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WORLD ECONOMIC CRISIS AS A MONETARY PHENOMENON

An expansionary monetary stance since the middle of 1990s is considered as the fundamental factor behind a series of consequent bubbles — on the stocks of a group of new Internet-based companies (1995—2000), real estate (2003—2004) and commodities markets (2006—2007). Specific transmission channels of the Fed monetary policy which led to the real estate market boom-bust cycle and ultimately to the 2008 world financial crisis are analyzed. Other factors, as the lack of proper regulation or the widespread use of innovative financial instruments, have been of much less importance.

Key words: monetary policy, speculative bubble, real estate market

Збільшення пропозиції грошової маси із середини 1990-х років розглядається засадничим чинником низки послідовних "бульбашок" — на ринках технологічних компаній (1995—2000 рр.), нерухомості (2003—2004 рр.) та сировинних товарів (2006—2007 рр.). Проаналізовано конкретні механізми монетарної політики ФРС, що призвели до "перегріву" ринку нерухомості та його наступного "обвалу", а в підсумку — до виникнення світової фінансової кризи. Інші чинники, як брак надійних регуляторів чи поширення інноваційних фінансових інструментів, мали порівняно другорядне значення.

Ключові слова: монетарна політика, спекулятивна "бульбашка", ринок нерухомості

1. Introduction

While there is consensus on the proximate immediate causes of the 2008 world financial crisis, as the lack of proper regulation under financial globalization [3, p. 225—238], misallocation of resources to real estate, financed through the issuance of exotic new instruments [14, p. 606—610], widespread securitization of assets [28, p. 600—605; 16, p. 239—255; 23, p. 51—70], the burst of the real estate bubble due to an increase in the interest rate, a collapse of trust in credit markets caused by housing prices failed to rise [17, p. 567—572], formal and informal weakening oversight and outright deregulation of financial markets [23], favorable taxation treatment of mortgages [25], or excessive government consumption, the policy of pre-crisis low interest rate and high credit growth is worth of attention as the single most important (or "fundamental") factor behind the world financial crisis. It is customary to state that on the eve of the crisis the world economy was "awash with liquidity" [28, p. 600—605].

John Taylor, an author of the well-know monetary policy rule[1], emphasizes that the US real estate crisis fits well to a classical explanation of a financial crisis as a natural outcome of mon-

[1] A Taylor rule stipulates changes in the nominal interest rate in response to divergences of inflation rates from target inflation rates and of the GDP gap. As it is widely considered, a systematic use of such a rule brings about price stability and full employment through reducing uncertainty and increasing credibility of future actions by the central bank.

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etary excesses [27, p. 2]. Although other references to the expansionary monetary policy as a single pre-crisis most important factor are not lacking, quite often neoliberal monetary policy stance is blamed for the single objective of price stability to be pursued by manipulating the rate of interest [3, p. 225]. Such an interpretation shifts an interest towards a more traditional discussion on the merits of monetary policy as an anti-inflationary tool, and could easily miss the point as well, but nevertheless it places the monetary policy issues at the central stage of the current discussion on pre-crisis developments, though with a clear anti-monetarist flavor.

All said, it is worth to consider monetary interpretation of the crisis in a wider framework, regarding connections between excessive money supply, on the other hand, and regulatory framework and excessive risk taking, on the other hand, as determinants of asset price bubbles. This paper presents an informal analysis of several transmission channels through which the Fed monetary policy might have contributed to the boom-bust cycle on the U.S. real estate market in particular and the 2008 financial crisis in general. Interactions with other factors are taken into account as well. The structure of the paper proceeds as follows. Following the introduction, Section 2 provides with a concise description of the pre-crisis monetary developments. Section 3 presents an analysis of the likely monetary policy effects in the short- and long run. Contradictory assessments of the monetary policy are outlined in Section 4. The monetary policy correction of the 2004—2006 period is considered in more detail along the lines of pre-crisis developments in Section 5.

2. Pre-crisis monetary developments

As of the end of 1990s, the US economy looked in an enviable shape, with the budget surplus, high GDP growth rate, low unemployment, high productivity growth, strong dollar and unchallenged technological leadership to top off the list of macroeconomic fundamentals. To some extent, such a situation had been an outcome of an expansionary monetary stance since the middle of the decade. The money supply growth rate had declined from 11% in 1993 to just 2% at the beginning of 1996, but since then a steep increase of the money supply occurred (Fig. 1). By the end of 1996 the money supply growth rate was at 4%, but next year this indicator increased to 6.2%, and on to almost 7% by the end of 2008. On the eve of the 2000—2001 recession, the money supply growth rate hiked to 15.9% in the 1999Q4, which implied a switch to a restrictionary monetary stance.

