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## The Risks and Side Effects of UMP: An Assessment of IMF Views and Analysis

### **UMP and Risks to Financial Stability:**

**Philip Turner**, Visiting Lecturer, University of Basel, and former Deputy Head of the Monetary and Economic Department, BIS

### **IMF Analysis of Housing Markets:**

**Alessandro Rebucci**, Associate Professor, Johns Hopkins University Carey School of Business, CEPR and NBER

**Jianping Zhou**, Senior Economist, Monetary and Capital Markets Department, and former Senior Economist, Independent Evaluation Office, IMF

### **Distributional Impact of UMP:**

**Pierre Monnin**, Fellow at the Council on Economic Policies, Switzerland

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*of the* International Monetary Fund

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**ABBREVIATIONS**

AE	advanced economy
BIS	Bank for International Settlements
CFM	capital flow management
ECB	European Central Bank
EM	emerging market
FAD	Fiscal Affairs Department (IMF)
Fed	U.S. Federal Reserve
GDP	gross domestic product
GFC	Global Financial Crisis
<i>GFSR</i>	<i>Global Financial Stability Report</i>
LTV	loan-to-value
QE	quantitative easing
UMP	unconventional monetary policies
VAR	vector autoregression
<i>WEO</i>	<i>World Economic Outlook</i>

## EXECUTIVE SUMMARY

This paper assesses IMF analysis of the risks and side effects of the unconventional monetary policies (UMP) adopted by the major advanced economies since the global financial crisis. While there has been broad support for the view that UMP helped to close output and inflation gaps, concern has been expressed in some quarters that this has not been a “free lunch.” Some have worried that, by encouraging risky behavior, UMP raises the odds of a future financial crisis, and hence the closing of current gaps comes at the cost of future gaps. A buildup of vulnerabilities in the housing sector raises particular concerns, given the role that stress in this sector has played as a trigger for financial crises in the past. Others have been concerned that while UMP closes output gaps, it does so by helping some wealthy households and hurting others—that is, UMP has adverse distributional effects.

Chapter 1 of the paper notes that the IMF has emerged as a prominent supporter of the view that macroprudential policies, rather than monetary policies, should be the first line of defense against financial stability risks. IMF staff’s 2015 paper on this topic was considered by many outside experts as an important statement of the arguments for this view and in helping to propagate it. The IMF has also devoted substantial resources to monitoring the buildup of financial stability risks and to the development of a macroprudential framework and policy toolkit to manage them. Senior policymakers and financial experts praised this effort, particularly the cross-country monitoring and analysis of the effects of macroprudential policy tools.

While the Fund has raised alarms occasionally about specific financial stability risks, it has consistently judged the risk buildup overall to be moderate and not sufficient to weaken its support for UMP. A notable example of this judgment is reflected in IMF analysis of housing sector risks, analyzed in Chapter 2. Fund staff have expressed concerns about housing sector risks in some countries but have not considered UMP to have contributed to a widespread and excessive buildup of risks in housing markets. Much of this work has been performed at the national level, and there would be benefits from increased knowledge sharing among country teams and use of multilateral surveillance vehicles to assess common factors, cross-border linkages, and the build-up of risks, building on recent work in the *GFSR*.

Having made macroprudential policies the first line of defense against financial stability risks, the Fund has been careful to avoid getting locked into a stance where these policies are always judged as “effective.” It will be important for the IMF to continue to carefully assess the effectiveness of these policies and consider possible complementarities between macroprudential and monetary policy in addressing financial sector risks, including those in housing markets.

The IMF has not been in the forefront of analysis of the distributional impact of UMP but has played a useful convening role to foster some discussion of the distributional effects of UMP and macroprudential policies, as described in Chapter 3. This is an issue that deserves attention to the extent that distributional concerns could be an impediment to use of UMP in future.



# **Chapter 1—UMP and Risks to Financial Stability**

**Philip Turner\***

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\* Visiting Lecturer, University of Basel, and former Deputy Head of the Monetary and Economic Department, BIS.

## I. INTRODUCTION

1. This chapter reviews the IMF's work over the past decade on whether unconventional monetary policies (UMP) have increased financial stability risks and on the policy tools that should be used to address such risks. The review is based on a reading of the relevant documents and on interviews with nearly 50 senior policymakers and leading monetary policy experts. It also draws on the case studies of advanced and emerging economies covering IMF advice on the use of macroprudential policies to manage financial stability risks.

2. The IMF has been a strong advocate of UMP to help major advanced economies (AEs) meet their macroeconomic goals, namely, closing output gaps and bringing inflation back to target. Indeed, as noted by First Deputy Managing Director Lipton that one channel through which expansionary monetary policy—conventional or unconventional—works is by easing financial conditions and encouraging risk-taking (Lipton, 2017). The IMF has nevertheless recognized—especially in light of the experience just prior to the onset of the Global Financial Crisis (GFC)—that the increase in risk-taking might sometimes end up being excessive, it may distort the allocation of capital across sectors, and the pursuit of risk-taking by individual agents could generate systemic risks. The IMF has thus devoted substantial resources to monitoring the buildup of such risks and to the development of a macroprudential framework and policy toolkit to manage them.

3. While the IMF has raised alarms occasionally about specific risks, it has consistently judged the buildup overall to be moderate and not sufficient to weaken its support for UMP. The IMF's former chief economist over much of the past decade expressed this view recently (Blanchard, 2018):

“When central banks ... embarked on QE [quantitative easing], there were widespread worries that it would lead to excessive risk taking ... Looking at the evidence today, it looks like risk taking has been actually quite limited. Stock prices are high, and so are P/E ratios, but these reflect low safe rates ... Securitized lending has expanded, but securitization is not by itself a bad thing ... Institutions such as insurance companies or defined benefit pension plans have increased the proportion of alternative, higher yielding, assets but it is not seen as representing excessive risk. Households and firms have deleveraged. Public debt, in ratio to GDP ... has stabilized in most countries. Some emerging market countries may have borrowed too much, but this is about it.”

4. In parallel, the IMF generally advocated that central banks should not “lean against the wind,” i.e., they should not use monetary policy tools to address financial stability risks. Instead, macroprudential policies should be “the first line of defense” for such purposes (Viñals, 2009; IMF, 2015b). This advice has been given in the context of considerable slack in the major advanced economies that has prevailed over much of this period, and particularly with inflation well below target in some of these economies. Nonetheless, the IMF has left the door open to

adjusting this approach as changing circumstances might modify the cost and benefits of using monetary policy to deal with financial stability concerns.

5. Others have been less sanguine about the impact of UMP on financial stability risks and have taken a different view on how actively monetary policy should be used to manage such risks. The Bank for International Settlements (BIS) argued that monetary policy strategies need to “lean against the buildup of financial imbalances even if near-term inflation remains low and stable” (Caruana, 2011). Others have warned that the financial stability risks are already deep-rooted because monetary expansion has lasted too long and relied too heavily on new, untried unconventional policy tools. The strong rise in equity prices worldwide since 2010, the narrowing of debt spreads, and the boom in bond issuance have raised for some the specter of another financial boom destined for a crash (White, 2016).

6. Those concerned with the buildup of financial stability risk have argued that policy interest rates should be raised substantially without delay and central banks should sell the assets acquired under QE, to forestall another financial boom-bust cycle (Hannoun and Dittus, 2017). The BIS’s 2017 Annual Report, for instance, stated that central banks may have to tighten monetary policy even if inflation remains below target so as not to fall behind the curve with respect to the financial cycle (BIS, 2017a). From this perspective, the policy framework of central banks needs reform so that interest rates are set less to meet an inflation target and more to moderate boom-bust financial cycles (White, 2017).

7. The focus in this chapter is on the financial stability effects of UMP on advanced economies, and particularly on the countries carrying out these policies. Section II describes the consensus before the GFC on the challenge of dealing with financial boom-bust cycles in a world of very low inflation and the evolution in the IMF’s views over the last decade; it concludes with an assessment of the IMF’s work. Section III assesses IMF work on some specific risks which prominent outside observers have worried could arise from the long period of expansionary monetary policy. The main findings of the chapter are summarized in Section IV.

## **II. UMP AND FINANCIAL STABILITY RISKS**

8. The IMF’s policy assessments prior to the GFC were based on an analytical framework shared by most central banks and monetary economists: monetary policy should aim at macroeconomic objectives, while other policies (regulatory, microprudential, fiscal, etc.) should prevent financial excesses. Using interest rates to tackle asset price booms was not ruled out but it was not recommended as the first resort.

9. With the onset of the GFC, as the need to use monetary policy instruments to meet macroeconomic goals (output and inflation) became paramount, the IMF moved on two fronts. First, it took a stronger view that monetary policy should focus on macroeconomic objectives and that financial stability should be assigned to other policies. Second, it developed detailed guidance

on the deployment of macroprudential policies as the first line of defense against financial stability risks. This section describes and assesses key IMF work on both fronts.

### A. “Leaning Against the Wind”

10. The view that tightening monetary policy is not a cost-effective way of addressing an asset price bubble has a long history. One basic reason, as restated by Persaud (2010), is that raising interest rates high enough to curb an asset price boom in one sector would cripple the rest of the economy. Central banks have thus been reluctant to “lean against the wind” of asset price increases. At the same time, central banks have long recognized that the interactions between monetary policy instruments and goals, on the one hand, and financial conditions, on the other, are very complex. For example, financial variables help to assess future macroeconomic prospects, and may be crucial for revealing the tail risks to any baseline projection. Hence, central banks have generally been very attentive to financial conditions, regardless of whether they have a mandate for financial stability.

11. Prior to the GFC, the IMF’s view reflected this consensus. Bilateral surveillance and macroeconomic assessments in the *World Economic Outlook (WEO)* strove to take full account of financial variables, making frequent reference to the work in the *Global Financial Stability Report (GFSR)*. Moreover, some attention was paid to issues that became prominent during the GFC, namely, how to continue expansionary monetary policy when policy interest rates hit zero and how to deal with the dilemma of a conflict between monetary policy goals and financial stability risks (Box 1).

