TYPES, CAUSES, WITH MODELS AND LEADING INDICATORS OF FINANCIAL CRISIS: THE CASE OF TURKEY

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ABSTRACT

This study focuses on the concept of crisis, financial crisis, types, causes, patterns are described. Key leading indicators selected, a leading indicator of this movement is described the situation in Turkey.

Keywords: Financial Crises, Financial Crises Models, Leading Indicators

INTRODUCTION

Crisis concept in the economics literature, distress, depression, recession, power era or the Great Depression of terms such as Money and stating in general terms the country's economy significantly to shake a sudden and unexpected situations that arise in the general phenomena of the resulting economic crisis is expressed as. According to the concept of economic crisis, its formation can be handled in two separate locations; The first is the Corporate Sector Crisis. These crises, inflation in goods and services markets crisis and recession crisis, the labor market as the unemployment crisis arises. Secondly, more specific problems arising in the money market is referred to as Financial Crisis [57].

The concept of financial crisis in the world with the financial crisis has become more discussed in the literature. In fact, more frequent intervals a result of the crisis the financial crisis emerged, leading indicators specified in the model and the predictability of the financial crisis has eased.

In this study, in general, the crisis can be explained by some of the leading indicators are expressed. As the general concept of the scope of this study will be released crisis, its causes, types and models will be specified. Finally, the literature given the situation in Turkey after the 2000-2012 year will be explained with the help of the basic leading indicators.

1.Concept of Crisis

In Greek the concept of crisis is called “crisis”. In Compact Oxford English Dictionary [4], crisis expressed as significant period of difficulty and danger. crisis concept, quick changes that require adaptation is expressed as [31]. Concept of crisis or collapse of the society in a country or between countries or seen difficult times in the life of an organization, depression, depression is expressed as crisis in Turkish Language [48]. Institution Mishkin (1999), financial crisis in financial markets, which are not expressed symmetrically, with moral hazard and adverse selection causes the effective return of funds to productive investments, refers to it as failure.

Friedman and Schwartz (1963), explain the concept of the financial crisis in monetary terms. The move comes with the monetary aggregates implies that the cyclical properties. Again in 1973, in their study the cyclical properties of monetary aggregates and incometransfer mechanisms between the bond issue in the process of reaching an equilibrium timeout frequent targets do they associate with. This state of the money supply variable income has led to undulate [15].

Can be expressed by Krugman there is no definition of the crisis. But Edward and Santenello crises were connected to a notable decrease in the value of currency [11].

Keynes, rising conjecture crisis environment, economic agents often by violent and sudden unforeseen and often refers to it as an event [40].

The concept of economic crisis, any goods, services or the foreign exchange market can be considered a change in price or quantity occur beyond the severe fluctuations can be expressed as [28].
2. Types of Crisis

To qualify as a development crisis is multidimensional, first, all of which may affect the economic activity that is required. Above all, a future of uncertainty in the markets should be expected. These actors in the economy with uncertainty and inability to determine the future will result in inability to fulfill their roles. In this case the economy to avoid recession or if the economic collapse of the dimensions that brings results [58]. There are several symptoms at the onset of the financial crisis. These increases in interest rates, increases in uncertainty, the collapse of the stock market are problems in the banking sector [33].

According to the financial crisis by all acceptable approaches can be grouped into four main groups [42].

- Currency Crises
- Banking Crises
- External Debt Crisis
- Systematic Financial Crises

2.1. Currency Crises

One of the local currency made speculative attacks, depending on the currency significantly in the official authority to devalue forced or domestic currency significantly depreciates or the country's large-scale international reserves, with or interest in a significant increase of Money trying to defend the crisis can be expressed as [37]. In fact, monetary crisis, exchange rate and capital mobility is due to the unchanged [55].

Currency crises can be caused by a speculative attack against high interest rate defense of the currency itself can also be caused in the event of [19].

