The Impact of Globalization, Trade Openness and Economic Growth on Financial Development the Case of Turkey

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ABSTRACT

This research has investigated the impact of trade openness, economic growth, and globalization on the financial development of Turkey. The analysis was applied on time series data from the period of 1980 to 2015 using different time series methodologies. First, the data was summarized and explored through descriptive statistics. Afterwards, unit root tests (Augmented Dickey Fuller and Phillips Perron), Johansen cointegration test, vector error correction model (VECM), and Granger causality under VECM were applied on the data. Results show that trade openness, globalization, and economic growth are key determinants of financial development in the case of Turkey and have positive significant relationship with it. To achieve the financial development in Turkey, Turkish government should stabilize its economy to have higher trade openness and globalization

Keywords: Financial development, Economic growth, Globalization, Trade openness.

ÖZ

Bu araştırma Türkiye'nin finansal gelişiminde 1980-2015 yılları arasında, ticari açıklığın, ekonomik büyümenin ve globalleşmenin etkilerini araştırmaktadır. İlk olarak, tanımlayıcı istatistikler kullanılarak veriler özetlenmiştir. Daha sonra, verilere birim kök testleri (Augmented Dickey Fuller ve Phillips Perron), Johansen eştümleşme testi, vektör hata düzeltme modeli, ve Granger nedensellik testleri uygulanmıştır. Elde edilen sonuçlar ticari açıklık, globalleşme ve ekonomik büyüme Türkiye'deki finansal gelişimin uzun dönemli belirleyicileridir. Finansal gelişimin başarılabilmesi için Türkiye'de ekonomik koşulların iyileştirilmesi gerekmektedir.

Anahtar kelimeler: Finansal gelişim, Ekonomik büyüme, Globalleşme, Ticari Açıklık

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Chapter 1

INTRODUCTION

Financial development (FD) is an aim that most economies try to achieve in order to facilitate many aspects of the economy. The financial system of an economy mainly consists of two clusters, financial intermediaries and financial markets. Both clusters are important for the wellbeing of a country's economy. The development of the financial system has been an interesting topic to study because it is vastly evident in past studies that FD boosts economic growth (EC). On average, countries with more developed financial systems have seen more rapid growth than countries with less developed ones (Cherif and Dreger, 2016). In fact, the financial system has a main role in meeting the needs of the real sector growth financially. With an underdeveloped financial system in the country, the real economy will not achieve the desired growth.

Main determinants of FD are discussed thoroughly in the literature, but there is no agreement on the key determinants or on the sign of the link between FD and its determinants. The literature on growth- finance nexus is well developed, but less emphasis is given to the relation between trade openness (TO) and FD and globalization and FD with mixed findings in papers examining these relationships. These mixed findings represent the complex nature of the relationship between economies. In the twentieth century, countries started to apply economic and financial reforms and made integration and links between each other. Most of these

economies also developed functioning financial systems to serve the economy (Kim, Lin, and Suen, 2010).

Trade and financial development relationship is examined through the literature and found to be strongly related. Braun and Raddatz (2005) investigated the relationship between TO and FD and found that when trade liberalization decreases the power of political groups who are against developing the financial system, the financial system flourish. In addition, Svaleryd and Vlachos (2002) argue that trade openness is linked with higher risk to competition and external shocks which will lead to a spike in the demand for financial services to hedge those risks and in turn strengthen the financial system of the country. Do and Levchenko (2007) concluded that TO affects the FD of a country through the goods and services that are offered by the specific country. In other words, economies which are producing financially dependent goods would require more external finance which means a better financial system in the country. However, countries with specialization in goods and services that are financially independent would mean less external finance and less developed financial system. Still, the effect of trade openness on financial development is inconclusive (Kim, Lin, and Suen, 2010).

Globalization is one of the most powerful tools to stimulate financial development. Opening markets for services and goods for other countries so that ideas, goods, and funds can flow would benefit emerging economies to attain a better financial system (Mishkin, 2009). Globalizing the financial system can benefit financial development in two ways. First, it would directly increase access to external finance as access to capital is increased and would lower the costs of borrowing (Bekaert, Harvey, and Lumsdaine, 2002). Second, globalization would increase the financial reforms of

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domestic financial institutions as the competition will increase with foreign more developed ones. Globalization brings expertise and skilled workers that will help domestic institutions bettering their practices and increase the efficiency of the financial system overall (Goldberg, 2007). For the above-mentioned reasons, the present study is examining the effects of globalization on financial development in the case of Turkey.