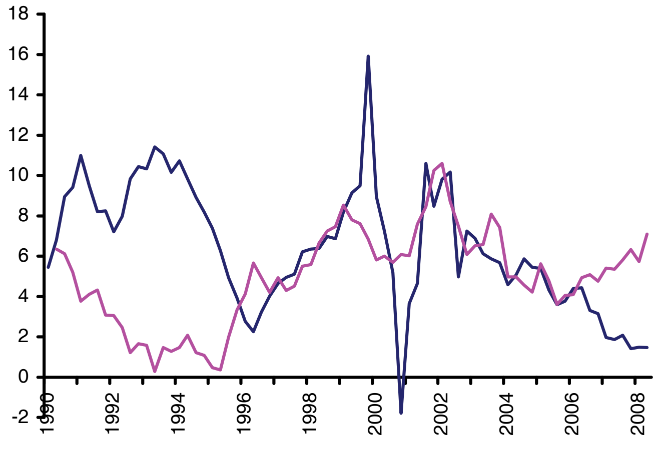


Fig. 1. The U.S money supply growth (%), 1990—2008

Source: IMF International Financial Statistics

The dot-com bubble of the end of the 1990s could be considered as a result of the investor's over-optimistic view of the U.S. new economy based on modern technological achievements, but to the same extent it looks like a natural consequence of an expansionary monetary policy. Low interest rates in particular and "easy" money monetary policy in general, including a less restrictive regulatory framework, contributed to a higher demand for financial assets. Investors borrowed money to buy into stocks of the dot-com companies, being unable to assess corresponding risks in a proper way.

A counter-cyclical weakening of the monetary policy stance had helped to wind up with the 2000—2001 recession, but at cost of the next bubble — on the real estate market, as investors looked for other 'safe havens' for their money. Traditionally housing is one of the safest investments and much of the dot-com money found its way into the U.S. real estate market since 2000 [23]. Redirection of money flows from the stock market towards the housing market had triggered an upward price tendency on the latter, which had only strengthened the attractiveness of the real estate as an investment asset. In turn, higher prices prompted more investments in the housing market and tapped foreign savings. On the other hand, intense capital inflows had created a downward pressure on the current account. Combining with a stronger consumption growth, it had widened the external imbalance (Fig. 2) and implied further increase in the bank's foreign borrowing in order to finance the saving-investment gap.

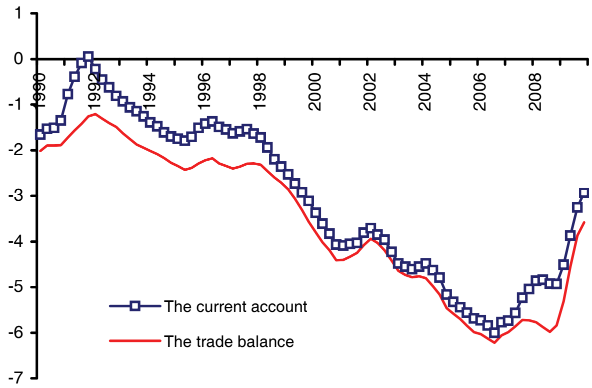


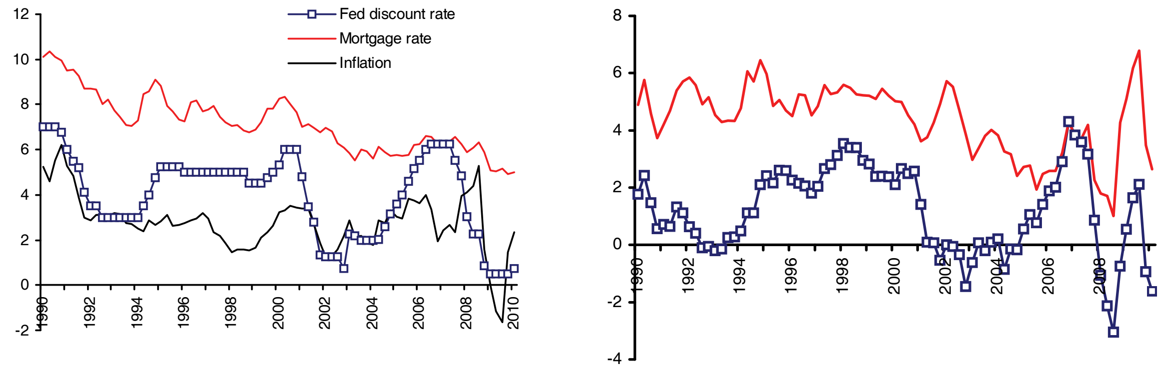
Fig. 2. The U.S. current account and trade balances (% of GDP), 1990—2009

Source: IMF International Financial Statistics

During the 2003—2005 period, the real estate market and remarkable consumer credit growth did play a role of an impressive growth "engine", but the situation has dramatically changed since the middle of the decade. As housing prices failed to rise, it created not only a decrease in the aggregate demand, but a collapse of trust in credit markets as well [17, p. 567]. Then a disruption of the U.S. financial market as a whole took its toll, leading to the deepest economic crisis since the Great Depression of 1929—1933 and imposing delayed costs of fiscal adjustment.

3. Short- and long-term mechanisms of monetary policy

First of all, the Federal Reserve had followed the policy of an artificially low interest rate for too long (Fig. 3). The Fed discount rate had fallen below 1% over the 2000—2002 period, presumably to prevent a sliding into the Japanese-style deflationary spiral. Since the middle of 2001 and till the end of 2004 the Fed discount rate was negative in real terms. Policy of extremely low interest rates could have helped as a counter-cyclical tool, but it ignited a higher demand for housing [14, p. 606—610].



a) nominal; b) real;

Fig. 3. The U.S. interest rates (%), 1990—2010

Source: IMF International Financial Statistics

It is interesting to note that in the second half of 1990s interest rates were rather high in real terms, but nevertheless it had not averted an accelerating upward trend in the money supply (Fig. 1). Such a situation could have reflected either numerous effects of financial innovations, or the popularity of leverage as a way to finance investments. Assuming high expected returns on the stock exchange or other asset markets, even historically high interest rates were not able to curb strong demand for money. In other words, investors were eager to borrow money at high interest rates, as expected returns looked even higher.

