What Happened to Turkish Currency Markets after the 2008 Financial Crisis? Presenting a Model of AMOS Path Diagram

R. Ceyda Üvez

Assist. Prof., PhD, Department of Business Administration
Marmara University, Anadolu Hisar Campus, Istanbul, Turkey
E-mail: ceydaozturk@marmara.edu.tr
Tel: +90 216 308 22 26 (1159)

Aslı Aybars

Department of Business Administration, Marmara University
Anadolu Hisar Campus, Istanbul, Turkey
E-mail: ceydaozturk@marmara.edu.tr
Tel: +90 216 308 22 26 (1131)

Abstract

This paper aims to search the relations of two different types of variable sets with the financial crises of Turkey. The main macroeconomic variables - first set of variables - have been examined via the global financial crisis of 2008 and the research shows how these indicators have affected the financial crisis. Second set of the variables are main money market indicators that are considered to be affected by the financial crises. Based on the quarterly weighted average interest rates on deposits, real effective exchange rates and international reserve data between the years 2006 and 2011, financial pressure index on Turkish economy has been computed to proxy for the country specific financial crises. The relation between relative macroeconomic variables and financial crisis of 2008 and the behavior of currency related variables in Turkey are determined using quarterly data between 2006 and 2011. The relations between the indicators have been analyzed by using AMOS (Analysis of Moment Structures), a structural equation modeling (SEM) software where the model is presented in an intuitive path diagram to show hypothesized relationships among variables.

Keywords: Financial crises, money market variables, Turkish financial markets, AMOS (Analysis of Moment Structures).

1. Introduction

The last few decades witnessed numerous financial crises that have significant long lasting influences on the global economy. Two prominent types of those crises can be classified as banking crises and currency crises, whereas stock market crashes, financial bubbles and sovereign defaults can also be considered as financial crises. The major reason of a banking crisis, which may also be referred to as a bank run, is the sudden withdrawal of the deposits by the bank customers, who believe that the bank will not be able to stay solvent (Porter, 2009). The devastating consequences of a bank run may be aggravated by the existence of contagion, whereby crisis disperses from a few banks to numerous

others including those in other countries or regions. A currency crisis or balance of payments crisis occurs due to a speculative attack resulting in the devaluation of the local currency or a decline in the foreign exchange reserves. The 1990s have specifically been hit by currency crises, namely; the European Exchange Rate Mechanism Crisis in 1992 - 1993, the Mexican Crisis in 1994 – 1995, the Asian Financial Crisis or the IMF crisis that was caused by the collapse of the Thai baht in 1997 and the 1998 Russian financial crisis. The currency crisis that occurred in Turkey in 1994 is considered to have been caused by a large increase in imports without an adequate coupling increase in exports, a productivity decrease, borrowing from external sources to finance investments and the need for further borrowings for debt repayments due to the high interest rates. The decrease in Turkey's credit rating and the belief in the overvaluation of the Turkish Lira triggered the demand for foreign currency resulting in the devaluation of local currency by 13.6% in 1994 (Boduroglu and Erenay, 2007).

In early 2000s the financial turmoil in particular countries continued. To name a few, Turkey had the currency and banking crises in 2001 and 2002 together with Argentina experiencing a crisis during the same periods. As part of the IMF exchange rate based stabilization program that was implemented at the end of 1999, the crawling peg exchange rate regime was agreed to be applied between January 2000 and June 2001 in Turkey. According to Evrensel (2004), the unsuccessful results of the various stabilization programs occur due to inadequate implementation of primary targets of the associated stabilization programs during the program years. Furthermore, the improvements that occur in the balance of payments and reserves cannot be maintained in the post program years.

November 2000 financial crisis, which occurred in the middle of the IMF stabilization program, was a typical example of liquidity shortage. In order to attract TRY demand for foreign exchange, interest rate was increased by using the foreign exchange reserves. However, foreign exchange could not be decreased because of the lack of necessary reserves, which if sufficient would prevent the financial crises. According to Özatay and Sak (2002), the fragility of the banking system arising from maturity mismatch due to the inadequate long term local currency borrowings of the domestic banks together with an increase in the amount of non-performing loans was the major cause of this crisis. The lack of timely structural reforms constituting a transparent and viable banking system adds to the severity of the problem. February 2001 financial crisis was a sample of domino effect with political factors rather than economic ones. After the crisis, all macroeconomic variables were affected in a negative way. Then, the last global financial crisis hit Turkey on February 2008 affecting the money market variables as well as the macroeconomic variables.

The rest of the paper is structured as follows: The next section provides the data and methodology utilized together with descriptions regarding the variables. The third section is dedicated to the findings of the empirical analyses and the last section focuses on the concluding remarks.

