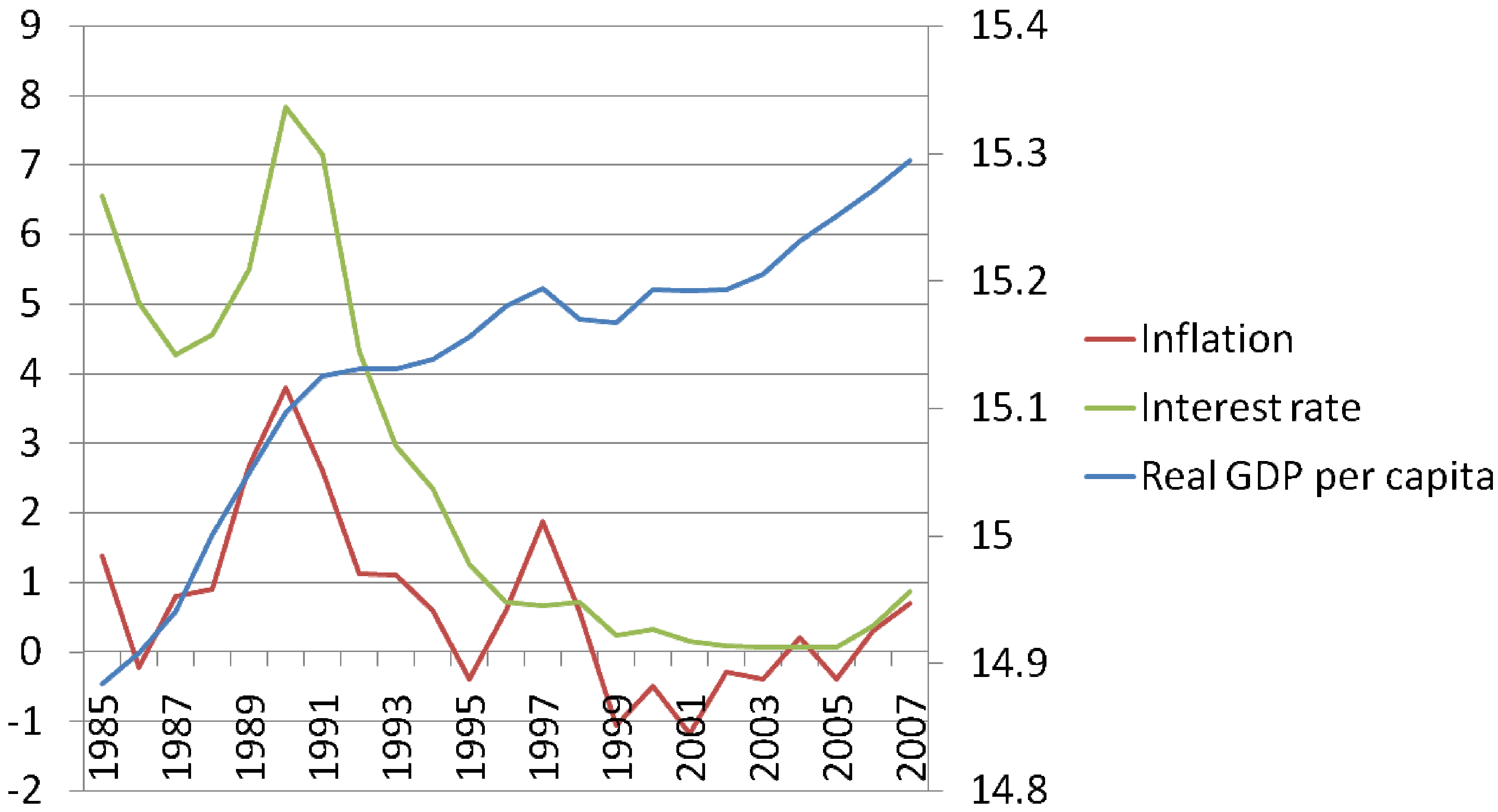
"If you want a simple model for predicting the unemployment rate in the United States over the next few years, here it is: It will be what Greenspan wants it to be, plus or minus a random error reflecting the fact that he is not quite God. "

