

Investigating the impact of global financial crisis on the commonwealth (Selected Countries of the Middle East including Iran, Kuwait, Oman, Pakistan, Syria)

¹Morteza Cheshti, ²Dr Mahdi Khoda Parast Mashhadi

¹Master of Economics, Firoozkooh Branch, Islamic Azad University, Firoozkooh, Iran
mch166@yahoo.com

²Assistant Professor of Economics, Department of Economics, Ferdowsi University Of Mashhad, Iran

Abstract: This paper is aimed at studying the impact of global financial crisis, or the lack thereof, on public welfare in the selected countries. The main result of this paper determines whether there is a significant relation between global financial crisis and public welfare by using inflation, employment, and human development variables. This research is applied based on the objective and among the descriptive-survey studies in terms of data collection. The library data is considered as the data collection tool for testing the hypotheses in this research. The statistical population in this study covers the selected countries of the Middle East including Iran, Kuwait, Oman, Pakistan, and Syria because they have available data for research period. The studied period includes 1997- 2011. The database of World Bank is applied for the inflation and employment rates, and UNDP database for the human development. Furthermore, the values of financial crisis are calculated through the computational method. The Panel Data, applied with choosing the fixed effects, is utilized in order to test the hypotheses. According to the main result of this research, only the employment variable has the significant correlation with the global financial crisis and this significant correlation only covers 4/6 required variables in the field of global financial crisis. Furthermore, the impact factor of this correlation indicates that with one unit increase in the employment, the financial crisis is enhanced 0.011907 units in the selected countries, and this correlation naturally has a negative impact.

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1. Introduction

In the last months of 2008, the world was faced with one of the most important events of American history called as the Black Friday or the financial tsunami of century. The widespread reflection of news about the bank failures and financial institutions of the United States such as September 11 terrorist attacks in 2001 quickly spread to the global financial markets and led to the collapse of Wall Street stock index so that New York Stock Exchange fell 20% during the first two weeks and the stock index in all major economic countries were dramatically decreased (Nili, F., 2009). The term "Financial Crisis" refers to the status in which a significant percentage of value of some equities is lost unexpectedly. The stock exchange collapse, bursting the financial bubbles, crisis due to the currency interest rates and disability to pay the high foreign liabilities are the examples of financial crises (Taghipur, A., 2009). The economists have taken considerable efforts to respond to this question that how the rise and fall of economic crises can be interpreted in the capitalist system. A group sought to design the appropriate mathematical and statistical models by observing the duration of crises and intervals in their frequencies which not only explain the previous crises, but also predict the future crises. These studies are typically conducted in the field of "Global

Systems' Theory" (Shafizadeh, A., 2009). Another group of economists sought to interpret and predict the financial crises through applying the theory of games especially the "coordinated game". Further explanation of the theories including the global systems and coordinated games in interpreting and predicting the crises requires raising the special topics which are not within the framework of our article. The factors which have made the recent financial crises include the policies of U.S Government in the false expansion of housing market, high-risk mortgage loans, financial innovation in the transactions of mortgage loans, weakness of monetary policies of U.S.A Central Bank, weakness of monitoring system in the derivatives market and the existence of financial and administrative corruption in the market of mortgage loans (Tayebi, S.K., 2009). Nowadays, the world, American and European economists have considered the change and reformation of current financial system and sought to take steps in line with changing and reforming the financial structures of America and other wealthy countries in order to overcome this crisis. According to the economists' viewpoints, nationalizing the banks is the first practical action in this regard and the governments should support and nationalize the private failed banks. If these policies are not resulted in the appropriate findings for controlling the crisis, the

countries which are directly involved in this crisis have no choice but adjusting their economic structure (Mehdizadeh, S., 2009).

This paper is aimed at studying whether there is a significant relation between global financial crisis and public welfare by using inflation, employment, and human development variables.

2. Research Literature

2-1 Theoretical Principles

Financial Crisis: Investigating the emergence of economic crisis in the East Asia during the second half of 1990s can raise our perception and understanding of the financial crisis in 2008. The absorbed foreign capital and expanded exports from this region to other areas of world was the basic pillar of economic growth in the countries of East Asia. This process of absorbing the foreign capital was along with the direct foreign investment and purchasing the securities. As the result of the crisis, a major part of international financial and monetary system was paralyzed and led to the inefficiencies of economic activities. Furthermore, there was no appropriate turnover, the rate of economic growth became slow and thus the foreign investment was reduced. The rate of demand for the basic commodity and also the purchasing power were decreased. The monetary risk was increase, thus the normal financial relations and especially the foreign investment was disrupted in the world; therefore, the monetary and financial trading lost its former popularity.

