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IS IT LIKELY FOR A FINANCIAL INNOVATION TO LEAD AN ECONOMIC CRISIS? MAJOR EXAMPLES OF FINANCIAL CRISES

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Abstract

It is a very well known truth that the financial innovations have a lot of significant positive impacts on the economy. For example, even a considerably trivial financial innovation may be helpful an economy to recover. However, we have also seen some equivocal claims, which argue that the financial innovations may have a dark side on their own behalf. Surely, the financial innovations sometimes may create complexity and actors in the financial sector may not correctly evaluate the risk and the return of the new products and services. Somehow, the creators of financial innovations were regarded as responsible of the recent global crisis of 2008 stemmed from mortgage markets. In this paper, theoretical literature about financial innovation and global crises was researched in detail, major crises stamped the economy were discussed, and whether the financial innovations have a share in these crises was analyzed. The paper develops propositions based on this review and discusses implications to avoid possible economic crises in the future.

Anahtar Kelimeler: Finansal İnovasyon, Küresel krizler, Asya krizi, Latin Amerika Krizi, Japonya Krizi, Mortgage Krizi.

1. Introduction

Back in the history, it is almost impossible to count the number of financial crises faced by many nations, and countless economies of countries have got through severe financial bottlenecks. After the crises experienced, there were a lot of discussions about the reasons and consequences of those tough crises. Particularly following the years of 1980s, there was observed a huge increase in the volume and depth of financial markets, and consequently new corporations and new tools showed up in accordance with the changing needs of consumers, investors, and the other actors in the market. At the end of the day, adopted with open arms by many social segments, some of those innovative developments have become part of life's rich pageant. In addition to that development, the markets of goods and capital are wide opened to foreign countries, and the countries become more fragile against the international risks. In the sunny days, when trying to figure out the reasons of crises following the rainy days, it is unfairly argued that the innovations which recently fall into our lives and are all unknown in terms of their risks and benefits are partially responsible of those crises.

The main target of this study is to address whether the fundamental reason underlying the crises is financial innovations. The most illustrious economic crises of past will be cited, and both the reasons and consequences of these crises shall be discussed by conducting a detailed literature review in the study. Accordingly, a general introduction about the financial innovations will be made in the first section, and positive and negative aspects of financial innovations will be emphasized. In the next section, some outstanding crises faced in the regions like Latin America, South East Asia, Japan, and U.S. will be scrutinized. And finally, it will be evaluated whether the financial innovations really lead to economic crises in the conclusion section.

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2. Literature Review

In the part of this research, financial innovation and major examples of financial crisis are considered by conducting a detailed literature review.

2.1. Financial Innovation

Ages ago, there was prevailing a 100% reserve plan based on the precious entities like gold and jewelry in the banking system. The system come to an end as the jewelers started to lend gold by exporting the bank money (Chen, 2009: 206). Immediately after, umpteenth innovations like new financial instruments, new financial markets, new financial services, and new financial techniques showed up in the banking and finance sector.

During the periods of strong economy, the number of institutions who are more likely to generate new ideas increases. For example, the financial innovations of international banking in 1970s were the result of rapid growth rates worldwide. The credits with currency option, parallel loans, private exchange regulations, and many new innovations were created just to achieve higher volumes of credit (Van Horne, 1985: 624). One of the most intriguing innovations in the finance sector was the creation of financial assets, which were derived from the products suitable for borrowers, and were also suitable for investors (Miles, Pillonca, 2008: 170). That innovative progress is particularly used in the housing finance. The 5 most important innovations in the housing finance are mortgage, specialized housing finance corporations, collateralized debt obligations (CDOs), covered bonds, and the securities based on mortgages (Allen, Barth, Yago, 2004: 16). Thanks to the progresses in the information and communication technologies, countless financial innovations such as electronic fund transfer, ATMs, credit cards, bank cards, electronic money, internet banking, electronic banking, telephone banking, and mobile banking have become all part of life's rich tapestry. For instance, ATM and Internet banking are regarded as the most approved payment methods, as the electronic transactions increase in number (Rauf, Khan, 2012: 103).