Regardless of particular transmission channels, a policy of easy money had created an over-optimistic vision of the future and contributed to a series of the bubbles on asset markets. The U.S. real estate bubble has been identified as early as in 2002, with possible losses estimated at as high as 1.3 to 2.6 billion dollars [4], but nothing had been done do dismantle it. The annual rate of real housing price growth was zero in 1996, but it had increased to 5.5% during the 1997 — mid-2002 period and to 9.6% for the mid-2002 — 2006Q1 period; the peak of 12.1% growth rate was achieved in 2005Q2 [16, p. 248].

Second, there has been a spectacular increase in the amount of credit in general and the so-called subprime loans in particular[2]. Although the increase of U.S. real estate prices had not been extremely high by international comparisons, the widespread use of financial innovations allowed to pull into the market much more of low income home buyers [14, p. 606—610]. Subprime loans in 2005 amounted to 625bn dollars or 20% of all mortgages. As of 2006, subprime loans constituted 32% of all mortgage originations, while ARMs accounted for 45%, with the share of conventional fixed rate loans being decreased to 23% only [16, p. 249—250]. All the more of mortgage loans were absorbed not by mortgage-backed securities (MBS) funds[3], but by the structural investment vehicles (SIV)[4]. Such developments were stimulated by steadily declining nominal short-term interest rates between 2001 and 2005. Coverage of SIV assets had

[2] Officially, a subprime lender has a FICO credit rating of less than 680, but in practice a subprime lender is considered to be someone who is spending more than a third of their post-tax income on personal debt [24, p. 55].

[3] A mortgage-backed security (MBS) is an asset-backed or debt obligation that represents a claim on the cash flows from mortgage loans, most commonly on residential property. In the U.S., most MBS's are issued by the Fannie Mae and Freddie Mac, which are U.S. government-sponsored enterprises (GSEs).

[4] A structured investment vehicle (SIV) is an operating company that invests in eligible securities purchased long-term assets and fund these purchases by selling short-term commercial paper or notes. Thus, the strategy of SIVs is to gain return on a credit spread between investments in the asset portfolio and shorter term funding.

become more complex, with an increasing involvement of private-equity funds, hedge funds, money markets. On the hand, SIVs boomed because they allowed banks to reap profits from investments in exotic securities, but without setting aside enough capital to mitigate risk.

For many economists, the world financial crisis is the outcome of deliberate U.S. government policies aimed at increasing mortgages for middle-class and low-income Americans [30; 23; 25]. Extra difficulties had been created by the activities on the real estate market by the largest mortgage insurance institutions, Fannie Mae and Freddie Mac, which were government-owned at the moment of their creation in the 1930s, but after their privatization in the 1960s were considered as financial institutions which enjoyed the privilege of implicit government guarantees. Initially their aim was to maintain a liquid secondary market in residential mortgages, but since 1992 they were obliged to promote affordable housing to middle- and low-income groups of population. In one of the interpretations, these were U.S. GSEs that deliberately led to the real estate bubble and its crash. As argued by Peter Wallison from the influential Council of Foreign Affairs [30], Fannie Mae and Freddie Mac were the main vehicles for creating astonishing growth of the subprime loans. Since 1998, Fannie Mae was offering a mortgage with a 3% down payment, and in 2001 the down payments were abolished at all. By September 2008, the portfolio of Fannie Mae and Freddie Mac reached $5.3 trillion of own mortgages and MBSs.

GSEs artificially reduced the cost of mortgage debt, being able to borrow at below-market rates and in virtually unlimited amounts [25]. Banks that originated mortgages were encouraged by regulatory capital adequacy requirements to sell them off to GSEs, which did not bear such capital costs.

Financial institutions engaged into securitization of mortgages gradually overtaken banks as a source of the credit supply[5]. As of 2007, the assets of banking system were worth of $12.8 accounted for two third of $11 mld of mortgages. Since the end 2008 the share of non-banking institutions has been on a decline, while banks started to regain their importance.

Complexity of financial instruments on the mortgage market and their relationship with subprime loans had become an important part of crisis developments, which distinguish the U.S. from other high-income countries that experienced the real estate bubble of much higher amptitude. Nevertherless in Ireland, Netherlands, Spain or Australia the burst of the real estate bubble has not led to a serious economic crisis of the U.S. scale [24, p. 55]. The U.S financial institutions had created so much complicated instruments that banks and non-bank institutions considered to be of good quality, but in reality any possibilities to assess their risk were lacking.

An increase in the real estate price in 2001 had taken place against the backdrop of a recession, which was running counter to a conventional wisdom of pro-cyclicality in house prices. Many borrowers had not enough income to support the so-called 'plain vanilla' mortgages ─ no 20% of down-payments and had to use more than 30% of their income for mortgage debt servicing [16, p. 248].

Financial companies bought subprime loans-backed securities, as they trust two historical facts of (i) Americans never defaulting on their mortgages and (ii) real estate prices always being on an upward trend. Such a situation is normal for standard mortgages with a fixed interest rate and substantial own payment, which were given to persons with credible employment prospects, but these were standards not to be met by subprime lenders.

