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# *Brave New World in the United States\**

*Government dreams vs. the reality of crisis*

**S**ummary: *In the wake of the subprime crisis, the emerging dominant view became that the free market model has failed and governments must take a more active role than before in regulating the market. This article attempts to refine this view by pointing out that a decisive liability lies with the US government for pursuing a vote maximization policy behind the false illusion of technological development and generating unrealistic market expectations regarding the magnitude of risks taken. On the one hand, these failures must be a warning sign for all who seek to rely exclusively on increased government interference and on putting the markets under control in resolving the crisis. On the other hand, they also underline the fact that no technological innovation can replace financial sustainability in any economic policy.*

## SUBPRIME CRISIS – FAILURE OF GOVERNMENT OR FAILURE OF MARKET?

The collapse of the subprime mortgage market in the US and its impact on the world economy

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revived the popularity of the theories of *Marx* and *Keynes*, the key apostles of more powerful government intervention.<sup>1</sup> In the United States, then-exiting Republican president George Bush, a former deregulation enthusiast said in an interview with CNN on 17 December 2008 that he had lost his faith in free markets. Just a few days after his inauguration, new president *Barack Obama* pushed through Congress an USD 825 billion package to boost the economy on grounds of Keynes' theories. Having lowered the prime interest rate practically to zero per cent, the Fed is now thinking about further ways of pumping more money into the economy. In other parts of the world governments launch economic stimulus packages one after the other. Even the International Monetary Fund, formerly famous for their dogmatic approach, expects Keynesian fiscal policy measures from governments almost everywhere.<sup>2</sup> Thus it seems that market failures must now be fixed by governments and the conclusion for the future appears to be obvious: tougher regulations are needed to prevent the occurrence of a similar crisis.

Amidst the efforts to clean up the debris, the role of governments in the development of the crisis seems to receive little attention. In this writing, I would like to address this very issue. Herein I review government actions, in partic-

ular soft monetary policy and the loosening of lending standards due to political considerations as factors that significantly distorted the functioning of the market, increased the risk appetite of market players and thus contributed significantly to the formation of the crisis. It can be documented that these mistakes or failures did not occur by accident. They were consequences of false illusions about technological development, which also served government endeavours so well.

First I provide a brief, factual description of the unfolding and development of the crisis based on *Charles Kindleberger's* model, in which the formation of an asset price bubble and the underpricing of risks are pivotal elements. Then I present the motivations of the key players of the crisis (Fed, US government, financial market players, and households) and attempt to reveal the causes of the bubble on the real estate market. Part four strives for capturing the root causes and find out the expectations which allowed the bubble to grow so large. Finally I review some lessons and briefly outline what relevance the whole story may offer for Hungary's economic policy.

## THE ANATOMY OF THE CRISIS

Although many analysts considered the crisis a unique, new, one-of-a-kind phenomenon, over time it became obvious that the stages of its evolution were similar to that of former financial upheavals. The crisis model in Charles Kindleberger's *Manias, Panics and Crashes* (1989) provide a very good illustration to that. The model names four key stages in any crisis.

① *Credit expansion (Monetary expansion)* generates a growth in credit supply and speculation takes off in one or more sectors. As part of this process, the price of individual products tends to be more and more determined by antici-

pations about the future price rather than the fundamentals. The driver of this process can be a feedback mechanism between excess liquidity, asset prices and output (Borio, 2007, page 9) on the one hand, and the temporarily self-fulfilling nature of favourable expectations due to the limited rationality of investors (Shiller, 2000)<sup>3</sup> on the other hand. Based on experience from past centuries, the subject of speculation may be specific corporate or government securities, raw materials, land, mines, real estate, railways or even tulip bulbs.

② Speculative investments *develop vulnerability* which consists of the following key elements: growth of asset price bubbles, accumulation of significant debts and the underpricing of risks. Kindleberger devotes a separate chapter to discussing how this environment creates the perfect terrain for fraud and swindling which will intensify later in the panic phase in order to reduce losses. Another typical feature of this stage is the rationalization of the bubble and the apparent justification of price levels that depart from long-term trends that are based on fundamentals.

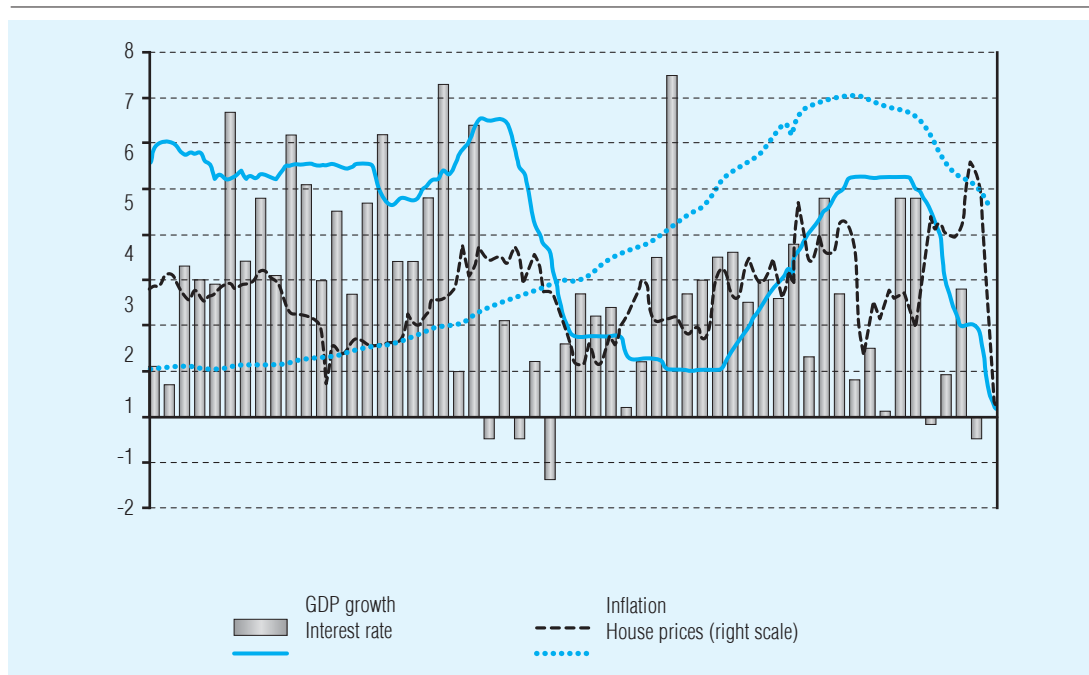
③ In a specific moment, an *unfavourable shock* occurs. It can be e.g. a monetary restriction measure which usually *changes investor expectations*. Some investors quit at this point then panic and escape start, which triggers a further price drop and increases panic. The portfolio of lending banks deteriorates significantly, their liquidity drops, and they are unable to provide further loans which intensifies the previous process.

④ The *crisis* actually breaks out when the failure of an institution conveys the risk of a chain reaction which calls for *government intervention*.

The individual stages of Kindleberger's model are clearly traceable in the formation of the subprime crisis. They are captured in *Chart 1* which shows GDP growth, interest rate, inflation and house prices in 1995–2009.

