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What institutional innovations are necessary for the U.S. and Germany to overcome the economic crisis?

How must the banking systems be reformed?

The International Banking Crisis and Institutional Reforms: German and Transatlantic Economic Perspectives

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SUMMARY

The international banking crisis has seriously affected Germany and the United States in many ways. Confidence in the market economy is shrinking in Germany, whose position as a leading net exporter of goods and services has made it quite vulnerable to the global recession. The German banking system faces a serious crisis and protectionism in Germany, as well as in the European Union (EU), is rising. The traditional consensus on framework policies (*Ordnungspolitik*) has been shaken in Germany and there is considerable confusion about how to cope with the transatlantic banking crisis and fall-out in the real economy—including the conflict over General Motors (GM) and its German subsidiary Opel.

To overcome the banking crisis there is a need to come up with five new institutional innovations which have not yet been discussed in the international arena/G20. If financial globalization should continue without adequate new national and international rules, then a long term decline of output growth, a declining legitimacy of the market economy, and a rising role of China's system in Asia are all likely outcomes. Improving the transatlantic policy dialogue—particularly between Germany and the United States—is a crucial challenge for overcoming the systemic crisis and the global recession. This analysis points out the fragility as well as the economic dynamics in Germany and the euro-zone and suggests new policy options for ending the chaos and inefficiencies in the banking systems. Institutions failed to work properly in the United States and Germany/the EU in the decade after 1995 and this has contributed to the international banking crisis; indeed, financial globalization has developed without an adequate institutional framework. The key dynamics of the transatlantic banking crisis are analyzed—with emphasis placed on the fact that the banking disaster of 2007/08 was not really a surprise—and the five key requirements for restoring stability and efficiency in the EU and the Organization for Economic Co-Operation and Development (OECD) banking sectors are highlighted: (1) Hedge funds should be regulated and be required to register with the Bank of International Settlements (BIS), which should have the right to tighten equity capital requirements if deemed necessary; (2) The quality and comprehensiveness of banks' balance sheets must be radically improved and all off-balance sheet activities must be included in future total balance sheets (TBS); (3) Securitization is a useful financial innovation, yet asset backed securities (ABS) should become more standardized and every bank selling ABS should declare its willingness to buy back this package at any point in time at a minimum of 50 percent of the initial transaction price; (4) All credit default swaps (CDS) must be registered in a global database, and future transactions should go through a clearinghouse. Previous CDS transactions must also be recorded, since a critical veil of ignorance of counterparty risk would otherwise continue and hence the uncertainty about the valuation of large portfolio positions of banks, funds, and insurance companies would continue; (5) Financing of ratings should be indirect, namely every country or company planning to place bonds in the market should pay fees into a pool, and this pool would then finance the respective rating on a competitive basis. This two-stage approach for financing ratings would most likely eliminate the existing conflicts of interest in the present regime.

Most important, however, is the introduction of a new tax regime designed to encourage bankers to have a long term time horizon in decision-making and to reduce excessive risk-taking. Banks and funds should be taxed not only on the basis of profits but also on the

basis of the variability—read: variance—of the rate of return on equity: the higher the variability over time the higher the tax to be paid. Without a consistent framework for financial globalization there will be no sustainable globalization process. The world economy is facing a serious global recession which is part of the negative external effects of inadequate U.S. prudential supervision; in the United States the role of hedge funds as drivers of excessive target rates for the rate of return on equity of big banks has not really been recognized in the political debate under President George W. Bush. In Germany and many other EU countries there is insufficient resolve to adopt an expansionary fiscal policy and combine such measures with adequate structural reforms for the banking sector. Lack of transparency in the U.S. banking sector is a well-established problem and could be overcome if the International Monetary Fund (IMF) Financial Sector Assessment Program is applied to the United States (probably in late 2009 for the first time, lagging far behind Europe).

INTRODUCTION

Economic institutions are quite important for a smooth and efficient economic system: Institutions (and rules) reduce transaction costs and thus help avoid large differences occurring between producers' net prices and gross prices (net price plus transaction costs) paid by consumers or investors. The smaller the transaction costs are, the higher the quantity produced in equilibrium. Credible institutions will reduce investor risk and hence reduce the cost of investment so that the aggregate investment output ratio will be higher than it would be otherwise; if we translate this idea into a standard neoclassical growth model it means that the higher the level of the growth path, the higher the underlying credibility of institutions is. Moreover, institutions facilitate the formation of expectations—again, investment in physical capital and human capital will be stimulated by institutions. The transatlantic banking crisis raises the issue of designing efficient economic institutions for the national and international economy; it seems that key institutions of prudential oversights are flawed in the United States and Europe and that there is a lack of political understanding as to why institutions matter for the time horizon of decision-makers and the propensity of risk-taking in the banking sector.

The role of rules and institutions has been emphasized by many economists in Europe and the United States:

- In Europe, several economists, including Röpke, Rüstow, von Mises, von Hayek, Böhm, Eucken, and Müller-Armack have strongly emphasized the role of institutions; here German and Austrian economists have been rather influential when it comes to strengthening the idea of competition (many British and Dutch economists also have been defenders of competition and free trade).
- In the United States such economists as Buchanan, Tullock (they emphasized constitutional arrangements as the basics of institutional set ups in modern economies), Olson, and Milton Friedman have put a strong focus on institutions and the role of competition.

In the following analysis it will be argued that financial globalization has progressed without reasonable institutions and that few lessons were drawn from previous instabilities and financial market crises such as the Mexican crisis in the 1980s and the Asian crisis in 1997/98.

Interestingly, the United States has not had a broader debate about a new financial architecture in the 1990s, when repeating the Washington consensus (meaning the traditional joint policy approach of the U.S. government and the IMF in the field of financial market liberalization) was not a convincing or an effective approach;[1] neither Germany nor its major EU partners are strong actors in shaping rules for financial globalization. A book on fifty years of Germany's social market economy edited by Dieter Cassel had one contribution on economic globalization where the authors remarked: "Owing largely to financial innovations, volatile international financial markets are increasingly escaping international prudential supervision."[2]

This statement, which referred to the 1997 annual report of the European Monetary Institute and the 1996 annual report of the Bank of International Settlements, shows that there was considerable concern about ineffective international financial market supervision at that time. While framework policies (Ordnungspolitik) had played a considerable role in Germany's economic policy at home, in the international arena it was hardly considered to be of real importance. The German government trusted that the United States would shape and lead the IMF and the General Agreement on Tariffs

and Trade (GATT) (World Trade Organization (WTO) after 1995). As long as the Cold War lasted there was strong political discipline among OECD countries, but after the demise of the Soviet Union in 1991 political divergence and indeed institutional indifference emerged in the United States and western Europe; globalization went along with an American-style laissez faire approach, not least of all because the British deregulation by Margaret Thatcher in the 1980s allowed London to renew its position as the global financial center; this applied adjustment pressure on New York to adopt more liberal rules for the financial sector, too. A minimum capital requirement rule—a required core capital of 8 percent, known as the Basel I Accord—was established in 1988 under the auspices of the Bank of International Settlements in Basel. The Bank of International Settlements had previously reacted to the 1974 bankruptcy of the Herstatt Bank in Germany. Herstatt Bank's open (unhedged) positions in the foreign exchange market imposed massive losses on the bank and ultimately led to the bank's collapse; following the Herstatt bankruptcy, the Basel Committee on Prudential Supervision was created. Through national legislation, Germany's banks were thereafter obliged to radically reduce their open positions on a day-by-day basis. Basel II (capital of banks on the basis of risk-weighted bank portfolio) was effectively adopted and implemented by the EU and its member countries in 2008, but the United States did not adopt the new rule book as quickly.

The German economists Walter Eucken and Franz Böhm are the founding fathers of the so-called ordo-liberalism which argued against laissez faire and suggested that a strong government should implement not only private property rights but also create a sustained legal framework for competition. Eucken emphasized the priority of the monetary order and argued that perfect competition would be the ideal regime for competition policy; while some elements of the school of ordo-liberalism were implemented by the Adenauer government—with the pro-liberalization economist Ludwig Erhard as the first Minister of Economic Affairs—the approach of workable competition was adopted in 1967.[3] This is also the year in which the Law on Stability and Growth was adopted under the first grand coalition of the Federal Republic of Germany. Müller-Armack, an influential economist working in the West German Ministry of Economic Affairs, coined the term "social market economy" which implied the combination of the dynamics of the market with some redistribution measures by the government. Eucken argued that anomalies of the labor market and the labor market supply curve would justify some government intervention in the labor market, but he firmly believed that in markets for goods and services, the principle of full competition in transparent markets should be adopted.

The German economy achieved high growth rates until the first recession in 1966/67—in 1967 there was a short-term dip of real output and then a new economic expansion followed. Serious problems came with the effective collapse of the Bretton Woods System in 1973, which led to unstable exchange rates in the EU—whose economic dynamics and regional trade expansion had benefited from a stable dollar exchange rate that indirectly brought exchange rate stability for the member countries of the EU. The creation of the European Economic Community (EEC) in 1957 and implementation of a customs union by 1968 would hardly have been possible if there had not been a system of fixed exchange rates at that time. Ludwig Erhard had not only lobbied for competition policy—the respective law was adopted only in 1957—but also for free trade in the EU. It was only in 1979 that the German chancellor Helmut Schmidt and the French president Valéry Giscard d'Estaing, with their EU colleagues, achieved an EU system of exchange rate stability which effectively made the Deutsche Mark (DM) the anchor currency in western Europe and the Deutsche Bundesbank the king of the new regional monetary system. The Deutsche Bundesbank later became the blueprint for the European Central Bank (ECB) which has shaped monetary policy since the start of the euro-zone in 1999.

Regulations in the EU have two key elements:

- At the supranational level, the Basel II rules, adopted in an EU directive, apply to all banks.
- In the EU, national policymakers have competences for regulating financial markets. There is the principle of home country supervision, namely that the prudential supervisor of the country's headquarter bank is also responsible for affiliates in other EU countries; only subsidiaries established abroad are subject to host country supervision in the EU.

As regards the setup of prudential supervision there exist a bewildering variety of institutional arrangements in EU countries, where some countries have allocated all competences to the central

bank (e.g., the Netherlands) while some countries have not given the central bank any role; several countries have a mixed system in which both the central bank and a special supervisory institution cooperate, as in Germany where the national regulator *Bundesanstalt für Finanzdienstleistungsaufsicht* (Federal Financial Supervisory Authority, BaFin) is mainly responsible for supervision while the Deutsche Bundesbank is involved only in a modest complementary function.

The international banking crisis has created new potential for conflict as well as new areas of enhanced cooperation between Germany/the euro-zone and the United States:

■ Governments have intervened through partial nationalization of banks and also allocated guarantees to banks facing refinancing problems. Both the U.S. administration and EU governments thus undermine competition in the banking sector; at the same time, restructuring of banks goes along with selling assets abroad—there is a downscaling of financial globalization.

■ Government's protection of the automotive industry creates tensions which are not only related to trade-diversion effects but also to non-discrimination of foreign investors in the respective sector. While the United States and Germany face no serious problems here, the nationalist approach of the Sarkozy government—in the initial version of the policy approach—discriminated against foreign competitors (financial support for troubled French car makers required that no plant would be closed in France and that the company should rely on French suppliers; this discriminatory approach was abandoned in Paris as the European Commission and several EU partner countries intervened pointing out the inconsistency with the EU single market rules). Serious challenges emerge, however, in the context of multinational firms which face serious problems due to the banking crisis and their own management pitfalls; the most prominent case is that of GM and Opel, where the German government is reluctant to inject capital into OPEL—the ministry of finance is afraid that this will entail a transfer of resources to the GM parent company. Four German state governments and the federal government are under public pressure to bail out Opel. The Grand Coalition is likely to save several firms in the automotive industry and in other sectors, but this is clearly a distortion of the competition process.

■ Government's broad intervention in the U.S., Germany, the UK, France, and other EU countries undermines the legitimacy of the market economy and also creates social and political tensions; specifically, as many workers face unemployment, the question of why taxpayers' money is put into ailing banks will arise, even though the rise of overall unemployment is a collateral effect of the banking crisis.

