

# *Monetary Policy and Financial Stability*

## *Měnová politika a finanční stabilita*

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### **Abstract**

The article deals with the interaction between monetary policy and financial stability. The discussion is focused on the impact of the world financial crisis on monetary policy orientation. The question is raised whether the established consensus on the goals and instruments of monetary policy still holds. In the pre-crisis period the mainstream approach considered price stability and financial stability as two separated goals to be achieved through different policies and instruments. Monetary policy safeguards price stability whereas regulatory and supervisory framework is responsible for financial stability. The instruments of monetary policy were expected to cope only with the consequences of financial imbalances and asset price bubbles, ex post correcting their negative impact on the economy. Lessons from the financial crisis heed to a reassessment of that approach. In the article the ways towards a more active engagement of monetary policy in preserving financial stability are examined. The view is held that financial imbalances should be reacted to already in the process of their formation, once they create a systemic risk and threaten to cause financial disarray. Though the views on the possible options diverge as yet, the role of financial stability concerns in monetary policy making is likely to keep increasing in the foreseeable future.

### **Keywords**

monetary policy, central banking, price stability, financial stability, asset prices, flexible inflation targeting, monetary policy framework, leverage

### **Abstrakt**

Stať rozebírá závislosti mezi měnovou politikou a finanční stabilitou. Klade si otázku, jaké důsledky má světová finanční krize na zaměření měnové politiky. Dochází k přehodnocení dosavadního konsenzu o cílech a nástrojích měnové politiky? V předkrizovém období převažující přístup teorie i praxe měnové politiky považoval cenovou stabilitu a finanční stabilitu za dva zcela oddělené cíle, jejichž zajišťování vyžaduje odlišné politiky a nástroje. Měnová politika zajišťuje cenovou stabilitu a na bubliny na trzích finančních aktiv reaguje pouze následně, když tlumí jejich důsledky. Zkušenosti z krize vedou ke korekci těchto přístupů. Ve stati jsou diskutovány náměty na aktivnější roli měnové politiky již v procesu tvorby finančních nerovnováh. I když se názory na možné směry řešení různí, nárůst váhy finanční stability pro nastavení měnové politiky se bude zřejmě prosazovat v teorii i praxi měnové politiky.

### **Klíčová slova**

měnová politika, centrální bankovníctví, cenová stabilita, finanční stabilita, ceny aktiv, pružné cílování inflace, měnově-politický rámec, pákový efekt

# 1 Introduction: Monetary Policy in the Aftermath of the World Financial Crisis, Outline of the Challenge

What should be the aims monetary policy is striving for, what can it accomplish and what would only be a futile endeavour? The evolution of the theory and practice of monetary policy is in its essence a permanent search for the answers to those questions.

In the period prior to the world financial crisis of 2007-8 central bankers and academic economists seemed to reach a consensus on both the goals of monetary policy and on the instruments to achieve them. The conviction gained ground that price level stability is the right way in which central banks and monetary policy can best contribute to macroeconomic stability and sustainable growth. That consensus was as follows: the dominant goal is price stability and the key instrument is policy short term interest rates.

What did the outbreak of the world financial crisis mean for the mentioned consensus? Are its principles still valid or undermined? Will central banking be quite the same after the global crisis or never again? What are likely challenges in the years ahead? Those are the issues vividly discussed in the contemporary central banking community, by the central bankers and academics as well.

The discussion is focused on two interrelated issues:

## i) The goals of monetary policy

Neither successful monetary policy nor the attainment of a low inflation environment in the past decade, however conducive to growth, prevented the onset of financial imbalances and high volatility in asset prices. The world financial crisis thus exposed the relationship between monetary policy and financial stability<sup>1</sup> and asset prices. Is the orientation of monetary policy on price stability too narrow? Should it embrace financial stability?

## ii) Monetary policy implementation

Not only in the course of the financial crisis, but also in its aftermath, major central banks had to resort to non-standard instruments (far beyond interest rates), aggressively engaging their balance sheets and adopting various forms of direct (Fed, Bank of England, Bank of Japan) or indirect (ECB) quantitative easing. Are those operations and instruments only a temporary phenomenon or a more durable one? Could it signal a revival of the role of monetary aggregates in monetary policy implementation?

This article concentrates on the former issue: should the monetary policy framework be adjusted to reflect more closely the challenge of financial stability and if so, how? The approaches of the pre-crisis period are confronted with the views and arguments evolving in the post-crisis atmosphere.

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1 Unlike standardized and clear cut definitions of macroeconomic and price stability, the concept of financial stability remains vague. It is as a rule interpreted as a situation when the financial system can fulfil its main functions (providing payments, channelling savings into investment, effecting risk sharing) smoothly, without disturbances that have significant social costs.

Without doubt, there are significant interrelations between monetary policy and financial stability. On the one hand, balance sheets of economic agents, asset prices and the entire environment of financial markets are affected by monetary policy. Through this impact monetary policy and its changes have a role in creating conditions for financial stability, contributing to preserve it or, in turn, causing instability.<sup>2</sup> It is hard to imagine that the prolonged period of negative real policy rates in the 2000s did not contribute to the boom in credit and asset prices that preceded the crisis, although it did prove consistent with low inflation in prices of goods and services.

