Hoisington
INVESTMENT MANAGEMENT COMPANY

Macroeconomic Analysis

May 2017

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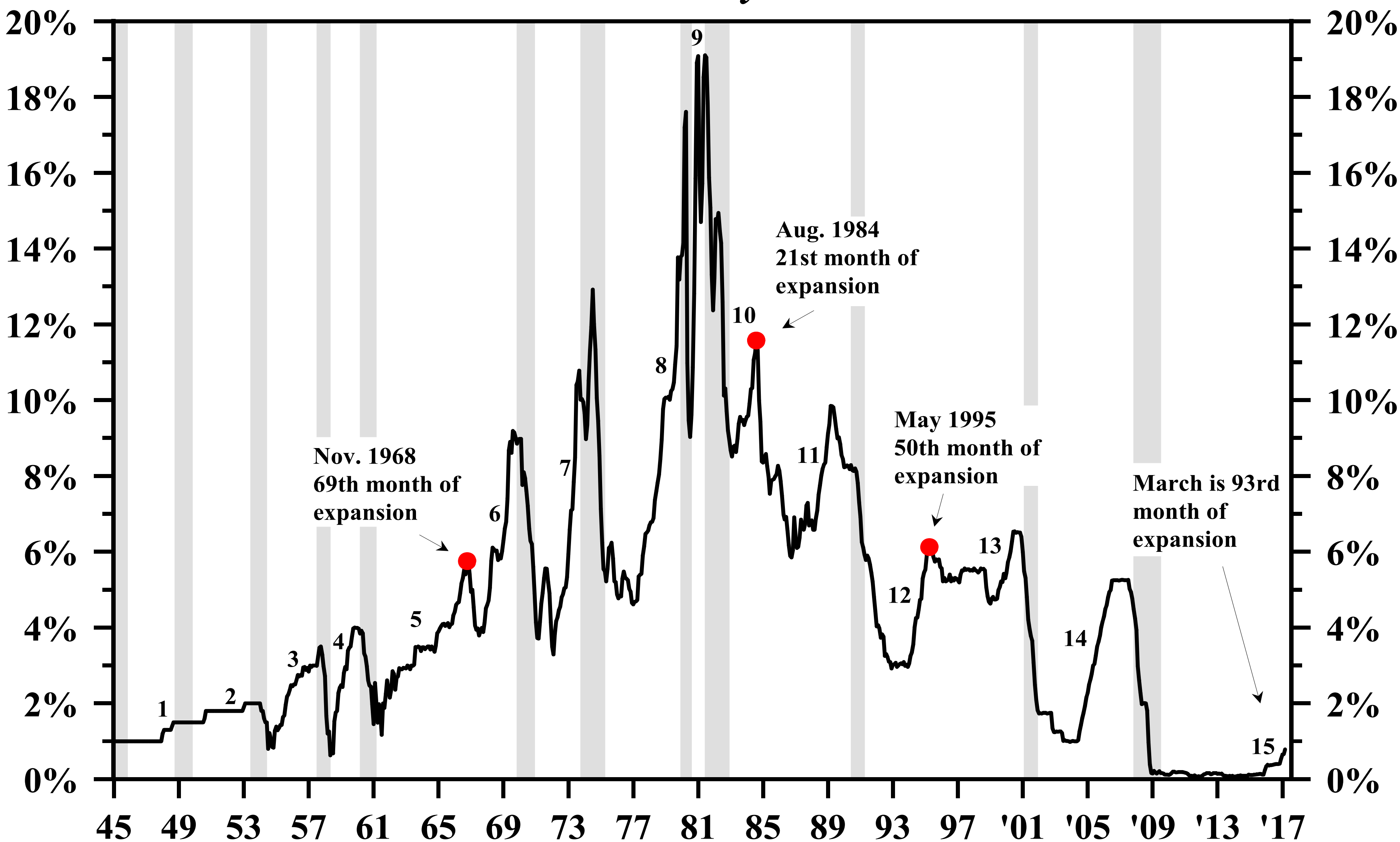
Federal Funds Rate

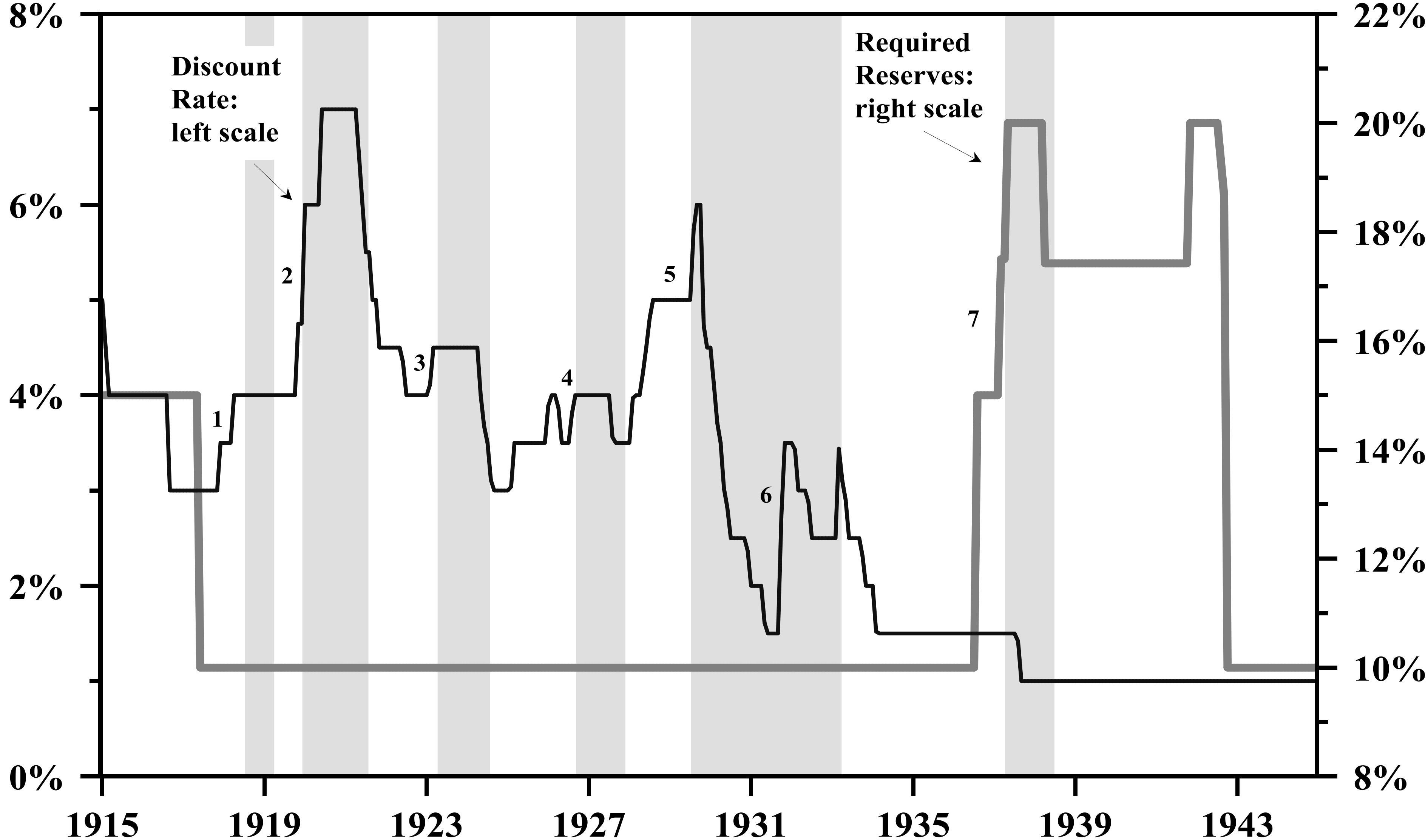
monthly



Source: Federal Reserve Board. Through March 2017. Discount rate used before June 1954.

Discount Rate and Average Reserve Requirements

monthly (1915-1944)

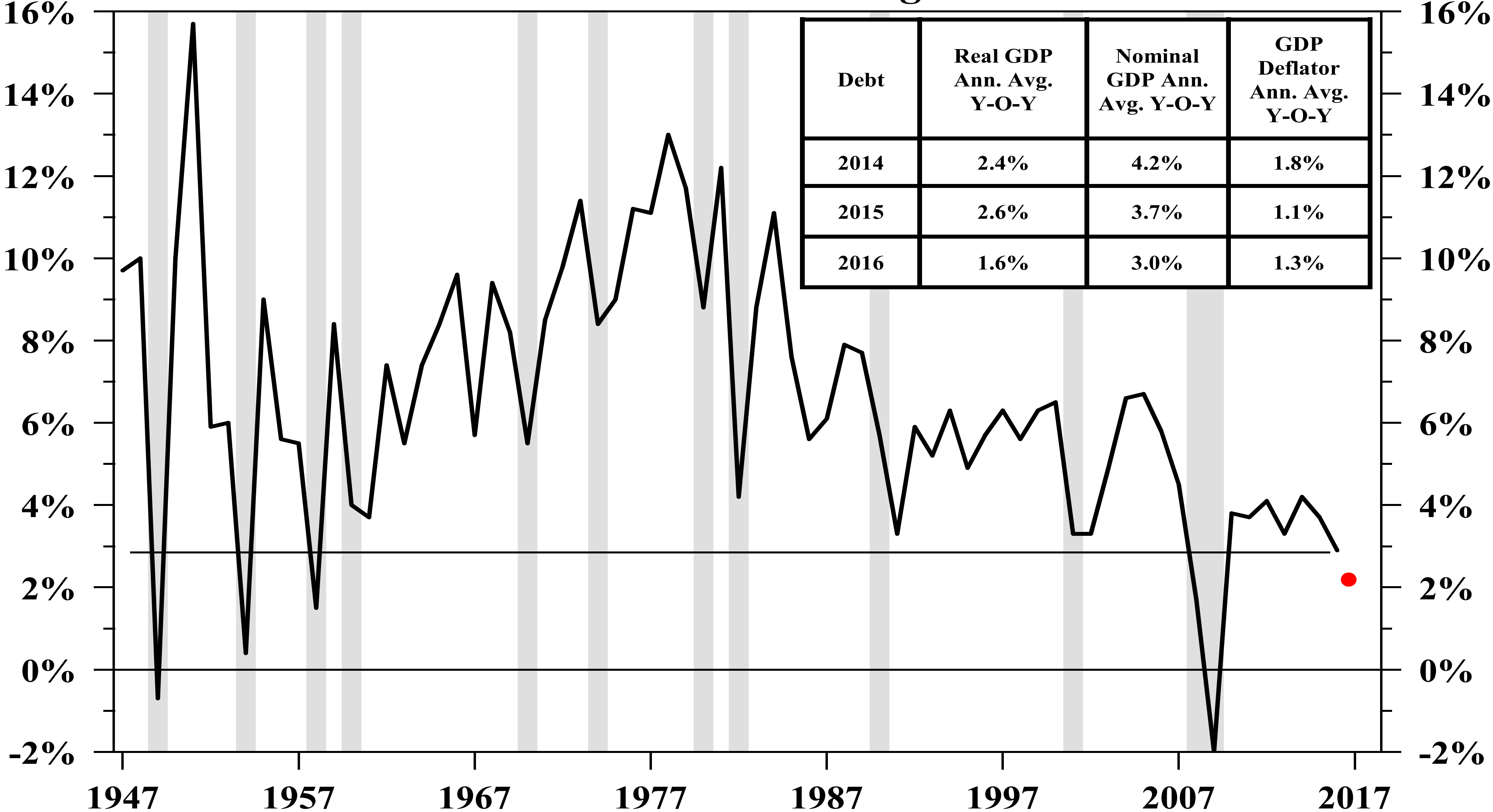


Source: Federal Reserve Board. Through December 1944.

Nominal GDP

(Y)=C+I+G+X = Corporate + Household Income = M*V = P*Real GDP

annual % change

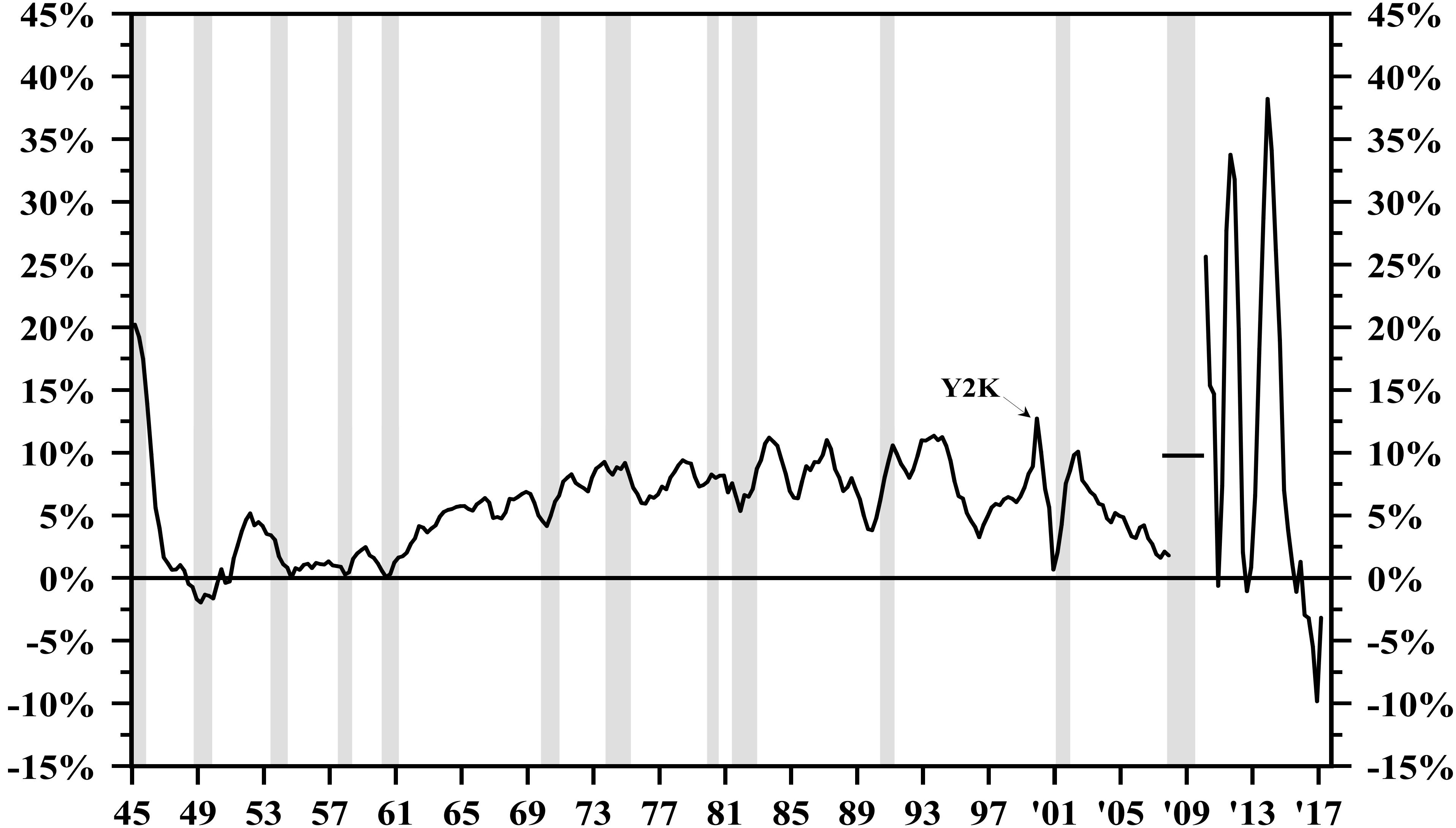


Debt	Real GDP Ann. Avg. Y-O-Y	Nominal GDP Ann. Avg. Y-O-Y	GDP Deflator Ann. Avg. Y-O-Y
2014	2.4%	4.2%	1.8%
2015	2.6%	3.7%	1.1%
2016	1.6%	3.0%	1.3%

Sources: Federal Reserve Board, Bureau of Economic Analysis.
Through 2016.