■ The ageing of societies—particularly in Europe—reinforces the need for social security reform so that pay-as-you-go financing would play a smaller role while capital market funded private retirement savings should be strengthened.[4] Since bankers have organized financial markets in a way which causes large instabilities in stock markets and enormous fluctuations of asset prices, there are serious doubts that one should proceed with such social security reforms. Financial market globalization obviously must be re-organized and major reforms in the banking sector are required in OECD countries.

Financial market globalization was reinforced in the decade following 1995, and one might expect major benefits from sustainable globalization. There is no doubt that securitization of loans and foreign direct investment of banks as well as internationalization of the banking business has intensified over time;[5] the home bias in the use of savings—emphasized in earlier empirical analysis by Martin Feldstein and Charles Horioka[6]—has reduced over time, particularly in the EU.[7] While one should expect considerable benefits from financial globalization organized in a consistent framework, such globalization can have negative national and international collateral effects if the institutional framework is incomplete and inconsistent: a low degree of transparency resulting from this could raise systemic risks and generate negative international external effects. The international banking crisis, which started in 2007 in the U.S. subprime mortgage market, shows that the institutional framework is incomplete and that there is a broad challenge for the EU countries and other OECD countries as well as China, India, and other newly industrialized countries (NICs) in implementing a new global financial architecture. At the same time the United States, the euro-zone and other countries will have to adopt reforms in the domestic sphere. For the euro-zone, the transatlantic banking crisis is

a welcome test for its institutional set up, and it seems that the euro-zone countries are doing rather well in the difficult transatlantic crisis; the European Central Bank (ECB) and several national central banks deserve credit for flexible and rather consistent crisis management in 2008, although the crisis has not yet been fully resolved.

Based on the Basel I rules, there should not be much reason to worry about the stability of the banking system, since regulations require internationally active banks to fulfill a minimum equity capital-loan ratio of 8 percent. Under Basel II there is a more differentiated approach which measures bank capital and portfolios on the basis of risks, so that 8 percent applies to a risk-weighted portfolio of the bank. Moreover, there is a distinction between tier 1 capital (in the EU usually 4 percent, in the UK 6 percent), tier 2 capital (8 percent requirement) and tier 3 capital. Based on the method chosen for risk assessment—external rating or two alternative internal rating approaches—the capital requirements will differ slightly. The basic logic of the Basel I/II approach is that an individual bank will face favorable survival prospects if its equity capital-loan ratio is sufficiently high. This logic, however, is flawed at the aggregate level as can easily be shown (see Appendix 5). Changing the Basel equity requirements is at least as important as the issue of pro-cyclicality in the Basel II rules. The basic point is that raising the equity-loan ratio does not simply improve the air bag of the individual bank; rather, at the aggregate level it is prone to bring about an increase in the ratio of the credit multiplier to the money multiplier, which implies a greater likelihood of increasing and excessive volatility of asset prices and hence of risk. By implication, minimum equity capital requirement should be carefully redefined under Basel III, and there is indeed an optimum capital requirement from a macroeconomic perspective. However, the main focus of the subsequent analysis is on overcoming the existing banking crisis, and several institutional innovations will be suggested as new remedies.

The United States faced a banking crisis in 2007/08 which spilled over to Europe and later to the whole world. This major crisis brought about enormous depreciations on portfolios of banks and funds and could entail a new Great Depression as the real economies in OECD countries, Russia, China, and elsewhere face a simultaneous decline in 2009. In September/October 2008, the U.S. government and European governments organized multi-billion dollar rescue packages to recapitalize banks, but national governments have not addressed the more important structural problems. Iceland, Hungary, the Ukraine, Estonia, and Latvia were among the countries facing balance-of-payments financing problems in October 2008. The euro-zone's financial market stability was relatively satisfactory, while the epicenter of the banking crisis was in the United States and to some extent in the UK, where banking supervisors had followed a similar benign neglect-attitude as their counterparts in the United States. In the euro-zone, Spain, and to some extent Italy, pursued rather strict regulatory approaches, which have helped them to avoid facing major subprime problems.[8] The U.S. subprime mortgage markets were the triggers of the financial market crisis in August 2007, but there is no doubt that the whole U.S. banking system was off-course with respect to sustainable banking in 2007. It is quite important to understand what went wrong, since successfully fighting the crisis requires measures based on adequate theoretical analysis. While the G20 meeting in November 2008 came up with a list of forty-seven measures to be considered, it is doubtful that the key reform elements necessary were on the radar screen of policymakers. Overcoming the strange confidence crisis among banks is one of the key challenges, as is a more realistic and more long-term profit maximization strategy of banks and other actors in financial markets. Better regulation and more regulation for big banks in the United States and other OECD countries are also high on the agenda. Beyond the financial sector—shaped by high innovation dynamics, high volatility in 2008, and declining confidence among banks—policymakers' focus is on the real economy; there is a broad fear of a heavy global recession. This holds despite the big interest rate cuts of OECD central banks in the second half of 2008, which were designed to contain the turbulence to financial markets and to avoid a big recession.

Financial markets are crucial for financing investment and innovation, thus they are indispensible for economic growth.[9] Asymmetric information and moral hazard problems are specific aspects of financial markets and thus financial markets are not working perfectly. There could be credit rationing under specific circumstances.[10] The risk of bank runs is specific to the banking sector and hence the confidence of depositors and depositor protection are crucial elements of the institutional setup in the banking industry.[11] From a theoretical perspective, there are sound arguments for why there

should be ex-ante rules—regulations—for banks and not simply an application of the general competition law whose rules apply ex post, except for the field of merger control.[12] Central banks are interested in systemic stability, as turbulence could undermine the effectiveness of monetary policy, and certainly investors and the general public have a strong interest in systemic stability.[13] For EU countries eager to create capital-based pension systems—as a complementary element to pay-as-you-go systems—the stability of financial markets is also quite crucial. While many banks run stress tests, it is unclear to what extent such tests are adequately tailored. From an economist's perspective, one may wonder whether prudential supervisors run simulations on the bankruptcy of individual banks. Part of the economics research community was not really good at understanding the problems of the U.S. subprime financing. For example, Joe Peek and James Wilcox argued on the basis of empirical analysis that the growth of asset backed securities markets had contributed to stabilizing housing investment in the United States.[14]

The transatlantic banking crisis intensified after the United States decided to let Lehman Brothers go bankrupt on 15 September: a decision which was totally inconsistent given the previous bailout of the smaller investment bank Bear Stearns in March 2008; and taking into account that a few days later American International Group (AIG), the giant insurance company, was saved by the U.S. government. The bankruptcy of Lehman in the midst of the banking crisis fully destroyed confidence in OECD interbank markets and thus represents an irresponsible step on the part of the Bush administration. Freddie Mac and Fannie Mae were rescued by the government, not least because of the pressure from China, whose central bank held large amounts of bonds issued by those two semi-public mortgage banks. It seems that neither the EU nor Japan had warned the United States not to let Lehman Brothers go bankrupt—the large majority of unsecured claims against Lehman Brothers was in Japan and the EU, while the U.S. share was only about 10 percent. While the U.S. government might have speculated that Lehman Brothers would be a cheap case of bankruptcy for the United States, it was in effect the ultimate impulse for wiping out confidence in interbank markets of OECD countries. Lehman Brothers going under Chapter 11 signaled that no bank in the United States was safe; and a fortiori, no bank in Europe.

In its 2008 report the IMF signaled early warnings that depreciations of banks and hedge funds and investment funds could reach about $1000 billion worldwide, while updates from the IMF in the summer of 2008 suggested even higher figures. Moreover, the Stability Report by the Bank of England in autumn 2008 warned that depreciations could even reach $2.8 trillion. Such depreciations would partly reflect the impact of the recessions in the United States, the UK, and other countries affected by the international banking crisis.

From a historical perspective, the U.S. banking crisis is the most severe crisis since the Great Depression, and the enormous international collateral damage and high costs to the U.S. economy—facing recession in 2009/2010—raises the question about the causes of this disaster, the impact of the international banking crisis, and the options for dealing with the crisis. As regards the latter, one should clearly make a distinction between crisis management necessary to overcome the banking crisis in the short run and the structural reforms required in the context of more long-term systemic changes.

In the short run it will be necessary to save the banking systems in the United States, the UK, and the euro-zone. Without a stable banking system there is a serious risk of another Great Depression. Governments have offered multi-billion dollar packages for partial nationalization of banks—read recapitalization of banks—and guarantees for banks which want to sell bonds in a shaky securities market and an almost non-existent interbank market. Given the small number of big U.S. banks, competition among banks is rather weak as there is a rather general "too big to fail problem" in the United States (provided that the bank considered faces a large share of unsecured claims of U.S. private and corporate citizens; hence the Lehman Brothers case is not really a counter-example).

Banks have lost confidence in each other, and the starting point was the growing tendency of bankers in the United States (and Europe) to avoid regulatory equity requirements by transforming loans into asset-backed securities which could be sold in the capital market and often ended up in the special investment vehicles created by the banks themselves. The banks thus have created a

"market for lemons" problem; that is, there was increasing quality uncertainty among bankers who could no longer draw reliable information from balance sheets about the financial status of potential partner banks. The classical lemons problem which had been identified as a potential source for market failure in goods markets is now visible in financial markets; with confidence among banks declining, liquidity for many products has dried up.[15]

Since banks no longer trust each other, the refinancing of banks through state-guaranteed bonds is one of the few alternatives for restarting both the interbank market and the capital market. This will go along with mergers & acquisitions and government participation in major banks as well as other bail-out measures of governments. The governments of the United States and of many EU countries have strongly intervened in the banking markets, thereby creating bigger banks as part of the rescue operations in the United States. Such developments are, however, in contrast to what structural reforms require, namely, more competition among private banks and dismemberment of large banks in order to bring about effective competition. The following analysis takes a look at the dynamics of the banking crisis (section 2), considers some key theoretical aspects (section 3), and suggests necessary reforms in the EU and at the global policy level (section 4). The appendix shows selected financial market indicators and also statistics on the rate of return on capital in the real economy of selected OECD countries.

THE DYNAMICS OF THE BANKING CRISIS

At first glance, the U.S. banking crisis started in subprime mortgage financing, as house prices started to fall in 2007. This implied serious doubts about the value of mortgage-backed securities largely held by special investment vehicles (SIVs) of banks which had organized increasing off-balance sheet activities through SIVs. Most SIVs held large positions of asset-backed securities (ABS) which represented loan portfolios which had been sold in national and international capital markets. The originate-to-distribute model, which became popular in the late 1990s, assumed that banks could easily sell loan portfolios in the capital market; banks created SIVs to unload ABS and to widen off-balance sheet activities. Hence the incentive for banks to broaden risk management was weakened and this held all the more as banks alternatively could not sell a loan portfolio but rather only the risk associated with that portfolio (we will refer to the relevant credit default swaps—the insurance instruments part of which was traded in the market—subsequently). As SIVs relied on refinancing through short-term commercial papers, the collapse of the U.S. commercial paper market in summer 2007 forced banks to take the portfolios of their respective SIVs back into their own books—the credit lines which banks gave to their respective SIVs when setting up the SIVs were enormous and had not really been meant to be drawn upon. The very purpose of the large credit line was to get a top rating for the SIV and to thereby make sure that the SIV had low refinancing costs.

Falling house prices in the United States undermined confidence of investors in mortgage-based securities (MBS) held by SIVs and problems with refinancing MBS indicated serious problems in the ABS market. The price of portfolios representing MBS related to the mortgage subprime market in the United States fell quickly in summer 2007. However, the crisis was not confined to the United States. In the UK, a bank run on Northern Rock occurred in 2007, and the government quickly decided to save the bank whose problems could have been anticipated if the regulator Financial Services Authority (FSA) had more carefully studied the aggressive expansion strategy of that mortgage bank.16 In early 2008, the UK government decided to nationalize Northern Rock and this became the starting point for heavy government involvement in the British banking crisis. British banks had largely adopted similar business models as their U.S. counterparts and several banks were involved in the markets for MBS/ABS. As refinancing of SIVs became more and more difficult in summer and autumn 2007 the prices of the respective assets fell strongly: lack of liquidity in the markets became a major problem.

