Predicting Bonds

Figure 1.

US TREASURY 10-YEAR BOND YIELD: 1965-1989
(percent, daily)

Source: Federal Reserve Board.

Figure 2.

US CONSUMER PRICE INDEX: 1965-1989
(yearly percent change, monthly)

Figure 3.

FEDERAL FUNDS RATE: 1965-1989
(Percent, weekly)

Source: Federal Reserve Board.

Figure 4.

US BANK PRIME LOAN RATE: 1965-1989
(Percent, weekly)

Source: Federal Reserve Board.
US UNEMPLOYMENT RATE: 1965-1989
(percent, monthly)


REAL GDP: 1965-1989
(trillion 2012 dollars, saar, quarterly, ratio scale)

Source: Bureau of Economic Analysis.
Figure 7.

US TREASURY BOND YIELD & NOMINAL GDP GROWTH

- US Treasury 10-Year Bond Yield (percent)
- Nominal GDP (yearly percent change)

Source: Bureau of Economic Analysis and Federal Reserve Board.

Figure 8.

SPREAD BETWEEN US TREASURY BOND YIELD & NOMINAL GDP GROWTH*
(percentage points)

* US Treasury 10-year bond yield minus yearly percent change in nominal GDP.
Source: Bureau of Economic Analysis and Federal Reserve Board.
Figure 9.

WEST TEXAS INTERMEDIATE CRUDE OIL PRICE: 1980-2000
(dollars per barrel, monthly, ratio scale)

Note: Shaded areas denote recessions according to the National Bureau of Economic Research.
Source: Haver Analytics.

Figure 10.

HOUSING STARTS: 1980-2000
(million units, saar, monthly)

Source: Census Bureau.
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Figure 11.
(percent, daily)

Source: Federal Reserve Board.

Figure 12.
DOW JONES INDUSTRIALS AVERAGE: 1987-2000
(daily)

Source: Dow Jones Inc.
Predicting Bonds

Figure 13.

THE AGE WAVE, INFLATION, and BOND YIELD IN THE US
(percent)

* Percent of labor force 16-34 years old.
** Five-year moving average of yearly percent change in CPI.
*** Five-year moving average of ten-year government bond yield.
Source: Bureau of Labor Statistics and Federal Reserve Board.

Figure 14.

EQUITY & BOND MUTUAL FUNDS
(cumulative flows since 1990, trillion dollars)

Cumulative Net Inflows
- Equity Mutual Funds
- Bond Mutual Funds
Predicting Bonds

Figure 15.
US TREASURY 10-YEAR BOND & TIPS YIELDS
(percent, daily)

10-Year Treasury
- Bond Yield
- TIPS Yield

Source: Federal Reserve Board.

Figure 16.
EXPECTED INFLATION IN 10-YEAR TIPS*
(percent, daily)

* Nominal minus TIPS yield.
Source: Federal Reserve Board.
EXPECTED INFLATION: SURVEY OF PROFESSIONAL FORECASTERS

- Median forecast of year-over-year CPI inflation rate over the next 10 years using Philadelphia Fed Survey of Professional Forecasters data.

MEASURES OF EXPECTED INFLATION (percent)

- Median forecast of year-over-year CPI inflation rate over the next 10 years using Philadelphia Fed Survey of Professional Forecasters data.
- ** Nominal US Treasury 10-year minus 10-year TIPS yields.
- Source: Federal Reserve Board and Federal Reserve Bank of Philadelphia.
Figure 19.

US CONSUMER PRICE INDEX
& US TREASURY 10-YEAR BOND YIELD

10-Year Yield
CPI Inflation*

* Yearly percent change.
Source: Federal Reserve Board and Bureau of Labor Statistics.

Figure 20.

US CONSUMER PRICE INDEX
& US TREASURY 10-YEAR BOND YIELD
(Percent)

10-Year Yield
10-Year Yield
Minus CPI Inflation*

* Yearly percent change.
Source: Federal Reserve Board and Bureau of Labor Statistics.
Figure 21.

REAL FEDERAL FUNDS RATE*
(percent)

* Federal funds rate minus median forecast of year-over-year CPI inflation rate over the next 10 years using Philadelphia Fed Survey of Professional Forecasters data (monthly series interpolated from quarterly data starting as two quarters per year during Q4-1979 until Q4-1991 when the data continue with four quarters a year).