As a feedback, the state of financial environment is the key factor in the transmission of monetary policy, through which the path of policy rate affects economic activity and inflation. The degree of financial stability or instability thus predetermines the efficiency of monetary policy and the impact its instruments are generating.<sup>3</sup> The lessons from the financial crisis revealed that financial factors may have a very strong and constraining impact on the transmission mechanism, making standard interest-rate policy much less effective.

## **2 Stages of Monetary Policy and the Views on its Role in Maintaining Financial Stability**

### **i) The era of “fine tuning” monetary policy**

Monetary policy in the 1960s and 70s was viewed as a means to stimulate economic activity and to reduce unemployment. To achieve those goals central banks aimed at smoothing cyclical fluctuations. That type of monetary policy was therefore labelled “activist” or “fine tuning”. Such an orientation on the short term neither required, nor made possible, to follow fixed rules. On the contrary, the decision making was of a discretionary character. Monetary policy making was veiled in secrecy; central banks had to try to “surprise” if not to “cheat” economic agents to achieve their aims.

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2 *The assessment of the resulting impact of monetary policy may, however, diverge. The discussion on the causes of the world financial crisis is just an example of such a disagreement. Even with the benefit of hindsight the views on the role of monetary policy clash. Was the crisis caused mainly by regulatory and supervisory failures or by monetary policy? Was the Fed the culprit, leaving its monetary policy too loose for a too long time? This is claimed e.g. by J. B. Taylor, father of the often cited Taylor rule of monetary policy which he derived on the basis of the empirical assessment of Fed’s behaviour since the early 1980ies. According to Taylor, the divergence from this rule in the years preceding the crisis was Fed’s crucial mistake contributing to the outbreak of the crisis. Cf. TAYLOR, J. B., *The Financial Crisis and the Policy Responses: An Empirical Analysis of What Went Wrong*, 2009.*

3 *The world financial crisis undermined the smooth functioning of financial markets. As a result, the normal transmission channels of monetary policy were jammed and the standard instruments were loosing their function. Under those conditions some central banks (among them the important ones, the Fed, Bank of England and ECB), had to resort to non-standard forms of monetary policy, in particular to the waves of quantitative easing.*

## ii) Monetary policy in the pre-crisis period.

A comparison of the recent decades with the 1960s and 1970s reveals that the shift towards price stability has been accompanied by profound changes in the role, approaches and orientation of central banking. Monetary policy turned into technical mode: setting one instrument (short-term interest rate) so as to achieve one goal (price stability). The technical character of monetary policy allowed for the adoption of monetary policy rules and called for increasing independence of central banks. Unlike the secrecy and discretion in the past, the new framework was based on an active role of inflation expectations shared by economic agents. For this purpose, monetary policy had to become transparent and predictable.

From the macroeconomic point of view, the decade preceding the first signals of the financial crisis in 2007 and its spread in 2008 appeared as an extremely favourable period in the modern history of the world economy<sup>4</sup>. Stable and relatively dynamic economic growth coexisted with low and non-volatile inflation. Such an environment resulted in increasing credibility of central banks. Their anti-inflationary orientation found its verification.

However, with the benefit of hindsight, there is no doubt that the primary causes of the crisis were already built into the "golden" period, its seeds were sown just when the world economy seemingly flourished. Stable growth rates and a low inflation environment of the Great Moderation period were not accompanied by the commensurate stability of financial markets and asset prices. On the contrary, with growing liberalisation of the financial sector, massive spread of financial innovation and advancing globalisation, the tendency towards imbalances and bubbles in financial markets has grown. The long-lasting favourable macroeconomic trends fostered undue satisfaction and expectations within the financial community as well as real economy agents. As a result, the arising imbalances and implied risks were mostly underestimated and neglected. An environment prone to bubbles was thus created.

In a way, a successful monetary policy may have contributed to such an environment. Given that a monetary policy focused on price stability is credible, inflationary pressures may accumulate for some time without being reflected in actual inflation as routinely measured, i.e. in the prices of goods and services. The more successful and credible an anti-inflation policy is, the longer the signs of growing imbalances may remain hidden below the surface, and the more intense is likely to be the negative impact of bubbles when they burst. A credible central bank focusing on price stability can thus contribute to the build-up of uncontrolled financial imbalances. It follows, the impact of monetary policy "suffers" a credibility and success paradox.