The U.S. banking crisis is serious and has undermined the stability of the United States and the transatlantic financial system. While the Federal Reserve—by cutting interest rates sharply—and the U.S. government have taken emergency measures to stabilize the economy, there is no sign that the United States has adopted adequate structural reforms. With the quasi-nationalization of

Fannie Mae and Freddie Mac (plus Citibank), the United States has indeed paid a high prize for the lingering mismanagement of the banking crisis and for years of insufficient prudential supervision as well as a framework which allows rating firms to effectively operate on very weak professional standards.[17] The latter has contributed to the subprime crisis and the collapse of the interbank markets in the United States and Europe.

Moreover, there were strange developments which have almost fully eliminated the normal risk premia—e.g., measured through the spread between corporate bonds with A-rating and government bond yields—in the United States from 2003 to 2006.[18] Too many A-rated subprime bonds were unloaded in financial markets and for unclear reasons, the senior tranches of almost all mortgage-based securities, exploding in volume between 2002 and 2006, could easily obtain an A-rating in the United States. The volume reached about $700 billion in the subprime category of mortgage lending and almost the same figure in the next higher category Alt-A: both categories combined were not more than $1400 billion, or about 10 percent of U.S. GDP. Even if one assumes that one third of all these loans will fail, it is surprising to witness in 2008 that global depreciations of assets of banks and insurance companies had reached a staggering $1800 billion. The confidence crisis affecting banks in 2008 put pressure not only on mortgage-based securities, but asset prices in general declined. One of the strange transatlantic links in terms of non-standard capital flows were payments of AIG in 2008 to Deutsche Bank and Société Générale which both obtained about $12 billion; AIG was only able to survive due to U.S. taxpayers' money (roughly $180 billion by March 2009). While one may argue that these flows are a natural consequence of the Credit Default Swaps (CDS) sold by a highly speculative AIG—CDS is insurance on bundles of loans (acquired by banks in the United States and Europe)—to banks worldwide, the new economic nationalism visible in the United States and in the EU raises doubts that the political systems will tolerate high transatlantic payments coming from government budgets (e.g., it is well-known that the German government would like to avoid spending taxpayers' money saving OPEL if it means that the money will end up with OPEL's parent company, GM, in Detroit).

It is widely accepted that the U.S. banking crisis started in the summer of 2007 when the housing prices started to fall and doubts about the substance of mortgage-based securities (MBS) spread, thus making the refinancing of special investment vehicles—with a strong focus on asset-backed securities (ABS)/MBS—increasingly difficult. However, the sources of the fragility of U.S. banks and financial markets dates back to the late 1990s when hedge funds with high rates of return on equity created enormous pressure for Wall Street Banks.

- The unregulated hedge funds with their high rates of return—about 20 percent in the late 1990s—put enormous pressure on banks to come up with similar rates of return on equity. Twenty-five percent became a kind of magic number announced by top managers of U.S. banks and with some delay also by bankers in the EU. Raising the return on equity became a top priority for bankers and stock markets, and the owners of banks quoted on the stock market cheered when top managers announced ever higher target rates of return—although basic economics suggests that even a rate of return on equity of 15 percent would be quite remarkable if achieved over an extended period of time. The UBS in the United States has indeed created its own hedge funds. Many banks in the United States and the EU created off-balance sheet activities and special purpose vehicles to raise the rate of return; SIVs invested in ABS/MBS and collateralized debt obligation (CDOs)—CDO are repacked bundles of ABS with specific tranches in terms of risk profiles—and relied on short-term commercial paper for refinancing. This model collapsed once the participants in commercial paper market faced doubts about the inherent value of mortgage-based securities (MBS). With U.S. real estate prices falling in 2007, doubts emerged quickly, and banks had to take the papers of their respective SIVs back into the balance sheet. The basic point is not that house prices can fall over time; the key problem is that hedge funds were unregulated and their indirect role for systemic instability was not recognized. Most critics looked only at the problem of leverage in hedge funds, but the associated high pressure on banks to come up with higher returns was largely ignored.

- A very serious problem is the market for lemons problems created by banks themselves. With increasing off-balance sheet activities, effective banking operations could no longer be monitored through balance sheets. As rumors about problems in off-balance activities became wide-spread,

the confidence in banks generally declined. A second problem is the lack of transparency and the incompleteness of balance sheets. To achieve their goal, banks created off-balance sheet activities, largely in the form of special investment vehicles, which bought long-term asset-backed securities and hoped to easily refinance those portfolios through short-term commercial papers; many banks had created ABS, since an expansion of the loan business could thus be reconciled with regulatory capital requirements. In order to get a top rating for the SIV and hence low financing costs, the respective SIV typically obtained a large credit line from the parent bank. Banks did not have to put up any equity capital for such credit lines under Basel I rules.

■ Banks packed dozens of loans in asset-backed securities and sold ABS and related papers in the capital market. In many cases, the banks wanted to maintain the loans on their books but wanted to get rid of the risk associated with the loans; the financial innovation used for this purposed were the Credit Default Swaps, which banks bought from special service providers and insurance companies—but CDS in term were traded in the capital market, mostly in the over the counter market. This market lacks transparency for both the prudential authorities and for the market as such. Regulators indeed allowed the CDSs to be sold around the world, and no one kept track of these transactions, although it would be wise to know those market participants representing the counterparty risk and whether they would be able to fully pay once the insurance case became reality. As lack of prudential supervision created a global veil of ignorance with respect to the allocation of CDS—there was no clearing house or global registry—currency markets and bonds markets were not only facing an impossible challenge, namely to correctly assess risk premia for various countries (it makes a big difference if most CDS were held within the United States, the euro-zone, the UK, or China). Moreover, the market value of the underlying loan portfolios also became difficult to assess as it makes a big difference whether there is credible insurance for the loan. Allocation of CDS across countries remained opaque, and hence the efficiency of financial market pricing remained low. While the United States recorded high growth rates of credit in the period from 2000 to 2006, the risk premia in credit markets declined to nearly zero in the period from 2003 to 2006, which was quite an abnormal situation. Part of this phenomenon could be explained by overgenerous rating agencies which accorded top ratings to too many financial products and business models, including SIVs.

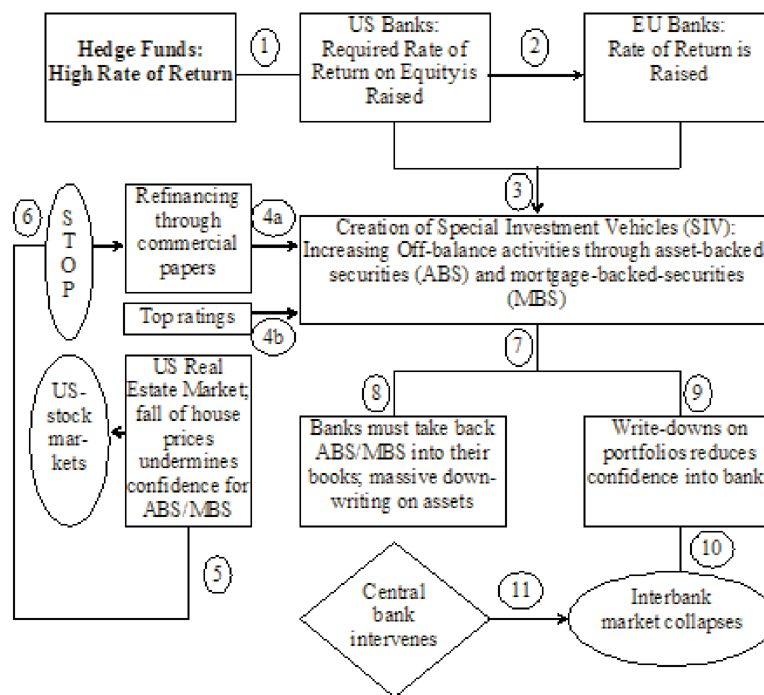
■ Rating agencies often came up with fantasy ratings which were much too good to be true—e.g., even two days before Lehman went bankrupt, the leading U.S. rating agencies had almost top ratings for the bank. Many ABS/MBS had top ratings, although it seems that the rating agencies' methods were highly doubtful. In the context of Basel II, external ratings have a quasi-official status, and it is of paramount importance to make sure that ratings are carefully awarded and also swiftly corrected if needed over time. As long as ratings are flawed, there will be a misjudging of risks in capital markets and an under pricing of risks. U.S. prudential supervision remained quite weak under the Bush administration. The SEC—responsible for investment banks—was mainly interested in investor risk. However, it did not consider systemic risk issues, and the number of employees dealing with risk management fell dramatically under the presidency of George W. Bush. The Fed, which was in charge of traditional banks (bank holdings), had adopted a laissez faire attitude under Chairman Alan Greenspan; banks in the United States and in the EU could incur increasing risks without regulators requiring enhanced risk management. Stability Reports of various central banks (Bank of England; ECB) warned of the rising risk banks were taking within OECD countries, but the regulators and the banks ignored such warnings. Moreover, the IMF's Financial Sector Assessment Program analyzed many crucial OECD countries, except for the United States. It was only in 2006 that the U.S. government agreed to a report being published on the U.S. system in 2009.

■ Time horizons of managers and traders were rather short, and there were inadequate incentives for long term investment horizons in banks. Many top bankers pursued high risk strategies and generated high bonus payments for managers and traders as long as the economic boom—along with rising asset prices—continued in the United States and Europe. In the medium term, however, as asset prices fell, many banks suffered high depreciations and losses from such "front-loaded" investment strategies. The typical assumption of most textbook economics—namely that investors maximize a profit function over a very long (infinite) time horizon—was not realistic; rather, a hit and retire approach was often observed. As long as the boom continued, one could hit high goals, and

once a crisis befell the market, early retirement was the ideal option for managers naturally willing to incur big risks for their respective banks.

The following figure summarizes the key dynamics of the U.S. banking crisis which resulted not only in the collapse of the commercial paper market and the interbank market in late 2007, but also in the U.S. central bank and the ECB providing emergency liquidity to banks that could no longer obtain loans in the money market and the interbank market. Mistrust among banks in the euro-zone is so great that more than €100 billion in excess reserves were kept at the ECB during several weeks in 2008, although market rates in the interbank markets were higher than what could be earned at the ECB account. It is not surprising that the problems in U.S. real estate market and U.S. banks brought about a fall of the stock market price index in 2008; stock market prices in the euro-zone also fell strongly in autumn 2008.

FIGURE 1: DYNAMICS OF THE INTERBANK MARKET



Coping successfully with the banking crisis and avoiding repeating this crisis within a few years can only be achieved if the causes of the banking crisis are recognized and adequate policy reforms are adopted. The problems in the United States and European banking sectors are not really surprising if one considers the early warnings emphasizing the risk of falling house prices in the United States—and those of Patrick Artus and Marie-Paule Virard, who warned that high rates of return on equity implied a high risk premium and hence incurring high risks.[19]

■ The laws of economics imply that in the long run the nominal interest rate (i) must be equal to the sum of the inflation rate and the real interest rate (r), and r must be equal to the growth rate of real output (gY). The rate of return on capital in turn should be equal to the risk free government bond interest rate (i) plus a risk premium (Ω)—in the stock market being equal to the price of risk times the variance of the stock market price. If the risk free nominal interest rate is 4 percent and the required rate of return on equity is 25 percent, the implication is that the bank management aims at investment projects which stand for an average risk premium of 21 percent. Part of the typical strategy to chase a high required rate of return of 25 percent was to use a high leverage (see Appendix 3) through raising off-balance sheet activities which allowed one to by-pass the Basel I/II minimum requirements on regulatory capital. Many banks achieved 25 percent rates of return for a few years, but in 2007/08 they suffered high depreciations and massive losses so that there was no sustainable profit rate. In regards to big banks, volatility of rates of return on equity were rather high; e.g., con-

sidering the variance as a measure of volatility the case of Germany shows that volatility of rates of return of big banks were much higher than the volatility of savings banks, cooperative banks, or *Landesbanke* (regional state-owned banks).[20]

■ The banks gave loans to the private sector, but loans were quickly sold as ABS or MBS in the capital market, thus weakening the incentive for the originator bank to screen those who took the loans; by implication risk management weakened. The originate-to-distribute model worked all the more poorly, the more stages of repackaging loans existed. When housing prices in the United States fell, special investment vehicles holding MBS faced problems, since refinancing through short-term commercial papers no longer worked, as the commercial paper market had collapsed. The market price of mortgage backed securities, particularly subprime securities, fell quickly and as banks were hardly able to give large credit lines to their respective SIVs, they took the SIVs' portfolios back into their books. Since the market price of MBS/subprime papers had fallen strongly in 2007/08, banks suffered high depreciations. The interbank market and the money market collapsed in 2008 as banks lost confidence in each other—not knowing how large off-balance stakes were on the one hand and how big risks associated with various portfolio positions, often involving previous CDS transactions, really were on the other hand. Banks stopped lending to each other or did so only against collateral which was previously unheard of. In the euro-zone, moreover, banks with high liquidity would rather channel excess liquidity into the accounts of the ECB than offer such liquidity overnight to banks at interest rates well above the central bank's deposit rate.

