THE RELATIONSHIP BETWEEN FINANCIAL DEPTH AND CURRENT ACCOUNT DEFICIT IN TURKEY

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ABSTRACT

In this study, the relationship between financial depth and current account deficit in Turkey is investigated in the short-run and long-run by using Bounds Test approach developed by Pesaran & Shin (1999) and Pesaran (2001) for the period 1987:01-2014:04. According to the results, there is a long-term relationship between financial depth and the current account deficit, but there is no short-term relationship. In addition, there is a negative relationship between the current account deficit variables and financial depth indicating that the more financial depth increases; there is an improvement in the current account deficit.

Keywords: Financial Depth, Current Account Deficit, Turkish Economy.

TÜRKİYE'DE FİNANSAL DERİNLİK VE CARİ AÇIK İLİŞKİSİ

ÖZET

Bu araştırmada 1987:01-2014:04 dönemi için Türkiye'de finansal derinlik ve cari açık arasındaki ilişki Pesaran & Shin (1999) ile Pesaran (2001) tarafından geliştirilen "Sınır Testi" yaklaşımı kullanılarak kısa ve uzun dönemde incelenmektedir. Araştırmadan elde edilen bulgular, uzun dönemde cari açık ile finansal derinlik arasında bir ilişkinin olduğunu, kısa dönemde ise herhangi bir ilişkinin olmadığına işaret etmektedir. Ayrıca, finansal derinlik ile cari açık değişkenleri arasında negatif yönlü bir ilişkinin olması, finansal derinlik düzeyi arttıkça cari açık düzeyinde bir iyileşmenin olacağını göstermektedir.

Anahtar Kelimeler: Finansal Derinlik, Cari Açık, Türkiye Ekonomisi.

1. Introduction

Turkey's large and growing current account deficits are one of the most debated topics in the academic and political arenas. The current account deficit in Turkey reached its highest levels historically from 1974 to 2014. In 2011 the rate of current account deficit to GDP was -9.7% and in 2013 this ratio was -7.9%. Turkey is within the group of countries with highest current account deficit (IMF, 2014b). As in many developing countries, Turkey's growth is dependent on external sources and as a result it is not possible to fully resolve the current account deficit. However, a common point of agreement is the necessity to reduce the current account deficit to sustainable levels.

Current account deficit is generally stated as a function of the difference between domestic savings and domestic investment. If total domestic spending is greater than total domestic savings, foreign savings must be used and the current account deficit problem is encountered. Contrary to closed economies, where investments must be equal to savings, this equality is disrupted in open economies and the current account deficit arises when domestic investments exceed domestic savings. Thus the basic reason for the increase in current account imbalance in Turkey is mainly the low level of domestic savings (IMF, 2014b). In the last thirty years Turkey's domestic savings rate has been lower than other countries with similar levels of income. Since 1998 this trend has led to a widening of the gap between savings-investment. While mean investment follows levels of about 20% of GDP, savings have fallen from 24% of GDP in 1998 to 12% in 2011 - the lowest level since 1980 (Republic of Turkey Ministry of Development, 2015). Though Turkey's savings levels are lower than other moderate income countries, Turkey's investment as a portion of GDP – a little above 20% - follows a similar trend to the global average (World Economic Outlook Database, 2014; IMF Country Report, 2014b).

Since 2001 Turkey has become more dependent on foreign savings. In recent years in Turkey the present savings deficit problem is not due to high public deficit as in the 1990s but due to lower savings by the private sector and especially households (World Bank, 2013). While public savings in Turkey have increased significantly since 2001, there has been a sharp drop in private savings. Van Rijckeghem (2010) linked the basic element in this fall to improving macroeconomic conditions, reduced economic uncertainty, expanding consumer credit and the effect of Ricardian equivalence on fiscal discipline. Access to consumer credit at highest levels reduces private savings and negatively affects the current account (Brissmis et al. 2010). Expanding credit reduces the need for savings required for precautionary savings or investments (Rogg, 2000). Clark (2012) stated that since 2000, in addition to increasing consumer credit, the current account deficit grew by significant levels and private savings reduced.

