

Jürgen Stark: Globalisation and monetary policy – from virtue to vice?

Speech by Mr Jürgen Stark, Member of the Executive Board of the European Central Bank, at the Federal Reserve Bank of Dallas, Dallas, 29 November 2011.

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Ladies and gentlemen,

I am very honoured to be here today. Reading about the origins of the Globalisation and Monetary Policy Institute, I came to learn that it was established in 2007 in order to promote a deeper understanding of the global environment in which US monetary policy operates. The establishment of the Institute could not have been more timely, as the deep-seated and systemic nature of the current crisis is certain to provide numerous interesting questions for researchers to explore in the years to come.

The good news, therefore, is that we live in challenging times and that for those of you who work in the Institute this will mean important and policy relevant work today and in the future. The bad news is that the crisis is still on-going, and insofar as this is the case and its ultimate outcome remains uncertain, there is an inherent peril to provide analysis and possible policy prescriptions on the basis of events which are either happening in real time or have recently elapsed.

We have seen many dimensions of the crisis since it started in August 2007, spreading from the periphery of the financial system to its core, and then onto sovereigns with weaker balance sheets, which in turn contributed to increasing the vulnerability of the core financial system even further. In recent months, this negative and self-reinforcing dynamic of adverse feedback loops between weak sovereign and financial sector balance sheets has been all too apparent in parts of the euro area. At every step of this process entailing the transformation of risk from one party to another, policymakers in various domains – regulatory, financial, fiscal, monetary – had to search for workable solutions. At a minimum, the evolving character of the crisis has forced policy makers to work on an effective response under exigent circumstances.

In the remainder of my remarks today, I would like to shed light on the on-going policy response from the point of view of a monetary policy practitioner in a central bank. I will do this by drawing on the relationship between globalisation and monetary policy in recent years and considering the extent to which both variables have influenced each other in either a “virtuous” or “vicious” manner. This will not only be useful to understand what has happened in the recent period but also to frame the challenges that might lie before us as a result of the changed global environment under which monetary policy must operate.

Before going any further, I think two disclaimers are in order. First, I will not purport to be exhaustive but selective in my discussion of the factors conditioning monetary policy frameworks in the global environment. Second, I do not intend to be taxative but reflective, as the assessment of monetary policy frameworks will necessarily continue even if the aftermath of the crisis.

1. The road to virtue

The road to virtue between globalisation and monetary policy was built on two inter-related premises. First, that the process of globalisation itself was largely irreversible. And second, that the by-products of such a process complemented improvements in monetary policymaking such that the battles of yesteryear had been decisively won in a durable manner and the new challenges appeared to be manageable. The relationship between monetary policy and globalisation could thus be best described as one which was both symbiotic in nature and mutually beneficial. I will review these arguments in turn.

The perceived inevitability of globalisation

First, asserting the irreversibility of globalisation in the midst of a systemic crisis such as the one we are currently experiencing may seem far-fetched. However, if one were to look back at the enthusiasm which prevailed in both the economics and international relations fields during the early 1990s, this appeared as an inescapable conclusion. The growth of world merchandise export volumes had already consistently outpaced that of real GDP for decades¹, while the world stock of outward FDI had dramatically increased in the period from 1980-1990². These favourable trends looked set to receive a further boost on account of the expected integration of central and eastern European economies as well as the states of the former Soviet Union and China into the mainstream of the world economy. Many observers therefore agreed with Francis Fukuyama that this marked “the end of history”³.

The intensified scope and depth of economic and financial exchanges in the global economy which followed seemed to confirm this premise. But “globalisation” as a concept was – and remains – elusive to define even within the narrower remit of economics and finance, such that observers interpreted these developments in a slightly different manner. On the one hand, theorists such as Ohmae (1990)⁴ tended to focus on the globalisation of production and the shifts in global finance that underpinned this trend to argue that a new capitalist system would progressively emerge, with the relevance of nation states as economic actors dwindling in importance. In contrast, other observers saw the growing internationalisation of the world economy as part of a broader and longer-dated trend where sharp intensifications in trade and financial exchanges underpinned by growing economic liberalism were not without historical precedent (for example during the period ranging from 1870 to 1913)⁵. These observers were thus more bullish as regards the ability of nation states to retain their economic power going forward, consolidating this inter alia through strategic alliances in economic blocks⁶. In spite of these nuances, the common thread between the two views was that the underlying economic forces were seen as inevitable in the international (or global) domain.