The volatilities seen in the rates of inflation and interest, and the perpetual changes observed in legislations, tax laws, technology, and the level of economic activities inevitably cause financial innovations (Van Horne, 1985: 622). Among the external factors that contribute to the success of innovations are funding, education, competition conditions, protection of ownership, and other legal issues, while the internal factors include the managerial subjects (Hausman, Johnston, 2014: 2726). The financial sector actually gives rise to the diversification of financial products and services through creating its own innovations. The funds needed by companies to increase their production volumes and the excess funds of account owners are balanced in the financial markets. Any change in the rates of interest and inflation may create demand for different financial instruments. The tax laws can also be influential on the yields (like interest, dividend, capital appreciation) of financial instruments. The capital limitations can be decreased or increased through legislative amendments. The financial innovations facilitate economic growth and pave the way of capital accumulation by improving the efficiencies of actors playing in the financial markets. (Chou, 2007: 78)

The innovations contribute to the development of economies in many distinct ways. In their regional study conducted for Spain, Valverde, Del Paso, and Fernandez (2007: 323) have concluded that the product and service innovations have a positive effect on the growth of gross domestic product, investments, and gross savings in this region. However, Hausman and Johnston (2014: 2721) have stated that the innovations primarily create employment opportunities in the economy. The rise in the personal incomes and gain in the profits of companies naturally support the growth by means of household expenditures and firms' tax payments. The increasing competitiveness level of a company who created an innovation also helps to improve its profitability rate. On the other hand, any innovation created has many acquisitions such as closing the trade deficit, recovering the economy during the fall times, and rising the living standards of people (Hausman, Johnston, 2014: 2722). The financial innovations may be helpful for companies to save in cost and time, and gain an advantage on the rates of interest and tax, and consequently increase their profits (Öncü, Mesci, Şahin, Faikoğlu, 2013: 124).

In the developed countries, thanks to the stable macro economies, and ceaseless financial innovations, the risk of systematic financial crisis is avoided (Gai, Kapadia, Millard, Perez, 2008: 401). Adcock, Hua, Mazouz and Yin (2014) have examined the correlation between the innovations and the reaction of markets during the financial crises for 27 European stock exchange indices in a research covering the period of 2007 January – 2012 December. Following the bad news, it is observed that the price indices of countries with higher innovation rates have achieved quite high returns over the odd, while the return percentages of countries with lower innovation rates have stayed below the line. These findings prove that the investor confidence is high in the innovator countries and they can more easily handle with the bad days in economy (Adcock, Hua, Mazouz, Yin, 2014: 470). According to the research conducted by Norden, Buston, and Wagner (2014: 130), it is stated that the risk management has always benefited from the financial

innovations created in the poor circumstances like economic crises. The credit derivatives that are one of the most important financial innovations have become a tool for banks to be used in risk management. The banks controlling their own risks through the credit derivatives are now able to have more stable credits portfolio and suffer less from the economic crises. Banks benefit from credit derivatives. These benefits include a better riskbalance within the loan portfolio, an improved ability to keep risk-levels at target ratios and becoming more sophisticated in the measurement and control of their credit risks (Norden, Buston, Wagner, 2014: 142).

In a research covering the 2005-2007 financial data of banks based in England and Italy, it is discovered that the bigger banks are more innovative as compared to smaller banks (Rossignoli, Arnaboldi, 2009: 275). In their study, Nanda and Nicholas (2014: 287) argue that the hard times of banks that are dependent on external financing negatively effect the innovations. Such financial strains are important obstacles in front of the innovative activities of a firm. It is not likely for small and medium sized enterprises that are more exposed to financial limitations to innovate (Brancati, 2015: 449). Because, the SMEs are quite sensitive to the current financial environment, when it comes to innovate. Gorodnichenko and Schnitzer (2013: 1148) find that the foreign capital firms are more creative and innovative than the domestic capital firms in the developing economies in transition. Accordingly, in terms of technological development, the domestic capital firms usually fall behind the foreign capital firms. The gap of creativity and innovativeness between the firms mostly stem from the financial restrictions faced by domestic capital firms. Such financial restrictions limit the innovation capacity of domestic capital firms. The domestic capital firms face with many barriers in front of the innovative activities, because their access to foreign finance is very difficult and costly (Gorodnichenko and Schnitzer, 2013: 1148).