Turkey is the world's 13th largest economy by Purchasing Power Parity (PPP) and one of the leading emerging markets in the area. The country is one of the members of the Organization for Economic Co-operation and Development (OECD) and G20 major economies. The central bank of Turkey was established in 1930 to control the country's financial institutions and the financial system. Istanbul stock exchange was first established in 1866 as the Ottoman stock exchange and transformed to the stock exchange that we know in 1986. Turkey has a well-functioning financial system but this financial system is still flawed. The Turkish economy has suffered from many financial crises episodes starting from the 1994 crisis, the twin crisis of 2000-2001, the turbulence of 2009, and the latest 2018 Turkish currency and debt crises. Recently, the Turkish economy has been recovering after the latest financial turmoil that hit the country where the economic growth was -4.7% in 2009, now it is around 7.44% in 2017 (World Bank, 2019). Trade is increasing throughout the years reaching 54.12% of GDP in 2017 compared to 45.9% of GDP in 2009 (World Bank, 2019). Financial development is increasing in the country according to the International Monetary Fund (IMF) index, as it reached 0.503 in 2016 from 0.446 in 2008 (International Monetary Funds, 2019). For the above-mentioned reasons, Turkey represents a good case study to determine the key determinants of FD to strengthen the country's financial system.

This research aim's to analyze the long run relationship among TO, globalization, EC and FD of Turkey for the period 1980 to 2015 in order to specify the key determinants of FD of Turkey and draw important policy recommendations out of the results.

This research will include a dataset spanning from 1980 to 2015 including TO (proxied by the exports + imports / gross domestic products), EC (defined as the logarithmic form of gross domestic products), globalization (KOF globalization index is used to proxy globalization), and FD (FD index which is calculated by the International Monetary funds is used to proxy FD). Methodology applied to the data to get the results consists of unit root test to test the stationarity of the series, Johansen cointegration test to see if there is a long run link amongst the variables, VECM to calculate the short and long run coefficients, and Granger causality test under VECM to see the direction of the relation between the variables.

This study will continue as follows, the next chapter will review previous studies related to the financial sector's development relationship with EC. Data sources and research methodology will be discussed in chapter 3. Chapter 4 discusses the empirical results of this study and finally conclusion and policy implications are presented in chapter 5.

Chapter 2

LITERATURE REVIEW

In this part, a short review of past literature on the impact of TO, growth, and globalization on FD is presented. The chapter discusses the influence of the variables individually with emphasis on the empirical relationship. The relations between each of the independent variables of interest and FD are discussed below.

2.1 Trade Openness and Financial Development

Researchers studied the link among FD and trade using both methodologies time series and panel data. Levchenko and Quy (2004) used both time series and panel data econometrics in the case of 77 countries. The authors used the ratio of exports plus imports to gross domestic products as a proxy of TO and found that TO that is related to financially dependent goods increases FD. Huang and Temple (2005) used the same proxy to measure TO utilizing both time series and panel data methods applied to 88 countries. The authors showed that TO have a stronger impact on financial development in developed countries. In addition, TO has a more powerful link with financial development than stock market development.

Authors also studied the relationship using panel data methods in order to see the differences across countries. Svaleryd and Vlachos (2002) investigated the relationship and found that TO causes FD for the case of 80 countries panel. Huang (2005a) utilized panel data econometrics to study the link between TO and FD in the

case of 119 countries. The author found that countries with lower geographical area and greater TO tend to have higher FD. Moreover, financial development is increased by TO. In addition, Herger et al. (2007) investigate the bond between TO and FD in the case of 124 countries and observed that there is a positive link joining TO and the size of FD. The authors noted that the positive link between the variables is not influenced by the difference in income levels. Moreover, Grima and Shortland (2008) using a sample of developed and developing countries concluded that economies with faster EC and higher openness to trade tend to have faster FD. Furthermore, Klein and Olivei (2008) investigated the relationship in the case of 93 countries using the total of exports and imports divided by the national income to proxy TO. The authors found a powerful relation among FD and TO. Law and Habibullah (2009) utilized dynamic panel analysis on 27 economies to review the relation between TO, institutional quality, and FD using data spanning from 1980 to 2001. The authors concluded that TO positively effects capital market development while institutional quality effects both bank development and capital market development.

Closely related to our study, the authors also focused on the case of emerging and developing economies. Using panel data of 24 developed countries over a period of 86 years, Rajan and Zingales (2003) studied the relationship between trade and financial openness with FD and concluded that both openness variables are key measures of FD. Following the steps of Rajan and Zingales (2003), Baltagi et al. (2009) studied the impact of both openness variables on FD on a panel consisting of 43 developing countries. Their findings suggest that both openness significantly impact financial development. However, TO has a stronger effect on FD than financial openness. Huang (2005b) used the ratio of exports plus imports divided by

GDP as a proxy of TO. Applying panel data econometrics on a sample of 35 emerging markets, the author noted that TO is statistically significant and positively influences FD. Law (2009) investigated the effect of capital flows and TO on FD. The author used GMM model to calculate the relationship in case of developing countries. TO was found to be significant and has a positive relationship with FD. Moreover, TO increases FD through increased competition. Hanh (2010) investigated the association between TO, financial openness, and FD taking 29 developing Asian countries as a sample and using Pedroni cointegration test and the generalized method of moments. Results point out that there is a positive long term connection amongst the variables. Moreover, the author found a bidirectional causal association linking TO and FD. Le, Kim, and Lee (2016) found that EC and TO are the main indicators of FD in developed countries. The authors analyzed a panel consisting of 26 Asian countries using GMM.