Paul Krugman, 1997

# This is not a supply shock …

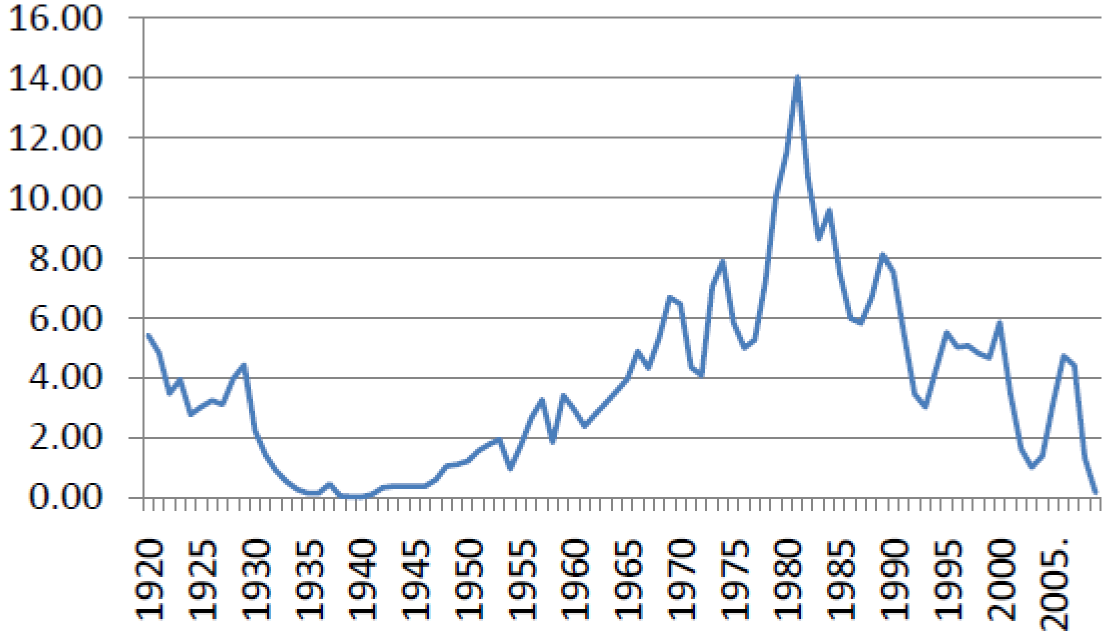


# Japan’s lost decade

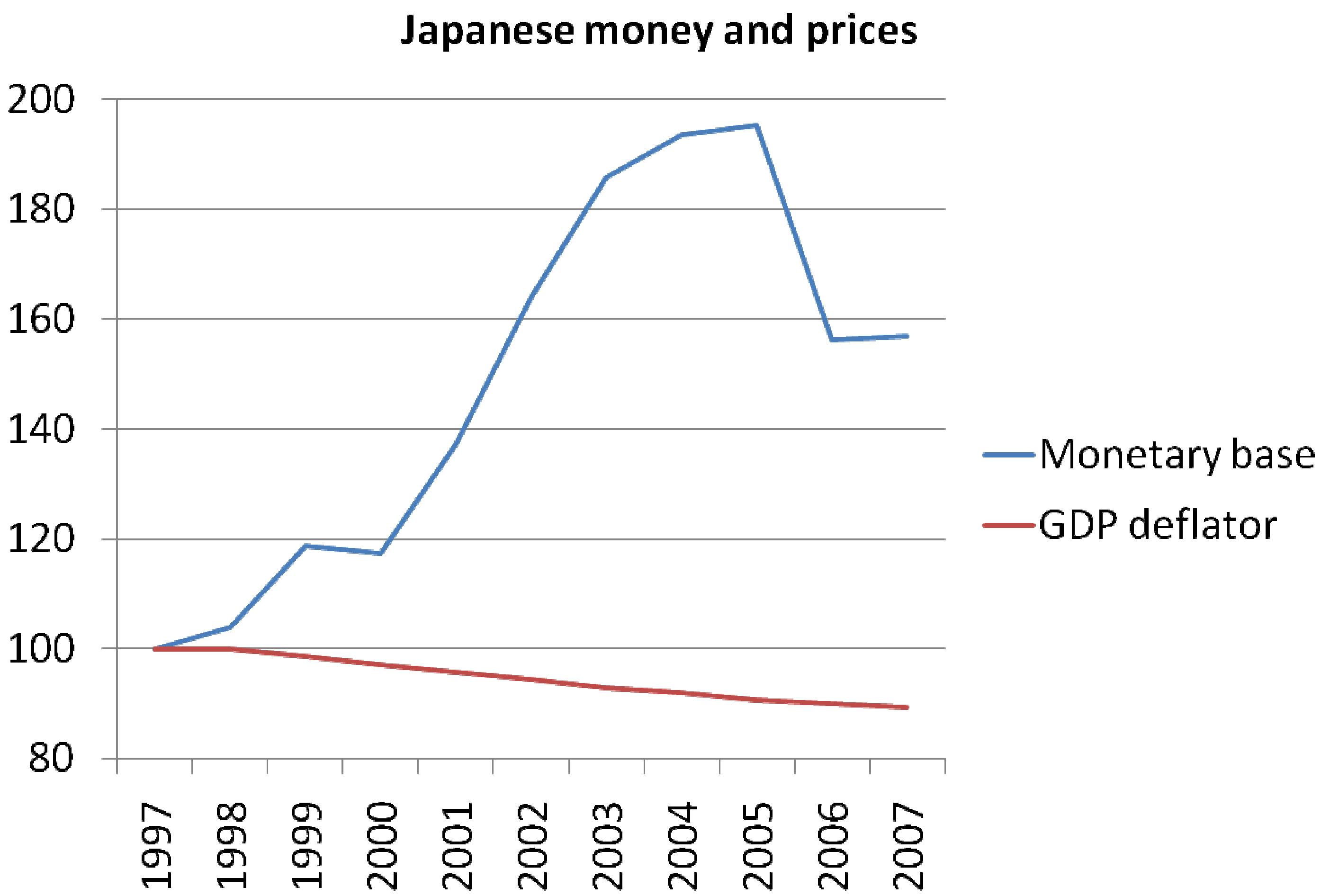



Source: IMF WEO database

## Short-term interest rates

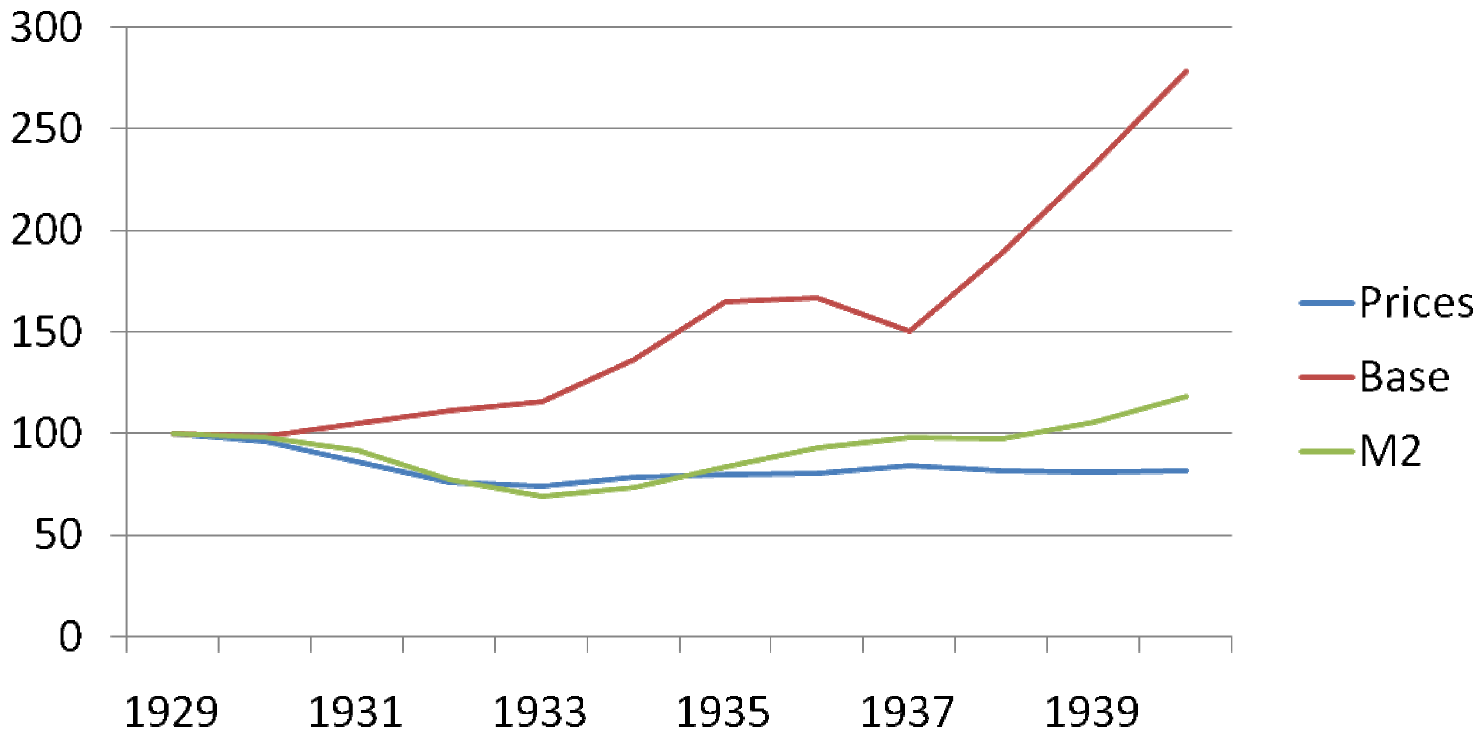



Source: Census, Federal Reserve

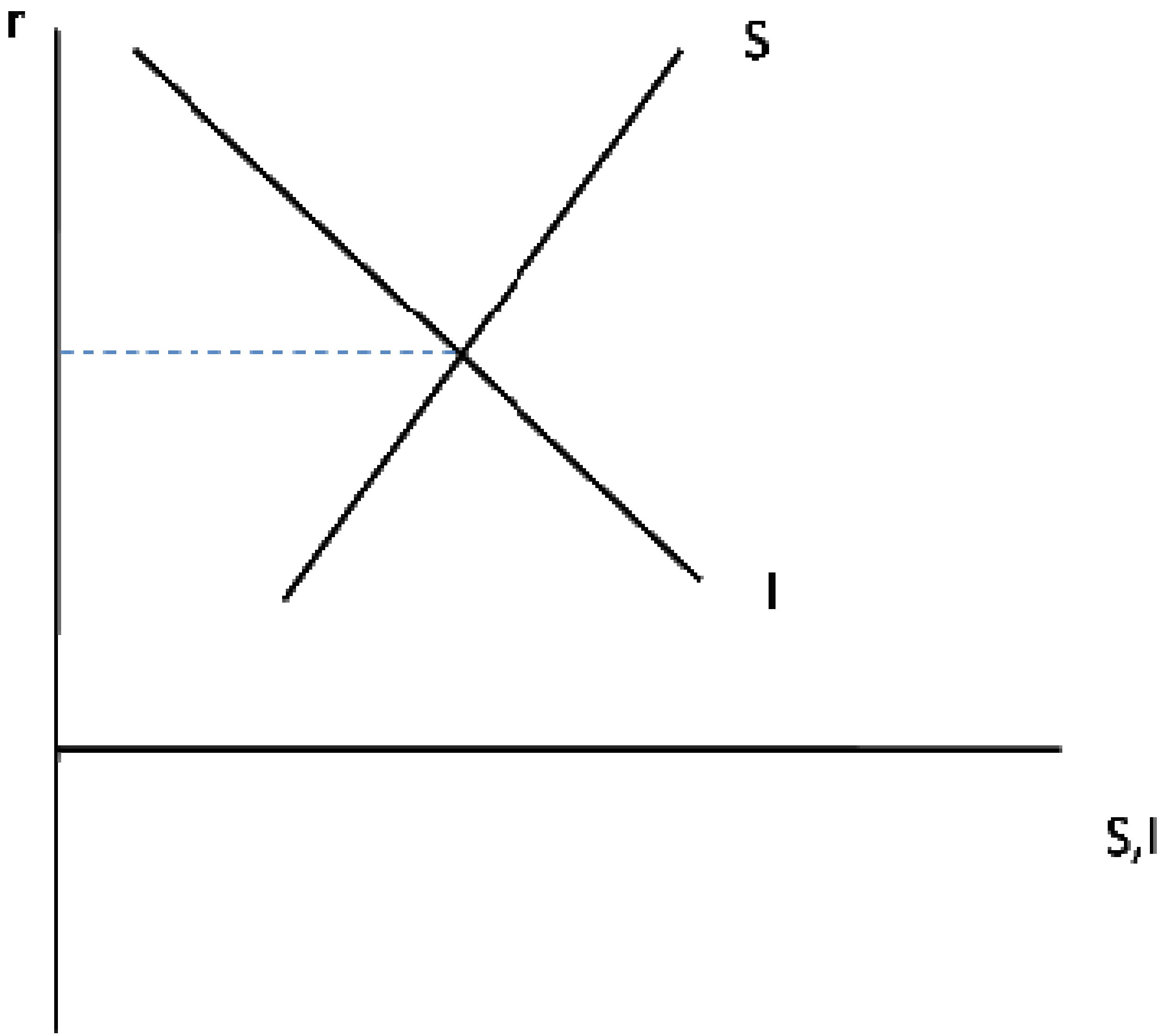


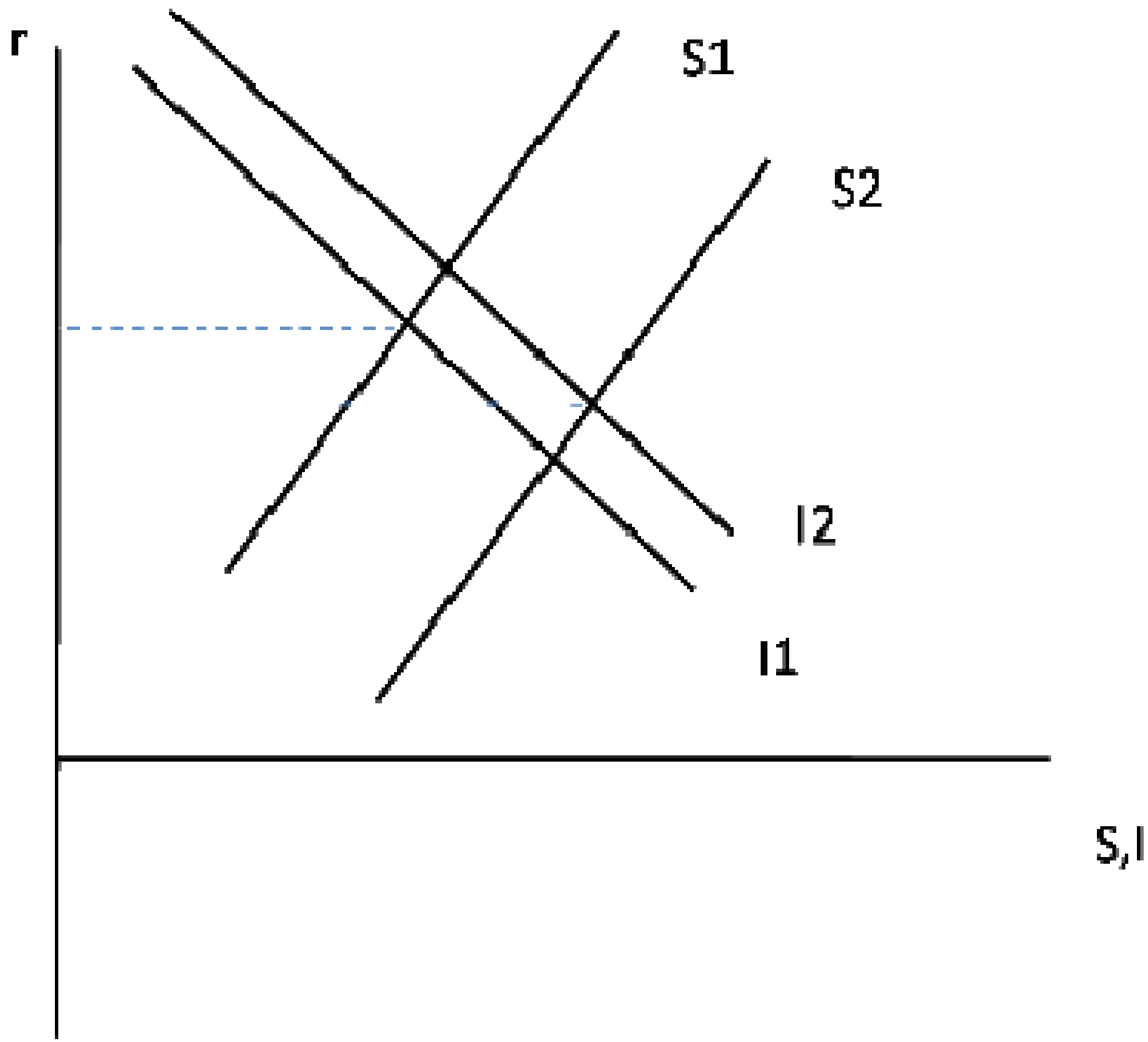

Source: Bank of Japan, IMF

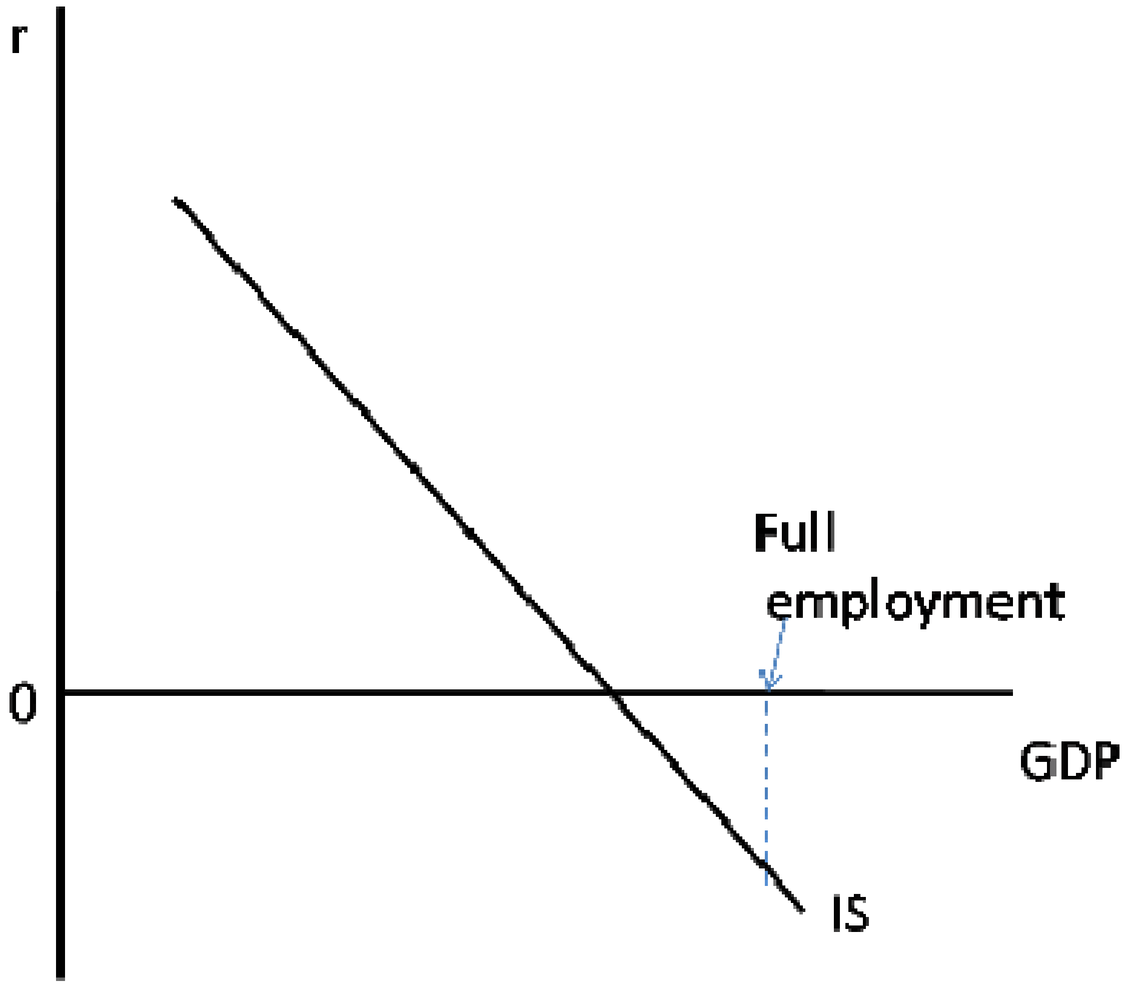
# Money and prices in the Great Depression

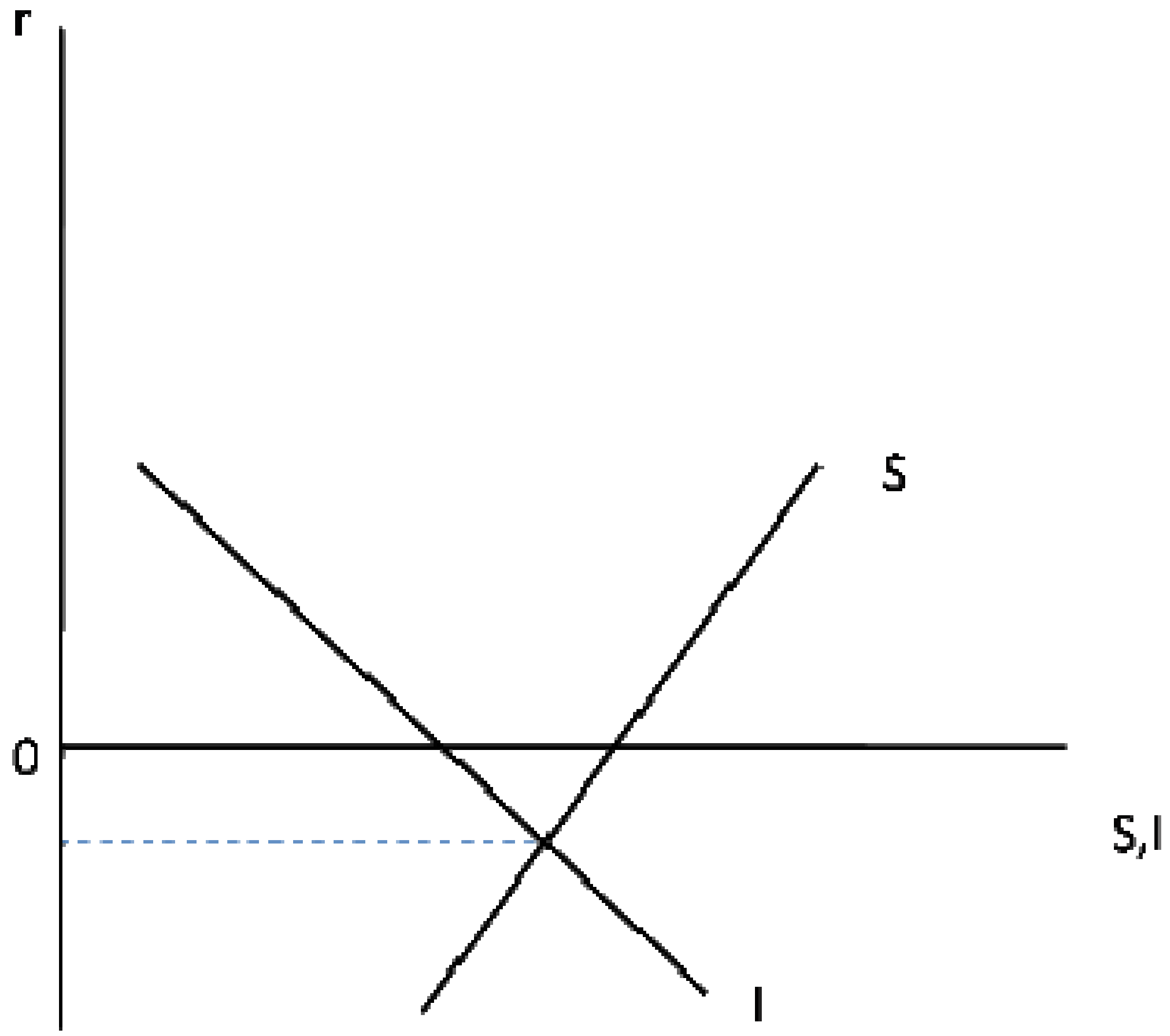



Source: BEA, Historical Statistics of the United States, St. Louis Fed

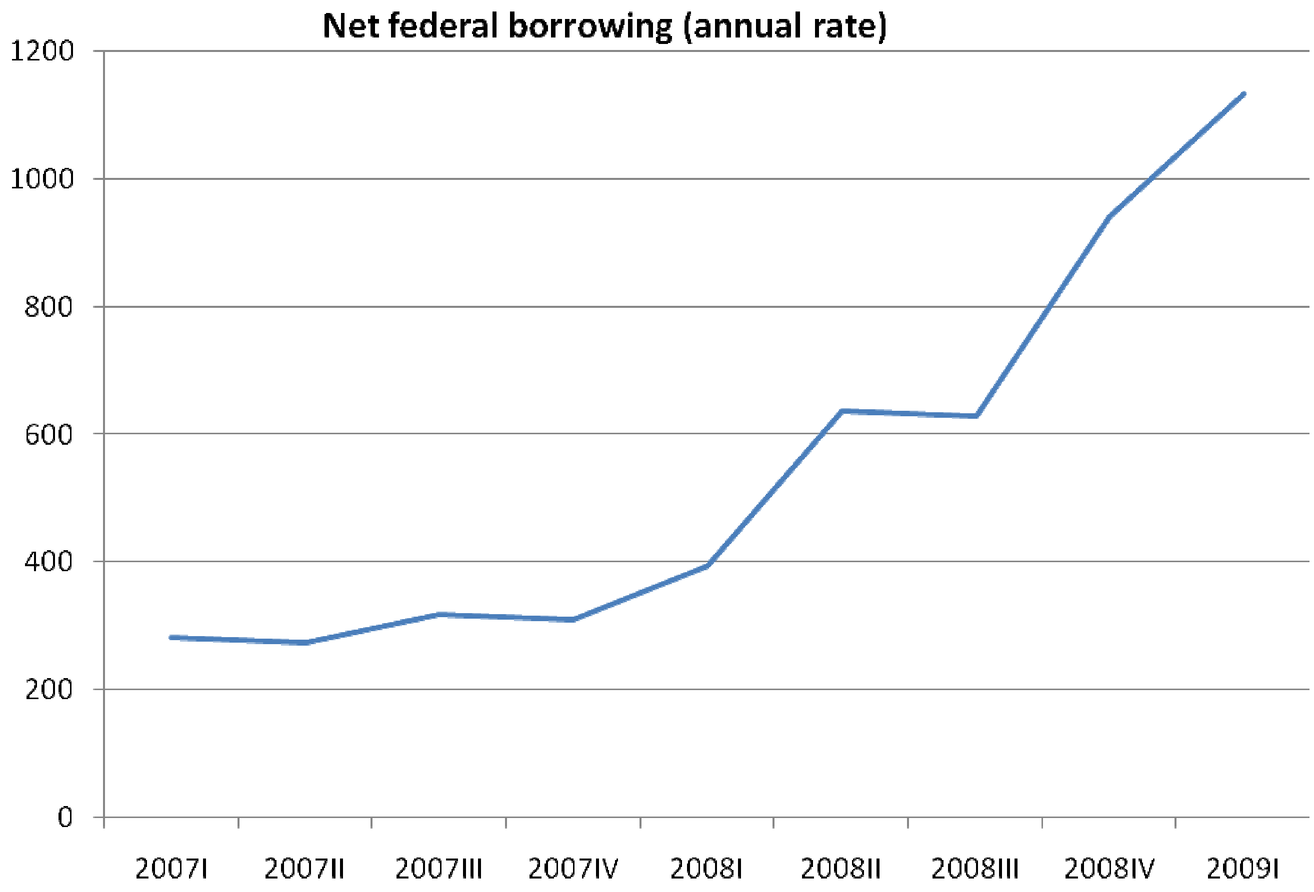

r
S
I
S,I

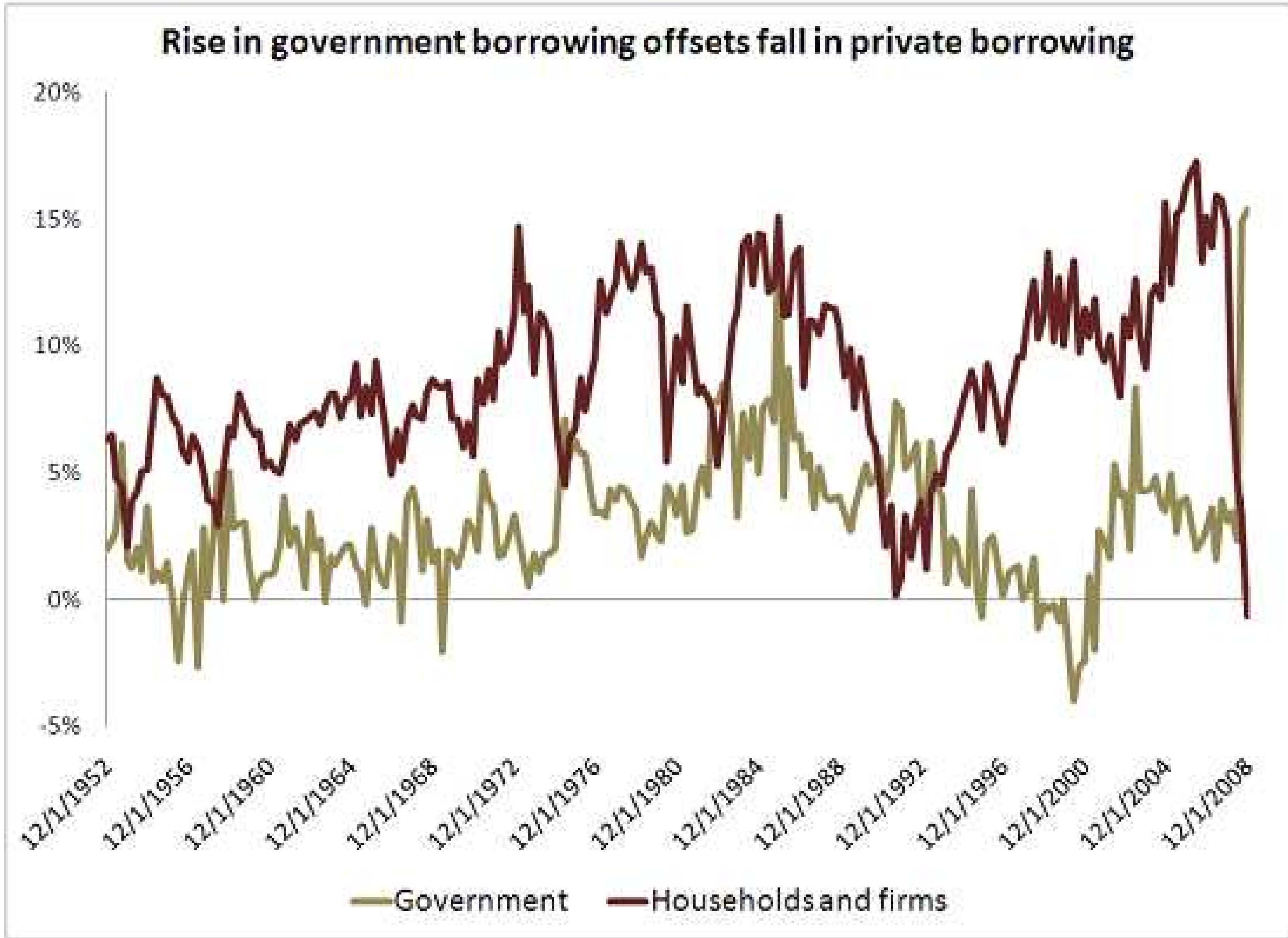

r
S1
S2
I2
I1
S,I


r
0
Full
employment
GDP
IS

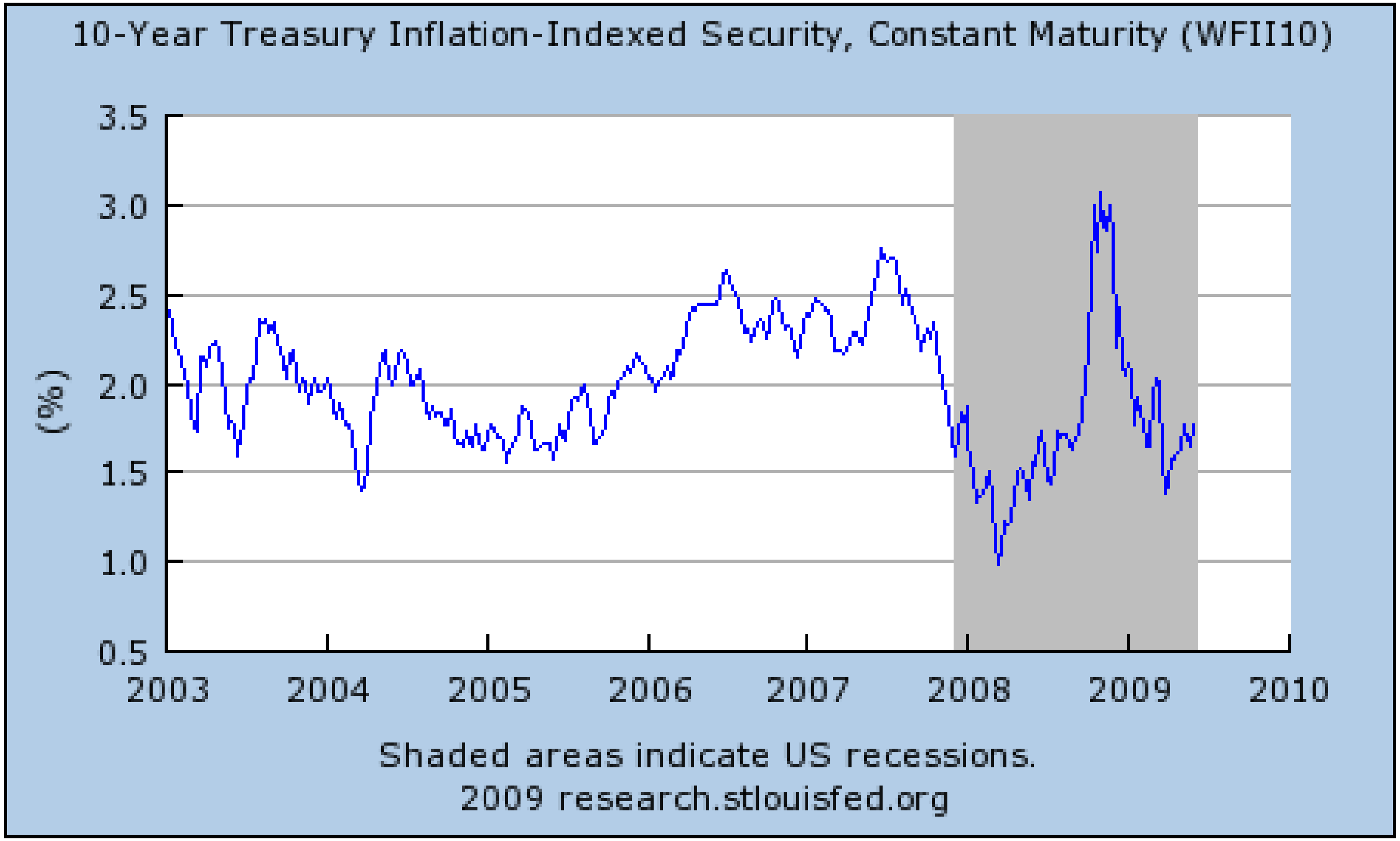


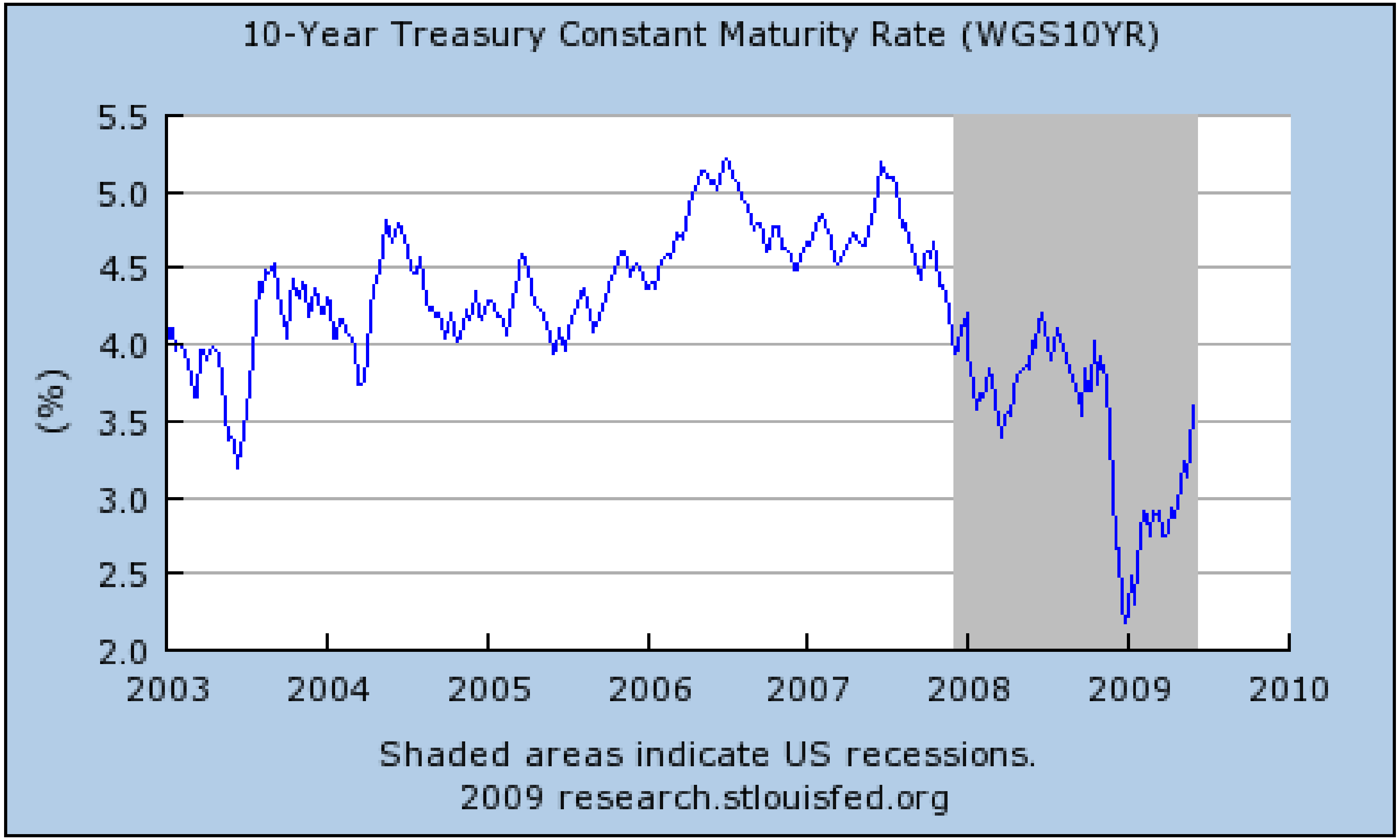
r
S
0
S,I
I


Net federal borrowing (annual rate)
1200
1000
800
600
400
200
0
2007I
2007II
2007III
2007IV
2008I
2008II
2008III
2008IV
2009I

