The recent sub-prime turbulences and their consequences for Luxembourg

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THE SPOKEN WORD PREVAILS

Ladies and Gentlemen,

I want to thank the ALFI organisers' for inviting me to this conference and share with you some thoughts on the challenging question regarding the recent sub-prime turbulences and their consequences for Luxembourg. In fact, several months after the beginning of the financial turbulences as we experience yet another wave shock of a propagating crisis, this conference is now timely appropriate for such an exchange of views in order to assess, in an environment still characterized by vast uncertainties, the impact of the turmoil and identify areas for action to minimize risks and safeguard our financial system.

1- Factors underlying contemporaneous financial turbulences diffusion process

Let me begin by recalling that until recently, the valuation of the impact of the sub-prime turbulences was focused on asset-backed securities, and particularly those backed by US sub-prime mortgages and to some extent leveraged loans. Given that the origin of the turbulences is mainly linked to the US mortgage market, some experts were suggesting that the developments linked to this negative shock would remain to a large extent **confined to the US Economy**. However, there are several reasons to wander from this optimistic view.

First, the process of globalization in the financial system has advanced more rapidly than in other economic sectors. This is particularly relevant for the money market, bonds and equities markets, OTC and derivatives markets. Unfortunately, as usual, one aspect of this process is: "there are no free lunches in the economy" which means that globalization has also negative effects on financial stability. The outcome of globalization might certainly spread risks but in the same time pave the way for

shocks to propagate rapidly among markets and participants. Contagion becomes a realistic scenario.

Secondly, large banking or financial institutions now operate internationally either through branches and subsidiaries or through several segments of the financial system, thereby easing co-movements and exposure to common shocks. A simple measure of the intensity of the geographical scope of foreign activities is the total assets held by banks outside their home country and/or world-wide assets held by intermediaries in their balance sheets. In this respect, the foreign assets held in non–EU countries by the EU key cross-border banking groups' account on average for 29% of total foreign assets of these groups, reaching up to around 50% for some institutions. An additional indicator illustrates the increasing intensity and scope of the international financial activities relative to the world trade one. In this regards, chart 1 shows both the proportions of global trade and cross-border holdings of assets that are accounted for by developed economies. It is certainly useful to notice that over the past decade, the world trade share of these economies has declined significantly, while their holdings of the cross-border financial assets have increased substantially. This indicates that foreign markets have become as important as domestic markets, and banks now compete throughout the world. Indeed, the globalization process enlarges the opportunity for banks to diversify their portfolios and risks associated with their financial decisions. However, while this may be true for individual intermediaries, the system as a whole may become less diversified if its exposure to the same sources of risks or shocks increases.

The third reason is that IT technologies and technical progress has contributed significantly to minimizing costs of conducting financial activities around the world. In this context, we all agree that the appearance of a shock in one country or financial difficulties affecting a sector or an individual banking group may spread to other countries through numerous channels which are more or less known. The US sub-prime market crisis, although not the only one, illustrates the speed of the spill over and its severity for other areas and asset classes.

2- The recent sub-prime crisis: contagion effects and implications

I would now like to move to the development of the **contagion process** in relation to the recent financial turbulences. To that end, four distinguished phases can be identified:

- From August 2007 until December 2007, emergence of ***market liquidity problems*** and decrease of investors' risk appetite. Individual actions of central banks combined to coordinated liquidity operations since December have led to a short term easing of strains in money and interbank markets and contributed to diminish the risk of downward market turbulences to go forward. Without a flexible and rapid response by central banks, the widening of strengthened market liquidity constraints would be harmful to financial stability. Notwithstanding the improvement in conditions in short term money and banking markets, there are indications that funding markets continue to be a cause of concern for several banking groups.

- Given the magnitude of the sub-prime shock, the second phase relates to the emergence of ***problems closer to solvency issues.*** The impact was indeed less pronounced in the EU compared to the US, but, we have to be conscious that in some cases and without public interventions, as in Germany and the UK, a few banks would have been in serious trouble. At a recent conference at Banque de France, Professor H. Rey of London Business School assigns the contagion from relatively small losses in the U.S. sub-prime market of a magnitude of USD 200 billion into a global financial turmoil to three major market dysfunctionalities: 1) the first one is due to the originate and distribute model; 2) the second one can be explained by a process referred to as the CDS vicious circle; and the third one 3) is attributed to mark to market asset valuation. In fact, one of the core lessons of the current financial turbulences is the failure of the "originate-and distribute" business model. Until the sub-prime crisis, a number of experts argued that securitization had contributed to a stabilizing effect on the global financial system through diminishing the degree of risk on the banking sector by sharing it more widely. Theoretically, this will be the case. But, excessive recourse to securitization in reality may create a lot of uncertainty and increase the opaqueness of the financial market. Indeed, several financial institutions were unable to give us their real exposure to the sub-prime market. In addition, the still heterogeneous disclosure across firms raises doubts on the realism of the valuation provided by the industry. Many have to confess that they did not understand the complexity of various financial products they use. In addition, the impact of the US mortgage defaults has spread to other asset classes and across the global financial system. Investors did not know which parties were exposed and how big their exposures were! Uncertainty got settled and gave rise to both