Researchers sought to investigate an individual country's case study to focus on the unique characteristics of each country. Law (2007) utilized the bounds test to look into the impact on FD by capital account and TO. The author shows that there is a significant and positive link amongst the independent variables and FD. Bank and stock market development proxies were used as a measure for FD in the case of Malaysia. Zhang, Zhu, and Lu (2015) took China as a case study to analyze the relationship between trade and financial openness, and FD. The authors included three dimensions of FD, namely, efficiency, competition, and size. Using panel econometrics methodologies, the authors found that both independent variables are significant and positively related to FD's competition and efficiency aspects. However, the author showed that the link between the independent variable and the size of FD is negative.

2.2 Economic Growth and Financial Development

Researchers sought to investigate the relationship between financial development and economic growth using both panel and time series techniques. This section will discuss studies used time series techniques to investigate a single country case. In his study, Wood (1993) used both bank based FD and the ratio of M2 to gross domestic products. The study examined the relationship between EC and FD and found that when the proxy of FD is bank development, there is a bidirectional relationship between the two variables. While in the case of FD proxy of M2 to GDP, the relationship goes from EC to FD. In other words, an increase in EC will stimulate FD. Demetriades and Luintel (1996a) analyzed the relationship between EC and FD in India, using data gathered from the central bank of India. The empirical findings suggest that EC affects FD and policies influencing EC will reflect on FD. In the same year, the authors Demetriades and Luintel (1996b) examined the same relationship in the case of Nepal. Their findings point to the existence of a bidirectional relationship between the two variables. In the case of Botswana, Akinboade (1998) examined the link between FD presented as two proxies and EC. The results showed that in both proxies' cases, the relationship between the variables is bidirectional. In the study of Shan and Jianhong (2006), total credit was used to proxy FD. The authors investigated the relationship between EC and FD in China using VAR model alongside with impulse response function and variance decomposition. Bidirectional relationship between the variables was found by the authors. Ang (2008) found similar results when investigating the relationship in the case of Malaysia. In the same vein, Abu-Bader and Abu-Qarn (2008) used cointegration, VECM, and Granger causality to investigate the relationship using four proxies to measure bank development. They found a positive significant

relationship between the variables and supported that the variables have a bidirectional Granger causality relationship. In addition, Odhiambo (2011) used both bank development and stock market development to study the relationship between these variables and EC in the case of South Africa. The author utilized cointegration test and error correction alongside with trivariate Granger causality approach. Results indicate the existence of a bidirectional relationship between bank development and EC with a positive long term relationship between the variables. The author also noted that stock market development Granger cause bank development.

The other section of authors used panel data econometrics to examine the relationship between financial development and growth. Berthelemy and Varoudakis (1996) used M3 to gross domestic products as a proxy for bank development. The study investigated the relationship between bank development and EC for 95 economies and their findings suggest a positive link between EC and bank development where an increase in the real sector growth will cause an expansion in the financial markets. Calderon and Liu (2003) used the same proxy (M2 to GDP) to indicate FD alongside with the ratio of private credit to gross domestic products. The authors examined the relationship in the case of 109 developing and developed economies and found that in most of the cases, EC causes FD. The authors noted that in the case of developing countries, the effect is stronger. Moreover, the same proxy was used to represent FD in the study of Akinlo and Egbetunde (2010). The authors used cointegration test and VECM alongside with Granger causality test to investigate the relationship between EC and FD in the case of 10 sub-Saharan economies. The findings indicate a positive long term connection between EC and FD with a mutual causal relationship between the variables. Rachdi (2011) utilized panel data cointegration test to investigate the relationship between FD and EC in the

case of 4 MENA countries and 6 OECD countries. Results show that there is a long term relationship between the variables in the 10 countries. In addition, results indicated that the causal relationship between the variables in the case of the OECD countries is bidirectional.

