

The Big Four Economic Indicators: Real Personal Income for February

March 28, 2016

by Doug Short
of Advisor Perspectives

Note: This commentary has been updated to include this morning's release of the February data for Real Personal Income Less Transfer Receipts.

Official recession calls are the responsibility of the NBER Business Cycle Dating Committee, which is understandably vague about the specific indicators on which they base their decisions. This committee statement is about as close as they get to identifying their method.

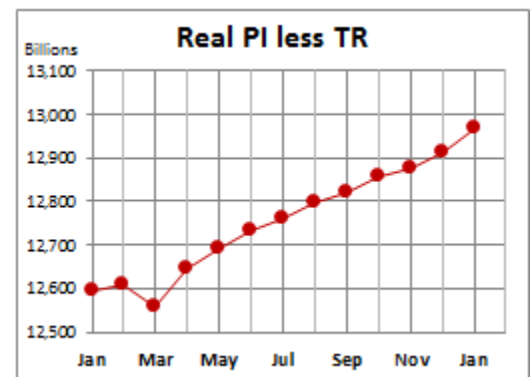
There is, however, a general belief that there are four big indicators that the committee weighs heavily in their cycle identification process. They are:

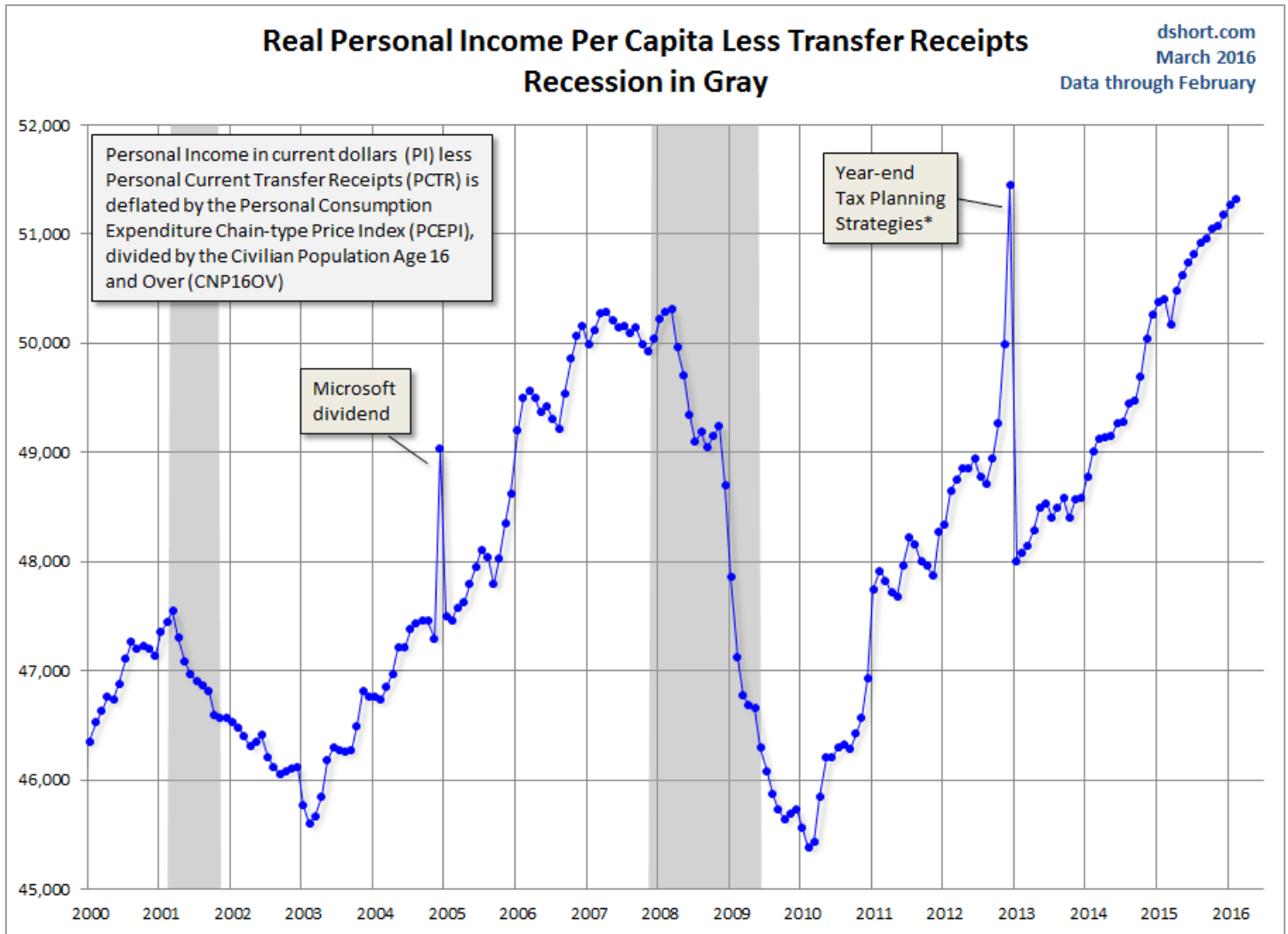
- **Nonfarm Employment**
- **Industrial Production**
- **Real Retail Sales**
- **Real Personal Income (excluding Transfer Receipts)**

The Latest Indicator Data

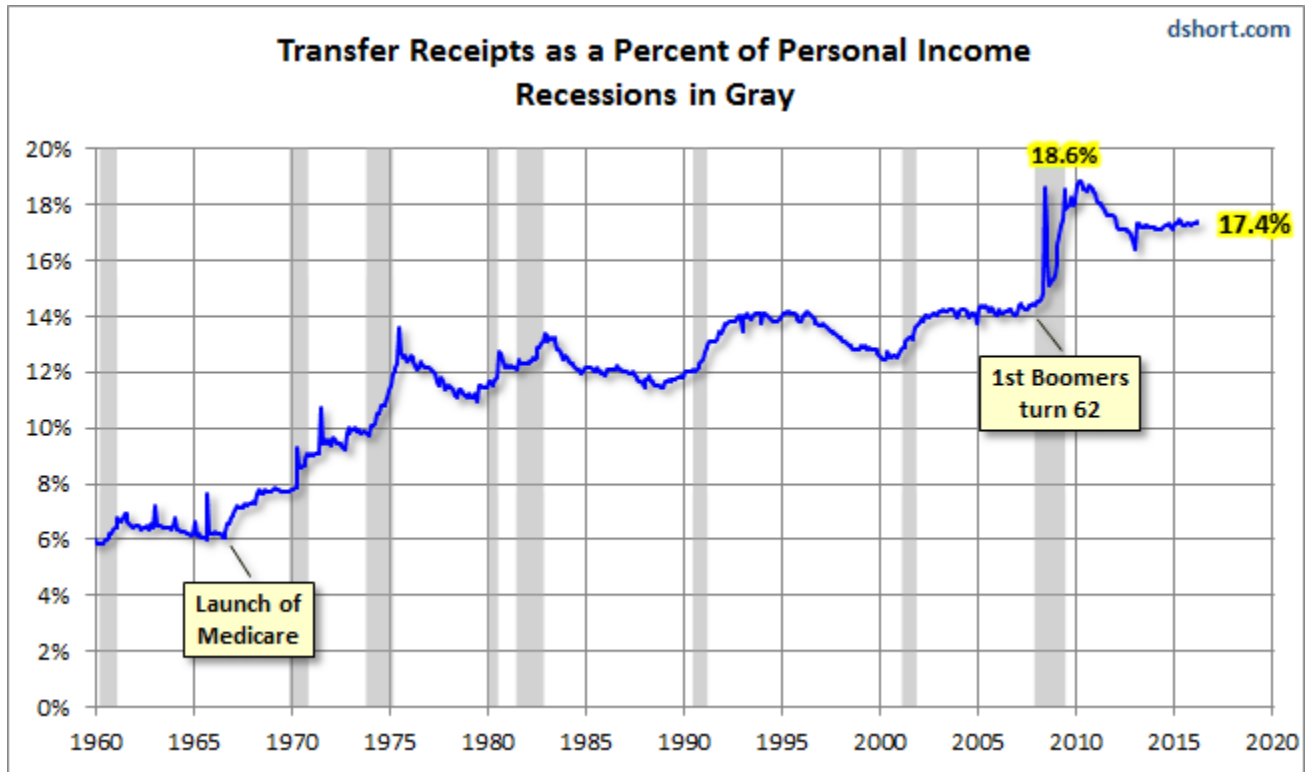
Personal Income (excluding Transfer Receipts) in February rose 0.7% and is up 3.9% year-over-year. When we adjust for inflation using the BEA's PCE Price Index, Real Personal Income (excluding Transfer Receipts) rose 0.18%. The real number is up 2.9% year-over-year.

Real PI less TR is one of those indicators that warrants adjustment for population growth to understand the long-term trends. Here is a chart of the series since 2000 adjusted accordingly by using the Civilian Population Age 16 and Over as the divisor.





A Note on the Excluded Transfer Receipts: These are benefits received for no direct services performed. They include Social Security, Medicare & Medicaid, Unemployment Assistance, and a wide range other benefits, mostly from government, but a few from businesses. Here is an illustration Transfer Receipts as a percent of Personal Income.

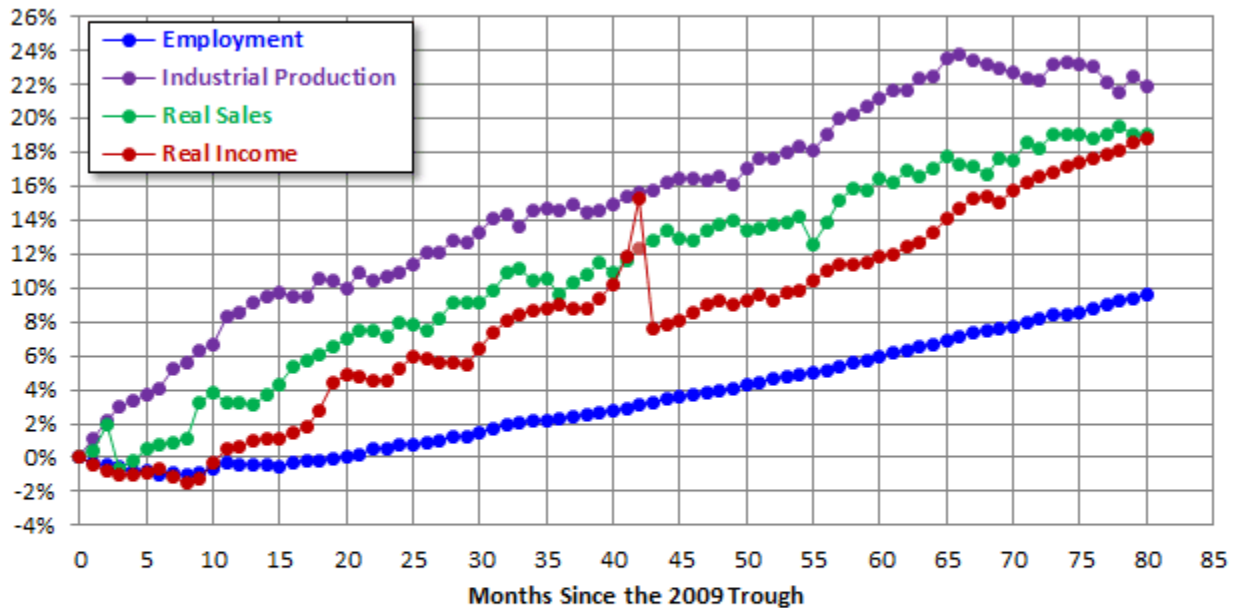


The Generic Big Four

The chart and table below illustrate the performance of the generic Big Four with an overlay of a simple average of the four since the end of the Great Recession. The data points show the cumulative percent change from a zero starting point for June 2009.