The increase in public savings created downward pressure on interest leading to greater and cheaper transfer of banking sector funds to the private sector, causing a lowering effect on private savings. The private sector savings/GDP rate of around 23% in 2002 regressed to 11.9% in 2012 (Republic of Turkey Ministry of Development, 2014). However, the household debt to GDP rate of 2% in 2002 increased to 18% in 2012 (Turkish Statistical Institute). The World Bank (2013) stated that the acceleration of credit flow together with falling interest rates, and in connection with this, increased consumption, are the most important factors in falling savings.

The significant increase in consumer credit in the banking sector caused a large rate of increase in household purchases of durable consumer goods, like vehicles and houses.

Şengönül (2008) stated that there were twin deficits in Turkey between the current account deficit and the private savings-investment deficit in the long term and current account deficit and the budget deficit in the short term. The same study proposed that in the very short term budget and private savings deficits occurred together with the current account deficit, in other words a "triple deficit" developed and thus, they advocate that net private savings deficit is an important determinant of current account deficit.

In Turkey the savings-investment/consumption imbalance increased even more after the 2007/2008 global crisis with the expanding monetary policies implemented by developed countries. As monetary expansion policies reduce interest rates, the cost of short-term capital flows declines. On the other hand, the appreciation of national currency has a positive impact on the company's balance sheet, which in turn increases the risk appetite in the economy and leads to a rapid increase in credit.

Turkey, like other developing countries, complied with the economic conjuncture; the increase in global appetite for risk accelerated capital inflows into the country, lowering interest rates increased asset prices and caused the Turkish lira to appreciate. These developments stimulated consumption and investment demand, increasing credit use by both companies and households and contributing to growth of the economy linked to domestic demand (CBRT, 2010:9).

It's possible to observe the savings-investment/consumption imbalance in an economy in the progress of bank deposits and loans. In Turkey when the rate of transformation of deposits to private sector loans is examined it was very low at the beginning of the 2000s, reached levels of 90% before the global crisis of 2007-2008 and loans are observed to exceed deposits in recent times (www.bddk.org.tr). This situation indicates that, apart from deposits, banks financed credit expansion with foreign debt. The insufficient deposits in Turkey show that the financial system is not deep. In Turkey financial depth rate is lower than many other countries (Republic of Turkey Ministry of Development, 2014). When the current account deficit problem is considered as an investment-savings imbalance, "financial depth" becomes important. Turkey's current account deficit is predominantly a result of low national savings (IMF, 2014b). Credit growth causes a higher deterioration in the CA balance for lower levels of financial depth (Ekinci, 2014).

Edwards (1995) examined private saving as one of the significant determinants of degree of financial depth in an economy. A more developed financial system leads to higher savings. As a result, as Chinn & Prasad (2000) stated, we assume that private savings can affect current account deficit through financial depth channels. In the literature when research into determinants of current account deficit is examined, it appears that financial variables are given less importance. The main objectives of this research are: i) to examine the impact of financial deepening on Turkey's current account deficits, ii) to understand the significance of monetization, including the level of saving in the economy on Turkey's current account deficit, and iii) to make policy recommendations on the basis of the research findings. So far, the current literature on this topic does not distinguish the contribution of the financial depth variable. This

research is different from other studies that analyze the effect of structural variables on the current account deficit because the emphasis is on the financial variable. There is a study by Ekinci (2014) on this topic. Ekinci (2014) emphasizes that although the effect of structural variables are deeply analyzed, less attention has been paid to the impact of financial variables.

The rest of the paper is organized as follows: The second section presents the literature. In the third section information is given about empirical framework. The empirical results are discussed in the fourth and fifth section. The final section contains conclusions and recommendations.