Authors also focused on developing and emerging markets to see the effects of economic growth on the development of the financial system. Luintel and Khan (1999) found a bidirectional relationship using a multivariate VAR model on a sample consisting of 10 developing countries. In addition, Shan et al. (2001) found a mutual relationship between EC and FD in 5 OECD countries. However, the authors find evidence of causality going from EC to FD in 4 other OECD countries and China. In the same year, Sinha and Macri (2001) found bidirectional Granger causality between FD and EC in the case of 8 Asian countries. The authors also found a positive significant link between EC and FD in the cases of Sri Lanka, Malaysia, Pakistan, and India. Moreover, bidirectional relationship was found by Fase and Abma (2003) when investigating the relationship between EC and financial environment in the case of 8 Asian countries. Furthermore, Toda and Yamamoto (1995) causality test was utilized by Shan and Morris (2002) to examine the relation between EC and FD. Taking total credit as a proxy of FD, the authors found that there is a mutual relationship in the case of four countries and that the relationship runs from EC to FD for five economies (OECD). Acaravci et al. (2009) found a bidirectional relationship between FD proxied by domestic credit and EC in the case of 24 sub-Saharan countries.

2.3 Globalization and Financial Development

The literature on the relationship between globalization and FD is limited and mostly agreeing on the existence of a positive significant relationship between both. Studies usually used foreign direct investments, capital market openness, TO as proxies for globalization. For my research, I am using KOF index as a proxy for globalization, the index was calculated first in 2006 by Dreher, and it is updated annually by Dreher, Gaston, and Martens (2008). The main idea behind the index is to include the interactions between the economies and the varieties of all inflows such as capital, goods, ideas, information, and cultural inflows. It includes three main clusters, political integration, economic integration, and social integration. The robustness of the KOF globalization index was tested by Gozgor (2017). The author argued that the components used in constructing the KOF index are robust and there is no need to change or modify the index.

On the empirical relationship between globalization and FD, the authors examined this relationship using different econometrics techniques applied to different samples. Mishkin (2009) examined globalization as a key determinant of FD in the case of China and found that it is actually one of the main indicators. Basco (2014) studied the effect of globalization on FD in the case of United Stated using bubbles to illustrate his idea. He found that when globalization increased, bubbles in the financial markets increased. Law, Azman-Saini, and Tan (2014) argued a long run link amongst economic globalization and FD exist and that a unidirectional causal relationship exists from economic globalization to stock market development in the case of 8 East Asian countries. Shahbaz, Lodhi, and Butt (2007) examined the impact of globalization on FD in the case of Pakistan using the Johansen cointegration test

with an autoregressive distributive lag method. The results show that there is a long term relationship between the variables and that globalization is the key indicator of FD.

García (2012) noted that financial globalization is stimulated by globalization which in turn stimulates the development of the financial sector. In the same vein, Rousseau and Sylla (2003) investigated the relationship and showed that increased globalization boosts FD through increasing foreign direct investments to the economy. Law and Demetriades (2006) argued that capital inflows from outside the country strengthen FD. In addition, Law (2009) reported that without good institutional quality and strong competition between banks, the economy will not be able to benefit from capital inflows. Falahaty and Law (2012) found that globalization affects FD through institutional quality. The authors applied fully modified ordinary least square method and PVAR on a panel of MENA countries covering the time span from 1991 to 2007. Shahbaz and Rahman (2012) investigated the relationship and concluded that globalization impact FD through foreign direct investments and EC. Torre, Gozzi, and Schmukler (2007) noted that after the economic reforms of many countries (capital market enhancement, financial account liberalization, and many more improvements on regulations), capital market reforms affect stock market development in a positive significant way.

Chapter 3

DATA AND METHODOLOGY

In this chapter, the methodologies used in this research will be discussed. The discussion will focus on offering brief information on the tests used. Results of the tests applied will be described in chapter 4.

3.1 Data Description

To study the effects of TO, globalization, and EC on FD in Turkey, time series secondary data spanning from 1980 to 2015 is used for this the IMF website. The sum of exports and imports of goods and services as a share of gross domestic products is used to measure TO. In addition, KOF globalization index is used in order to represent the globalization effect. The logarithmic form of gross domestic products of Turkey is used to proxy EC. The FD index constructed by the International Monetary Fund (IMF, 2019) including the depth, access, and efficiency of both financial institutions and financial markets of Turkey is included to represent the FD variable in this research. Figure (1) shows the components of the financial development index.
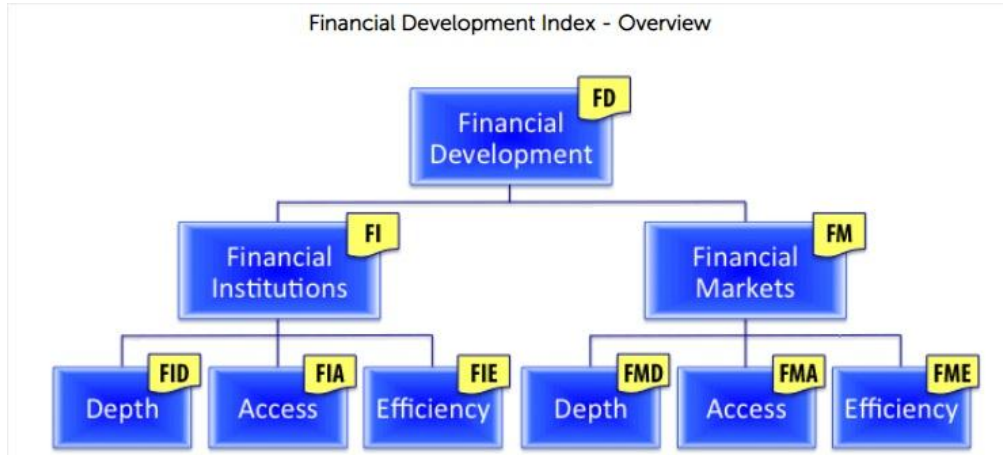
Figure 1: Financial Development index (IMF, 2019)

