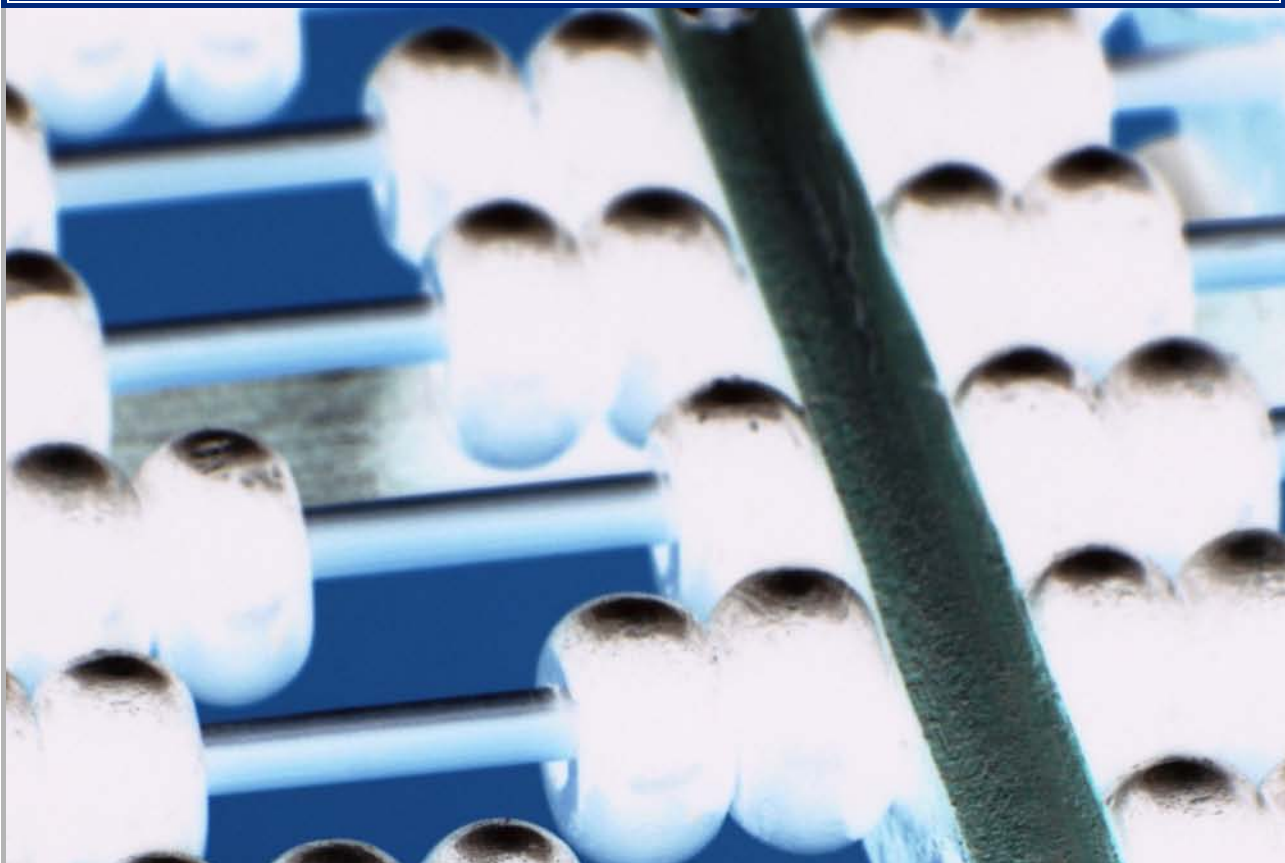


Causes and Consequences of the Financial Crisis

Discussion paper



Author:

Dr. Thieß Petersen
Bertelsmann Stiftung
Tel: + 49 – 52 41 – 81 81 218
thiess.petersen@bertelsmann.de
<http://www.bertelsmann-stiftung.de>

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Translator:

J. Alexander Colpa (PhD)
Kingston, Ontario
Canada
Tel: 001 – 613 – 546 – 0605
acolpa@kingston.net

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Executive Summary

The bursting of the US real-estate bubble forms a central element of the current financial crisis. Such a bubble can only develop if the prerequisite monetary funds are available. Indeed, in the years 2001 to 2004, the US Federal Reserve made such funds available through its **loose monetary policy**. Low interest rates were used to stimulate the economy in order to soften the dreaded production and employment declines that occurred in the wake of the dot-com collapse and the terrorist attacks of September 11, 2001. In response to declining US interest rates, other central banks also implemented monetary growth policies, thus creating a worldwide increase in liquidity. **Psychological elements** (greed, envy, herd instinct, systematic underestimation of risks, the conviction that the individual is more cunning than the market) and the **inefficiencies of financial markets** (especially asymmetrical information) have certainly contributed to the financial crisis, but without the monetary roots there would be no liquidity to fuel a speculation bubble. Hence, the monetary policies that were used to combat the **Crisis of 2001** formed the germ-cells for the **Crisis of 2009**.

The effects of the burst US real-estate bubble are transmitted to the real economy through a variety of channels and mechanisms: Asset losses lead to a **decline in consumption**; a decline in the refinancing opportunities for banks makes credit more expensive and, consequently, higher interest rates reduce the **demand for investment**; rising risk-premiums for credit also reduce investment. The overall result is a **decline in the demand for goods throughout the entire economy** and this leads to reduced production and increased unemployment. The decline in demand occurs primarily in the country at the source of the burst real-estate bubble, but it is transmitted to other countries through intertwined economic connections, and, in the end, it evolves into a **global economic crisis**.

The list below indicates the major reasons why it is impossible to **quantify the burden** that will be caused by the collapse in production and employment that is to be expected as a result of the current crisis:

- a lack of knowledge about the **extent** of the worldwide **value adjustments** that are still required due to bad credits and over-valued investment papers, and the related losses of assets,
- persistent **shortcomings** of the current **prognosis models**. They are not suitable for future extrapolations during a crisis because they assume stable relationships between individual indicators. Such assumptions are no longer valid in a crisis,
- inaccuracy regarding **central model assumptions** (raw material prices, exchange rates, economic developments in the most important trading partners etc.),
- uncertainty about the **effectiveness of economic policy measures**, and
- The role of **expectations** including the tendency of negative expectations about future economic prospects to spiral into ever more pessimistic outlooks.

Given these uncertainties, no one can accurately predict either the **severity** or the **duration** of the current recession. Only one thing is clear: even under favorable scenarios, the world will experience a temporary economic collapse with an increase in unemployment.

Besides affecting production and employment, there will be further consequences arising directly from the crisis or from the measures that are used to alleviate its effects. The most important ones are:

- a **worldwide increase in public debt**,
- an increasing **income disparity** leading to **social tensions** both within countries and between countries,
- a greater **pressure to cut costs on the part of businesses**, leading to job losses, decreases in minimum social standards and a greater shifting of cost burdens to society in general (e.g. increasing pollution),
- the danger that countries will adopt **protectionist measures** to shield domestic production and to soften declines in unemployment,
- the emergence of a **monetary basis for a new speculation bubble** founded on current loose monetary policies,
- that the necessary **structural adjustments** will be slowed down due to a policy of cheap money and,
- a deepening of **generational conflict**. The rising national debt and the shift of costs (pollution, depletion of raw materials) onto the broader society means that current generations are improving their living conditions at the expense of future generations. This will have serious consequences for the **social and political system** as a whole.

Yet amongst all of this pessimism there are some **rays of hope** that may counteract the negative economic developments and their consequences.

- If the **economic programs** and the **loose monetary policies** of the central banks have the right effect on demand and employment, **economic growth** will return relatively quickly.
- The global economic downturn has brought about a decline in the price of raw materials that raises the **spending power of consumers**. This will positively impact consumer demand and increase employment.
- Many of the global economic programs promote **eco-friendly technologies**. Businesses in that sector will be able to **raise their production and employment levels**, drawing further investments and employment opportunities their way.
- With a total population of 2.5 billion, **China and India** represent enormous **sales potential**. In 2009, both national economies will grow more slowly than in previous years, but the World Bank is expecting real growth figures of 7.5 percent for China and 5.8 percent for India.
- The real foundations for overall economic production processes (i.e. **human and material capital**) are still present.

These rays of hope give rise to the **expectation** that the current global economic crisis will be **relatively short**. The World Bank expects that, after the economic decline of the years 2008 and 2009, there will be a worldwide recovery. The **decisive question** is: How can a global departure from the monetary and fiscal growth policies be achieved without duplicating the crisis-like developments of the years 2002 to 2008?

1. Causes of the financial crisis

Knowledge about the causes of the actual financial crisis is imperative if we are to devise measures that will reduce the likelihood of a recurrence. There are numerous approaches to explaining the current crisis: investor greed, a lack of morals among bankers, poorly informed investors, erroneous stimulus systems for the compensation of bank managers, an absence of regulations on the part of a state, the monetary growth policies of central banks, the development of inscrutable financial derivatives – this list is by no means complete and it could be extended indefinitely. In spite of the many possible explanations, the bundle of causes can, in the end, be summarized into three categories:

- The **loose monetary policy** of the most important central banks, originating in the US between 2001 and 2004 and copied by central banks worldwide. The interest rate cuts served as the global monetary basis for the speculative real-estate and stock bubbles.
- **Psychological elements** that supported the emergence of a speculative bubble (greed, envy, herd instinct, systematic underestimation of risks, and the conviction that the individual is more cunning than the market).
- **Inefficiencies in the financial markets**, primarily caused by lack of information, leading to a market breakdown.

1.1. The loose monetary policy

- After the bursting of the speculative dot-com bubble, the US central bank cut interest rates several times in early 2001. After the terrorist attacks of September 11, 2001, the rates were cut again (see Figure 1). The **loose monetary policy** served to soften the negative economic impacts of these two shocks. The interest rate cuts were intended to increase investment. That, in turn, would lead to more employment, higher wages, more consumer demand, and then to further production and employment increases.
- Declining interest rates in the US reduced the incentive for capital investment there. A **devaluation trend of the US dollar** (respectively an increase in the value of the euro) emerged, which heightened the export opportunities of the US economy while export opportunities for all other countries declined. In order to prevent a decline in exports and employment in Europe, the European Central Bank responded with interest cuts of its own (see Figure 1). Other central banks followed suit for the same reasons, causing a **worldwide loose monetary policy**.
- The political-economic goal was achieved, i.e. **production, employment, and wages** increased in the US. As a consequence of the increase in private income, **the demand for real estate went up**, generally financed through credit. The loose monetary policy also decreased the cost of borrowing, thus further strengthening incentives for credit-financed real-estate purchases and creating even more demand for real estate.
- The rising demand for real estate led to a permanent **growth in real-estate prices**. Since this real estate functioned as security for the credit, the security holdings of the creditors increased. **Credit lending increased further** for more consumer goods, real estate, and especially automobiles.