Big Four Indicators Since the End of the Last Recession

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Big Four Indicators Month-over-Month

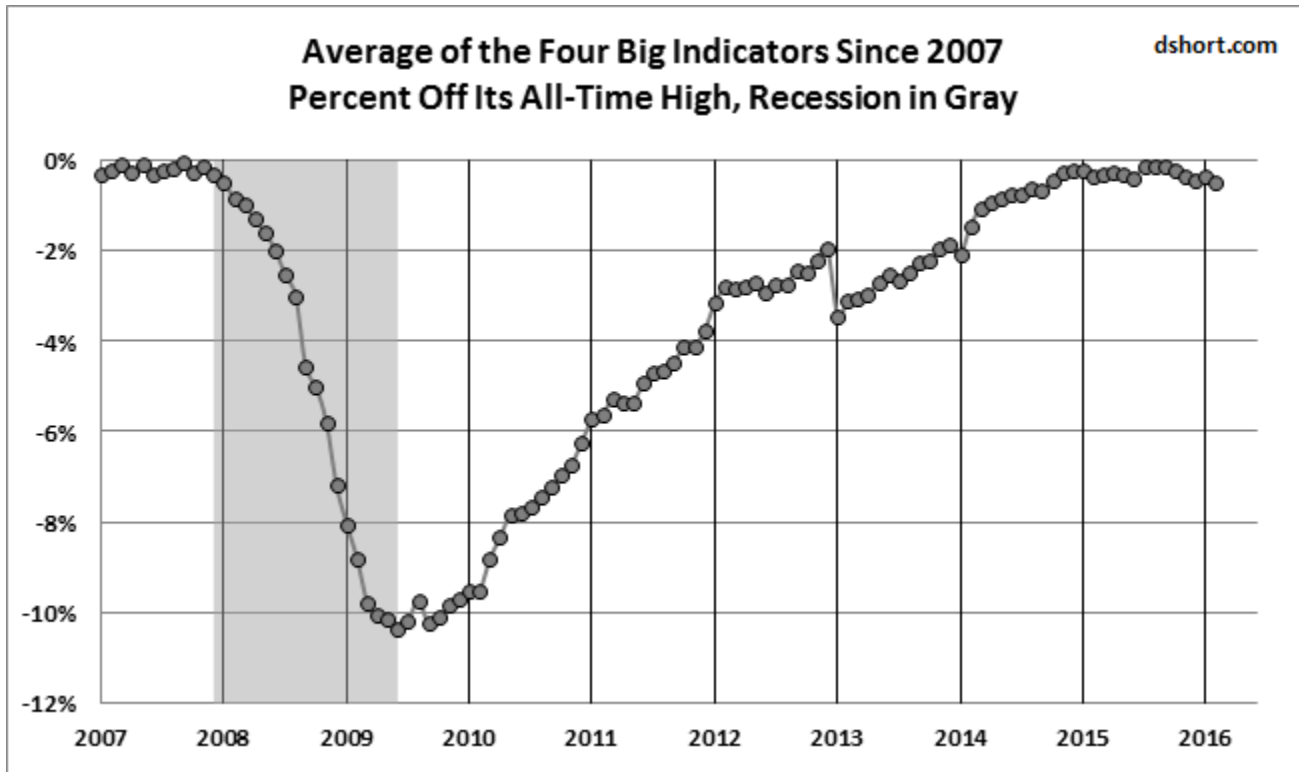
Indicator	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Employment	0.06%	0.18%	0.19%	0.16%	0.20%	0.11%	0.10%	0.21%	0.20%	0.19%	0.12%	0.17%
Industrial Production	-0.19%	-0.17%	-0.35%	-0.02%	0.76%	0.02%	-0.01%	-0.14%	-0.74%	-0.48%	0.78%	-0.49%
Real Sales	0.88%	-0.11%	0.89%	-0.27%	0.63%	0.02%	0.03%	-0.18%	0.18%	0.42%	-0.42%	0.02%
Real Income	-0.39%	0.70%	0.36%	0.31%	0.22%	0.29%	0.17%	0.27%	0.14%	0.27%	0.37%	0.18%

Employment is released the first week of the month, Income the last week, Industrial Production and Sales mid-month.

Current Assessment and Outlook

The US economy has been slow in recovering from the Great Recession, and the overall picture has been a mixed bag for well over a year and counting. Employment and Income have been relatively strong. Real Retail Sales have been hovering around a flat line for the past eight months, and Industrial Production has essentially been in a recession.

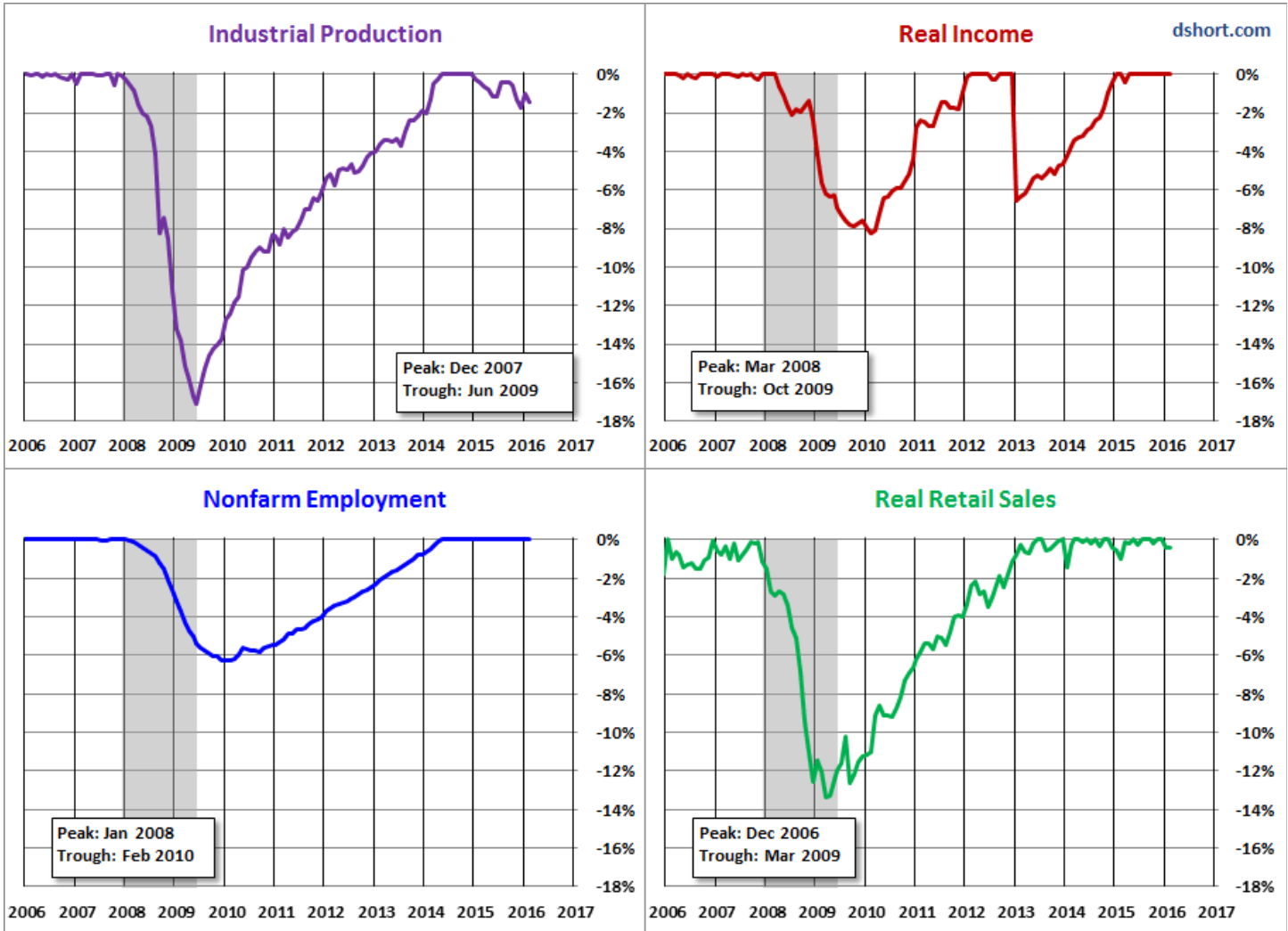
The chart below illustrates the average of the Big Four percent is off its all-time high. For three months in 2015, July through September, the index hovered a mere 0.10% below its all-time high in January 2006, a bit over 10 years ago. But it has since trended downward.



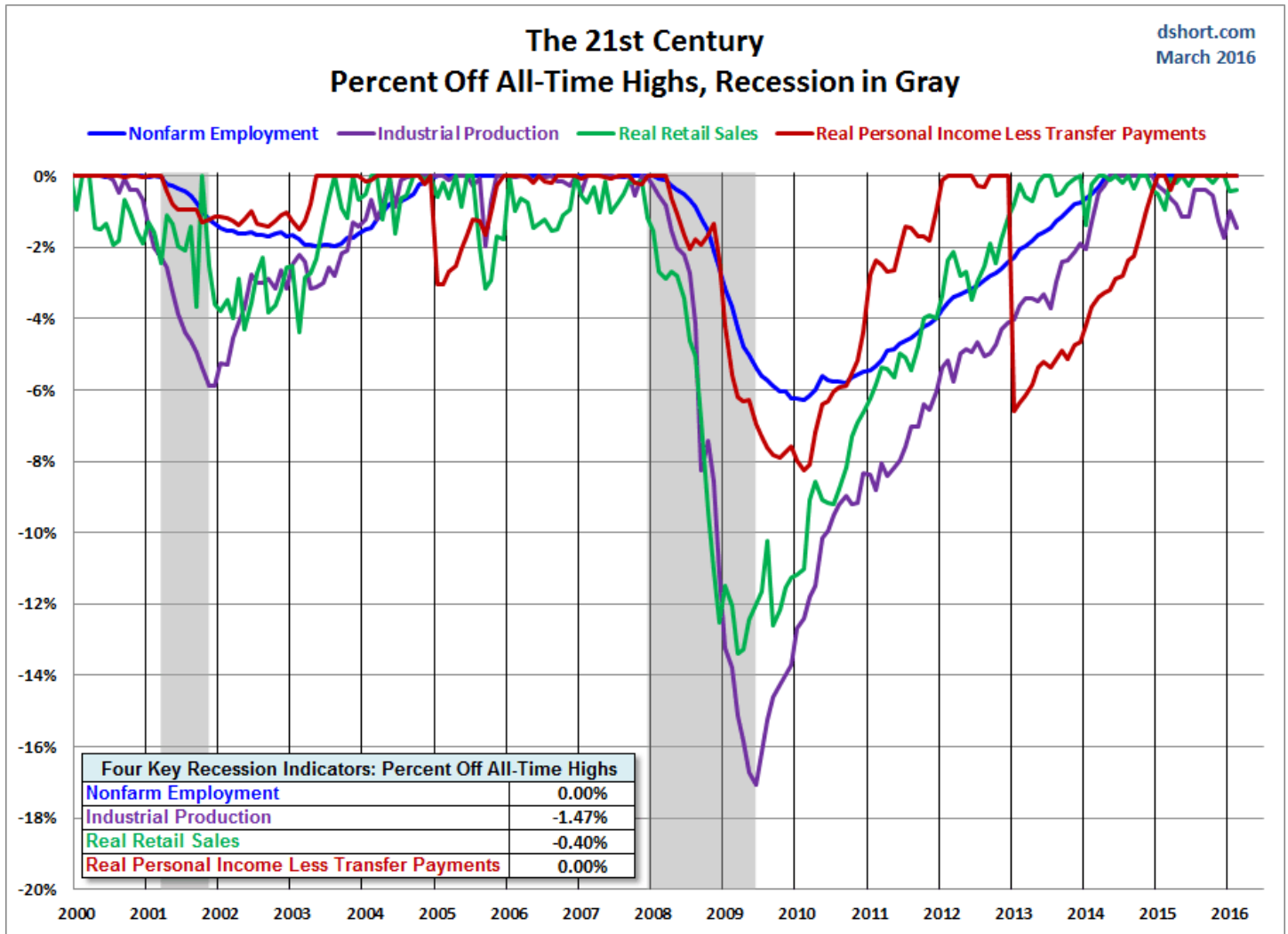
The next update of the Big Four will be our first peek at March data, namely, the numbers for Nonfarm Employment.

