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Agenda for Building a New Financial Market Architecture

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Abstract

Since the summer of 2007, participants in financial markets have been confronted by a crisis of their own making. In order to prevent the recurrence of a similar crisis in the future, the G-20 nations, at their finance summit in Washington on 15 November 2008, resolved to “ensure that all financial markets, products and participants are regulated or subject to oversight, as appropriate to their circumstances.” However, the elimination of loopholes as a matter of principle does not in itself provide a roadmap for the reconfiguration of financial markets. DIW Berlin is promoting an agenda of nine principles for regulatory reform. Item 1 through 3 focus on the prevention of coordination failures at the micro and the macro level as well as establishing appropriate incentives front and center; item 4 through 6 sketch out opportunities and limits for the future role of government; item 7 and 8 focus on oversight. Finally, item 9 calls for a stronger emphasis on equity financing and makes an appeal for the insight that financing constraints based upon credit worthiness ultimately serve to protect the financial system.

JEL Classification: G20, G24, G28

Keywords: Financial crisis, Regulation, Financial architecture

1 Prelude

The current financial crisis can be traced back to severe distortions in US housing and financial markets. During the housing-market boom that was fueled in no small part by the Federal Reserve’s expansionary monetary policy, mortgages were granted to a large number of homeowners of questionable creditworthiness (sub-prime mortgages). Enticing loan offers

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with initially low interest rates and payment requirements that reset with much stricter terms were widespread. Credit limits for borrowers generally rose automatically with rising home values. The repeated refinancing of homes at 100% of their value was not unusual in the US during this period. With the Federal Reserve's incremental increase of interest rates from one percent (in mid-2004) to 5.25 percent (by mid-2007), the interest on variable-rate mortgages linked to the prime rate also rose sharply.

Often, mortgage loans would be bundled, tranced, given a rating, and finally sold all over the world in the form of mortgage-backed securities with different credit ratings (see Figure 1). So-called senior tranches (AAA to A) have the highest ratings. According to estimates by Fitch, a rating agency, the default probability of these tranches lies between 0.061 and 0.304 percent. Mezzanine tranches, by contrast, have a default risk between one percent (BBB) and as high as nine percent (B). The equity tranche, which is unrated, has the greatest probability of default.

Securitized instruments turned incendiary when investors, using special purpose vehicles (SPVs), pooled the higher-return mezzanine tranches into new asset-backed structures, so-called mezzanine collateralized debt obligations (mezzanine CDOs). New ratings across the entire spectrum of creditworthiness were then obtained from rating agencies for each individual CDO tranche. The super-senior tranche, with an estimated default probability of 0.061 percent, accounted for 50 to 60 percent of the total market volume (see Figure 1).¹ Currently, all tranches—including the super-senior tranche—of many real estate-backed mezzanine CDOs are considered highly speculative.

Figure 1 (here)

This process was repeated as investors resold CDOs, creating veritable chains of securitization. Losses are initially absorbed at each level by the equity tranche. While the issuer of the security should have been retained this tranche, apparently it was often possible

¹ Swiss Federal Banking Commission: "Subprime-Krise: Untersuchung der EBK zu den Ursachen der Wertberichtigungen der UBS AG." September 2008.

to unload even the most speculative portion of CDOs to risk- and return-hungry investors, such as hedge funds.²

Some purchasers of CDOs were legally independent special purpose vehicles, beyond the balance sheets of their parent banks, and which relied on short-term refinancing. The assets of the special purpose vehicle, customarily senior tranches, served as security. The long-term nature of this investment required a continuous rollover of short-term credit or securities in the money market.

2 Crisis

2.1 Collapse of real-estate prices

By the second half of 2006, housing prices in the US began to fall across the board (Figure 2). In the months that followed, credit defaults at lower credit ratings rose continuously. The crisis became acute in July 2007 when the investment bank Bear Stearns was forced to close two of its hedge funds that had invested in mezzanine CDOs. Shortly afterwards, for the first time, Standard & Poors downgraded mortgage-backed securities issued in the boom year of 2006.³ With additional losses in value, further downgrades soon followed. The devaluation of their securities cut off many special purpose vehicles from the liquidity supplied by the money market. The parent owner was then required to take on responsibility for refinancing in order to keep the special purpose vehicle from becoming insolvent. This overstrained many banks. In Germany, the first casualties were the Industrie-Kreditbank (IKB) in July 2007 and then in August, the Sachsen Landesbank. Both of these banks were compelled to appeal to their current owners and then to their home states or the national government for additional lines of credit and direct equity investment.

Figure 2 (here)

² In the United States, even pension funds invested in these extremely risky and therefore very high yield equity tranches: “The Poison in Your Pension,” by David Evans: Bloomberg Markets, July 2007, www.bloomberg.com/news/marketsmag/pensions.pdf. Cf. also Bank of England: Financial Stability Report, October 2008.

³ Brunnermeier, M.K.: Deciphering the Liquidity and Credit Crunch 2007-08. www.princeton.edu/~markus/research/papers/liquidity_credit_crunch.pdf. Rudolph, B.: “Lehren aus den Ursachen und dem Verlauf der internationalen Finanzkrise. Schmalenbachs Zeitschrift für betriebswirtschaftliche Forschung.” vol. 60, 2008, 713-741.

2.2 Rising need for liquidity and the drying up of the money market

With the ratings of many securitized products downgraded, hedge funds, which had financed their CDO investments with bank loans, short sales and repurchase agreements, were confronted by increased margin calls and demands for increased collateral from their brokers. In addition, higher redemption of hedge fund shares by investors drove up their liquidity requirements. As long as there was still a market, investments were converted to cash. In the process, however, it soon became apparent that non-standardized structured products could not be sold. As a consequence, their market value began to fall quickly towards very low values. Increasingly, fire sales of liquid assets such as stocks occurred and stocks prices began to decline (see Figures 3 and 4).

Figures 3 and 4 (here)

The liquidity requirements of banks, insecurity regarding government readiness for rescue, mounting write-offs due to an ongoing downgrading of the mortgage related securities in the banks' books, and, additionally, falling asset prices together with diminishing confidence in market participants slowly converged to bring the money market to a complete standstill.⁴ The tendency for precautionary hoarding of liquidity and the fear of default drove up risk premiums, and not merely for long-term lending.

