

# Narrative Instrument for Monetary Policy Shocks

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## 1 Introduction

This note details the construction of an instrument for monetary policy shock in the US built as an extension of the narrative shock developed in Romer and Romer (2004) (RR04 henceforth). The new narrative-based instrument is constructed at monthly and quarterly frequency for the period 1969-2007.

## 2 Methodology and Charts

The construction of the instrument closely follows RR04, where the indicator variable for monetary policy is constructed as the intended changes in the Federal Fund Rates that are independent from monetary policy actions taken in response to information about future economic developments (in the form of forecasts of inflation and real activity that are available to policy makers at the time of the FOMC decision). In developing the extended version of the narrative-based instrument we make the same working assumptions as in RR04, that is, (1) the relevant sampling frequency is dictated by the schedule of the FOMC meetings and (2) the set of forecasts used to purge the measure from macroeconomic condition considerations is a good proxy of the information set available to policy makers at the time of the decision.

The Monetary Policy Shock narrative-based instrument is constructed as the residual of

the following regression (equation (1) in RR04):

$$\begin{aligned}\Delta FFR_m = & \alpha + \beta FFR_m + \rho u_{t+0|t}^{(m)} \\ & + \sum_{j=-1}^2 \gamma_j y_{t+j|t}^{(m)} + \sum_{j=-1}^2 \lambda_j \left[ y_{t+j|t}^{(m)} - y_{t+j|t}^{(m-1)} \right] \\ & + \sum_{j=-1}^2 \phi_j \Delta \pi_{t+j|t}^{(m)} + \sum_{j=-1}^2 \theta_j \left[ \Delta \pi_{t+j|t}^{(m)} - \Delta \pi_{t+j|t}^{(m-1)} \right] + \varepsilon_m.\end{aligned}\quad (1)$$

Equation (1) is estimated at FOMC meeting dates (indexed by  $m$ );  $\Delta FFR_m$  is the change in the intended funds rate around the FOMC meeting, while  $FFR_m$  is the level of the intended rate before any change associated to the meeting  $m$  takes place.  $u$ ,  $y$  and  $\pi$  are used to denote the unemployment rate, real output growth and inflation respectively, while the notation  $t+j|t$  denotes forecasts for quarter  $t+j$  where  $t$  is the quarter the specific FOMC meeting  $m$  belongs to such that  $y_{t+1|t}^{(m)}$  denotes the forecast for real output growth ( $y$ ), relative to the next quarter ( $t+1|t$ ), which is available at meeting  $m$ .

For the sample 1969-1996 we use the data supplied by RR04.<sup>1</sup> In this set intended rates are extracted from FOMC minutes and the forecasts used are the Greenbook forecasts.<sup>2</sup> To work out the extension up to 2007 we proceed as follows; at the time of the construction of the instrument (February 2014) Greenbook forecasts were available only up to the end of 2007, therefore, for the subperiod 1997-2007 we simply extend the RR04 dataset using the same data sources and the same methodology. Data relative to the fed fund rate level and target range at each FOMC meeting date for the subperiod 1997-2007 are from Bloomberg. Only scheduled FOMC meetings are used for the construction of the series. The instrument at quarterly frequency is finally obtained summing up the residuals from equation (1) over the observations relative to the meeting dates belonging to each specific quarter.

Figures 1 and 2 summarize the results: Figure 1 plots the original narrative shock and corresponds to Figure 1 in RR04; Figure 2 reports the extension up to 2007 (inclusive) where the data and methodology are those in RR04.

## References

Romer, Christina D. and David H. Romer (2004) “A New Measure of Monetary Shocks: Derivation and Implications,” *American Economic Review*, Vol. 94, No. 4, pp. 1055–1084.

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<sup>1</sup>Original data are available for download at <https://www.aeaweb.org/articles.php?doi=10.1257/0002828042002651>.