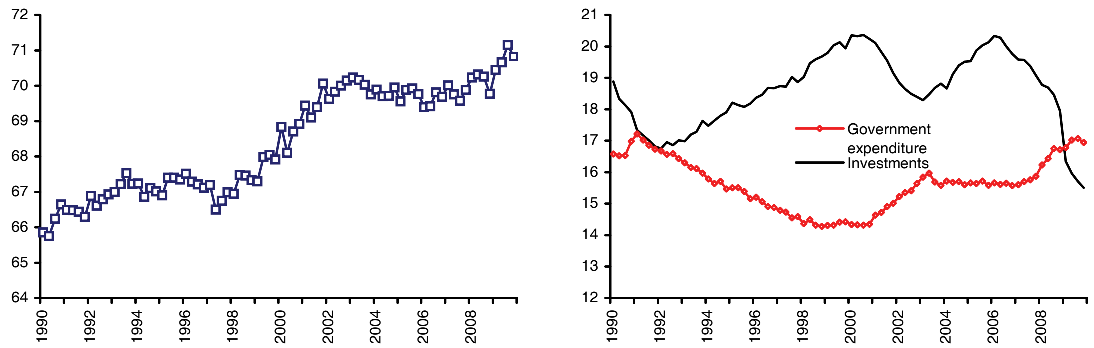
Third, low interest rates fuelled demand for stock, which in turn reinforced private consumption through the wealth effect. A very high rate of home building contributed directly and indirectly to growth through either residential investment and accompanying purchases of fur-

[5] Securitization of assets had been encouraged since the beginning of the 1980s with the aim of increasing the amount on new credit, attracting new investors to the real estate market, and tapping foreign investors [24, p. 60].

niture, appliances, carpets and other household goods, adding to aggregate demand [6, p. 6). In addition, the rapid rise in home prices inclined to increase spending on new cars, boats and vacations. Over-consumption led to dissaving and worsening of the U.S. current account. Research findings indicate relatively large housing wealth effects for the U.S., with financial wealth effect being smaller in magnitude [12, p. 79–89].

During the 1995–2003 period the share of private consumption in the U.S. GDP increased from 67 to 70% (Fig. 4a). The U.S. accounts for a third of the global increases in household income. The dynamics of private consumption was well above the GDP growth rate, being dependent upon the value of assets owned by households. In expectations of further real estate and other assets appreciation, consumers went on an intense borrowing spree. The "debt/disposable income" relationship increased from 103 to 139% of GDP over the 2000–2007 period.

Investments had been on the rise in the 1990s, but declined in 2000–2003 (Fig. 4b). Then the real estate bubble had helped to increase investment rate again, but it drastically dropped to a record low level with the beginning of the real estate crisis. At the same time there has been a steady increase of the government expenditure.



a) private consumption; b) investments and government expenditures;

Fig. 4. The structure of U.S. GDP (%), 1990–2009
Source: IMF International Financial Statistics

Private borrowing was stimulated not only via record low interest rates, but due to a low inflation as well. However, credit booms are not always accompanied by the acceleration of inflation, as it happened during numerous financial crises in the Latin American and East Asian countries in the 1990s, an in the U.S. in the 1920s [25]. For a particular U.S. situation in 2002–2003, the so-called "China factor" was one of the most frequently-cited forces behind the changing nature of the inflationary process[6].

A low cost of funding had been creating incentives for speculative investments on the real estate market. As of 2005 as much as 28%, and in 2006 up to 22% of housing purchases were aimed at "flipping" them for profit, not for personal residence [23]. There were a number of popular reality TV programs, as "Flipping Out", "Property Ladder", "Flip This House" etc.

Excessive absorption had led to a decrease in the saving rate and worsening of the U.S. current account (Fig. 2). Personal saving rate of the U.S. households declined from 12.2% in 1981 to just 2.3% in 2000 (0,7%) (Fig. 5). Private savings recovered during the 2004–2005 period due to a reverse in the monetary policy stance, but since the middle of 2006 the saving rate was on a downward trend again. With the beginning of the 2008 world financial crisis, savings increased, but this trend has been reversed over the last few years.

[6] Empirical studies suggest that the impact of Chinese exports on global prices had been fairly modest, but non-negligible [11; 22]. .

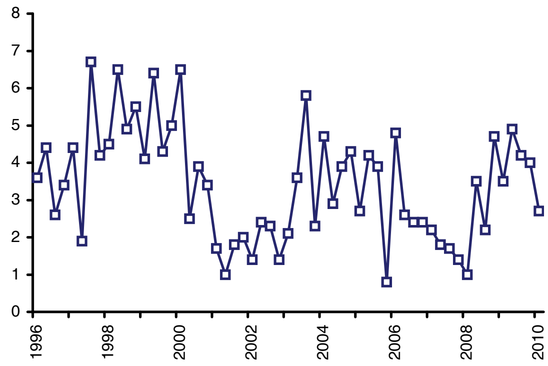


Fig. 5. U.S personal saving rate (%), 1996—2010

Source: U.S. Department of Commerce: Bureau of Economic Analysis

From the peak through the end of 2008, the U.S. households lost $13 trillion of wealth, coming mostly from equities and home prices [6, p. 6—7]. Even though much of this wealth was illusory, as it was based on highly-inflated asset values, it felt like real wealth and could be converted into cash by those to sell at the right time. Having fallen by as much as 20%, the value of U.S. assets has returned to the level of mid-1990s. It is natural that the lost of such a big chunk of wealth cannot but set obstacles to an increase in the private consumption, even if adjust for the famous American optimism.

