Opening Remarks at the Stresa Seminar

Some Thoughts on the Regulation of the Financial Sector

Prepared for the morning session:

Financial Markets: Is Increased Regulation Justified, and Where is it Leading?

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June 26/28, 2009

The views expressed in this note are those of the authors and do not necessarily represent those of the Swiss National Bank.

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1. Introductory Remarks

As can be inferred from the title of this document, in this short note we reflect on issues concerning regulations in the financial sector. The note is structured as follows. Initially, a short description of the crisis is given. The analysis of the crisis so far shows that there is no unique factor which crystallises as cause for the crisis. Section 3 goes on and gives an overview of suggestions made with regard to regulatory reforms. Given that no unique cause for the crisis has been identified, it is by no means surprising that the list of proposed regulatory reforms is so extensive. Section 4 analyses regulation under several aspects. Section 5 draws the attention to two crunch points which need to be addressed. Section 6 concludes.

2. Review of the Financial Crisis

2.1 Phases of the Crisis

We start with a short, and necessarily incomplete, review of the financial crisis. The financial crisis has erupted in several waves and has, in the last couple of quarters, also left its marks on the non-financial economy. Roughly speaking, the crisis can so far be divided into 3 more or less distinct phases, the first being the recognition phase lasting until mid-2007, the second being a phase in which market turbulence has been confined to the financial sector, and the third being the phase in which the crisis spilt over to the non-financial sector (Figure 1).

Although in the meantime it is well accepted that the crisis has been preceded by a real estate price bubble (see Figure 2), this has not been generally recognised at an earlier stage when the property price bubble formed. While real estate values of regions which have experienced the most soaring house price increase have started to decline already in mid-2006, it has been only much later, with an increasing percentage of subprime mortgages getting delinquent or entering foreclosure (see Figure 3), that further signs of possible distress in the financial system started to emerge; beginning with the bankruptcy filing of several mortgage lenders, the downgrading or negative credit watch attached to securities backed by subprime mortgages, and the suspension of redemptions or liquidation of various investment funds. This stage can be described as a recognition phase which lasted until approximately mid-2007.

In the stage following the recognition phase, financial distress has been confined to the financial sector. This phase comprises the acquisition of Bear Stearns by JPMorgan Chase and lasted until September 2008 (see Figure 1). The third phase was heralded by the failure of Lehman Brothers on September 15th 2008, an event which marked the beginning of the transmission of the crisis from the financial to the non-financial sector (see Figure 4). We are still amidst this phase and it is to be hoped that this stage constitutes the final stage of this crisis. A further round would entail adverse effects emanating from problems in the non-financial market (e.g. rising unemployment rates, increasing default probabilities of companies) back on the financial sector. Additional financial constraints and distress on the financial level, would, in turn, have repercussions for the non-financial sector again.

2.2 Measures Taken During the Crisis

In line with the degree of severity of the crisis and the deterioration of the economic outlook, several measures were taken by different authorities around the world. In the following, we mainly focus on steps taken by U.S. authorities. This subsection presents some of the most important measures taken by authorities, with the subdivisions highlighting the focus of the respective measures. The different measures addressed problems in the short-term interest rate market, attempted to ease funding and liquidity constraints, and involved the prevention of failures of systemic market participants.

The Federal Open Market Committee (FOMC) started to reduce its target for the federal funds rate in several steps from 5.25 percent on September 18th 2007 to 2 percent on April 30th 2008, where it stayed until October 8th 2008. Thereafter, the target was reduced again in three steps to a target range for the effective funds rate of 0 to 0.25 percent, where it has stayed until now. Other major central banks also reduced their key target rate, although this happened much later in autumn 2008 (see Figure 5). In tandem with the decrease in the target for the federal funds rate, the FOMC entered reciprocal currency swap agreements with various counterparties – the first being, on December 12th 2007, the ECB and the SNB – partly in order to reduce the pressure on money markets.

Furthermore, in order to further ease the funding constraints faced by various market participants, the Federal Reserve Board announced various measures[1] to boost liquidity and enhance funding conditions in different market segments. In addition, the Treasury introduced special measures as well which should help ease the pressure on households threatened by foreclosure and aid companies under financial distress cope with the turmoil (for instance, TARP[2]).

Finally, some large companies – whose failure would have posed a systemic risk – had to be assisted with term finance facilities or lending lines provided by the Federal Reserve Bank of New York in order to facilitate the acquisition by other firms (Bear Stearns, March 24th 2008) or to prevent the failure of the company respectively[3] (AIG, September 16th 2008; see also Figure 6). Moreover, to prevent further market disruptions packages of guarantees, liquidity access and capital were launched by the Treasury, Federal Reserve and the FDIC[4] (Citygroup, November 23rd 2008, BoA, January 16th, 2009) and some companies were directly put under state ownership, namely Northern

[1] TAF (Term Auction Facility, December 2007), TSLF (Term Securities Lending Facilities, March 2008), PDCF (Primary Dealer Credit Facility, March 2008), AMLF (Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, September 2008), CPFF (Commercial Paper Funding Facility, October 2008), MMIFF (Money Market Investor Funding Facility, October 2008), TALF (Term Asset-Backed Securities Lending Facility, November 2008).

[2] TARP ($ 700 billion Troubled Asset Relief Program, October 2008). Announced on October 14th 2008, TARP will purchase capital in financial institutions. This facility will allow banking organisations to apply for a preferred stock investment by the U.S. Treasury. In December 2008, the U.S. Treasury authorises loans to non-financial institutions under TARP, namely to General Motors and Chrysler.

[3] The financial support has been orchestrated before TARP has been launched and was restructured as soon as TARP was in effect.