## 2.1 Pre-crisis Principles Compared with the Lessons from the Crisis

The outbreak of the financial crisis shook confidence in the applied regime and policies. Despite the low and stable inflation and dampened cyclical fluctuations, financial crisis hit

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4 Dubbed in the literature as the "Golden" or the "Nice Decade" (Non-Inflationary Consistently Expansory Decade). Economists started to speak of a "Great Moderation", i.e. of a period in which the traditional business cycle was dampened at last.

the world economy, with an imminent risk of a deep recession and deflation, and inflation threatening in the longer run. As a result, many pre-crisis “certainties” have gone.

i) Pre-crisis concepts:

- Success in stabilizing inflation is the key for macroeconomic stability, price stability is therefore the best contribution monetary policy can provide to the sustainable development.
- Once the low inflation environment is achieved, the economy was viewed as broadly capable to adjust itself. This belief was underpinned by the experience from the Great Moderation era.
- Monetary policy operating through the control of a short-term interest rate is sufficient to capture the impact of monetary policy on the economy. Although short-term interest rates alone have only a modest influence on economic activity, their transmission affects medium- and long-term interest rates, which do have a substantial role in the economy. A short term interest rate, together with expectations about its future path, is thus capable to affect the entire range of interest rates and their impact on the economy.
- The implementation of monetary policy through interest rate instruments, which are entirely in the domain of the central bank only, established a clear cut division between monetary and fiscal policy making.

ii) Financial crisis undermined those established beliefs:

- The crisis demonstrated that the existence of price stability could not secure and guarantee financial and macroeconomic stability.
- Central banks had to resort to unconventional monetary policies (more precisely: balance sheet policies), well beyond standard interest rate policy, to influence longer term interest rates, credit spreads and financial conditions in general. They engaged in massive purchases of government and private sector assets (such as mortgage backed securities) and extended large scale long-term liquidity support to the banking sector.
- Due to those non-standard, balance-sheet operations the division of responsibilities between monetary and fiscal policy has become fuzzy. Such a trend was all the more problematic as it evolved in the conditions of soaring public sector debts and rising sovereign risk.

This confrontation of the pre- crisis views with the lessons from the crisis reveals how a radical shift occurred under the impact of the crisis.

## 2.2 Monetary Policy and Financial Stability: “Mainstream” Approach

The conventional mainstream approach assumed that monetary policy can do little more than deal with the fallout from the unwinding of asset price bubbles. Central banks should step in only after bubbles burst, supplying the necessary liquidity to mitigate the adverse

effects on the macroeconomic situation.<sup>5</sup> The most influential supporter of the given approach was Alan Greenspan, the then chairman of the Fed.<sup>6</sup>

The mainstream view seemed to be vindicated against the backdrop of a number of persuasive arguments why central banks should not try to “deflate” asset market bubbles:

- the experience showed that to distinguish bubbles *ex ante* from normal adjustments to fundamentals is highly uncertain, bubbles are hard to identify before they burst,
- a monetary policy deflation of such bubbles carries a risk of major negative effects on the real economy,
- even if a central bank could identify bubbles, the instruments of monetary policy are not appropriate tools to cope with them. The policy interest rate, in particular, is too coarse to calibrate the desirable tightening,
- setting a separate financial stability objective for monetary policy would compromise its main goal to deliver price stability and most likely it would lead to public confusion about monetary policy orientation.

The mainstream approach may be therefore summarized as follows: price stability and financial stability are viewed as separate goals and, accordingly, their attainment requires separate policies to deliver. Monetary policy operating through interest rates is called to secure price stability along with the stability of the aggregate output, while prudential instruments, regulatory and supervisory tools are expected to provide for financial stability and the smooth functioning of financial markets. Central banks should react to bubbles only if they pose a direct threat to price stability. If it is not the case, their reaction should come only after the bubble bursts, supplying the necessary liquidity to mitigate the adverse consequences on the real economy (to clean).

Such a view on policy reaction was widely adhered to not only before, but also after the outbreak of the world financial crisis.<sup>7</sup>

### 2.3 Monetary Policy and Financial Stability: an “Alternative” Approach

In the opposition to the mainstream concepts there were some voices - already before the outbreak of the crisis - calling for a more active reaction of monetary policy to the risks of

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5 *This is the principle of the Jackson Hole consensus (named after the location of annual conferences of leading world bankers and economists). Cf. MISHKIN, F. Will Monetary Policy Become More of a Science?, 2007.*

6 *“We need to focus on policies to mitigate the fallout when it occurs and, hopefully, ease the transition to the next expansion.” GREENSPAN, A., Economic Volatility, 2002.*

7 *E.g. Fed’s Vice Chairman Donald L. Kohn addressing 26th Cato Institute’s Annual Monetary Policy Conference in November, 2008, underlined he was not convinced that “the current crisis demonstrates that central banks should switch to trying to check speculative activity through tighter monetary policy whenever they perceive a bubble forming” Cf. KOHN, D. L., Monetary Policy and Asset Price Bubbles Revisited, 2008.*

financial instability. They expressed dissatisfaction at how financial imbalances are treated in standard monetary policy and its models.<sup>8</sup>

The opponents of mainstream approach, based particularly in the Bank for International Settlements, pointed out that the debate on the monetary policy role in preserving financial stability was flawed. It has often been cast almost entirely whether central banks are able to judge the degree of overvaluation of particular assets. According to the “alternative” view, this was, in fact, a misplaced focus. What should be assessed is not whether assets are overpriced, but the formation of imbalances. The experience suggested that nearly all major unsustainable booms in asset prices were accompanied or preceded by strong increases in credit and/or money supply.<sup>9</sup> Therefore what matters is the degree to which the positions taken by leveraged investors pose a risk to financial stability.