In order to prevent the collapse of the system, central banks began to inject liquidity into commercial banks all over the world. For a moment it seemed that this might calm the markets; as 2007 came to a close, the DAX once again climbed over 8,000 points. Other indices also regained some of their previous strength. With the end of each business quarter, however, and the next upcoming expiration date of short-term financing from the money market, even stronger central bank intervention signaled the ongoing need for liquidity in the banking sector. As a result of the bankruptcy sale of the collapsed investment bank Bear Stearns to JP Morgan on 16 March 2008, the risk premium for long-term loans began to rise again, although crisis-intensifying systemic consequences failed to materialize. The persistent

⁴ Claims are securitized in the bank's trading book and have to be balanced against market value according to International Financial Reporting Standards (IFRS). Appreciation and depreciation in value must be entered as profit and loss, respectively. Claims in the banking book can be settled against the purchase price. In order to limit the requirement for write-offs, the EU Parliament recently allowed banks to shift securitized instruments onto their banking books, www.iasb.org.

demand for liquidity spread around the world, and had a sustained negative impact on stock markets. Naturally, bank stocks were especially caught in the downwards spiral (see Figure 5).

Figure 5 (here)

2.3 A new dimension

On 7 September 2008 the US government nationalized Fanny Mae and Freddie Mac because of acute liquidity problems. The business model of these two listed wholesale banks with implied government guarantees consisted of purchasing mortgages and refinancing them by issuing structured commercial paper.⁵ Their placing into government receivership catapulted the crisis into a new dimension. Investment banks saw themselves exposed to a torrent of liquidity outflow. Speculative short selling put their stock values under pressure.⁶ These combined forces first brought the investment bank Lehman Brothers to its knees. The US government refused to stage a rescue of Lehman and its primarily foreign creditors, forcing Lehman to file for bankruptcy protection. On September 15 Lehman had to file under chapter 11 of the US bankruptcy code.

Lehman's failure signaled to banks all over the world that their fear of losses in the money lending market was all too justified. As a result, short-term lending between banks quickly ground to a halt. The central banks—traditionally, the lenders of last resort—now partially became lenders of first resort.⁷ The range of securities eligible as collateral for loans from central banks was widely expanded. Despite all these measures, lasting stability was not achieved. Commercial bank deposits at the European Central Bank (ECB) rose explosively after the Lehman bankruptcy, despite a negative interest differential (Figure 6). As banks had been used to work on the basis of just-in-time liquidity the threat of suffering severely from liquidity shocks was self-evident. Therefore they valued insurance against these shocks via central bank money higher than the costs of using these funds. The functioning of the system

⁵ US banks own or back five trillion dollars in mortgages. This is equal to somewhat less than half of the domestic real estate credit volume of twelve trillion dollars.

⁶ The seller offers to sell a stock at a particular time without owning it and deposits funds as security with the originating bank. Short selling is profitable when the market *falls* and the paper can be bought back at a lower price at term.

⁷ This especially affected wholesale banks. They have no funds from savings or demand deposits at their disposal. This type of bank serves as an intermediary for corporate clients, for example, banks and retail markets.

now depended above all on the availability of securities to banks that could be used as collateral against central-bank credit.

Figure 6 (here)

3 Government rescue measures

Declining confidence forced governments to announce large-scale rescue operations. On October 3, the US Congress passed a 700 billion dollar rescue plan. Ireland was the first European nation to deploy a rescue parachute for its domestic banks. On October 5, the German government announced a guarantee for all savings deposits. Then, just two weeks later, on October 17, the German government adopted a rescue package of nearly 500 billion euros for the banking sector, consisting of guarantees, equity participation, and the purchase of illiquid commercial paper. Meanwhile, the British government began the compulsory nationalization of its most important domestic banks.⁸

Further national rescue plans followed. The implementation was initially reluctant, however, and without international consultation process. Only the negative externalities of unilateral actions forced eventually coordinated operations. The European Union agreed both internally and with US officials to engage in coordinated crisis management. While the money market is still frozen to some extent, the flight from risky assets, and in particular from risky investment vehicles continues. In the third and the fourth quarter of 2008, hedge funds underwent in each quarter a historic decline in the volume of assets under management. Single Hedge Funds and Funds of Funds lost together 635 billion dollars in Q3 and 895 billion dollars in Q4 (Figure 7).⁹

Figure 7 (here)

⁸ Of the eight institutions originally targeted, however, only HBOS, Lloyds TSB and RBS (Royal Bank of Scotland) have accepted capital injections, which are also associated with specific requirements. Northern Rock and Bradford & Bingley have been nationalized.

⁹ According to hedgefund.net, this was the largest drop-off in the history of the hedge fund industry for each period. Asset Flow Report – Q3 and Q4 2008. These figures include double counting as Funds of Funds are investors in Single Hedge Funds. However, there is justification for referring to the gross reduction in assets under management as it accounts for the actual loss of business that the Hedge Fund industry suffers from. The respective figures for Single Hedge Funds are 421 billion Dollar in Q3 and 584 billion dollars in Q4. Total volume of assets decreased 32.2 percent in 2008. www.hedgefund.net/marketing_index.cfm?template=research/researchfront.cfm and <http://www.hedgefund.net/publicnews/default.aspx?story=9809>.

4 Principles for rebuilding the financial market architecture

The reliance on taxpayer bailouts in this crisis is fraught with multiple disincentives and risks. As a result, it is only acceptable, at best, over the short term. Lasting stabilization of the banking and financial sectors can only be achieved by means of a reorganization of regulations and, ultimately, of the architecture of financial markets. New regulatory structures should aim at resolving today's problems without engendering a new set of similar difficulties. In the follow section, principles for the reorganization of financial markets are presented in the form of an agenda. The latest findings in economic behavioral research as well as consultations with market participants have been drawn upon in the formulation of these recommendations.

We suggest concrete actions to achieve the final aim expressed in each agenda item. However, in building the new financial architecture it should be secondary, which single proposal will be implemented as long as the final aim is achieved. Can two different measures do the job of reaching the target, should the legislature be indifferent between the two. In addition, intermediary steps should not be treated as the ultimate aim. For example, the often expressed call for more transparency in financial markets can not be an end in itself, but merely a means to achieve an overarching goal, such as the avoidance of failure to achieve coordination.

4.1 Agenda Item 1: Minimizing coordination failures

Coordination failures, that is, the inability of actors to align their actions to the needs of all market participants, results in suboptimal equilibria.¹⁰ An uncoordinated pullout of investors, for example, can drive an essentially sound enterprise into bankruptcy.¹¹ In the current crisis, inadequate coordination has been a central problem, both at the private and government level.

