Financial Markets

Robert M. Coen
Professor Emeritus of Economics

Northwestern Alumnae Continuing Education

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Monetization of Economy

- Metal coins used in ancient times
  - Medium of exchange
    - Facilitates specialization, division of labor
  - Store of value
- Banks established for
  - Safe keeping
  - Coin exchange
  - Some lending
- Financial intermediation
  - Get funds from savers to investors
  - Paper money allows more loans
    - Fractional reserve banking

Greek Coin from 4th Century BC

By Classical Numismatic Group, Inc.
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Early Misbehavior of Financial Markets

Christ Expelling the Money-Changers from the Temple

Nicolas Colombel, 1644-1717
Saint Louis Art Museum

Private, Specie-backed Money

Banks issue own paper, locally circulating currency
- Smith thought this was desirable

Risk of excessive loans and note issues
- Convertibility in question

Lending risk (adverse selection)
Risk of borrowing short, lending long

Multiple currencies create transaction costs

Fluctuations in gold or silver supplies create instability

Smith thought competition among many small private banks would limit misbehavior

Speculative excesses, instability cast doubt

Early Episodes of Speculative Euphoria

1630's Holland – Tulipmania

1710's France – Mississippi Company

1710's England – South Sea Company

Chronicler of “Tulipmania”

Charles Mackay, 1814 - 1889

Extraordinary Popular Delusions and Madness of Crowds, 1841

U.S. Experience

18th and early 19th centuries – state banks

- Recurrent economic crises
- Banks over-expand, then collapse
  - Bad loans, bank runs and failures
- Real shocks <--> financial crises
- Specie supply does not meet currency needs
- National banks fizzle

1913 Federal Reserve

Great Depression

1920’s Florida real estate speculation

Origin of “Ponzi Scheme”

