EUROPEAN CENTRAL BANK

EUROSYSTEM

Transmission embargo until 18.00 p.m. ECB time (C.E.T.) on 12 November 2008

"GROWTH AND PRODUCTIVITY OF THE FINANCIAL SECTOR: CHALLENGES FOR MONETARY POLICY"

Speech delivered at

High-Level BCL Policy Panel

by
Jürgen Stark
Member of the Executive Board and the Governing Council of the European Central Bank

12 November 2008

Luxembourg

Check against delivery.

European Central Bank
Directorate Communications - Press and Information Division
Kaiserstraße 29, D-60311 Frankfurt am Main
Tel.: +49 69 1344 7455, Fax: +49 69 1344 7404
Internet: http://www.ecb.int

Introduction

I would like to thank the Banque Centrale du Luxembourg for the invitation to speak here today. It gives me great pleasure to congratulate the Banque Centrale du Luxembourg on its tenth anniversary. It is a great honour for me to contribute to the Pierre Werner Lecture and to address such a distinguished audience on this occasion.

Depending on one's perspective, this is either the worst or the best time to address the question of productivity in the financial sector and its implications for monetary policy. I lean towards the latter.

The current financial crisis is now wreaking havoc and the economic outlook is extraordinarily difficult to assess. It is also a time when the market model is increasingly being questioned, not only by the usual suspects but also by a broad spectrum of economists and non-economists alike. That the financial sector is now experiencing a negative shock is an understatement to say the least. In some respects, the financial landscape is already rather different from only half a year ago.

What would we say if a non-financial sector were hit by a huge negative shock? Typically, the sector in question would need to adjust itself to leaner times, often resulting in some combination of outsourcing to

countries with lower costs and increased focus on automation. Low-skilled jobs would tend to become fewer, and highly skilled jobs would tend to gain in importance.

That some sectors shrink and others expand is quite normal in a dynamic market economy and there are examples of shrinking industries as well as of expanding ones.

In the short-to-medium term, I think it is a good bet that the financial services sector will shrink significantly and that the events now unfolding will change the financial landscape for years to come. In the longer term, developments are more open and will be shaped not least by the policy responses under way.

I would like today to discuss the role of financial innovation in the economy and its implications for monetary policy.

The role and performance of services and financial services in the economy

In the last few decades we have experienced a sustained trend towards services as a share of GDP at the expense of manufactured goods (in the OECD services account for more than 70% of GDP)[1]. Financial services

have been an important part of this trend. At the aggregate euro area level, the financial sector accounts for a remarkable share of about 6% of total industries, i.e. including manufacturing, in terms of value added, with an average growth rate of more than 7%.

These numbers, however, mask a substantial heterogeneity among countries. In some countries the services sector has expanded to a considerable size, while in others this is not the case - the range is from Luxembourg, where the financial services sector accounts for more than 16,8% of value added, to countries such as Spain where it accounts for about 4,2%.

This leads us to the following questions. To what extent are financial services *at the service* of the real economy? Are they to a considerable extent disconnected from other sectors? As yet these are open issues.

But when assessing the financial sector it is useful to consider more than its development in terms of size. The development of the role the services sector plays may be even more important. Financial services are critical to the allocation of capital in the economy and provide the means to channel inter-temporal decisions of savers and borrowers.

The manufacturing sector has declined in line with the growing importance of the service sector. However, owing to its productivity growth, it has been able to produce more goods with less labour input. Likewise, growth and productivity of the financial services sector are important in their own right as a contribution to overall economic activity. However, it is also the role of this sector to be at the service of the real economy, by channelling resources to the most productive investment opportunities, those that are most significant for the smooth functioning of the economy. Financial services allow the exchange of risks and the transfer of capital to prospective entrepreneurs; they enable households to choose investment profiles according to their needs and attitudes to risk.

Financial development and innovation

- **The bumpy road from innovation to development**

It is well known that innovations do not translate one-to-one into productivity growth and that many other factors matter too. In the financial sector, much innovation has been spurred by the interaction between banks and other financial intermediaries.