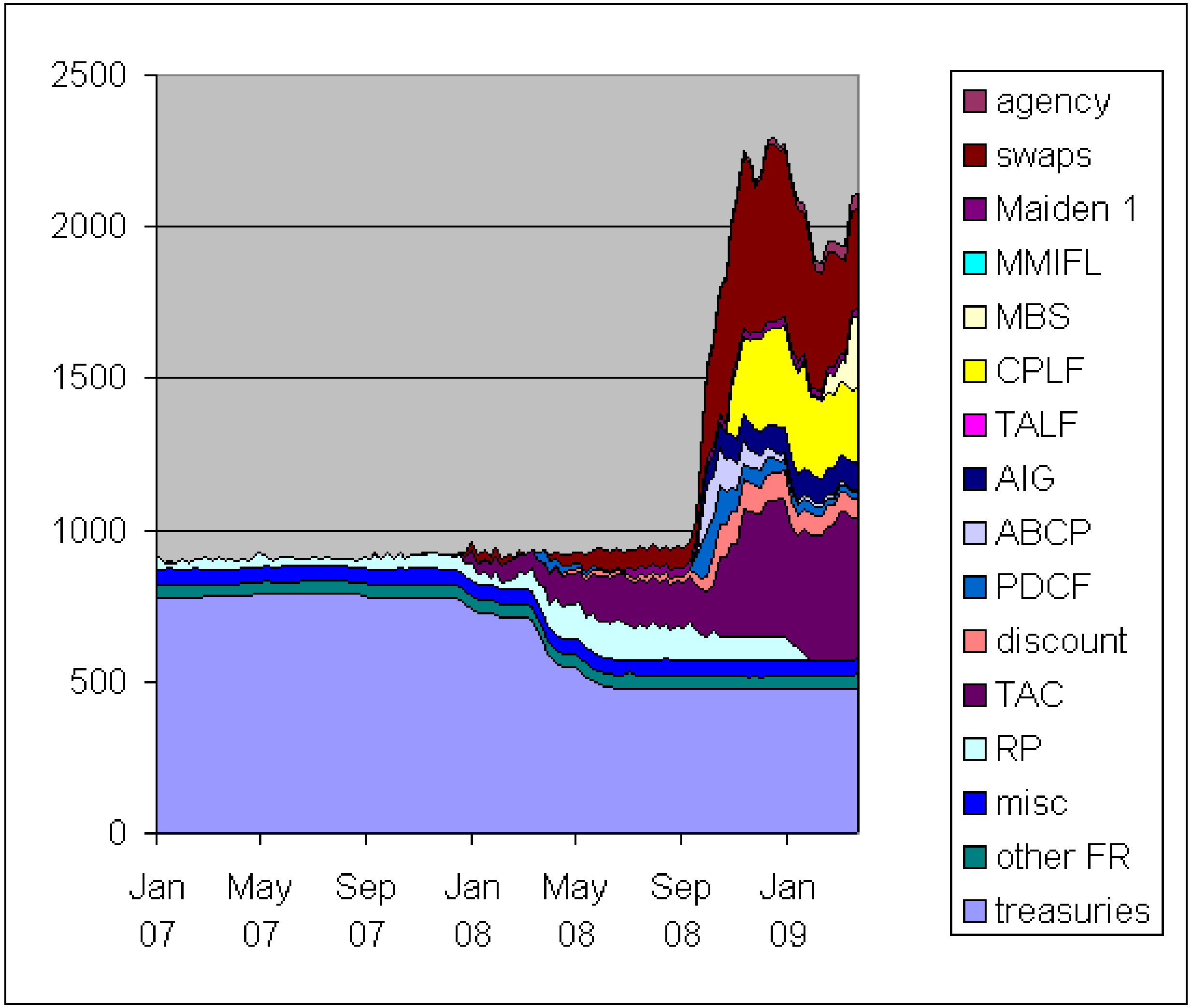



Source: Brad Setser

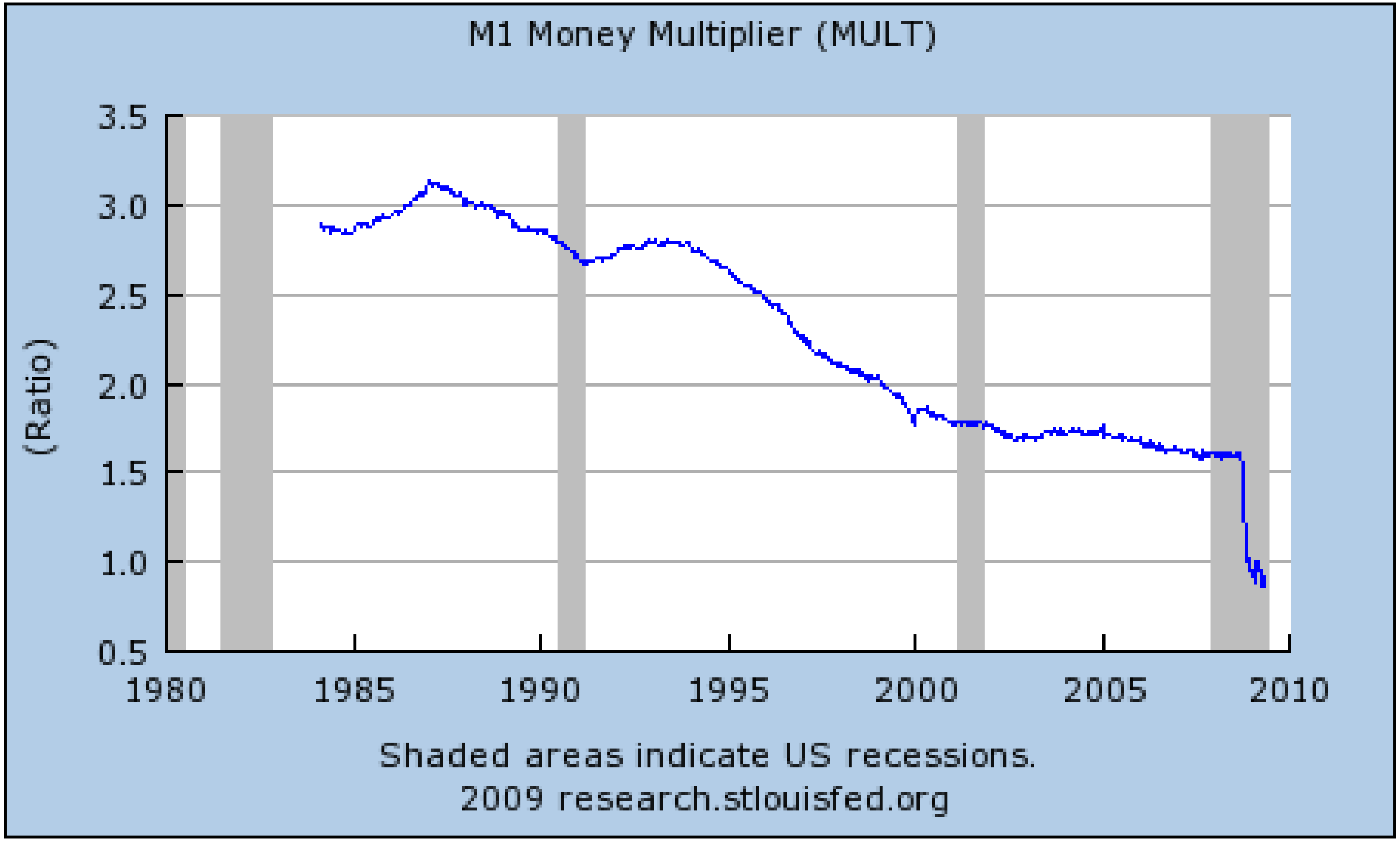

10-Year Treasury Inflation-Indexed Security, Constant Maturity (WFII10)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
(%)
2003
2004
2005
2006
2007
2008
2009
2010
Shaded areas indicate US recessions.
2009 research.stlouisfed.org


10-Year Treasury Constant Maturity Rate (WGS10YR)
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
(%)
2003
2004
2005
2006
2007
2008
2009
2010
Shaded areas indicate US recessions.
2009 research.stlouisfed.org

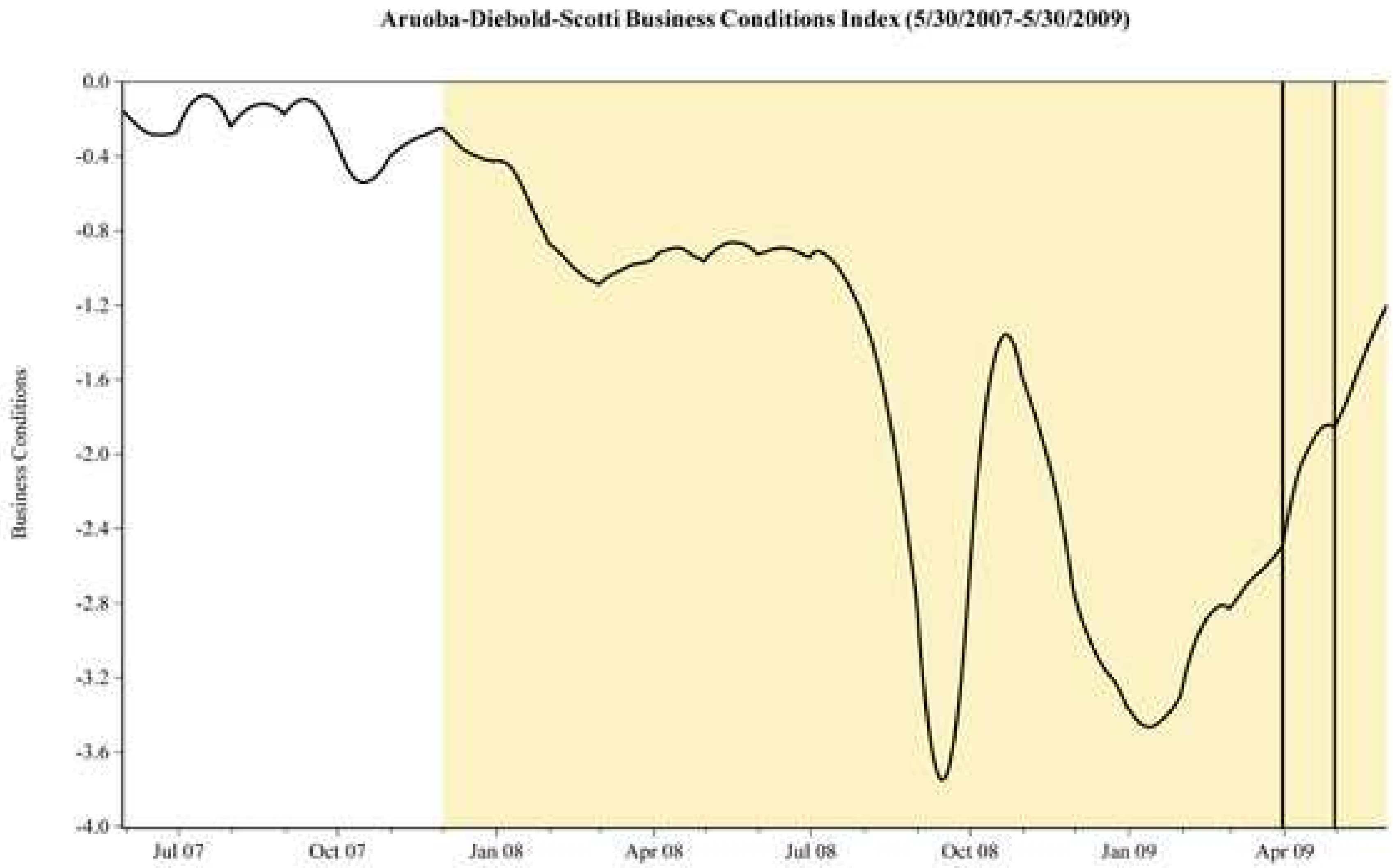
# The Fed steps out




Source: Federal Reserve/James Hamilton



M1 Money Multiplier (MULT)
(Ratio)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
1980
1985
1990
1995
2000
2005
2010
Shaded areas indicate US recessions.
2009 research.stlouisfed.org



Aruoba-Diebold-Scotti Business Conditions Index (5/30/2007-5/30/2009)
Business Conditions
0.0
-0.4
-0.8
-1.2
-1.6
-2.0
-2.4
-2.8
-3.2
-3.6
-4.0
Jul 07
Oct 07
Jan 08
Apr 08
Jul 08
Oct 08
Jan 09
Apr 09


LSE

CENTRE *for* ECONOMIC PERFORMANCE

*Lionel Robbins Memorial Lectures*

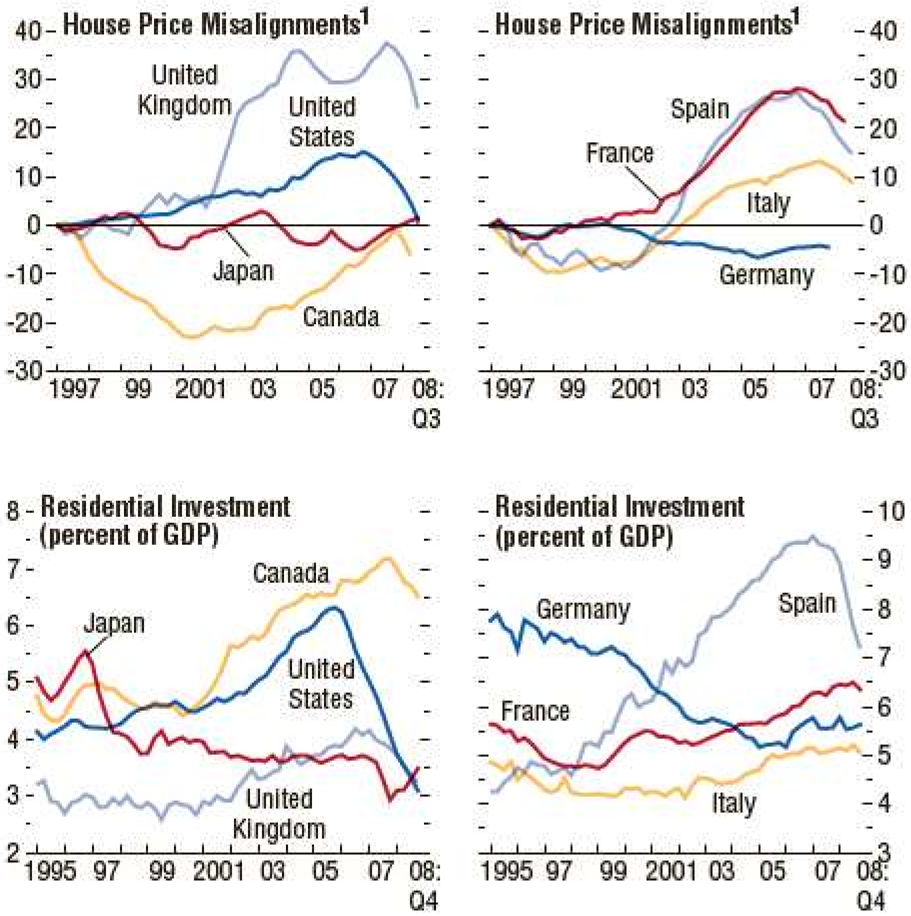
# The Return of Depression Economics Part 2: The eschatology of lost decades

Professor Paul Krugman
*Centenary Professor, LSE and Professor of Economics and International Affairs, Woodrow Wilson School, Princeton University*