Alongside the studies claiming that innovations always have positive effects, there are also other researches arguing that innovations may bring in some negative effects. Krugman (2007) states that some financial innovations may lead to a crisis, for instance in the recent mortgage crisis the financial innovations have complicated the financial system, and the market has failed to receive the signals of impending crisis. Particularly following the mortgage crisis experienced in U.S. in 2007, it has been a controversial subject whether the financial innovations have a dark side and cause the economy to become more fragile. Suciu (2011: 177) blames the financial innovations as the most important reason of 2007 crisis. He also argues that credit risk is transferred by the financial tools that are quite incognita, complex, and hazardous. Allen (2012: 493) has also verified that countess securitizations and subprime mortgages have worsened the financial crisis. On the other hand, it is also stated that the financial liberalization is a bigger problem than the financial innovations.

2.2. Latin America Crisis

Having a mixed economy, Mexico declared a moratorium as a result of the 1st and 2nd oil crises in 1980, and implemented a stabilization program prepared by IMF. The great earthquake experienced in 1982 thrown the Mexican economy into a deeper crisis, and the inflation rate rose as high as 160%. Now, it is clearly proved that the most important reason of that crisis was the lack of "Political Certainty and Stability". The main target of the Economic Restructuring Program that has been implemented since 1989 is to balance the revenues and expenditures of public sector. Immediately, the foreign trade is liberalized, and trade barriers are removed in this country. It is aimed to make a deregulation, and in this direction privatization is used as a tool (Mortan, 2001: 117).

Earlier on the Tequila Crisis of 1994, the amount of private capital has risen more than fivefold by reaching to $188 billion in Latin America (Özel, 2005: 15). So, the domestic currency was over appreciated and the current deficit was extraordinarily increased as a result of this huge foreign capital entrance. However, the foreign debts of countries detachedly kept on their rapid grow rates in the process. Gourinchas, Valdes, and Landerretche (2001:1) have examined the behaviors of various macro economic variables in Latin America during the period also called as Lending Boom, and concluded such results: It is observed significant booms both in investment and consumption fronts. Huge rises are seen in the real domestic interest rates. The output growth rates have fallen more than 1%. The domestic money has slightly appreciated in real base, and current deficit is exceptionally accreted. The foreign official deposits have gone up in flames, and the maturity periods of foreign debts are fatally shortened. The rises observed in volumes of credits and prices of assets in Latin America somehow evoke us post financial liberalization. Kaminsky and Reinhart (1998: 448) propose that the boom in Latin America is definitely correlated with the financial liberalization and growth. In their study, they have revealed that the credit booms are often followed by banking and/or monetary crises.

After signing the North America Free Trade Agreement (NAFTA) with U.S. at the beginning of 1994, Mexico faced with a series of major misfortune such that its own domestic currency depreciated by almost

half, interest rates rose fourfold, inflation rate rose eightfold, and economy shrunk to $286 billion from $421 billion (Özel, 2005: 13). In Mexico during the period of 1993-1994, the prices of key inputs were frozen, the rises in fuel prices and minimum wage were limited, the tax rates were decreased through tax reforms, and numerous tax exempts and subsidies were provided (Mortan, 2001: 120). Also known as Tequila Crisis, the Mexican Peso Crisis spread out to the peripheral countries like South America, Argentina, and Brazil. The systematic macro economic and liquidity shocks which led to the economic crises in Latin America not only disrupted the functions of weak banks, but also the operations of strong banks (Arena, 2008: 309). The unreliable working of financial system and banking system inevitably intensified the current crises in Latin America (Fratzcher, 1998: 689).

2.3. The Southeast Asia Crisis

The Southeast Asia Crisis, initiated in July 1997 was seriously contaminated to other countries through financial markets. The surveys specifically conducted for Asian crisis may be summarized under two topics. The first one of these renditions argues that the crisis was stemming from internal reasons, while the second claims that the reasons of that crisis were external causes. The analysts who think of that the crisis has actually stemmed from internal causes state that the real economy has already declined and some economic indicators have been alerting in the pre-crisis period, while the others who assume that the main reason of the crisis is external developments claim that the financial instabilities observed in other countries have negatively influenced the market expectations and confidence, and those problems have naturally leaped into their own economies.