In fact the banking crisis is not a real surprise, and one has to blame both banks themselves and imprudent supervisors in the United States and the EU to have allowed such chaos in financial markets to emerge. The U.S. dynamics largely show that the big banks no longer understood the system they had created and that U.S. policymakers had failed to implement a clear system of supervision—instead the United States had refused to adopt the Basel II rules which would have imposed at least a small amount of equity capital for extending large credit lines to special investment vehicles (in this perspective the UK banking sector looks better positioned than the United States). By refusing to adopt Basel II, the United States not only created an uneven transatlantic playing field for banks, but it also prevented greater transparency—in a world economy with high growth—from being achieved.

The priority reforms are therefore obvious; they must correspond to the problems identified and should be adopted by the relevant policymakers:

■ Regulation of hedge funds: Hedge funds—largely active from tax havens—with more than €1 billion should be required to register with the Bank of International Settlements (BIS); BIS must reserve the right to raise equity requirements if deemed necessary, and trading in CDS could be restricted. Hedge funds that do not comply with BIS rules must not be permitted to trade government bonds in any member country of the IMF; this clause might require that government bonds be traded only through international clearinghouses, thus excluding over-the counter trade—in this manner, tax havens would be subject to rules and guidelines set at the European and global policy level.
 Banks must establish fully consolidated balance sheets, in the sense that a total balance sheet includes all off-balance sheet activities; banks which do not comply must face sharply restricted access to central bank liquidity. The ECB should encourage interbank activities by according different discount rates, namely a low discount rate to banks strongly active in the interbank market; banks with low activities in the interbank market would face higher discount rates. Thus, banks would have an incentive to engage in the interbank market. The enormous expansion of ECB liquidity provision in euro-zone interbank markets is a doubtful exercise if it were to continue in the long run; this would undermine both the efficiency of monetary policy and the incentive of banks to engage in the interbank market, which is normally an important market for the efficiency of the banking system—monitoring and signaling are crucial elements of the normal competition process in the interbank market.

■ ABS products must be standardized in order to avoid complex pricing problems, and all CDS should be registered in a global data bank; a bank issuing ABS should keep 20 percent of the equity tranche in its books (this gives a strong incentive to really consider the risks contained in the loans

which back the ABS) and declare its willingness to buy back the ABS product at 50 percent of the original price at any point in time, thereby avoiding pricing uncertainty even in the critical case where markets for specific financial products should collapse; the underestimation of liquidity risks, which was a serious element of the U.S./transatlantic banking crisis, must be avoided in the future. New transactions with CDS should be possible only through a clearinghouse, and previous CDS transactions should be required to be registered worldwide—otherwise, confidence in financial markets cannot be restored.

- Rating agencies must face new rules and should be required to obtain a license as proposed by the European Commission; in addition, there should be random checks and fines for poor rating accuracy. Conflicts of interests (in the traditional regime, banks placing a bond issue have paid the respective rating agency) must be avoided. Specifically, a two-stage financing procedure would be useful; banks, firms, or governments wanting to place bonds in the market should pay into a pool, and this pool would then finance the rating process on the basis of competitive tenders. At the bottom line, fees to be paid should reflect market shares of issuers—with a top-up for weak ratings of the respective placement of bonds. Thus, the information derived from ratings should be considered a public rather than a private good. It would be useful if the EU or the ECB would encourage the creation of at least one major European rating agency.

- A new tax regime is necessary for banks, funds and insurance companies. Taxing the profits (Π) of banks should be only one basis for taxation; in addition, the variability of the rate of return on equity should be considered. The higher the variance ("V") on the rate of return, the higher the overall tax rate should be. (The tax to be paid by an individual bank would thus be: $T=\tau'\Pi + \tau''V''$; e.g., for the case of Germany, the figures show that private big banks would have faced a high variance tax burden, τ"V", as the variance of their return on equity was relatively high). Banks anticipating such a tax burden would have an incentive to take a more long-term view—in the long term, the variability should be smaller than in the short term, and bank managers can influence the variance of the respective bank's rate of return.

FIGURE 2: STRUCTURAL REFORMS TO BE ADOPTED

Priority Reforms for Overcoming the International Banking Crisis				
Hedge Funds: must register with BIS; equity requirement; hedge funds which do not comply with rules cannot trade in government bonds markets	**Balance Sheets:** Full disclosure of bank's activities: including all off-shore balance activities	**ABS and CDS:** Standardization of ABS products; 20% of the equity tranche remains at the bank and bank must declare that it is willing to buy back the ABS at 50% of the original price	**Rating Agencies:** Agencies should face new rules such as obtaining a license; agencies should be subject to random checks, fines for poor work; two-stage financing	**New Tax Regime:** Taxing profits and taxing the variability (variance) of the rate of return on equity
AIM: Controlling Risk from HFs	**AIM:** Restoring Confidence	**AIM:** Transparency, reduced transaction costs	**AIM:** Improving the quality of the ratings process; raising the quality of information	**AIM:** Encouraging long term time horizon of banks, funds and insurance companies (avoid short-term hit and retire strategy & inadequate bonus systems)

A variance tax would be a true innovation in the OECD tax systems, but such a tax is quite useful since it would help to avoid excessive short-term decision-making which results in excessive risk-taking and high negative national or international external effects (i.e., international instability spillovers and problems related to systemic instability caused by non-sustainable bankers' strategies). Indeed, a variance tax could be considered a special Pigovian tax which helps to internalize negative external effects. There could be a minor problem in recessions when the rate of return on equity falls, hence making the variance tax pro-cyclical; however, governments could introduce a partial or full waiver for variance taxation in recessions.

Taking stock of the key elements of the banking crisis identifies seven areas of weaknesses:

- Deficiencies of U.S. banking regulation; the Paulson reform program, which suggests that the Fed should have a larger role in regulation, is a doubtful program given the fact that the Fed has not used existing regulatory power—its board has made clear for years that the best regulation is no regulation.
- There is a sustained problem of market failure in the U.S. interbank markets and in EU interbank markets in 2007/08, which represents a self-imposed market-for-lemon problem caused by insufficient financial reporting and opaque balance sheets.
- In the United States, special problems of interbank market failure have emerged, i.e., EU banks were squeezed out of the market. This was somewhat remedied by the transatlantic swap operations organized by the Fed and its counterparts in Europe; the swap operations allow EU banks with U.S. subsidiaries (which were effectively locked out of the U.S. interbank market after the summer of 2007) to obtain dollar loans from the ECB, which in turn has obtained a dollar loan from the Fed. The European bank will then send the dollar liquidity to its U.S. subsidiary, which is a very strange indicator of discrimination against foreign banks in the U.S. interbank market. This could be understood as being counter to the General Agreement on Trade in Services (GATS) rules of the WTO.
- From 2002 to 2006, leading U.S. rating agencies have for their part done sloppy work, as the report by the U.S. SEC in 2008 has shown, and it is absolutely unclear why Basel II gives those rating agencies even more power—external ratings have an official status for risk management of banks—while not imposing decent standards and responsibilities.
- The trigger for the banking crisis was not the subprime crisis but rather the strange increase in the required rate of return on capital on Wall Street at the beginning of the twenty-first century. EU banks were afraid of being taken over by U.S. banks if they could not match the new Wall Street benchmarks.
- To a limited extent, the financial innovations adopted in the OECD banking world in the context of the originate-and-distribute approach is a useful way to deal with risk, but the excessive creation of A-rated ABS is suspect, and systematic failure to consider liquidity risk raises doubts about the overall framework within which banks operate;
- In Germany, there are major weaknesses in the field of banking supervision, and costs for the taxpayer of dealing with the IKB Deutsche Industriebank AG problems and part of the *Landesbanken* are already high—here, national reforms and EU reforms are necessary.

The reforms suggested in the context of this analysis are urgent and will help to sort out the mess in the U.S. financial markets and elsewhere. While overregulation should be avoided, there is a need for more and better regulation. Basically, there are seven key proposals for solving the banking crisis:

- The interbank market is fully restored by forcing banks to disclose their positions in structured products and off-balance sheet activities. In particular, banks must fully disclose all off-balance sheet investments in the notes to the balance sheet; moreover, from a specific target rate on, banks must hold 20 percent of the equity part of asset-backed securities; litigation among banks, which has increased in 2007/08 and increasingly destroys confidence in the markets, should be minimized and conflicts should be sorted out quickly, outside courtrooms to the greatest extent possible;
- Only those banks which have met the new disclosure procedures and fully commit to the equity part investment in ABS will get full access to central bank refinancing. These measures will restore confidence in the interbank market. In the EU, a new European Banking Standard Council should be established which monitors banks' behavior in world capital markets; strange behavior and obvious problems in meeting legal requirements—e.g., UBS in the United States from 1999 to 2008—will have consequences, namely, that banks considered in breach of critical rules and standards

are excluded for at least five years from all transactions in the context of the emission of government bonds in the EU/euro-zone.

- As regards the EU, greater efforts in terms of harmonizing national prudential supervision should be adopted; so far, the EU indeed offers a bewildering range of institutional arrangements—e.g., the central bank is involved in some countries, in some countries it is not involved at all, and in still other countries it has exclusive competence for the supervision of banks and financial markets.
- The European Commission should publish regular reports on the banking systems in EU countries, and member countries should quantify the welfare costs of major banking crises; in this way, a new field of benchmarking would be established.
- Medium and large hedge funds should become more involved in reporting as soon as they have the needed leverage, and an option should also be introduced for central banks to impose a maximum leverage ratio.
- In 2006/2007, the IMF did a poor job in economic policy assessment; its lukewarm reports on the U.S. economy were not in line with the sober analysis of the U.S. economy and U.S. economic policy—required as part of regular surveillance of IMF member countries—would have shown, namely critical faults in U.S. prudential supervision and massive growth of credit along with strongly declining risk premia in U.S. bonds markets from 2003 to 2006. The reporting procedures in the IMF should therefore be adjusted in a way which enables external experts to contribute to surveillance activities.
- Finally, within the WTO, it remains to be analyzed to what extent the asymmetric collapse of the U.S. interbank market represents a discrimination against foreign entities/banks.

The transatlantic banking crisis should be taken seriously, and adopting key reforms is urgent for both OECD countries and the global economy. If such reforms are not adopted in a timely fashion, there could be a backlash in globalization, and indeed a backlash in financial globalization has already become visible. With regard to shoring up the shaky U.S. housing market, the proposal of Feldstein should be realized quickly.[21] With respect to the costs of the U.S. banking crisis, a preliminary assessment is that the per-capita cost for every American is about $1,000 (mainly related to the Freddie Mac, Fannie Mae, and Lehman Brothers failures), whereas the international external costs are about $360 billion annually in 2008 and 2009, which in turn is equivalent to $1,200 per U.S. citizen. Such large external international costs are unacceptable in a fair global economic framework. The world economy is paying high costs for the lack of a consistent U.S. regulatory framework. Financial globalization implies that sorting out the problems in the U.S. banking market will be much more complex than the case of the Bank of Credit and Commerce International (BCCI) bankruptcy in 1991.

