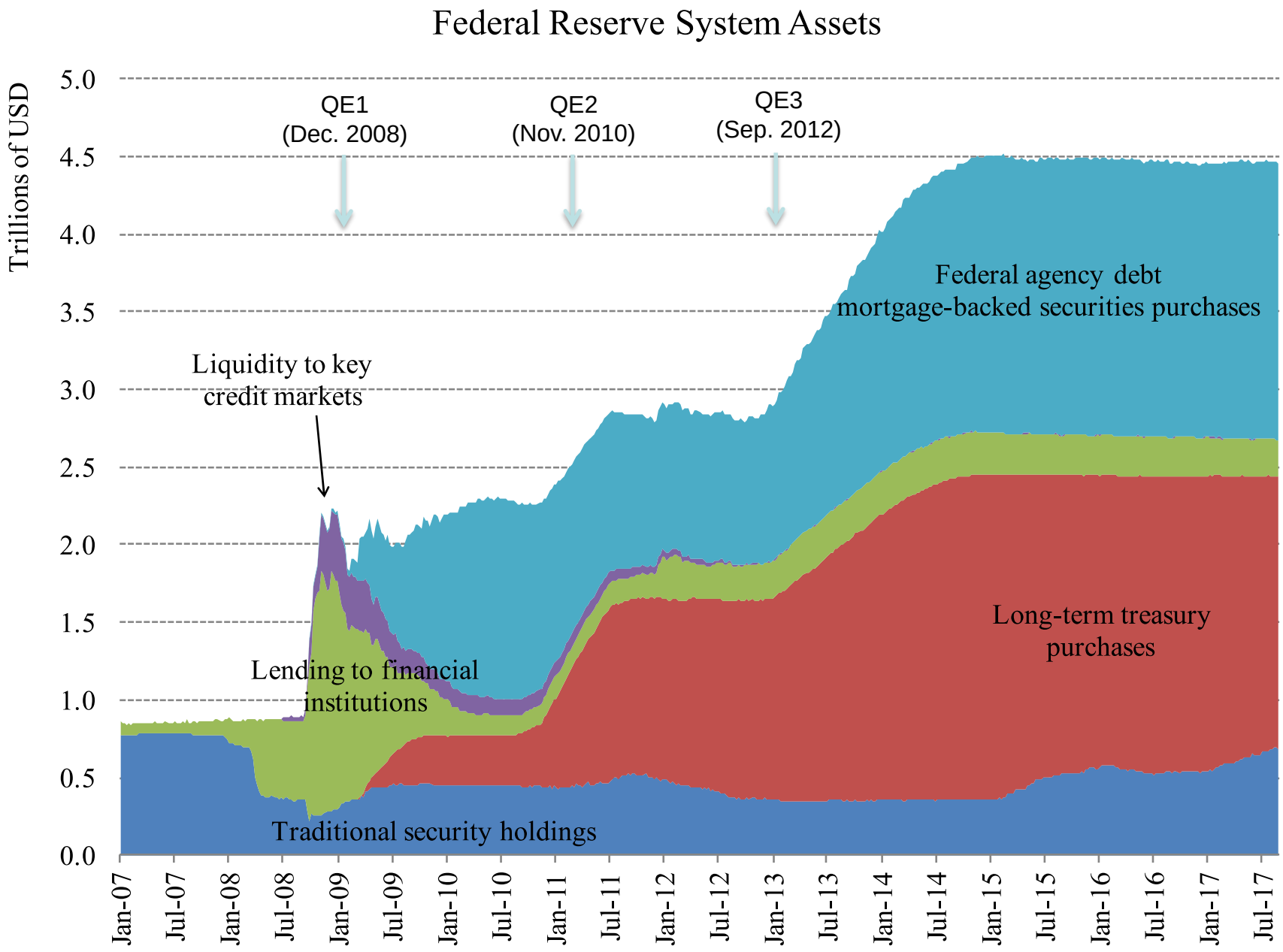
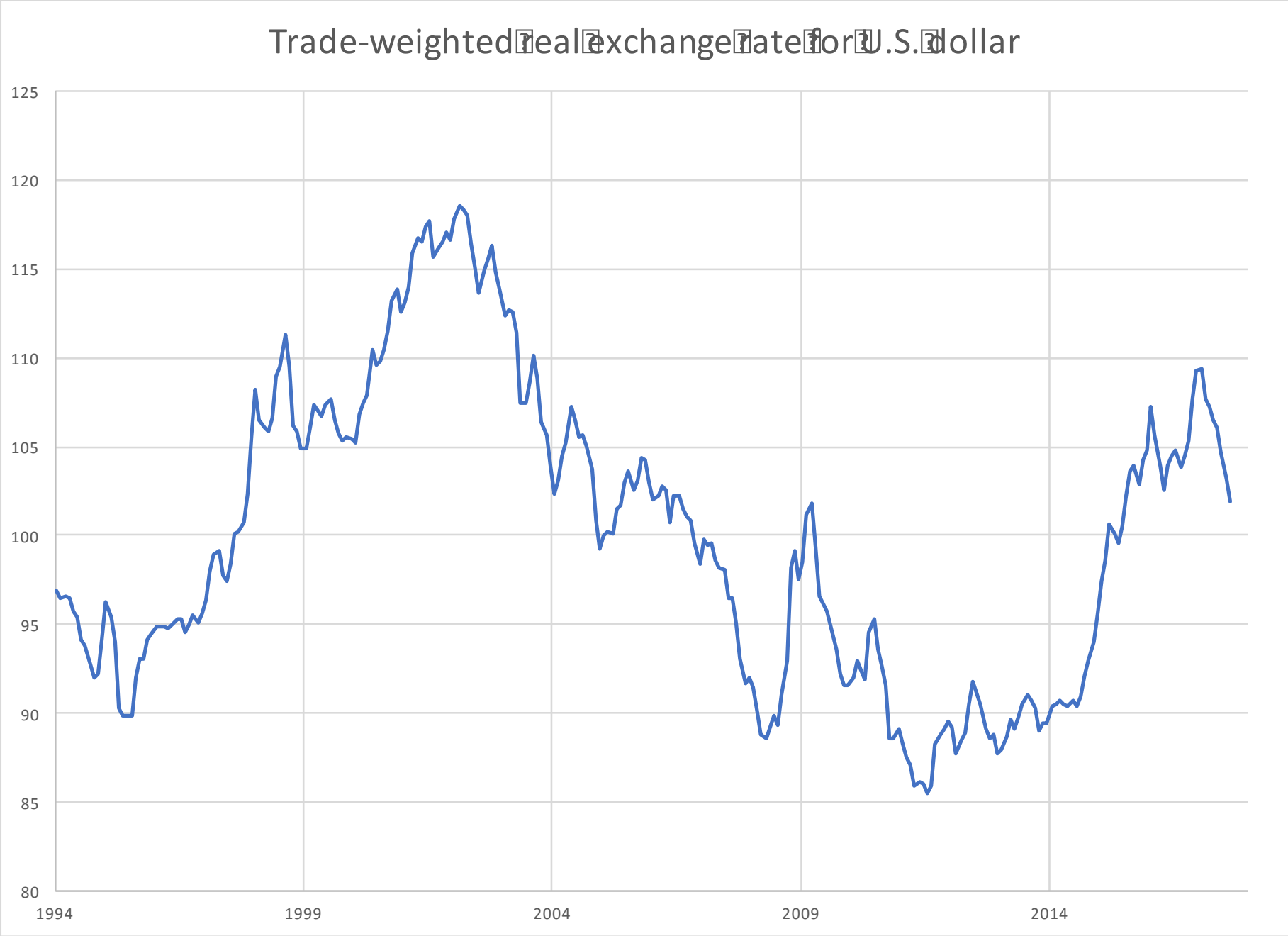
The U.S. Economy