2. Literature

One of the most difficult aspects of investigating the relationship between financial depth and current account deficit is the measurement of "financial depth". The proxies proposed to measure the level of financial depth are basically chosen from the monetary and credit aggregates in an economy. There are five categories of financial development / depth indicators (Lynch, 1996):

i) Quantity measures: These indicators are the traditional measures of financial development and deepening and are based on monetary and credit aggregates. Quantity indicators are proxy measures of savings and credit intermediation in an economy. They measure the degree of monetization in the economy. Financial deepening generally entails an increased ratio of money supply to GDP ratio, thus it is measured by relating monetary and financial aggregates such as M1, M2, M3, and private sector credit to GDP ratio.

ii) Structural measures: The M2 / M1 ratio is the basic indicator that measures structural development of the financial system. This ratio can be positively related to the level of financial development; saving deposits increase as the financial system expands. The second rate used in this section is the ratio of securities market outstanding to broad money (SEC/M2).

iii) Financial prices: The real deposit interest rate is the most important financial price. Interest rates should be positive for substantial financial deepening to occur.

iv) Product range: Increasing the diversity of financial products encourages more use of the financial sector, and financial risks are more accurately evaluated. Financial products are instruments such as government bonds, derivatives like financial futures, and swap.

v) Transaction costs: Financial systems require low transaction costs (especially low credit intermediation costs) to support optimal deepening. Transaction costs include bank operating costs and interest rate spreads.

Financial development is defined as a combination of depth (size and liquidity of markets), access (ability of individuals to access financial services), and efficiency (ability of institutions to provide financial services at low cost and with sustainable revenues, and the level of activity of capital markets) (Sahay et al., 2015). Therefore financial depth is related to the size of financial markets. Measuring the financial depth of an economy uses markers such as the rate of private sector loans to GDP, rate of monetary aggregates such as M1, M2 and M3 to GDP, and rate of deposits to GDP.

Most studies reviewed have focused on traditional indicators such as the ratio of M2/ GDP and private sector credits/GDP. M2 is an indicator of money supply that includes cash, checking and savings accounts. To measure financial depth different financial variables are used together with the most commonly used variables. For example, while King & Levine (1993) studied the empirical link between a range of indicators of financial development and economic growth, they used such variables as liquid assets in the financial system/GDP ratio and the ratio of credit issued to private firms to GDP. When Rousseau & Wacthel (2001) examined the empirical relationship between financial sector development and economic growth, they used the variables of M3/GDP, M3-M1/GDP and total credit/GDP.

The level of financial depth in an economy is important at the point of determining private savings, especially. Edwards (1995) stated that the financial depth marker of M2/GDP ratio had a positive correlation to savings. As a result, the financial depth of an economy may affect both investments and savings, and thus the current account balance. There are different approaches to the topic of the effect of savings-investment balance on current account balance. Feldstein & Horioka (1980) estimated a cross-section regression and determined that the tendency of increased domestic savings-investment to cause lower current account deficit was stronger in larger countries. The importance of country size to financial markets was supported by Martin and Rey (2004). This paper presented a two-country model with an endogenous number of financial assets. In this way, larger and more effective financial markets have higher domestic savings rates and as a result this may lead to lower current account deficits.

There are limited studies that examine the relationship between financial depth/ development and the current account deficit. The main studies on this subject are Chinn & Prasad (2000), Calderon et al. (2000), Blanchard & Gravazzi (2002), Chinn et al. (2011), and Ekinci et al. (2014).

Blanchard & Gravazzi (2002), in research on the OECD and Euro region economies, used M3/GDP rate in panel data regression as an indicator of financial depth and showed a strong negative correlation with current account balance. They concluded that an increase in M3/GDP ratio caused a reduction in current account deficit/GDP ratio.

Calderon et al. (2000) attempted to identify determinants of current account deficit in developing countries in research through the GMM estimator method using data from 44 countries from the years 1966-1995 and showed that an increase in both public and private savings rates contributed to a fall in current account deficit. Calderon used the ratio of liquid liabilities to GDP as a measure of financial depth. The estimated coefficient is negative but not statistically significant. Calderon et al. (2000) indicated that its negligible impact may be due to contrasting effects of financial depth on the current account deficit.