Chart 1

**GDP GROWTH, INTEREST RATE, INFLATION AND HOUSE PRICES  
IN THE UNITED STATES, 1995–2009**



Source:

GDP growth: Quarterly figures, Bureau of Economic Analysis, <http://www.bea.gov/national/index.htm#gdp>;  
 Interest rate: monthly figures, federal funds overnight interest rate, [http://www.federalreserve.gov/releases/h15/data/Monthly/H15\\_FF\\_0.txt](http://www.federalreserve.gov/releases/h15/data/Monthly/H15_FF_0.txt);  
 Inflation: CPI monthly figures, year-on-year change, St. Louis Federal Reserve Bank, <http://research.stlouisfed.org/fred2/series/CPIAUCNS?cid=9>;  
 House prices: Case-Shiller 10-city composite index (2000=100%), [http://www2.standardandpoors.com/portal/site/sp/en/us/page.topic/indices\\_csmahp/0,0,0,0,0,0,0,0,0,0,1,3,0,0,0,0,0.html](http://www2.standardandpoors.com/portal/site/sp/en/us/page.topic/indices_csmahp/0,0,0,0,0,0,0,0,0,0,1,3,0,0,0,0,0.html)

**Monetary expansion**

Chart 1 highlights that the extraordinary growth of house prices began around 1997 already but accelerated only after 2001. As shown in the chart, three things happened at that point.

1 The fast-paced growth of the 1990's stopped and an economic setback occurred in multiple quarters. This setback stemmed from two factors: first, the burst of the dotcom bubble (we will discuss it in more detail in the next chapter) and second the terror attacks on 11 September 2001, which also had a negative impact on growth and economic outlook.

2 The deceleration of the economy was accompanied by a lower inflation rate that dropped from over 3 per cent to around 1 per cent.

3 With a view to these two trends it is no surprise that the Fed embarked on aggressive interest rate cuts, lowering the interest rate from 6.5 to 1.75 per cent in the November 2000 – January 2002 period.

Real expansion, however, came only after that. In H2 2002, inflation was on the rise again and economic growth accelerated in Q2, 2003. Interest rates remained below the inflation rate until August 2005, i.e. savings account owners could count on a negative real interest for over two and a half years. Naturally, this was a

strong spur towards indebtedness and, as shown in the chart, this was the time when house prices began to rise at an accelerating speed.

Besides negative interest rates, fiscal policy also contributed to excess liquidity. As illustrated in *Chart 2*, the budget surplus developed in the late 1990's turned into a significant debt after 2001, reflecting the tax reduction policy of the Bush administration on the one hand and the expenses of the wars in Afghanistan and Iraq on the other hand.

Besides monetary and fiscal policy actions, other global factors also contributed to excess liquidity. Asian countries, especially China, had a significant surplus in their balance of payments in the past decade and chose to keep their accumulated reserves in US dollars. Thus in practice they financed the US current account deficit (around 6 per cent p.a.), which was one of the most important consequences of consumption-driving negative real interest rates.<sup>4</sup> Access to this form of financing meant that the players of the US economy had no

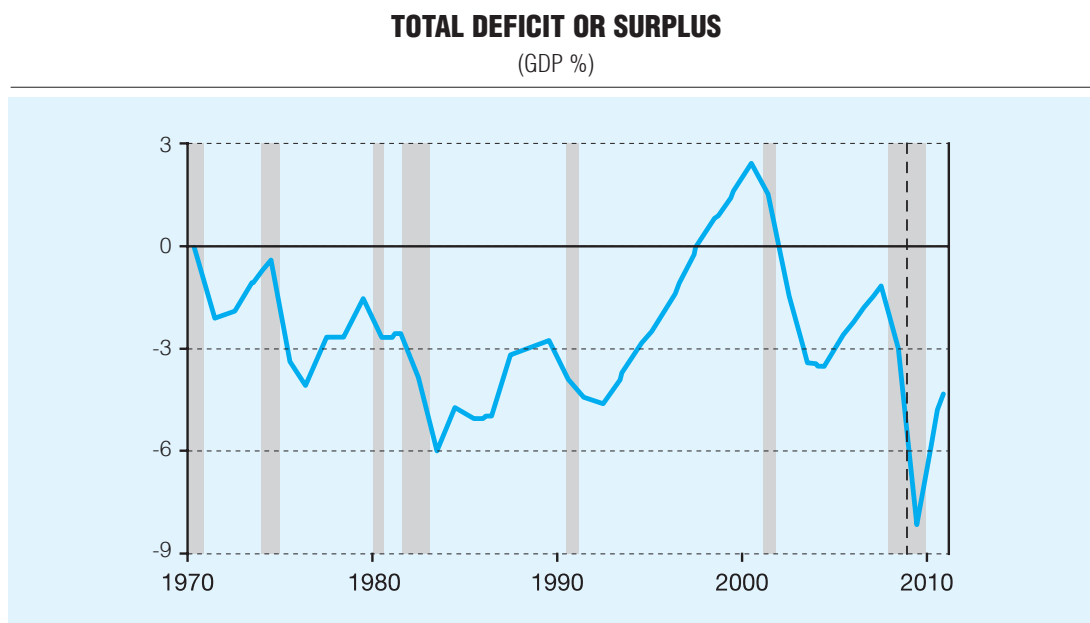
motivation to hold back consumption and accumulate savings.

Excess liquidity that resulted from these three factors led to increased investor risk appetite, since higher returns were only achievable at assuming higher risks and at a higher leverage. Risk taking was supported by the skyrocketing development of innovative financial products, which enabled the distribution of risks across the system. As structured financing gained ground (see *Chart 3*), not only could investors select the risk of their loan portfolio but they also seemed to have a way to achieve, by unbundling and repackaging various assets, a lower level of exposure than the aggregate risk of the elements of their portfolio.<sup>5</sup>

### Development of vulnerability

As mentioned briefly in the previous part and as shown in *Chart 1*, surplus liquidity in the US flowed into the real estate sector where prices

*Chart 2*

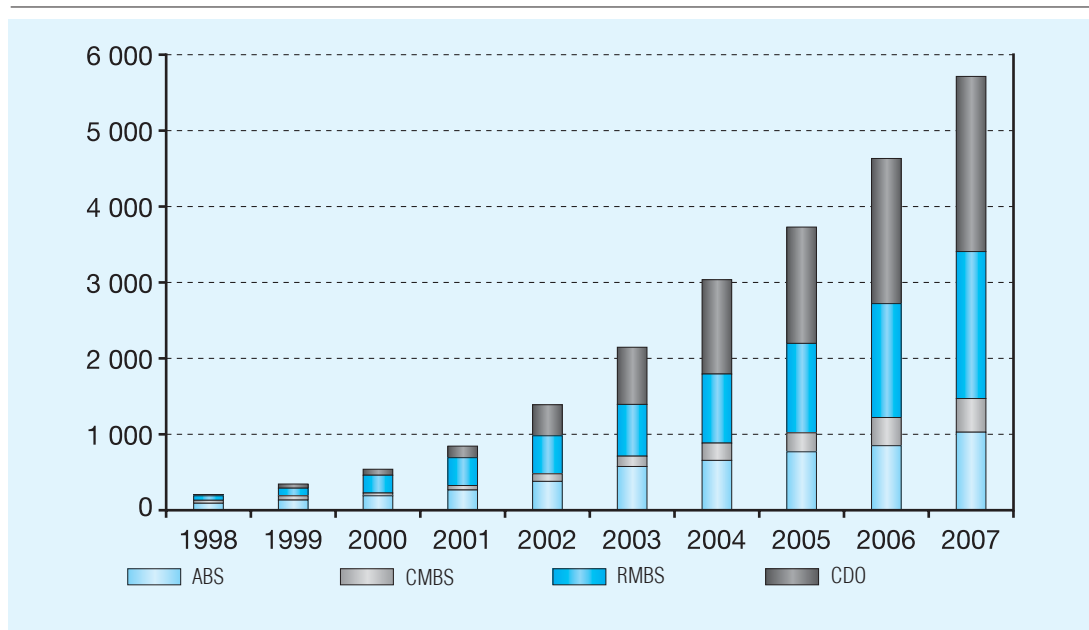


*Remark:* Grey bars represent recession periods.

