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THE SUBPRIME CRISIS AND THE ASIAN CRISIS – REMARKS FROM A COMPARATIVE ANALYSIS

Summary: The paper reveals whether the existing premises of currency and banking crises can be implemented while searching for the roots of the contemporary global financial crisis. To answer this question, we attempt to find out whether the current crisis is similar to the one that exploded in the countries of Southern and Western Asia in the nineties. We find that, apart from the constant increase in the volume of capital flows around the world, the development of techniques of the financial instruments' creation as well as institutional forms of financial institutions, the main reasons for the crises' outburst remain unchanged. Among them one can distinguish weakening economic fundamentals and structural imperfections, reflected in the lack of transparency of financial instruments and financial markets.

Keywords: subprime crisis, Asian crisis, financial markets.

1. Introduction

The whole decade after the financial turmoil has crushed economies of developing and emerging countries and banking and currency crises once again have become a centre of interest for economists and policymakers. For certain, this appears to be the effect of the price bubble burst on the housing market in the USA, leading to unprecedented economic disturbance in this very country[1].

This crisis has affected not only the financial sector, but also the real economy. It caused an economic turmoil worldwide, as the disturbances in the American economy have been transmitted to other countries – just like in the nineties a growth of the American economy induced the consequent growth in the rest of well-developed countries around the world[2]. Fundaments for a global crash also were laid worldwide, as the emerging of house price bubble in the USA was strictly linked with the emergence of the bubbles of the same type in many countries[3]. Hence the

[1] A. Ghosh, J.D. Ostry, N. Tamirisa, *Anticipating the next crisis*, "Finance & Development" 2009, Vol. 46, No. 3, p. 35-37.

[2] R.J. Samuelson, *The Great Inflation and its Aftermath. The Past and Future of American Affluence*, Random House, New York 2008, p. 156-165.

[3] R.J. Shiller, *Understanding Recent Trends in House Prices and Homeownership*, [in:] *Housing, Housing Financing and Monetary Policy*, symposium sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, August 2007, p. 89.

burst of the American bubble was simply the stimulus for the snowball effect[4]. This, in turn, has pushed the global economy into the deepest recession since the half of the former century[5]. Moreover, recession is supported by feedback between a drastic restrictions of the credit activity and asset prices slump[6]. The consequences of the global financial turmoil can reach far into gloomy future, because of supply-side problems. According to O. Blanchard[7], Economic Counselor and Director of the IMF's Research Department, in the aftermath of the crisis some parts of the economic system have broken. In advanced countries, the financial systems appeared to be partly dysfunctional, in emerging market countries, capital inflows, which decreased dramatically during the crisis, may not fully come back in the next few years. In nearly all countries, the costs of the crisis have added to the fiscal burden, and higher taxation is inevitable[8].

Under such circumstances, a question can be raised: whether the existing concepts, explaining the banking and currency crises' premises as well as the methods of overcoming such crises, can be effectively used while formulating the theoretical background for the crisis observed nowadays. This question is of high importance, because since the turn of the eighties and nineties theories of banking and currency crises have been deeply modified, being influenced with the process of globalization and financial integration[9] as well as the fall of the average inflation rate around the world to the lowest level since the seventies[10].

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[4] F. Allen, E. Carletti, *The Role of Liquidity in Financial Crises,* [in:] *Maintaining Stability in a Changing Financial System*, symposium sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, September 2008, p. 379-422; G.B. Gorton, *The Panic of 2007*, [in:] *Maintaining Stability in a Changing Financial System*, symposium sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, August 2008, p. 131-137.

[5] O. Blanchard, *Cracks in the system. Repairing the damaged global economy*, "Finance & Development" 2008, Vol. 45, No. 4, p. 8-10; R. Dodd, *Overhauling the System*, "Finance & Development" 2009, Vol. 46, No. 3, p. 32-34.

[6] S. Claessens, M.A. Kose, M.E. Terrones, *When crises collide*, "Finance & Development" 2008, Vol. 45, No. 4, p. 26-28.

[7] O. Blanchard, *Sustaining a Global Recovery*, "Finance & Development" 2009, Vol. 46, No. 3, p. 8-9.

[8] C. Cottarelli, J. Viňals, *Looking ahead*, "Finance & Development" 2009, Vol. 46, No. 3, p. 20-23.

[9] M.A. Kose, E. Prasad, K. Rogoff, S. Wei, *Financial globalization. Beyond the blame game. A new way of looking at financial globalization reexamines its costs and benefits*, "Finance and Development" 2007, Vol. 44, No. 1, p. 9. This process made keeping restrictions imposed on capital flows impossible. Taking this into account, many countries have started to ease and abolish such restrictions. (M.A. Kose, E. Prasad, *Liberalizing Capital Account Restrictions*, [in:] *Financial Globalization. The Impact on Trade, Policy, Labor, and Capital Flows*. A Compilation of Articles from Finance & Development, IMF, Washington 2007, p. 6). This, in turn, produced an impulse for disturbing the global external balance. (R. Cardarelli, A. Rebucci, *Exchange Rates and the Adjustment of External Imbalances*, [in:], *Spillovers and Cycles in the Global Economy*, World Economic Outlook, IMF, April 2007, p. 81; P.R. Lane, G.M. Milesi-Ferretti, *Examining Global Imbalances*, [in:] *Financial Globalization…*, op. cit., p. 24-27; L. Summers, *The U.S. Current Account Deficit and the Global Economy*, The Per Jacobsson Foundation Lecture, Washington 2004, p. 3-10).

[10] K.S. Rogoff, *Globalization and Global Disinflation*, [in:] *Monetary Policy and Uncertainty: Adapting to a Changing Economy*, symposium sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, August 2004, p. 77-112.

This produced mounting capital flows, with the high share of speculative flows, which are of extreme volatility[11]. That is why in turn of centuries emerging and developing countries appeared to be unable to control and monitor capital flows, what led to series of banking and currency crises of the new type[12]. These crises were neither prevented, nor cured with the use of the standard instruments and policy actions, which up to then were considered to be a good anti-crisis panacea[13]. Taking this into account, a need to reformulate theoretical backgrounds was discerned in order to find new guidelines how to avoid and offset negative effects of banking and currency crises. The realization of such a target revealed that the important reason for crises were not only unfavorable changes of macroeconomic fundamentals, but also microeconomic structural imperfections of the economy as well as psychological motives of the investors' behaviour.

One's interest can arouse, whether modified theoretical concepts can be used or not, while searching for the roots of contemporary financial turmoil. It can be assumed that such concepts are of positive value only if contemporary crisis reveals a similarity to disturbances observed in the late nineties. As a reference point so-called Asian crises could be chosen, hence these appeared to be one of the first crises of a new type. Moreover, in spite of differences (institutional and social) between Asian countries and the USA, there are also similarities between those two crises. Both of them occurred under conditions, which had seemed to be very stable and favourable. In both cases speed and seriousness of the crises took analysts, politicians and individuals by surprise.

Taking this into consideration, the aim of this paper is to reveal if and – if so – to what extent a contemporary crisis is similar to banking and currency crises that exploded in the countries of Southern and Eastern Asia in the nineties. The

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[11] P. Masson, *Globalization: Facts and Figures*, IMF Policy Discussion Paper 2001, No. 4, p. 9-10.

[12] A. Sławiński, *Kryzysy walutowe a kierunki reformy międzynarodowego systemu finansowego*, "Bank i Kredyt" 2000, Nr. 7-8, p. 90.

[13] The majority of countries implemented policies based on so-called Washingtonian consensus (J.E. Stiglitz, *Szalone lata dziewięćdziesiąte. Nowa historia najświetniejszej dekady w dziejach świata*, WN PWN, Warszawa 2006, p. 203-217). The main elements of this consensus were: declining the budget deficit, privatization and liberalization of the financial sector, removal of the preferential interest rates for privileged borrowers, removal of barriers for foreign direct investments and making exchange rates uniform for all transactions (A. Wojtyna, *Polityka ekonomiczna a wzrost gospodarczy,* "Gospodarka Narodowa" 1995, No. 6, p. 5-6). While deciding, whether countries struck by crises could be granted a financial help, IMF often required very tough obeying rules of this consensus (M. Feldstein, *Refocusing the IMF*, [in:] *The International Monetary Fund and the World Economy*, Vol. I, ed. G. Bird, D. Rowlands, *The International Library of Critical Writings in Economics*, Vol. 208, Edward Elgar Publishing Ltd, Cheltenham-Northampton 2007, p. 411-418; M. Mussa, M. Savastano, *The IMF Approach to Economic Stabilization*, [in:] *The International Monetary Fund and the World Economy...*, p. 450-451, 462; J. Tobin, *The IMF's misplaced priorities: flawed fund*, [in:] *World Finance and Economic Stability.* Selected Essays of James Tobin, Edward Elgar Publishing Ltd, Cheltenham-Northampton 2003, p. 69-70).

second section is dedicated to the analysis of the purposes, scale and depth of the financial crisis caused by a turmoil on the housing market in the USA. In the third section we shed some light on the roots of Asian crisis. The fourth part compares macroeconomic fundamentals observed in the USA and in Asian countries at the threshold of the crises' explosion and a short time after it. In the fifth section we focus on the comparison of microeconomic imperfections, implemented in American economy and the economy of the Asian countries. The sixth section is a conclusion.