The common conditions usually experienced in a pre-crisis period may be summarized as follows (Wade, 1998: 1540-1541);

a) The domestic saving rate was incredibly high. The savings bonds were transferred to companies from households via banks, and a high volume of government debt was created.

b) There was prevailing a fixed exchange rate regime. Japan and Asian countries except Korea fixated their local currencies to U.S. dollar. This environment induced a perception of small risk existed when the funds were moving from a market to another market.

c) In the period starting at the beginning of 1990s and ending at the midst of 1990s, the liberalization of capital markets was achieved. The deregulations were conducted in the domestic financial markets without a regulatory control mechanism.

d) A huge amount of international financial asset inflow was observed. The excess liquidity in Japan and Europe was channelized to Asia because of the higher returns and lower borrowing costs, and that situation caused the formation of a deep structure of foreign debt.

In Thailand, the level of foreign debts rose to $80 billion in March 1997, while it was only $40 billion in 1992. In 1996, the total debt reached to the 51% of national income (it was just 34% in 1990). In August 1997, the total foreign debt rose to $90 billion ($70 billion of it was belonging to private sector, and $20 billion of that figure was accrued at the end of 1997). The volume of credits rose to 767 billion baht in 1996 from 264 billion baht in 1993. (Lauridsen, 1998: 1576). The portfolio investments and short-term borrowings continuously kept growing. The portfolio investments rose to 138 billion baht (1993) from the level of 23.5 billion baht (1992) (Lauridsen, 1998: 1579). A ginormous amount of money within the financial system was allocated for unconscious investments because of the lack of the areas to be invested in. As a result of the inattentive borrowing, there emerged an investment bubble.

Some trade partners of Japan such as Thailand, Korea, and Indonesia, which fixated their domestic currencies to U.S. dollar instead of Japanese yen faced with the issues of foreign trade deficit and current deficit after 1995. The dollar fixations of those countries led their domestic currencies to be targeted by the speculators and overvalued. In the summer of 1997, the monetary crisis in which baht was devaluated in Thailand spread in only one night into Malaysia, Indonesia, Philippines. In November 1997, the domestic currency of South Korea was attacked. Won, the South Korea's domestic currency was devaluated. Then the country demanded a financial aid from IMF in order to pay its short-term debts. Some greatest firms of South Korea declared bankruptcy, and the small companies perpetually made a loss of 50% in each day until the midst of December. And, the short-term interest rates jumped over the levels of 30% in that period (Arestis, Glickman; 2001: 258).

The prices of equities, properties, and other assets significantly increased in the Asia crisis. And, the development was accompanied with currency crises. The governments had to be torn between two choices of either to conduct a policy of higher interest rate just to protect the domestic currency or a policy of lower interest rate just to stop the banking crisis. Eventually, the total production volume fell, and the recession period lasted for 1.5 years on the average (Allen, 2012: 499). The people both living in countryside and cities

were deeply affected by the state of market, and they were all become poorer in an uncommonly short period. (Jones, Hull, Ahlbutg, 2000: 59).

In an empirical study conducted by Corsetti, Pesenti, and Roubini (1999: 36), it is figured out that the crises are systematically related with the weaknesses of real and financial sectors in the economy. In the research that also evaluates Asia crisis within this context, it is concluded that the current deficit (balance of payments disequilibrium) emerged as a result of overvaluation of real exchange rate is highly correlated with the index of crisis. Corsetti, Pesenti, and Roubini (1999: 36) have discussed about the financial fragility index (the credits to be defaulted in case of a credit boom) as an indicator in the periods of financial crisis, and the calculation of financial cost related with financial bailouts (the share of credits defaulted in national income). In the wake of that research, it is found that the impact of the variables on the index of crisis is high in the countries with lower reserves. Another finding is that the government debt plays an un-negligible role in the creation of twin crises (financial + monetary). Besides, it is also concluded that the public cost of clearing the balance sheets of banks is extremely high (Corsetti, Pesenti, Roubini, 1999: 36).

The creditors have also a distinct share in the creation process of crisis as well as that of the debtors. The financial elites that act irresponsibly, manage arrantly, and make secret agreements have also caused the financial corporations to collapse (Jones, Hull, Ahlburg, 2000: 59). The badly allocation of resources in social security just because of bureaucracy and corruption has jeopardized the economy. Now, it becomes a necessity to restructure the banks and companies for a rapid and sustainable growth in Asia. The crisis of 1997 has led to many changes in the ownership structures of banks. The governments have either intervened in or nationalized many banks experiencing various issues. In the post-crisis period, the banks were restructured and the assets of banking system were returned to their initial private owners. The performances of banks are really increased through privatization efforts (Williams, Nguyen, 2005: 2148).

