John Williams'
Shadow Government Statistics
Analysis Behind and Beyond Government Economic Reporting

SPECIAL COMMENTARY NUMBER 877
Industrial Production Benchmark Revision

April 2, 2017

Industrial Production Just Took a Hit with Its Benchmark Revisions, Given Higher-Quality, Weaker Historical Data from 2015

Double-Dip Recession in Production Now Steeper than Previously Indicated

Two or More Consecutive Quarters of Annual Decline in Production Are Unprecedented Outside of Formally-Recognized Recessions; There Were Five, Now There Are Seven Consecutive Quarters in Place

Gold and Silver Mining Activity Revised Sharply Higher

Negative Indications for Pending Benchmark Revisions to Retail Sales, Durable Goods Orders and the GDP

Broad Outlook Continues for Non-Recovering Economic Activity

Issues Foreshadow FOMC Problems, a Weaker Dollar and Stronger Gold

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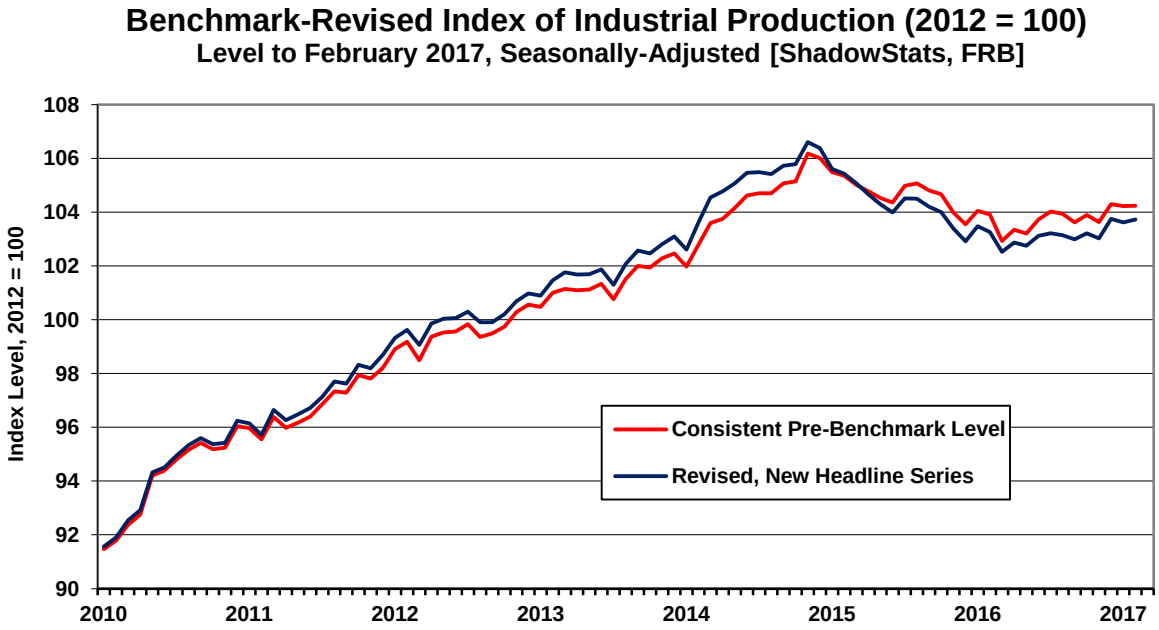
PLEASE NOTE: The next regular Commentary *follows on Tuesday, April 4th covering the February Trade Deficit and Construction Spending, with a subsequent missive on Friday, April 7th, covering March Employment and Unemployment conditions. Please call me at (707) 763-5786, if you have questions or would like to talk.*

Best wishes to all — John Williams

ANNUAL REVISIONS TO INDUSTRIAL PRODUCTION SHOWED AN INTENSIFYING HISTORICAL DOWNTURN IN BROAD ECONOMIC ACTIVITY

Headline Economic Detail Often Is Boosted by Overly-Optimistic Assumptions. The Federal Reserve Board (FRB) published the 2017 Benchmark Revisions to its Index of Industrial Production on March 31st. As usual with the annual benchmarking of government or Federal Reserve economic data, prior reporting revised to the downside, reflecting the availability of better-quality, hard historical numbers. In the current circumstance, the 2015 Census of Manufactures showed that the previously-used, underlying assumptions for production had been overly optimistic (see also the background to the 2016 revisions in *Commentary No. 796-A*). Upside-gimmicked assumptions often are used by the federal government's statistical bureaus, with those assumptions also feeding regularly into the FRB's economic data. As once explained by an official of one of the statistical bureaus, it was a political embarrassment to understate actual economic conditions, but there was no political problem with overstating them.

Graph 1: Benchmark-Revised Monthly Industrial Production (2010 to 2017)



As will be discussed more extensively, the benchmarking now shows a one-quarter economic expansion for the production series, which had plunged in collapse along with the broad economy into 2009. The recovery in third-quarter 2014 to the production series' fourth-quarter 2017 pre-recession high, and one-quarter's expansion in fourth-quarter 2014, were followed by a now-deeper, renewed downturn into first-quarter 2015 and after. That subsequent period now clearly and formally qualifies as a "double-dip" recession in industrial production. A similar pattern eventually should be recognized for the GDP.

While the history of production activity was revised lower in 2015, again, thanks to the new Census of Manufactures, relative growth thereafter in 2016 pretty much followed the prior pattern, consistent with the overly-optimistic assumptions still in place, subject to downside benchmark revisions in the 2018.

Negative Implications. The background and nature of the revised history for the Industrial Production series have negative implications for the pending 2017 annual benchmark revisions to Retail Sales on April 26th, New Orders for Durable Goods on May 18th, and ultimately with the broadest and most-heavily gimmicked of the major economic series, the Gross Domestic Product (GDP) on July 28th.

The results here also are consistent with a darkening pattern of weaker headline economic activity in the months ahead. As previously and currently argued by ShadowStats (see *Commentary No. 873* and *No. 859 Special Commentary*), that should cause the FRB's Federal Open Market Committee (FOMC) to shift policy away from tightening, back towards some expanded form of quantitative easing, in response to resulting liquidity and solvency deterioration in the domestic banking system. Such has severely negative implications for the exchange rate value of the U.S. dollar and highly positive implications for primary inflation hedges—stores of real wealth and purchasing power—such as gold and silver. Interestingly, previously flat at a low level of activity, Gold and Silver Mining was revised higher and now is up-trending, with the new production levels the highest since 2013 (see *Graph 18*).

Some Hard Numbers and Summary Detail. Again, the benchmark revision showed a steeper decline in the production series, to date. Versus the pre-recession peak monthly activity of November 2007, the revised February 2017 level was down by a revised 1.52% (-1.52%), versus a pre-revision decline of 1.04% (-1.04%). Against a revised December 2014 near-term recovered peak, February 2017 was down by 2.70% (-2.70%), versus a drop of 1.52% (-1.52%) before the benchmarking. Versus its initial reporting, February 2017 production revised lower by 0.49% (-0.49%).

On a quarterly basis, two or more consecutive quarters of year-to-year decline never have been seen in the 99-year history of the Industrial Production series, outside of what eventually would be recognized as a formal recession. Coming into the benchmarking, there had been five consecutive quarters of annual decline (fourth-quarter 2015 through fourth-quarter 2016), post-benchmarking there now are seven consecutive quarters of annual decline (second-quarter 2015 through fourth-quarter 2016). In like manner, the number of consecutive months of year-to-year decline expanded from fifteen to twenty.

The decline in aggregate production was dominated by the Manufacturing sector (see *Graph 8*), revised lower in February 2017 by 0.89% (-0.89%), versus prior reporting. That primarily reflected downside revisions to durable goods production, both consumer and industrial. The revised usual graphs of Consumer Goods (*Graphs 10* to *12*) follow, where nondurable consumer goods, such as food and clothing, revised higher. Manufacturing did not recover its December 2007 pre-recession peak, either before or after the benchmarking. Versus its pre-recession high, benchmarked Manufacturing in February 2017 was down by 5.82% (-5.82), having been down by 4.97% (-4.97%) before the revision.