2. Data and Methodology

The quarterly secondary data in this research has been collected from various sources like Istanbul Stock Exchange (ISE), Central Bank of the Republic of Turkey (TCMB), Turkish Statistical Institute (TurkStat).

Firstly, significantly important money market and main macroeconomic performance indicators in the Turkish economy are searched and then accumulated based on literature and previous empirical studies. Consequently, their relationships with the financial crises are evaluated. Necessary variables are selected while unrelated ones are eliminated.

We have decided to search those relations and modeled them in two path diagrams with AMOS. In the first one, we looked after the impact of different macroeconomic variables on financial crises in Turkey. In the second model of AMOS, the effect of financial crises on different money market indicators has been studied.

2.1. AMOS Model of the Research

AMOS; "**A**nalysis of Moment Structures", implements a general approach to data analysis which is known as structural equation modeling (SEM) and known as analysis of covariance structures (AMOS™ 19.0 User's Guide by SPSS, James L. Arbuckle).

This approach includes, many well known conventional techniques, including the general linear model and common factor analysis. As by AMOS, multiple models can be fitted in a single analysis, each pair of models in which one model can be obtained by placing restrictions on the parameters of the other can be also examined. AMOS accepts a path diagram as a model specification and displays parameter estimates graphically on a path diagram.

2.2. Variables and Explanations

Concluding on various macro economic performance indicators in the Turkish economy within the line of literature review, following variables are used in the model. These variables in AMOS model are then classified as observed via unobserved, and as endogenous via exogenous.

When parameter estimates are displayed on the path diagram and when means and intercepts are explicit model parameters, then result is a parameter estimate associated with object. Result is an intercept if object is an endogenous variable or it is a mean if object is an exogenous variable.

2.2.1. "Observed Endogenous" Variables
a. "Financial Pressure Index (FPI)"
Based on the quarterly weighted average interest rates on deposits, real effective exchange rates and international reserve data between the years 2006 and 2011, financial pressure index on Turkish economy determines the financial crises. Eichengreen et al. (1994, 1996) define speculative attacks or crises as large changes in exchange rates, interest rates and international reserves and develop a speculative pressure index using these fundamentals. Thus, based on their work, FPI is calculated as below;

FPI = (% change in interest rates) + (% change in real effective exchange rate) – (% change in net international foreign exchange reserves)

On our first path diagram FPI is an observed endogenous variable. However in the second graph it becomes an observed exogenous variable as it is considered to affect the money market indicators.

b. "Istanbul Stock Exchange 100 (ISE 100) Index Closing Prices"
The ISE 100 index closing prices are accumulated quarterly in thousand TL to provide an indication of the stock market behavior with regard to the financial crises.

c. "Istanbul Stock Exchange Trading Volume"
Trading volume of ISE is also gathered on quarterly basis in thousand TL as a proxy for the effect of the financial crises on the traders' activity. As stated by Yüksel (2002), trading volume has been utilized in literature as an indicator of the time-series properties of financial asset returns.

d. "Gold Prices"
The quarterly data relating to the gold prices are collected in TL. This variable is chosen to be one of the money market indicators since, as also stated by Shafiee and Topal (2010), gold prices demonstrate a unique behavior when compared to other mineral commodities, which can be understood from the 6% increase in price of gold while that of other key minerals and equities fell by 40% during the 2008 financial crisis.

e. "Inflation"
Inflation rate in Turkey is accumulated on a quarterly basis.

2.2.2. "Observed Exogenous" Variables
f. "Current Account to Gross Domestic Product" Ratio (CA/GDP Ratio)
The ratio of quarterly average current deficit in Turkey to quarterly GDP by current prices on expenditure base in terms of currency unit. Being one of the most important traditional macroeconomic indicators of a potential financial crisis in a developing country, persistent current account deficit of 4% or more of GDP is often regarded as unsustainable in the long run and given as a warning signal of an expected crisis. According to open economy macroeconomic theory, current account deficit is the result of an excess of domestic investments over domestic savings and of an excess of government expenditures over revenues. This indicator implies not only the tendency of the emerging economies' financing the deficits with foreign capital inflows but also when the ratio drops to negative values more than 4% indicates the probability of a new financial crisis. CA is financed by capital and financial account surplus where capital account involves transfers of assets like the sale of patents, copyrights or selling embassy land. CA to GDP ratio more leads to financial contagion referring to the process by which a shock in one part of the financial system spreads to other parts through a series of linkages. External stability is the achievement of a sustainable net flow of resources corresponding to this ratio among countries. Decreasing trend in the CA as a result stabilize the value of the country's currency. It is important to point out that borrowing overseas is not bad if they are diverted to productive use and governments adapt right policies to handle major changes in economic conditions. What may cause the foreign exchange rate crisis is the loss of investors' confidence in an economy's capacity to sustain existing trends. This usually leads to government action to impose harsh restrictions on spending and credit.