There are various definitions of currency crises. For example; Frankel and Rose (1996), currency crisis explained by the concept of the national currency will depreciate. The rate of the national currency depreciated by 25% compared to the previous year, and the requirement that the rate of obsolescence should not be less than 10% indicates that [14].

Kaminsky and Reinhart Currency crisis index and Express the concept of financial pressures. Exchange rate and the percentage change in the level of gross international reserves generated from a weighted average of three standard deviations from the mean pressure index refers to the removal of currency crises [22].

In developing countries, most of the crisis is a crisis of the type of money. Since 1982, occurring in Latin America and the crisis in Turkey in 1994 are examples of this. This type of attack is relatively easy to model. Because of the behavior of economic agents of the Central Bank and currency crises are more pronounced in [29].

2.2. Banking Crises

Banking crises in the face of actual and potential bank failures have difficulty in meeting the obligations of banks and the banking system of large-scale government assistance which will occur is expressed as [7].

Banking crises often from banks' balance sheets shrink; balance deterioration is due to the active structure. More specifically, the increase in nonperforming loans, securities markets, fluctuations in the structure of the real sector downsizing due to the deterioration of banks' assets are the main reasons for the banking crisis [43].

Currency crises, banking crises may result in two ways. First, the pre-crisis period before being abandoned fixed exchange rate of international reserves as a result of speculative attacks largely disappeared and it cause a sudden drop in the money supply and the interest rate is. The second came with the currency crisis as a result of local currency undervalued among banks, which in large quantities and which is protected against exchange rate risk occurs when the payment of debts denominated in foreign currencies [5].

Starting from the 1980s, as a result of financial liberalization of currency and banking crises have mentioned the existence of a bidirectional relationship, and this crisis has been called twin crises [44].

2.3. External Debt Crisis

External debt crisis, a country facing problems due to non-payment of public or private sector debt is the announcement that it will pay principal and interest [54].

A borrower can not pay the debt or debts of lender insolvency of people thinking of their new loans did not comply with the repayment of their loans in case they want to reveal the debt crisis. Debt crisis may result from the public and private
sector debt. Unable to pay back the debt of the public sector, risk perceptions as a strong decline in private capital inflows and currency crises can lead to [20].

It is possible to express the causes of the debt crisis. The first is the difficulty in repayment of external debt can be expressed as a temporary situation. Second, countries can not pay their debts to avoid their obligations with the case. Third, the country declared that the debt crisis is starting now. Fourth, falling into the debt crisis of the state foreign debt of the country will be affected [6].

2.4. Systematic Financial Crises
Financial markets can not effectively fulfill its functions and as a result are exposed to serious deterioration resulting in severe damage to the real economy is the case [37]. Potentially serious deterioration of the financial markets is also referred to as the condition. Economic, political and social life caused by the structure and variability may arise from situations [9].

Systemic crisis in the economy unsolve the business financing problems and goes bankrupt, the Central Bank's failure in solving the liquidity problem, would lead to bank failures and financial structure of the country all the systematic effects [36].

Propagation process consists of a systematic crisis. Country, organization or business as a result of the neoliberal system problems in another country, organization or business would cause problems in. For example, Asian corporate bankruptcies in the crisis initially observed that while in Korea and Thailand, this situation soon jumped on the financial markets of countries in the region to spread [39].

3. Causes of the Financial Crisis
Financial crisis reduces economic activity and reduce the effectiveness Considered as a phenomenon, the behavior of economic agents to withstand the crisis is becoming important. [32].

The causes of the financial crisis, financial liberalization, fixed exchange rate system and can be expressed as macro-economic reasons.

3.1. Financial Liberalization
Financial liberalization; usually governments of developed countries to their home countries in order to attract international financial activities, relaxation of regulations on the banking system as a result of the application is referred to the process of opening up of economies to international capital flows is called [49]. Financial liberalization in developing countries the main problem is the problem. These countries open to international capital flows come to their economies by inserting a fragile structure led to the emergence of currency and banking crises pose [2].