Complementarities between globalised economic performance and policymaking

Second, following the broad acceptance of the premise that the globalised world would be durable in nature, academics and policymakers devoted their attention to fleshing out the practical implications of globalisation in different policy environments. Insofar as monetary policy was concerned, the debate was broadly captured by the relative weight of improved policymaking versus globalised factors in accounting for successful economic outcomes.

A first dimension in this regard was backward looking in nature and stemmed from the sharp reduction in the variability of both inflation and output during the 1990s. This phenomenon, which became known as “the great moderation”, coincided with both the intensification of

¹ According to WTO data, the average growth of world merchandise export volumes per annum was 15% from 1960 to 1990 inclusive, as compared to average real GDP growth per annum of 8% over the same period.

² According to UNCTAD data, the world stock of outward FDI increased from USD 564 billion in 1980 to USD 1763 billion in 1990.

³ See *The End of History and the Last Man*, book by F. Fukuyama (1992).

⁴ See *The Borderless World* (1990) and *The End of the Nation-State* (1995), books by K. Ohmae

⁵ See for example *Globalisation, History and Development: a tale of two Centuries*, article by D. Nayyar (2006). The author notes that export shares in GDP for selected industrialised countries (e.g. UK, Germany, Japan) were broadly comparable in 2000 relative to 1913, and that the relative increase in export shares to GDP for these same countries between the periods 1900–1913 and 1973–2000 was also comparable. In addition, the stock of FDI as a proportion of world GDP was about 9% in the mid-1990s, similar to the ratio in 1913.

⁶ See for example *Globalisation in Question*, book by P. Hirst and G. Thompson (1999) and *Globalization: A Short History*, book by J. Osterhammel and P. Petersson (2005).

globalisation in its broadest possible interpretation (namely the growth of cross-border trade in goods, services and financial assets, complemented by improvements in information and technology transfer) as well as with the establishment of price stability-oriented monetary policy frameworks under independent central banks. In principle, each of these factors could help to account for improved macroeconomic performance. On the one hand, globalisation and the associated increase in international flows of capital, goods and services should have resulted in greater pressure towards price equalisation and convergence as well as greater shock resilience of our economies. On the other hand, an independent and price stability oriented monetary policymaking should contribute to overall greater macroeconomic stability with lower output and inflation volatility. A debate ensued among policymakers and academics to assess the relative merits and contributions of globalisation and monetary policy for macroeconomic stability, with some also suggesting that the improved macroeconomic performance was only accidental in nature reflecting “good luck”⁷.

I will not try to settle this debate today, which is bound to continue in both academic and policy quarters, although – not surprising for a central banker – I personally believe that monetary policymakers deserve significant credit to this end, not least as inflation is ultimately a monetary phenomenon and hence ultimately determined by monetary policy. But the more fundamental point which I would like to make is that there seemed to be a large degree of positive complementarity between globalisation outcomes and monetary policymaking. Whether one thought that policy frameworks largely managed to keep inflation in check once it was already low with the aid of global factors, or alternatively considered that the low inflation responded to policy frameworks successfully harnessing the forces of globalisation, both trends appeared to be working in the same “virtuous” direction.

A second dimension of the debate involving monetary policymaking in a globalised environment was more forward-looking in nature, relating to the perceived ability of monetary authorities to continue to deliver on their price stability mandates. The main concerns in this regard had to do with the possible effects of globalisation in domestic product and labour markets as well as financial conditions, and the extent to which these should be incorporated into the central bank’s reaction function so as to ensure the effectiveness of monetary policy in a changed environment.