The model to be estimated is relying on the values of cointegration analysis and vector error correction model to calculate both short and long-run coefficients. The equation to be estimated is as follows:

$$FD = \beta_1 GL + \beta_2 LGDP + \beta_3 TO + \varepsilon_t \tag{1}$$

Where:

FD = Financial development index,

GL = Globalization index,

LGDP = Logarithmic form of gross domestic products,

TO = Trade openness.

The coefficients β_1, β_2, β_3, and β_4 will determine the effects of independent variables on FD. The prior expectations of signs in this study are that all 3 independent variables to have a positive relationship with FD.

3.2 Unit Root Test

To analyze the link among TO, globalization, EC, and financial in Turkey, unit root of the series should be investigated in order to avoid any spurious regression results. To decide on the type of analysis to undertake, unit root tests have to be applied on the series. If the series was stationary at their level forms, ordinary least square can

be applied to the series. However, if the unit root exists in one or more series included, regression results will be misleading with insignificant coefficients and high R square.

In order to investigate unit root, this study uses both Phillip Perron unit root test (PP) and Augmented Dickey-Fuller test (ADF). ADF includes three different models, the first model ignores the existence of both intercept and trend (equation (2)), the second model includes the intercept and ignores the trend (equation (3)), and the third model comprises both the intercept and trend (equation (4)). This research will take into account all three models. The H_0 of the ADF test is that the series is not stationary against the alternative hypothesis of no unit root.

$$\Delta X_t = \partial X_{t-1} + \alpha \sum \Delta X_{t-1} + \varepsilon_t \tag{2}$$

$$\Delta X_t = \beta + \partial X_{t-1} + \alpha \sum \Delta X_{t-1} + \varepsilon_t \tag{3}$$

$$\Delta X_t = \beta_1 + \beta_2 t + \partial X_{t-1} + \alpha \sum \Delta X_{t-1} + \varepsilon_t \tag{4}$$

Where X is the variable under the test, Δ is the operator of differencing, β represents the intercept, ε is the error term residuals and *t* is the time trend. The coefficients to be calculated are β_2, ∂ and α are the coefficients to be estimated. The H_0 and H_1 hypotheses of Athe DF test are:

H$_0$: $\partial = 0$ (The series has unit root)

H$_1$: $\partial < 0$ (No unit root in the series)

Phillips and Perron (1988) (PP) came up with a new unit root test that overcomes the augmented Dickey-Fuller test problem by correcting the Dickey-Fuller procedure

automatically to allow for autocorrelation within error terms, the regression model to

test the presence of unit root in a series:

$$\Delta X_t = \beta_0 D_t + \alpha X_{t-1} + \varepsilon_t \tag{5}$$

The test does not fix autocorrelation or heteroscedasticity in the model, but it

proposes new statistics (t) in the residuals. If these new methods are donated by

φ_t and φ_π then their equations will be:

$$\varphi_t = (\hat{\sigma}^2/\hat{\omega}^2)^{\frac{1}{2}} t_{\pi=0} - \left(\frac{1}{2}\right)\left(\frac{\hat{\omega}^2 - \hat{\sigma}^2}{\hat{\omega}^2}\right) . (T . \frac{SE(\hat{\omega})}{\hat{\sigma}^2}) \tag{6}$$

$$\varphi_\pi = T . \hat{\omega}^2 - \left(\frac{1}{2}\right)(T . \frac{SE(\hat{\omega})}{\hat{\sigma}^2})(\hat{\omega}^2 - \hat{\sigma}^2) \tag{7}$$

Where

$$\sigma^2 = \lim_{T \to \infty} T^{-1} \sum_{t=1}^{T} E(\varepsilon_t^2)$$

$$\hat{\omega}^2 = \lim_{T \to \infty} \sum_{t=1}^{T} E(T^{-1} S_t^2)$$

PP has the same null hypothesis as ADF (X_t has a unit root). We cannot reject the

null hypothesis when α=1.