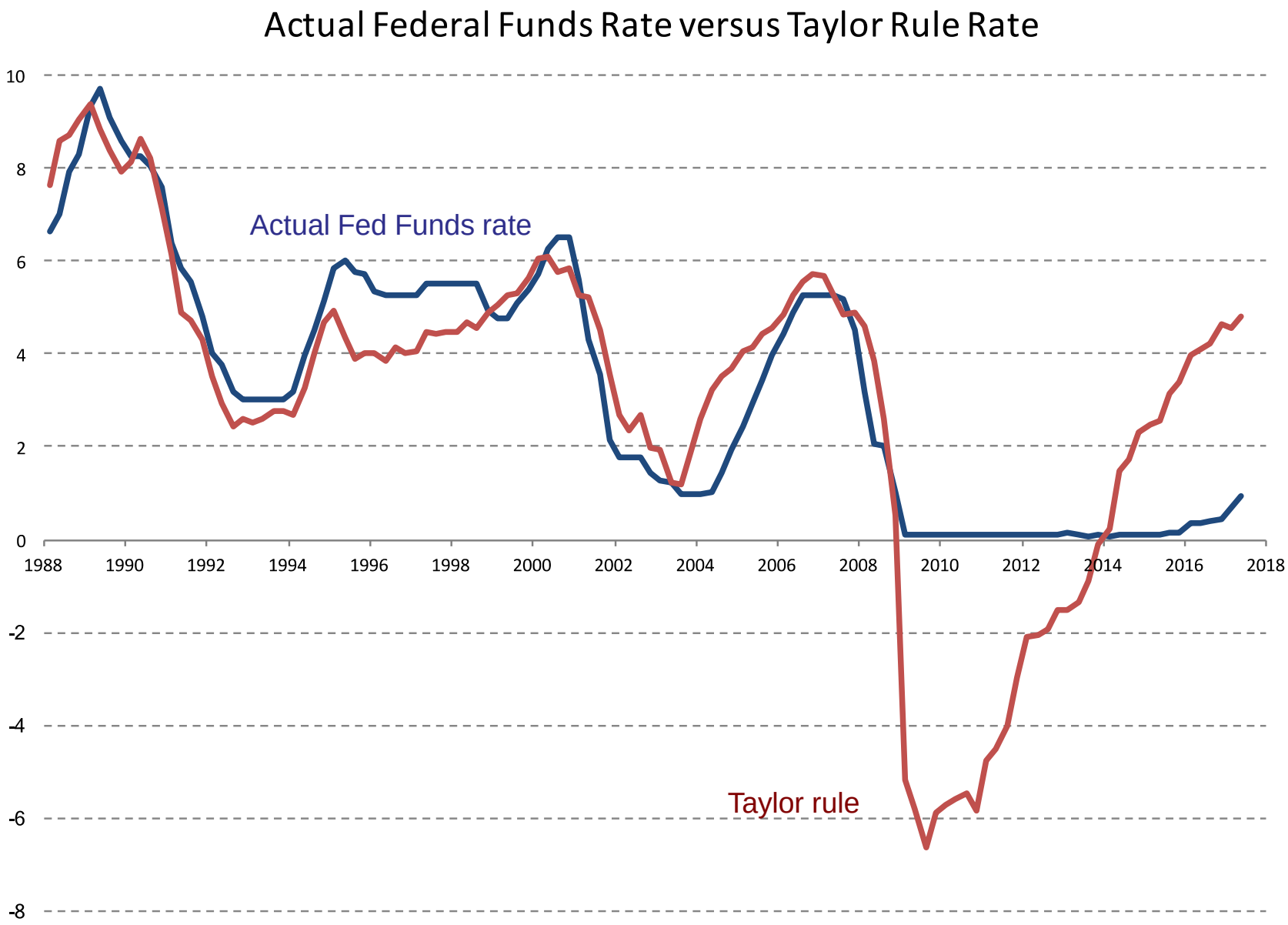
Sergio Rebelo

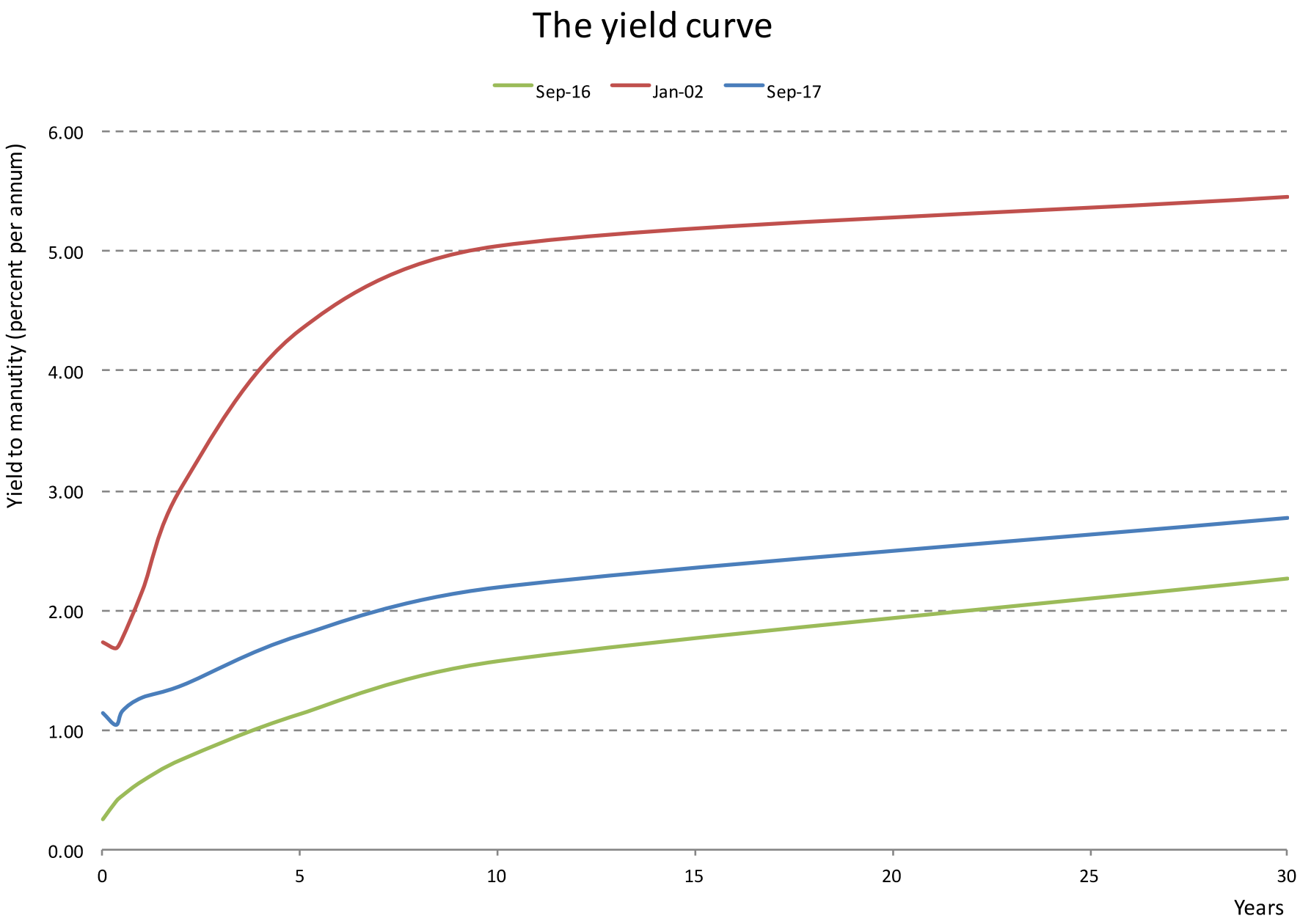

Federal Reserve System Assets
Trillions of USD
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
QE1
(Dec. 2008)
QE2
(Nov. 2010)
QE3
(Sep. 2012)
Federal agency debt
mortgage-backed securities purchases
Liquidity to key
credit markets
Long-term treasury
purchases
Lending to financial
institutions
Traditional security holdings
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Jul-14
Jan-15
Jul-15
Jan-16
Jul-16
Jan-17
Jul-17


Trade-weighted real exchange rate for U.S. dollar
125
120
115
110
105
100
95
90
85
80
1994
1999
2004
2009
2014

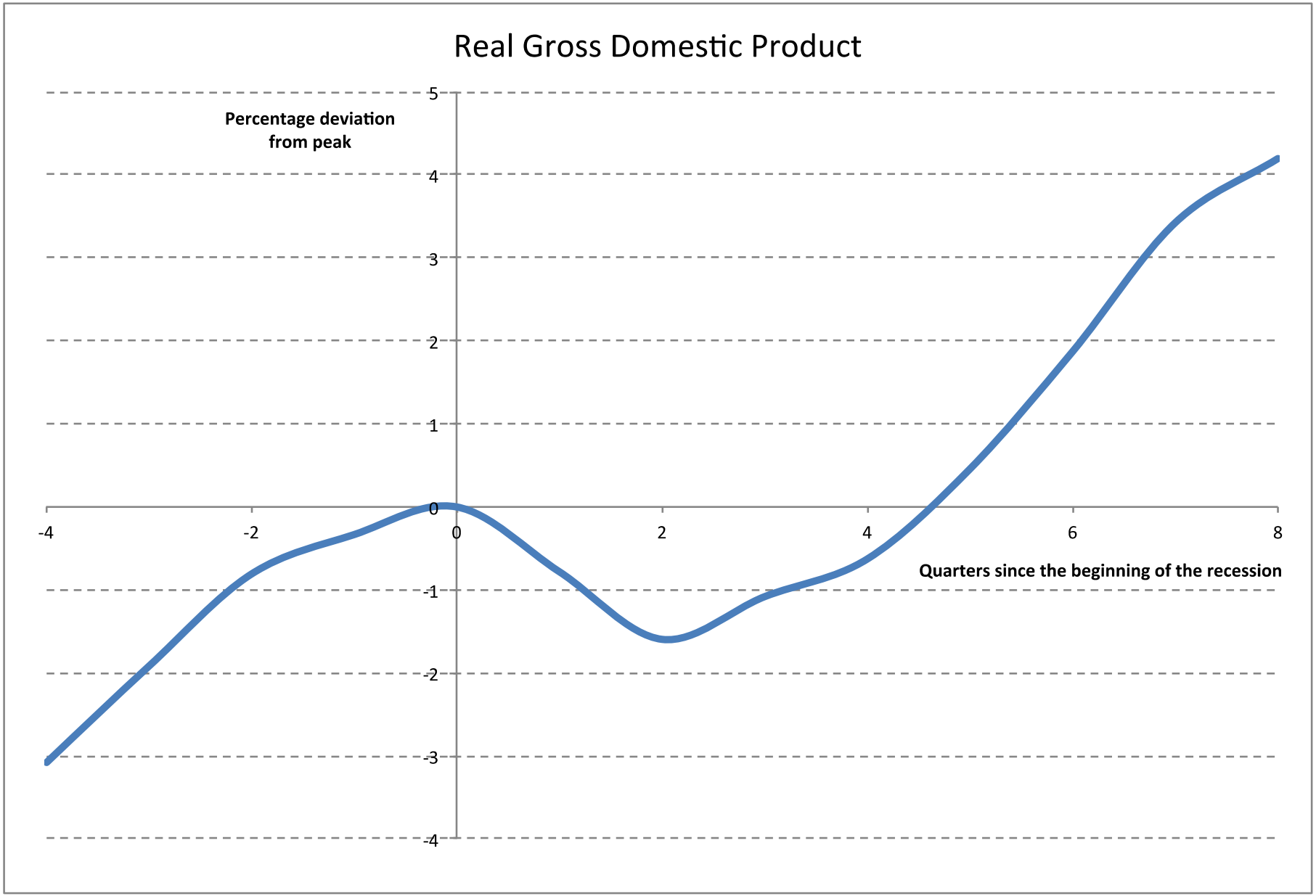
The Taylor Rule

Fed Funds Rate = 2.1 + 1.3 x Inflation – 2.0 x (Unemployment – 4.8)