- However, the worldwide policy of loose money had the medium term effect of pumping too much **liquidity** into the markets, increasing the danger of inflation. To prevent a rise in inflation the US Federal Reserve imposed successive hikes to its key interest rate late in 2004, and the European Central Bank followed in 2006 (see Figure 1). As credits in the US were variably priced, this raised the credit costs for real-estate owners.
- **Increasing interest rates** had a negative impact on growth and employment. Higher interests generally caused a decline in investments and a reduction in employment. Wages decreased and this led to a drop in consumer demand, further decreasing production and increasing unemployment.
- As a result of rising credit costs and falling wages, borrowers were no longer able to pay their amortizations and interests, so they were forced into selling their credit-financed real estate. The surge in supply led to a **drop in real-estate prices**. Potential home buyers realized that the trend towards ever increasing real-estate values had been highly irrational, so their willingness to acquire property fell drastically. The rising supply thus met with a drop in demand, real-estate prices fell rapidly, and the **speculative real-estate bubble** burst.
- Consequently, real estate, which had functioned as security, lost value. For the banks involved, this loss of credit meant an asset loss at the expense of their own capital.
- Hence, the banks saw a decline in their ability to extend credit. The tightening of credit increased interest rates even further. Investment, production and employment all declined, i.e. the downward economic trend continued.

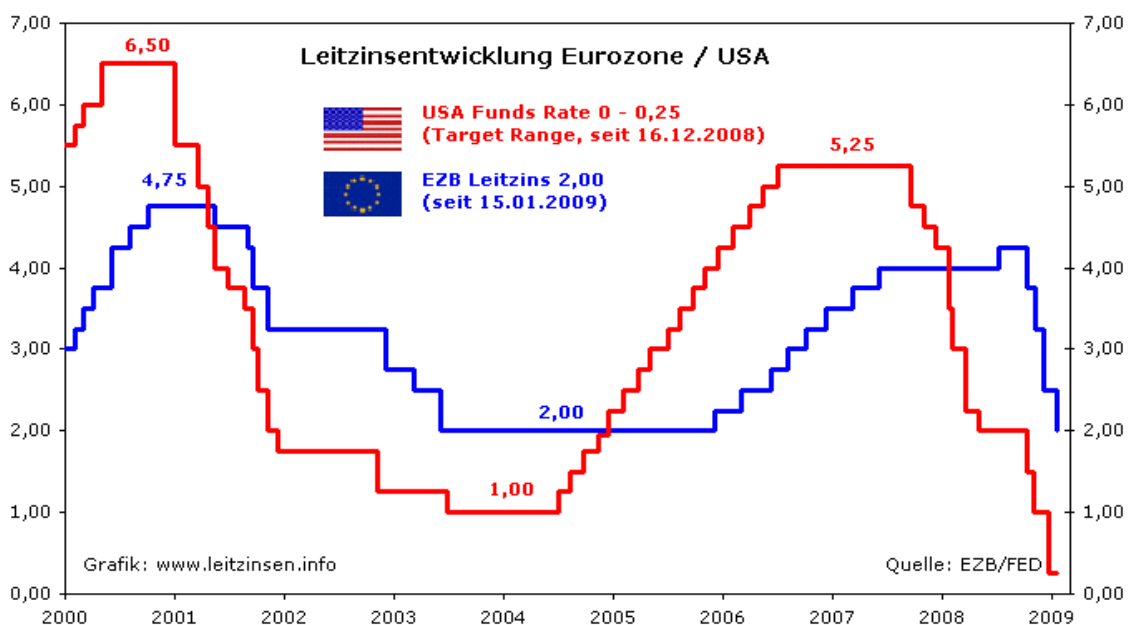


Figure 1: Development of Key Interest rates in the US and the Euro-Group. (Source: <http://www.leitzinsen.info/>, Downloaded: 16.01.2009)

1.2. Psychological elements of a speculative bubble

While an increase in liquidity in the overall economy forms the monetary basis for a speculative bubble, speculation and speculative bubbles are also a psychological problem. Greed, envy and a herd mentality play an important part in the overheating of asset values. Other contributing factors are the systematic underestimation of risks, and the conviction that the individual is more cunning than the market. We will consider the following psychological causes of speculative bubbles in detail:

- **Greed and envy:** If my neighbor becomes rich by purchasing stocks, then I want to achieve that too, so I will also buy stocks, even with a rising exchange.

Excursus 1: Is greed a fundamental human trait?

Is greed – the excessive and reckless striving for individual gain – a part of human nature? It is a controversial question. If it were a fundamental human trait it would be hard to alter this motive for human action. However, sociological studies seem to suggest that greed is not a fundamental characteristic. For example Max Weber determined that “man, by nature, does not want to earn more and more money. Instead he simply wants to live as he is used to, and acquire only as much as that requires.” (Weber 1965: 50). From the perspective of pre-capitalist eras, Weber points out that people viewed acquisition for its own sake (gathering an excess of goods for trading) as dirty and despicable (Weber 1965: 60). Generally, in all pre-capitalist eras, the dominant motive was the principle of covering one’s needs which meant desires were satisfied by a bundle of goods that was determined by ethical, cultural, and traditional limits. According to Karl Polanyi, also referring to pre-capitalist society, humans are self-satisfied creatures whose demands and needs are by no means limitless and greedy (c.f. Polanyi 1979: 149. 165-170). Werner Sombart showed that also in medieval society, which already had markets, trade, and a monetary economy, the principle of covering needs still predominated (Sombart 1928: 31-44). Even the father of economics, Adam Smith, was of the opinion that people were neither egoistic nor greedy, and that their self-serving actions were restrained by moral-ethical considerations (c.f. Petersen 1998 for greater detail). Thus we may conclude that greed and envy, seen by so many as causal elements in the current financial crisis, are characteristics that emerge from social parameters. As such they are socially determined and fundamentally changeable.

- **Herd instinct I:** If many investors believe that the exchange of a specific stock will rise, they will buy that stock. If that causes many investors to buy the shares, the price per share will rise. This represents an incentive for other interested buyers to purchase shares. This cycle continues and the exchange rises ever more.
- **Herd instinct II:** Fund managers tend to buy those stocks that all the other managers are purchasing as well. That way, even if the exchange might experience a downturn sometime later on, the managers avoid the pressure of accountability (Aigner 2008: 25).
- **Herd instinct III:** Especially in times of great uncertainty, forecasters tend to orient themselves on the predictions of other forecasters. Hence, the fact that many forecasters predict a rising exchange for a specific stock is no proof for the credibility of that prediction.

- Systematic underestimation of risk: Sudden risks (terrorist attack, oil-price crisis, pandemic etc.) are not included in the prognosis models of professional investors and fund managers. Thus, the decision makers systematically underestimate such risks.
- The irrational thrill of risk in the face of threatening losses: Daniel Kahneman (Economics Nobel Laureate, 2002) and Amos Tversky have shown in their research that people become irrationally drawn to risk when there is a possibility of loss. People will avoid taking a sure risk, and prefer instead to engage a game of chance where the expectation of loss is much higher than the sure risk.
- The conviction of being more cunning than the market: Even when market participants know that the exchange of a particular stock is overheated, they will still buy the stock because they assume that, notwithstanding the overheated price, they will somehow find a person willing to buy the stock at a higher price later. Market participants assume that they can still get out of the market at the right time, with gains. This phenomenon is similar to behavior in automobile traffic. Eighty percent of drivers will engage in risky maneuvers because they believe themselves to be among the top twenty percent of drivers.

Excursus 2: Can speculative bubbles be prevented?

As long as people have traded assets there have been speculative bubbles. For instance, in 1637, in The Netherlands, the tulip, an import from the Orient, became a status symbol among the upper class. The price of a tulip bulb shot up until costing several thousand euros in today's terms. This bubble burst when, at an auction, people were no longer willing to pay that price. Given the psychological elements of human behavior which were discussed above, the question is: How can we prevent financial markets from overheating? The results from experimental economics should make us extraordinarily skeptical. Back in 1988 Vernon Smith (Economics Nobel Laureate, 2002) began to study the behavior of people in simulated financial markets. Numerous similar experiments have been done since then. The central result of all experiments was that as soon as there were more than fifteen trading phases in a trial, speculative bubbles ending in a price collapse occurred regularly. Even variations in the rules of the trials (e.g. introducing a transaction tax, limiting price fluctuations, fixing the price at which the game leaders would buy back traded stocks at the end of the trial, or the introductions of a clearing house) could not prevent speculative bubbles. Economics professor Bernard Ruffieux concluded: "No one has yet succeeded in making a single fictitious financial market function efficiently" (Ruffieux 2006: 54). If it has already proven impossible under ideal laboratory conditions, we must surely fear that in real financial markets, with their information shortcomings, recurring speculative bubbles and collapses cannot be prevented.

The permanent price rise of asset values will come to an abrupt end at some point. It is impossible to predict when this will happen. Triggers can be either events with a broad impact (failure of a major bank, terrorist attack) or marginal events (a decline in the expected profits of a corporation from €50 million to €200 million). The only decisive point is that irrationally optimistic future expectations revert to pessimistic outlooks in a single stroke. That leads to sales in order to realize profits. When a drastic sell-off occurs simultaneously with a decline in demand, the result is a massive price or exchange collapse. One of the contributing factors to exchange downturns is the computer guided "Stop-Loss Sale" (This type of sales order, widely used in the US, is given to the stock exchange automatically when the value of a stock reaches or drops below a predetermined level.)

1.3 Inefficiencies of financial markets

Finance and capital markets serve to channel the total available capital towards those investment intentions and economic activities that will render the highest returns given the existing capital risks. Thus financial markets **should** serve to coordinate the activities of the capital providers (the savers) and the capital seekers (investors) in a way that is most beneficial, from an overall societal perspective, to the entire political economy. Markets achieve this goal through the incentive and coordinating function of price. However the market's ability to function also depends on numerous **model assumptions** that are not present in the real world of financial paper (stocks and loans). The most important prerequisites for a well functioning market are:

- **Knowledge about the benefit of the purchased good:** The buyer of a good or a service is in a position to ascribe a certain benefit to that good or service, and to express that in monetary value. If an apple is ascribed a benefit corresponding to one Euro, then the purchase of that apple becomes dependent on its market price. If the market price falls below one euro, buying the apple becomes worthwhile; however, it will not be bought at a higher price. The benefit of a stock consists of the dividends and the gain that will be made when the stock is sold. Neither of these quantities is known. Even in the case of fixed interest papers, there is always the danger that the debtor will not be able to pay the promised interest or pay off the debt. Market participants ought to know the true or **fundamental value** of financial paper, yet this is either uncertain or unknown. But, if savers don't know what benefit they will draw from the acquisition of financial paper, there is no guarantee that they will invest in paper that gives the highest return, both from the individual and general economic perspective. (See in more detail Ruffieux 2006, 52-53.)
- **Equality of information for all market participants:** Transparency is an obligatory prerequisite for the functionality of markets. As soon as there are differences in the availability of information, a market becomes inefficient. The example of **insider knowledge** will serve us well here. If certain individual shareholders sell their shares because they know that their company is on the verge of insolvency, then other investors will unwittingly buy worthless paper. As a result their capital will not realize the highest possible benefit for the general economy.
- **Asymmetrical information** poses further problems. In credit markets, credit lenders face uncertainty over the quality of the borrowers. There are good risks (borrowers who will most likely be capable of repaying their loan) and bad risks (those who are highly unlikely to have the capacity to repay). The higher the default risk, the higher the risk premium that is added to the interest rate, so that every credit **ought to have an individual interest rate based on the default risk**. However, if credit lenders are unable to assess the qualitative differences between borrowers, they can only work with an average risk premium that corresponds to the average default risk. Thus the good risks pay too high an interest rate; one that could reduce their demand for credit. Meanwhile, too much credit is flowing to bad risks, because, given their individually high risk of default, the interest is too low. **Asymmetrical information** about borrowers causes a market failure in that a sub-optimal volume of lending emerges. Furthermore, relative to the size of the entire credit market, the weight of good risks declines. As a result the average quality of the borrowers continues to decrease. In the long run this can cause a **collapse of the entire credit market**. (For more detail see Akerlof 1970 and Petersen 2007).