The irregular and weather-dominated Utilities Sector (see *Graph 13*) was revised higher by 0.51% in February 2017.

The Mining sector (see *Graph 14*) revised lower by 2.78% (-2.78%) for February 2017. On the upside were Coal Mining and Gold and Silver Mining (*Graphs 17* and *18*). Oil and Gas Extraction (*Graph 15*) revised minimally lower in the most-recent reporting, incorporating a pattern of regularly-increased

weighting of that series that otherwise increased the patterns of growth in overall mining in the 2011-to-2013 period, adding an upside bias to the Mining Sector

Quarterly Benchmark-Revisions to Industrial Production Showed a Somewhat Deeper Double-Dip Recession, in the Context of Business-Cycle Definitions. Updating prior *Commentary No. 876*, the headline downturn in Industrial Production from fourth-quarter 2014 remained in place and likely still will serve as the benchmark for timing the onset of a yet-to-be-recognized, formal U.S. economic recession. Yet the ensuing production downturn deepened, reflecting a much-weaker 2015, based again on upgraded production-data quality, with the availability of the 2015 Census of Manufactures.

Examined in the context of standard business-cycle definitions, Industrial Production and other key series are at significant variance with the headline economic recovery and subsequent expansion reported in real, inflation-adjusted U.S. Gross Domestic Product (GDP), since its collapse into 2009.

Where Industrial Production represents roughly 61% of GDP, and it is a traditional indicator used in the timing and calling of official recessions, the U.S. economy likely never fully recovered from its downturn into 2009, and likely faltered anew in late-2014, as discussed in the *Opening Comments* of the March 30th *Commentary No. 876*. Examined and discussed there (see *Graphs 1*, *6* and *Table 1* of that missive), headline real GDP declined from its pre-recession peak in fourth-quarter 2007 by 4.2% (-4.2%) to its trough in second-quarter 2009. It entered a period of recovery—still below its pre-recession peak—recovering same in third-quarter 2011, and it has been in a period of expansion since, up by 12.2% from its pre-recession high, as of fourth-quarter 2016.

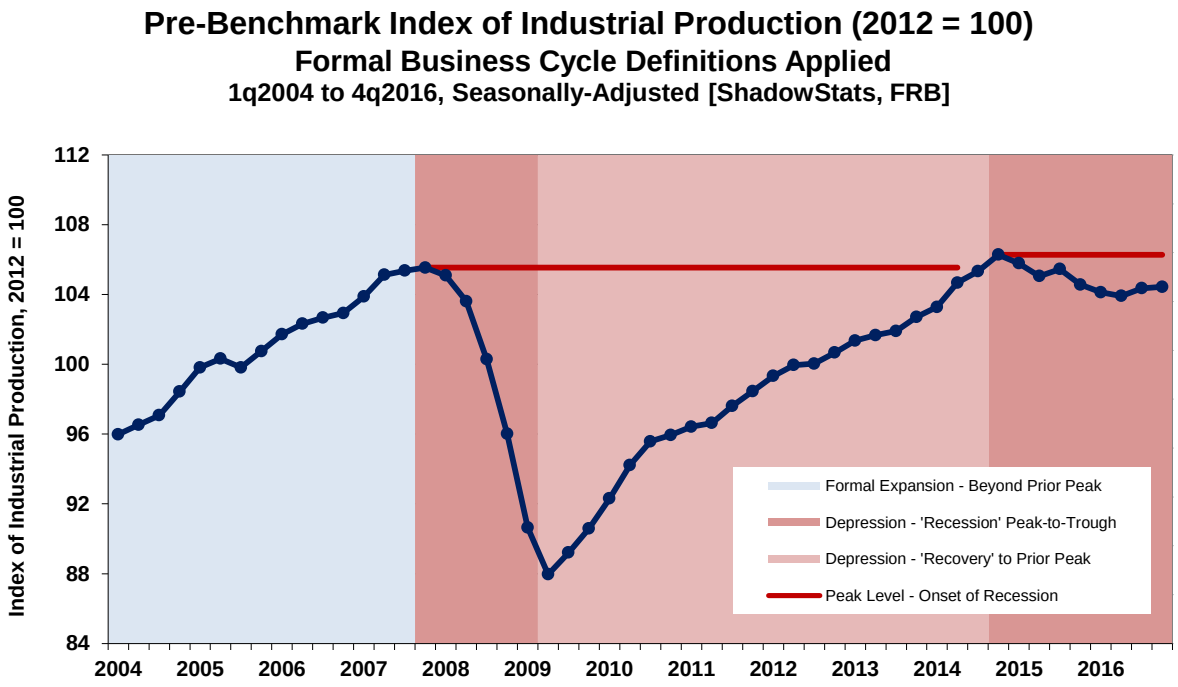
In contrast, before the March 31st annual benchmark revisions, headline Industrial Production had declined from its pre-recession peak in fourth-quarter 2007 by 15.5% (-15.5%) to its trough in third-quarter 2009. It entered a period of recovery—still below its pre-recession peak—recovering that peak for one quarter in fourth-quarter 2014, falling back the next quarter in a double-dip recession, where it held at 1.0% (-1.0%) below its pre-recession peak of fourth-quarter 2007, down by 1.7% (-1.7%) versus its one-quarter peak activity in fourth-quarter 2014, never having entered a period of quarterly expansion (see accompanying *Graph 2*).

The benchmark revisions to Industrial Production showed a more severe double-dip recession, incorporating the just-available hard data out of the 2015 Census of Manufactures. Post revisions (see accompany *Graph 3*), headline Industrial Production still declined from its pre-recession peak in fourth-quarter 2007 by 15.5% (-15.5%) to its trough in third-quarter 2009.

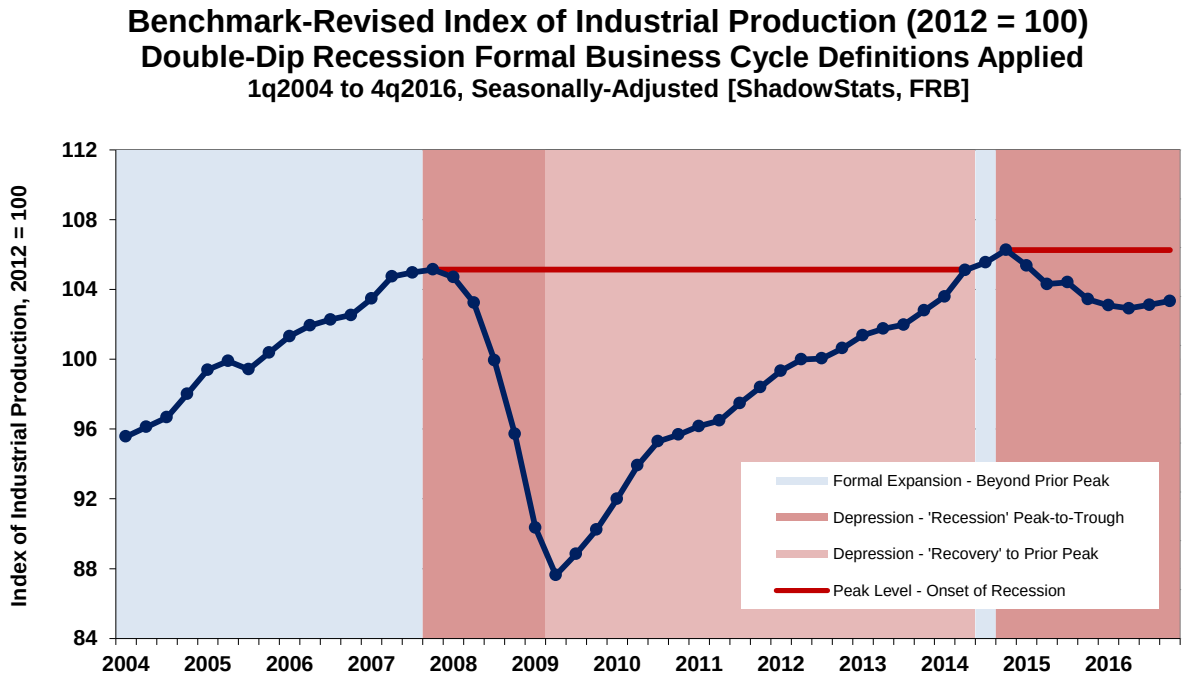
It entered a period of recovery—still below its pre-recession peak—recovering that peak a quarter earlier than before and for two quarters, in third- and fourth-quarter 2014, with one quarter of 1.1% net expansion. Production still fell back, however, in first-quarter 2015 at the onset of the double-dip recession, holding at 1.6% (-1.6%) below its pre-recession peak of fourth-quarter 2007, as of fourth-quarter 2016, while it was down by 2.8% (-2.8%) from its one-quarter expansion in fourth-quarter 2014.

