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EDITORIAL

One year on and the subprime mortgage meltdown which flared in August 2007 is far from over. Moreover, it raises questions as to the advantages and disadvantages of securitisation; the role of financial innovation in the transfer of risks and, as a result, their traceability; the internal control of risks and the very structure of the prudential and supervisory systems in place within the banking sector. This report analyses the consequences of the subprime crisis. It examines its impact on risk management, on the behaviour of banks and on growth.

This report also presents a number of recommendations, some of which are only relevant on a global scale such as the improvement of the way in which ratings agencies operate or the application of certain accounting standards. Other recommendations apply directly to Europe, where greater coordination is needed between national regulators within the single market.

Christian de Boissieu
Executive Chairman of the CAE

Subprimes Mortgage Crisis

Report by Patrick Artus, Jean-Paul Betbèze, Christian de Boissieu and Gunther Capelle-Blancard

The financial crisis which began in 2007 came as a surprise to all market observers. If, just before the summer, many anticipated an increase in defaults on subprime loans, no one imagined that it would provoke a financial crisis that some have no hesitation in comparing to that of 1929. At worst, there were fears of a slowdown in the US economy, but not one that would spread to the rest of the world: the «decoupling theory». Fate, however, was to decide otherwise, with the downturn proving more widespread and more brutal than expected.

So how did we end up in this position? How did the crisis reach such magnitudes? How did the authorities react? What are the long-term consequences? How do we improve the way in which the financial banking system is regulated? One year after the first effects were felt, this report, presented and discussed during the CAE plenary meeting of April 17, 2008, attempts to tackle these different questions.

Factors behind the crisis

The subprime crisis can be linked to three factors: global imbalances, microeconomic failure and high-risk financial practices.

Global imbalances

Masked by its own success, the fragile nature of the global economy clearly played its due part in triggering the current financial crisis. What is referred to as the Hyman Minsky 'paradox of tranquillity': overindebtedness crises take hold when all is well and economic agents (businesses, households, etc.) take advantage of growth and low interest rates to borrow, albeit sometimes beyond their means. As a result, when interest rates rise, notably on the back of monetary tightening, debt levels which were thought to be acceptable are no longer tenable and lead to overindebtedness. As well as the Minsky paradox, the financial crisis which began in 2007 was also affected by a 'paradox of credibility', with the success of the central banks and monetary authorities in curtailing inflation reinforcing their credibility.

The basic model in understanding the sequence of events leading up to the crisis is the theory of overindebtedness inspired by the work of Irving Fisher in 1933. Traditionally, everything starts with a productivity shock: it has a positive impact on growth which in turn boosts earnings forecasts and leads to an increase in investment and therefore lending. This dynamic nonetheless brings with it several stabilisation mechanisms. Under normal circumstances, increased lending is limited by an increase in inflation which in turn prompts a tightening

of monetary policy and a rise in interest rates. In addition, banks find their credit offering restricted by their own capital requirements. Recently, however, these automatic stabilisers have not worked in their usual fashion and what follows explains why.

In the case of the subprime crisis, the starting point appears to be the excess liquidity worldwide, notably due to major trade surpluses and high savings rates in emerging countries (particularly China) and commodity-exporting countries. This strong global liquidity did not result in inflation in goods and services, quite the opposite in fact: global inflation continued to fall and any volatility vanished, resulting in a stability which, coupled with a lower degree of fluctuation in GDP and its components, is referred to as the phenomenon of 'great moderation'. Add in an improvement in the macroeconomic situation of emerging countries and the modernisation of their financial structures, and all of the parameters needed to boost confidence are met. Hence the drop in risk aversion between 2003 and 2006, with high liquidity levels encouraging investors to opt for more risky assets in the search for greater returns. This then obviously led to a drop in returns, i.e. in price of risk. As time went by, greater risks were taken but not adequately remunerated, setting the scene for a sharp turnaround. The world's financial players, however, remained in denial, convinced that the central banks would continue to safeguard the overall stability of the system. In actual fact, the drop in inflation and its volatility combined with the drop in risk premiums led to a drop in long rates, despite the tightening (which some believe came too late) of US monetary policy, fuelling an abundant and bargain credit supply. It also stimulated high leverage loans and, while excess liquidity had no impact on the price of goods and services, it did affect asset prices: the world's stock markets rose as did property prices. This appreciation led to an increase in mortgage loans as borrowings were pledged against the value of real estate (financial accelerator principle). The rise in asset prices also impacted on consumption, resulting in renewed optimism to bolster growth (wealth effect).