Professor Lord Richard Layard
*LSE, Chair*

# Lecture 2: The eschatology of lost decades

Paul Krugman

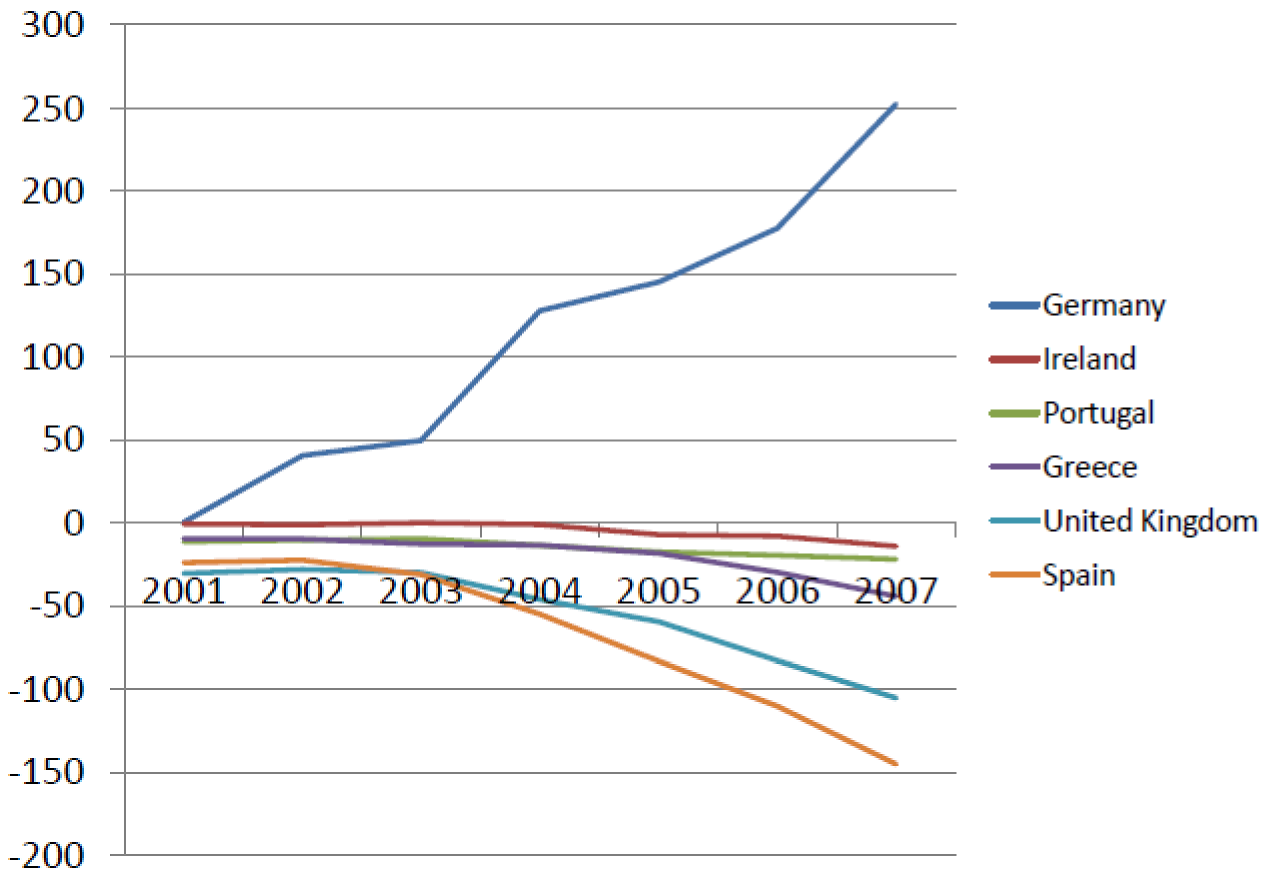


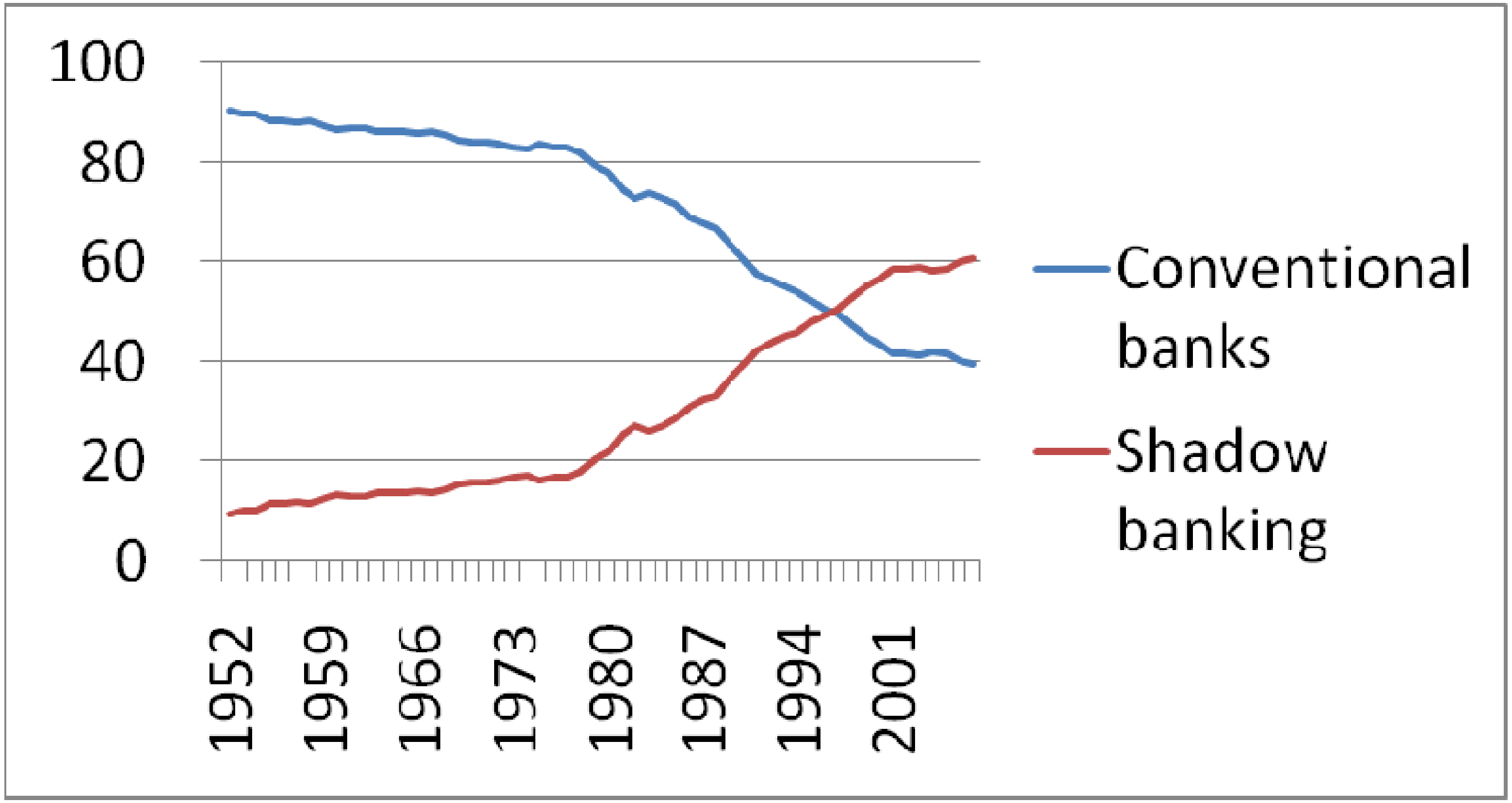
House Price Misalignments1
United Kingdom
United States
Japan
Canada
House Price Misalignments1
Spain
France
Italy
Germany
Residential Investment (percent of GDP)
Canada
Japan
United States
United Kingdom
Residential Investment (percent of GDP)
Germany
Spain
France
Italy
1997 99 2001 03 05 07 08: Q3
1995 97 99 2001 03 05 07 08: Q4

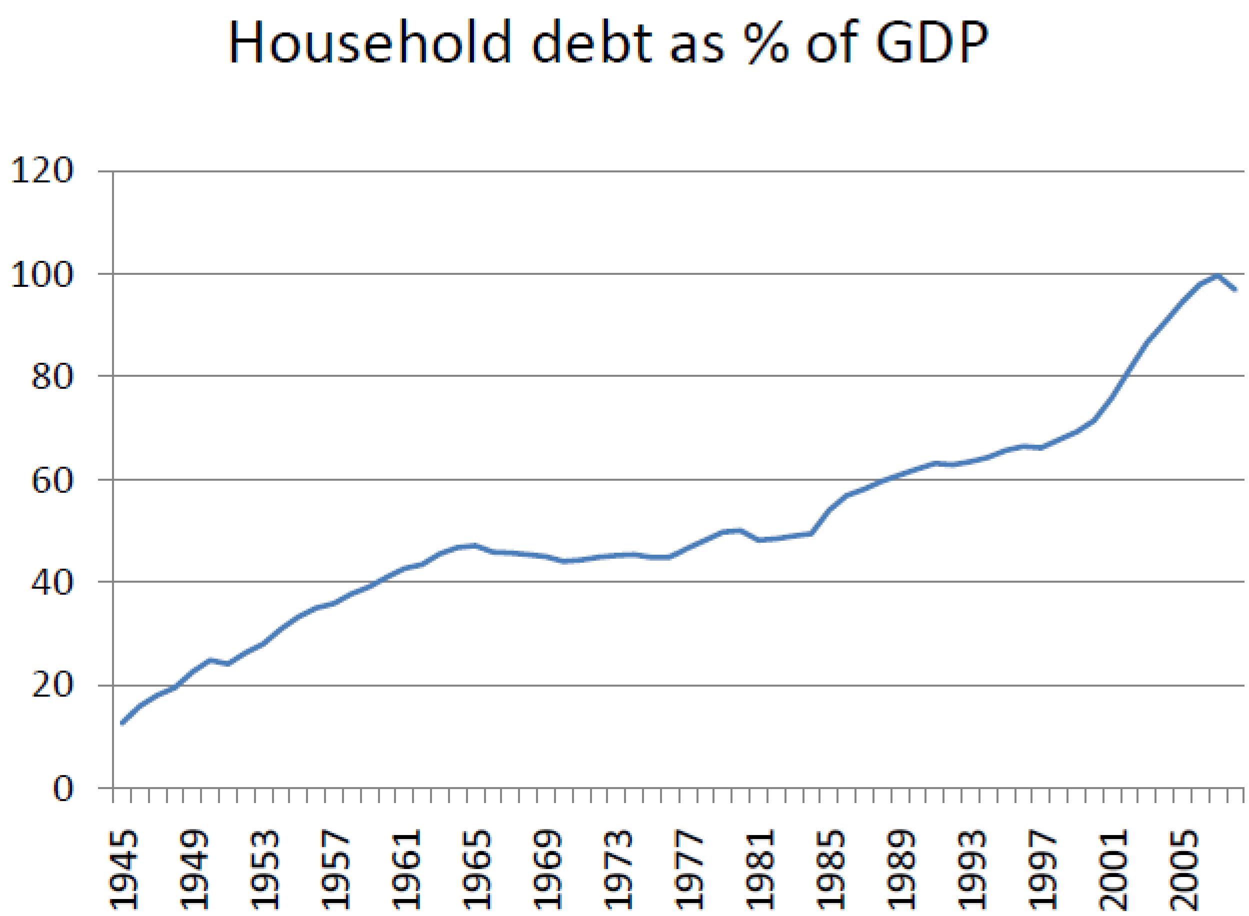
# Growing surpluses

| | 2000 | 2007 |
|---|---|---|
| Developing Asia | 38.6 | 406.5 |
| Newly Industrialized | 38.9 | 103.6 |
| Middle East | 71.9 | 254.1 |
| Japan | 119.6 | 211 |
| Germany | -32.6 | 250.3 |
| Total | 236.4 | 1225.5 |

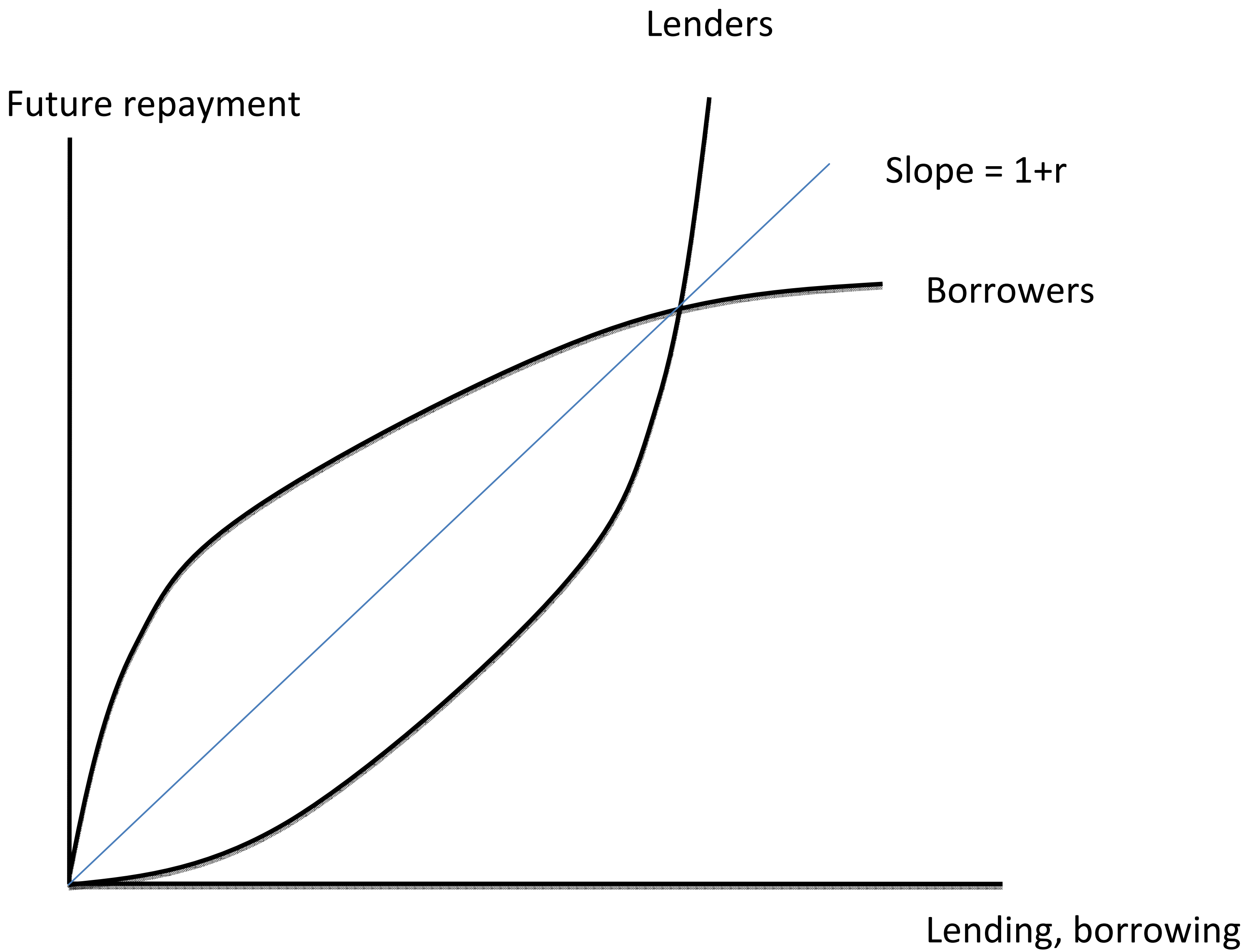
# European current accounts ($billion)

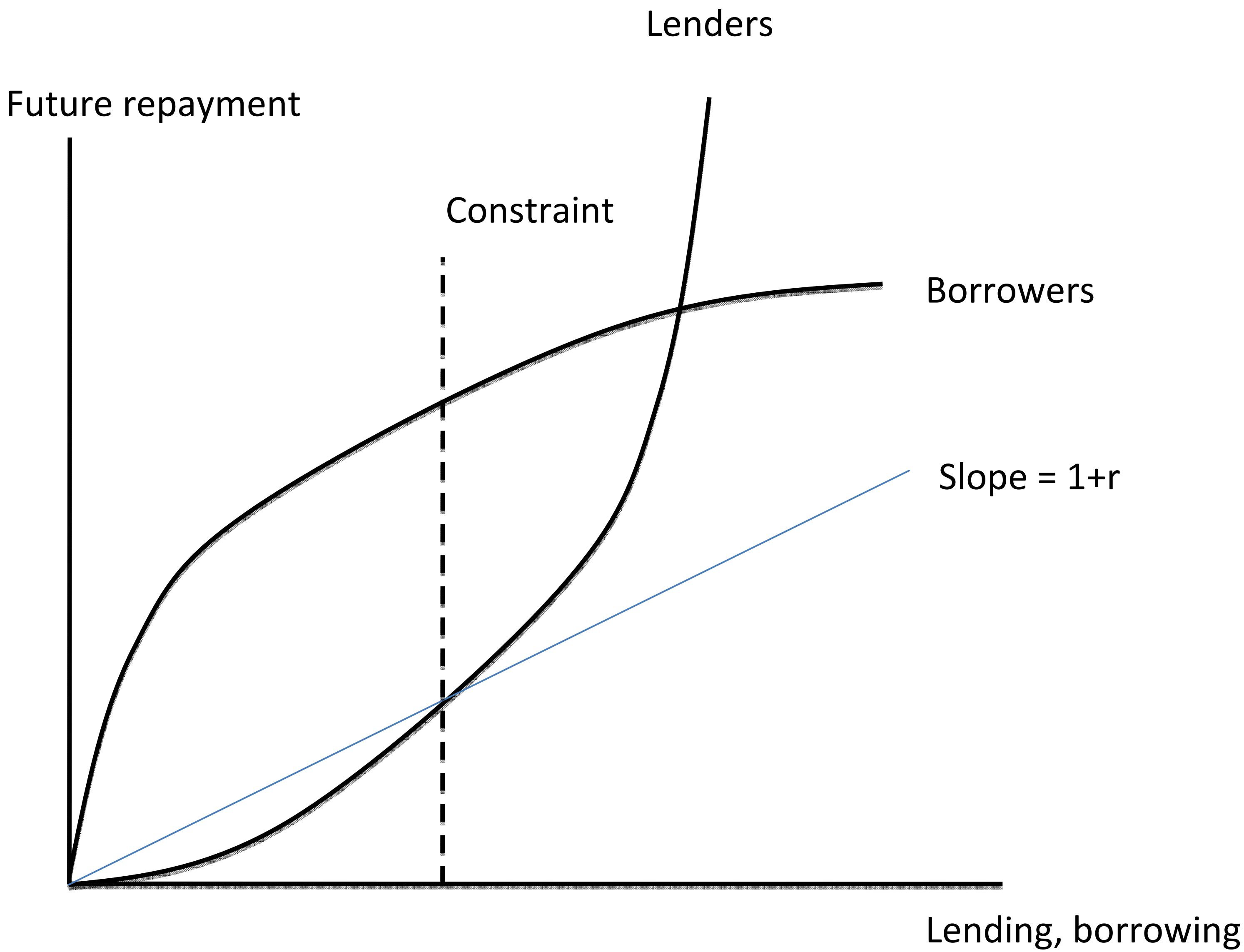



100
80
60
40
20
0
1952
1959
1966
1973
1980
1987
1994
2001
Conventional banks
Shadow banking

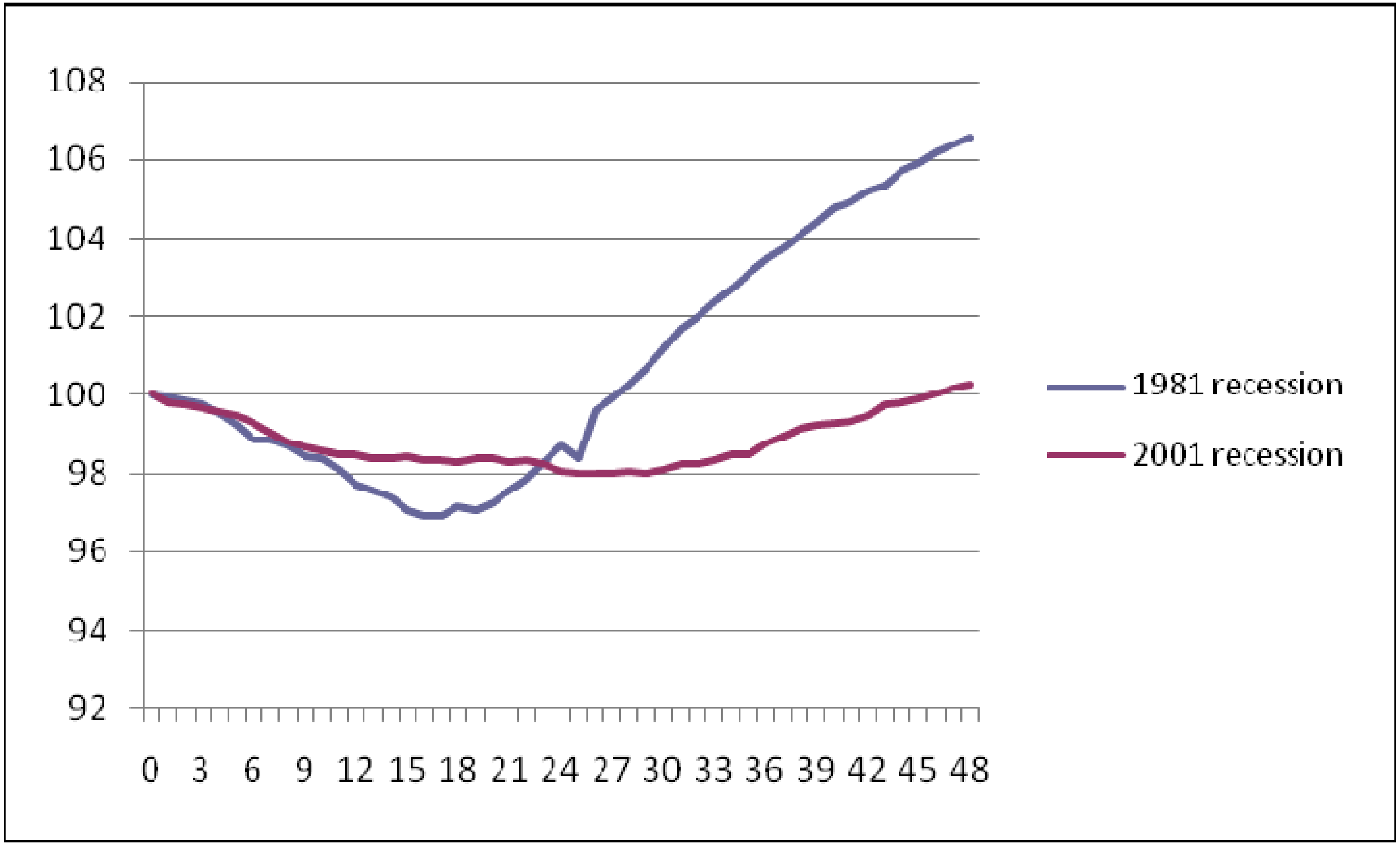


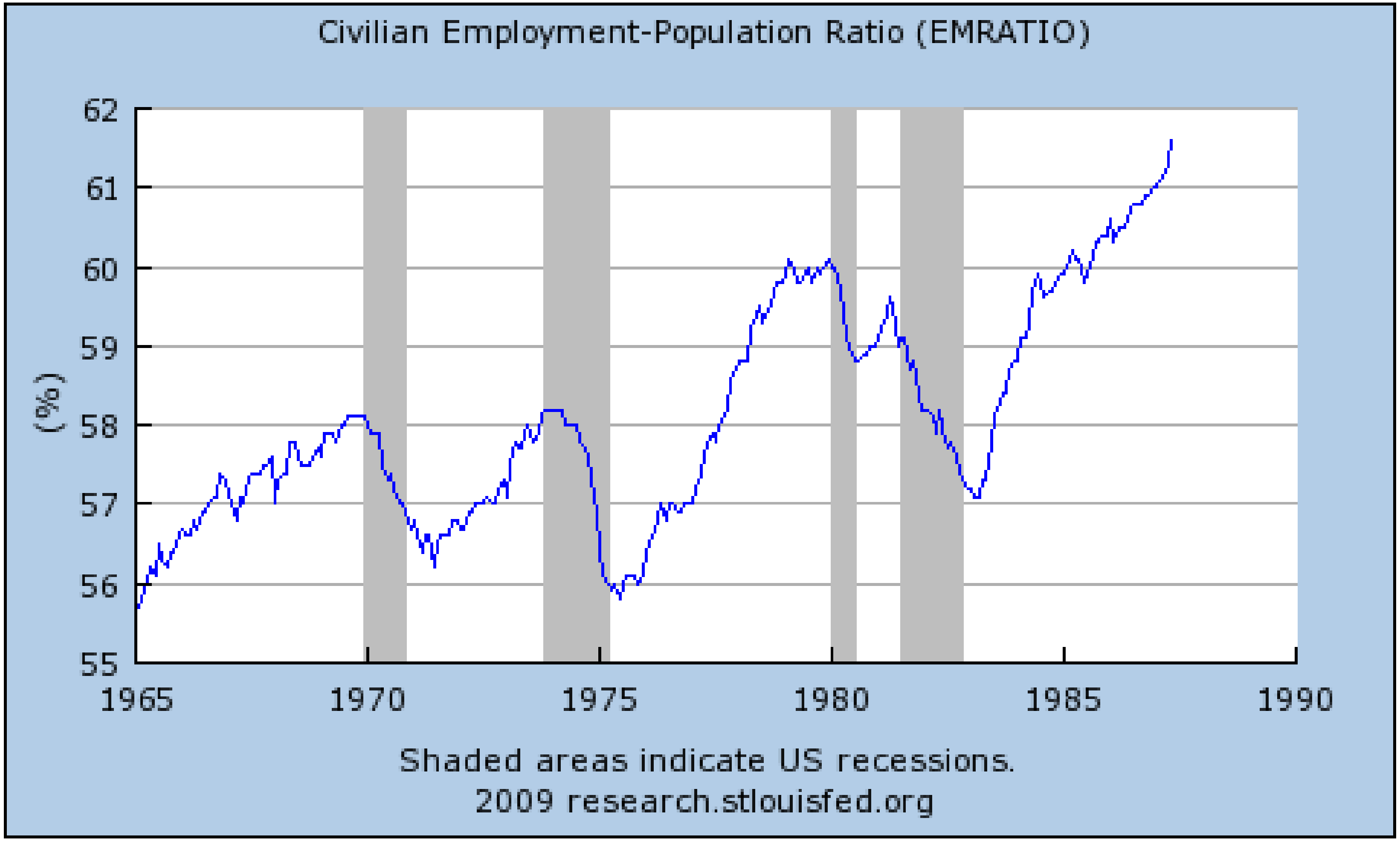
Household debt as % of GDP
120
100
80
60
40
20
0
1945
1949
1953
1957
1961
1965
1969
1973
1977
1981
1985
1989
1993
1997
2001
2005