g. "Gross External Debt to GDP" Ratio
The ratio of the quarterly gross external debt to GDP in currency units. Financing the development by external debt denominated in foreign currency usually leads to depreciations. The ratio is showing both the probability of having debt crises and currency crises in the economies and again related with the stability of the economy. Large current account deficits resulting with high external debt lead to the country's insolvency and inability to borrow any further. This vicious cycle has been stressed in the study of Atkeson and Rios-Rull (1996) concerning the case of Mexico with reference to trade deficit, capital account, balance of payment policies and international debt. In their study regarding the currency crises in emerging markets, Hale and Arteta et al. (2009) construct certain indexes as indicators of various economic dimensions. The ratio of foreign debt to GDP is used as part of the generation of an index concerning the countries' long-run macroeconomic prospects.

h. "Foreign Direct Investment to GDP" Ratio
The ratio of quarterly foreign direct investment inflows to GDP. The work of Ismihan et al. (2008) utilizes this ratio as component of the economic globalization index besides the ratios of foreign trade to GDP and gross private capital flows to GDP. Another index developed by Drehner (2006) concerning the actual flows as an indicator of economic integration uses trade, foreign direct investment, portfolio investment and income payments to foreign nationals and capital account employed as a percentage of GDP. The ease to attract foreign capital is regarded to be an indicator of the degree of a country's financial development and it demonstrates the openness of the financial account (Hale and Arteta et al., 2009).

i. "Total Domestic Credits to GDP" Ratio
The ratio of quarterly domestic credits to GDP. The above stated work of Hale and Arteta et al. (2009) also utilizes the ratio of total domestic credits to GDP in the computation of the index to evaluate the

countries' investment climate and monetary stability. This ratio is also classified as one of the determinants of financial liberalization (Kaminsky and Reinhart, 1999). Cesmeci and Onder (2008) determine domestic credit volume to GDP to be one of the fundamentals affecting the currency crises as part of their study concerning Turkey. From another perspective, lending booms that result due to monetary expansion and credit growth can be quantified by the mentioned ratio and are regarded to be explanations for the various episodes of the currency crises due to a possibly higher ratio of banks' bad loans to total assets (Gunsel et al., 2010).

j. "Total Trade to GDP" Ratio

The ratio of the sum of quarterly import level and export level to GDP. According to Brahmbhatt (1998), cross-border transactions can mainly be classified into four groups, namely, international trade, foreign direct investment, financial integration encompassing portfolio investments or lending and borrowing, and labor migration. He proposes two methods for the measurement of global economic integration, whereby the first one focuses on the prerequisites of globalization like barriers and official controls, and the second one on the economic outcomes like the extent of trade and flows of capital. Arribas et al. (2008) focus on the trade data of a set of 59 countries to measure globalization of trade by focusing on degree of openness, total connection and integration. Macerinskas and Pipinyte (2003) emphasize the ratio of total trade to GDP to be the most frequently used proxy of international trade as it provides an indication about the degree of competition that a country faces both in the domestic and foreign markets. This ratio has also been used by the A. T. Kearney/Foreign Policy Magazine Globalization Index, which is regarded to be the first attempt to evaluate globalization with a multidimensional perspective, as an indicator of economic integration.

k. "M2 to Net International Reserves" Ratio

The ratio of M2 to foreign exchange reserves. The level of the quarterly average amount of M2 is stated as TRY. M2 includes the currency in circulation; some deposit items, commercial and savings sight deposits (TÜİK-Statistical Indicators). Net international foreign reserves are also quarterly average values. These indicators assess the short term liquidity and convertibility of the domestic currency. When this ratio increases due to the loss of international reserves, it is an indicator of an upcoming financial crisis. In the case of a currency crisis, this ratio can be used as a proxy to denote whether the central bank has sufficient international reserves to satisfy the demands of the individuals who intend to convert their domestic currency deposits into foreign currency (Calvo and Mendoza 1996). Thus, this ratio is an indicator of reserve adequacy. Sachs et al. (1996) mentions the existence of two alternatives in the event that a bank run occurs with the expectations of potential currency devaluation. In the first course of action, the central bank can provide domestic credit to commercial banks for the agents to withdraw and convert into foreign exchange resulting in the devaluation of domestic currency. Unless the central bank extends this domestic credit, bank defaults may occur contracting the economy. Thus, in order to preserve the banking system, the central bank may choose the first alternative and the degree of devaluation depends on the relative proportion of M2 to the international reserves.