12. As the depth of the GFC, and then the sluggishness of the ensuing recovery, became apparent, the IMF became a strong advocate of UMP as the primary means of closing output gaps and bringing inflation back up to target. Over the next few years, the IMF also increasingly advocated that financial stability risks should be addressed not by monetary policy tools but through other means, particularly macroprudential policies. The IMF’s views were formalized in a September 2015 Policy Paper, “Monetary Policy and Financial Stability.” The paper posed the question of “whether monetary policy should be altered to contain financial stability risks.”

“Should [monetary policy] lend a hand by temporarily raising rates more than warranted by price and output stability objectives? ... Based on our current knowledge, and in present circumstances, the answer is generally no. But the door should remain open as our knowledge of the relationship between monetary policy and financial risks evolves and circumstances change” (IMF, 2015b).

**Box 1. Monetary Policy and Financial Stability:  
IMF Views Prior to the Global Financial Crisis**

Prior to the Global Financial Crisis (GFC), the IMF generally called for macroeconomic policy to consider asset price movements and address financial stability issues through regulation and fiscal policies. It expressed concerns that low interest rates could create financial instability but felt that monetary policy should generally not aim to influence asset prices, thus supporting the “clean” versus the “lean” view. Nonetheless, to the extent that asset price movements contained new information about future inflation and output gaps, the IMF advised that monetary policy should consider such movements.

The October 1999 *World Economic Outlook (WEO)* noted that even though the “zero bound on nominal interest rates constrains the ... interest rate channel, monetary policy does not lose all effectiveness.” The *WEO* of September 2001 urged the Bank of Japan—which had commenced unconventional monetary policies (UMP) but bought mainly short-term bonds, limiting the impact on longer-term yields—to make “more aggressive use of the flexibility available under the new monetary framework with the aim of achieving a rapid end to deflation.”

The May 2000 *WEO* had as its main theme, “Asset Prices and the Business Cycle.” It argued that macroeconomic policy should take asset price movements into account when such movements contained new information about future inflation and the output gap. In principle, the IMF did not rule out raising interest rates to counter a sharp rise in asset prices even when there was little evidence of inflationary pressures. But it suggested that: (i) such a step should not be taken lightly; (ii) there were technical and political difficulties in deciding when to strike preemptively; (iii) in many circumstances, alternative policy actions might be more effective in tackling an asset price boom than raising interest rates. Such actions included tighter financial regulation; countercyclical fiscal policy; and tax increases to lower the real post-tax return on asset transactions.

In 2004, the IMF expressed concern about the financial risks of interest rates remaining too low for long. The *WEO* of April 2004 noted that global interest rates were at that time very low and would “have to rise substantially.” It worried that asset prices could get ahead of fundamentals, and that future interest rate rises—especially if abrupt or unexpected—could lead to financial market volatility. Concern was expressed about the lack of transmission of higher policy rates into long-term rates, which remained low worldwide (“the Greenspan conundrum”). As a result, the *WEO* warned, “market participants have sought to boost returns through increasingly complex and leveraged strategies.”

The *WEO* and *GFSR* reports in April 2007 recognized the macroeconomic risks that financial excesses were creating without anticipating the onset or depth of the GFC. The October 2007 *WEO* made only a modest downward adjustment to the baseline forecast for 2008 growth in the advanced economies, though it underlined the clear risk of a deeper impact due to financial conditions (loss of confidence in risky securitizations and banks’ weakened balance sheets).

The *WEO* in April 2008 devoted a chapter to implications of the turning housing price cycle, suggesting that monetary policy may needed to respond more aggressively to developments in the housing sector, within a risk management approach that treats house price dynamics as one of the key factors to be considered in assessing the balance of risks to output and inflation.

13. The IMF’s conclusion that under “current understanding and circumstances, the case for leaning against the wind is limited” was based on a comparison of the costs and benefits of such a policy. The costs were the short-run loss in output and increase in unemployment from raising interest rates. These costs could be large given the prevailing wide output gaps and the steep increases in interest rates that were likely to be needed to have an impact on the trajectory of asset prices. The benefits were the reduction in the probability of a crisis. This cost-benefit

framework owes much to the work of Svensson (2014; 2017), an influence acknowledged in the IMF paper and in interviews with staff conducted for this evaluation.<sup>1</sup> The IMF used its own large-scale model (the Global Integrated Monetary and Fiscal Model) to carry out the cost-benefit but reached a conclusion similar to Svensson that “the costs of leaning against the wind appear greater than the benefits, unless a severe crisis is foreseen” (IMF, 2015b).

14. Since the 2015 Policy Paper, the IMF has continued to refine its views, with its latest thinking reflected in a 2018 book “Advancing the Frontiers of Monetary Policy” edited by Adrian, Laxton, and Obstfeld. One chapter of the book revisits the terrain of the 2015 paper and reaffirms that “monetary policy is generally not the appropriate tool” for managing financial stability risks.<sup>2</sup> However, the chapter also emphasizes that this conclusion is predicated on the feasibility (especially in political economy terms) and availability of effective macroprudential policies. It also underscores the need for further research concerning the question of whether monetary policy could occasionally be used to complement prudential tools.

15. Recently, IMF staff have suggested that inflation-forecast-targeting central banks explicitly consider financial conditions in a growth at risk framework (IMF, 2017; Adrian, Laxton, and Obstfeld, 2018). Staff show that financial conditions provide valuable information on “downside risks to inflation and growth over the short- to medium-term policy horizon that stem from vulnerabilities in the financial sector.” Hence, having monetary policy respond to financial conditions improves welfare even if the monetary policy mandate remains focused on price and output stability. This result derives from the observed link between financial conditions and the conditional mean and variance of the output gap and inflation and goes beyond the previous consensus, which argued that monetary policy should take financial conditions into account only to the extent that they change the baseline forecast for output and inflation.

## **B. Macroprudential Policies as the First Line of Defense**

16. On the second front, the IMF has devoted considerable effort into (i) developing a “framework to inform the IMF’s country-specific advice on macroprudential policy;” (ii) maintaining a database of macroprudential measures taken by countries (IMF, 2018a); (iii) carrying out cross-country studies to assess the effectiveness of these measures and summarize lessons learned. The framework was initially laid out in a 2013 IMF Policy Paper on “Key Aspects of Macroprudential Policies” and two guidance notes for IMF staff on how to advise countries on the use of these policies (IMF, 2013a; 2014a; 2014b). It was further complemented by a paper on the role of macroprudential policies in dealing with large and volatile capital flows

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<sup>1</sup> Svensson was a visiting scholar at the IMF in 2015–16.

<sup>2</sup> “Raising interest rates more than warranted by medium-term price and output stability objectives seems to increase the overall costs to society by raising unemployment and lowering real activity. These generally exceed the gains achieved from reducing the risks of a financial crisis. Moreover, an additional financial stability objective may cloud communications and undermine the credibility, and therefore the effectiveness, of monetary policy” (Adrian, Laxton, and Obstfeld, 2018).

(IMF, 2017b). The IMF is also playing a role in upgrading the data needed to improve macroprudential policies by keeping track of the development of possible systemic risks (Heath and Goksu, 2017).

17. The 2013 IMF policy paper provided a comprehensive review of the definition and scope of macroprudential policies, their interactions with other policies, the challenges of making them operational, the institutional arrangements under which these policies were likely to be more effective, and their cross-border implications. The paper noted the “strong complementarities and interactions” between monetary policy and macroprudential policy (see also Nier and Kang, 2016). Macroprudential policy could be used to build up buffers when financial conditions are easy. Such buffers could be released to keep banks and other intermediaries healthy during periods of financial distress, helping to preserve the effectiveness of monetary policy in financial downturns.<sup>3</sup> Macroprudential policy could also be adapted to counter unwanted side effects from expansionary monetary policy, and this might be particularly important when interest rates are close to zero and the temptation to seek higher leverage is strong. Finally, macroprudential policy tightening might lower aggregate demand and affect financial variables in ways that require monetary policy to be easier than otherwise.

18. The first guidance note (IMF, 2014a) discussed conditions under which macroprudential policies should be tightened or relaxed, challenges in their implementation (including leakages), and how such policies should be communicated. The notes discussed “how the operational advice should differ with country-specific circumstances and relate to other policy settings.” The second note (IMF, 2014b) offered guidance on the “specific macroprudential tools available to address a given vulnerability,” covering both broad-based tools and more targeted tools (e.g., targeted to the corporate sector or household sector), and liquidity and structural tools. The 2017 paper discussed the role of macroprudential policies in the context of risks associated with large and volatile capital flows inter alia to ensure consistency with the use of capital flow management measures.

19. IMF staff were concerned about the possible policy leakages that could undermine the effectiveness of macroprudential measures. In this context, staff have explored a possible role for some form of international coordination of macroprudential policies, particularly among countries with strong trade or finance links. A paper by Choi, Kodres, and Lu (2018) argues that joint macroprudential tightening by several countries can make such policies more effective.<sup>4</sup> Staff also called attention to credit leakage to nonbanks: a 2016 IMF working paper argues that quantitative

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<sup>3</sup> Weidmann (2018) also stresses how macroprudential rigor can protect monetary policy—laxity could leave monetary policy having to reduce the real burden of private debt by inflation. See also Dudley (2013).

<sup>4</sup> Researchers at the ECB have found cross-border spillovers from macroprudential policy have been important in the euro area (Nocciola and Zochowski, 2016).

macroprudential constraints on banks have a strong substitution effect driving credit to nonbanks (Cizel and others, 2016).<sup>5</sup>

### C. Assessment

20. The consensus view among central banks and monetary policy experts remains that monetary policy should generally focus on its macroeconomic objectives, the view that prevailed pre-GFC. Though the IMF was not in the vanguard in the initial development of this view, it was a prominent advocate of the assessment that the circumstances of the post-GFC period justified aggressive monetary measures to address output gaps while developing other tools to deal with financial excesses. Its 2015 paper on the topic is considered by many outside experts as nicely summarizing the arguments for the view and helping to propagate it. IMF mission chiefs were generally appreciative of the framework as useful in guiding their discussions with authorities, though a few felt it was too constraining in not acknowledging that simultaneous use of macroprudential tools and modest tightening of monetary policies might sometimes be more effective than just using the former.