more market volatility as we have seen in recent months and to a sharp increase of investors' risk aversion (see chart 2).

- Since December 2007, attention has been drawn to insurance companies and their ***monoline*** financial guaranty activities. The monoline insurers became the next potential victim of both sub-prime crisis and financial market turmoil. Until the recent turbulences, monoline insurers were very successful at avoiding losses and their business model exhibited a very high operating leverage with a fairly low capital base and reserve positions compared to the amount of insured risk. This common practice was allowed in the past, but has become a major source of concern at present. In this context, I would just recall that monoliners activity was traditionally limited to guarantee US-municipal bond issues with low default probabilities that involve small capital cushions. However, extending their activities through insuring ABS structures coupled to current market conditions are putting pressure on their capital cushions. In fact, the loss assumptions for the bucket of structured finance bonds wrapped by monolines, which are partly formed by US sub-prime mortgages and CDOs, have been revised sharply higher. Under these new assumptions, the excess capital of many monoliners is insufficient and requires fund injections to meet their capital requirements or avoid a downgrading. In addition, banks may exhibit numerous types of exposures to monoline insurers. In the case of materialization of these risks, banks are likely to face more provisioning or write-offs.

- As for the CDS vicious circle (see chart 3) some banks with no exposure to sub-prime saw a sharp rise of the spread of their traded CDS from 30 basis points in July 2007 to 700 basis points during the recent turbulences. This is mainly due to a pronounced increase of doubts and uncertainties. In this context, banks cannot raise as much funds on the market as they need because of both rising costs and fierce competition for collecting customer deposits. As a consequence, the balance sheets of banks deteriorate. The CDS spreads widen further and downgrading looms potentially intensifying the negative impact on capital cost and balance sheets. Overall, the procyclical spiralling down of asset values stems from the implementation of the so called fair value accounting methodology. As we know, in distressed times, the mark to market valuation is even worse for illiquid and/or senior asset classes with long maturities. The recent experience shows that this is typically the case for most of the assets hold by financial intermediaries, banks and insurers. The impact on banks' net worth has

henceforth been more noticeable. This is due to falling mark to market investment values rather than to impaired credit quality or defaults.

– Still, the **impact of turbulences on the real economy** is the current focus of attention. As you know, in recent decades many countries have experienced some financial turbulences and banking crises. Much of the economic literature reveals that financial turbulences involving the banking or financial sectors may lead to disruptions in the real economy. The past banking crises in the developed countries illustrate the importance of the damage, both in terms of direct fiscal costs relating mainly to managing the crisis and loss of economic activity. In this regard, an academic article published in *Journal of Banking and Finance in 2003*, assessed the cumulative consequences of past banking crises in terms of output dip and fiscal costs for nine developed countries. As indicated in the table (1), the impact for Japan, since 1992, amounts to 28% in terms of GDP and 20% in terms of fiscal costs. While the fiscal costs of the 91-94 crisis in Finland reached 11% and the output dip was around 23% of GDP.

While all of these results are consistent with the credit and exchange rate channels theories regarding the impact of banking instability on real economic activity, we need to explore other alternative explanations of the recent financial turbulences before drawing any hasty conclusion. In particular, we need more understanding of the **financial market channel**, which is usually neglected in economic theory as well in empirical studies.

In this context, let me briefly touch upon the differences between the US and the Eurozone financial structure as illustrated by table (2) below. While the US financial system is often described as a market based system, the Eurozone financial system is recognized as a bank-based system. Given this idiosyncratic feature, the financial market channel could be favoured to assess the consequences of the financial turmoil on the US real economy, whereas the credit channel seems to be more suitable in the Euro area. This means that monetary policy in the euro area can more easily affect the balance sheet of banks and may affect the economy in a wider sense compared to the US. Beside, the impact of the Eurosystem interventions in order to prevent or limit contagion may materialize in shorter time-frame. So far for theory.

