PPI of durable and nondurable goods: 1985-2016

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IDG RAS

23 June 2009

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Abstract
It was demonstrated that the difference between the PPI of durable and nondurable goods can be predicted at a several year horizon. The prediction consists of three steps. First, we show that the difference between producer price index for durable and nondurable goods is characterized by the presence of sustainable mid-term trends. Second, the evolution of the difference is predicted at a five to ten-year horizon as an extrapolation of the previously observed behavior. Third, considering the overall PPI to be practically constant over the next decade one can expect an overall decline in nondurables price and equivalent increase in that for durables.

Key words: durable goods, nondurable goods, prediction, PPI
JEL classification: E3, G1

Introduction

There exist sustainable trends in the differences between various subcategories of producer price index (PPI) in the United States (Kitov, Kitov, 2009a; Kitov, 2009b). The presence of mid-term trends implies that the pricing power of a given subcategory of commodities relative to other subcategories is defined by economic and social processes, which are stable over longer periods. When a robust trend is established it lasts before underlying processes suffer a significant change or disappear. As a result, one can predict the evolution of the relative pricing power and thus the deviation between corresponding price indices by extrapolating these trends.

The evolution of the producer price index of durable and nondurable goods provides important economic information and is reported by the BLS at a monthly rate. Data show that during the past decade the difference between these two indices has been decreasing, i.e. the index for durables has been growing at a lower rate than that for nondurables. In 2008, the difference underwent a sudden drop to -67 and then a strong recovery to -20. So, what will be the next trend in the difference?

The future of both indices is of crucial importance for industries behind relevant goods, for stock market, and for real economy. Our analysis provides all interested bodies with a long-term prediction. Its reliability depends on the growth in real GDP in the near future. In any case, a new trend in the price is under development right now.

The prediction consists of three major steps. First, we demonstrate that the difference between PPI of durables and nondurables is characterized by the presence of sustainable trends. Second, we predict the difference at a five to ten-year horizon as an extension of the previously observed behavior. Finally, it is demonstrated that the overall PPI will be practically constant over the next decade. Therefore, the above difference provides a direct prediction of the price index for durables and nondurables.

Linear trends in producer price indices

It was found that the difference between the overall producer price index, PPI, and individual subcategories of the PPI is characterized by the presence of sustainable trends (Kitov, Kitov, 2009b; Kitov, 2009b). Similar trends were initially revealed in consumer price indices (Kitov, Kitov, 2008). Therefore, the presence of sustainable (linear and nonlinear) trends is an inherent feature of consumer and producer prices.

For durable and nondurable goods, this feature is also observed. Figure 1 demonstrates the difference between the (indices for) durables and nondurables (retrieved on June 3, 2009 from the Bureau of Labor Statistics web-site: http://www.bls.gov/data). As for gold (Kitov,

2009b) and jewelry (Kitov, 2009c), the modelling starts from July 1985. The difference has two distinct quasi-linear and both positive branches: between 1988 and 2000 (June), and from 2001 to 2008 (January). Red and blue lines highlight segments between 1988 and 2000, and from 2001 to 2008, respectively. Corresponding linear regression lines in Figure 1 have slopes of +0.05 and -6.8. The former slope is a negligible one, and the latter indicates that the index for nondurables has been growing since 2001 by 6.8 units if index faster than that for durables. In January 2008, the difference reached the level of -40, descending along the trend. Then the difference dropped to -67 in June and recovered to -20 by the end of 2008. This effect has been observed for all other commodities and is related to the financial crisis and recession of 2008.

The presence of linear trends in the difference between durables and nondurables is now a reliable observation. However, it describes the past rather than foresees the future evolution. So, the next step is more uncertain and is based on an assumption that the presence of sustainable trends will last in the years to come.

For many consumer and producer price indices (but not for all!), a period of high volatility in the difference has been observed since January 2008. Judging by previous observations of bends in the trends, this period is related to the turn to a new trend after 2009. A naïve assumption about the new trend is that it will repeat the trend observed between 2001 and 2008, but with an opposite sign. Actual trend may be different but almost inevitably with a *positive* slope. Here, we do not consider any other option except the naïve one. (The reader can make own assumptions on the duration and slope of the next trend.) So, the green line predicts the evolution of the difference after 2009. Because the green line has a positive slope, the index for durables will be catching up that for nondurables since 2009. According to our assumption, the rate of approaching to the index for nondurable goods will be +6.8 units of index per year during the next 7 years.