Fourth, the overheating of the U.S. economy in general and excess money supply in particular had been the most important tools of a steep increase in the commodities prices, of crude oil and metal in the first place, which had created the next bubble in 2006—2007. It is proved that global liquidity is useful indicator of commodity prices inflationary pressure at the U.S. and global level [7, p. 227—242; 13].

Similar to the real estate market, a commodities market bubble of 2006—2007 was stimulated by speculative instruments implying future liabilities and rights. Following the collapse in the housing bubble, investors switched to buying crude oil and metals. The price of oil increased from $50 to $147 per barrel from early 2007 to 2008, before plunging with the beginning of the world financial crisis. As in the previous bubbles, there was "too much money chasing a few goods".

4. Contradictory assessments of the Fed monetary policy

Chairman of the Federal Reserve Ben Bernanke does not agree that monetary policy played a central role in the crisis [9], as much as former Fed governor Alan Greenspan does it [20]. Their arguments are plain enough. During the February 2009 hearings in the U.S. Congress Ben Bernanke singled out the real estate market crash as a main determinant of the 2008—2009 financial crisis, although admitting that important differences with Japan and other countries were created by a large-scale securitization of mortgages [29, p. 118]. According to Alan Greenspan, between 2002 and 2005 the correlation between the Fed-funds rate and the mortgage rate diminished to insignificance [20]. If so, any changes in the discount rate were unable to induce favourable developments on the real estate market.

As suggested by the FRS experts [15], monetary policy was accommodative following the 2001 recession, but is was not the primary contributing factor to the extraordinary strength in housing market. However, empirical evidence are obtained that the monetary policy had significant effects on housing investment and house prices and that easy monetary policy designed to stave off perceived risks of deflation in the 2002—2004 period had contributed to the boom in the housing market in 2004 and 2005 [21, p. 339—366]. Similarly, it is established for the European countries that real house prices are pro-cyclical and typically are preceded by a period of easing monetary policy [1]. During the 2002—2005 period, the lower short-term interest rate may have been a cause of the boom and bust in housing and inflation in 2006 and 2007, as well as poor credit assessments on subprime mortgages [26].

Another argument holds it that a steep decrease in the interest rate since the beginning of the decade had been caused by significant capital inflows. In March of 2005, Ben Bernanke argued that persistent low short-term interest rates had been resulted from a remarkable reversal in the flows of credit to developing and emerging-market economies [8][7]. The explanation looked credible, but it should be taken into account that the capital inflows could have been caused by the U.S. consumption boom, which appreciated either stock exchange assets, or houses through its positive effect upon GDP growth. At the same time, the wealth effect and capital inflows only worsened the U.S. current account deficit, thus contributing to a future reverse in the expectations.

As argued by Benn Steil [25], low interest rates were initially established by the Fed and then sustained by massive capital inflows. Since the end of 1990s, a third of debt issues were placed abroad [24, p. 63]. In fact, China sponsored American home-buyers through low mortgage rates, as it was interested in keeping an undervalued exchange rate of the yuan in attempts to boost exports.

A widespread borrowing by the U.S. households and financial institutions provoked a global surge in asset prices (real estate, commodities, stocks, bonds and art). It was not downplayed that capital inflows predominantly financed the mortgage issues and purchases of stocks and bonds. In the case of a synchronous decrease in prices for both asset markets, exactly as it happened since the end of 2008, the reverse of capital flows is a natural outcome, with a further decline in credibility to follow. An accelerating rate of private and public debt accumulation had been working in the same direction since the beginning of the decade, resulting from profligate fiscal policies, among other things. As the economic recovery had coincided with military campaigns in Iraq and Aphganistan, and against the backdrop of a tax cuts package of the Bush Administration, pro-cyclical improvement in the budget balance did not happened. A higher U.S. indebtness had not served as a reliable cushion in the case of any unfavorable crisis developments.

As in 2002—2003 the U.S. economy was in recession, an expansionary monetary stance was in tune with macroeconomic conditions, but it was necessary to account for possible long-run consequences. It was quite obvious that an increasing wedge between the real estate prices and GDP and wage dynamics would lead to a future decline in prices, as it happened on the IT stock market a few years earlier, with the destabilization of the financial system and decline in private consumption being likely outcomes. Assuming a dominating role of the U.S. in the world economy (its share has been oscillating around 25% of global GDP over last two decades), a slower U.S. demand growth cannot but cause a global recession. In turn, it is only worsening the prospects of U.S. recovery through narrowing demand for its exports. It is worth noting that the annual U.S. consumption stays at $9 trillion, being nine times larger of the China's consumption, and fifteen times of that in India, two largest emerging markets.

