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Study of global banking crisis of 2008 and happiness index in G7 countries

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Abstract

The financial crises of the 1929 Great Depression influenced all the countries of the world on a more frequent and wider scale with the influence of globalisation toward the end of the 20th century. Banking crises are in fact the result of a domino effect of other crises. In this study, the effects of the global banking crisis of 2008 and its effect on happiness index were investigated. With the effects of crises, the individual can experience fragility both sociologically and psychologically. Does this fragility that an individual is experiencing can only be attributed to one effect? Also, the happiness indices between the years 2006 and 2016 of the G7 countries most affected by the 2008 global financial crisis and the GNP per capita figures were tested by the panel ARDL method. Analysed results show that the GNP figures, which declined between 2008 and 2010, have not been produced much effect on happiness levels.

Keywords: Banking crisis, happiness index, G7, panel ARDL.
Jel Classification: C23, G01, I31.

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1. Introduction

Financial crisis is a term which includes in currency crises, monetary crisis and banking crises. Banking crises start with extreme currency fluctuations and as a result of loan repayment problems, balance sheet collapses. Throughout history, man has experienced such economic crises. These crises were seen in the 20th century more often and broader. The reason for this is that the economies of the countries are tied up with each other through globalisation. A wave of crisis starting in a country gradually spreads in other countries and affects nearly all the countries either economically and socially or psychologically.

It is observed that the banking crises experienced in recent years have affected developed countries more than developing ones (Laeven & Valencia, 2012). Banking crises affect the systems of the countries with well-developed financial systems broader (Kroszner, Laeven & Klingebiel, 2007). When the crises experienced in the world so far are studied, it is noticed that all have many common features but none of them looks like another (Perelman, 2008). However, the most common characteristics of the experienced crises are that almost all have extensive devastating force. It is observed that banking crises affect not only macroeconomic outcomes and the impacts of banking but also social life profoundly and deeply. The purpose of this study is to analyse the variabilities in happiness indexes of the countries which were most affected by the global crisis of 2008. In the study, GDP figures of the countries chosen for the happiness index before and after the crisis period were used. From this aspect, the study has the characteristics of the first study in which happiness index and variables of the crisis are compared. The hypothesis of the study is that financial crises in general and banking crises, in particular, affect social life both physically and psychologically. The content of the study is made up as such: in the first chapter, the global financial crisis of 2008 and happiness index surveys will be studied. Following the chapter, the literature review will be included. In the second chapter, methodology, dataset and empirical findings will be reported and in the final chapter, you will see results and recommendations.

2. Global financial crisis of 2008 and happiness

2.1. Global financial crisis of 2008

A crisis (depression) can be defined as a tension which threatens high-level objectives and functioning of an organisation or causes it to be on the danger list, makes prevention and repression system disabled and it is a tense situation where urgent decisions should be taken. A crisis is the reaction of the society to a new situation. With a different perspective, objectively the crises arise from in a specific time when social relationships cannot be maintained as before while subjectively they are uncertainty situations where decisive activities can fix broken relationships and with some minor adjustments, improbable changes could be performed or radical innovations can suddenly appear (Jessop, 2009). In the nature of the crises has the change of the available and has the reaction occurring with this change. Crises either arise from sudden or show itself spreading over time.

It is difficult to say certainly the beginning of banking crises; because these crises vary about how they develop. Until their effects reach significant rates (as in the recent financial crisis in the US), the rough effects of a minor shock gradually spread across the overall economy. Some crises develop incrementally. They sometimes come out in a sudden and are mostly caused by a sudden recession (as in Mexico after the devaluation of local currency). The results rather than the reasons for the banking crises can vary dramatically. Some crises (as in Indonesia, towards the end of 1990s) are characterised as the collapse of significant parts of the banking system, whereas in other crises, surveillance of system is provided with regulatory criteria and government assistance in order not to cause banks to close down (as in 2001 crisis of Argentina). Furthermore, some banking crises are related to the

collapse of aggregate demand while others can result from bad credit decisions and management failures (Laeven & Valencia 2012).

