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What does South Korean inflation targeting target?☆

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ABSTRACT

This paper characterises South Korean monetary policy in the period of explicit inflation targeting that started in 1999. We calculate Bank of Korea's parameters in the policy objective function, conditional on an estimated macro-model. We show that this central bank appears to have pursued optimal policy geared towards achieving price stability, while displaying a considerable degree of interest rate smoothing. In addition, the central bank loss function is estimated to include negligible weights on output and exchange-rate variability.

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1. Introduction

In recent years, many countries around the globe have adopted inflation targeting (IT) regimes with an explicit goal. This has been the case in advanced economies for over a decade, as in the experiences of Australia, Canada, Great Britain, Israel, New Zealand and Sweden. A large number of countries, including other developed and emerging market economies (EME), have more recently introduced IT frameworks which operate under officially flexible exchange-rate regimes.[1] South Korea (henceforth Korea) adopted IT in 1998, completing its transition to a full-fledged regime by 2001.

Considerable research has been devoted to uncovering central bank preferences. The empirical literature on optimal monetary policy has largely focused on the US, which is not an IT country. We extend this literature by examining the case of Korea, which is not only an IT country but also a very open economy and an EME. Our paper uses economic outcomes and an empirical macro-model to estimate the Bank of Korea's (BOK) loss function in the IT period. The objective function parameters indicate how different goals are traded off in response to shocks. They are estimated under the assumption that the BOK sets monetary policy optimally, while trying to reach its pre-announced inflation target. It has become customary to use empirical policy rules to summarise short-term interest rate movements. In the case of Korea, the literature includes both estimates of standard Taylor rules (see e.g. Kim & Park, 2006) and those extended to incorporate the role of the exchange rate (see e.g. Eichengreen, 2004). Estimated policy rules are appealing because they capture the systematic relationship

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[1] For the international experience on IT, see e.g. Carare and Stone (2006) and IMF (2005).

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between interest rates and macroeconomic variables. The main drawback of estimated policy rules is that they are unable to address questions about the policy formulation process, as they fail to uncover central bank preferences. The identification of optimal policy weights offers the advantage of unveiling the monetary authority's objectives.

From a technical point of view, Ozlale (2003) comes closest to the present study. This author uses a maximum-likelihood approach to estimate policy weights conditional on private sector behaviour. He sets up a closed-economy macro-model for US inflation and output (drawing on Rudebusch & Svensson, 1999) along with a infinite horizon quadratic loss function to summarise policy objectives. A different approach, consisting in the joint estimation of the macro-model and central bank preferences, is undertaken in Dennis (2006). Otherwise, the latter study, like Ozlale (2003), employs the Rudebusch–Svensson model to describe the macroeconomy and uses an infinite horizon quadratic objective function. We deviate from these studies by incorporating small-open-economy features. Regarding the macro-model, these features refer to the inclusion of the exchange rate and its implications for domestic macroeconomic developments (in line with Collins & Siklos, 2004), as well as the use of external variables that impact the Korean economy. Among the latter variables are economic activity and interest rates in major advanced economies, as well as world commodity prices. We also allow the BOK to have a concern for exchange-rate stability, in light of Korea's status as a small-open-economy EME.[2]

Another feature of the present paper is that it studies the implications of two types of loss functions. First, we consider rule-of-thumb benchmarks such as strict IT (or "inflation nutter", as labelled in King, 1997) and "flexible" IT (incorporating a role for output stability), supplemented with loss functions attaching a role to interest rate smoothing and/or the exchange rate.[3] Second, we turn our attention to optimisation-based objective functions. This includes both the analysis of optimal objective function parameters for the BOK and the assessment of each relevant goal's contribution to the determination of observed interest rate paths.[4] The present paper also differs from the related literature in the treatment of the inflation target. We use the values for such target that are actually pre-announced by the BOK. Previous analyses postulate a fixed inflation target to be estimated (Dennis, 2006), take annual average inflation as the inflation objective (Ozlale, 2003), or treat inflation targets as Hodrick–Prescott trends (Collins & Siklos, 2004).