As regards product and labour markets, observers differed on whether from a theoretical vantagepoint globalisation should make the short run Phillips curve either (i) steeper as a result of greater price responsiveness to shifts in demand (e.g. Rogoff 2006⁸); or (ii) flatter as a result of other factors including increased openness reducing the responsiveness of inflation to the domestic output gap or squeezed profit margins due to competition from labour abundant countries (e.g. Bean 2006⁹). Yet other observers (e.g. Taylor 2008¹⁰) argued that the correlation between globalisation and the sort of effects which were purported to have on policy response functions were spurious in nature. Empirical studies (e.g. Borio and Filardo, 2007¹¹) showed some support for a flattening of the Phillips curve and that measures of global slack had become relatively more important to account for domestic inflation relative to domestic ones, albeit not in the case of the euro area.

⁷ For a review of the arguments in this regard, see *The Great Moderation*, speech by B. Bernanke Board of Governors of the Federal Reserve System, February 2004 .

⁸ See *Impact of Globalisation on Monetary Policy*, article by K. Rogoff (2006).

⁹ See *Globalisation and Inflation*, Speech by C. Bean, Bank of England , October 2006.

¹⁰ See *The Impacts of Globalisation on Monetary Policy*, article by J. Taylor (2008).

¹¹ See *Globalization and inflation: New Cross-Country Evidence on the Global Determinants of Domestic Inflation*, article by C. Borio and A. Filardo, BIS, (2007).

The integration of low cost and labour abundant producers such as China into the global system led to the common perception that such emerging markets were “exporting deflation”. This view, however, downplayed the cost-push factor which those same emerging markets could have on relative prices, for example through rising demand for commodities, working their way into short-run fluctuations of headline inflation. Therefore, it is clear that the widespread presumption of favourable “tail-winds” from globalisation on inflation is turning more and more into “head-winds” posing challenges to the maintenance of price stability. In addition, policymakers can choose to act to dampen the effect of these relative price changes on the absolute price level to the extent that they are able to distinguish between temporary shocks and permanent inflation trends.

Concerning financial globalisation, the main source of concern for policymakers in the run-up to the crisis stemmed from the potential impact of more integrated financial markets on the monetary policy transmission mechanism, for example by increasing the sensitivity of investors to (now lower) interest rate differentials. From a theoretical point of view, some observers argued that key determinants of long-term interest rates – such as the global riskless real rate of interest and the real risk premium – had indeed been influenced by the globalised environment¹².

In these circumstances, the ability of short-term interest rate changes to influence long-term rates could be more problematic than would otherwise be the case. There was some empirical evidence pointing to this end for a number of advanced economies including the euro area¹³, as well as to suggest that global factors had become increasingly important in the determination of national real bond yields¹⁴. At the same time, there was also some evidence to suggest that the responsiveness of longer-term yields to unanticipated changes in short-term rates remained unhindered¹⁵.

Public remarks by policymakers in the run-up to the crisis show that officials were cognisant of the increased challenges for monetary policy brought about by financial globalisation. The remarks by former Federal Reserve Chairman Greenspan noting that the diverging evolution of short-term versus long-term rates in the US represented a “policy conundrum”¹⁶ received ample media attention in this regard. In a speech in March 2007, current Federal Reserve Chairman Bernanke also acknowledged that the central bank’s analysis of financial and economic conditions was becoming more complex¹⁷. Former ECB vice-President Papademos noted similar challenges to the central bank’s monetary analysis in another speech in June 2007¹⁸. However, these same public interventions also show that policymakers at either side of the Atlantic remained confident on the ability of monetary policy to continue to effectively transmit monetary impulses to financial markets and the real

¹² See *Globalization’s Effect on Interest Rates and the Yield Curve*, article by T. Wu, Federal Reserve Bank of Dallas (2006).

¹³ See *Panel remarks at the Thirteenth International Conference “Financial Markets and the Real Economy in a Low Interest Rate Environment”* by L. Reichlin (2006).

¹⁴ See *The Equilibrium Level of the World Real Interest Rate*, article by D. Giannone, M. Lenza and L. Reichlin (2007)

¹⁵ See for example *The High-Frequency Response of Exchange Rates and Interest Rates to Macroeconomic Announcements*, article by J. Faust, J. Rogers, S. Wang and J. Wright (2007).