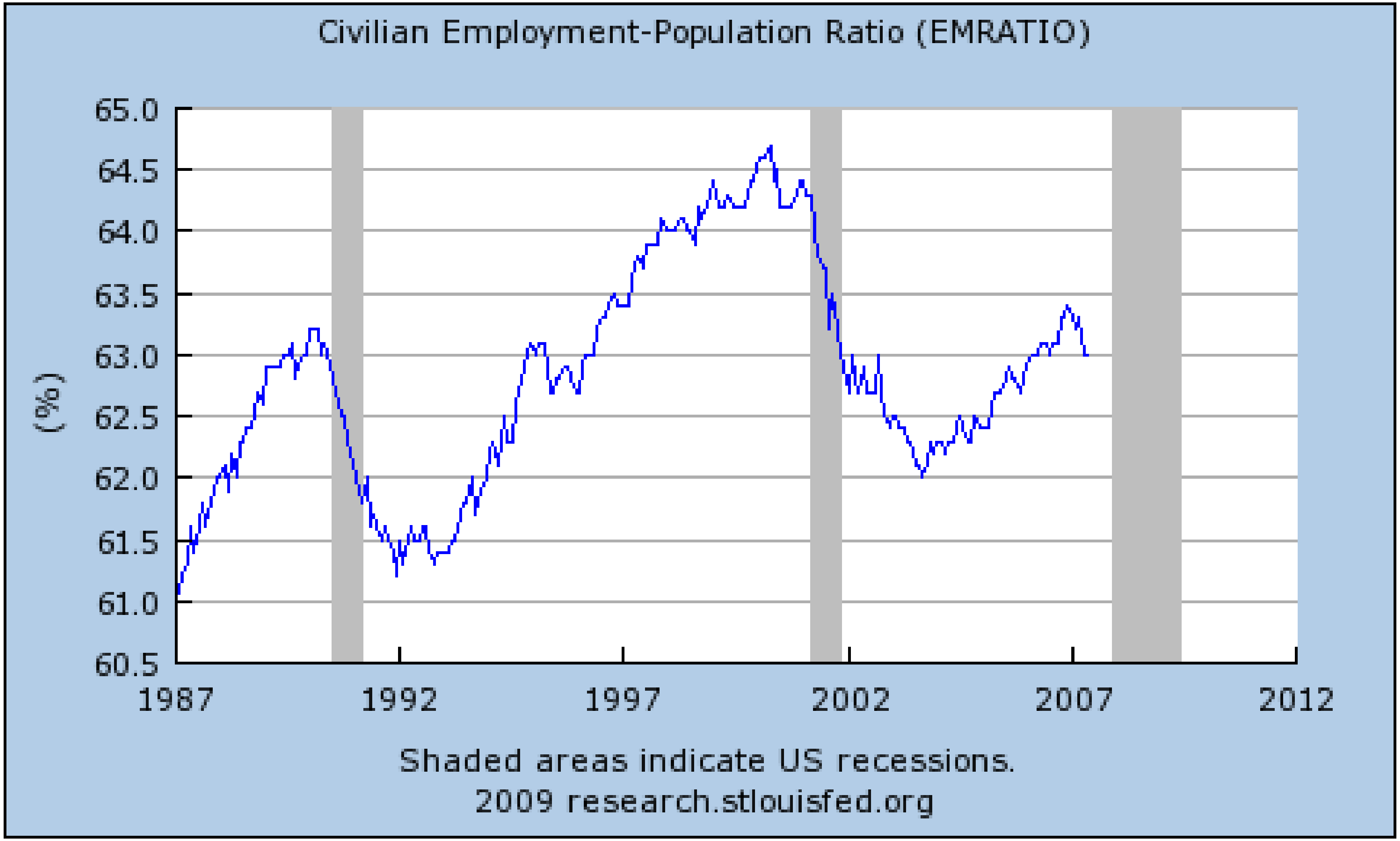

Lenders
Future repayment
Slope = 1+r
Borrowers
Lending, borrowing

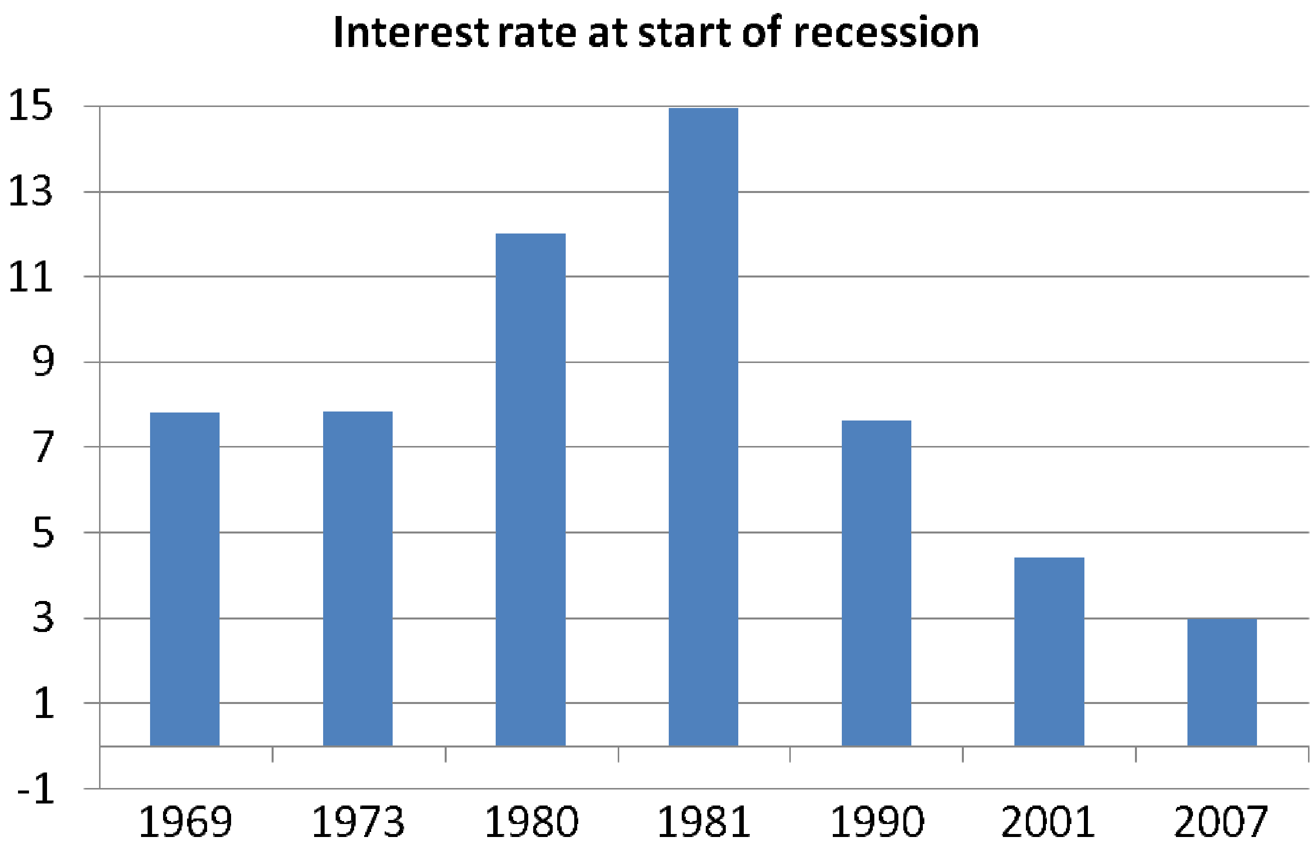

Lenders
Future repayment
Constraint
Borrowers
Slope = 1+r
Lending, borrowing

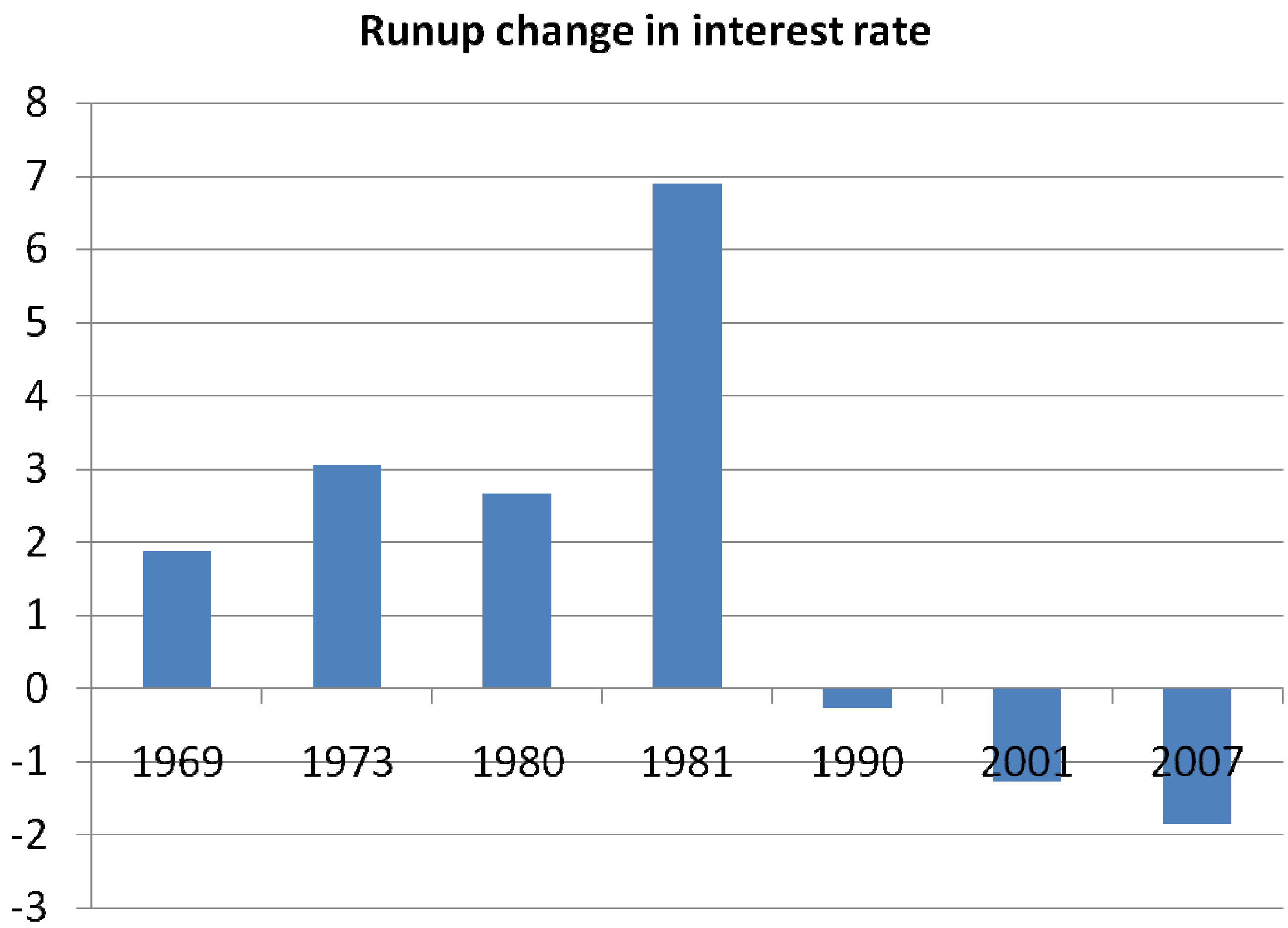
# Employment cycles

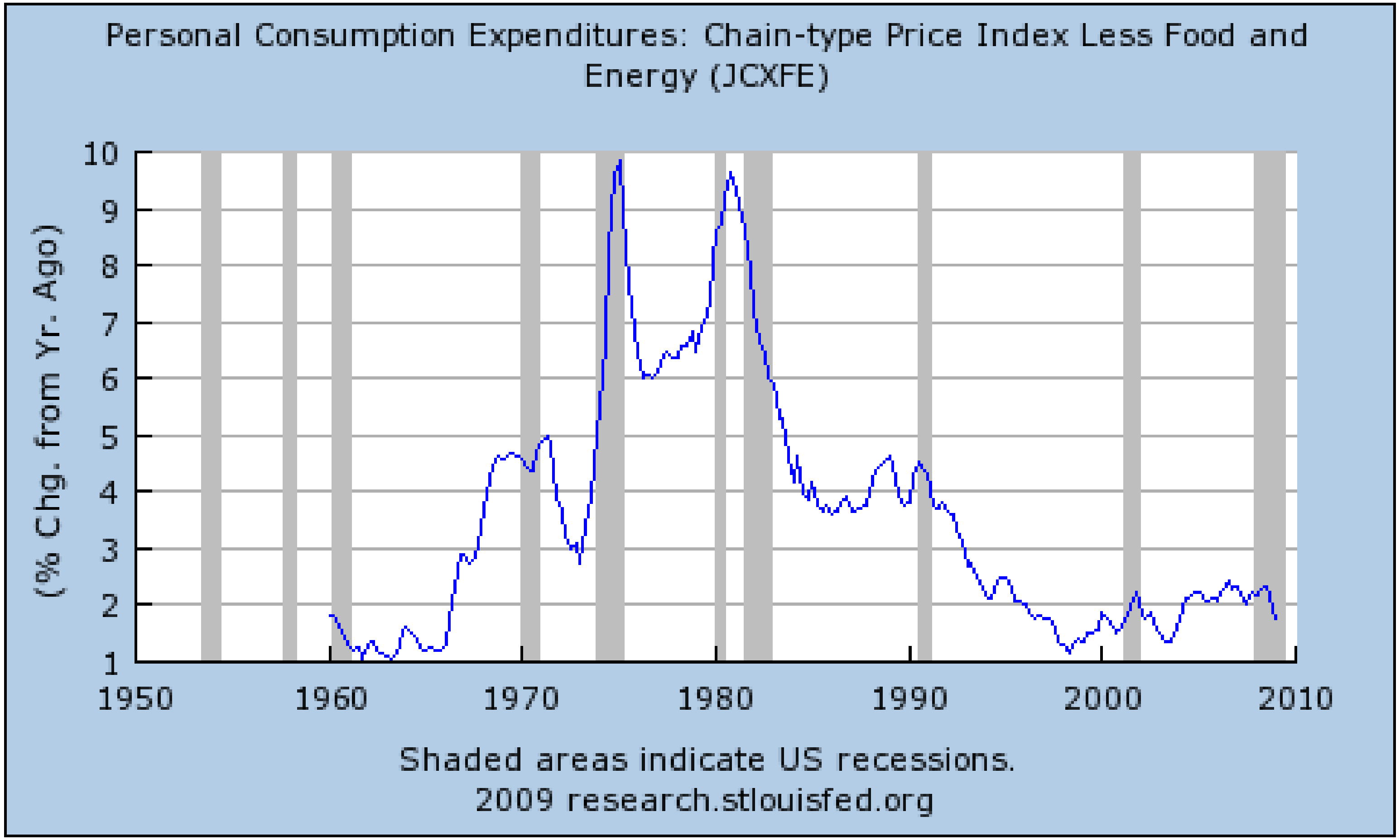



Civilian Employment-Population Ratio (EMRATIO)
(%)
62
61
60
59
58
57
56
55
1965
1970
1975
1980
1985
1990
Shaded areas indicate US recessions.
2009 research.stlouisfed.org

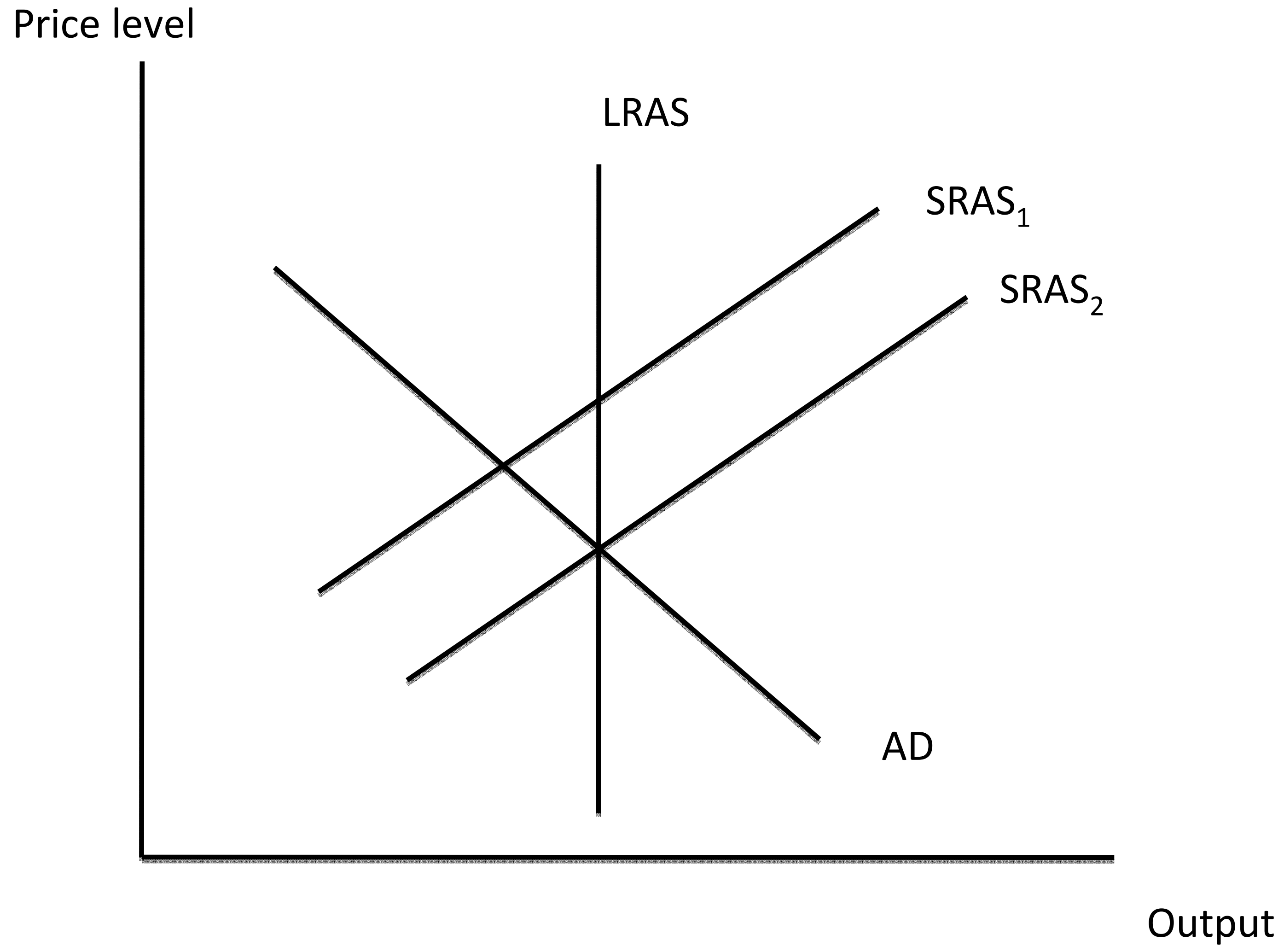

Civilian Employment-Population Ratio (EMRATIO)
65.0
64.5
64.0
63.5
63.0
62.5
62.0
61.5
61.0
60.5
(%)
1987
1992
1997
2002
2007
2012
Shaded areas indicate US recessions.
2009 research.stlouisfed.org


Interest rate at start of recession
15
13
11
9
7
5
3
1
-1
1969
1973
1980
1981
1990
2001
2007