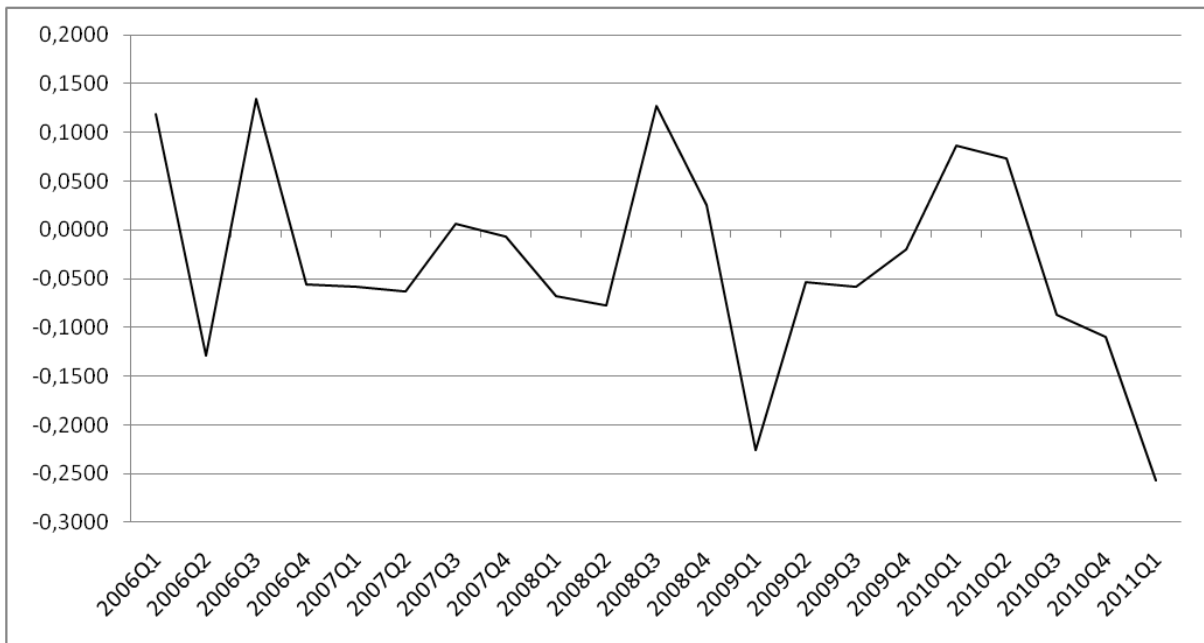### 2.3. FPI and Financial Crises in Turkey

The data relating to the FPI is accumulated on a quarterly basis and is used to provide an indication of the financial crises in the history of Turkey. The country-specific FPIs are calculated with the changes in the exchange rates and the international reserves where these variables encompass both successful and unsuccessful attacks especially on emerging currencies. From the below graph 1, especially the February 2001 financial crisis can be observed definitely.

Graph 1: Financial Pressure Index of Turkey between 2000 and 2006
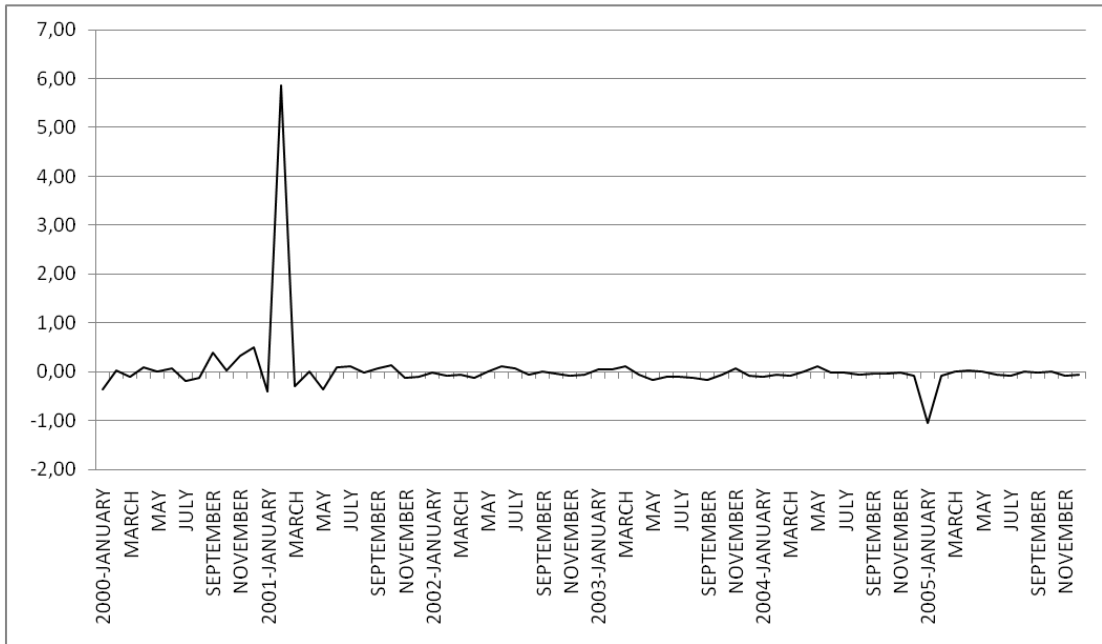
The FPI value in the last quarter of 2000 suddenly increased from 0.027 to 0.287, which shows the first unexpected crash, and then it increased to 1.72 in the first quarter of 2001, specifically in February, during the financial crisis.