Monetary Base

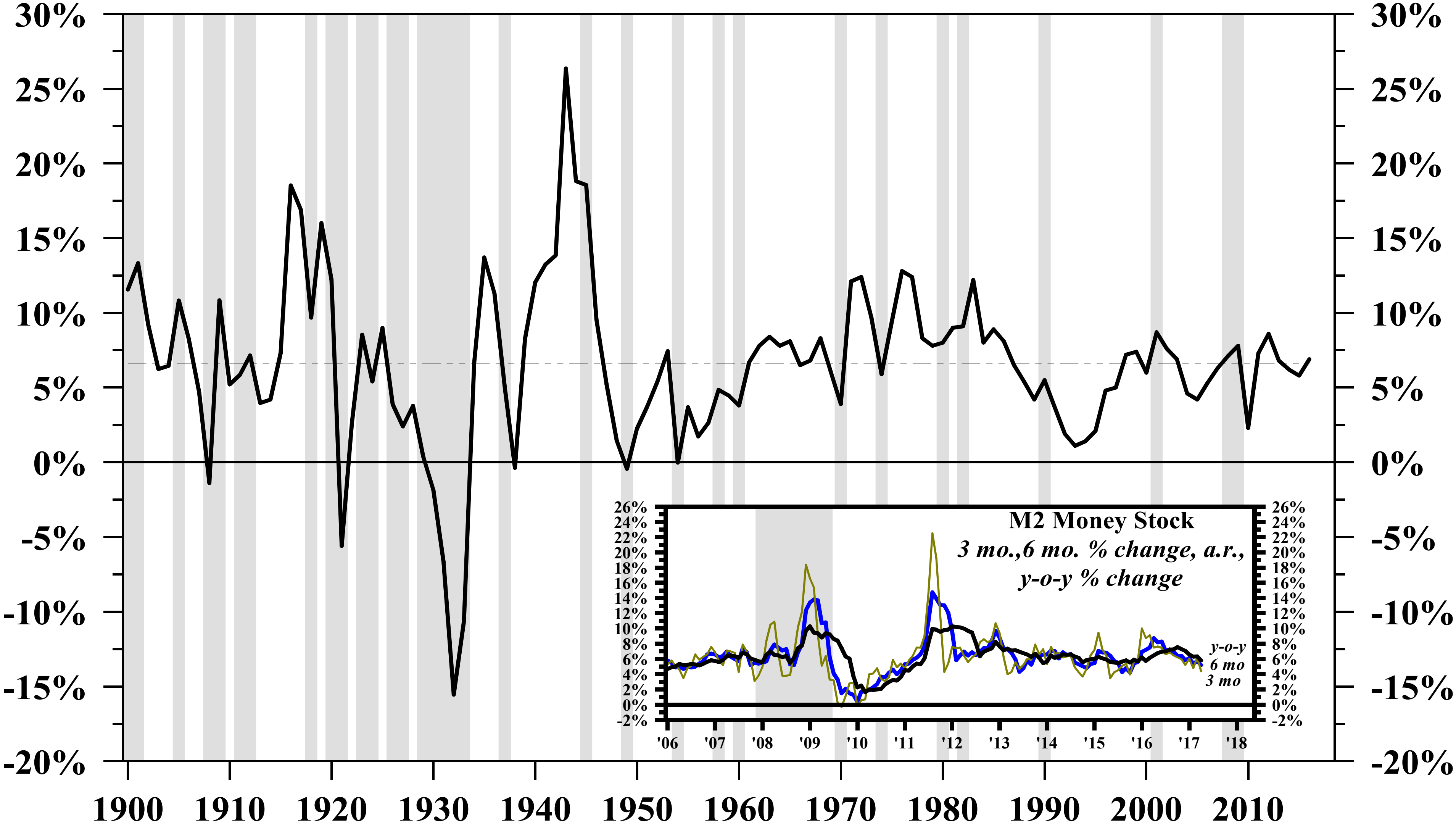
year over year % change, quarterly



Source: Federal Reserve Bank of St. Louis. Through March 2017. Excludes data for 2008 and 2009.

M2 Money Stock

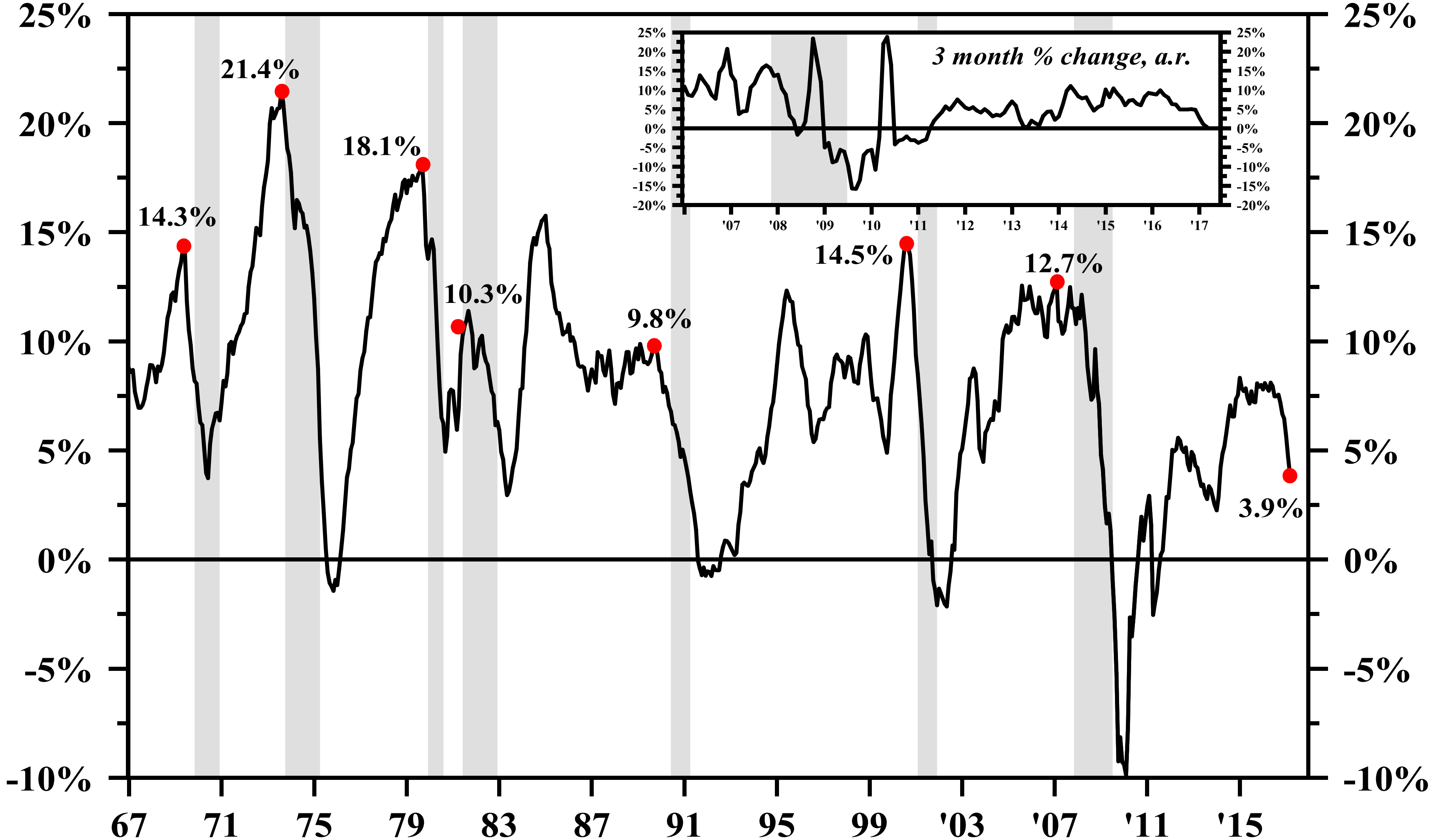
annual % change



Source: Federal Reserve. Through 2016. (Insert chart through April 17, 2017.)

Bank Loans plus Nonfinancial Commercial Paper

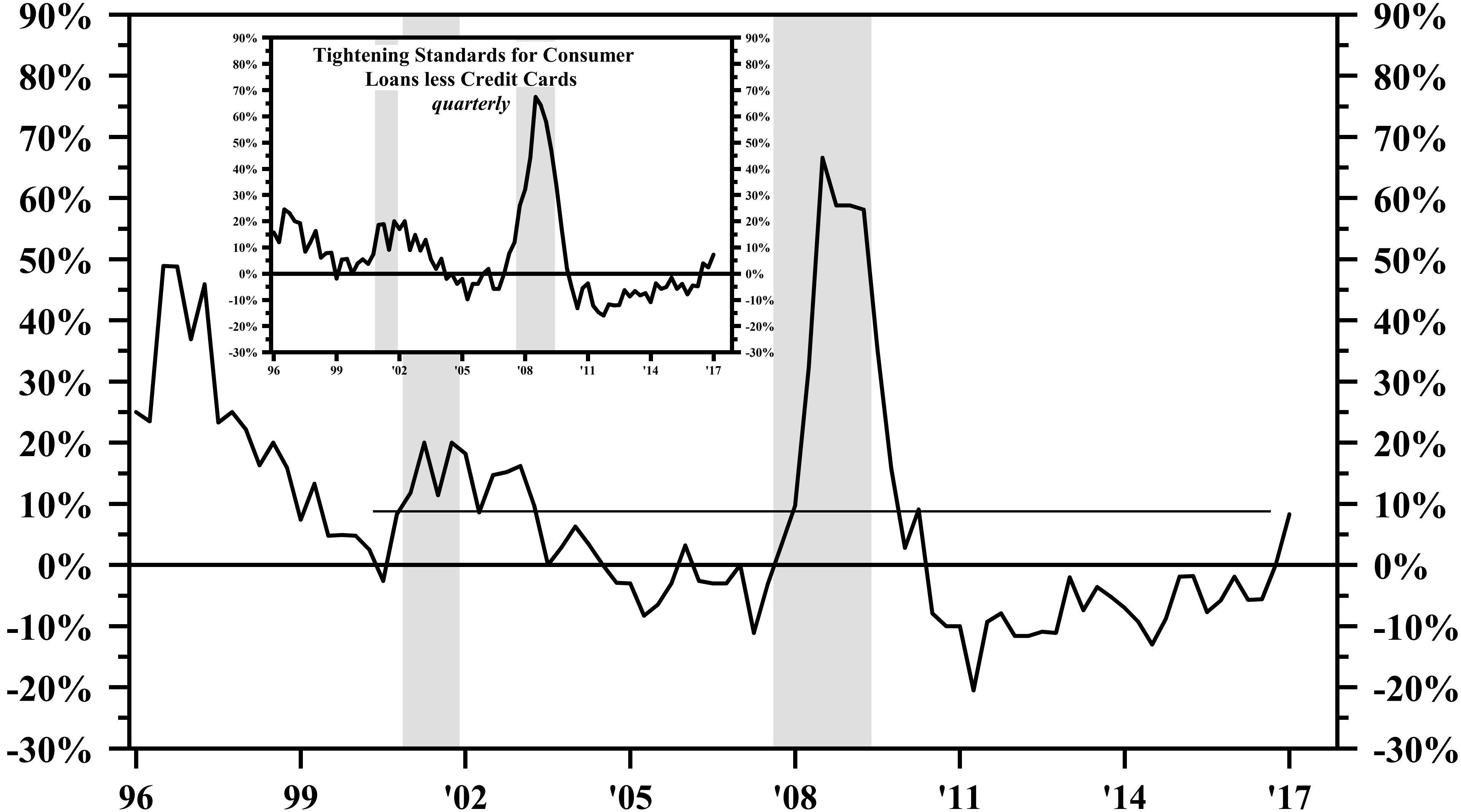
y-o-y % change



Source: Federal Reserve Board. Through March 2017.

Tightening Standards for Consumer Credit Cards

quarterly

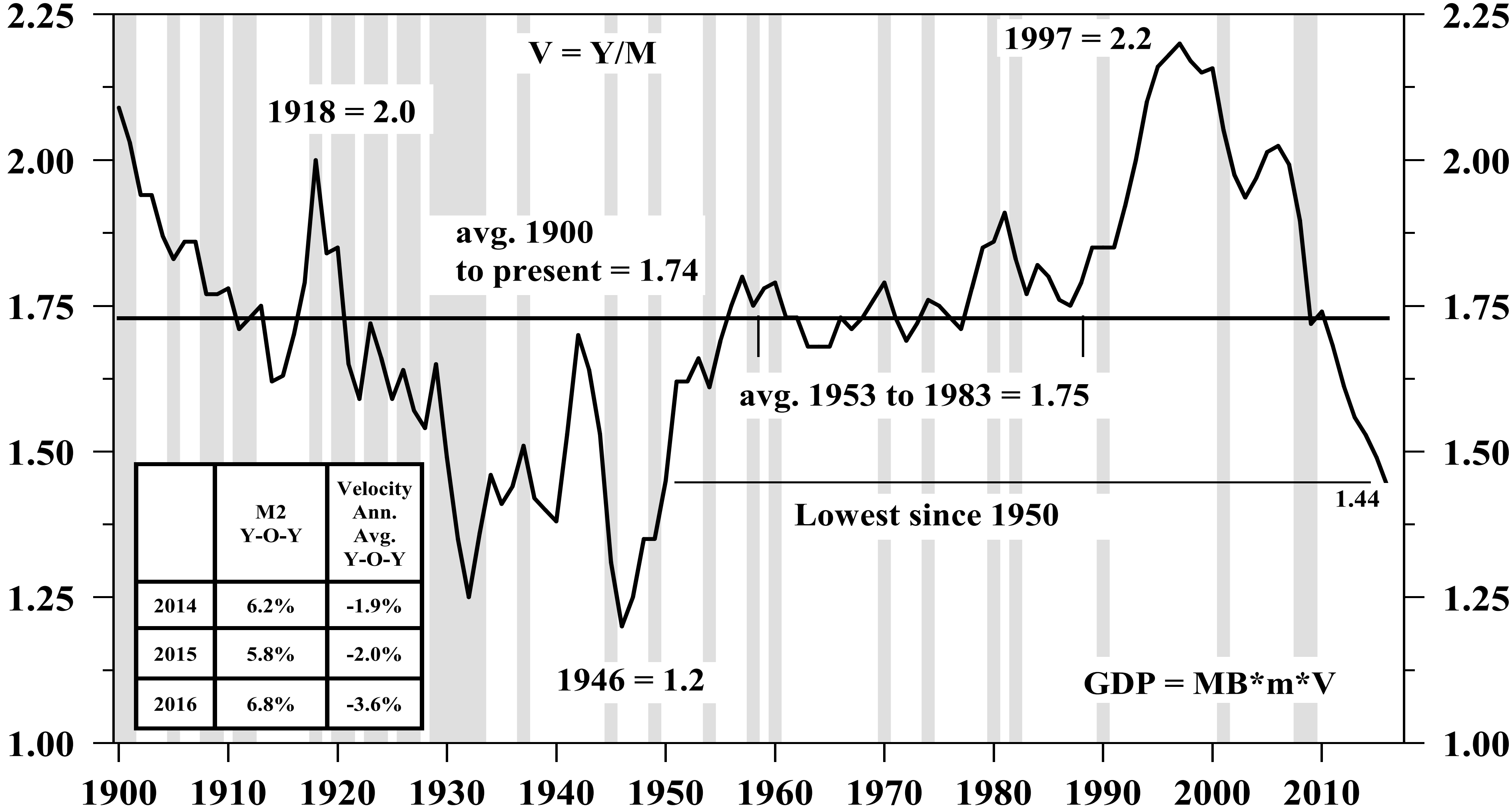


Source: Federal Reserve. Through Q1 2017.

Velocity of Money 1900-2016

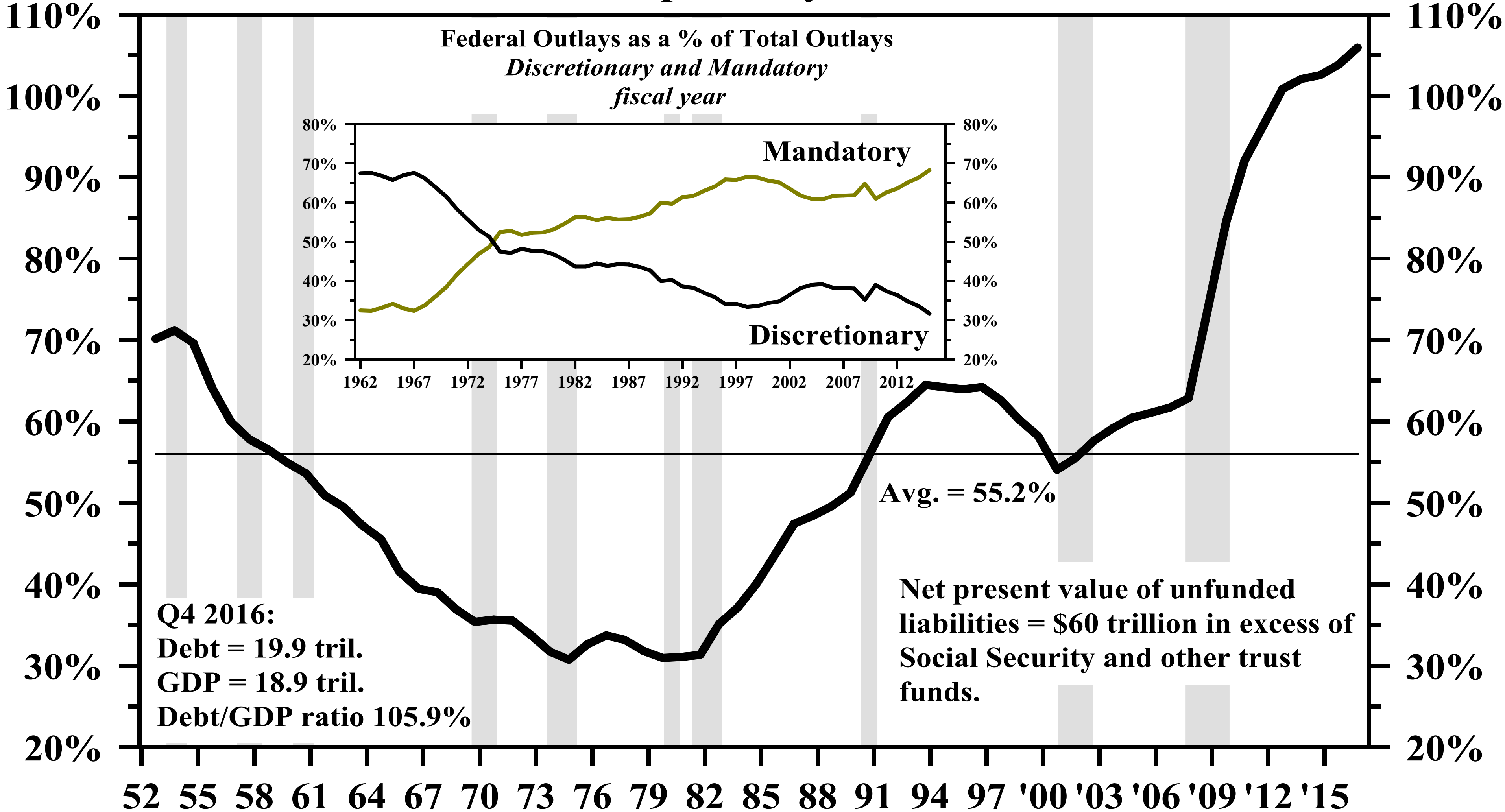
Equation of Exchange: V = GDP/M

annual



Sources: Federal Reserve Board; Bureau of Economic Analysis;
Bureau of the Census; The Amercian Business Cycle, Gordon, Balke and Romer. Through Q4 2016.
Q4 2016; V = GDP/M, GDP = 18.9 tril, M2 = 13.1 tril, V = 1.44