Market inefficiency has become especially evident in the area of credit trade. On a grand scale, banks have bundled individual credit contracts together into packages that were then sold on international capital markets. There is nothing fundamentally wrong about this practice. On the contrary, the resulting **diversification of risks** is **economically sensible and desirable**. For instance, if a financial institution has only given real-estate credit to the residents in a particular region, and the primary employer in that region ceases production unexpectedly, then thousands of people will lose their jobs and their ability to meet their credit obligations. Consequently the financial institution could face insolvency. Spreading the credit among more institutions also spreads the associated risk, thereby lessening the threat of insolvency for financial institutions. (See Hellwig 2008: 13-14).

The problem of **asymmetrical information** is serious in relation to the bundling of credit packages. The buyers of the credit packages are at an informational disadvantage concerning the quality of the borrowers involved, compared with the banks that originally handed out the credit and now sell it. The package buyers only have knowledge about the average default risk, and the average value of the outstanding claims. At an estimated default rate of 20 percent (which equals an estimated repayment rate of 80 percent), only €80 would be paid for a claim with a nominal value of €100. However, the sellers of the credit packages generally have an information advantage, meaning they are better able to estimate which credits have a default risk of less than 20 percent. Hence they will not likely include credit with a default rate below 20 percent in the packages. Buyers end up acquiring claims packages whose **expected value** is less than the **sale price**. By the time the credits have to be repaid, parts of the credits must be written off so that losses are incurred. This is even more likely when the asset values and earnings that function as security for the credits decline, causing a further reduction in the expected values of the claims.

Indeed it is the international sale of such claim packages that causes the bad credits and the associated write-offs/losses to spread **worldwide** beyond the affected American banks to all banks that purchased such credit packages. Hence, what was originally an **American real-estate crisis** caused by the bursting of the real-estate bubble, soon grew into a **worldwide financial crisis**.

Excursus 3: Could oversight panels have prevented the financial crisis?

The aforementioned information deficits caused a market failure that required the state to intervene as a regulator in the finance and credit markets (minimum standards for down payments on credits, risk evaluation by ratings agencies, permissions and prohibitions on certain products etc.). In the search for causes of the current crisis, the state is often blamed for inadequate regulation, and of having failed in its attempt to alleviate the market breakdown. In any case, it seems questionable if the delineated market crisis can be cured. Therefore it is necessary to examine the proposed regulatory reforms critically. As examples we will point out three reform proposals.

Many people place the responsibility for the financial crisis squarely with the **ratings agencies**. They are blamed for incorrectly estimating the risks of the credit packages. In the future they should better assess the quality of the credit. But it must be borne in mind that the rating agencies are only able to assess the quality of the institutions that sell the credit packages. Indeed the agencies ought to assess the quality of individual borrowers, including the reliability of all real-estate owners who have financed their purchases with credit. In practice however, this would be impossible.

Another circumstance that is often mentioned as a cause of the financial crisis is the inadequacy of the **liability rules**. Institutions that sell their credits to others are not liable for these credits. Therefore, in the future, financial institutions should face increased liabilities for the claims they make. The disadvantage of such a measure is that it defeats the very purpose of selling claims: the benefit of risk diversification, protecting financial institutions from insolvency, would be lost.

Finally, **short sales** have also been implicated in the formation and bursting of speculative bubbles, so that a prohibition is being demanded. This would prevent actors from committing themselves contractually to selling a specific stock, foreign currency, or raw material at a specific future moment for a price or exchange rate that is determined in the present. Here, too, it should be noted that short sales are completely economically justifiable. For example, in foreign trade the futures market for foreign currency is an important instrument that protects against future exchange-rate fluctuations. An exporter who will sell goods in the US in half a year and earn a specific dollar amount does not know today how many euros that amount will then be worth. To improve his own planning and security it makes sense for him to sell the dollar amount, which he does not yet possess, on the futures market for an exchange rate that is determined today. Under a prohibition against short sales, this security instrument would be lost.

1.4. Other influencing factors

The search for the origins of the global financial crisis will occupy many economists, so the mechanisms that have been sketched here represent only a rough overview of the contributing causes. Besides the bases that were already named, there are further influencing factors that either contributed to the crisis or determined its extent.

- The emergence of the real-estate bubble in the US was also underpinned by **state interventions**. Among these we should include the tax savings that resulted from real-estate purchases and the extending of mortgages to middle-class families by Freddie Mac and Fannie Mae.
- The **compensation and bonus system** of the banks and financial institutions is based on returns, and current gains and profits. The effect is that actors in the financial sector have an incentive to concentrate on short-term gains while neglecting long-term loss risks (e.g. extending real-estate credit with high risk premiums to insecure borrowers, or the development of highly speculative financial paper that places bets on exchange rates).

- The monetary roots of the real-estate and stock bubble also extend to the **balance of trade surpluses of the Chinese economy**. These surpluses have risen phenomenally in the past years, from US\$17.4 billion (2001) to US\$160.8 billion (2005) and an estimated US\$400 billion in 2008. A trade surplus means an export of capital, so that currently the Chinese foreign reserves stand at around US\$1.8 trillion (Siebert 2007:55). The accompanying demand for asset titles causes exchanges to rise. (See Appendix 1, the relationship between balance of trade surpluses and capital exports).
- The mirror image of the Chinese trade surplus, the **American balance of trade deficit**, is another monetary root of the financial crisis. In combination with the US budget deficit this double deficit indicates that the American economy has been living beyond its means during the past years. The Chinese trade surpluses have provided the capital that facilitated the credit-financed consumption in the US. This credit-financed consumer spending caused a rise in the extension of credit, thereby **further stimulating the process of creating money** (i.e. additionally increasing liquidity).

Excursus 4: The process of creating money

The process of creating money describes how the amount of money is increased in a political economy. In modern economies both the central bank and the commercial banks provide society with money. Money consists of coins and notes (cash) and sight deposits (credit balances) at the central and commercial banks (transfer money). This amount of money is represented as M1. Term deposits and savings deposits are other important monetary concepts. The **central bank** creates money by acquiring assets from non-banks, and paying for the acquisitions with central-bank money, usually in the form of a sight deposit. Or, the central bank can extend credit to the non-bank, granting the non-bank a credit balance. **Commercial banks** obtain central bank money by selling assets to the central bank or by letting the central bank extend them a loan. They can then use this money to create further transfer money, thus letting the overall amount of money grow. For example, let us assume that commercial bank A receives €1,000 from the central bank for the sale of asset paper. The commercial bank can then extend a €1,000 credit to a business, which in turn uses it to settle an invoice from a business partner. The business partner then deposits the money in his account with commercial bank B. Bank B can now extend credit to another business that uses it to settle a contract by paying the money into a creditor's account with commercial bank C. Commercial bank B has thus increased the amount of money by €1,000 and bank C can further increase the amount by extending credit as well. If there are no restrictions, this **process of creating money by extending credit** can be continued indefinitely. However, in practice there are restrictions that limit multiple money creation by commercial banks. For one, a minimum reserve deposit requires that credit institutions keep a set percentage of their deposits at the central bank. At the European Central Bank this minimum reserve deposit is around two percent. On top of that, commercial banks can also create transfer money by acquiring **asset paper, foreign currency or real assets** from non-banks and allowing the sellers to have credit balances (see Jarchow 1993: 15-35).

Given these relationships, **state debts** can also contribute to an increase in the amount of money. If the state has debts directly with the commercial banks, or sells them bonds, the resulting credit balances represent an increase in the money supply. However, when the state sells its bonds to private individuals, it merely redistributes money among the non-bank sector without raising the amount of money.

- The **mathematical models** that **investors** use for exchange prognoses systematically underestimate the risks to the capital markets. The elaborate models for investment and risk management are based on data with little volatility, and they neglect the effects of ex-

ternal shocks. Risk management based on such models has too few liquidity reserves, so it is likely to experience liquidity problems when unforeseen circumstances arise (Eichengreen 2008: 9).

- The current liquidity problems also stem from an insufficient self-capitalization quota of the banks. In the third quarter of 2008 the self-capitalization quota of the Deutsche Bank stood at 10.3 percent, the Commerzbank at 7.4 percent, and the Postbank at 5.5 percent (Marschall 2008). There is however solid economic reasoning for low self-capitalization. Assuming that a bank places €1,000, and within a year realizes a profit of €100, its self-capital gain is 10 percent. However, if the bank realizes the €100 profit from €100 self-capital and €900 external capital, borrowed at 8 percent interest, the bank has to subtract €72 (interest) seemingly making the profit only €28, but in relation to the self-capital of €100, the self-capital gain is 28 percent, which is even higher than the benchmark value of 25 percent mentioned by Josef Ackermann.
- Finally, a scientific shortcoming must also be considered. The **political economic models** of the Neoclassical Era, which are influential in the current economic discussion, tend to work with rational expectations. Under rational expectations the economic actors assume that speculative bubbles will burst, so they are not even willing to pay high prices. Hence the emergence of speculative bubbles is excluded from the models. Consequently, mainstream political economics does not concern itself with speculative bubbles and their consequences. This explains the current helplessness of political economists.

1.5. Intermediate summary

A central element in the current financial crisis is the bursting of the US real-estate bubble. The loose monetary policy of the period 2001-2004 provided the prerequisite financial means. Psychological elements and inefficiencies in the markets also contributed to the crisis, and allowed the crisis to spread to other economies. However, such a speculative bubble could not have emerged without the monetary roots that provided the necessary liquidity. Succinctly put, the financial measures that were put in place to alleviate the crisis of 2001 formed the beginnings of the crisis of 2008. Therefore, all measures to combat the current crisis must be drawn up with an eye to their **long-term** and **unintended consequences**. At this point two possible dangers must be pointed out.

- State interventions, now running into the billions, cause the **public debt** to skyrocket. Besides reducing the ability of future generations to act, such debts can lead to a **new speculative bubble**. A high and rising national debt causes a rise in interest rates, and the affected country will see capital imports and upwards revaluation trends. The resulting influx of international capital will then provide the liquidity that may trigger a speculative bubble. In the long term, high national debts could even lead to **state bankruptcy**. (See Petersen 2006a and Petersen 2008a.)
- In the short term the worldwide economic collapse will decrease energy and raw material consumption, sparing the climate and the environment and slowing the trend towards global warming. However, concerns about international competitiveness have led governments to distance themselves somewhat from their **planned environmental protec-**

tion measures (for instance in automobile production). (See Spiegel Online 2009.) This threatens to increase the average global temperature, fostering **climate change** and all its accompanying symptoms: an increase in weather extremes (heat waves, drought, storms, floods), the spread of insect-borne diseases, and economic consequences of climate change such as crop failures or damage to real estate and infrastructure. Therefore, the protection of current employment comes at the expense of future generations who will suffer the consequences of climate change. (See Kemfert 2008 and Petersen 2008b).