Innovation in manufacturing and retail is about reducing costs, inventing new products and markets often as a part of a process of

Schumpeterian “creative destruction”. **Innovation in the financial sector** is largely about risk – how to slice it, how to package it and how to trade it. You can think of it in two dimensions, innovation in ***products***, illustrated by new types of securities, and innovation in ***processes*** that can be related to new means of distributing securities.

Both of these dimensions have benefited from advances in information and communication technology (ICT). ICT has made the creation, valuation and exchange of complex financial products possible. It has also affected the core of financial intermediation. But the increased efficiency has come at the cost of lack of transparency, the result of certain risk-management practices rather than computer software.

As regards the first dimension, the innovations in **products**, derivatives stand out the most and are indeed at the epicentre of the crisis. The hedging strategies that are now commonplace would not have been possible without the advances in derivatives and ICT. On the lenders side, one of the more important effects of technological innovation on financial services is the abundance if not overabundance of real-time information. Since the costs of obtaining information have gone down dramatically with the advent of ICT, so have the costs of being in a particular market.

The proliferation of derivatives did more than just reduce entry costs into a particular market. It also contributed to the **second dimension** of innovation, the **innovation in processes**, by changing the way certain types of securities changed hands and transactions were being conducted. This was most visible in the explosion of securitisation, i.e. the complex process in which risky securities were bundled together and then "tranched" again and again in an increasingly long chain of permutations and combinations which allowed risks to be customised and enabled issuers to reach an ever increasingly large investors base.

However, I would like to make two points here.

First, it is difficult to precisely pin down the link between financial innovation and productivity in financial services. Just as productivity in the services sector as a whole is difficult to measure, it is especially the case in the financial sector:

- It is not easy to identify some kind of rough proxy for innovation because there is an almost infinite amount of data on the emergence and growth of new financial instruments.
- And if you consider productivity as being the efficiency with which financial services are provided it is not evident how this can be separated from improvements for example in infrastructure or ICT.

Second, while it is clear that financial innovation plays an important role in strengthening the investment chain and in efficiently managing risks, it has not had a smooth history, a point perhaps less necessary to emphasise today. With all its benefits for the economy, it is rather prone to wild swings and excessive volatility from time to time. There have been excessive asset price development, that have been difficult to reconcile with the fundamentals, not to mention bubbles.

The current crisis has even led a well-known economist to call this process “destructive creation”, a phrase which certainly seems to capture the mood of the times.[2]

- **Lax institutional framework led to several problems**

It is now widely recognised that the regulatory framework on the supervisory side and the risk management methods of the financial institutions have been lagging far behind financial innovations. However, the challenges posed by financial innovation for market participants, supervisors, rating agencies and, last but not least, for investors have been huge:

First, the boost in innovation in financial services was associated with **new products and processes of increasing complexity**. The derivatives

have now become their own worst enemy. Their complexity combined with rapid growth of new types has been such that not only were borrowers unaware of the underlying risks but also, remarkably, the creators of these products. There is also the complexity or increasing in-transparency of the increasingly longer chains of intermediation and re-intermediation through “securitisation”.

This made a further proper assessment of the risks even more difficult. Indeed, recent advances in the field of behavioural finance indicate that, excessive complexity may lead to investment decisions being based on a rudimentary information set, not infrequently the last bit of information in the chain. For all the sophistication of mathematical finance, human beings have, by nature, a limited ability to acquire and process the relevant information from an over-abundance of information, much of which is in fact irrelevant for the decision at hand. While behavioural finance draws on research from psychology and other fields in cognitive science to support models of decision-making, I think we need to look no further than our own Inboxes with the emails we get every day to be convinced.

Second, the abundance – or over-abundance – of **real-time information** may have created a great variety of trees but they have been so dense as

to hide the wood itself and, just as with processed food, too much sugar has been added, which we know is not good for our health!

