THE CORRELATION BETWEEN FINANCIAL LIBERALIZATION AND ECONOMIC GROWTH: ANALYSIS ON TURKEY

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ABSTRACT
The aim of this study is to analyze the correlation between financial liberalization and economic growth in terms of the data of Turkey. Correlations between the financial development rates of the 1980-2009 period and economic growth rate are analyzed in terms of economy by using multivariable co integration analysis and Granger causation tests. According to the analysis results, the financial improvement data and improvement data are found co integrated in long term. However, according to the results of Granger causation tests, per capita income is in a one way causation relationship with bank deposit liabilities, and in a two way causation relationship with loan provided to private sectors. Also, as the loans provided to private sectors by the banking department are taken into consideration as an indication of development, it is found that there is a two-way causation between the variables of growth and financial improvement.

JEL CLASSIFICATION & KEYWORDS
F43 | Financial Liberalization | Economic Growth | Time Series
Unit Root | Johansen Co Integration | Granger Causality

INTRODUCTION
As a result of the financial policies that are parts of the globalization processes observed in 1980’s, financial systems have got into a rapid and high-rated change. Essentially, the aim of liberalization is eliminating the controls over political and managerial mechanisms, and trade and financial markets, and then making them international issues. Also, the level of the financial improvements gives us reliable information about the future rates of economical growth, capital movement and technological improvement.

The concept of liberalization can be divided into three parts as trading liberalization, financial liberalization, financial and managerial liberalization. Trading liberalization means eliminating the governmental control over the trade of goods and services, and the approach aiming at providing the international liberal trade together.

Financial liberalization is however a set of policies that firstly aims at abolishing the interferences and controls of the government on domestic banking and other financial instruments, and, consequently, proposes the integration of the domestic financial markets into international markets.

Political and managerial liberalization means policies that generally aim fairly to improve the managerial opportunities on the side of private sectors and nongovernmental organizations with deregulation, privatization, governance and localization models. According to these policies, when it comes to decision mechanism, it is of no importance whether the private sector is domestic or foreign (Dağdelen, 2004:5-6).

After 1990s, balance of finance (banking) and payments (exchange) crises, or “wins’ crises” with its explanation in the literature, whose effects are densely observed, are felt effectively during this period. Towards economical crises, while it is recommended to make liberalization applications at product and financial markets at the standard receipts by IMF, it takes attention that the world trend turns into this way. This literature presents the existence of positive relationships between growth and liberalization; however, towards the common applications tending economical liberalization, some claims have aroused that openness indexes in Latin America, Southeastern Asia, Russia and Turkey, and especially as stated by the writers such as Siltzitz (2002) and Krugman (2001), results from financial markets’ problematic of whole liberalization. The attention taking element in this point is that being related to liberalization applications’ inefficiency of including just economical dimensions in economics letters economics’ one another trivet is political dimension. Accordingly, while it is accepted that coordination of stability and growth cannot be provided just by the liberalization of economies, disordering the deregulation in liberalization and the problems that arise from simultaneous clarity are also emphasized. In this respect, the importance of political institutionalization while economies are liberalized take attention.

The requirement of financial liberalization comes out from the monetization of economical growth that is necessary for supporting the economical activity’s capacity against the increasing complexity of trade. Also, the existence of financial markets or banking brokers, by benefiting from the accumulation of the sources in economy, aim providing better mobilizations of suitable savings. Thus, usage of more profitable technologies which require high investment is allowed. More effectively, by means of the increase in investment opportunities, subjectively by financial devices, account owners with higher proceeds may come out. At the same time, the increase of growth is provided by a direct increase in the capital efficiency. The mobilization of effective resources for investment is a necessary condition for any economical take off. However, the quality of range is also an important factor at growth. (Duman ve Lee, 2000:3).

