

# When did unsystematic monetary policy have an effect on inflation?

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## Abstract

An important stylized fact to emerge from VAR estimates is that exogenous monetary policy shocks (also labelled unsystematic monetary policy) have a delayed, persistent, hump-shaped effect on inflation. I argue that this empirical pattern is fragile. In particular, it disappears when one examines periods without large shifts in the level of inflation (such as 1984–2005). An important consequence is that the hump-shaped VAR estimated response of inflation is not appropriate to fit stylized models of the response of inflation around a stable steady state inflation level.

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## 1. Introduction

One of the most widely accepted stylized facts of monetary economics is that US inflation has a hump-shaped response to exogenous monetary policy shocks. For instance, [Christiano et al. \(2005, pp. 5–8\)](#) state, “after an expansionary monetary policy shock [...] inflation responds in a hump-shaped fashion peaking after about two years.” Likewise [Mankiw \(2001\)](#) writes, “According to the consensus view among central bankers and monetary economists, a contractionary monetary shock raises unemployment, at least temporarily, and leads to a delayed and gradual fall in inflation.”

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This stylized fact is supported by a series of robustness checks along several dimensions, though all within the VAR framework, reported in the second chapter of the 1999 Handbook of Macroeconomics: “Monetary Policy Shocks, What have we learned and to what end?” (also by Christiano et al., 1999a; thereafter CEE-99a) and in many contributions reviewed therein.

However, this VAR based characterization of the effects of unsystematic monetary policy<sup>1</sup> on inflation is very sensitive to the choice of the sample period. In particular, if one considers the last twenty years, VAR estimated monetary policy shocks have no effect on inflation nor the price level. The hump-shaped response of inflation is obtained only if either the building up or the collapse of the 1970 Great Inflation is included in the samples over which the VAR is estimated. One important implication is that models that are consistent with the evidence estimated over long sample periods may be mixing up the response of inflation to monetary policy shocks in periods of large adjustments of inflation, such as the so-called Volker disinflation, and periods when the mean of inflation is stable, e.g. from 1984 to 2005. There is therefore a risk that these models provide a poor approximation of inflation dynamics for both periods of large adjustments and periods when the mean of inflation is stable.

The paper proceeds as follows. Section 2 reviews the literature on VAR identifications of US monetary policy shocks. Section 3 focuses on the changes in the inflation impulse responses estimated on the 1984–2005 sample period relative to the ones obtained for the 1960–2005 period. Section 4 concludes.

## **2. VAR based identification of US monetary policy shocks**

Twenty six years after the seminal contribution of Sims (1980), vector autoregressions (VARs) have become the most widely used econometric apparatus to describe stylized facts on the effects of structural, i.e., economically meaningful, shocks. In particular, the study of US monetary policy with VAR models has developed as a literature of its own. CEE-99a, which is the second chapter of the latest Handbook of Macroeconomics, is entirely dedicated to VAR based identification of US monetary policy shocks and estimates of their effects on US macroeconomic variables.<sup>2</sup> In their introduction, CEE-99a argue that US monetary policy shocks are “good candidates” to evaluate the ability of models to mimic actual economies. For instance, they showed in an earlier paper that limited participation models and sticky price models predict different paths for money and the interest rate following a monetary policy shock (Christiano et al., 1999b).

One remarkable result of CEE-99a is that most competing identification schemes of US monetary policy shocks deliver quite similar results in terms of their effects on output and prices. A monetary tightening triggers a hump-shaped response of the GDP log-level and a negative response of the price log-level that is gradual. This is true for both recursive identification and non-recursive models as initially put forth by Sims, as well as across models that differ in terms of the number of variables entering the VAR, and therefore the information set the central banks uses to set its monetary policy instrument (usually the interest rate on federal funds).

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<sup>1</sup>Throughout the text I consider either monetary policy shocks, exogenous monetary policy shocks or unsystematic monetary policy as interchangeable terms.

<sup>2</sup>The other two most cited surveys are Leeper et al. (1996) and Bernanke and Mihov (1998).

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