3.3 Johansen Cointegration Test

After checking the series for unit root, there are two ways, if the series is stationary,

one can continue the analysis using ordinary least squares. However, if the series has

a unit root, regression results will be spurious. In the presence of non-stationary data,

we must check the existence of a long term relation amongst the variables. Johansen

cointegration test is used to see if there is any long term link between the variables.

Johansen cointegration test uses a vector autoregressive model in order to evaluate

long term relations between the variables

$$X_t = \partial_1 X_{t-1} + \partial_2 X_{t-2} + \cdots + \partial_k X_{t-k} + \varepsilon_t \qquad (8)$$

Where X_t is n x 1 vector of non-stationary dependent variables in the VAR system while ε_t is a vector of the residuals.

3.4 VECM

After estimating the Johansen cointegration test, if the results confirm the presence of a long run link amongst the variables, VECM is used in order to estimate both long and short term coefficients of the variables. Relationship between Y_t and X_t with an error correction specification is:

$$\Delta Y_t = \alpha + \beta \Delta X_{t-\pi} \hat{e}_{t-1} + \varepsilon_t \qquad (9)$$

Where β is the estimation of the speed of adjustment which measures the transition from the short to long term change in Y reacting to changes in X.

3.5 Granger Causality Test

Wald Granger causality test, under VECM, was used in order to investigate the direction on the relationship amongst the variables. The test estimates the following equations:

$$X_t = \sum_{i=1}^{n} \alpha_i Y_{t-i} + \sum_{j=1}^{n} \beta_i X_{t-j} + \varepsilon_{1t} \qquad (10)$$

$$Y_t = \sum_{i=1}^{n} \lambda_i Y_{t-i} + \sum_{j=1}^{n} \delta_i X_{t-j} + \varepsilon_{2t} \qquad (11)$$

Where X is the independent variable and Y is the dependent variable, if the estimated coefficient of lagged values of the independent variable or for the lagged error terms from the Johansen regression is significant, one can draw that X Granger causes Y and vice versa.

All the econometric methods used have been applied using E-views software.

Chapter 4

EMPIRICAL RESULTS

In this section, the findings from this study are presented and discussed. Descriptive statistics, unit root test results, cointegration, VECM, and Granger causality results are reported and discussed.

4.1 Descriptive Statistics

Variables' descriptive statistics are shown in table (1), the table shows that the variables are normally distributed as the Jarque-Bera's p-value statistic show that the H_0 of normality is not rejected at any significance level. The maximum and minimum observations in the variables show that the samples are not dispersed away from the mean and there are no false observations.

Table 1: Descriptive Analysis

Statistic	FD	LGDP	TO	GL
Mean	0.276	8.253	40.626	45.514
Median	0.243	8.059	43.122	48.301
Maximum	0.479	9.437	54.970	54.057
Minimum	0.153	7.128	17.090	30.274
Std. Dev.	0.094	0.769	9.623	7.020
Jarque-Bera	4.246	2.764	2.374	4.134

| **Probability** | 0.120 | 0.251 | 0.305 | 0.127 |

From figure (2) of variables' line plot, there is an upward trend in all the four variables, which can initially indicate the existence of unit root in the variables because the observations are not random. Due to this initial test, unit root test has been applied to the series.