Inflation: It refers to the status under which the monetary demand for the product becomes higher than the production and it raises the price of a unit production due to the lack of control. The inflation means paying more money for purchasing the products and service. Moreover, the inflation is defined as the cumulative process of raised price and it irreversibility.

Employment rate: A number of active populations are employed in each society. According to the definition, the "employee" is the one who has job and knowledge about it as a specialization and profession. The "Employment" refers to the status of being employed and engaged to a certain job. In other words, the employment refers to the status in which the reward or wage is paid in cash or in the form of goods due to the direct and active engagement to the production flow and doing the services. The employment rate is generally defined as the ratio of employed people to the total population. The population is limited to the age groups in some of the calculations. Some types of calculating the employment rates are as follows:

1. The Gross Employment Rate which is calculated for all population of society according to the following formula:

$$GER. g = \frac{Pem}{P} \times 100$$

2. The Net Employment Rate which is calculated for the population at the age of work (Active potential population) with the following formula.

$$GER. g = \frac{Pem}{P(15 - 64)} \times 100$$

3. The Active Employment Rate which is calculated for the active population (employed+unemployed population who is searching for job) with the following formula.

$$GER. g = \frac{Pem}{Pa} \times 100$$

Where P denotes the whole statistical population (between 15-64 years old, active population a) and Pem represents employment rate of the population.

Human Development Index (HDI): It is a combined index for measuring the success of each country according to three basic criteria of human development: Long and healthy life, the access to the knowledge, and the welfare.

The new method of 2011 issue on November 4, 2010 and updated on June 10, 2011 was the combination of three following variables.

1. Long and healthy life: The life expectancy (Life Expectancy Index) at the beginning of birth through the following formula: LEI = LE - 20 / 82.3-20

2. Education Index (Education Index) : The mean years of schooling and the expected years of schooling through the following formula: EI = $\sqrt{MYSI * EYSI / 0.951}$

- Average education year index through the following formula: MYSI= MYS / 13.2

- Expected years of schooling index at the first education year through the following formula: EYSI= EYS / 20.6

3. The Income Index (Income Index) through the following formula: (II) = $\ln(GNI_{pc}) - \ln(100) / \ln(107.721) - \ln(100)$

Finally, the HDI of geometric average for three normal indexes are calculated through LE= $\sqrt[3]{LEI * EI * II}$.

Where, MYS refers to the mean years of schooling, EYS: expected years of schooling, and GNI_{pc}: Gross National Income in annual purchasing power parity.

2-2 Research Background

(Allen, F. et. al, 2012), in this study, they examine the relationship between the structure of financial systems and financial crises. Using cross-country data on financial structures and crises, they find that there is a significant short-term reversal in development of the banking sector and the stock market during both bank crises and market crashes, with the corporate bond

market moving in the same direction as bank credit. However, the results are significant for countries with market-based financial systems but not for countries with bank-based financial systems. Emerging markets have mainly bank-based financial systems, which may explain why these markets require more time to recover from economic downturns after a financial crisis. (Joseph J. Minarik, 2012), this paper provides an interpretation of how U.S. politics dulls the awareness of policymakers as to the danger of the current fiscal-policy deadlock in Washington, which could set in motion vicious cycles that could not be reversed. It hypothetically extrapolates that behavior to show how it could take the country beyond a tipping point into a financial abyss. The purpose is to show the urgency of honorable compromise to head off irreversible drastic consequences. (Andreas Horsch, 2012), Much has been written about the origins and contagious processes that led to the subprime crisis of 2007 first and to the financial crisis thereafter that characterize financial markets ever since. This retrospective is designed to illustrate that it has been human action in the very entrepreneurial or managerial sense that has caused the financial crisis to emanate and spread. From this viewpoint, responsible actors can be identified not only within financial intermediaries, but as bureaucratic and political entrepreneurs within public institutions as well. (Benmelech, E, et. al, 2013), does short-term debt increase vulnerability to financial crisis, or does short-term debt reflect – rather than cause – the incipient crisis? They study the role that short-term debt played in the collapse of the East Asian financial sector in 1997–1998. They alleviate concerns about the endogeneity of short-term debt by using long-term debt obligations that matured during the crisis. They find that debt obligations issued at least three years before the crisis had a negative, albeit sometimes insignificant, effect on the probability of failure. Their results are consistent with the view that short-term debt reflects, rather than causes, distress in financial institutions. (Mac an Bhaird, Ciarán, 2013), Supply and demand responses to financial crises result in fluctuations in credit flow to the private sector. Policy makers concerned with the sustainability and growth of viable firms should disaggregate these responses. Utilizing firm level data, this study investigates characteristics of firms applying for external finance before and after the financial crisis, along with characteristics of successful applicants. Notwithstanding changes in credit conditions, salient features of external financing demand endure across the period, including ownership, asset structure, age and size. Failure to secure debt in an earlier period does not deter firm owners from applying for loans in a subsequent period. Evidence suggests that the most

financially distressed firms are suffering the greatest consequences of the credit crunch.