¹⁰ Morris and Shin identify the uncoordinated withdrawal of foreign investors as the cause of the Asian financial crisis of 1997. Morris, S, Shin, H.: Unique Equilibrium in a Model of Self-Fulfilling Currency Attacks. *American Economic Review*, 88(3), 1998, 587-597.

¹¹ Hubert, F., Schafer, D.: Coordination Failure with Multiple Lending. *Journal of Institutional and Theoretical Economics* 158(2), 2002, 256 ff.

Prevailing practices in securitization are a nearly inexhaustible source of coordination failures.¹² Multiple layers of stratification and inadequate documentation complicate the identification of debtors, the volume of debt, and collateral. In this way, efforts to reduce defaults of distressed borrowers through the formation of creditor pools and through debt restructuring are doomed to failure.¹³ Both parties, the debtor on mortgage in the USA and the bank that eventually holds the security that is over several intermediate stages connected with the individual mortgage are unable to initiate a debt workout. The addressee for a possible renegotiation of contract terms is neither identifiable nor accessible.

The behavior of investors additionally complicates the picture. The mismatching of maturities in investment and financing multiply the probability of a liquidity crisis at maturity and, thus, an uncoordinated investor flight.

In the run-up to the current crisis, a deregulatory “race to the bottom” had been underway for many years. The US and UK in particular resisted coordination and instead relied upon lower standards of regulation to enlarge competitive advantages. With the passage of the first rescue package after the collapse of Lehman Brothers, there was also an international scramble for the best possible exit positions. The UK, for example, had to contend with a massive outflow of deposits after the Irish government hastily announced a guarantee for its domestic banks. Because of the precipitant Irish move, other EU states also felt compelled to increase the level of their own guarantees.¹⁴

Minimizing coordination failures in the private sector requires a reduction in the complexity of securitization instruments and sanctions for mismatched maturities. Vertical retention quotas at each level of securitization can achieve the first aim.¹⁵ Capital requirements based on the magnitude of the divergence between investment and financing horizons can achieve the second. Vertical retention quotas simplify the identification of principal debtors and—analogueous to bank reserve requirements—limit the number of levels and, in each case, the

¹² A damage claim brought against Deutsche Bank illustrates the increased problems of coordination caused by securitization. The extension of 640 million dollars in financing borrowed by Donald Trump fell through. Trump has charged Deutsche Bank with selling pieces of the loan to too many investors. – Cf. *Donald Trump verklagt Deutsche Bank*. www.handelsblatt.com/unternehmen/banken-versicherungen/donald-trump-verklagt-deutsche-bank;2083309.

¹³ Creditor pools are traditionally an instrument designed to prevent coordination failures and a stampede of creditors. Cf. Brunner, A., Krahen, J. P.: Multiple Lenders and Corporate Distress: Evidence on Debt Restructuring. *Review of Economic Studies*, vol. 75(2), 2008, 415-442.

¹⁴ Cf in addition Zimmermann, K. F.: Coordinating International Responses to the Crisis. DIW Berlin’s Weekly Report, Number 42/2008, Documentation.

¹⁵ The “first loss piece” is a horizontal retention. Vertical retention applies to each tranche and defines a portion of the tranche and of the whole portfolio that should be kept by the originator of the portfolio.

amounts available for securitization. For example, a 20% retention quota for the first creditor and 40% for downstream purchasers would permit a maximum of only two levels. The securitization volume available in the last level shrinks to 40% of the original amount of credit.

The response to coordination failure at the government level must be the creation of a governing board to establish binding trans-national minimum regulatory standards. Similarly, an organization in a position to coordinate international measures in the midst of a crisis should be a fundamental element of a new architecture. While the establishment of standards is a somewhat natural function of the Financial Stability Forum,¹⁶ the IMF could help this organization to attain new significance and authority.

National oversight boards are unable to effectively monitor financial conglomerates active on a global scale. Only a unified system will be able to detect and sanction activities that are off balance sheets and regulatory arbitrage that overlaps national borders and sectors. Meanwhile, in Europe, the oversight agencies are splintered and powerless.¹⁷ In terms of regulatory oversight, the prevention of coordination failures requires a trans-national mandate. This can only be achieved through the creation of a European financial market oversight system.

4.2 Agenda Item 2: Forcing Subsidiarity

In opposition to the vision of European-wide financial market oversight, it is often argued that such a structure could never be reconciled with unique national requirements in individual financial sectors. The European Central Bank and its affiliated national central banks demonstrate, however, that a decentralized division of labor under a common roof can be functional. The regulation of the regional banks can be delegated to national organs, with an overarching European oversight board assigned responsibility for monitoring supranational financial market participants as well as national regulatory authorities. With the implementation of a two-tiered financial oversight system, one could hope for a much stronger

¹⁷ German Council of Experts 2008, Annual Report 2009/9: “Mastering the Financial Crisis – Strengthening the Forces for Growth.” Working at the European level unconnected with each other are: the CESR, Committee of European Security Regulators, the CEBS, Committee of European Banking Supervisors, and CEIOPS, Committee of European Insurance and Occupation Pensions Supervisors.

impetus in the direction of coordinated regulation and oversight in Europe than from the Lamfalussy Process currently in effect.¹⁸

4.3 Agenda Item 3: Putting the right incentives in place

The intrinsic roots of the crisis are to be found in the lack of controls for ubiquitous “moral hazards” in the financial sector. Immediate payment of fees, handoff of credit default risks, and lack of transparency in structured products have created a major incentive to drastically lower standards for credit approval at the expense of investors at the end of the securitization chain. Mandatory requirements for issuers to bear a portion of default risk by means of retention quotas would contribute to eliminating this incentive.

Cheap outside capital led banks to use extreme leverage. This resulted in a risk loving behavior in investment firms, and a large exposure of equity to default risk. With a high reliance on outside capital, a firm’s equity is quickly wiped out when its investment return is lower than the cost of servicing its debts. The establishment of a fund that would balance bonuses for bank managers during profitable years with losses during unprofitable years and pay out the net bonus after no less than three to five years would likely exert a dampening effect on the incentive to use excessive leverage. More transparency and better corporate governance would also be provided if regulators had knowledge of the bonus systems in place for bank managers and shareholders had to approve compensation packages at their annual meetings.