2. The roots of the subprime crisis

As the beginning of the financial crisis in the USA one may perceive July 2007. Then, Bear Stearns & Co informed investors of its two funds, the High-Grade Structured Credit Strategies Enhanced Leverage Fund and the High-Grade Structured Credit Fund that they were going to halt redemptions. The reason for the decision was the excessive involvement of those funds in various types of mortgage-backed securities, mainly connected with so-called subprime mortgages.

The market for subprime mortgages is a segment of the overall credit market in the USA, which includes lower-quality loans[14]. They do not meet the requirements of prime loans, and the probability of default is significantly higher in their case. Such loans are addressed to individuals with very low income or, in some cases, with no income at all[15]. Thus, the risk connected with subprime loans is higher, as well as the their costs for the borrowers (interest payments, application fees, appraisal fees, insurance cost, etc.)[16].

The first symptoms of the crisis are usually linked just with the worsening situation on the subprime market. Subprime mortgage payment delinquency rates, that remained in the 10-15% range in the 1998-2006 period, began to increase rapidly, rising to even 25% by first quarter of 2008[17]. Therefore, the crash of the subprime market may be seen as triggering off all subsequent events. For that reason, the crisis of 2007 is usually called "the subprime crisis". Nevertheless, it quickly turned out that also other segments of the housing market – and financial market as well – were not stable[18].

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[14] The subprime market came into existence already in the 1970s, but as the matter of urgency it appeared just twenty years later. It is worth noticing that the creation and development of the subprime market was the consequence of introducing specific legislation. This issue will be explained in the further part of the paper.

[15] J. Kiff, P. Mills, *Money for Nothing and Checks for Free: Recent Developments in the U.S. Subprime Mortgage Markets*, IMF Working Paper 2007, No. 188, p. 3.

[16] S. Chomsisengphet, A. Pennigton-Cross, *The Evolution of the Subprime Mortgage Market*, "Federal Reserve Bank of St. Louis Review" January-February 2006, p. 31-32.

[17] B. Bernanke, *Mortgage Delinquencies and Foreclosures*, Speech at the Columbia Business School's 32nd Annual Dinner, New York, 5 May, 2008.

[18] E.M. Gramlich, *Booms and Busts: The Case of Subprime Mortgages*, "Federal Reserve Bank of Kansas City Economic Review" 2007, Fourth Quarter; P. Mizen, *The Credit Crunch of 2007-2008:*

Unfavourable tendencies in the financial system and the US economy, however, had been already growing much earlier[19]. As usual in such cases, there is no possibility to distinguish just one cause of the crisis. Quite opposite, the vast array of the reasons may be identified, including events and factors relatively distant.

It is a common belief that the direct cause of the subprime crisis and the global financial crisis was the bubble burst in the US housing market[20]. There were several reasons of the emerging of this bubble. First and foremost, monetary policy of the Fed should have been mentioned. At the beginning of the XXI century this institution tried to prevent the consequences of the collapse of the dot-com bubble (connected with the so called new economy). Thus, the Fed started in 2001 to conduct an expansionary policy, conducting systematic reductions of the federal funds interest rate. It resulted in interest rates decrease, about 3% in just a few months. Another cut in the interest rates came after 11 September 2001. The Fed lowered federal funds rate in order to stimulate economic activity, suffering from the terrorist attack. The last reduction took place on 25 June 2003. The Federal funds rate reached 1% then[21].

Such an expansive monetary policy contributed to a long period of economic growth[22], but also brought some negative consequences, in the form of a boom in the housing market, which led to a rise in house prices. Low interest rates encouraged borrowing, especially in the form of mortgage loans[23]. Reaping profit from transactions

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A Discussion of the Background, Market Reactions, and Policy Responses, "Federal Reserve Bank of St. Louis Review" September/October 2008.

[19] D. Baker, *The Run-Up in Home Prices: Is it Real or Is it Another Bubble?* CEPR Briefing Paper, April 2002. Among them, changes in the financial systems should be stressed. They considerably influenced functioning of the financial intermediation, making these institutions more prone to financial crises (M. Kiedrowska, P. Marszałek, *Stabilność finansowa – pojęcie, cechy i sposoby jej zapewnienia*, część I, „Bank i Kredyt" 2002, No. 4). Of high importance were also global imbalances (B. Bernanke, *Financial Reform to Address Systemic Risk,* Speech at the Council on Foreign Relations, Washington, D.C., 10 March 2009).

[20] Such a bubble was identified in August 2002, whereas its peak was reached in 2005. The value of sold houses rose fivefold since 1990. The number of sold houses just doubled in this period, increasing from ca 5 million in 1990 to more than 11 million in 2005. Thus, the main factor of such remarkable growth in transactions value was the rise in house prices. Indeed, at the beginning of the 1990s, the average price of sold houses exceeded a bit 100000 USD, whereas in 2000 it was already 200000 USD, and in 2005 – 275000 USD (according to: *Median and Average Sales Prices of New Homes Sold in United States* 2009, http://www.census.gov/const/uspriceann.pdf.

[21] The Federal Reserve Board, *Open Market Operations*, http://www.federalreserve.gov/fomc/fundsrate.htm, 10 April 2009.

[22] It must be stressed that the evaluation of the FED's policy during this time was very high. According to some authors, high quality of this policy contributed to so-called "long boom". Namely, from November of 1982 to the end of the 1990s (with mild recession in 1990) the US economy was marked by stable expansion (J.B. Taylor, *Monetary Policy and the Long Boom*, "Federal Reserve Bank of St. Louis Review" November/December 1998,). Looking back, one may assume that imbalances already grew within this period.

[23] The mortgage loans-GDP ratio increased from ca 20% at the beginning of the 1990s to more than 90% in 2006. (W. Nawrot, *Globalny kryzys finansowy XXI wieku. Przyczyny, przebieg, skutki, prognozy*, CeDeWu, Warszawa 2009, p. 64-65).

on the housing market, usually financed with loans, became common practice. Such investments were very profitable, as the prices of houses still increased. Moreover, the higher demand for houses accelerated the rise of their price.

In this situation, banks were very keen on lending. Trying to maximize their profits, financial institutions turned to individuals with very low incomes and/or weakened credit histories. These clients, in normal circumstances, had very little (or even none) chance of receiving loans[24]. Thus, the subprime market developed dynamically. In 2005 total value of such loans amounted to $ 625 billion, constituting about 20% of the overall mortgage loans portfolio[25].

Along with rising prices on housing and securities markets the value of their collateral also grew. Under such conditions, banks offered to their clients new loans for further purchases. The offer, due to overall optimism, was eagerly accepted. Then, there was a constant flight of capital to the housing market, contributing to further rise of prices.

Extended lending activity required more funds. Thus, banks had to intensify the scale of their passive operations. It is characteristic that aside from "traditional" operations, like issuing shares and obligations, financial institutions started to implement financial innovations, among which securitization played the key role, as it made possible issuing securities on the basis of subprime loans (so called MBS – *mortgage-backed securities*). The sale of these securities helped to raise funds and simultaneously to ease risk burden, connected with subprime loans. The part of the risk was transferred to buyers of the MBS. Moreover, securities of this type were treated as a method for evasion of capital requirements[26]. Thus, mortgage-backed securities were sold in large numbers. Finding buyers for these papers was very easy. During the boom, MBS were treated as a very attractive and profitable investment. Thus, they were bought for both speculative and investment purposes[27].

The situation became much more complicated when financial institutions started to include MBS in some types of structurized securities, mainly collateralized debt obligations – CDOs. These papers were first instruments of risk management, but

[24] Borrowers with very low creditworthiness were described as "NINJAs" (*No Income, No Job, No Assets*). (J. Kregel, *Changes in the US Financial System and the Subprime Crisis*, The Levy Economic Institute of Bard College Working Paper 2008, No. 5302008, p. 14; P. Mizen, op. cit., p. 551).

