



Inflation targeting and financial stability in emerging markets



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ABSTRACT

This paper aims at investigating whether emerging market inflation targeters are more financially vulnerable than their non-targeting counterparts. It further assesses the extent to which targeting central banks are less responsive to financial imbalances, compared to those implementing alternative policy strategies. Based on a sample of 26 emerging countries, including 13 targeters, the analysis suggests that monetary policy in targeting countries is relatively more sensitive to financial risks. However, despite stronger central banks' responses to financial imbalances, the financial sector appears to be more fragile for targeters. Our conclusion therefore challenges the view that central banks, through their policy interest rates, can guarantee the stability of the financial system. It rather suggests that the control of inflation should remain the primary monetary policy objective, while a (macro)prudential authority would be in charge of the financial stability objective.

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1. Introduction

"The recent crisis points up the weakness of the existing regulatory and supervisory regimes in many countries [...]" (Woodford, 2012).

"[...] the crisis has taught to us that central banks, when they set interest rates, should also be concerned about the fragility of the financial system." (Giavazzi and Giovannini, 2010).

The two quotes above illustrate the debate which arose in the wake of the 2008/2009 global financial crisis. The financial regulatory system has been questioned, as has the monetary policy doctrine of the past two decades. The regulatory system failed to contain the financial bubble and has been ineffective in controlling financial innovations. Since the advent of the inflation targeting monetary policy strategy, central banks have been tasked with the primary objective of price stability. Under such a framework with CPI-inflation stability objective, a common view was that by focusing on inflation, the monetary authorities are also, to some extent, addressing the issue of financial stability because financial imbalances should be evident through inflation.¹ The global financial crisis proved this perspective wrong. Indeed, the relatively low and stable inflation of the early 2000s did not prevent the global

economy from experiencing a housing price bubble which burst in 2008.² As a consequence, inflation targeting has been criticized and regarded as a potential cause of the crisis, primarily because central banks have been less concerned with developments in the financial markets and did not respond to financial imbalances.³

This raises two questions. First, does the implementation of inflation targeting associated with higher financial fragility? Second, do targeting central banks really discard concerns for financial stability in their policy-making? This paper is built upon these two issues which have yet to receive substantial attention in the academic literature.

To our knowledge, Frappa and Mésonnier (2010) is the only existing study which investigates comparatively the state of the financial system in targeting versus non-targeting countries. Relying on a sample of 17 advanced economies, their empirical analysis suggests that inflation targeting is associated with higher real house prices and price-to-rent ratio. Considering the latter as indicators of financial instability, that is to say, the financial sector is relatively less stable in countries implementing the inflation targeting regime.

To assess the extent to which a central bank is concerned with

² This incoherence (stable inflation coupled with increasing financial risk) can be explained by the so-called "paradox of credibility" (Borio et al., 2003).

³ See for example Frankel (2012) and CEPR (2013). Another view developed in the literature argues that lax mortgage rules and financial regulation are to be blamed for the crisis, rather than monetary policy (Jean Louis and Balli, 2013, among others).

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¹ Or at the best, that microprudential tools should be used for the financial stability objective.

financial imbalances, an augmented version of the central bank's reaction function (i.e. Taylor-type rules) can be estimated, including a measure of financial stability.⁴ Borio and Lowe (2004) estimate such augmented central bank reaction functions for Australia, Germany, Japan, and USA, and conclude that there is no evidence of monetary policy tightening when financial imbalances accumulate. Castro (2011) investigates the extent to which the Bank of England, the Fed and the European Central Bank are concerned with financial stability. Estimating linear, non-linear and asymmetric augmented Taylor rules, his findings suggest that only the European Central Bank seems to tighten its policy stance in the presence of increasing financial imbalances. Based on a time-varying response approach, Baxa et al. (2013) examine this issue for the cases of USA, UK, Australia, Canada and Sweden. They conclude that most of those central banks (including those implementing the inflation targeting regime) respond to financial stress, mainly by decreasing their policy interest rate. This suggests that those central banks react "curatively" (i.e. when the economy is negatively affected by a financial shock) rather than preemptively to avoid the shock. Other analyses, including Cecchetti and Li (2008), and Belke and Klose (2010) have investigated central banks' reactions to financial instability in advance economies, with mixed conclusions. To the best of our knowledge, no such empirical investigations have been conducted on a sample of emerging countries, least of all studies aiming to compare targeters to non-targeters.⁵

Focusing on emerging markets, our contribution to the existing literature lies on three main points. First, we construct a composite index of financial instability which provides a more complete and comprehensive view of the financial conditions (compared to a single indicator such as credit growth). Second, we shed light on the assumption that inflation targeting might be associated with higher financial instability. Third, as a first attempt in the related literature, we investigate whether inflation targeting central banks in emerging countries are less responsive to financial imbalances compared to their peers.