¹⁶ See *Testimony of Chairman Alan Greenspan Before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate*, Federal Reserve Board’s semi annual Monetary Policy Report to the Congress, February 2005

¹⁷ See *Globalisation and Monetary Policy*, speech by B. Bernanke, Board of Governors of the Federal Reserve System, March 2007.

¹⁸ See *The Effects of Globalisation on Inflation, Liquidity and Monetary Policy*, speech by L. Papademos, ECB, June 2007.

economy, notably through well-anchored inflation expectations, effective communication, and medium-term orientation of monetary policies.

Overall, the “virtuous” view of the relationship between globalisation and monetary policy prevailing in the run-up to the crisis was one where the potential challenges to policy frameworks posed by more integrated product, labour or financial markets appeared to be manageable. This view was partly conditioned by the favourable experience during “the great moderation”, with stability oriented monetary policymaking and globalisation trends seemingly complementing each other to yield a stable macroeconomic environment.

2. The seeds of vice

As we now know, the “virtuous” view of the relationship between globalisation and monetary policy came to an abrupt end in September 2008 as a result of the Lehman bankruptcy and the events which have followed to the present day. With the benefit of hindsight, it has become evident that while policymakers in different areas of the economy thought to have things under control, a “perfect storm” was simmering beneath the surface. The policy failures in many domains, notably supervisory and regulatory regimes as well as risk management and compensation practices by financial institutions, were significant in the run-up to the crisis. And once the crisis hit and public balance sheets were burdened with the respective costs of supporting financial sectors, fiscal stimulus and the operation of automatic stabilisers in a sharp economic downturn, other vulnerabilities emerged.

However, it is legitimate to ask about the relative responsibility of monetary authorities in contributing to the crisis, whether actively or inactively. I would thus like to highlight three elements which helped to sow the seeds of a vicious relationship in this regard.

Complacency and insufficient medium-term orientation of monetary policy

The first was complacency. With inflation seemingly under control following “the great moderation” of the 1990s amid intensified globalisation, many observers thought that monetary policy had greater degrees of freedom to devote to short-term demand management. Proponents of this view referred to this as “fine-tuning”¹⁹, whose theoretical counterpart was a form of “flexible inflation targeting” with an added emphasis on output stabilisation beyond inflation stabilisation. The pre-crisis focus on the output gap was in many ways paradoxical insofar as consensus macroeconomics had run full circle back to the intellectual climate of the 1970s, where policymakers’ exaggerated real time measures of economic slack was at the root of many policy failures. This was the same environment that had favoured the Great Inflation.

Too much emphasis on short run economic developments, or – in my view – an insufficient medium-term orientation of monetary policies has certainly contributed in part to the build-up of monetary and financial imbalances. Although monetary policy frameworks oriented towards the medium-term could probably not have completely prevented the current crisis, I am convinced that they would have helped to make it less disruptive. As you know, the ECB has never subscribed to the view that monetary policy has a primary role to play in the management of aggregate demand and we think that this element of the pre-crisis monetary policy paradigm should be revised on the basis of subsequent events.

Underappreciation of monetary and credit dynamics

A second element fostering a vicious relationship between monetary policy and globalisation in recent years was the underappreciation of monetary and credit dynamics on the part of

¹⁹ See *Economic Performance in the Greenspan Era: the Evolution of Events and Ideas*, article by A. Blinder and R. Reis (2005).

policymakers. In hindsight, the crisis has been a sober reminder that the seeds of financial instability are often alike, including high leverage, rapid growth of financial institutions, and balance sheet mismatches. Some of these trends can be picked up when closely looking at monetary and credit variables, even if such trends may not be addressed by conventional monetary policy tools and require macro-prudential action instead.

As you know, liquidity and money lie at the core of the ECB's second pillar in its monetary policy strategy, but this emphasis was seen by mainstream modellers as somewhat of a relic of the past. However, the crisis has shown that liquidity and various definitions of money are critical elements in the transmission mechanism. The use of these indicators at the ECB has proved useful during the crisis, for example by providing insights into bank behaviour, financing conditions and the overall state of the business cycle (Papademos and Stark 2010²⁰). There is evidence to suggest that, without taking such monetary analysis into account, inflation in the euro area would have been distinctly higher at times of financial exuberance and would have fallen deep into negative territory in the wake of the financial markets' collapse²¹. We thus think that this is one reason to revisit the role of monetary and credit variables in monetary policy strategies going forward.