*Source:* Congressional Budget Office, <http://www.cbo.gov/doc.cfm?index=9957>

Chart 3

**NUMBER OF STRUCTURED FINANCING PRODUCTS RATED BY MOODY'S IN EUROPE**



Remark: CDO: Collateralized Debt Obligation; RMBS: Residential Mortgage-Backed Securities; CMBS: Commercial Mortgage-Backed Securities; ABS: Asset-Backed Securities.

Source: Moody's (2007)

began to rise quickly. The growth of property prices enabled increasingly risky lending schemes as repayment was guaranteed by the rising price of the property instead of the debtor's income. In an era of excess liquidity, it meant that loans also became available for people who could hardly get access to such facilities before.

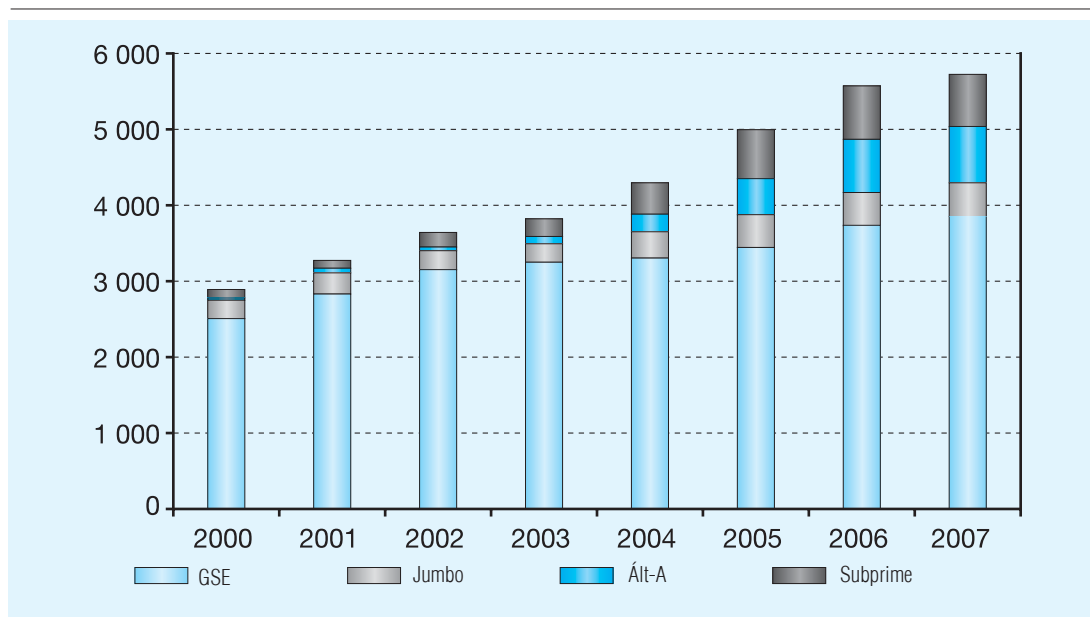
High-risk, subprime borrowers can be classified into two groups: Alt-A and subprime. In the Alt-A category, risk derives from the fact that loans were taken out at a very low level of documentation, e.g. the income certificate was missing or no declaration was submitted on any other mortgage that may have encumbered the property. In the subprime category, risks were signalled by a poor credit history or the complete failure to repay a former loan. In 2000, the aggregate ratio of these two categories within total mortgage loans represented 4 per cent

only. This figure rose to 25 per cent by early 2007 (see Chart 4) and nearly 40 per cent of mortgages issued in 2006 fell in these categories (Gorton, 2008, p. 4).

Creditors managed risks in two ways: partly by imposing mortgage terms that protected them and partly by securitization. The most important element of these was that subprime mortgages had a fixed, usually attractively low interest rate for the first 2–3 years which functioned as bait. Once the initial period was over, the borrower had to pay the market interest rate, which could be as much as 3 to 5 per cent above the initially paid rate. However, upon the end of the first period, borrowers had the opportunity to refinance their loan depending on the value gain of the underlying property. This approach provided creditors with an exit option in case they had serious doubts about the further rise of house prices (Gorton, pp. 4–5).

### MORTGAGE-BASED SECURITY OUTSTANDINGS

(USD billion)



*Remark:* GSE: loans taken in by government-sponsored institutions (Fannie Mae and Freddie Mac); Jumbo: mortgage loans exceeding GSE-regulated loans securitized by private institutions; Alt-A, Subprime: risky loans securitized by private institutions.

*Source:* Gorton (2008), page 3

For the issuers of subprime loans, the key form of financing is securitization, performed either by Government Sponsored Enterprises (GSE's) or by specialized credit institutions. In the securitization process, the homogeneous portfolio consisting of long-term, illiquid loans is transformed into a short-term Mortgage Based Security (MBS), which is then sold as a common bond. After that, bonds are resold to investors or companies specializing in bond transformation and issuing SPV's – Special Purpose Vehicles. When transforming subprime loans, these companies repackage these credit facilities into three deal sets depending on the expected loss rate and the sequence of cash flows deriving from repayment: senior, mezzanine and equity tranches, with the latter bearing the expected loss. In the next step, these securities were packaged with other types of higher or lower rated securities, creating

Collateralized Mortgage Obligations (CDO's). Then the companies took out insurance on the new product (CDS – Credit Default Swap) and/or had them rated by rating firms, which enabled the trading of the papers. By 2006, 80 per cent of subprime mortgages totalling to USD 1,200 billion were securitized this way (Gorton, 2008, p. 6).

In summary, thanks to excess liquidity and the resulting yield hunting, the ratio of risky loans grew significantly in the US economy. Using complex, innovative financial products, these risks were then spread to the world's financial markets.

#### Unfavourable shock

The functioning of this scheme depended on two factors. First, on the constant rise of pro-

erty prices, which enabled the refinancing of loans, and thereby helped to avoid mass bankruptcy. Second, it depended on the demand for SPV's, i.e. on continued market liquidity. The disappearance of either of these preconditions would predict non-linear losses on high leverage markets. In 2007, both preconditions ceased to exist.

The sharp rise of property prices for more than a decade generated a corresponding growth in supply and consequently a construction boom took off. In 2005, more than 2 million new property developments began, 50 per cent more than in the period before the bubble (Baker, 2008, page 10). The signs of excess supply first appeared on the rental house market, where the number of vacant properties went up from 7.5 to 9 per cent. Later the same signs appeared on the newly built properties' market and prices fell by 4.5 per cent compared to the prior period in Q3, 2007, which was the biggest price drop since 1988 (Gorton, 2008, page 20). This trend was also reinforced by tightening monetary conditions as the Fed began to raise the interest rate in H2 2005 (Chart 1), making loan financing more expensive and thereby reducing demand for real estate.

The decrease of property prices not only meant that subprime loans were not renewed and thus monthly instalments went up significantly after the initial, low-rate period. What was equally important is that with properties bought at a low down payment, the debt could easily exceed the market price of the property and thus the owner was better off leaving the house than continuing with instalment payments. The combination of these two factors made subprime and Alt-A loan failures and the return of properties to banks reach a mass quantity by 2007. The number of foreclosures went up by 79 per cent in 2007 on 2006 with 43 per cent of them related to subprime mortgages with a variable interest rate (Orlowski, 2008, page 9). While this process continued to

increase supply on the real estate market, it also frightened investors who responded with tighter lending conditions. Increasing supply and decreasing demand resulted in a further price drop and a self-fueling, downward spiral evolved – by the end of 2008, property prices fell by 30 per cent compared to their 2007 peak (Chart 1).

Money market problems were first signalled by the ABX index, an indicator created in 2006 to reflect the risk of mortgage-based securities by tracking fluctuations in the value of Credit Default Swaps (CDS). In H1 2007, this index nosedived in conjunction with BBB securities that contained subprime loans. At the same time, rating firms were downgrading structured, mortgage-based securities in mass quantities. This move triggered immense write-offs<sup>6</sup> and contributed to the dramatic fall of demand for these securities.