Figure 22.

REAL BOND YIELD*

* US Treasury 10-year bond yield minus median forecast of year-over-year CPI inflation rate over the next 10 years using Philadelphia Fed Survey of Professional Forecasters data (monthly series interpolated from quarterly data starting as two quarters per year during Q4-1979 until Q4-1991 when the data continue with four quarters a year).
Figure 23.
FEDERAL FUNDS RATE and US TREASURY 10-YEAR BOND YIELD
(percent, monthly)

Note: Shaded areas denote recessions according to the National Bureau of Economic Research.
Source: Federal Reserve Board.

Figure 24.
US YIELD CURVE* & THE BUSINESS CYCLE
(basis points, monthly)

* 10-year US Treasury bond yield minus federal funds rate.
Note: Shaded areas denote recessions according to the National Bureau of Economic Research.
Source: Federal Reserve Board.
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Figure 25.

US CONSUMER PRICE INDEX & MONETARY POLICY CYCLE
(yearly percent change)

Note: Blue shaded areas denote periods of monetary easing between cyclical peaks and troughs in the federal funds rate. Red shaded areas denote monetary tightening periods.

Figure 26.

US YIELD CURVE* & MONETARY POLICY CYCLE
(basis points)

Note: Blue shaded areas denote periods of monetary easing between cyclical peaks and troughs in the federal funds rate. Red shaded areas denote monetary tightening periods.
Source: Federal Reserve Board.

* US Treasury 10-year bond yield less federal funds rate. Monthly through 1987, then weekly.
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Figure 27.

FED’S ASSETS: 2008-2015* (trillion dollars)

* Average of daily figures for weeks ending Wednesday.
QE3 expanded (12/12/12) = Fed starts buying $45bn/month in Treasuries.
Source: Federal Reserve Board.

Figure 28.

FED’S ASSETS: 2008-2015* (trillion dollars)

* Average of daily figures for weeks ending Wednesday.
QE3 expanded (12/12/12) = Fed starts buying $45bn/month in Treasuries.
Source: Federal Reserve Board.
Predicting Bonds

QE3 expanded (12/12/12) = Fed starts buying $45bn/month in Treasuries.
Source: Federal Reserve Board.

QE3 expanded (12/12/12) = Fed starts buying $45bn/month in Treasuries.
Source: Standard & Poor's.
EUROZONE: GOVERNMENT 10-YEAR BOND YIELDS (percent)

Bond Yields
- France
- Germany
- Italy
- Spain

Source: Financial Times.

Note: D (7/26/12) = ECB President Mario Draghi pledged to do "whatever it takes" to defend the euro. NIRP (6/5/2014) = negative interest-rate policy. QE (1/22/15) = quantitative easing. QEE (3/10/16) = expansion and extension of QE with corporate bond purchases started 6/1/16. QT (12/31/2018).

Source: Financial Times.

GREECE: GOVERNMENT 10-YEAR BOND YIELD (percent, daily)

Source: Financial Times.
Figure 33.
EUROZONE: GOVERNMENT 10-YEAR BOND YIELDS
(percent, daily)

Bond Yields
- France
- Germany
- Italy
- Spain

Note: D (7/26/12) = ECB President Mario Draghi pledged to do "whatever it takes" to defend the euro. NIRP (6/5/2014) = negative interest-rate policy. QE (1/22/15) = quantitative easing. QEE (3/10/16) = expansion and extension of QE with corporate bond purchases started 6/1/16.
Source: Financial Times.

Figure 34.
ECB DEPOSIT RATE & GERMAN GOVERNMENT 10-YEAR BOND YIELD
(percent, daily)

Source: European Central Bank and Haver Analytics.
Figure 35.

ECB: HOLDINGS OF SECURITIES
(trillion euros, ratio scale)

Securities of Euro Area Residents in Euro

D NIRP QE QEE

Note: D (7/26/12) = ECB President Mario Draghi pledged to do "whatever it takes" to defend the euro. NIRP (6/5/2014) = negative interest-rate policy. QE (1/22/15) = quantitative easing. QEE (3/10/16) = expansion and extension of QE with corporate bond purchases started 6/1/16.

Source: European Central Bank.

Figure 36.

JAPAN: INTEREST RATES
(percent, weekly)

10-Year Government Bond Yield
Call Rate: Uncollateralized Overnight

Source: Bank of Japan.
Figure 37.