[25] E.M. Gramlich, *Booms and Busts: The Case of Subprime Mortgages*, "Federal Reserve Bank of Kansas City Economic Review" 2007, Fourth Quarter, p. 106. Institutions which operated on the subprime market intercepted some of "prime" clients, offering to them seemingly good options of refinancing previously raised loans.

[26] A. Blundell-Wignell, P. Atkinson, S. Hoon Lee, *The Current Financial Crisis: Causes and Policy Issues*, Financial Market Trends, OECD, 2008, p. 5-9.

[27] A. DeMichelis, *Overcoming the Financial Crisis in the United States*, OECD Economics Department Working Paper 2009, No. 669, p. 25. It must be stressed that such a practice was, in a way, also a result of already mentioned expansive monetary policy. It led to overliquidity of financial institutions, which, trying to make good use of additional funds, invested in various types of financial instruments.

with time they appeared to be used for speculative purposes[28]. The CDOs were held by a wide range of investors, not only from the USA[29]. Moreover, buyers and issuers of MBO and CDOs managed credit risk with the use of credit derivatives, i.e. credit default swaps – CDS. The market for CDS also grew rapidly, reaching in the first half of 2008 58 trillion USD[30].

By the use of described instruments, lenders and investors limited credit risk to some degree. However, it was not eliminated, but just transferred to other market players. Moreover, transactions with these securities were also risky, especially with reference to securities backed with subprime loans.

It must be stressed that on the basis of mortgage loans – including also subprime loans – a very complicated and risky structure of financial instruments was built. However, in the situation of a lasting boom on the housing market and favourable macroeconomic conditions risks connected with the securities were underestimated. Moreover, rating agencies awarded rather high credit ratings to these securities and their issuers[31]. Consequently, the turnover of risky securities was very high.

Thus, the next reason of the crisis was an imprudent and too risky activity of financial institutions. First, the scale of lending was excessive. Financial institutions tried to reap the benefits of experienced boom and as a result fell into so-called "predatory lending". At the same time, standards in the area of credit risk control were not complied. Moreover, banks placed confidence in collaterals of fluctuating market value. It grew with the increase in both house and financial instruments prices. It should have been expected, however, that with the downturn in the economy, the collateral lose in value. Second, the scale of securitization, perceived as an easily available source of additional capital, appeared to be enormous. But the basis for this operation formed, to a large degree, subprime loans. Obviously it had influence on the level of risk, connected with investments in securitized assets. The risk was, however, ignored[32].

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[28] S. Wachter, A. Pavlov, Z. Pozsar, *Subprime Lending and Real Estate Market*, Institute for Law and Economics Research Paper 2008, No. 08-35.

[29] Just in 2006 total value of the newly issued CDOs amounted to 521 billion USD, whereas in 2007 – 482 billion USD. (Securities Industry and Financial Markets Association, *Global CDO Market Issuance Data*, 2009). CDOs were frequently backed by structures, resulting in so-called *two-layer securitizations*.

[30] C. Cox, *Testimony Concerning Turmoil in U.S. Credit Markets: Recent Actions Regarding Government Sponsored Entities, Investment Banks and Other Financial Institutions*, Testimony Before the Committee on Banking, Housing, and Urban Affairs, United States Senate, 23 September 2008.

[31] The rating agencies for a long time had been misreading the risk in MBS and CDOs, giving some of them their highest ranking. (E. Benmelech, J. Dlugosz, *The Alchemy of CDO Credit Ratings*, paper prepared at the Carnegie-Rochester Conference *Distress in Credit Markets: Theory, Empirics, and Policy*, November 2008; B. Eichengreen, *Ten Questions about the Subprime Crisis*, Banque de France Financial Stability Review 2008, Special Issue on Liquidity, No. 11).

[32] Taking an excessive risk was a specific element of corporate culture, mainly in the investment banks. (D.W. Diamond, R. Rajan, *The Credit Crisis; Conjectures about Causes and Remedies*, NBER Working Paper 2009, No. 14739, p. 6-8).

The question arises, why such an activity did not cause any reaction from the supervisors. Without any doubts, too much forbearance for hazardous ventures increased the scale of problems. Thus, among the causes of the crisis the weakness of the supervision, or, more generally, inappropriate legal frameworks, are often listed[33]. As the main examples one usually points at the acts, which enabled or even encouraged lending to low income social groups. Among this specific "non-discriminating" legislation, in the context of the subprime crisis of special importance there are the *Home Mortgage Disclosure Act* of 1975 and the *Community Reinvestment Act* of 1977[34]. The motive for passing both acts was to increase the access of members of ethnic minorities to the mortgage loans. In fact, these acts made the creation of the subprime market possible. Especially important for the development of this market turned out to be the amendment to the Act of 1977. It allowed the securitization of the subprime loans. The main outcome of the change was risk transfer – from the subprime market to the market of "usual" securities[35]. Financial institutions very eagerly seized the opportunity, what contributed to already mentioned, dynamic growth of the subprime market and consequently extended issuing of mortgage-backed securities.

Another criticized regulation was the *Gramm-Leach-Bliley Act* of November 1999, which repealed a part of the *Glass-Steagall Act* of 1933. It liquidated the separation between commercial banks (which traditionally had a conservative culture) and investment banks (with a more risk-taking culture). One of the consequences of the *Gramm-Leach-Bliley Act* was higher exposure of depositors and lenders to risk connected with (potentially wrong) investment decisions made by bankers[36].

All described factors did not cause any disturbances for a long time. During the boom, both the consumers and investors were very optimistic. But problems started to grow with the switch in the monetary policy. Facing higher and higher inflation pressure, the Fed decided to raise interest rates. The sequence of rises started in June 2004 and lasted for two years. As a result, the Federal funds rate reached 5%[37]. This contributed to a significant increase in interest payments, making the burden of loan

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[33] C. Calomiris, *The Subprime Turmoil: What's Old, What's New and What's Next?*, paper prepared for Federal Reserve Bank of Kansas City's Symposium *Maintaining Stability in a Changing Financial System*, Jackson Hole, August 2008, p. 45-49; R.C. Whalen, *The Subprime Crisis – Cause, Effect and Consequences*, Policy Brief, Network Financial Institute at Indiana State University, March 2008, p. 4-6. According to the defenders of the free market, these very factors constitute the original cause of the crisis.

[34] B. Bernanke. *The Community Reinvestment Act: Its Evolution and New Challenges*, Speech at the Community Affairs Research Conference, Washington DC, 30 March 2007; J. Haughey, *How the subprime mortgage mess began*, "Market Insight" 14 February 14 2008.

[35] N. Brown, D. Westhoff, *Packaging CRA Loans into Securities*, Mortgage Banking, May 1998; R Roberts, *How government stoked the mania*, "Wall Street Journal", 3 October 2008.

[36] J. Kregel, op. cit., p. 10.

[37] http://www.federalreserve.gov/fomc/fundsrate.htm, April, 10, 2009.

much heavier for the borrowers. At the same time, investments in houses became less attractive.

The first symptoms of decline in the housing market appeared in 2005. During the next months the situation did not change significantly. The number of transactions dropped, but the prices started to decrease just in 2006. At first, it was not clear, however, if the observed decreases were just the correction or downward tendency. At the beginning of 2007 there was even small recovery, but at the end of that year the sale of new houses fell about 19%, whereas the sale on the secondary market – about 13%[38]. At the turn of 2007 and 2008 there was not any doubt that the market had collapsed.

As house prices turned negative in a number of regions and the burden of the debt became too heavy, many borrowers were left with no choice but to default as prepayment and refinancing options were not feasible with little or no housing equity. The quality of the financial institutions assets worsened. Foreclosure activity increased dramatically. But attempts to sell foreclosed houses only accelerated the decrease in prices.

Under these circumstances, the collateral accepted by banks also lost most of its value what made the situation of these institutions even worse. The share of non-performing loans in banks' balance sheets increased. Then, failures and recklessness in lending the policy of the financial institutions became evident, mainly on the subprime market. The relaxation of standards and procedures on this market, combined with high cost of such loans, made the growth of non-performing loans extremely fast[39].

It was necessary for banks to build reserves for exposures connected with mortgage loans. At the same time, losses from *subprime loan* defaults were growing continuously[40]. Combined with the decrease in receipts (due to freezing of lending and growing scale of non-performing loans), it contributed to massive total losses of financial institutions.