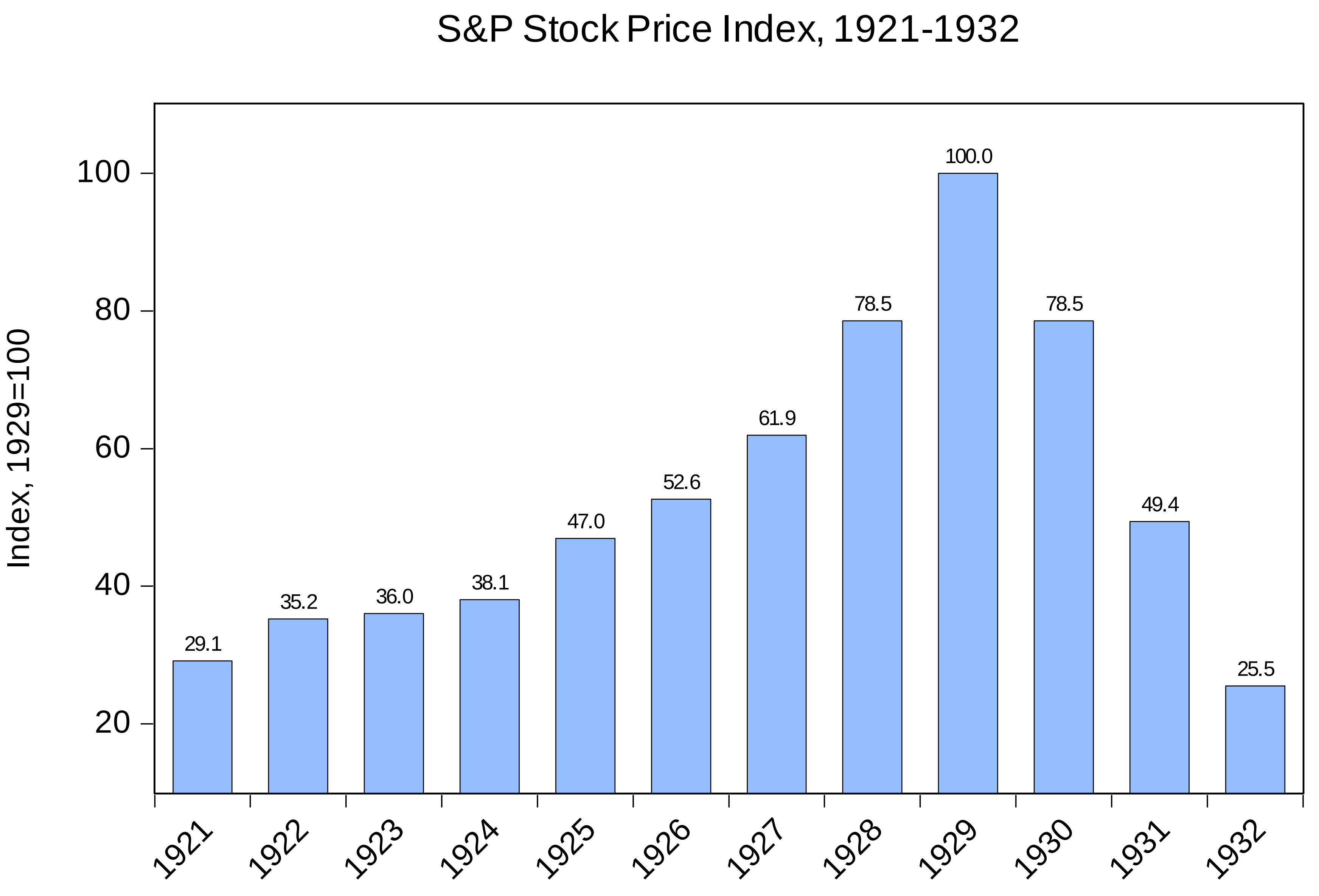
Slump in farm prices and income

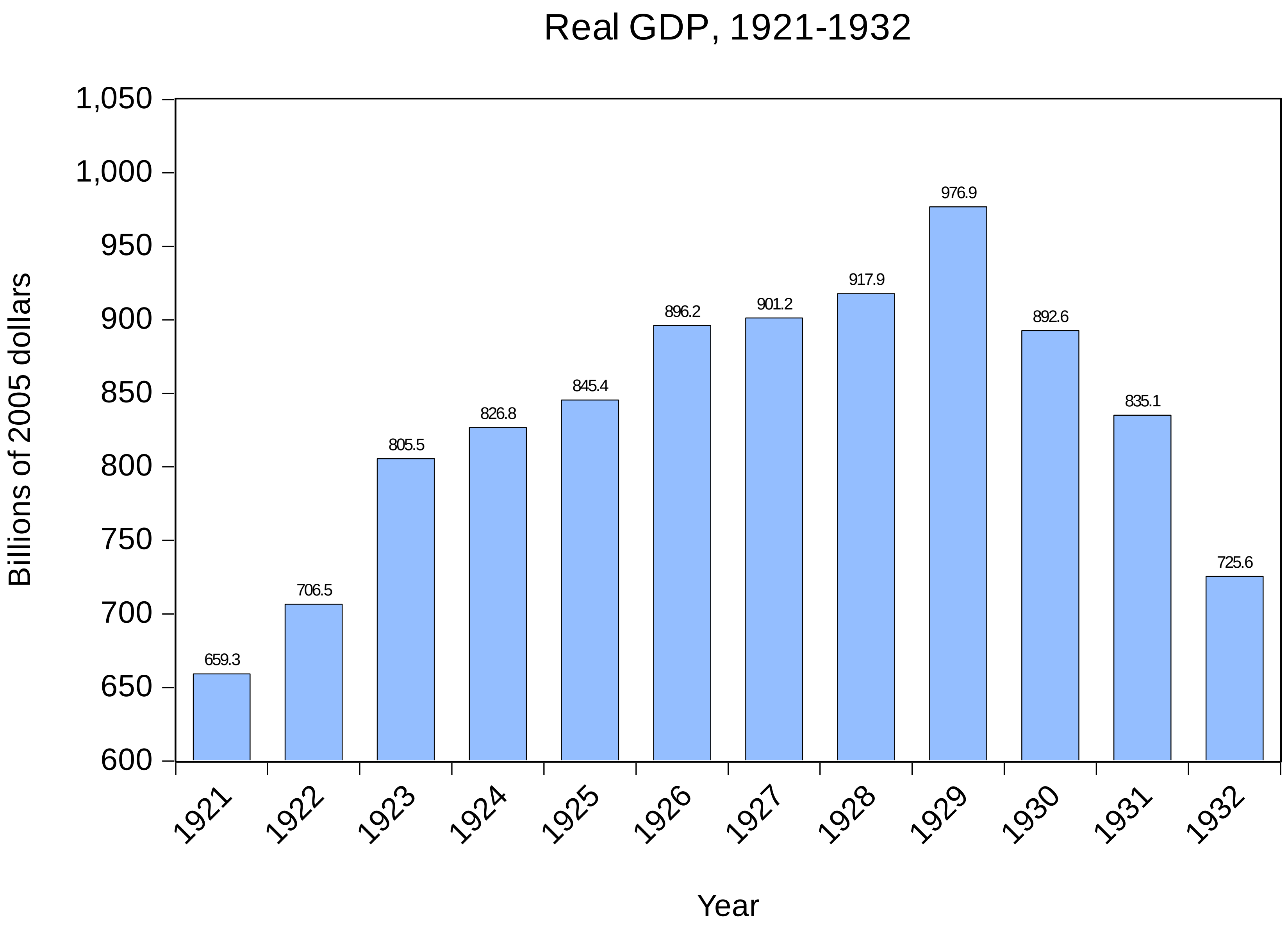
Growing stock market speculation

October 1929 NYSE collapse