Graph 2: Financial Pressure Index of Turkey between 2006 and 2011

The Global Financial Crisis of 2008 affected Turkey in the third quarter of 2008 when the FPI increased to 0.11 from negative values. The financial crises in 2006 and the first quarter of 2010 can also be noted from the above graph. There exists a significant drop in FPI since the beginning of the third quarter of 2010.

3. Findings of the Research
3.1. The AMOS Model

The AMOS model utilized in this study is a non recursive model where some variable has an indirect effect on itself. Related to the model, AMOS program concludes that "minimum was achieved" which means that the model was fitted successfully with chi-squares, the degrees of freedom levels and the probability levels.

Model evaluation is one of the most unsettled issues connected with structural modeling. Many of statistics, besides the value of the discrepancy function at its minimum, have been proposed as measures of the merit of a model. AMOS calculates most of them and fit measures are reported for the model specified by the user.

Among the goodness of fit measurements CMIN/DF is used firstly in the literature. This ratio is the minimum discrepancy, divided by its degrees of freedom. According to AMOS guide, several writers have suggested the use of this ratio as a measure of fit. For every estimation criterion, the ratio should be close to 1 for correct models. It is accepted that a ratio greater than 2 definitely represents an inadequate fit.

Besides the CMIN, some other measures of fit, NFI, RFI, IFI, TLI, and CFI require a "null" or "baseline" bad model against which other models can be compared. Each null model gives rise to a different value for NFI, RFI, IFI, TLI, and CFI. The Bentler-Bonett (1980), normed fit index (NFI), accepts models with overall fit indices of less than 1. Also, Bollen's (1986) relative fit index (RFI) verifies that values close to 1 indicate a very good fit. Like RFI, Bollen's (1989) incremental fit index (IFI) accepts models with values close to 1 to indicate a very good fit. The fourth one, the Tucker-Lewis coefficient was discussed by Bentler and Bonett in the context of analysis of moment structures, and is also known as the Bentler-Bonett non-normed fit index (NNFI). The typical range for TLI lies between 0 and 1, but it is not limited to that range. TLI values close to 1 indicate a very good fit. The comparative fit index (CFI), is identical to the McDonald and Marsh (1990) relative no centrality index (RNI) and it accepts that the CFI is truncated to fall in the range from 0 to 1. CFI values close to 1 indicate a very good fit then.

The root mean square error of approximation (RMSEA) is accepted as the most powerful model fit measurement. The columns labeled LO90 and HI90 contain the lower limit and upper limit of a 90% confidence interval for the population value of RMSEA. AMOS accepts that a value of the "RMSEA ≤ 0.05" would indicate a close fit of the default model in relation to the degrees of freedom. However some literatures also accept "RMSEA ≤ 0.08".

The numbers on the arrows are the estimates of standardized regression weights. These numbers denote that when one variable goes up by 1 standard deviation, the effected one goes up or down by calculated much standard deviations. In finance it is used as a method of assessing how variable or volatile a value is likely to be. So that standard deviation is applied in finance to measure the volatility which is also accepted as historical volatility. Standard deviation can also be calculated as a measure of the riskiness. The higher the standard deviation, the greater the relative riskiness is because of the uncertainty in the amount.

According to all these measurements, our first path diagram of AMOS model is reliable and significant.

3.2. Path Diagrams

The figure below presents the path diagram-1 with results of the goodness of fit measurements.