Fed ignored numerous early "warning signals". A steep increase in the real estate prices was explained by insufficient productivity in the construction industry, while spectacular foreign

[7] In the aftermath of the 1997—1998 Asian crisis, many LDCs became more cautious and turned into net savers. Initially their savings were absorbed by IT companies on the U.S. market, but a subsequent crash of the dot.com market had led this process to a stop [14, p. 606—610].

borrowing and the current account deficit were blamed for the saving glut in China, South-Eastern Asian, Western European and Gulf countries. It did not contradict with a previous position of neglecting a relationship between the money supply and asset prices. In his speech at the American Enterprise Institute on December 5th, 1996, Alan Greenspan characterized the behavior of investors as "irrational exuberance". To some extent he was correct, because investors quite often ignore the price-earnings ratio, with structural, cultural and psychological factors being of exaggerated importance[8], but all these determinants are less influential under the policy of tight money and high interest rates.

Lack of inflation could not be considered a convincing evidence in favor of the 2002—2004 Fed monetary policy, as inflation not always emerges during credit boom busts [25]. For example, it was a case for many such episodes in the Latin American countries in the 1990s, as well as in the U.S. in the 1920s. It is important that the debt buildup is encouraged during a cheap money period under favorable taxation treatment — exactly what had happened in the U.S. Mortgage interest rate deductability encouraged either leverage, or home ownership, regardless of higher risk.

Prevailing assumptions of an "indefinite" external financing of even extremely high U.S. current account proved to be too optimistic. It was not envisaged that an abrupt decline in the stock exchange indexes and real estate market would cause a reverse in the investors' mood and thus put a significant constraint on capital inflows, especially under conditions of a serious private and public debt accumulation.

Important lessons of the 1997—1998 Asian crisis had been underestimated. According to Jacqueline Best [10, p. 30], in both cases — of the Asian and U.S. real estate crisis — underlying reasons are the same, such as excessive leverage, moral ha¬zard, poor risk management. The only difference is that inefficient government policies had been considered as the main reason behind the Asian crisis, while the U.S. private sector is blamed for the current financial malaise. In 1998, Alan Greenspan heralded the emergence of "the new advanced technology-based international financial system", and claimed that the Asian crisis had been caused by excessive reliance on state and under-developed regulatory systems and lack of fit with the global financial system [19].

It is worth noting that since the end of 1990s a third of real estate debt issues had been bought by foreigners [24, p. 63]. About $2 trillion of MBS issues had been proceeded through the Cayman Islands. At this point some analogies with the Enron case cannot but emerge. The failure to detect risk in a timely manner does not refer only to a lack of government regulation, as rating agencies, mortgage brokers and self-regulating banks all failed to manage risk [23]. The Enron case demonstrated how it was possible to hidden information about real financial conditions for quite a long period of time with the help of formally independent accounting firms. The same could had happened with opaque investment instruments on the real estate market, with innovative nature of these instruments being only a pretext for serious flaws in the risk management under conditions of an expansionary monetary stance.

5. A belated monetary policy tightening in 2004—2006

A long-awaited gradual increase in the Fed discount rate since the middle of 2004 almost immediately put a brake on the real estate prices, which led to a stagnation and then to a bust of

[8] Explanations are not lacking that the IT boom of the second half of 1990s had been inspired by a widespread notion that Internet was the key for future growth. Such feeling had been actively supported by media. Following the 1997 Asian crisis, demand for the stocks of U.S. technological companies was strengthened by the sense of excitement after the crash of potential competitors in the technology sector.

the real estate market. As a result, systemic problems in the banking sector have emerged. The beginning of the U.S. real estate crisis is traced to the fall of 2006, when the delinquency rate on subprime loans had increased from 5 to 10%, and then to 18% by the end of 2008 [24, p. 63─64]. Institutions that originated mortgages reacted to a changing situation on the real estate market with a delay. Although U.S. real estate prices had ceased to grow in 2005 and were on a decline since August 2006, there were new subprime loans issues of $1.2 billion in 2006─2007, of which 80% loans were securitized. As of 2008, about 50% of the stock of U.S. mortgages were subprime loans [30, p. 199].

The burst of the real estate bubble has brought about a serious decline in the construction industry, which used to be considered one of the most important engines of the U.S. growth. If in the pre-crisis 2005 year a quantity of new homes increased by 6.5%, this quantity has decreased since then: by 14.6% in 2006, by 28.6% in 2007, by 40.5% in 2008, and by 28.5% in 2009.

John Taylor argues that the real estate market overheating could have been avoided if the Fed increased its discount rate earlier [26][9]. During the 2002─2005 period the lower short-term interest may have been a cause of the boom and bust in housing and inflation in 2006 and 2007 as well poor credit assessments on subprime mortgages. Excessive risk taking and the low interest rate are connected [27]. Incentives for payments are stronger in line with an increase in real estate prices, while the opposite does happen at the downturn. If the house price falls below the value of the mortgage, negative incentives for delinquencies and foreclosures are mounting. In John Taylor's view, it is likely that risks of MBS were underestimated due to a lack of competition and poor accountability, but the most credible reason is an inherent difficulty in assessing risk due to complexity of these financial instruments.

Investments into MBS had become a component of the culture of excessive risk taking [14, p. 606─610]. However it was very difficult, especially in the case of new innovative financial products, to assess whether a manager creates true excess returns, or these returns are a compensation for future risk, which is to be materialized very soon. Willingness to take illiquidity risk could had been strengthened by the abovementioned saving glut and perceived Fed determination to provide market with extra liquidity in the emergency case (the so-called "Greenspan Put"). Following the 1987 stock market crash, the 1990─1991 Gulf War, the 1994 Mexican crisis, the 1997─1998 Asian crisis, the burst of the dot-com, and the 9/11 attacks, the Fed responded by significantly lowering the Fed Funds rate, often resulting in a negative real yield. In general, in good times capital is cheaper and the cost of illiquidity remote. It was a serious mistake that the risk assessment was given to rating agencies, which were paid by the financial companies [25, p. 8]. Expansion of the MBS was further fuelled by financial sector compensation policies, which rewarded bets on rising asset markets using cheap borrowed money.