3. Materials and Methods

3-1 Research Methodology

This research is applied based on the objective and among the descriptive-survey studies in terms of data collection. The library data is considered as the data collection tool for testing the hypotheses in this research. The statistical population in this study covers the selected countries of the Middle East including Iran, Kuwait, Oman, Pakistan, and Syria because they have available data for research period. The studied period includes 1997- 2011. The research data is collected from the reliable sources. The database of World Bank is applied for the inflation and employment rates, and United Nations Development Programme (UNDP) database for the human development. Furthermore, the values of financial crisis are calculated through the calculation by the following formula (Kamel, 2009).

$$IND = \left(\frac{\frac{1}{\sigma^2_{TCN}}}{\left(\frac{1}{\sigma^2_{TCN}} + \frac{1}{\sigma^2_{RES}} \right)} \right) * \Delta TCN + \left(\frac{\frac{1}{\sigma^2_{RES}}}{\left(\frac{1}{\sigma^2_{TCN}} + \frac{1}{\sigma^2_{RES}} \right)} \right) * (-1) * \Delta RES$$

Crisis = 1 if $IND \geq \beta_{IND} + \sigma_{IND}$, 0 Otherwise.

Where, the changes of TCN are equivalent to the weighted mean of official exchange rate changes and the changes of RES are equivalent to the changes of currency reserves in each country.

3-2 Research hypotheses

- There is a significant correlation between the financial crisis and inflation rate.
- There is a significant correlation between the financial crisis and the employment rate.
- There is a significant correlation between the financial crisis and the human development.

3-3 Conceptual model of Research

The conceptual model of research is shown in Figure 1. In this model, the global financial crisis was considered as the independent variable and the commonwealth are with the sub-indexes including the inflation and employment and human development rates as dependent variables.

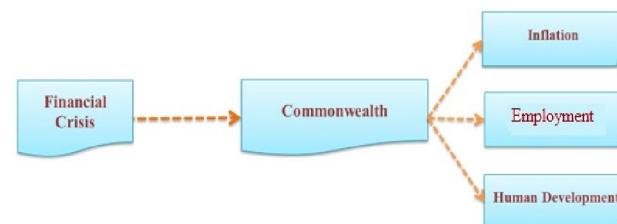


Figure (1) Conceptual model of research

4. Research findings

4-1 Chow test

Chow test (or not-pooled F-Test) determines whether the hybrid model is better or the fixed effects model. The following hypotheses are formulated for such this test:

H0: All intercepts are equal \Leftrightarrow Fixed effects model

H1: At least one of the intercepts is different from the rest of them \Leftrightarrow Hybrid model

The test statistic is defined as,

$$F = \frac{(\text{RSS}_{\text{LSDV}} - \text{RSS}_{\text{Pooled}})/(T-1)}{(1-\text{R}^2_{\text{LSDV}})/(NT-T-K)}$$

$$\frac{(\text{RSS}_{\text{Pooled}} - \text{RSS}_{\text{LSDV}})/(T-1)}{\text{Or } F = \frac{\text{RSS}_{\text{LSDV}}/(NT-T-K)}{\text{R}^2_{\text{LSDV}}}}$$

$$\text{Or } F = \frac{\text{RSS}_{\text{LSDV}}/(NT-T-K)}{\text{R}^2_{\text{LSDV}}}$$

Where, R^2_{LSDV} and RSS_{LSDV} are the coefficient of determination and the sum of squared residuals from the not-pooled model (FEM), respectively, and $\text{R}^2_{\text{Pooled}}$ and $\text{RSS}_{\text{Pooled}}$ are the coefficient of determination and the sum of squared residuals from the pooled model. The numbers of sections are shown with the symbol "N" and the length of time (i.e. years) with the symbol T. Chow test results are shown in Table.

Table (1) Chow test results

Redundant Fixed Effects Tests

Pool: Untitled

Test period fixed effects

Effects Test	Statistic	d.f.	Prob*
Period F	0.865268	(14.57)	0.5985
Period Chi-square	14.452690	14	0.4166

As seen, the values of Prob. are greater than 0.05, thus H0 is not rejected. Therefore, the fixed effects model is applied in this paper.

4-2 Unit root test (panel data)

If the variables of time series applied in estimating the model parameters are not persistent, the

obtained regression is probably false, thus application of F and t statistics will be misleading. Therefore, the data is initially tested according to being persistent in order to prevent the false regression. The results of unit root tests for all variables are shown in Table 2 in order to avoid increasing the number of tables.