Actually, there are some lessons to be learned from the Asia crisis: (Mishkin, 1999: 709) 1) It is possible to make applications to the international creditors, as a last resort. 2) A moral hazard may stem from credit transaction, and this can encourage the financial instability. 3) The high volume of hot money inflows has led to the deepening of crisis, but the example does not imply that it is a wise strategy to make foreign exchange controls just to stay away from crises. 4) The fixated foreign exchange regime is a quite hazardous strategy for developing countries because the likeliness of a financial crisis is much higher in this case.

Liberalization further exacerbates the future trials and tribulations to be experienced in the financial infrastructure (Arestis, Glickman, 2002: 258). Demirgüç and Kunt (1998: 32-33) have examined the relationship between financial liberalization and financial vulnerability, and then concluded that financial liberalization practices extremely increase the possibility of having a crisis in banking sector. And, it is also stated that this relationship is strong enough in the places where the institutional environment is stronger. The economic problems of neighbor countries or affined markets may now easily spread into other countries. As long as the dependency to the short-term foreign capital for the finance of consumption and investment proceeds, there will be hot many outflow and the national economy will inevitably go through a crisis in case of any disturbances in market confidence. When explaining the transfer mechanism in Asia crisis, Fratzcher (1998: 689) has clearly identified that the main trouble is not the high current deficit, but the fragility in capital flows. Therefore, primarily the vulnerability level that causes capital outflows must be reduced. Here, the most urgent need is to draw long-term investments and foreign direct investments.

The regional organizations that are economically developed are more prepared against great crises. ASEAN was tremendously vulnerable to economically respond the crisis. Singapore, even the richest member of ASEAN, was deucedly influenced by the crisis because of the small scale of its economy and inexperience against the crises. However, ASEAN's ability to increase its own bargaining power in the international markets will be helpful for that organization to handle with the consequences of crisis in an easier way. (Rüland, 2000: 444-445)

2.4. The Japan Financial Crisis

The volume of home loans given to the real estate sector showed an unprecedented rise, and a bubble of record prices was formed in the real estate sector as result of the tight money policy and financial liberalization policy implemented in Japan at the beginning of 1980s. The Bank of Japan reduced the interest rates in five times, and lowered the rates to the levels of 2.5% from the previous high levels of 5% in order to revive the domestic demand and recover the halted economy because of the over-valuation of Japanese yen during the period of 1986-1987 (Hepsen, 2011: 21). However, the sales of land decreased as a consequence of the tax regulations that encouraged people to keep in reserve the lands they owned. The new development considerably limited the supply of land, and gave rise to the further increases in prices. The stagnation

period that got started in 1991 and lasted for more than 32 months, consequently turned into a banking crisis. In 1998, the government of Japan was obliged to transfer funds of 60 trillion yen ($500 billion which is 12.3% of its GDP) to the financial system in order to reconstruct the financial system and offset the losses of banks (Barth, Caprio, and Levine, 2000: 67). The ratio of uncollectable credits in GDP was 7.8%, and the total loss of Japan banks reached to 65.7 trillion yen as of 1999 (Hepşen, 2011: 26). Among the claimed main drivers of crisis was that the extreme fluctuations seen in the prices of housing sector, the increased volume of loans given to the real estate sector, the inability to measure the law solvency of customers who got loans, and the increased rate of defaulted credits.

Hoshi and Kashyap (2010: 410-413) briefly summarized the lessons that must be extracted from the experience of the Japan crisis in their study; 1. It must be considered that there is always of possibility that banks will refuse equity support, 2. It should be maintained to make sure the rescue packages large enough, 3. There must be set the limits of assets purchase programs in fixing solvency problems, 4.The importance of tying assistance to credible inspection programs, 5. The importance of restructuring troubled assets, 6.The value of having adequate resolution authority, 7. The dangers of politically directed lending, 8.The critical role that macroeconomic growth plays in bank recovery.)