As a result of financial liberalization, banks have come to the forefront as a new and dominant power besides market, state and individuals. Thereby, financial liberalization grows in two ways. The first one is market and bank based liberalization of banks in the shape of financial brokers; the second one is liberalization of capital account observed in the country’s balance of payments (Duman ve Lee, 2000:7).

In the application, developing and developed counties’ duration of liberalization is not carried on spontaneously and in equal sectors. In the early 1970s, while trade liberalization is not provided in many developing countries as the financial sectors liberalized meaningfully, during the same years, in many developed countries, trade liberalization is provided
as the financial sector is under pressure (Galindo at al., 2002:4).

The macro economical instability and institutional substructure inefficiency of the financial system has resulted in appearance of an original financial substructure in Turkey. Banking system's inefficiency of providing cheap and sufficient loan for the companies in need and their direct financing system's not being developed has increased the importance of the loans provided by trade relationships and shareholders. In another say, the advantage provided by the loan providing companies' knowledge about the loan taking companies, inefficiency of the loan providing of banking systems for private sectors and macro economical instabilities have increased the importance of trading dept as a financial choice. Tendency of companies to provide resources by indirect ways, especially by the way of taking on trading dept, loads financially weak companies' incremental costs, generalizes unrecorded financial relationships and accordingly poses an obstacle for the Turkey to reach the sustainable growth aim (Tusiad: 2005).

The 32 numbered decision came into force in the year 1989, which creates the legal substructure of financial markets' liberalization and is as the continuation of the economical liberalization durations started with the alterations on 24 January 1980. With this decision, domestic markets are opened to capital flow without any legal limitations. Before this, ISE is set up in 1986 as an important pace for creation of capital market. Creation of capital market has started in Turkey with these two important regulations. During the same period, choosing loans as public finance policy has affected closely all over the world countries.

In financial sector, credit and deposit rates are set free, the private investments from coming out in competitive market condition (Ünsal, 2003: 191-205).

In financial sector, credit and deposit rates are set free, the taxations, which are on interest income and increase the cost of financial transaction, are reduced, the citizens are allowed to open accounts in the banks with foreign currency, the foreign banks are provided to get into act in Turkey in the middle 1980s, and legal prohibitions of foreign currency income has been eliminated at end of 1980s (Akyüz, 1990).

When the condition of Turkey is viewed, as a result of the financial reforms applied to finance market, it is seen that Turkey's financial markets have relatively developed in 1990s, depth duration. Deepening of financial markets has given positive results in terms of providing the growth of financial substructure. For example, the rate of M2/GNP, one of the most important indicators of a strong economy in the general economy, has changed from %15 in 1980s to %17 in 1990 and to %31 in 2000. However, this duration couldn't provide an increase of saving-investment effectiveness that is foreseen by economic theory, and an enlargement of credit pool intended to stable investment (Yeldan, 2004:129).

In Turkey, despite all these institutional structuring and financial liberalization efforts, it is impossible to say that private sector has developed. In our country, banking sector is still dominant in banking system (Zaim, 1995; Arı, 2000). Although there are many banks in the system, few banks have much share in the deposit and credit market.

International Capital Movements and Financial Crises

Liberalization and globalization of financial system have both revived new financial instruments and brought new qualifications to the present ones. The financial improvements which have increased 1980 are shown in the markets, products, services and technology (Lucas, 1994:179). There are about 152 instruments around the world for which money and financial assets are used (Ödabaşı, 1999:38).

Many kinds of financial innovations set up for purposes such as stopping crises for their way of coming out, protecting the economic operator from exchange rates, interests and risks occurring in product prices also speeds up the globalization (Miller, 1992:12). However, most of them have turned into structures much different from main purpose. For example, the "Options" that took place in Japan rice industry in the 11th century (Lucas, 1994:184), have turned into speculative means of gamble, as "futures obsen sleep" growing in today's markets, while their main aim was taking position towards the elimination of national currency from option markets (Kozanoğlu, 1998:141).