We examine in the Korean context one issue that is particularly relevant for EMEs, namely, whether monetary policy is geared towards stabilising the exchange rate.[5] While exchange-rate variability has in recent years risen among this group of countries, the extent of such fluctuations is still a matter of debate. Calvo and Reinhart (2002) find that these specificities of EMEs are responsible for a relatively small degree of exchange-rate flexibility in these economies – what the authors label "fear of floating".[6] One reason for this is that a weaker currency could lead to adverse balance sheet effects by raising the domestic-currency real value of external liabilities, thereby causing economic activity to fall.[7] The evidence on limited exchange-rate flexibility raises the question whether the desire to stabilise the exchange rate (for financial stability or other considerations) has created a conflict with other monetary policy goals. Alternatively, one could expect the improvement on balance sheet of banks in the post-Asian-crisis years to imply that financial stability considerations were less of an issue for Korea.

Our analysis of Korean IT begins in 1999, the first full year of the regime's implementation. Among the class of EME countries, the choice of Korea appears to be appropriate. Even if Chile implemented an IT scheme in the early 1990s, the country only adopted such regime in a context of enhanced exchange-rate flexibility only in 1999. We decide to employ a monthly sample to allow enough data for the estimation. Going further back in time would imply mixing data from the new regime with that of the previous monetary targeting period, while also involving a likely structural break at the time of Asian crisis of 1997–1998.

Our characterisation of BOK intentions does not directly address the important question whether Korea's IT regime had an effect on the country's macroeconomic performance. For countries that target inflation explicitly, the international evidence on this issue is mixed. Analysts often conclude that countries that adopt IT manage to reduce inflation to low levels and curb inflation and interest rate volatility (see e.g. Corbo, Landerretche, & Schmidt-Hebbel, 2001; Neumann & von Hagen, 2002). By way of contrast, Ball and Sheridan (2005) and Pétursson (2004) question whether this is the case among advanced countries.[8] In the case of EMEs, the literature is not as comprehensive and detailed as in the case of developed countries. The evidence appears to be somewhat more supportive of the experience of IT among EMEs (see e.g. Gonçalves & Salles, 2008;

[2] Our framework is also different from that advanced by Favero and Rovelli (2003). In their study of the Fed's behaviour, these authors employ a GMM estimation approach and assume a finite horizon for policymaking – in contrast with our use of an infinite horizon. In their study for 32 industrialised and developing countries, Cecchetti and Ehrmann (2002) pursue yet another method to characterise monetary policy intentions. More concretely, they employ a vector autoregressive setup to model macroeconomic dynamics, while using an output-inflation variability frontier to disentangle central bank preferences.

[3] The former two scenarios have also been investigated by Collins and Siklos (2004).

[4] Our use of a two-step method (first estimating the macro-model, then, conditional upon the latter, obtaining the policy coefficients) allows us to consistently compare the optimal central bank's loss function with rule-of-thumb benchmarks for the policy weights, conditional on the same empirical macro-model.

[5] In particular, this issue is of interest for the discussion of IT in EME economies. Using a panel of 17 EMEs, Aizenman, Hutchison, and Noy (2008) report a higher policy response to inflation (relative to real exchange rate) in IT than in non-IT countries.

[6] This means that, despite the recently proclaimed switch to floating exchange rates, the evidence seems to suggest a reversion to some degree of exchange rate management, albeit one which seems to be less tight than before the crisis (see e.g. Reinhart and Rogoff, 2004).

[7] Eichengreen (2005) discusses the implications of contractionary depreciations for monetary policy.

[8] The lack of a consensus is also apparent concerning other important effects of IT regimes, such as policy credibility, the predictability of inflation, and the sacrifice ratio (that is, the output cost of lowering inflation).

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