In fact, the theoretical foundations of financial liberalization process Mc Kinnon 1973 and is located at 1973 Shaw. Especially in the financial markets of developing countries criticized the study because of restrictive practices, financial repression approach "Mc Kinnon-Shaw Approach (MSY)" is expressed as [38].

Under pressure of financial markets more effectively and in a way never intervene in a situation away from work for the outcome of the implementation of liberalization has led to serious risk. Interest rate controls the removal of the compulsory reserve reduction, market Access and domestic banks and foreign banks for the facilitation, the domestic currency convertibility, ensuring liberalization of capital movements, such as internal and external financial deregulation practices of the banking system interest rate, exchange rate, liquidity and solvency risks greatly stimulated has been [24].

3.2. Fixed Exchange Rate System
Fixed exchange rate system, the central bank will take action to protect the value of Money explains the value of the center can be expressed as a rate system. Fixed exchange rate system at a rate determined by the central bank, foreign exchange trading has to do. This system remained valid until the Second World War [56]. Fixed Exchange rate regime of low inflation expectations and the central bank's inflation-targeting regime with the hope of reaching may be preferred [53].

Confidence about the sustainability of the fixed exchange rate system is important. This trust is damaged the structure of the national economy and the crisis to crisis becomes more appropriate in case of realization of the costs will be high. [17].

Fixed exchange rate based on research related to the implementation of stabilization policies, in developing countries, overvaluation of
3.3. Macro-Economic Causes

Many factors play a role in the financial crisis as the macroeconomic instability. The banking sector is shown as the main cause of macroeconomic instability. Changes in asset prices, especially housing prices, interest rates rise significantly, the decline in the exchange rate of the banking sector will cause affected [5].

Contrary to what experienced by individual financial institutions financial crisis affecting the whole system in general macroeconomic imbalances are caused. Such imbalances may actually initiate a systemic crisis, and deepening the institutional and regulatory repetition of these factors are influenced by a powerful way. These elements; asymmetries, externalities of stiffness and fractional reserve banking; inadequate accounting and auditing standards; prudential regulations and problematic banks in implementing the failure to timely intervention refers to the situation. Accordingly markets tracked or not reliable monetary and fiscal policies to be followed if it believes that the likelihood of crises multiply even more. In this context, the allocation of resources and management of excessive inflation or a very large role in government fiscal policies that are not credible policies can be concluded and can cause a financial crisis [9].

4. Financial Crisis Models


4.1. First Generation Financial Crisis Models (Canonical Models)

Krugman, between the years of 1973-1982 in Mexico and other Latin American countries have been developed to explain currency crises arise. Krugman has noted, this model as a product for the budget deficit crisis represents. Central Banks to close the budget deficit as the ultimate solution would tend to increase the money supply by Krugman advocates; excessive expansion of monetary and fiscal policy to reduce the level of international reserves, and consequently abandoned the fixed exchange rate regime [30].

First-generation crisis models, to specify the time of the creation of speculative attacks are working. The reason for the pressure on speculation and money, negative developments in key macroeconomic variables are expressed as a result of these negative developments and predictable currency crisis [44].

Flood and Garber similarly to the first generation Krugman elucidated financial models. Escape from the national currency and foreign Exchange orientation purposes only speculative or irrational investor behavior have also added to this model [13].

4.2. Second Generation Financial Models (Self Confirms Models)

1992-1993 European Monetary crisis developed after the currency crisis that created this model as a case about the sustainability of macroeconomic policies has seen a sudden change [43].

Obstfeld his work in 1994, the second generation is the basic building block of financial models. In this study Obstfeld Krugman's model is not sufficient to explain the crisis of the European Monetary stated. Obstfeld governments react differently according to the 1992-1993 crisis, the cause of the rise in the unemployment rate and rising interest rates, as has been seen [35].