In terms of markets they are involved in, financial crises are divided into two: real-sector crises and financial crises. Banking crises are categorised under financial crises, but they affect both the real sectors and they are affected by other crises. Banking crises are more costly and of longer duration compared with other crises. A certain time is required to get the results from the precautions taken and to provide market balance.

It has taken a long time to make predictions about the future and understand the historical roots of the financial crisis starting in 2007 and being effective even in 2012. General opinion is that the crisis has macroeconomic financial and social roots (Osmanoglu, 2012). Also, it shouldn't be ignored that financial crises contain some serious dramatic outcomes such as contributing to socio-economic inequities (Kalayci, 2014).

Before the crisis spread across the world, the first signals came in 2008 when the funds were transferred from external countries to the US, a dominant power in the global economy. Before 2008, the US current account deficit had been increasing each day and the budget deficit had constantly been increasing too. While the direction of real production in the world was increasingly focusing on China, asset prices in the US economy based on derivatives market increased too. Among the causes of the crisis were the collapse of mortgage lending, inflated prices in real estate markets, irregularities experienced in security funds, expansion on derivatives market as well as an increase of nominal prices in the derivatives market. Consequently, the difference occurring between nominal income and real-production led to the global financial crisis. While total GNP of world countries was about $60 trillion in 2008, in the derivatives market about $670 trillion operation was being made. The basic cause of the crisis can be explained with nominal money exceeding 10 times of real production. Subsequently, the global financial crisis began to show its effect on real production. Slowdown in G7 countries brought the growth of developing countries almost to a halt (IZTO, 2018, p.3). Financial crisis affected especially OECD countries (notably France, Italy and Sweden) more than the Great Depression of 1929 (Eichengreen & O'Rourke, 2009).

The countries paid a heavy toll in order to get over this crisis. From October 2008 to 2009, America, Europa and other countries spent about $2.9 trillion to ease financial markets and to build customers' trust. Moreover, it is predicted that EU governments spent $200 billion EURO by preparing a stimulus package in order to prevent the deterioration of their economies more. However, all these precautions couldn't prevent the most serious financial crisis having been experienced since the 1930s. In a study conducted by Commerzbank, it is estimated that the worldwide loss reached €7.3 trillion which accounts for ¾ of annual GDP. Following the financial crisis, GDP growth in G7 countries declined by 5.2% from the first quarter of 2008 to the second quarter of 2009 and the unemployment figures increased by 1.67 on average (Roth, 2010). However, before long it was understood that each attempt to overcome the crisis revealed the fact that this crisis was rather greater than the Great Depression of 1929.

People witnessed the fragility of the modern financial system in the period of the collapse of financial markets. With a broader definition, people encountered with the problems such as the fragility of the financial system and mutual trust. If the production system has adequate trust, the production process works properly, but if this trust is broken, the results can be extremely dramatic. The result obtained from this; trust is an important input for free-market economies and these economies cannot work properly without adequate trust (Roth, 2010). The global financial crisis of 2008 created a trust issue for the people. In this respect, people prefer to be on the safe side because of the inadequate trust for financial systems and insecure situations affect happiness indexes.

2.2. Happiness index

Before the 1990s, happiness levels of the countries were measured only with GDP. After this period, it was suggested that measuring happiness only by using GDP is an inadequate calculation. From 1990 onwards, many economists and scientists determined various criteria to create a happiness index. In recent years, the issue of happiness has become a field of the interest of many scientists. According to those who point out that happiness occurs as a result of a combination of variables such as demographic, economic, physical environment, social environment and the socio-cultural situation of the country, there is a great link between happiness and the satisfaction of life (Seker, 2010).

In the finance literature, many studies have been conducted about measuring happiness. As stated in world happiness reports, happiness is generally divided into two: external factors and personal factors. External factors consist of income, job, government, society, values and regions while personal factors consist of mental and physical health, family, gender, age and education. In most of the analysis, income is the most significant factor in poor countries compared with rich ones whereas factors such as social security, quality of work life and freedom have more stronger effects on happiness (WHR, 2016). When the literature is reviewed, it is revealed that the primary determiners of life satisfaction are age, physical health, working style, parenting, stress, lifestyle and personality structure (Chow, 2005).