Third, the innovation boost came hand in hand with **agency problems**. The agent, i.e. the originator of the loan, had little incentive, if any to act in the interest of the holder of the loan (the principal). It is often the case that banks have less incentive to control the credit quality of a loan they *sell* than of a loan they *retain*.[3] A bank that has (financed and) monitored firms/borrowers' projects has information about the pay-off coming from a prospective project, i.e. if it is likely to fail or succeed. This prompts the question whether the bank's incentives to sell the loan are in line with risk control otherwise used. The recent experience of the sub-prime meltdown suggests that agency problems contributed to a deterioration of the loans' underwriting standards. They probably also played a part in the relatively large credit access to borrowers with weak financial positions.

Overall, it was the idiosyncrasy of the instruments combined with the overlay of technology that allowed lenders and borrowers, originators, securitisers and re-securitisers to be increasingly exposed to the full spectrum of shadow risks that they had originated, passed on and taken over again when unbundled in new forms.

The institutional and regulatory framework was not able to keep all these developments under control and to ensure a smooth process of financial innovation with sufficient transparency as regards the new products and processes, with appropriate incentive structures, adequate risk management practices and a proper system of checks and balances.

Implications for monetary policy

The financial sector is relatively small but has a large impact on overall productivity. It is not only in this capacity, however, that financial sector productivity is extremely important for monetary policy. I would like to highlight three aspects in this context:

1. the role of financial sector productivity in the transmission process,
2. the implications for monetary policy of shocks to productivity in financial services,
3. and, finally, I would like to make a few remarks about monetary policy issues in turbulent times.

The level of productivity in the financial sector is important in terms of both the qualitative and quantitative aspects of the transmission mechanism. This is my **first point**.

The following thoughts are necessarily tentative as it is unclear at this stage which components of recent financial innovation will survive the current crisis. I will assume in the following that innovations such as securitisation and structured credit products will remain with us also after the crisis, although this would necessitate that the paramount incentive problems which are at the root of the current crisis be properly addressed.

The **most traditional channel** is the **interest rate channel**, whereby changes in central banks' key, very short-term interest rates are reflected in the interest rates that banks pay on deposits and charge on loans. There is evidence that financial innovation has led to a stronger and faster pass-through from changes in policy rates to banks' interest rates, in particular for banks which are very active in securitisation and derivatives markets.

The **second channel** is the so-called **bank lending channel**, operating via the effect of a monetary policy change on the asset side of banks' balance sheets. For example, a monetary policy induced reduction of banks' reserve holdings could lead to a contraction in loan supply if banks are not fully able to replenish their reserve holdings through the issuance of securities or deposits. In this respect, "true sale" securitisation, in which the underlying credit is removed from the originating bank's balance sheet, has provided banks with a formidable

instrument to conserve on bank capital and reserves and to expand the asset side of their balance sheet through leverage. This development has weakened the traditional lending channel, to the extent that a change in monetary policy working through a change in bank reserves might not lead to a change in loan supply. However, in situations in which the securitisation market grinds to a halt, such as is currently observed, the effectiveness of the bank lending channel may reassert itself.

The **third channel** is the **balance sheet channel**, relating to the balance sheet position of banks' borrowers. Via its impact on interest rates and, indirectly, on a vast array of asset prices, monetary policy can affect the net worth of borrowers and hence banks' willingness to supply loans. It may thus alter the credit premium that banks charge on loans over and above the rate at which they can collect funding.[4] The net effect of financial innovation on the balance sheet channel is somewhat ambiguous. On the one hand, new tools to assess the creditworthiness of borrowers might have contributed to compressing the external finance premium. Also, and perhaps most importantly, credit premium determination might have become largely independent of the creditworthiness – and the value of collateral pledged by – individual borrowers. The explosion of sub-prime loans is a very telling example of

this tendency of credit terms to become disconnected from the credit history and the balance sheet position of borrowers.

On the other hand, the more continuous pricing of credit market products offered by credit risk transfer instruments as well as the parallel move to fair-value accounting standards may have accentuated the sensitivity of the external finance premium to changes in monetary policy.