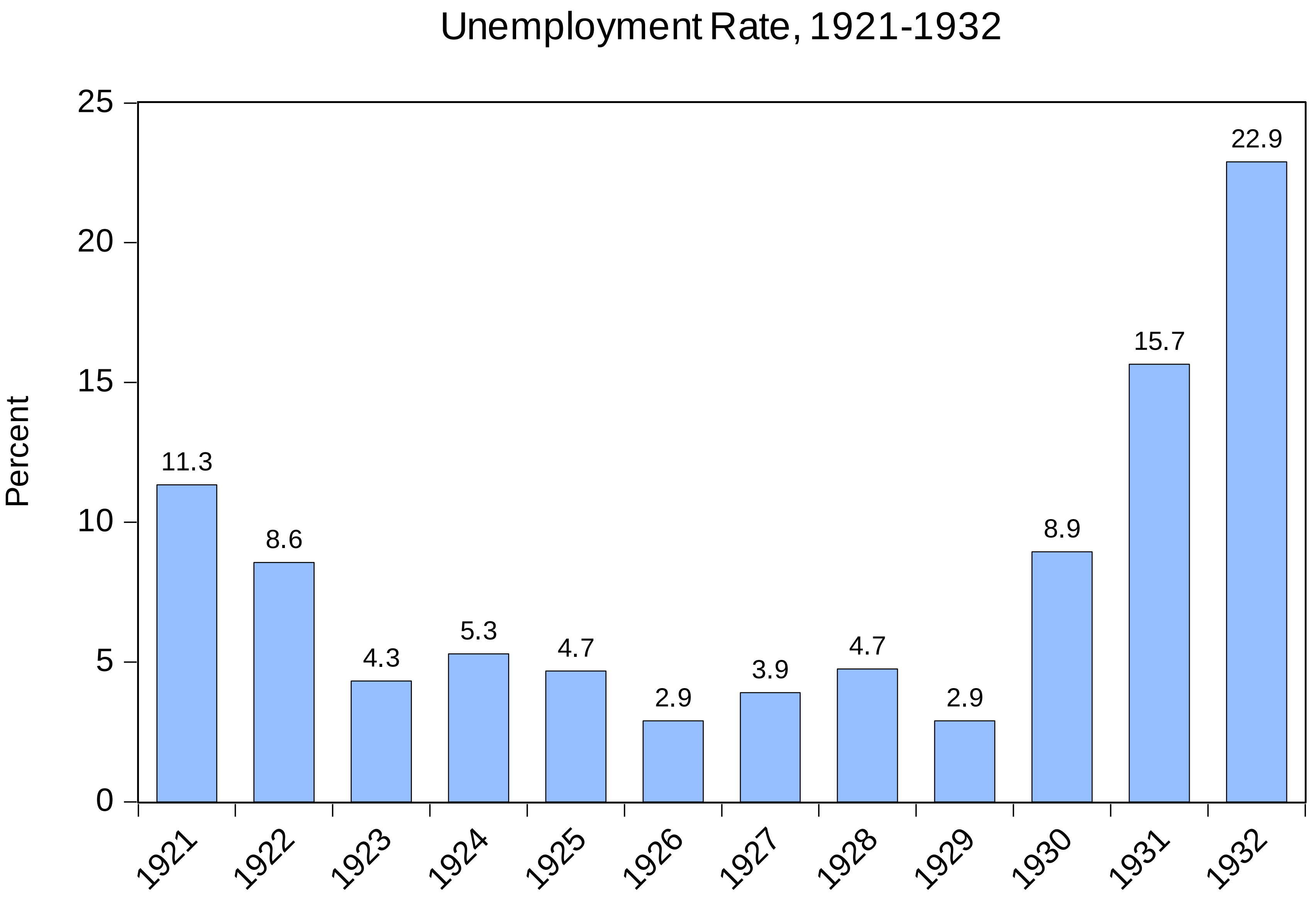
GDP decline, unemployment, deflation

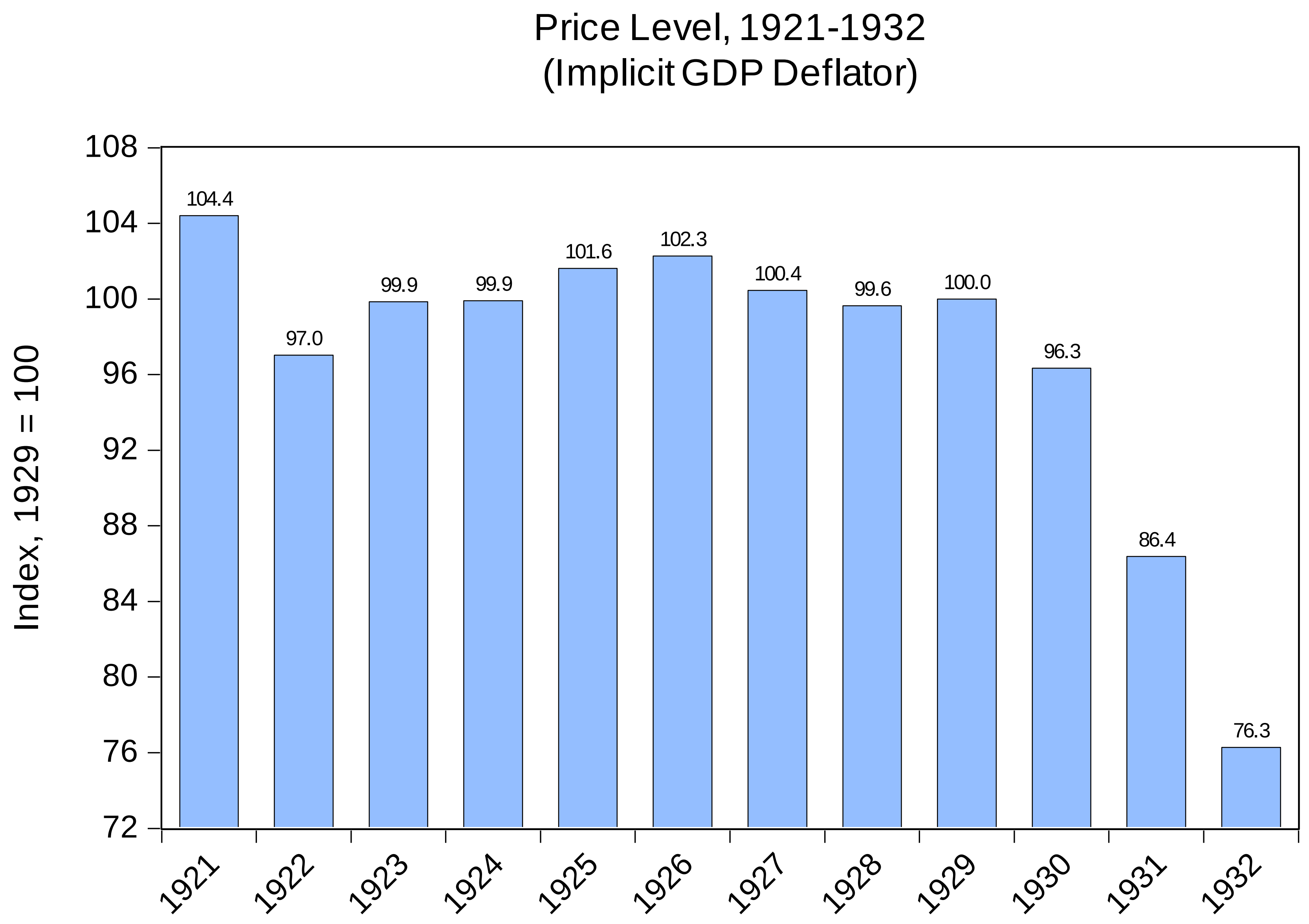
Contagion of bank failures, foreclosures


