MONETARY POLICY RULES IN A SMALL OPEN ECONOMY: AN APPLICATION TO MEXICO

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We estimate a small-scale macro model for the Mexican economy under the New Keynesian (NK) framework and alternative interest rate rules for Mexico. With these results we evaluate the performance of the Bank of Mexico against a set of optimality principles derived in the NK literature. Our system estimation results show that the Bank of Mexico holds a preference for stabilizing not only inflation around target, but also acts to achieve an output gap close to zero. Furthermore, we find that the central bank responds non-linearly to real exchange rate depreciations. We also find that the central bank has actively attempted to neutralize demand and supply shocks through monetary policy that is consistent with the Taylor principle.

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I. Introduction

Price stability is an explicit objective of central bank policy in Mexico. In the past, monetary policy centered on the use of the exchange rate as the economy's nominal anchor, but when this resulted incompatible with macroeconomic conditions, the consequence often entailed a balance of payments crisis. Recently, Mexico's monetary policy has evolved towards the establishment of a precise inflation target, favoring

the short-term nominal interest rate as policy instrument. Explicitly, the monetary authority aims to achieve the convergence of inflation to its target level in the medium-run; however, it is plausible that implicit additional objectives also guide policy. Hence, the comprehension of the factors to which the monetary authority responds, as well as the effect of policy decisions on the economy constitute a problem of interest. The effective identification of the transmission mechanism of monetary policy is a fundamental pillar of policy conduction.

The purpose of the present paper is to model the behavior of the Mexican economy and the response of the central bank to economic conditions during the past decade. We model the economic restrictions faced by policy-makers through a small-scale macro model in the New Keynesian (NK) tradition. This class of models incorporates nominal rigidities and imperfect competition into the dynamic stochastic general equilibrium (DSGE) framework developed in the Real Business Cycle (RBC) literature. The assumption of nominal rigidities generates a structure where monetary policy is effectively non-neutral in the short-run, while maintaining its long-run neutrality. We use this modeling strategy as a reference to determine which factors account in greater part for inflation dynamics in Mexico, as well as to determine important aspects of the transmission mechanism. Furthermore, we model the conduction of monetary policy as endogenous –with the short-run nominal interest rate as instrument– through the use of the monetary policy rule methodology.

This approach is attractive and has received plenty of attention in the literature. Its main strength lies in its capacity to systematically incorporate economic information in order to formulate a policy recommendation. Policy rules vary considerably in their essence and complexity, and can be broadly separated into simple and optimal rules. Simple interest rate rules tend to be characterized in the literature as linear functions of the inflation rate and the output gap. These rules are essentially ad hoc, although some baseline versions may be derived from standard theory as special cases.[1] However, their simplicity makes them an attractive initial step in the evaluation of monetary policy, as they are able to capture some important aspects of policy conduction. Conversely, optimal rules are the solution to the explicit optimization of an objective function, the latter of which may be utility, subject to the constraints imposed by the structure of the economy as a whole. By using a larger information set and by modeling interactions between variables in a more sophisticated manner, optimal rules contain a more rigorous analysis. However, their complexity may reach considerable levels, making the communication of policy objectives to the

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[1] See, e.g., Clarida et al. (1999).