The estimation of default risk provided by rating agencies is essential for the functioning of structured products. Agencies systematically overrated the value of structured portfolios. Flawed risk assessment models and compensation systems are responsible for this. Payment for rating and consultation services by the issuers of structured products also creates

¹⁸ www.bundesbank.de/bankenaufsicht_cebs_lamfalussy.php

incentives for collusion.¹⁹ It is known that many agencies kept adjusting their ratings until the tranche ratings given meet the wishes of the issuers.²⁰

Incentives for collusion could be significantly attenuated by tying the compensation received by credit agencies to the accuracy of their predictions, the introduction of a registration requirement, and by requiring the disclosure of forecasts made by the rating agencies. The major loss in credibility suffered by credit rating agencies still leaves doubt, however, as to whether a sole reliance on private companies to issue credit ratings will be sufficient to quickly restore lost confidence.

4.4 Agenda Item 4: Using the credibility of governments to rate debt

Only government entities currently possess sufficient credibility to stabilize the banking system. With the creation of a non-profit rating agency at the European level, this credibility could be put to good use for a transitional period of several years. Issuers of structured products sold in Europe would be required to contract such a public agency for one of two necessary ratings.²¹ More competition to provide the best ratings would result. The fundamentals for constructing a public rating agency are already in place in the euro zone. Under the roof of the ECB, the national central banks already operate credit-rating departments.

4.5 Agenda Item 5: Don't place excessive demands on the government

The realization that in the face of huge systemic uncertainty only national economies acting as a whole can guarantee sufficient certainty also entails the risk of “overshooting the mark” in redefining the role of the government in the financial sector. Germany is a good example of the fact that government as proprietor of financial organizations can be confronted with

¹⁹ Tirole, J.: Collusion and the Theory of Organizations. In: Laffont, J. J (ed.). *Advances in Economic Theory: Proceedings of the Sixth World Congress of the Econometric Society* Vol 2. Cambridge 1992, 151-20.

²⁰ Cf also United States Security and Exchange Commission: Summary Report of Issues Identified in the Commission Staff's Examinations of Select Credit Rating Agencies. www.sec.gov/news/studies/2008/craexamination070808.pdf.

²¹ The US stock market oversight agency, the SEC, only accepts Standard & Poors, Moody's and Fitch. These three agencies have a quasi-monopoly with respect to CDOs.

massive problems of governance. This is evident from the business policies of many state-owned banks at the level of the federal states (*Landesbanken*). The dominant business model of these banks—which is supported by, and sometimes even initiated by the government actors—to operate as a primarily international, wholesale bank has proved to be unsustainable. Strengthening the role of the government as regulator and supervisor is appropriate. It would be inappropriate, however, to additionally burden the government with direct operating responsibility for the banking sector.

4.6 Agenda Item 6: Preventing misuse of government responsibility

The government-sponsored enterprises Fannie Mae and Freddie Mac were profit-oriented mortgage finance companies with implicit government guarantees. Government backing of this nature defeats any incentive for due diligence in the selection of investment projects and business partners; in addition, private insurance against default makes no sense in the face of an implicit (and thus free) government guarantee. Government backing serves instead as a huge incentive to pursue a high-risk business model. This risk-loving behavior is not penalized on the refinancing market by appropriate risk surcharges. As a result, it can be assumed that a high-risk but government insured model will “crowd out” risk-appropriate private business models. Should one wish to exclude “charity hazards” from the finance sector in the future,²² there must no longer be any private financial service providers with government guarantees when the crisis has been eventually overcome.

4.7 Agenda Item 7: Accounting for non-renegotiation-proof contracts

A contractual design is said to be renegotiation-proof if it is robust against renegotiation both before and after it is executed.²³ If it is not renegotiation-proof, the goal of the contract cannot be obtained.²⁴ The removal of risk from bank balance sheets through outsourcing to legally independent special purpose vehicles or to hedge funds must be seen as a contract that lacks

²² The concept of a “charity hazard” is typically used in connection with the effects of implicit government guarantees for flood victims. It describes their unwillingness to obtain private insurance for their endangered property at the water’s edge.

²³ Bolton, P. (1990) “Renegotiation and the Dynamics of Contract Design,” *European Economic Review* 34, 303-310.

²⁴ Schäfer, D.: “*Hausbankbeziehung und optimale Finanzkontrakte.*” *Wirtschaftswissenschaftliche Beiträge*, Volume 190, 2003.

renegotiation-proof. For if default risks materialize, as has occurred in the current crisis, the issuing banks are regularly forced to reassume onto their own balance sheets the risks that they had putatively handed off. Similar uncertainties regarding the removal of risk are also associated with credit default insurance, especially if the independence of the rating agencies from the issuer is questionable. If losses occur with greater than expected frequency, smooth loss adjustment on the part of the insurance provider is unlikely. Due to the latent potential of risks returning to bank balance sheets, regulatory authorities in the future must handle them as though they had never been swapped out. This presupposes registration and authorization of special purpose vehicles by oversight entities, as well as transparency regarding the management of portfolio risks.

4.8 Agenda item 8: Avoid excessively broad regulation

Despite the many sides to the problems faced by the financial sector, the desire to enact blunt and wide-sweeping regulations must be resisted. International financial conglomerates need a different oversight framework than regionally active mid-sized banks. National development banks need to be regulated differently than private commercial banks. The implementation of adequate and specific regulations for hedge funds and private equity funds is particularly important. The problem of a single unified system to regulate both of these financial intermediaries can be demonstrated by considering rules surrounding capital requirements. While hedge funds are indebted at the fund level, takeovers by private equity firms are usually based upon a construction in which the share of loan financing in the purchase price is carried forward directly to the acquired company.²⁵ Fixing a standard for capital requirements would achieve its intended goal for hedge funds by limiting leveraged financing, but in the case of private equity firms, this would lead to undesired restrictive capital equity requirements for companies outside the financial sector.

4.9 Agenda item 9: A greater emphasis on equity financing

The crisis began with the lowering of standards for credit approval and the abolition of any kind of financial constraints for many parties, in particular US private households. The

²⁵ Schäfer, D., Fisher, A.: “*Fear of Financial Investors unjustified.*” Weekly Report, 7/2008, S. 42-48. http://www.diw.de/deutsch/produkte/publikationen/weekly_report/jahrgang_2008/78027.html

enormity of the crisis is due in turn to the widely spread practice of heavy leveraging. Lasting stabilization of the system is unthinkable without the return of more equity based financing to private economic units, whether they be highly indebted households, or businesses, or financial intermediaries. Furthermore, politicians and the general public need to interpret financing restrictions for individuals and firms based upon poor creditworthiness as protective of the system, and not as a damaging form of credit restraint.