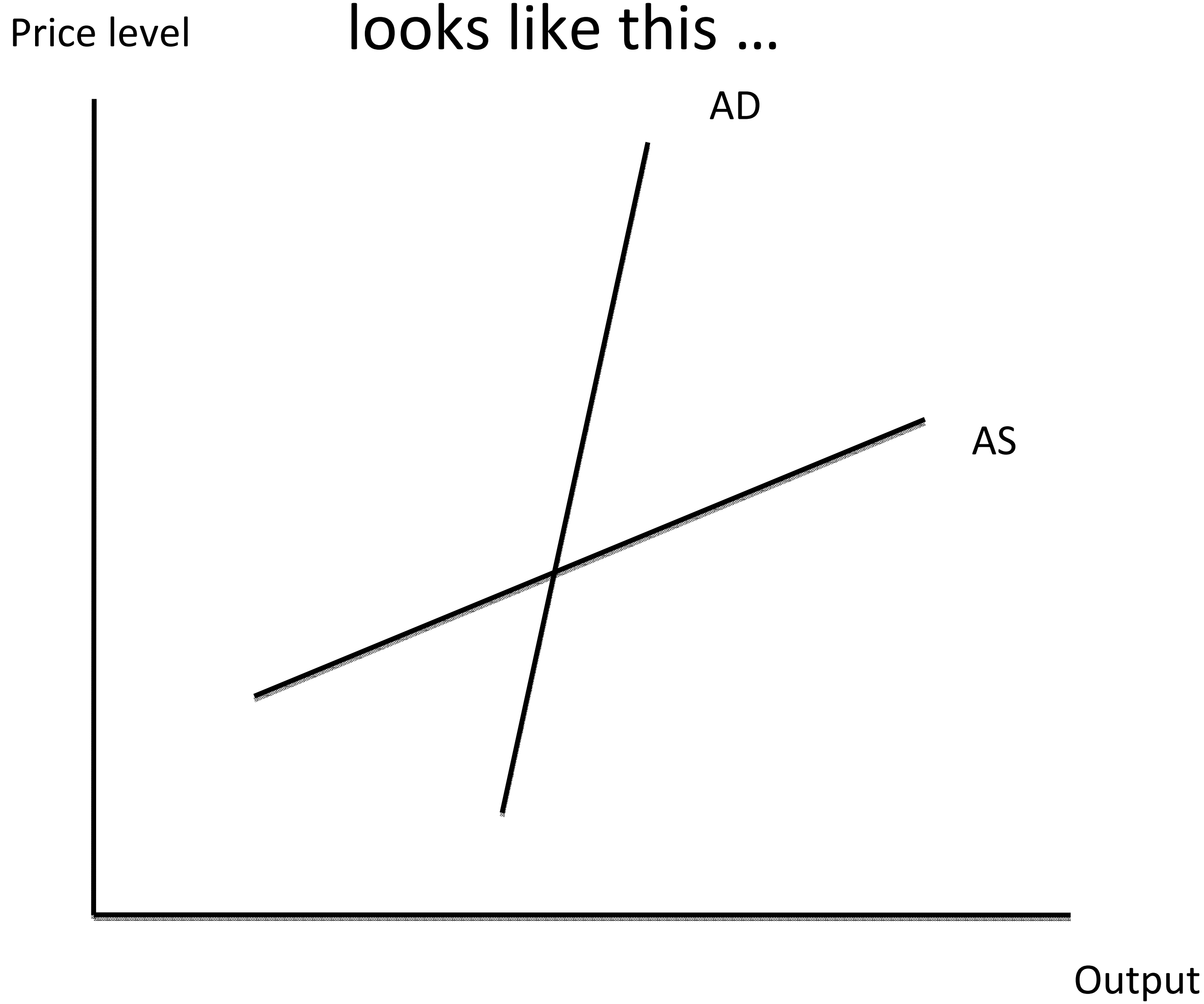

Runup change in interest rate
8
7
6
5
4
3
2
1
0
-1
-2
-3
1969
1973
1980
1981
1990
2001
2007


Personal Consumption Expenditures: Chain-type Price Index Less Food and Energy (JCXFE)
(% Chg. from Yr. Ago)
10
9
8
7
6
5
4
3
2
1
1950
1960
1970
1980
1990
2000
2010
Shaded areas indicate US recessions.
2009 research.stlouisfed.org

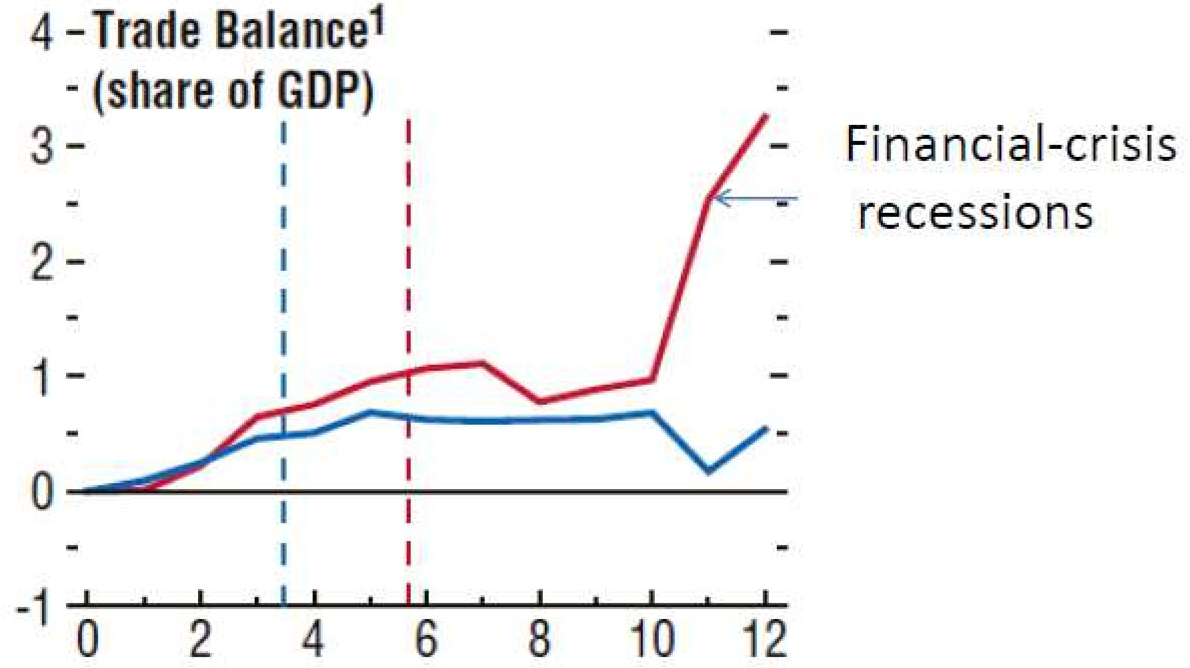
# The textbook adjustment process



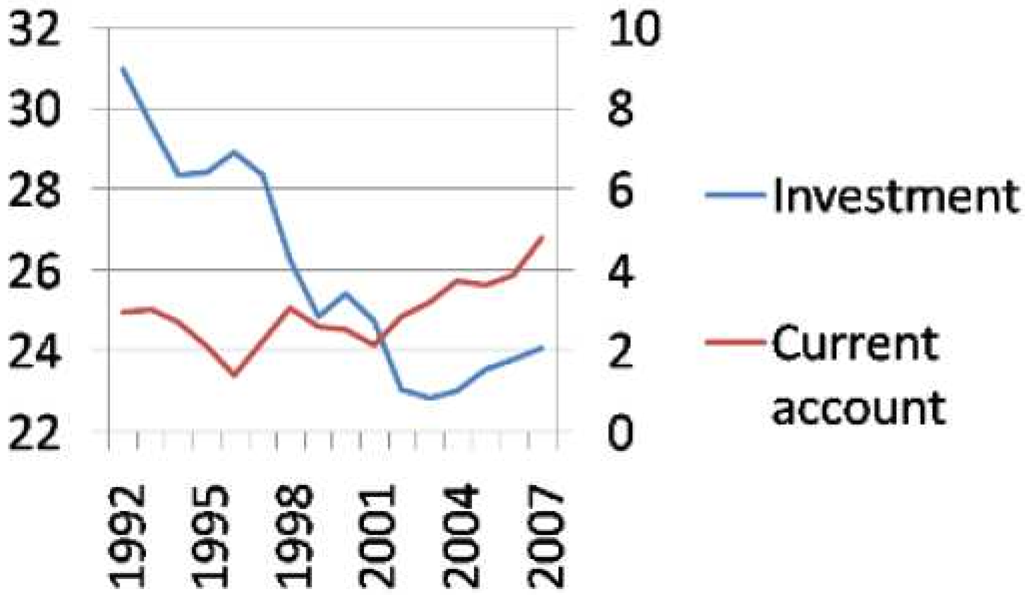
But in the liquidity trap, it probably looks like this …



Historically, recovery from financial-crisis-led recessions has been export-led



# Japan’s recovery: export-driven



# THE RECOVERY FROM THE GREAT PANIC OF 1873

Our Nation's Four Great Business Epochs After the Recovery from the Panic of 1873.

## Roger W. Babson, the Well-known Statistician, Tells of the Business Epochs That Followed That Period of Depression.

BY ROGER W. BABSON
of Wellesley Hills, Mass.

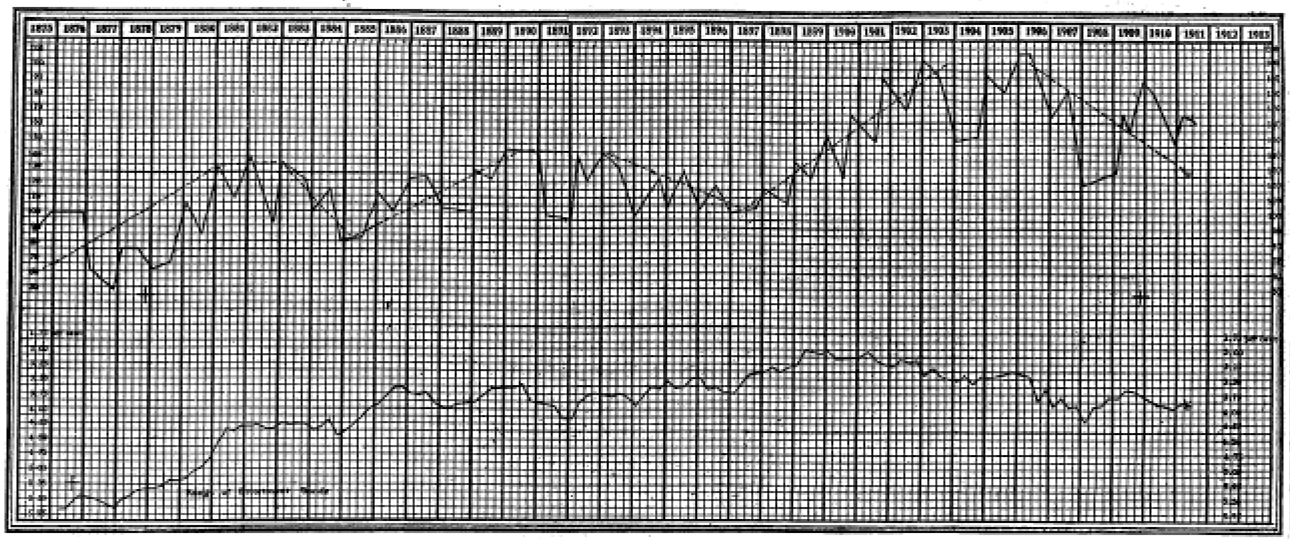
AT the close of the last article we left our Nation in the throes of the severe depression of 1873. It will be remembered that the real panic began with Black Friday in the Fall of 1869, and continued into 1870; but this was so sharp and sudden that there came a quick rebound in 1871, which lasted into 1872.

As stated in the previous article, all of our severe crises have consisted of two sharp movements about three years apart, followed by about three years of depressed business. Therefore, although the first and in many ways the severest blow of the "Panic of 1873" came in 1869 and 1870, the second and final blow did not come until 1873, which completed the forced liquidation begun three years previous.

Although the second blow is often not as severe as the first, yet the business is less able to withstand the second pressure, and the apparent disaster is much greater. Therefore the year 1873 was one of great financial and industrial hardship.

In the Fall of 1872 the trouble really began, but it was first brought to an acute stage on April 26, 1873, when the Atlantic Bank failed. A flood of stocks was sold on the New York Stock Exchange, prices fell with great rapidity, and the market showed an almost continual decline until the Fall of the year. In the late Summer there was a slight rally, but this was simply the lull before a storm and in September, 1873, the New York Warehouse Company, a large and apparently prosperous concern, went to the wall. The New York Midland failed on the 15th of September, and Jay Cooke & Co., a great banking house of that day, closed on the following day.

The entire financial community was then in a state of great excitement, and confidence seemed to vanish. The New York Stock Exchange closed its doors on the 20th and did not open them until the 30th, while about 20 per cent. interest was charged for time money for a short period during the worst of the trouble.




**Prices of Investment Stocks and Bonds from 1875 to 1911.**

This is a plot of relative price movement of ten representative high-grade stocks and five representative high-grade bonds. The basic law that action and reaction are equal, when areas are considered, is well illustrated here. Especially does it show that while the stock market sometimes discounts conditions, it does not always do so. The dotted line shows the major cycles. On account of the maturing feature of bonds the bond line shown is the plot of bond yields inverted, which indicates the varying cost to the investor. Note that the bond market does not rise and fall simultaneously with the stock market except in rare instances.

of gradual recovery. It is true that Stock Exchange transactions were very small, failures large, and clearings continued to decline; but the setback in business was comparatively short, and by 1886 everything was going again at full speed. As is usual, after even a semi-panic, money is cheap, which condition eventually prepares a foundation for a general uplift. Although Mr. Vanderbilt did all he could to stay the break of prices during 1882 and 1883, yet he saw that it was unprofitable and decided to let go and sell the market short, so as to win, whatever happened. Moreover, he made the best of his opportunities in 1884 and 1885 by purchasing the securities of several competitive roads, which resulted in the absorption by the New York Central of the West Shore and allied lines.

As is always the case following a semi-panic, labor troubles again crept out, and 1886 stands out in the memory of us all as the year of the fierce strikes in New York, Chicago, and other cities. It was on May 4, 1886, that the bomb-throwing outrage was perpetrated in Chicago, which serves as another illustration of the unintelligent means which the public uses to withstand the laws of nature. However, labor was not long out of work, as the wheels of industry again began to turn, and all the country was blessed with splendid crops, which resulted in gold imports and a general revival of building of all kinds. Moreover, although our noble legislators in Washington at this time again attempted to tinker with the tariff, "in order to bring back good times," yet there was enough latent sense and conservatism to prevent this move, and the various bills aiming at a lower tariff and railway-rate regulation were defeated. Under the stimulus of cheap money and favorable legislation, there were nearly 13,000 miles of new railroad constructed in 1887, which, according to my figures, is the greatest number of miles ever constructed in any one year. Eighteen hundred and eighty-eight was another year of good business, and although St. Paul passed its dividend yet earnings continued to increase, and on Jan. 10, 1889, J. P. Morgan came to the front through the enactment of the famous "gentlemen's agreement" between the trunk line officials. In fact, fundamental conditions continued to improve

So how does it end?

Keynesian business cycle theory:

“use, decay, and obsolescence”

Koosian theory: rebuilding the balance sheets

Use, decay, and obsolescence:

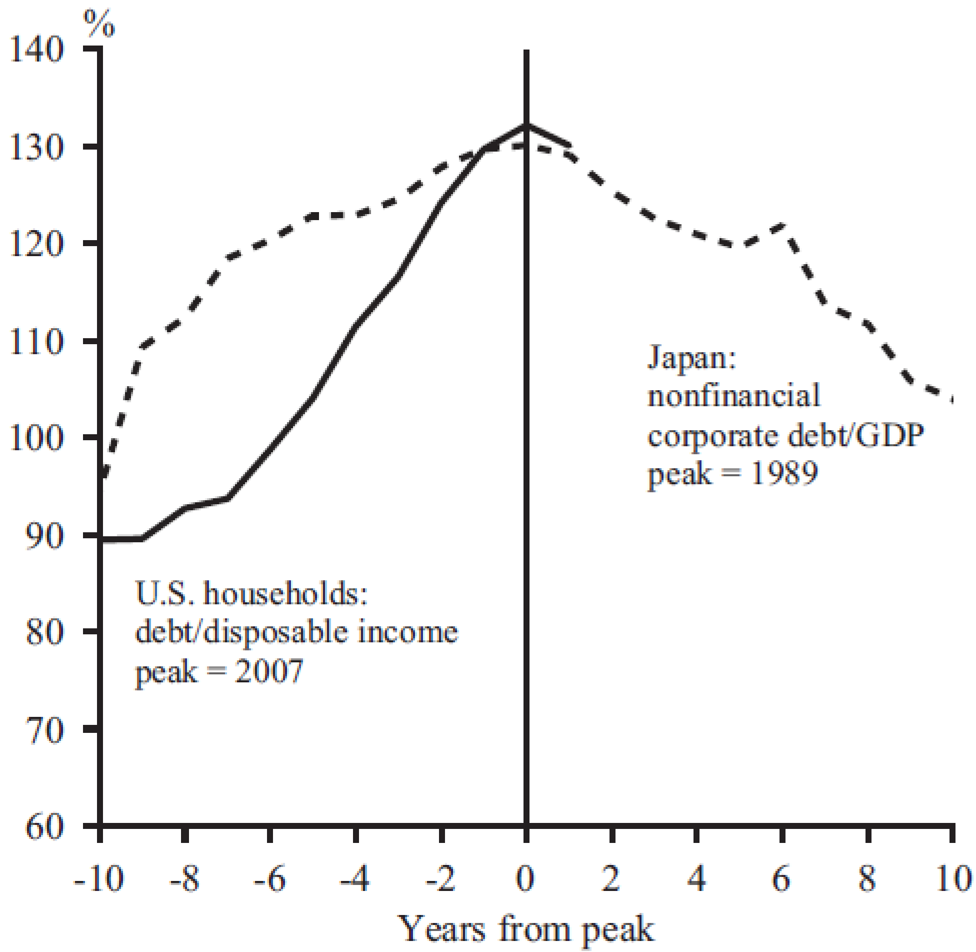
US stock of autos: 135 million

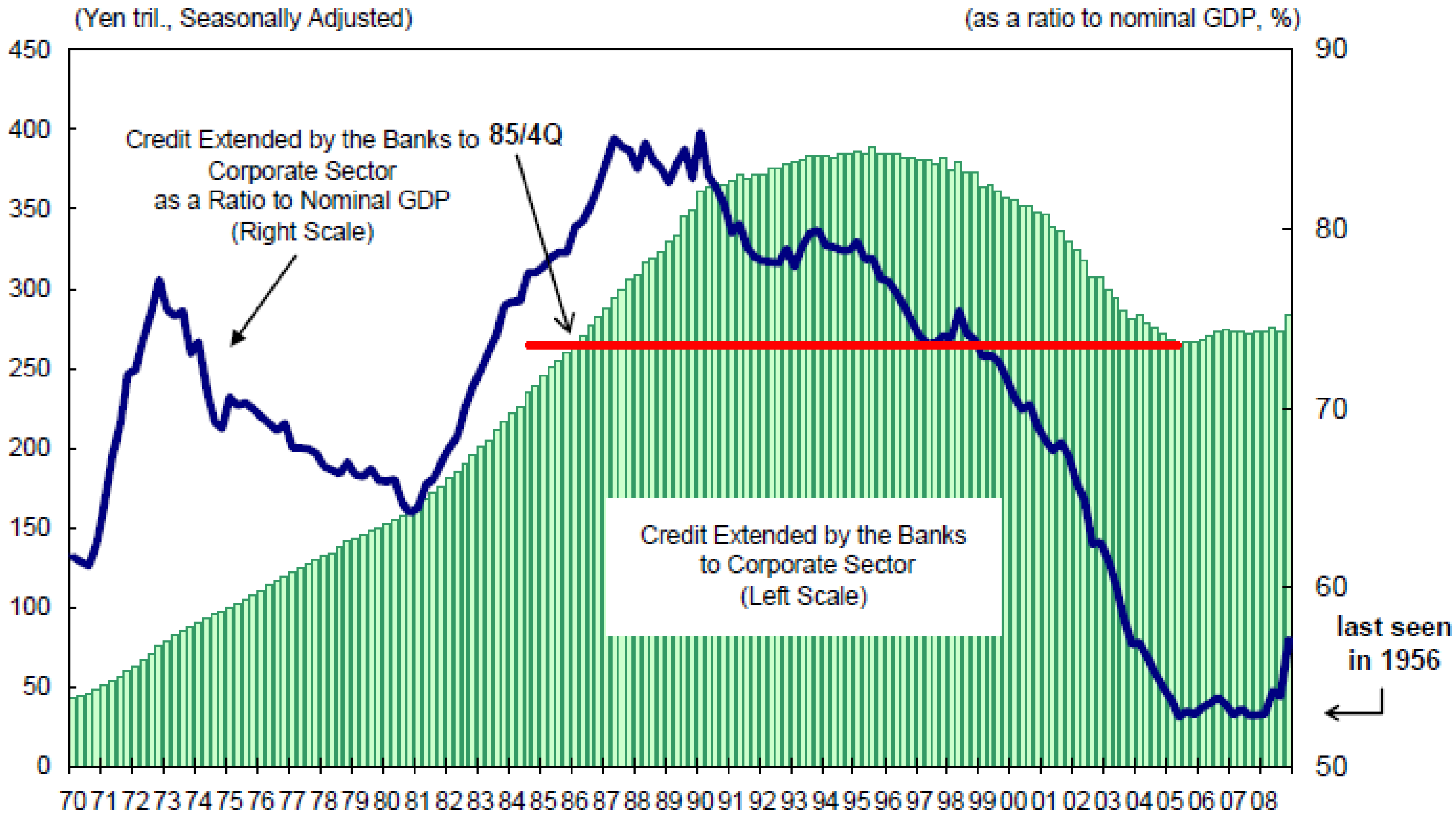
May 2009 auto sales: 484,000

Annual rate of 6 million?