[Graphs 2 and 3 follow on the next page.]

Graph 2: Pre-Benchmarking Industrial Production – Business-Cycle Definitions



Graph 3: Benchmark-Revised Industrial Production – Business-Cycle Definitions



The Fed's Distorted Production-Revision Graphs and ShadowStats' Corrections. The pattern of relative upside revisions to activity before 2015 in *Graph 1* was due largely to a pattern of accelerating upside revisions to the weighting of the Oil and Gas industry components of the Mining Sector, coming

into 2014. Those upside revisions, however, are not obvious when viewed in the FRB's plots of the comparative before-and-after Industrial Production series provided along with the benchmarking details.

The accompanying ShadowStats graphs reflect the prior and revised production series on a consistent basis. The graphs in the Federal Reserve Boards' *Press Release* do not do so, visually overstating the magnitude of the downside benchmark revisions.

Indexed with the annual average for 2012 = 100, comparative growth rates within the Index of Industrial Production (IIP) are not affected by the index-base year. There are problems, however, in terms of comparative, graphic-level representations for pre- and post-benchmarking periods, if the revisions pre-date the index year, as just happened.

The Fed's revision graphs, in the opening part of the *Press Release* are misleading. Both the original and revised series are indexed to 2012 = 100 and plotted in comparison, but the year 2012 in the benchmarking was revised lower by 0.47% (-0.47%), before being boosted and re-indexed to 2012 = 100, which left the new series equal to the previously reported old one in 2012. Putting both series on a consistent visual basis requires a relative downside revision to the plotted old series by 0.47% (-0.47%) as well. As a result, what is shown officially as a 0.98% (-0.98%) downside revision in the level of the February 2017 (headline new series versus old series with the same index levels) actually was a revision of 0.49% (-0.49%) on a consistently-indexed basis. The differences vary largely by series, due to the particular phenomenon with the re-indexing of the revised data.

The underlying reporting details were revised back only to January 1972, but if one views both the headline revised and prior series back to 1919, they no longer have a common starting point. Again, the revised series still is 0.47% (-0.47%) lower than what it should have been, in its prior, equivalent level, for purposes of plotting the series on a comparative basis. As result, the Fed's comparative graphs show "downside" revisions to some series, pre-2012, where none took place. In such a circumstance, the revised plot is too low in a consistent comparison with the earlier graph, forcing the 2012 point of equivalence. Consider that a series with 2009 = 100 (as seen with the GDP) would end up showing different net revisions of the new-series versus the old series, than what was just published, as would series based with 1972 or 1919 = 100.

Such can be seen in the FRB's plot of revised Industrial Production on page 7 of the press release, versus *Graph 4* here, where the "new" red line should be coincident with the "prior" black line in the period before 1972, before any actual benchmarking. I apologize for any confusion created by my standard use of a red line to show the old series, where the Fed uses a red or colored line to show the new series.

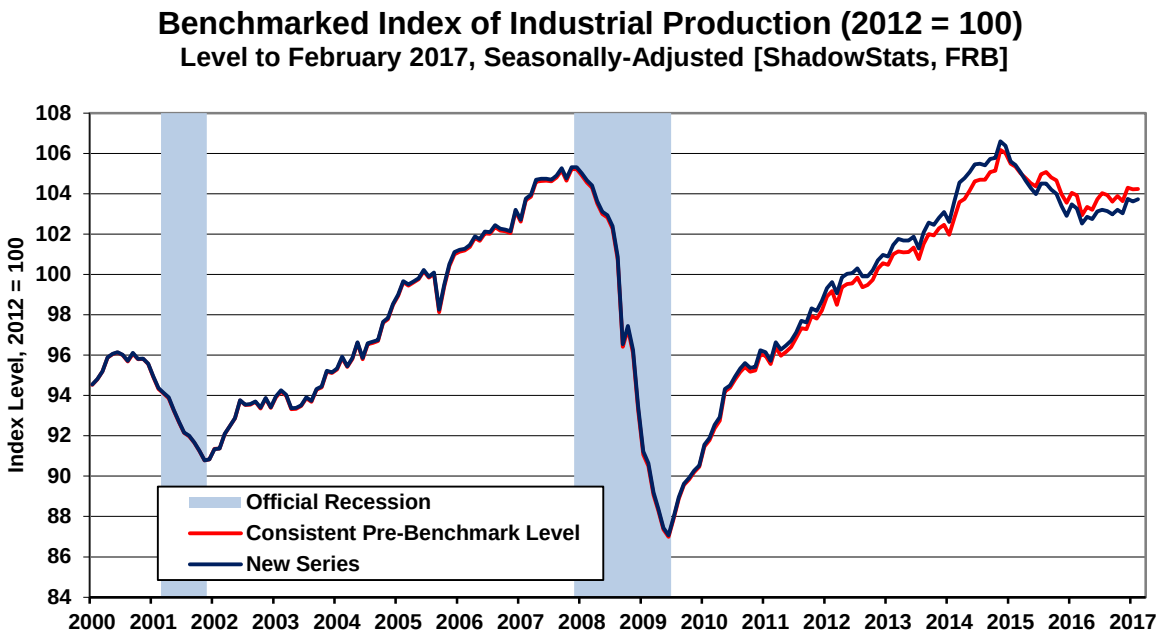
NOTE: With the exception of Graph 2, Graphs 1 to 20 are plotted with the headline, revised series, as published, versus the prior, original series plotted on a fully consistent basis. The old data have been adjusted to account for the re-indexing distortions (reduced by 0.47% [-0.47%]), so that both the old and new series' common starting points indeed are "common," with the actual benchmarking revisions surfacing only after January 1972, when they were made.