The **fourth and last channel** I will mention is the so-called **risk-taking channel**, relating to the potential impact of monetary policy on the risk-taking attitude of banks. An important element in the run-up to the current crisis seems to have been banks' tendency to target a specific leverage ratio or a certain risk metric (e.g. the Value at Risk). In an environment of low interest rates and low inflation conducive to higher asset valuations banks might have been tempted to take on additional risk. There is no sound evidence that one can disentangle empirically this channel from the more traditional balance sheet channel. So, it is premature to draw inferences on this dimension in any direction. However, one might presume that such mechanism might contribute to making bank behaviour more pro-cyclical and less predictable than in the past.

To sum up, financial innovation in the recent past has affected the various transmission channels of monetary policy in different ways, sometimes strengthening and sometimes weakening these channels. Some of these mechanisms, such as the large diffusion of securitisation, have certainly increased the productivity of the financial sector, if measured by the ability of financial intermediaries to leverage capital and liquidity to expand their operations. However, securitisation has also meant that the traditional chains of reactions that monetary policy used to rely upon to influence credit conditions might have become more tenuous and more difficult to predict. The empirical evidence is yet too fragile and has mostly been derived for samples covering periods of booming securitisation and derivatives activities. It remains to be seen whether these findings apply over the entire economic and asset price cycle or only during periods of low financial market volatility, ample liquidity and benign risk levels.

The **second point** elaborates on the question of how shocks to productivity in financial services are transmitted to the economy and what the implications are for monetary policy.

As productivity shocks are unobservable, there is considerable uncertainty about both their magnitude and persistence. Part of this

uncertainty can be addressed by distinguishing transitory from permanent productivity shocks.

The ECB's focus is on the inflation effects of productivity shocks. The impact on inflation depends on supply and demand effects:

- As regards **supply effects**, negative productivity shocks contract – at least temporarily – the supply of goods or financial services and thereby *tend to increase prices*.
- D**emand effects** work through the wealth channel. If economic agents perceive a negative productivity shock to be *permanent*, they will feel poorer and reduce their spending in proportion to the perceived decrease in wealth. If, however, they perceive this shock to be *transitory*, economic agents' perceived wealth will remain more or less unchanged and the fall in demand will be muted.

This suggests that

- **transitory negative productivity shocks** will be associated with some degree of excess demand, pushing up inflation,
- whereas **permanent negative productivity shocks** could be associated with either excess supply or excess demand, depending on the perceived decrease in wealth.

Is what we are experiencing right now a negative shock to financial sector productivity? And, if so, is it permanent? It is not easy to answer these

questions because of the high level of uncertainty we face. Confidence in the private sector has been heavily affected, in particular after the collapse of Lehman Brothers, suggesting that the decrease in wealth perceived by agents around the world is very large.

What can central banks do in this situation of heightened uncertainty? The short answer is: reduce uncertainty by providing a firm anchor for private sector expectations. This is precisely what the ECB has been doing.

And this leads me to my **third point**: monetary policy in turbulent times. Our monetary policy strategy is rendering us very valuable services in this respect. In particular, the monetary analysis helps us to obtain a robust assessment of the balance of risks to price stability and, ultimately, to adopt the monetary policy stance that is appropriate in order to fulfil our mandate.

In these challenging times, core principles derived from the cumulated experience of central banks over a very long period of time have been the firm basis that has guided the monetary policy of the ECB. Allow me to briefly mention the most important of these principles:

- **First**, monetary policy must be given a **clear and unambiguous mandate to maintain price stability.**
- **Second**, the central bank must be **credible in its commitment to deliver this objective**.
- **Third**, the central bank must be **independent of political influence**.
- **Fourth**, so as to maintain its legitimacy, an institution endowed with independence to pursue a specific public objective must **act in a transparent manner**.
- **Fifth**, monetary policy must **maintain a medium-term orientation**.
- **Sixth**, monetary policy must **be underpinned by a comprehensive analytical framework**. Given the importance of maintaining credibility and a medium-term orientation, such a framework must include a thorough analysis of monetary and credit developments, reflecting the necessarily monetary nature of inflation over the longer term.
- **Finally**, a clear distinction must be maintained between the determination of the monetary policy stance required to maintain price stability and the provision of liquidity to the money market, the so-called "**separation principle**".