Without downplaying the impact of such specific factors, as complexity of investment instruments, insufficient regulation of capital flows or mistakes in risk management, monetary effects seems to be dominant. A Fed policy of easy money had triggered an upward price tendency on the real estate market, which had only strengthened the consumption and investment demand. A low short-term interest rate encouraged excessive risk-taking, resulting in that more mortgage loans were absorbed not by MBS funds, but by much riskier SIVs [16, p. 249]. As in summer of 2007 Chuck Prince, an executive director of Citigroup, put it, "If music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you've got to get up and dance. We're still dancing" [Financial Times, July 9, 2007]. In plain language, excessive bor-

[9] For the European countries, the highest increase in the real estate price was found in the countries, where the interest rate deviation from the Taylor rule was the largest, as Ireland, Spain, Portugal [2].

rowing and risky investments are not to be avoided, if the policy of easy money continues. Just in a year, the "music" would stop, as the credit crunch takes its hold, and many of the financial market "dancers" would go bankrupt.

It was neglected that in the upturn of business-cycle dynamics optimistic and even euphoric assessments of earnings potential and asset prices lead firms and households to take on more debt and hence financial fragility [16, p. 242]. According to the well-known cycle theory by Hyman Minsky, an American economist, banks do accelerate the expansion process by lending to units whose spending depends on access to intermediate credit. But in the downturn banks reduce their own liquidity, as provision of fresh funds to non-bank financial institutions becomes of higher priority thus 'crowding out' conventional lending. As uncertainty grows, banks become reluctant to take on more default risk, amount of lending decreases, and pessimism starts to prevail, thus causing a deep economic slump. In order to prevent bank runs and a debt-deflation spiral, the central bank has to supply cheap liquidity. However, it has a long-run risk of its own, with an inflationary build-up might be expected. Policy implication is rather clear, i.e. better not to allow 'the bubble' to mount, in order not to be at risk of future stabilization actions.

Real estate prices used to be pro-cyclical, i.e. they have a tendency to increase during an economic boom, and following a long enough period of expansionary monetary policy. If so, an expansionary monetary policy of 2002─2004 aimed at dealing with the danger of deflation led in the longer run to a real estate boom of 2004─2005.

6. Policy implications

Among numerous explanations of the U.S. real estate bubble and 2008 world financial crisis, as weak government regulations, high risk due to the complexity of new financial instruments, widespread securitization of assets, a collapse of trust in credit markets caused by hou¬sing prices failed to rise, taxation system flaws etc., monetary determinants of the crisis are much more credible as its root causes. Stylized features of the pre-crisis developments do not violate the classical explanation of a financial crisis as a natural outcome of monetary excesses, as argued by John Taylor. The policy of 'easy' money contributed to the crisis through numerous channels, with the real estate bubble being one of the most important factors but not the single one. Low interest rates in particular and "easy" money monetary policy in general, including a less restrictive regulatory framework, contributed to a higher demand for financial assets. In the second half of 1990s, a combination of higher money growth rate, investment leverage and over-optimistic expectations had contributed to the dot-com bubble, which burst in 2000. Then a counter-cyclical weakening of the monetary policy stance had helped to overcome the 2000─2001 recession, but at cost of the next bubble ─ on the real estate market. As housing prices failed to rise, investors switched to a commodity market in 2007─2008, thus creating the next bubble in a row over the last decade.

Although it might have been difficult to contain capital inflows in a liberalized global setting as a pre-requisite for tightening monetary policy [5, p. 6], nevertheless it was possible to start increases in the Fed discount rate much earlier or tighten banking requirements for mortgages. This kind of pre-emptive monetary tightening would have helped to stave off the real estate bubble and thus keep the economy from sliding into the worst financial crisis since the Great Depression of 1929─1933. Similarly, it was possible to tighten financial regulations in a similar fashion, as it is being done in recent months.

Recent global financial crisis should not be considered as a fall of monetarism out of grace. Just the opposite, it is an another argument in its favor. A series of large-scale U.S. bubbles argues with strength in favor for a cautious monetary policy, without any merits of the short-term monetary easing which should be weighted against the long-term losses. If the simple Taylor rule-based monetary policy were implemented in 2002—2004, it would have been possible to stave off the danger of the future financial turmoil.