There are studies showing a positive correlation between financial depth and current account deficit. In research identifying determinants of current account deficits of 18 industrialized and 71 developing countries in the period between 1971-1995 using panel data analysis, Chinn & Prasad (2000) identified a positive correlation between financial depth and current account deficit in developing countries. Blanchard and Giavazzi (2002) determined that financial development and integration relaxed liquidity restrictions and by easing consumption increased consumption, causing higher current account deficits. Chinn & Prasad (2000) proposed

that in countries in the early stages of financial development, capital imports caused current account deficits, while in the advancing stages of financial development to pay accumulating external liabilities countries export capital and thus begin current account surplus.

Clarida (2005) and Mendoza et al. (2006) stated that financial development may increase domestic investments, and higher financial intermediation and financial sector quality may be related to deterioration of current account deficit. Clarida (2005) proposed that the developed capital markets in the USA absorbed more savings globally causing higher current account deficits.

Chinn et al. (2011) proposed that developing countries with more developed financial markets had weaker current account balances. Ekinci et al. (2014) observed that in the early stages of financial development in countries with less financial depth, the current account balance is more sensitive to accelerating credit growth. Ekinci et al. (2014) examined the dynamics of the impact of credit growth on the CA balance, which is measured as the ratio of the CA balance to GDP. This ratio is selected as proxy for financial depth. The panel dataset comprised 49 countries including industrial and developing ones. The estimation results implied that a 10 percentage point increase in credit growth would worsen CA balance by 0.14 percentage points for a country with financial depth level in the high 10 percentile. On the other hand, the same level of credit boom would worsen the CA balance by 0.63 percentage points for a country where financial depth level is in the low 10 percentile. This finding is important in emphasizing that acceleration of credit growth in economies with insufficient financial depth may lead to greater deterioration of current account balance.

Hermann & Winkler (2008) found that financial markets were an important element to determine current account balance, with current account deficit in countries in the group of emerging economies in Europe reflecting an increase in investment, while the current account surplus in emerging economies in Asia was linked to a reduction in investment.

There are two opposite approaches to whether savings increase linked to financial depth of an economy and the net effect of this. The first of these, postulated by McKinnon (1973) and Shaw (1973), is that as markets deepen households obtain opportunities for greater savings. Accordingly financial depth may increase both savings and investment through efficiency of resource allocation, which will improve current account deficit. The other view, as stated by Chinn et al. (2005), is that greater financial development in less developed and developing countries leads to higher savings; however as financial markets develop and borrowing constraints reduce, households are less enthusiastic about saving which leads to an increase in current account deficit.

3. Empirical Framework

This research uses the M2 money supply to GDP ratio that is often taken as a proxy for financial deepening. The variable representing current account deficit is the current account deficit to GDP rate. To determine the short and long term correlations between the variables, the autoregressive distributed lag (ARDL) "bounds test" approach developed by Pesaran & Shin (1999) and Pesaran (2001) was applied. The most important advantage of the bounds test approach compared to classic cointegration methods is that without regard to whether the variables are integrated at zero I(0) or first degree I(1), the cointegration relationship between

the variables can be determined. Additionally the bounds test provides reliable results in situations where the number of observations is low.

The first ARDL bounds test approach creates a model called the unrestricted conditional error-correction model (UECM) determining the presence of a long term correlation between variables. The unrestricted conditional error-correction model (UECM) applied in this research is given below:

$$\Delta ca_t = \alpha_0 + \sum_{i=1}^{m} \alpha_{1i} \Delta ca_{t-i} + \sum_{i=0}^{m} \alpha_{2i} \Delta m2_{t-i} + \alpha_3 ca_{t-1} + \alpha_4 m2_{t-1} + \varepsilon_t \tag{1}$$

$$\Delta ca_t = \alpha_0 + \sum_{i=1}^{m} \alpha_{1i} \Delta ca_{t-i} + \sum_{i=0}^{m} \alpha_{2i} \Delta m2_{t-i} + \alpha_3 ca_{t-1} + \alpha_4 m2_{t-1} + \alpha_5 \, trend + \varepsilon_t \tag{2}$$

The difference between the unrestricted error-correction models shown in equations (1) and (2) is that the 2nd equation has trend variables. In the ARDL approach unrestricted error-correction models are estimated using models both with trend variables and without trend variables. In the above equation m shows the lag number. The lag number begins from the highest lag number with criteria such as AIC and SC determined according to the lowest value.