In the “alternative” view, the mainstream approach, i.e. only subsequent accommodation of the consequences of bubbles and an orientation solely on mitigation of the risks of recession, was unduly asymmetric. The outcome is an environment with too low real interest rates where banks and their customers are stimulated to take on excessive risk, with adverse consequences for financial stability. If growing imbalances are left uncorrected, they tend to deepen and there is nothing to affect expectations during the period the bubble is inflating. When finally bubble bursts, the costs to the real economy are likely to be quite high.

In that line of reasoning the foremost challenge for central banks is to cope with the formation of imbalances, to try to stem them and to prevent the development of bubbles, rather than to concentrate only on what should be done once a bubble bursts. Central banks should react to imbalances once they are growing, even if the outlook for inflation and growth rate does not yet seem to be under threat. Hence, this stance requires a more symmetric approach of central banks: not only should they deal with the impact of imbalances and bubbles ex post (to clean), but they should try to control and constrain their growth ex ante (to lean against the wind).

Though that line of reasoning attracted some professional attention, in the period before the outbreak of the world financial crisis it was not reflected in the policies of central banks and had not prevailed in the theoretical field either.

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8 *“In a monetary regime in which the central bank’s operational objective is expressed exclusively in terms of short-term inflation, there may be insufficient protection against the build-up of financial imbalances that lies at the root of much of the financial instability we observe. This could be so if the focus on short-term inflation control meant that the authorities did not tighten monetary policy sufficiently pre-emptively to lean against excessive credit expansion and asset price increases. If the monetary policy reaction function does not incorporate financial imbalances, the monetary anchor may fail to deliver financial stability.”*

CROCKETT, A., *International Standard Setting in Financial Supervision*, 2003.

9 Cf. DETKEN, C., SMETS, F., *Assets Price Booms in Monetary Policy*, 2004.

### 3 Search for a New Consensus on the Orientation of Monetary Policy

The world financial crisis and its unexpectedly heavy costs have shaken the established concepts and stimulated a reassessment of means and instruments to better preserve financial stability. What should be the role of monetary policy in this reassessment? In the conditions of the financial crisis the interdependency of monetary policy implementation and financial markets functions was particularly exposed. But does it mean that it should be monetary policy which should assume greater responsibility in securing financial stability? Should its goals and framework be adjusted towards more engagement in financial stability? This is the principal question of the on-going discussion.

Reviewing the current views one can see areas of agreement but, as yet, more of a disagreement. All seem to agree that a better theoretical, empirical and operational understanding of the role of financial factors in the transmission mechanism of monetary policy is required. As yet, their role in macroeconomic models used to be only marginal. Applied models should be therefore augmented to better capture the functioning of banks and financial markets and their interplay with the real economy.

The agreement also extends to the need to improve the real-time indicators of the build-up of financial imbalances. Their enhancement should advance our ability to detect when rapid credit expansion and asset price increases only reflect sustainable movements in the underlying economic fundamentals as opposed to the situations of surging imbalances susceptible to future correction.

Unlike the above “technical” issues, disagreement continues on the monetary policy role in supporting financial and macroeconomic stability. The views diverge whether and, if so, how to adjust the monetary policy framework. The range of opinions is wide, starting with the continuity of the hitherto approach to the introduction of financial stability as a separate target into the loss function of central banks. Recognizing that diversity, we structure the on-going debate into two headings: continuity versus adjustment of monetary policy framework.

The continuity view adheres to the principles of the pre-crisis mainstream approach and holds that monetary policy regimes should keep focusing on price stability more or less in the same way as before the crisis.

The distinguishing feature of the adjustment “school” is an endeavour to assign financial factors more weight in the implementation of monetary policy. The most frequented option is the introduction of financial stability as a separate objective of monetary policy, as an additional stabilization goal, alongside the traditional goals of inflation and output gap stabilization. Though the ideas presented so far mostly uphold flexible inflation targeting framework, an extension of monetary policy targets to financial stability would represent a considerable shift from the previous mainstream thinking and signal an obvious departure from a “narrow” concept of central banking, hitherto concentrated on price stability and typical for pre-crisis era, to a more “broader” one.



The adjustment view draws on the ideas of “leaning against the wind” developed in the pre-crisis period in an opposition to the mainstream approach. Since the outbreak of the financial crisis those ideas have been gaining ground. As a result, the once “alternative” approach seems to be currently turning into the mainstream one.

### 3.1 Continuity View

The continuity view holds that flexible inflation targeting does not require any explicit addition of financial imbalances or asset prices to the formal structure of inflation targets. This stance is clearly stated by L. Svensson, an eminent expert on flexible inflation targeting.<sup>10</sup> In the background is the belief, that the outbreak of financial crisis had relatively little to do with monetary policy and was mainly due to regulatory and supervisory failures, distorted incentives in financial markets and mishandled macro conditions.

The type of inflation targeting which is commonly applied is called “flexible” as it does not pursue price stability as a sole target, though in connection with the real economy performance. As such it aims at stabilizing inflation around the inflation target and resource utilization around desirable output-gap. The concept of flexible inflation targeting thus means that a trade-off between inflation stabilization and output stabilization is built into monetary policy making. The policy implementation then aims at a reasonable compromise between the two.