21. Senior policymakers and financial experts greatly appreciated the IMF work on quantifying the effects of macroprudential policy tools. While other institutions such as the BIS have also contributed importantly, the IMF is regarded as the international clearinghouse for evidence on how different instruments have been designed in different countries and how well they are working.<sup>6</sup>

22. There was also appreciation that, while providing a strong framework to guide analysis and policy advice, the IMF had left the door open to changes in its advice as economic circumstances changed and additional evidence accumulated. It was noted that the house view was becoming more nuanced as output gaps closed and signs of financial excesses have become more salient. Some experts pointed to a welcome recent trend toward convergence of views between the IMF and the BIS. While BIS researchers have often been associated with the view that monetary policy should systematically lean against the buildup of financial imbalances even when inflation is low and stable, more recently, the BIS has shown some adaptation in the direction of recommending that macroprudential tools should be used to counter such vulnerabilities, similar advice to that of the IMF (BIS, 2018). For its part, the IMF has emphasized the need for central banks to be alert to financial conditions and to respond to changes in these conditions to guard against tail risks in output.

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<sup>5</sup> Constâncio (2017) has argued that without an expanded macroprudential toolkit to cover maturity mismatches and leverage in nonbank financial institutions, there will be other financial crises that monetary policy cannot prevent.

<sup>6</sup> In one interview, it was said that the IMF's advocacy of such policies had been very helpful in the political debate in a country where they had not yet been used. Their very specific impact (e.g., on those seeking mortgages) can attract strong opposition from those affected, and the indication that such measures are supported internationally can be persuasive.

### III. IMF ANALYSIS OF SPECIFIC FINANCIAL STABILITY RISKS RELATED TO UMP

23. This section looks at IMF work on specific financial stability risks particularly arising from UMP, with a focus, as noted earlier, on financial stability effects of UMP on advanced economies and particularly on the countries carrying out these policies. While influential observers have worried about many risks from a decade of expansionary monetary policies, four broad risks stand out: (i) the “debt trap;” (ii) the snap-back in interest rates; (iii) an increase in bank risk-taking; and (iv) an unsustainable rise in asset prices, both equity and house prices. (This chapter only discusses equity price risks; house price risks are discussed in Chapter 2 of this paper.) Box 2 discusses the analysis of issues related to debt build up in emerging markets that has been facilitated by the easy global liquidity conditions steaming from UMP.

#### Box 2. Corporate Debt in Emerging Market Economies

Corporate debt in emerging markets has grown at a rapid rate over the past decade—the share of EMs in total private nonfinancial debt has gone up from about 10 percent before the global financial crisis to about 35 percent today. Caruana (2012) and He and McCauley (2013) discussed the role of accommodative global monetary conditions in this build up, though downward pressure on the policy interest rates set by emerging market central banks and portfolio balancing effects that transmit lower bond yields as central banks of advanced economies engage in large-scale bond purchases.

While the development and growth of corporate bond markets is welcome, and in fact has been advocated by the IMF, it can also be a source of vulnerability when global financial conditions become less favorable. Many financial crises in emerging markets have been preceded by rapid leverage growth.

The IMF has been alert to the potential risks from this source and conducted a detailed assessment in 2015. The spillover report that year focused on the risks from higher FX exposure—taking account the extent of hedging, sectoral differences and maturity structure—and concluded that corporate sector risks were moderate but needed to be monitored. The October 2015 *GFSR* also examined the rise in non-financial corporate debt across major emerging markets and concluded that global factors had supplanted country-specific characteristics in explaining the rise in corporate borrowing. The *GFSR* recommended increased monitoring of systemically important firms and tightening of prudential policies to help limit further build-up of foreign exchange balance sheet exposures. Further, emerging markets were advised to prepare for an increase in corporate failures with the normalization of global financial conditions and advised that corporate insolvency regimes should be reformed in some countries. Since 2015, the IMF has continued to update its assessments. The October 2018 *GFSR* drew attention to the continuing increase in external leverage across emerging markets but concluded that “overall vulnerabilities ... remain moderate compared with historical levels.”

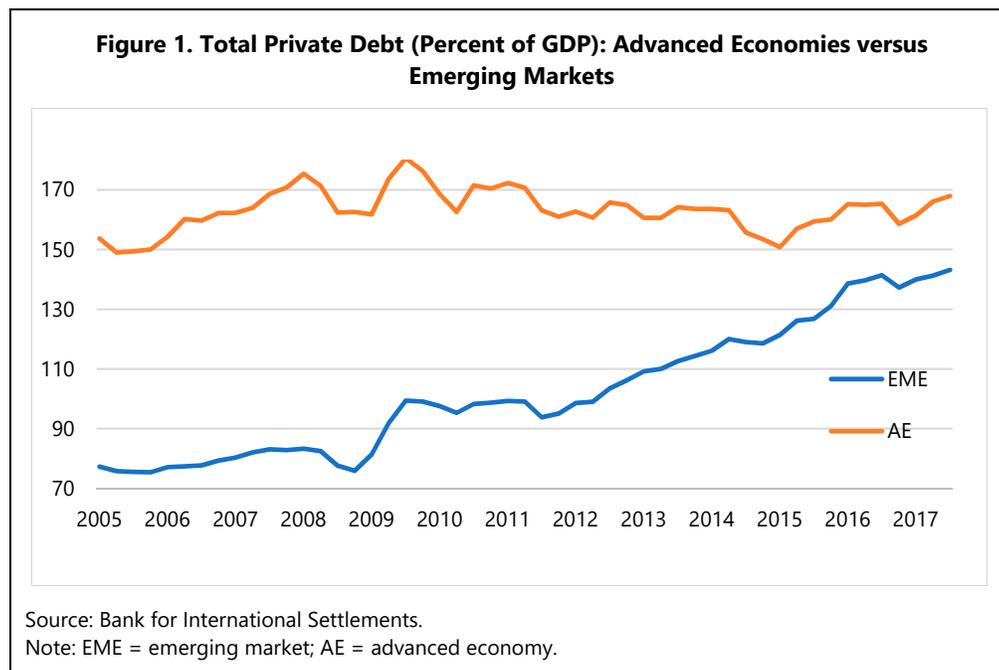
#### The “Debt Trap”

24. *Concerns:* A possible financial stability risk is that a long period of highly expansionary monetary policies could lead to a dangerous rise in private sector debt and leverage. As a result,

the economy would be in a “debt trap,” meaning the central banks will not be able to raise rates for fear of triggering defaults and economic turmoil.<sup>7</sup>

25. *IMF analysis:* The IMF has generally provided reassurance that by boosting both activity and asset prices, expansionary monetary policies post-GFC made it easier for borrowers to service and, if necessary, repay their debts. Developing this line of argument, the April 2015 *GFSR* quantified how accommodative monetary policies helped balance sheet deleveraging.<sup>8</sup> In several countries (notably Japan, the United Kingdom, and the United States), higher asset prices have led to even larger reductions in *net* financial debt. In some cases, higher asset prices have raised the value of the collateral held by banks against non-performing loans. This may have accelerated debt write-offs and improved the capacity of banks to extend new loans.

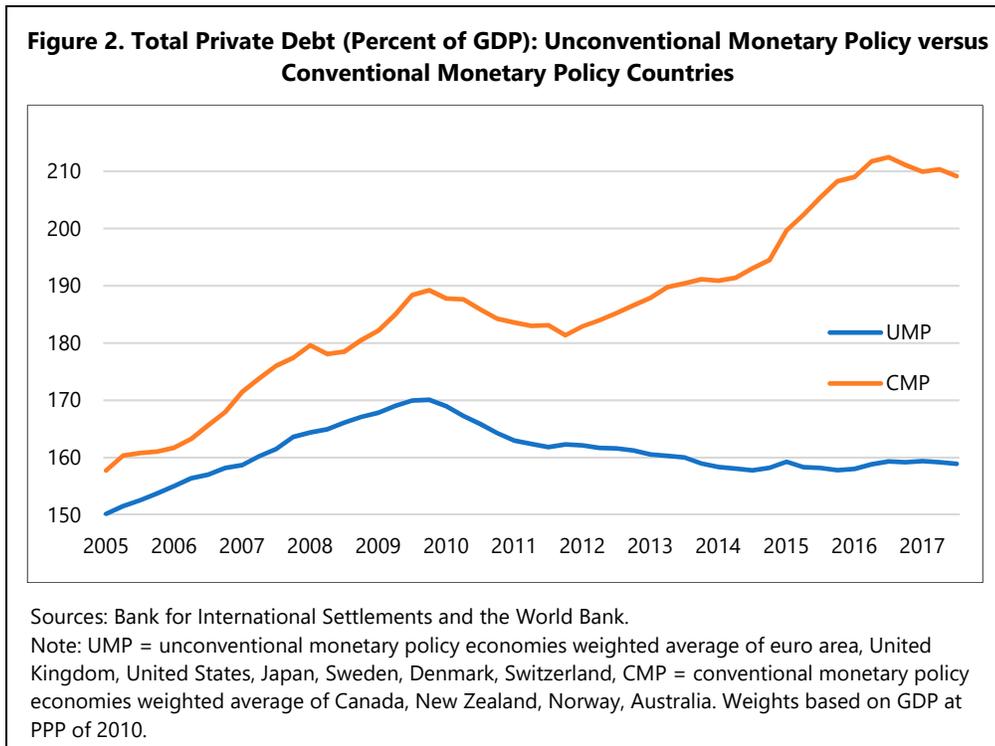
26. *Assessment:* Many interviewees pointed out that the debt trap fears have not materialized and the fact that debt/GDP ratios have stabilized in advanced economies engaged in UMP, or even fallen in some countries, in the face of exceptionally expansionary monetary policies is consistent with the IMF’s judgment and analysis. Aggregate quarterly data from the BIS show that the gross debt of the nonfinancial private sector—that is, the sum of household and nonfinancial corporate debt (private debt, for short)—in the advanced economies has been quite stable since the adoption of expansionary monetary policies (Figure 1).