Japan has a leader position in the world economy and finance particularly because of its production power in machinery industry. The production volume of Japan spreads into everywhere in Asia. Japan is the biggest source of import for all of the Southeastern Asia economies except Korea and Vietnam. Mostly the capital goods and sophisticated spare parts for export industry are imported from Japan. However, Asia Crisis and Japan Crisis have negatively affected each other. The bad conditions prevailing in the countries experiencing crisis complicated Japan to handle with the problems (Whittaker, Kurosawa, 1998: 769).

Throughout 1990s, the foreign investors aggressively bought Japan funds (equities), and finally become the owner of 12 % of Japan assets (40.9 trillion Yen or 351 billion US$) (Karolyi, 2002: 439: 413). The foreign investors afraid of the Asia financial crisis of 1997 rushed out of Japan. The foreigners have sold Japan funds with the market value of 15 million Yen in each week during the period between July 1997 and October 1998 (Karolyi, 2002: 439: 439).

2.5. The US Sub-Prime Mortgage Crisis

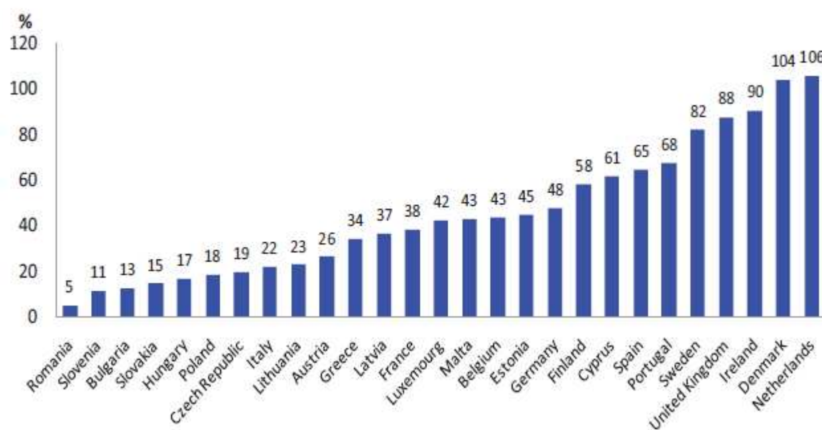
In the pre-crisis period, the demand of household for real estate credits was terrifically high. Then, the financial institutions started to seek for new sources in order to be able to offer greater amount of loans. As the home loans are long-term credits, they turned their face to the capital markets in order not to experience a maturity mismatch risk. The recent financial innovations enabled banks to convert almost all of their credit portfolios into cash. So, they created securities that were traded in financial markets through converting the mortgage bonds taken as collateral for home loans into a debt instrument. The security issuance was funded through the institutional and small investors, and these investors were enabled to achieve a revenue stream.

The conversion of illiquid assets into liquid assets and then let them to be traded in the market is a financial innovation (Suciu, 2011: 177). We can give an example for innovative mortgage products, these are flexible mortgages with variable repayments (USA), abolishing penalties for early mortgage pay-offs (Germany), variable payment mortgages (France), flexible mortgages (UK), shorter-term mortgages, early mortgage renewal, flexible payment schedules (Canada), flexible mortgages with variable repayments, split-purpose loans, deposit bonds, non-conforming loans (Australia), interest-adjusted loans(Denmark), lengthening mortgage terms (Finland and Ireland), savings or equity mortgages (Netherlands) (Miles, Pillonca, 2008: 162). However, a financial crisis showed up following that financial innovations period in which the new instruments and financial institutions were created and new legal regulation were made. Thus, it is argued that the financial innovations not always maintain a better level of welfare, but give rise to speculations in trade, and make the asset prices more volatile (Kubler, Schmedders, 2012: 147).

In his work, Zarutskie (2013: 373) has researched how the commercial banks react to the securitization of credit portfolios and the deregulation in banking market. Hereunder, all of the banks showed interest to the credits on real property. The growing volume of credits on real property is related with the securitization of these credits. However, as compared to smaller banks, the bigger banks (like younger banks) were more interested with the nonresidential credits as a reaction to the securitization and deregulation. And, the smaller banks and older banks preferred to offer unsecured commercial and personal loans. The bigger and younger banks demanded a lower rate of interest and commission because of their huge credit volumes and low-cost structures, while the smaller and older banks reflected a higher rate of interest and commission to their customers. In addition to this, the prior screening ability of smaller banks is far better than the bigger banks (Zarutskie, 2013: 373).