The banking rescue packages designed by the UK, Germany, France, other EU countries, and the United States will hardly work, as they help to stabilize the banking systems only transitorily. As long as confidence in the interbank market is not restored, there is a risk of silent socialization of the banking system through ever-increasing liquidity injections from the central banks (plus explicit socialization through governments buying stocks and warrants of banks). Confidence in the interbank market can only be restored if parliaments in OECD countries adopt laws which force banks, hedge funds, and the like to sell all products with CDS elements to a clearing house, which in turn then reallocates the CDS in a transparent way. Bank mergers could be a hidden avenue to raise the silent risk exposure of banks, as merging bank I and II typically implies that the bank taken over could have large stakes of CDOs, part of which are a combination of ABS and CDS—products difficult to evaluate; such opaqueness cannot be accepted and bank supervisory agencies and merger commissions should carefully look into the merger dynamics. The short-term options of saving the banking system—including M&As—are absolutely in contrast to what a solid efficient banking system looks like: smaller banks in a more competitive environment; the more mega banks (representing the ominous too-big-to-fail) there are, the more strictly regulations will have to be imposed. If the United States does not accept Basel II+, there can be no free capital movement, as the distorted U.S. system would continue to create big international negative external effects.

THEORETICAL ASPECTS OF SUSTAINABLE FINANCIAL MARKET GLOBALIZATION

As regards sustainable financial market integration, one can expect long term globalization only under certain conditions. Financial market integration can generate considerable benefits by reducing international transaction costs, stimulating financial product innovations and efficiency gains, as

well as through a better diversification of risks. However, those benefits will not be generated automatically; in a multi-country world economy, the leading countries must implement a consistent international framework which creates a competitive, level playing field on the one hand and establishes clear responsibilities on the other hand. The requirements for sustainable globalization are as follows:

■ Long term benefits on the basis of a consistent institutional framework and clear responsibilities can be expected; this implies that no major player in the world economy imposes large negative external effects on other countries—as was the case with the United States in 2007/08. The U.S. policy in 2008 brought about a rise in the U.S. inflation rate; about 5 percent was reached in the summer of 2008, and this imposes an inflation tax on those countries holding foreign reserves in U.S. currency. While one might argue that most foreign reserves are in dollar-denominated bonds, it is clear that the interest rate on U.S. bonds is not really rising parallel to the inflation rate; one may argue that the crisis-induced rise in the inflation rate was 4 percentage points. With about $6000 billion reserves worldwide in 2008, the depreciation effect on reserves is $240 billion in that year. As regards the EU there are additional costs for the Community in the form of a fall of real output which is roughly 1 percentage point in 2009 compared to the business-as-usual scenario—to this effect, a fall in output of about $180 billion would have to be added to the drop in real output in other trading partners of the United States. This is an international resource transfer in favor of the United States amounting to about 2-3 percent of the rest of the world's GDP, and is more than the $300 billion the U.S. taxpayer is likely to pay for the rescue of Fannie Mae and Freddie Mac plus Lehman Brothers in 2008/09. It could well be that the rest of the world will face higher costs from the U.S. banking crisis than the United States itself. The key players in the world economy will hardly be willing to accept a U.S.-led financial globalization process if it turns out that it imposes major costs on non-U.S. countries.

■ The cost of achieving political consensus at the international level will affect the ability to cope with international crises. If there is a consistent mix of regional organizations (responsibilities) and global organizations, international frictions in running the global system will be relatively low. In this perspective, the EU principle of home country supervision for bank affiliates abroad—in other EU countries and the European Economic Space—is doubtful, as the ongoing internationalization of the intra-EU banking business means that national regulators face an increasingly tough challenge to effectively regulate banks. Moreover, banks from non-EU countries can easily set up a subsidiary in an EU country and subsequently engage in bank business in all EU countries through affiliates. If banks create a separate legal entity, a true subsidiary in another EU country, the host country's supervisors will be responsible for supervision. However, this creates a difficult moral hazard problem on the part of supervisors, since the supervisor in the host country has a relatively weak incentive to effectively supervise the subsidiary. If the subsidiary is in trouble, the parent bank will have to foot the bill, and if not the parent bank then it will be the ministry of finance in the headquarter country.

■ Creating colleges of supervisors—as suggested by the European Commission for big banks with international operations—is rather strange as well. A better system would follow the logic of regulations in telecommunications in the EU, that is, by establishing a supranational framework and making sure that national regulators have to adopt a combined legal and economic analysis while notifying key approaches to the European Commission which will produce a comparative report on prudential supervision in each EU country. National central banks—politically independent and not directly involved in monetary policy—should be involved in prudential supervision and, ideally, the national supervisory agency would have a similar institutional setup across the euro-zone countries.

■ Effective crisis management in an international crisis of financial markets is crucial. It is rather doubtful that the world economy has an institutional platform for effective crisis management. The interplay between the BIS and the IMF is rather unclear; the BIS has an analytical focus on world capital markets and is home to the Basel Group of Supervisors, but it has an incomplete global coverage of (member) countries, while the IMF has no real competence in prudential supervision. It could have at least some reporting competence if the IMF statutes were changed in such a way as to require member countries to accept regular Financial Sector Assessment Programs, whose re-

sults would then be published. The OECD could also play a more important role, namely, by conducting more research on financial market stability, prudential supervision, and financial innovations. As regards the OECD reports of 2007/08, one may argue that there is neither much theoretical reflection nor can one identify a critical assessment of the United States.[22]

■ An international system can be sustainable only if there is acceptance of burden sharing. In other words, the costs of a major crisis must be shared in a way which is politically acceptable and gives no perverse incentives (e.g., for countries to ignore international external costs of domestic policy pitfalls). To some extent, one might argue that the IMF will be in charge of helping countries with high current account deficits and problems occurring in the context of massive exchange rate swings. However, the case of an international banking crisis has not really been defined within the mission of the IMF, although it seems to be logical that the organization which is in charge of maintaining the international payments system should have certain competences here as well. The IMF should create a special facility for helping countries which are subject to an external shock from a major banking crisis; the World Bank, which is engaged in financial institution building in developing countries, should offer particular support for very poor countries and help to convey best practices in prudential supervision, namely in the context of international benchmarking.

■ Leadership in the global economy's governance is crucial in the standard model of the international system dominated by a large economy—in the second half of the twentieth century, the United States was the dominant country and its share of world GDP was still close to 30 percent at the beginning of the twenty-first century; this is much above the 20 percent of the EU. Figures based on purchasing power parity (PPP) look smaller for the United States, namely, 20 percent (in 1929 the nominal share of the United States in world GDP was 38 percent, but considering the fact that U.S. multinational companies' subsidiaries abroad are more important for GDP outside the United States in 2008 than in 1929, one may assume that the economic impact of the effective U.S. economy has not reduced). However, with the rapid rise of China, there is no doubt that the exclusive leadership role of the United States becomes less credible and legitimate over time. The alternative to a global system shaped by dominance would be one of joint leadership through an institutionalized policy club such as the G8 or the G20. Indeed, the meeting of the G20 in Washington in November 2008 suggests that the broader international G20 policy club is a feasible platform. The G20 policy club is relatively complex to organize since it has a fairly large number of member countries which have rather heterogeneous characteristics. Given the fact that Chinese bankers—in Hong Kong and Shanghai (and in Singapore)—are quite experienced and influential, one will probably have to deal with certain global governance issues at the level of the G20 or a future G25, which should additionally include Spain. The G8/G20 is the group of policymakers that will most likely discuss the need for global reforms in prudential supervision. The IMF also plays an important role.[23]

While the IMF is effectively in charge of designing the new architecture of the global financial system, it is not fully clear why more regulation in banking sectors is really needed. One may argue that the basic alternative is to engage in broad national or international dismemberment of big banks and thus to reinforce competition in the banking sector of each country (dismemberment could be realized after nationalization of banks: privatization gives an ideal starting point for splitting up banks which have exceeded a critical size); with smaller banks we have less problems of the too-big-to-fail type, and competition would therefore be relatively strong—and hence light regulation is appropriate. If, however, there is no dismemberment of big banks (and possibly insurance companies) in most countries, competition will be relatively weak and in this case stricter regulation is necessary. Strict regulation is the natural policy response to a system characterized by a few big banks, which are all too big to fail. In this perspective, the U.S. government under President Bush pursued an inconsistent policy: Bank mergers had brought about a system of Wall Street banks which were too big to fail, and at the same time, the government was not eager to implement strict regulation.

GLOBAL AND EU POLICY OPTIONS

The international banking crisis started in the United States, whose banking market has dominated the international developments for decades—sometimes joined by British banks that benefitted from deregulation in the 1980s. While the internationalization of banking intensified in the 1990s—in Europe through the creation of the EU single market in 1992—the world's leading economy, the United

States, has allowed effective regulation to weaken over time; the personnel for risk management in the U.S. SEC declined dramatically under the Bush administration, surprising for a period in which the investment banks for which the U.S. SEC is the relevant supervisor expanded heavily. The Fed has held the view—under Chairman Alan Greenspan and also under his successor, Ben Bernanke—that reducing regulation should be the appropriate policy approach for traditional banks (bank holdings). The result has been insufficient equity capital for the growing risks taken by big banks in New York. Some of the Wall Street investment banks were major players in the subprime mortgage market. There were also some banks from the UK, Germany, the Netherlands, France, and Switzerland active in that market. As regards Germany, IKB Deutsche Industriebank and SachsenLB were among the large players in the U.S. markets; the absolute volume of subprime deals represented by these two medium-size German banks was larger than that of the German leader, Deutsche Bank. The IKB had no clear idea of the type of business it was undertaking; indeed, on its website it explained the role of special investment vehicles and it claimed that investment in ABS are "in the short run an almost risk-free investment" (see Appendix 4). In its 2006 annual report, IKB claimed that it had adopted a conservative strategy in the field of risk—one may argue that this is a straightforward lie. Interestingly, faulty statements in company reports are not liable. From this perspective, a key element of EU reforms should be to require company statements in the annual reports to incur a specific liability if key statements are wrong. Statements about the risk strategy should be earmarked as being of particular sensitivity, and it would be useful to develop a new indicator system by which one could measure the degree of risk incurred. A new EU directive is urgent here and it is obvious that intra-EU capital flows are distorted by misleading statements of bankers with respect to risk and risk management, respectively. One also should note that the EU single banking market will be distorted by asymmetric government-led bank recapitalization in individual member countries; here the European Commission has an important task in pushing for common principles for the recapitalization of banks.

In regard to cooperation between the EU and the United States, it would be useful to establish a transatlantic and global parliamentary debate on financial globalization. The Bank of International Settlements should become the core of enhanced financial regulation in a global context: This will require broadening membership on the one hand. On the other hand, the BIS should be subject to special international parliamentary control. Selected members of the European Parliament, the U.S. House, and other parliaments should be delegates of a newly established Parliamentary Assembly at BIS. The OECD Development Center could also be used as a forum for a policy debate involving industrialized countries, Brazil, China, and other newly industrialized countries. Thus the pressure on the BIS to come up with better and more consistent work could be reinforced, and this would reinforce global governance. The IMF will need to play a crucial role in stabilizing countries facing sudden strong capital outflows and hence high devaluations; a particular problem will occur in countries with high foreign debt. Eastern European EU accession countries could face serious problems in 2009/2010 as a decline of the real economy could overlap with a second wave of the banking crisis and high capital outflows or reduced capital inflows. Individual EU countries as well as the Community should help eastern European accession countries. In regard to Iceland—a country in the European Economic Space—the EU should also help the country since there is a global fragility which implies that the bankruptcy of any country in Europe would be a signal for investors worldwide that countries in Europe could indeed go bankrupt: Country risk premia would increase while the United States would benefit in such a situation from higher capital inflows driven by safe-heaven considerations (Appendix 1 presents theoretical reflections which highlight the impact of financial market integration and changes in risk premia, respectively). As regards the euro–zone, one may emphasize that membership in the euro-zone is quite useful for some Mediterranean countries; without the euro-zone and the ECB, all EU countries would be part of the European Monetary System (EMS I) and there is no doubt that the international banking crisis would have created enormous tensions on the continent—with Greece, Italy, and Portugal being among the prime targets for speculative attacks.

With regard to the EU, one may conclude that the best way to reform the system of prudential supervision is to combine stricter national regulations with a new EU-based complementary framework on prudential supervision. There are good arguments why an integrated financial EU market requires European supervision to some extent.[24] If the UK should be reluctant to support an EU-wide frame-

work regulation of financial markets, the euro-zone countries should undertake their own policy initiative. It should be possible to create a euro-zone-wide regulatory framework quickly, namely through a treaty among central banks of member countries of the euro-zone; this would be in line with the creation of the European Monetary System in 1979 when heads of states were skeptical that a traditional international treaty—requiring ratification in parliaments of all EU member countries—could work. Thus, the EMS was created on the basis of a treaty among EU central banks.