Graph 2 *is shown as plotted in Commentary No. 876. The plots on either basis are internally consistent in terms of any period-to-period changes in growth; the two plots just are not comparable when plotted in the same graph with both series indexed to 2012 = 100.*

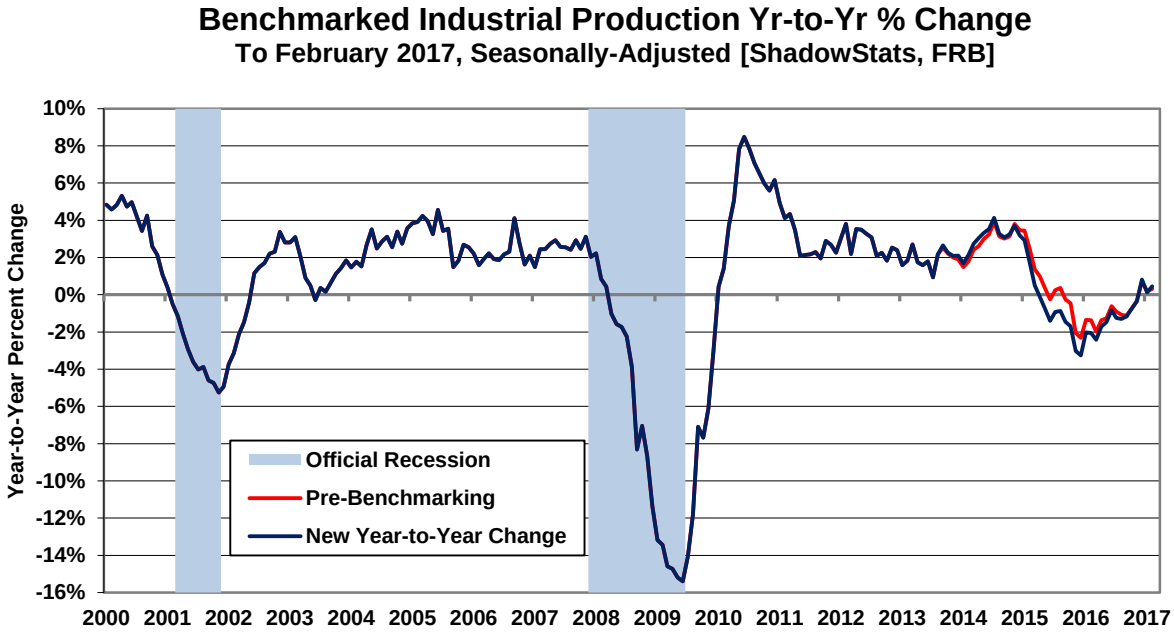
Regular Reporting Resumes on April 15th. The regular reporting of headline March 2017 industrial production and new revisions to the most-recent six months follows on April 18th (*Commentary No. 881*). More benchmarking detail will be reviewed in that coverage. Subscribers looking for specific detail are invited to make a request by e-mail to johnwilliams@shadowstats.com. We shall do our best to accommodate your needs. Prior monthly reporting detail is found in *Commentary No. 874* of March 17th.

Schedule of Graphs

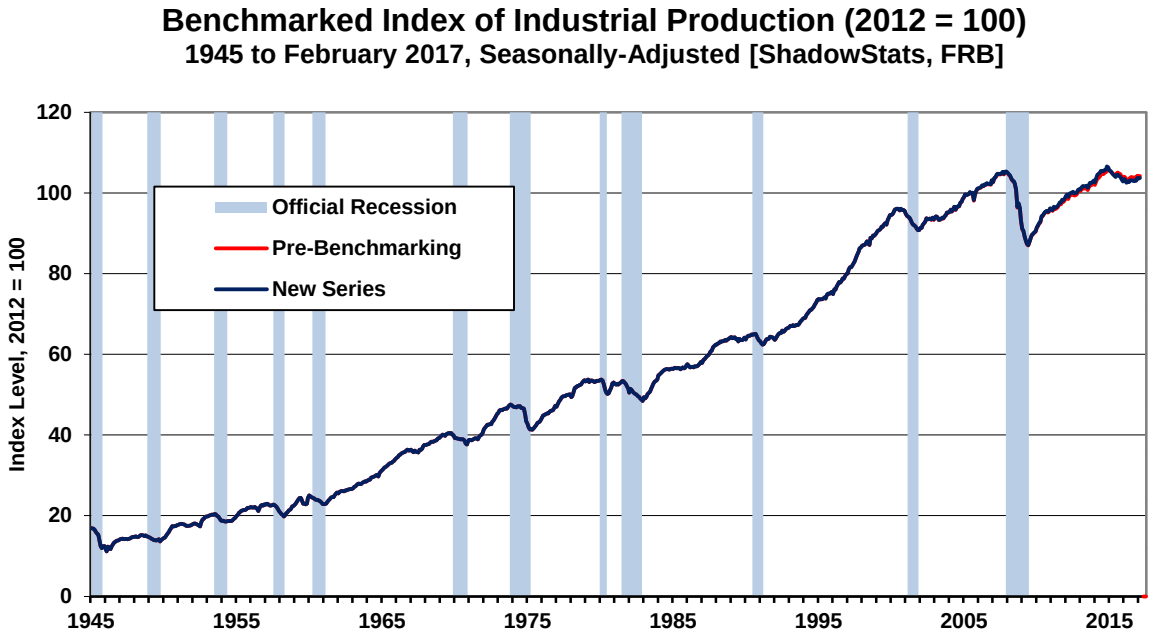
Graph 4: Benchmark-Revised Index of Industrial Production (2000 to 2017)



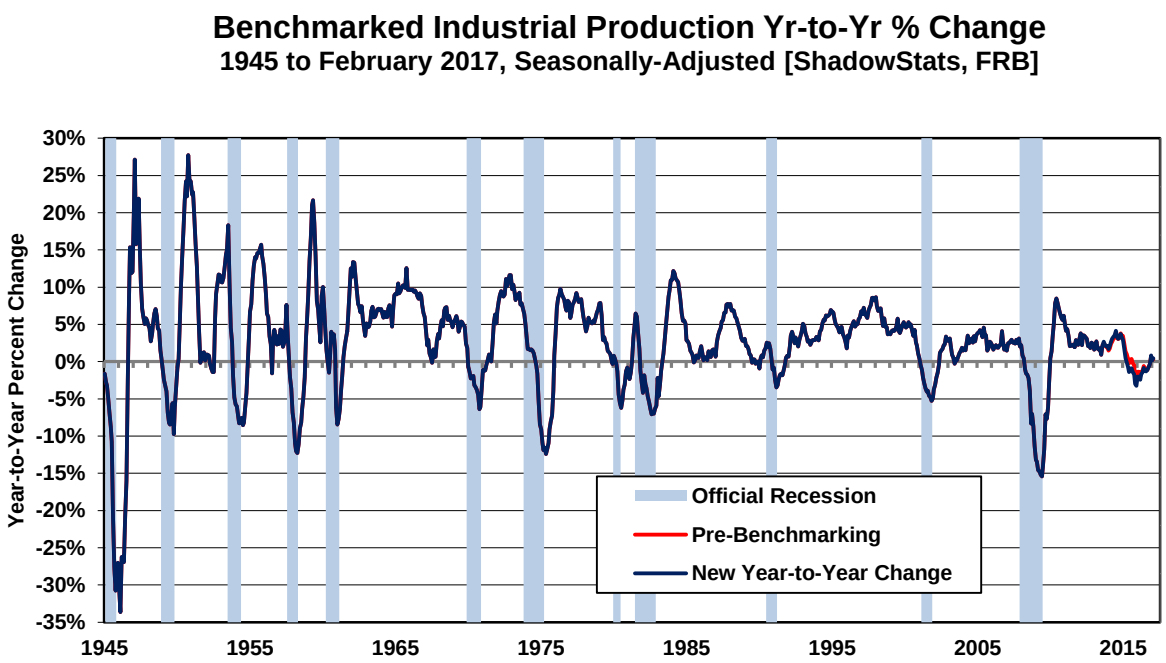
Graph 5: Aggregate Industrial Production, Revised Year-to-Year Percent Change since 2000