5 Crisis management and financial markets' architecture

Policy makers might be tempted to deal with issues of crisis management and financial architecture separately. A temporal shift of the work on a reshaping of the financial architecture for the sake of a more intensive dealing with the huge amounts of toxic assets in the books of the banks seems to be a plausible strategy. However, past crises such as the Nordic banking crisis at the beginning of the 90s and Asian crisis in 1997 have inter alia shown that the willingness of the actors in the financial sector to accept fundamental changes in regulation decreases to the extent as the crisis management works. Presumably, confidence in the financial sector only returns in a sustainable way when policy makers have started credible and visible actions for a reshaping of the financial market architecture and have therefore signaled their commitment to avoiding similar future crises.²⁶ The urgent need for regaining confidence in the working of financial markets calls for a synchronization of both crisis management and actions to build the new regulatory framework.

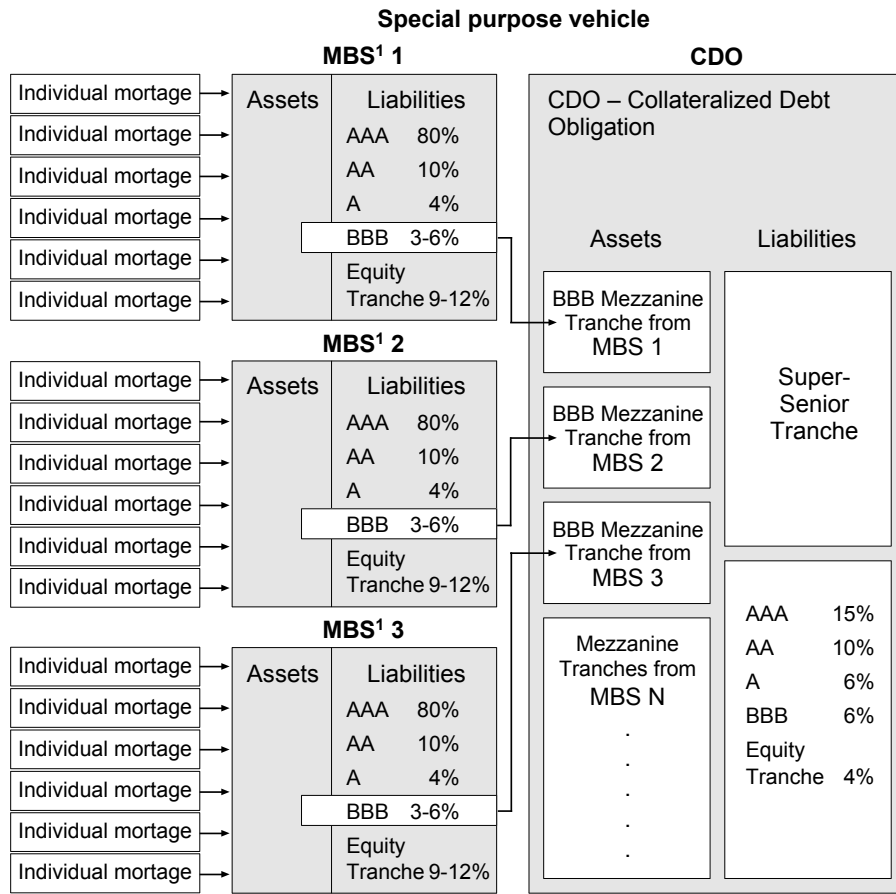
6 Conclusion

Since the summer of 2007, participants in the financial markets have found themselves in a situation of undeterminable risk in making decisions (so-called Knightian uncertainty), and therefore in a regulative dilemma. The basic axiom that bad business practice leads to insolvency must stand aside in favor of the goal of preventing the fall of a bank at any cost. If

²⁶ Cf. Zimmermann, K.F. (2008), *Coordinating international responses to the crisis*, in Eichengreen, B. and Baldwin, R. (Eds.), *Rescuing our jobs and savings: What G7/8 leaders can do to solve the global credit crisis*, documented in Schäfer D. (Ed.), *Finanzmärkte im Umbruch : Krise und Neugestaltung Vierteljahrshefte zur Wirtschaftsforschung (Quarterly Journal of Economic Research)*, 1-2009.

this reversal of principles is ignored, and—for reasons justified from a regulatory perspective—the rescue of a system-relevant bank like Lehmann Brothers is denied, then the consequences for system stability are often devastating. In order to achieve the goal of lasting restoration of system stability, over the next few months the architecture of financial markets must be redesigned. There are numerous possible wrong turns in this process. Many might be avoided if the principles presented here are taken into account, beginning with the principle of minimizing sources of coordination failures, continuing with a redefinition of the government’s role, and finally, with the placement of a greater emphasis on equity financing.

Figure 1
From Mortgage-Backed Securities (MBSs) to Mezzanine Collateralized Debt Obligations (CDOs)



