Available online at www.sciencedirect.com

ScienceDirect

Journal of Policy Modeling 38 (2016) 103–124

Journal of Policy Modeling

www.elsevier.com/locate/jpm

Money and monetary policy in Israel during the last decade☆

Jonathan Benchimol*

Bank of Israel and EABCN, POB 780, 91007 Jerusalem, Israel

Available online 30 December 2015

Abstract

This study examines how money and monetary policy have influenced output and inflation during the past decade in Israel by comparing two New Keynesian DSGE models. One is a baseline separable model (Gali, 2008) and the other assumes non-separable household preferences between consumption and money (Benchimol & Fourçans, 2012). We test both models by using rolling window Bayesian estimations over the last decade (2001–2013). The results of the presented dynamic analysis show that the sensitivity of output with respect to money shocks increased during the Dot-com, Intifada, and Subprime crises. The role of monetary policy increased during these crises, especially with regard to inflation, even though the effectiveness of conventional monetary policy decreased during the Subprime crisis. In addition, the non-separable model including money provides lower forecast errors than the baseline separable model without money, while the influence of money on output fluctuations can be seen as a good predictive indicator of bank and debt risks. By impacting and monitoring households' money holdings, policy makers could improve their forecasts and crisis management through models considering monetary aggregates.

JEL classification: E31; E51; E58

Keywords: Divisia monetary aggregates; Monetary policy; DSGE; Crises; Israel

☆ The content of this paper does not necessarily reflect the views of Bank of Israel.

* I thank Michael T. Belongia, Itamar Caspi, André Fourçans, Alex Ilek, Weitzman Nagar, Akiva Offenbacher, Sergey Slobodyan, and Yossi Yakhin for their helpful advice and comments, and Noam Michelson and Tanya Suhoy for their outstanding dataset. Tel.: +972 2 6552641; fax: +972 2 6669407.

E-mail address: jonathan.benchimol@boi.org.il

http://dx.doi.org/10.1016/j.jpolmod.2015.12.007

1. Introduction

The consequences and pace of the recent economic downturn, which began with the Subprime mortgage crisis in the United States and was followed by the global financial crisis (GFC), differed worldwide depending on the countries involved and their monetary policies. Nevertheless, most countries shared at least one common element: an increase in the (relative) risk aversion levels of households (Bernanke, 2009).

Risk aversion, which can be a perception, feeling, or behavior, leads to changes in both household consumption and the money held by households. The trade-off between consuming and holding money can be modeled using non-separable preferences between consumption and money holdings and testing the existence of non-separability parameters. At equilibrium, consumption equals output in simple models, and even though this non-separability parameter exists, it does not assign a significant role to money holdings with regard to output dynamics (Andres, Lopez-Salido, & Valles, 2006; Ireland, 2004).

Despite their potential influence on output, monetary aggregates and money demand have largely been ignored in the dynamic models literature (Woodford, 2003). Indeed, Christiano, Trabandt, and Walentin (2010) show that dynamic stochastic general equilibrium (DSGE) models can identify and explain business cycle dynamics as well as demonstrate how economic shocks affect the economy.[1] However, by developing the now standard New Keynesian DSGE models for the Eurozone and United States, and by excluding money shocks from their model(s), Smets and Wouters (2003, 2007) do not assign money an explicit role with regard to economic dynamics.

Nevertheless, the impact of money shocks on output is theoretically significant when risk aversion is sufficiently high relative to the non-separability parameter, as may be the case during crisis periods, and empirical tests with Eurozone or US data confirm this result (Benchimol & Fourçans, 2012, 2016; Caraiani, 2015). Indeed, comparing the out-of-sample forecasts of these non-separable models with those obtained from the baseline model a la Gali (2008) shows that assuming non-separability between consumption and real money holdings improves the forecasting performance of output during crises (Benchimol, 2011; Benchimol & Fourçans, 2016).

Unlike all the DSGE literature including money (Andres et al., 2006; Barthelemy, Clerc, & Marx, 2011; Ireland, 2004), Benchimol and Fourçans (2012) introduce a microfounded money equation in the flexible-price economy, enriching economic dynamics, in line with Gali (2008), and estimate the model's parameters through Bayesian estimations with several monetary policy rules and risk aversion calibrations. Benchimol (2015) also introduces the concept of flexible-price real money.

Non-separability between consumption and money introduces money-related variables into the inflation and output equations. Thus, by minimizing its loss function with respect to these two equations, the central bank has to deal with money-related variables. Yet, the objectives, independence, and autonomy of the Bank of Israel (BoI) do not directly refer to money or monetary aggregates as instruments devoted to conducting monetary policy. The main objective of the BoI is to maintain price stability while being independent of politics and administrations. Therefore, it is interesting to test a model in which consumption and money are not time-separable in household preferences and to analyze the role of money and monetary policy on Israel's output dynamics

[1] For those reasons, policymaking institutions and central banks are increasingly utilizing DSGE models to assist in forecasting and policy decisions (Edge & Gurkaynak, 2010).