Better regulation is required to overcome the banking crisis of 2007/08 (which could be reinforced by a global recession in 2009). Several principles should be emphasized here as elements of a solution:

- Typical remedies for coping with the market for lemons problem in the relevant goods market (e.g., used automobiles) should also be applied in the interbank market. Guarantees or warranties are one element, carefully building up reputation a second, and conveying quality signals are a third aspect. One should note that a quality control system can be developed by the banking industry itself and it is not really necessary for governments to do this; rather, government could encourage banks to develop quality signals, guarantee schemes, etc.

- A useful new rule should stipulate that banks creating an ABS or similar financial papers must declare that they will be willing to buy back the assets at any point of time for no less than 50 percent of the initial market price. Such a clause would avoid uncertainties about valuation in an economic crisis. At the same time, banks would have a strong incentive to carefully consider the creation of markets and the range of partners involved in ABS transactions. Banks launching ABS should maintain a 20 percent stake in the equity tranche so that the respective banks have a strong motivation to carefully consider the risks involved in loan portfolios and securitization. (The German Minister of Finance has also advocated a 20 percent rule.)

- As regards revitalizing the interbank market, it is obvious that the mega rescue packages and guarantee schemes implemented by many OECD countries are a rather artificial way to jump-start the interbank markets. The rescue packages of September and October 2008 could be useful to some extent and are indeed helpful in creating some extra time to come up with truly adequate reform initiatives. However, it will be necessary to give incentives to banks to become more active again in the interbank market. The ECB should give preferential interest rates for access to central bank liquidity to those banks which are active in the interbank market; banks which are more active in the medium term should have more favorable access than banks which are mainly in the short term interbank market.

- As creating trust among banks is quite difficult, it could be useful to encourage the creation of small homogenous groups of banks that are willing to resume interbank lending. Such arrangements could be encouraged both by central banks and the ECB. In a second step, the regional clubs of banks could be merged in order to create a euro-zone-wide banking community which is active in the interbank markets.

There is some risk that the global G20 deliberations will lead to discussions about a very long list of reform steps which are difficult to implement and which effectively create more confusion than progress in solving the critical problems. A very long and complex list of measures invites external pressure for delaying the process through confusing and complex debates. Thus, setting priorities is quite important, and five priorities have been highlighted here. A new regulatory approach in financial markets should follow the successful example of telecommunications markets; benchmarking, EU regulatory reviews, and an ongoing dialogue with scientific experts are indispensible elements. The European Parliament (EP) should restore the EP's research service (former DG-IV of the EP), which is quite crucial for optimal legislation in an increasingly complex world economy.

If the United States should fail to adopt Basel II rules—plus some additional key regulations for banks, hedge funds, and insurance companies—the EU should consider imposing restrictions on transatlantic capital flows. It is not in the interest of the EU (nor of the world economy) that in the context of uneven regulatory conditions for banks, insurance companies, and the like, capital from the EU flows to the United States with its partly artificially high rates of return on equity. At least in

the run-up to the banking crisis, many banks and other financial companies enjoyed a cost-advantage by not having to comply with Basel II rules. A U.S. system which has neither consistent domestic regulation nor Basel II rules is creating negative external effects, primarily through the chaos created in the international finance markets by the U.S. banking crisis of 2007/08. This is neither a level playing field nor a system in line with basic requirements for efficiency and stability. One should note that imposing capital export taxes on investments of EU firms with realized plans for portfolio investment in the United States simply reflects a type of Pigovian tax which is designed to help internalize negative external (international) effects. It is up to the United States to avoid such effective barriers for international capital flows.

The EU should push for the creation of a formal Group of International Supervisors (GIS), which would become a twin organization to the existing BIS. The GIS should include supervisors from all countries of the world and be mainly organized in regional groupings (e.g., the EU, North American Free Trade Agreement (NAFTA), Mercado Común del Sur (MERCOSUR), and the Association of Southeast Asian Nations (ASEAN)). The BIS/GIS should be subject to direct international parliamentary control in order to avoid bureaucratic inefficiencies and lack of transparency.

The IMF could have a new role organizing global annual meetings of GIS/BIS along with the World Bank and the WTO. In this way, one could look more deeply into the interdependencies of setting international rules for the world economy. One could thereby create a more consistent international division of labor across international organizations.

Thus we can summarize the overall analysis as follows. The diagnostic part of the U.S. banking crisis is obvious:

- The optimum (national) size of banks grows along with the volume of global financial markets; the rapid expansion and internationalization of financial markets after 1991 increased the size of banks and insurance companies in the United States as well as in Europe.

- Once certain banks and insurance companies obtained critical size, the potential risk of bankruptcy for each represents a systemic risk. The managers of these banks and insurance companies can then pursue strategies of excessive risk-taking in the context of chasing higher expected rates of return on equity—those managers can bet on a bail-out through the government in the case of bankruptcy, and therefore the competition process is seriously weakened. For example, as long as the bank was not on the brink of bankruptcy, the investment bank Goldman Sachs could pay its 26,000 employees $16 billion in bonus payments during 2006. Raising the required rate of return on equity to 25 percent at the beginning of the twenty-first century in Wall Street—and in other OECD banking centers—set an illusionary target, which testifies to the ignorance of top managers about firmly-established laws in economics. With a 4 percent rate of return on risk-free government bonds, the target ratio of 25 percent implied a risk premium of 21 percent and, furthermore, implied that bankers were chasing very risky deals.

- In the case of a banking crisis, major banks can obviously blackmail government and prudential authorities to impose a ban on short sales of banking stocks. In the United States, Secretary of the Treasury Hank Paulson imposed such a ban in September 2008 (possibly after a call from the boss of Morgan Stanley).

- While it is true that the U.S. administration did not bail out Lehman Brothers (it filed for protection under Chapter 11), no big bank or insurance company faces a credible threat of bankruptcy as there is a visible “too-big-to-fail problem.” Thus, competition in the banking sector is weakened; and in other sectors linked to the banking system directly (e.g., the U.S. automotive firms and their respective banks which represent high stocks of asset-backed securities/ABS, collateralized debt obligations/CDOs—a mixture of various ABS—and credit default swaps/CDS which are a kind of insurance for loan packages). The government’s bail out of the big insurance company, AIG, provides more evidence of this problem; indeed, it had to be saved once Lehman Brothers was pushed toward Chapter 11, because AIG sits on an enormous stock of credit default swaps, including those which cover part of the claims against Lehman Brothers. AIG also had to be saved because its high stock of CDS would have been worthless once AIG had gone bankrupt. As CDS provides coverage against

"failure of bonds/loans packaged in ABS," it is clear that enormous depreciation on portfolios in many banks and insurance companies would have been triggered once CDS of AIGs had become worthless. It is noteworthy that CDS and credit derivatives were sold worldwide at the beginning of the twenty-first century. For example, even Allianz probably had about €1,000 billion of CDS on its books at the end of 2007. As there is no global inventory list of CDS, it is absolutely unclear which countries—and to what extent—are infected through toxic CDS. This, in turn, reinforces the lack of confidence in financial markets in general and in interbank markets in particular.

■ The bottom line is that the big banks, big funds, and big insurance companies are in a situation coined in a phrase by Janos Kornai: there is "soft budget constraint," as government bail-out is fully anticipated in case anything goes seriously wrong (Kornai's soft budget constraint originally referred to socialist countries where central banks had to ratify whatever overruns in costs the state-owned firms occurred). As the threat of bankruptcy is not faced by managers of these companies, there are poor incentives for good governance. Moreover, the incentive to take excessive risks is strong. It is strange that the phenomenon of the soft budget constraint once used by Kornai to discuss the notorious inefficiency of socialist command economies must now be discussed in the context of the 2007/08 crisis of the U.S. financial system.

■ The work of rating agencies has been poor and implies that financial market actors suffer from opaque signaling in bonds markets.

■ From the above list of problems and weaknesses, the necessary remedies for coping with the crisis and for avoiding future crises can be derived. The world economy needs competitive and efficient banks acting within a more long-term framework of open competitive markets.

Government bail-outs of major U.S. banks and U.S. insurance companies—or nationalization—is only one element of solving the crisis, where we assume that those firms will be restructured and privatized in the long run. Other necessary reform elements are:

■ Restrictions on the size of banks and insurance companies—and even dismemberment of oversized firms which exhibit the "too-big-to-fail problem"; in the absence of dismemberment stricter regulation is absolutely necessary. Insurance companies with standard insurance business should not be allowed to be active in the CDS market and related fields, as this pillar of potentially very large risks could easily undermine the stability of the respective insurance companies;

■ To tax banks, funds, and insurance companies on the basis of both profits and volatility of rates of return (the higher the volatility, the higher the tax rate), so that the apparently short-term bonus/profit maximization strategies no longer look attractive; banks which sell asset-backed securities must keep 20 percent on their books and guarantee that they will buy back the assets sold for at least half of the selling price;

■ The large U.S. rating agencies which represented—according to an SEC report—such visible lack of proficiency should become subject to a licensing procedure while imposing random testing of the quality of rating projects; a group of experts should conduct regular testing, and at the same time, high fines must be imposed for faulty ratings and insufficient documentation of rating decision-making;

■ Comprehensive regulations for banks and hedge funds as well as related actors in financial markets are needed, and prudential supervisory bodies should be more professionally organized in terms of research and a scientific advisory body (Germany's Federal Financial Supervisory Authority (BaFin) is a relevant, weak example in this field, and it should be reorganized);

■ All CDS contracts should be registered in a global database, and regulators should adopt broad requirements in terms of transparency, on the one hand, and restrictions, on the other; for example, CDS contracts should not be accumulated by banks or insurance companies on a large scale, which effectively implies that they would no longer face any threat of bankruptcy (since they signify a systemic risk in case of bankruptcy);

- Rating agencies will no longer obtain fees directly from the issuing of bonds; instead, there should be a two-stage pool financing, according to which rating firms obtain fees only from a large pool within which all companies issuing bonds should contribute;

- As regards prudential supervision, a Europeanization of the process is advisable to make sure that crisis management in the EU single financial market can be organized effectively; there is also a need to somewhat restrict regulatory arbitrage within the EU.

These minimum reform agendas for the United States—and also for the EU—should not be understood as simply reflecting a new policy fad with a bias in favor of regulation and control. Rather, this agenda is the logical response to the problem of a soft budget constraint on the part of the banking and insurance sector in OECD countries; too-big-to-fail has become a serious challenge. This clear preference in favor of more and better regulation can partly be justified by referring to arguments by Cooter and Schaefer, who discuss the role of regulation for the specific case of (developing) countries with weak rule-of-law.[25] With such a weakness, it is quite useful to have regulations as a kind of general remedy. In the United States and the EU, one should realistically consider that the soft budget constraint of big banks and big insurance companies is an important problem and that market discipline and competition forces are often rather weak. Hence tighter regulations—and, in some cases, dismemberment of companies—are preferred policy options for coping with the problem of too-big-to-fail. It is noteworthy that ongoing financial market globalization will reinforce the tendency for a growing role of big banks and big insurance companies. Such growth dynamics are only acceptable by policymakers if there are strict regulations or remedies in favor of more competition (e.g., a fall of sunk costs and hence a greater likelihood of newcomers entering the market). The visible tendency of the United States to internationally externalize a considerable share of the costs of its banking crisis makes reforms urgent, which helps to internalize negative external effects. It is not implausible to assume that the rest of the world bears a larger share of the costs of the U.S. banking crisis than the United States itself.

Without better regulations or more competition in the banking sector—as well as better prudential supervision, which should follow a more economic approach as compared to the largely legalistic approach traditionally applied—no internationalization of the EU CO_2 emission certificate markets should take place. Similarly, there could also be no feasible pension reforms in Europe which would encourage individuals to rely more on private retirement savings. The apparent knowledge gap of bankers in some big banks suggest that compulsory retraining of managers would be useful; as much as retraining among medical doctors is standard, there is an equal need to make sure managers understand through teaching units—provided by independent universities and institutes—the challenges they face. Moral hazard remains a big problem.