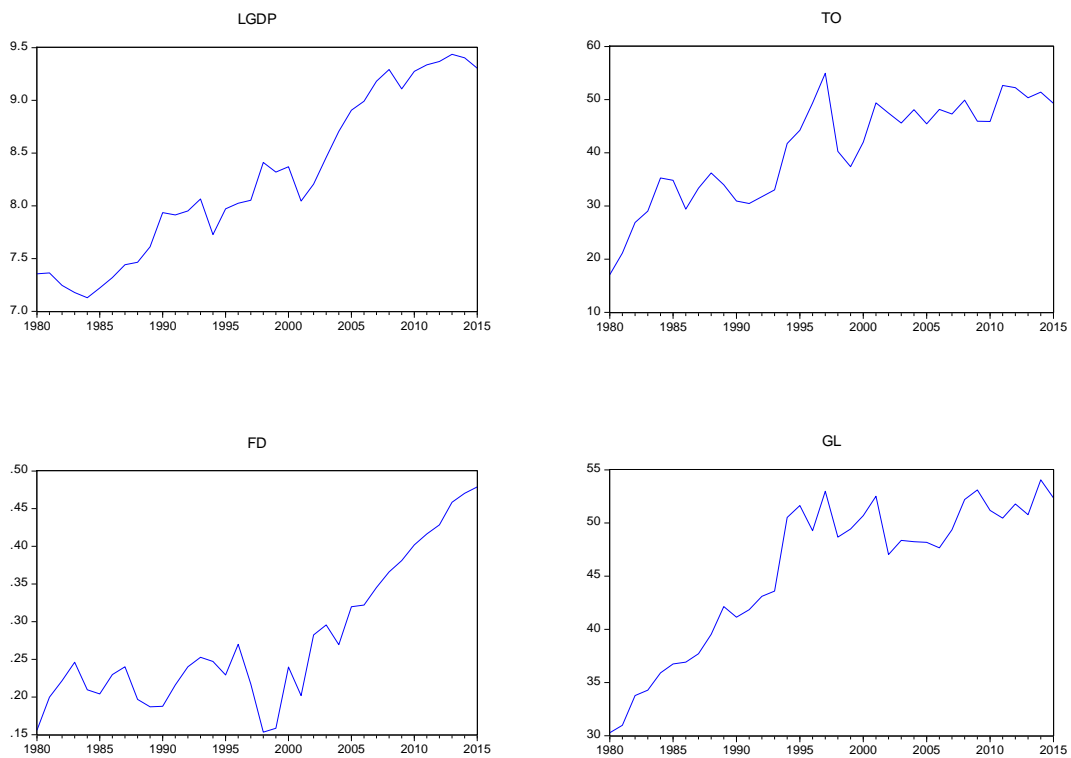

Figure 2: Line plots of variables

4.2 Unit Root Results

To analyze the presence of unit root in the variables, the following tests were applied, namely, the Augmented Dickey-Fuller test (Dickey & Fuller, 1981) and the Phillips Perron test (Phillips & Perron, 1988). Summary of the results is presented in table (2). Results for both ADF and PP show that at level, as we failed to reject the

null hypothesis of nonstationarity for both ADF and PP in the three models. When the first differences are taken, the series became stationary across the three models and the two tests as the null hypothesis was rejected. The results show that all the series used in this study are integrated of one (I(1)). Therefore, ordinary least square method cannot be applied to these series as the regression results will be misleading and false. As an alternative, cointegration test is applied to analyze the presence of long term link amongst the variables.

Table 2: Unit root tests results

Level		FD	GL	TO	LGDP
ADF	Intercept and trend	-2.72	-2.18	-3.43***	-3.06
	Intercept	-0.89	-2.06	-2.50	-0.37
	None	1.55	1.34	0.64	2.05
PP	Intercept and trend	-2.70	-2.04	-3.20	-3.06
	Intercept	-0.78	-2.27	-2.57	-0.38
	None	2.21	1.57	1.19	2.05
First Difference		**FD**	**GL**	**TO**	**LGDP**
ADF	Intercept and trend	-6.94*	-7.55*	-5.54*	-5.97*
	Intercept	-7.05*	-7.29*	-5.51*	-6.07*
	None	-6.31*	-6.69*	-5.43*	-5.42*
PP	Intercept and trend	-7.03*	-8.04*	-8.83*	-5.97*
	Intercept	-7.32*	-7.31*	-6.86*	-6.07*
	None	-6.31*	-6.68*	-5.68*	-5.49*

Note: *, *** refer to significance at 1%, and 10%.

4.3 Johansen Cointegration Results

Since all of our variables are I(1), the Johansen cointegration was used according to the theory (Johansen & Juselius, 1990). Results reported in table 3 show that the first null hypothesis of no cointegrating equation was rejected as the computed trace statistic is larger than the 5% critical value of trace statistic. The results mean that there is a long term relationship between FD and globalization, TO, and EC.

Table 3: Johansen cointegration test

Null Hypothesis	Trace Statistic	5% Critical Value	1% Critical Value
No contegrating equations**	66.58	62.99	70.05

Note: ** refer to significance at 5%.

4.4 VECM Results

According to the findings drawn from the cointegration analysis, a long run connection amongst FD and the independent variables exists. So, VECM is used to calculate the short and long run coefficients of this relationship. Results displayed in table (4) show long-run coefficients are positively significant as the computed t-values of the coefficients are around 2 which means that all TO, globalization, and EC have a positive link with FD and any increase in one of the independent variables will increase FD in the long run (an increase of 1% in EC, globalization, and TO will in turn increase FD by 0.176%, 0.013%, 0.015% respectively). FD will converge to its long term equilibrium as the cointegration equation is significant with t-value reaching -5.18. The speed of adjustment for the long term convergence of FD by the contribution of TO, EC, and globalization is 59%.

As for short term coefficients, both globalization and TO were found to be significant at the short run, the second lag globalization coefficient is found to be significant with a positive sign which means in the short run if globalization increased by 1%, FD will increase by 0.0063%. As for TO, if it increased by 1%, for both the first and second lags, FD will increase by 0.0067% and 0.0036% consecutively.

