



## The housing price boom of the late 1990s: Did inflation targeting matter?☆

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### ABSTRACT

The recent boom in the housing markets of most developed economies has spurred criticism that inflation targeting central banks may have neglected the build-up of financial imbalances. This paper provides a formal empirical test of such claims, using a standard program evaluation methodology to control for a possible bias due to self-selection into inflation targeting. We consider 17 industrial economies over the period 1980–2007, among which nine countries have targeted inflation at some point. We find robust evidence of a significant positive effect of inflation targeting on real house price growth and on the house price-to-rent ratio.

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### 1. Introduction

The credible anti-inflationist monetary policies conducted in major developed economies since the mid-1980s have been identified as one plausible factor behind the Great moderation episode over the last two decades. However, as the dotcom boom and bust of the early 2000s and the recent subprime mortgage crisis have shown, financial crises associated with asset price boom and bust episodes are not merely a relic of the twentieth century. This unpleasant fact has recently prompted a debate about the role of inflation targeting (IT) policies in the build-up of imbalances, which eventually led to such episodes of financial turmoil. Indeed, some central bank watchers have regularly contended in recent years

that the narrow pursuit of such policies, which aim primarily at stabilizing inflation over a 2–3 years horizon, could actively contribute to damaging financial stability over longer horizons. In particular, some inflation targeting countries could mistakenly neglect monetary and financial developments that may seem irrelevant for future inflation over the short- to medium-term, but that have important macroeconomic effects over longer horizons.<sup>1</sup>

While there is a broad consensus in the economic profession that a policy focused at maintaining price stability is also a necessary condition for maintaining financial stability, the experience of the recent years has confirmed the view that it is not a sufficient one.<sup>2</sup>

First, there is a view that an inflation targeting central bank may neglect important information about the build-up of financial imbalances that do not materialize rapidly into consumer price

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<sup>1</sup> See notably a series of contributions by Claudio Borio, William White and their coauthors at the BIS (Borio et al., 2003; Borio and White, 2003; White, 2006). Bean (2003) claims, on the contrary, that inflation targets may be enough, provided the central bank is sufficiently forward-looking. Recently, Leijonhufvud (2007) and De Grauwe (2007) have also expressed their concern that central banking could not be reduced to strict inflation targeting without damaging consequences for both financial and macroeconomic stability.

<sup>2</sup> Interestingly, the point has been repeatedly voiced in these terms by Mervyn King, Governor of the Bank of England, in recent speeches. See King (2009), Bordo and Wheelock (1998) and Bordo et al. (2003) have provided historical evidence of the detrimental effect of episodes of monetary instability on financial stability.

pressure. Many reasons may account for such a disconnection between financial and price developments. Among the usual suspects are the impact of globalization in terms of lower import prices and induced lower domestic inflation pressures, as well as the consequences of structural changes that have affected the functioning of labour and financial markets over the last two decades. Some have also argued that the mere success of inflation targeting strategies could have contributed to preventing a proper risk assessment by inflation fighting central banks, what *Borio et al. (2003)* labelled the “paradox of credibility”. Since the anti-inflationary commitment of the central bank becomes more credible, and long-run inflation expectations get more firmly anchored around the central bank’s objective, the macroeconomic consequences of “cheap money” –including credit booms that sustain a rise in some asset prices– may take more time to show up into higher inflation. As a conclusion, policy rates may fail to rise promptly enough to stem the build-up of financial imbalances (*Borio and White, 2003*).<sup>3</sup>

A recent paper by *Piazzesi and Schneider (2007)* provides another theoretical motivation for our study. They construct a general equilibrium model of housing prices where some agents suffer from inflation illusion and thereby disagree about the level of ex ante real interest rates. While smart investors understand the Fisher equation and thus link the level of nominal bond rates to their inflation expectations, illusionary investors do not and therefore they systematically associate shifts in nominal rates with shifts in the real return on bonds. In this set-up, the authors show that, when households are allowed to borrow against housing collateral, then a non-monotonic relationship occurs between house prices and inflation, depending on the level of nominal rates. For instance, in the context of low nominal interest rates where smart investors have inflation expectations below the long-run inflation average and see investment in bonds as more rewarding, illusionary investors see investment opportunities in a leveraged housing portfolio, thus driving up house prices above the equilibrium value. While the authors’ focus is more on the consequences of structural change in mortgage markets, their model also suggests that inflation targeting may have a role in house price mispricing episodes, at least in a transitional phase. Consider for instance that the central bank adopts inflation targeting and that only a portion of households adjust their inflation expectations down to the central bank target. Disagreement about ex ante real rates may then be conducive to a house price boom in a context of low nominal rates. This is what we observed in the late 1990s-early 2000s in many developed economies, a period when (less informed) households may have viewed borrowing as exceptionally cheap in real terms. We do not deny that structural factors, like a widespread shift towards more deregulated mortgage markets, are likely to have played an important role in fueling the recent rise in housing prices and explaining the correlation in housing price booms across most industrial economies. That said, inflation targeting strategies may have been an additional destabilizing ingredient, at least until all agents brought their inflation expectations in line with the central bank target.