Household often benefited from the leverages, and financed their house and land buying by running into debt. The growing demand for house and land caused the prices of the said assets to rise tremendously during that period. The rise in the prices of real estate also means a rise in the mortgage values. Thus, assuming that the insured values of assets already increased, the banks started to provide more loans. The repayment abilities of individuals were not meticulously analyzed. There were experienced many problems such as moral hazard and adverse selection in the market. The moral hazard occurs when a person willingly takes more risks. The one who knows that someone will show up and save himself/herself from a bad situation never avoids from taking risk (Suciu, 2011: 179). In the pre-mortgage crisis period, the individuals purposively made risky investments even they knew that they would suffer from the repayments of credit funds. The state guaranteed financial system created a huge burden for the society due to the misconducts of individuals. In addition to this, by making adverse selection, also the credit institutions made loans without prior screening to the people who were not capable of repaying the credit installments. Thinking of deposit owners that their money was safe, and the risky moves of banks to gain more profits paved the way of crisis. Another indicator of the asymmetric information problems existed in the market was that the unawareness of actors on which regime is the right choice between high and low leverage regimes, even though they used high leverage regime. Furthermore, the market actors also lacked of enough information about the returns and risks of the new products in the financial market. The optimism prevailing around the financial markets prevented to recognize the magnitude of risks. Due to that over optimism, the construction activities and the prices of lands continued to rise further. In the period of 1996-2006, the net debt stock of American household grew by 2.3 times, and the prices of land and house rose by 2.5 times (Boz, Mendoza, 2014: 21). In the case of European countries, it is observed that the mortgage debts have reached to a significant share in their national income. The Figure 1.shows the ratio of home mortgage debt to GDP of the counties in the European Union.

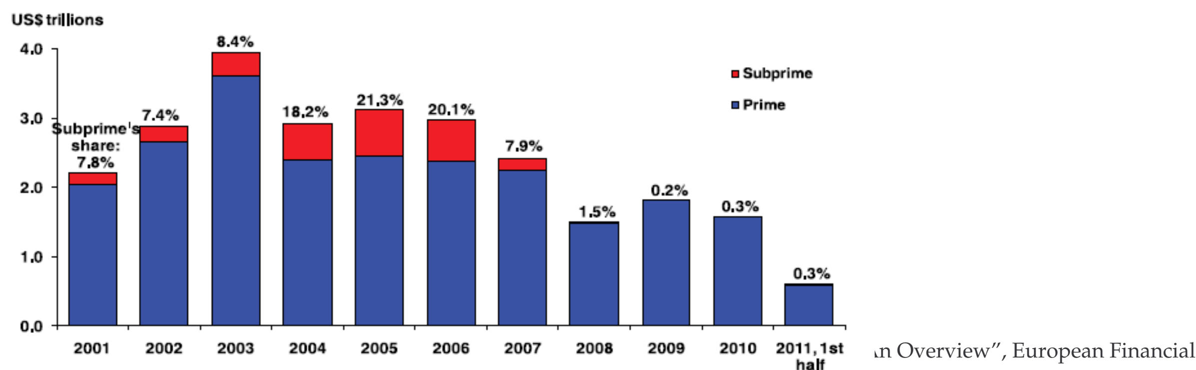
Fig.1. Home Mortgage Debt to GDP (%) in European Union Countries



', European Financial

As a result of the growth in the volume of non-performing loans, the subprime mortgage crisis officially started on the fall of 2006. The Figure 2 shows the amount of prime and subprime mortgages from 2001 until the first half of 2011. In 2006, just a year before the explosion of financial bubble, 20.1% of all mortgage credits was comprised of subprime mortgage loans that were likely to default. The prices of land and house started to fall as soon as the crisis showed up. The decline seen in the prices of real estate owned by household also shrunk their capabilities of borrowing. The depreciation of warrants (mortgage bonds) hold by banks hindered them to collect the debts. In the post-crisis period of 2008, it became a controversial subject whether the financial innovations induce financial crises. However, the idea was not first emerged in the last crisis experienced, there were usually many similar ideas argued after the financial crises. In his work, Chen (2009: 207) proposes that the banks should turn back to their traditional roles in the narrow banking as is the case in Fisher's (1936) %100 reserve model, in order to eliminate the crises and bankruptcies in the banking system. Though, the banking and finance markets of 21st Century have showed a tremendous growth, gained depth, and acquired an international dimension just to respond to the changing needs of individuals and corporations. Now, it become an inevitable part of competition to provide a large variety of products and services to the investor profiles comprised of a wide array of customers ranging from small investors to big investors, from the risk lover investors to risk averse investors, and from the short-term investors to long-term investors.