Table (2) The results of reliability test of research variables

Pool unit root test: Summary				
Series: CRISISIR, CRISISKU, CRISISOM, CRISISPA, CRISISSY				
Date: 10/23/13 Time: 10:25				
Sample: 1997 2011				
Exogenous variables: Individual effects				
Automatic selection of maximum lags				
Automatic selection of lags based on SIC: 0				
Newey-West bandwidth selection using Bartlett kernel				
Balanced observations for each test				
Method	Statistic	Prob **	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.69672	0.0035	2	28
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.68580	0.0459	2	28
ADF - Fisher Chi-square	9.71225	0.0456	2	28
PP - Fisher Chi-square	10.5457	0.0322	2	28

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

As shown, the value of Prob. Is smaller than 0.05 for all cases of calculated panel data unit root test (Levin, Lin & Chu t * and Im, Pesaran and Shin W-stat and ADF - Fisher Chi-square and PP- Fisher Chi-

square). According to the test statistic, it should be noted that only the ADF - Fisher Chi-square and PP - Fisher Chi-square tests have the results greater than

1.96. Therefore, the results of test variables at the target level are approved through PP- Fisher Chi-square test.

4-3 Estimating the model with fixed effects

The results of estimating the model by the fixed effects method and Eviews software are presented in Table 3.

Table (3) The results of estimating the model with the fixed effects

Period fixed effects test equation:

Dependent Variable: CRISIS

Method: Panel Least Squares

Date: 10/23/13 Time: 09:57

Sample: 1997 2011

Included observations: 15

Cross-sections included: 5

Total pool (balanced) observations: 75

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INFLATION	-0.000144	0.004149	-0.034704	0.9724
EMPLOYMENT	0.011907	0.003160	3.767469	0.0003
HDI	0.311902	0.233557	1.335446	0.1859
R-squared	0.046284	Mean dependent var		0.800000
Adjusted R-squared	0.019791	S.D. dependent var		0.402694
S.E. of regression	0.398689	Akaike info criterion		1.037907
Sum squared resid	11.44460	Schwarz criterion		1.130606
Log likelihood	-35.92150	Hannan-Quinn criter.		1.074921
Durbin-Watson stat	1.578481			

The results of estimating the model are as follows,

- The value of R^2 statistics for the coefficient of determination in the model implies that 4.6 percent of variation in the dependent variable (global financial crisis) can be explained by the explanatory variables (Inflation, employment and human development).

- According to the results of estimating the Student's t-test for human development and inflation variables less than 1.96 and also the values of Prob. less than 0.05, it can be concluded that these two variables have no significant relationship with the financial crisis.

- With one unit increase in the employment, the amount of financial crisis is increased equal to 0.011907 units.

- Durbin-Watson statistics less than 1.96 indicates that the autocorrelation between the model components is rejected.

5. Conclusion and Suggestions

This article investigates the correlation between the global financial crisis and the selected indexed of commonwealth according to the available statistics of 5 chosen countries from the Middle East after investigating the background and the indexes associated with the commonwealth, and collecting and evaluating the research data and analyzing them. The implemented method of this article and some of its results are consistent in some findings with the results

of previous studies such as (Moshiri, S., 2009), (Afzali, M., 2009), (Fallah- Shams M.F., 2009), (Soleimani-Shayesteh, A., 2009).

Research result

According to the main result of this study, only the employment variable has the significant relationship with the global financial crisis and this relationship covers only 4/6 required variables in the field of global financial crisis. Furthermore, the impact factor of this relation indicates that with one unit increase in the employment, the financial crisis is enhance equal to 0.011907 units in the selected countries and this relationship naturally has the negative impact.

Suggestions

- ✓ Leading the bank and wandered investment towards the industries with higher added value than the average monetary value of market.

- ✓ Controlling the currency market and speculation and preventing the existence of brokers in this sector.

- ✓ Creating the unreal crisis in the market and supporting the agriculture and industrial production by granting the subsidies to the production and reducing the prices.

- ✓ Controlling the financial markets through facilitating the lending conditions and intensifying the control of granted loans expenses.

- ✓ Balancing the profitability of capital markets such as real estate, stocks, gold, etc, through effective expansionary and tightened monetary policies in any sector.
- ✓ Financial guidance and support of increased employment in sectors with higher added value.
- ✓

Suggestions for future research

- ✓ Investigating the correlation between the effect of employment and the financial crisis in Iran in terms of development and support of industry sector.
- ✓ Investigating the correlation between the effect of employment and the financial crisis in Iran in terms of development and support of agriculture sector.
- ✓ Investigating the correlation between the effect of employment and the financial crisis in Iran in terms of development and support of cooperatives.

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