Literature

1. Ahearne, A., Ammer, J., Doyle, B., Kole, R., and Martin, R. Monetary Policy and House Prices: A Cross-Country Study // International Finance Discussion Paper No. 841. — Washington: Federal Reserve Board, 2005. — 68 p.
2. Ahrend, R., Cournéde, B., and Price, R. Monetary Policy, Market Excesses, and Financial Turmoil // OECD Economics Department Working Papers No. 597. — Paris: OECD, 2008. — 36 p.
3. Arestis, P., and Singh, A. Financial globalization and crisis, institutional transformation and equity // Cambridge Journal of Economics. — Vol. 34. — No. 2 (March). — P. 225—238.
4. Baker, D. The Run-Up in Home Prices: A Bubble // Challenge. — 2002. — Vol. 45. — No. 6 (November-December). — P. 93—119.
5. Baily, M., Litan, R., and Johnson, M. The Origins of the Financial Crisis // Fixing Finance Series Paper No. 3 (November). — Washington: Brookings Institute, 2008. — 47 p.
6. Baily, M., and Elliott, D. The US Financial and Economic Crisis: Where Does It Stand and Where We Go From There? // — Washington: Brookings Institute, 2008. — 26 p.
7. Belke, A., Gordon, I., and Hendricks, T. Global liquidity and commodity prices — a cointegrated VAR approach for OECD countries // Applied Financial Economics. — Vol. 20. — No. 3. — P. 227—242.
8. Bernanke, B. The Global Saving Glut and the U.S. Current Account Deficit / Speech at meeting of the Virginia Association of Economics in Richmond, Virginia (March 5, 2005). — Richmond: VAER, 2005. — 12 p. http://www.federalreserve.gov/boarddocs/speeches/2005/200503102/
9. Bernanke, B. Monetary Policy and the Housing Bubble / Speech at the Annual Meeting of the American Economic Association in Atlanta, Georgia (January 5, 2010). — Atlanta: AEA, 2010. — 10 p. http://www.federalreserve.gov/newsevents/speech/bernanke20100103a.htm
10. Best, J. The Limits of Financial Risk Management: Or What We Didn't Learn from the Asian Crisis // New Political Economy. — 2010. — Vol. 15. — No. 1. — P. 29—49.
11. Borio, C., and Filardo, A. Globalization and inflation: New cross-country evidence on the global determinants of inflation // BIS Working Paper No. 227. — Base: BIS, 2007. — 48 p.
12. Bostic, R., Gabriel, S., and Painter, G. Housing wealth, financial wealth, and consumption: New evidence from micro data // Regional Science and Urban Economics. — 2009. — Vol. 39. — No. 1. — P. 79—89.
13. Browne, F., and Cronin, D. Commodity Prices, Money and Inflation // ECB Working Paper No. 738. — Frankfurt: ECB, 2007. — 31 p.
14. Diamond D., and Rajan R. The Credit Crisis: Conjectures About Causes and Remedies // American Economic Review. — 2009. — Vol. 99. — No. 2. — P. 606—610.
15. Dokko, J., Doyle, B., Kiley, M., Kim, J., Sherlunf, S., Sim, J., and Van den Heuvel, S. Monetary Policy and the Housing Bubble. —Washington: Federal Reserve Board, 2009. — 61 p.
16. Dymski, G. Why the subprime crisis is different: a Minskyian approach // Cambridge Journal of Economics. — Vol. 34. — No. 2 (March). — P. 239—255.
17. Gorton, G. Information, Liquidity, and the (Ongoing) Panic of 2007 // American Economic Review. — 2009. — Vol. 99. — No. 2. — P. 567—572.

18. Greenspan, A. Current account / Speech at Advancing Enterprise 2005 Conference (London, February 4, 2005).
http://www.federalreserve.gov/boarddocs/speeches/2005/20050204/default.htm
19. Greenspan, A. The structure of the international financial system / Speech at the Annual Meeting of the Securities Industry Association (Boca Raton, Florida, November 5, 1998). http://www.federalreserve.gov/boarddocs/speeches/1998/19981105.htm
20. Greenspan]A. The Fed Didn't Cause the Housing Bubble // The Wall Street Journal. — 2009. — March 11.
21. Jarocinski M., and Smets, F. R. House Prices and the Stance of Monetary Policy // Federal Reserve Bank of St. Louis REVIEW. — 2008. — July/August. — P. 339—366.
22. Kamin, S., Marezzi, M., and Schinder, J. Is China exporting deflation // Board of Governors of the Federal Reserve System International Finance Discussion Paper No. 791. — Washington: FRS, 2004. — 68 p.
23. Savic, I. Today's Financial Crisis: Lessons from the Past. — Toronto: University of Toronto, 2008. — 10 p.
24. Seabrooke, L. What Do I Get? The Everyday Politics of Expectations and the Subprime Crisis // New Political Economy. — 2010. — Vol. 15. — No. 1. — P. 51—70.
25. Steil, B. Lessons of the Financial Crisis // Council Special Report No. 45. — Washington: Council of Foreign Relations, 2009. — 28 p.
26. Taylor, J. Housing and Monetary Policy // NBER Working Paper No. 13682. — Cambridge, Mass.: NBER, 2007. — 16 p.
27. Taylor, J. The Financial Crisis and the Policy Responses: An Empirical Analysis of What Went Wrong // NBER Working Paper No. 14631. — Cambridge, Mass.: NBER, 2009. — 30p.
28. Tobias, A., and Shin, H. Money, Liquidity, and Monetary Policy // American Economic Review. — 2009. — Vol. 99. — No. 2. — P. 600—605.
29. Udell, G. Wall Street, Main Street, and a credit crunch: Thoughts on the current financial crisis // Business Horizons. — 2009. — Vol. 52. — Issue 2. — P. 117—125.
30. Wallison, P. Not a Failure of Capitalism — A Failure of Government. — Washington: The Research Foundation of CFA Institute, 2009. — 16 p.