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Table 4: VECM results

Result	Variable	Coefficient	*t* Statistic
Speed of adjustment	ΔFD	-0.599	-5.180
Short run relationship	ΔGL(-2)	0.0063	2.351
	ΔTO(-1)	0.0067	3.012
	ΔTO(-2)	0.0036	1.946
Long run relationship	LGDP(-1)	0.176	2.116
	GL(-1)	0.0127	-7.230
	TO(-1)	0.015	3.053

4.5 Granger Causality Test Results

Granger causality test under VECM is applied to the dataset to know the direction of the link amongst the variables. Table (5) presents the results of the Granger causality test, according to the results, there is a bidirectional relation among TO and FD which means they affect each other. In addition, there is a one way Granger relationship from globalization to FD which translates to that globalization granger causes FD, as well as one unidirectional relationship running from EC to TO which means that if a change occurred in EC, a change will follow in TO.

Table 5: Granger Causality/Block Exogeneity Wald Tests

Dependent Variables	FD	GL	TO	LGDP	Direction
FD	-	5.91	9.13**	1.65	FD → TO
GL	6.50***	-	3.17	2.65	GL → FD
TO	6.26***	5.39	-	4.02	TO → FD
LGDP	3.04	5.26	6.41***	-	LGDP → TO

Note: **,*** refer to significance at 5%, and 10%

Chapter 5

CONCLUDING REMARKS

This research has examined the effect of TO, EC, and globalization on the FD of Turkey. TO was represented by the sum of exports and imports of goods and services as a share of gross domestic products, EC was proxied by the logarithmic form of gross domestic products, KOF globalization index was used as a proxy of globalization, and IMF FD index represented the FD of Turkey. The analysis was applied on time series data from the period of 1980 to 2015 using different time series methodologies. First, the data was summarized and explored through descriptive statistics. Then, normality was confirmed using the Jarque-Bera test. Afterward, the unit root initial test was indicated through graphs of the series. In addition, formal unit root tests (ADF and PP) were applied to the data in order to check the stationary properties of the dataset. Then, the Johansen cointegration test was applied to investigate the establishment of a long run connection between the variables. After assuring that a long term relationship exists, the vector error correction model was applied to estimate short and long-run coefficients. Finally, Granger causality under VECM was applied to see the direction of the relationship between the variables.

Results show that TO, globalization, and EC are key determinants of FD in the case of Turkey. The test showed that globalization has a statistically significant positive relationship with FD. As the economic, social, and political integration increase in

Turkey, the financial system development increases. Globalization eases capital inflows and outflows alongside with increased diversification benefits and increased awareness of investors. EC was found to have a positive relationship with FD which is in line with expectations. EC increase would set the right conditions for the financial system to develop and prosper. TO is also found to have a positive significant relationship with FD. Increased imports and exports are in turn increasing the pace of a developed financial system as a well-developed financial system is needed to facilitate trade transactions. Moreover, Granger causality results indicate that there is a bidirectional relationship between TO and FD, as more trade would strengthen the financial system, a strong financial system with easy access to credit and well-maintained infrastructure would stimulate trade.

Results drawn from empirical analysis have many important policy implications. Governments play a key role in improving all the crucial economic conditions for the benefits of globalization to be realized in Turkey. In addition, policies of institutional restructure and reforms are important to decision makers that are trying to accelerate the pace of globalization and in turn FD. Globalization can be achieved in two ways, either by opening the financial markets and participating in the global markets with free capital movement and minimal cost access to funds alongside with the increased freedom of foreign financial institutions to operate in the country or with trade liberalization which is a mutual goal with trade openness. As for EC, policymakers should facilitate the necessary conditions in order for the real economy to grow including better infrastructure and increased attention to all aspects increasing EC in order to have a better financial system. Stable economic growth can be achieved through many measures. First, policymakers should invest in human capital development as it will provide more productivity and efficiency. Second,

policymakers should encourage foreign investors to invest in the country by reducing unnecessary regulations as foreign direct investment stimulates economic growth. Third, Governments should provide incentives to individuals and encourage small business as small and medium enterprises stimulates and stables economic growth. Lastly, policymakers should focus on long term infrastructure projects as it is essential to promote long term growth. Government officials should encourage trade and facilitate all the necessary conditions to certify that development in the financial system is achieved. More importantly, trade liberalization by policymakers promotes competition in the domestic markets which will lead to better domestic products and increase productivity, which will drive the economic growth and in turn increase financial system efficiency of the country. |This can be done by decreasing barriers to imports and lower tariffs imposed on them. Finally, policymakers should design proper strategies and techniques to observe and improve the financial system as a whole.

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