Background Analysis: The Big Four Indicators and Recessions

The charts above don't show us the individual behavior of the Big Four leading up to the 2007 recession. To achieve that goal, we've plotted the same data using a "percent off high" technique. In other words, we show successive new highs as zero and the cumulative percent declines of months that aren't new highs. The advantage of this approach is that it helps us visualize declines more clearly and to compare the depth of declines for each indicator and across time (e.g., the short 2001 recession versus the Great Recession). Here is our four-pack showing the indicators with this technique.



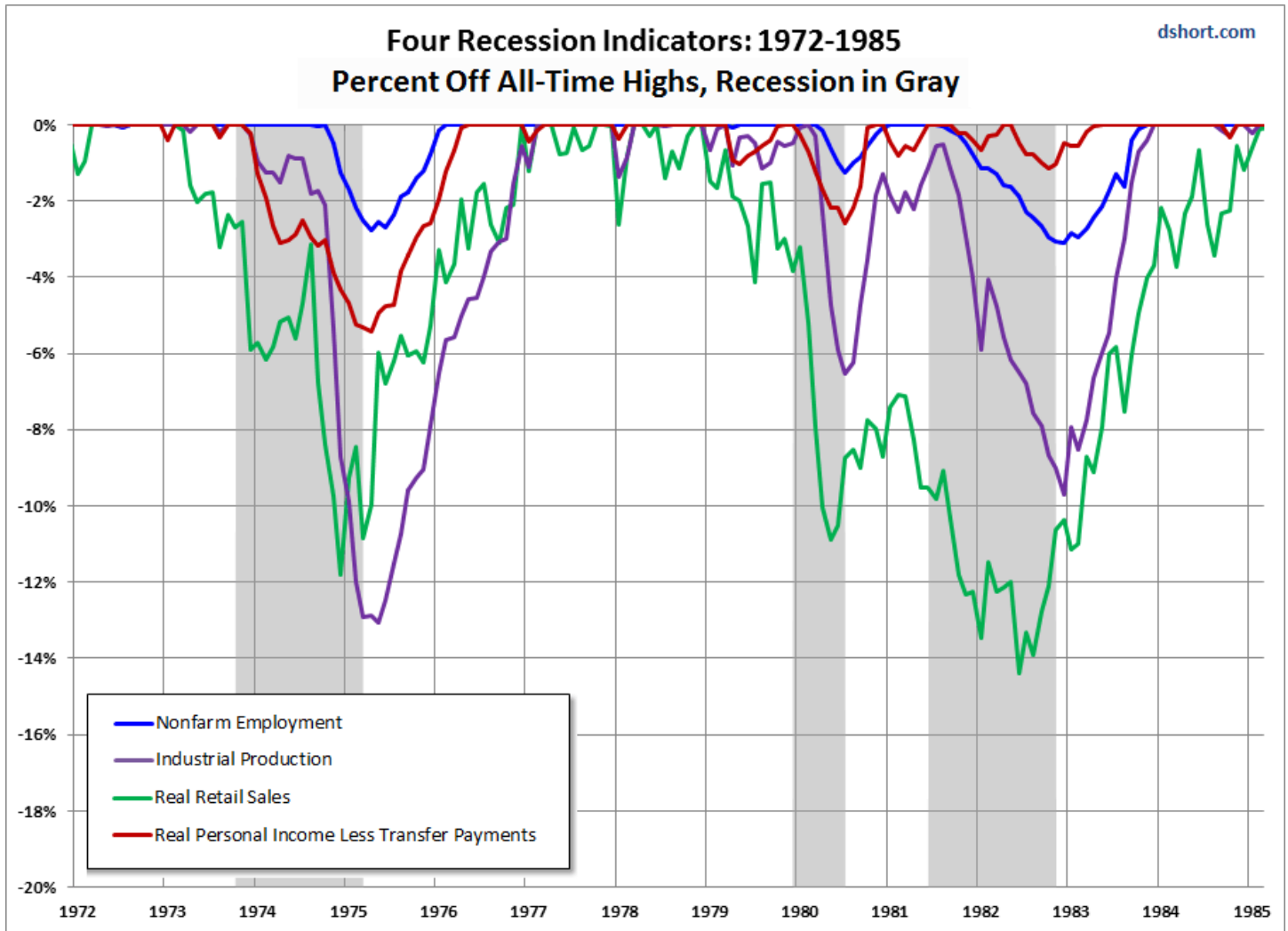
Now let's examine the behavior of these indicators across time. The first chart below graphs the period from 2000 to the present, thereby showing us the behavior of the four indicators before and after the two most recent recessions. Rather than having four separate charts, we've created an overlay to help us evaluate the relative behavior of the indicators at the cycle peaks and troughs. (See the note below on recession boundaries).



The chart above is an excellent starting point for evaluating the relevance of the four indicators in the context of two very different recessions. In both cases, the bounce in Industrial Production matches the NBER trough while Employment and Personal Incomes lagged in their respective reversals.

As for the start of these two 21st century recessions, the indicator declines are less uniform in their behavior. We can see, however, that Employment and Personal Income were laggards in the declines.

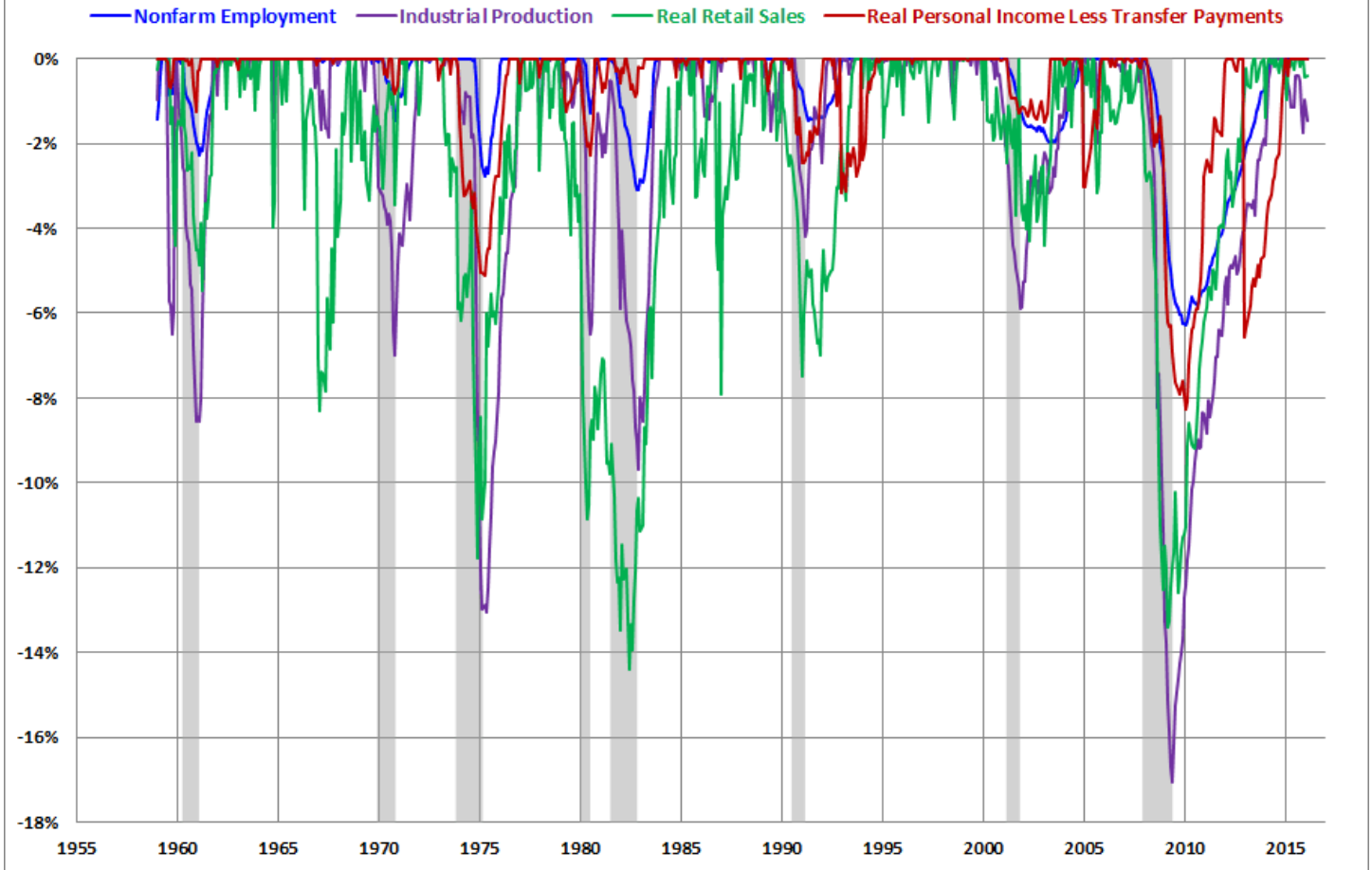
Now let's look at the 1972-1985 period, which included three recessions -- the savage 16-month Oil Embargo recession of 1973-1975 and the double dip of 1980 and 1981-1982 (6-months and 16-months, respectively).



And finally, for sharp-eyed readers who can don't mind squinting at a lot of data, here's a cluttered chart from 1959 to the present. That is the earliest date for which all four indicators are available. The main lesson of this chart is the diverse patterns and volatility across time for these indicators. For example, retail sales and industrial production are far more volatile than employment and income.