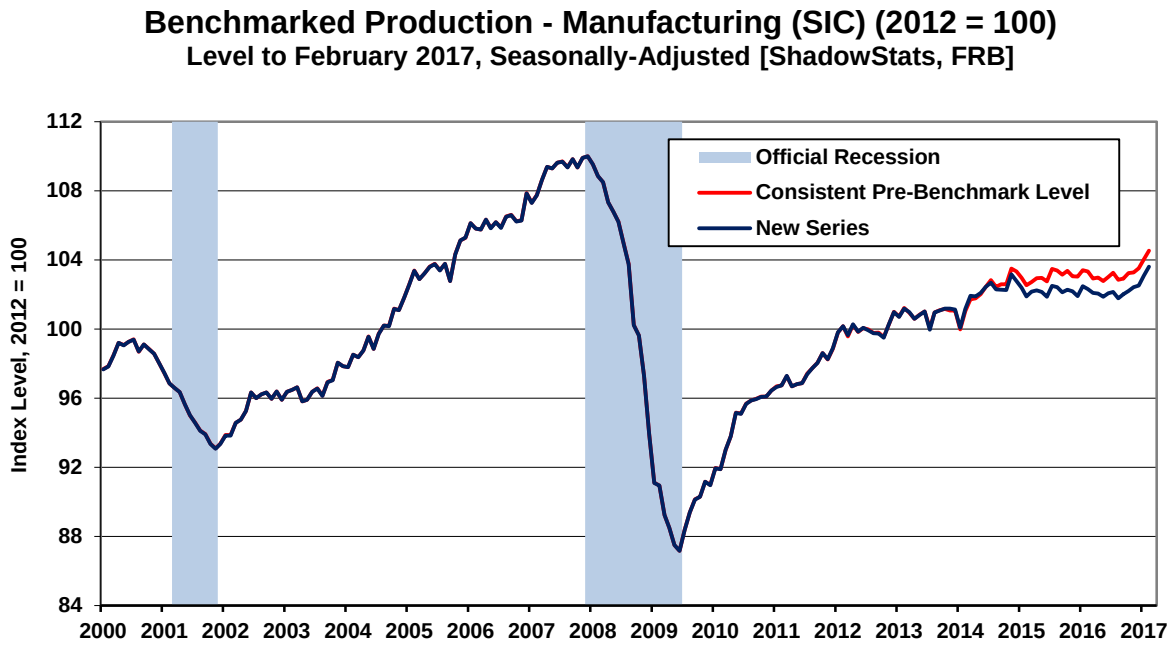
Graph 6: Benchmark-Revised Index of Industrial Production (1945 to 2017)



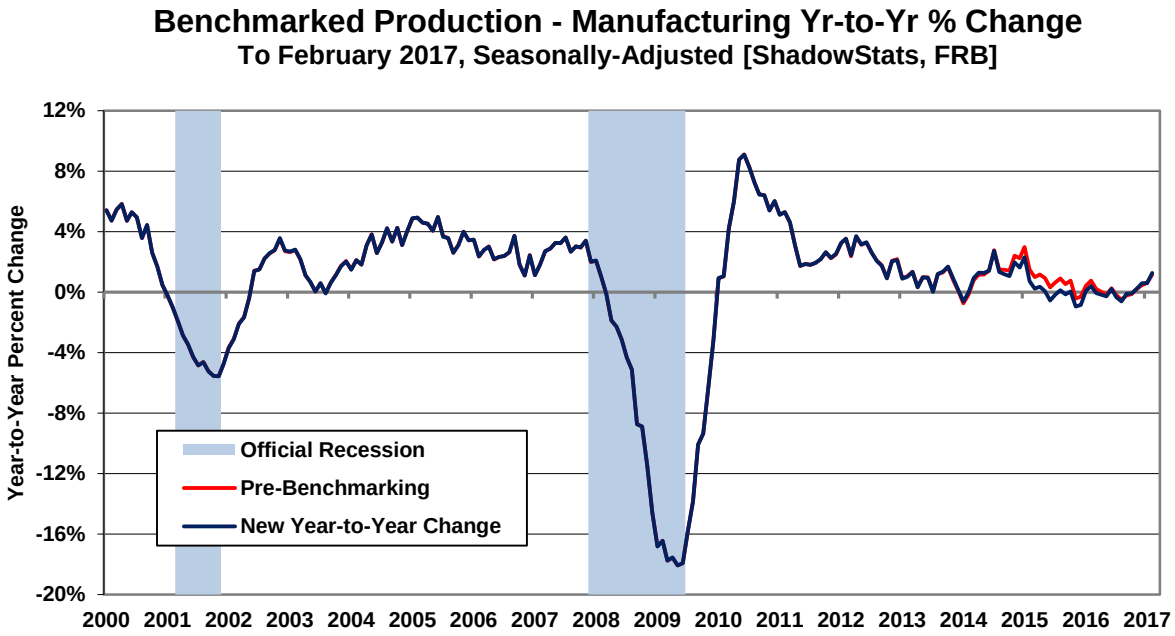
Graph 7: Industrial Production, Revised Year-to-Year Percent Change since 1945



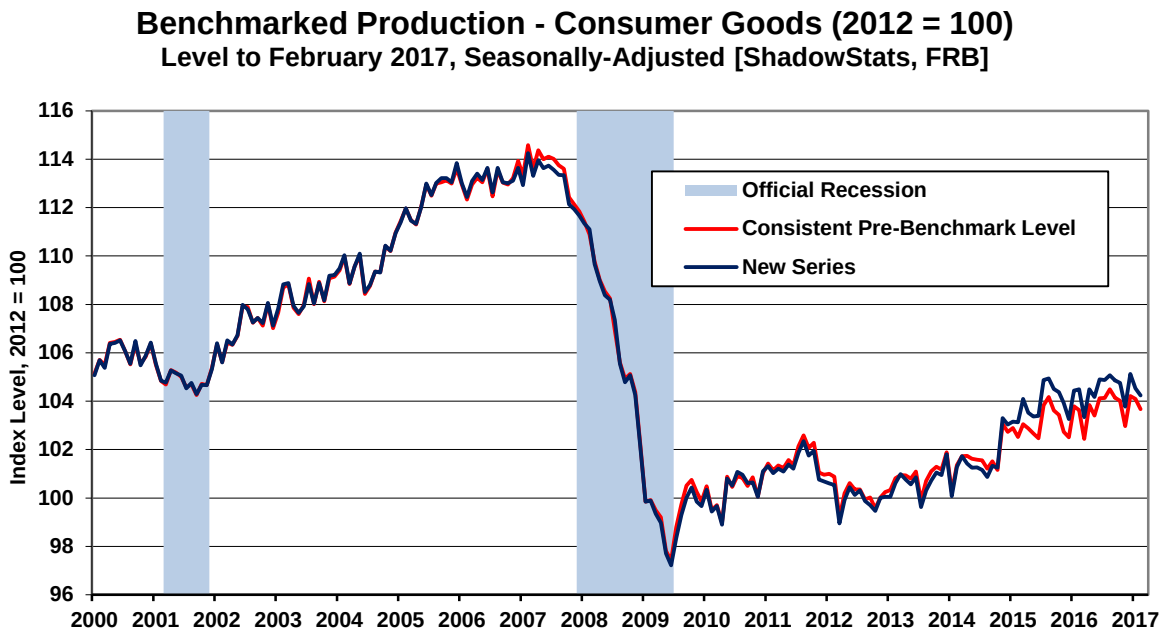
Graph 8: Benchmarked Production - Manufacturing (76.4% of the Aggregate in 2016)



