International Review of Economics and Finance 43 (2016) 415–428

Contents lists available at ScienceDirect

International Review of Economics and Finance

journal homepage: www.elsevier.com/locate/iref

Do quantitative monetary targets matter?☆

Hsin-Yi Lin *

Department of Economics, National Chengchi University, Taipei, Taiwan

ARTICLE INFO

Article history:
Received 16 January 2015
Received in revised form 11 January 2016
Accepted 11 January 2016
Available online 21 January 2016

JEL classification:
C26
E31
E52

Keywords:
Endogeneity
Quantile regression
Panel data
Exchange rate target
Inflation target
Money growth target

ABSTRACT

This paper evaluates the effects of monetary policy directed at inflation across different levels using panel data quantile regression and instrumental variable quantile regression methods. We identify a heterogeneous and nonlinear relationship between an explicit quantitative goal for monetary policy and inflation after controlling for the problem of possible endogeneity. We also find that both having and successfully hitting quantitative targets is more effective for monetary policy in lowering inflation in high-inflation episodes than in low-inflation episodes. When countries suffer from severe inflation problems, the adoption of quantitative goals for monetary policies can thus deliver important economic gains. Conversely, the adoption of quantitative goals may not result in a lowering of inflation when countries are more economically sound.

© 2016 Elsevier Inc. All rights reserved.

1. Introduction

The macroeconomic effects of quantitative monetary targets have been well analyzed theoretically, suggesting an explicit *de jure* quantitative goal for monetary policy improves its transparency. As an example, Fatás, Mihov, and Rose (2007) identify transparent targets for monetary policies with quantitative goals that take three forms: exchange rates, money growth rates, and inflation targets. However, instead of focusing on just one of these targets, they combine different types of targets for monetary policy and compare the effects on inflation of both having and successfully hitting the quantitative goals. The argument is that having and hitting quantitative targets increases the credibility and accountability of central banks, that this helps alleviate the dynamic inconsistency problem, and thus leads to lower inflation.

Svensson (1997); Bernanke, Laubach, Mishkin, and Posen (1999) and Mishkin (1999) argue that because the initial credibility of central banks in high-inflation episodes is low, developing monetary targets makes monetary policy more credible, and should thus lead to better macroeconomic outcomes. Gonçalves and Salles (2008); Lin and Ye (2009) and Brito and Bystedt (2010) also argue that in higher-inflation periods, central banks place greater emphasis on the behavior of inflation. Therefore, it is reasonable to suspect that the credibility gained from explicitly announcing quantitative monetary targets would be much more substantial during high-inflation periods. However, Ball and Sheridan (2003) and Lin and Ye (2007) show that when countries are in a stable

☆ We would like to thank the editor and two anonymous referees for their very constructive comments and suggestions that have led to a signicantly improved version of the paper. We also thank seminar participants at National Chiayi University and National Taiwan University for their helpful comments. The assistance of Mr. Ji-Yuan Liang is also gratefully acknowledged. All remaining errors are ours. This project is supported by the National Science Council of Taiwan (NSC102-2410-H-004-012).

* Tel.: +886 2 29393091x51547; fax: +886 2 29390344.
E-mail address: linh@nccu.edu.tw.

http://dx.doi.org/10.1016/j.iref.2016.01.005
1059-0560/© 2016 Elsevier Inc. All rights reserved.

macroeconomic environment, adopting a quantitative monetary regime may not improve performance, as measured by inflation behavior. Therefore, the effectiveness of the adoption by central banks of quantitative goals for monetary policy to lower inflation rates depends on the inflation level in a country. That is, the effects of a country's monetary policies in high-inflation periods are greater than those in low-inflation periods. The effects of quantitative targets for monetary policies on inflation are thus heterogeneous across different levels of inflation.

However, the existing literature only reveals the effects of monetary policy on "average" inflation and does not explain the heterogeneous effects at its different levels. Therefore, it is both important and desirable to use an econometric method to accommodate key features of existing theory and to describe the heterogeneous relationship across different levels of inflation. In this regard, a quantile regression technique that estimates the impact of quantitative targets for monetary policy for different quantiles of inflation can expose the conditional heterogeneity of inflation. In addition, Lin and Ye (2007, 2009) point out that the macroeconomic performance of monetary regimes can be affected by country characteristics. Therefore, conducting panel data research to control for the fixed effects of a country is important. In evidence, Klein and Shambaugh (2010) and Rose (2011) find that country fixed effects are statistically important, and that failure to analyze these fixed effects can seriously weaken a study's conclusions. Controlling for fixed effects in panel data also addresses the potential for omitted variable bias and improves inference of the causal effects of quantitative monetary targets on inflation. This paper thus considers applying the quantile regression for panel data models developed by Koenker (2004) to capture heterogeneity and to control for the fixed effects of the impact of monetary policy.