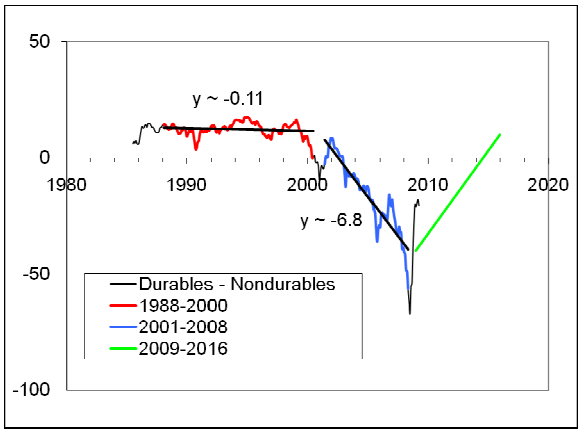

Figure 1. Evolution of the difference between the PPI of durables and nondurables between 1985 and 2009. Red and blue lines highlight segments between 1988 and 2000, and from 2001 to 2008, respectively. Green line predicts the evolution of the difference after 2008, as a mirror reflection of the linear trend between 2001 and 2008.

However, this convergence is only a relative, not absolute, one. Thus, we do not know where the index for durables will go in absolute terms, if we do not know how the PPI will grow. We have answered this question several years ago. After 2008, inflation in the United States will be falling down to and then below zero (Kitov, 2006ab; Kitov, Kitov, Dolinskaya, 2007). Accordingly, the overall PPI will not be growing during the next 5 to 10 years, after it recovers by 20 units by the end of 2009 due to increasing oil price (Kitov, 2009; Kitov, Kitov, 2009a).

So, now we can refer the indices for durables and nondurables to constant PPI since 2010. Without loss of generality, we put the 2010 level of PPI at 190. Figure 2 displays the difference between the PPI and the index for durables (left panel) and the difference between the PPI and the index for nondurables (right panel). When both differences reach the level of the PPI in 2016, i.e. will intersect the zero line, they will change by -25 and +15 units, respectively. This defines the absolute change in corresponding prices by +15% and -10%, respectively.

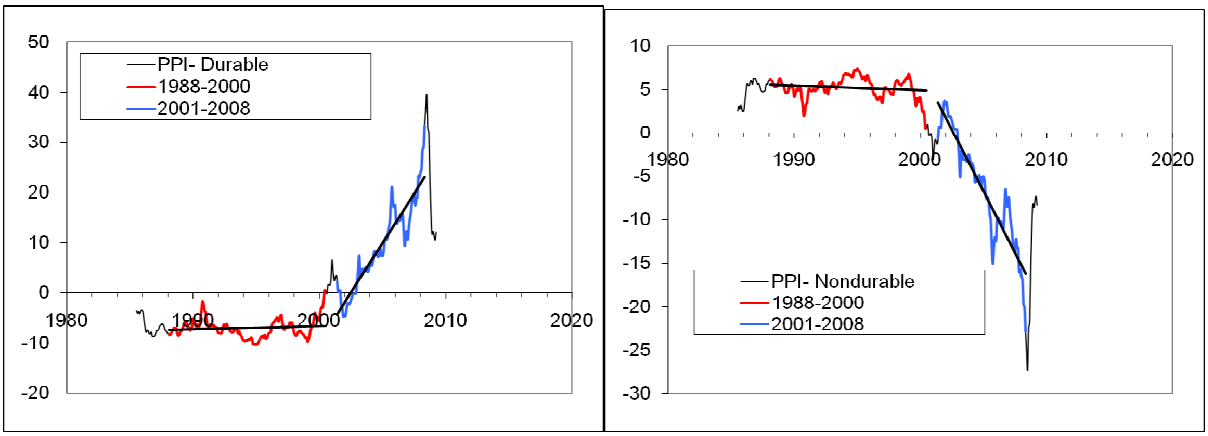

Figure 2. The difference between the PPI and the index for durables (left panel) and the difference between the PPI and the index for nondurables. When both differences reach the level of the PPI, i.e. will intersect the zero line, they will change by -25 and +15 units, respectively. This defines the change in corresponding prices by 15% and 10% respectively.

Conclusion

The difference between the PPI of durables and nondurables is characterized by the presence of two distinct segments with sustainable quasi-linear trends between 1988 and 2008, with a turning period between 2000 and 2001. It is likely that the difference in the next 5 to 10 years will show similar behavior, i.e. a new robust trend will be observed. To match the previously observed pattern, the new trend should be characterized by a positive slope, which absolute value cannot be currently accurately determined.

For the sake of simplicity, it is assumed that the new trend will repeat the previous one but with an opposite sign. At the same time, the PPI will likely not be growing during the next decade because inflation in the US will approach zero. As a result, the price for durable goods will be rising in absolute terms and the price for nondurable goods will to be declining since 2010.

Apparently, the above estimates are only crude ones and actual duration and slop will be determined only in several years. However, one can expect that the PPI of durables will reach the level of the PPI of nondurables by 2016.

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