Microeconomic failure

Following the slump in market prices as of 2000, financial intermediaries were obliged to come up with other highly profitable investments to satisfy their clients. When equity markets are down, investors traditionally turn to bonds (flight to quality). However, given the macroeconomic imbalances outlined above, yield-to-maturity rates were very low. To meet this demand for profitability – further exacerbated by competition from new financial intermediaries (hedge funds in particular) – banks adopted two types of strategy: they increased their volume of activity by easing lending conditions and innovated.

Lending behaviour is typically procyclical: conditions ease when the climate is favourable and tighten when there is a downturn. When it comes to the subprime mortgage lending crisis, this was particularly apparent. Indeed, several empirical studies clearly show that financial institutions in the United States were lax in granting loans to households.

Normally, an increase in the volume of loans means an increase in banks' equity. These past few years, however, this stabilising mechanism has not fully come into play. Financial institutions have very successfully adapted to this constraint by innovating, notably by coming up with new securitisation vehicles.

High-risk financial practices

There is a broad consensus amongst economists that acknowledges the benefits of financial innovation – benefits which mean a reduction in transaction costs and greater flexibility in financial operations. Moreover, by improving the process of price discovery, financial innovation should also contribute to market efficiency and allow for better risk allocation. In fact, even today, while everyone admits that securitisation played a key role in the subprime crisis, it is not the process itself that is called into question.

Securitisation is a financial operation that consists in transforming traditionally illiquid bank loans into securities that can be easily traded on the market through the creation of an ad hoc legal entity. Most often, the bank that issued the loans sells them to a special purpose vehicle (SPV) which finances the acquisition by issuing shares on the markets. It is then the investors that purchase these shares that are paid the revenue linked to the loans (interest and repayment of the principal). Securitisation allows banks to transfer their credit risk. The banking or financial operator that sells the loans it has issued can thus pursue its operations with its capital base intact. As such, securitisation is part of the wider phenomenon of disintermediation.

In theory, securitisation is supposed to improve the efficiency of the financial system by allowing for a more effective risk spread. In practice, the originator that no longer bears the risks often becomes less strict in the screening and the monitoring. As a result, the quantity of loans within the system increases while their average quality diminishes. The bank assets that guarantee the loans become weaker and weaker in relative terms, and the risk taken on by the purchaser of the paper increases. Theoretically, the best way of limiting the risk of opportunist behaviour on the part of the seller is to split the portfolio of loans into several more or less risky tranches, with the seller retaining the tranche that bears the most risk, i.e. the equity tranche or First Loss Position. By only selling a fraction of the loans, and the less risky tranche at that, the originator is more driven to ensure that screening and monitoring is exhaustive. Furthermore, the higher the equity tranche, the lower the investor exposure. That said, in practice, it is difficult to know which part is effectively retained by the originator: given the increasing number of risk transfer tools (CDS, etc.), we no longer really know who has what. Moreover, it would appear that, in enabling banks to transfer part of their risk, securitisation is encouraging them to take on more.

When the financial system functions correctly, the risks are indeed borne by those that choose to accept the consequences (not necessarily by those who are actually able to). In the end, the traceability of financial flows is impossible and the concentration of risk liable to feed system risk.

The unfolding of events and consequences of the crisis

Short-term effects

Initially a relatively unexpected consequence of the financial crisis, interbank market liquidity vanished whilst global macroeconomic liquidity continued to grow sharply.

The increase in the number of defaults on mortgage loans (particularly in the United States), combined with the liquidity crisis, had a major impact on banks' results. Estimates of the losses incurred have continued to rise since the start of the crisis. In March 2008, a certain consensus stood at around US$ 400 billion, and in April the IMF estimated that the crisis would cost the banking sector US$ 565 billion and the financial sector writ-large close to US$ 1,000 billion overall. If these forecasts prove accurate, the subprime crisis could cost the United States the equivalent of 7 points of GDP, i.e. twice that of the savings and loans crisis at the end of the 1980s.

The crisis also resulted in a massive reduction in debt leverage, first apparent in the deleveraging of structured products. LBO (leverage buy out) funds were also hit hard by the crisis. While hedge funds initially held up well, as the situation became more complex, several of them were obliged to put a hold on the repurchase requests of their clients or to liquidate their portfolios. Generally-speaking, hedge funds suffered like the rest from shrinking financing and the downturn on the financial markets.