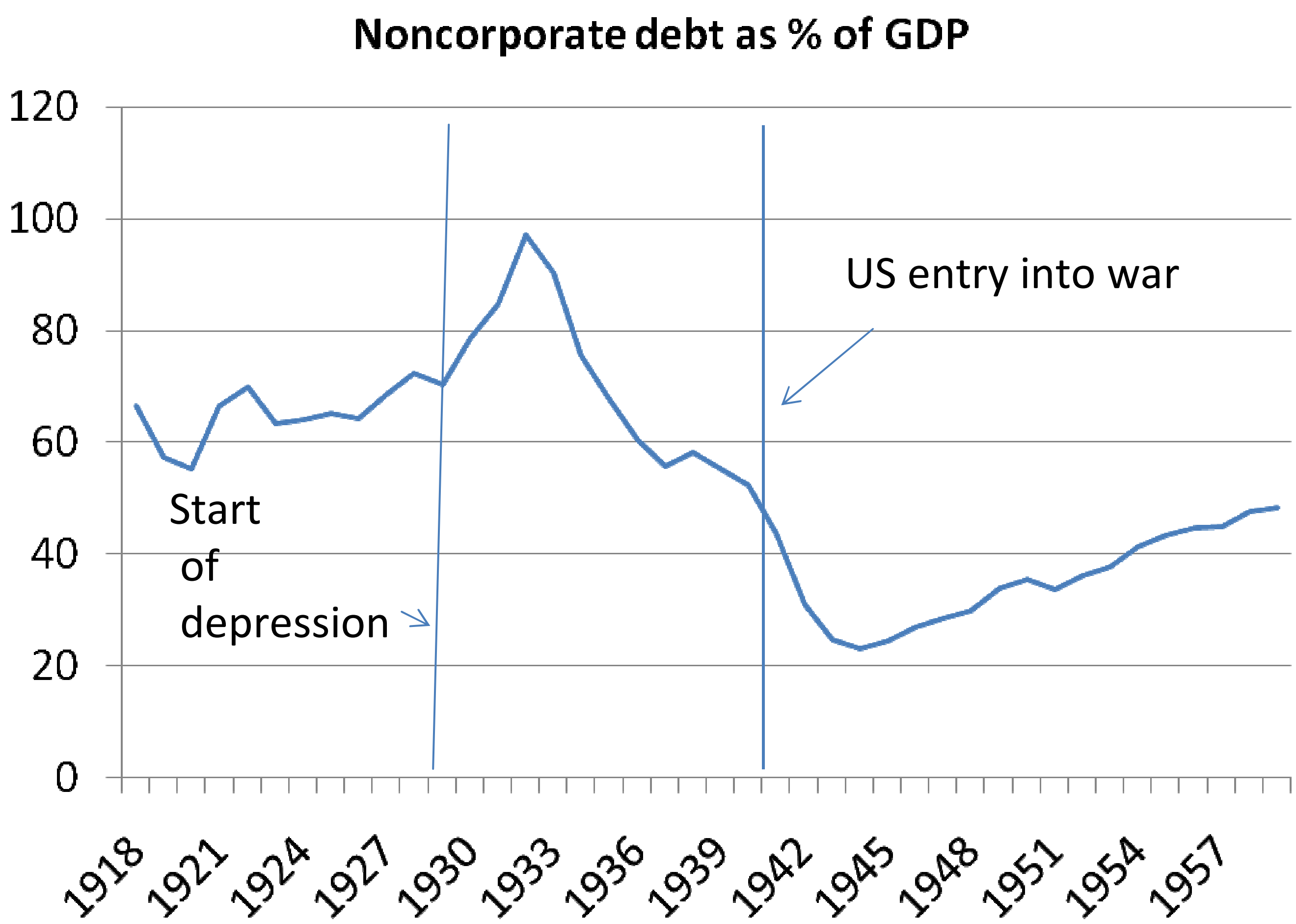
If so, more than 20 years to replace stock …

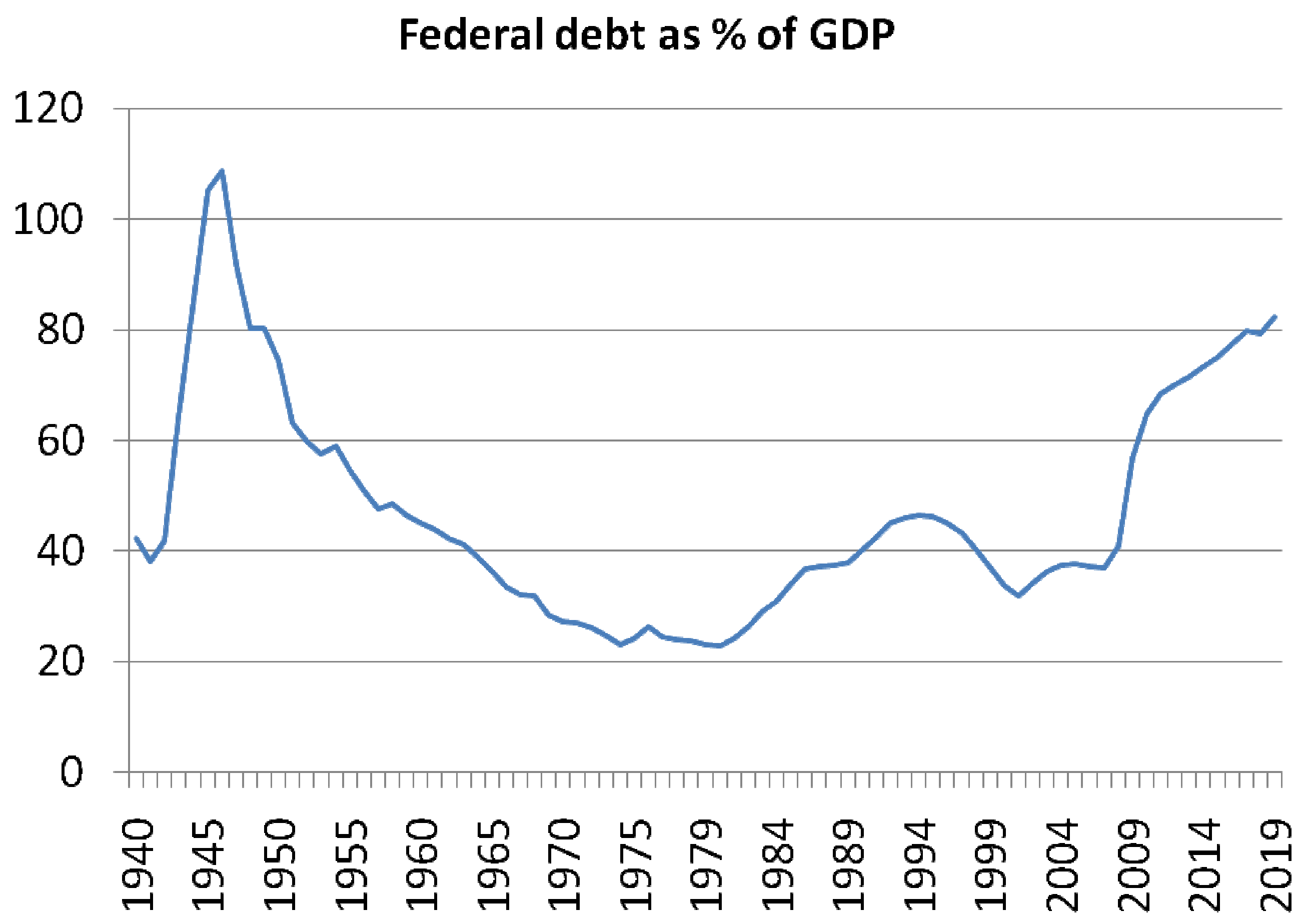
## Leverage ratios

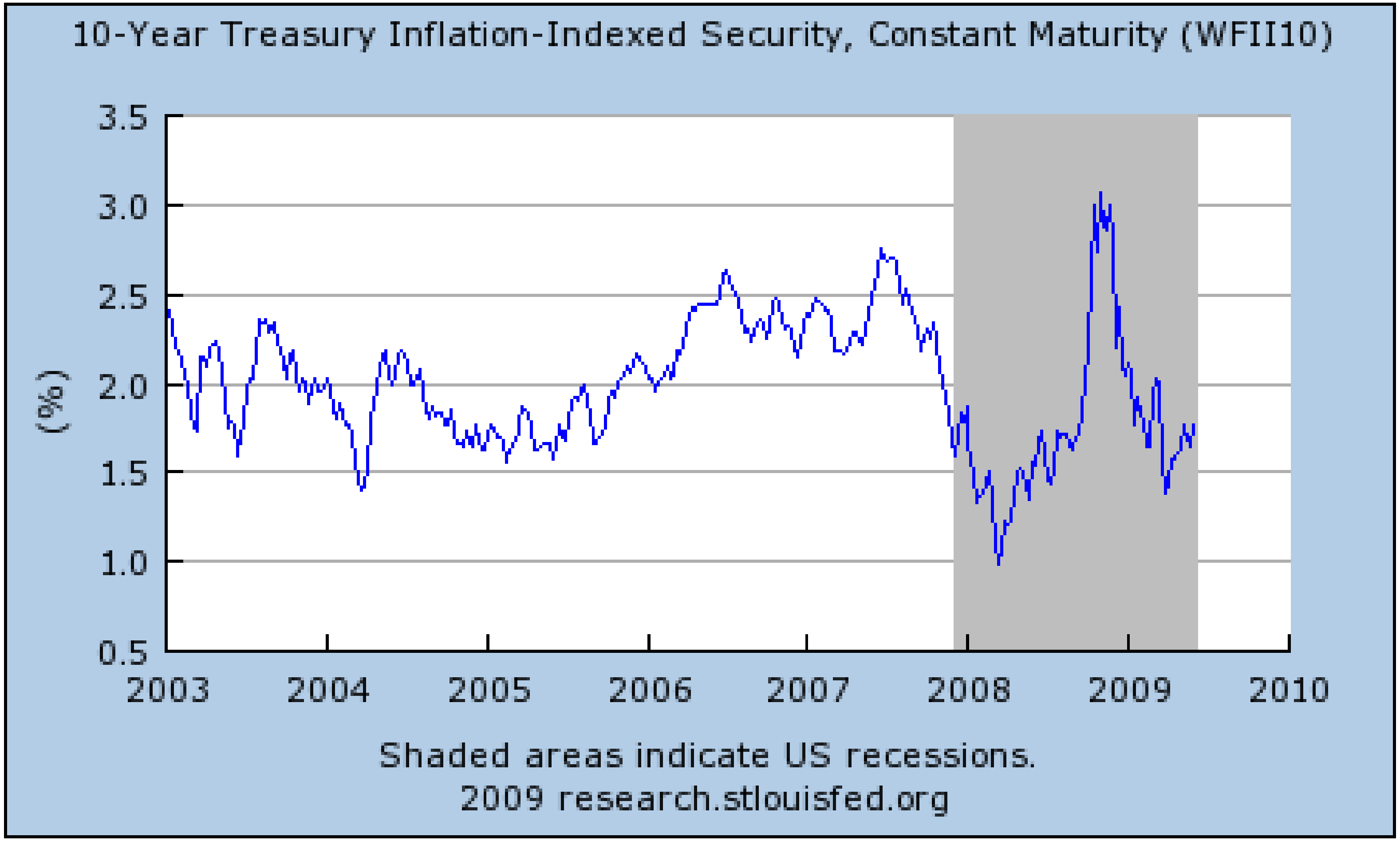


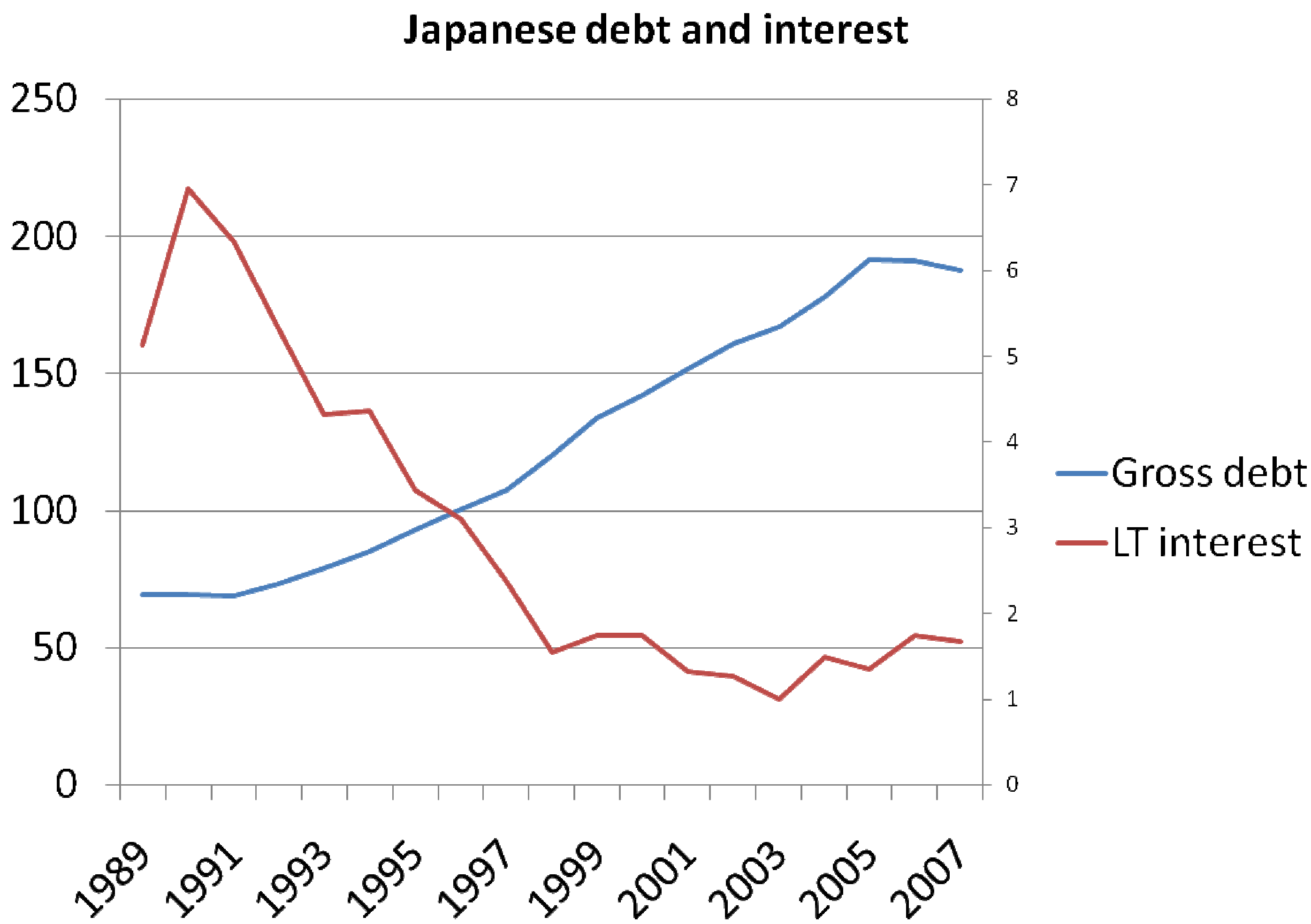



Source: Richard Koo


Noncorporate debt as % of GDP
120
100
80
60
40
20
0
US entry into war
Start
of
depression
1918
1921
1924
1927
1930
1933
1936
1939
1942
1945
1948
1951
1954
1957


Federal debt as % of GDP
120
100
80
60
40
20
0
1940
1945
1950
1955
1960
1965
1970
1975
1979
1984
1989
1994
1999
2004
2009
2014
2019


10-Year Treasury Inflation-Indexed Security, Constant Maturity (WFII10)
(%)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
2003
2004
2005
2006
2007
2008
2009
2010
Shaded areas indicate US recessions.
2009 research.stlouisfed.org



Japanese debt and interest
250
200
150
100
50
0
8
7
6
5
4
3
2
1
0
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
Gross debt
LT interest


Source: OECD


CENTRE for ECONOMIC PERFORMANCE

*Lionel Robbins Memorial Lectures*

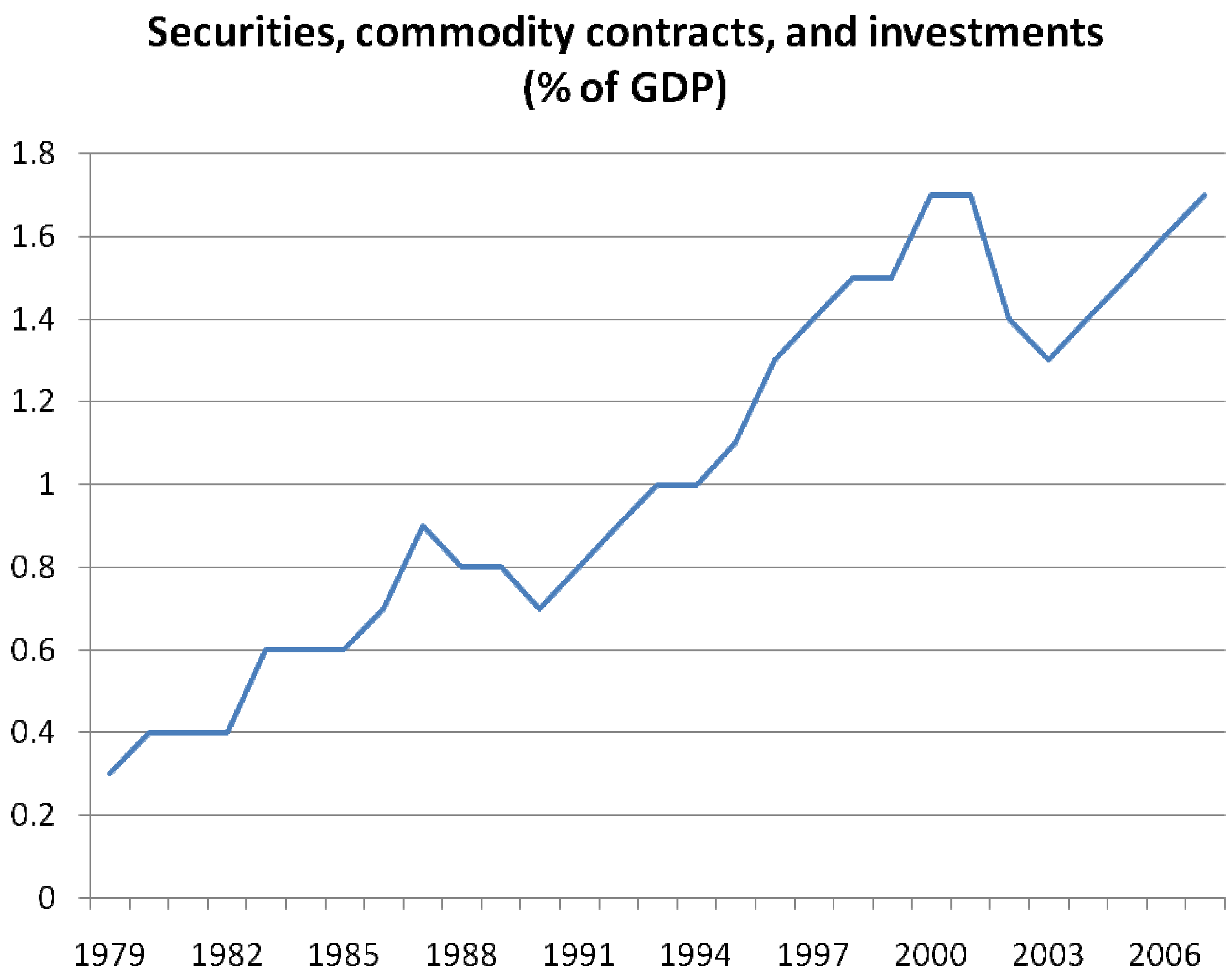
# The Return of Depression Economics
# Part 3: The night they reread Minsky

Professor Paul Krugman
*Centenary Professor, LSE and Professor of Economics and International Affairs, Woodrow Wilson School, Princeton University*

Professor Danny Quah
*Chair, LSE*

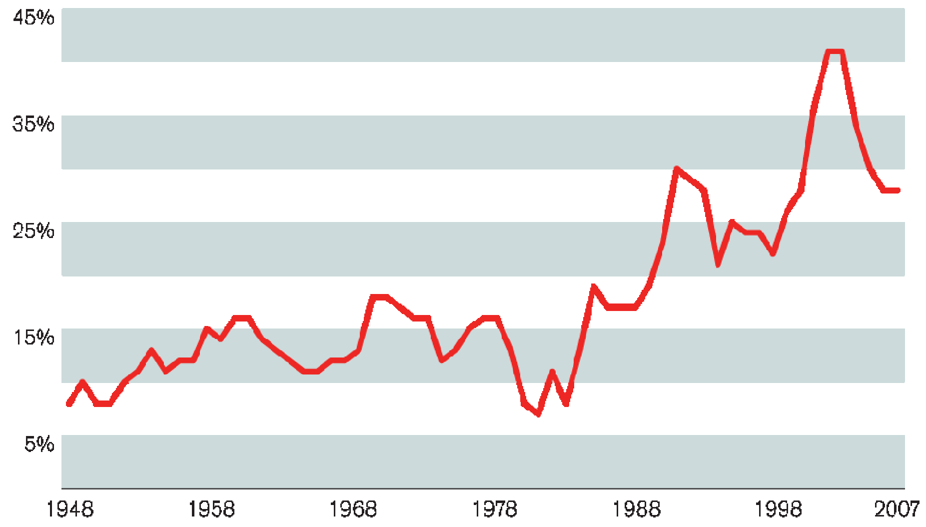
# Lecture 3: The night they reread Minsky