2. Real economic consequences of the financial crisis

2.1. The general transmission mechanisms of the financial crisis to the real economy

The crisis in the financial markets has already spread to the real economy. US unemployment rose by 2.6 million in 2008, America's largest employment downturn since 1945. In December of 2008, the total number of unemployed stood at 11.1 million (Handelsblatt 2009, US Bureau of Labor Statistics 2009). The transmission of the financial crisis to the real economy happens over numerous channels. The most important are:

- The bursting of the real-estate bubble brings with it an **asset loss** for home owners, meaning that these people **demand fewer consumer goods**. This primarily affects large-item goods (cars, furniture, appliances, and above all construction) and luxury items (vacations, jewelry etc.). (See Table 1.)
- The bursting of the credit bubble (partial or total loss of certificates) causes a **loss of assets** among investors that also leads to a **lessening of consumer demand**.
- Declining consumer demand reduces the sales and profit outlooks of businesses in the consumer goods industry, causing their share prices to drop. This means a further **loss of assets** and even **more loss of consumption**.
- The overall exchange downturn leads to a general **crisis of trust**. Many consumers react to the rising uncertainty with **panic saving**, further reducing consumer demand.
- For the banks, the required write-offs of worthless claims come at the expense of their **own capital**. Flexibility for credit extension is narrowed, causing a decline in **credit offerings**. The **crisis of trust** also extends to a loss of faith in the security of savings deposits. Clients withdraw their savings, thus reducing the **refinancing options** of the banks. In all, the availability of credit declines because banks are no longer certain that their credits will be paid back.
- The **trust crisis** also leads to declining profit expectations concerning upcoming investment projects in the economy. This causes the demand for **material investment** (machinery, production facilities) to decline.
- The declining willingness to lend restricts the credit offerings throughout the economy, so **interest rates rise**. That also leads to a **decline in investment** and, hence, a decline in material investment.
- Falling demand for material investment due to falling expectations and rising interest rates decreases the sales and profit outlooks of the **material investment industry**. Their share prices decline causing further **asset losses** for shareholders, and hence, a further decline in **consumer spending**.

- The crisis of trust concerning the repayment of credit causes the banks to increase the risk premiums they charge for credit. That causes a further rise in interest rates, with the aforementioned negative consequences for investment.
- The general reduction in demand for goods causes a decline in overall economic production, hence a drop in employment. This situation is aggravated by the “**wait and see attitude**” of consumers. When, for example, employees fear such a convergence of effects, they must take into account that they face an increased likelihood of unemployment. The expected income declines and these people are likely to curtail their current consumer spending in order to better provide for their future. The same holds true for savers and shareholders who fear declines in interest and dividend income.
- The decline in employment reduces the **disposable income** of private households, so that their consumer demand declines further.
- The rise in unemployment means that the state has more expenses for social security while taking in less money from taxation and contribution payments. The decline in state revenues also means a decline in state purchases of goods.
- Finally, the state also comes under pressure due to the falling profits of the central bank. The central bank has to write-off worthless credits, meaning a reduction in profits. But these profits are passed on to the Federal Government of Germany so that state revenues decline. The budget of 2010 will be the first to be affected. In 2006 this profit was around €4.2 billion; in 2007 it was nearly €4.3 billion (Deutsche Bundesbank 2998: 136).

The effects outlined above are depicted in Figure 2.

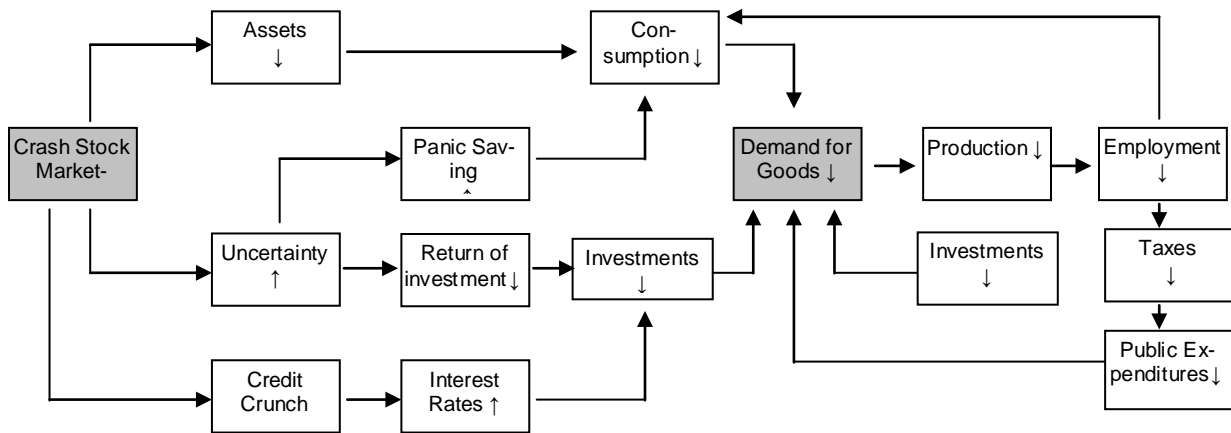


Figure 2: Effects of the financial crisis on the real economy. (Author's graphic)

2.2. The real economic consequences of the financial crisis are spread internationally

The mechanisms that carry the fallout of the burst US real-estate bubble into the real economy become more intensified because of external relationships between the various national economies. That means that even if no financial institution in a country has a toxic credit on its books,

that country would still feel negative effects on production and employment because of the real economic interconnections. The decline in production and Gross Domestic Product (GDP) of a country (in this case the US) has effects on other countries via several channels. The following relationships are to be expected based on theoretical political-economic considerations:

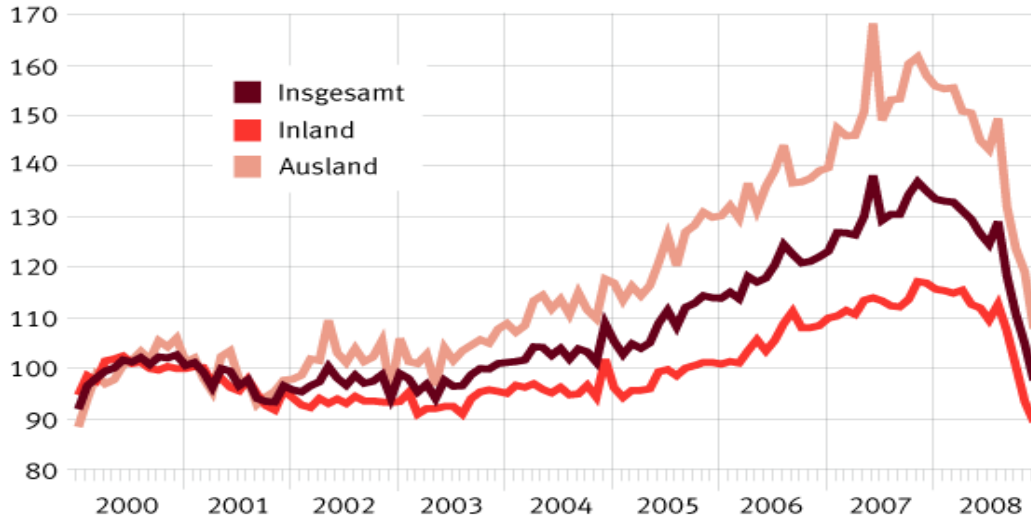
- If the American domestic earnings and GDP fall, **American imports** will decline. Since these imports are someone else's exports (for instance Germany's), **the demand for German exports will decline** (see Table 1). A smaller export demand causes a decline in overall demand, so a production decline and a weakening of economic growth are the consequences for Germany. As production capacity is then no longer in full use, the demand for investment (production) goods falls, and the demand for labor falls as well, causing unemployment to increase in Germany.
- The US financial crisis will decrease the demand for American asset paper, and the subsequent loss of demand for US dollars causes a **devaluation of that currency**. At the same time this devaluation **increases the value of all other currencies including the euro**. The upwards revaluation of the euro makes German goods more expensive, causing German exports to fall. That also has a negative impact on production and employment in Germany.
- Finally, in order to improve domestic consumer demand for domestic goods, and to improve domestic production and employment, the American government might try to counter the domestic employment decline with **protectionist measures** against foreign imports. This will cause a decline in German exports, production and employment.

Therefore, we may conclude that the negative consequences of the burst real-estate and credit bubble in the US will be transmitted to other countries by an American import decline and a devaluation of the US dollar. Then, other countries will also face production and employment declines. As a result a **worldwide decline in the demand for goods has to be feared**.

This trend can already be observed. In a press release dealing with the **development in new industrial orders** (January 8, 2009), the German Federal Ministry for Economics and Technology determined that during October – November 2008 the intake of new orders from foreign countries declined an average of 26.4 percent compared to the same period a year earlier. Domestic orders were down by 17.9 percent (German Federal Ministry of Economics and Technology 2009). Figure 3 shows this development in the intake of new orders.

The dramatic fall in new orders also expresses itself in a **sales decline** for the manufacturing industry. Just as with the trend in new orders, foreign sales have dropped more sharply than domestic sales. (See Table 1.)

Index of new order intake in the manufacturing industry*



* Not including food and tobacco processing. Seasonally and working day adjusted result.

Figure 3: Sales-volume index in the manufacturing industry Source: Federal Statistical Office 2009 (<http://www.destatis.de/jetspeed/portal/cms/Sites/destatis/Internet/DE/Grafiken/IndustrieVerarbGewerbe/Fotografie/AuftragseingangStart,templateId=renderLarge.psmI> Downloaded on 05.02.2009).

Table 1 below: Sales-volume-index in the manufacturing industry. 2000=100. Work-day adjusted according to Census X 12 ARIMA

Branch of Economy	Sales Destination	Percentage change in real sales from a year earlier		
		September 2008	October 2008	November 2008
Manufacturing (overall)	Total	- 2,4	- 3,2	- 6,4
	Domestic	- 1,5	- 2,2	- 5,1
	Foreign	- 3,3	- 4,3	- 8,2
By subcategory				
Food processing	Total	- 0,1	- 0,3	- 1,7
	Domestic	- 1,1	- 1,3	- 2,3
	Foreign	+ 4,4	+ 4,6	+ 1,3
Chemical Products	Total	- 5,2	- 5,9	- 14,8
	Domestic	- 4,5	- 6,9	- 13,8
	Foreign	- 5,7	- 5,0	- 15,5
Metal Products	Total	- 1,4	- 1,5	- 6,6
	Domestic	+ 0,3	- 1,0	- 5,4
	Foreign	- 5,8	- 2,4	- 9,3
Industrial Machinery	Total	+ 2,6	+ 1,2	+ 0,5
	Domestic	+ 3,4	+ 3,3	+ 2,9
	Foreign	+ 2,0	- 0,3	- 1,4
Broadcast and Information Technology	Total	- 9,9	- 1,3	- 3,7
	Domestic	- 2,3	+ 3,2	- 2,7
	Foreign	- 14,6	- 4,1	- 4,3
Automobiles and Automotive Parts	Total	- 4,4	- 8,8	- 14,8
	Domestic	- 4,9	- 5,3	- 13,2
	Foreign	- 4,1	- 10,8	- 15,7

2.3 Estimating the consequences of the financial crisis quantitatively

The observations made thus far have sketched the general trends that may emerge as a consequence of the burst real-estate and credit bubble in the US. The next step would be to explain how extensive the decline in production and employment is likely to be in **the future**. However, for various reasons, it is difficult, perhaps almost impossible, to **quantify the real economic consequences of the current crisis**. The major reasons are given below:

- **A lack of knowledge about the extent of the value adjustments that is still required.** Answering the question about the real economic consequences presupposes knowledge about the extent of the losses and the potential losses. This is hard to estimate. In April 2008 the International Monetary Fund estimated that the required write-offs of credits and asset paper worldwide would be close to **US\$945 billion**. By October of 2008 they had recalculated this figure to **US\$1.405 trillion** (an increase of nearly 50 percent) (International Monetary Fund 2008: 15). Soon afterwards (October 28, 2008) the Bank of England's *Financial Stability Report* estimated the global losses at nearly **US\$2.8 trillion** (Bank of England 2008:14). Given the suspected information shortcomings, the dynamic and scope of the estimates make it clear that no one is able to forecast the necessary value adjustments. As long as the extent of the asset losses from the crisis remains unclear, an exact quantification of the consequences cannot be made either.
- **Deficits of the current prognosis models:** All models that are used for forecasting future economic developments are based on the assumption that the **relationship between the individual economic quantities is relatively stable** (e.g. between income level and consumption, interest rates and investments). The stable relationships of the past were deemed applicable to the future as well. But, given the extent and the tempo of the current crisis these beliefs are no longer plausible. So, for instance, the consumer quota, i.e. that part of disposable income that people use to purchase consumer goods, is normally quite constant. However, in times of economic uncertainty, consumer behavior is likely to change considerably due to increased **panic saving**. Also the way businesses react to an interest rate cut can be quite different during a crisis from what would be expected in a normal situation. Fundamentally, political economic models assume that overall investment activity will increase when interest rates fall. But in a crisis of trust it is possible that businesses do not react at all, even to a dramatic drop in interest rates, because they are pessimistic about the profits such investments might reap. (**Keynesian Investment Trap**). Therefore we may conclude that the usual prognosis models for future extrapolations are not applicable during times of crisis because the stable relationship between individual quantities does not accurately reflect reality.
- **Uncertainty concerning further model assumptions:** Forecasts about economic development depend on numerous quantities. Besides the previously mentioned behavioral assumptions, a prognosis about future growth must also contain assumptions about the prices of the most important raw materials and about exchange rates. One need only look at the extreme price fluctuations in the **price of oil in 2008** in order to appreciate how difficult it is to devise proper assumptions. (Early 2008 saw the price around US\$95 per barrel, by summer it was US\$145 per barrel, only to plummet to US\$40 per barrel by year's end.)

- **The function of expectations:** The greatest factor of uncertainty in predicting the real economic consequences of the financial crisis is likely to be the role of expectations for economic development. Decisions are almost always made in a condition of uncertainty, meaning that they depend on the **expectation attitudes of the decider**. **Self-fulfilling prophecies** are problematic in this respect. For example, let us assume that the fundamental economic data allow an objective expectation of economic growth by one percent for the coming year. If, nevertheless, economic actors have the objectively unfounded expectation that the economy will shrink, they will act according to their belief. Investors will not make planned investments, consumers will postpone buying a new car, and employees will forego a vacation. Thus, decision-makers themselves create facts that result in a drop in demand, which chokes-off production and causes an actual shrinking of the economy. So, when the fear of a recession increases in an environment of great uncertainty, the future expectations of the deciders are likely to be increasingly pessimistic. Negative expectations about future economic developments have the tendency to **spiral into further pessimistic expectations**. That is to say, negativity breeds negativity, just as optimism about rising exchanges creates further optimistic expectations. This process is supported by the circumstances described in Section 1.2, whereby, in times of great uncertainty, forecasters tend to orient themselves on the prognoses of other forecasters, causing a herd instinct of ever more pessimistic forecasts. In order to quantify future economic developments it would be necessary to know at what values the downwards spiral of expectations will stop. Nobody, however, knows this information.
- **Uncertainty about the effectiveness of economic policy measures:** Future economic development also depends on the measures that are taken to soften the consequences of the financial and economic crisis. In this context there are uncertainties, too. Until now, we have no definitive idea which measures the governments will use to counter the decline in production and unemployment. The more effective the measures, the milder the real economic fallout. Questions about the **effectiveness of these measures, such as** "Will the selected measures have the desired effects?" are even more problematic. The possibility that investors might not respond as expected to an interest rate cut was already articulated. The positive employment results of credit-financed state expenditures are in no way guaranteed either. Consumers know that they will end-up paying higher taxes to cover the interest fees on state debts that are financed by deficits. In anticipation of future tax hikes, rational economic subjects will decrease their consumer spending to an extent that equals the increased state expenditures, so that, on balance, the total economic demand for goods remains unchanged. (David Ricardo's **Equivalency Theorem**. See Petersen 2002.) Indeed, uncertain economic subjects are likely to fear further tax increases, causing them to curtail their consumption to such an extent that it will be, by volume, greater than the state expenditure increase. This causes a non-Keynesian reaction (C.f. Petersen 2006b on the theory and empirics of **non-Keynesian effects**). Hence, depending on the nature and effect of political economic counter measures, a diversity of economic developments is possible. Therefore, future economic development can only be quantified when it is known which measures will be implemented and how they will work.

Given this background of uncertainty, it will come as no surprise that various research institutes present different pictures concerning future economic developments. Figure 4 provides an overview of how the most prominent German economic research institutes forecast the growth

rate of the real gross domestic product for Germany during 2008 and 2009. Figure 5 summarizes their predictions for unemployment during the same period.

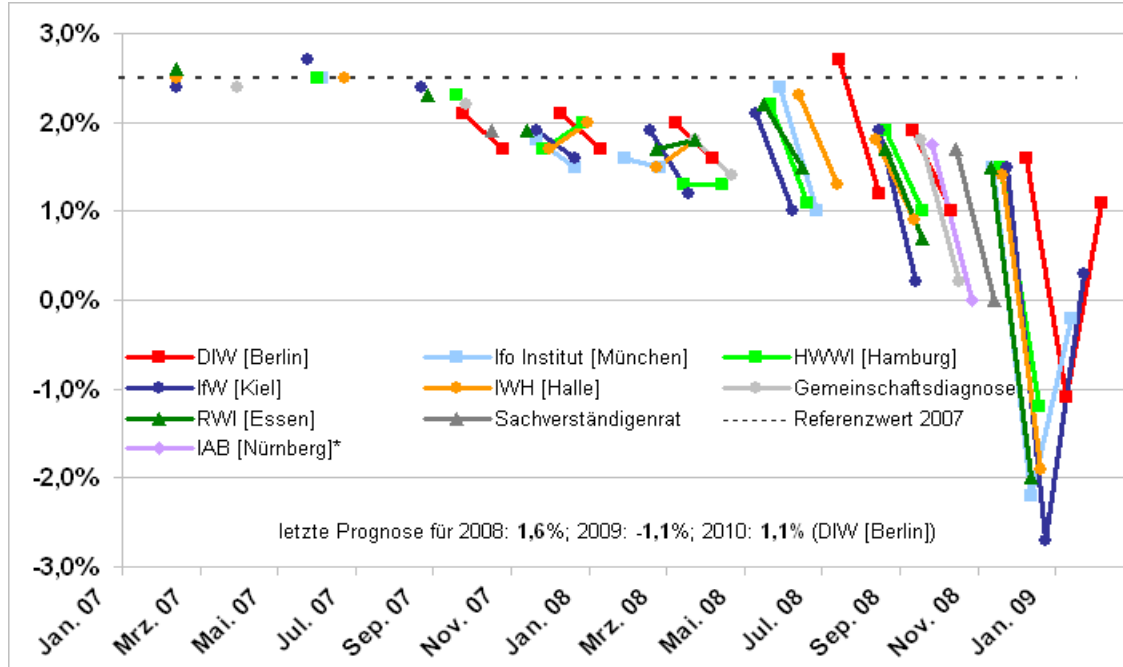


Figure 4: Prognoses for the growth rate of real GDP in Germany (Source: Institut zur Zukunft der Arbeit [Institute for the Future of Labor] (IZA), <http://www.iza.org>). Explanation: Single dots signify a prognosis value for 2008. When dots are connected, the left one gives a value for 2008 and the right one a forecast value for the same period in 2009. This way a trend becomes visible. The ifo Institute, the Institut für Weltwirtschaft, and the DIW have already made predictions for 2010. These are symbolized by the dots furthest to the right in groups of three. The IAB publishes three variants for the growth rate in the coming year. The graph above uses the middle variant.

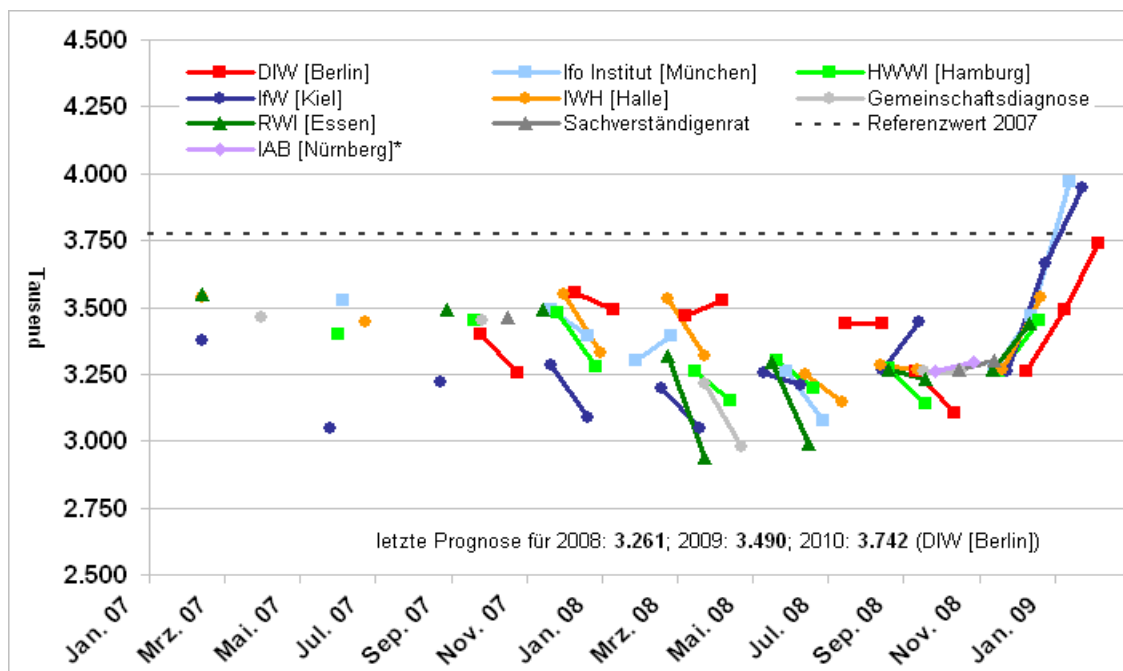


Figure 5: Prognoses about the number of registered unemployed in Germany. (Source: Institut zur Zukunft der Arbeit [Institute for the Future of Labor] (IZA), <http://www.iza.org>). For explanations: Figure 4.