GDP is a valuable target, but it is one of the last factors to follow happiness when economic stability is in danger, social adaptation is not provided, the values are not supported, ethical standards are sacrificed or when the global climate is in danger (WHP, 2016).

Easterlin Paradox which has become a key concept in happiness came up with an article by Easterlin (1974). 'Easterlin paradox' suggests that there is no connection between the financial growth of a society and average happiness level. This paradox has long been assessed with several analyses with a big dataset. In most of his articles, Easterlin studied the link between GDP and happiness in time in both developing and developed countries. In the results of these analyses, it was found that there is little evidence between average happiness and total income. However, it shouldn't be ignored that there is strong evidence indicating that the countries with income of which is more is happier (Stevensons & Justin, 2008). On the other hand, in another study in which the Easterlin paradox was re-evaluated, it was mentioned that there is a link between financial growth and happiness (Stevensons & Justin, 2008).

However, as the income increases during life-cycle, does happiness increase at the same level? When the Americans who were born in the 1940s are studied, average income per capita calculated according to the price changes in goods and services increased by 116% between 1972 and 2000. Still, the happiness level they reported in 2000 is not different from the one they reported 28 years ago. In the following years, they had more money and higher life standards, but this didn't make them feel happier (Easterlin, 2004). In the survey of Gallup World Poll, although world happiness level is dependent on other factors rather than income, income is regarded as a supporter for happiness and a premise in order to realise other factors (WHP, 2012). It is clear that absolute conditions can have a strong effect on welfare and in the international level, there is a correlation between measured happiness and income per capita. Economic conditions in poorer countries dramatically decrease happiness (Veenhoven, 1991). This makes up a paradox for the economists in happiness studies. While there is an obvious correlation between income and subjective welfare, it is observed that the happiness level of people doesn't increase though big income increases have been obtained especially after the World War II. In further studies, it is concluded that people have got used to higher life standards (Dockery, 2003).

Since the 1940s, several studies have been performed on happiness. The most renowned studies in this field are 'General Social Survey' in America and 'Euro-barometer' of EU. In addition to these research studies, many scientists continue their studies on happiness (Seker, 2010). The point nearly all studies focus on is the factors making people happy.

Although many studies have been performed on the issue, it cannot still be obtained any clear conclusion about the measurability of happiness. Apart from measuring happiness, measuring methods are also the subject of the studies. Since each measurement is performed objectively notably in the science of Economy, the question 'can happiness be measured objectively' or 'can subjectively measured happiness reflect the truth?' can be asked. In earlier research studies, we encounter with some views that people cannot know their happiness level exactly, even if they know, they cannot reflect this correctly.

In many studies, the assessment of individuals about happiness is measured with one or more questions. For instance, by using the measures of the surveys performed regularly such as Eurobarometer Survey, British Household Panel Survey, the Russian Longitudinal Monitoring Survey, the German Socio-Economic Panel Study, long-term happiness data is accumulated for the countries. In these surveys, individuals are required to describe themselves about their life satisfaction and happiness through the questions including various measures such as from 1 to 10 or from 1 to 4. In General Social Survey, the question of happiness 'how would you say things are these days, would you say that you are very happy, pretty happy or not too happy?' is asked by using a three-point likert scale. The most common scale which we also use in our study is the 11-point numeric rating scale. Life satisfaction which means the positivity level obtained with the general assessment of an individual about life quality is measured with the question 'How happy are you when you think of your life as a whole?'. The answers are in between 0: never happy and 10: very happy. According to the results of the given answers, the countries could see their rank in life satisfaction and their long-run tendencies could be studied (Veenhovenl & Dumludag, 2015).

3. Literature review

Several studies were conducted either about the global financial crisis of 2008 or happiness index. However, we couldn't encounter with a study involving both variables. Therefore, studies are generally limited to the concepts about the science of Economy and happiness index surveys.