The crisis obviously also had negative consequences for consumption and employment. According to IMF forecasts published in April 2008, growth in the United States should stand at 0.5% in 2008 and 0.6% in 2009. For France (and Germany) growth is forecast at 1.4% for 2008.

Long-term effects

One of the first lasting effects of the financial crisis should be an increase in the cost of financing the economy and there are two reasons for this: the increase in the cost of financing banks and the increase in the risk premiums supported by non-financial borrowers.

We should also expect to see a drop in securitisation operations, with the main consequence being the need for banks to retain more capital since they will have to book a greater proportion of loans on their balance sheets. The Western economies' (United States, Europe and Japan) need for capital should therefore increase over the long term. First, there will be less debt leverage by investment funds as the cost of debt will be higher and the credit supply more limited. Second, banks will need more regulatory capital as they will have to book a larger proportion of loans to their balance sheets. The problem here is that an increase in equity demand in the West looks unlikely.

The only solution is to seek another potential source for equity savings, namely emerging countries and commodity-exporting countries. Until now, the recycling of the trade surpluses of emerging and commodity-exporting countries was essentially carried out via the accumulation of foreign exchange reserves by the central banks of these countries which invest almost exclusively in risk-free assets. As such, the potential that a greater proportion of these recycled surpluses be invested in equities is considerable.

This trend has gotten off to a spectacular start with public reserve funds and sovereign wealth funds acquiring shares in or contributing to the capital of major banks. Beyond the immediate effect of a loss in capital due to provisions booked after the crisis, this call for investment amongst emerging and commodity-exporting countries is likely to prevail in the long term as the major OECD countries find that local savings are insufficient to fund their additional capital requirements.

The financial crisis has also revealed a liquidity requirement that should have a series of consequences. First, it will make it difficult for small- to medium-sized companies to secure financing as, by definition, the debt securities or capital they issue are not very liquid and are therefore hard to sell. Next, it will change the role of finance. Contemporary finance has mostly been synonymous with the transfer of risks, notably *via* the derivatives and securitisation markets. If securitisation volumes fall in the future and if the financial markets develop a need for liquidity, it is feasible that the finance sector will no longer devote its time to ensuring the transfer of risk but rather to safeguarding liquidity. This will mean the development of those markets which traditionally remain liquid (major markets for standard assets), as well as the development of the (paid) business of liquidity supplier.

What future impact will this new environment have on banks? Given the above, it would seem reasonable to think that banks will increase in size as it is easier for major banks to: issue liquid debt assets, secure capital from investors in emerging countries and diversify the risk of default – all at the same time. We can therefore expect to see the continued concentration of the banking sector.

Lastly, the environment seems to be tirelessly generating bubbles. Investors still have access to abundant liquidity and, despite crisis after crisis, do not appear to have given up on their quest for higher returns, prompting them to mimic each other. As a result, liquidity is concentrated on a small number of assets with what are subsequently exaggerated asset prices, hence the bubbles.

Intervention to hold the crisis in check

State intervention to rein in the crisis which began in August 2007 can be classed according to three different categories:

- aid to households to limit the increase in payment defaults;
- easing of monetary policy by injecting liquidity and potentially playing on interest rates;
- intervention as a lender of last resort and even a buyer of last resort.

Protecting borrower solvency

At the end of August 2007, the US government announced several measures aimed at preventing defaults on payments amongst households. The program baptised 'Hope Now Alliance' which was officially presented at the start of December 2007 has two objectives: to protect the most precarious households but also to curtail the crisis any further. The main measure has been the freeze, under certain conditions, of interest rates on adjustable rate subprime mortgages.

At the start of 2008, the Bush Administration also announced a package of tax rebates worth US$ 150 billion (i.e. the equivalent of 1% of the country's GDP) to boost consumer confidence, but which will obviously widen the US deficit.

Monetary policy

Central banks have moved quickly since the beginning of the crisis in August 2007, both to avoid a systemic banking crisis and to limit its impact on growth – keeping the two objectives separate as far as possible. In fact, the US Federal Reserve also took advantage of events to innovate its process of intervention.

Banks traditionally finance their activities via short-term borrowing on the interbank market. The financial crisis that began in 2007, however, prompted a great deal of mistrust between banks, leading to a hike in 3-month rates. Under normal circumstances, 3-month interbank rates do not go more than 20 basis points above the central bank's key rate which is considered to be safe. Since August 2007, the spread has been 2 to 6 times higher!