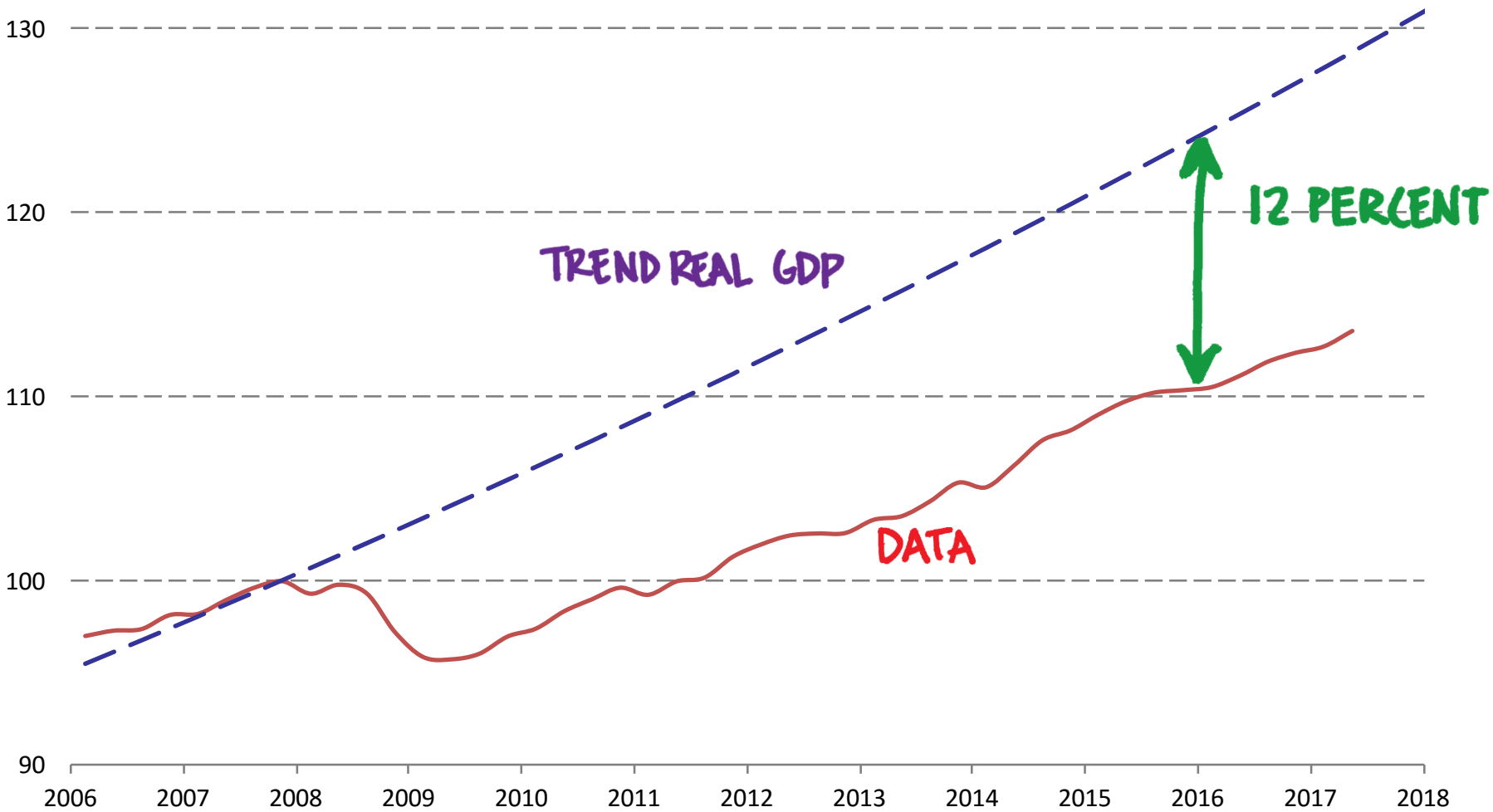




Data source: Fred.

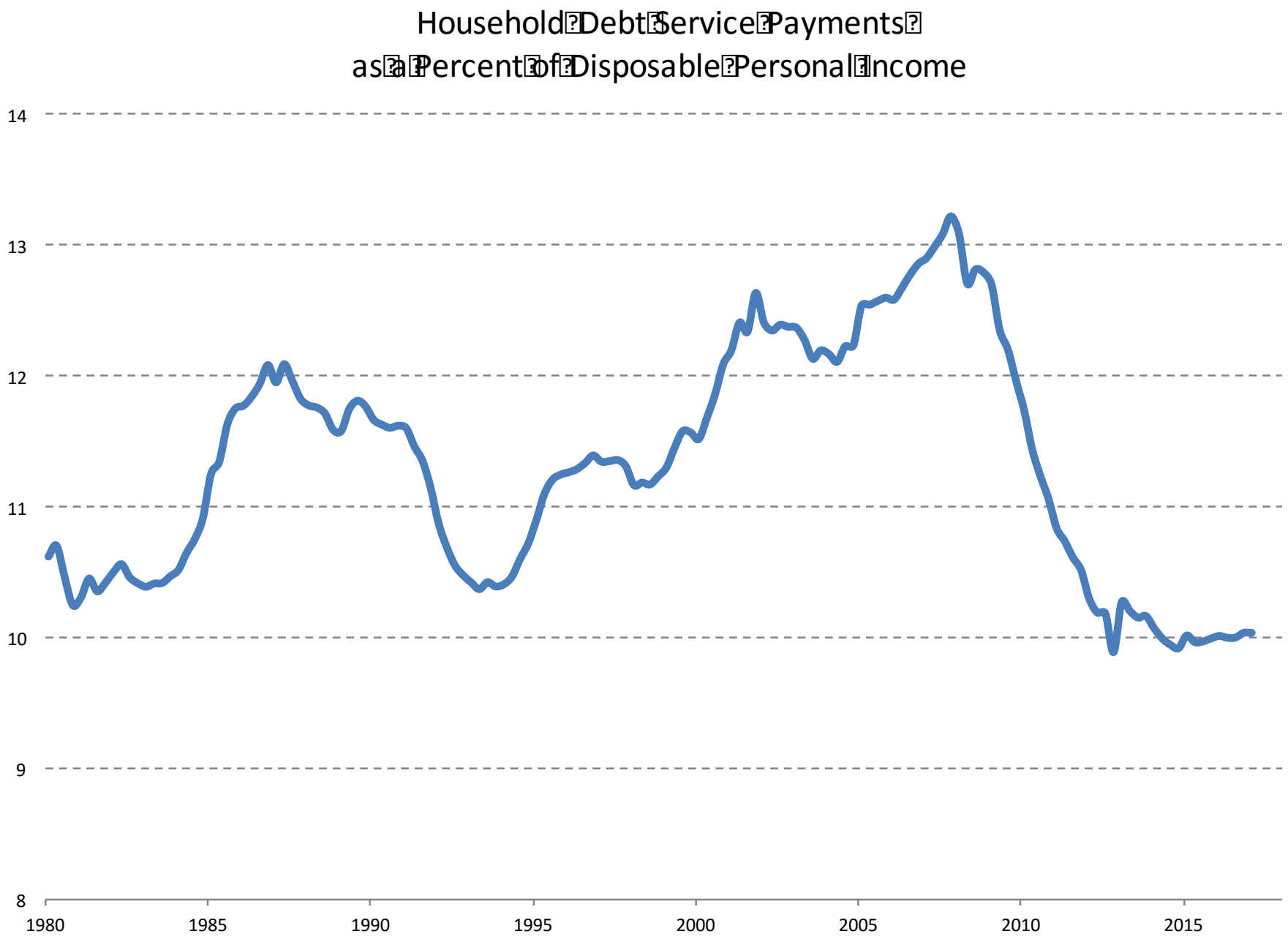

Real Gross Domestic Product
Percentage deviation from peak
5
4
3
2
1
0
-1
-2
-3
-4
-4
-2
0
2
4
6
8
Quarters since the beginning of the recession