Yet, it became clear soon that the problems with subprime loans are just the top of an iceberg. The situation deteriorated drastically by the wide use of described financial engineering[41]. The scope of problems, generated by mortgage-backed securities turned out to be tremendous. Meanwhile, just in the half of 2007, in the face of the decrease in house prices and the increase of non-performing loans ratio,

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[38] W. Nawrot, op. cit., p. 31.

[39] Besides the characteristics of borrowers, problems with repayments of subprime loans were also generated by credit terms, or, more generally, the construction of the subprime loans. The latter ones were mainly the adjustable-rate mortgages, combining fixed and floating interest rates. Usually, the initial fixed rate was a below-market rate, so that shock could be substantial when the adjustable-rate period started. (J. Kiff, P. Mills, op. cit., p. 8).

[40] P. Mizen, op. cit., p. 542.

[41] Therefore, the subprime crisis represents, as Eichengreen puts it "the first crisis of the age of mass securitization" (B. Eichengreen, op. cit., p. 20).

difficulties arose in assigning a precise price to the CDOs. Pricing challenge did arise because these instruments were no longer traded. Ultimately, CDOs, without real backing, appeared to be almost worthless.

Surprisingly, it turned out that problems affected also institutions not involved directly into the subprime market, but only investing in various types of securities, connected with this market[42]. As a result, their stock prices decreased. The capital market also collapsed. Additionally, due to limited confidence in the market, financial institutions faced problems with liquidity. At the same time, consumer sentiment started to fall. It led to the decrease in demand for both investment and consumer goods[43]. Neither interest rates cuts, made by the Fed and central banks in other countries, nor liquidity facilities, offered to the banks, restored the balance[44].

Negative tendencies intensified in 2008. Financial institutions contended with more and more problems. The situation temporarily improved thanks to a capital injection to the biggest banks. Nevertheless, already in March, Bear Stearns was on the verge on bankruptcy[45]. The actual nationalization of *Freddie Mac* and *Fannie Mae*, the biggest institutions on the US mortgage loans market, took place on 7 September. Just a week later, Merill Lynch was bought by Bank of America in a transaction of 50 billion USD value[46].

On 15 September 2008 the famous investment bank, Lehmann Brothers, declared the bankruptcy. That date is perceived as the "official" beginning of the global financial crisis. As it was underlined in the *IMF Economic Outlook*, "the financial market crisis that erupted in August 2007 has developed into the largest financial shock since the Great Depression, inflicting heavy damage on markets and institutions at the core of the financial system"[47]. The chronology of chosen events consisting of the subprime crisis in the USA is presented in Table 1.

It turned out very fast that the scale of problems is much worse than anybody could expect. In spite of initiating many large-scale programs, with intention to support financial institutions, the situation of the latter ones – in the USA and in other countries as well – still deteriorated. Defaults and losses on other loan types also increased significantly as the crisis expanded from the housing market. Furthermore, the crisis spread very fast also to the real sector.

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[42] Surprisingly it concerned also banks from outside the USA.

[43] An extremely well-known case of liquidity problems was Northern Rock. This institution was nationalized and then closed. It is characteristic that Northern Rock had not been involved in subprime market. (H. Song Shin, *Reflections on Northern Rock: The bank run that heralded the global financial crisis*, "Journal of Economic Perspectives" 2009, Vol. 23, No. 1).

[44] P. Swagel, *The Financial Crisis: An Inside View*, paper prepared for the spring 2009 Brookings Panel on Economic Activity, March 2009.

[45] In the end, it was taken over by JP Morgan Chase.

[46] Federal Reserve Bank of St. Louis, *The Financial Crisis: A Timeline of Events and Policy Actions*, http://timeline.stlouisfed.org/pdf/CrisisTimeline.pdf. 2007.

[47] *IMF Economic Outlook 2008*, p. 4.

Table 1. The chronology of the subprime crisis in the USA

Date	Event
2007	
February, 27	The Federal Home Loan Mortgage Corporation (Freddie Mac) announces that it will no longer buy the most risky subprime mortgage and mortgage-related securities.
April, 2	New Century Financial Corporation, a leading subprime mortgage lender, files for Chapter 11 bankruptcy protection.
June, 7	Bear Stearns informs investors that it is suspending redemptions from its High-Grade Structured Credit Strategies Enhanced Leverage Fund.
July, 11	Standard and Poor's places 612 securities backed by subprime residential mortgages on a credit watch.
August, 6	American Home Mortgage Investment Corporation files for Chapter 11 bankruptcy protection.
August, 9	French investment bank BNP Paribas suspends three investment funds that invested in subprime mortgage debt.
September, 30	Affected by the spiraling mortgage and credit crises, Internet banking pioneer NetBank goes bankrupt; the Swiss bank UBS announces that it lost US $690 million in the third quarter.
November, 1	The Fed injects $ 41billion into the money supply for banks to borrow at a low rate (the largest single expansion since $50, 3 billion on 19 September 2001).
2008	
September, 15	Lehman Brothers Holdings Inc. files for Chapter 11 bankruptcy protection.
September, 17	The US Federal Reserve lends $85 billion to American International Group (AIG) to avoid bankruptcy.
September, 19	So-called Paulson rescue plan unveiled after a volatile week in stock and debt market.
September, 21	The Federal Reserve Board approves applications of investment banking companies Goldman Sachs and Morgan Stanley to become bank holding companies.
September, 25	Washington Mutual seized by the Federal Deposit Insurance Corporation; its banking assets sold to JP Morgan Chase for $1.9 billion.
September, 29	Emergency Economic Stabilization Act defeated 228-205 in the United States House of Representatives; the Federal Deposit Insurance Corporation announces that Citigroup Inc. would acquire banking operations of Wachovia; the highest ever one-day drop of the Dow Jones.
October, 3	The Emergency Economic Stabilization Act signed, creating a $700 billion Troubled Assets Relief Program to purchase failing bank assets.
October, 14	The US taps into the $700 billion available from the Emergency Economic Stabilization Act and announces the injection of $250 billion of public money into the US banking system. Nine banks agree to participate in the program and receive half of the total funds: 1) Bank of America, 2) JPMorgan Chase, 3) Wells Fargo, 4) Citigroup, 5) Merrill Lynch, 6) Goldman Sachs, 7) Morgan Stanley, 8) Bank of New York Mellon and 9) State Street.
November, 25	The US Federal Reserve pledges $800 billion more to help revive the financial system.
December, 1	The National Bureau of Economic Research announces that a peak in U.S. economic activity occurred in December 2007 and that the economy has since been in a recession.

Source: authors' own work based on Federal Reserve Bank of St. Louis, T*he Financial Crisis: A Timeline of Events and Policy Actions*, http://timeline.stlouisfed.org/pdf/CrisisTimeline.pdf.

The precise scale of losses, caused by the subprime crisis, had not been known yet[48]. There is no doubt, however, that the subprime crisis had serious consequences for both micro and macro levels. Among microeconomic problems triggered by the crisis one may list dramatic losses of the financial institutions, changing in their hierarchy, credit crunch and deterioration in households finances. Macroeconomic consequences are mainly recession in many countries, instability of financial systems and excessive volatility of exchange rates[49].

3. The roots of the Asian crisis

Since the end of the 1980s, several countries of East and Southern Asia were put forward as a model for other less developed countries to follow[50]. They were characterized by the high rate of real GDP growth[51], low inflation rates and high levels of savings and investments[52]. Moreover, their fiscal policies – in contrast with Latin America countries in the 1980s, where budget deficits contributed significantly to crises – were, in principle, sound and conscious[53].

There were, however, numerous institutional, structural and macroeconomic problems, in some cases deeply hidden under the cover of prosperity and very good macroeconomic indicators. Among them one may list[54]: (1) financial sector weaknesses, (2) too optimistic and too far reached investments made by firms, leading to overinvestment, (3) intense, strict, non-transparent and unofficial relations between business and politics, (4) external sector problems, (5) exchange rate regimes, in form of some type of US dollar peg and (6) forbearance of the financial supervisors. All those factors (strictly interconnected) occurred, with various intensity, in Asian "tigers", leading ultimately to the financial crisis.

[48] In October 2008 The Bank of England estimated such loss at $ 2,8 trillion. (Bank of England, *Financial Stability Report*, Issue 24, October 2008, p. 14). Just half a year later, the IMF reported of already $ 4.1 trillion. (IMF, *Global Financial Stability Report*, Washington April 2009).

[49] It is worth noticing, however, that in the USA, i.e. the country in which the crisis started, despite some depreciation of the dollar, the currency crisis did not occur.