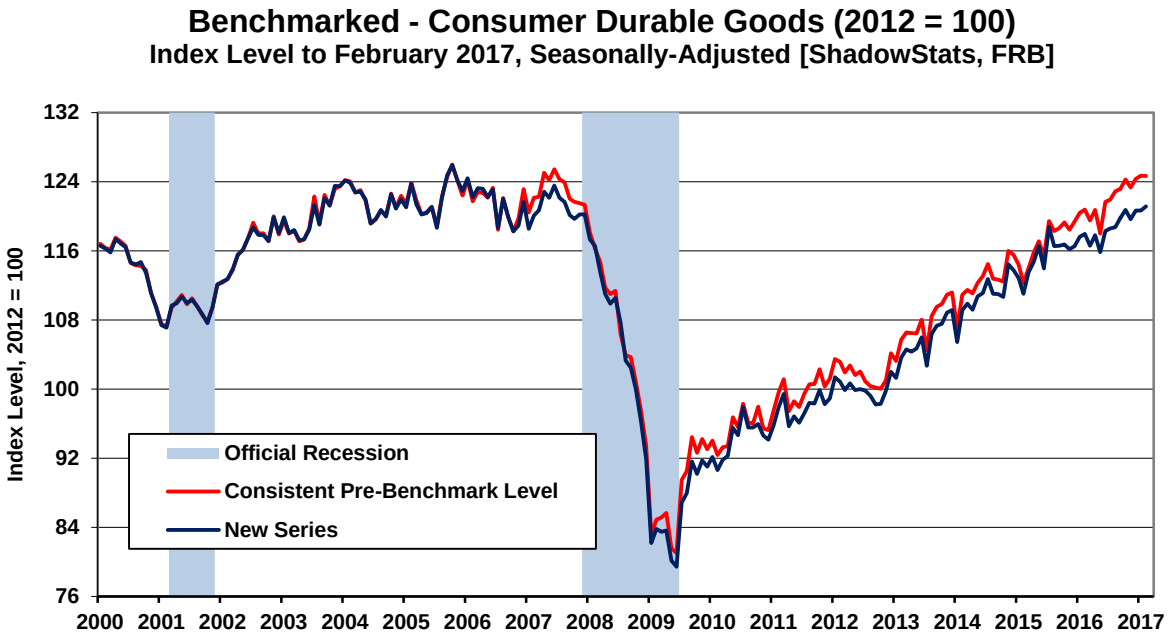
Graph 9: Benchmarked Manufacturing, Revised Year-to-Year Change



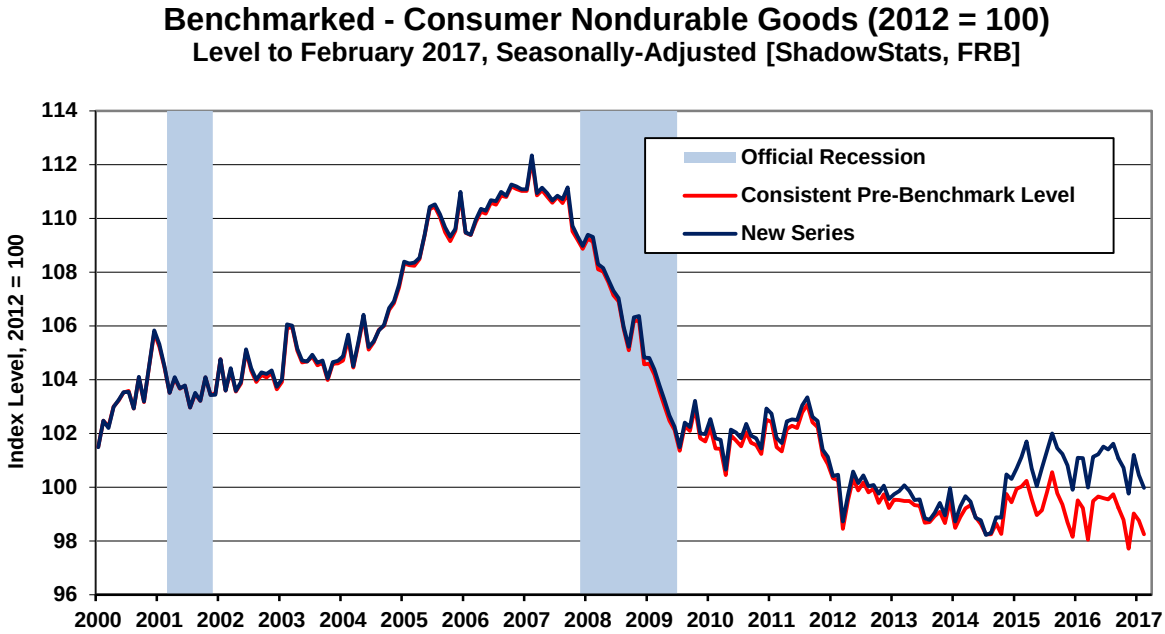
Graph 10: Benchmarked Production – Consumer Goods (28.2% of the Aggregate in 2016)



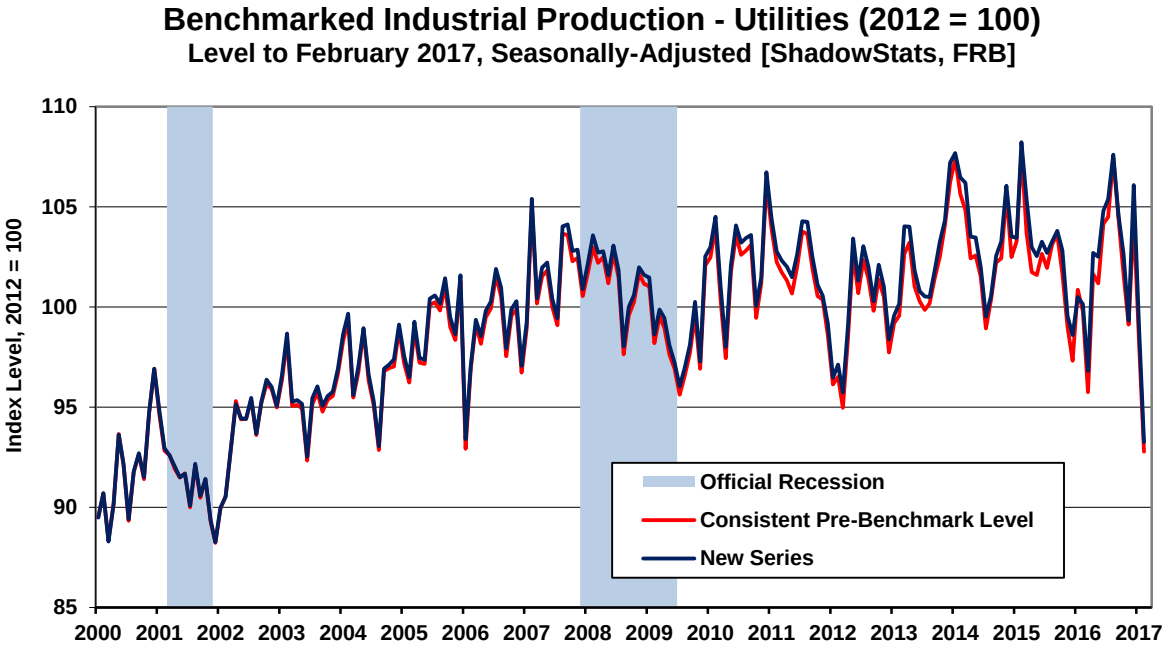
Graph 11: Benchmarked Production – Consumer Durable Goods (6.3% of the Aggregate in 2016)