[4] Federal Deposit Insurance Corporation.

Rock in the United Kingdom (UK) (February 17th 2008), as well as Fannie Mae and Freddie Mac in the U.S. (September 7th 2008).

2.3 Contributing Factors

Why has this crisis been so severe and why have all these measures been taken? The following intertwined factors surely played a role here, namely (1) the development of highly complicated structural financial products, (2) the immense levels of leverage, (3) severe maturity-mismatch, (4) intensively interconnected firms, (5) determination of fair-values when markets are no longer active, and (6) the existence of "too-big-to-fail" companies. All these factors partly unfolded in the so-called shadow-banking sphere[5], aloof from the already heavily (at least in comparison to other industries) regulated banking system.

The first three factors have been particularly relevant in the context of securitisation. Three crucial players as regards the construction/ engineering and dissemination of structured credit products were off-balance sheet vehicles (SIVs), credit rating agencies, and the sellers of CDSs.[6] On the one hand, off-balance sheet items allowed banks to circumvent expensive capital requirements because credit risk has been transferred to these off-balance sheet entities. Furthermore, SIVs engaged in heavy leverage and severe maturity mismatch – two features which have not been confined to SIVs, but have also otherwise been prevalent in the financial sector and which have, in combination with an evaporation of liquidity, certainly contributed to the gravity of the crisis. On the other hand, credit rating agencies were important because, in the absence of any other agency which assessed the quality of complex CDOs[7], the market relied on the credit rating they assigned to the respective CDOs, and because they advised the issuer of CDOs on how to structure their securities in order to get a custom-tailored rating.

As concerns the fourth factor, there were other non-bank financial institutions, such as insurances, mono-line companies and former investment banks, which by engaging in selling CDS for instance, did also play a role in the proliferation of innovative financial products and strengthened the interconnections/ -dependencies between firms. CDS provide buyers with insurance against default and allowed them to take the default risk "out" of a security. The heavily traded credit default insurance products, CDS, were traded over-the-counter (OTC) and not through a central clearing system. The massive use of over-the-counter trades, the creation of (allegedly) off-balance sheet vehicles and the involvement of non-supervised financial actors created room for opacity as regards the counterparty risk faced by, exposure to various securities undertaken by and financial entanglements/ interconnections assumed by financial institution.

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[5] Shadow banks can be thought of as non-bank financial institutions, such as mutual funds, which fulfil similar macroeconomic roles as banks do, i.e. maturity transformation and credit lending, but are not always – depending on the country – subject to the same regulatory oversight as banks are.

[6] Credit Default Swaps.

[7] Collateralised Debt Obligations.

Once the incertitude stemming from, on the one hand, the use of overly complex credit products which only few people really understood and, on the other hand, from the lack of knowledge concerning the exposure of financial institutions to complex credit products and the level of interdependencies between financial institutions turns into panic, liquidity evaporates meaning that the interbank lending market freezes, funding is only sparsely available if at all, and assets are sold at fire-sale prices putting pressure on the value of assets which are on the balance sheet of the selling party or other financial institutions. This is problematic, especially for banks, when it comes to determining the fair value of an asset for the quarterly financial statements since decreasing asset prices erode the capital basis available to the bank (fifth factor).

Finally, as regards the sixth factor, the fact that many financial institutions have grown to the extent to have become financial giants, with interconnections to other financial (giant) institutions, means that the impact on systemic risk that their disorderly failure would cause has to be avoided at any cost.

3. Areas for Regulatory Reform

In the following section, we review some areas in which regulatory reforms have been suggested. The review is not meant to be exhaustive of course and the intention is to be as neutral an observer as possible and to avoid any judgement. It stands out that there have been suggestions for regulatory reforms in nearly every area. This might seem remarkable at first sight. However, the short and incomplete account of the crisis in the last section has made evident that the crisis is of an extremely complex nature and that it is futile to search for a unique cause for the crisis. It is therefore by no means surprising that proposals for regulatory reforms stretch across very different areas.

In our view, the proposals can be grouped according to their main focus, namely preventing systemic failures, strengthening the resilience of banking institutions, avoiding pro-cyclicality, and restoring transparency. Of course, some regulatory suggestions may fall into more than one category.

3.1 Preventing Systemic Failures

Because the banking industry fulfils such a central macroeconomic role[8] a major disruption in the banking system would cause huge economic damage to the society. Hence, it is important to prevent a systemic relevant bank from going bankrupt.

It is frequently mentioned that too little attention has been placed on systemic risk, the focus having merely been on idiosyncratic risk, that is risk pertaining to an individual banking institution. This calls for strengthening and building **macro-prudential regulation**.[9] Macro-prudential regulation

[8] For a more detailed analysis, see Section 4.1.

[9] See, i.e., the financial regulatory reform proposal by the Obama administration of June 17, 2009; which proposes to grant the Federal Reserve new authority – and accountability – for regulating bank holding companies and other large firms that pose a risk to the entire economy in the event of failure; European Commission

aims at detecting developments in the economy which might endanger financial and macroeconomic stability. Variables whose "abnormal" developments need to be observed in this context are leverage, credit expansion, extent of maturity transformation and asset prices.

Closely related to macro-prudential regulation is the view that all financial institutions, that is **shadow banks,** such as money market funds, and other relevant financial institutions, such as mono-line insurers or insurance companies, too, and not only banks, are to be regulated if they are of systemic relevance and are highly interconnected. [10] The criterion for whether a financial institution is regulated or not is, according to this view, to be primarily determined by the institution's systemic relevance and by its macroeconomic function (the intermediation between investors and savers). Hence, Structured Investments Vehicles (SIVs) with substantive economic risk are to be treated as if on balance sheet (so that banks must hold capital against the implied risk) and hedge funds[11] are to be regulated if bank-like in nature, that is if they service private clients and make funds available on demand, or pose a systemic risk. Similar considerations would apply to investment banks[12] - this is, however, not of prime importance at the moment since there is no pure investment bank left to which this regulation could be applied.