[50] See for example the report of the World Bank: *The East Asian Miracle: Economic Growth and Public Policy*, Oxford University Press, World Bank, September 1993).

[51] Within the years 1985-1997 the average GDP growth rate amounted to 6.6% in Indonesia, 7.6% in the Philippines, 3.8% in Malaysia, 8.5% in Thailand and 7.6% in Korea. (S. Heffernann, op. cit., p. 515).

[52] C.J. Lindgren, T.J.T., Baliño, C. Enoch, A.M. Gulde, M. Quintyn , L. Teo, *Financial Sector Crisis and Restructuring. Lessons from Asia*, IMF Occasional Paper 1999, No. 188, p. 10.

[53] See for example: S. Radelet, J. Sachs, *The Onset of the East Asia Financial Crisis*, NBER Working Paper 1998, No. 6680, p. 22.

[54] M. Goldstein, *The Asian Financial Crisis. Causes, Cures and Systemic Implications*, Institute for International Economics, Washington 1998, p. 7-22; S. Heffernan, op. cit., p. 515-522; C.J. Lindgren, T.J.T., Baliño, C. Enoch, A.-M. Gulde, M. Quintyn, L. Teo, op. cit., p. 9-15.

A financial system with banks as the main type of financial intermediaries and underdeveloped money market was typical for Asian economies. The growth of the economy in those countries was financed mainly by a rapid increase in the supply of credit. Therefore the large credit expansion was possible due to foreign refinancing, particularly in the form of short-term loans, denominated in a foreign currency[55].

With almost unlimited availability of credit, enterprises decided to realize even doubtful or risky investments. At the same time, banks relaxed their standards and requirements[56]. Bankers, using property as a collateral, perceived credit risk as acceptable, all the more so because prices of property increased. There were also impressions among the financial institutions that governments, in case of necessity, would support banks. Such expectations were well-founded, especially in the face of close links between members of the governments, banks' managers and enterprises[57]. Additionally, large, highly indebted corporations exerted strong political pressure, enforcing privileges and protection[58]. It undermined regulators' authority, who tried to avoid any controversial actions and/or decision, which could upset politicians, senior bankers or managers of large enterprises[59]. All those factors increased moral hazard. Under such circumstances enormous scale of credit activity, combined with lowering profitable investment opportunities, led to build-up "bad" credits.

As the starting point of the Asian currency crisis one can consider a moment in which Thai baht appeared to be under a serious devaluation pressure caused by a speculative attack. This very attack, performed in May 1997, was provoked because the central bank passed the information about selling the major part of its foreign reserves in the forward-type transaction. This quite shocking for foreign investors news was accompanied with the very pessimistic data on the Thai private foreign debt. The crisis outburst, crashing Thai economy, as well as the economies of neighboring countries, due to the contagion effect[60].

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[55] What important, the scale of hedging was negligible – thanks to the successful functioning of the peg exchange rate systems there was little use of any cover against the currency risk. (M.R. King, *Who Triggered the Asian Financial Crisis?*, "Review of International Political Economy" 2001, Vol. 8, No. 3, p. 443-444).

[56] Granting funds depended generally on individual connections with the bank, not on the assessment of feasibility of evaluated projects or their risk profile. (S. Heffernan, op. cit., p. 521).

[57] M. Goldstein, op. cit.; S. Heffernan, op. cit., p. 515-522.

[58] The best example were so-called chaebol, functioning in Korea, i.e. family owned industrial groups. Each chaebol was associated with financial institution responsible for its financing. The links between the two firms were very strict. (R.C. Feenstra, G.G. Hamilton, E.M. Lim, *Chaebol and catastrophe: A new view of the Korean business groups and their role in the financial crisis*, "Asian Economic Papers" 2002, Vol. 1, No. 2).

[59] S. Heffernan, op. cit., s. 521.

[60] A detailed information on the timeline of this crisis and attempts of its overcoming can be found in, among others: M. Antczak, *The 1997 Currency Crisis in Thailand*, [in:] *The Episodes of Currency Crisis in Latin American and Asian Economies*, ed. M. Dąbrowski, Raporty CASE 2001, No. 39, Warszawa, p. 55-76; A. Berg, *The Asia Crisis: Causes, Policy Responses, and Outcomes*, IMF Working Paper 1999, No. 138; M. Błaszkiewicz, *The South Korean Currency Crisis, 1997-1998*,

As a result, the currencies of Asian countries depreciated sharply, leaving no choice but to ultimately fully float them, causing the outflow of foreign capital. All the governments in the region tried nevertheless to defend the currency, exhausting much of their reserves und increasing domestic interest rates. Higher interest rates, in turn, made the situation of highly indebted firms much worse. The level of irregular debts increased triggering banking crises in individual countries. The final effect was a dramatic fall of the GDP, mass bankruptcies of companies and financial institutions. Joint costs of this crisis were very high, reaching 50-60% of GDP in Indonesia and 24% in Thailand[61].

The expectations of the future devaluations, the ground for which was laid due to the excessive foreign liabilities of firms and financial institutions, leading to mounting private and official external foreign debt, was a trigger for speculative attacks. To the direct causes of the subprime crisis one can include, as it was already noticed, the burst of the price bubble on the housing market and the dramatic fall in prices of securitized financial instruments, as the future inflows in a form of repayments of subprime mortgages were considered to be the main (and in some cases one and only) collateral for such assets[62]. However, the reasons –both micro- and macroeconomic for the outbreak of these two crises were similar. Both were brought about by investors' panic and uncertainty about the future value of financial and real assets. The main feature of both crises was the decrease of the liquidity of the financial institutions, leading to their insolvency[63].

4. The macroeconomic causes of the outbreak of the Asian crisis and the subprime crisis in the USA

To the group of macroeconomic phenomena, which were commonly observed before the outbreak of crises in the USA and in Asian countries, one can include a rapid

[in:] *The Episodes of Currency Crisis...*, op. cit., p. 101-124; G. Corsetti, P. Pesenti, N. Roubini, *What Caused the Asian Currency and Financial Crisis? Part II: The Policy Debate*, NBER Working Papers 1999, Vol. 6834 and *What Caused the Asian Currency and Financial Crisis? Part I: A Macroeconomic Overview*, NBER Working Paper 1999, No. 6833; C.J. Lindgren, T.J.T., Baliño, C. Enoch, A.M. Gulde, M. Quintyn, L. Teo, op. cit.; W. Małecki, *Korea Południowa*, [in:] *Kryzysy walutowe*, W. Małecki, A. Sławiński, U. Żuławska, Wydawnictwo Naukowe PWN, Warszawa 2001, p. 105-124; T. Obal, *Kraje Azji Południowo-Wschodniej*, [in:] *Kryzysy bankowe. Przyczyny i rozwiązania*, ed. M. Iwonicz--Drozdowska, BFG i PWE, Warszawa 2002; R. Piasecki, *Indonezja*, [in:] W. Małecki, A. Sławiński, U. Żuławska, op. cit., p. 125-136; M. Sasin, *The Indonesian Currency Crisis, 1997-1998*, [in:] *The Episodes of Currency Crisis...*, op. cit., p. 77-100.

61 S. Heffernan, op. cit., p. 511.

62 J. Kiff, V. Klyuev, *Foreclosure Mitigation Efforts in the United States: Approaches and Challenges*, IMF Staff Position Note 2009, No. SPN/09/02, p. 4-6.

63 K. Hoe Ee, K. Rui Xiong, *Asia: A Perspective on the Subprime Crisis*, “Finance & Development” 2008, Vol. 45, No. 2, p. 19.

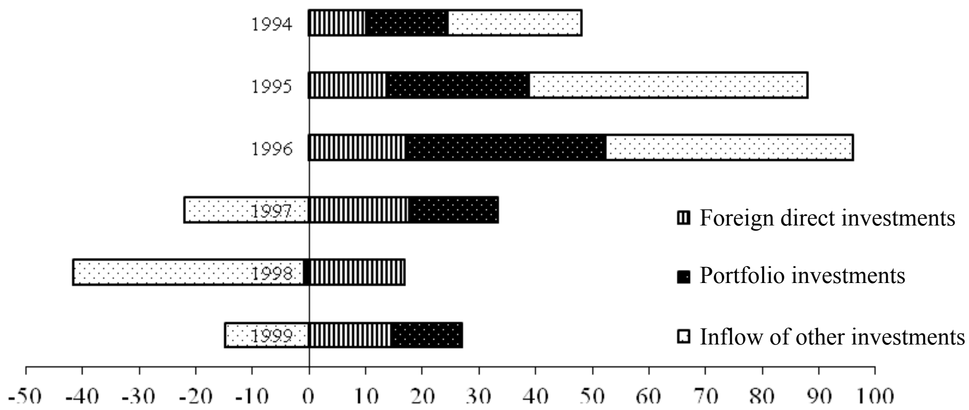

Figure 1. Inflow of foreign capital to Indonesia, Korea, Malaysia, the Philippines and Thailand in 1994-1999 (in billions USD)

Source: own calculations based on IMF, *International Financial Statistics*, Washington March 2001, p. 509, 578, 654, 815, 985.