Because of the time lags between monetary policy actions and their effect on inflation and real economy, inflation targeting is based on macroeconomic forecasts. Accordingly, flexible inflation targeting can be described as forecast targeting. The central bank chooses a policy rate path so that the forecast stabilizes both inflation and resource utilization.

According to the continuity view the targets of monetary policy should remain to be confined to price stability and resource utilization (output gap), i.e. they should not be extended on financial conditions. The arguments for this stance appear persuasive:

- Financial stability and price stability, though interrelated, are different goals. Accordingly, financial stability policy and monetary policy are different, with different objectives, instruments and responsibilities,
- Flexible inflation targeting by itself cannot achieve financial stability. In accordance with Tinbergen separation principle, each goal must have its own instrument, interest rate policy is therefore not enough to achieve financial stability,
- Instruments other than interest rates (credit-to- GDP ratio, capital standards, loan-to-value ratio) are likely to be much more effective in avoiding excessive credit growth and asset-price booms, and are therefore more appropriate to use as a first-best alternative to care of financial stability,

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10 *“The main conclusion for monetary policy from the crisis is that flexible inflation targeting, applied in the right way and using all the information about financial factors that is relevant for the forecast of inflation and resource utilization at any horizon, remains the monetary policy before, during, and after the financial crisis that has the best chance to stabilize both inflation and the real economy”.*

*Cf. SVENSSON, L. E.O., Inflation Targeting, 2010, p.52.*

- The extension of the monetary policy targets to financial stability, i.e. a further extension of the implied trade-off, would cause overburdening of monetary policy and loss of its efficiency in securing its main target, price stability.

The essence of the continuity view can be summarized as follows: central banks should continue in the hitherto procedure and take financial conditions such as credit growth, asset prices and imbalances into account only to the extent that they have an impact on the forecast of inflation and resource utilization. They are not target variables, but only indicators providing information to the central bank. Not even the lessons from the financial crisis justify turning those indicators into policy targets, along with price and output stability.

Nevertheless, the challenge of the crisis outbreak made an impact on the advocates of the continuity of the existing monetary policy framework, too. They are striving to prove that the applied regime of flexible inflation targeting has a potential to cope with the risks for financial stability without any substantial change in its operational framework. This potential to be used is seen, in particular, in the enhanced role of financial indicators and in the extension of monetary policy horizon.

i) Why not to increase the weight of financial indicators in setting policy when justified ?

That argument runs as follows: it may appear that financial factors have a larger role in affecting the transmission mechanism and as indicators of future inflation and resource utilization than thought before. If so, central banks should be responding more to financial indicators in the sense of adjusting the policy rate to given changes of the financial indicators.

This stance comes closer to “leaning against the wind” provided credit growth and asset prices are considered just indicators. They are emphasized because they may have increased the potential of negative effects on inflation and resource utilization at a longer period (which actually happened in the course of the world financial crisis). If so, then “leaning against the wind” is considered as completely consistent with flexible inflation targeting and a way to improve the stability of inflation and resource utilization in the longer run.<sup>11</sup> However, a disagreement with “leaning against the wind” approach remains if it implies that credit growth and asset prices should become targets and enter the explicit or implicit loss function alongside inflation and resource utilization.

ii) Why not to extend time horizon of monetary policy ?

The greater emphasis put by central banks in recent decades on achieving price stability through adopting the regime of inflation targeting has already implied a significant lengthening of the policy horizon. Whereas policies of “fine-tuning” had previously focused on the immediate effects of monetary policy on output and employment, under inflation targeting attention shifted to the subsequent effects on inflation over the following one or two years.

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<sup>11</sup> Cf. SVENSSON, L. E. O., *Inflation Targeting*, p. 58.

The essence of the standard flexible inflation targeting<sup>12</sup> entails a long run objective with no fixed time frame for which it is to be reached. In practice, however, policy tends to be focused on a horizon which is consistent with the lags of monetary policy and yet at the same time not too far ahead so as to maintain a reasonable degree of confidence about the forecasts. In reality, two years is often chosen as a reasonable horizon that satisfies these two criteria.

Nevertheless, even this relatively extended horizon appears to be inadequate for the ability of inflation targeting to handle financial imbalances which are - as a rule - evolving over a more protracted period. Taking on board the possible risks posed by cumulating financial imbalances may therefore require a further shift in the monetary policy horizon of central banks.

Now, the advocates of the continuity view claim that the inflation targeting framework will automatically take account of risks to financial stability, without requiring any additional stabilization goals, as long as monetary policy decisions are made on the basis of projections that extend far enough into the future. The argument boils down to the link between the consequences of financial imbalances and the policies towards attainment of inflation and output stabilisation targets over a longer period.

In their view, should the financial imbalances deteriorate and should financial crisis occur, it will likely result in output below potential and/or deflation. Hence the standard policies to achieve price and output gap stability – if extended over a long enough horizons – will simultaneously reduce the likelihood of a crisis.