Given these uncertainties, **nobody** can determine **how severe** the current recession will be or **how long** it will last. Only scenarios (Brost and Ruzio, 2009) whose arrangement depends largely on the expectation attitudes of economic actors can be determined. Two fundamental scenarios represent the major points that can be expected:

- **Consumers and producers quickly regain their confidence:** When citizens assume that economic policy measures take hold, that savings are secure, and that the economy will soon recover from the current downturn, we can assume that panic saving will decline. As a result, private consumer spending will increase, the sales and profit expectations of investors will improve and an increase in investment will follow. The general increase in demand will improve the employment situation, leading to better wages and increased consumer demand. In this context it should be noted that amidst all of the negative consequences of the financial crisis, there are some stabilizing factors that favor an economic upturn. The global economic collapse has lowered the demand for raw materials, causing their prices to drop, **lowering the cost of production**. This leads to a **drop in the inflation rate** so that the **purchasing power of consumers increases**. The loose money policy of the central banks causes interest rates to drop, making investment projects more attractive. Hence, **investment activity could increase**. Finally, the uncertainties of investing in financial products could lead capital investors to turn to material investments and new technologies that bring better expectations of profit. One area to which capital flow is likely to be diverted is renewable energy (solar, wind, and water power, geothermal energy and biofuels) (cf. Alt 2006). Stronger investment in this sector will increase employment and, consequently, demand and production.
- **Consumers and producers do not regain their confidence:** If, instead, citizens believe that the economic policy measures are not taking hold, that savings remain insecure, and that the economy will not soon recover from the downturn, then the result will be the previously mentioned negative effects on production and employment. In such a scenario even the stabilizing factors of declining inflation, better purchasing power, and low interest rates will not be able to prevent the economy from shrinking.

Independent of which scenario actually emerges, the world will experience an economic downturn with rising unemployment. Besides the consequences sketched thus far, there are others that stem directly from the crisis, or from the measures used to counter it. The most important of these, mentioned briefly, are:

2.4. Further Consequences of the financial crisis

- **Rising public debt:** As discussed in Section 2.1., both **rising expenditures** (social transfers due to increased unemployment) and **declining revenues** (falling tax and contribution payments, as well as falling Bundesbank profits) will affect public budgets as a result of the financial crisis. Additionally, public budgets are burdened by economic stimulus packages and state surety bonds. It is impossible to say now how heavily burdened public budgets are. The extent of the stimulus packages is also unclear. The volume of economic programs slated for the future also depends on how quickly and effectively the currently planned measures work. The budget pressures that stem from the state securities depend on how much the banks and financial institutions need to write off. This, too,

- **The state's capacity to act is curtailed:** If a state has to spend a growing proportion of its budget on debt servicing charges while facing higher demographically determined expenditures for elder care, the future flexibility to maneuver becomes limited. That could, for example, lead to the danger of declining **investment in education**, and subsequently compromise a state's international competitiveness.
- **The increasing inequality of income distribution:** Income inequality has increased in practically all OECD countries over the past 20 years. This can be attributed to the fact that, compared to middle and lower income levels, wealthier households have shown a remarkable rise in income (OECD 2007: 1-5). The World Bank also expects a future rise in income disparity, both within and between countries. Though there is certainly a general rise in income, these gains in affluence from globalization are distributed unevenly. Highly qualified workers, for whom there is a strong labor market demand, will especially reap the profits. There will be an increasing difference in income between qualified and unqualified people (C.f. World Bank 2007: xi-xxiv). If the state already faces limitations on its capacity to act, given the previously mentioned reductions, it will no longer be able to balance out the income disparities, resulting in a rising inequality of income. This is likely to foster an increase in **social tension** within and between countries.
- **The increasing pressure to minimize costs:** Falling consumer demand will lead producers to compensate for domestic sales declines by turning to exports. In order to maintain international competitiveness, cost-cutting measures will cause **layoffs, wage reductions, and a decline in the minimum social standard**. This strategy will result in a rising unemployment rate, a growing low-wage sector including a rise in social inequality, an increase in working hours, and an intensification and **consolidation of work processes**. Further strategies for cost reductions include: the **shifting of costs to the broader society**, as in environmental pollution and depletion of raw material reserves, and the exploitation of positions of power, for instance in unfair trade relationships *vis à vis* weaker trading partners.
- **Increasing incentives for protectionism:** One method of combating unemployment is protectionism (as discussed in Section 2.2.). In mid-January the *Financial Times Germany* reported that "Russia is raising import tariffs on cars, poultry, and pork. Indonesia is imposing new tariffs on 500 imported products. India is barricading itself from foreign soy beans and steel. And, according to the World Trade Organization, Argentina and Brazil are contemplating similar measures concerning wine, textiles and other products." (Bayer 2009.) Limiting imports may look like a sensible short-term option for a country, but in the long run restrictions on imports hurt all economies, including those that first adopted the protectionist measures. Figure 7 depicts the reciprocal effects of protectionist measures.

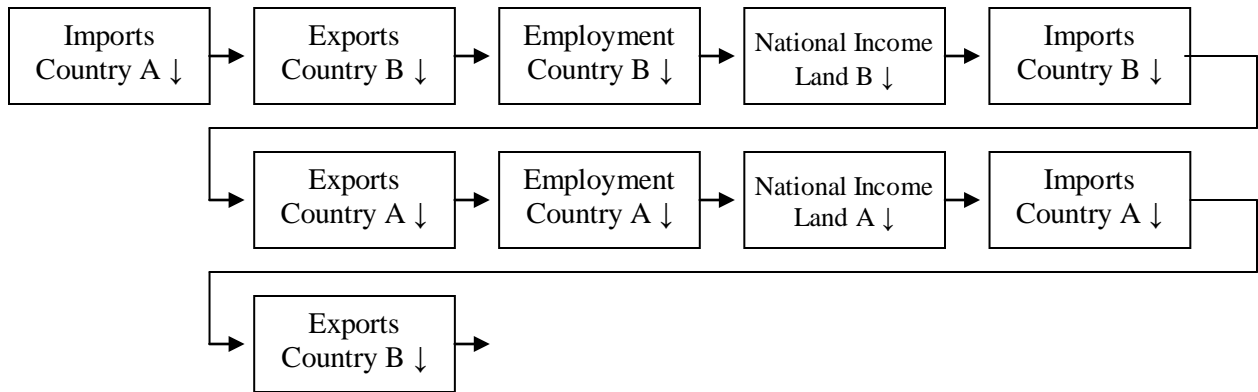


Figure 7: Real economic repercussions of an import limitation. (Author's graphic)

- **Monetary basis for a new speculative bubble:** In analyzing the causes of the current financial crisis, the loose monetary policy of the central banks, with the US Federal Reserve leading the way, emerged as a central element in the formation of the speculative real-estate bubble. The current interest rate cuts and the resulting global spread of liquidity can, in themselves, form the **monetary basis** of a **new speculative bubble**. Possible candidates for speculation include precious metals, non-renewable resources, state asset paper, and art works.
- **Individual states cannot regulate the financial market:** Given the market inefficiencies discussed in Section 1.3., it is imperative that methods of regulating the market be found. However, this can only be done if all states observe the rules that are put in place. But if some states see weak regulations as a competitive advantage that will give them a higher employment rate in the financial sector, and improved sales and tax revenues, then internationally active financial institutions will move their transactions to those states, thereby undermining the regulatory efforts of all countries concerned. The possibility of such “**regulatory arbitrage**” can only be done away with through a global regulatory effort. But given the national interests involved, its successful implementation is doubtful. Without global regulation, the uncertainties and dangers of unregulated financial markets will continue to exist.
- **Structural problems aggravate the economic crisis:** Even if the financial crisis is currently blamed for all economic problems, we should not overlook the fact that many of these problems are structural in nature. For instance, the sales crisis in the **automobile industry** has persisted for years. It is illustrated in Figure 8, which shows the number of newly licensed private cars in Germany. The slump is largely due to the circumstance that cars offered for sale no longer match the needs of car buyers (lack of fuel efficiency, etc.). Such structural problems aggravate the economic downturn. Additionally, current political measures, above all the politics of cheap money, **delay the process of adaptation** (Langhammer 2008).

The number of newly licensed private cars in Germany since 1998

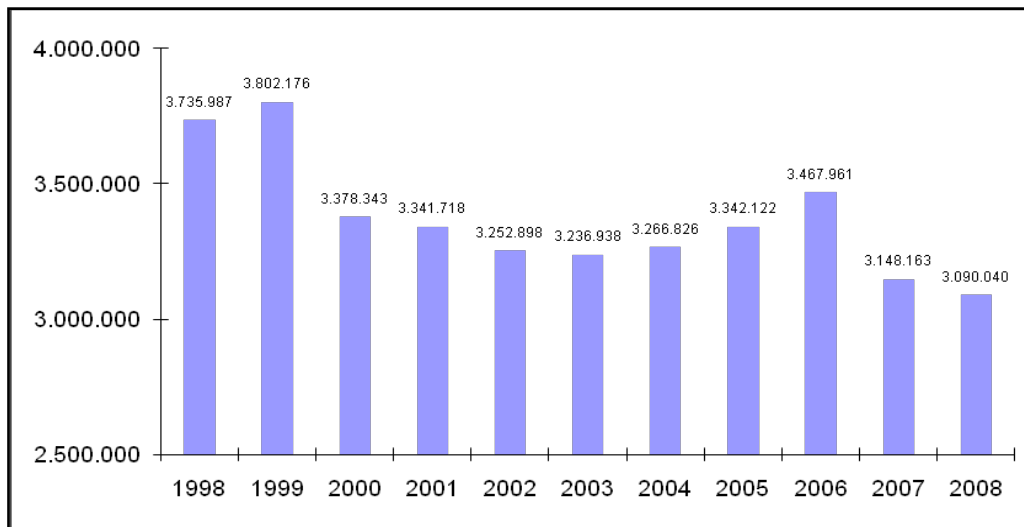


Figure 8: The number of newly licensed private cars in Germany since 1998. (Source: Kraftfahrt-Bundesamt, http://www.kba.de/dln_005/nn_277816/DE/Statistik/Fahrzeuge/Neuzulassungen/FahrzeugklassenAufbauarten/n_fzkl_zeitreihe.html Downloaded on 13.01.2009).

- An increase in generational conflicts:** The expected rise in state debt and the shift of costs to the broader society (pollution, depletion of raw material reserves) mean that current generations are improving their living conditions at the expense of future generations. They will bear the costs of their predecessors' behavior, including paying down the debts and living with overburdened natural resources. This can have grave consequences for the overall **societal and political system**. Harald Welzer asserted that "this kind of future-colonialism will avenge itself, not least because generational inequality is one of the strongest triggers for radical societal change, and it will not be positive". (Welzer 2009: 133).
- Set-backs for foreign development aid:** Developing countries will be especially hard hit by the current economic crisis. Declining prices for raw materials will cause the export of these materials, the primary source of developing countries' income, to fall sharply. Consequently, these countries will lack the funds to import essential food products. Their **rising need for development aid** converges with the industrial nations' **declining willingness to pay development aid from public funds**. These problems are further aggravated by the apprehended **decline in private donations** that come first and foremost from the corporate sector. (C.f. Günther 2008 and Focus online 2008a).
- Asset and income losses for private schools:** Private educational institutions (primary/secondary and academic/professional) get their revenues largely from donations and the proceeds of their endowments. A decline in donations is certain to be expected given the current economic crisis. This will be especially true for donations from businesses. The overall decline in profits from the financial market will negatively impact the proceeds that come from the holdings of the private educational institutions. Furthermore, the falling exchange rates for stocks and other asset papers will lead to a **shrinking of en-**