<sup>2</sup><http://www.philadelphiafed.org/research-and-data/real-time-center/greenbook-data/pdf-data-set.cfm>

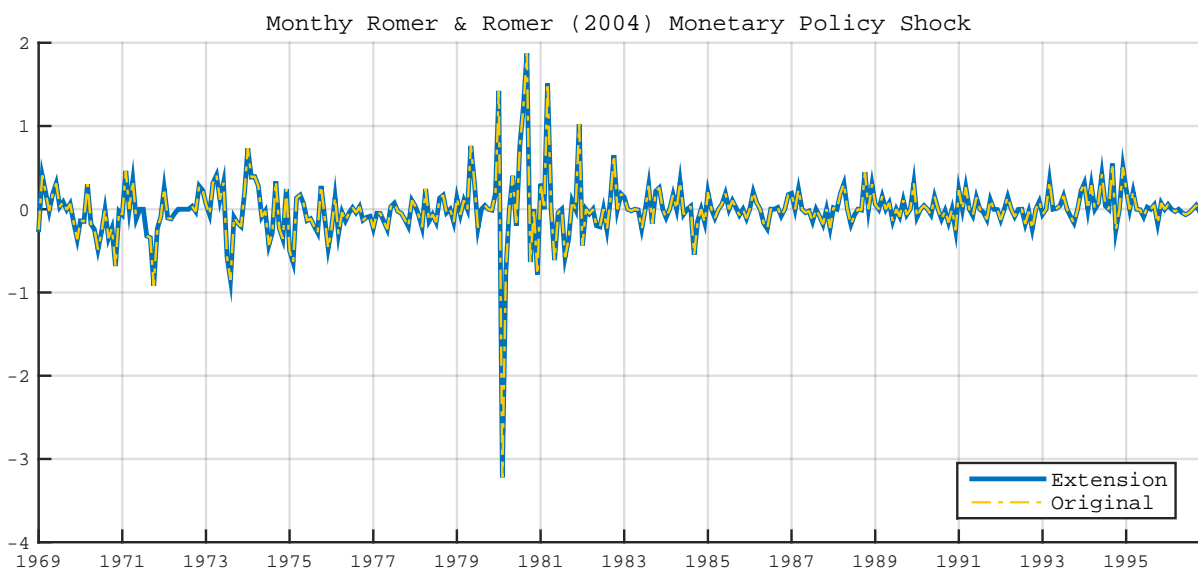


Figure 1: Romer and Romer (2004) measure of monetary shock: original and extended data..

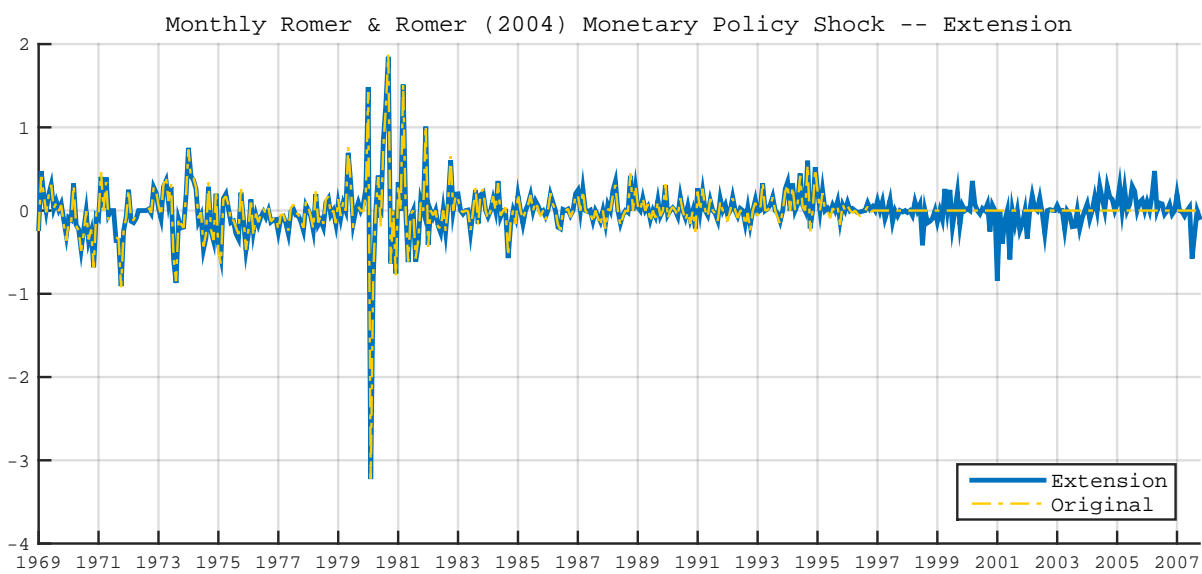


Figure 2: Extension of RR04 for the sample 1997-2007 based on same data and methodology.