S&P Stock Price Index, 1921-1932
Index, 1929=100
100
80
60
40
20
29.1
35.2
36.0
38.1
47.0
52.6
61.9
78.5
100.0
78.5
49.4
25.5
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932

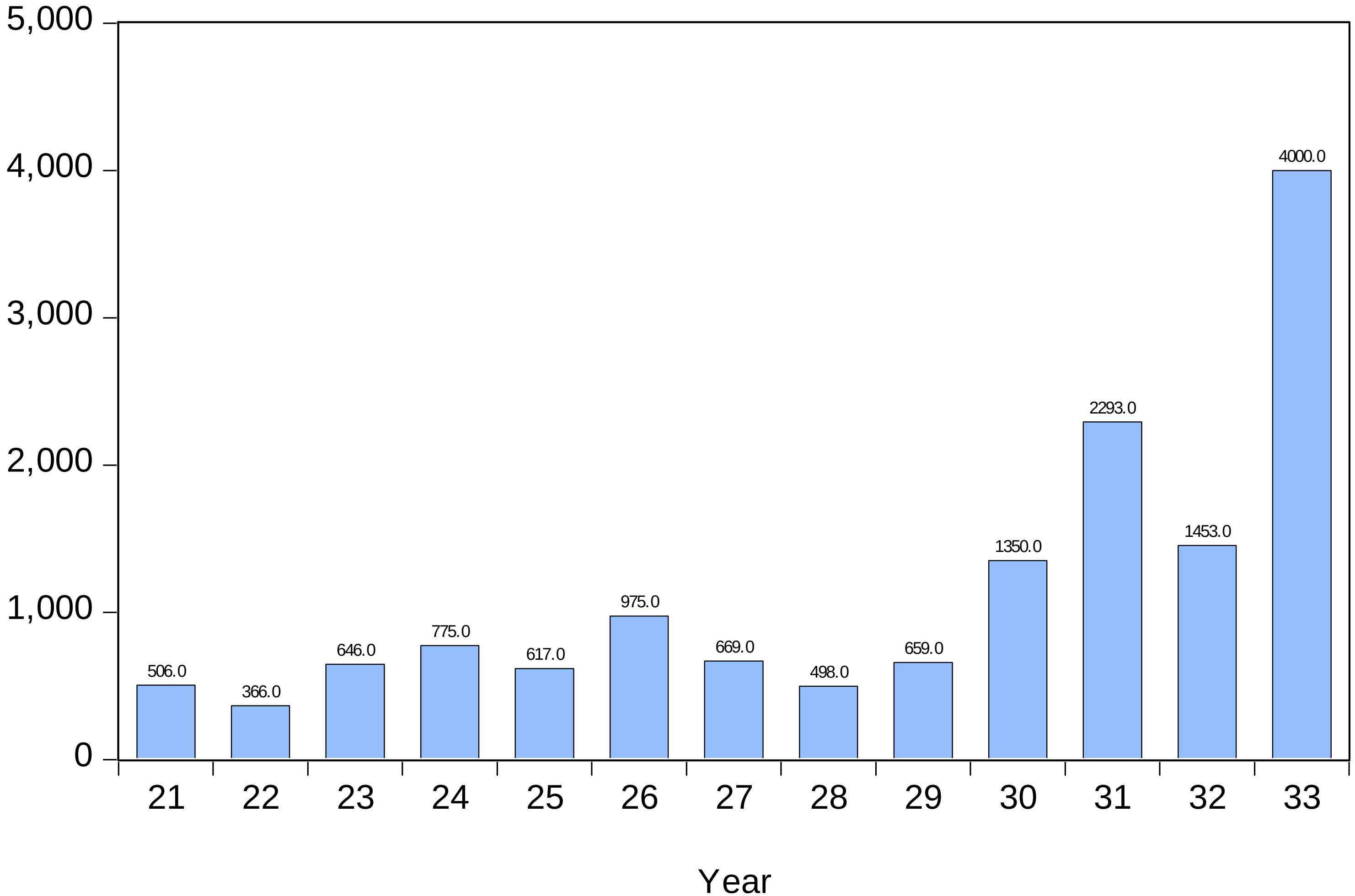


Real GDP, 1921-1932
Billions of 2005 dollars
1,050
1,000
950
900
850
800
750
700
650
600
659.3
706.5
805.5
826.8
845.4
896.2
901.2
917.9
976.9
892.6
835.1
725.6
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932
Year


Unemployment Rate, 1921-1932
Percent
25
20
15
10
5
0
11.3
8.6
4.3
5.3
4.7
2.9
3.9
4.7
2.9
8.9
15.7
22.9
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932


Price Level, 1921-1932
(Implicit GDP Deflator)
Index, 1929 = 100
108
104
100
96
92
88
84
80
76
72
104.4
97.0
99.9
99.9
101.6
102.3
100.4
99.6
100.0
96.3
86.4
76.3
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932

Bank Failures, 1921 - 1933



Source: FDIC

Aftermath of Great Depression

1932	Federal Home Loan Bank Act
1933	Securities Act FDIC established
1934	Securities and Exchange Commission
1940	Investment Company Act