These principles should be the cornerstones of monetary policy-making in normal times but, arguably, become even more important in a time of

crisis. In this respect, I would say that our monetary policy, while being pragmatic, has consistently followed these principles and has thus been able to address the challenges that the financial market tensions have brought about. Allow me to briefly illustrate this point.

Our single, **clear and unambiguous mandate** has ensured that attention has remained focused on the attainment of our objective of maintaining price stability, at a time when other considerations could have come to the fore.

At the same time, our **monetary policy strategy** has ensured that the appropriate medium-term orientation of monetary policy has been maintained. In particular, the monetary pillar embedded in our strategy ensures that due attention is paid at all times to medium-term developments in nominal variables. The identification of the policy-relevant signal in monetary developments requires a detailed examination of bank balance sheets, complemented by the analysis of other sources of financial information. This is instrumental in understanding market developments, monitoring financial innovation and assessing its implications, for instance, for the transmission mechanism. In this respect, a thorough and broad-based monetary analysis not only provides relevant information on risks to consumer price inflation, but can also

support the early detection of financial imbalances and asset price misalignments.[5]

Finally, by having a **clear separation** between the monetary policy stance, which as explained, has maintained the appropriate medium-term orientation, and its implementation through liquidity operations, we have proved able to act in the liquidity management domain rapidly and, when necessary, significantly, to support the functioning of the money market that is central to the implementation and transmission of monetary policy.

Concluding remarks

Allow me to summarise my remarks with the following points.

1. The long phase of heightened risk appetite has now come to an end, with effects over the foreseeable future. We have observed and will continue to see a consolidation of the financial services sector, in terms of the products and number of players. In addition, there is a need to simplify and standardise complex financial products. Some complex derivatives will disappear; securitisation is likely to become more streamlined. More services may be rendered in low-cost countries. These changes are already underway and can be thought of as a huge negative productivity shock to the financial services market.

2. The enormous unwinding of liabilities, through de-leveraging is likely to result in a shake-up of the financial sector as a whole. Whether this will ultimately impact on the net worth of households and firms is as yet an open question. The effects of the shock need to be contained and reduced at as little cost to taxpayers as possible and with due regard for moral hazard problems.
3. It is not only governments and central banks that need to think about putting in place safeguards that reduce the likelihood of such occurrences in the future. Private banks and credit rating agencies also need to have better control and greater transparency with regard to risk exposure.
4. Improvements in the regulatory framework and its implementation are very important as transparency in the measurement of risks is a cornerstone in regaining trust in the financial sector. The pendulum, however, should not swing from one extreme to the other, namely from lax regulation to overregulation. We need a rules-based approach for our market economies to function properly and this includes the important issue of setting up the incentives properly. All this can be covered by the German term “Ordnungspolitik”.
5. For us, price stability in the medium to long term is and will remain our primary objective. The threat to price stability remains, but it is smaller than it was only a few months ago. At the same time, to

deliver price stability is the best contribution we can make to a smooth adjustment of the financial markets to the negative shock of the crisis and financial stability in general. However, I would like to emphasise, that it will take some time for the effects of central bank efforts to fully materialise. We have to be patient. The challenge now is to retain the good parts of financial innovation and not to repeat past excesses that have contributed to the crisis. Risk management needs to provide life jackets, not golden parachutes.

---

[1] OECD, Enhancing the Performance of the Services Sector, 2006.

[2] Baghwhati J. , "We need to guard against destructive creation", Financial Times, 17 October 2008.

[3] Calomiris C.(2007)"Bank failures in theory and history: the Great Depression and other "contagious" events", NBER WP 13597 ; BIS(2005, 2007), Credit Risk Transfer Report.

[4] The external finance premium is the difference between the costs to the borrower of external versus internal funds.

[5] See R. Adalid and C. Detken, "Liquidity shocks and asset price boom/bust cycles", *ECB Working Paper* No 732, February 2007.