There have occurred many financial crises all around the world. It is possible to state the crises since 1970s as December-1973 England Banking Crisis, June-1974 Herstatt Crisis, August-1982 International Loan Crisis, December-1986 Bond crisis, October-1987 Bourse Crisis, Saving and Loan Crises in the early 1980s in the USA. However the biggest ones of these crises could be stated as Latin America Crises in 1970s and 1980s, Europe Exchange Rate Mechanism Crisis in 1993, the crisis in Latin America in the years 1994-1995, Asian Crisis effect of which is thought to still continue, Russian Crisis and Brazil crisis. In Turkey similar crisis have come out in the years 1978 and 1994 (Akdış; 2000).

Mexico, among the Latin American Countries, has been shaken by the huge downfall of currency, and after an increase in the expectations about the matter of crisis, has faced with financial crises by being obliged to devaluate the national monetary unit peso. In the same way, Brazil has managed to decrease the inflation rate from %2700 to %3 by applying the "Real Plan" after the crisis.

The crisis started in 1997 in South East Asian Countries such as South Korea, Indonesia, Thailand, and Malaysia has affected closely all over the world countries.

In Turkey it was first in 1991 when a crisis featuring financial qualifications occurred. Structural problems of Turkey's economy have revealed a high exchange demand in 1994, and the exchange rates kept under pressure have got into an improving trend in free market. On the 19th of January and the following days, in free market, one dollar has increased from 15.000TL to 22.000TL, and because of the following progressions and delay in the regulations for a treatment, a set of stabilization measures, known also as 5 April decisions, came into force (Akdış, 1996:136).

Turkey has faced with new financial crises on 22 November 2000 and 21 February 2001. The difference of these crises from the previous crises is their coming out in a period when a comprehensive stability program is applied. Both the crises have resulted from the mistakes in economy policies and applications. However, it can be said that both during 22 November and 21 January crises, international short-term currency has, by spurts, extended the panic in bourse, interests and exchange rates, and has contributed to the growth of market shocks.

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Literature Review

In literature, the indicators of trade liberalization, according to the neoclassical theory, are analyzed in the dimensions of trade openness conceptions belonging to free trade and Keynesian theory. Free trade view, based on the idea of “leaves them do”, is best of the two views based on the Optimum of Pareto in welfare economy. The first view is the present competitive balance’s creating the Optimum of Pareto when the free trade cannot reach saturation and exteriority. According to the second view, the Optimum of Pareto occurs again as a result of a competitive balance that comes out by means of the exteriority and suitable total transfers among the trading shareholders.

According to the neoclassical tradition, the theory of markets’ effectiveness being relevant, the prices are determined as a result of many economical units’ behaviors that are according to the utility-maximizing and rational expectations. Inner Growth Theories that have come out as a reflection to the neoclassical growing methods and try to describe the lost unit of economical growth (Bulutay, 1995; Romer, 1987, 1990), and the economists that correlate the financial development (Levine, 1997; Pagano, 1993) are regarded to have assumed that financial development leads to economical growth (Hermes, 1994). Financing the investments in the financial liberalization, differences between developed and developing countries take attention. Primarily, financial markets play more important role in financing investments when these countries show little progresses in economical development. According to the data revealed by Allen (1993), financial markets in the United Kingdom made a contribution of %25 - %33 to the formation of fixed currency during the second half of 19th century and beginning of 20th century. When it comes to Singh’s prediction, involvement of foreign sources directed to the financing of fixed capital formation in 1980s is over %50 in equity markets (Aktaran and Odekon, 2002-3).

Methodology and Data

There are three different empirical and analytical evidence viewing financial liberalization affecting economic growth positively, negatively or neutrally does not affect on the working testing the affect of the economic growth on financial liberalization.