<sup>7</sup> The BIS’s *Quarterly Review* September 2017 warned about this “debt trap” constraining future monetary policy (BIS, 2017b).

<sup>8</sup> See the section “Macroeconomic deleveraging: what is in the mix?” pp. 9–12 of the April 2015 *GFSR*.

27. Nor have debt ratios been driven higher in countries where the central bank has followed UMP. Figure 2 divides the larger advanced economies into two groups: those that have followed UMP (Denmark, the euro area, Japan, Sweden, Switzerland, the United Kingdom, and the United States) and those that have largely not (Australia, Canada, New Zealand, and Norway). Private debt in the UMP countries has actually fallen. By contrast, private debt has increased in the non-UMP countries, notably in Australia and Canada, partly reflecting increases in residential property prices.<sup>9</sup>



28. To summarize, the IMF correctly argued that easy monetary policy would not lead households and firms to borrow even more because the crisis made all borrowers more cautious and credit conditions were tightened by more demanding bank regulations and new macroprudential policies. Expansionary monetary policy seems to have helped make the financial system safer by avoiding a deeper downturn that would have made the debt/GDP ratio worse, and this was reinforced by the tighter regulation of banks worldwide. The combination of monetary easing with regulatory tightening kept down the ratio of private debt to GDP. That said, the IMF has continued to monitor debt-to-GDP ratios carefully for signs of vulnerability, both in the *GFSR* and in the *Fiscal Monitor* and has flagged the risks of high and rising leverage, continued deterioration in underwriting standards, and stretched asset valuations in some major advanced markets.

<sup>9</sup> Terms of trade gains from commodity price increases may have played a role in driving up debt ratios in CMP countries, which are net commodity exporters.

### “Snap-back” in Interest Rates

29. *Concerns:* The worry is that a snap-back in market interest rates as UMP are unwound could impose heavy losses on bond investors and damage the banking system. There is evidence that lower long-term rates fostered by UMP have led to a procyclical increase in the duration of assets held by financial firms, reflecting central banks purchases of longer-dated paper to depress yields, expectations of even lower future yields, or reactions to a rise in the present discounted value of long-dated liabilities. However, such a procyclical response could magnify any initial shock to the long-term rate as central banks turn to unwind UMP. Leading to a destabilizing market snap-back—a sudden rise in long-term interest rates—in bond markets, some recent market developments may add to this risk. One is the growth of bond funds offering investors the promise of liquid products based on illiquid bonds. Another is the greater use of interest rate derivatives to alter the duration of portfolios of assets or debt structures.

30. *IMF work:* The “taper tantrum” of the first half of 2013, when a hint that the Fed was starting to consider reducing the pace of its asset purchases provoked turmoil in bond markets worldwide, put snap-back risk at the center of attention. The *GFSR* of October 2013 considered such a scenario and what policy could do to contain it. It noted the broad-based shift into fixed-income assets and an extension in portfolio duration well above historical norms. It estimated that a 100-basis point increase in long-term rates would lead to \$2.3 trillion aggregate losses on global bond portfolios, higher than the average for the tightening of monetary policy in 1994–95, 1999–2000, and 2004–06. The report also noted how structural changes may have reduced market liquidity in bond markets.<sup>10</sup> While analyzing the risks from a sudden and sharp rise, the *GFSR* concluded that a more probable outcome was that interest rates would rise gradually, permitting “a smooth portfolio rebalancing out of longer-duration assets” and a repricing of credit risks. To guard against adverse consequences of a snap-back, the IMF emphasized clear communication by central banks on the preventive side and the provision of liquidity backstops to certain market segments in case risk materialized.<sup>11</sup>

31. The *GFSR* of April 2017 analyzed the opposite risk: a scenario in which interest rates remain lower than historical averages for a long time (the so-called “low-for-long” scenario). Structural factors (and not monetary policy) were assumed to generate a steady state of lower growth with lower nominal and real interest rates. Flatter yield curves and lower real long-term interest rates would challenge the business models of banks, insurance companies, and pension funds. The *GFSR* discussed how policies might help the industry to adapt through facilitating

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<sup>10</sup> Especially useful is that their analysis drew on estimated determinants of the long-term rate, distinguishing between those variables the Fed could control (market expectations of the future interest rate path, the size, and persistence of asset purchases) and those that it could not (macroeconomic fundamentals, macroeconomic volatility, and financial market volatility).

<sup>11</sup> In its recent note to the G-20, the IMF reiterated the risk from a surprise rise in interest rates, which it felt could be mitigated through the adoption of growth-oriented macroeconomic policies (IMF, 2018b).

consolidation in the banking sector and adjusting regulation for insurance, pension, and mutual funds toward a focus on economic valuation.<sup>12</sup>

32. *Assessment:* IMF analysis has been broadly supported by recent work by the policy community. A central bank working group recently found that the low interest rates of recent years have led banks, insurance companies, and pension funds to engage in relatively little additional risk-taking (BIS, 2018). This rather restrained risk-taking by financial institutions since the crisis may reflect tighter regulation and de-risking following the global financial crisis. Even so, the working group worried that the lengthening of the average maturity of asset portfolios and the shifting of bank loans to the interest-sensitive real estate sector has made the financial sector, and especially the banks, more vulnerable to snap-back risk.

33. It should be recognized that at this point the extent of UMP impact on bank risks remains uncertain given that it is hard to measure the impact of the multiple monetary, regulatory, cyclical, and structural factors that have brought long-term interest rates to historical lows. Long-term rates have been affected by both cyclical and structural factors. A weak economy and low inflation holds down short-term rates—both current rates and those expected to prevail in the future. Structural factors related to population aging and slower productivity growth have also exerted a large influence in recent years and this impact may keep long rates low for years. On the other hand, the impact on long-term interest rates of new financial regulations inducing banks and other financial firms to increase their holdings of government bonds will fade once firms have met the new norms (Ramaswamy and Turner, 2018).

34. This uncertainty over the likely trajectory of long rates underlines the usefulness of alternative interest rate scenarios. While the IMF has produced several useful scenarios, some interviewees felt that it has done so in a rather piecemeal way: the studies were done at different times and covered different parts of the financial system. This makes it hard to know what the assessment would be at the present time for the risks facing the financial system as a whole.

### **Bank Risk-taking**

35. *Concerns:* Persistent low interest rates can affect banks' risk perceptions, a point made most forcefully by Borio and Zhu (2008). They note that forward guidance about policy interest rates can, by "removing uncertainty about the future," compress risk premia, "adding an extra kick" to the effect of interest rate changes. They argue further that "the perception that the central bank ... is effective in cutting off large downside risks" also encourages risk-taking when interest rates fall through an "insurance effect."

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<sup>12</sup> Similarly, the euro area team has assessed the financial stability risks to the euro area insurance and pensions sector in a 2017 selected issues paper.

36. *IMF work:* IMF economists have been prominent in analyzing the effects of monetary policy on bank risk-taking, though not risks related to UMP specifically. Dell’Ariccia, Laeven, and Suarez, (2016), for instance, have established a risk-taking channel that operates via bank lending. But they showed that most of the variation in bank lending reflects influences other than monetary policy.<sup>13</sup> This was indeed the experience of the period before the GFC: innovation not well regulated nor subject to market discipline led to risky credit expansion even in the face of a substantial tightening in monetary policy. In addition, a 2010 IMF staff position note challenged the conventional view that monetary policy easing leads to greater bank risk-taking (De Nicolo and others, 2010). This paper recognized that that portfolio rebalancing effects suggest a risk-taking channel: monetary expansion that lowers the return on safe assets will encourage banks to take more risk by expanding lending or by buying risk assets. But the IMF paper noted that there is also an offsetting factor in the form of a capital conservation effect: the value of the bank’s assets rise as a result of monetary expansion. The higher value of safe assets (e.g., government bonds) makes poorly capitalized banks more confident of their survival, and so less inclined to take gambling-for-resurrection risks. Such a capital conservation effect, likely to be significant in the aftermath of a financial crisis, was reinforced by stronger bank regulation after the GFC.

37. *Assessment:* IMF work in this area is generally regarded as of high quality and influential. If expansionary monetary policies succeed in stabilizing the real economy and limit the declines both in real income and in asset prices during a recession, the financial system will generally emerge stronger than if the recession had been allowed to deepen further and loan losses materialized. Greater risk-taking by well-capitalized banks and other financial institutions can contribute to this favorable outcome. The IMF rightly emphasized the need for adequate capitalization of banks and closely monitored bank performance in the low interest rate environment.

### **Equity Prices**

38. *Concerns:* Quantitative easing has been criticized on the grounds that “with long-term bonds removed from their portfolios, investors would spend too much in other areas” such as equity, which could lead to “overvaluation and bubble behavior” (Palley, 2011). Such fears have been very prominent in discussions of UMP in the media throughout the past decade and continue to the present. For instance, in a *Wall Street Journal* op-ed in January 2018, Martin Feldstein wrote that: “Year after year, the stock market has roared ahead, driven by the Federal Reserve’s excessively easy monetary policy. The result is a fragile financial situation—and potentially a steep drop somewhere up ahead.” The BIS has also expressed concerns that stock market valuations have looked frothy (BIS, 2017a).

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<sup>13</sup> Their estimates imply that a 1 percentage point rise in the real federal funds rate lowers their bank-loan measure by only 6.1 percent of the standard deviation of their bank loan measure. As Svensson (2018) points out, the magnitude of the bank risk-taking channel effect identified is too small to overturn the orthodox policy assignment.

39. *IMF work:* The IMF has not done much on equity market risks from UMP. It analyzed the policy response to asset price movements in the context of analytical work on “asset prices and the business cycle” well before UMP was in place (IMF, 2000). There it argued that macroeconomic policies should take into account these price movements to the extent that they informed on future inflation and output gap developments. IMF staff has issued some working papers that deal with monetary policies and stock markets more generally rather than with the specific impacts on UMP. For instance, Laeven and Tong (2011) study the relationship between unexpected monetary policy moves by the Fed and stock prices in various countries. Interviews with staff reveal that their focus was much more on housing sector risks than equity market risks, given the analysis—by IMF staff themselves and by others—that booms based on leveraged lending are more likely to pose risks of severe output losses when they collapse.