On the basis of the second-generation model of market expectations of macroeconomic policy is rooted in the idea that directly affect their decisions. External-policy approach referred to as investor expectations with this model of interaction between policy implementation results of a self-feeding might be causing the crisis highlights [18].
4.3. Third Generation Financial Models (Spread / Meeting Impact Model)

The third-generation crisis models, was developed after the Asian crisis. In these models, especially in the banking sector balance sheet effects and focus on the problems and contrary to the other two models with money and banking crises have become expressed [52].

The third-generation crisis models, deficiencies in financial markets is seen as the foundation of the model. These models typically; government guarantees the existence of asymmetric information in the form of bad policies or defects in, or as the fulfillment of the contract is based on two corruption [54].

The crises of the 1980s and in the 1990s, this model tries to explain the crisis feeds from various sources have revealed that. Some of these are; public finance deficit, foreign trade balance indicators, the deterioration in the exchange rate speculative attacks and structural reasons. Therefore, in various regions of the world economy with a fragile economy, especially the crisis began to decline rapidly [25].

5. Literature

Krugman, he organized the identification of the crisis in the study stated. In the descriptions for predictability was found. Money supply growth has led to balance of payments problems and crisis will lead to the reduction of reserves stated [30]. Kaminsky, Lizondo, Reinhart, based on monthly indicators in their study approach known as leading indicators have revealed KLR model. This study January 1975 - June 1998 covers the period. As a result of this 24-month analysis of the crisis when the display is good, when the show was as bad reviews. KLR model is expressed by a matrix of the signal [23].

Table 1: Signal Matrix Crisis

<table>
<thead>
<tr>
<th>SIGNAL</th>
<th>CRISIS THERE (IN 24 MONTHS)</th>
<th>NO CRISIS (IN 24 MONTHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAVE SIGNAL</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>NO SIGNAL</td>
<td>C</td>
<td>D</td>
</tr>
</tbody>
</table>

If we are to explain the variables in the matrix; A variable which is good number of indicators, the B indicator bad signal the number of the months, the C signal for a crisis, although the indicators crisis not mark the number of months, D crisis no signal is applied, the indicators crisis specify where shows.

Undur and others, studies in Turkey in the 1994 crisis have been discussed. Deterioration in the crisis, both in the work of the deterioration in the economic structures as well as a result of poor macroeconomic management stated. Export / Import, Short-term external debt / GDP, short-term advances to the Treasury / GDP, are Reserve / M2 + debt stock, real M1 in 1994 indicators in predicting the crisis as the most successful indicators stated [51].

Berg and Pattilo have investigated whether the Asian crisis are envisaged. KLR model were compared with the regression models. Results in determining the time of the Asian crisis KLR model that adequately meet expectations stated [3].

Nag and Mitra, using monthly data between the years of 1980 to 1998 work was done, Indonesia, Malaysia and Thailand have used their country. 80% of the data prior to the Asian crisis, the crisis gave the signal [34].

Edison, defines the crisis and leading indicators approach has used the KL model. Edison crisis fall in international reserves as stated [10].

Goldstein and others, dealt with the monthly data for the period 1970-1995. KLR model with the data of 25 countries examined and was found to predict. Bank crisis for the real exchange rate, stock prices, money multiplier, determines the index has increased production and exports. The real exchange rate in currency crises, stock prices, exports, M2 / reserves, increase production as crisis indicators that signal was expressed [16].

Arrow (2003), used data from the 1980-1997 period hundred eighteen countries, and these countries have been investigated for the currency crisis. Which is highly leveraged to the IMF, the debt service to exports ratio, with a high ratio of reserves to import and export growth slow countries with a low probability of getting the Money crisis is overstated.

Kibritçioğlu (2004), the currency crisis early warning system to identify who has worked with KLR model. Turkey has applied for the period
1986-2004. 46 variables were used in the study. The variables that you have created with successful composite index composite index created as a result of the crisis in the 12-month period prior to the crisis months, giving the signal has emerged very successful results.

Tosuner, has addressed the monthly data covering the period 1991:7-2004:5. Evaluate the Turkish economy and has created a forecasting system [46].