Figure 1: Presented Path Diagram of AMOS-1
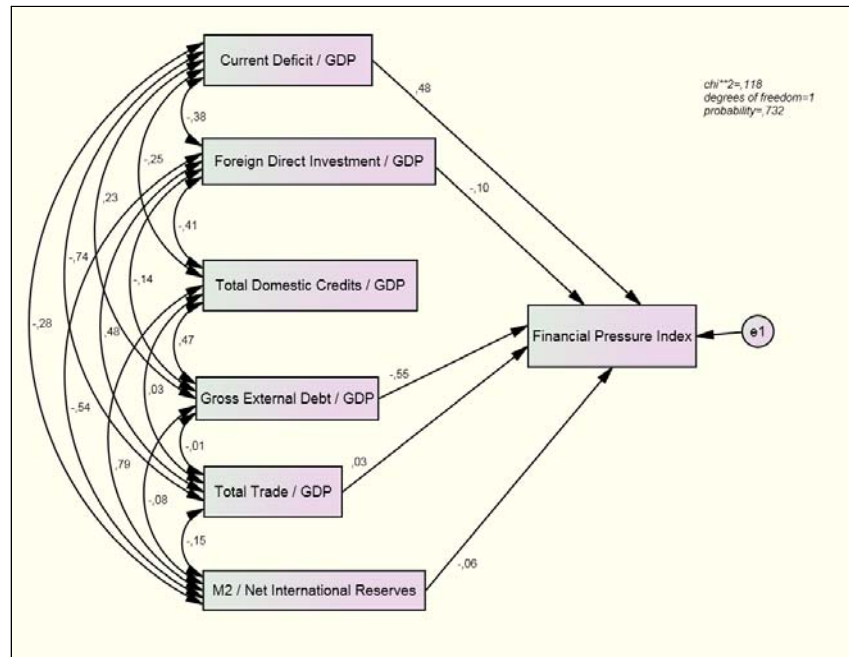
The first path diagram is statistically significant as minimum was achieved with the chi-square of 0.118; with degrees of freedom of 1 and with the probability level of 0.732. According to AMOS program, probability level should be greater than 0.05. Other accepted and selected goodness of fit measurements are also significant as follows:

CMIN comparisons	NPAR	CMIN	DF	P	CMIN/DF
Our model	34	0.118	1	0.732	0.118

Baseline comparisons	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Our model	0.999	0.970	1.008	1.302	1.000

RMSEA comparisons	RMSEA	LO 90	HI 90	PCLOSE
Our model	0.000	0.000	0.374	0.740

The numbers on the arrows in figure are the estimates of standardized regression weights. These numbers are explaining that when one of the observed exogenous variables in our figure goes up by 1 standard deviation, the effected variable, FPI goes up or down by written calculated much standard deviations.

On our first AMOS path diagram, among our "observed exogenous" variables "current deficit to GDP" and "gross external debt to GDP" ratios have the greatest direct effect on FPI with 0.48 and 0.55 values respectively. If "current deficit to GDP" and "gross external debt to GDP" ratios are kinds of economic stability ratios which also give us the signals of coming crises in the long run; then it is obvious that deficit increases or external debt increases will directly affect the financial crises negatively not only today but also in the future.

After this first group of ratios showing mostly the stability of the economy, the second groups of ratios that affect FPI are "FDI to GDP" and "total trade to GDP" ratios with -0.10 and 0.03 respectively. "FDI to GDP" ratio is accepted as an indicator of a globalization, an indicator of the degree of a country's financial development and the openness of the financial account. When this ratio rises, FPI will decrease by 10%, which indicates one of the positive effects of economic globalization.

On the other hand "total trade to GDP" is a ratio which shows the degree of competitiveness of the economy in the global world and has only 3% effect on the financial crises.

　　　　When we examine the results of "current deficit to GDP" ratio and "FDI to GDP" ratio, we regard the fact that the first indicator implies the tendency of the emerging economies' financing the deficits with foreign capital inflows for Turkey. Otherwise the effect of "FDI to GDP" ratio should be greater than -10% naturally. The covariance between these two ratios is -0.38.

　　　　"Total domestic credits to GDP" ratio which is generally used to evaluate the countries' investment climate and monetary stability or classified as one of the determinants of financial liberalization has however no effect on financial crises of Turkey.

　　　　When "M2 to international reserves" ratio increases due to the loss of international reserves, it is accepted as an indicator of an upcoming financial crisis. More, in the case of a currency crisis, this ratio can be used as an indicator of reserve adequacy. Thus, the ratio having -0.06 effect on FPI, indicates low and negative effect on the financial crises of Turkey.