40. *Assessment:* The IMF analysis was based on its conclusion that the greatest macroeconomic risk exposure seems to come not from equity price cycles but from booms and busts in residential property markets, especially those synchronized across countries and involving rising leveraged borrowing. The historical evidence suggests that monetary easing has not been a precondition for equity price booms (Posen, 2010). Nor is there reliable and consistent evidence that equity prices help to predict future output (Walsh, 2009). The warnings against conditioning monetary policy decisions on asset price bubbles in the May 2000 *WEO* remain valid—in terms of both the preconditions for any policy action and the judgement that regulatory or fiscal policies are likely to be more effective than interest rate increases. Recent developments do not suggest that UMP led to a general or persistent overvaluation of equities or corporate bonds (Cecchetti and Taboga, 2017).

#### IV. CONCLUSIONS

41. The IMF took a clear view, during the period of aggressive UMP after the global financial crisis, that such action was fully justified by macroeconomic needs and that stability risks should be monitored carefully, but that policymakers should also be mindful that sustained macroeconomic weakness would have adverse stability consequences. To the extent that financial stability concerns developed, those should be dealt with through regulatory and macroprudential tools rather than by monetary policy leaning against the wind. This work is generally viewed as having been based on high-quality analysis and as influential in the global debate. In retrospect, this overall approach seems to have been well founded as a basis for policy advice in the post-GFC period.

42. Notwithstanding this clear policy position in support of UMP, the IMF has paid considerable attention to the financial stability risks posed by UMP in both its analytical work and its bilateral and multilateral surveillance. IMF analyses of specific financial stability vulnerabilities (whether from low interest rates or of other origins) have generally maintained a high standard and are well regarded by senior officials and other observers.

43. Complementing its support for UMP, the IMF has been at the forefront of international efforts to develop and assess new macroprudential policies, sharing experience that has often prompted national authorities to consider measures that had worked elsewhere. Within a few years, it has built fairly detailed knowledge on the design of macroprudential policy instruments. This work is generally viewed by policymakers as providing high value added and having considerable traction.

44. As the global economy has regained its footing rising attention has been paid to the buildup in financial stability risks from increasing leverage and potential market weaknesses. There is also increasing awareness that macroprudential tools may themselves have some limitations in their ability to contain stability risks. In this context, and with central banks pivoting to the withdrawal of monetary stimulus, it will be important for the IMF to continue to evaluate the feasibility and availability of effective macroprudential policies, research the possible complementarity between macroprudential and monetary policy, and assess whether there are circumstances in which financial conditions should explicitly be considered in setting monetary policy.

45. Years of depressed long-term rates, reflecting both monetary and nonmonetary factors, have made interest rate risk possibly one of most important risks faced by the financial system, with uncertainty prevailing over whether interest rates will suddenly snap back or remain depressed for many years to come. The IMF has periodically analyzed many aspects of this risk with insight. The IMF should keep this risk high on the policy agenda and consider making interest rate risk the focus of regular and comparable scenario analyses as interest rate developments unfold. Gaps in macroprudential policies with respect to such risks need to be addressed.

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## **Chapter 2—IMF Analysis of Housing Markets**

**Alessandro Rebucci\* and Jianping Zhou†**

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\* Associate Professor, Johns Hopkins University Carey School of Business, CEPR and NBER.

† Senior Economist, Monetary and Capital Markets Department, and former Senior Economist, Independent Evaluation Office, IMF.

## I. INTRODUCTION

1. House prices in several countries boomed after the Global Financial Crisis (GFC), raising concerns about their sustainability and associated risks. Many argued that a prolonged period of low interest rates and unconventional monetary policies (UMP) had encouraged speculative investment and asset price bubbles, particularly in housing markets.<sup>1</sup>
2. This chapter evaluates IMF analysis of housing market development during 2008–18 and its advice to countries on how they should manage housing sector risks. Specifically, the evaluation centers on two sets of questions:
  - To what extent did IMF staff analyze the relative importance of UMP and other factors in generating excessive house price booms in the countries undertaking these policies or on other countries, and what value added did it provide?
  - What advice did staff offer, through its multilateral and bilateral surveillance, to manage such housing booms?
3. These questions are addressed based on desk review of IMF documents, interviews with IMF staff in functional and area departments working on housing sector issues, and interviews with housing sector experts and policymakers at central banks and other financial institutions. The desk review examines Article IV Staff Reports, Selected Issues Papers and IMF Working Papers; the *WEO* and the *GFSR*; and minutes from the weekly surveillance meetings.
4. Section II provides an overview of staff analysis of housing issues and policy advice through multilateral and bilateral surveillance. Section III concludes with an assessment and recommendations.

## II. IMF SURVEILLANCE OF HOUSING BOOMS

### IMF analysis and advice prior to the GFC

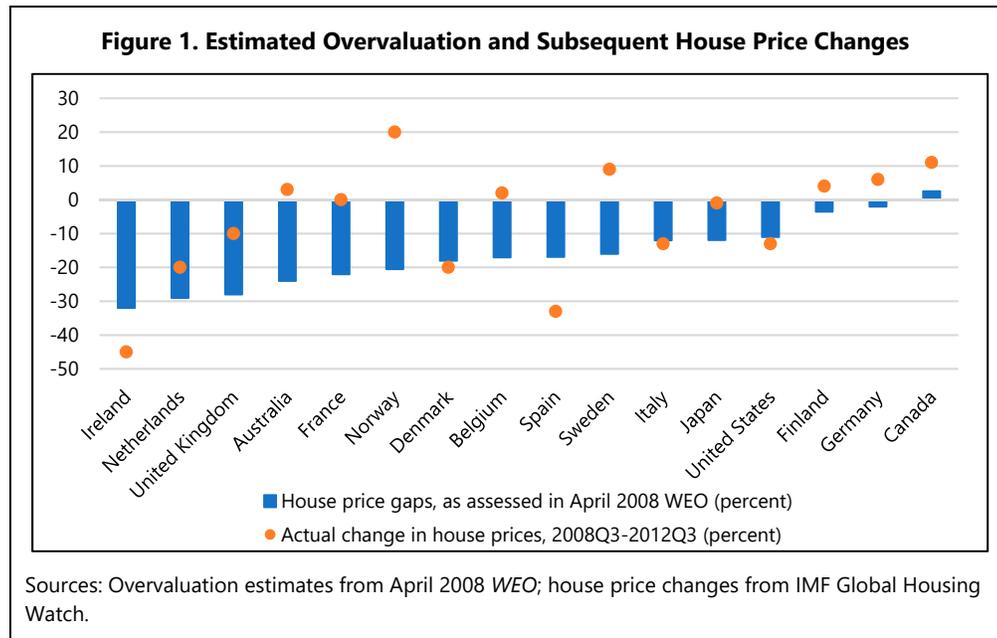
5. Just prior to the GFC, IMF analysis pointed to an increasing overvaluation of house prices in a group of advanced economies after a lengthy period of economic expansion and relatively easy financial conditions. Though house prices had started to fall in the United States in 2006, they had continued to rise in many other countries. Analysis in the April 2008 *WEO* suggested that house prices were overvalued in 2008 by between 10 percent and 30 percent in many economies (Figure 1).<sup>2</sup> To reach these assessments, house price changes were modeled as a

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<sup>1</sup> See Borio and Zhu (2012); Adrian and Shin (2014); Bruno and Shin (2015); and Gabriel and Lutz (2015).

<sup>2</sup> In some countries (such as Denmark, Ireland, the Netherlands, and the United Kingdom) where the IMF had assessed house prices to be overvalued in April 2008, house prices fell quite significantly in coming years, but not in others such as Norway and Sweden.

function of growth in disposable income per capita, short-term interest rates, long-term interest rates, credit growth, changes in equity prices, and changes in working-age population. The “unexplained increase” in house prices could reflect omitted variables “but could also be interpreted as a measure of overvaluation and, therefore, used to identify which countries may be particularly prone to a correction in house prices” (IMF, 2008).



6. IMF staff were open to the use of monetary policy as part of the set of policies to address these housing booms. An analytic chapter in the April 2008 *WEO* took note of the “central bank orthodoxy” that monetary policymakers should not target a particular level of house (or other asset) prices and should respond to changes in house prices only if they affected output and inflation outcomes and expectations.<sup>3</sup> However, the counterargument was that a pre-emptive monetary policy response “could diminish the risk that a bigger crash would occur later on, with serious consequences for the real economy and inflation.” Thus, the *WEO* chapter proposed a risk management approach under which “house prices would seem relevant for calculating the risks to the outlook for overall economic activity, particularly during periods of rapid change in house prices and when house prices seem to be moving out of line with historical norms,” due to “speculative forces.” It noted, however, that monetary policy “should not bear the full weight of responding to asset price bubbles” and other policies could also have a critical role.