Post World War II

Important advances in financial research and innovation

1970s Securitization of mortgages and other loans
Emergence of MMMFs

1980 Depository Institutions Deregulation Act
Removed Regulation Q
Allowed Interest-paying checking
Allowed S+L and CU to offer checking

1982 Garn-St. Germain Act
Further deregulation of S+L
Allowed adjustable rate mortgages

1980s Savings and loan crisis

Post World War II

1980s Growth of leveraged buyouts, hedge funds, private equity

1987   One-day collapse of NYSE

1990s Stock market euphoria and collapse

Post World War II

1990s Stock market euphoria and collapse

1997-98 Collapse of hedge fund LTCM

1999 Gramm-Leach-Bliley Act
Banks can sell and trade securities and insurance

2002 Sarbanes-Oxley
Tightens accounting and corporate governance

2007-08 Housing market collapse, deep recession

2010 Dodd-Frank Act

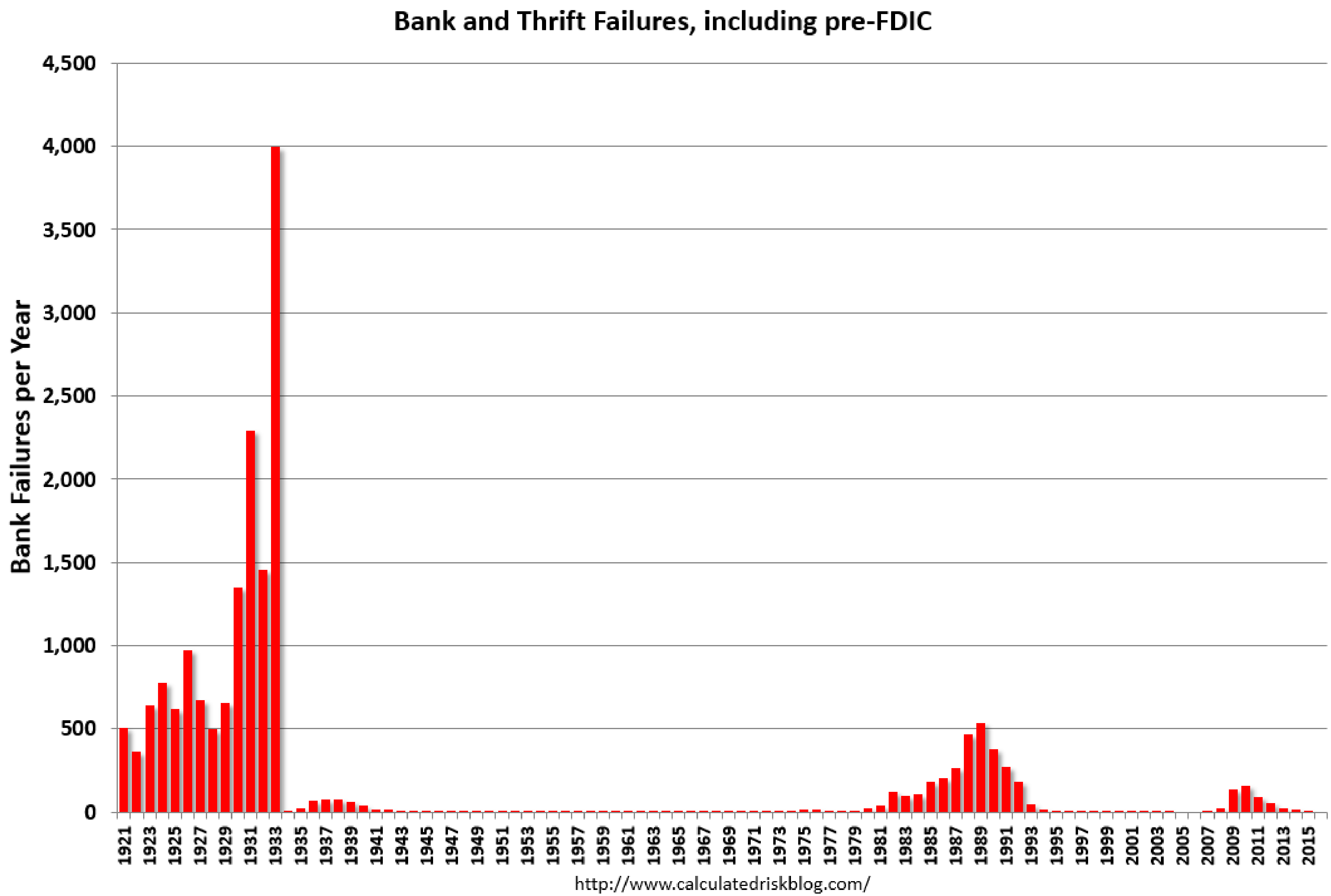
Financial Innovators – Nobel Laureates

Portfolio theory
Harry Markowitz (1952)
James Tobin (1958)
William Sharpe (1963)

Corporate finance and cost of capital
Franco Modigliani, Merton Miller (1958)

Efficient markets theory
Eugene Fama (1965)