In this paper, we aim to bring such hypotheses to the data and assess whether inflation targeting actually mattered as regards housing price inflation in developed OECD economies. Over the last decade, an abundant empirical literature has tried to quantify the macroeconomic performance of countries that adopted inflation

targeting.<sup>4</sup> Most studies focus on inflation performance, in absolute or relative terms, while some also examine whether adopting an inflation targeting strategy could be made responsible for a more volatile output. However, to our knowledge, there is no comparative empirical work about the consequences of inflation targeting policies for financial stability. We aim at filling this gap, using a program evaluation methodology that has been recently transposed to macroeconomic issues (see notably *Persson, 2001; Lin and Ye, 2007*). We thus circumvent the self-selection bias that is likely to plague previous studies on the consequences of adopting inflation targeting.

Our study covers 17 industrial economies over the period 1980–2007, among which nine countries have targeted inflation at some point. We find that the average effect of inflation targeting on house price inflation is positive and statistically significant. These results are robust to various specifications and options of the evaluation procedure. On average, the adoption of inflation targeting is associated with an increase in the level of annual house price inflation of roughly 2.0 percentage points in targeting countries. Besides, inflation targeting also appears to be associated with a slightly higher average house price-to-rent ratio (of around 6 percentage points).

In the rest of the paper, Section 2 provides an overview of the recent housing price boom in developed OECD economies. Section 3 presents our econometric methodology. Section 4 presents the dataset and discusses several empirical issues. Section 5 comments on the results and Section 6 concludes.

## 2. The housing price boom of the last decade

Since 1970, nominal house price growth has fluctuated widely in developed economies, with four expansionary phases – in the early and late 1970s, in the mid to late 1980s and from the late 1990s to the mid-2000s– and four slowing phases – in the mid-1970s, the early 1980s, the early 1990s and from 2007 to the present.<sup>5</sup> Note that, while housing price busts are normally characterized by a significant drop in real house prices, nominal house price deflation is rare and has been associated in the past with episodes of severe economic downturns, such as the recessions in the early 1990s in Finland, Norway and Sweden.<sup>6</sup>

Most developed economies have experienced rapidly rising house prices since the mid-1990s.<sup>7</sup> In terms of its magnitude, length and geographical coverage, the latest boom has been quite exceptional. In the 17 OECD countries of our sample,<sup>8</sup> the annual rate of growth of nominal housing prices reached an average of almost 7.5% between 1996 and 2006 (5.5% in real terms), compared with only 5.4% over the 1980–1995 period (0.5% in real terms). In addition, the recent boom lasted for almost ten years in most countries, which is roughly twice as long as the duration of past episodes.

An abundant literature has investigated the reasons why this housing boom was so pronounced and, in particular, why it was

<sup>4</sup> See for instance *Ball and Sheridan (2005), Lin and Ye (2007), Vega and Winkelried (2005)* and the studies collected in *Bernanke and Woodford (2005)*.

<sup>5</sup> See for instance *Lecat and Mesonnier (2005)*.

<sup>6</sup> For a description of past housing booms and busts and the size of associated recessions in developed OECD economies, see *Claessens et al. (2008)*.

<sup>7</sup> An exception is Germany whose nominal house prices have been gradually declining since they reached a modest peak in 1994. Japan is another obvious exception: the country remained stuck in recession throughout the 1990s following the housing price and stock market bust of the beginning of that decade. Given that Japan is a special case, we excluded it from our database. Note that since Japan did not target inflation over the period under review, excluding Japan tends to minimize the probability of rejecting the null of no-impact of IT on house price growth.

<sup>8</sup> Countries are listed in Section 4 below.

<sup>3</sup> A more formal presentation of a similar argument has been put forward by *Amato and Shin (2006)*. In their model, where private agents have diverse private information about the true state of the economy, the public signal provided by the central bank has a disproportionate effect on agents’ decisions, is likely to crowd out their private information and then tends to lower the information value of prices.

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