Nevertheless, the views should not be confined to this divergent financial system structures. Indeed, the euro area financial system shows a trend towards more financial market activities. The growth of securitization market in the euro area has been remarkable despite the recent slowdown owing to the unravelling of the credit market turmoil since mid-2007 (see chart 4).

Thus, the annualized issuance of the euro-denominated asset-backed securities increased from €50 billion in 1999 to almost €400 billion in mid-2007. It is worth noting, however, that securitization activity in the euro area despite the strong growth observed in recent years remains well below the level of activity in the US and the UK. In fact, chart 5 shows that the amount of securitization in the euro area remains at a marginal level (less than 3% of GDP), while in the US the peak reached 16% of the GDP in 2005 and in the UK the peak reached 11% in 2006.

Similarly, the issuance of euro-denominated collateralized debt obligation (CDOs), as illustrated by chart 6, increased from basically nil in 1999 to a peak of almost €70 billion in 2006. While at a global level, the issuance of CDOs between 2004 and 2006 has tripled amounting to around €330 billion in 2006. A major part of the CDOs are so-called synthetic securitization instruments and collateralized loan obligations (CLOs) have been the predominant type of CDO in the euro area (see chart 7). However, it is useful to note the substantial drop of these figures in the most recent months. I draw the attention to the deceleration of securities issues in the euro area published one hour ago.

These developments reveal a gradual decline during the past decades in importance of the traditional model of financial intermediation in the euro area whereby banks obtain funding mainly via deposits and use these funds to grant loans that they hold to maturity. In fact, as already mentioned, a new business model qualified as the "**originate-and-distribute**" business model was in the process of replacing, if not complementing the traditional one. Through the originate-and-distribute model, banks are increasingly relying on market-based funding and transfer a significant part of their credit risk off-balance sheet. However, this new model raises several issues due in particular to the loosening of the link between the debtor and the creditor. Whereas in the conventional model, banks favour customer relationships meaning that banks have the necessary incentives to monitor carefully the lending activities and assess properly credit risks. The convergence towards the new business model stimulates

an increasing information asymmetry and uncertainty and thus affects the degree of market efficiency.

Recent experience has shown the limits of this model and the opacity emerged from the use of highly complex instruments and derivatives. In this context, **how strong is the risk of adverse selection underlying this model in particular in securitizations? Is the substitution process between the two models reversible? If not, what are the corrective measures to be taken to promote financial stability?**

3- Reflections on the implications for Luxembourg

In the next part of my speech, I will try to shed light on how Luxembourg has been impacted by these turbulences and what we expect in the near future.

As regards the most pressing concerns, the **liquidity position** of the Luxembourg banking sector was hardly affected according to the standard indicators which display a liquidity level considerably higher than the minimum required which is currently set at 30%. However, as central bank we follow with a great attention the liquidity needs of the Luxembourg banking system. As a result, during the turmoil months, we have observed the participation of 4 to 5 additional counterparties for some MROs even if on the average the number of bidders has remained unchanged. Furthermore, as regards LTRO operations, we have also noticed an increase in the average bid amount from €3.9 to €4.3 billion. However, the average aggregate amount of liquidity provided by the BCL to its counterparties has not risen compared to the end of July. Notwithstanding this fact, an increase of 20 % in the total collateral deposited at the BCL by our counterparties has been observed from July to December 2007. By this, counterparties might have intended to ensure a potential access to liquidity if needed. Finally, the BCL as a member of the Eurosystem is participating in the joint actions of the ECB and the Federal Reserve, providing US dollar funding to Luxembourg counterparties. The relative portion of central bank provision of liquidity shows, however, that other national central banks than Luxembourg have increased their shares in the total liquidity provisions. This would allow for two deductions: Either the Luxembourg financial sector is less affected by the crisis and the stable need of domestic intermediaries for central bank liquidity may reflect the net creditor position and the soundness of the aggregate balance sheet as well as the relative independence of these banks inside their groups. Or, as a consequence of the crisis,

core functions of banking groups have been further centralized and funding and liquidity management is concentrated even more at headquarters than before.

Let me add that the relative share of Luxembourg banks in securitization is low relative to international standards. Therefore, banks in Luxembourg might be less affected on the liquidity side of the balance sheet than on the asset side.

As regards the impact on the economic activity, the fallout from the US housing market problems has provoked a downturn that proves to be more severe and more protracted than initially assumed. In this respect, the euro area and the Luxembourg economy can hardly escape the ripple effects of the slowing US demand and possibly also the exchange rate channel. A fortnight ago, the Eurosystem published an updated set of the staff macroeconomic projections, which, in the context of the financial market turmoil, are characterised by an exceptionally high level of uncertainty. Currently, the ECB staff expects real GDP growth to turn out at around an average of 1.7% in 2008 and 1.8% in 2009 while the inflation forecast has been revised upward respectively. to 2.9 and 2.1%.