Four Recession Indicators Since 1959 Percent Off All-Time Highs, Recessions in Gray

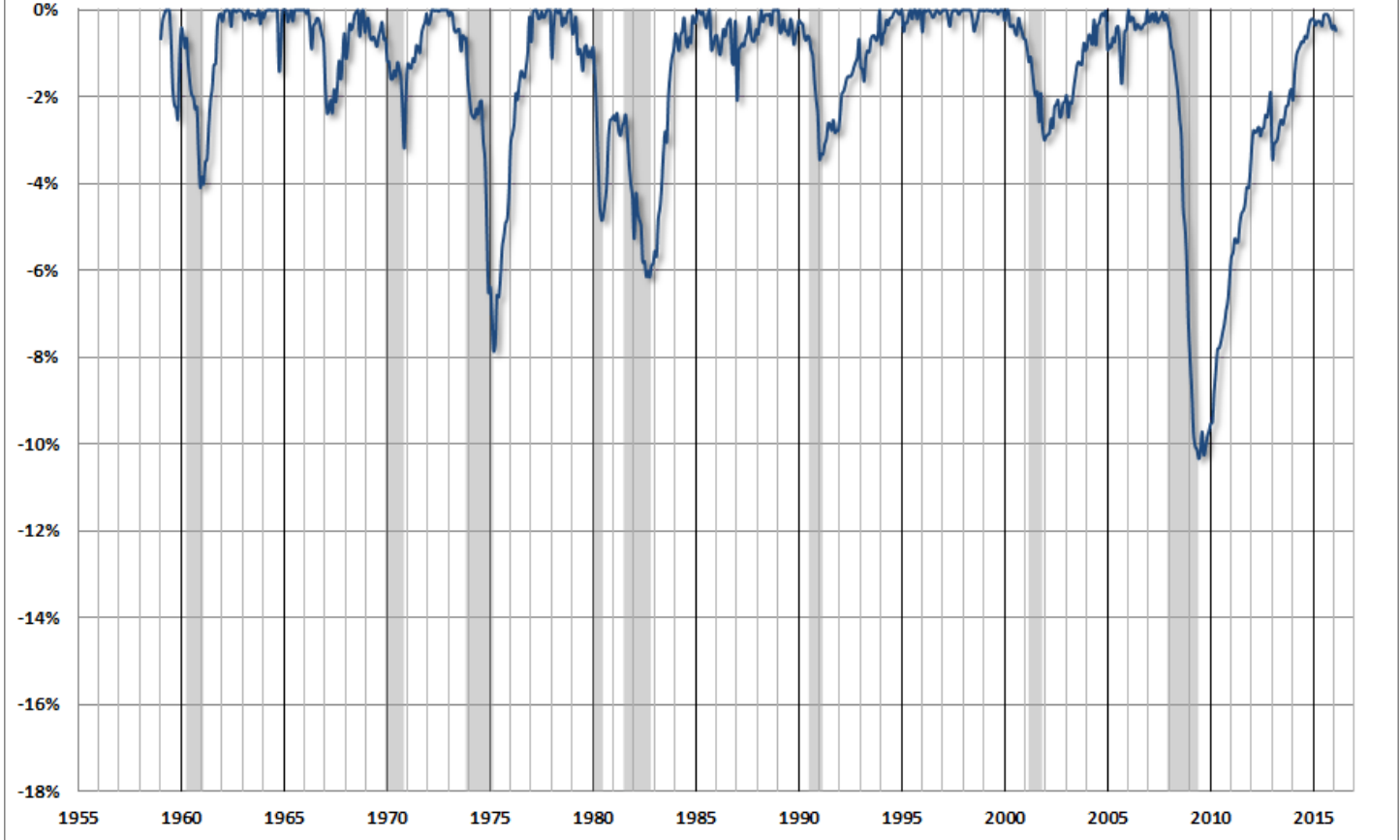
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History tells us the brief periods of contraction are not uncommon, as we can see in this big picture since 1959, the same chart as the one above, but showing the average of the four rather than the individual indicators.

**Average of the Four Big Indicators
Percent Off Its All-Time High, Recessions in Gray**

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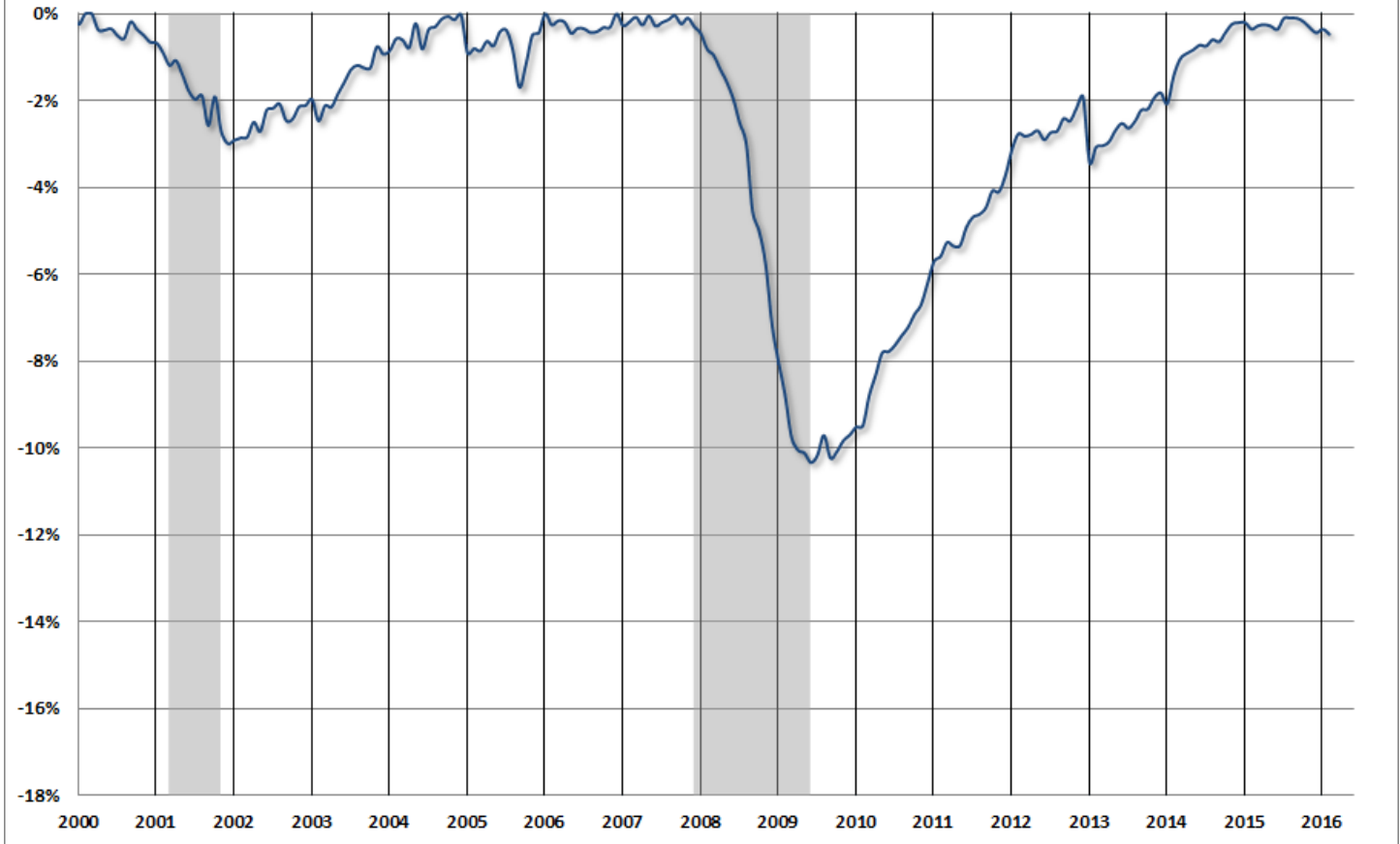


The chart clearly illustrates the savagery of the last recession. It was much deeper than the closest contender in this timeframe, the 1973-1975 Oil Embargo recession. While we've yet to set new highs, the trend has collectively been upward, although we have that strange anomaly caused by the late 2012 tax-planning strategy that impacted the Personal Income.

Here is a close-up of the average since 2000.

**Average of the Four Big Indicators Since 2000
Percent Off Its All-Time High, Recessions in Gray**

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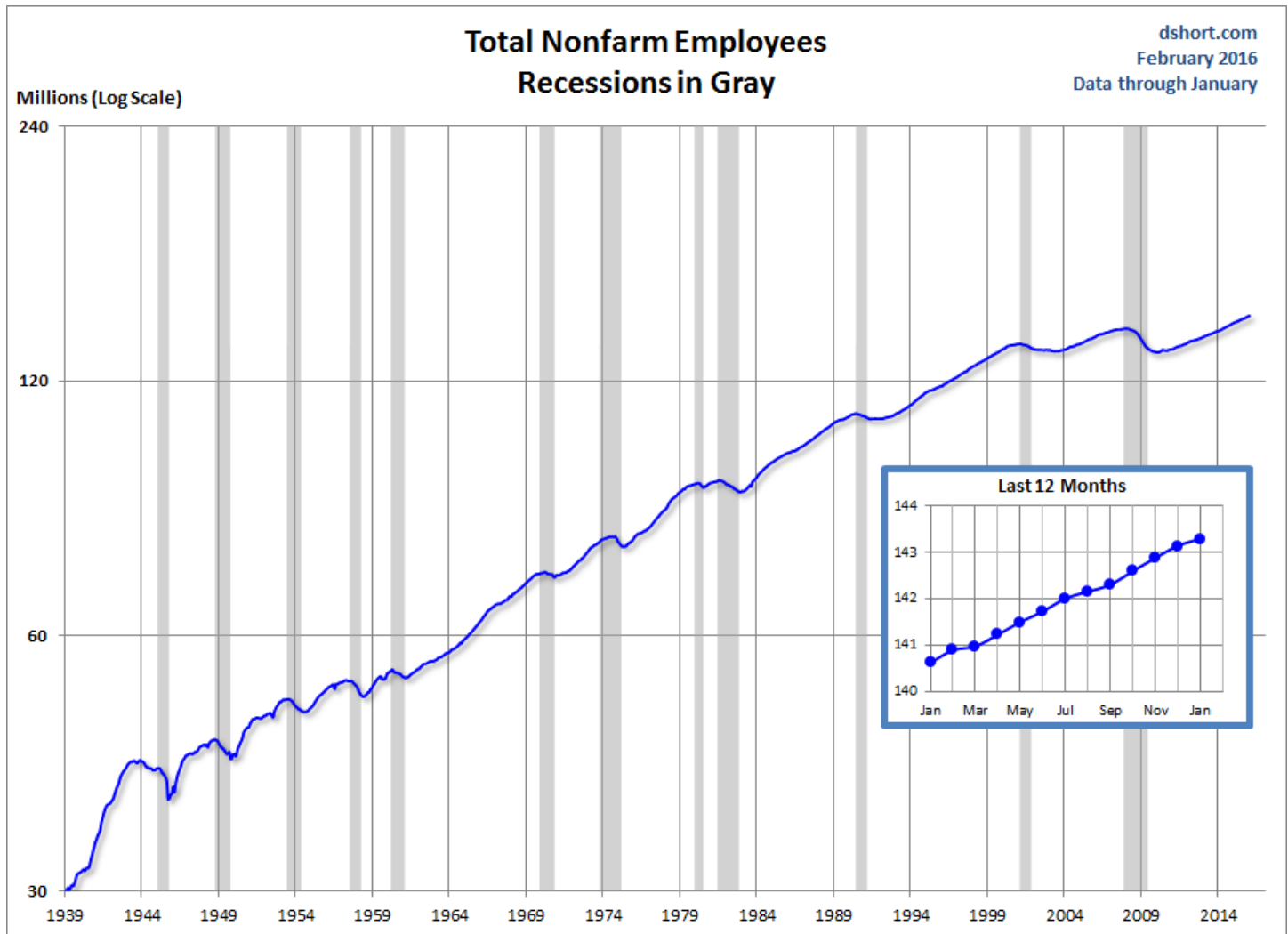
Appendix: Chart Gallery with Notes