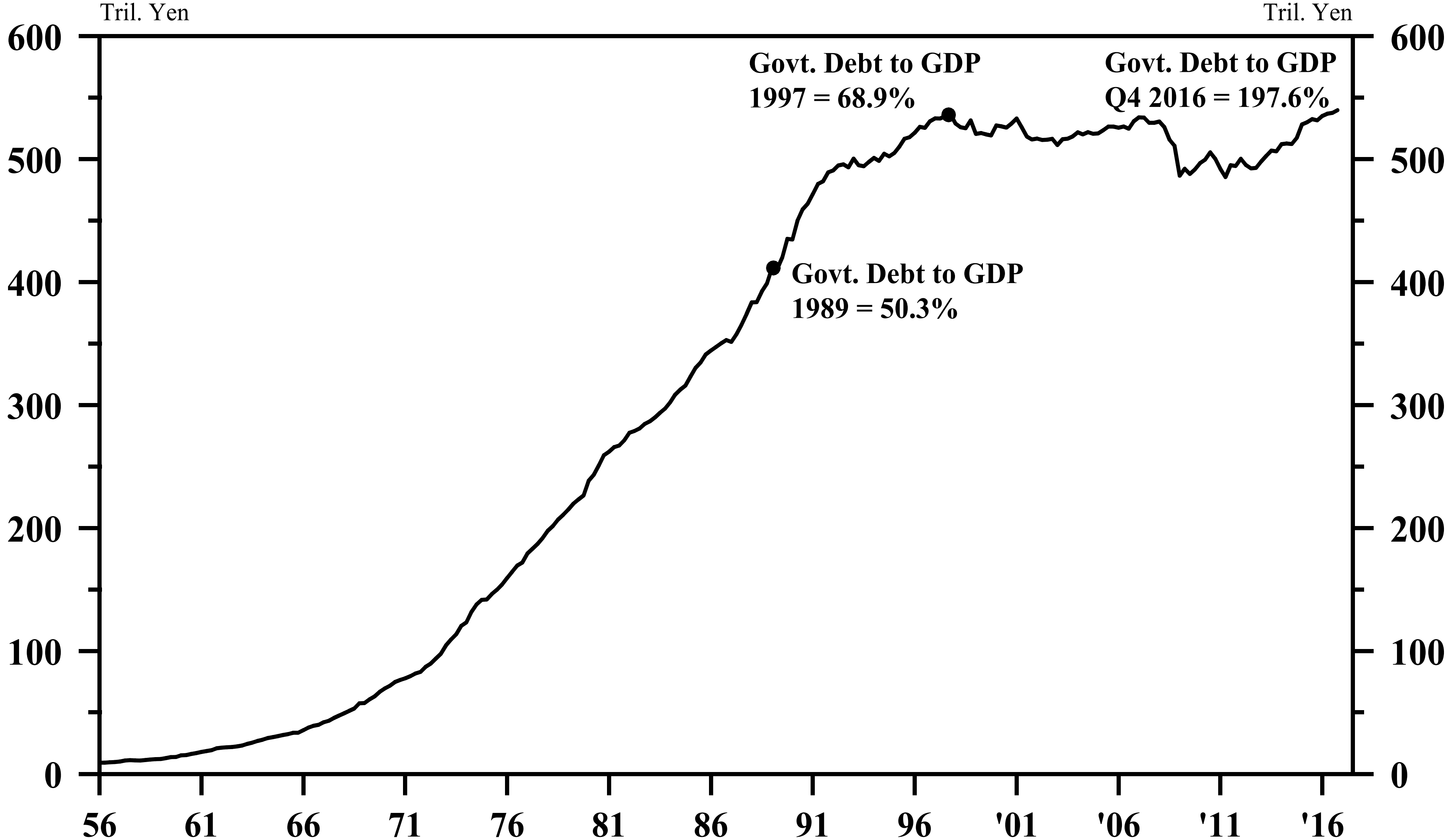
Gross Federal Debt as a % of GDP
(Excluding Off Balance Sheet Liabilities)
quarterly



Source: Federal Reserve Board, Bureau of Economic Analysis. Office Management and Budget. Through Q4 2016.

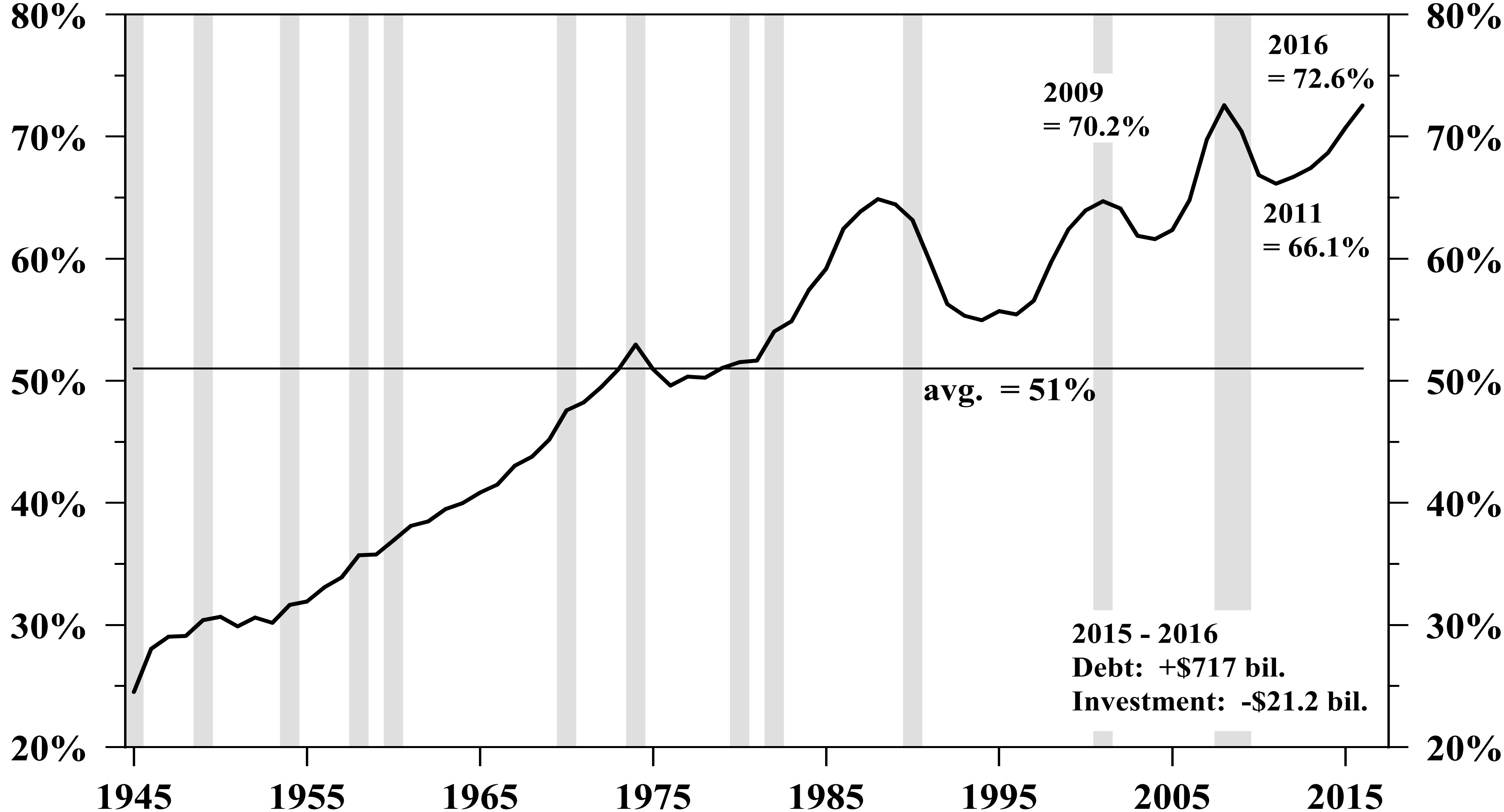
Japan: Gross Domestic Product

quarterly level



Source: Cabinet Office of Japan. Through Q4 2016.

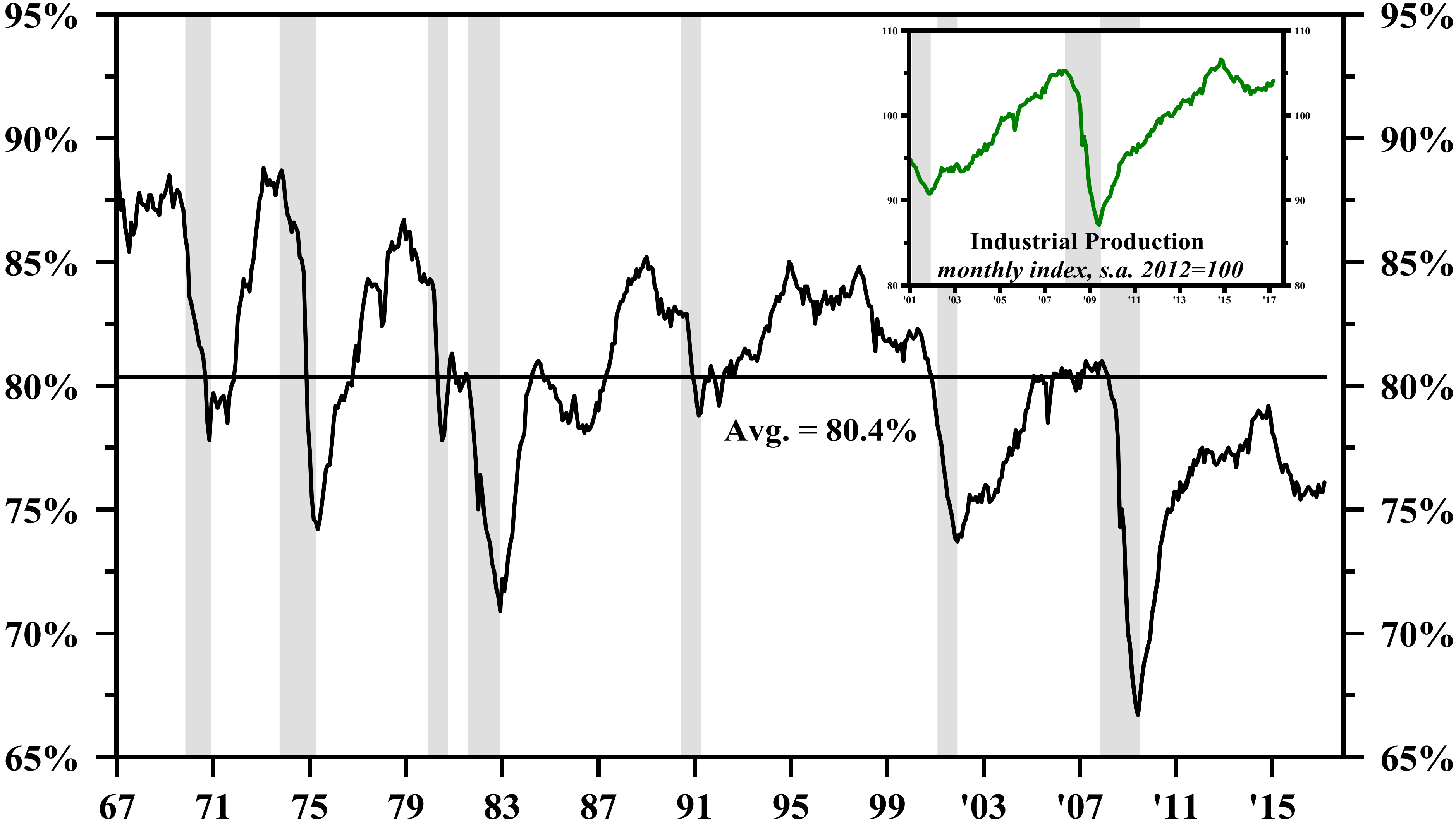
Business Debt as a % of GDP
(Excluding Off Balance Sheet Liabilities)
annual



Sources: Federal Reserve. Through Q4 2016.

Total Industry Capacity Utilization

monthly



Source: Federal Reserve Board. Through March 2017.

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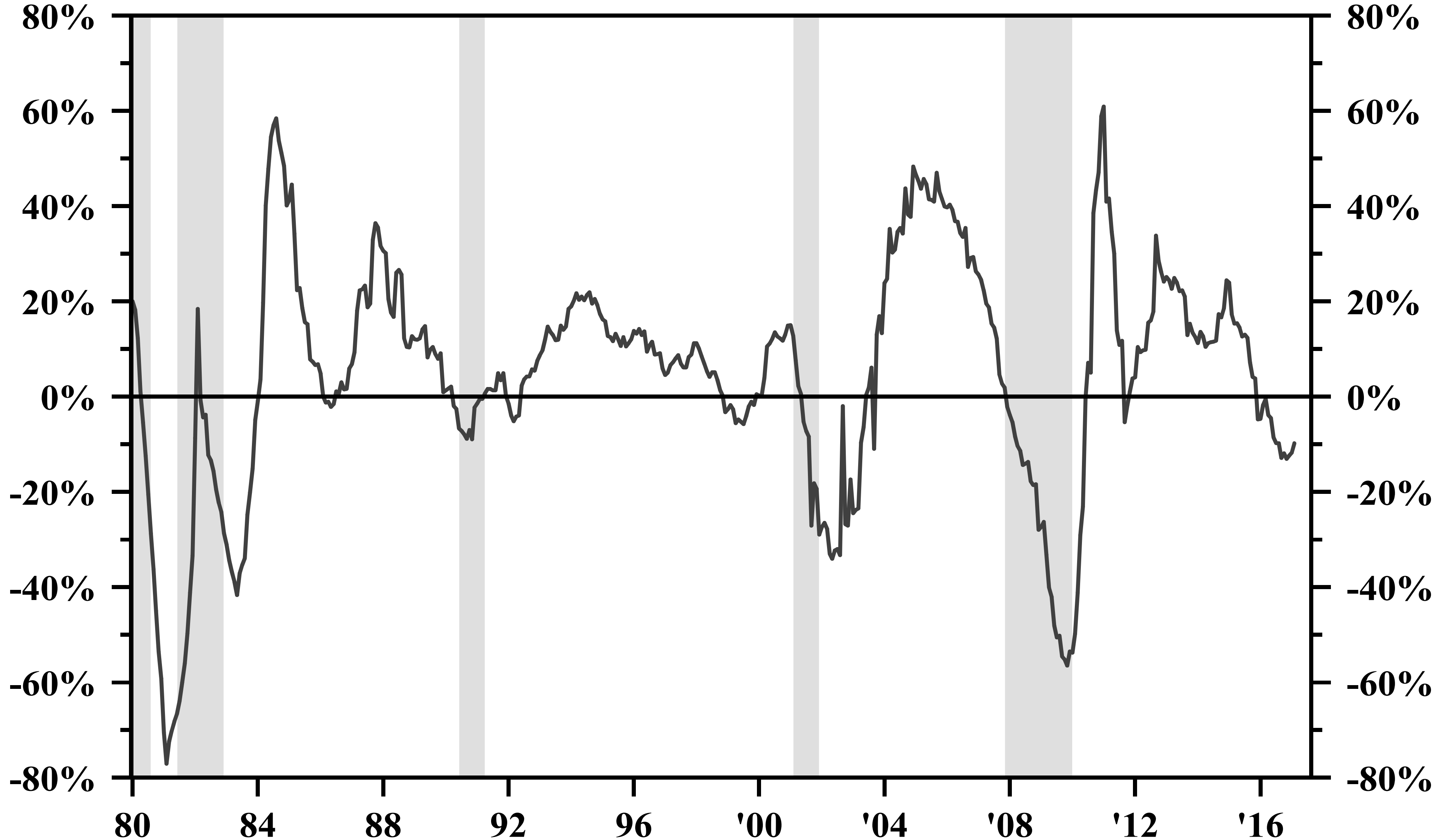
Federal Receipts: Corporate

y-o-y % change, 12 month sum



Source: U.S. Treasury. Through February 2017.