### The spreading of the crisis

First the so-called SIV (Special Investment Vehicles) companies returned to the balance sheet of sponsor banks. These high leverage funds used cheaper, short-term loans to finance their long-term, high-return assets. With the fall of the ABX index, creditors refused to renew the short-term loans of these companies which drove them out of business.<sup>7</sup> Furthermore, due to increasingly expensive financing and mass mortgage breakdowns, institutions that issued subprime loans, e.g. New Century Financial and Countrywide Financial went bankrupt one after the other in 2007.

In the next phase, the crisis spread to the interbank market as shown by the sudden jump in the TED spread (the difference between the 3-month LIBOR and the three-month T-bill) following the collapse of Bear Stearns' two hedge funds in August 2007 (see Chart 5.). The

reason was that banks were worried that there would be no market for the derivative assets, which they received as collateral for their short-term loans, in case they needed to sell it (Gorton, 2008, page 26). In other words, trust disappeared from financial intermediation and it practically paralyzed the entire system.

Thanks to a concerted intervention of the Fed, the ECB and the Japanese central bank, interbank rates decreased at the time. As shown in chart 5, however, this was a temporary relief only. As the losses of various financial institutions surfaced, the risk premium went up in December, 2007 and then again in April, 2008. It had an especially adverse impact on companies involved in high-leverage dealings, like Bear Stearns and Lehman Brothers which relied the most on cheaper, short-term loans in financing their high-return, long-term assets.<sup>8</sup>

The bankruptcy of Lehman in September, 2008 can be considered a turning point in the crisis, causing unprecedented panic on the markets and threatening to crash the entire financial system. As a consequence, the Fed and the US government intervened with unparalleled vehemence (Calomiris, 2008, pp. 55–56), pumping seemingly unlimited liquidity into the system, nationalising several institutions and launching exorbitant bank saving packages.<sup>9</sup> These US actions were soon followed by similar steps in other countries of the world.

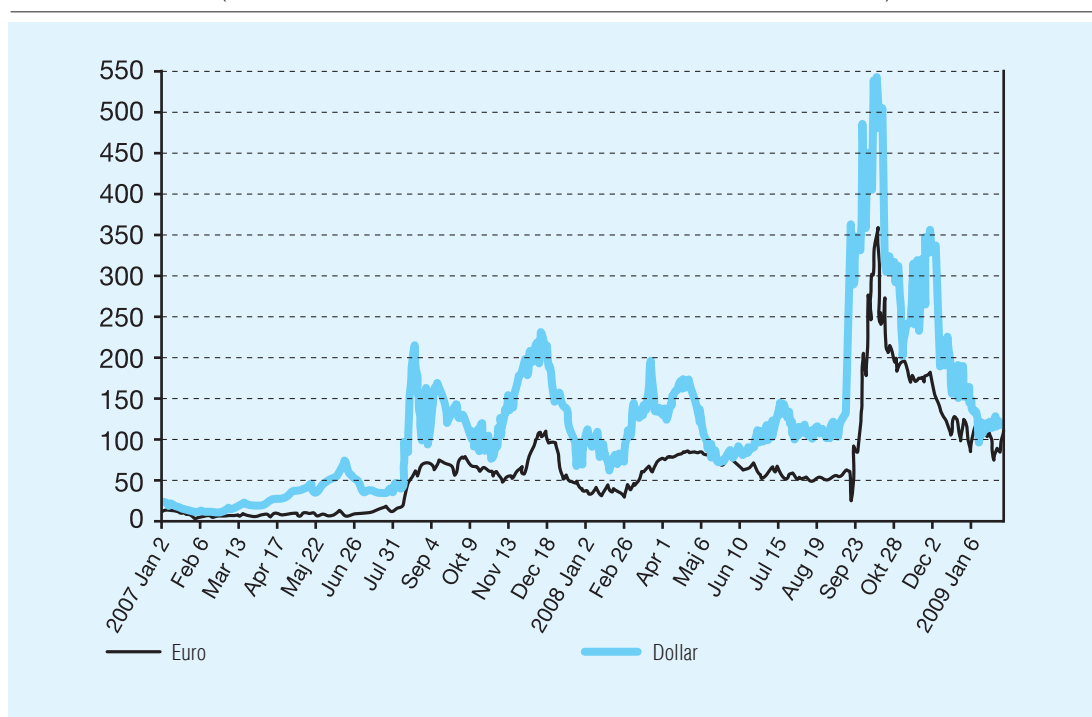
### THE PLAYERS IN THE CRISIS

As the exorbitant costs of managing the crisis are to be borne by taxpayers and future generations, public attention quickly turned towards searching for scapegoats. It did not take long to

Chart 5

#### CHANGES IN THE TED SPREAD

(difference between the three-month T-bill interest rate and three-month LIBOR )



Source: Magyar Nemzeti Bank (Hungarian National Bank) chart set, 30 January 2009



find that the greed of the financial system was responsible for the financial catastrophe. As *White* (2008, page 2) pointed out, however, it would have been better to consider this circumstance as a constant factor. After all, gravity is not regarded as the principal cause of airplane crashes. In the upcoming sections I highlight the erroneous decisions of the Fed and the US government to show how they helped to amplify the consequences of wrong incentives that existed in the financial sector.

### Monetary policy

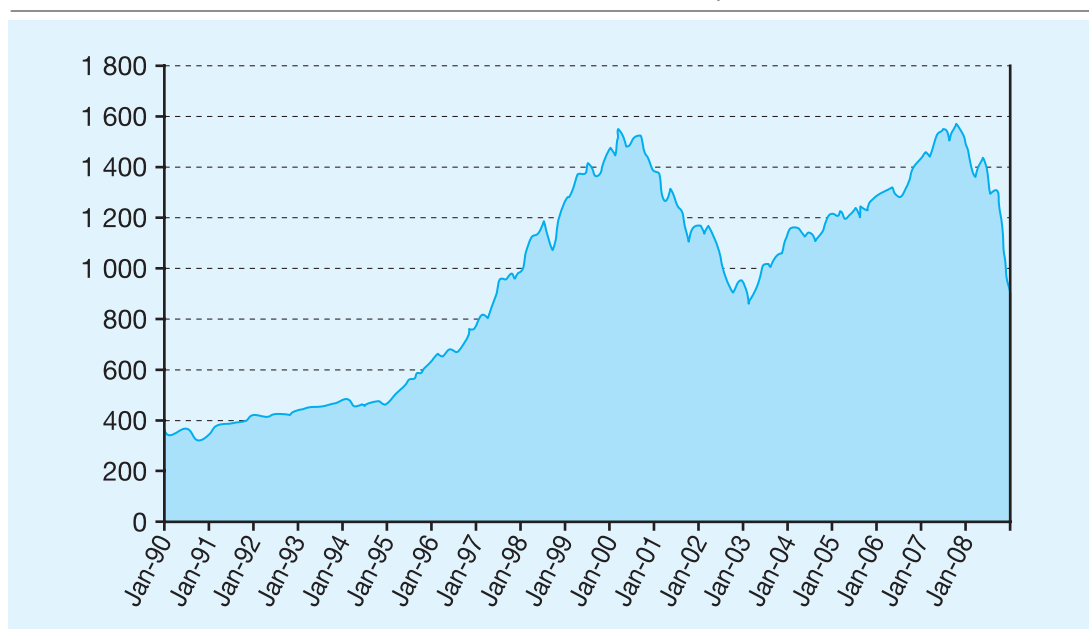
The extremely low interest rate, which we discussed already and which caused a negative real interest rate for nearly three years, was one of the key originators of excess liquidity which ultimately led to the crisis. Besides the interest rate, the calculability of interventions also played a major role in shaping the risk perception of investors (Borio and Zhu, 2008). The

Fed committed immense mistakes in this respect as well in the period preceding the crisis.