ACTUAL REAL GDP VERSUS TREND REAL GDP

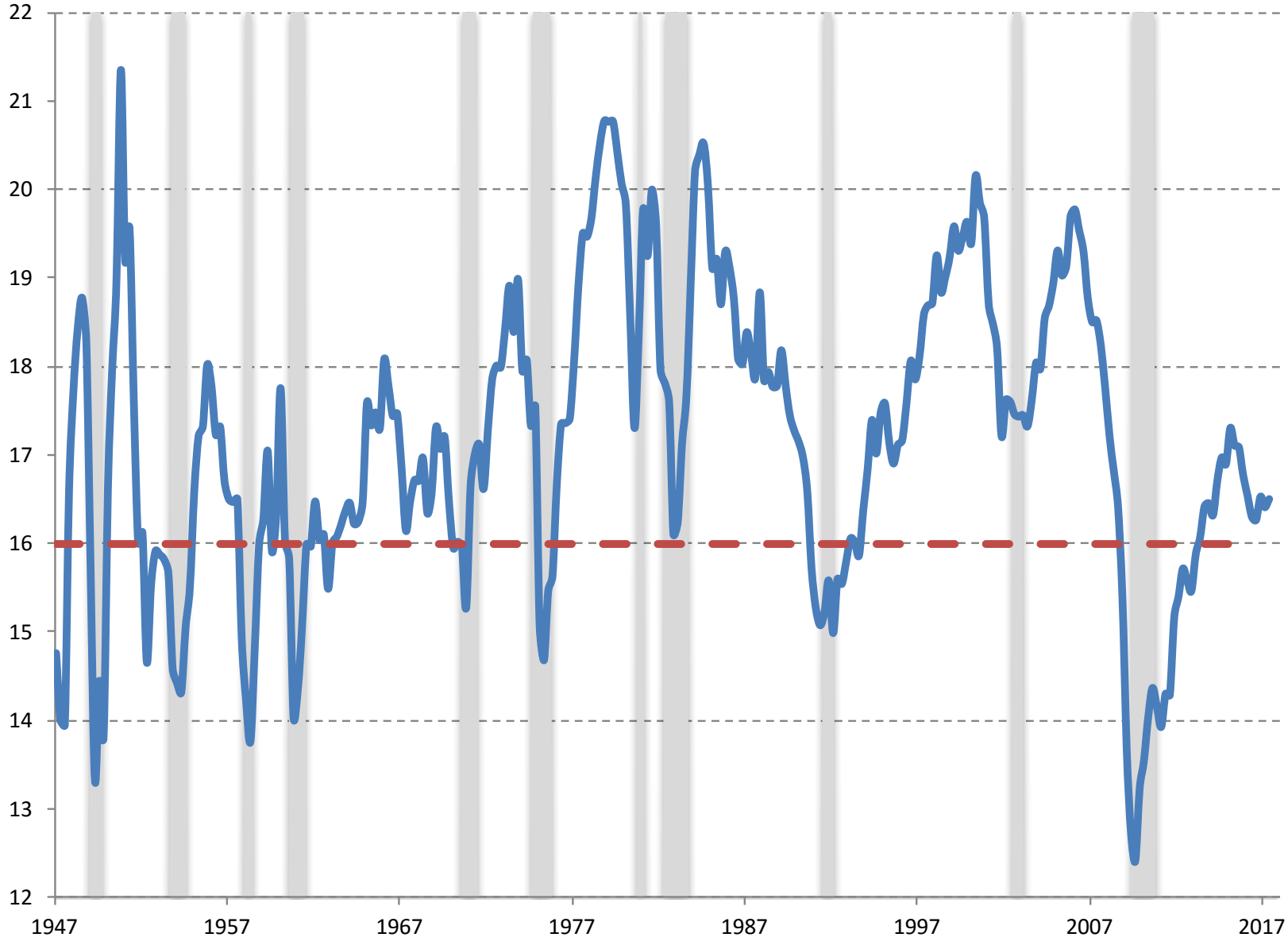


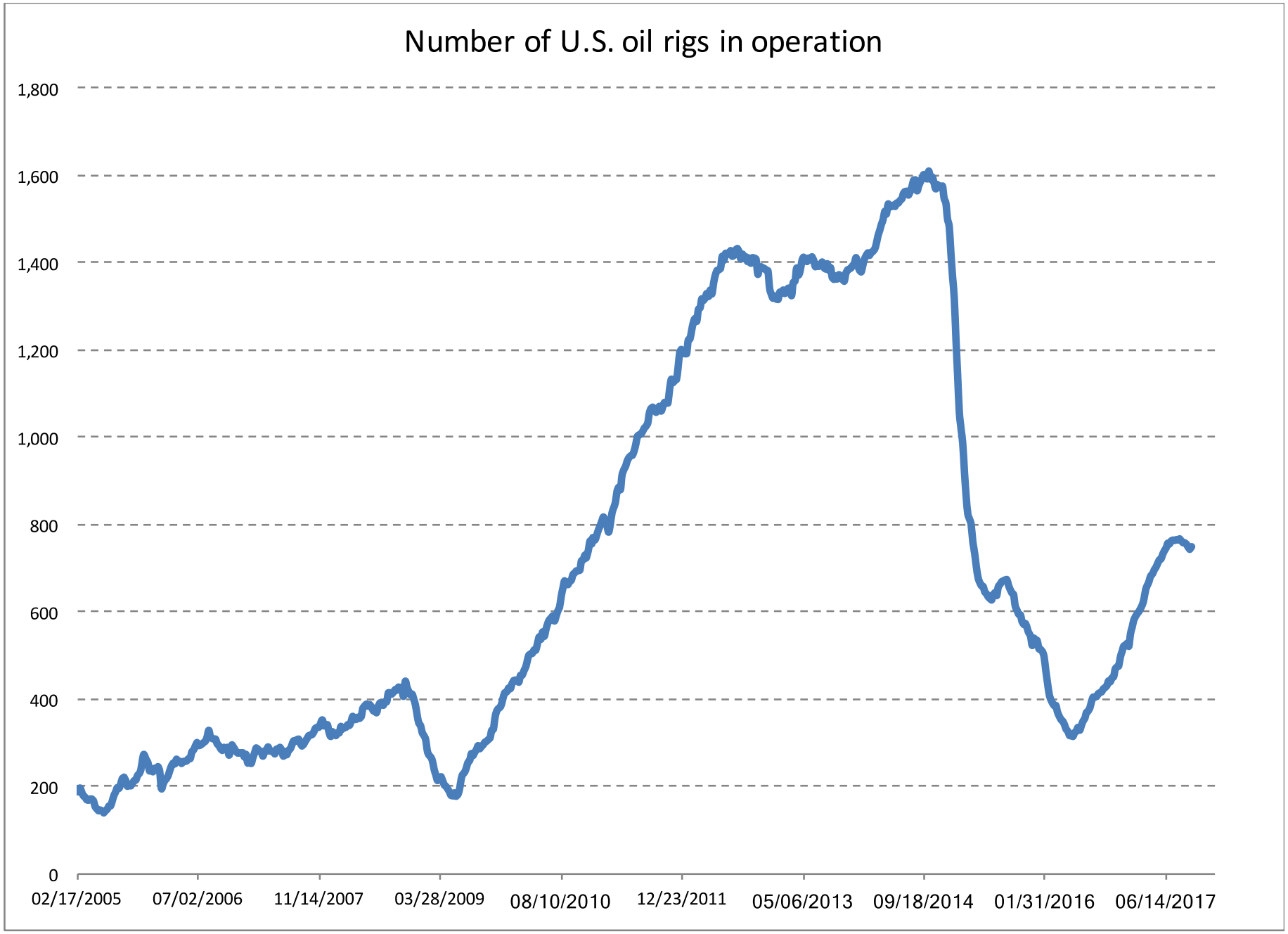
U.S. HOUSEHOLD DEBT/DISPOSABLE INCOME

30-Year Fixed Rate Mortgage Average in the United States
20
18
16
14
12
10
8
6
4
2
0
1971
1976
1981
1986
1991
1996
2001
2006
2011
2016

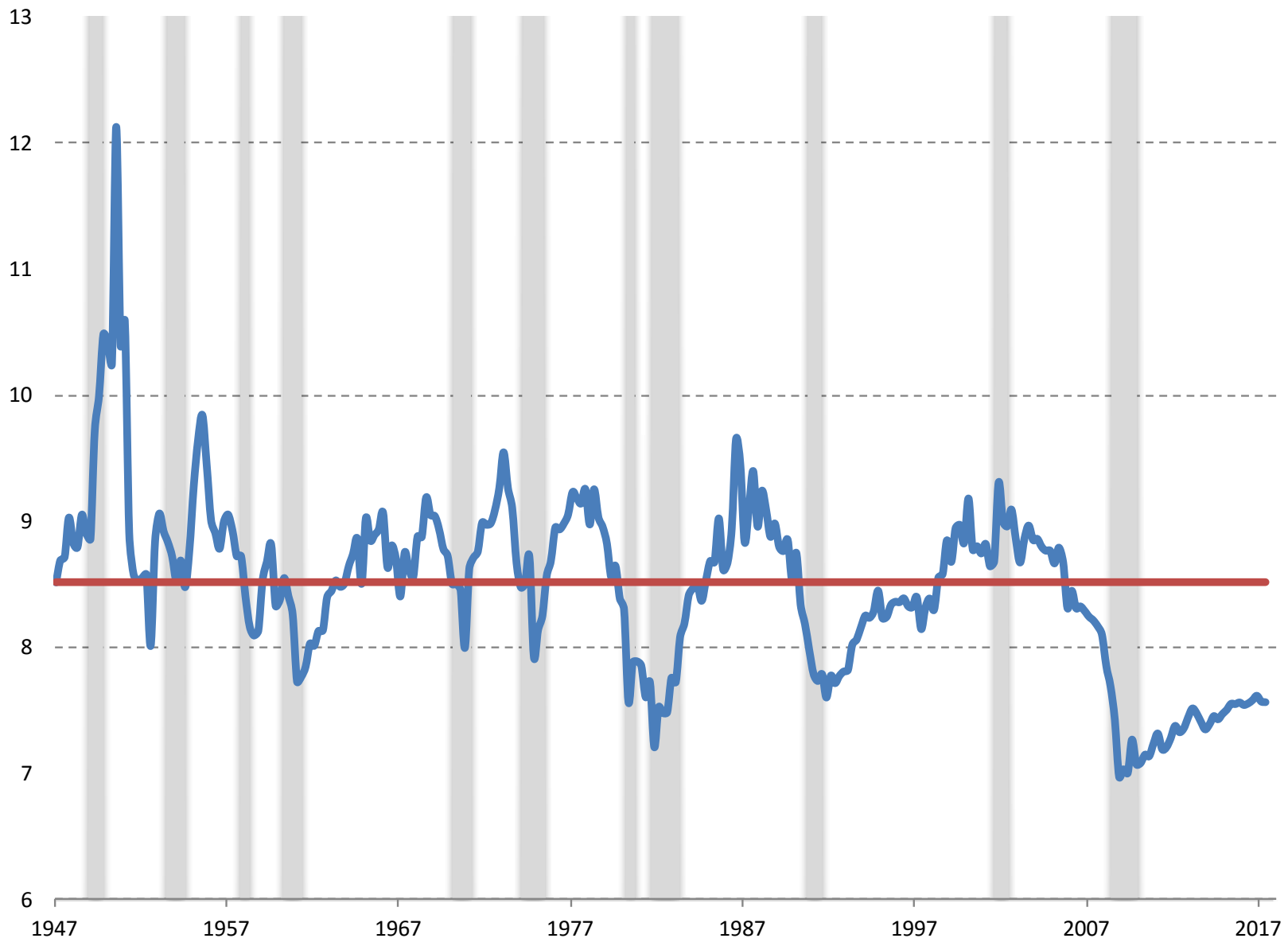

Household Debt Service Payments
as a Percent of Disposable Personal Income
14
13
12
11
10
9
8
1980
1985
1990
1995
2000
2005
2010
2015

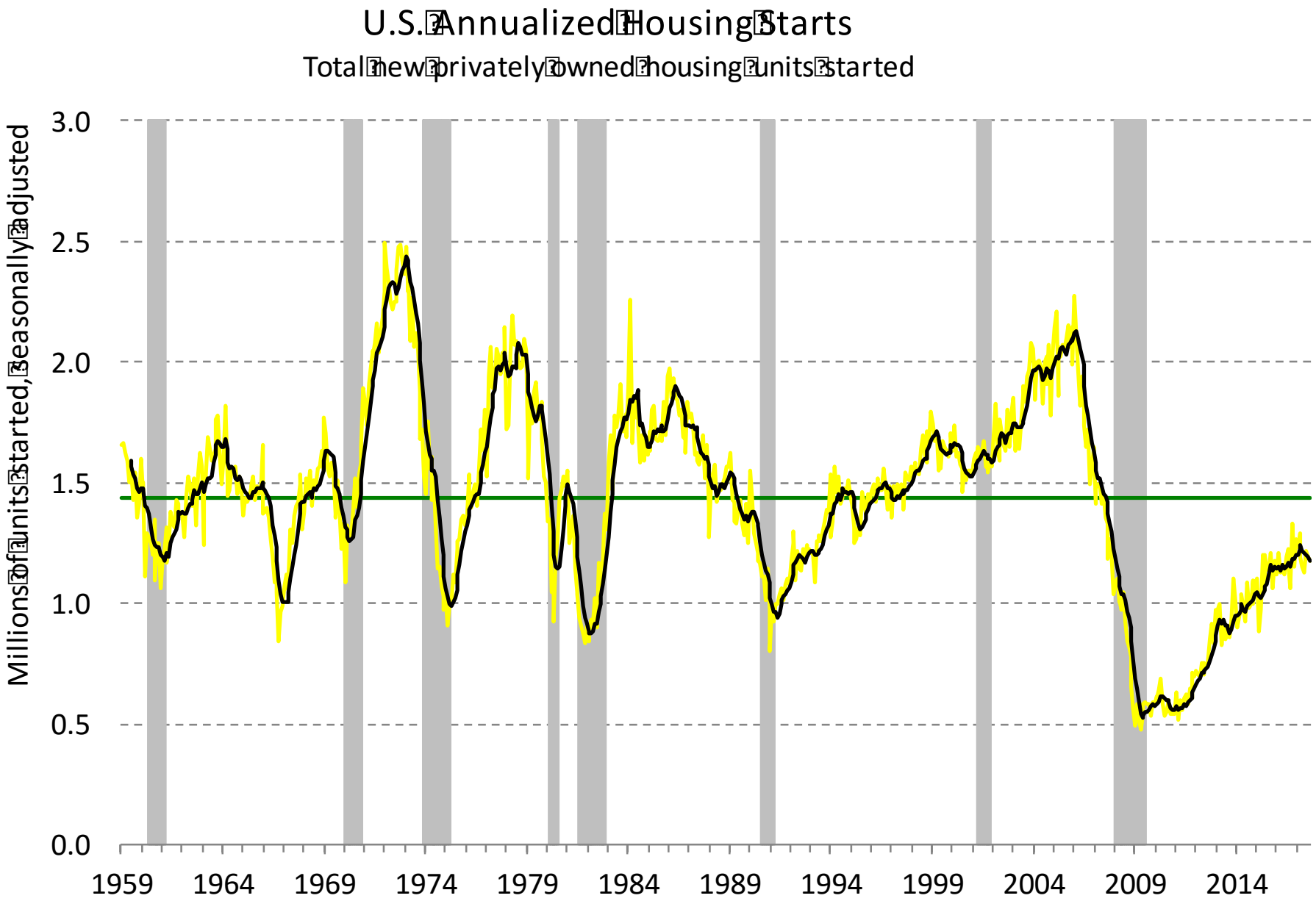
INVESTMENT/GDP (PERCENTAGE)