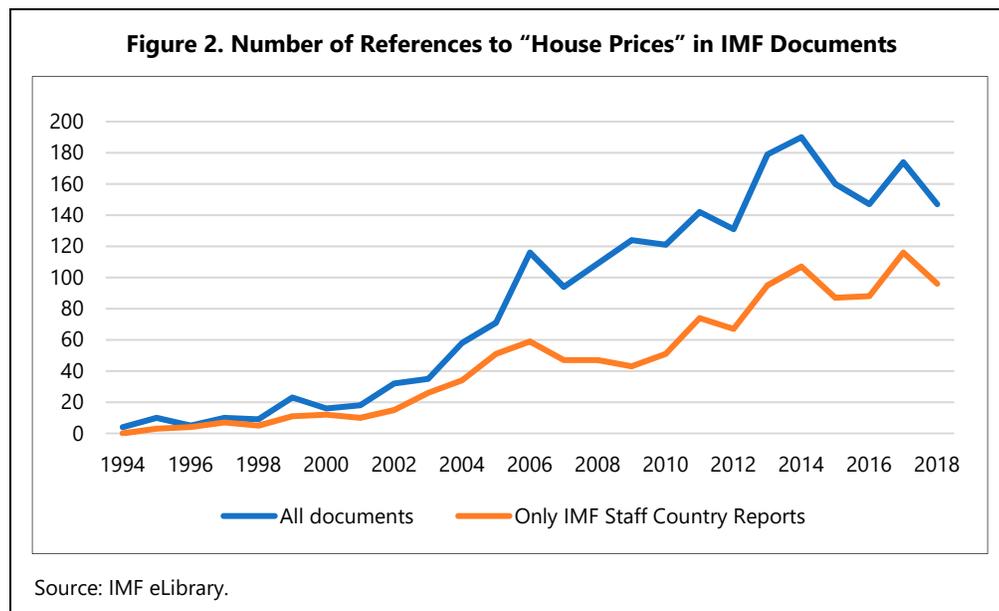
7. In subsequent years, IMF analysis and advice has evolved in two ways. First, estimates of overvaluation are now primarily conducted at the bilateral level by country teams using a variety of methods (an exception being the housing module of IMF’s internal Vulnerability Exercise). While analytic work on housing markets at the multilateral level has continued, it has shied away

<sup>3</sup> IMF (2008), Chapter 3, “The Changing Housing Cycle and the Implications for Monetary Policy.”

from making public explicit estimates of the likely overvaluation in specific countries on the basis of a common model, as was done in the April 2008 *WEO*. Second, the policy advice for dealing with house price booms has changed. The focus now is very much on using macroprudential policies rather than monetary policies to manage housing risks. Each of these developments is discussed in turn.

### IMF analysis of house price booms post-GFC

8. The IMF has continued to pay considerable attention to housing markets. As an illustration, Figure 2 shows the number of references to the words “house prices” in IMF Article IV reports, Selected Issues Papers, and other bilateral and multilateral documents.



9. In the post-GFC period, as countries have diverged in their economic conditions, the estimates of house price overvaluation have come from country teams. The methods used to judge overvaluation vary across countries. Some teams rely on authorities’ estimates, others on deviation of house price-to income ratios from historical averages, and some based on looking at the residuals from econometric estimation of the drivers of house prices (similar to the April 2008 *WEO* analysis)—see, for example, Geng (2018). There have been cases where staff have flagged risks to housing markets ahead of a downturn, for instance in the case of the Netherlands in 2012.

10. While the role of UMP in driving house price booms has not been an explicit focus of inquiry, interviews with staff indicate that the low interest environment engendered by such policies has been an important reason for the increased attention to housing. Countries where house prices were stable before the adoption of UMP in the major advanced economies but boomed thereafter—such as Austria, Germany, and Switzerland—have come in for increased attention; other such cases include Colombia, China, Israel, the Philippines, and Singapore. For

example, housing received extensive coverage in the 2014 (IMF, 2014a) and 2017 (IMF, 2017c) staff reports for China as the IMF became increasingly concerned about “significant” downside housing risks. Staff offered cross-country lessons on mitigating measures and proposed a range of tools, including prudential measures as well as social security reforms and residence/“hukou” systems (see also, Ding, Jin, and Lam, 2017). While most of the analysis has been done in the context of bilateral consultations, there has been some regional surveillance of housing markets, notably a 2013 cluster report (IMF, 2013) that studied housing sector risks in some Nordic countries (Denmark, Finland, Norway, and Sweden).

11. In many cases, staff have reached the judgment that house price booms are not exclusively, or even largely, the result of UMP and other demand-side forces but reflect local supply constraints. Such factors have been flagged in Article IV reports the cases of the United Kingdom (2009) and France (2011) and more recently in Germany (2017b, 2018c) and the Netherlands (2017), among many other examples (IMF, 2009; 2011b; 2017a, respectively).

12. Multilateral surveillance has continued to contribute through research on housing markets and estimates of possible overvaluation, though these estimates are now not made public but serve as an input for country teams. This shift may reflect recognition that national housing markets are affected by idiosyncratic factors as well as macroeconomic factors that are not easily modelled, so that the results of a cross-country exercise could be misleading. Nonetheless, overvaluation estimates of the kind presented in the April 2008 *WEO* have continued in the housing module of the IMF’s internal Vulnerability Exercise. In that module, a common model for the drivers of house price growth is estimated for each country and estimates of likely overvaluation are derived. These estimates are one of the inputs—along with other indicators such as the deviation of house price-to-income ratios from long-term averages—used to help country teams flag the vulnerability of housing markets to a possible crash. Interviews with staff working on the housing module suggest that the model has continued to prove useful in identifying overvaluations in some housing markets. Staff indicated that while they did not explicitly account for links between UMP and house prices, much of the effects of such policies would be captured through mortgage interest rates that are included in the model.

13. On the research side, considerable attention has been paid to understanding the link between credit booms and house price booms. The April 2011 *GFSR* (IMF, 2011a) linked housing booms to credit growth, drawing on empirical literature that confirmed that rapid mortgage credit growth and strong house price increases go “hand in hand.” In 2012, the Fund launched the Global Housing Watch initiative that aimed to monitor and analyze housing market developments. This was followed by the IMF’s 2015 Staff Discussion Note “Housing Finance and Real-Estate Booms: A Cross-Country Perspective” (Cerutti, Dagher, and Dell’Ariccia, 2015). The analysis shows that housing price booms are more likely “to end badly” (i.e., in a recession or financial crisis) if they are accompanied by very strong growth in credit, including mortgage credit. The paper concludes that macroprudential policy should be “the first line of defense for

handling mortgage market booms,” even though “their effectiveness beyond the short run has yet to be proven.”

14. More recently, the *GFSR* has stepped up attention to housing risks. The April 2018 *GFSR* assessed the impact of global financial conditions on national housing markets and found that national housing markets have become more synchronized than in the past (IMF, 2018b). The April 2019 *GFSR* developed a new tool to assess “house prices at risk”—a measure of downside risks to future house price growth at the economy and in major cities (IMF, 2019).

### **Macroprudential policies and housing booms**

15. Over the past decade, the IMF’s policy advice on managing house price booms has placed greater emphasis on the use of macroprudential policies relative to other policies, as discussed in Chapter 1 of this paper. Staff have expended considerable effort in providing operational guidance on the choice and design of macroprudential tools to manage housing booms (IMF, 2014b). Limits to loan-to-value ratios, caps on debt service-to-income ratios, and sectoral capital requirements are the most commonly recommended measures.

16. IMF researchers have also devoted considerable attention to studying the effectiveness of such policies. Cerutti, Claessens, and Laeven (2017) study the effects of several macroprudential policies for 119 countries over 2000–13. They find that tightening these measures does significantly lower household credit growth. The impact on house price growth is also negative but not statistically significant. They argue that since “house price booms associated with increased leverage are the most destructive,” macroprudential policies can play a useful role by “dampening household indebtedness.”<sup>4</sup>

17. While generally supportive of macroprudential measures in the housing market, Fund staff have questioned policies that discriminate against foreign residents or buyers. Fund staff have labeled such policies as capital flow management (CFM) measures, and on occasion asked that measures be scaled back. For instance, the 2017 Article IV for Australia advised that one of the housing CFMs used by the authorities should be reconsidered; several others were judged to be consistent with the IV. The report stated that “CFMs should be replaced by alternative and effective nondiscriminatory measures where available” (IMF, 2018a). This broad issue has

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<sup>4</sup> Over the same period but using a different data set of policy measures, Zhang and Zoli (2016) compare the impact in Asia, where the “economies appear to have made greater use of macroprudential tools, especially housing-related tools,” with that in other regions. They find that housing-related policy measures have curbed real credit growth in Asia and other regions; in Asia these measures have lowered real house price growth as well but in other regions the impact on prices is not significant. Vandenbussche, Vogel, and Detragiache (2015), however, find evidence of the effectiveness of some macroprudential policy measures on house price inflation in Central, Eastern, and South-Eastern Europe.

generated some pushback from authorities in several countries who argue that these measures are being undertaken for financial stability or social goals rather than to restrict capital flows.<sup>5</sup>

### III. ASSESSMENT AND RECOMMENDATIONS

18. Boom-bust cycles in the housing markets have been a ubiquitous source of financial crises and recessions over the course of history and in recent decades. Indeed, house price declines were a key trigger for the global financial crisis. Given the importance of housing cycles for financial stability, the attention given to this sector in IMF surveillance is welcome. As discussed in the first chapter of this paper, the IMF's judgment that UMP was not leading to excessive financial stability risks appears to have been borne out, and this is also the case with housing sector risks, the focus of this chapter.

19. While not overly alarmed by housing sector risks overall, the IMF has been concerned about house price booms in some countries and has worked with authorities to analyze these developments and the needed policy response. Interviews conducted with authorities for this evaluation provide many examples—among them Canada, China, France, Germany, Korea, and the Netherlands—where staff work on housing markets was valued by the authorities. The 2013 cluster report on Nordic housing markets was also considered very useful.

20. The IMF also deserves credit for the extensive effort it has put into compiling a database on the use of macroprudential policies to manage housing sector risks, on the detailed operational guidance provided to country teams on appropriate policies, and on the analytic work on the effectiveness of these policies. As noted in Chapter 1 of this paper, this work has been considered useful by authorities and academic experts.

21. There are several ways in which the IMF can build on these strengths to improve its analysis on housing markets. On surveillance, these include (i) greater knowledge-sharing among country teams together with more attention in multilateral surveillance, particularly on techniques to assess overvaluation; and (ii) greater attention to the drivers of house prices, including spillover effects. On the policy options, the IMF should take a more critical look at the effectiveness of macroprudential policies and be more open to the use of other policies. These points are elaborated below.

#### **Surveillance of housing markets**

22. While the increasing attention by country teams to judging housing price overvaluation is welcome, there has been a proliferation in the types of analyses and models used. Interviews with country teams reveal that there is little guidance on techniques to assess overvaluation, with the result that different methods are used, sometimes even within departments. Attempts at

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<sup>5</sup> This issue is also noted in the chapter on Korea and the ASEAN5 (Darius and Loungani, 2019) and the chapter on Canada (Everaert, 2019).

knowledge sharing have been sporadic, such as the Global Housing Watch initiative launched in 2012 to compile staff views on housing markets—and a couple of seminars organized under the auspices of the Financial Surveillance Group at which mission chiefs discussed housing market developments in their respective countries, and a recent briefing to the Board on cross-country housing developments.