1 MBS = Mortgage-backed securities.

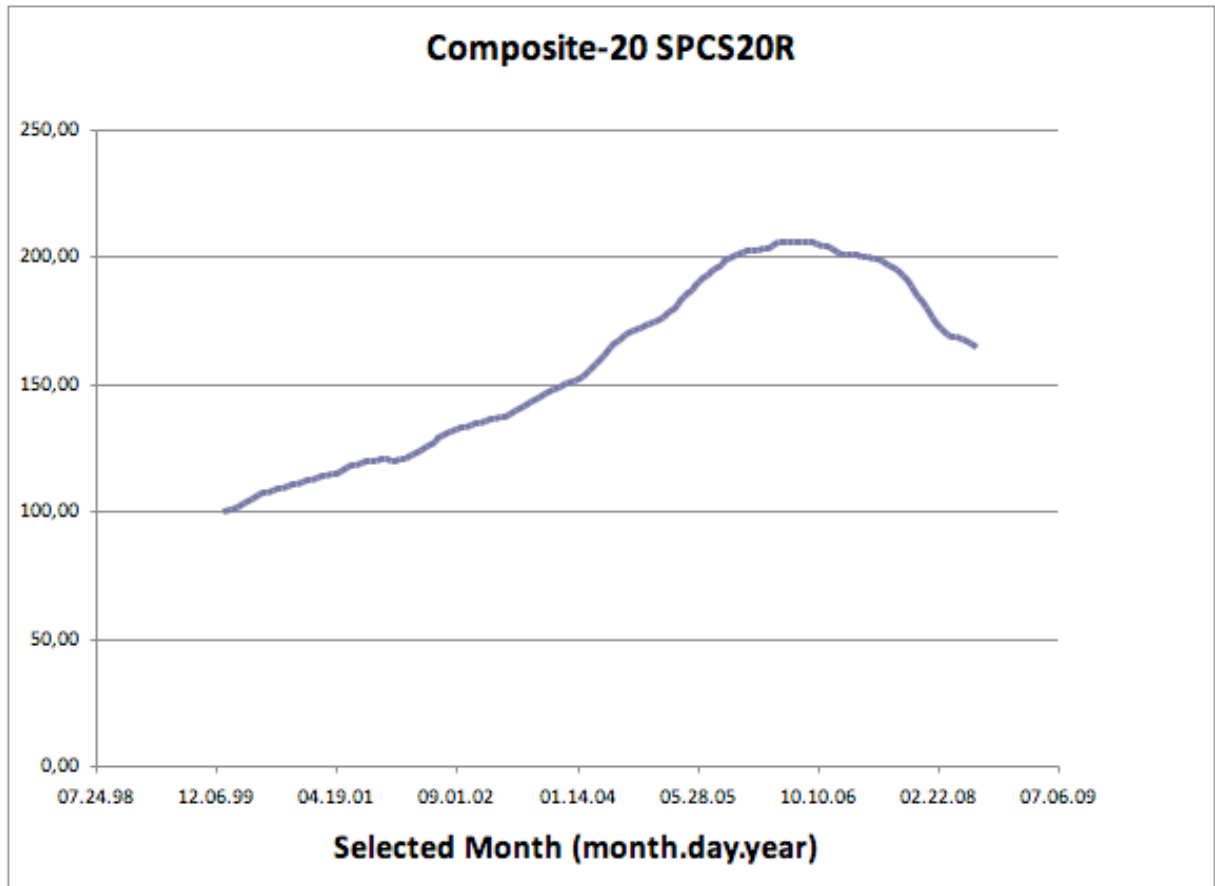
Sources: Figure by DIW Berlin; Data from the Swiss Federal Banking Commission.