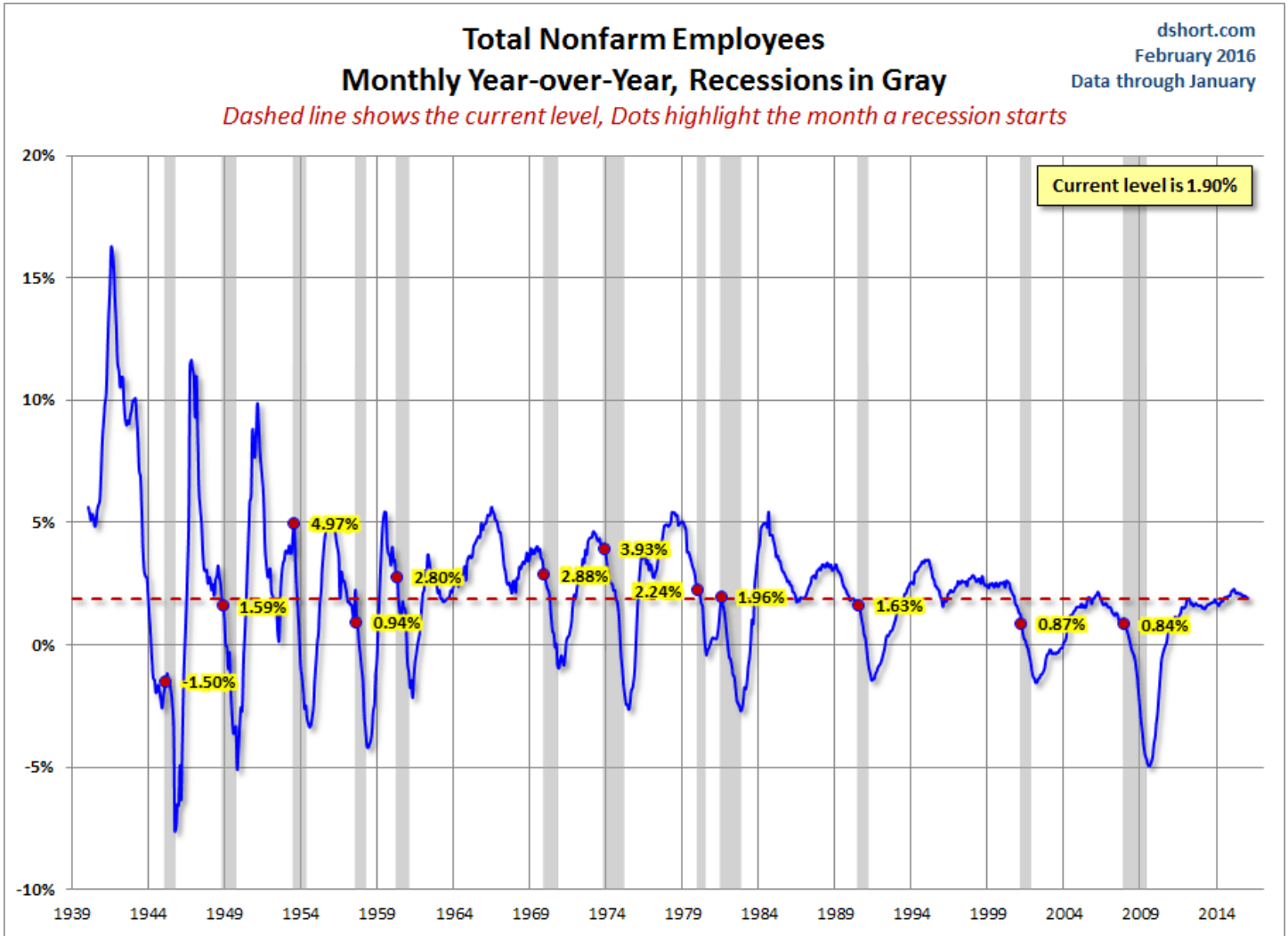
Each of the four major indicators discussed in this article are illustrated below in three different data manipulations:

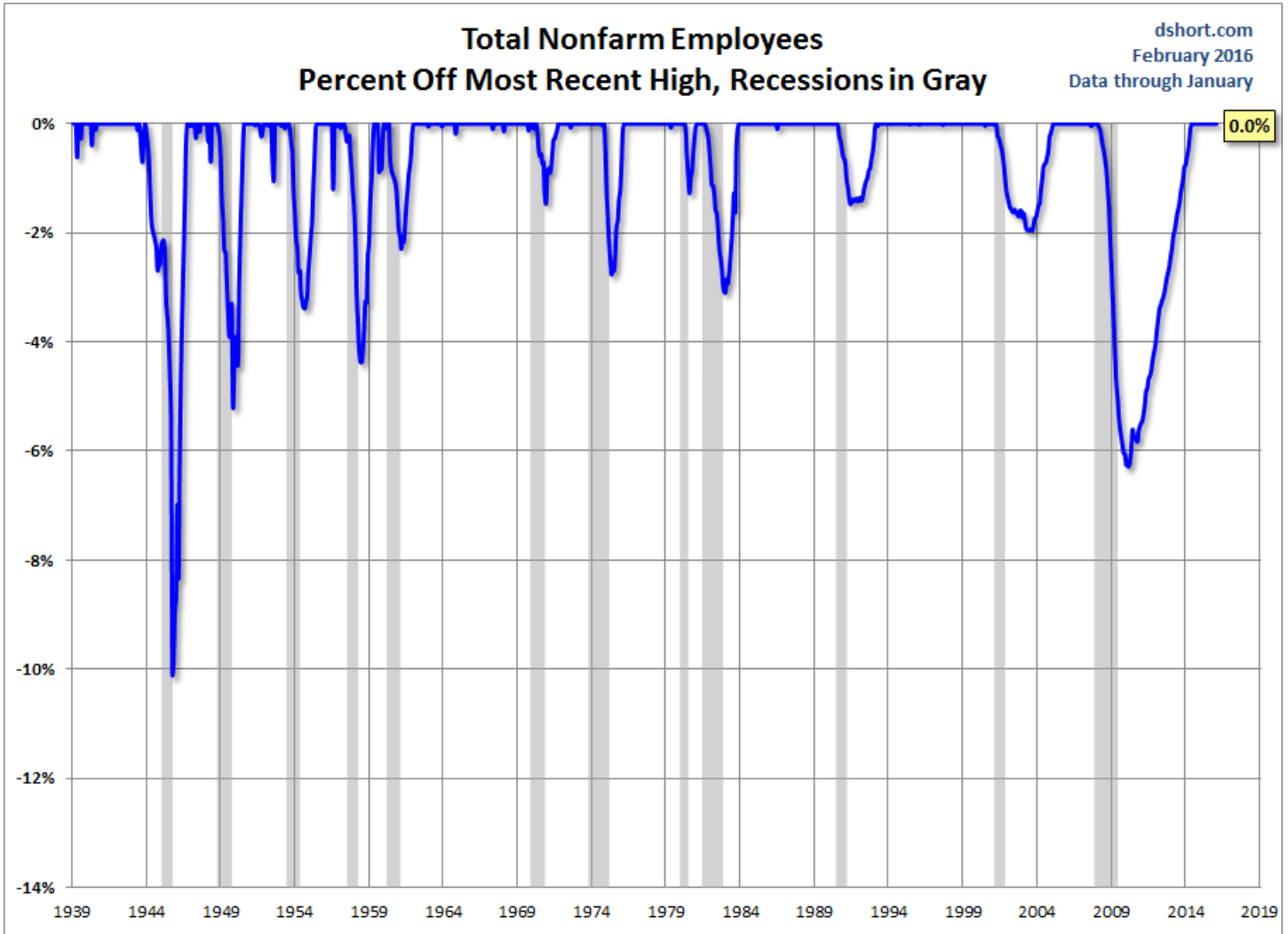
1. A log scale plotting of the data series to ensure that distances on the vertical axis reflect true relative growth. This adjustment is particularly important for data series that have changed significantly over time.
2. A year-over-year representation to help, among other things, identify broader trends over the years.
3. A percent-off-high manipulation, which is particularly useful for identifying trend behavior and secular volatility.

Total Nonfarm Employees

There are many ways to plot employment. The one referenced by the Federal Reserve researchers as one of the NBER indicators is Total Nonfarm Employees (PAYEMS).