- dowments.** Harvard University is a prominent example. Before the outbreak of the financial crisis, its assets stood at nearly US\$37 billion. By December 2008 they had dropped to US\$29 billion. Further losses ranging between US\$5-8 billion are still expected. The immediate consequences of these losses are a freeze on new appointments and cuts in course offerings. Increases in tuition fees are also possible. Financial experts estimate that, overall, US colleges and universities will see endowment losses of 20 percent to 30 percent (Füller 2008). For the approximately **seventy German academic institutions** with private support, similar developments are to be feared. The decline in donations will likely have a larger impact on the German universities given their smaller capital (Peter 2008).
- **Asset and income losses for churches:** Church revenues are affected by the financial crisis in several ways. The aforementioned decline in donations will also affect churches. In Germany their most important source of income is the church tax. As it is dependent on the basic income tax rate, a general decline in employment and income leads directly to a **reduction in church-tax revenue**. Losses from asset investment (low interest and dividend income and losses due to exchange declines) will only play a subordinate role. Nevertheless, the Evangelical-Lutheran Church of Oldenburg fears a loss of €4.3 million; one of its own banks had invested with Lehman Brothers (Focus online 2008a). These **income declines** can lead to reductions in offerings such as day-care centres, youth work, and education. Alternatively, churches may have to raise fees for their programs.
 - **Financial crisis in sports:** The financial crisis will affect **professional sports whose** major sources of income are sponsors and the revenues from broadcast rights. Sponsors are likely to reduce their commitments given falling sales and profit expectations. For instance, the net worth of Roman Abramovitch, owner of the English soccer team FC Chelsea, shrank from US\$23.5 billion to US\$3.3 billion during the financial crisis (Spiegel online 2008). Some sponsors have withdrawn altogether (Honda withdrew from the Formula I races and the Spanish top league team Deportivo La Coruña has no jersey sponsor). In the future, radio and television broadcasters will pay less for **media rights** (Blatter 2008). High **ticket prices** will also have to come down to attract spectators. In the US, the price for a family with two children, attending an NFL football game, including food purchases, program booklet, and parking fees, is now US\$396 (Oldörp 2008). Falling revenues in pro sports will also be felt in **amateur sports** because most pro league clubs use part of their profits to support youth and amateur organizations. The decline in income means that such organizations are less able to satisfy their **social political mandates**, meaning that broadly accessible leisure-time sports will no longer enjoy the support they once had.
 - **The financial crisis and volunteerism:** The effects of the financial crisis will hit the volunteer sector in the form of **falling revenues**. Reductions in donations and sponsorships will be just as concerning as cutbacks in public subsidies. This will have a detrimental effect on the framework for volunteer work (less money for continuing education measures, for equipment, and for the refunding of travel expenses). This will negatively impact the willingness of people to engage in such activities. Declining numbers of volunteers coincide with a rising demand for their services. In the face of rising state debt from the financial crisis, and the future burdens of an aging society, it will be impossible for the state to sustain the current level of social programming. One way to close the gap would be

through an increasing dependence on volunteers, so the demand for their help will likely rise.

- **Uncertainty factor China:** It is still unclear how deeply the Chinese economy will be affected by the crisis, and how it will react. No one disputes that economic growth in China will slow compared to previous years. The World Bank assumes that in 2009, the Chinese economy will only grow by 7.5 percent, down from 11.6 percent (2006) and 11.9 percent (2007), with an estimated growth of 9.4 percent for 2008 (World Bank 2008: 17). How China will respond to this development remains an open question. If the financial crisis also affects the Chinese banking system to the extent that liquidity shortfalls emerge, or if social unrest looms in the wake of mass layoffs, it is possible that China will sell off part of its foreign currency reserves, now estimated at US\$1.8 trillion. The resulting over supply on international financial markets will result in a **declining exchange for financial titles**.
- **Uncertainty factor India:** India is a highly underestimated entity as can be shown from a few numbers. By 2020 the **supply of Indian workers will rise by 250 million people, an average of 15 million per year**. These are by no means low-skilled laborers, as India is currently graduating **500,000 engineers, technologists and IT specialists**, a number four times higher than that of the US, which was the world's talent pool. Since the cost of living in India is far below that of Western industrial countries, these workers are a good value. For example, in Bangalore a software engineer costs his employer about €12,000 per year. In the German city of Waldorf (Baden) (SAP), the same position would cost at least four or five times as much. A **call-center position** in the US costs about US\$4,500 per month; in India it would barely be €1,000. This has caused a massive displacement of call-center jobs from the US and the UK. When, in the future, Indian call-center workers learn languages other than English, corresponding displacements could also be felt in Germany. However, we must keep in mind that about one-third of India's adult population is illiterate. But the sheer mass ensures that the absolute number of qualified workers is huge. Given these numbers, it is possible that the **West's creative advantage will weaken**. This development is currently limited to the IT and call-center sectors, but soon bio- and genetic technology, pharmaceuticals, medicine (including surgery), armaments and space research will be affected, too (C.f. Ihlau 2008). These developments represent a significant challenge for the employment and growth opportunities of industrialized nations.
- **Uncertainty factor energy:** Developments in energy prices present a further uncertainty. In the wake of global demand and production declines, energy demand has decreased. In the case of petroleum, this caused a price drop from US\$145 per barrel (summer 2008) to US\$45 per barrel (end 2008, see Section 2.3.). Such price drops should, however, not lead to the expectation that energy prices will remain so low. As the amount of all non-renewable resources is fixed, even if their exact volume is not precisely known, consumption, even by small amounts, reduces available supply. Therefore, **in the long run, the price of every non-renewable resource must rise**. A price increase over time is the signal for an **approaching exhaustion of all finite raw material supplies**. This is a situation we cannot avoid.

2.5. Intermediate summary

The burst US real-estate bubble is transmitted to the **real economy** by means of various channels. Asset losses lead to consumption declines. The worsening refinancing options for banks make credit more expensive, thereby reducing the demand for investment. Similarly, rising risk-premiums on credit also reduce investments. All of this affects a downturn in demand for goods throughout the economy and, as a result, **production declines and unemployment rises**. The drop in demand takes place primarily in the country where the real-estate bubble burst, but due to the interconnectedness of all national economies it is transmitted worldwide, and becomes a **global economic crisis**.

It is **impossible to quantify accurately** the production and employment collapses that are to be expected. The **reasons** for this are: the lack of knowledge about the extent of the value corrections and asset losses that are still required; the shortcomings of the current prognosis models; uncertainty about critical model assumptions (raw material prices, exchange rates, economic developments of the most important trading partners, etc.) and uncertainty about the effectiveness of economic policy measures. Perhaps the greatest uncertainty comes from the role of expectations. Negative expectations have the tendency to turn into a spiral of ever more pessimistic expectations.

No one faced with these uncertainties can currently predict how deep or how long the current recession will be. Only one thing is certain: even under favorable scenarios there will be a temporary global economic downturn with rising unemployment.

Next to the effects on production and employment, the financial and economic crisis will have numerous other consequences – direct and indirect – stemming from remedial measures. The most important of these consequences are: a global rise in public debt; increasing inequality of income and the resulting growth in social tension; greater pressure to minimize costs, which can lead to layoffs, wage cuts, declining social minimum standards and a shifting of costs onto the broader society; the danger of protectionist measures; the development of a monetary basis for a new speculative bubble; delays in implementing adjustment measures due to the current cheap money policy; and an increase in generational conflicts that can have grave consequences for the overall social and political system.

The effects of the financial and economic crisis will touch **all areas of life**. A few of these were discussed briefly: the willingness to donate and, hence, all activities of donation-funded institutions, private educational institutions, churches and all related social activities, professional and amateur sports, and volunteerism. For reasons of space other aspects have been omitted: arts and culture (Can donations and patrons still be found?), public education providers (Will states and municipalities still have the means to finance such facilities?), provisions for children and youth (Who will look after them when public subsidies drop, and higher fees can no longer be paid by parents?), research and development (Will the price decline in raw materials dampen the incentive to develop sustainable technologies?), financing for the overall association and party systems, the health-care system (Are businesses still willing and able to afford health and prevention measures?), the system of private elder care (Which capital investments are still certain over the long term?), the financial possibilities for mutual familial support (Can the care of family members still be organized and financed?), the regional population structure (employment-related migrations, national and international), political stability (What will happen when millions of people in

China become unemployed, or when people in poor countries suffer famine because of a lack of foreign aid?) the environment and bio-diversity (Will businesses forego environmentally protective measures to cut costs?) – this list can be continued *ad infinitum*.

3. Opportunities in the current financial and economic crisis

Amidst all the pessimism of the expanding global crisis, we should not overlook the rays of hope that also appear. They may be able to counteract the negative developments or, at least, weaken their impact.

- Governments and central banks have already implemented extensive measures to soften the real economic impact of the financial crisis. These programs have a positive effect on employment because they stimulate a state demand for goods that spreads to the entire economy. As a result, businesses have better sales expectations and that stimulates their investment activity. **Tax cuts** increase the disposable income of consumers, thus increasing demand as well. By the end of 2008, the largest national economies had stimulus programs reaching a magnitude of nearly **€1.8 trillion** (the US: US\$1.15 trillion; China: US\$500 billion; Russia: €157 billion; Japan: €210 billion; Germany: €50 billion; France: €52.4 billion; Great Britain: €23.7 billion; Italy: €80 billion – as of November 22, 2008, Source: Brenke et al 2009: 8) Given the extent of these amounts, positive demand and employment impulses are to be expected.
- **The loose money policy** of the central banks cheapens credit and will encourage investment activity. Higher investments stimulate the demand for investment goods and foster positive employment effects.
- If the fiscal and monetary policy measures have the desired effect on demand and employment, economic growth will recover relatively quickly and so will the job market. This would alleviate the pessimism about future expectations for economic development, thus improving the investment climate. One indication of an improvement in outlook could be the rise in the **ZEW-Indicator for the business expectations in Germany**. This indicator is based on a monthly survey of 350 experts about their expectations for the coming six months. In October of 2008 it registered at -63.0. In November it had improved by 9.5 points to -53.5, and December saw a rise of 8.3 points to -45.2. January 2009 brought an additional rise of 14.2 points to -31.0. Though the index is still well below its historical mean value of 26.5 (ZEW 2009a: 1, ZEW 2009b), the rise could nevertheless signify that the bottom of the recession fear has been reached. January 2009 also saw the **ifo Business-climate Index Germany's** first improvement since May 2008 in six-month expectations for business conditions (ifo 2009).
- The global economic downturn has diminished the demand for raw materials, causing **raw material prices to fall**. (See Section 2.3.). This is especially noticeable in the price of petroleum, which has substantially reduced the cost of filling a car. The disposable income of consumers has, therefore, increased. Generally, declining raw material prices reduce production costs, causing the inflation rate to fall and **increasing the purchasing**

power of consumers. In turn, stronger purchasing power has a positive effect on demand, production, and employment.