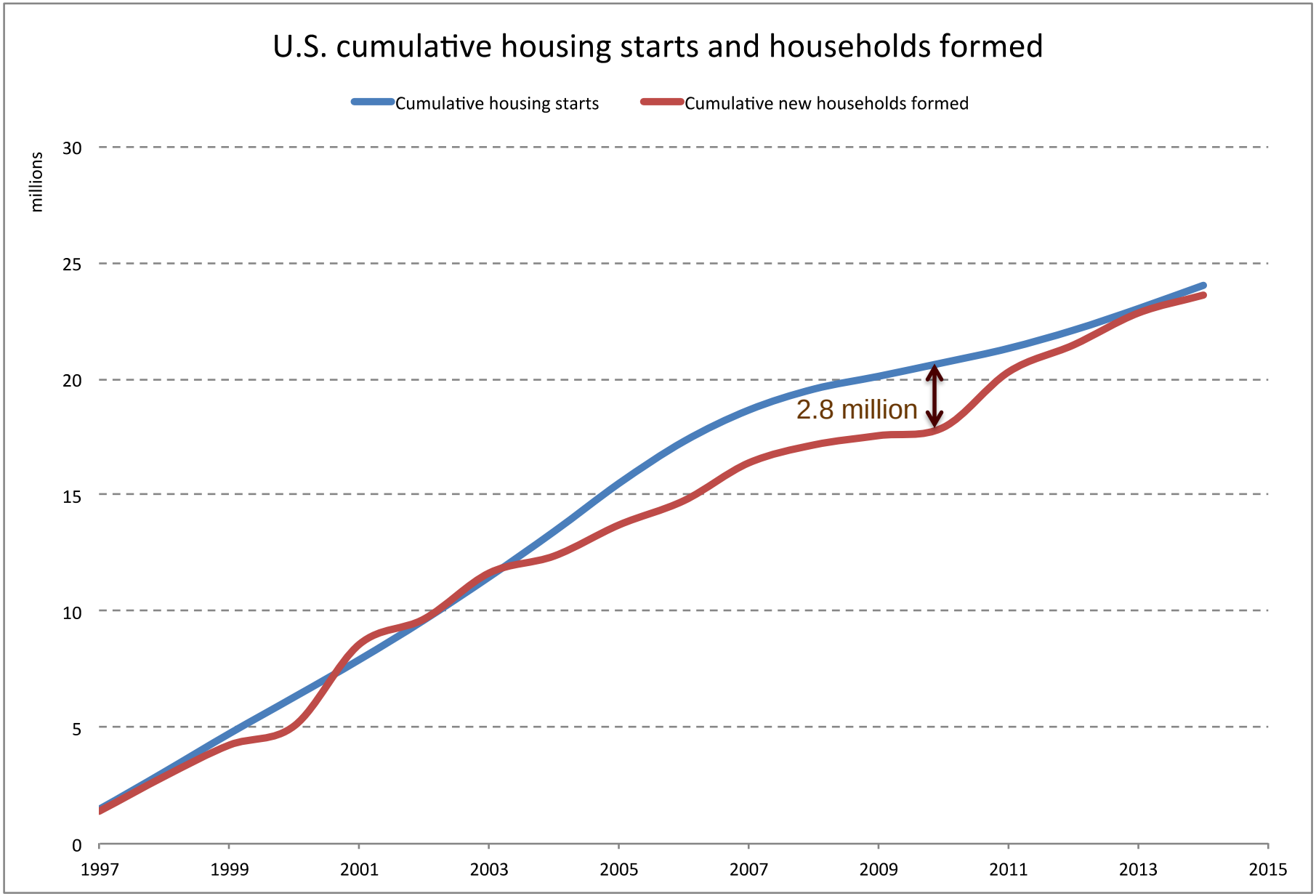

Number of U.S. oil rigs in operation
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
02/17/2005
07/02/2006
11/14/2007
03/28/2009
08/10/2010
12/23/2011
05/06/2013
09/18/2014
01/31/2016
06/14/2017