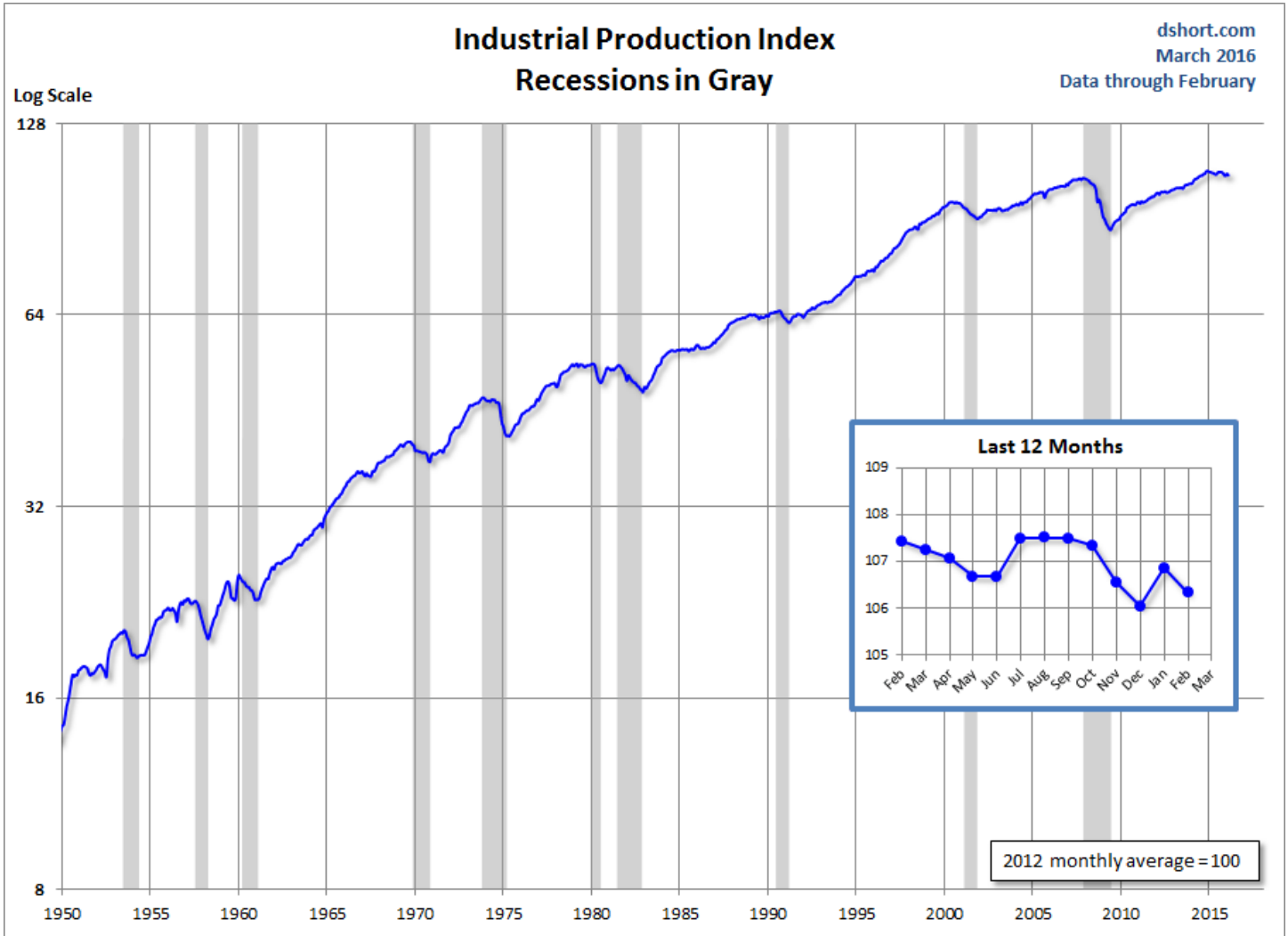






Industrial Production

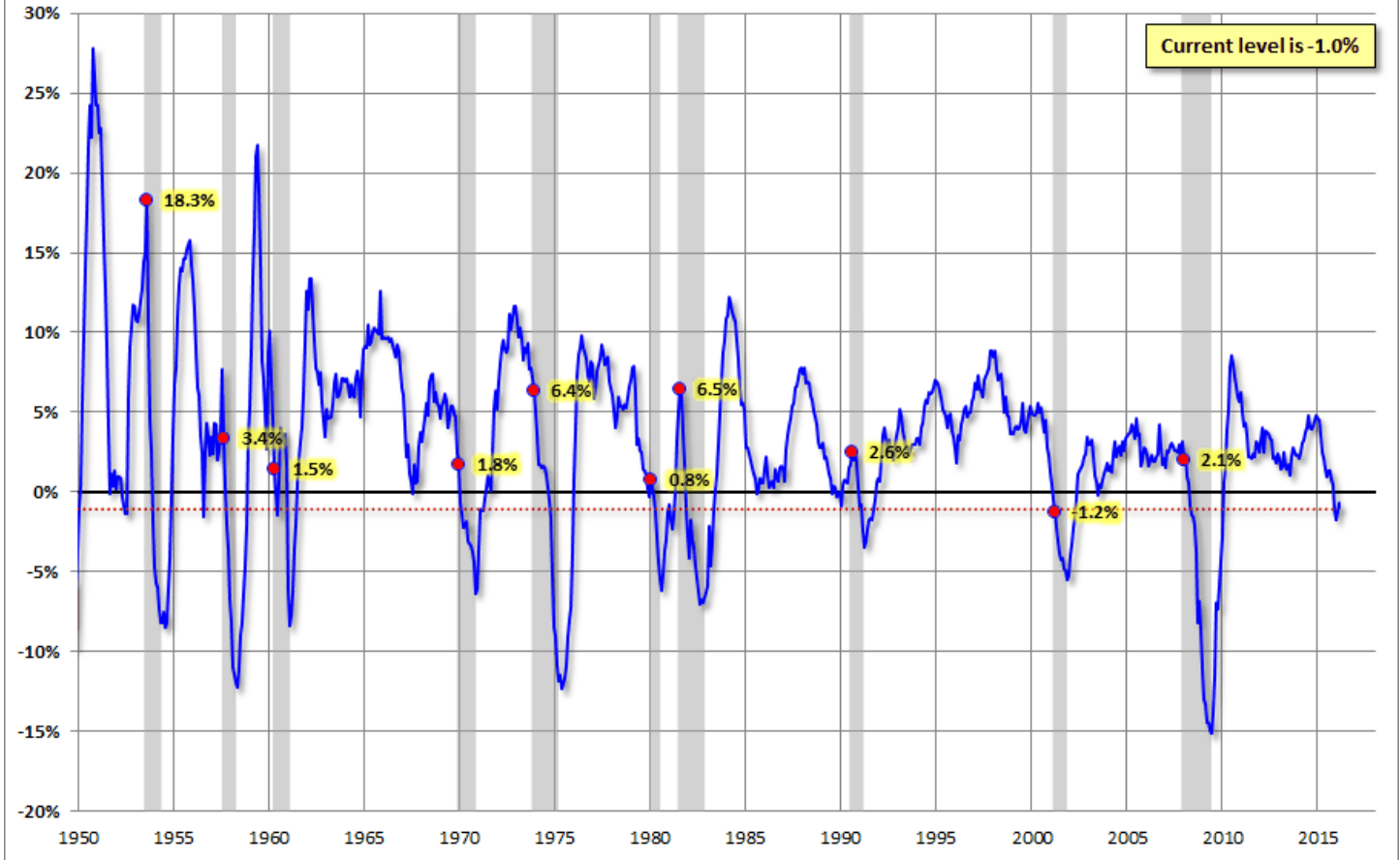
The US Industrial Production Index (INDPRO) is the oldest of the four indicators, stretching back to 1919, although we've dropped the earlier decades and started in 1950.

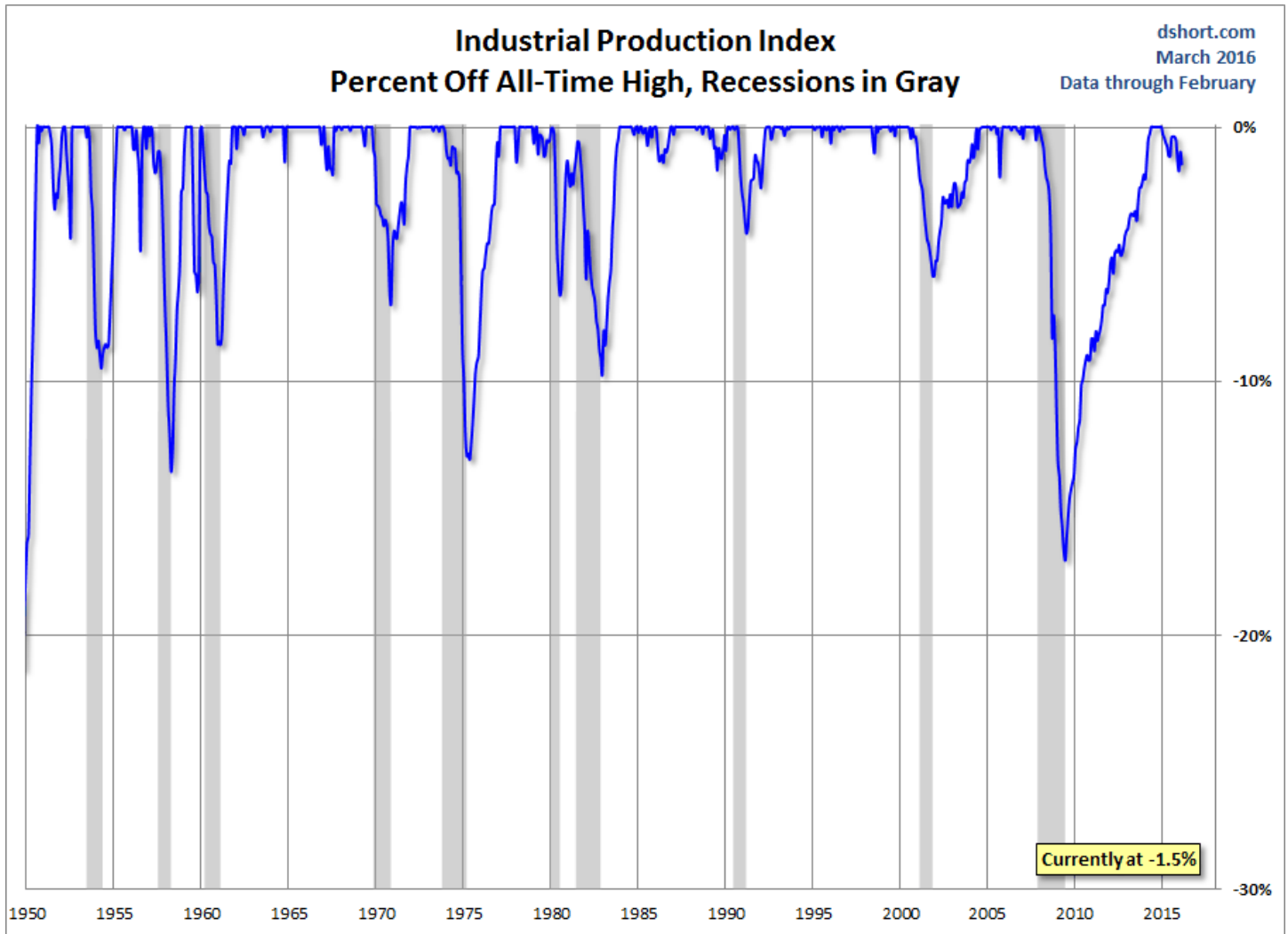


Industrial Production Index Year-over-Year Percent Change with Recessions

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Data through February

Dashed line shows the current level, Dots highlight the month a recession starts





Real Retail Sales

This indicator is a splicing of the discontinued retail sales series (RETAIL, discontinued in April 2001) with the Retail and Food Services Sales (RSAFS) and deflated by the seasonally adjusted Consumer Price Index (CPIAUCSL). We've used a splice point of January 1995 because that date was mentioned in the FRED notes. Our experiments with other splice techniques (e.g., 1992, 2001 or using an average of the overlapping years) didn't make a meaningful difference in the behavior of the indicator in proximity to recessions. We've chained the data to the latest CPI.