The snag of that reasoning seems to be in the implied sequencing. Within the standard framework of the flexible inflation targeting adjustment in monetary policy to stabilize inflation and output gap is initiated as a reaction to the forecast divergence from the inflation target. It means, monetary policy reaction follows only after deterioration of financial factors threatening to cause deflation and/or negative output gap was evolving. Consequently, considerable economic and social costs are likely to be already incurred.

### **3.2 Adjustment Oriented Views**

According to adjustment “school” the desirable framework should allow monetary policy to tighten even if near term inflation is under control, whenever there are signs that credit and asset price booms threaten financial stability. In their view, extending the horizon per se will not capture the risks of financial imbalances as it does not address the underlying weakness of the applied regime: a concern for financial imbalances is not incorporated either in the adopted forecasting model and/or among the stabilization goals.

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*12 Unlike that standard regime, there were cases and/or development stages when interest rates were set to bring inflation forecast to the target over some fixed period, be it a concrete date or period. Such an option has been applied by the central banks particularly in the situation of gradual disinflation to price stability. The Czech National Bank also adopted this fixed period target procedure in the first stages of inflation targeting before reaching the status of the “low inflation economy”.*

As especially technical challenges make hardly feasible to modify accordingly and to extend the type of the model used, a more practical alternative to such a more complex model is seen in a modification of the loss function to explicitly include a concern for financial imbalances. The central bank, aiming to pre-empt the risks associated with evolving financial imbalances should be guided by a separate operational objective, on top of inflation and output stabilization goals.

There are two principal arguments why it should be not only useful but also desirable to effectively engage monetary policy in financial stabilization:

- The influence of monetary policy on credit conditions, asset prices and yields is hardly in any doubt. Monetary policy setting inevitably affects financial environment, the degree of leverage of financial institutions and hence the probability of occurrence of a crisis.
- However welcomed are the activities towards a more efficient regulatory framework, to strengthen its macro prudential dimension and to change its character from a pro-cyclical to a more counter-cyclical one, the regulatory and supervisory activities can be hardly successful enough without cooperative monetary policy, consistent with the requirements of financial stability.

An extended engagement of monetary policy in financial stabilization is, however, exposed to the constraints:

- there may be conflicts between goals of price and financial stabilization
- the extended policy framework should still provide a clear anchor for medium term inflation expectations
- the technical background as well as the practical experience on how to implement “leaning against the wind” is mostly lacking as yet
- practical aspect of extracting the relevant information from financial imbalances in a way that allows pre-emptive policy to be implemented remains extremely demanding.

### **3.3 Trade-off: Central Bank’s Inflation and Output Stabilization Objectives against Financial Stability Requirements**

The pre-crisis consensus in the sense that price stability is the main goal of monetary policy continues to be widely shared and undisputed even after the crisis. Hence, any extension of monetary policy framework should not imply any significant weakening of the commitment to price stability. Therefore the introduction of financial stability objective into a loss function is at the same time required not to undermine in any way medium term inflation target.

However, it may be only by coincidence if the interest rate policy focused on the traditional stabilization objectives is also the one that best serves the financial stability goal. Therefore a conflict is likely to arise between the use of monetary policy to maintain price stability and stable real activity and its use to diminish risks to financial stability. In such a constellation, monetary policy faces a trade-off.

This trade-off may appear a parallel to that experienced already in a flexible inflation targeting framework between its goals of inflation stabilization and output gap stabilization. Nevertheless, there is a difference. Adding one more target extends the potential frequency of conflict. Moreover, the requirements of price stability and financial stability may be developing in a more or less opposite direction. Such a situation e.g. arises when forecast for inflation signals "no change in interest rates", whereas credit and money are dramatically rising together with asset prices, threatening financial stability. Evidently, a balancing problem of financial stability concerns with price stability objectives arises.

M. Woodford<sup>13</sup> offered a solution to that balancing problem which appears to be promising. It is based on the distinction between normal conditions and a situation fraught with high systemic risk. In normal conditions monetary policy is focused on standard targets. Unlike that, during periods, when increasing leverage signals an increasing probability of a financial distress and possibly crisis, the central bank should "lean against the wind". This implies that the policy ends up with lower inflation and real activity than it would be otherwise the case.<sup>14</sup> In those periods, the central bank deliberately aims at undershooting inflation and output goals in order to reduce the risk of a financial crisis. Hence, financial stability considerations would be "switched on" only temporary, affecting the near-term transition path, in the same way as concerns for stability of the real economy do under conventional flexible inflation targeting.

While a compromise, the presented approach should uphold price stability as a dominant goal of monetary policy and, at the same time, take care of financial stability concerns. Nevertheless, in the periods of financial distress when the central bank "leans against the wind" in order to reduce the risk of financial crisis the inflation and output goals are likely to be undershot. Hence, the short term deviations from the inflation target should be considered justified and tolerated because the central bank has to take into account an additional trade-off between price and output stability on the one hand, and financial imbalances on the other. This requires a corresponding communication strategy explaining why the slower convergence of inflation figures to the target is taking place.