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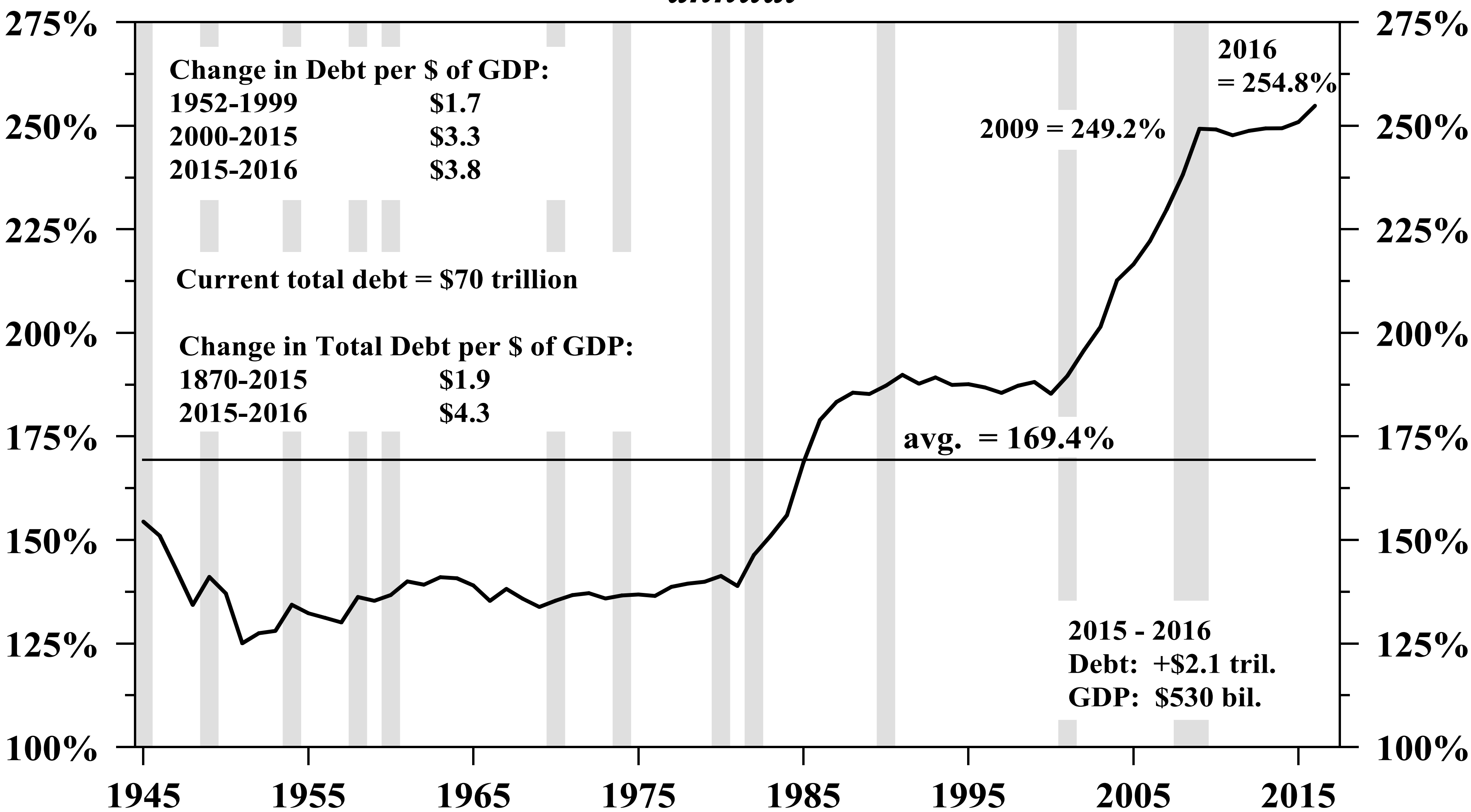
Total Nonfinancial Debt as a % of GDP

(Excluding Off Balance Sheet Liabilities)

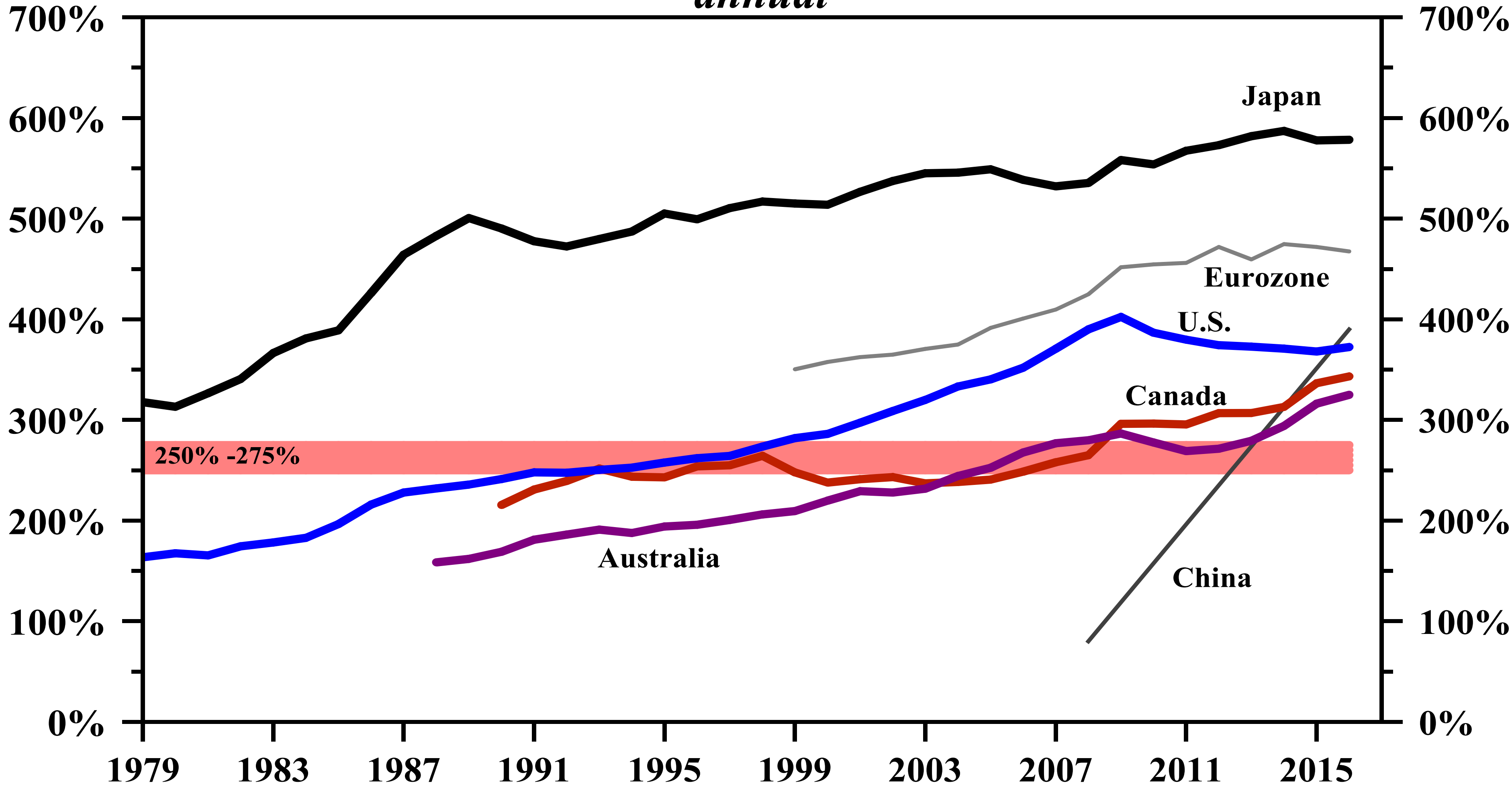
annual



Sources: Federal Reserve. Through Q4 2016.

Total Private and Public Debt as a % of GDP
Major Countries
(Excluding Off Balance Sheet Liabilities)

annual



Source: Bank of Japan, Cabinet Office, Statistics Canada, Federal Reserve, Bureau of Economic Analysis, Statistical Office of the European Communities, Reserve Bank of Australia. Haver Analytics. Through Q3 2016. U.S. Through Q4.

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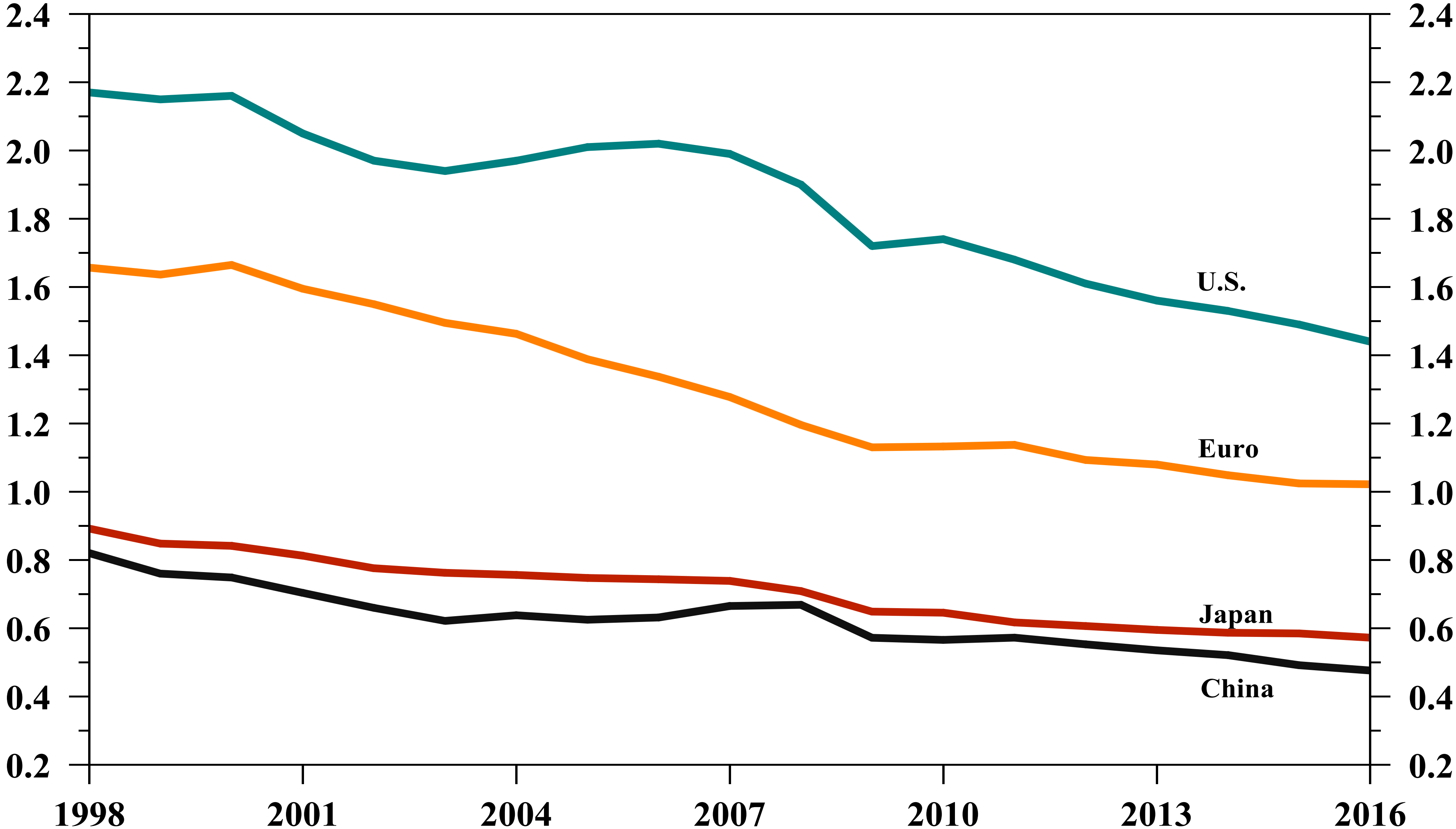
M2 Velocity: Four Major Economies

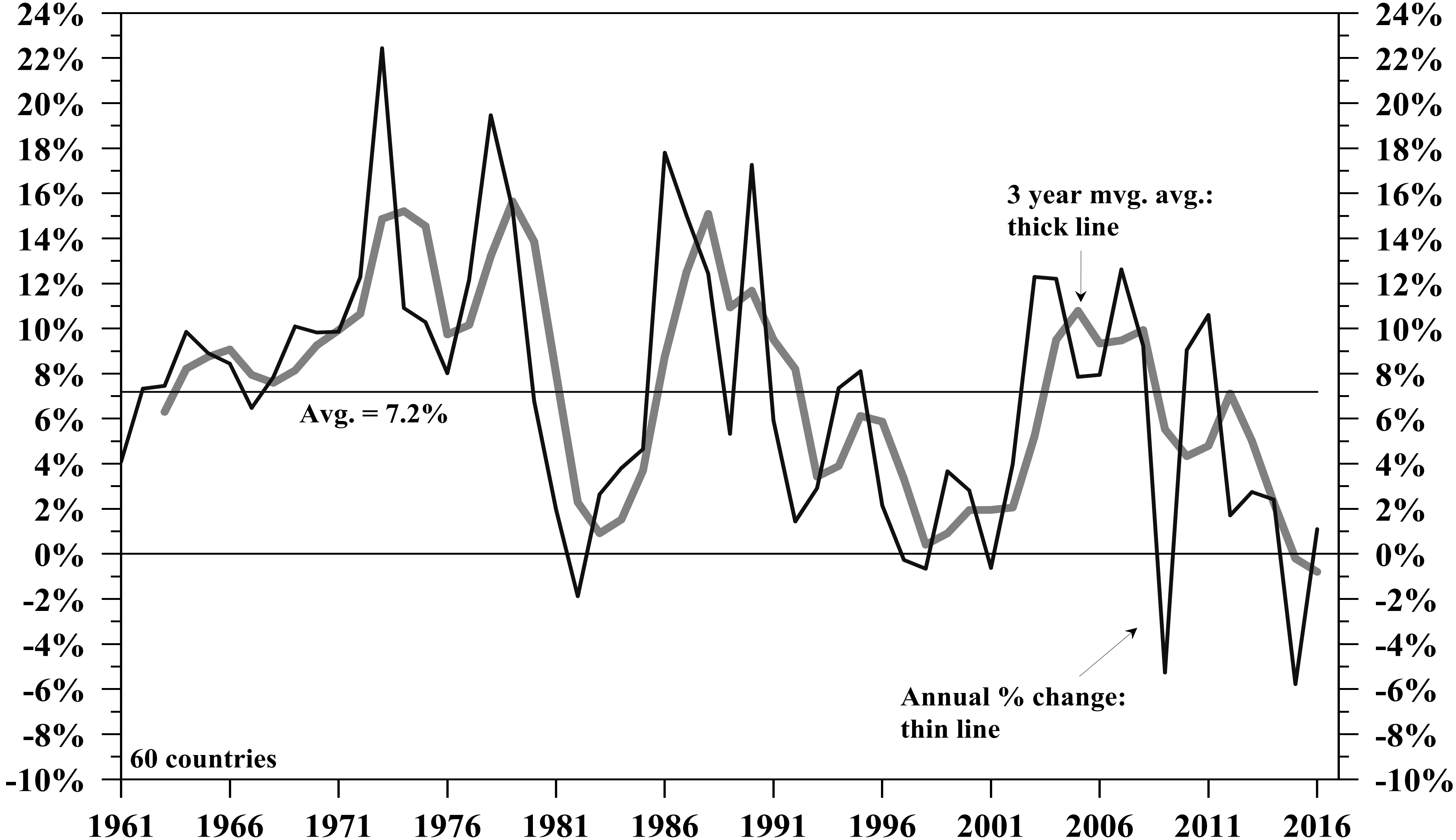
annual



Sources: Bureau of Economic Analysis, Federal Reserve, European Central Bank, Bank of Japan, China National Bureau of Statistics, People's Bank of China, Haver Analytics. Through 2016.

World GDP

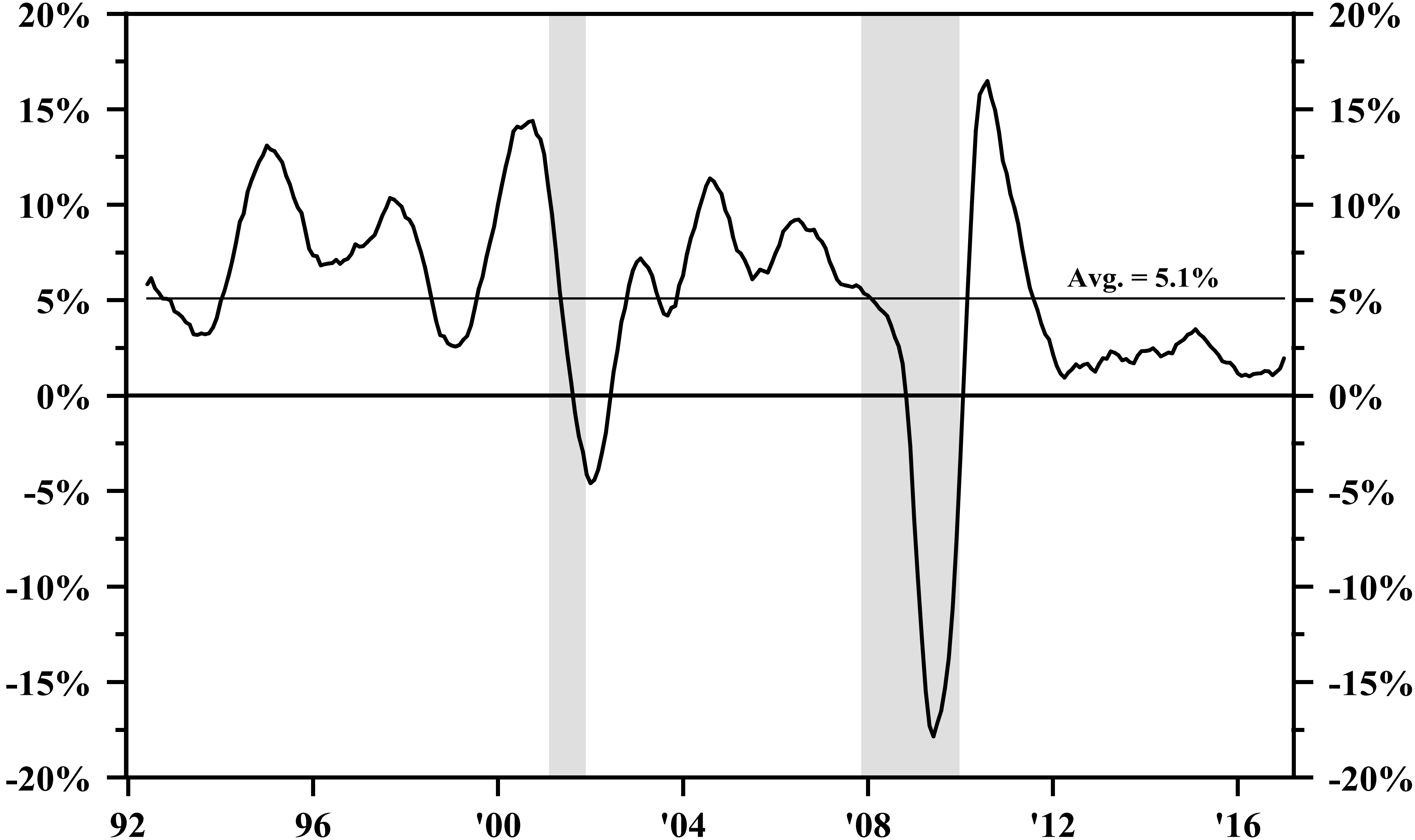
annual % change



Sources: Haver Analytics., World Bank, IMF. Through 2016. 2016 IMF estimate included.