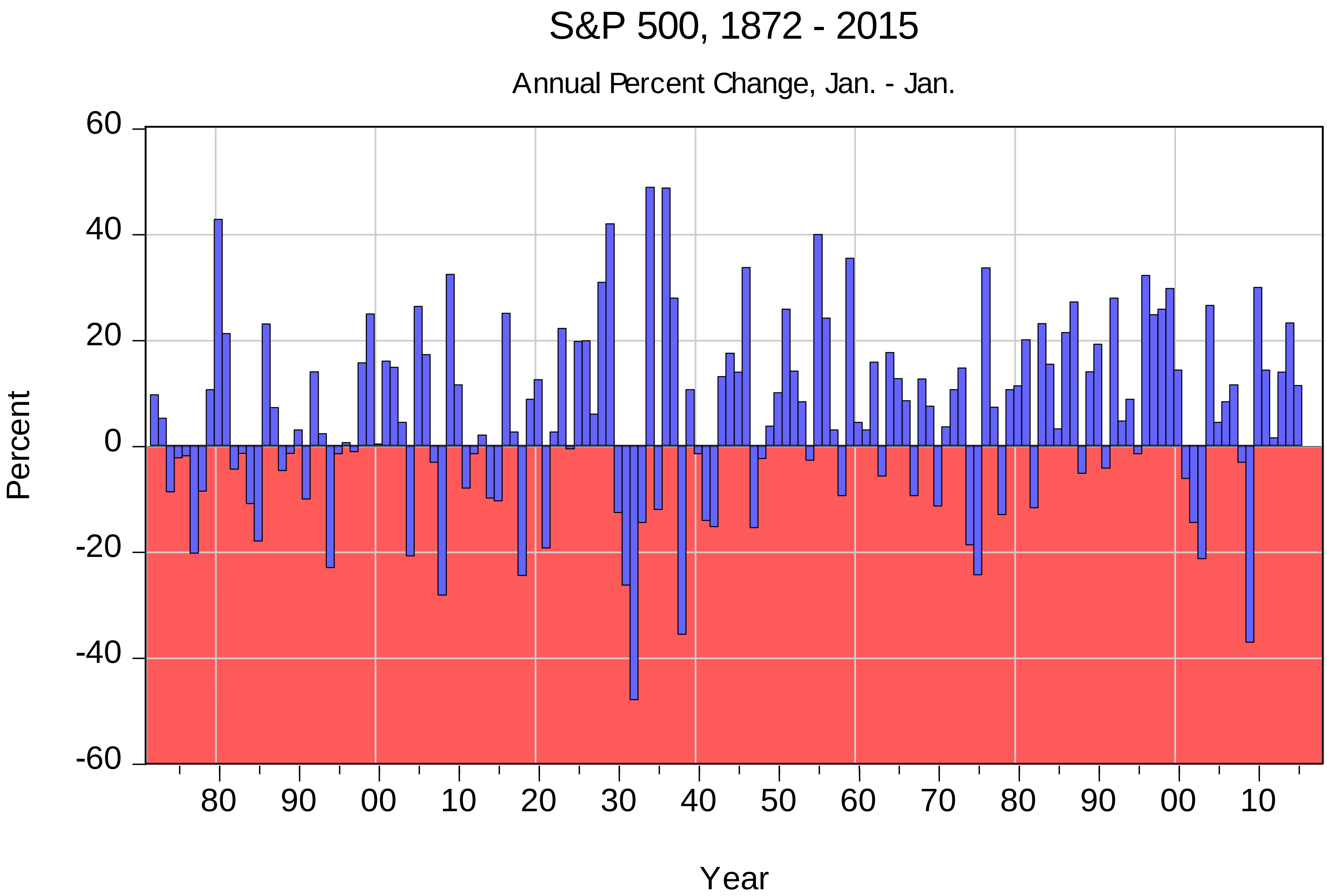
Options pricing
Fisher Black, Myron Sholes, Robert Merton (1973)


Bank and Thrift Failures, including pre-FDIC
Bank Failures per Year
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1921 1923 1925 1927 1929 1931 1933 1935 1937 1939 1941 1943 1945 1947 1949 1951 1953 1955 1957 1959 1961 1963 1965 1967 1969 1971 1973 1975 1977 1979 1981 1983 1985 1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
http://www.calculatedriskblog.com/

