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Predicting the price index for jewelry and jewelry products: 2009 to 2016

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Abstract

It was demonstrated that jewelry and jewelry products price can be predicted at a several year horizon. The prediction consists of three steps. First, we show that the difference between producer price index and the index for jewelry and jewelry products 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. Considering the PPI to be practically constant over the next decade, the above difference provides a direct prediction of the price index for jewelry and jewelry products.

Key words: jewelry and jewelry products, prediction, PPI

JEL classification: E3, G1

Introduction

Jewelry and jewelry products (JJP) price has never been in the centre of broader attention. Only rich people have been really concern about the price. During the past decade the jewelry customer community has been growing, however. The mainstream economics does not consider JJP as an important commodity. Only selected individuals hold large assets in pieces of jewelry. At the same time, JJP are also vulnerable to the evolution of real economy, as one could observe in 2008 and 2009. Obviously, the future evolution of JJP price is one of priorities for rich people. Our analysis provides them 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.

In this paper we demonstrate that JJP price can be predicted at a several year horizon. The prediction consists of three steps. First, we demonstrate that the difference between producer price index, PPI, and the producer index for JJP is characterized by the presence of sustainable trends. Second, we predict the difference at a five to ten-year horizon. Finally, it is demonstrated that the PPI will be practically constant over the next decade. Therefore, the above difference provides a direct prediction of the price index for jewelry and jewelry products. Surprisingly, the price index for JJP will be growing in a direction opposite to that for gold ores. The price index for gold ores was discussed in our previous paper (Kitov, 2009b).

1. 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). 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 gold ores price, this feature is also observed. Figure 1 demonstrates the difference between the PPI and the price index for jewelry and jewelry products (both variables retrieved on May 22, 2009 from the Bureau of Labor Statistics web-site: <http://www.bls.gov/data>). As for gold ores, the modelling of the index for JJP starts from July 1985. The difference has two distinct quasi-linear and both positive branches: between 1988 and 2001 (June), and from 2001 to 2008 (January). Red and blue lines highlight segments between 1988 and 2001, and from 2001 to 2008, respectively. Corresponding linear regression lines in Figure 1 have slopes of +0.76 and +4.2.

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

2. Predicting the price index of jewelry

After 2008, a period of high volatility in the difference has been observed. This period is related to the turn to a new trend after 2008. 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 *negative* 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 trends.) So, the green line predicts the evolution of the difference after 2008. Because the green line has a negative slope, the index for JJP will be catching up the PPI since 2009. According to our assumption, the rate of approaching to the PPI will be +4.2 units of index per year.

However, this convergence is only a relative, not absolute one. Thus, we do not know where the index for JJP will go, if we do not know how the PPI will grow. For example, Figure 2 shows that the PPI has been growing since 1985, but the difference in Figure 1 has different slopes before and after 2001. In other words, the growth in the difference after 2009 does not indicate that the index for JJP will grow. Hence, the question is how fast 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 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 index for JJP ores to the constant PPI since 2010. Without loss of generality, we put the 2010 level of PPI at 190. Then, the index for JJP will rise from 160 units in 2008 to 190 in 2016. Figure 2 illustrates the prediction – the price for JJP will increase ~30 units or by approximately 20%.

Conclusion

The difference between the PPI and the price index for jewelry and jewelry products is characterized by the presence of two distinct segments with sustainable quasi-linear trends between 1988 and 2008, with a turning point in 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 negative slope, which absolute value can not be currently 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 not be growing during the next decade because inflation in the US will approach zero. As a result, JJP price will be rising by ~4.2 units of index per year during the next seven years. If the slope will be larger, the next trend will be shorter in duration, and vice versa. The absolute change of about 30 units is likely to be the same for any slope.

Apparently, the above estimates are only crude ones and actual duration and slop will be determined only in several years. However, a rise in JJP price by about 20% is very likely.

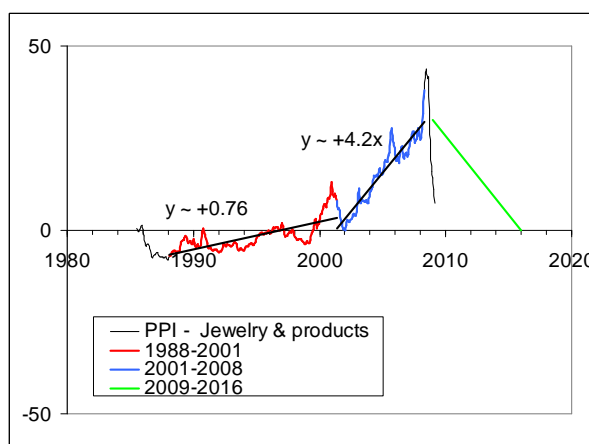


Figure 1. Evolution of the difference between the PPI and the price index for jewelry and jewelry products between 1985 and 2009. Red and blue lines highlight segments between 1988 and 2001, and from 2001 to 2008, respectively. Green line predicts the evolution of the difference after 2008, as a mirror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

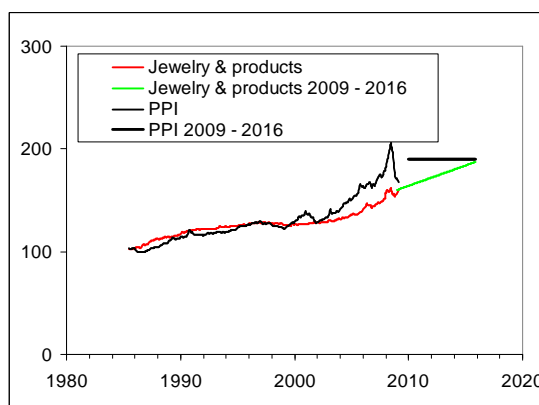


Figure 2. Evolution of the PPI and the index for JJP since 1985. Green line – the prediction of the index for JJP between 2008 and 2016. Thick black line – the PPI at constant level between 2010 and 2016.

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