Karaçoğ and Alp'tekin (2006), in their study have been discussed in Turkey. Between November 2000 and February 2001 were announced by the KL model. Models of international reserves, exports, foreign trade rate, the real exchange rate, the M1 level, M2/RP multiplier, domestic credit/GDP, the real interest rate on deposits, M2/Gross International Reserves, Production Index, a leading indicator as adopted.

Kaya and Yılmaz. KL models have been tried in Turkey's economy crisis. The study covers the period 1990-2002. In the study of the subject has acquired April 1994 and February 2001 [27].

Peng and Bojono, the monetary crisis of the Chinese economy using data for the period June 1991 to November 2001 with KLR models have attempted to predict. KLR model of exchange rate fluctuations in 1994, August 1998 and May 1999 has been successful in predicting crises [41].

Karakayalı and Sayın, KL model with a leading indicator for the economy of Turkey in advance of the 2008 crisis have examined whether known or unknown. On display was used. 2002-2009 period studied. As a result they use indicators to predict the 9 months before the 2008 crisis has been successful in predicting [26].

Shi and Gao, have attempted to predict the 2008 crisis. Chile, Euro Zone, India, Iceland, Japan, Korea, Malaysia, Mexico, Pakistan, Russia, Vietnam, the UK and American countries have tried to model the data using the KLR. Export Credit interest rate/deposit interest rate, M2/International Reserves, Production Index, Bond Price Index expressed as the highest indicators [45].

Yücel and Kalyoncu (2010), studies have dealt with Turkey. 1988-2008 period have been discussed. The study has addressed the 28 countries.

6. Leading Indicators and the Case of Turkey (2000:01-2012:10)

Financial system crisis emerge suddenly. However, signals a certain time before they begin to give. Therefore, indicators of crisis, the financial and the real sector plays a role in the information. This information is analyzed in a careful and systematic crisis situation may turn out to be seen [21].

IMF to adapt some of the indicators tested in many countries and some of these early warning indicators as stated. The IMF adopted by the main indicators of real exchange rate, short-term capital movements, credit expansion, inflation, money supply/reserve ratio, the export volume, the current account deficit, budget deficit, public spending, banks’ foreign Exchange positions of banks NPLs, domestic interest rates, domestic-foreign interest differential, can be expressed as the stock market indices [1].

In this study, a leading indicator as the Net International Reserves, Exports, Foreign Trade Level, Real Exchange Rate, M1 Level, M2/RP multiplier, domestic credit/GDP, real interest rates on deposits watching, M2/Gross International Reserves and Production Index has been taken.

6.1. International Reserves

A financial crisis in the country's most important defense tool available is the large amount of foreign exchange reserves. Because of attacks against foreign currency will be created out of existing reserves is using the opportunity to intervene. However, the components offoreign exchange reserves also refers to the importance of this issue greatly. Which is called hot Money because of portfolio investments inflate the size of a reserve, rather than being secured can be expressed as a risk factor [8].

Kaminsky and Reinhart Lizondo as expressed in the work done by the net international reserves of the decrease occurring in 10% within 24 months following a financial crisis is taking place is expressed as a signal that indicates that you can have [22].
When we examine the net international reserves 2000-2011 more than in the years when there were no differences are seen to be a serious decline in 2012. This decrease may be indicative of a crisis in reserves.

6.2. Export

In other words, a reduction of exports over imports, exports will lead to the realization of the given open in reserves. This situation causes output from the country foreign exchange may cause the liquidity crisis [25].

10% decrease in exports occurred in the following 24 months if the place could be a signal indicative of a financial crisis is expressed as.