In good deal of empirical working the rate of liquid obligation of financial system to GDP the rate of commercial bank assets amount of commercial bank and central bank asset the rate of credits given by intermediaries to private sector to GDP as an economic growth the growth rate of real GDP per capita are used. Also middle school registration rate, inflation rate, being open to foreign trade, state consumption and the datum level of real income are used as a control variable (Özcan, 2007:46).

In this study representing the economic growth the increase rate of real GDP per capita is used and also as a financial development criterion broad money supply credits given to private sector by banking sector and bank deposit liabilities. In assurance of data Turkish institute of statistics benefitted from central bank statistics.

Table 1 Data Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yt</td>
<td>GNP Per Capita</td>
</tr>
<tr>
<td>M2Y</td>
<td>Rate of Round money to GNP</td>
</tr>
<tr>
<td>CREDY</td>
<td>Rate of private sector loans provided by the banks to GNP</td>
</tr>
<tr>
<td>BDY</td>
<td>Rate of Bank Deposit Liabilities to GNP</td>
</tr>
</tbody>
</table>

All data used in the analysis is formed in the period between 1980 and 2009 and due to being annual data are analyzed without purified.

Before VAR analysis applied it will be tested that whether the variables planning to be used in work are stable or not with a developed Augmented Dickey Fuller (ADF) unit root tests. If time series are stable by applying Johansen Juselius test the existence of co integration between time series namely the existence of long term relationship between variables. If series are not stable in the same degree the long term relationship of series will be analyzed with limit test approach.

In econometric study firstly the stability of data is examined. To set up meaningful statistic data, it is hoped that the series are an the same degree and stability.

In practice, commonly used unit root tests are Dickey Fuller and developed Dickey Fuller (ADF) (1981) test. Determining long term having characteristic of one series is made according to probability of existence in three different processes. These three processes are shown like that;

\[ Y_t = \alpha + \gamma Y_{t-1} + \varepsilon_t \] (2.1)

\[ Y_t = \alpha_0 + \gamma Y_{t-1} + \gamma T + \varepsilon_t \] (2.2)

\[ Y_t = \alpha_0 + \gamma Y_{t-1} + \gamma T + \varepsilon_t \] (2.3)

These three processes vary according to whether the average of series equals zero (2.1), another value different from zero (2.2), and whether the average is different from zero and trend is included in (Ağır, 2002).

ADF regression could be formulized as below;

\[ \Delta Y_t = c + \gamma \Delta Y_{t-1} + \Sigma \Delta Y_{t-j} + \varepsilon_t \] (2.4)

Here \( \varepsilon_t \) is a nonsuccessive, probable wrong term, whose average is zero, and variance of which is stable. For unit root test, the hypothesis of Ho: \( \alpha_1 = 0 \) is tested in contrary to the hypothesis of H1 : \( \alpha_1 < 0 \). In case H0 is denied, Yt series is stable; unless the hypothesis of zero is denied, the series is not stable. If acquired ADF as an absolute value is smaller than critique value, it is statistically accepted that the series is not stable and contain unit root. As a response to this, if an acquired test statistic is bigger than the critique value acquired as an absolute value this series is statistically accepted to be stable.

Table 2 Test Results of Stability

Results of the tests applied to the test results of DF and ADF show that variables are not stable. By applying the variables of the first test to the first degree range, the results of Table 3 are got. It is represented with “d” that the range of variables are taken.

Empirical Conclusions

In most of the empirical studies, high amount of macro economical time series are non-stable series. As it is possible to face with the problem of fake regression among the series including unit root, the co-integration of series should be analyzed by stabilizing them. Different methods have been improved in the literature for this. One of the series start are to be mounted to the model by stabiling. However, in this case, there occurs a information loss as searching the correlation between long-term and term.