World Trade Volume

year over year % change of 6 month mvg. avg



Source: Netherlands Bureau for Economic Policy Analysis. Through January 2017.

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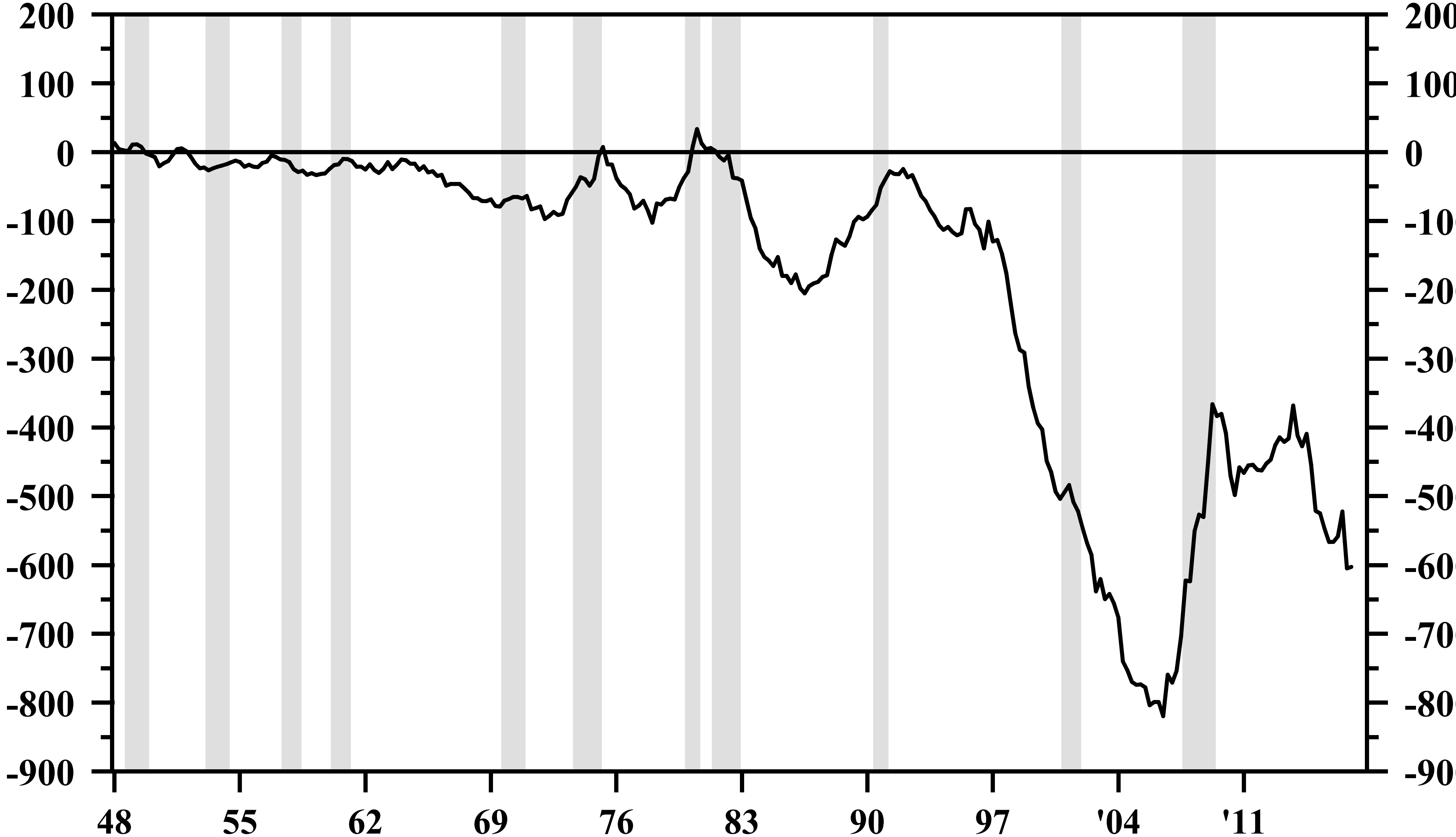
Real Net Exports of Goods & Services

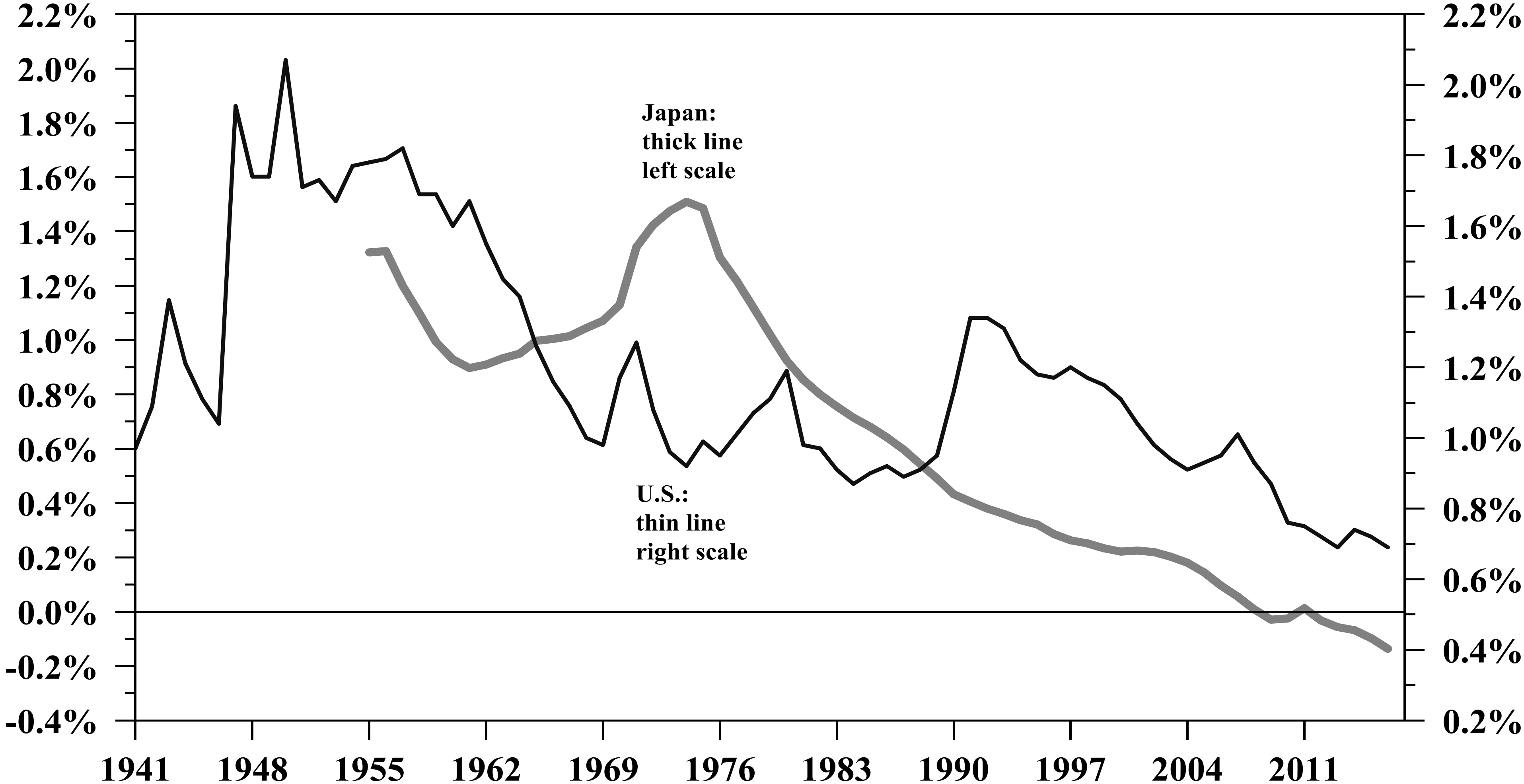
S.A.A.R, bil. Chained $2009, quarterly



Source: Bureau of Economic Analysis. Through Q1 2017.

Population Growth: U.S. and Japan (1941-2016)

annual % change



Sources: Census Bureau. Ministry of Internal Affairs and Communications, Haver Analytics. Through Q4 2016. (Japan population growth is measured as a 5 year % change, a.r.)

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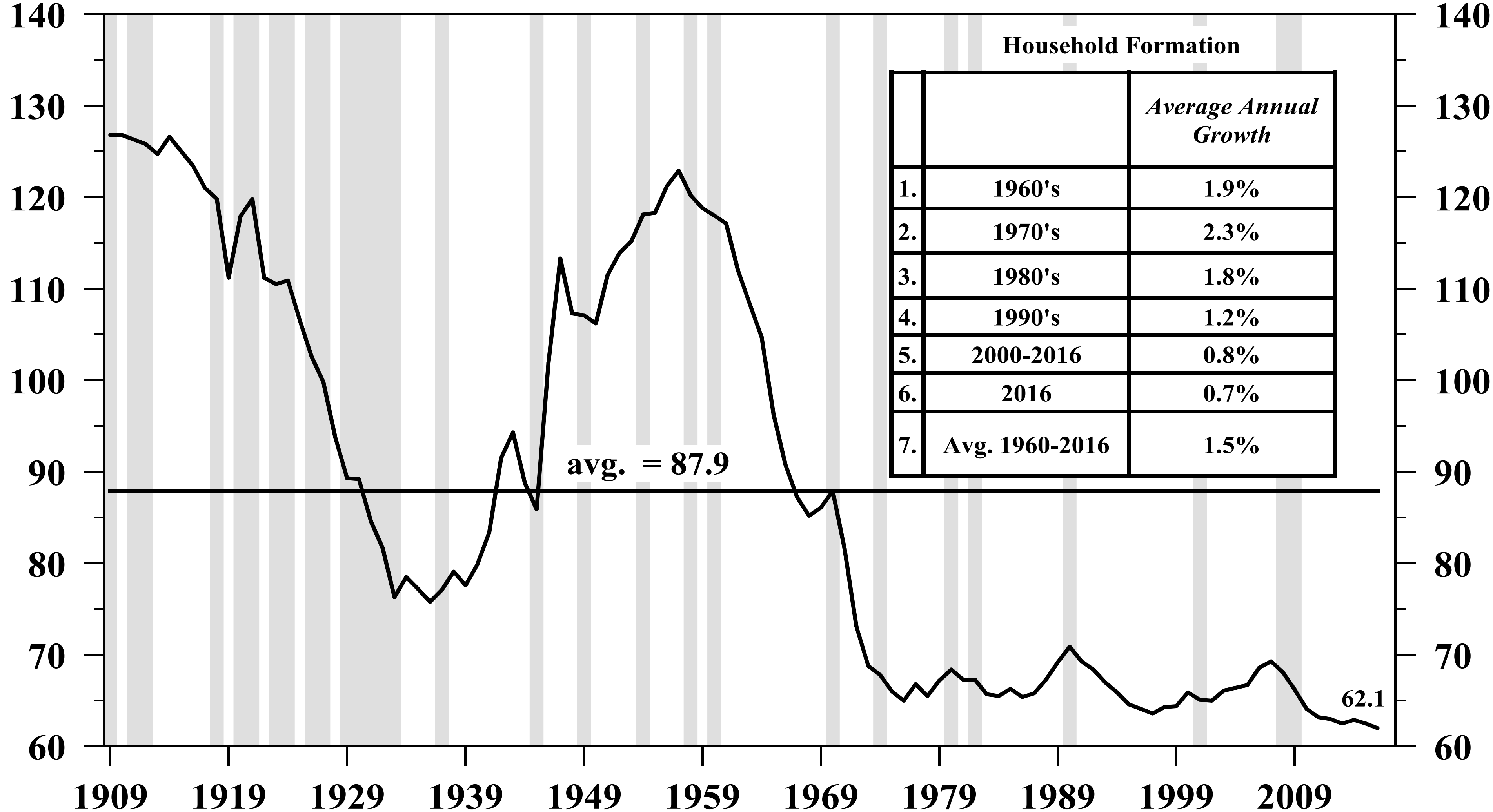
U.S. General Fertility Rate
(Births per 1000 Women Aged 15-44)
annual



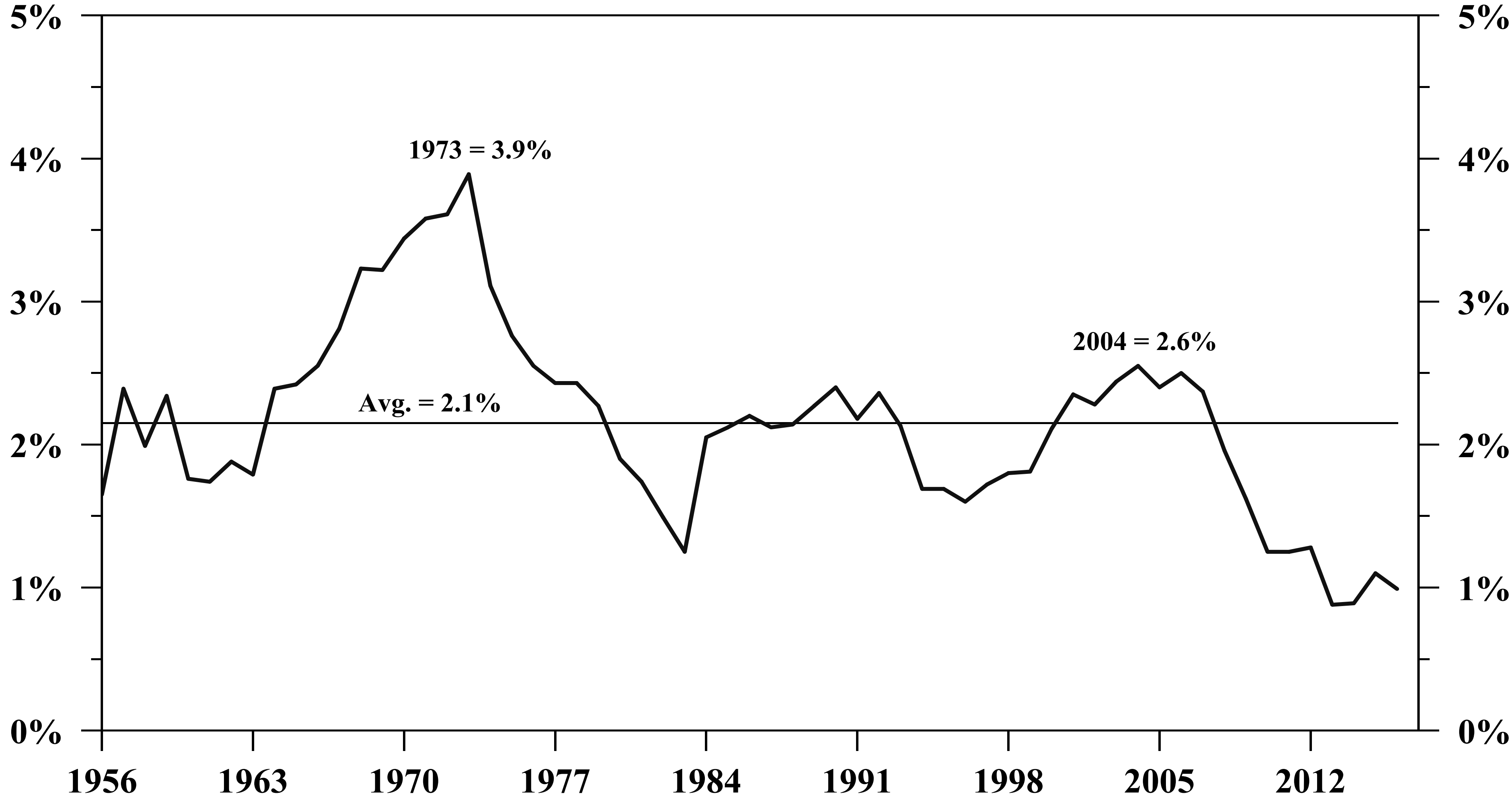
Household Formation

		Average Annual Growth
1.	1960's	1.9%
2.	1970's	2.3%
3.	1980's	1.8%
4.	1990's	1.2%
5.	2000-2016	0.8%
6.	2016	0.7%
7.	Avg. 1960-2016	1.5%

Sources: National center for Health Statistics, Haver Analytics, St. Louis Fed., Census Bureau. Through Q3 2017.