The ECB should exploit opportunities for reducing the interest rate. Such a step is unlikely to directly stimulate economic expansion, but it would reinforce profitability of banks in the euro-zone which face considerable problems with respect to profitability (see Appendix 2 for regressions on banks' profitability in the United States, Switzerland, Germany, the UK, and the EU, respectively). Banks in the euro-zone will welcome profits from intermediation in a situation where high depreciations on portfolios of banks are common. With lower short term interest rates it could be possible to avoid an inverse yield structure; such a yield structure has already been observed in the United States where safe-heaven effects have channeled a high share of savings and capital inflows into long term government bonds. Profitability of banks is a key for revitalizing the banks' loan business in the medium and long run.

The EU would be wise to adopt an expansionary fiscal policy in 2009, namely, in a situation in which monetary policy has lost its effectiveness (partly because banks hardly pass on the ECB's reduction of the central bank interest rate to the banks' clients; problems with the Keynesian liquidity trap could also play a role). At the same time, many countries face a recession, and the recession could be unusually deep judging by forecasts of the IMF, the EU, and the Deutsche Bundesbank in November 2008. In such a situation one should consider options for expansionary fiscal policy with a clear focus on stimulating innovation and investments; in some countries, measures to stimulate consumption could also be adequate.

The EU countries should spend more money on improving infrastructure. This should include modern telecommunications, and here it would be quite useful for the European Commission to remove unnecessary (regulatory) obstacles for higher investment. The EU should try to enhance cooperation with the new U.S. administration; on both sides of the Atlantic, an expansionary fiscal policy with a strong focus on green information technology (IT) could be useful. The new U.S. administration will consider climate policy as a more important field than the Bush administration has, falling more in line with the EU countries' year-long emphasis on fighting global warming. Thus it seems attractive to consider a joint expansionary policy with a triple focus on green IT, infrastructure modernization, and selected impulses for higher innovation and investment. At the bottom line, it should be emphasized that restoring confidence in the interbank market is of paramount importance for overcoming the U.S. and global crisis.

The Obama administration has adopted some key reforms necessary to cope with the banking crisis and the government has made clear that more international cooperation in many policy fields is desirable. In Europe, the EU and its member countries have also implemented reforms which are useful as a first step for overcoming the banking crisis. Germany is among the EU countries where the government has not only adopted a rescue package for banks—with capital injections in several banks (including Commerzbank which received €18 billion from the government in December 2008 and January 2008 for a stake of 25 percent while the whole bank was not worth more than €5 billion on the stock market)—but also a fiscal stimulus package. In addition, the government has decided to put the reform of prudential supervision on the agenda for 2009/2010 and to impose some restrictions on managers' salaries.

The main challenges, however, have not been tackled thus far in the United States and Europe, namely, the establishment of an historical data ban for all credit default swap transactions, thereby facilitating the valuation of banks' assets. The basic argument here is that only solid knowledge about the holder of CDS—and thus the ability to evaluate the counter-party risk—will allow a basis for pricing many bank assets. This in turn is the basis for restoring confidence among bankers whose balance sheet information is rather worthless without such information. Neither Keynesian fiscal policy nor expansionary monetary policy will be able to stabilize the banking system; the banking system itself must be reorganized and the more expansionary monetary policy is, the less pressure there is on bank managers to do their job; it also is obvious that a government which simply recapitalizes banks without imposing new rules on risk management and incentive schemes for bank managers will not really help. One can only warn that the strategy of the United States, the UK, Germany, and other euro-zone countries that relies on very low interest rates and loose fiscal policies as a means of coping with a financial market crisis is unreliable. As long as the principles of market economies are not restored—to combine private property with market transparency and effective competition plus internationalization of external effects—American and European economic globalization cannot succeed. It also should be clear that governments should encourage competition in financial markets and greater transparency; consolidation of the banking sector, so far, has mostly meant the creation of even bigger banks. The well-known problem of “too big to fail” is thus reinforced.

In this perspective it is quite interesting to note that Mercedes Bank in Germany—so far mainly known for its activities in car-financing and automotive leasing—has been a winner in the banking crisis as investors have withdrawn investments from some traditional big banks and looked for alternatives. Governments might even consider encouraging industry to create a new (European) bank in order to stimulate competition. With new banks in the market, unwinding some of the failed giants of the industry should not be such a problem.

In the EU27 Germany and France, as traditional leaders in European integration, face a particular challenge in overcoming the crisis in the euro-zone. Avoiding new protectionism in the EU and worldwide should be a key policy element for the EU, but it is unclear whether Germany and France really act with the same agenda. A particular problem concerns eastern European accession countries whose banking systems are largely dominated by western European investors and foreign banks, respectively. As country risk premiums in eastern Europe have strongly increased in 2008/09, refinancing of bonds and loans will become quite difficult for many accession countries. Germany, as

the world's No. 1 exporter, has a natural interest in stabilizing eastern Europe, however, there is not much leadership to be observed in Berlin in this field. One should warn that the idea of stabilizing individual countries will not work; rather, there is a need to come up with an approach which would stabilize the whole region. The European Commission and the European Parliament should adopt a new initiative here—and certainly the IMF and the European Bank for Reconstruction and Development (EBRD) could also play a crucial rule. The new market economies in eastern Europe are being put to a very serious test in the course of the transatlantic banking crisis. Political support for market economies in Europe and the confidence in banking systems has declined so that overcoming the banking crisis is of paramount importance.

While not too many economists sounded the alarm before the crisis, it is true that applying principles of economics will help to sort out the chaos in financial markets. Embracing new ideas—such as the proposed volatility tax—will be a necessary element for effective crisis management and sustained recovery. Big banks with non-sustainable investment strategies and excessive targets for the rate of return on capital will ultimately destabilize the banking system and this negative externality should be internalized through a quasi-Pigovian tax (read: the volatility tax). It is obvious that there is still a long research agenda for economists and that indeed financial globalization without adequate institutions and rules is bound to fail. A global dialogue about the required institutions and rules is needed and the United States and Germany should play a strong role in this field.

APPENDIX 1: RATE OF RETURN ON REAL CAPITAL (INCLUDING DEPRECIATION RATE)

FIGURE 3: RATES OF RETURN ON CAPITAL IN THE BUSINESS SECTOR[1]

	1960-69	1970-79	1980-89	1992	1993	1994	1990-94
United States	17.1	15.7	15.7	17.1	18.1	18.8	17.4
Japan	24.8[2]	17.9	17.9	14.0	13.8	13.4	14.2
Germany	16.3	13.5	13.5	13.7	13.2	13.8	13.7
France	11.9[3]	12.8	12.8	14.6	14.3	14.7	14.5
Italy	12.7	11.8	11.8	14.5	14.6	15.2	14.7
United Kingdom	11.8[3]	10.2	10.2	9.9	10.9	11.5	10.2
Canada	12.4[n]	14.2	14.2	16.1	16.4	17.1	16.5
Netherlands	n.a.	13.9	13.9	17.4	16.7	17.9	17.9
Belgium	n.a.	12.7	12.7	12.5	12.1	12.4	12.7
Sweden	13.2[2]	10.7	10.7	11.1	12.0	12.6	11.0
Switzerland	15.6	11.1	11.1	8.5	9.3	10.4	9.4
G-10 Weighted Average	17.0	14.8	13.8	15.1	15.5	16.0	15.3

[1] Gross output of the business sector minus net indirect taxes and labor income, all divided by non-residential capital stock excluding land

[2] 1965-69

[3] 1963-69

[n] 1966-69

Source: OECD (1995), Saving, Investment, and Real Interest Rates, A Study for the Ministers and Governors by the Group of Deputies, Paris, October 1995.

If one assumes that the rate of depreciation on capital is 10 percent, the net yield on capital in industry is about 5 percent in the long run. The difference vis-à-vis the risk-free interest rate of government bonds is about 2 percentage points, and entrepreneurs have to take considerable risk to earn these extra two percentage points. Why should bankers get 25 percent rate of return on equity? There is no argument which could support such a target ratio for the banking sector; an individual bank might shoot for ambitious goals—e.g., because it is a leader in the use of information and communication technology which raises productivity and profits, respectively; however, the overall banking sector would be wise not to aim for more than 10 percent or 15 percent as a long term strategy.

One may look not only at the rate of return on equity but also on returns on assets. Figures from the United States—from the Federal Deposit Insurance Corporation (FDIC) Quarterly Banking Profile—show that not the biggest banks (in terms of assets), but rather the medium-sized banks obtained the highest return relative to assets. In the period 1999-2008 the average return on assets in percentage was 1.17 for an asset size of $1 billion to $10 billion; it was 1.12 for greater than $10 billion. If one drops the year 2008, the annual average is 1.32 for the medium sized banks and 1.22 for the biggest banks. From this perspective dismemberment of big banks should be considered seriously—the profitability is higher and the too-big-to-fail problem less relevant than for the very big banks. While managers of big banks often claim that there are economies of scale, research suggests doubts about this argument; see, for example, Jeffrey A. Clark's 1984 article "Estimation of Economies of Scale in Banking Using a Generalized Functional Form" in the Journal of Money, Credit and Banking, as well as A. Berger and D. Humphrey's 1994 working paper "Banking Scale Economies, Mergers, Concentration and Efficiency: The U.S. Evidence."

APPENDIX 2: NEW CRITICAL ISSUES OF ECONOMIC ANALYSIS AND POLICY IMPLICATIONS

The dominant approach in macroeconomics is New Keynesian Economics, which is an approach emphasizing deviations from the long-term/natural output or the natural rate of unemployment. By implication, the level of natural/long-term output is not really considered, which is rather unsatisfactory from an analytical point of view. Another critical point in model-building concerns the formation of expectations; in many standard models rational expectations are assumed so that no systematic forecast error should occur. However, if we look at open economy macroeconomics and hence at the forward exchange rate and the current exchange rate, one should expect that there is no systematic difference between the forward exchange rate and the respective future spot exchange rate; this, however, is not true, as is well-known from the literature. Moreover, if we consider a bubble model the combination of the open interest parity $i = i^* + E(d\ln e/dt)$ and the expectation rule $E(d\ln e/dt) = \psi'' (\ln e\# - \ln e) + (1-\psi'')d\ln e/dt$—with $d\ln e/dt$ being the percentage devaluation on the bubble path and $e\#$ being the long term equilibrium exchange rate—which then gives the equation $d\ln e/dt = (1/(1-\psi''))(i-i^*) + \psi''/(1-\psi'')(\ln e - \ln e\#)$ according to which the bubble dynamics of the exchange rate depend on the probability that the bubble will collapse ($0 \leq \psi'' < 1$), the international interest rate differential (i denoting the domestic interest rate and i^* the foreign interest rate) and the percentage difference between the actual exchange rate and the equilibrium exchange rate.[26] If ψ'' were zero the interest rate parity holds; if, however, there is $\psi''>0$ an initial undervaluation ($\ln e - \ln e\# > 0$) implies that there will be some devaluation—until the point in time when the bubble bursts. As long as there is no knowledge about when the bubble will burst, it is implausible to work with rational expectations. One more criticism concerns the issue of Dornbusch-type exchange rate overshooting. If there is overshooting of the exchange rate in the short-run there will be systematic forecast errors unless the time path of the overshooting was known in advance; if, however, that time path was known in advance, speculators could exploit profits by eliminating the overshooting. To the extent that there is overshooting in reality it must be true that rational expectations do not hold.

To the extent that the set of equations is within the framework of a stochastic model—and based on rational expectations—one also faces problems which are relevant in the context of the international banking crisis and expectation formation, respectively:

- Each equilibrium equation of the model will contain a stochastic term with zero mean value and a given variance σ^2. The assumption of rational expectations is that agents share the same model at any time in the economy while one may suggest that true rational behavior (implying that there is no systematic forecast error) suggests a different approach: use a complex standard model in periods of normal economic dynamics, but use a more simplified short-term model in periods of "excessive dynamics"—in periods in which there is a sudden strong upward revision of σ^2. If some agents arrive at the conclusion that the price of risk has exceeded a critical margin it makes sense to invest in a more sophisticated model since the benefits of utility maximization in a better model—with a smaller σ^2—minus the costs of adjusting the model are likely to exceed the benefit of the existing standard model. How are expectations formed in the interim period between the use of the old model and the use of the new model? One possibility is to form expectations by analogy: Look to a similar historical episode and assume that the time path of variable x, y, z will follow a similar adjustment pattern as in that period.