Real Retail Sales Growth Since 1947

With an Exponential Regression

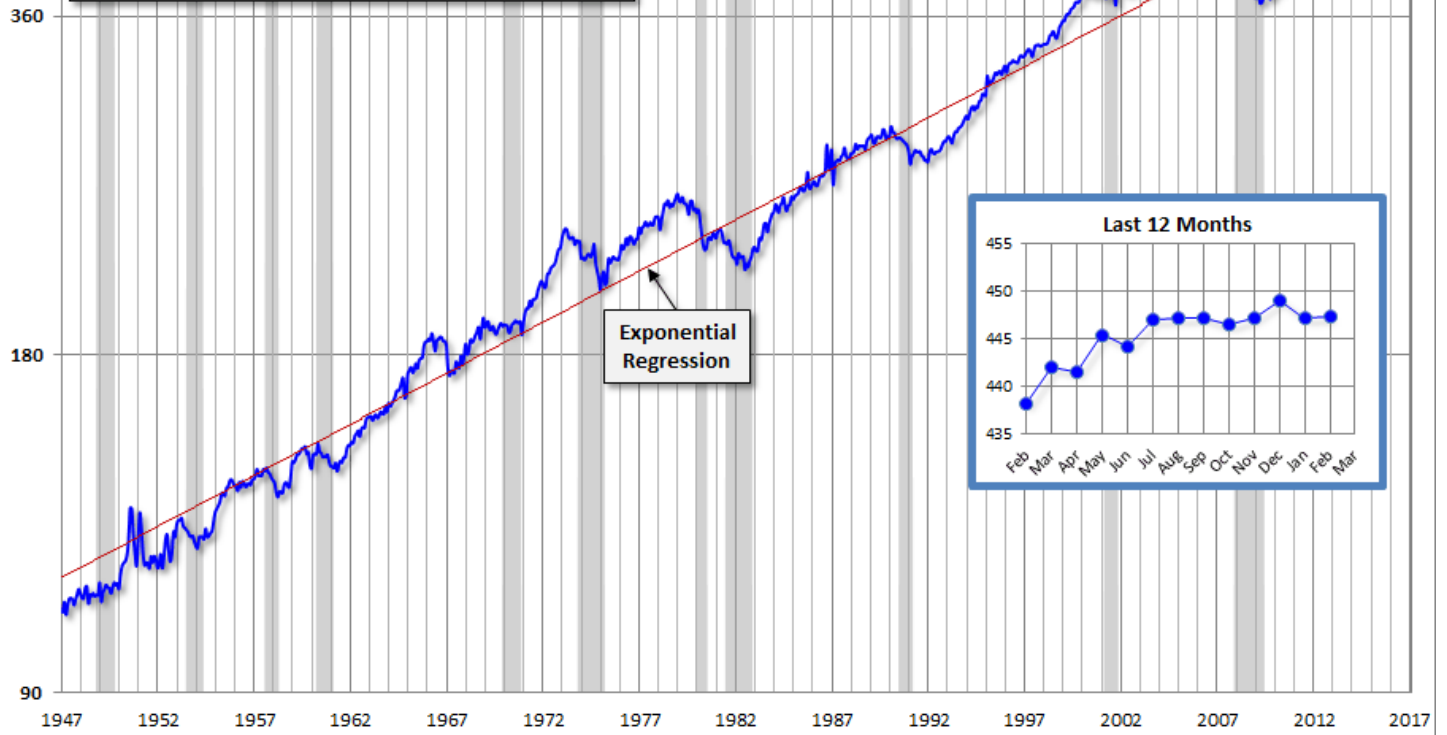
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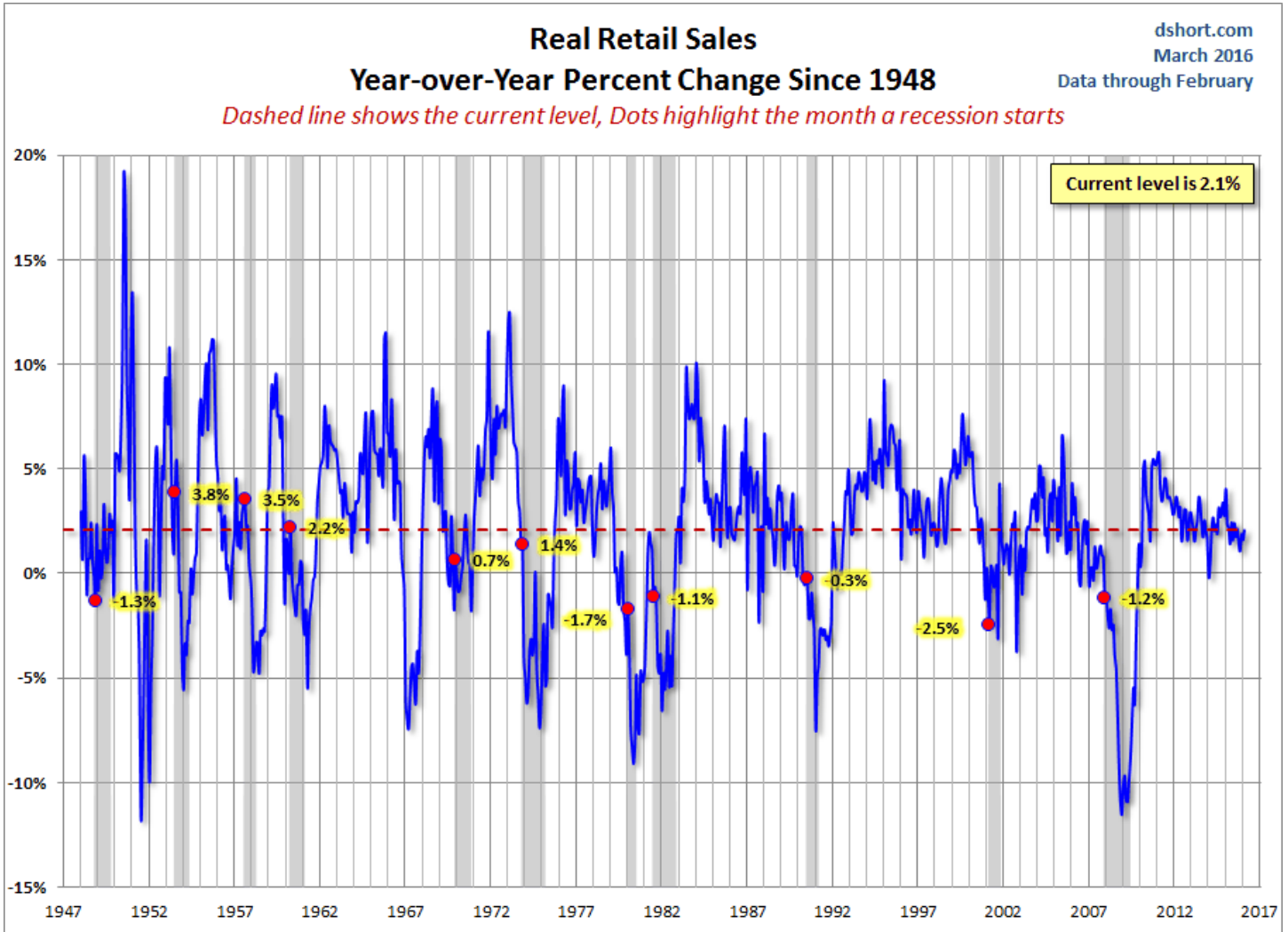
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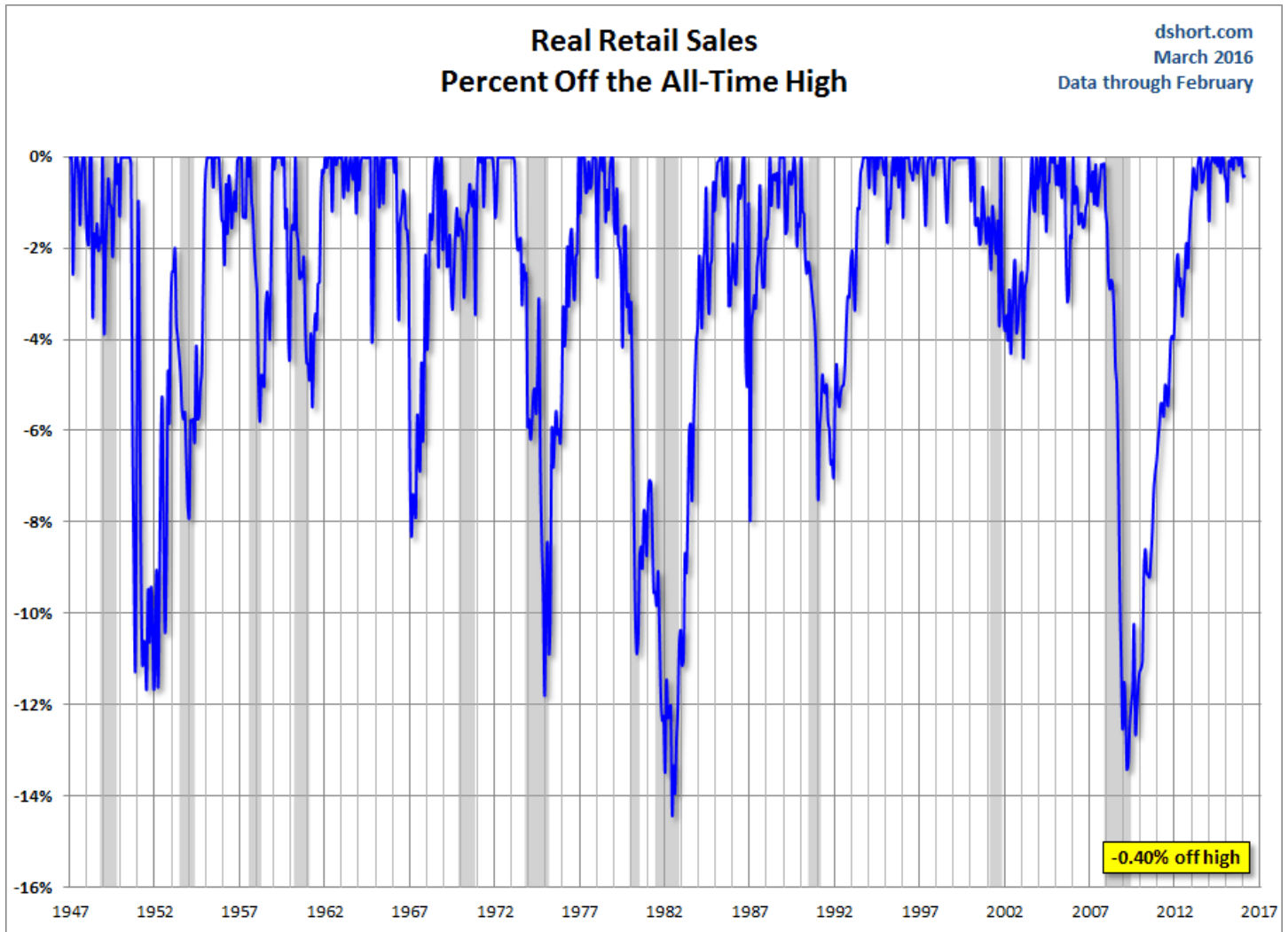
Data through February

Billions (Log scale)

Real Retail Sales is computed as follows:
 The FRED discontinued retail sales series (RETAIL, discontinued in April 2001) spliced with the Retail and Food Services Sales (RSAFS) deflated by the Consumer Price Index (CPIAUCSL). The splice point is January 1995.







Real Personal Income Less Transfer Receipts

This data series is computed by taking Personal Income (PI) less Personal Current Transfer Receipts (PCTR) and deflated using the Personal Consumption Expenditure Price Index (PCEPI). We've chained the data to the latest price index value.

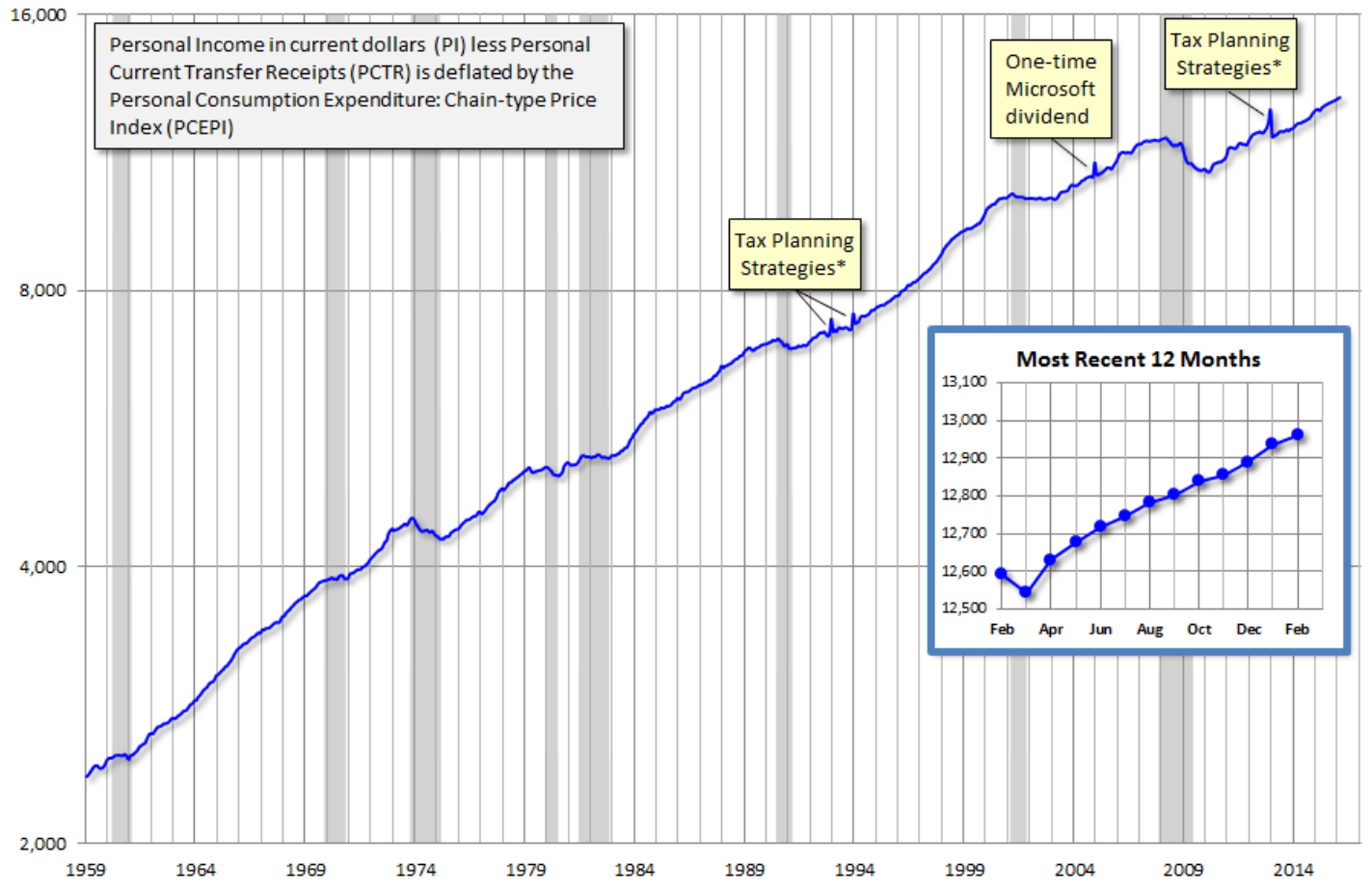
The "Tax Planning Strategies" annotation refers to shifting income into the current year to avoid a real or expected tax increase.