Real Disposable Personal Income per Capita (1956-2016)

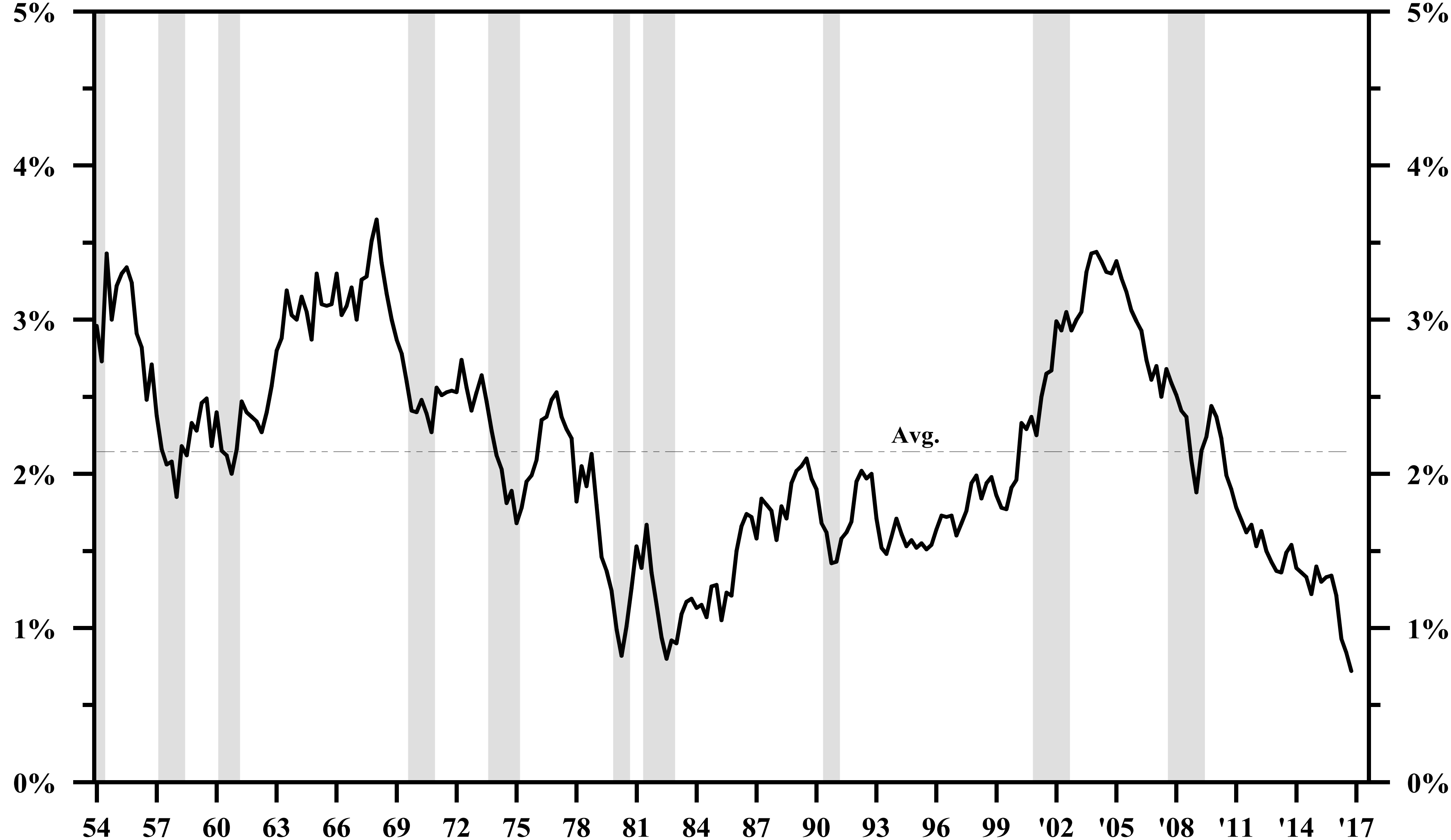
ten year % change, a.r.



Sources: Bureau of Economic Analysis, Census Bureau. Computation of the 10 year moving average starts with 1946 thus the first plot begins in 1956. Through Q4 2016.

Nonfarm Business Sector: Productivity

7 year % change a.r., quarterly



Sources: Census Bureau. Bureau of Labor Statistics. Through Q4 2016.

Susceptibilities of Late Stage Expansions and Signs of Exhausted Pent-Up Demand

1. This is the worst expansion since the end of World War II and one of the worst since 1790, but February is its 80th month, 21 months longer than the average expansion over the past seven decades.

2. Setting new records is a reason for caution, not optimism. With regard to pent-up demand, the economy is in the opposite condition of a recession or early stage expansion.

3. The lack of such demand makes the economy susceptible to either slower growth or to the risk of an outright recession and especially so when the Fed is restraining monetary conditions.

4. Nominal GDP is growing at less than the stall speed, a rate that makes the economy very vulnerable to any "shock."

5. The factory use rate is much lower than two years ago and well below long term historic norms.

6. Rents are weakening after a massive six year boom in apartment buildings.

7. Retail space rents are falling, amid actual abandonment of such properties due to lack of alternative end use possibilities.

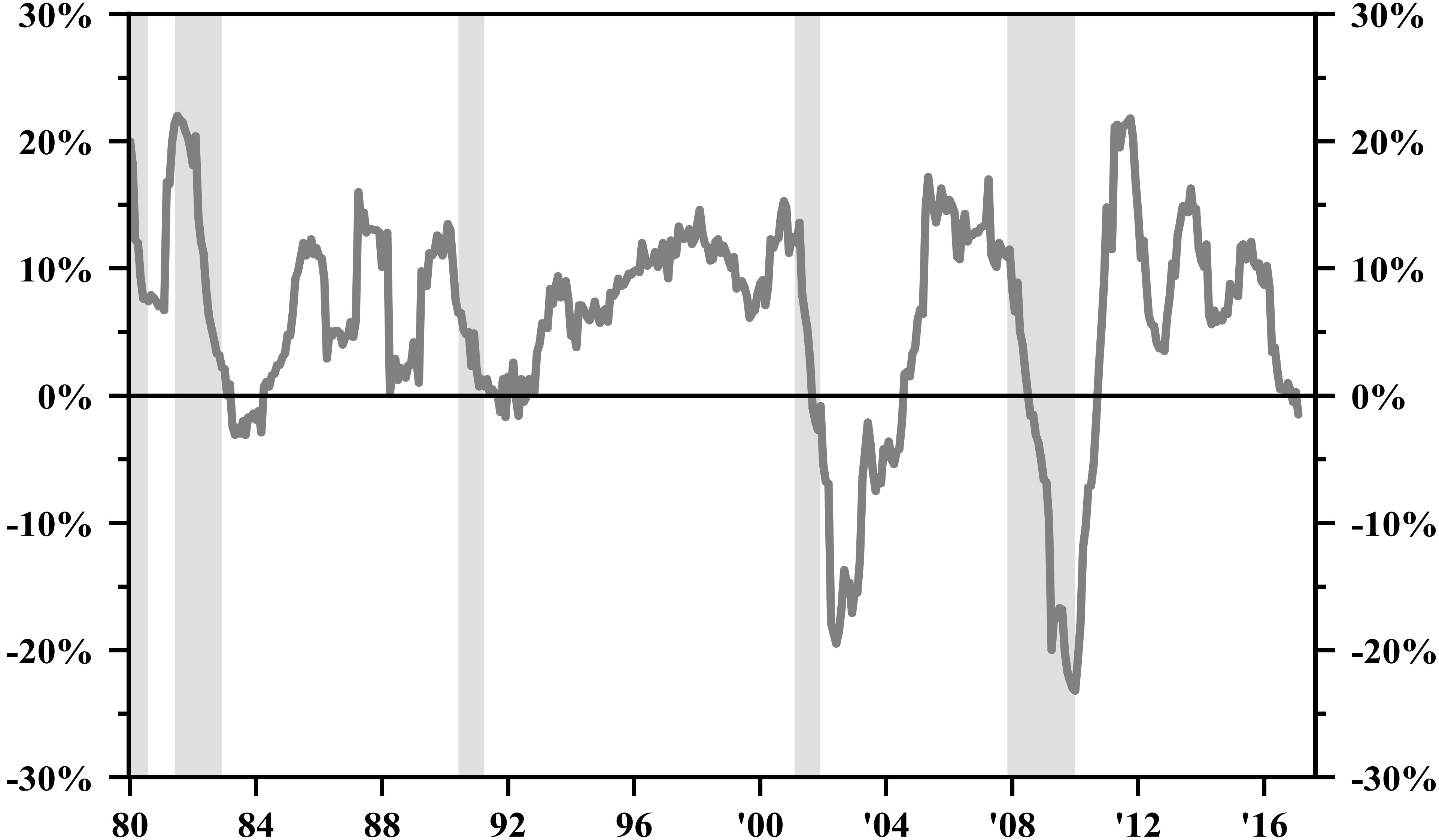
8. Prices for new cars are dropping as well as most discretionary goods. Delinquency rates on automobile loans are rising, particularly so on the riskiest types.

9. Rising vacancy in office buildings is placing downward pressure on rents.

10. The December 2016 personal saving rate was 5.4%, versus the long-term average of 8.5%.

Federal Receipts: Individual

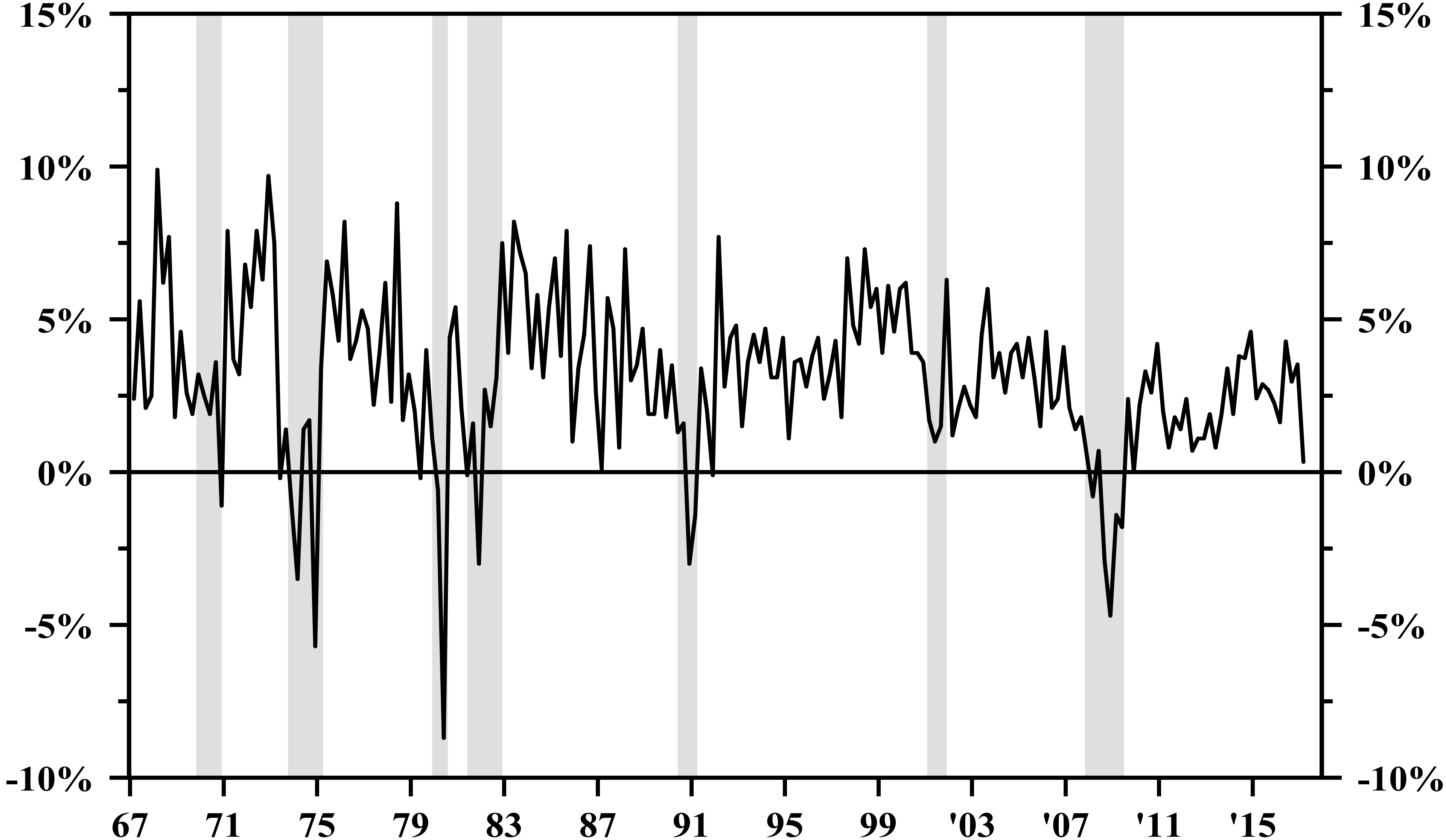
y-o-y % change, 12 month sum



Source: U.S. Treasury. Through February 2017.

Real Personal Consumption Expenditures

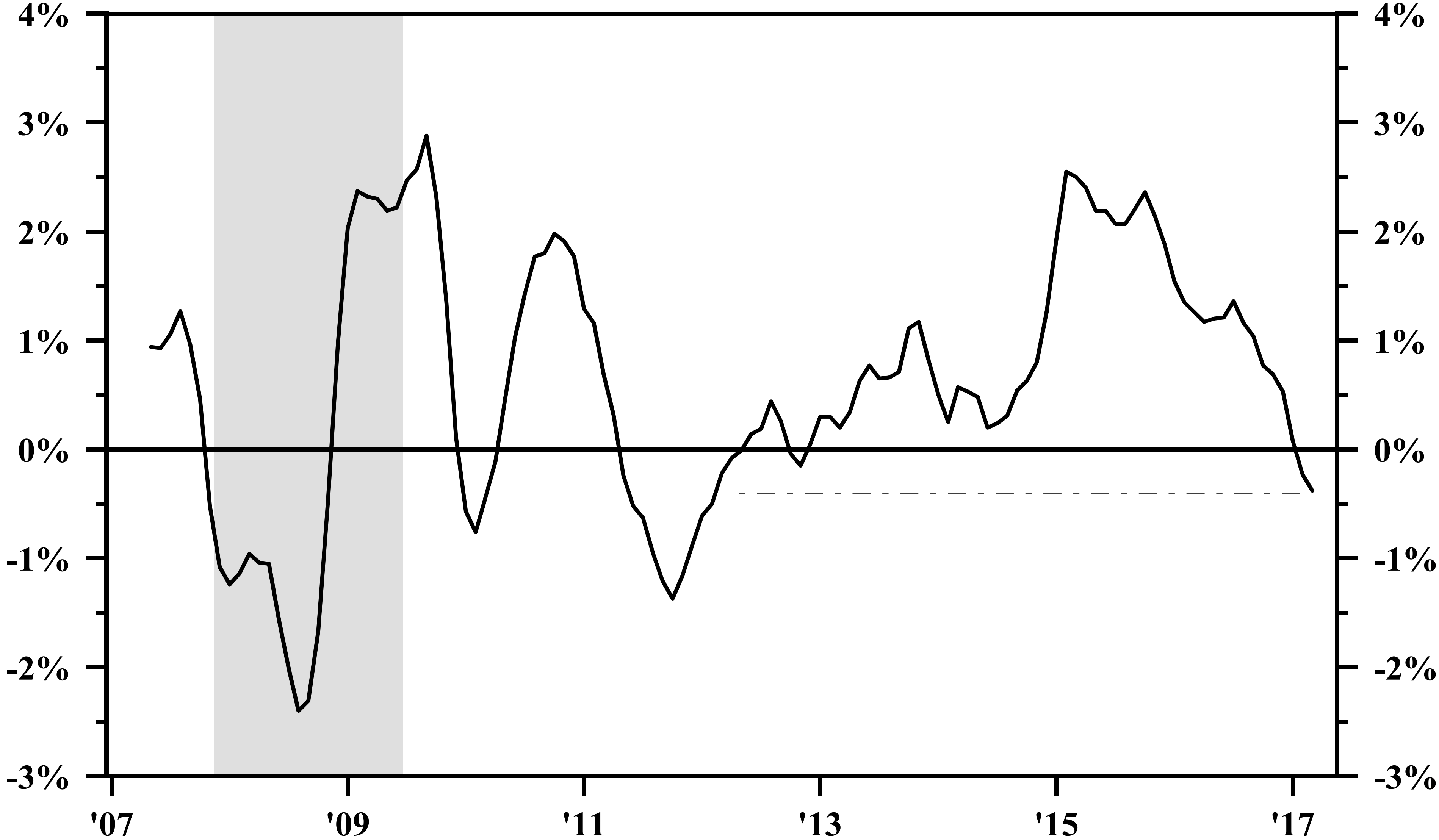
quarterly % change, a.r.



Source: Bureau of Economic Analysis. Through Q1 2017.

Real Average Weekly Earnings

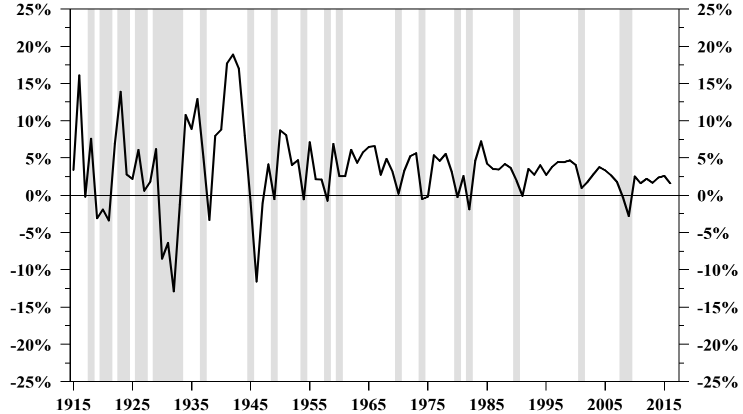
year over year % change, 3 month mvg. average



Source: Bureau of Labor Statistics. Through March 2017.