The mistakes occurred during the management of the dotcom bubble, which preceded the real estate bubble. In conjunction with the trust in the productivity-increasing effects of technology and the theory of the new economy, a huge bubble began to grow on the US stock exchange from the mid 1990's as shown in *Chart 7*.<sup>10</sup> Being a believer of the new economy, *Alan Greenspan* did not intervene into the growth of the bubble for two reasons. First, because of the concept of the new economy and hoping for permanent productivity growth, he thought there was a chance that inflation would stay low over the long run.<sup>11</sup> He also agreed with the view that bubbles can only be declared bubbles in hindsight. Second, the Fed tried to raise interest rates in 1997 but failed to slow down the soaring stock exchange (Greenspan, 2008, pp. 210–215). After that they did not even try to do anything against soaring as reflected so well by *Chart 6*.

Chart 6

**THE S&P 500 INDEX MONTH-TO-MONTH, 1990–2008**



Source: <http://www.economagic.com>

While accepting the growth of the bubble, however, the Fed regularly intervened with the operation of the market and cut the interest rate, whenever they thought that unfavourable shocks threatened the soaring. *Fleckenstein* (2008) voiced some strong criticism about the monetary relief that followed the bankruptcy of Long-term Capital Management (LTCM) in 1998. As shown in Chart 6, the S&P index fell back somewhat due to the 1998 LTCM but the drop was far from dramatic. If we look at Chart 1 again, it is obvious that growth figures did not give reason for any serious worry either. Still, the Fed cut the interest rate at the end of September and the stock exchange began to grow again – albeit not immediately, only two weeks later. However, Greenspan did not consider it satisfactorily convincing and cut the interest rate again at an extraordinary October session in order to “stimulate the market”. This second cut had a dramatic effect, and the market skyrocketed. After a third interest rate cut in November, the crisis was over. This set of actions convinced investors for a long time that Greenspan would not allow the market to suffer serious losses (*Fleckenstein*, 2008, p. 55).<sup>12</sup>

Thus it seems obvious that the US monetary policy functioned asymmetrically in the 1990's already. On the one hand, monetary policy-makers did not attempt to prevent the formation of bubbles in any way. On the other hand, they made all efforts to prevent the realization of losses. What is more, they were extremely slow in taking out the excess liquidity from the system that was made available upon unfavourable shocks. This is well illustrated by the lastingly negative real interest rates of 2003 – 2005. This way, they allowed the market to function upwards, but prevented it from functioning downwards. This policy incorporated a severe moral hazard problem into the financial system, and diminished all sense of risk on the part of market players.<sup>13</sup>

Besides asymmetrical interventions, the Fed also followed other ways of not combating the bubble. Due to political reasons and in order to avoid the conflicts, which we will discuss in the next part, they did not voice concerns about the loosening of lending standards and did not use their regulatory mandate to prevent the accumulation of risky loans (*Calomiris*, 2006, page 171). Instead, they believed in the risk-mitigating effect of financial innovation and considered it a key means of enabling more people than ever to buy property.<sup>14</sup>

In summary, it is clearly visible that the Fed did not only create the lavish supply of liquidity that fuelled the bubble, but also reduced risk perceptions by financial market players through interfering asymmetrically with the market, while at the same time failed to use its regulatory mandate to keep risks under control. All this severely distorted market drivers. However, this was only a part of government intervention. The key responsibility for the loosening of lending standards lies with the government's housing policy.

### The housing policy of the US government

Excess liquidity generated by monetary policy means was not destined to end up in the real estate sector. What attracted it there was the government's housing policy, which involved active interference in the market to increase the ratio of homeowners, especially among minorities and immigrants. As traditionally there is strong scepticism in the US about government redistribution, a different method had to be found, which worked outside the budget and did not increase the redistribution rate. The government “resolved” this partly by government-sponsored institutions and partly by loosening up the conditions for borrowing.

Government-sponsored enterprises on the real estate market were set up during the great depression,<sup>15</sup> when banks provided housing loans on a one or two-year term which made property purchases extremely difficult. An organisation called the Federal Housing Administration (FHA) was established in 1934 to function as a guarantor for the housing loans of low-income citizens under strict conditions (e.g. requiring a down payment of 20 per cent). Then in 1938 Fannie Mae (the Federal National Mortgage Association) was set up for buying up FHA loans and later for repackaging and securitising them. Seeking to reduce the deficit, President *Johnson* privatised the firm in 1968, and its shares were floated on the New York stock exchange. Still, Fannie Mae partly retained its governmental function, which resulted in a rather unique arrangement. Despite resting in private ownership, there is implicit government guarantee on its loans, which gives them significant benefits in obtaining financing. On the other hand their activities are strictly restricted to housing properties and secondary markets, i.e. they are not allowed to issue mortgages.<sup>16</sup> Their market share is huge, and as shown in chart 4, they were responsible for 78 per cent of MBS' issued in 2000. *Wallison* and *Calomiris* (2008, page 2) considered this arrangement the privatisation of profits and the socialisation of risks as these institutions had access to cheap financing, while being able to lend at market costs. With a view to the crisis and the subsequent bailing out of these companies, this standpoint is not far from reality.

Government interference with the housing market was further expanded in the 1970's when the issue of discrimination came up in relation to the assessment of mortgage applications. In 1977 the Community Reinvestment Act (CRA) was passed, requiring banks to do business in their entire geographical area, not only in lucrative districts (*Liebowicz*, 2008,

page 6). From then on, banks were not only rated on the basis of financial stability but also with a view to their compliance with CRA rules and low scores may have triggered penalties.<sup>17</sup> Starting in 1991, banks had to report mortgage applications by ethnic group as well. Once this data was available, it was promptly in the focus of media attention. Based also on some other variables, a 1992 study of the Federal Reserve Bank of Boston suggested that the mortgage applications of minorities were rejected at a much higher rate than that of white applicants. Although there were serious doubts about the data and the findings of that study (*Liebowicz*, 2008, page 6), the response of the media spurred government action and triggered the tougher enforcement of CRA rules. That was the time when the government-induced loosening of loan conditions began.

This loosening involved government-sponsored institutions first, which were forced by the government to provide 42 per cent of their loans to groups with earnings below the median income level. This ratio went up to 50 per cent in 2000 and to 52 per cent by 2005 (*White*, 2008, page 5). In the 2000's, the institutions were even more willing to serve government needs as they got involved in the accounting scandals of 2002–2003 which put their special licenses at risk (*Wallison* and *Calomiris*, 2008, pp. 4–5). When opening up to disadvantaged groups, they gradually softened up the formerly strict conditions. They rendered less and less importance to credit history, increased the ratio of available income-dependent loans, decreased down payment from 20 to 3 per cent and lowered documentation requirements (*Liebowicz*, 2008, pp. 7–10).

As the activities of GSE's were concentrated on the secondary market, the loosening of borrowing standards directly affected lending banks as government pressure through CRA, excess liquidity and investor competition all pushed them towards the expansion of lending.

In the beginning, the overall softening of lending standards did produce the results expected by the government. Indeed, the number of home owners increased throughout the US from 64 per cent in 1994 to 69 per cent in 2005 (Liebowicz, 2008, page 16). Second, easy access to loans not only motivated minorities to take out mortgages but attracted property speculators as well (we will discuss it later).

In summary, the government's housing policy significantly distorted the US property market and contributed to the increase of risks. Government pressure to provide loans to disadvantaged groups and the loosening of government guarantee conditions helped the boom of subprime and Alt-A loans shown in Chart 4. The expansion of these risky loans seriously magnified the consequences of informational asymmetry between the players of the financial market. I will present this in the next section.