The co integration approach developed by Engle – Granger (1987) has solved the problem of information loss to a great extent. According to this approach, the range of the non-stable series are taken and stabiled, and the series get stable
in the same serial are mounted to the model with their original forms. According to the Johansen analysis, a different approach, the number of co integrated vectors among the variables is detected. In other words, as Engle – Granger approach finds just a cointegrated vector among the series, co integrated vectors one less than the number of variables can be find with Johansen analysis. Johansen cointegration theory states that there could be only one correlation between two variables in long term. Johansen (1988), and also Johansen and Juselius (1990), use the statistics of “maximum eigen value and trace” in order to test whether there is a correlation between the variables. As the long term correlation between the variables is being searched by the Johansen co integration test, the number of delays in the created VAR is important (Kar, 2001:18).

Table: 4 Determining the suitable delay length for VAR model

<table>
<thead>
<tr>
<th>Lag</th>
<th>LR</th>
<th>FPE</th>
<th>AIC</th>
<th>SC</th>
<th>H-Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>NA</td>
<td>1.01e+36</td>
<td>9.425.414</td>
<td>9.444.916</td>
<td>9.430.823</td>
</tr>
<tr>
<td>1</td>
<td>1.847.534</td>
<td>3.61e+32</td>
<td>8.629.647</td>
<td>8.727.157</td>
<td>8.656.692</td>
</tr>
<tr>
<td>2</td>
<td>42.57378</td>
<td>1.02e+32</td>
<td>84.91561</td>
<td>86.67079</td>
<td>85.40242</td>
</tr>
</tbody>
</table>

(*) shows the most suitable delay length

All the criteria such as LR, FPE, AIC, SC and H-Q given in the Table 4 show that suitable delay length as two. Co integration analysis can be made just after the suitable delay number is determined. Johansen Co integration Test results are given in the Table 5.

Table: 5 Johansen Co Integration Test Results

<table>
<thead>
<tr>
<th>Max. Eigen value Test</th>
<th>Trace Test</th>
<th>Critical value</th>
<th>HA</th>
<th>Trace</th>
<th>Critical value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD</td>
<td>HA</td>
<td>0.01</td>
<td>0.05</td>
<td>0.01</td>
<td>0.05</td>
</tr>
<tr>
<td>r=0</td>
<td>r = 1</td>
<td>126.188</td>
<td>29.540</td>
<td>32.118</td>
<td>207.847</td>
</tr>
<tr>
<td>r=1</td>
<td>r = 2</td>
<td>49.065</td>
<td>23.440</td>
<td>25.823</td>
<td>81.658</td>
</tr>
<tr>
<td>r=2</td>
<td>r = 3</td>
<td>27.289</td>
<td>17.239</td>
<td>19.387</td>
<td>52.993</td>
</tr>
</tbody>
</table>

Cointegration test results; according to Max. Eigen value and trace statistics, there is a long term correlation between income and measurements of financial development. In another words, the related data is correlated with each other. According to Granger (1988), the co integration of series signs the existence of one way reasoning. Granger reasoning test is a method used for searching the reasoning correlations among economical variables. In our study, Granger reasoning test is used for the aim of testing the correlation between each of the financial development data involved in and GNP used as the indicator of economical growth.

Granger reasoning test is a technique used to determine whether a time serial (x) is beneficial to foresee the value of another time serial. In case the previous values of X, are used for predicting x_i in respect of using just its own previous values, it is said that x_i variable is x_i-s Granger variable (Ozcan, pg:82).

As it can be understood from the p probability values given with F statistic values in Table 6 for Granger reasoning Tests are denied. Denied values are below:

- The hypothesis defining that YP isn’t Granger reason of BDY and CREDY is, with a probability of 0.002 and 0.005 percent.
- The hypothesis defining that M2Y isn’t Granger reason of YP, BDY and CREDY is, with a probability of 006 – 0,000 – 0,003 percent.
- The hypothesis defining that M2Y isn’t Granger reason of YP, BDY and CREDY is, with a probability of 006 – 0,000 – 0,003 percent.
- The hypothesis defining that M2Y isn’t Granger reason of YP, BDY and M2Y is, with a probability of 0,000 – 0,000 – 0,005 percent.