Real GDP 1915-2016

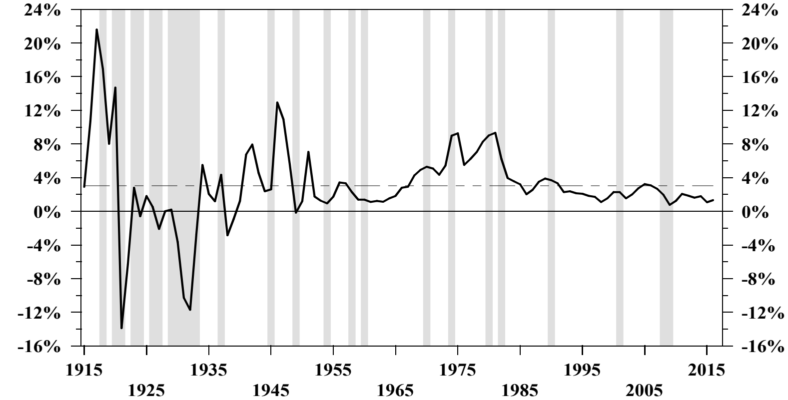
annual



Sources: Federal Reserve Board, Bureau of Economic Analysis, N.S. Balke & R.J. Gordon, C.D. Romer. Through Q4 2016.

GDP Implicit Price Deflator

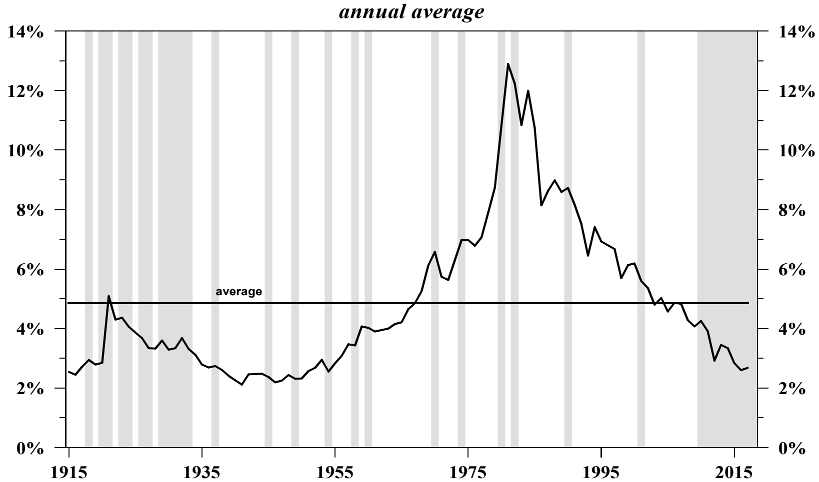
percent change in annual average



Sources: Federal Reserve Board, Bureau of Economic Analysis, N.S. Balke & R.J. Gordon, C.D. Romer. Through 2016.

Long Term Treasury Rate 1915-2016

annual average



Sources: Federal Reserve Board, Homer & Sylla, Wall Street Journal. Through Q4 2016. Initial global market period interrupted by WWI.

A Century of Federal Reserve Restraining Operation's Indelible Mark

1. Economic growth rate along with inflation receded.

2. A financial crisis was more likely than not.

3. With different lags, which were influenced by the initial conditions, bond yields dropped along with falling inflationary expectations.

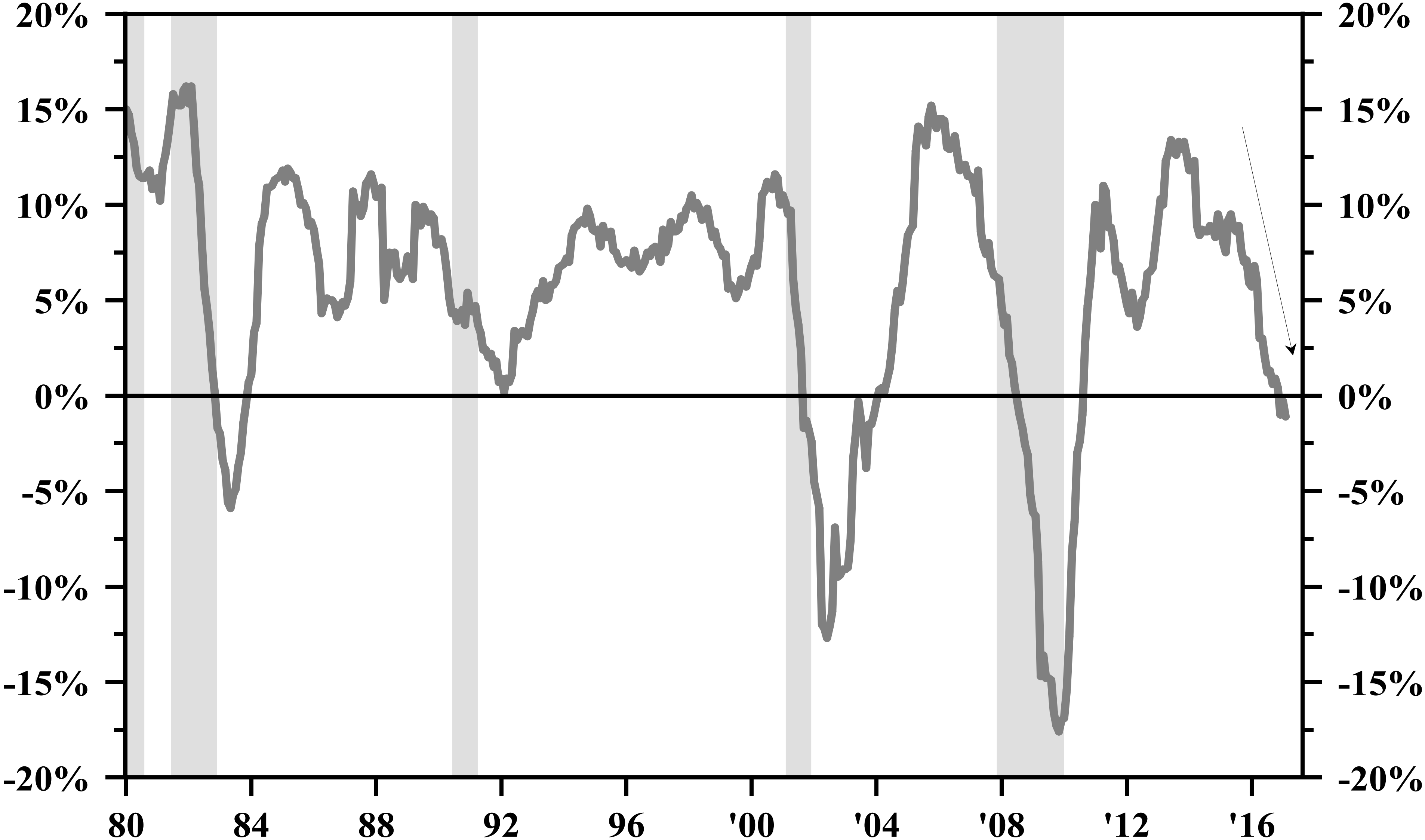
4. Since 1915 the cyclical trough in Treasury bond yields typically occurred several years after the end of the economic contractions.

5. This long empirical record as well as economic theory indicates that the current Fed tightening cycle will not end differently.

Appendix

Federal Receipts

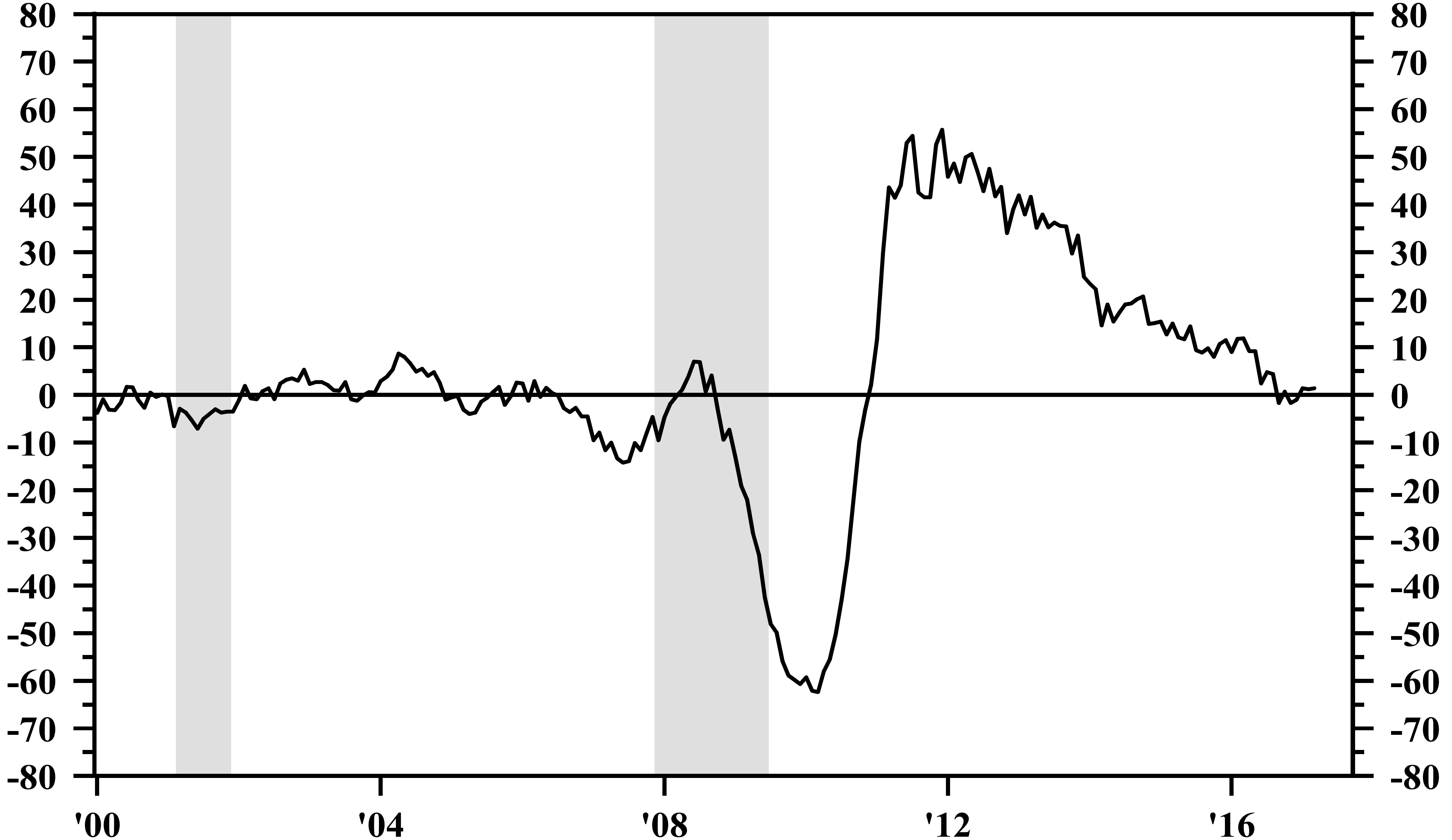
y-o-y % change, 12 month sum



Source: U.S. Treasury. Through February 2017.

Housing Starts: Multifamily

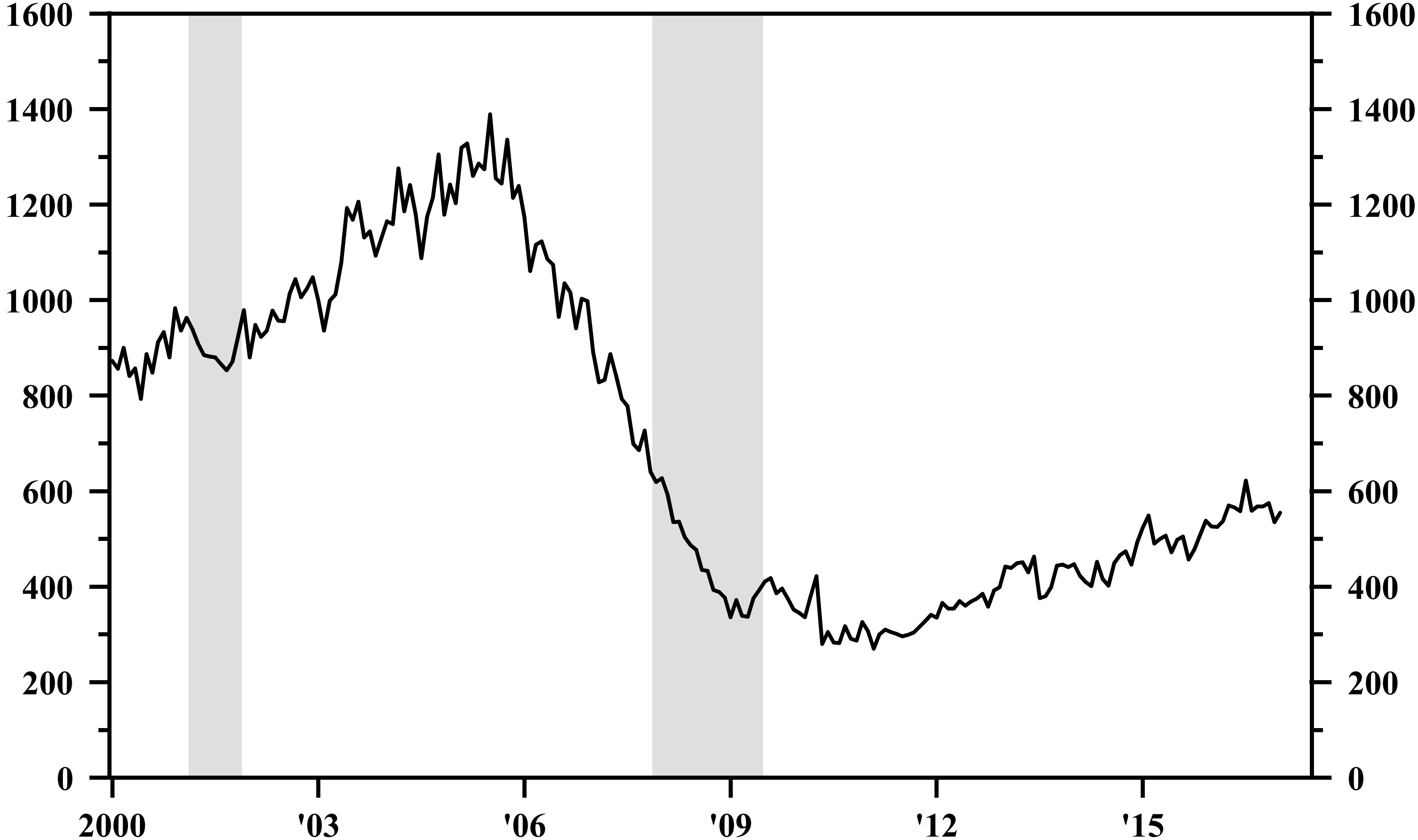
year over year % change of 12 month avg



Source: Census Bureau. Through March 2017.

New Home Sales

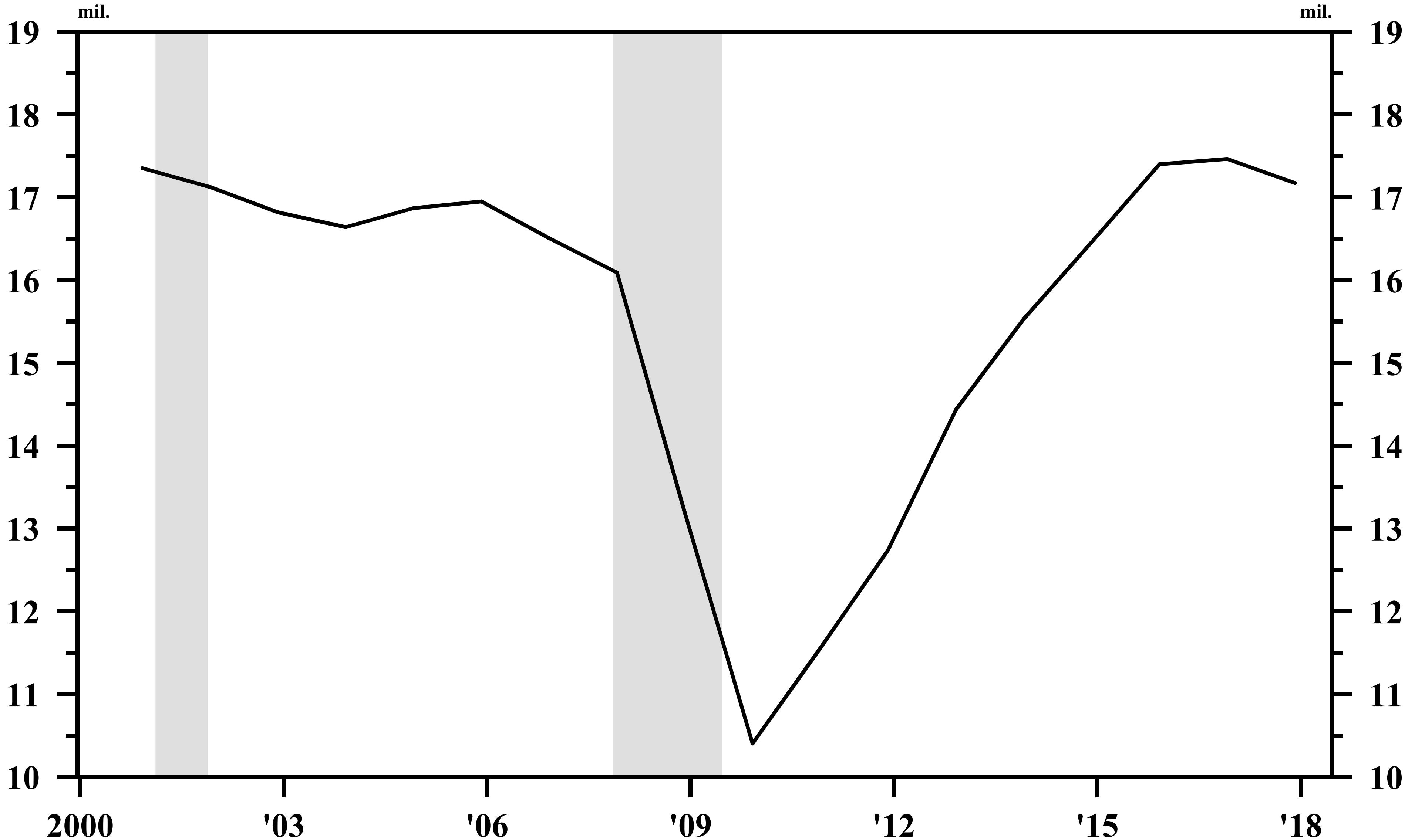
monthly level (thousands)



Source: Bureau of Census. Through February 2017.