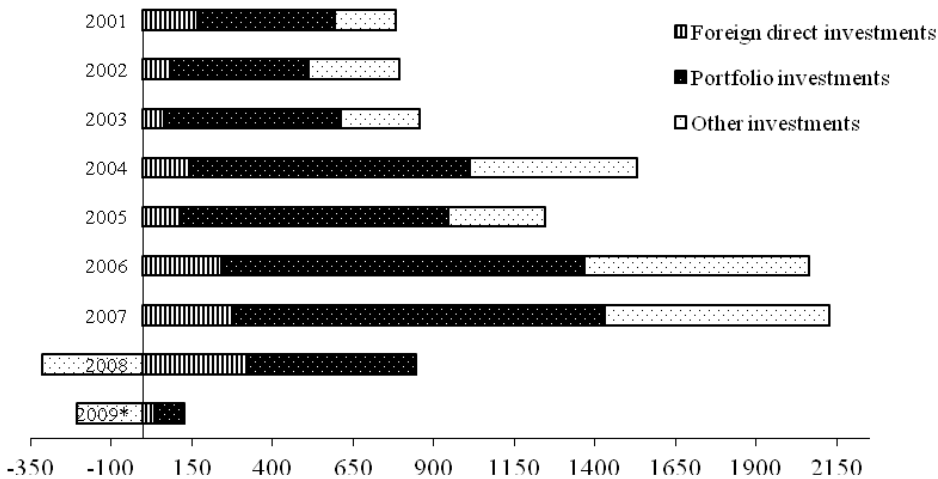

Figure 2. Inflow of foreign capital to the USA in 2001-2008 (in billions USD), data for January-March 2009.

Source: own calculations based on IMF, *International Financial Statistics*, Washington August 2009; *International Financial Statistics*, Washington February 2009.

growth of liquidity of financial markets. The direct cause of this process was a sudden increase of inflows of the foreign capital, as Figures 1 and 2 depict. They illustrate excessively rapid growth of foreign portfolio investments as well as other investments. In Southern Asia a joint inflows of such capital mounted to 190.6 billion USD and this value doubled in 1996 if compared with 1994. Undoubtedly, it was due to deep liberalization of capital flows, introduced by Asian countries in the beginning of the nineties[64].

One can observe a similar tendency while observing foreign capital inflows to the USA in the years 2001-2006. Joint values of this flow due to portfolio and other investments reached 6,5 trillion USD. It has to be emphasized that the inflow of this capital in 2006 almost tripled respecting the inflow observed in 2001. The reasons for such growth can be found in fast economic growth of American economy as well as the economy of Asian countries in the years that had preceded the crises' outbreak, as tables 2-5 show.

Table 2. Selected macroeconomic indicators in Asian countries in 1994-1998

Indicator	1994	1995	1996	1997	1998	1999
1	2	3	4	5	6	7
Philippines						
Real GDP growth rate	4.4	4.7	5.8	5.2	−0.5	2.3
Inflation rate	9.1	8.1	8.4	6.0	9.7	8.5
Current account balance in % of GDP	−4.6	−4.3	−4.4	−5.1	1.8	2.1
Budget deficit in % of GDP	−1.7	−1.3	−0.6	−0.7	−2.6	−2.7
Money supply growth rate	26.5	25.3	15.8	20.9	7.4	15.0
Credit for non-monetary sector in % of GDP	30.0	38.2	50.0	57.6	50.5	46.9
Official foreign currency reserves in billions of USD	5.9	6.2	9.9	7.1	9.1	13.1
Short-term external debt in billions of USD	5.7	5.3	8.0	11.8	n. a.	n. a.
Indonesia						
Real GDP growth rate	7.5	8.2	8.0	4.6	−13.6	−3.9
Inflation rate	8.5	9.4	7.9	6.6	60.7	25.4
Savings-investments gap in % of GDP	n. a.	−1.3	−0.6	−0.3	9.7	8.0
Current account balance in % of GDP	−1.7	−3.3	−3.2	−3.0	−0.1	2.8
Budget deficit in % of GDP	0.0	0.8	1.2	−0.7	−4.5	−6.5
Money supply growth rate	21.8	26.7	27.0	27.4	61.7	15.6
Credit for non-monetary sector in % of GDP	51.9	53.5	55.4	61.0	51.6	n. a.
Official foreign currency reserves in billions of USD	11.8	13.3	17.8	16.1	22.4	26.2
Short-term external debt in billions of USD	19.5	26.0	32.2	36.0	n. a.	n. a.
South Korea						
Real GDP growth rate	8.6	8.9	7.1	5.5	−5.5	2.0
Inflation rate	6.3	4.5	4.9	4.4	7.5	1.8

[64] S. Griffith-Jones, J. Williamson, R. Gottschalk, *Should Capital Controls Have a Place in the Future International Monetary System*, [in:] *The Future of the International Monetary System*, ed. M. Uzan, Edward Elgar, Cheltenham-Northampton 2005, p. 142, 158-160.

1	2	3	4	5	6	7
Savings-investments gap in % of GDP	−1.0	−1.8	−4.4	−1.9	12.5	10.7
Current account balance in % of GDP	−1.0	−1.9	−4.7	−1.8	13.1	7.1
Budget deficit in % of GDP	0.3	0.4	0.3	0.3	−3.8	−5.1
Money supply growth rate	18.7	15.6	15.8	14.1	25.2	n. a.
Credit for non-monetary sector in % of GDP	56.8	57.0	61.8	69.8	73.6	n. a.
Stock exchange index (1995=100)	105.1	100.0	90.3	70.9	44.4	87.0
Official foreign currency reserves in billions of USD	25.0	31.9	33.2	19.7	52.0	73.7
Short-term external debt in billions of USD	58.4	78.6	100.0	68.4	n. a.	n. a.
Malaysia						
Real GDP growth rate	9.3	9.4	8.6	7.7	−7.5	−1.6
Inflation rate	3.7	3.4	3.5	2.7	5.3	3.8
Current account balance in % of GDP	−7.8	−10.0	−4.9	−5.1	12.3	8.7
Budget deficit in % of GDP	1.5	1.3	1.1	2.6	−1.9	−6.1
Money supply growth rate	24.9	22.9	26.2	20.0	24.7	29.7
Credit for non-monetary sector in % of GDP	15.8	18.2	23.7	9.6	1.3	6.1
Official foreign currency reserves in billions of USD	74.6	84.8	89.8	100.4	108.7	n. a.
Short-term external debt in billions of USD	6.2	7.3	11.1	14.9	7.0	n. a.
Thailand						
Real GDP growth rate	8.6	8.8	5.5	−0.4	−8.0	1.0
Inflation rate	5.1	5.8	5.9	5.6	8.1	0.5
Savings-investments gap in % of GDP	−5.9	−7.7	−10.5	−1.7	12.1	9.7
Current account balance in % of GDP	−5.4	−7.9	−7.9	−1.9	12.2	8.8
Budget deficit in % of GDP	2.0	2.5	1.0	−1.6	−2.9	−3.8
Money supply growth rate	28.9	35.5	37.2	25.7	28.4	33.8
Credit for non-monetary sector in % of GDP	12.9	17.0	12.6	16.4	9.5	4.7
Official foreign currency reserves in billions of USD	90.9	97.5	100.0	116.3	109.5	n. a.
Short-term external debt in billions of USD	29.2	41.1	37.6	34.8	25.0	n. a.

Source: M. Antczak, op. cit., p. 40; A. Berg, op. cit., p. 15; IMF, *International Financial Statistics*, Washington March 2001, p. 507, 576-578, 650, 813-815, 981; C.J. Lindgren, T.J.T. Baliño, C. Enoch, A.M. Gulde, M. Quintyn, L. Teo, op. cit., p. 10; W. Małecki, op. cit., p. 124; R. Piasecki, op. cit., p. 136.