Largest Daily Changes in the DJIA

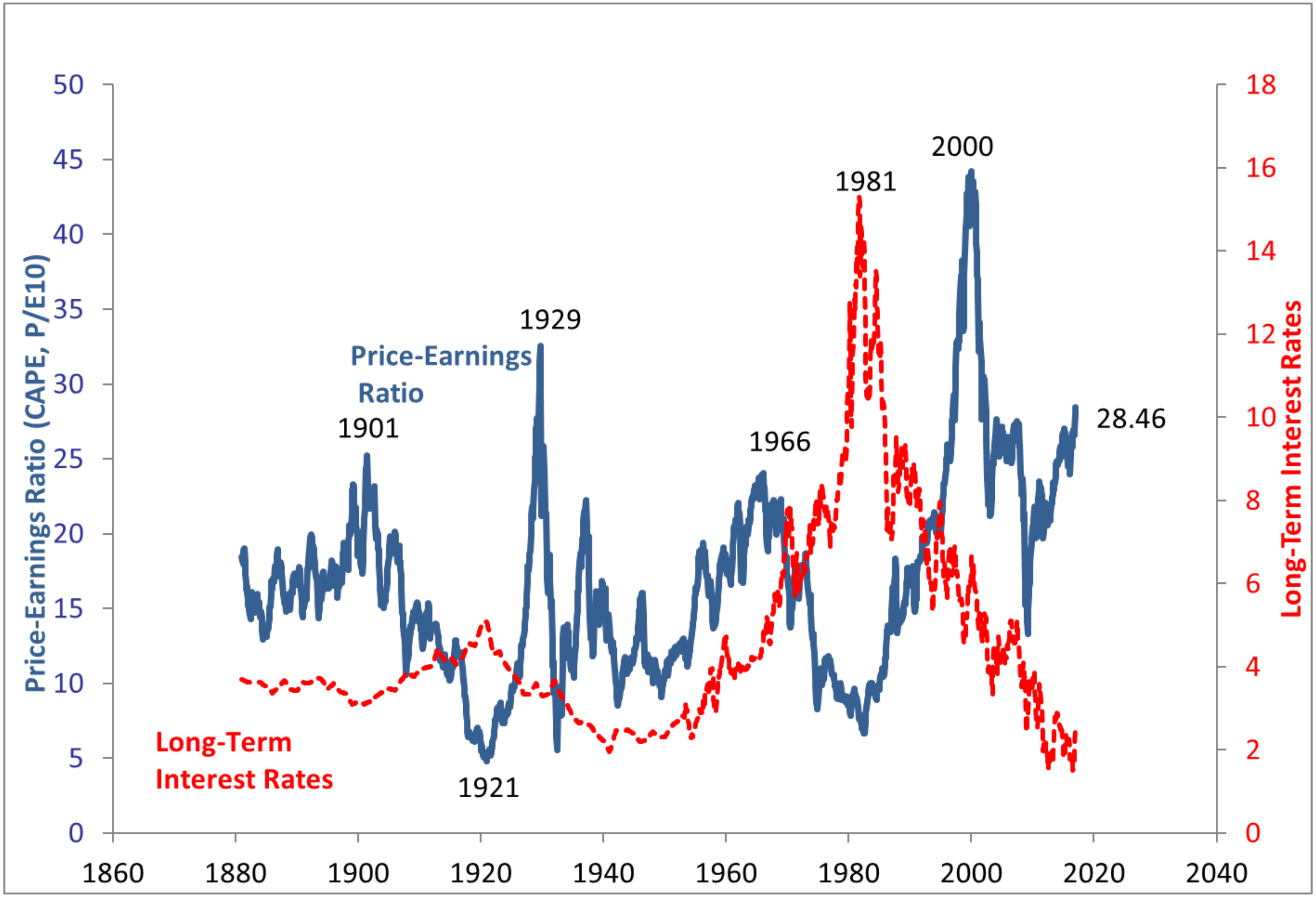
Percent

Increases		Decreases	
1933-03-15	15.3	1987-10-19	-22.6
1931-10-06	14.9	1929-10-28	-12.8
1929-10-30	12.3	1899-12-18	-12.0
1932-09-21	11.4	1929-10-29	-11.7
2008-10-13	11.1	1929-11-06	-9.9


S&P 500, 1872 - 2015
Annual Percent Change, Jan. - Jan.
60
40
20
0
-20
-40
-60
Percent
80
90
00
10
20
30
40
50
60
70
80
90
00
10
Year

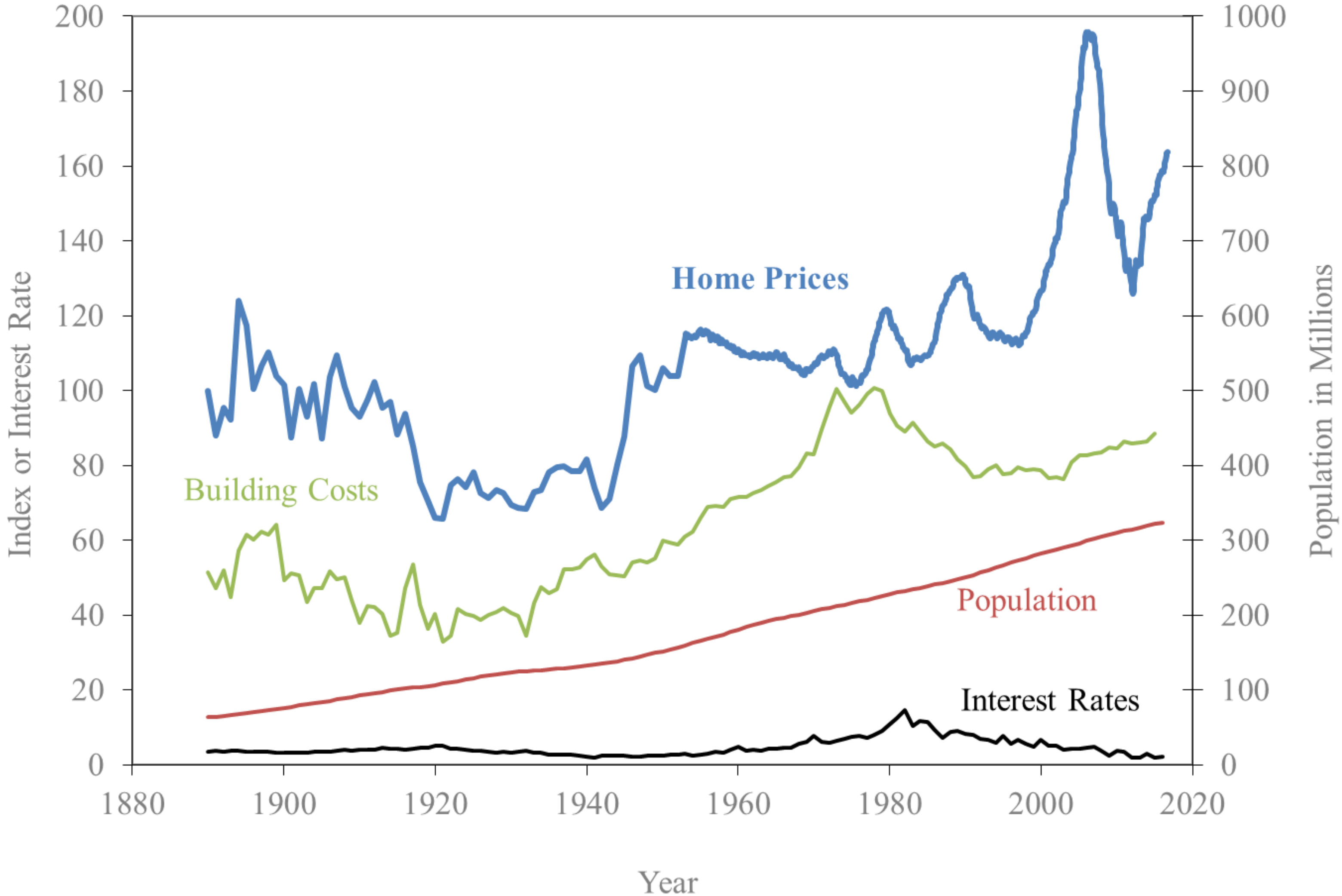
U.S. Price-Earnings Ratio of Corporate Stocks, 1871 – 2016