Figure 2: Presented Path Diagram of AMOS-2
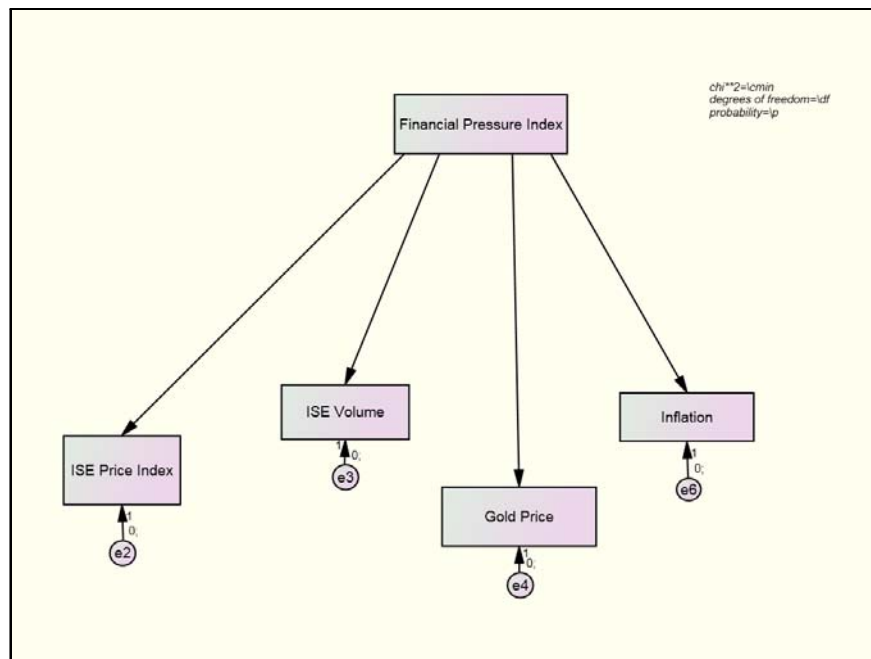
　　　　Our second path diagram model is not statistically significant according to selected goodness of fit measurements as follows. Thus, there is no significant effect of the financial crises on the selected money market variables between 2006 and 2011 periods when quarterly data is used.

CMIN comparisons	NPAR	CMIN	DF	P	CMIN/DF
Our model	14	86.516	6	0.000	14.419

Baseline comparisons	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Our model	0.048	-1.381	0.051	-1.654	0.000

RMSEA comparisons	RMSEA	LO 90	HI 90	PCLOSE
Our model	0.733	0.600	0.873	0.000

　　　　Non significant results mean that the chosen money market variables have no effect on Turkish financial crises or in other words, those variables totally behave free from the financial crises in the

economy. Moreover, we have searched the same relations on the FPI with a lag in the data by thinking of three months delay. However, the model is still not statistically significant.

CMIN comparisons	NPAR	CMIN	DF	P	CMIN/DF
Our model	14	89.350	6	0.000	14.892

Baseline comparisons	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Our model	0.016	-1.460	0.017	-1.749	0.000

RMSEA comparisons	RMSEA	LO 90	HI 90	PCLOSE
Our model	0.777	0.639	0.924	0.000

4. Conclusion

According to us, there are two important findings in this research. First one is the low effect (3%) of "total trade to GDP" ratio on the financial crises of Turkey between the years of 2006 and 2011. As Macerinskas and Pipinyte (2003) have also stated, this ratio pictures the increasing trend of integration of the domestic markets with the foreign markets over time. When the ratio rises, the globalization will also rise, so that the effect of the global financial crises on the economy will increase. Thus, Turkey being an emerging economy with having only 3% of "total trade to GDP" ratio, which denotes the country's not much being integrated with the global markets, has not been much affected by the consequences of the recent global financial crisis of 2008. Other findings that depend on the ratios "current deficit to GDP" and "gross external debt to GDP" also support this concluding remark. This points out that the reason of a financial crisis in Turkey is hugely because of its high level of current deficit and financing this deficit with external debt and foreign direct inflows.

Second important finding is the statistically non significant research result of our second AMOS path diagram. However even with or without three months of delay, we could not find any effect of financial crises on the selected money market variables. This concluding remark might be explained by inefficiency of the money markets which can be another research topic.