DIW Berlin 2008

Figure 2

Case-Schiller Home Price Index for 20 US Metropolitan Areas—Composite-2 SPCS2OR

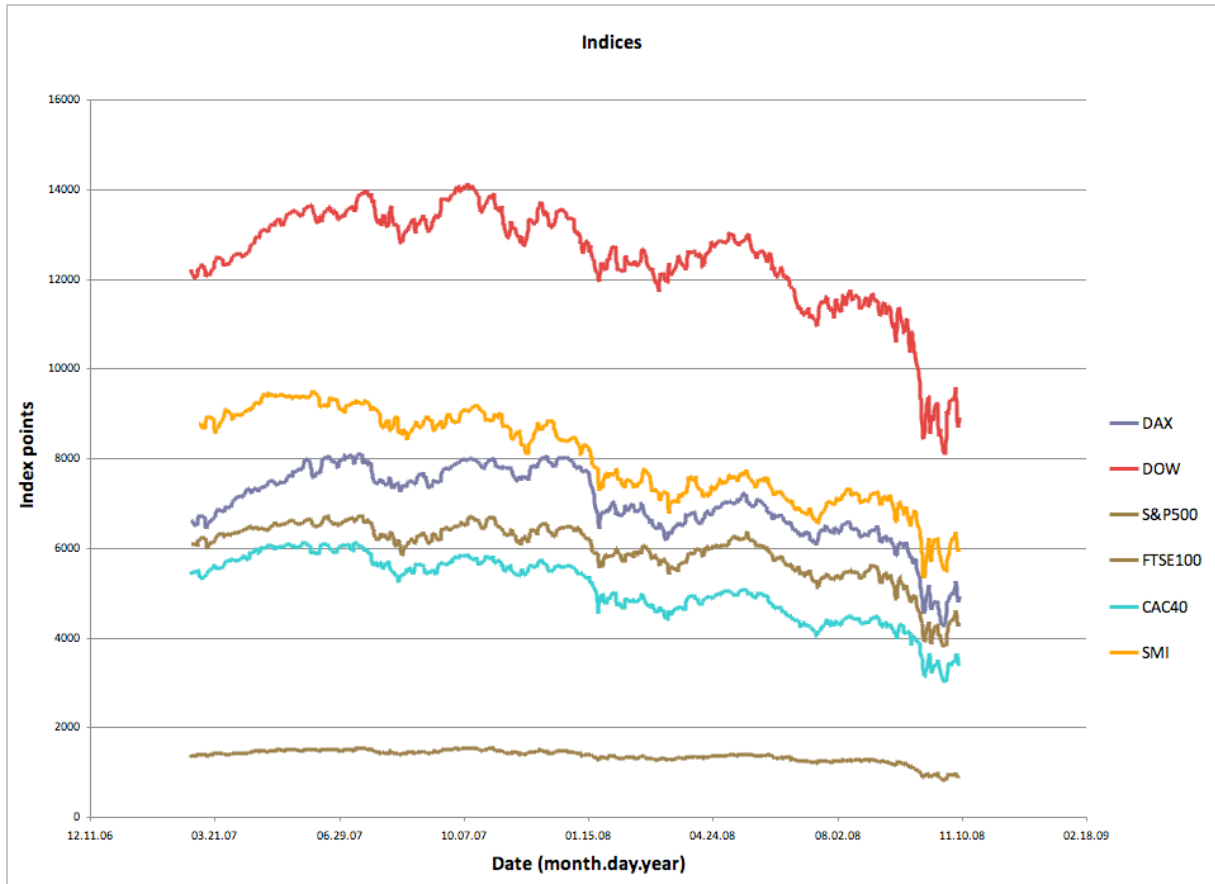
Index 2000=100



Source: Standard & Poor's/Case-Schiller Home Price Indices

Figure 3

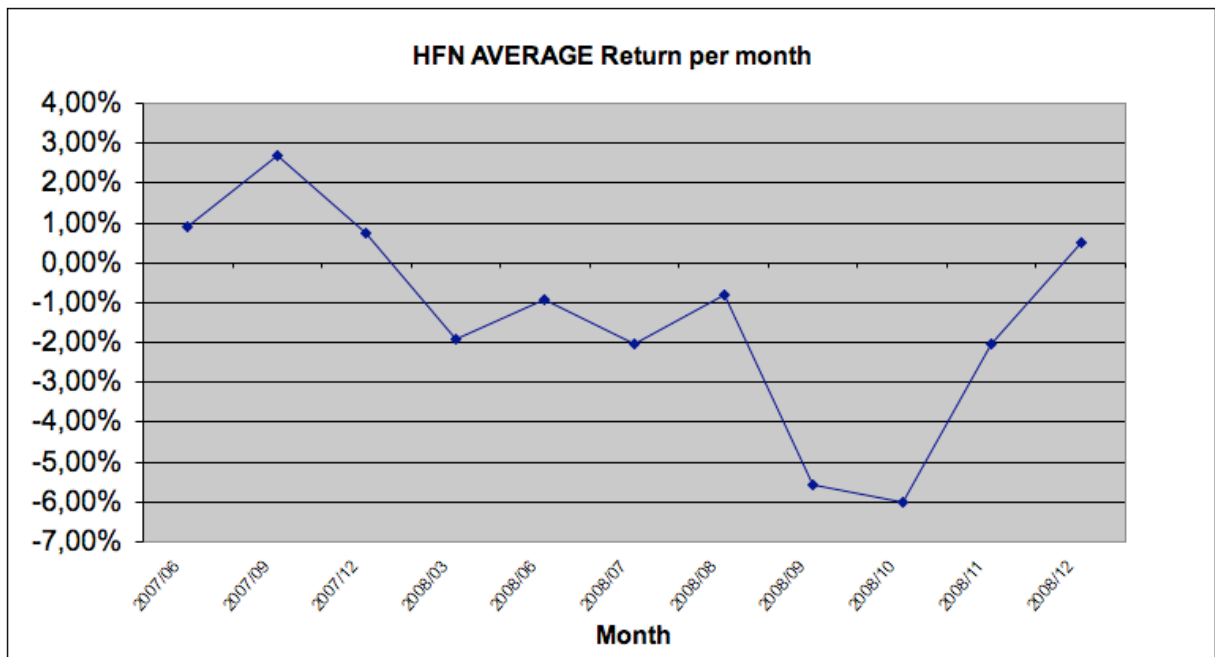
Important Stock Index Trends



Source: Yahoo Finance, <http://de.finance.yahoo.com/>

Own calculations

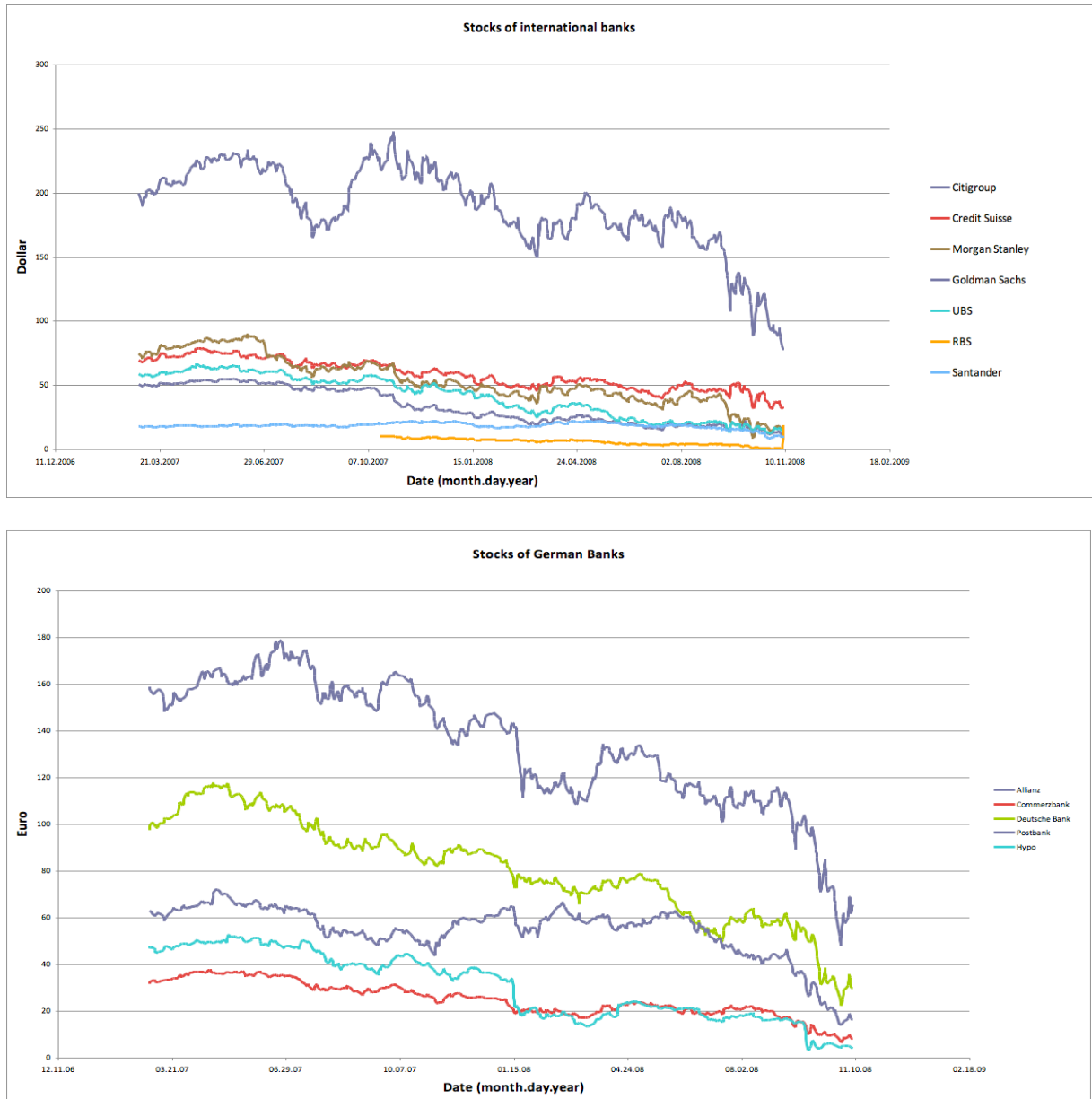
Figure 4