Moreover, disregard for monetary and financial phenomena by policymakers had a more profound implication insofar as found a theoretical underpinning in the risk management approach to asset price trends. The consensus view in the run-up to the crisis – to which the ECB did not subscribe to – was that the best that central banks could do was to “clean-up” following a bubble burst through a loosening of the monetary policy stance. Subsequent events have shown that these “bubble bursts” can be very costly and that aggressive ex post action may not suffice. This is because the expectation that the central bank will aggressively protect the markets from “tail events” in bad times can encourage markets' tendency towards risky strategies, over-exposures and exuberance (Stark 2010)²².

In my view, this asymmetry in responding to shocks where downside risks to the economy received a greater weight in central bankers' “policy preferences” than upside risks to price stability contributed to the build-up of financial imbalances in some advanced economies. The main ex ante policy tools to prevent such situations from developing in the first place are surely to be found in the regulatory and supervisory domain, which is at times not under the authority of the central bank. However, without prejudice to this, a greater focus on monetary phenomena by central banks through closely scrutinising credit and money developments inspires a “leaning-against-the wind” stance which can help smooth financial cycles and stabilise the economy in the medium term.

Confusing “known knowns” with “known unknowns”

A third element of vice in the relationship between monetary policy and globalisation in recent years has been the failure of policymakers to think through the possible ways in which they might be called to act as a result of situations which they have helped to bring about. In their well-cited book, Reinhart and Rogoff (2009) make a compelling case to show that financial bubbles throughout history have shared a number of common elements, such as rising home prices and financial innovation. Yet as these authors point out, in spite of these common traits, policymakers have at times fallen prey of the “this time is different”²³ illness.

²⁰ See *Enhancing Monetary Analysis*, book edited by L. Papademos and J. Stark, ECB, 2010.

²¹ See *Lessons for Monetary Policy Strategy from the Recent Past*, article by S. Fahr, R. Motto, M. Rostagno, F. Smets and O. Tristani, ECB (2010).

²² See *In Search of a Robust Monetary Policy Framework*, speech by J. Stark, ECB, November 2010.

²³ See *This Time is Different: Eight Centuries of Financial Folly*, book by C. Reinhart and K. Rogoff (2009).

Moreover, the record shows that as far back as 2004 both policymakers and academics were alerting on some of the emerging tail risks which have subsequently materialised. To name a few examples, Borio and White (2004)²⁴ cautioned on the greater prominence of credit and asset price boom-and-bust cycles even in a low inflation environment; Rajan (2005)²⁵ did a careful review of some worrying trends associated with globalised financial markets; and Rogoff (2006)²⁶ noted that the “great moderation” had not been associated with lower asset price volatility. The record also shows that monetary authorities echoed many of these and other concerns (such as the possible disorderly unwinding of global imbalances) in their public discourse, including through speeches and official publications²⁷. Thus, even if novel, it is not correct to say that policymakers were unaware of the potential risks associated with a globalised environment.

So why did such risks still materialise in the end? Part of the answer was the insufficient policy traction with the authorities that were competent to heed such warnings. However, it is also true that while the onset of the crisis can be largely seen as the result of vulnerabilities and imbalances which had been growing steadily and which had been identified fairly early on in the process, they combined in ways that few would have anticipated. This was especially the case as regards the functioning of the financial system as its wider interconnections. Policymakers thus confused risks which they thought they knew (“known knowns”) with risks which they knew they didn’t know (“known unknowns”). This is what the IMF and others have deemed as a “failure to connect the dots”²⁸.