Furthermore, when the inflation and output targets are undershot, the central bank is now committed by the same criterion to a subsequent easing of monetary policy. Consequently, the cumulative effect on the price level in the longer run may be close to zero. Hence, public should be well aware that a more prolonged policy horizon may become relevant once monetary policy is active in preserving financial stability.

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13 An extended version of the new Keynesian model was developed to present the idea. Cf. WOODFORD, M., *Forecast Targeting as a Monetary Policy Strategy: Policy Rules in Practice*, 2007.

14 This means that the policy rate should be higher during these periods than it would normally be required by standard Taylor rule considerations. It should be noted, however, that higher policy rates tend to boost capital inflows potentially offsetting the efficacy of the policy measure taken, which may be relevant especially in the terms of a small open economy.

### 3.4 How Can Monetary Policy Be Conducive to Safeguarding Financial Stability?

In what follows, potential ways to cope with the mentioned constraints are identified, recognizing the existence of the three different phases:

- i) in the build up of imbalances and rising threats to financial stability,
- ii) if financial crisis occurred,
- iii) in the aftermath of financial crisis.

#### **ad i) Is there a viable option for monetary policy to reduce the likelihood of occurrence of a crisis?**

Unlike the pre-crisis debate whether central banks are able to judge the degree of overvaluation of particular assets (which is hardly feasible), a more workable approach is searched for. A link between monetary policy and leverage of financial institutions<sup>15</sup> may provide a basis for a solution.

Monetary policy choices affect the degree of leverage, since a loosening of monetary policy is generally associated with increased leverage. The greater is the leverage taken on, then the greater the probability of a shock triggering a chain reaction affecting financial sector is. Consequently, the greater is also the probability of systemic risk and the possibility of a crisis evolving. Hence, a conclusion can be drawn: to reduce the likelihood of financial instability requires reducing the too expanded leverage.

From the point of monetary policy it appears attractive that the highly leveraged investing can be effectively limited by relatively small changes in the interest rates, at which the leveraged positions are financed. Given that, the mainstream argument against the use of monetary policy loses much of its relevance. That argument was as follows: if interest rates changes should cope with asset market overvaluation, they would have to be raised so high that their impact on real economy would be disastrous. That conclusion is, by itself, no doubt true. However, in the "leverage" approach, the policy aim is not to cope with the overvaluation of the assets as such, the leverage taken on is considered a critical issue instead.

This line of thinking results in conclusion that it is not only appropriate but also feasible to try to reduce the ex-ante probability of disarray, even at the cost of some loss to other stabilization objectives. To provide for this, introducing minimization of the risk of financial instability as an additional stabilization goal, alongside the traditional goals of inflation and output gap, is considered desirable.

#### **ad ii) Monetary policy once the financial crisis broke out**

The disarray of the financial system has negative impact on the transmission mechanism through which policy rate affects inflation and economic activity. If in the crisis conditions

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<sup>15</sup> Leverage is the ratio of a company's debt to its equity, i.e. to the part of its total capital that is owned by shareholders. High leverage means a high degree of reliance on debt financing.

the policy rate is set as a function of inflation and output gap, i.e. in a standard way (reflecting e.g. Taylor rule), an undesirable decline of the inflation rate (risk of deflation) and of economic activity is likely to occur. Consequently, a modified rule should be applied during a crisis situation to avoid the chain of negative consequences.

Once the financial crisis broke out, an immediate reaction of monetary policy is justified, without waiting for inflation and output to decline. A useful way to adapt the Taylor rule for such a crisis situation may be a response to observed changes in credit spreads (i.e. in the margin between creditor's and debtor's interest rates).

V. Cúrdia and M. Woodford<sup>16</sup> presented a model version of such an approach. Their model reflects consequences of the increased credit spreads for monetary transmission mechanism and a corresponding reaction of monetary policy to changes in those credit spreads, i.e. a modified path for policy rate. Along that approach, monetary policy reaction does not wait to actual fall in inflation and in economic activity. Rather, policy interest rate is cut already with the changes in credit spreads.

The described approach offers a solution for the crisis, without changing the standard inflation targeting framework. The suggested procedure is consistent with inflation targeting, there is only a shift in the structure of the relevant indicators, and/or in their weight.

### **ad iii) Monetary policy in the aftermath of financial crisis**

There is hardly any unifying view on what should be the course of monetary policy in the aftermath of a financial crisis. This refers to the timing of exit from non-standard instruments, but not only that.

In the view of some the perceived risk is that the policy will not be accommodative enough and/ or not kept long enough given incurred costs and the prolonged consequences of the financial crisis. Central banks should be therefore as accommodative as possible, by driving policy rates close to zero, by committing to keep them low as long as desirable, and by keeping central bank's balance sheet instruments active for a sufficiently long period<sup>17</sup>.

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<sup>16</sup> Cf. CÚRDIA, V.; WOODFORD, M., *Credit Spreads and Monetary Policy*, 2010, p. 3-35.

<sup>17</sup> This stance seems to be followed by the Fed, committing among other to keep low interest rates as long as 2013 (and possibly even 2014), which had hardly any parallel in the past.