Source: Hedgefund.net

Figure 5

Trends in stock prices of international and German banks

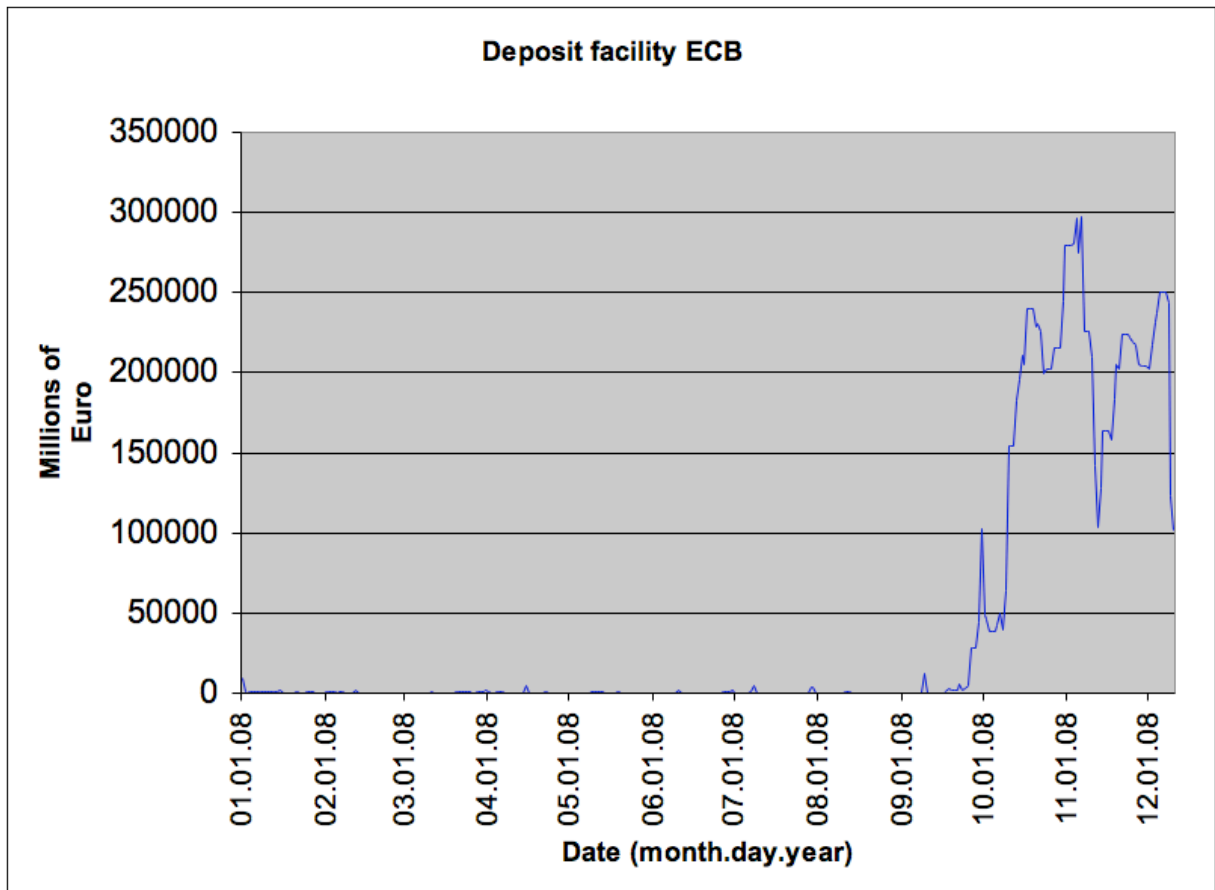


Source: Yahoo Finance, <http://finance.yahoo.com/>

Own calculations

Figure 6

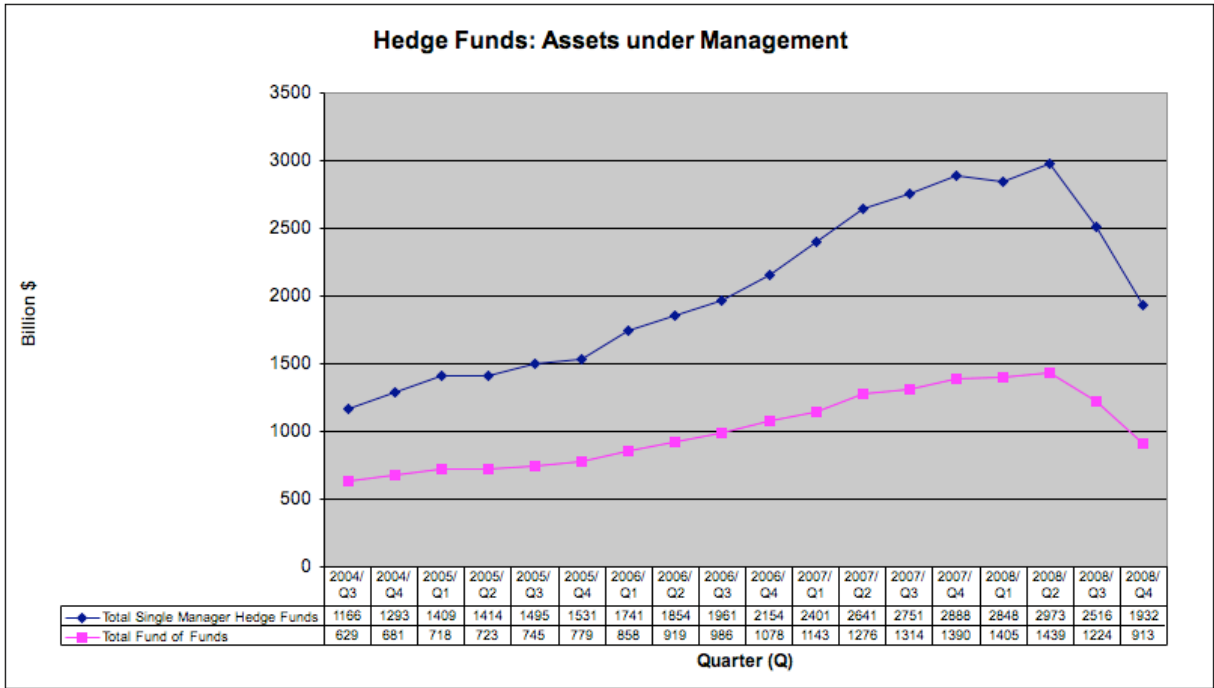
Deposits with the European Central Bank (ECB)



Source: European Central Bank (ECB)

Figure 7

Hedge Funds Assets under Management in Billion US-Dollar



Source: Hedgefund.net