It has been observed that it is sometimes difficult to determine which regulatory authority is responsible for a certain kind of financial institution. Therefore, it has been emphasised that increased **cooperation between different supervisory entities** is important. Coordination in integrated regulators reduces the dangers of inconsistency and arbitrage between different regulators.[13] Furthermore, the scale of the global crisis has given rise to the view that it might be necessary to have a certain degree of **international cooperation**. This could include measures such as strengthening the capital framework in an internationally consistent manner, improving oversight of global financial markets and coordinating supervision of internationally active firms.

(EC) proposal for Pan-European Macroprudential Supervision System in the form of a new European Systemic Risk Council; Bank of England (BoE) Governor King's speech on June 17, 2009 on a macro-prudential tool-kit.

[10] See financial regulatory reform plan by the Obama administration to better regulate mortgage brokers, managers of hedge funds and other private pools of capital.

[11] UK: hedge fund managers are already regulated, but hedge funds themselves are not subject to capital or liquidity requirements; EU: April 2009 proposal to regulate managers of alternative investment funds.

[12] US: Subject to capital requirements but not leverage ratio, EU: subject to capital requirements.

[13] see financial regulatory reform proposal by the Obama administration to create an oversight council to bring together regulators from across markets to coordinate, to enhance the sharing and circulation of information, and to identify gaps in regulation; CH: as of January 2009, the government supervision of banks, insurance companies, stock exchanges and securities dealers and other financial intermediaries in Switzerland are grouped together under one authority; EU: the EC has adopted a communication on financial supervision in Europe which proposes, among other things, the creation of a new European System of Financial Supervisors, composed of new supervisory European authorities and created by the transformation of existing committees for banking, securities and insurance and occupational pensions sectors. It is based on shared and mutually reinforcing responsibilities, combining national supervision of firms with tasks at the European level, and aims at fostering harmonised rules and coherent supervisory practice and enforcement. Legislation will follow in autumn.

Finally, it has also been frequently mentioned that it would be advisable to have a **resolution agency**, which helps winding down companies in an orderly manner.[14]

3.2 Strengthening the Resilience of Banking Institutions

As regards **capital requirements** suggestions are that the quantity[15] and quality of capital must be increased. To this end, however, agreement on a commonly accepted definition of capital needs to be found.

Furthermore, a **leverage ratio** as a complementary non-risk weighted capital requirement or additional buffer is commonly regarded as a useful tool to counteract sudden spells of liquidity evaporation and the underestimation or miss-calculation of risks related to financial securities.[16]

Finally, recommendations concerning **liquidity requirements** aim at preventing banks to overly rely on short-term wholesale funding and instead to rely more on retail time deposits.[17] Proposals have ranged from general liquidity rules entailing the establishment of a core funding ratio[18] to suggestions concerning accounting issues in the form of mark-to-funding[19] instead of mark-to-market valuation for assets which are financed through long-term funds.

3.3 Avoiding Pro-Cyclicality

The financial crisis has brought to light that many existing regulatory requirements, be they of public or of private nature, and practices employed in the private sector were having pro-cyclical effects.

With regard to **capital requirements**, the view is that steps must be taken in order to avoid the pro-cyclical effects of the Basel II capital requirements[20], which work through risk-sensitivity measures as well as fair-value evaluation. This could be done by using through-the cycle estimation of credit-risks instead of point-in-time estimation. Furthermore, counter-cyclical capital buffers could be created by, for instance, multiplying the traditional capital adequacy requirements by factors relating to macro-prudential or systemic risk and thereby allowing the capital ratio to fluctuate within

[14] See Obama Administration financial regulatory reform proposal for a "resolution" authority for large and interconnected financial firms; BoE governor King's speech on June 17, 2009, see also Swiss National Bank's Financial Stability Report 2009, which stresses the importance of orderly wind-downs of large financial institutions which are "too big to fail".

[15] Swiss Financial Market Supervisory Authority (FINMA, formerly SFBC): December 2008.

[16] already adopted in Canada, USA, CH: from 2013 onwards for the two big banks CS and UBS

[17] See also "Principles for Sound Liquidity Risk Management and Supervision", September 2008, Basel Committee on Banking Supervision (BCBS).

[18] As proposed by the Financial Services Authority (FSA) in the UK in December 2008. Core funding is defined as retail deposits plus long-term wholesale funding as percentage of total liability.

[19] As presented in a preliminary conference draft of the Geneva Report on the World Economy, "The Fundamental Principles of Financial Regulation".

[20] See "Proposed Enhancements to the Basel II Framework" in January 2009, by BCBS.

a certain previously defined range throughout the economic cycle.[21] Moreover, efforts are under way to make off-balance sheet vehicles and the trading books subject to capital requirements as well.[22] This seems particularly important, SIVs and proprietary trading having been important ways for banks to circumvent capital requirements in this crisis. In a similar vein, there have been suggestions concerning the regulation of securitisation.[23] In addition, it has been proposed that the capital requirements depend on the degree of liquidity mismatch and on credit growth (which might also be an indication for the level of systemic importance).

There is also quite some debate concerning the role of **accounting standards** in this crisis, especially in conjunction with the fair-value principle which has been considered partly responsible for fire-sales. The view is that the way forward is not to abandon fair-value principles but to find a better principles-based approach which accounts for the legitimate demand of investors to obtain truthful current financial information. Fair-value accounting principles and standards are, in this view, to be revaluated with the objective of developing more realistic guidelines for dealing with instruments in illiquid and distressed markets.[24] Furthermore, there are suggestions to review the current standards for consolidation of various types of off-balance sheet vehicles.