23. In addition to greater knowledge sharing, multilateral surveillance efforts (including through high-profile outlets such as *WEO* or *GFSR* analytic chapters) can provide useful consistency checks in how overvaluation is assessed across countries.<sup>6</sup> Recent work in the *GFSR* has been well directed towards filling this need.

24. While judgments about the drivers of house prices have been implicit in the work of the country teams, IMF analysis would benefit from a more rigorous look at the extent to which easy monetary policy in major global financial markets has contributed to house price booms in the countries carrying out these policies and elsewhere. Staff could also investigate whether and how conventional monetary policies and UMP differ in their impacts on housing markets, particularly in view of the dearth of cross-country academic work on this topic (see Rosenberg, 2018). This is particularly important given that UMP may be used by central banks in future recessions or crises.

### **Effectiveness of macroprudential policies**

25. While staff deserve credit for advancing the frontiers of knowledge over the past decade about macroprudential policies, there should be increased alertness to a couple of issues pertaining to the use of these policies for housing sector risks.

26. *Source of the shock:* Whether macroprudential policies are the right policy tool could depend on the underlying source of the housing price boom. For example, if housing booms are largely due to good medium-run growth and productivity prospects, which may be the case particularly in emerging markets, there may not be a need for extensive macroprudential policies to constrain the booms, but rather attention to alleviate any emerging supply constraint. Likewise, the policy response could differ depending on whether the boom is the result of spillovers from one set of countries to others or the results of a common shock across countries (Cesa-Bianchi, Cespedes, and Rebucci, 2015). If UMP by major advanced economies is the primary source of house price booms in many countries, some consideration could be given to alerting UMP source countries to their policy spillovers of their actions rather than force the adjustment onto the UMP-receiving countries facing housing booms.<sup>7</sup>

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<sup>7</sup> This is not necessarily an advanced economy vs. emerging markets issue because some policies by emerging markets also create spillovers for other countries, both advanced and emerging. For example, the tightening of

27. *Effectiveness of macroprudential policies:* In many countries, macroprudential policies appear to be having only temporary effects on house price and credit growth, requiring further and frequent tightening of policies—see, for example, the experience of Canada described in Everaert (2019). In future, it may be useful to set out more clearly what the expectations are on what these policies will achieve, so success or failure can be more readily discerned. Macroprudential policy, even if much more targeted than monetary policy, is likely to work better when the housing boom is based on leveraged financing; it may be less effective if the boom is driven by foreign cash buyers or by inflows of hot capital levered abroad, or if domestic households can adjust their portfolios without de-leveraging. Managing booms in global cities seems particularly challenging to accomplish via national macroprudential policies. The IMF should thus be open to the use of other policies, including fiscal measures.

28. There seems to be scope to investigate the issue of the optimal use of real estate property or turnover taxes to support financial stability, particularly when macroprudential policies have failed to cool property markets. Property taxes might be more effective tools than prudential rules in responding to nonbank capital flow shocks and their impact on property prices in global cities. They can address regional and distributional impacts, and provide revenue for redistribution at the local level, including for increasing subsidized housing supply. In some cases, the staff reports note successful use of real estate taxes to address house price booms (e.g., Canada, Israel).

29. Staff should revisit the issue of leaning against the wind by using monetary policy for housing market stabilization. As noted earlier, the April 2008 *WEO* (IMF, 2008) was open to this possibility, particularly when house prices appeared to be driven by “irrational” and speculative forces. Recent work by monetary policy experts has reached similar conclusions, arguing that when “the policymaker is concerned with potential departures of private sector expectations [about house prices] from rational ones and seeks to choose a policy that is robust against such departures ... the optimal target criterion requires the central bank to “lean against” house prices” (Adam and Woodford, 2018). The IMF’s own work on the links between credit growth and house price booms (Cerutti, Dagher, and Dell’Ariccia, 2015) notes that since “about 60 percent” of house price booms have occurred in the context of a broader credit boom and rapid economic growth, the role of monetary policy in managing house price booms “should not be downplayed.”

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capital controls in China since 2015 arguably leads to an impact not just on its domestic housing markets but in several cities around the globe such as Sydney and Vancouver, as noted in the Article IV reports for Canada (IMF, 2016) and Australia (IMF, 2018a).

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## **Chapter 3—Distributional Impact of UMP**

**Pierre Monnin\***

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\* Fellow at the Council on Economic Policies, Switzerland.

## I. INTRODUCTION

1. The sustained application of accommodative monetary policies has led to concerns that they were aggravating inequality. The criticism has come from several quarters, from academics to private sector participants, from politicians to media and civil society organizations.<sup>1,2</sup> Some argued that by boosting housing and stock prices, QE benefited people in the upper part of the wealth distribution more than others, while low to negative returns on bank deposits and fixed-income instruments were depressing incomes for the elderly dependent on such savings. Asset purchases were also alleged to benefit mainly a few economic sectors, such as the financial industry, yielding a lopsided recovery. Doubts were also raised about the effectiveness of QE in stimulating economic activity and thus generating an increase in labor income for lower-income households.

2. In response to such concerns, prominent central bankers have addressed the issue of inequality in their public speeches (see, e.g., Cœuré, 2012; Bernanke, 2015; and Draghi, 2016). They have emphasized the broader gains to labor income from policies that contributed to bringing unemployment rates down from high levels. They have also suggested that any concerns about inequality were more properly addressed through fiscal policies than by scaling back UMP.

3. Over the past decade, the IMF has done considerable work on the drivers of inequality, including the contribution to inequality from various economic policies (Dabla-Norris and others, 2015).<sup>3</sup> This research has helped guide IMF country advice. The Guidance Note on Jobs and Growth Issues recommends that fiscal policy advice, for example, “encourage progress on reducing inequalities” (IMF, 2013) and the Guidance Note for Surveillance advises that income distribution issues may be examined if they have a bearing on economic stability (IMF, 2015). In 2015, the IMF started a pilot program on integrating distributional issues into surveillance and program work; the review of the program concludes that country teams should consider

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<sup>1</sup> See, for example, Acemoglu and Johnson (2012), Stiglitz (2015), and Fisher (2017) for academics, and the McKinsey Global Institute (2013) for a private sector view.

<sup>2</sup> See, for example, “The hidden cost of quantitative easing” (Guardian, March 2, 2010), “Quantitative easing ‘is good for the rich, bad for the poor’” (Guardian, August 14, 2011), “A monetary policy for the 1 percent” (The Economist, July 5, 2012), “Debate rages on quantitative easing’s effect on inequality” (Financial Times, October 21, 2014), “The risk that QE will generate inequality” (Financial Times, October 24, 2014), “Notes on easy money and inequality” (P. Krugman, New York Times, October 25, 2014), “Soros: ECB QE means inequality and asset bubbles” (CNBC, January 23, 2015), “How the Fed is making the rich richer and leaving you behind” (Huffington Post, April 16, 2015), “The Federal Reserve and inequality” (Washington Post, June 4, 2015), “Stiglitz: Fed’s zero-rate policy boosts inequality” (Wall Street Journal, June 4, 2015), “How Federal Reserve quantitative easing expanded wealth inequality” (Forbes, June 25, 2015), “QE’s shortcomings show up in global wealth” (Bloomberg, 2015).

<sup>3</sup> These include fiscal policies (Ball and others, 2013; Lipton 2014; and Clements and others, 2015), capital account liberalization (Furceri and Loungani, 2015) and structural policies (Ostry, Berg, and Kothari, 2018).

inequality issues “when the authorities are planning—or advised by staff—to embark on economic policies and reforms that have significant undesirable distributional effects” (IMF, 2018).

4. The IMF has fostered discussion on the distributional effects of monetary policy, conventional and UMP. For example, this subject was the topic of a session at its 2012 Annual Research Conference, and the Fund also helped convene a workshop in 2016 in which researchers studied the distributional effects of monetary policy as well as the macroprudential policies that staff have been increasingly recommending. These efforts notwithstanding, the IMF has not been in the forefront of analytic work on the possible distributional impacts of UMP and concerns about such impacts have not been given much attention in its policy advice.

5. This paper reviews the evidence on the distributional effects of UMP (Section II) as a basis for assessing whether greater attention is warranted to such effects in future IMF analytic work and policy advice (Section III).

## II. UNCONVENTIONAL MONETARY POLICIES AND INEQUALITY

### Portfolio and labor income channels

6. It has long been recognized that monetary policy actions have distributional effects (Greenspan, 1998). Expansionary monetary policy, i.e., lowering of policy interest rates, lowers interest incomes, other things equal. At the same time, it also raises labor incomes by reducing unemployment and bringing about a recovery of the economy. Depending on their asset positions and labor force status, households can be affected differentially through these portfolio and labor income channels. The presumption, supported by some empirical evidence, has been that for the vast majority of households, the latter effect dominates and moreover that the gains in labor income are fairly evenly distributed (Romer and Romer, 1999). Thus, conventional expansionary monetary policy is generally believed to decrease income inequality. Moreover, since the monetary easing is usually reversed in a year or two as the economy recovers, the policy is considered not to have a permanent impact on the distribution of income, i.e., there is little impact on wealth inequality from conventional monetary policy.

7. Though similar channels operate in the case of UMP, there have been concerns that UMP may be more prone to raising inequality. The nature of the portfolio channel may be somewhat different with UMP than with conventional monetary policy. On the one hand, the cut in policy interest rates to zero and even to negative values—and the forward guidance to hold rates low for an extended period of time—lowers interest incomes on fixed-income assets, which tend to be held by older, retired people often with limited alternatives.<sup>4</sup> This point was emphasized in a 2013 study by McKinsey Global Institute, which shared that “younger households that are net

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<sup>4</sup> Note, however, that in countries with negative interest rates, banks have typically chosen to protect retail customers by not applying negative rates to their deposits (Honohan, 2019).

borrowers” had benefited from UMP. On the other hand, with UMP, central banks are rather explicitly trying to push up the prices of risky assets (e.g., equity prices and house prices), which have larger shares in the portfolios of higher-income households. Critics have argued that this effect can be substantial and can even offset the equalizing impact of UMP through the labor income channel. Moreover, by leading to a persistent increase in the prices of risky assets, UMP may also have led to an increase in wealth inequality, not just income inequality, in part because UMP have persisted for much longer than a conventional monetary policy cycle.