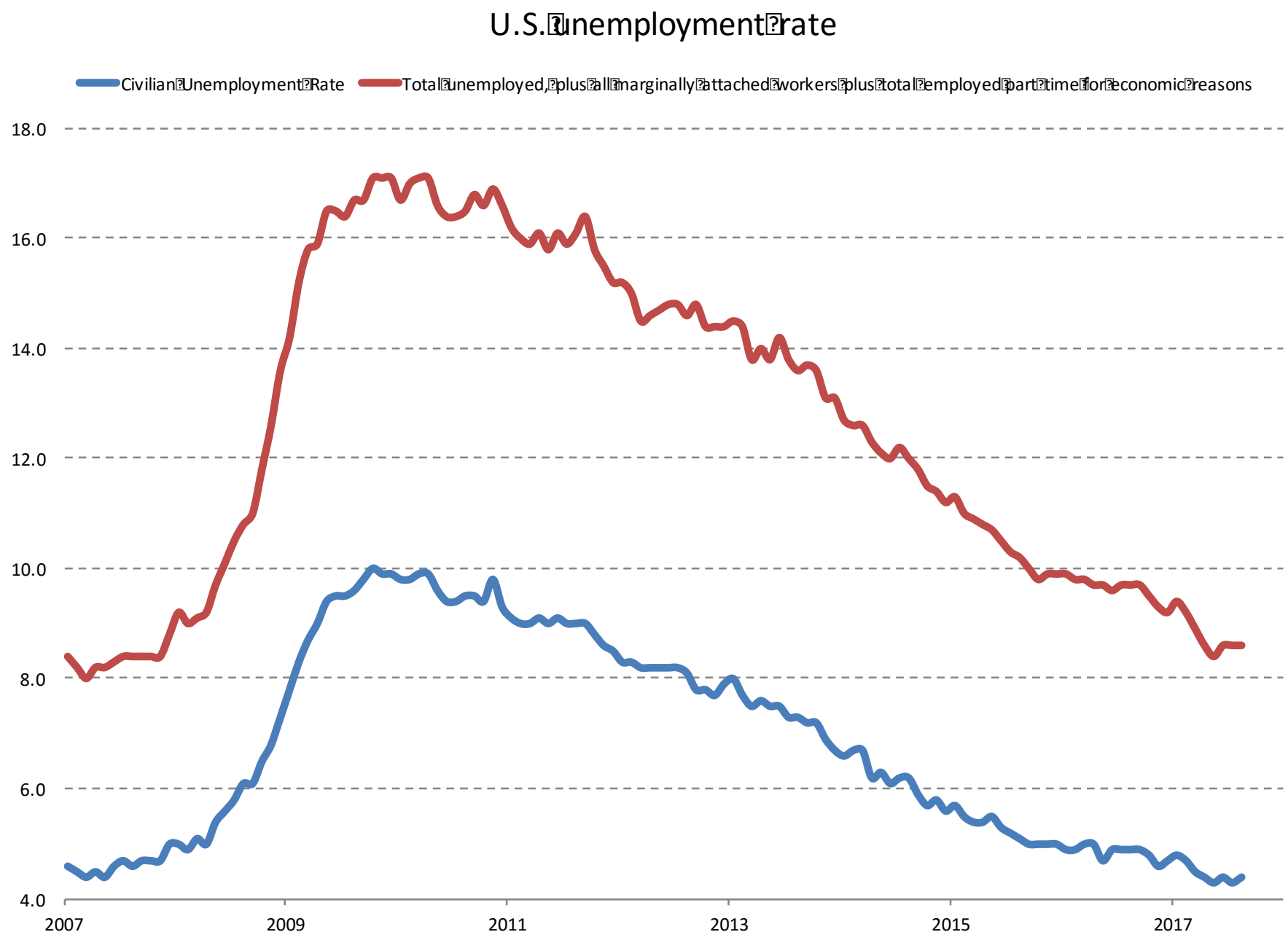
PERSONAL DURABLE GOODS EXPENDITURES/GROSS DOMESTIC PRODUCTS

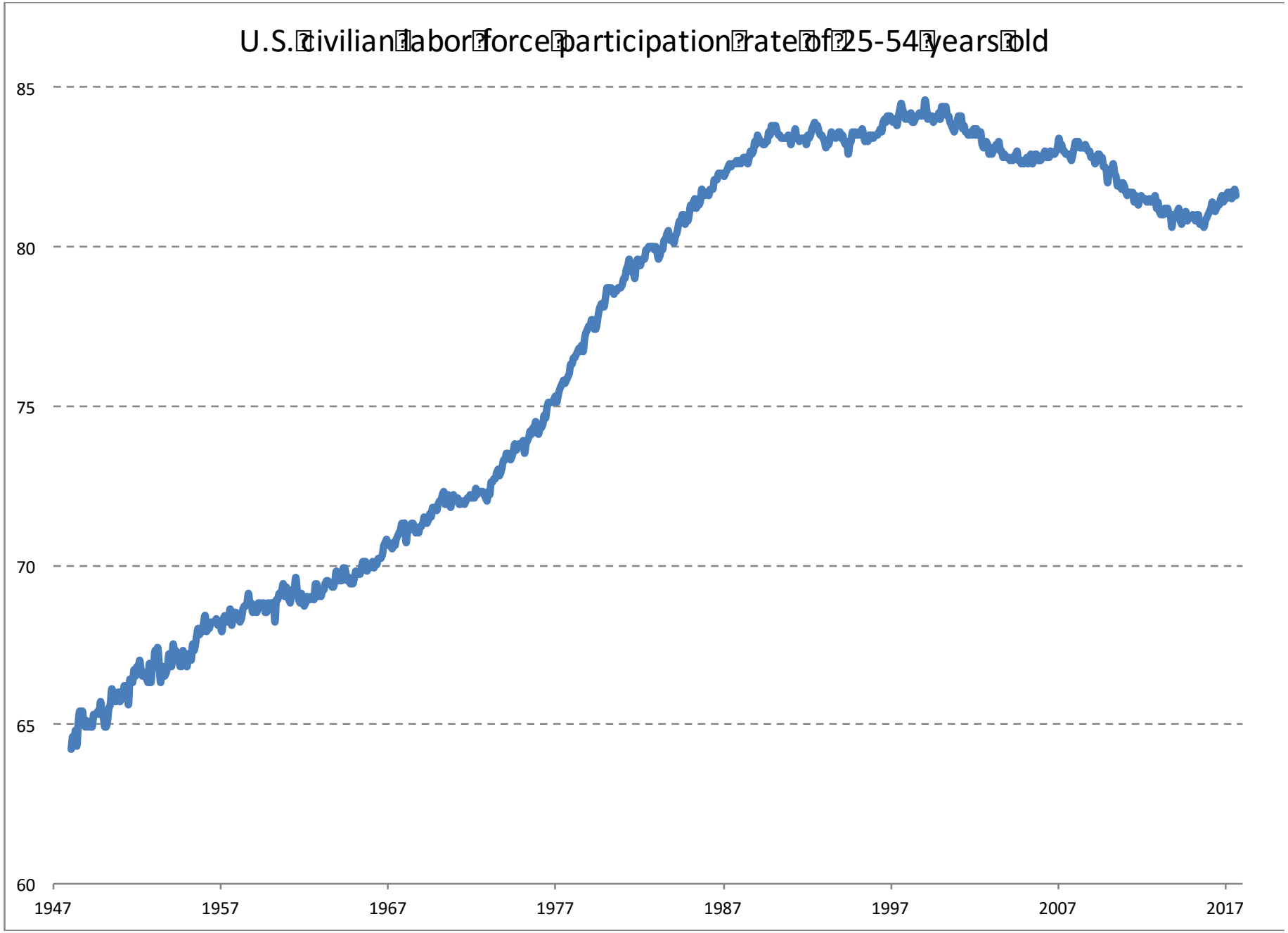


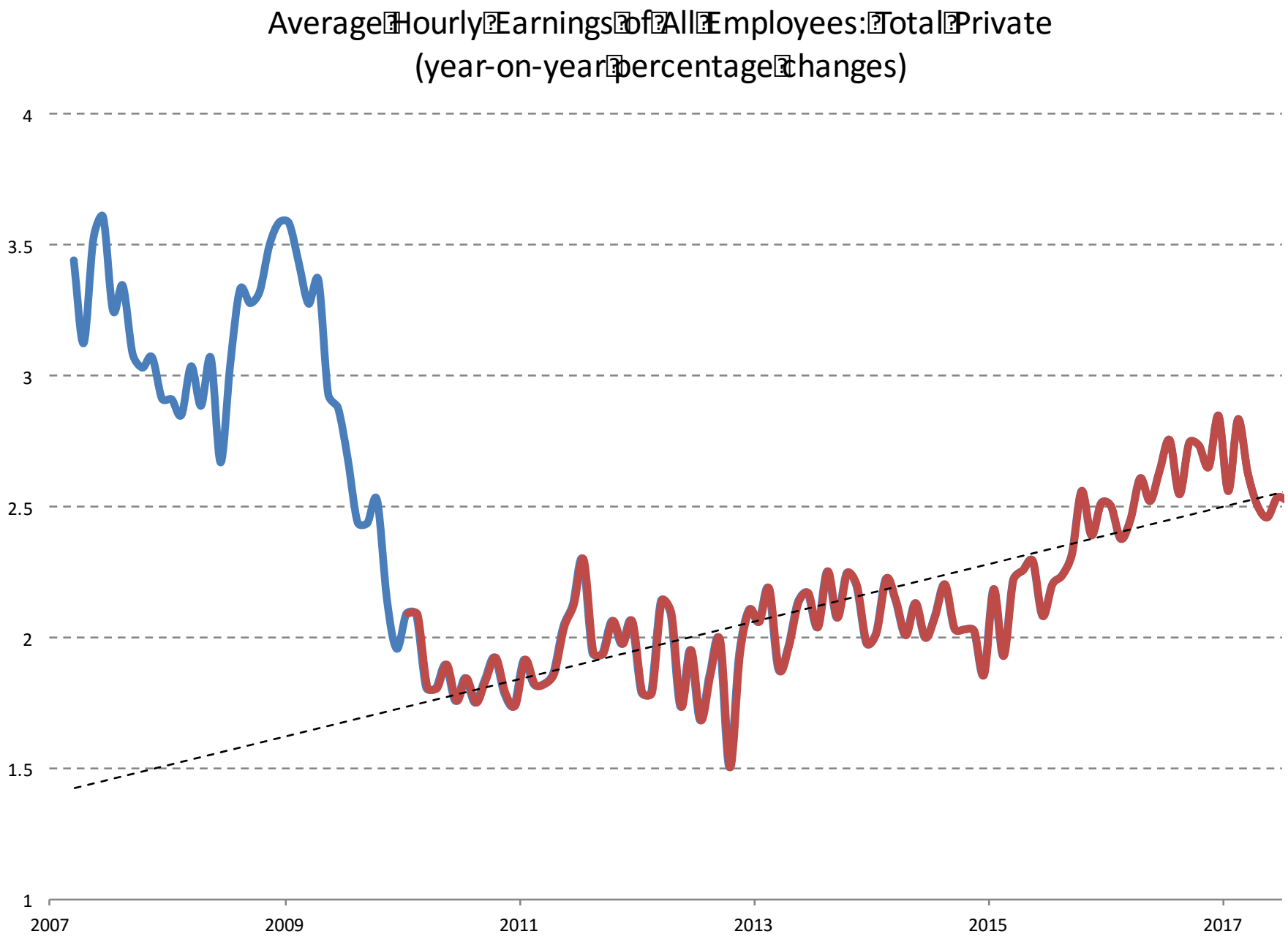


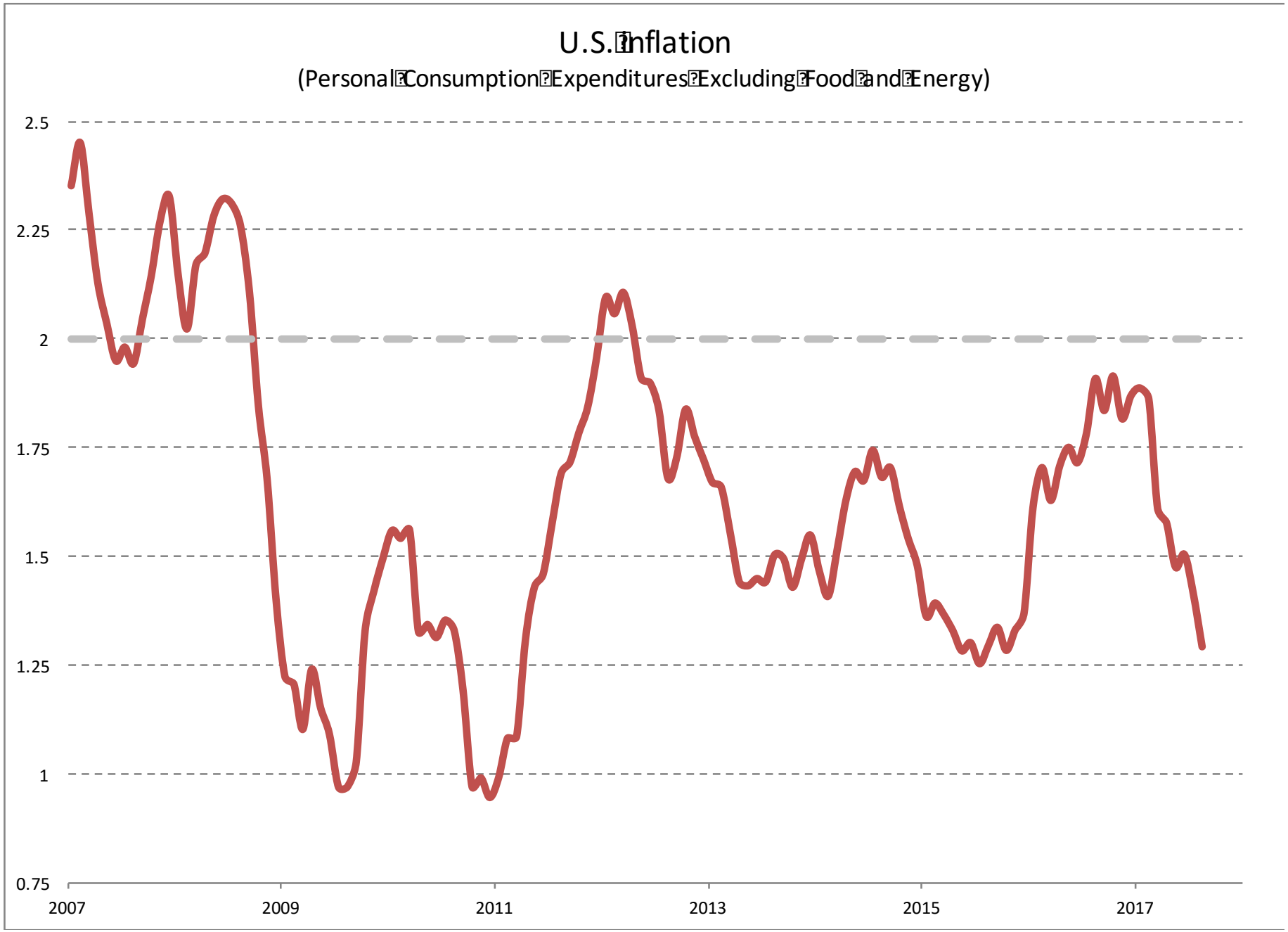
Sources: U.S. Census Bureau, NBER


U.S. cumulative housing starts and households formed
Cumulative housing starts
Cumulative new households formed
millions
30
25
20
15
10
5
0
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2.8 million

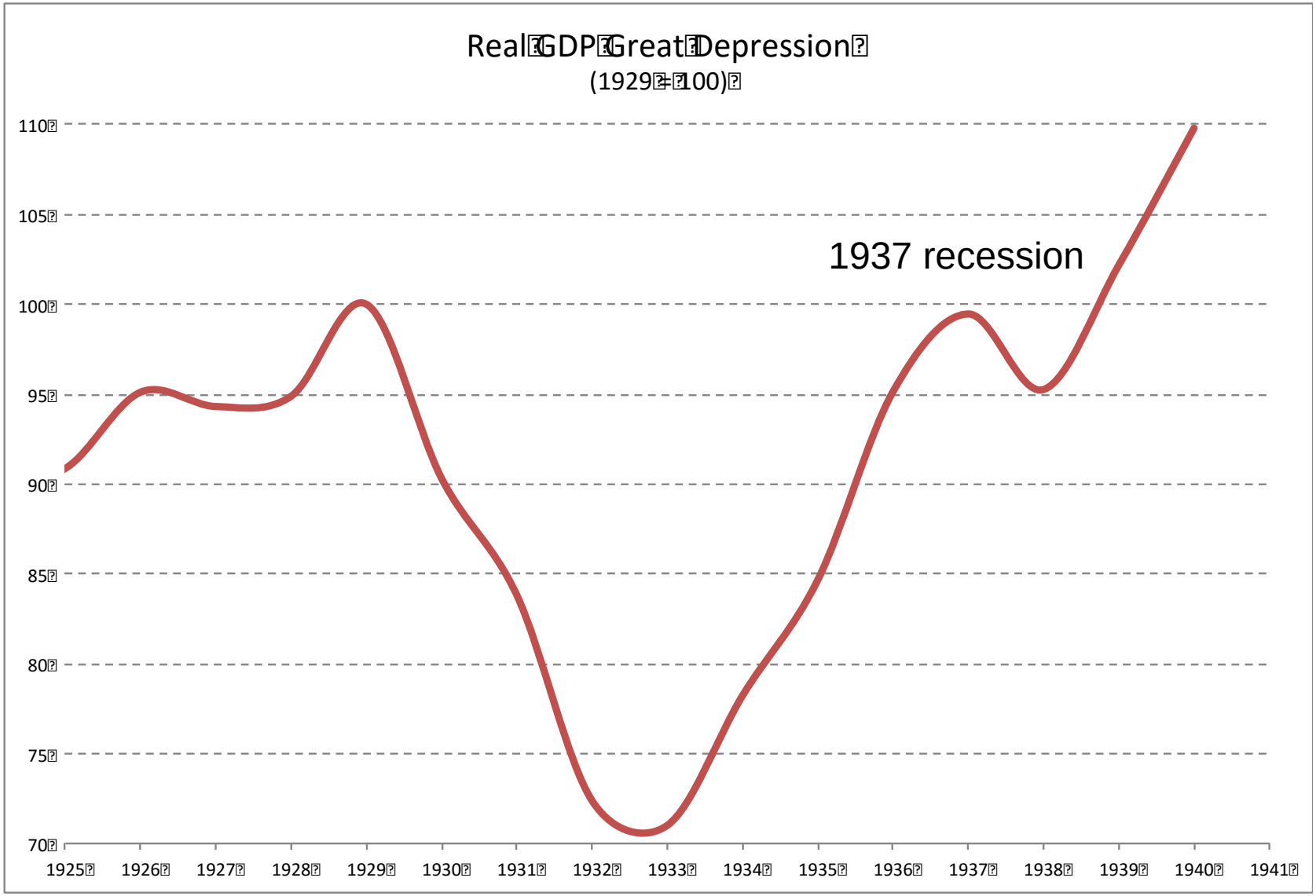

U.S. unemployment rate
Civilian Unemployment Rate
Total unemployed, plus all marginally attached workers plus total employed part time for economic reasons
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2007
2009
2011
2013
2015
2017


