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# Data revisions in India: Implications for monetary policy

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ABSTRACT

This paper studies data revision properties of GDP growth and inflation for the Indian economy. The results show that revisions to GDP growth and inflation are significant, and cannot be characterized as either containing pure news or pure noise. We also find that there is a significant predictable component in the revisions to GDP growth and inflation. Our findings suggest that if the Reserve Bank of India were to follow a Taylor rule for its monetary policy formulation, then the interest rate based on the preliminary data would be much lower than the one based on the fully revised data.



## 1. Introduction

Most macroeconomic time-series data are subject to revisions. Data revisions pose a problem for policymakers since they formulate policies in real-time without access to the fully revised data. Data revisions also create a challenge for economic researchers since their empirical work is based on heavily revised data, and the policy conclusions based on the use of heavily revised data can often be misleading in real-time. Recently there has been a surge in literature on data revisions and the implications of these revisions for policy making.[1] Most of the research on data revisions has focused on OECD countries, especially on the U.S. economy. The issue of data revisions in developing countries has not attracted a great deal of attention due to non-availability of real-time data.[2]

The macroeconomic time-series data in India are also subject to revisions. GDP growth and the Wholesale Price Index (WPI) – the primary measure of inflation in India – undergo heavy revisions. Figs. 1 and 2 plot revisions to GDP growth and aggregate inflation in India. It is evident from the graph that the final estimate of inflation is higher than the preliminary estimate for the majority of the sample since revisions are almost always positive. The revisions to GDP growth show higher volatility before 2001, and has been mostly positive, though less volatile, since then.

This paper studies the data revision properties of GDP growth and the WPI inflation and its sub-components in India, namely primary, manufacturing, and fuel inflation.[3] We examine whether data revisions to GDP growth and inflation have zero mean, and whether they can be forecasted using the information available at the time of the preliminary data announcement. This fits in with the news versus noise literature in the data revision that has been studied extensively for the

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[1] See Croushore (2008) for a comprehensive literature review on real-time data.

[2] Notable exceptions are Urdaneta (1976), Van de Eng (1999), Chumacero and Gallego (2001) and Palis, Ramos, and Robitaille (2004).

[3] Fuel, power and light sub-component are represented as fuel in this paper.

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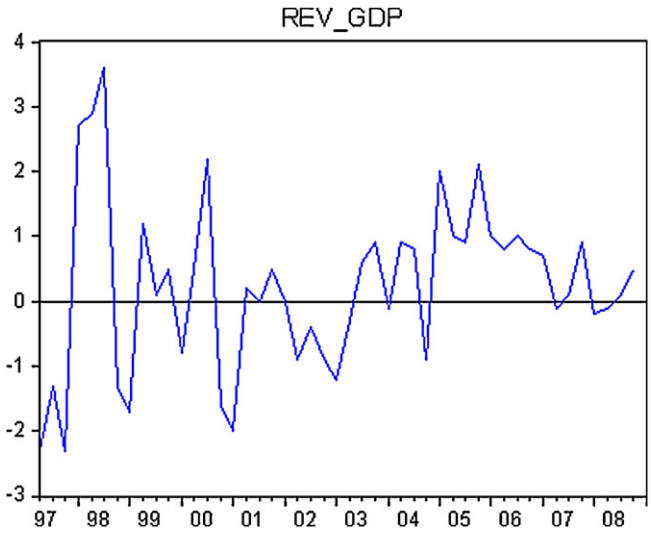


**Fig. 1.** Revisions to GDP growth.*Sources*: Reserve Bank of India and Author's calculation.

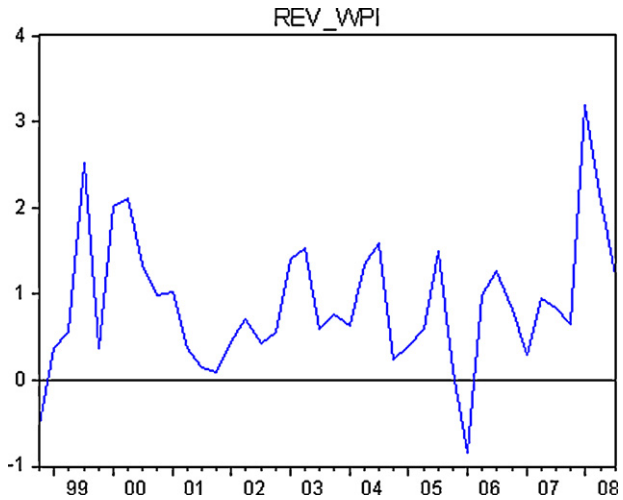


**Fig. 2.** Revisions to inflation.*Sources*: Reserve Bank of India and Author's calculation.

key macroeconomic variables in the U.S.[4] Conventional wisdom also suggests that data revisions pose a serious problem for monetary policy formulation, as the monetary policymakers are uncertain about the true state of the economy on the basis of preliminary estimate of macroeconomic variables. Thus, we examine the effect of data revisions on monetary policy formulation in India. Specifically, we examine how the interest rate prescribed by a Taylor rule would differ if the real-time data were used instead of the fully revised data.

Literature on data revisions has become quite extensive after compilation of the real-time data set at the Federal Reserve Bank of Philadelphia by Croushore and Stark (2001). Croushore and Stark (2001) show that data revisions pose a serious challenge for policy formulation as well as the econometric estimation of macroeconomic models. A big part of the literature on data revisions investigates the revision properties, and tests whether these revisions are predictable or not. Mankiw, Runkle, and Shapiro (1984) tested whether preliminary announcements of the money stock were rational forecasts of final announcements. Mankiw and Shapiro (1986) applied a similar analysis to GNP data. Faust, Rogers, and Wright (2005) tested the news versus noise hypothesis for revisions to the OECD output data, and found evidence in support of the noise hypothesis. Croushore (2008) studied the patterns of data revisions to the inflation rate in the U.S., and found that it is possible to forecast revisions from the initial release. He noted that the initial release of inflation is likely to be revised up.

We find that revisions to GDP growth in India between 1997 and 2001 are characterized by two regimes: volatile and insignificant revisions between 1997:Q2 and 2001:Q1, and mostly positive and significant revisions after 2001:Q1. The

[4] Mankiw et al. (1984) and Mankiw and Shapiro (1986).