Accordingly, when the indicator (NP) of GNP per capita for representing economical growth, it is seen that there is a one way reasoning relationship between banking deposit liabilities(bdl) and two way relationship between loans provided to private sectors. When valued in terms of M2Y, it is seen that there is a relationship of one way to NP and BDL, and two way to CREDY. These results confirm the results achieved by Luitel and Khan (1999), Shan and Morris (2002), also by Yapralı (2007) from his studies on Turkey.

CONCLUSION

Financial development means wellness and improvement of the functions carried out by financial system. Each of financial system functions that are the mechanism providing resource transfer between savings and investments in
The table below presents the Granger Reasoning Results for financial liberalization and economic growth in Turkey:

Table 6 Granger Reasoning Results

<table>
<thead>
<tr>
<th></th>
<th>YP</th>
<th>BDY</th>
<th>M2Y</th>
<th>CREDY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Empty Hypothesis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>YP isn't Granger reason of BDY-M2Y and CREDY</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>YP--BDY, YP--M2Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Conclusion</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-0.02</td>
<td>-0.45</td>
<td>-0.05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[7.404]</td>
<td>[1.574]</td>
<td>[5.852]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[3.06]</td>
<td>[3.29]</td>
<td>[0.45]</td>
<td>BDY isn't Granger reason of YP-M2Y and CREDY</td>
</tr>
<tr>
<td></td>
<td>-0.13</td>
<td>-0.19</td>
<td>-0.79</td>
<td>No reasoning</td>
</tr>
<tr>
<td></td>
<td>[10.16]</td>
<td>[23.42]</td>
<td>[6.61]</td>
<td>M2Y isn't Granger reason of YP-BDY and CREDY</td>
</tr>
<tr>
<td></td>
<td>-0.006</td>
<td>0</td>
<td>-0.003</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[21.55]</td>
<td>[43.53]</td>
<td>[15.14]</td>
<td>CREDY isn't Granger reason of YP-BDY and M2Y</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>-0.005</td>
<td></td>
</tr>
</tbody>
</table>

Note: The values in square brackets show the F statistic [F] values, and the values in the brackets show p probability (p) values. Lag values are taken as 2.

economy can make contribution to economical growth by affecting decisions of saving and investment. On the other side, it is a predicted progress that financial systems get deeper as a result of the increase of requirement to the banks and other financial institutions’ functions being related to the increase that arise by the growth of country economies (Özcan, 2007; 90).

Economical growth is, to a great degree, related to effectiveness of the financial system providing transfer of funds. The development of financial system affects economical growth through technological innovations and capital investments. The systematical crises and structural problems in Turkey and the other developing countries, especially during the period after 1990, clearly present the importance of financial system. Stability and effective working of financial system provide both effective operation of policies being applied and decrease the systematical risks. In the same way, decrease of financial pressure and change of financial markets positively affect the fragility of financial markets provide the real sector make investments more productive areas (Altunç, 2008; 129).

The main aim of this study determining, with annual data related to the years of 1980-2009, the existence of long term correlation between financial growth and economical development in Turkey, and the direction of this long term correlation by means of Granger reasoning tests. As a measurement of financial growth; the rate of M2 capital demand to GDP (M2Y), the rate of the private sectors loans, provided by banks, to GDP (CREDY), the rate of bank deposit liabilities to GDP (BDY) are used. As the representative of economical development, real GNP per capita (YP) is taken. Primarily, the stability of series is examined by ADF method. It is viewed that the series are not stable at the level. Unit root results have shown that the series is stable at the first range. Lastly, with Granger reasoning test results, it is seen that the rate of liquid liabilities and financial system deposits to GDP are Granger results of the variable of per capita’s growth rate, in another aspect, the variable of income per capita’s growth rate is the Granger result of the loans provided by deposit banks and other institutions to private sector.

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