U.S. civilian labor force participation rate of 25-54 years old
85
80
75
70
65
60
1947
1957
1967
1977
1987
1997
2007
2017

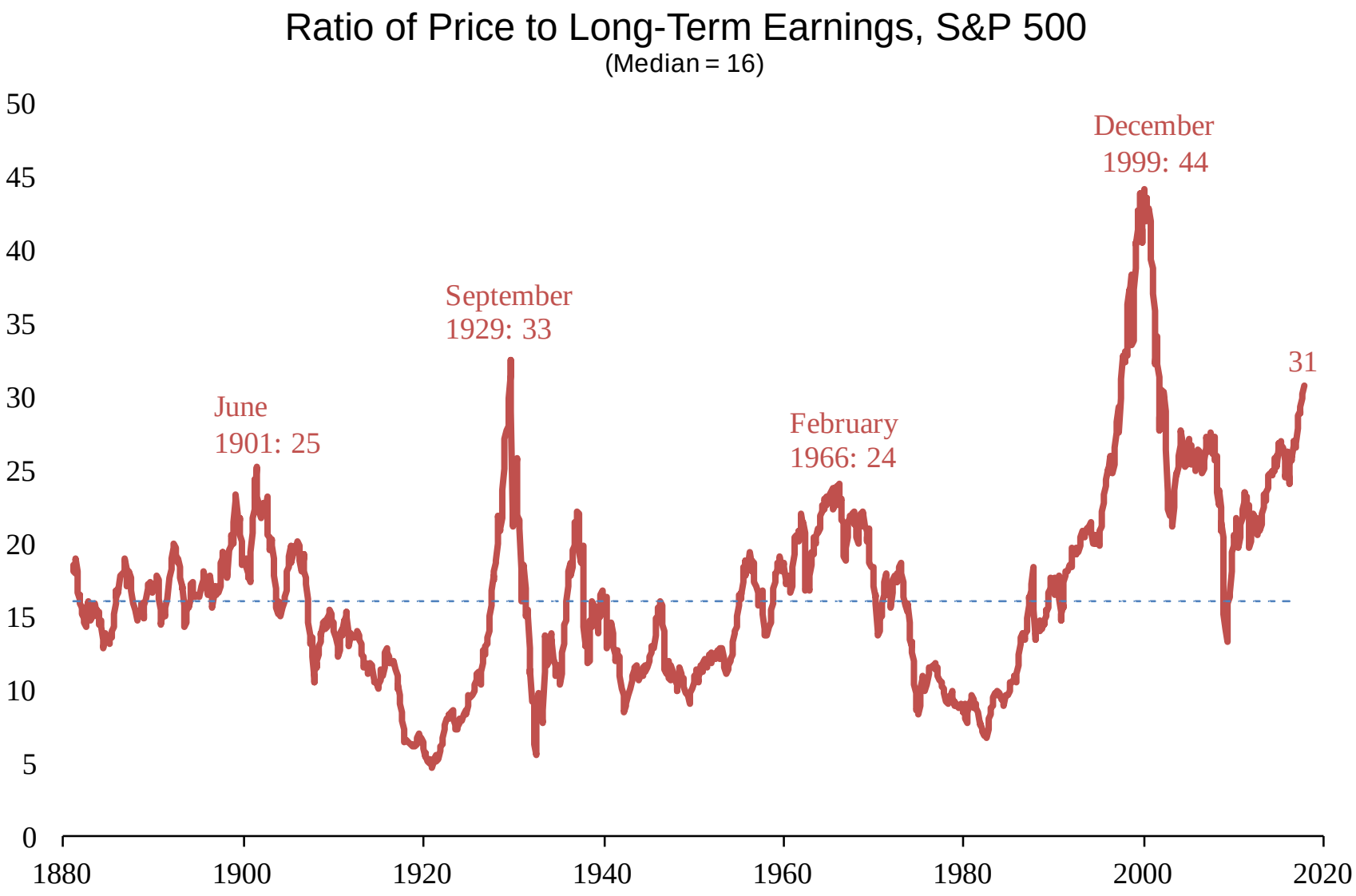

Average Hourly Earnings of All Employees: Total Private
(year-on-year percentage changes)
4
3.5
3
2.5
2
1.5
1
2007
2009
2011
2013
2015
2017

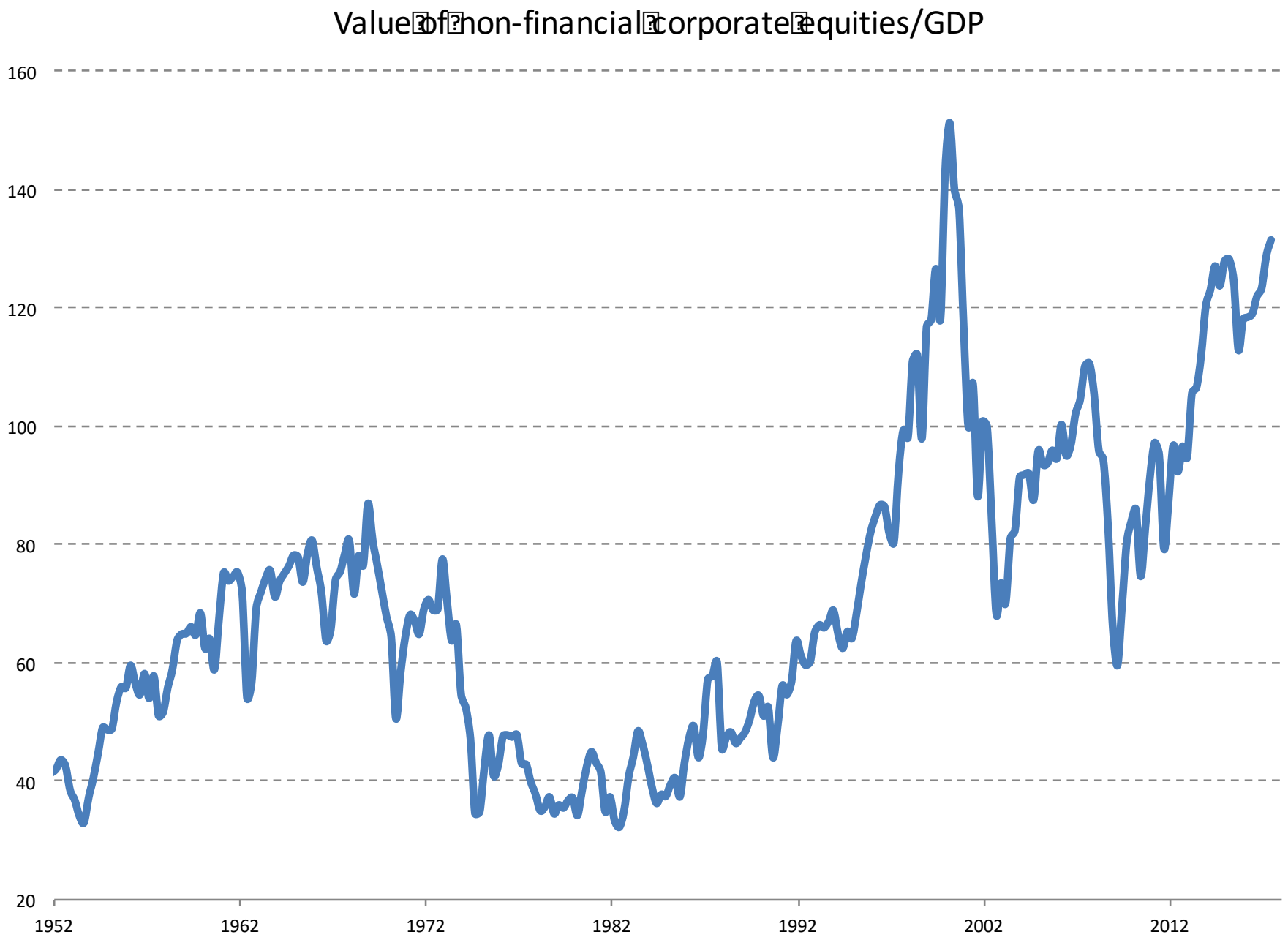

U.S. Inflation
(Personal Consumption Expenditures Excluding Food and Energy)
2.5
2.25
2
1.75
1.5
1.25
1
0.75
2007
2009
2011
2013
2015
2017