- There is a special problem for actors facing short-term liquidity constraints and potential long-term solvency problems. In a period of crisis nobody knows whether the system will move to a new steady state and thus calculation of the steady state, taking time and resources, is not really attractive to the individual actor: The rational actor will ignore the long term solvency issue and consider a simplified model—potentially without any explicit solvency constraint—and switch to a more sophisticated short-term model which allows one to better cope with liquidity issues.

- At the same time, economic agents are expected to share the same model which is counter-intuitive; rather, an evolutionary approach would be useful here where some actors have a knowledge advantage (read: knowledge is closer to reality) or an information advantage vis-à-vis other agents

(e.g., private information whose role could increase in the context of enhance innovation dynamics in the real sphere or the monetary sphere). How do we know that somebody has a knowledge advantage? Typically, an economically very successful actor is assumed to have a superior model. Let us apply this idea to the asset bubble of 2005/06 and the subsequent transatlantic banking crisis. The idea proposed here is that leading banks and firms dominate the formation of expectations and try to manipulate the public; setting the modeling standard indeed is a standard in the economic sense of the world. The more successful the investment bankers are—e.g., in terms of expected rate of return on equity—the more credible their preferred version of the model will be and thus more people will act accordingly: they will adopt the same model. If, however, the leading banks suggest a quasi-contradictory goal—such as the famous 25 percent rate of return on equity after 2002 in the United States, the UK, and many euro-zone countries as well as Switzerland—the multi-agent system will produce instability and before that quasi-rational bubbles (note here that by quasi-contradictory goal we mean a goal that indeed is logically inconsistent while the actor and the general public believe that the goal is consistent; the 25 percent required rate of return on equity as a goal for the overall banking sector is inconsistent with the real world in which economic laws will make sure that the output growth rate will be roughly equal to the real interest rate of government bonds and in a non-inflationary setup the difference between the 25 percent goal and the real interest rate simply is the risk premium which, however, is unrealistic for Western societies with a majority of risk-averse investors; leading bankers in New York, London, Zürich, and elsewhere cheated on the public by declaring in company reports that they had adopted a conservative—read: low-risk expansion strategy—while in effect they had done the opposite. Managers signing such lies written in company reports should be liable; indeed, the company report accompanying the balance sheet must become a serious document by appropriate change of laws).

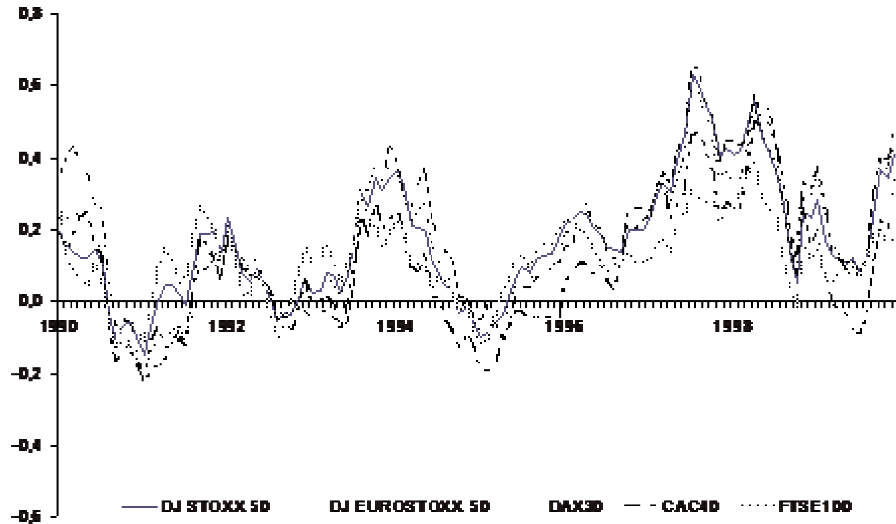
■ In a multi-agent model there arises a serious problem if certain "opinion leaders"—top managers from big companies—declare that they are unable to make a public forecast for their respective business. Expectation formation of agent i (an automotive supplier firm) is conditional on the known expectation of agent j (an automotive producer); if a critical number of agents declines to make a public forecast there can be no rational expectations at the aggregate so that there will be systematic forecast errors. They cannot be profitably exploited as long as the crucial number of non-forecasters persists. This seems to be a good description of the situation in the OECD countries in 2008/09. The question then is which type of expectation formation is adopted in such a setup, which in reality is also confronted with the fact that some international organizations are not publishing their true internal macroeconomic forecast for fear that the "mood" of the public could switch to an even more negative sentiment and that investment and consumption fall at an even faster rate.

As a consequence of the reflections presented it would be useful to conduct more research on empirical aspects of expectation formation.

A serious analytical shortcoming concerns the role of cumulated foreign direct investment (FDI) for the adjustment current account imbalances: in the presence of inward FDI and outward FDI—and assuming that consumption, exports and imports depend on national income (and not on GDP as is usually assumed) the Marshall-Lerner condition has to be modified.[27]

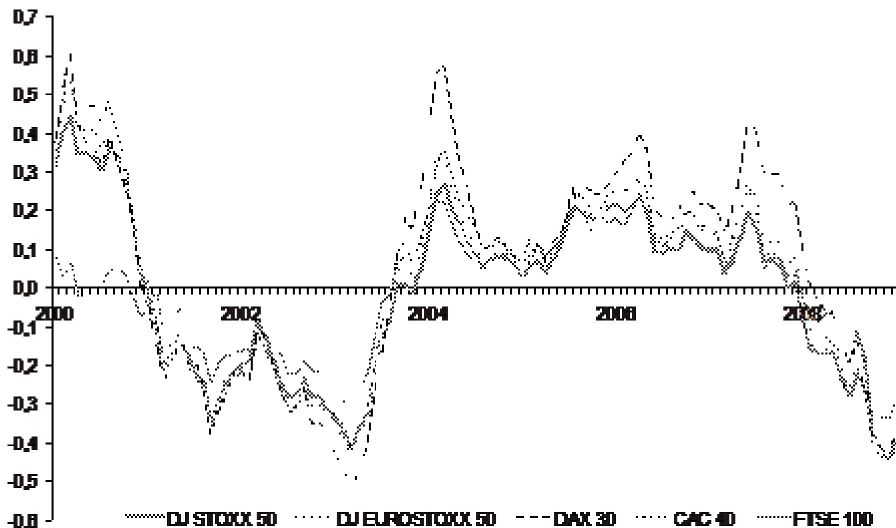
APPENDIX 3: SELECTED FINANCIAL STATISTICS

FIGURE 4: ANNUAL GROWTH RATE OF STOCK MARKET INDICES (BASED ON MONTHLY VALUES), 1990-1999



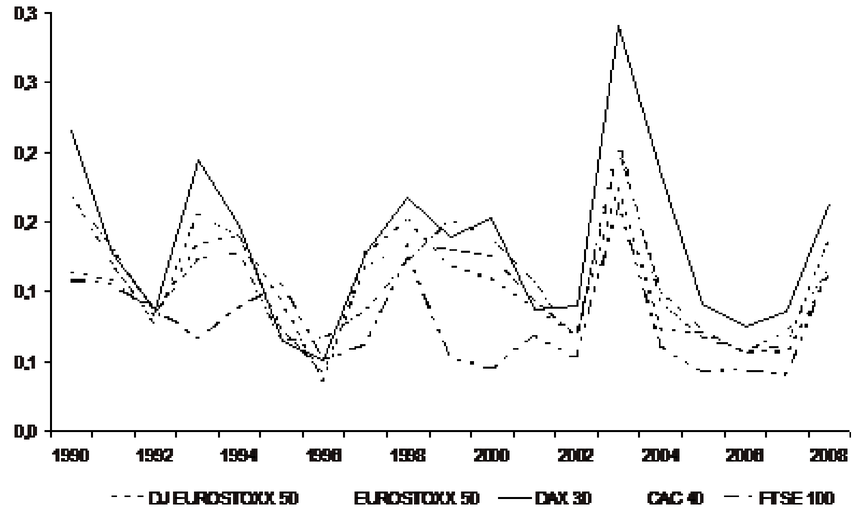
Source: Eurostat, EIIW Calculations

FIGURE 5: ANNUAL GROWTH RATE OF STOCK MARKET INDICES (BASED ON MONTHLY VALUES), 2000-2008



Source: Eurostat, EIIW Calculations

FIGURE 6: VOLATILITY OF STOCK MARKETS (VARIANCE, BASED ON MONTHLY FIGURES), 1990-2008



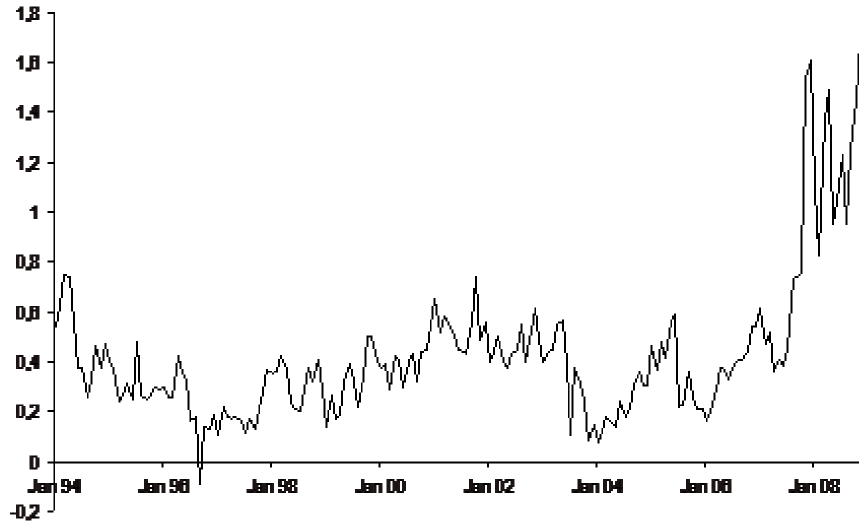
Based on growth rates of stock market indices (monthly values), Volatility of the following 12 months

Source: Eurostat, EIIW Calculations

FIGURE 7: INTEREST RATE SPREADS BETWEEN CORPORATE BONDS AND GOVERNMENT BONDS IN GERMANY (M, Q, Y)

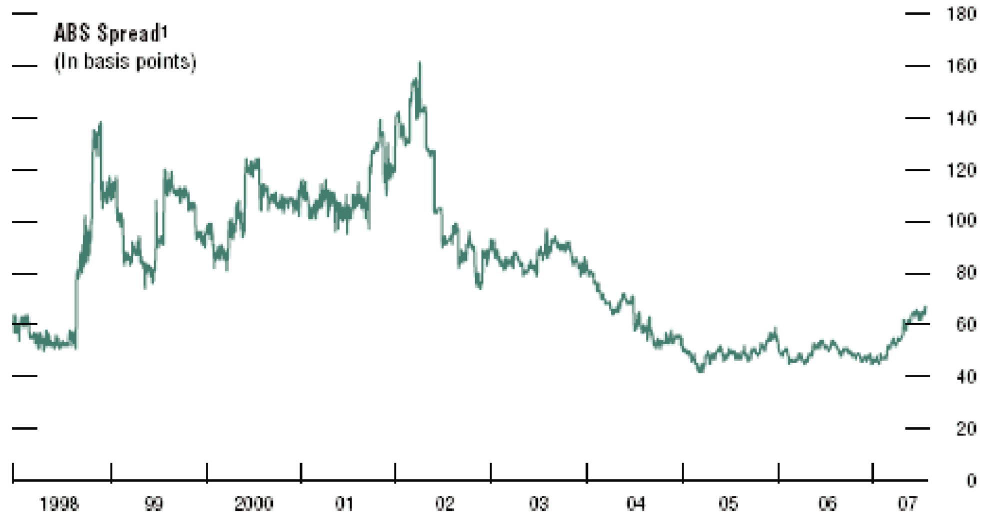
Source: Bloomberg

FIGURE 8: INTEREST RATE SPREADS BETWEEN CORPORATE BONDS AND GOVERNMENT BONDS IN THE U.S. (M, Q, Y)



Source: Bloomberg

FIGURE 9: DECLINE OF RISK PREMIUM IN THE US IN 2002-06 (ABS VS. GOVERNMENT BOND YIELD);



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