The first study on the field was performed by Easterlin (1974). Easterlin studied the existing correlation between income and happiness and established his study on three aspects. In the first aspect, he studied the happiness level of poor and rich people in the country they worked. In the second aspect, he did an international comparison and studied the correlation between the average happiness level and the size of GNP. In the third aspect, the time set was studied. It was concluded the positive correlation between income and happiness presented a stronger outcome in the studies he conducted in the country than intercountry relationships. In Dockery's (2003) study about happiness in working life and life satisfaction, some evidence was detected indicating the negative effects of unemployment time as well as the positive effects of wealth on welfare. In a comparison of welfare for the states, it was underlined the 'quality' of employment should be taken into consideration.

Kahneman and Deaton (2010) analysed over 450,000 responds in the survey intended for 1,000 American citizens. At the end of the study, it was seen that emotional well-being and the context of life assessment is different. It was concluded that income is related with education and life assessment whereas the concepts such as health, personal care, solitude and smoking are attributed to emotional well-being; however, emotional well-being is sometimes associated with income. It was observed that the people whose annual income is a lower encounter with some situations like diseases, divorce and isolation.

Clark (2006) concluded that as the unemployment time increases, life satisfaction reduces in general. General finding is that there exists no situation like getting used to unemployment. Di Tella, MacCulloch and Oswald (2001) made a life satisfaction survey with 264,710 people in 12 European countries and US between 1975 and 1991. According to the results of the survey, it was concluded that people are less happy when there are high inflation and high unemployment.

In their study 'Happiness and Income', Cirkin and Goksel (2016) used survey method. They analysed the results they obtained with sequential estimation method. The most significant finding of the study is that happiness and life satisfaction is independent of income. That is, the increase in income level is not significant with being happy but there is a significant difference with life satisfaction. In the study 'Finance and Happiness', Veenhovenl and Dumlubag (2015) made a historical study of searching for happiness in the countries. First, periodisation about happiness was performed and subsequently, the answer for the question 'today, are we happier?' was attempted to be found.

4. Methodology and findings

4.1. Scope of the study

The scope of the study is happiness index data made up of six variables with GNP figures of G7 countries between the years 2006 and 2016. In 2016 world happiness report, national life assessments were explained with new basic variables. These variables were as follows:

- GDP per capita
- Social support
- Life expectancy
- Freedom of choice about life
- Generosity
- Freedom from official corruption

Happiness index data was taken from the world happiness reports (WHR) and GNP figures per capita were taken from world development index.

4.2. Dataset and econometric methods and results

In the study, firstly, a stability test was conducted for the data of G7 countries for 2006–2016. Afterwards, Panel autoregressive distributed lag (ARDL) test was used in order to see the extent of causality within data. These tests were performed with E-Views 9 program.

4.2.1. Unit root tests

In the tests which were used to test the stationarity of data such as Levin, Lin and Chu testi, Im, Pesaran and Shin testi, Augmented Dickey-Fuller (ADF) and Phillips and Peron (PP), sets are not stationary on the surface, so they are made stationary after the first difference. The stationary situations of the sets in the first difference are shown in Table 1 and 2

Table 1. Unit root test in GNP per capita

Method	Statistic	Probability**
Levin, Lin and Chu t*	−587.086	0.0000
Im, Pesaran and Shin W-stat	−224.011	0.0125
ADF–Fisher Chi-square	29.9725	0.0077
PP–Fisher Chi-square	38.0211	0.0005

Table 2. Unit root test for happiness index

Method	Statistics	Probability**
Levin, Lin & Chu t*	−602.505	0.0000
Im, Pesaran and Shin W-stat	−321.186	0.0007
ADF–Fisher Chi-square	38.5806	0.0004
PP–Fisher Chi-square	77.9453	0.0000

4.2.2. Panel ARDL

Panel ARDL is an approach which has an assumption that only one reduced equation exists between external and dependent variables. Therefore, in the analysis, long-run relationship between the variables is calculated first and then the short run relationship. For this purpose, in this study, a cointegration technique, ARDL method designed by Pesaran (1997) and Pesaran and Smith (1995) was used. The long-run relationships in Economy have become the focus of theoretical and empirical studies. In this context, Pesaran and Smith (1995) studied the usage of ARDL model for the analysis of long-run relationship when basic variables exist (Eq.(1)). According to the study of Paseran and Shin (1997), the basic ARDL model below is accepted as a main equation.