## Financial sector

The problem of asymmetrical information remained an unchanged element of the system despite the revolutionary innovations on the financial markets (Borio, 2007, page 9). It means that relevant information is not equally available to each player during the transfer of resources, which leads to adverse selection, principal-agent problems and the appearance of moral hazard. In the OAD model, the information asymmetry is observable between each player of the lending process, which had especially grave consequences in the case of subprime loans. *Ashcraft, Scheurmann* (2008) and *Baker* (2008) listed several such interrelations. In the context of this writing, the most important relations are as follows:

① Between *loan agent and borrower*: clients who take out subprime loans are usually not quite sophisticated financial experts. Conse-

quently, they could easily be talked into loans that were definitely disadvantageous for them and which they were unable to pay back later (*predatory lending*). The agent usually makes a profit on these contracts as he gets the commission for concluding the deal.

② Between *lenders and real estate appraisers*: while the agents of loan providers were paid to get clients, the assessment meant business for appraisers, an incentive emerged to assign a high value tag to properties. As risks were transferred in the OAD model by way of securitization, it was beneficial for all participants – the borrower got the loan, the lender's agent got a fee for the assignment, while the appraiser could count on further assignments.

③ Between *lender and securitization institution (GSE or investment bank)*: a lender has more information on the solvency of the borrower than the securitization institution. However, as the latter can transfer risks further and generates revenues from securitization, his interests are tied to the quantity of issued papers as opposed to the quality of loans.

④ Between *the securitization institution and investors*: the securitization firm has more information than investors and it can easily happen that they retain quality papers for themselves and securitize inferior ones.

⑤ Between investors and credit rating firms: credit rating firms are not paid by investors but by sellers. This way, sellers are free to use the services of rating firms who promise the highest rating. Calomiris (2008, pp. 31–32) described this process in detail: the few players on the credit rating market began to compete for clients by issuing increasingly favourable ratings. What made it especially easy is that subprime loans were a new phenomenon and thus no time series were available for reliable ratings. In addition, *Liebowicz* (2008, page 12) also pointed out that due to political reasons, credit rating firms that enjoyed a special position and were protected from real market com-

petition did not want to take risks by objecting the government's housing policy endeavours.

In summary, the circumstances discussed above illustrate quite well why the loosening of lending conditions was especially harmful. For in the long sales chain, information was unavoidably a problem, and quality could only be guaranteed if the entire chain was based on reliable debtors. Government pressure to soften loan conditions eliminated this very requirement.

While the presence of the information problem in the OAD chain explains the supply of inferior papers, it does not explain why demand existed for them. Government regulations played a decisive role in that, too. As we could see earlier, in an era of excess liquidity, the risk appetite of investors increased significantly and yield hunting was typical. This was especially true of institutional investors (e.g. pension funds) that are bound by strict rules regarding the rating of their investments. If so, then demand must come from the yield difference between corporate and real estate market securities. For the bonds of AAA-rated companies promised much lower returns than similarly rated mortgage securities. There were thus good reasons why these apparently safe, high-return assets were popular among investors when liquidity was omnipresent (Ashcraft and Schuermann 2008, pp. 11, 62–64). Thanks to multiple government interference, immense demand encountered with immense supply on the market of high-risk securities and an extremely complex network of institutions emerged to serve their needs.

The history of socialist regimes taught us that market-distorting, bureaucratic interference always has side effects which must then be resolved either by undoing the intervention or by imposing further bureaucratic measures (Mises, 1962, pp. 533–534, Kornai, 1993). In the US, there was a failure in this respect as well. While the consequences of informational

asymmetry inherent in the financial system were magnified by government measures, they left the whole issue to be resolved by the market based on the ideology of free markets. As we could see in the previous sections, Alan Greenspan and the Fed played a key role in this process. While the bubble was taking shape, they failed to fight for tighter lending standards and did not toughen the capital or *margin requirements* of credit institutions. They believed the markets can resolve these issues automatically and that markets gravitate towards equilibrium, which makes regulating them unnecessary (Greenspan, 2008, page 434). They failed to realize that any system is more than just the sum of its elements and that the calculations of individual institutions did not take into consideration the systemic risk, which does require regulation.<sup>18</sup> This is especially true when former interventions have magnified potential threats.

## Households

We have reviewed the motivation of each player except households. Just like with financial markets, government regulations contributed significantly to the fact that households became indebted most enthusiastically (*see Chart 7*). Besides negative real interest rates, two institutional factors played a vital role in this process.

① The US government's housing policy does not only encourage home ownership through the means described above but also via taxation policy means. Interests payable on mortgages are deductible from the tax base. One unintended consequence of this scheme is that homeowners are not motivated in any way to pay their mortgages quickly. Instead, it is much easier for them to spend mortgages on consumption, practically using their house as an ATM machine (Ellis, 2008, pp. 17–18). After

the bursting of the dotcom bubble, Greenspan enthusiastically supported this strategy as it enabled consumption growth.<sup>19</sup>

② If a household is unable to pay mortgage instalments, it would face rather gracious bankruptcy conditions. The debtor must submit the keys but the banks would usually not cite him to court for the rest of the debt due to the high costs of legal proceedings (Ellis, 2008, pp. 19–20). What it means is that a homeowner can win a lot if house prices go up but he can escape losses.

Besides the circumstances mentioned earlier (cheap loans, loose lending standards), these two factors also contributed greatly to the increasing popularity of housing speculation i.e. when property is bought for resale as opposed to dwelling. As access to loans was easy and house prices were on the rise, investors could count on nearly sure profits even with a zero down payment. When prices began to fall, they stopped repaying the mort-

gage and handed over the key to the bank. According to Liebowitz (2008, page 24) the rate of speculative buyers was around 28 per cent in 2005 and 22 per cent in 2006. He believes this group played a decisive role in the formation of the crisis. This view is supported by the fact that both in the subprime and prime categories, mortgage failure rates were the highest in areas where speculation was especially buoyant (Florida, Las Vegas, California).<sup>20</sup>

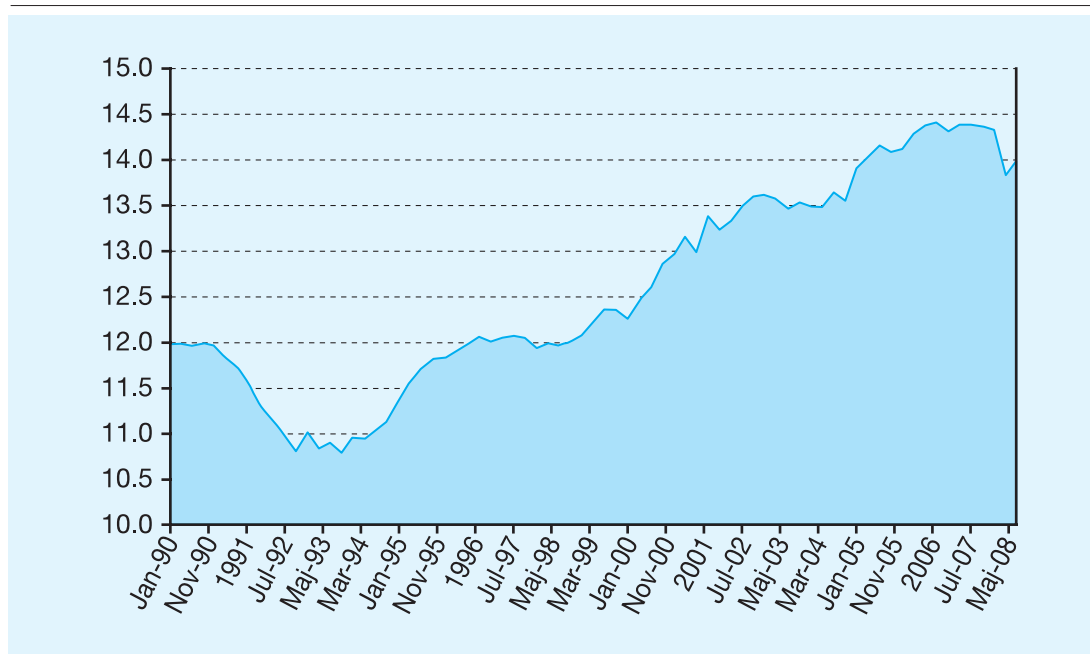
In summary, it is clearly visible that government intervention distorted the motivating factors of both financial system players and households and led to unintended consequences.