Furthermore, as the adoption of a monetary policy regime is likely characterized by self-selection (Mishkin & Schmidt-Hebbel, 2007; Lin & Ye, 2007, 2009; Gonçalves & Carvalho, 2009), selection bias also arises when discussing the effects of monetary policy. For example, countries with low (high) inflation are more (less) likely to adopt fixed exchange rate regimes. By contrast, central banks of countries experiencing high inflation are more averse to inflation than their low-inflation counterparts. This endogeneity makes the estimation results inconsistent. However, there is no procedure for dealing with the endogeneity of the quantile regression for panel data models. Accordingly, we apply the instrumental variable quantile regression of Chernozhukov and Hansen (2005, 2006) to Koenker's (2004) quantile regression for panel data models to control for the possible endogeneity of the choice of monetary policy. We should note that while Jackson and Miles (2009) consider using an ordinary quantile regression method to reexamine the same data set as Fatás et al. (2007), they do not conduct panel data analysis and fail to consider the fixed effects. The other concern with Jackson and Miles (2009) is the endogeneity problem in that they use only lead inflation to replace current inflation as a way to minimize any endogeneity, and not instrumental variables, which is a more common approach for dealing with endogeneity. In this paper, and in a marked departure from Jackson and Miles (2009), we propose an econometric method that combines both quantile regression for panel data models and the instrumental variable quantile regression. The new method ideally reveals the effects of the inflation regressors at different quantiles of inflation, after controlling for the country fixed effects and the selection bias of policy adoption.

In our empirical method, we employ a set of instrumental variables based on political and economic arguments and apply a combined econometric method to control for possible selection bias in policy adoption. By extending the data set of Fatás et al. (2007), we use the most comprehensive panel data set consisting of 50 countries over the period 1960–2007. The empirical results show that the effects of quantitative monetary targets on inflation are significantly negative at all quantiles of inflation after controlling for country fixed effects and policy adoption selection bias. Having both explicit *de jure* quantitative goals for monetary policy and successfully hitting targets improves economic performance as measured by the behavior of inflation. In addition, we find that the effects of quantitative targets differ across inflation levels. In sum, the effects of decreasing inflation are greater in high-inflation episodes than in low-inflation episodes. By using the quantile regression for panel data models, the effectiveness of quantitative monetary targets in terms of lowering inflation is found to be quite heterogeneous. That is, after performing a complete evaluation of the effectiveness of monetary policy regimes, our results accommodate the arguments in Svensson (1997); Bernanke et al. (1999); Mishkin (1999); Ball and Sheridan (2003); Lin and Ye (2007, 2009) and Gonçalves and Salles (2008) at different inflation levels. These results are robust with respect to differences in the data, including countries facing extremely high rates of inflation, different time periods, and developed and developing countries.

Moreover, we treat the three different monetary policy targets separately to better understand the effects of each quantitative target at different quantiles of inflation. For the exchange rate regime targets, having a more fixed target does not lower inflation, but successfully hitting the target can lower inflation. The results are consistent with those in Baxter and Stockman (1989); Flood and Rose (1995) and Levy-Yeyati and Sturzenegger (2001). Further, both having and hitting the inflation target reduces inflation in all quantiles, as also supported by Gonçalves and Salles (2008) and Lin and Ye (2007, 2009). Finally, the effects of adopting and successfully hitting the monetary growth target on inflation are positive. All effects of the quantitative goals for separate monetary policies are heterogeneous for different inflation episodes.

The remainder of the paper is organized as follows. Section 2 briefly reviews the literature. Section 3 introduces the model and data. Section 4 discusses the empirical results. Section 5 concludes the paper. A list of the countries used in the analysis is in the Appendix.

2. Literature review

Central bank quantitative monetary targets increase both transparency and accountability, and serve as potential commitment mechanisms to reduce inflation (Mishkin, 1999). The three basic types of monetary policy regime are money growth targeting, exchange rate targeting, and inflation targeting. However, the extant literature usually analyzes only the effects of one of these regimes. During the 1980s and 1990s, money growth targeting was a popular monetary policy among central banks in both

Download English Version:

https://daneshyari.com/en/article/5083359

Download Persian Version:

https://daneshyari.com/article/5083359

Daneshyari.com