$$Y_t = \alpha_0 + \alpha_1 + \sum_{i=1}^{p} \theta_i Y_{t-1} + \beta' X_t + \sum_{i=1}^{q-1} \beta *_i' \Delta X_{t-1} + \mu_t \quad (1)$$

$$\Delta X_t = \cdot P1 \cdot \Delta X_{t-2} + \cdot P2 \cdot \Delta X_{t-2} + \cdot \ldots\ldots + \cdot Pi \cdot \Delta X_{t-i} + \varepsilon_t \quad (2)$$

The relationship between the happiness level of countries and GNP values calculated with the values before and after 2008 crisis is shown in Table 3 by Panel ARDL method. According to Table 3, the relationship between variables is negative and significant in long run, but in the short run, the result is positive and significant. Error correction coefficient seems negative and significant. The fact that this coefficient is negative and statistically significant yields a result that variables and changes in the model will reach a balance of 7% in a run. According to the results of the analysis, even if GNP values per capita falls, this fall is not effective on happiness index in long run. However, in the short run, increase in GNP figures increases the happiness level in a negligible amount.

Table 3. Panel ARDL test

Independent Variable	Coefficient	Std. Error	Statistics	Probability
		Long run		
GDPL	**−0.448663**	**0.065777**	**−6.820.957**	**0.0000**
		Short run		
ECT	**−0.691414**	0.233574	−2.960.147	**0.0045**
D(GDPL)	**0.553452**	0.312319	1.772.071	**0.0819**
C	2.018.255	0.690066	2.924.727	0.0050

Mean dependent var	−0.001491	S. D. dependent var	0.013221
S.E. of regression	0.009754	Akaike info criterion*	−5.723.767
Sum squared resid	0.005233	Schwarz criterion	−5.054.108
Log likelihood	2.423.650	Hannan-Quinn criter.	−5.455.909

*Model selection method: Akaike information criteria (AIC)

4.2.3. Granger causality test

Granger causality test is one of the various causality tests. This test is based on the assumption that the relationship between two variables has also a time-wise relationship with one another. If we accept one of the variables as Y, and the result of the assumption practised with $Yt = (Yt_{-1}, Xt_{-1})$ yielded

better results than the one practised with, it can be said that the changes in *Xt* is the Granger cause of *Yt* (Ugurlu, 2009). In Granger causality test results shown in Table 4, since the probability value is higher than 0.05, a causality relationship either one-way or multi-dimensional ways cannot be detected between GNP per capita and happiness index.

Testing hypothesis:

H0= $\sum_{i=1}^{m} \delta i = 0$ *X*, is not Granger cause of *Y*.

H1= $\sum_{i=1}^{m} \delta i \neq 0$ *X*, is Granger cause of *Y*.

Table 4. Granger causality test

Null Hypothesis	Observation	F-Statistics	Probability
GDPL does not Granger cause HAPPL	63	0.76143	0.4716
HAPPL does not Granger cause GDPL		0.02191	0.9783

5. Results

Financial crises affect social life profoundly both in the sociological and economical way. Some unwanted situations occurring after a crisis can play an effective role on happiness factors of individuals. Before the 1990s, the happiness of individuals was only measured with per capita GNP figures. If the analysis were conducted with this framework, we could get more different results. However, the happiness index today is being conducted with different criteria. In this regard, income is only one of the factors affecting the happiness of people. In G7 countries, notably in France, Germany, England and America between 2008 and 2010, a decrease in GNP was observed, but the happiness index didn't change so much. It can be understood from this fact that happiness is not only based on income. Income, employment and financial instability during the crisis terms are inevitably among the factors affecting people's life satisfaction. However, the recent happiness indexes emphasised other criteria more than the previous ones. When indexes are reviewed, it is seen that there is not so much decline during the crisis and it is the strong evidence of this situation. Starting in 2008, the financial crisis effects of which are observed all over the world cannot be associated with the expected unhappiness, uncertainty and desperation in our analysis.

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