As a result, the central banks have massively intervened to inject liquidity, hoping to calm market tensions and restore confidence. Monetary policy has also been characterised by the extension of terms on loans, the widening of collateral and refinancing for newcomers from the Fed.

As well as granting liquidity, the Fed also slashed its target rate from 5.25% at the start of the summer of 2007 to 2.25% at the end of July 2008 in a bid to limit the impact of the crisis on growth. While the ECB did not reduce its key rate, it nonetheless agreed not to increase it before June 2008.

Lender of Last Resort (LLR)

As they use part of their liquid resources to finance an illiquid payroll, banks are exposed to a liquidity crisis at any moment. Despite being solvent, they do not have sufficient liquidity to handle the withdrawal of a large proportion of their liquid assets (in the event of a panic within the banking sector for example). This means that, to continue to finance their illiquid assets, they need a Lender of Last Resort (LLR) to ensure they are able to cope with unexpected withdrawals, thereby eliminating the risk (as short-term lenders to banks know that they do not run the risk that loans will not be repaid).

The role of LLR is played by central banks which are able to loan additional liquidity to banks, taking the latters' assets as collateral. Since the start of the crisis, the Bank of England has been obliged to nationalise (albeit temporarily) the mortgage lender Northern Rock in February 2008, whilst, in March 2008, the Fed was called upon to bail out the fifth largest US investment bank, Bear Stearns. Note that this is the first time the US monetary authorities have come to the support of an investment bank.

Improving financial governance

There are already many lessons to be learnt from ongoing subprime crisis which, in certain instances, constitute recommendations for future state policy.

Functioning of ratings agencies and transparency of information

• Oblige ratings agencies to be transparent in their models and methodology.

• Impose that agencies take liquidity and operational risk into account in their ratings, as well as credit risk. This could take the form of an additional rating or the use of a different ratings scale for structured products.

• Implement mechanisms aimed at reducing conflicts of interest between issuers and ratings agencies. We would notably suggest overhauling the pricing system and lean towards subscriptions whereby each client of a ratings agency pays a fixed annual fee covering a broad range of services. Any services that do not fall within this range could be subject to an additional fee (which could depend on the nature and value of the operations concerned).

• Enhance the Code of Conduct Fundamentals of the International Organi-zation for Governmental Securities Commissions (IOSCO) to incite agencies to make a clearer distinction between their advisory and their ratings activities.

• Create a European label for ratings agencies like the US label, NRSRO, which could be awarded by the Committee of European Securities Regulators (CESR).

• Review the classification of financial products offered to investors, incorporating liquidity risk as a criterion. Oblige prescribers (banks, insurance companies, etc.) to refer to the classification applied to UCITS by the market regulator.

Matching bank assets to liabilities

• Define international liquidity standards that are both simple and transparent despite the complexities of today's finance sector. Before any measures are taken, however, it is vital to refine the concepts and management models surrounding liquidity risk. These analyses must precede any global agreements and it is up to the Basel Committee (extended to include emerging countries) to organise these works.

• Take into account the liquidity issue in the 'improvement' of each of the three pillars of Basel II: definition of the solvency ratio (pillar 1), banking supervision (pillar 2) with an increasing focus on market discipline (pillar 3) as banks will have to be more transparent with respect to their liquid positions.

• Increase the weighting of the contingency lines via which banks undertake to repurchase the loans they have securitised.

• Put the review of the Capital Requirements Directive (CRD) on the agenda of the EU presidency as of July 1, 2008.

Accounting standards

• Relax accounting rules governing market value for institutional investors to enable them to spread their unrealised capital gains or losses over several years where securities are held to maturity.

International governance

At a European level

• In the short term, develop and strengthen the Lamfalussy 3 process committees (CESR for financial regulators, CEBS for banks, CEIOPS for insurance companies), as per the recommendations of Tommaso Padoa-Schioppa.

• In the medium term, set up a European system of banking supervisors which mirrors the European Central Banking system as suggested by Michel Pebereau.

On a global level

• Involve the major emerging countries and representatives of the developing countries in the work on liquidity.

• Replace the G7/G8 by a G13 or G15, thereby enabling the major emerging countries (China, India, Brazil, Indonesia, etc.) to join.

• Make sure that regulations do not work to the advantage (in fine), of the offshore markets which once again pleads for collaboration on the widest possible level.

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