In order to counteract adverse effects on market functioning stemming from **short selling**, many governmental authorities or central banks have temporarily banned short sales or put into place strict disclosure requirements.[25]

Furthermore, suggestions have also been made with regard to **remuneration policies**. According to these suggestions contracts are to take incentive structures into account, thus aligning remuneration with long-run shareholder interests rather than short-term returns.[26]

3.4 Restoring and Increasing Transparency

As far as **financial product** regulation is concerned there is a debate about maximum loan-to-value ratios or loan-to-income ratios[27], especially for mortgages. Moreover, the regulation of OTC credit derivatives such as CDS is also frequently discussed.[28] Lastly, regulatory suggestions aim at

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[21] According to a decree issued by FINMA (formerly SFBC) in December 2008, the big banks will have to meet risk-weighted capital requirements in good times that are double what they are now. This target will apply as of 2013 to prevent pro-cyclical effects.

[22] See BCBS, or EU Commission Staff Document on Possible Changes to the Capital Requirements Directive.

[23] US: Treasury and proposal by the Obama administration that issuers and originators retain financial interest in securitised loans

[24] See proposals made by International Accounting Standards Board (IASB) and Financial Accounting Standards Board (FASB) respectively.

[25] FSA has temporarily banned short sales from September 2008 to January 2009. Thereafter, it has imposed stricter disclosure rules; similar steps have been taken by the U.S. Securities and Exchange Commission (SEC) which has prohibited short sales of financial institutions securities as of October 2008; FINMA (formerly SFBC) announced on September 2008 that naked short-sales are not admissible in the current market environment.

[26] CH: FINMA circular on a revised remuneration system coming into effect in 2010; EU recommendations on remuneration in April 2009.

[27] Already in place in Hong Kong, the Netherlands, Greece, Austria, Poland.

[28] See financial regulatory reform plan by the Obama administration.

making sure that consumers really understand the product they buy and that companies compete by offering better and not only more complex products.[29]

Furthermore, an additional measure proposed to bring light into the obscurity of counterparty interactions is to build a **central counterparty clearing system** for OTC derivatives.[30] This would also allow to reduce unnecessary multiplications of gross exposures.

Rating agencies have played an important role in this financial crisis. It has therefore been suggested that, in order to mitigate conflicts of interests, the rating function is to be separated from the advisory function.[31] Furthermore, the rating process for complex structured credit products needs to be thoroughly reviewed. Finally, in this view, it would be preferable if risk ratings by rating agencies would not only account for default probabilities and the loss in the case of a default, but also for other risk factors, such as liquidity risk.

4. Deliberations on Regulation

This section will first review the rationale for regulating the financial sector. The section goes on and discusses causes of the financial crisis which cannot be traced back to deficiencies in the existing regulatory environment. As we show in Subsection 4.3, regulation may have its own dynamics and the possibility of undesired outcomes cannot be excluded. In Subsection 4.4. we therefore advocate a “principle of precaution”.

4.1 Regulation of the Financial Sector

The financial sector is usually regulated quite intensively, at least in comparison to other industries. A sound case for the need to regulate the financial sector can indeed be found, namely that this sector is special, if not to say unique, in certain respects. This will be illustrated by means of the reasons put forward for regulating banks.

Banks fulfil the role of a financial intermediary, channelling the funds available from people who save to people with productive investment opportunities. They do this by engaging in maturity transformation, thereby allowing households and firms to hold liabilities of a longer maturity than they otherwise could. Furthermore, banking institutions reduce the extent of asymmetric information economic agents face when looking for opportunities to invest thus contributing to a reduction of information uncertainty.

[29] See financial regulatory reform plan by the Obama administration to create an agency for consumer protection; EU is also launching a proposal concerning consumer protection involving product information and sales thereof.
[30] See, e.g., financial regulatory reform plan by the Obama administration; or the High Level Group on Financial Supervision in the EU, chaired by J. de Larosière, from February 2009.
[31] EU has put forward a regulation for credit rating agencies in April 2009, involving the prohibition of advisory functions and the obligation for more disclosure.

Financial markets are also prone to the problem of asymmetric information. The problem can be partially remedied with the help of "information producers" like rating agencies. However, because banks can fully internalise the benefits of additional information gathering, they are better able and put more effort into the monitoring of a borrower's activity than the above mentioned information producers. Since information is a public good, producers, like rating agencies, cannot do so ("free rider problem"). The important point to note is that banks attenuate a *primary* market failure. Without their existence there would be a case for government intervention.

However, the existence of banks shifts the problem of asymmetric information one level further. Bank depositors are also confronted with an asymmetric information problem because it is difficult for them to discern whether a bank engages in excessively risky activities. This *secondary* information asymmetry, gives rise to the problem of bank runs. To put it in a rough way, the existence of banks hinges at the mercy of rumours.

There remains therefore, despite the existence of banks, a need for regulation. Typically governments declare the insurance of deposits as mandatory. The important point to recognise here is that the absence of regulation of this *secondary* market failure may be very damaging because it may lead the *primary* market failure – which the banks solved by their very existence – to re-emerge again. *To get to the heart of the point, an absence of regulation enhances the need for regulation.* This shows that the case for regulation in the financial sector is of a different nature than the one in other sectors.

The historical experience tells us that regulation was successful. For example, in the U.S., the establishment of deposit insurance has been shown to be effective in forestalling bank runs. While the number of bank runs amounted to more than 2000 bank failures a year, from 1930 to 1933, that is the years preceding the creation of the FDIC, this number decreased to fewer than 15 per year after the establishment of the FDIC in 1934.