References

[1] A.T. Kearney, Inc. Global Policy Group & Foreign Policy Magazine, 2001. "Measuring Globalization", *Foreign Policy*, Vol. 122, pp. 56-65.
[2] Arribas, I., Perez, F., and Tortosa-Ausina, E., 2008. "Measuring Globalization of International Trade: Theory and Evidence", *World Development*, Vol. 37, No:1, pp. 127-145.
[3] Atkeson, A., Rios-Rull, V., 1996. "Balance of Payments and Borrowing Constraints: An Alternative View of Mexican Crisis", *Journal of International Economics*, Vol. 41, No:3-4, pp. 331-349.
[4] Bentler, P. M., Bonett, D. G., 1980. "Significance Tests and Goodness of Fit in the Analysis of Covariance Structure", *Psychological Bulletin*, Vol. 88, pp. 588-606.
[5] Boduroglu, İ., Erenay, Z., 2007. "A Pattern Recognition Model for Predicting a Financial Crisis in Turkey: Turkish Economic Stability Index*, The *International Journal of High Performance Computing Applications*, Vol. 21, No: 1, pp. 5-20.
[6] Bollen, K. A., 1986. "Sample Size and Bentler and Bonett's Non-normed Fit Index", *Psychometrika*, Vol. 51, pp. 375-377.
[7] Bollen, K. A., 1989. "A New Incremental Fit Index for General Structured Equation Models", *Sociological Methods and Research*, Vol. 17, pp. 303-316.
[8] Brahmbhatt, M. 1998. "Measuring Global Economic Integration: A Review of the Literature and Recent Evidence". Working paper, The World Bank, Washington

[9]   Calvo, G. A., Mendoza, E. G., 1996. "Petty Crime and Cruel Punishment: Lessons from the Mexican Debacle", *The American Economic Review*, Vol. 86, No:2, pp. 170-175.

[10]   Cesmeci, O., Onder, A. O., 2008. "Determinants of Currency Crises in Emerging Markets-The Case of Turkey", *Emerging Markets Finance & Trade*, Vol. 44, No:5, pp. 54-67.

[11]   Drehner, A., 2006. "Does Globalization Affect Growth? Evidence from a New Index of Globalization", *Applied Economics*, Vol. 38, pp. 1091-1110.

[12]   Eichengreen, B., Rose, A. K., and Wyplosz, C., 1994. "Speculative Attacks on Pegged Exchange Rates: An Empirical Exploration with Special Reference to the European Monetary System", NBER Working paper Series, No:4898.

[13]   Eichengreen, B., Rose, A. K., and Wyplosz, C., 1996. "Contagious Currency Crises", *The Scandinavian Journal of Economics*, Vol. 98, No:4, pp. 464-484.

[14]   Evrensel, A. Y., 2004. "IMF Programs and Financial Liberalization in Turkey", *Emerging Markets Finance and Trade*, Vol. 40, No: 4, pp. 5-19.

[15]   Gunsel, N. R., Tursoy, T., and Rjoub, H., 2010. "An Empirical Analysis of the Currency Crises, Fundamentals and Speculative Pressure, African Journal of Business Management", Vol. 4, No:6, pp. 972-978.

[16]   Hale, G., Arteta, C., 2009. "Currency Crises and Foreign Credit in Emerging Markets: Credit Crunch or Demand Effect? ", *European Economic Review*, Vol. 53, pp. 758-774.

[17]   Ismihan, M., Olgun, H., and Utku-Ismihan, F. M., (2008), "Globalization of National Economies", *International Research Journal of Finance and Economics*, Issue 14, pp. 68-81.

[18]   Kaminsky, G. L., Reinhart, C. M., 1999. "The Twin Crises: The Causes of the Banking and Balance-of-Payments Problems", *The American Economic Review*, Vol. 89, No:3, pp. 473-500.

[19]   Macerinskas, J., Pipinyte, A., 2003. "Globalization Measurement Methodology", *Organizaciju Vadyba, Sisteminiai Tyrimai*, Vol. 28, pp. 71-85.

[20]   McDonald, R. P., and Marsh, H. W., 1990. "Choosing a Multivariate Model: Noncentrality and Goodness of Fit", *Psychological Bulletin*, Vol. 107, pp. 247-255.

[21]   Özatay, F., Sak, G., 2002. "The 2000-2001 Financial Crisis in Turkey", http://www.brookings.edu/es/commentary/journals/trade/papers/200205_ozatay.pdf

[22]   Porter, M., 2009. "Financial crises: A Detailed View on Financial Crises between 1929 and 2009", MLP, 1st International Edition, Hamburg, Germany

[23]   Sachs, J. D., Tornell, A., and Velasko, A., 1996. "Financial Crises in Emerging Markets: The Lessons from 1995", *Brookings Papers on Economic Activity*, Vol. 1, pp. 147-215.

[24]   Shafiee, S., Topal, E., 2010. "An Overview of the Global Gold Market and Gold Price Forecasting", *Resources Policy*, Vol. 35, pp. 178-189.

[25]   Yüksel, A., 2002. "The Performance of the Istanbul Stock Exchange during the Russian Crisis", *Emerging Markets Finance and Trade*, Vol. 38, No: 6, pp. 78-99.

Web Sources

<http://evds.tcmb.gov.tr/yeni/cbt-uk.html >

<www.ise.org/data.htm>

<www.ise.org/data/foreign participation>