## DREAMS AND REALITY

The previous section revealed how government steps distorted market drivers and resulted in risk accumulation within the system. As the

Chart 7

### DEBT SERVICE OBLIGATION OF HOUSEHOLDS AS A PERCENTAGE OF DISPOSABLE INCOME



Source: <http://www.economagic.com>

US government obviously did not intend to ruin the economy, it is important to understand the beliefs and anticipations that drove their measures.

Both on the part of the monetary authority and the government, the most important anticipation was about technological development. IT development and breakthroughs in financial innovation seemed to have opened a new era for the world economy. In the brave new world, permanent increase of profitability, greater social justice and the disappearance of business cycles were expected.<sup>21</sup>

The anticipation of new eras is not a new phenomenon in economic thinking. According to *Shiller* (2000), in the 20th century it was typical in the early 1900's, in the 1920's and in the 1950's (pp. 101–119). Ironically, these views usually broke through right before the largest social-economical cataclysms.<sup>22</sup>

In the 1990's and 2000's, the revolutionary innovations of *financial engineering* were considered the actual miracle. The development of information technology enabled new methods of risk management, partly by developing new derivative products and partly by the model-based assessment of portfolio risk. The VaR (*value at risk*) model developed by the specialists of investment bank J. P. Morgan provided an estimate of the worst expectable loss in a certain period assuming regular market conditions and a given level of confidence. With this model, investors could obtain day-to-day risk information not only about specific assets but about the entire portfolio which enabled them to assume positions and assess their traders based on their risk preference (Jorion, 1999, pp. 262–271). The method was a major step forward compared to former times when the relative risk of increasingly complex assets was almost impossible to tell and without purposeful internal risk management, a swindler trader could drive an entire bank into bankruptcy.<sup>23</sup>

The innovations in risk management quickly found their way to the regulatory authorities who also had serious difficulties assessing the risks of new products. Once they accepted that market models are better than theirs, effective 1995 the Basel Committee allowed banks to use their own internal models for calculating their capital requirement (Jorion, 1999, page 65).

At the beginning it seemed that technical innovations worked excellently. Using the new products, quantitative funds realized unbelievable returns at apparently zero risk by utilising the arbitrage opportunities in the world market. Even if there were warning signs like the delinquency of LTCM in 1998<sup>24</sup> they were considered one-off, non-repeatable events and even greater efforts were made to gain a deeper understanding of risks and to fine-tune VaR models (Nocera, 2009).

However, the subprime crisis highlighted with unprecedented clarity the deficiencies of model application. The most basic problem was the lack of sufficiently long time series (as mentioned earlier herein) about the new products, which would have enabled the reliable evaluation of associated risks. The other problem was that while enjoying 99 per cent probability, market players were inclined to forget about the remaining 1 per cent, the so-called tail events, which may have resulted in orders of magnitude larger losses than estimated.

Besides data quality and the tail events, more serious problems were revealed as well. One of these was the relevance of Goodhart's law, which says that once a numeric indicator becomes the basis of decision-making, players will no longer focus on the underlying purpose but on the indicator itself. In the case of the VaR it meant that since traders were assessed not only with a view to the returns of their portfolio but also on the basis of VaR, they became interested in keeping the indicator law. I.e. they focused on products like CDS's which entail a low-risk in 99 per cent of the cases but

if a loss is suffered it is a huge one (Nocera, 2009). Another factor which motivated traders to keep VaR values low was that thanks to applicable regulations, they helped financial companies keep their capital requirement low (Danielsson, 2008, page 327). Besides the manipulability of the indicator, it also became obvious that VaR models provide insufficient protection on their own against system-level events as its assumptions were, by definition, based on regular market circumstances. In these situations, the pro-cyclical nature of VaR-based regulations is clearly apparent: in good times when asset prices are high, capital requirements are low. When prices begin to fall, a selling spiral takes off to increase capital which further reduces prices.<sup>25</sup>

Naturally, the creators of VaR never said that model-based risk estimates provide protection against all risks. In the final chapter of his textbook, *Jorion* (1999) engaged in a lengthy warning of the limitations of model-based risk assessment and emphasises that it is only the initial approach in evaluating risks. Nobel laureate economist *Robert Merton* (1998) closed his Nobel lecture noting that despite technological advances, models would never capture the full complexity of reality. Still, at the time of the subprime crisis, the false illusion of security and the resulting excess risk appetite is considered one of the key causes of the turmoil (Danielsson, 2008; Nocera, 2009).

However, it is not difficult to detect self-interest behind confidence in technology. For investors, the overlooking of model limitations offered obvious benefits before the crisis broke out as higher risks carried the promise of higher returns and, as discussed earlier, yield hunting became a typical characteristic of the market.

What is far more interesting than investor attitude, however, is the reason why government players overlooked these limitations. On the surface, government players believed in the

miracles of technology as much as investors did. E.g. upon the growth of the technology bubble, Greenspan pointed out that it is very difficult to question the opinion of securities analysts who use immense amounts of data and sophisticated models.<sup>26</sup> In his autobiography, he explains over long paragraphs that with complex products we can only trust the self-regulation mechanisms of the market because financial market players are always one step ahead of regulators. In Greenspan's opinion, another argument for self-regulation is that new, complex products are smoothing the market and contribute to higher efficiency, while sporadic failures cannot shake the entire system thanks to developed financial markets (Greenspan, 2008, pp. 436–442).

Naturally, the promise of paradise on Earth is as old as humanity. Therefore, it may not even be necessary to dig any deeper into explaining confidence in technology. Still, just like in the case of investors, this faith served perfectly the short-term interests of decision makers since fast-paced economic growth and immense consumption rendered significant popularity to political leaders.<sup>27</sup> Faith in the miracles in technology may have suggested to politicians that these goals are easy to achieve finally and e.g. there is no need to seek resources in a transparent manner within the budget, potentially at the expense of other items, to finance the promotion of social justice. If we accept the foregoing, we may realize that the US may not be so different from us, and if we look beyond the surface we may observe similar trends to those in our region, e.g. the new type of macroeconomic populism, which *Csaba* (2008b) identified with respect to Eastern Europe. In this new form of populism, governments seek popularity not by manipulating expenditures but by letting go on the revenues and regulatory side, doing nothing to keep booming consumption under control. What links it with



the recent years of budgetary populism in Hungary, is that both are characterised by the lack of financial sustainability and the unforeseeable consequences.<sup>28</sup>

## LESSONS

Obviously it is way too early to consider the lessons of the US subprime crisis final. Based on what we have discussed here, however, we should at least be cautious about opinions that expect the resolution of the crisis from increased government activity and putting market forces under tighter control. If we look at the road to crisis, it is clear that the government played an active, decisive role in the story. Whether these interventions were driven by pure, illusionary belief or by simple self-interest is difficult to judge. Either way, there is no guarantee that decision makers will act more wisely in handling the crisis than they did when

making it happen. This is especially true considering the fact that the unbelievably loose monetary policy and exorbitant economic stimulus packages that are used to fight the crisis may soon create conditions, which are very similar to former period of excess liquidity.