Real Personal Income Less Transfer Receipts Recessions in Gray

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Data through February

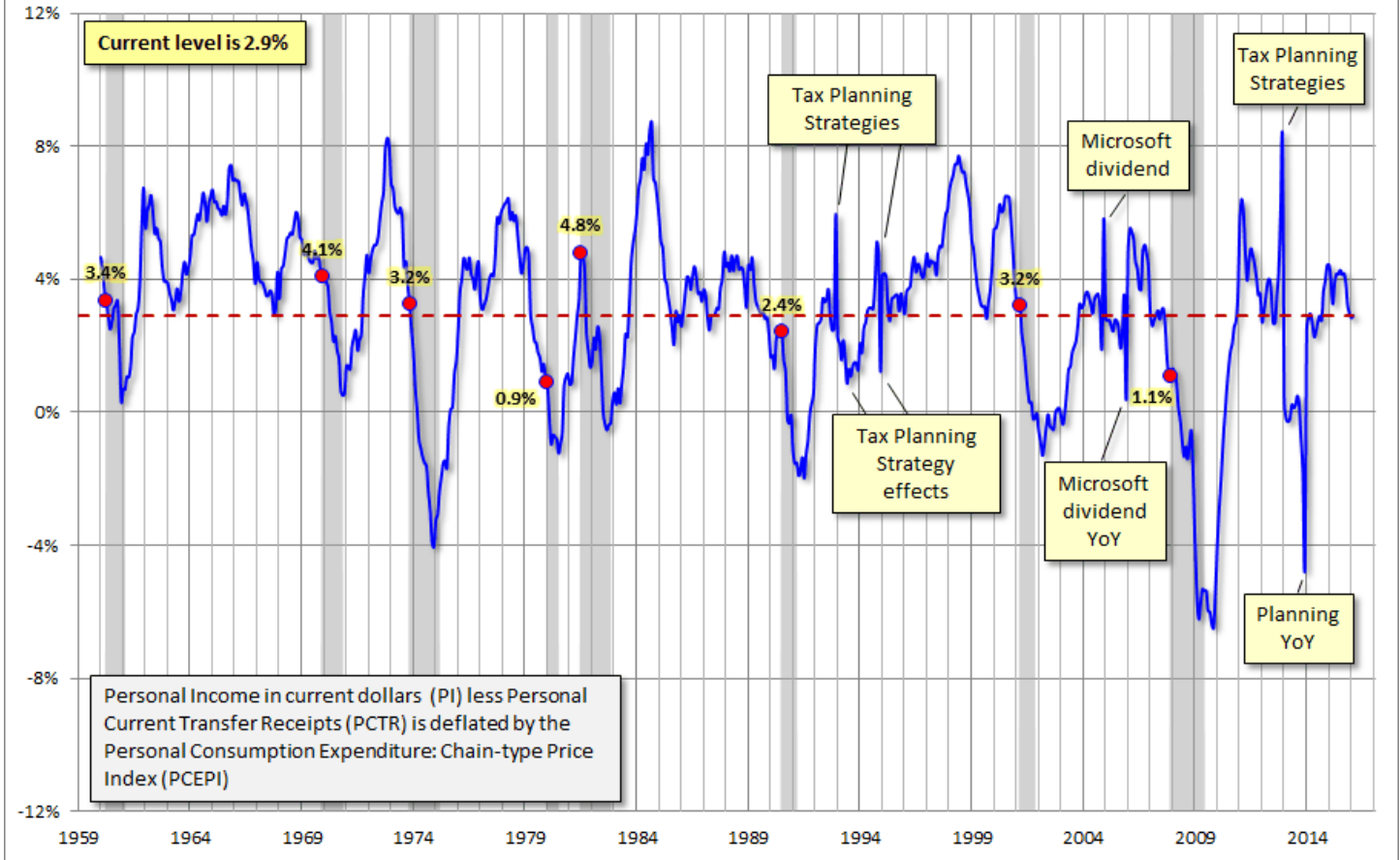
Billions (Log Scale)

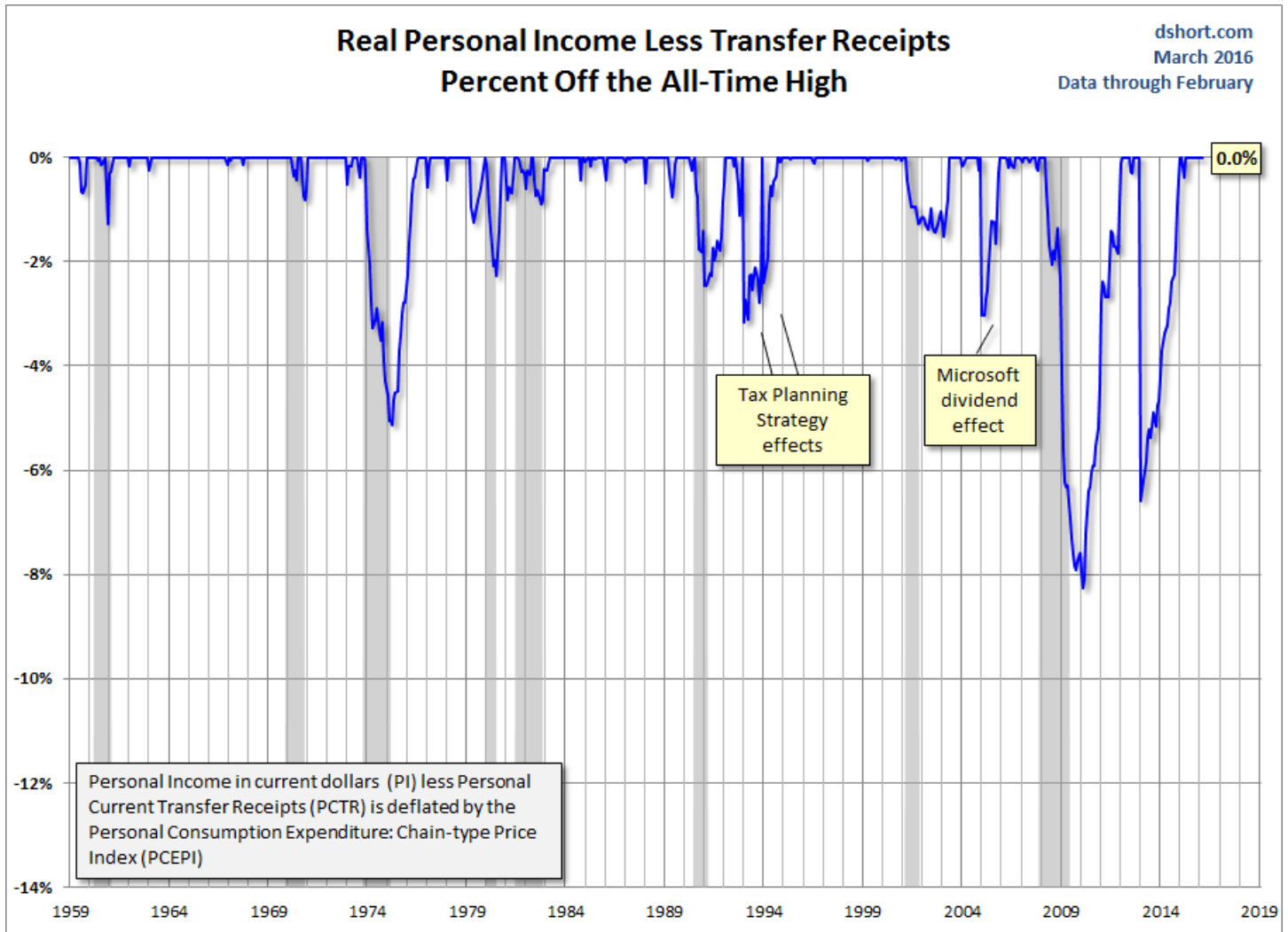


Real Personal Income Less Transfer Receipts Year-over-Year Percent Change Since 1960

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Data through February

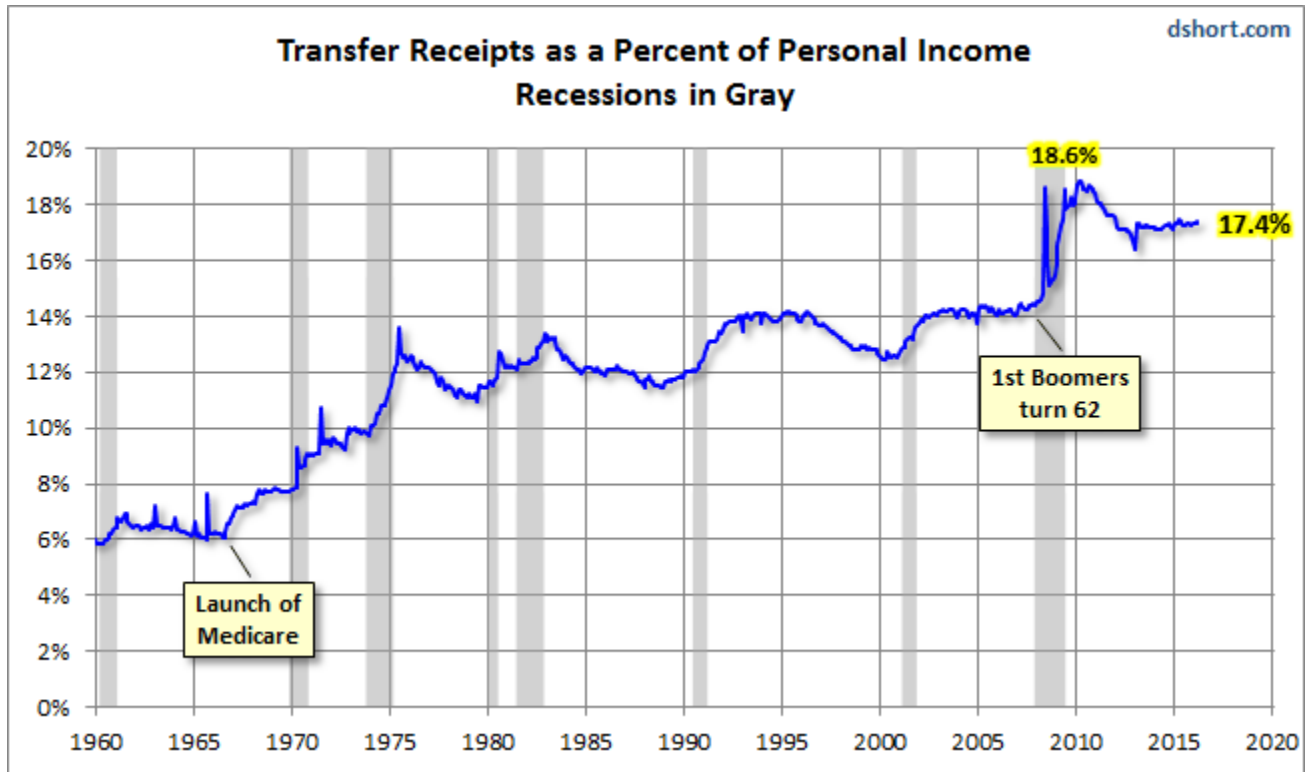
Dashed line = current level, Dots = month a recession starts





Transfer Payments largely consist of retirement and disability insurance benefits, medical benefits, income maintenance benefits (more here).

The chart below shows the Transfer Payment portion of Personal Income. We've included recessions to help illustrate the impact of the business cycle on this metric.



A Note on Recessions: Recessions are represented as the peak month through the month preceding the trough to highlight the recessions in the charts above. For example, the NBER dates the last cycle peak as December 2007, the trough as June 2009 and the duration as 18 months. The "Peak through the Period preceding the Trough" series is the one FRED uses in its monthly charts, as explained in the FRED FAQs illustrated in this Industrial Production chart.