Insofar as monetary authorities are concerned, this “failure to connect the dots” refers to the unanticipated burdens on central banks resulting from their own contribution to the creation of global excess liquidity and the latter’s role in the development of asset price boom-and-bust cycles. The burst of the bubble and the chain of events set in motion as a result would ultimately reverberate back on central bank activity by impinging on the price stability outlook through severe threats to financial stability. This was the case regardless of whether monetary authorities were formally responsible for safeguarding financial stability or not, which is one reason why monetary policy should systematically incorporate financial analysis into its assessment of the risks to price stability (Moutot and Vitale, 2009)²⁹. In addition, threats to price stability through severe strains on governments’ fiscal solvency also arose in some cases. This would call for unprecedented central bank action at the limit of policy mandates in response to exceptional and exigent circumstances.

Overall, the seeds of vice in the relationship between monetary policy and globalisation in recent years – including complacency, underappreciation of monetary and credit dynamics and the confusion of “known knowns” with “known unknowns” – have a common thread: the potential for unintended consequences. I would therefore like to outline some of the challenges we may expect in this context in the period ahead.

²⁴ See *Whither Monetary and Financial Stability? The Implications of Evolving Policy Regimes*, article by C. Borio and W. White, BIS, 2004.

²⁵ See *The Greenspan Era: Lessons for the Future*, speech by R. Rajan, IMF, August 2005.

²⁶ K. Rogoff (2006), op. cit.

²⁷ For example, the ECB’s Financial Stability Report consistently alerted on the vulnerabilities that were building up in the financial system, including through the significant underpricing of risks across a variety of asset classes, while official policy meetings (G7, G20, BIS-based) routinely warned on the possibility of a disorderly unwinding of global current account imbalances.

²⁸ See *Initial Lessons from the Crisis*, IMF, February 2009.

²⁹ See *Monetary Policy Strategy in a Global Environment*, article by P. Moutot and G. Vitale, ECB, 2009. In the EU, we have since attempted to correct for this “failure to connect the dots” with the establishment of the European Systemic Risk Board (ESRB) as the main body for macro-prudential oversight and surveillance of EU financial markets.

3. Globalisation and monetary policy in the period ahead

The nature of the relationship between monetary policy and globalisation must be redefined in the period ahead to maintain its virtues while correcting its vices. Let me give you the key policy elements needed for this to be successful.

What kind of global system will emerge in the aftermath of the crisis?

First, we should not take the process of globalisation for granted. Measures introduced in response to the crisis have in some cases reversed aspects of globalisation. Contrary to the experience of the Great Depression, we have not seen a rise in trade protectionism in recent years. However, we have witnessed a broad-based increase in financial protectionism that is equally if not more worrying. For example, banking systems have been renationalised in some advanced economies, including in the euro area, and other market segmentations have been re-introduced along national lines. If this trend were to be sustained in the future, the euro area could be particularly affected as financial integration is a key aspect for the smooth functioning of monetary union and the broader viability of the single market. Another prominent case of rising financial protectionism in recent years has been the introduction of measures to curb capital inflows in some emerging economies. This was partly done in an effort to contain the fallout from too easy monetary policy in key advanced economies.

In their landmark publication, Rajan and Zingales (2003)³⁰ offer powerful insights into the nature and functioning of financial markets. The authors warn that the establishment might exploit the wave of public anger during economic downturns in order to restrict competition and access to capital. The authors also note that open borders help to keep economic and political elites in check and preserve competitive markets. These policy prescriptions should be heeded if the mistakes of the 1930s (or similar ones) are not to be repeated. This is also why the G20 process to achieve a level playing field with uniform rules of the game in the global financial and economic system, including as regards capital flow management, is so important.

Once we accept that globalisation is not an irreversible or uniform process, the need to invest in better governance through co-operative outcomes at a global scale will follow. Policymakers at all levels should internalise this concept and act accordingly.

Shock transmission and policy degrees of freedom in a globalised era

Second, I would argue that globalisation (and in particular financial globalisation) has changed the risk and reward matrix associated with policy failures and successes, respectively. Globalisation may be initially more forgiving with policy mistakes on account of higher thresholds of tolerance, for example as regards current account or public debt positions. However – as the crisis has forcefully taught us – by enabling these imbalances to remain unaddressed for longer, the eventual cost of adjustment of unsustainable policies would be higher than would otherwise be the case – and the adjustment may occur in a very swift manner.