The story has several lessons for Hungary, too. First it shows that lasting disturbances should be expected in the world economy, which we have to adapt to. The case of the US illustrates that excess consumption on a lasting basis is unmanageable even for the most important player of the world economy, and therefore it is surely impossible for a small, open economy. The most important lesson, however, is that it is extremely dangerous if a country's economic performance is determined by illusions and consumption fever. Probably it is high time to reread the books of *Adam Smith* (1759/1991) and *Max Weber* (1905/1995) on the moral basis of capitalism and focus on work and savings instead of consumption.

## NOTES

<sup>1</sup> The term Keynesian Resurgence of 2008/2009 was already an entry in wikipedia in January 2009. In Hungarian on the renewed popularity of Karl Marx, see e.g. Zeiler (2008).

<sup>2</sup> <http://www.imf.org/external/pubs/ft/survey/so/2008/INT122908A.htm>. Hungary is a natural exception due to its strained public finances.

<sup>3</sup> George Soros (2008) captured this phenomenon with the term reflexivity. Reflexivity refers to situations where there is no clear distinction between the observer and the observed phenomenon, where it is therefore not possible to gain perfect knowledge and the anticipations of the individual also shape reality which can be manipulated for a limited time. The development of money market bubbles is an example of this.

<sup>4</sup> Naturally, this issue would deserve a much deeper and more extensive discussion yet we do not have the space for that herein. In Hungarian technical litera-

ture, see this matter discussed by Botos (2007) and Magas (2008).

<sup>5</sup> Hereinafter I only discuss the characteristics of subprime loans and the OAD (originate and distribute) model of the US mortgage market superficially and only to a level of detail required for understanding the following chapter. For a more detailed discussion of this topic see Király and Nagy (2008), Király, Nagy and Szabó (2008) pp. 588–593, and, in English, Ashcraft and Schuermann (2008) and Gorton (2008).

<sup>6</sup> The magnitude of these write-offs was further increased by fair-value-accounting. Introduced in 2007, this rule required companies to book assets at the actual market price (mark-to-market). At the time of the crisis, it meant that companies had to devalue their assets for which demand disappeared in just a few weeks. Then in order to mitigate these losses, they had to liquidate marketable and profitable assets which put pressure on other market

- prices and generated further losses. See Whalen (2008) page 6–11 and Roubini (2008) pp. 206–208.
- <sup>7</sup> As pointed out by Gorton (2008, page 25), the likely cause of the disappearance of SIV's was the decrease of trust on the market as opposed to fundamental problems, for these funds had very little exposure to subprime loans and their portfolio was properly diversified.
- <sup>8</sup> According to Zingales (2008), Lehman's leverage was in excess of 30, i.e. there were only 3.3 dollars of capital assets for each 100 dollars lent. What it meant was that even a 3.3 per cent impairment loss was enough to make the company insolvent. On top of that, Lehman financed more than 50 per cent of their assets from short term loans which was a significant risk factor when confidence was being lost.
- <sup>9</sup> The grand total of bank-saving packages cannot be estimated at this point. Yet analysts believe that guarantees undertaken and subsidies provided can total to 7.8 thousand billion dollars. See <http://www.marketoracle.co.uk/Article7624.html>
- <sup>10</sup> Robert Shiller wrote his book *Irrational Exuberance* in conjunction with the stock exchange bubble right before it burst. The book made Shiller a world-famous author very quickly.
- <sup>11</sup> Greenspan (2008) pp. 205–208. What is more, he actively intervened to help detect this phenomenon when making a proposal on the Boskin Committee, which was intended to recalculate inflation and show the inflation-decreasing effect of technology. Fleckenstein (2008, pp. 38–43) presented three methods which enabled inflationary calculations that yielded a 1.1 per cent lower rate than before. 1. Geometric calculation was used instead of arithmetic calculation to determine price changes. I.e. if a product's price went up from 100 to 161 dollars in 5 years, the annual growth is 10 per cent. Performing the same calculation with arithmetic methods, we would get a 12 per cent growth rate. 2. Involving the substitution effect in the calculation. If the price of a product goes up but that of a substitute product stagnates, the price increase is not taken into consideration. 3. Hedonic adjustment: if the price of a product goes up but its quality improved as well, the quality improvement was deducted from the price change. As Rogoff (2003) pointed out, however, the low inflation rate of the 1990's was in fact a consequence of intensifying international competition.
- <sup>12</sup> From the investors' standpoint, Greenspan of course saved the world. See Dunbar (2000) pp. 329–332
- <sup>13</sup> Among others, Alexander Lámfalussy pointed out this asymmetry already in 2006, well before the crisis burst out. See Lámfalussy (2008) pp. 197–198.
- <sup>14</sup> In his autobiography written right before the crisis, Greenspan openly expresses his opinion that it was worth assuming financial risk in order to provide housing opportunities to the wide public (Greenspan, 2008, pp. 277–278). Fleckenstein (2008, page 159) quotes a 2005 speech of Greenspan regarding the risk-mitigating role of innovations.
- <sup>15</sup> In this section I rely on the description rendered by Frame and White (2005)
- <sup>16</sup> Freddie Mac (Federal Home Loan Bank Board), established in 1970 for the securitization of the mortgage portfolio of S&Ls has been operating along similar principles since 1989.
- <sup>17</sup> If a bank failed to provide a sufficient amount of loans of this sort, they were exposed to penalties. What is more, effective 1995, a low CRA score was a potential reason for the authorities to reject these institutions' merger with other banks or their opening of new branch offices – White (2008, page 5) considers this the real breakthrough in forcing banks to comply with CRA requirements.
- <sup>18</sup> This is the phenomenon of the fallacy of composition, meaning that whatever is rational at micro-level may not necessarily be rational at a high level. This problems may be especially grave in the financial system e.g. in relation to peer pressure. See Borio (2007) page 9
- <sup>19</sup> In support of this view, Fleckenstein (2008, pp. 139–140) quotes a speech that Greenspan delivered in Congress in 2002.
- <sup>20</sup> These differences are apparent at <http://data.newyorkfed.org/creditconditionsmap/> – in most areas of the US, mortgage delinquency rates are between 0 and 2 per cent.
- <sup>21</sup> An illuminating example of this thinking was presented by Weber (1997) who envisaged the disappearance of business cycles due to wise government policy, IT development and globalization.
- <sup>22</sup> Naturally, this state is well observable on money markets as well as pointed out by Borio (2007,

- page 9). The risk perception of market players is always the lowest when the bubble reaches maximum size – right before bursting.
- <sup>23</sup> Jorion (1999, pp. 46–52) cites the 1995 bankruptcy of Barings and Daiwa as examples.
- <sup>24</sup> See Dunbar's (1999) gripping book about the history behind. The author blames the built-in mechanisms of VaR models for the fact that traders had to liquidate profitable positions to compensate their losses due to the financial crisis in Russia in order to raise capital. This move, however, generated a price decrease on other markets as well and thus aggravated the crisis (pp. 296–298)
- <sup>25</sup> This criticism was voiced among others by Eatwell (2007), Borio (2008), Nourini (2008).
- <sup>26</sup> Fleckenstein (2008, pp. 66–67) cites a 1999 speech of Greenspan about it.
- <sup>27</sup> E.g. Soros (2008, page 160) plain states that the fact that interest rates remained below inflation over a long period of time after 2003 was a result of 2004 elections.
- <sup>28</sup> At the time of this manuscript going to press, the question in Hungary is whether the state would go bankrupt. Regarding the US, it would have been cheaper for the government to buy the mortgaged property for borrowers as a gift – based on chart 4, it would have cost less than 2 thousand billion dollars while the costs of the crisis have way exceeded that already, albeit the final figure cannot be estimated at this point.

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