The analysis is based on a sample of 26 emerging countries, including 13 targeters,⁶ with quarterly data spanning from 2000Q1 to 2010Q4. The main findings reveal that on average, targeters are financially more vulnerable than non-targeters. The analysis of

reaction functions suggests that contrary to their counterparts, most targeting central banks respond to financial imbalances with tighter policy. Overall, our conclusions suggest that despite the main policy instrument's response to financial risks, targeters are more financially unstable. This challenges the effectiveness of the short term interest rate as instrument to address financial instability, since the greater financial vulnerability in targeting countries can hardly be attributed to central banks' lack of concern with developments in the financial sector.

The remainder on the paper is organized as follows. In Section 2, we construct a composite index of financial instability. Section 3 provides an empirical analysis of the effect of inflation targeting on financial instability. Section 4 investigates the extent to which the monetary authorities are concerned with financial stability when setting their policy interest rate. And finally, Section 5 concludes.

2. On the assessment of the financial conditions

2.1. Issues in measuring financial stability

According to Borio and Drehmann (2010), financial instability is "a set of conditions that is sufficient to result in emergence of financial distress/crises in response to normal-size shocks". A variety of indicators are used in the literature to assess financial (in)stability; from individual financial institutions' characteristics (related to their balance sheets) to macroeconomic data. Gadanez and Jayaram (2009) provide a review of these variables.⁷ Existing studies which empirically investigate countries' financial conditions rely on alternative strategies. While some of these studies primarily focus on a single variable (Frappa and Mésonnier, 2010 use the housing price), others combine information from a number of financial and macroeconomic indicators to construct a composite index (Brave and Butters, 2011 rely on a set of 100 indicators for their composite financial condition index). Despite possible limitations (Vermeulen et al. (2015) argue that policy makers should be cautious when using financial stability indices, because they may show a weak relationship with the onset of a crisis), composite indices have the advantage of aggregating information from a larger set of financial variables which capture specific risks. In this regard, they can be expected to reflect more faithfully the actual financial conditions than a single indicator.

Building a composite index nonetheless raises the issue of the aggregation technique to be employed. Again, various approaches emerge from the existing literature. Broadly speaking, two types of strategies can be identified. The first relies on econometric and/or economic simulations, based on macroeconomic models. Using a reduced-form model and VAR impulse responses, Goodhart and Hofmann (2001) construct a financial condition index for the G7. Another economic-based approach for credit risk consists in assigning weights to each specific market based on its relative importance in the total amount of credit in the economy. The second category essentially stems from statistical analyses. It includes simple factor analysis (Illing and Liu, 2006), dynamic factor analysis

⁴ There is little consensus on the best way to take account of financial stability in the monetary policy framework. First, central banks of which the primary goal is inflation stabilization may face a trade-off between this primary monetary policy objective and a secondary financial stability goal (De Grauwe and Gros, 2009; King, 2012). Second, even when there is consensus that the central bank should attempt to control financial imbalances, another issue is whether this should be clearly specified in its loss function (Disyatat, 2010) or merely considered as a new argument in the reaction function but not as an objective per se (Bean, 2003). These issues are beyond the scope of our investigation in this paper. In addition, the institutional arrangement governing the monetary and the prudential authorities is another important element determining the extent to which the central bank responds to financial risks. However, our analysis in this paper intends to be descriptive rather than normative. We are interested in assessing how targeting and non-targeting central banks have behaved in the recent period with respect to financial instability risks, regardless of their official mandate. This draws from the debate in aftermath of the 2008/2009 global financial crisis, where some criticisms against the prevailing monetary policy making were developed, suggesting that more attention should have been paid to financial stability concerns.

⁵ In a discussion paper, Kawai and Morgan (2012) argue in favor of a more preemptive central banks' reaction with respect to financial risks. Based on the survey from the BIS, they evidence that most Asian central banks have an official financial stability mandate, as of 2009.

⁶ The sample has been selected on the basis of data availability, for both targeters and non-targeters (see Appendix Table 1). Our starting point is the EMBI list to which we add and subtract countries depending on data availability. Since both subsamples have been selected following the same procedure, there is no reason a priori to believe that the non-targeters subsample might bias the results. The existence of a potential self-selection bias is discussed and addressed in our empirical analysis.

⁷ Six main categories are identified: (1) Real economy includes GDP growth, fiscal position of governments, and inflation. (2) The corporate sector includes total debt to equity, earnings to interest and principal expenses, net foreign exchange exposure to equity, and corporate defaults. (3) The households sector includes household assets, debt, income, consumption, debt service, and principal payments. (4) External sector includes exchange rate, foreign exchange reserves, current account, capital flows, and maturity/currency mismatches. (5) The financial sector includes monetary aggregates, interest rate, growth in bank credit, bank leverage ratios, nonperforming loans, risk premium, capital adequacy, liquidity ratio, standalone bank credit ratings, and banking concentration. (6) Financial markets variables include change in equity indices, corporate bonds spread, market liquidity, and house price.

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