S&P 500, cyclically adjusted

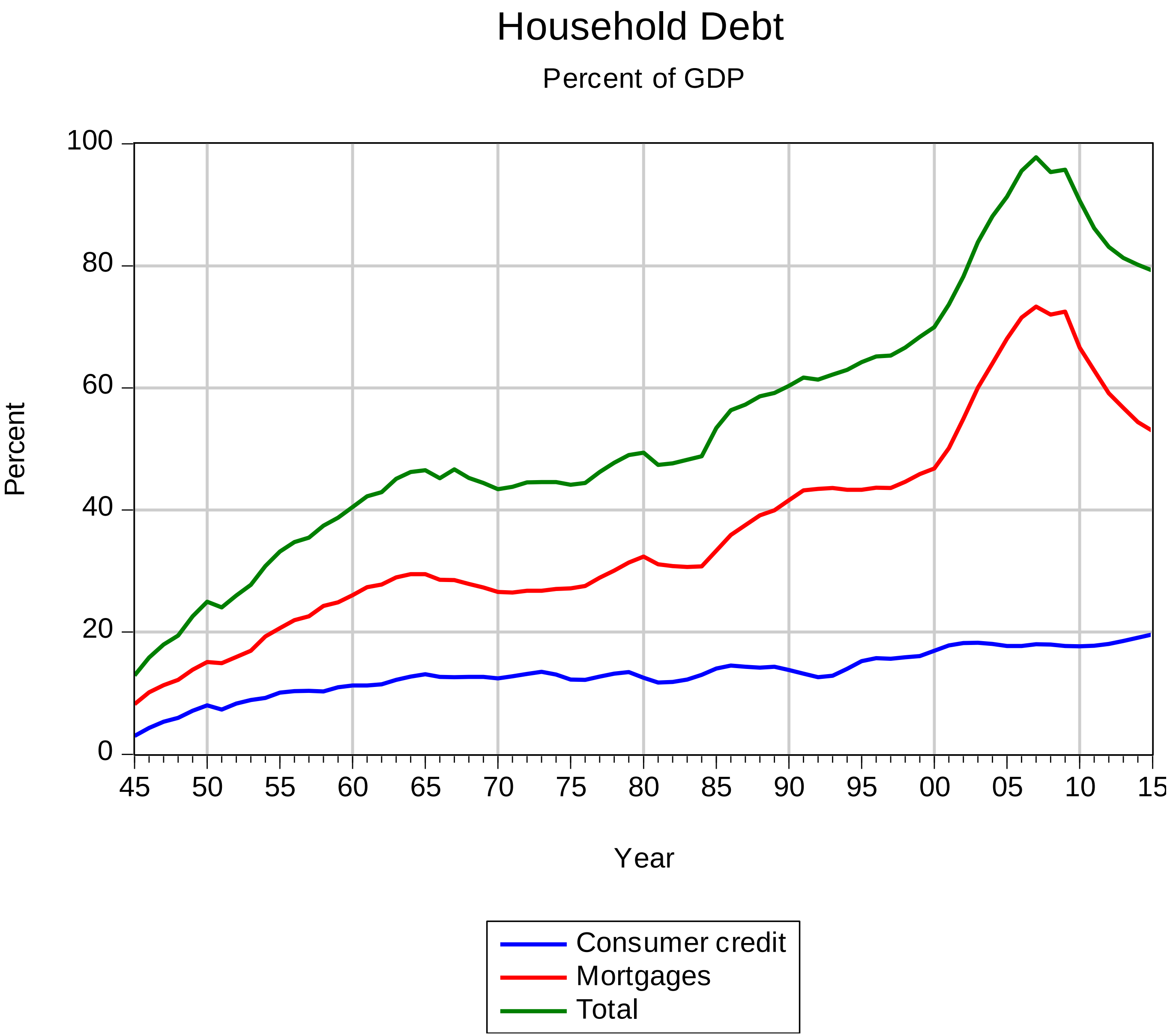


Robert J. Schiller, *Irrational Exuberance,* Princeton, 2015, updated.by author

U.S. Home Prices and Related Series, 1890 - 2016



Robert J. Shiller, *Irrational Exuberance*, 3rd. ed., Princeton 2015, updated by author


Household Debt
Percent of GDP
Percent
100
80
60
40
20
0
45
50
55
60
65
70
75
80
85
90
95
00
05
10
15
Year
Consumer credit
Mortgages
Total

Post World War II

Have financial innovations and regulatory changes made financial markets more stable or less stable?

Changes promote risk-taking, innovation
Dodd-Frank created comprehensive oversight
Fed has become professional and independent
Public’s financial knowledge is growing
Growing complexity challenges regulators
Bubbles probably unavoidable

END