But beyond these traditional channels, are there symptoms of impending problems with potentially more profound consequences? It is well-known that the banks have in the past relaxed their lending standards, by accepting higher loan-to-value ratios or by lengthening the duration of mortgage loans, from the typically 20 years to up to 30 years or more. A more aggressive pricing policy via a lowering of the compensation for the incurred risk has also been observed. But that is still a far cry from the practices of some US banks. So-called sub-prime loans are also not relevant for Luxembourg.

That may actually be the direct consequence of a more conservative approach to financial innovation. Though Luxembourg cherishes its position as an international financial centre and ought to promote the innovation process, it should nevertheless be wary of excesses and perverse side-effects. Unlike in the USA, the securitization of mortgage loans is not widespread and these loans usually remain on the banks' books. That in itself should provide - and it probably has provided - the necessary incentive for the banks to monitor carefully their lending activities and to assess properly the reimbursement capacity of the borrowers.

What were the immediate consequences of the financial market turbulences on the Luxembourg financial centre?

Despite recent favourable information on the relative growth performance of the Luxembourg **fund industry**, monthly data as illustrated by chart 8, show a decreasing trend of net asset growth rates. This trend can be attributed to both the cyclicality of funds' activities and their dependence on market performance as well as to a strong competition from other major financial centres. .

The sharp drop in financial markets prices and the ensuing prudent behaviour of customers has also impacted on the **banks'** trading income. According to the banking sector's aggregate profit and loss account, the net trading fees have fallen continuously, though not at dramatic proportions, since the beginning of 2007. These developments are also borne out in the National Accounts data. However, for 2008 interest income may still benefit from the positive impact of business inertia. Amid a sharp drop in gross value added in the financial services sector, real GDP growth in 2007Q3 turned out at 0.7%, below trend estimates. The decline of net results for 2007 by 11.5% does also not warrant optimism for the contribution of the financial sector to GDP in the last quarter of the year. This figure is, however, not yet published for Luxembourg. The renewed fall in equity markets at the beginning of the year coupled with a 5% drop in January of net assets of the fund industry, is also likely to be a further drag on economic activity in Luxembourg.

Among the series of stress testing tools and macro-prudential indicators designed by the BCL, the BCL built its own index to evaluate the degree of the banking sector's vulnerability. The recent estimates (see chart 9) show an increase of the degree of banks' vulnerability from the end of 2006 to the third quarter of 2007. However, the index forecast for 2008 and 2009, based on the December Eurosystem macro-economic projections, seems to indicate that the degree of vulnerability would tend towards its average level. Still, it remains to be seen how profitability in 2008 will be affected adversely by further valuation losses, increased funding costs, slowing credit growths, declining non-interest income.

The **BCL's retail interest rate statistics** reveal that the banks' response to the money market disruptions and the increase in wholesale funding costs falls short of what several observers had feared. According to the data up to December 2007, the

bank lending rates applied on new loans (at variable rates) to households for house purchase have in the course of 2007 actually eased by 20 basis points relative to the 50 basis points increase in the ECB minimum rate. As regards non-financial corporations, the reference rate of loans at variable rates is very often the 3-month Euribor. On this segment, we have noted a strong impact as the lending rates rose by more than 70 basis points in 2007, hence 20 basis points more than the adjustment in the key central bank rates. But that is still substantially lower than the rise in the money market rates which, at their peak, reached more than 100 basis points since January 2007.

Interest rates however are only one criterion of credit conditions. Banks can also adapt to more stringent credit standards by raising the collateral requirements for example. Our bank lending survey, which is part of the wider Eurosystem bank lending survey, provides very useful information on issues such as the banks' lending policies, their demand perceptions and their risk assessments. The September 2007 and January 2008 results highlighted the tightening in credit conditions on accounts of the higher cost of funding. They were nevertheless more optimistic than those of the euro area, and banks reported particularly sustained demand by both non-financial corporations and households.

Reminiscent of the effects of the 2001-2003 downturn on financial markets, **fiscal policy** in Luxembourg is not oblivious to the current developments. The financial services sector accounts for about 30% of total tax receipts and complacency in the early stages can have dire consequences for the medium term policy. After three years of significant revenue windfalls, the development in 2007 continued to be stronger than what could have been expected on the basis of the regular tax assessment bases. According to the preliminary results, the central government balance also returned to a surplus equivalent to 0.7% of GDP, for the first time after five years. Nevertheless, the outlook for 2008 is highly uncertain, and, if the downturn on financial markets were to persist or to worsen, that would, akin to the real GDP prospects, weigh on tax receipts.