- One consequence of the global economic downturn is the global decline in demand for raw materials and energy. This also means a reduction in CO₂ emissions and other burdens to the environment. **Global warming** and related **climate changes** will, hence, be slowed. This will reduce the economic costs of the aforementioned negative impact of climate change (heat waves, drought, storms, floods, crop failures, storm damage, etc.).
- Many of the economic stimulus programs that have been imposed worldwide foster ecologically friendly and CO₂-reducing technologies, products and production facilities. Businesses in the fields of solar energy, wind power, water power, geo-thermal energy and bio-fuels will be able to increase their production and employment. In so doing, they will increase disposable income, raise demand, and draw more investment their way. The emergence of an eco-friendly economic system has advantages other than increasing employment. For instance, one can contemplate a **reduction of the greenhouse effect** and a related slowdown in global warming. The **potential for international conflicts** will also be reduced: Wars can be fought over petroleum, but not over solar or wind energy.
- It is possible that the current global economic crisis will accelerate the implementation of much-needed reforms. For example, a reduction in high-profit opportunities during financial market speculation could channel available funds into **more socially meaningful investments** like education and environmental protection, thereby improving quality of life. If **China would allow its exchange rate to float freely**, its currency would rise in value, and disparities in international balances of trade would be lessened. For countries that currently have a trade balance deficit in their bilateral relationship to China, this would mean an increase in exports, economic growth, and a corresponding rise in employment. The Chinese economy would also profit from such income growth because a part of the strengthened income would be spent on Chinese goods.
- Due to the turbulence in the capital markets, trust in US asset paper has diminished. If international capital investors, notably the Chinese, no longer feel secure investing in the US, they will withdraw their capital and the US dollar will weaken. This will improve the export opportunities of the American economy while reducing its large trade deficit. It would, therefore, also reduce China's trade surplus. The **current balance of trade disparities would decline**.
- **China and India** now have a total population of approximately 2.5 billion. This represents not only a large supply of labor, but also a large number of consumers and a significant sales potential. Neither of these emerging economies is immune from the effects of the financial crisis. They will not grow as strongly as in previous years, but the prognoses for 2009 still see China growing at a rate of 7.5 percent and India at a rate of 5.8 percent (see Table 2). That means a growth in consumer demand in China and India, and, hence, further export opportunities for the rest of the world.
- Finally, we should not overlook the fact that **human capital** and **material resources** are the real basis of the overall economic production process, and that they remain present.

Unlike wars, terrorist attacks, or natural disasters, a financial crisis does not destroy the physical foundations that are needed for adding economic value.

All these positive elements give reason to **hope** that the current global crisis **will not last very long**. In its current prognosis (accessed on 20-11-2008) the World Bank assumes that after the economic downturn of 2008 and 2009, subsequent years will see a worldwide recovery. (See Table 2.)

	2006	2007	2008	2009	2010
World total	4,0	3,7	2,5	0,9	3,0
OECD-countries total	2,9	2,4	1,2	- 0,3	1,9
Eurozone	2,9	2,6	1,1	- 0,6	1,6
Japan	2,4	2,1	0,5	- 0,1	1,5
USA	2,8	2,0	1,4	- 0,5	2,0
Russian Federation	7,4	8,1	6,0	3,0	5,0
China	11,6	11,9	9,4	7,5	8,5
Indonesia	5,5	6,3	6,0	4,4	6,0
Thailand	5,1	4,8	4,6	3,6	5,0
India	9,7	9,0	6,3	5,8	7,7

Table 2: Real Gross Domestic Product Growth rates of selected countries. Values for 2008 are estimates. Values for 2009 and 2010 are prognosis values (Source: World Bank 2008: 17).

4. Outlook: Upswing 2010 – and then what?

Amidst all the uncertainty over and pessimism about future global economic development, this author believes that the **economic policy measures** of the leading national economies, stimulus programs and loose money policy will take hold. The worldwide **economic upswing that the World Bank and others expect for 2010** (see Figure 9) **will occur**.

The sheer extent of the economic packages that have already been enacted by the end of 2008 will ensure the desired positive effects on demand, production, and employment. Supplementary programs, central banks' cheap-money policies, growth of more than seven percent in China and India will also play a role in spurring demand, production, and employment. The pessimism of consumers and investors will yield, the confidence in the economic recovery will grow, and the setbacks of 2008 and 2009 will prove temporary, if significant.

Prognoses about the development of real GDP in Germany for 2009 and 2010

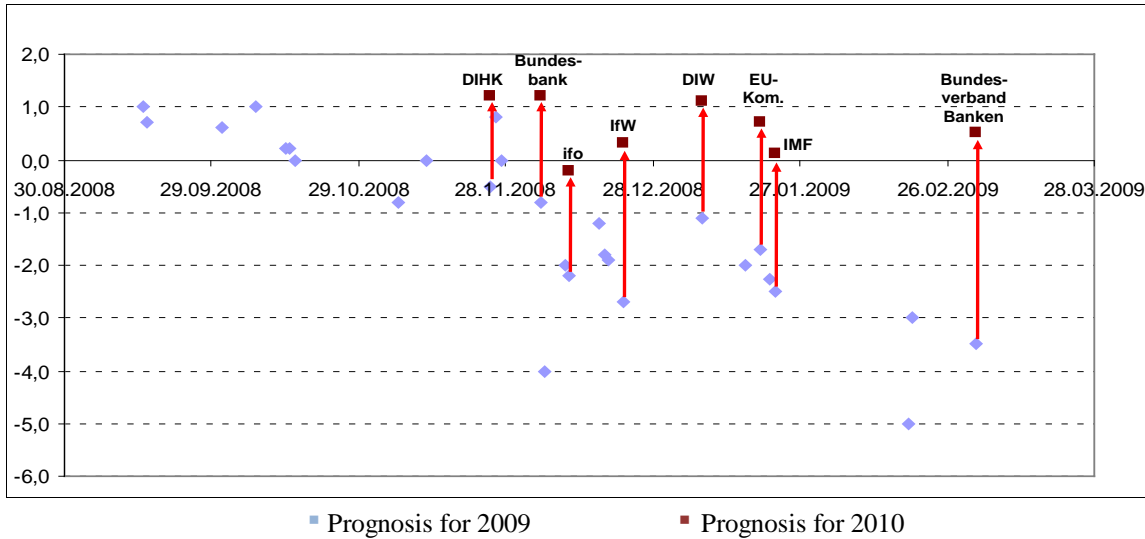


Figure 9: Prognoses about the development of real gross domestic product in Germany for 2009 and 2010. Author's own graphic based on the following sources: IMF (3x), HWWI (2x), RWI (2x), DIW (2x), IfW (2x), IW Köln, Gemeinschaftsdiagnose, Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung, IWH, DIHK, OECD, IAB, Bundesbank, ifo, IMK, DB Research, EU-Kommission, Bundesregierung, Norbert Walter.

We can currently only make a rough estimate of the consequences and challenges that will emerge in spite of this economic recovery. There will certainly be social sectors where a “business as usual” attitude will again be possible after the economic collapse. The behavior of donors could normalize and develop just as it did before the crisis so that activities of social benefit (social engagement, development aid, arts, culture, etc.) will experience only a short-term drop in donations. The danger of a global increase in **protectionism** could be reduced to more normal levels. The drastic fall of raw material prices, petroleum most of all, will once again turn into a continual price rise as industrial production restarts. Hence, the industrial-economic incentives to **develop environmentally sustainable technologies** will remain.

Nevertheless, there will be many areas where the financial and economic crisis will have serious consequences. In the **banking and financial sector**, change will be massive. It will go well beyond partial state ownership, mergers, and insolvencies of financial institutions, towards a new system of state regulation. The **asset losses** incurred by individuals and institutions represent lasting setbacks for afflicted savers and businesses. Even if exchange profits are again to be expected in the wake of the economic recovery, it will take years for the losses to be recouped. Those who have suffered a total loss (bankruptcy of the institution that sold certificates, forced sell-off of credit-financed real estate) will not be helped by any of these renewed exchange or price gains. **State debt**, which will rise considerably due to state sureties and stimulus packages, will further increase the already considerable burden on future generations in all countries.

Yet, not all the consequences will be negative. One advantageous after-effect may come from the intensification of human capital investments, which form a significant part of numerous international stimulus programs. If states continue to give priority to human resource expenditures even after the crisis has passed, there will be many benefits to society (more employment, higher productivity, better integration of immigrants, strengthened social stability, improved participation

in social life, etc.). Perhaps the strongest global advantage will come from the start of an **environmentally protective economic system** as is required by international stimulus programs. Producers (auto sector, construction industry, electric appliances etc.) and their customers have received incentives to be more environmentally conscious. If this marks the beginning of a permanent restructuring of national economies in favor of “green” and energy saving processes, then a major step towards the reduction of global warming and climate change will have been made.

Regardless of the largely positive consequences of the crisis that might emerge in the mid to long term, and in spite of the thesis presented earlier, claiming that the crisis will be temporary, the analytical background as to the origins of the crisis raises a decisive question: **After the economic recovery, from 2010 on, how can we, globally, find a successful way out of the loose money and fiscal policies without duplicating the crisis-like developments of 2004-2008?** If this paper’s analysis of the causes of the crisis holds true, then there is a real danger that the inevitable financial turn-around, with increasing interest rates, will lead to a new worldwide economic collapse. It would burden budgets with debts substantially higher than those currently. Under such circumstances, it is highly doubtful that governments could implement rescue packages similar to those implemented now.

The prevention of another massive global production and employment collapse entails **overcoming two fundamental challenges:**

- How will an **end to loose monetary policy** be achieved without having the associated interest hikes choke off investments and economic growth?
- How will an **end to loose fiscal policy** be achieved without having the associated drop in demand and the necessary reversal of tax cuts choke off consumption and economic growth? Given the currently accumulating mountain of debt, a mere balancing of budgets will be insufficient. That leads to the question: How can public budgets reduce their debts without causing yet another economic collapse?

It is impossible to determine the answers to these questions now because the scientific discipline of economics and the politics of economic affairs have never been confronted with a challenge of this size. Nevertheless, answers have to be found quickly because a **gradual renunciation** of the current loose economic policy demands that such an exit strategy be contemplated and prepared. Otherwise, an abrupt economic policy turn would be required. The experiences with the tight money policies of 2004- 2006 and the resulting interest rate increases make us fear that such an abrupt change would precipitate an economic crisis whose reach would far exceed the already inestimable extent of the current one.

Appendix 1: The relationship between trade balance account and capital balance account.

The balance of payments comprises the total of all economic transactions between domestic and foreign entities that occur during a year. Assets include those activities resulting in a **payment inflow** for the domestic economy. It has three categories: 1) the export of goods and services (EX); 2) capital imports, e.g. the sale of stocks and asset papers to foreign economic entities (money or capital flows into the domestic economy) or a foreign assumption of debt (C^{IM}); and 3) the sale of gold and foreign currency by the central bank, which means a decline in gold and foreign currency holdings (GFC^{Sale}). Liabilities include those activities that result in a **payment outflow** from the domestic economy. It also has three categories: 1) the import of goods and services (IM); 2) capital exports, e.g. the purchase of stocks and asset papers from foreign entities (money/capital flows out of the domestic economy) or an extension of credit (C^{EX}); and 3) the purchase of gold and foreign currency by the central bank, leading to an increase in gold and foreign currency holdings (GFC^{Buy}). The fundamental structure of a payment balance looks as follows:

Payment inflow	Payment outflow	
EX	IM	} Trade balance
C^{IM}	C^{EX}	} Capital balance
GFC^{Sale}	GFC^{Buy}	} Gold- foreign currency balance

In the balance of payment, all transactions are booked twice. For instance, the export of goods (assets) is balanced against the extension of credit (liabilities). Not counting statistically unclassifiable transactions, there is always a **balance of payments**.

$$(1) EX + C^{IM} + GFC^{Sale} = IM + C^{EX} + GFC^{Buy}$$

The conversion of equation (1) represents the definition of the relationship between the trade balance account ($EX - IM$), the capital balance account ($C^{EX} - C^{IM}$) and the account of the gold and currency balance, **currency balance** for short, ($GFC^{Sale} - GFC^{Buy}$).

$$(2) (EX - IM) = (C^{EX} - C^{IM}) + (GFC^{Buy} - GFC^{Sale})$$

Given a currency balance account of zero ($GFC^{Buy} - GFC^{Sale} = 0$) a trade balance surplus ($EX > IM$) corresponds to a net capital export ($C^{EX} > C^{IM}$)

Source: Petersen 2006c

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