It should be noted en passant that the mandatory insurance of deposits reduces the incentives of banks to collect information on borrowers. Thus it increases the *primary* market failure problem. This effect, however, is of a second order of magnitude. This may explain the further historical experience. Although working smoothly and well initially, this period of stability was abruptly halted by an increasing rate of bank failures in the 1980s and 1990s which was fuelled by increased credit risk taking by financial institutions. Because with deposit insurance depositors essentially do not care about the degree of risk-taking by their banks, higher risk taking does not entail the payment of higher risk premia by the bank to their depositors.

4.2 Regulation in the Context of the Current Crisis – Underlying Causes

We have shown that there is a strong case for specific regulations in the financial system. In Section 3 we have given a short overview of the current propositions for future regulatory reforms which have been put forward by several parties. The question is whether regulation or regulatory reform can be presented to the wider public as a way out of this crisis. One may adhere to this view if the origin of the crisis is seen to be only located in insufficient or inappropriate regulation. However, so manifold are the causes to this crisis, that, in our view, the above question needs to be clearly answered in the negative. It is highly unlikely that deficient regulation was the main cause of the crisis and for precisely this reason new or reformed regulation cannot constitute the way out of the crisis.

In our view, macro imbalances are an underlying cause for the current financial disorder. They are necessary factors which lie at the root of the unusually low real interest rates. One possible explanation for these imbalances is the "saving glut" hypothesis put forward by Bernanke.[32] He argues that, in addition to funds provided by the increased saving motive of the ageing population of mature industrial countries, there is a much more important source contributing to the abundance of savings, namely the change in the saving behaviour of governments from or people living in emerging market countries. There are several reasons for this, most importantly however, the need for these countries to actively manage the flow of financial capital by building up foreign exchange reserves. This involved a shift to a surplus in the respective country's current account. These vast amounts of savings were primarily invested in risk-free or very low risk government bonds and put pressure on the whole spectrum of the yield curve. The low interest rates, in turn, fuelled the increase of asset prices since the market price of an asset can be thought of as the expected discounted value of future cash flows generated by this asset. Low interest rates did, however, also affect the pension funds' saving plans, since they had to cope with relatively low returns for their invested funds while at the same time being obliged to guarantee a certain pre-specified return on their investments. This might have put pressure on the managers of these funds to find higher yielding investment opportunities without engaging in too much additional risk – the so-called "search for yield" phenomenon. As we now suspect, this increased demand for higher returns in exchange for only small increase in risk has fostered financial innovation and the concomitant propagation of a variety of complex structured credit products. Furthermore, a prolonged period of relative macroeconomic and financial stability encouraged economic actors to take on more risk – excessive risk as we, with the benefit of hindsight, now know.

If it is the case that macro imbalanced were a major cause for the emergence of the crisis, the extent to which regulation or regulatory reforms can be presented/"sold" as an avenue of getting out of the crisis must be questioned.[33] By any means, we should be realistic enough and not place exaggeratedly high expectations on the healing powers of regulation. Too high expectations would be particularly detrimental if the fourth phase[34] – using the terminology of Section 2 – of the financial crisis should materialise, because it could give rise to a climate of disillusion.

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[32] Bernanke, Ben S. (March 10, 2005), The Global Saving Glut and the U.S. Current Account Deficit, Remarks at the Sandridge Lecture, Virginia Association of Economics, Richmond, Virginia.

[33] In particular, the announcement of certain regulations or regulatory reforms, i.e. capital requirements, can in the short-run, aggravate the problems.

[34] Problems in the non-financial sector having negative repercussion on the financial sector, which, in turn, might again adversely feed back to the non-financial.

4.3 Regulation from a Normative and Positive Perspective

Regulation should be analysed both from a normative and a positive point of view. The normative perspective tries to determined how and when existing problems should be tackled by regulatory measures. From this point of view, regulation should only be resorted to if there is a market failure.

The positive view analyses the behaviour of a regulator and the reason why certain economic policies are pursued. The former task is performed by modelling the regulator as an economic actor who tries, like all other economic agents, to maximise his utility and does not always serve the public interest. This is the "public choice" approach, advocated by economists such as J. Buchanan[35] and B.S. Frey[36], which makes use of economic tools to deal with traditional problems of political science.

This approach points at many political factors and processes which may explain the existence of regulation. We will restrict our example to regulations in the banking sector. Here, the demand for regulation might stem from depositors seeking protection for their funds, from, as in the current crisis, investment banks trying to benefit from some kind of government protection, or more simply from politicians, which take into account these desires, perhaps because they wish to be re-elected. The supply of regulation may be determined by the number and the competence of regulatory authorities involved and might, especially in times of severe turmoil, be subject to bureaucratic competition and a desire to extend one's administration regulatory power and status to a degree which would not be possible in times of tranquillity.

Taking such a positive view on regulation helps to ward against regulatory mistakes which can be committed all too easily. If the current regulatory reform suggestions are viewed from this positive angle, it might be conceivable that unnecessary regulatory measures are taken on the pretext that this is indispensable to prevent future crises of similar magnitude. This might involve the risk of overregulation which is very difficult to revoke and which frequently entails a suite of yet another regulation to counteract the adverse effects of the former. Some events may point in this direction. The proposals to register or regulate hedge funds now rather than at an earlier time may be an example, because these funds did not play a major role in the current, as opposed to previous, financial crisis. The "political economy analysis" or "public choice approach" is also very fruitful to analyse the reasons why the automobile industry did benefit from facilities originally put in place to provide help to the financial industry.