It is the sudden operation of these centripetal (as opposed to centrifugal) forces of globalisation enabling the rapid propagation of shocks across borders which has led observers such as Rogoff to deem the euro area “the ultimate contagion machine”³¹. The key policy elements to restore normalcy in the euro area thus require (i) redressing the macroeconomic imbalances and unsustainable fiscal policies that lie at the heart of the sovereign debt crisis in the euro area; (ii) much greater economic policy co-ordination among

³⁰ See *Saving Capitalism from the Capitalists: Unleashing the Power of Financial Markets to Create Wealth and Spread Opportunity*, book by R. Rajan and L. Zingales, (2003).

³¹ See the interview of K. Rogoff in the *Frankfurter Allgemeine Zeitung*, September 2011.

monetary union members; and (iii) ensuring that there is an effective governance framework in place which can guard against similar instances from occurring in the future, inter alia through macroeconomic and fiscal surveillance and early correction mechanisms.

Emerging challenges to monetary policy frameworks

Third, as regards the challenges for monetary policy looking forward, central banks are likely to be subject to greater peer and public scrutiny in a world of higher interconnectedness. At the same time, however, monetary authorities are also more liable to be burdened with the spillovers resulting from the actions of other parties. Crucial challenges in this regard include the risk that monetary policy is overburdened by fiscally dominant regimes caused by government's irresponsible fiscal behaviour and unsustainable public finances. There is also the risk that monetary policy is dominated by financial stability concerns, implying that price stability would be subjugated by financial stability.

Monetary policy frameworks have to be made robust against the challenges ahead and I believe a number of principles for robust monetary policy frameworks should be strongly reaffirmed as a result.

First, we should recognise the centrality of price stability for monetary policy. This is the best contribution that monetary authorities can make to overall economic welfare. Price stability should thus remain the primary task and the key "deliverable" for central banks in the period ahead. The crisis has confirmed the importance of a clearly defined objective for price stability by contributing to anchor expectations during periods of turbulence when otherwise the private sector would become disoriented. There is also a "credibility premium" to be obtained from an undisputable definition of price stability during such turbulent periods and we have to concentrate all our efforts in preserving the hard earned credibility over the last decades.

Second, central bank independence under a clear mandate and transparent communication policies to anchor expectations will continue to be instrumental in the pursuit of price stability by monetary authorities.

Third, globalisation implies a greater emphasis on the necessary medium-term orientation of monetary policies designed to maintain price stability. This is a concept which the ECB has espoused since its inception and we think that the limits of short-termism in policies have been fully exposed by the crisis.

4. Conclusion

In conclusion, the crisis has been a sobering experience for policymakers, forcing them to rethink many priors in different realms. Insofar as monetary policy is concerned, we have learned that the perceived virtues which seemed to underpin its interactions with an increasingly globalised environment could in fact mask significant vices. Monetary policy making in the run up to the crisis was too complacent to macroeconomic stability, lacked sufficient medium-term orientation and under-appreciated the role of monetary and credit dynamics in monetary frameworks, also in view of identifying financial imbalances and globally interconnected risks.

The relationship between monetary policy and globalisation will have to be redressed in the years to come. The process of globalisation should not be seen as irreversible and policymakers should actively invest in better governance at all levels. Monetary policymaking will remain challenging, not only due to the nature of the interactions in a global setting but also as a result of the burdens and demands that might be placed by other parties on central banks. Fiscal dominance and the subjugation of price stability to financial stability concerns appear as two distinctive risks in this regard.

In this environment, the key task for central bankers in the years to come is the continuous strive to make our monetary policy frameworks more robust against the vices mentioned earlier. In this process, we need to reaffirm the principles which have been at the core of modern central banking and have served us well during the crisis, namely the centrality of price stability for monetary policy, and the importance of central bank independence and effective communication in the consecution of this goal. Lastly, monetary authorities should remind other parties that there are reasonable limits to what monetary policy can do so as to extricate the global economy from a predicament which needs to be solved at its roots.