Table 2: Export

<table>
<thead>
<tr>
<th>YEARS</th>
<th>EXPORT</th>
</tr>
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<tbody>
<tr>
<td>2000</td>
<td>4,5</td>
</tr>
<tr>
<td>2001</td>
<td>12,8</td>
</tr>
<tr>
<td>2002</td>
<td>15,1</td>
</tr>
<tr>
<td>2003</td>
<td>31,0</td>
</tr>
<tr>
<td>2004</td>
<td>33,7</td>
</tr>
<tr>
<td>2005</td>
<td>16,3</td>
</tr>
<tr>
<td>2006</td>
<td>16,4</td>
</tr>
<tr>
<td>2007</td>
<td>25,4</td>
</tr>
<tr>
<td>2008</td>
<td>23,1</td>
</tr>
<tr>
<td>2009</td>
<td>-22,6</td>
</tr>
</tbody>
</table>

In 2007, our exports increased by 25.3% to 107.2 billion dollars. Thus, our exports,$ 100 billion level for the first time within the past also, our share in world exports has been 1.04%. 2008 1.04% of our exports of 132 billion dollars in the year, our share in world exports within1.1% has increased.

Exports increased by 23.1% in 2008, during the first 9 months of 2009 the average monthly decrease in exports stood at 30.3%. However, with the month of October 2009, our exports to the recovery trend seen across the globe began to increase again in parallel. November's 5.2% decline seen in December, despite the 30.2% growth in exports in 2009, as a result, a decrease of 22.6% compared to the previous year stood at 102.1 billion dollars. In this context, Turkey's exports envisaged in the 2010-2012 Medium Term Program $ 3.6 billion to 98.5 billion export target has been exceeded.

In Graphics as seen in the first ten months of 2012, exports disclosed remained at a similar rate.

6.3. % Change External Terms of Trade

External terms of trade composition of imports and exports because it creates export goods prices decline or remain the same situation comes, while prices of imported goods of this case with an increase in answers, the external terms of trade deteriorates. According to leading indicators approach foreign trade rate compared to the same month of the previous year, a decrease of 11% in the case will be referred to as a signal to attack. The terms of trade are examined recent developments occurring in the perception of a crisis not seen any.
6.4. Reel Döviz Kuru
Causing an overvalued real exchange rate mechanism crisis; banks, non-bank financial institutions and other businesses involved in the real sector of the foreign exchange positions arising in the form of openings lead to the banking crisis arises. Limited increase in the exchange rate in the period is open currency positions. Therefore, thoroughly shorter maturities of foreign currency debt and foreign exchange risk arises almost entirely neglected, and the crisis is a symptom [12].

6.5. M1 Level
M1 money supply compared to the same period of the previous year, a 17% increase occurring signal is expressed as crises.

6.6. M2 Level
Expressing the M1 definition of the money supply in the narrow sense of the term deposits with the addition of the definition of M2 money supply is found. The definition of M2 money supply is one of the indicators of crisis. M2 money supply, the same month the previous year, an increase of 17% compared to the signs of the crisis could be called in question.

As seen in the table, in the last months of 2008, falling experienced with the exception of the global crisis, a noticeable decrease is observed. So in 2008, excluding a sign of crisis there is no sign of any crisis.
7. Concluding Remarks

The financial crisis in the economy, resulting in a situation of sudden and unexpected event. Financial liberalization often experienced problems from becoming crises have provided. Liberalization of the market due to timing problems fragility, deterioration in macroeconomic indicators and at constant exchange rates has led to the crisis.

This study gives an overview of the crisis, then selected five key leading indicators related interpretations have been made. Our study covering the period 2000-01-2012:10 international reserves, exports, foreign trade level, the real exchange rate, M1 and M2 level Level is selected as a leading indicator. Evaluated a number of signal intervals, Turkey are found to be still within the range of critical signals.

Expressed the following opinion on the financial crisis; environment and there are indicators of crisis, but the crisis would be definitively say and especially to predict when the crisis is not possible. Dornbusch's words, "The crisis is seen, but when they explode." And when the crisis is already projected to be precise that while it is necessary precautions are taken, the crisis is avoided, so no crisis. In addition, pressures and tensions in the financial crisis, is composed of individuals of insecurity and panic [50].

REFERENCES