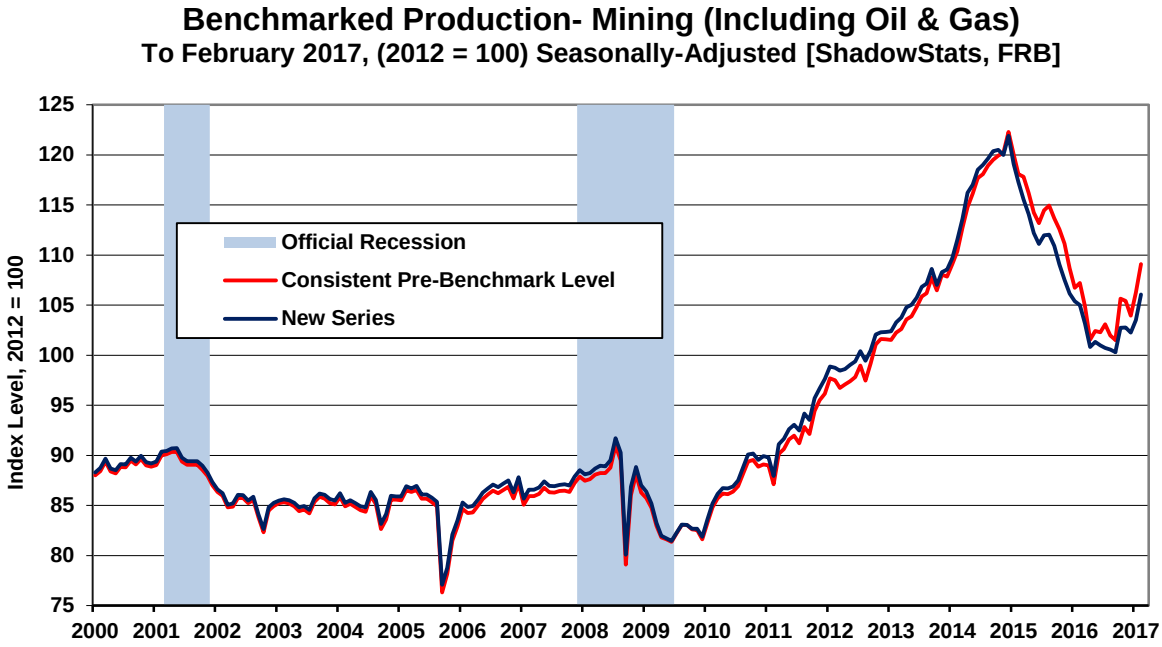
Graph 12: Benchmarked Production – Consumer Nondurable Goods (21.9% of the Aggregate in 2016)



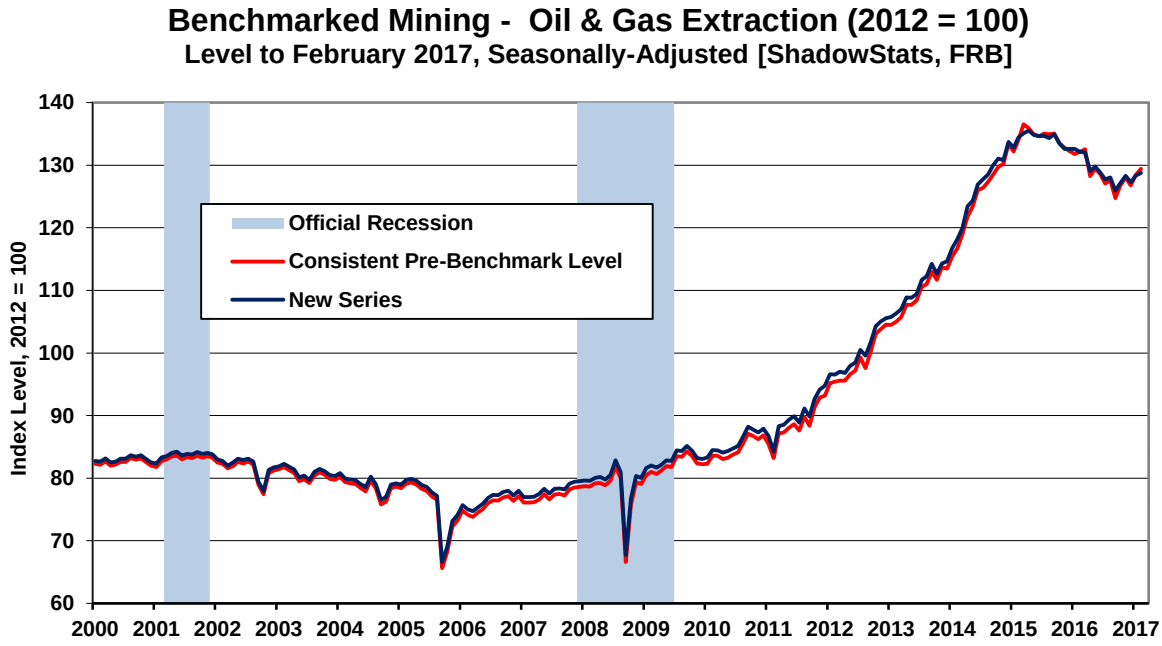
Graph 13: Benchmarked Industrial Production - Utilities (10.6% of the Aggregate in 2016)



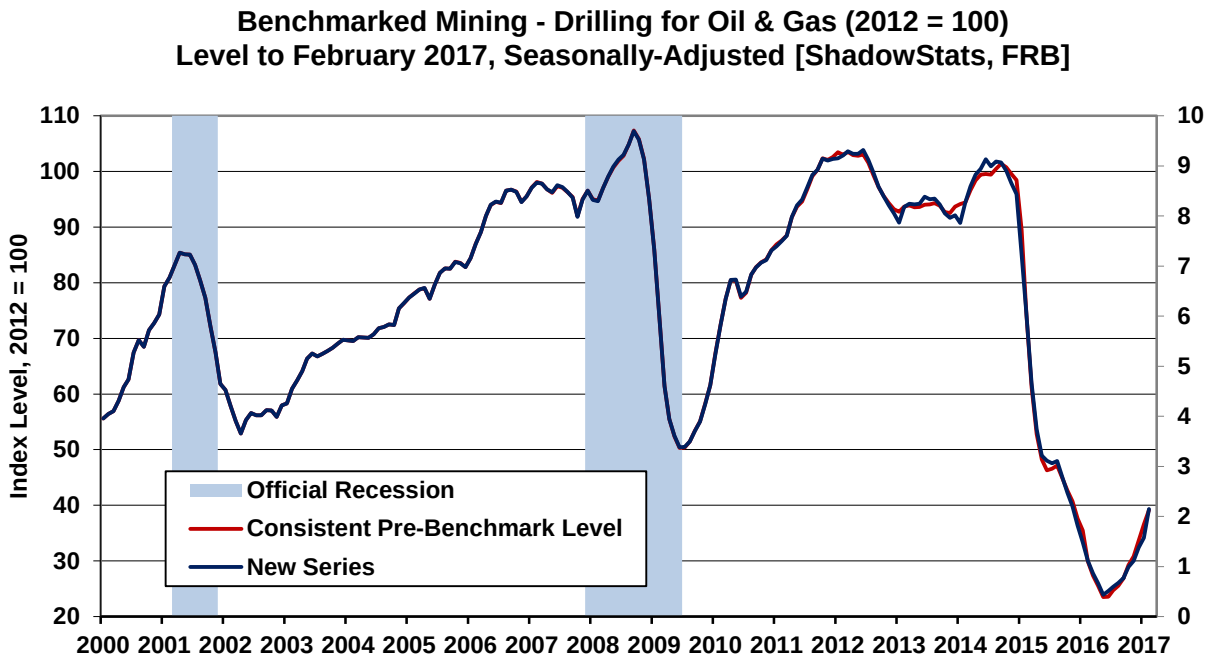
Graph 14: Benchmarked Production - Mining, Including Oil and Gas (12.9% of the Aggregate in 2016)