An opposite view points to the limitations and unwelcome side effects of such a too long-lasting accommodative monetary policy.<sup>18</sup> Very low interest rates may disguise underlying credit quality weaknesses, encouraging banks to pretend that loans of low-quality borrowers will become good. Moreover, low interest rates, extended central bank funding and asset purchases make the recognition of the incurred costs and the commitment to debts unwinding less binding. Instead, in the post crisis conditions most national economies need balance-sheet repair which accommodative policies are likely to delay.

Obviously, there is hardly any standard solution as for accommodative monetary policy in the aftermath of the financial crisis which would be "right" irrespective of the concrete circumstances. The crucial issue is the realistic assessment of the given stage of the post-crisis environment and its impact on the role and setting of monetary policy, be it interest rate (conventional) or balance sheet (unconventional) policy.

## Conclusions

The world financial crisis of 2007-8 casts doubts on the existing consensus on the role of monetary policy, which dominated both theory and the conduct of monetary policy in the previous decades. The crisis revealed some weaknesses of the hitherto approaches. Models applied by central banks did not elaborate extensively enough on the role of financial markets in the transmission channels of monetary policy and did not address the impact of financial frictions and of some other factors leading to the imperfect functioning of financial markets.

Under the pressure of the crisis, non-standard policies and instruments have been resorted to, including some previously regarded as taboo in the developed world. At the same time the unexpectedly high costs incurred because of crisis drew the attention to financial stability concerns and to the ways of its upholding. The debate developed whether monetary policy orientation on price stability did not prove too narrow and whether it should not be more engaged in preserving financial stability. The view is held that however welcomed is the ongoing enhancement of the regulatory and supervisory framework and its macroprudential dimension extended, it can be hardly efficient enough without consistent and cooperating monetary policy. Balance sheets of economic agents, asset prices and the entire environment of financial markets are influenced by monetary policy.

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18 W. White identified the undesirable medium-term effects of very expansionary monetary policies as follows: "the first worry is that such policies will prove effective only by stimulating a "bubble" in some new market and still further increases in leverage and indebtedness. A second worry is that very easy monetary policy reduces growth potential in various ways. In particular, saving rates are reduced (affecting the capital stock over time) and "zombie" companies and banks are allowed to survive. A third worry is that the "search for yield" will strongly encourage imprudent lending and the development of new instruments to hide risk. Fourth, at very low interest rates, the interbank market will collapse, leaving the central bank as the market maker of last resort. And finally, there is the worry that extraordinary easy monetary policies (various forms of quantitative and credit easing) might inadvertently culminate in rising inflation". Cf. WHITE, W. R., *Some Alternative Perspectives on Macroeconomic Theory and Some Policy Implications*, 2010, p. 50-51.



Though it would be premature to judge whether, and if so, how the established consensus will adjust, price stability is most likely to remain the dominant goal of monetary policy. Nonetheless, an apparent shift in the arguments towards the increased role of monetary policy in safeguarding financial stability is visible. The ways are searched how to integrate financial stability concerns into monetary policy making in general and to a flexible inflation targeting framework in particular.

As yet, the views on the concrete resolution diverge. Some see the argument for the use of monetary policy to cope with the risk to financial stability limited to exceptional situations, as a second best solution only. If there is a threat to financial stability and other, more effective instruments are not available, then the impact on financial stability should be taken into consideration when choosing the policy rate path. It could result in a lower or higher policy rate path than otherwise, in order to trade-off less effective stabilization of inflation and resource utilization for more financial stability.

Unlike that, an option gaining wider support claims a certain weight should be attributed to financial stability along with the standard inflation and output gap targets in setting monetary policy. As a conflict is likely to exist between the requirements of price and financial stability, such an extension of monetary policy targets implies that a trade-off between them is faced. The suggested response assumes a temporary "switch" to the financial stability mode once a situation characterized by substantial financial stability risks develops, while the commitment to the medium term inflation target remains untouched.

Though a compromise, such an approach represents a departure from the previous mainstream view which posited only subsequent reaction to the consequences of asset market bubbles, i.e. "to clean only". Contrary to that, monetary policy is expected to react not only to the fallout of asset price bubbles, but already to the formation of imbalances, provided the risks of financial instability exceed a certain threshold. Hence, the implementation of the presented approach would imply a shift from the ex post solution, "to clean only", to occasional ex ante reaction to financial stability concerns, i.e. "to lean against the wind" once desirable.

Concluding, the world financial crisis turned out to be a milestone in the evolvement of the theory and practice of monetary policy. Though the views on the role of monetary policy in safeguarding financial stability continue to diverge as yet, the conviction is gaining ground that monetary policy should reflect financial stability concerns in a more active, ex ante way. Hence, the established consensus on the goals of monetary policy is likely to go through reassessment and adjustment.

It in no way implies, however, that financial stability could be and should be primarily secured through monetary policy. Instead, the regulatory and supervisory instruments are the "first line of defence" and should be capable to carry the main burden. Strengthening their macroprudential orientation, allocating more attention on preventing episodes of systemic distress that have costs for the real economy rather than on preventing the failure of individual institutions are welcomed steps towards consistent and mutually reinforcing monetary and prudential policies in the realm of financial stability.

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