Basing on presented data a remark can be formulated, according to which in the years that preceded the crises' eruption the economy of the countries of Eastern and Southern Asia as well as the American economy were on the path of the rapid growth, accompanied by the boom of credit activity. Unprecedentedly, as it was already mentioned, high growth of the real GDP and the growth of credit for non-monetary sector supported inflationary pressure and forced monetary expansion. On the other hand, the recovery of the economy was to the great extent initiated and supported by loose fiscal policy, which favoured the consumption growth creating a background for the speculative price bubbles emergence. Long-lasting excessive consumption deeply disturbed the balance between domestic savings and domestic investment. This difference had to be offset by the increase of the foreign debt.

Table 3. Selected macroeconomic indicators in the USA in 2001-2009

Indicator	2001	2002	2003	2004	2005	2006	2007	2008	2009
Real GDP growth rate	0.8	1.6	2.5	3.6	2.9	2.8	2.0	1.1	−2.8[a]
Output gap in % of the potential GDP	1.3	0.4	0.3	1.2	1.4	1.6	1.2	0.2	−4.1[a]
Inflation rate	1.6	2.6	1.9	3.2	3.7	2.2	4.1	0.8	−0.1[a]
Savings-investment gap in % of GDP	−2.8	−4.2	−5.1	−5.5	−5.2	−4.6	−4.6	−5.5	−2.8[a]
Current account balance in % of GDP	−3.8	−4.4	−4.8	−5.3	−5.9	−6.0	−5.3	−4.7	−2.8[a]
Budget deficit in % of GDP	−0.4	−3.8	−4.8	−4.4	−3.3	−2.2	−2.9	−6.1	−13.6[a]
M2 growth rate	n. a.	6.3	5.0	5.7	4.0	5.4	5.6	9.5	9.1[b]
Claims on private sector of depository corporations in % of GDP	52.4	52.6	53.8	55.8	58.1	59.9	62.5	61.7	63.1[b]
Claims on private sector of depositary corporations and other financial corporations in % of GDP	178.0	168.4	183.4	190.3	194.6	201.7	209.2	191.2	189.9[b]
Stock exchange index (2005 = 100)	96.5	87.5	85.3	97.8	100.0	108.2	124.9	106.7	73.1[b]

[a] Forecasts of the World Economic Outlook. [b] Data for January 2009.
Source: own calculations based on IMF, *International Financial Statistics*, Washington August 2009; IMF, *International Financial Statistics*, Washington February 2009; World Economic Outlook Database, http://www.imf.org/external/pubs/ft/weo/2009/01/weodata/download.aspx.

Such a massive inflow of foreign capital created huge appreciation pressure on Asian countries' currencies as well as on American dollar, leading to overvaluation. This, in turn, limited the competitiveness of the domestic exporters, deeply impairing the balance on trade and current account balance. In countries of Eastern and Southern Asia this overvaluation was heavily heightened by the interventions on foreign exchange markets, conducted by central banks of this region. What was even worse, these actions often attempted to stabilize the exchange rates at levels which not corresponded to macroeconomic fundamentals, but were favourable to domestic borrowers, which run up debts in foreign currencies. A sudden weakening of the domestic currency could lead to insolvency and bankruptcy of such borrowers. Moreover, in Asian countries the stable exchange rate was considered to be an evidence of the prestige of the economy. Its change could lead to the erosion of this prestige, hence monetary authorities tried to avoid this at any costs, deepening structural imbalance in this way.

However, keeping the exchange rate stable appeared to be impossible. Foreign interventions only postponed necessary macroeconomic adjustment. The pressure on the exchange rate became so strong that central banks of Asian countries could not overcome it. As a result, the currencies of these countries weakened seriously, as Table 5 presents.

Table 4. Selected macroeconomic indicators of economic vulnerability in Asian countries in 1996 and in the USA in 2006

Indicator	1996					2006
	Indonesia	Korea	Malaysia	Philippines	Thailand	USA
Inflation > 5%	+	–	–	+	+	–
Budget deficit > 2%	–	–	–	–	–	+
Current account balance > 4% of GDP	–	+	+	+	+	+
Savings-investments gap >4% of GDP	–	+	n. a.	n. a.	+	+
Portfolio investments and other investments > 50% of current account deficit	+	+	+	+	+	+
Capital inflows > 5% of GDP	–	+	+	+	+	+
Credit to the non-monetary sector > 100% of GDP	–	+	+	–	+	+
Liquid liabilities > 50% of GDP	–	–	+	+	+	+
Stock market capitalization in % of GDP	34	29	263	85	66	135*

* Data for the end of the 2005.

Source: own calculations based on Tables 2-3, the World Bank Financial Structure Dataset, IMF, *International Financial Statistics*, Washington August 2009; IMF, *International Financial Statistics*, Washington February 2009.

Table 5. Index of changes of exchange rate of Asian countries' and the American dollar in the aftermath of the crises blow (end of the quarter)

Date	Currency					Date	Currency
	Indonesian rupiah	Korean won	Malaysian ringgit	Philippine peso	Thai baht		U.S. dollar
	per U.S. dollar						per Euro
I 1997	100.0	100.0	100.0	100.0	100.0	II 2007	100.0
II 1997	101.3	101.0	101.8	100.1	99.3	III 2007	105.0
III 1997	135.4	104.1	128.8	128.5	140.6	IV 2007	109.0
IV 1997	192.2	192.8	157.0	151.6	181.9	I 2008	117.1
I 1998	344.2	157.3	147.2	140.6	149.4	II 2008	116.7
II 1998	616.0	156.2	168.2	159.6	162.9	III 2008	105.9
III 1998	442.3	158.2	153.3	166.2	151.4	IV 2008	103.1
IV 1998	331.7	137.0	153.3	148.1	141.3	I 2009	98.5

Source: own calculations based on IMF, *International Financial Statistics*, Washington August 2009; IMF, *International Financial Statistics*, Washington February 2009; IMF *International Financial Statistics*, Washington March 2001.

This in turn deepened repayment problems as vast majority of liabilities was nominated in foreign currencies. In the USA a different pattern could be observed. The dollar-nominated assets market is so liquid, that it is impossible to produce so strong wave against the dollar to cause a dramatic fall of its exchange rate. However, a slight weakening of the American currency could be noticed soon after the crisis had broke out. It can be assumed, that the role of the dollar as the international reserve money played a key role in the process of the overcoming further depreciation pressure. The USA, as the world debtor, lacks the interest in stabilizing exchange rate of its currency. It is rather the key point of interest for countries and private investors that have accumulated large reserves in US dollars. Leaving the dollar not so easy for them, it would mean melting of the value of their reserves[65]. But still – just after the subprime crisis had broken out, there was a slight weakening of the U.S. currency.

Summing up, it can be stated that the macroeconomic situation in both compared Asian countries and the USA was similar. Undoubtedly, the background for emergence and eruption of both crises can be referred to weakening macroeconomic fundamentals, expressing themselves in the increase of the inflation rate, current account deficit as well as the emergence and inflation of price bubbles and the boost of credit activity, along with intensifying microeconomic imperfections. They are going to be analyzed in more specific manner in the next section.

5. Microeconomic imperfections as background for the outbreak of the Asian crises and the subprime crisis

The macroeconomic premises which are presented above supported the emergence of unfavourable microeconomic phenomena. The excess liquidity of the financial markets induced private and institutional investors, lenders and borrowers to undertake excess risk under the circumstances of growing information asymmetry. Figure 3 follows the track to the burst of both Asian and subprime crises.

Investors that started buying high-yielded debt instruments and shares through the agency of financial institutions, such as hedge funds or private equity funds, were unable to conduct a precise estimation of the price risk related to these instruments as well as their creators' insolvency risk. Hedge funds management made an attempt to increase the selling of participation certificates and was strongly inclined not to inform investors about real risk related to undertaken investment projects. Financial institutions, easing the creditability analysis, granted credits to 1) large corporations because of some shady links between them, and financed their unprofitable undertakings in Asia, or 2) individuals, who were not employed (the "NINJAs",

[65] This refers mainly to China, as this country appears to be the holder of the vast majority of dollar-nominated reserves worldwide. Despite its tough talking, China authorities cannot sell their dollar assets without causing a decline of the value of their 800 billion USD holdings of US Treasury securities (as of July 2009). (M. Liu, *Beijing's dilemma*, "Newsweek", 26 October 2009).

mentioned earlier) in the USA. Hence, the increase in credit activity was to the great extent supported by moral hazard of both – creditors and borrowers.