4.4 Regulation and the Precautionary Principle

Having described normative and positive aspects of regulation, it would make sense to exercise the following adapted "precautionary principle" when considering taking regulatory measures: The

[35] Buchanan, James M. (1973), Public Choice and Public Policy, *Increasing Understanding of Public Problems and Policies*, Farm Foundation.
[36] Frey, Bruno S. (1984), The Public Choice View of International Political Economy, *International Organization* 38(1): 199 – 223.

rational for regulation should be well founded and the standards high. The onus of the proof lies with those who propose a regulation.[37]

First of all, regulatory measures should only be envisaged if there is a market failure (i.e., asymmetric information, presence of negative externalities, public goods, imperfect competition).

Next, if a market failure exists, it must be determined or clarified whether this failure could also be tackled by the private sector. This might partially be the case, as the presence of banks and rating agencies shows. However, because these private market institutions may only partially solve the market failure and may, in some instances, even cause some further market failure, there might still be some room for government involvement.

However, before governments undertake any intervention in form of regulations it must, in a third step, be shown that regulation can be beneficial and successful at all. This necessitates the comparison of costs and benefits of regulatory measures and the reflection on possible market distortions caused by government interventions (i.e. government failure which increases the moral hazard problem). Furthermore, it needs to be taken into account that the financial system is particularly good at finding ways around regulation, meaning that there is a countermove by the financial industry for every move made by regulatory authorities, thus making certain regulations futile.

5. Crunch Points to be Addressed

If one adopts an attitude of reserve or healthy scepticism, there are two points which emerge. Even if the above mentioned precautionary principle is abided by, resolute regulation seems to be warranted to address the "too-big-to-fail" problem. Moreover, the application of this principle to the field of monetary policy results in sticking to the view according to which monetary policy should primarily address the goal of price stability.

First, we need to recognise that the "too-big-to-fail" problem is a very serious and real problem, and not only a scenario left to be discussed in textbooks and on an academic level. Through their size and the adverse impact for the whole economy their failure would pose, firms judged to be systematically relevant compel the government to intervene in case of a threat to their existence. This implicit (and in the meanwhile explicit) obligation imposed on the government means that firms might have an incentive to grow up to a size at which they are deemed to be too systematically relevant to be left to fail. The experiences we have made so far, have shown that it is utterly costly to let such a company fail. For one thing, the collapse of Lehman Brothers in September 2008 caused severe reverberations throughout the whole economy, transmitting the crisis from the finan-

[37] The "precautionary principles" has originally been used in the field of environmental policy making. It basically states that if an action or policy might severely or irreversibly affect the public – in the absence of a scientific consensus that harm would not ensue – the burden of the proof falls on those who advocate taking the action (see e.g. Raffensperger C. And J. Tickner (1999), Protecting Human Health and the Environment – Implementing the Precautionary Principle, Washington D.C.: Island Press; in the context of environmental economics).

cial to the non-financial sector. On the other hand, the actions taken to prevent failures resulted in an increase of the size of banks and thus in an exacerbation of the too-big-to-fail problem. The recent history is also a "precedent" for the future. There is a need here to impose stricter regulations to increase the resilience of "systemic" players[38], to restore fair competition between players benefitting and those not benefitting from a "government guarantee", and to compensate the government for the provision of a "lender of last resort"-insurance.

Second, and more important for monetary policy makers, there has been an ongoing debate concerning the issue of whether central banks should target asset prices in order to prevent bubbles and thus safeguard financial stability. This debate has, since the eruption of the financial crisis, gotten fresh impetus. Before the crisis, there has been some consensus that monetary policy should focus on maintaining price stability. According to this view[39], monetary policy should not be concerned with spotting and subsequently prickling emerging bubbles. However, amidst the current crisis, proponents[40] of the asset price targeting camp are getting more and more support, arguing that if central banks had taken into account the evolution of asset prices this crisis would never have broken out with such virulence. There is a potential problem that arises with this kind of argumentation. The problem is similar to the point discussed before, namely that caution must be exerted when regulating in the context of fundamental macro imbalances and that not too much hope must be put on the power of regulation. The same holds for monetary policy, namely that when fundamental macro imbalances are at the root of the financial crisis, monetary policy, even if it kept an eye on asset prices, would not have prevented the current crisis. Furthermore, monetary policy can only influence nominal magnitudes. Macro imbalances are real phenomena, though. The existence of "global imbalances", bubbles, tends to manifest itself in different assets classes, such as diverse commodity prices, and not only in real estate or stock prices. The burst of a bubble is followed by the birth of another one. The argument that monetary policy would be overburdened since it would have to achieve two goals (price and financial stability) while having only one instrument at its disposal retains its validity.

6. Concluding Remarks

This note has shortly reviewed the history of the current financial crisis and worked out the factors (intense use of complicated structural products, increasing levels of leverage, severe maturity-mismatch, strongly interconnected financial firms, etc.) which might explain its specificity and severity. We then listed the proposition concerning regulations. The list is, without being exhaustive, a long one. We then contrast the normative to the positive approach to regulation. This shows that

[38] The proposal put forward recently by the Swiss National Bank and the Swiss Financial Market Supervision Authority (FINMA) concerning increased capital requirements and the implementation of some kind of leverage ratio has to be seen in light of these findings.
[39] Bernanke, Ben S., and M. Gertler (2001), Should Central Banks Respond to Movements in Asset Prices?, *The American Economic Review* 91(2): 253 – 257.
[40] Cecchetti, Stephen G., Hans Genberg, and Sushil Wadhwani (2002), Asset Prices in a Flexible Inflation Targeting Framework, *NBER Working Paper Series* No. 8970.

the possibility of over- or false regulation cannot be excluded. Furthermore, the hopes centred on regulations, if they are understood by the wide public as a means to come out of the financial crisis, may give rise to disappointments. We therefore advocate a "precautionary principle". Even when adopting such a principle, it is argued that the problem of financial firms being "too-big-to-fail" must be handled resolutely, because neither action nor inaction has proved to be capable of preventing huge damage being done to society. Action by the government, has so far resulted in the size of banks becoming even larger, thus aggravating the "too-big-to-fail" problem. Conversely, being inactive, as in the case of letting Lehman Brothers fail, has turned out to be very pernicious.