Paul Krugman

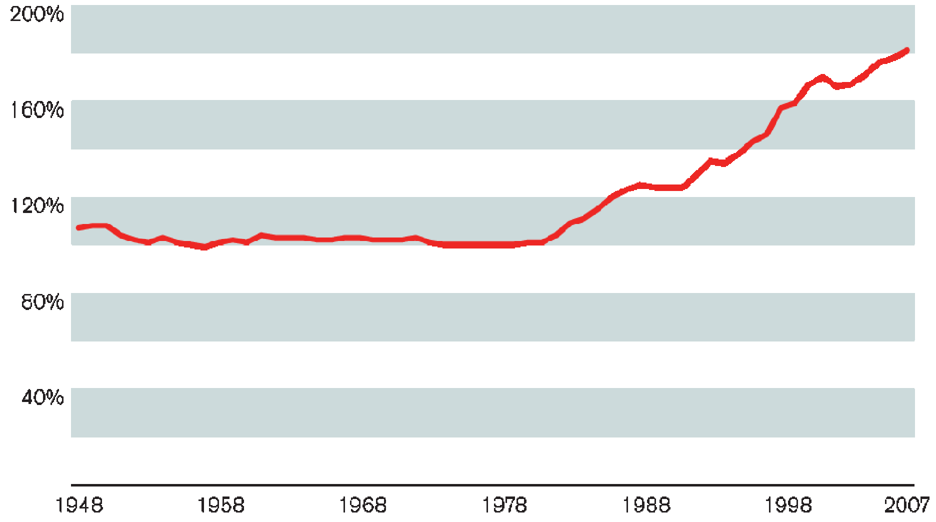

Securities, commodity contracts, and investments
(% of GDP)
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1979
1982
1985
1988
1991
1994
1997
2000
2003
2006

Source:
Simon Johnson/
James Kwak

FINANCIAL-INDUSTRY PROFITS
AS A SHARE OF U.S. BUSINESS PROFITS




PAY PER WORKER IN THE FINANCIAL SECTOR AS
A PERCENTAGE OF AVERAGE U.S. COMPENSATION



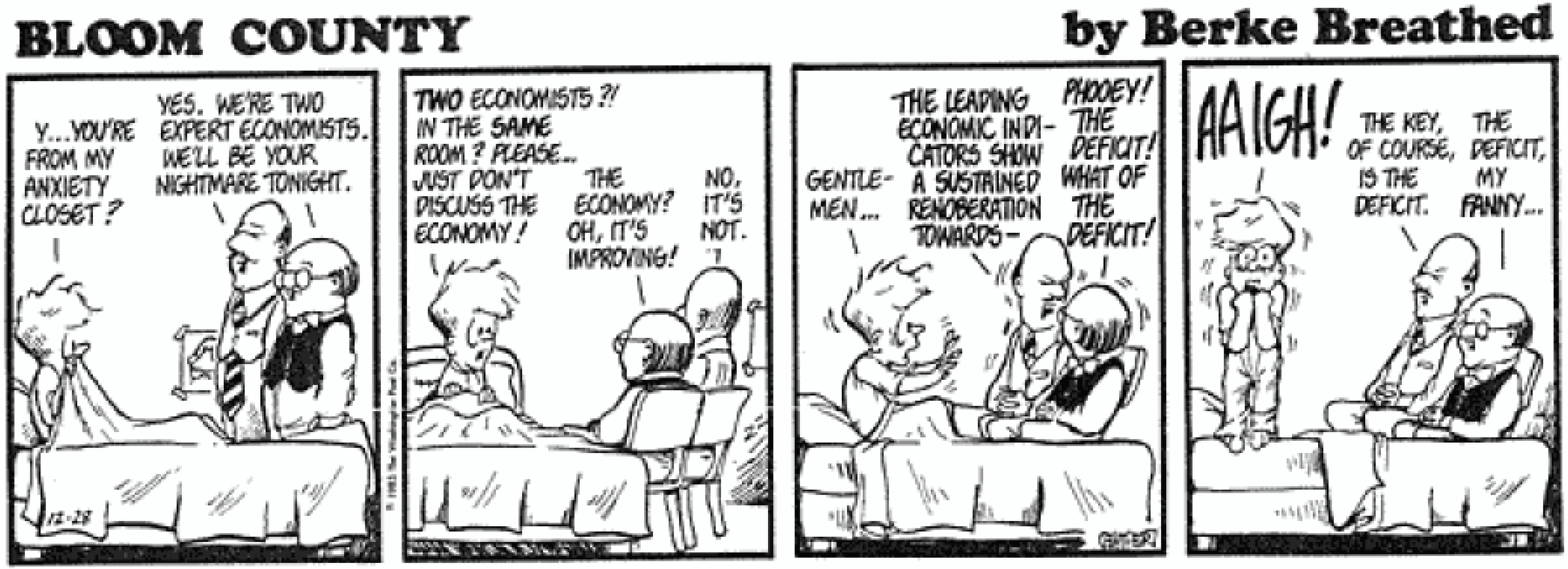
What if we de-financialize?

US exports of financial services, 2007:

$43 billion = 0.3 % of GDP

UK exports of financial services, 2007:

$69 billion = 2.5% of GDP




UCLICK.
Get a Laugh @ GoComics.com

# Reading Keynes I

From the time of Say and Ricardo the classical economists have taught that supply creates its own demand;—meaning by this in some significant, but not clearly defined, sense that the whole of the costs of production must necessarily be spent in the aggregate, directly or indirectly, on purchasing the product.

…

It is, then, the assumption of equality between the demand price of output as a whole and its supply price which is to be regarded as the classical theory's 'axiom of parallels'. Granted this, all the rest follows—the social advantages of private and national thrift, the traditional attitude towards the rate of interest, the classical theory of unemployment, the quantity theory of money, the unqualified advantages of *laissez-faire* in respect of foreign trade and much else which we shall have to question.

# Reading Keynes II

Let $Z$ be the aggregate supply price of the output from employing $N$ men, the relationship between $Z$ and $N$ being written $Z = \phi(N)$, which can be called the *aggregate supply function*. Similarly, let $D$ be the proceeds which entrepreneurs expect to receive from the employment of $N$ men, the relationship between $D$ and $N$ being written $D = f(N)$, which can be called the *aggregate demand function*.

# Reading Keynes III

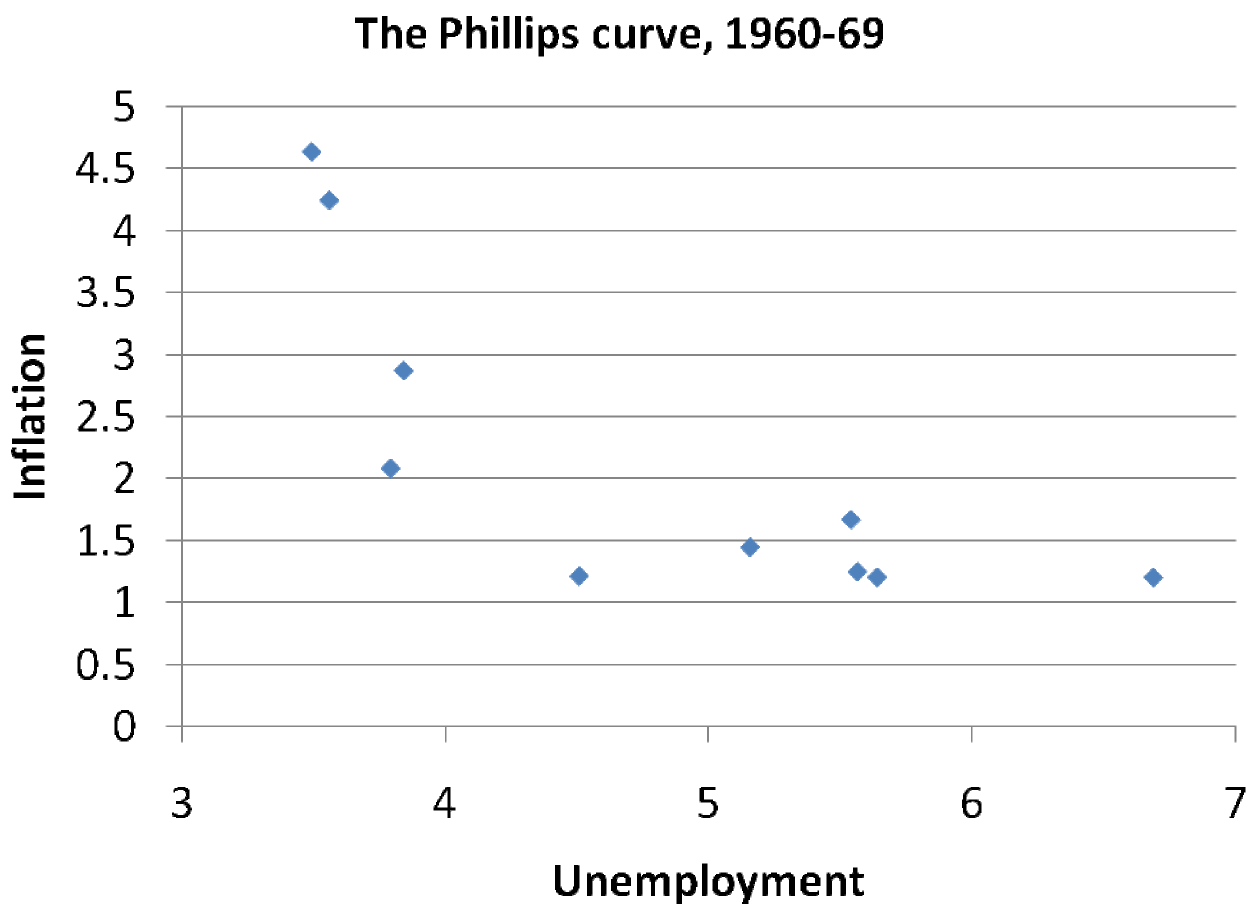
Now if for a given value of N the expected proceeds are greater than the aggregate supply price, i.e. if *D* is greater than *Z*, there will be an incentive to entrepreneurs to increase employment beyond *N* and, if necessary, to raise costs by competing with one another for the factors of production, up to the value of *N* for which *Z* has become equal to *D*. Thus the volume of employment is given by the point of intersection between the aggregate demand function and the aggregate supply function; for it is at this point that the entrepreneurs' expectation of profits will be maximised. The value of *D* at the point of the aggregate demand function, where it is intersected by the aggregate supply function, will be called *the effective demand*. Since this is the substance of the General Theory of Employment, which it will be our object to expound, the succeeding chapters will be largely occupied with examining the various factors upon which these two functions depend.

Rationalizing macro, part 1:

The neoclassical synthesis (Samuelson)

Rational consumers (Ando-Modigliani, Friedman)

Natural rate hypothesis (Friedman, Phelps)

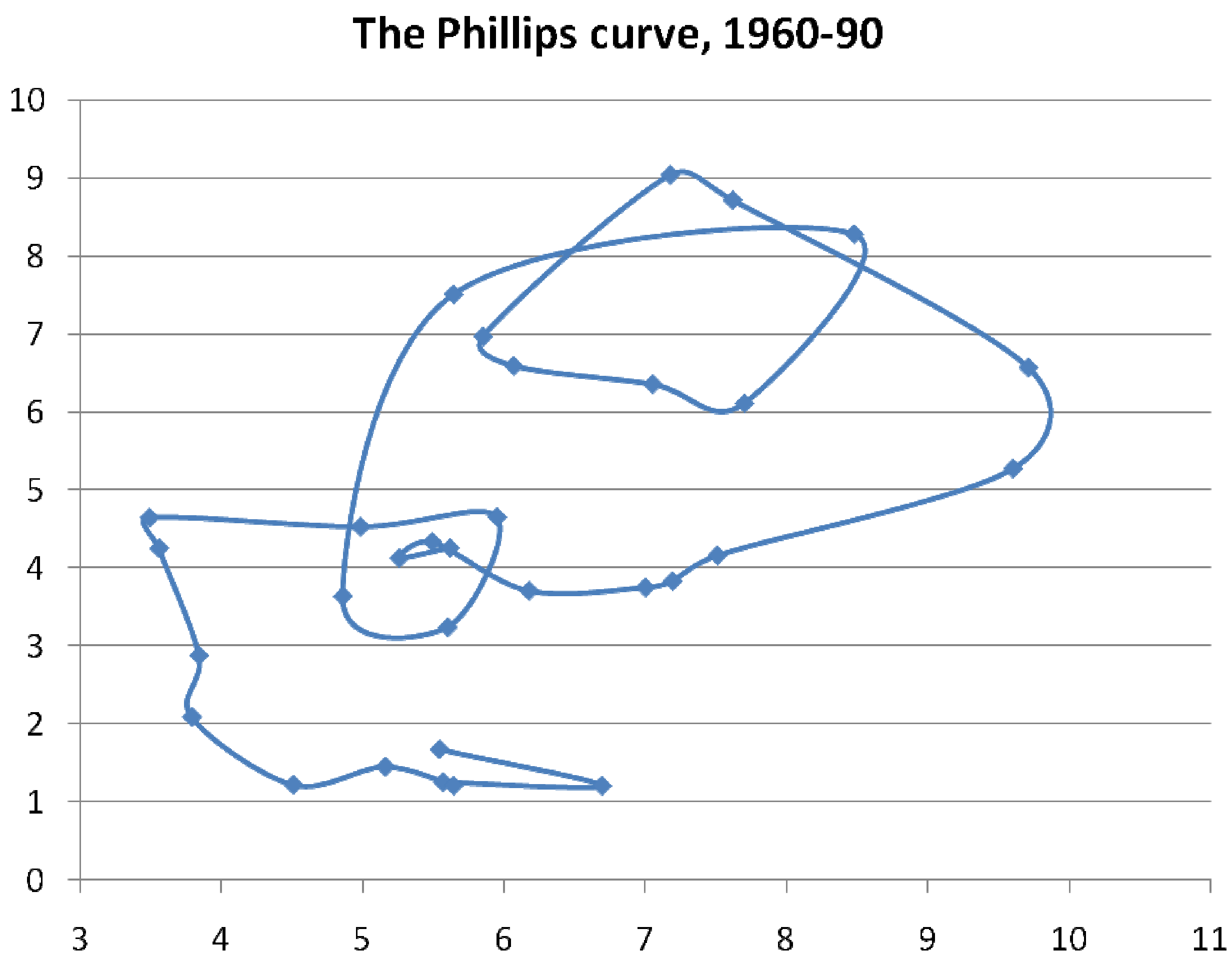


The Phillips curve, 1960-69
Inflation
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3
4
5
6
7
Unemployment

Friedman, 1967:

To state this conclusion differently, there is always a temporary trade-off between inflation and unemployment; there is no permanent trade-off. The temporary trade-off comes not from inflation per se, but from unanticipated inflation, which generally means, from a rising rate of inflation. The widespread belief that there is a permanent trade-off is a sophisticated version of the confusion between "high" and "rising" that we all recognize in simpler forms. A rising rate of inflation may reduce unemployment, a high rate will not.

Prediction: "Clockwise spirals" in unemployment-inflation


The Phillips curve, 1960-90
10
9
8
7
6
5
4
3
2
1
0
3
4
5
6
7
8
9
10
11

# The Great Divide

Lucas / rational expectations

Too much information (circa 1979)

Real business cycle ("fresh water")

New Keynesian ("salt water")

In the background: efficient markets theory

For a long while after the explosion of macroeconomics in the 1970s, the field looked like a battlefield. Over time however, largely because facts do not go away, a largely shared vision both of fluctuations and of methodology has emerged. Not everything is fine. Like all revolutions, this one has come with the destruction of some knowledge, and suffers from extremism and herding. None of this deadly however. The state of macro is good.

Olivier Blanchard, August 2008

John Cochrane, a finance professor at the Booth School of Business at the University of Chicago, said that while Tobin made contributions to investing theory, the idea that spending can spur the economy was discredited decades ago.

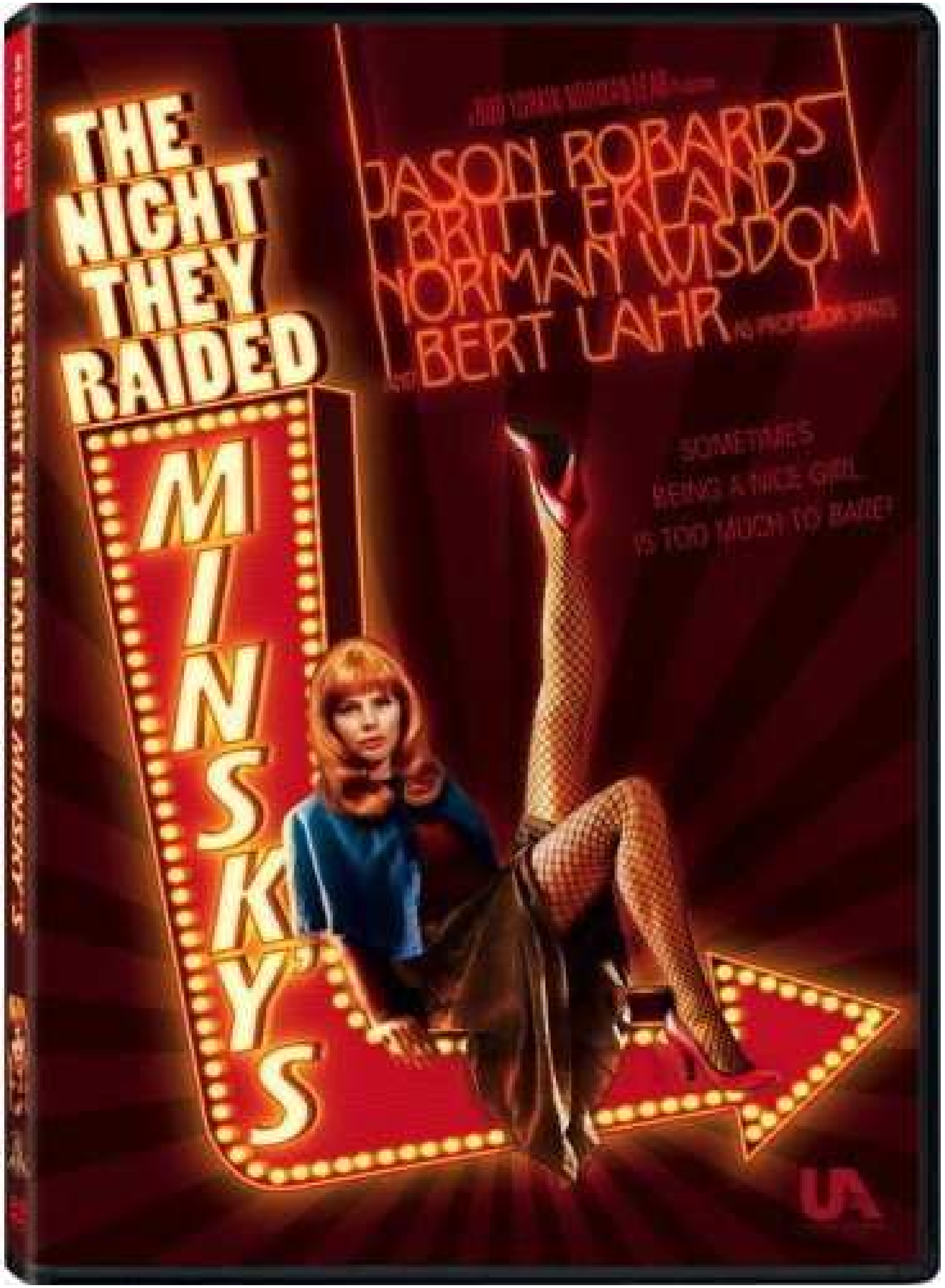
“It’s not part of what anybody has taught graduate students since the 1960s,” Cochrane said. “They are fairy tales that have been proved false. It is very comforting in times of stress to go back to the fairy tales we heard as children but it doesn’t make them less false.” To borrow money to pay for the spending, the government will issue bonds, which means investors will be buying U.S. Treasuries instead of investing in equities or products, negating the stimulative effect, Cochrane said. It also will do nothing to unlock frozen credit, he said.

From Bloomberg**: Yale’s Tobin Guides Obama From Grave as Friedman Is Eclipsed**

What even salt-water schools lost:

*Fiscal policy*: only 5 NBER working papers mentioned fp in title or abstract between 1985 and 2000 (out of about 7000)

*Causes of demand fluctuations*


THE NIGHT THEY RAIDED MINSKY'S
JASON ROBARDS
BRITT EKLAND
NORMAN WISDOM
BERT LAHR
SOMETIMES
BEING A NICE GIRL
IS TOO MUCH TO BARE!
UA
THE NIGHT THEY RAIDED MINSKY'S