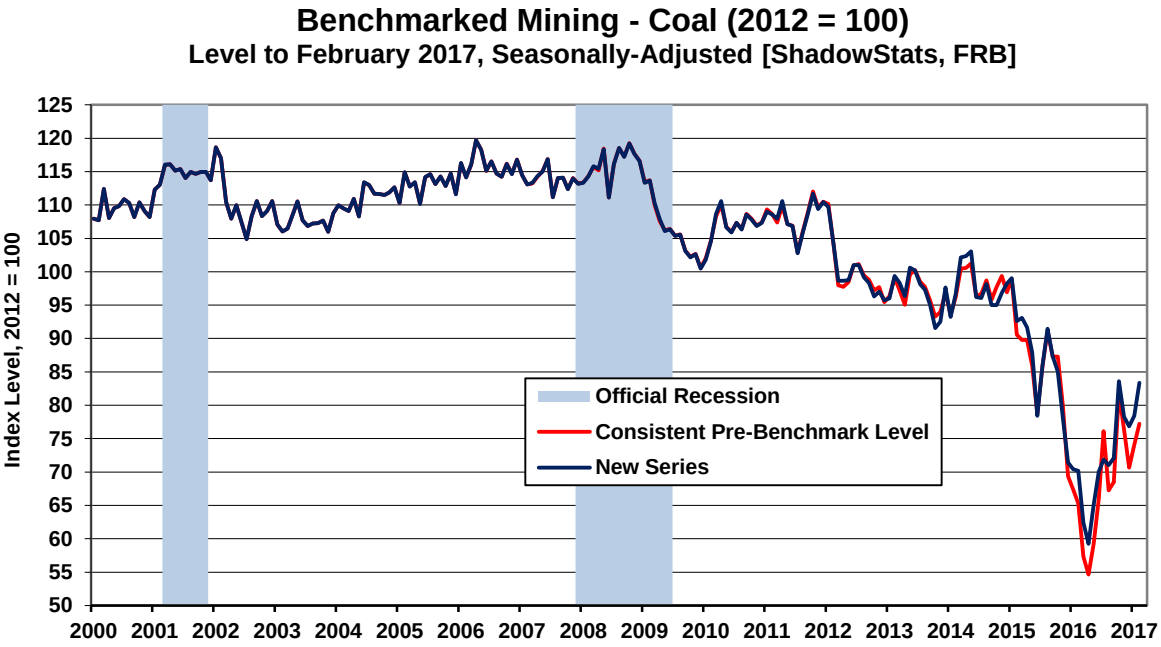
Graph 15: Benchmarked Mining – U.S. Oil & Gas Extraction



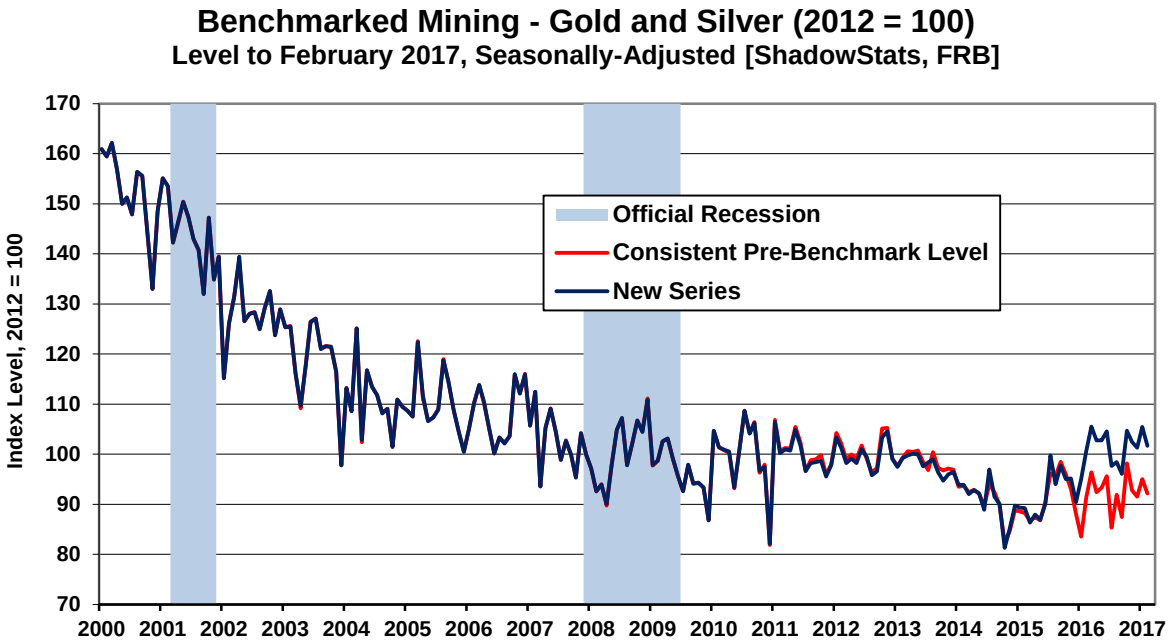
Graph 16: Benchmarked Mining - Drilling for Oil & Gas



Graph 17: Benchmarked Mining - Coal Mining



Graph 18: Benchmarked Mining – Gold and Silver Mining

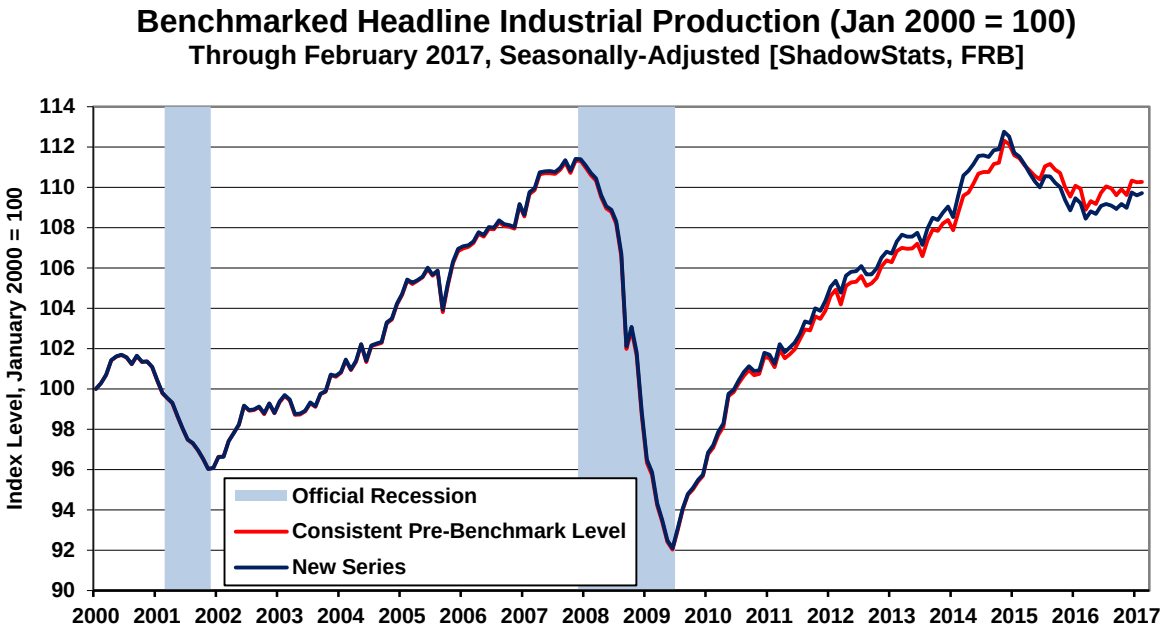


Inflation-Corrected Industrial Production. The revised detail of the headline level of aggregate industrial production is found in *Graph 1*, *4* and *6*. Regularly updated in the monthly *Commentaries* covering industrial production, *Graphs 19* and *20*—shown on the next page—also have been revised, addressing reporting quality issues tied just to the overstatement of headline production activity that results from the FRB using too-low an estimate of inflation in deflating certain components of industrial production.

Graph 19 shows the new headline industrial production reporting, but indexed to January 2000 = 100, instead of the Fed's formal index that is set at 2012 = 100. The 2000 indexing simply provides for some consistency in the series of revamped "corrected" graphics (including real retail sales, new orders for durable goods and the GDP, as discussed in prior *Commentary No. 876*). The re-indexing does not affect the appearance of the graph or reported growth rates (as can be seen with a comparison to the earlier *Graph 4*).

Graph 20 is a recast version of *Graph 19*, corrected for the estimated understatement of hedonic-inflation adjustments used in headline production reporting. See *Commentary No. 874* of March 17th for a full discussion. The circumstance will be reviewed, anew, along with the April 18th release of the March 2017 headline production detail.

Graph 19: Benchmark-Revised, Indexed Headline Level of Industrial Production (Jan 2000 = 100)



Graph 20: Revised, ShadowStats-Corrected Level of Industrial Production (Jan 2000 = 100)