Vehicle Sales

annual level



Source: Bureau of Economic Analysis. Through March 2017. (2017 plot is Q1 avg.)

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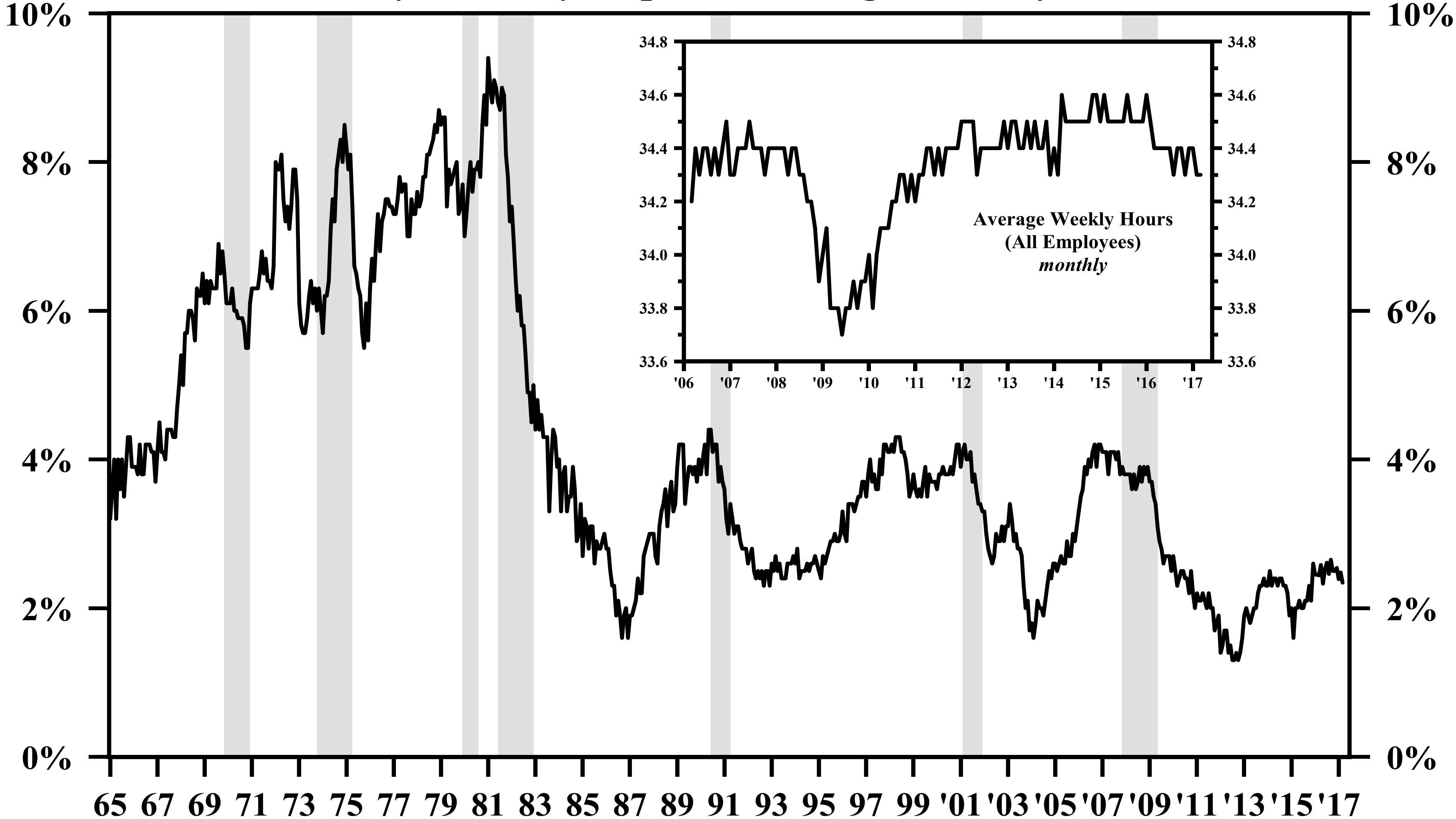
Nonfarm Payroll Growth

average monthly change, 1000's

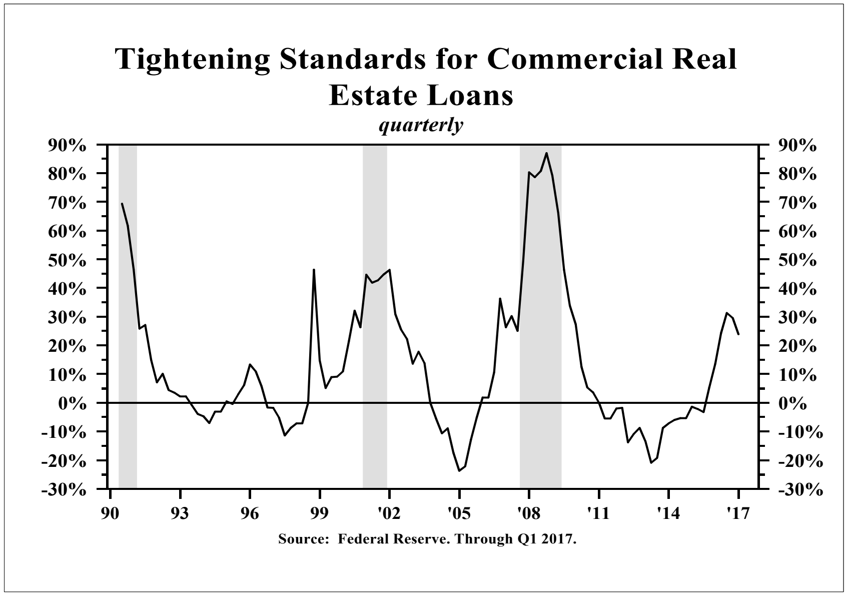
		Nonfarm	Manufacturing
	(A)	(B)	(C)
1.	2014	250	17
2.	2015	226	6
3.	2016	187	-1
4.	Q1 2017	178	16

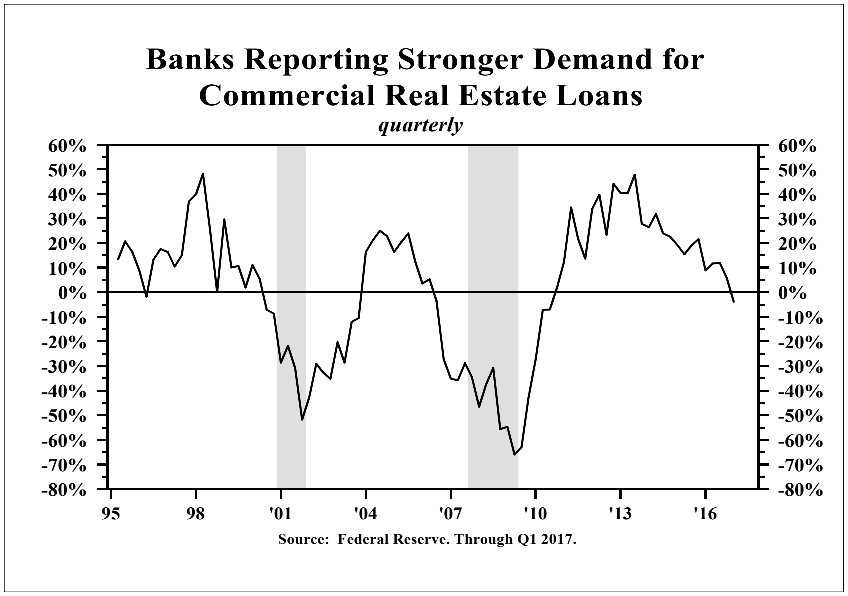
Source: Bureau of Labor Statistics. Through March 2017.

Average Hourly Earnings
(Production and Nonsupervisory)
year over year percent change, monthly



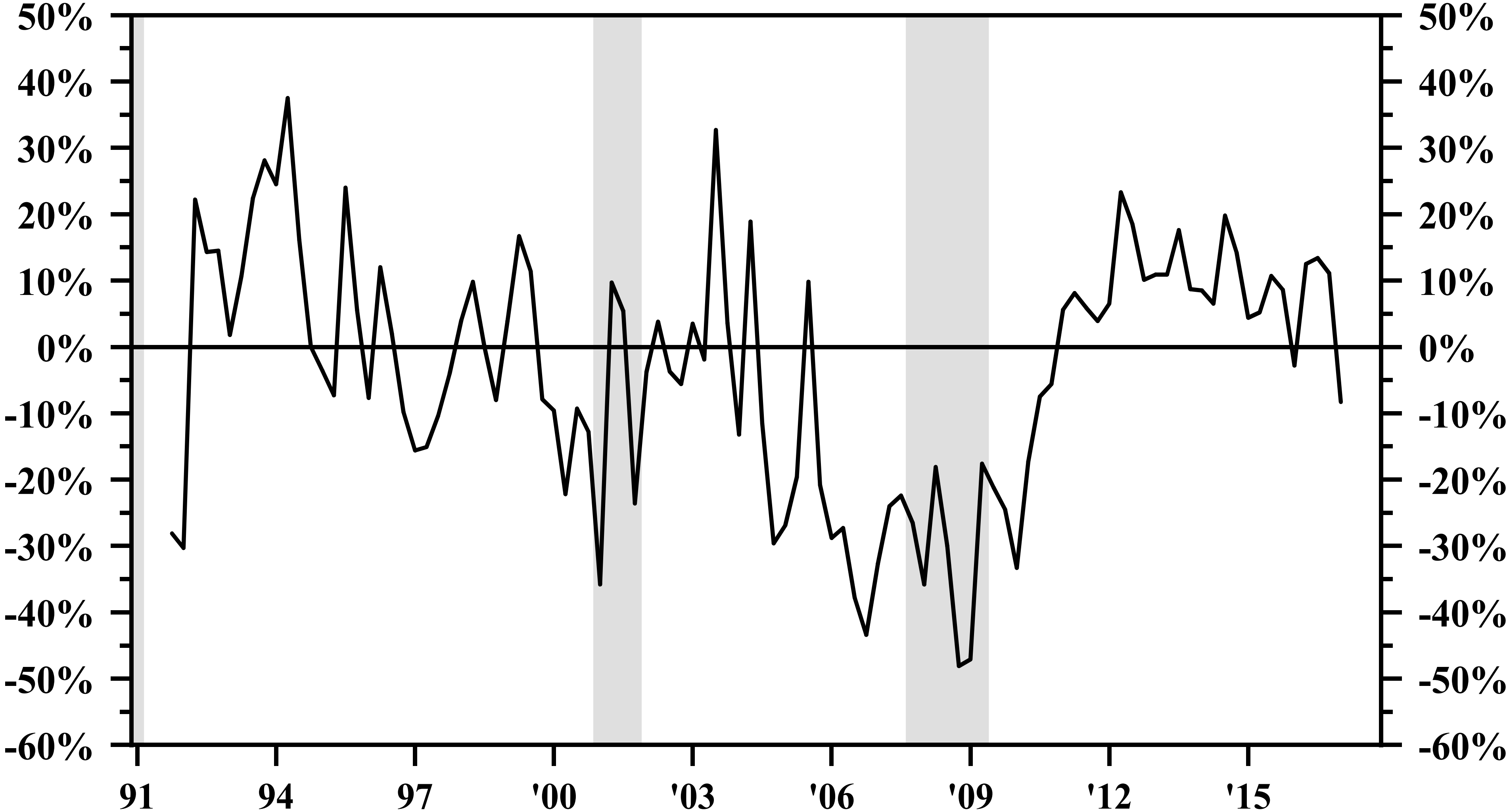
Source: Bureau of Labor Statistics. Production and nonsupervisory workers, total private industries. Through March 2017.


Tightening Standards for Commercial Real Estate Loans
quarterly
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
-10%
-20%
-30%
90
93
96
99
'02
'05
'08
'11
'14
'17
Source: Federal Reserve. Through Q1 2017.


Banks Reporting Stronger Demand for Commercial Real Estate Loans
quarterly
60%
50%
40%
30%
20%
10%
0%
-10%
-20%
-30%
-40%
-50%
-60%
-70%
-80%
95
98
'01
'04
'07
'10
'13
'16
Source: Federal Reserve. Through Q1 2017.

Banks Reporting Stronger Demand for Consumer Loans

quarterly



Source: Federal Reserve. Through Q1 2017.

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Jean-Louis Arcand, Enrico Berkes, and Ugo Panizza, "Too Much Finance?", IMF Working Paper No. 12/161, June 2012.

3. "Public Debt and Growth", Manmohan S. Kumar and Jaejoon Woo (2010). IMF Working Paper WP/10/174 (July).
"External Debt and Growth", Catherine Pattillo, Helene Poirson, and Luca Antonio Ricci, 2002. Review of Economics and Institutions, Fall 2011, vol. 2-No. 3-Article 2.

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House of Debt, Atif Mian Ph.D., Princeton University, University of California Berkeley, University of Chicago Booth School of Business and Amir Sufi, University of Chicago Booth School of Business (2014; University of Chicago Press)

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9. "Consumers and the Economy, Part II: Household Debt and the Weak U.S. Recovery”, Federal Reserve Bank of San Francisco Economic Letter January 2011. Atif Mian Ph.D., Princeton University, University of California Berkeley, University of Chicago Booth School of Business and Amir Sufi, University of Chicago Booth School of Business

10. "Debt and deleveraging: The global credit bubble and its economic consequences”, December 2010. “Debt and deleveraging: Uneven progress on the path to growth” January 2012. “Debt and (Not Much) Deleveraging” February 2015. McKinsey Global Institute.

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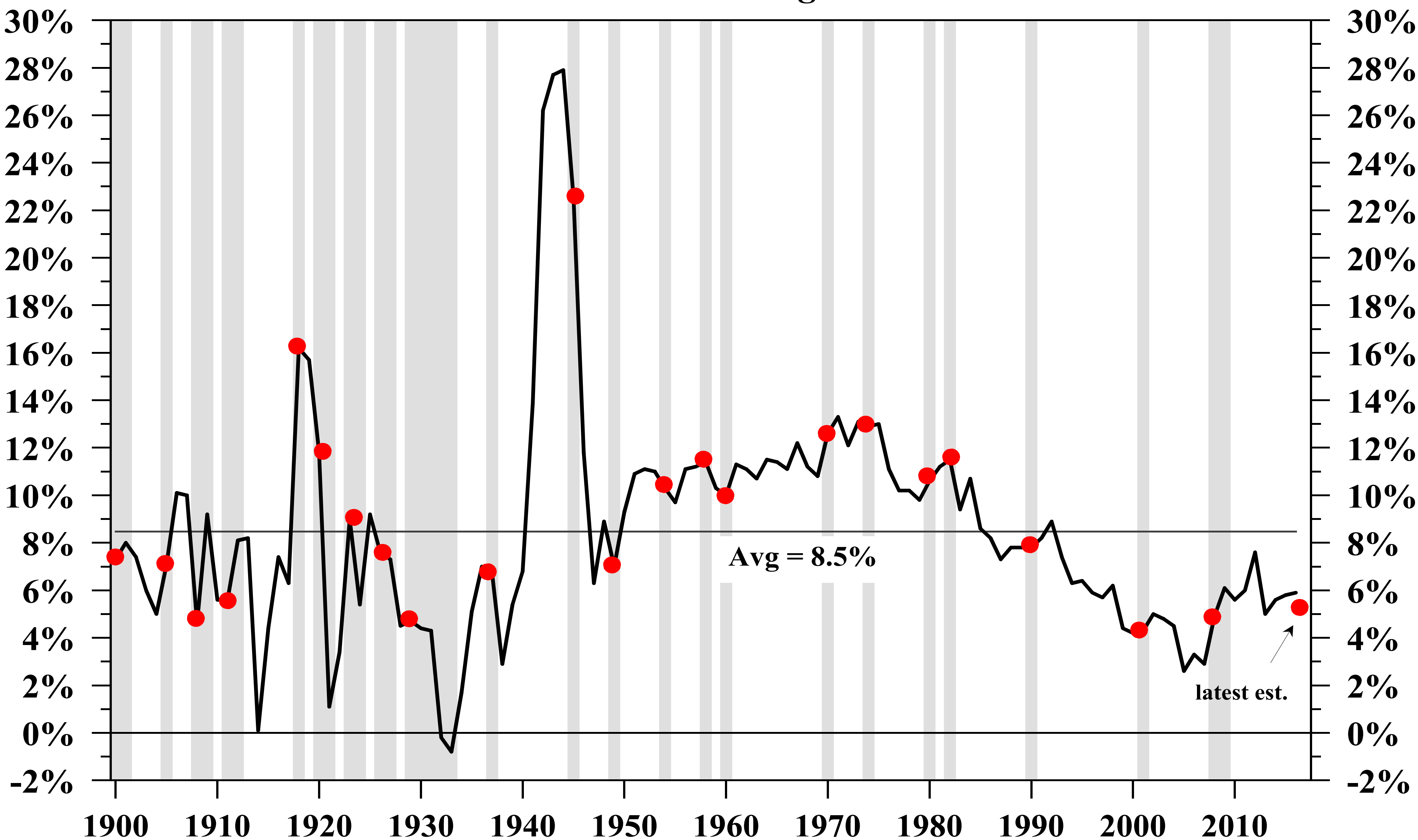
Personal Saving Rate 1900-2016

annual average



Sources: Bureau of Economic Analysis, Martha L. Olney University of California. Through 2016.