**JAPAN: MONETARY BASE**
(trillion yen, sa, ratio scale)

* Adjusted for change in reserve requirements.
Note: Z = Zero Interest Rate Policy. A = Markets start to anticipate Abenomics. QQE (4/4/13) = Quantitative and Qualitative Easing. QQEE (10/31/14) = QQE expanded and extended version. NIRP (1/29/16) = Negative interest rate policy. YC (9/21/16) = Yield curve targeting.
Source: Bank of Japan.

Figure 38.

**JAPAN: US$ / 100YEN**
(daily)

Note: A = Markets start to anticipate Abenomics. QQE is Quantitative and Qualitative Easing. QQEE is the expanded and extended version of QQE. NIRP = negative interest rates. YC = Yield curve targeting.
Source: Haver Analytics.
Figure 39.

GOVERNMENT 10-YEAR BOND YIELDS
(percent, daily)

Source: Haver Analytics.

Figure 40.

CORPORATE & US TREASURY 10-YEAR BOND YIELDS
(percent, monthly)

Note: Shaded areas denote recessions according to the National Bureau of Economic Research.


Source: Federal Reserve Board.
Figure 41.

YIELD SPREAD CORPORATE* & US TREASURY 10-YEAR BONDS (basis points, monthly)

Note: Shaded areas denote recessions according to the National Bureau of Economic Research.
Source: Federal Reserve Board.


Figure 42.

S&P 500 VIX & HIGH YIELD CORPORATE BOND SPREAD

* US high-yield corporate bond yield less US Treasury 10-year bond yield (basis points).
Source: Chicago Board Options Exchange, Bank of America Merrill Lynch, and Federal Reserve Board.
**Predicting Bonds**

*Figure 43.*

**FIBER WEEKLY LEADING INDEX & HIGH YIELD CORPORATE SPREAD (basis points, inverted scale)**

- **High-Yield Corporate Spread***
- **FIBER Weekly Leading Index (1992=100)**

Note: Shaded areas denote recessions according to the National Bureau of Economic Research.


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*Figure 44.*

**US FEDERAL GOVERNMENT BUDGET DEFICIT (as a percent of nominal GDP)**

Note: Shaded areas denote recessions according to the National Bureau of Economic Research.

Source: Bureau of Economic Analysis.
Figure 45. US FEDERAL GOVERNMENT EXPENDITURES & RECEIPTS (as a percent of nominal GDP)

Note: Shaded areas denote recessions according to the National Bureau of Economic Research.
Source: Bureau of Economic Analysis.

Figure 46. US AGENCY & GSE-BACKED BONDS: NET PURCHASES BY REST OF WORLD (billion dollars, 4-quarter sum)

Source: Federal Reserve Board Financial Accounts of the United States.
Figure 47.

US TREASURY BONDS: NET PURCHASES BY REST OF WORLD
(billion dollars, 4-quarter sum)

- US Treasury Securities

Source: Federal Reserve Board Financial Accounts of the United States.

Figure 48.

US DEBT
(trillion dollars)

US Debt
- Total (nsa)
- Nonfinancial (sa)
- Financial (sa)

Source: Federal Reserve Board Financial Accounts of the United States.
Figure 49.

US DEBT (as a percent of nominal GDP)

Debt/GDP
- Total
- Nonfinancial
- Financial

Source: Federal Reserve Board Financial Accounts of the United States.

Figure 50.

US DEBT OF NONFINANCIAL DOMESTIC SECTORS
(trillion dollars, nsa)

Nonfinancial Debt
- Total*
- Total Less Treasury
- Treasury

* Includes mortgage, consumer, business, and US Treasury debt.
Source: Federal Reserve Board Financial Accounts of the United States.
**Figure 51.**

**US DEBT OF NONFINANCIAL DOMESTIC SECTORS**  
(as a percent of nominal GDP)

- **Nonfinancial Debt/GDP**
  - **Total***
  - **Total Less Treasury**
  - **Treasury**

* Includes mortgage, consumer, business, and government debt.  
Source: Federal Reserve Board Financial Accounts of the United States.

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**Figure 52.**

**US TOTAL HOUSEHOLD DEBT BALANCE**  
(trillion dollars)

Source: New York Fed Credit Panel.
* Ratio of debt service payments to disposable personal income.
Source: Federal Reserve Board.