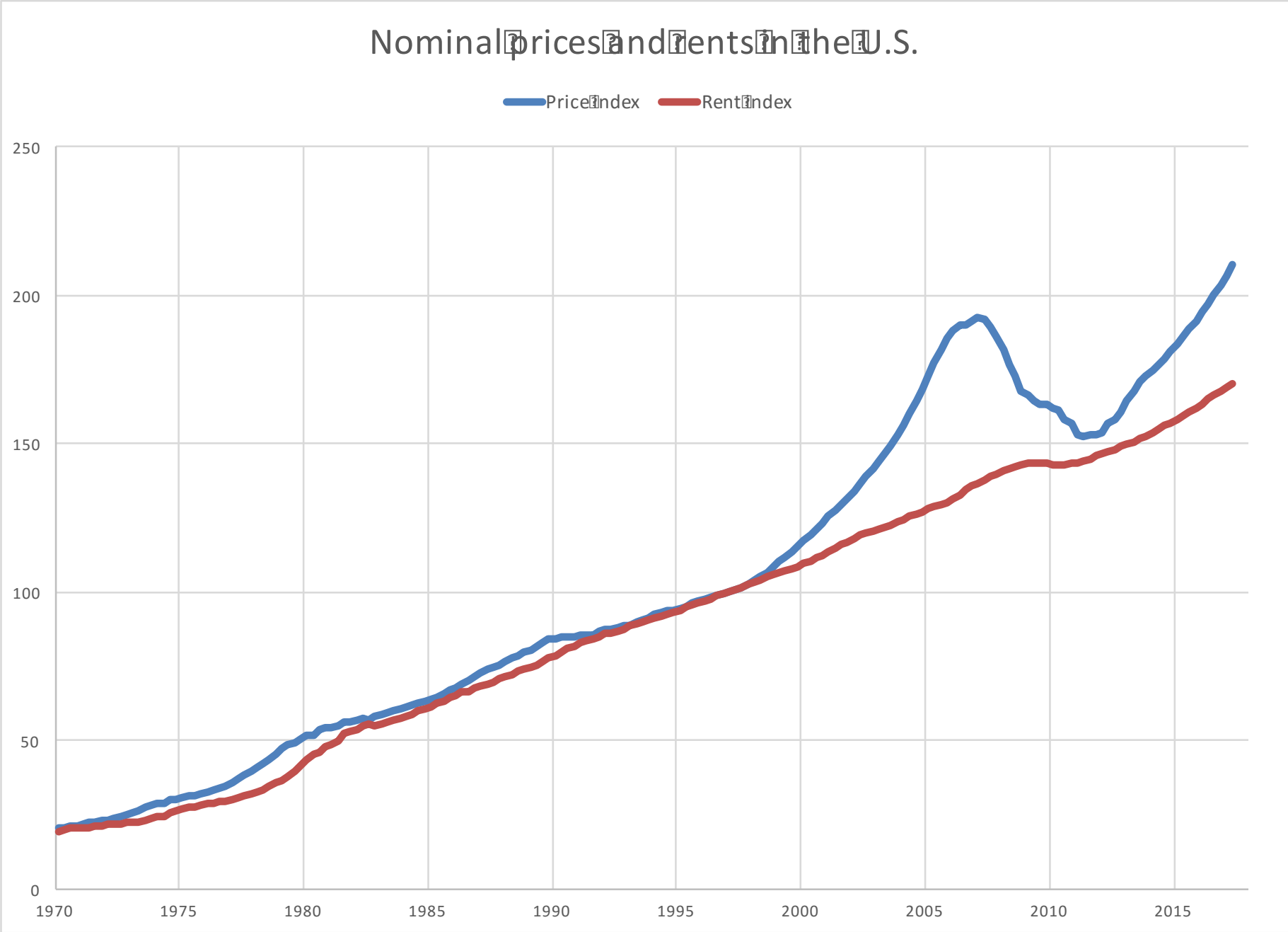
The Great Depression: Real GDP

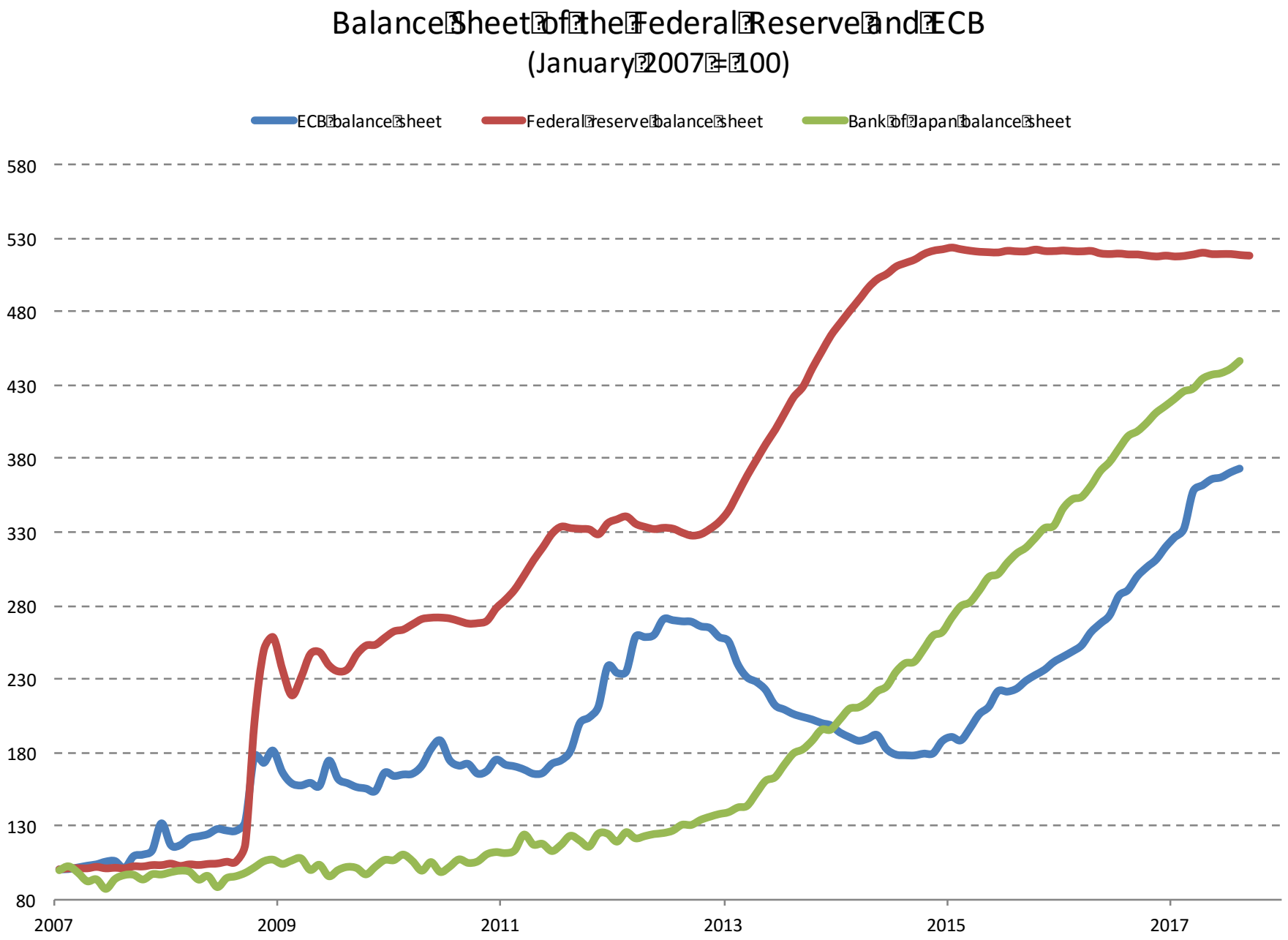
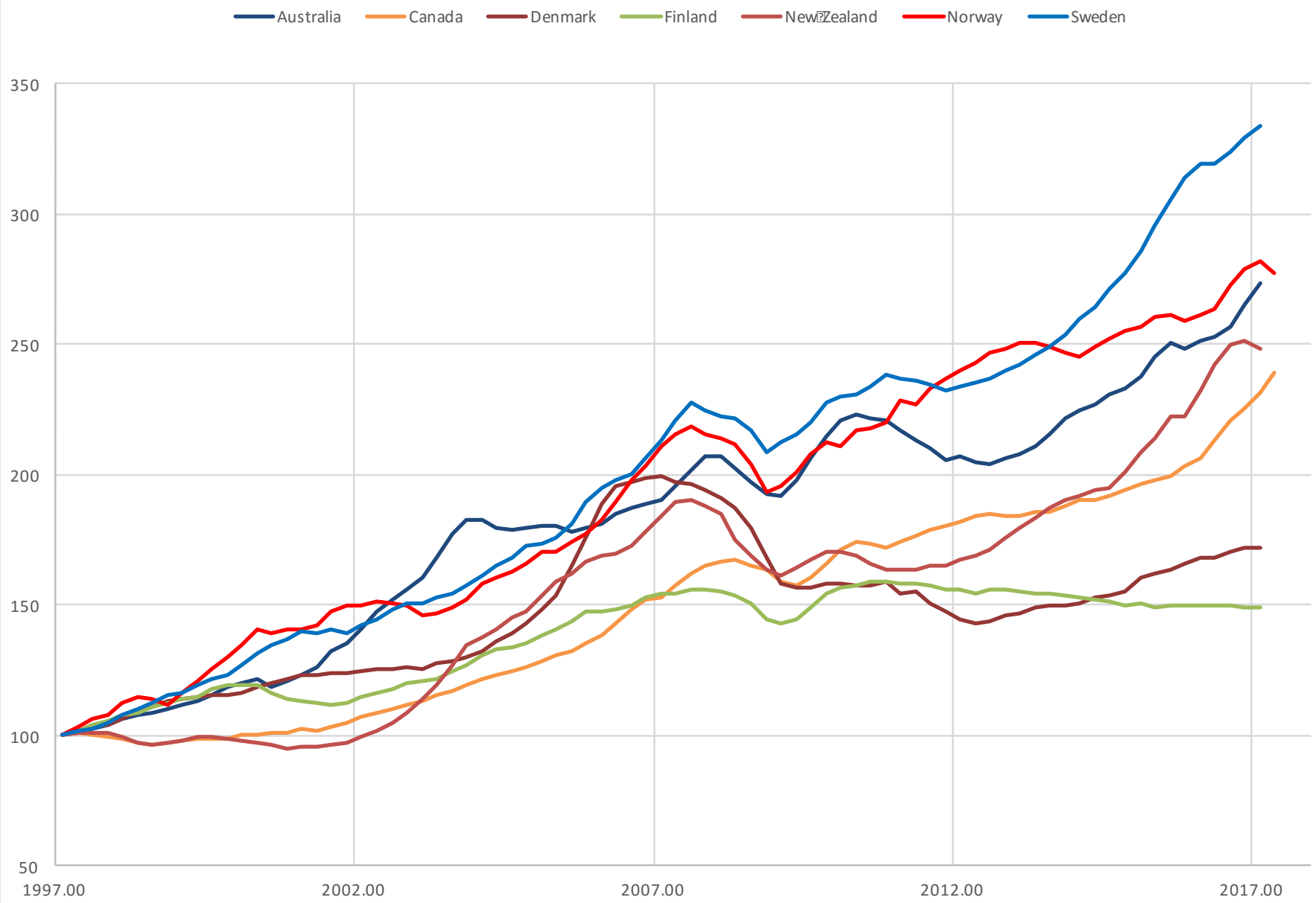


Source: Historical Statistics of the United States, Bureau of the Census.


Ratio of Price to Long-Term Earnings, S&P 500
(Median = 16)
50
45
40
35
30
25
20
15
10
5
0
1880
1900
1920
1940
1960
1980
2000
2020
June
1901: 25
September
1929: 33
February
1966: 24
December
1999: 44
31


Value of non-financial corporate equities/GDP
160
140
120
100
80
60
40
20
1952
1962
1972
1982
1992
2002
2012


Nominal prices and rents in the U.S.
Price index
Rent index
250
200
150
100
50
0
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015


Balance Sheet of the Federal Reserve and ECB
(January 2007 = 100)
ECB balance sheet
Federal reserve balance sheet
Bank of Japan balance sheet
580
530
480
430
380
330
280
230
180
130
80
2007
2009
2011
2013
2015
2017

INFLATION-ADJUSTED HOUSE PRICES