8. Central banks undertaking UMP have been open to considering the possibility that their effects on income and wealth distribution may be less benign than in the case of conventional monetary policy (Fontan, Claveau, and Dietsch, 2016). In particular, central banks acknowledge that encouraging some risk-taking, and raising asset prices in the process (particularly benefiting wealthy households) is an important part of the transmission channel from UMP to the economy. However, they argue that while this channel taken in isolation might raise inequality, the beneficial—and fairly evenly distributed—gains in labor income from economic recovery are also likely to have been substantial, given the depth of the recession. Haldane (2018) argues that had UMP not been undertaken, the distributional consequences would have been worse. Central banks also recommend that to the extent that there are adverse distributional consequences on some segments of the population, these would be better addressed through fiscal policy rather than by scaling back UMP.

### **Empirical evidence**

9. The evidence on the impacts of UMP on income and wealth inequality is mixed. This is not surprising given the lack of a commonly accepted framework for analysis of such effects, the numerous ways in which inequality can be measured, the heterogeneity in household portfolio and labor force composition across countries (and even over the course of the decade), and differences in the timing and specifics of UMP programs. Nevertheless, a number of credible studies do find some evidence of an increase in inequality from UMP. At the same time, these studies do not generally provide evidence on what inequality would have been if UMP had not been carried out or if alternate policies had been adopted; hence, they do not offer a rebuttal of central banks’ argument that the counterfactual would have been worse.

10. Key studies, many of them carried out by central banks, on the link between UMP and income inequality include the following:

- (i) *United States*: Montecino and Epstein (2017) decompose changes in households’ net income (total income minus interest payments on debt) between 2010 and 2013 into changes coming from employment and returns on various financial assets. They find that while employment changes and mortgage refinancing tended to narrow income inequality, these impacts were outweighed by the increase in inequality from realized equity returns. Using estimates from the literature on the impact of QE on the different

components, they conclude that the Fed's UMP led to modest increases in inequality over this period.<sup>5</sup>

- (ii) *United Kingdom*: Bunn, Pugh, and Yeats (2018) compare the actual change in income components of U.K. households between 2008 and 2014 with their hypothetical values had the BoE kept its monetary policy as in 2008 before the GFC. While UMP had a positive overall impact on aggregate household income, the upper part of the income distribution benefited from a larger increase than the lower part; in fact, the bottom decile percent are estimated to have lost out from the loosening of monetary policy. Mumtaz and Theophilopoulou (2017) also find that quantitative easing worsened income inequality in the United Kingdom, in contrast to the effects of conventional monetary policy easing.
- (iii) *Japan*: Saiki and Frost (2014) estimated UMP's effects on income inequality based on Japanese household survey data spanning from 2008 to 2013. They find that the use of UMP significantly widened income inequality in Japan, mostly through higher realized capital gains for the households at the top of the income distribution. Saiki and Frost (2018) revisited their initial study on a longer time span and confirm their initial results. Using a similar measure for QE on an extended sample (2002–17), Taghizadeh-Hesary, Yoshino, and Shimizu (2018) confirm Saiki and Frost's results.<sup>6</sup>
- (iv) *Euro area*: Empirical findings on the distributional impact of UMP in the euro zone have only recently started to emerge. In contrast to the literature cited above for the other countries, these studies tend to conclude that the ECB's UMP have or will lead to a decrease in income inequality. Some rely on the assumption that an equalizing impact through the labor market will eventually materialize and offset an initial increase in inequality due to lower interest incomes (Bundesbank, 2016). Others translate UMP into a decline in shadow policy interest rates, an assumption likely to understate the impact of the portfolio balance channel—and the consequent increases in asset prices—which are a key transmission channel of UMP (Lenza and Slacalek, 2018).

11. The impact of UMP on wealth inequality is particularly difficult to assess, given greater challenges in measuring wealth than income. Nevertheless, there is suggestive evidence:

- The Bank of England (2012) notes that their UMP programs pushed up the prices of equities—of which 40 percent are held by the top 5 percent richest households—by at least as much as it has pushed up the price of the government bonds they bought. The

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<sup>5</sup> Davtyan (2018) and Jawadi, Sousa, and Traverso (2017) also find, in a VAR setting, that UMP raises inequality through stronger positive effect on financial income than on labor income.

<sup>6</sup> Another recent study (Feldkircher and Kakamu, 2018) finds that expansionary monetary policy in Japan decreases income inequality mainly by reducing unemployment. However, their measure of UMP is the shadow interest rate, which is likely to understate the portfolio rebalancing effect of central banks' asset purchases, which as noted earlier is a key transmission channel of QE.

strong and immediate impact of QE on equities through the portfolio rebalancing channel is further documented by Rogers, Scotti, and Wright (2014).

- Adam and Tzamourani (2016) study the distributional consequences of asset price increases for euro area households. They find that gains from bond price increases have been spread evenly across households, leaving wealth inequality largely unchanged. In contrast, equity price increases largely benefited the top of net wealth (and income) distribution, and thus increased wealth inequality. House price increases display a hump shaped pattern over the net wealth distribution, with the poorest and richest households benefiting least.
- Domanski, Scatigna, and Zabai (2016) explore the impact of QE in different advanced economies using household survey data. They find that, while low interest rates and rising bond prices have had a negligible impact on wealth inequality, rising equity prices have been a key driver of inequality. Higher housing prices have only partly offset this effect.
- Dobbs and others (2013)<sup>7</sup> examine the distributional effects and risk of QE and ultra-low interest rates in the United States, the United Kingdom, and the euro zone. They provide suggestive evidence that ultra-low interest rates have produced large distributional effects on both incomes and wealth in different segments of the population in advanced economies through changes in interest income and interest expense and through gains in house prices.

### III. IMF CONTRIBUTIONS, ASSESSMENT, AND RECOMMENDATIONS

#### IMF contributions

12. The IMF has played more of a convening role than an active research role in this area. In particular it fostered some high-level discussions on the distributional impacts of monetary policies in 2012 as concerns about the distributional impacts of UMP became prevalent in policy circles and the media. At its Annual Research Conference that year, a session chaired by the IMF's then-Deputy Managing Director Zhu featured innovative work on the distributional impacts of monetary policy. Noting that conventional expansionary monetary policy had in the past lowered inequality, Coibion and others (2017) suggested that "the zero lower bound was even costlier for welfare than we thought."<sup>8</sup> Another empirical study (Furceri, Loungani, and Zdzienicka, 2018) extended the findings on distributional effects, which had mostly been for a few advanced

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<sup>7</sup> McKinsey Global Institute.

<sup>8</sup> The work was co-authored by a resident scholar in the Research Department and only published much later, in 2017 (Coibion and others, 2017).

economies, to 32 advanced and emerging countries over the period 1990 to 2013 and again showed that conventional monetary policy easing lowers inequality.

13. The Fund, in collaboration with the Council on Economic Policies in Zurich, also convened a workshop at which staff and other researchers presented work on the impacts on monetary policy and macroprudential policies on inequality (see Koedijk, Loungani, and Monnin, 2018). The staff's increasing support for macroprudential policies to manage financial stability risks made the evidence on the distributional effects of these policies particularly germane to the Fund's work.<sup>9</sup> That said, it is still too early to be confident of the direction and extent of the distributional effects of macroprudential policies.

14. Notwithstanding these ongoing efforts, the distributional impacts of UMP were evidently not judged to be of first-order importance by country teams and did not feature in Article IV consultations.

### **Assessment and recommendations**

15. Given the other tasks confronting the IMF over the past decade—and the prevailing consensus that conventional monetary policy easing reduced inequality—the modest attempt to understand the possible distributional consequences of UMP does not seem a huge failing. Nevertheless, it is a surprising one given the active analytic work underway at the Fund to study the distributional impacts of many other economic policies and that the distributional impact of UMP has been raising some concerns. With some additional effort, the IMF could have provided evidence on the impact of UMP on inequality, at a time when debates on the topic were ongoing in policy and academic circles.

16. Should the IMF be more active on this issue in future? While the decision clearly depends on the opportunity costs of staff time, there is a case to be made that for a couple of reasons the answer is “yes.” First, as described in the previous section, there appears to be suggestive evidence that the distributional impacts of UMP can differ from those of conventional monetary policy. Though the evidence is mixed, debates over the distributional impacts can nevertheless be politically charged. Political and public support for future UMP could well depend in part on perceptions of their distributional impact (Voinea and Monnin, 2017). Analytic work by the IMF could bring a balanced view, bringing in cross-country evidence to shed light on the various channels through which UMP have distributional impacts. This analysis can be useful both as countries exit from UMP and in the event of future use of UMP.

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<sup>9</sup> Early empirical evidence indicates that macroprudential measures taken to foster financial stability might have an impact on inequality. Countries with countercyclical capital buffers, concentration limits, or limits on growth of direct credit tend to experience higher income inequality. Similarly, caps on loan-to-value (LTV) ratios are one example of a widely used macroprudential measure, but such caps affect households' access to mortgages and, since housing is the most important asset in most households' portfolio, relaxing or tightening this access may affect the distribution of wealth within a country.

17. Second, the IMF's own Guidance Notes require staff to be alert to the distributional impacts of its recommended policies. Hence the IMF should be prepared to judge the distributional effects of UMP in the future and, should distributional effects be of concern, be prepared to offer advice on how to address such effects. The IMF should also work on the distributional effects of macroprudential policies to the extent that they remain the first line of defense against financial stability risks.

18. Fortunately, the Fund's substantial investment in building up expertise and modelling capacity on the distributional impacts of policies place it in a good position to analyze the impact of monetary policy—conventional and unconventional—on inequality when it is necessary.

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