Fig.2. Subprime Share of All Home Mortgage Originations



n Overview", European Financial

The financial innovation is one of the most indispensable components of a growing and well-functioning housing market. The innovations in housing market have always been fueled by urbanization and household total wealth. Regardless of the geography, many people see unfeasible to buy or construct a house in cash. In the past, the specialized lenders used to seriously cripple the entrance of new participants (developers, consumer, and financial intermediaries) through charging high interest rates and limiting the capital inflow. However, the financial innovations facilitated the entrance of private investors into this market, and the creation of long-term and low-cost source of funds (Allen, Barth, Yago, 2014: 32). Nevertheless, for an innovation to be useful, worthy point of notice here is that the innovation should be clearly defined, public information notice must be provided in case of it has a complex structure, and the authorities have to exercise their power not in the advantages of their own interest, but the common interests of society. The returns and risks of an innovation must be decently calculated, whenever a new product is developed, a new service is offered, or a new regulation is made in the financial market. If the returns and risks are not calculated properly and the problems of imperfect data are experienced in the market, then there may be unintended troubles after the innovation. Therefore, the institutions and organizations subject to innovation must be closely supervised, and the public should be informed enough about the dangers and risks of innovations.

3. Conclusion

The crises have not been the uncharted waters in the banking and finance markets for ages. Due to the intensified commercial and political relationships between the countries, any crisis experienced in a single country can now easily spread into to the other economies, and may cause the problem to have a global extent. Among the causes of crises, the financial innovations were not seen as the determinant factors at first, but recently it is loudly verbalized that the innovation made in financial markets is also one of the crisis causes. However, it is coincided with similar consequences, when the underlying problems of crises are carefully analyzed. In company with the liberalization, the short-term capital inflow leads the domestic currencies be to over appreciated and increase the current deficits, and the situation gives rise to vulnerability of national economies against foreign shocks. On the other hand, the ubiquitous loan facilities offered by financial corporations scale up both asset demand and asset prices. As an impression, in which a continuous rise in the asset prices will be seen, is formed in the mind of people, then the hazardous consequences are likely to occur. At that point, the responsibility bear by creditors is tremendous, as well as borrowers. The whole society may have to pay for the mistakes made by individuals. Today, the loans with inflated prices are given to almost everyone, and that situation causes the prices to rise further and the creation of a balloon to be burst in case of any unexpected development. It may be said that there is an artificial welfare environment, if the underlying driver of the economic growth is not long-term foreign direct investments, but the short-term hot money inflow. Therefore, it must be avoided to be over dependent to the short-term capital particularly in the finance of domestic investments and consumption. An imminent crisis can be forecasted and the required measures can be taken by merely analyzing the market indicators. In other respects, it is also quite important to be able to learn from the experiences of past periods, given that the unexpected situations always repeat themselves over and over.

The academic studies figured out that the crises are systematically related with the weaknesses of real and financial sectors in the economy. The credit booms are often followed by banking and/or monetary crises. Liberalization further exacerbates the future trials and tribulations to be experienced in the financial infrastructure. The subject of this study that tries to find an answer to the question of whether the financial innovations may lead to economic crises may differ greatly from case to case. An innovation can be a new product, a new technology, or a new service, which will ease the lives of people or meet their changing needs. At the first stage, the people may not have the exact information about this new and unusual situation they have faced. However, if the returns and risks of an innovative development are still unknown even it has started to diffuse in the community, the complexity emerged may mislead the people. This case may lay the groundwork suitable for crises. In such a situation, the real cause of the financial crisis is not the financial innovations, but the asymmetric information. The asymmetric information is the cause of various issues such as moral hazard, adverse selection, and principal-agent problem.

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