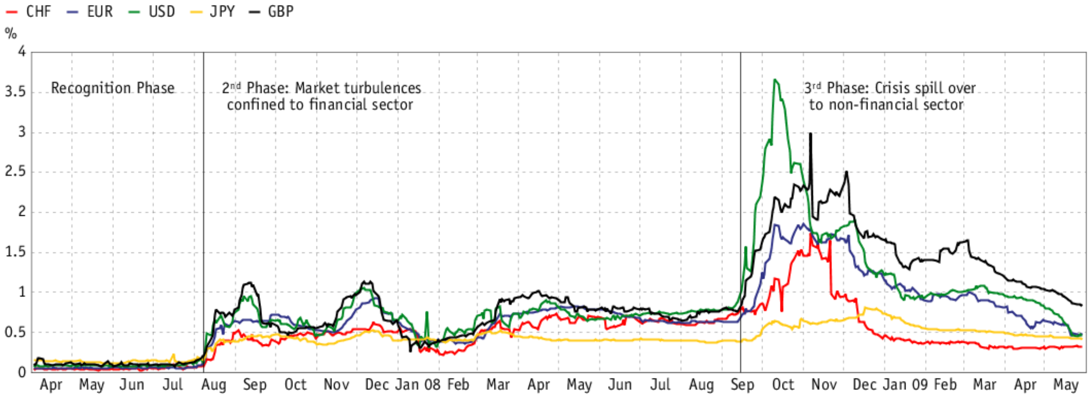
On the other hand, applying the precautionary principle, we argue that propositions to change the traditional view of the role of monetary policy, according to which it should exclusively address price stability issues, should be approached with some degree of scepticism. The current financial crisis had broad macroeconomic causes, such as the global "saving glut". These are real in nature. Monetary policy, however, can only influence nominal magnitudes. Even if monetary policy was the best instrument to recognise and fight "bubbles", like the one in the residential market, it would not have been in a position to address the underlying causes. The recent events do thus not, as it may appear at first sight, advocate the view that "financial stability goals" should be taken into account when the level of short-term interest rates are set by monetary policy.

Figures:

Figure 1:

Money market spreads

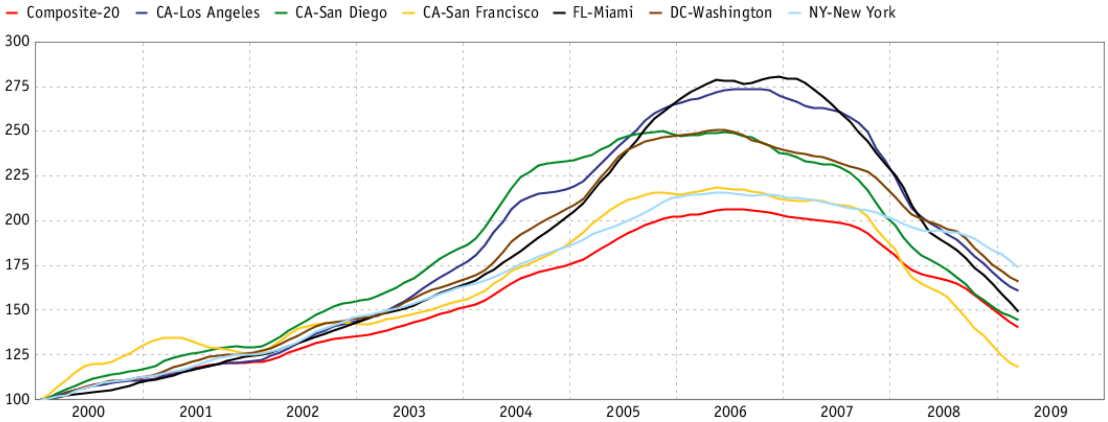
Spreads between three-month Libor and three-month overnight indexed swap rates (TOIS for CHF, EONIA for EUR, OIS for USD, TONAR for JPY, SONIA for GBP)



Sources: Bloomberg, SNB

Figure 2:

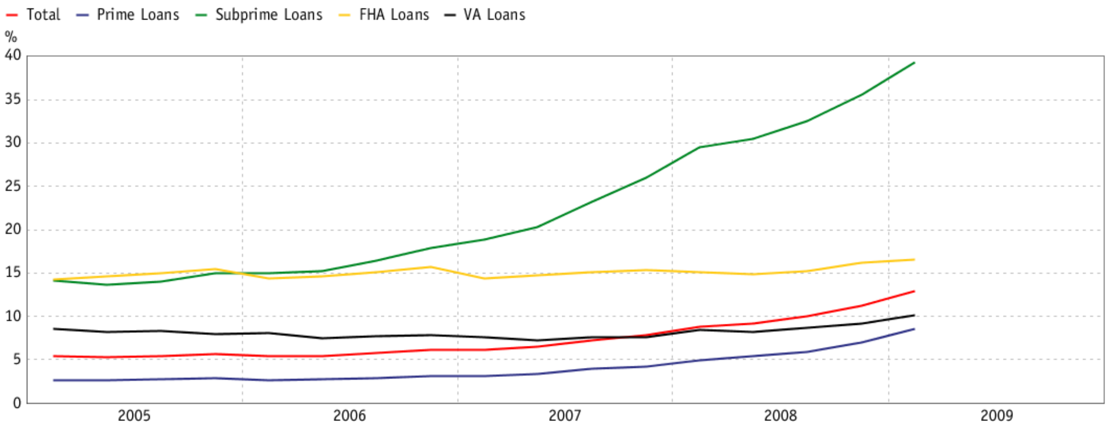
S&P / Case-Shiller Home Price Indices



Source: Standard & Poor's

Figure 3:

Percentage of loans in foreclosure or delinquent

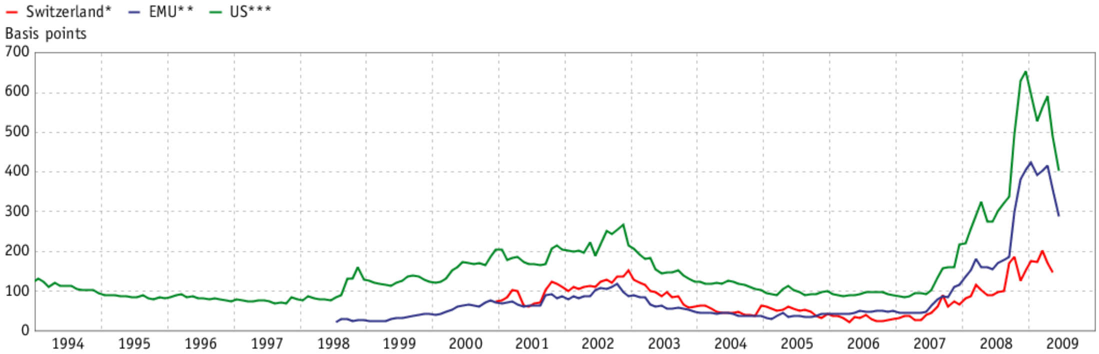


Source: Mortgage Bankers Association of America

Figure 4

Credit spreads

Credit spreads between corporate and government bonds

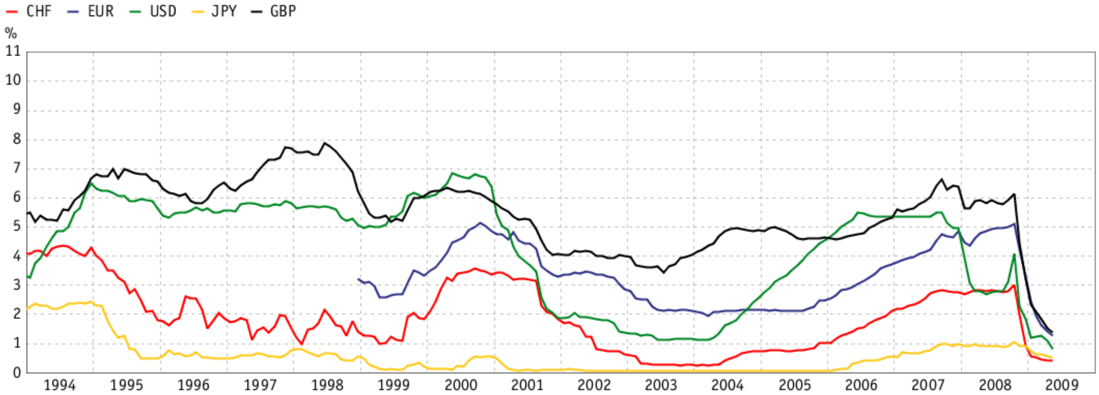


Source: Thomson Datastream
* Yields (spot rates) for Swiss investment grade corporate bonds and for Swiss Confederation bonds, calculated by the SNB.
** Euro-Aggregate Corporate (investment grade, EUR-denominated) and Euro-Aggregate Government AAA indices, Barclays Capital.
*** US Corporate (investment grade, USD-denominated) and US Treasury indices, Barclays Capital.

Figure 5

Short-term interest rates

Three-month Libor

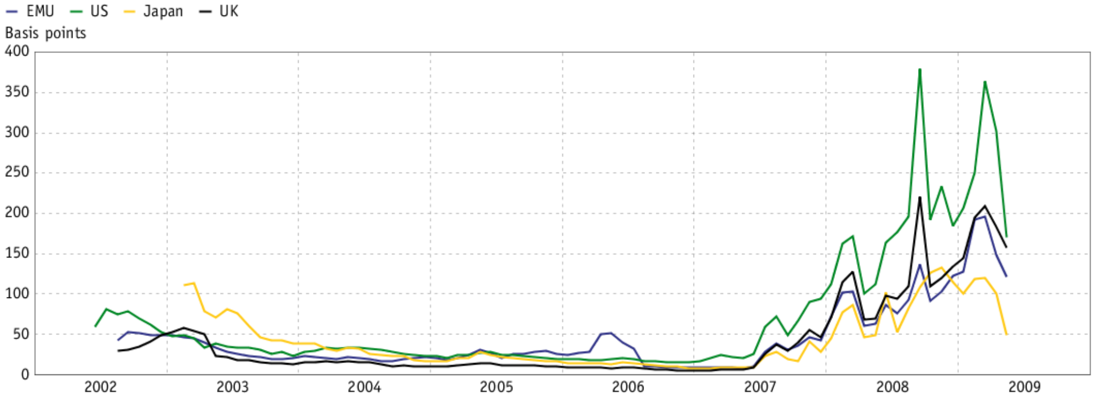


Source: Reuters

Figure 6

Bank credit default swap prices

Premia for credit protection on issuer bank (five-year senior, average of largest banks in the country)



Source: Bloomberg