4- Lessons to be drawn and concluding remarks

Let me now share with you some reflections about lessons that may be drawn from the recent turmoil. There are a number of weaknesses that have been highlighted during the recent months and call for corrective actions by the private and public

sectors. A financial sector that generates on the one hand huge revenues for some of its participants but on the other hand regular crises with high costs for non-participants, is in my view ripe for a hard look at the balance of existing incentives.

The first issue that I would like to stress is the obvious underestimation by financial actors and supervisors of the actual **degree of leverage** in the financial system. This leverage is not only generated by traditional banking activities but also by highly leveraged institutions, SIVs, conduits, LBO-financed firms etc. Yet there has been an imperfect assessment of the existing risks arising from the **linkage** between the banking sector and all these SIVs and conduits. Indeed, the recent financial turbulences have pointed out that significant risks may be transferred back to banks using puts, guarantees, credit lines or other mechanisms. Hence it seems urgent for the financial industry to improve its risk management practices and the transparency in this respect. These characteristics, coupled with inadequate pricing and valuation, were at the heart of the present liquidity turbulences, implying a high degree of uncertainty about the size and location of the risks in the securities market.

Another key issue of concern is related to the respective responsibility of **credit rating agencies** and professional investors. Banks appear to have outsourced a significant part of their risk assessment and due diligence to rating agencies and credit scoring programs. It might however be worth recalling that credit agencies only measure the probability of default but with no responsibility or legal liability to those who use the ratings. In that sense, the information provided by rating agencies to investors on structured finance products definitely needs to be enhanced in order to increase investors' awareness of the effective risks associated with these products. Also, I believe that the market needs to find a better balance between investor due diligence and agency ratings. Finally, potential conflict of interest should be raised in this context, whereby rating agencies are paid by the issuer they rate. In response to these critics, the three major rating agencies have now taken a first step in announcing a set of measures intended to address these diverging interests and enhance their valuation methods.

Besides self-regulatory responses to be urged in the areas of risk management, disclosure, asset valuation and credit rating agencies, several initiatives have been launched recently or are currently being discussed by regulators, supervisors and central banks in order to promote a stable financial system. There is a consensus towards the need to strengthen **EU's prudential framework** for the banking sector,

in particular regarding the treatment of large exposures, banks' capital requirements for securitisation including liquidity facilities for SPV's as well as liquidity management. Do we need supplementary capital buffers to complement risk-based capital measures? Do we need to address the procyclicality still embedded in the new Basel II capital standards? Supervisors should also undergo an analysis of the incentives that prompted banks to move some assets off balance sheet, even though they still held the risk exposure.

As I mentioned, the new **IAS/IFRS accounting** standards raises some concerns regarding procyclicality of mark to market valuation. It might be appropriate from a financial stability point of view to reflect again on the proposal of a dynamic provisioning approach.

Let me now bring up a final area that has been recently emphasized by the finance ministers and central bank governors alike. Indeed, the past turbulences have highlighted the necessity of adequate **cooperation and information exchange** mechanisms between central bankers, bank supervisors, and financial regulators at the national and international level. These mechanisms should ensure a timely and appropriate response to market and institutions in stress situations. The prominent role of recent central banks in the resolution of potential financial or banking crisis by the provision of liquidity has again been underlined during the recent months. It seems to me that central banks have the ultimate responsibility for financial stability and central banks alone have the resources to serve as potential lender of last resort when the need arises. In order to allow for a timely decision by a central bank to potentially grant emergency liquidity assistance, it is of outmost importance that it has access, in normal and in times of crisis, to adequate information. And this includes supervisory information.

Looking at the **Luxembourg legal and institutional framework** for crisis prevention and management, important weaknesses need to be settled. Given the relevance of the financial sector, I hope that the legislator will in the end acknowledge the mission of the BCL in that field. I will also not repeat my concerns about the non funded depositor guarantee scheme in Luxembourg.

Let me conclude by saying that the present financial crisis will probably drag on for longer than initially foreseen. The process of deleveraging and re-intermediation, the repricing and quality deterioration of assets amplify uncertainties. The later will

persist until the full magnitude of losses on individual financial institutions will be clear. Given the size of our financial sector and its role of engine for the economy, Luxembourg authorities need to take a step ahead and put in place an institutional framework that allows for an effective response to stress situations and thus, ensures the promotion of a stable financial system.

Thank you for your attention.