Path of crisis	Asian crisis	Subprime crisis
Credit expansion	▪ excess liquidity of financial institutions ▪ easy access to credit	▪ excess liquidity of financial institutions ▪ easy access to credit ▪ securitization of mortgages
Excessive risk undertaken by investors	▪ increase in investments in high-yield Asian securities ▪ increase in portfolio investments in dollar denominated debt securities	▪ increase in short-term portfolio investment in instruments of complex structure and high duration (*CDO, MBS*)
Principal-agent problem	▪ disregarding shareholders' interests ▪ increase in volume of credit backed with informal government guarantees	▪ easing of creditability analysis ▪ no incentive to the limitation of the credit risk ▪ fast transformation of given credit into sellable debt instruments
Excessive risk undertaken by creditors Moral hazard	▪ ability to repay foreign debt fully dependant on keeping the stable exchange rate ▪ common belief that in case of bailout financial institutions are going to be supported with governmental help	▪ common belief that US central bank is going to increase indefinitely financial institutions' liquidity if needed ▪ increase of financial institutions' liabilities due to financing of purchases of structured instruments
Irrational euphoria Price bubbles emergence	▪ rapid increase in prices of both financial and real assets	▪ rapid increase in housing prices and equity prices ▪ low spreads and volatility of value of credit products

Figure 3. Microeconomic track to the blow of the Asian and subprime crisis

Source: K. Hoe Ee, Rui Xiong, op. cit., p. 21.

Creditors counted on government or central bank, hoping that in case of problems with credits' repayment a help was going to be granted to them or their borrowers. The strength of moral hazard was intensified additionally due to the conflict of interests between managers and shareholders, who were unable to control and monitor undertakings of management under the circumstances of imperfect financial supervision. Borrowers also undertook excessive risk taking credits nominated in foreign currencies (Asia) or mortgages (US), assuming that economic policy was going to be conducted in the long term in a suitable manner, helping them repay their financial obligations. That is why in many Asian banks as well as in American ones the ratio of non-performing loans to overall loans exceeded 5% at the threshold of a crisis. For example, in Korea this ratio reached 6.0% in 1997, growing by almost 2 percentage points within just a year[66], and in Thailand and Indonesia 22.5% and 7.1% respectively[67].

It can be recapitulated, that microeconomic imperfections in both analyzed cases were also similar. In Asian countries, as well as in the USA, negative influence of macroeconomic fundamentals was strengthened by risky activity and performance of both financial institutions and private sector. As an evidence of such behaviour one can treat the excess investment and credit risk undertaking, running excess debts in foreign currencies and keeping opened and not appropriately hedged positions in these currencies. In Asia it was possible due to the existence of informal links between financial institutions and companies, and in the USA – due to the liberalization of banking law and fast growth of the share of aggressively investing hedge funds and private equity funds in the financial market[68].

Mounting problems and structural weaknesses put a stop to further expansion of price bubbles, leading to their burst, which appeared to be very painful. As Figure 4 depicts, soon after the crises outburst, a deep fall in share prices could be observed, becoming an evidence of the bubbles existence and rapid diminishing.

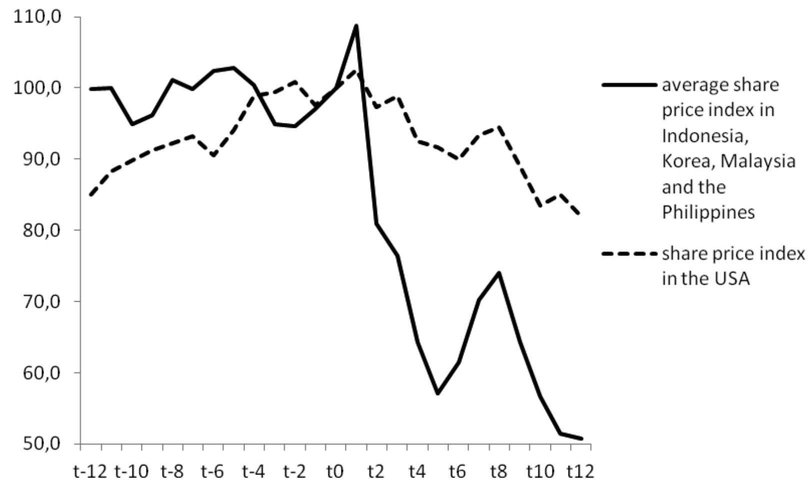

Figure 4. Index of monthly changes of share prices in four Asian countries and in the USA a year before and after crises (t0 = 100)

Source: own calculations based on IFS database.

[66] M. Rumiński, *Kryzys walutowy 1997 roku a restrukturyzacja sektora finansowego i sektora przedsiębiorstw w Korei Południowej*, NBP, Materiały i Studia 2004, No. 174, p. 31.

[67] S. Heffernan, op. cit., p. 522.

[68] K. Hoe Ee, Rui Xiong, op. cit.; P. Mauro, Y. Yafeh, *Financial Crisis of the Future*, "Finance & Development" 2007, Vol. 44, No. 4, p. 26-30.

The striking is the phenomenon of very fast diffusion of pessimistic forecast concerning the future performance of the economies, created by individual events – speculative attacks on Thai baht (in May 1997) and the rest of currencies of Asian countries (in July 1997) because of uncertainty about the level of official foreign reserves and ability of central banks of Asian countries to defend their currencies and mounting problems with the repayment of housing credits leading to the collapse of mortgage market in the USA (in September 2007). Due to these events investors' cup of bitterness both in Asia and the USA was filled to the brim, leading to very serious and deep re-evaluation of financial and real assets.

In order to conclude, another comparison can be made. According to IMF, main structural problems observed in Asia at the threshold of a crisis were: inadequacies in the regulation and supervision of financial institutions, limited experience among financial institutions in the pricing and managing of risk, lack of commercial orientation, poor corporate governance, and lax internal controls, which contributed to imprudent lending, including the lending associated with relationship banking and corrupt practices[69]. Almost all of these weaknesses could be also found while analyzing the roots of the subprime crisis. This is a quite pessimistic remark, as it reflects the inability of policymakers as well as private and institutional investors to learn from past mistakes and their adherence to market strategies ineffective in the long run.

6. Conclusions

The main conclusion that may be drawn from the paper is the surprising constancy of the main reasons of financial crises. Despite continuously increasing international capital flows, the development of financial engineering, new forms of financial intermediation and changes in global financial architecture, currency and banking crises break out due to the same set of factors as in the past. Among them one should list, for example, weak fundamentals of the economy and structural failures, expressed in low transparency of financial products or overall financial markets as well and leading to excessive risk, taken by different agents.

Such phenomena have usually become foundations of a crisis, especially without an appropriate and fast response from the government, central bank and supervision. When these institutions do not react to changes in micro- and macroeconomic frameworks, described problems accumulate in the economy as the period of prosperity lengthens, thus making future crisis more severe and costs of its overcoming much higher.

Moreover, financial crises tend to converge around the world, mainly because of their scale. The Asian crisis was first of unprecedented magnitude not seen earlier,

[69] IMF, *Interim Assessment,* World Economic Outlook, December 1997, p. 10-12.

compared only to some extent with Latin America crisis of the 1990s[70]. Subprime crisis was of similar severity. Their comparison allows to assume that under the circumstances of mounting capital flows and liberalization and deregulation regional differences eroded. Crises tend to be less and less region-specific, spreading faster worldwide, especially via contagion channels.

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KRYZYS O ZWIĘKSZONYM RYZYKU I KRYZYS AZJATYCKI – UWAGI WYNIKAJĄCE Z ANALIZY PORÓWNAWCZEJ

Streszczenie: Autorzy artykułu starają się odpowiedzieć na pytanie, czy istniejące pojęcia kryzysów bankowych i walutowych można wykorzystać szukając przyczyn globalnego kryzysu finansowego. W tym celu autorzy zbadali, czy i w jakim stopniu obecny kryzys jest podobny do kryzysu bankowego i walutowego, który wybuchł w krajach Azji Południowo-Wschodniej w latach dziewięćdziesiątych ubiegłego wieku. Realizacja tak sformułowanego celu badawczego pozwoliła stwierdzić, że mimo ciągłego wzrostu przepływów kapitału na świecie, rozwoju technik konstrukcji instrumentów finansowych oraz instytucjonalnych form instytucji finansowych, główne przyczyny wybuchu kryzysów pozostają niezmienione. Należą do nich słabnące fundamenty gospodarcze oraz niedoskonałości strukturalne wyrażające się w nieprzejrzystości produktów finansowych oraz rynków finansowych.