To determine whether there is a long term relationship between variables in the bounds test, the coefficients of ca_{t-1} and $m2_{t-1}$ in equations (1) and (2) are brought to zero constraints, at the same time as being tested for whether they are zero or not. According to the Wald restriction test, if the null hypothesis is not cointegrated ($H_0: \alpha_3 = \alpha_4 = 0$), the alternative hypothesis that there is a long term relationship is established as ($H_0: \alpha_3 \neq \alpha_4 \neq 0$). The ($H_0: \alpha_3 = \alpha_4 = 0$) hypothesis is tested using the F test. If the calculated F statistic exceeds a critical upper limit, the null hypothesis is rejected and it is accepted that there is a long-term relationship between the variables. In the inverse situation, where the F statistic is smaller than a lower critical value, it is decided that there is no long term relationship. If the calculated F statistic is between the upper and lower limit values, the presence of a relationship between the variables is uncertain.

After a long term relationship has been determined between the variables, the short and long term ARDL model is estimated. The long term ARDL model applied in this research is given below:

$$ca_t = \alpha_0 + \sum_{i=1}^{m} \alpha_{1i} ca_{t-i} + \sum_{i=0}^{m} \alpha_{2i} m2_{t-i} + \varepsilon_t \tag{3}$$

$$ca_t = \alpha_0 + \sum_{i=1}^{m} \alpha_{1i} ca_{t-i} + \sum_{i=0}^{m} \alpha_{2i} m2_{t-i} + \alpha_3 trend + \varepsilon_t \tag{4}$$

The lag length related to the variables in the model can be chosen by using the Akaike Information Criteria (AIC) or Schwarz criteria (SC). The lag length with smallest value of either the Akaike (AIC) or Schwarz (SC) criteria determines the most appropriate lag length.

In the short term ARDL model while determining the lag length, the method recommended by Kamas and Joyce (1993) is used, as in the long term ARDL model.

The short term ARDL model is given below:

$$\Delta ca_t = \alpha_0 + \sum_{i=1}^{m} \alpha_{1i} ca_{t-i} + \sum_{i=0}^{m} \alpha_{2i} m2_{t-i} + \delta EC_{t-1} + \varepsilon_t \tag{5}$$

$$\Delta ca_t = \alpha_0 + \sum_{i=1}^{m} \alpha_{1i} ca_{t-i} + \sum_{i=0}^{m} \alpha_{2i} m2_{t-i} + \delta EC_{t-1} + \varepsilon_t \tag{6}$$

In equation (6) the EC_{t-1} variable is the value from the previous period of the error series obtained in the long term ARDL model. The δ parameter of this variable shows how much of the short term imbalance will resolve in the long term. If the δ parameter is negative, it shows the deviations in the short term will approach balance values in the long term; if it is positive it shows the series will distance from balance values in the long term.

4. Empirical Results

In the research, quarterly data for the period from 1987-2014 were used. The variables used in the research comprised two variables; the percentage of current account balance to GDP (ca) and the percentage of money supply to GDP (m2). The M2/GDP rate is the proxy variable for financial depth. Broad money (M2) is selected because it is linked to savings and represents the level of monetization in the economy. The Ca series is a seasonally adjusted series taken from Federal Reserve Economic Data (FRED). The M2 series is calculated as the percentage rate of M2 taken from the Central Bank EVDS and GDP series. This series appeared to show significant seasonal variations and was adjusted for seasonal effects using the X-12 method.

The variables used in this study were analyzed using descriptive statistics and other empirical approaches. The descriptive statistics and correlation matrix are presented in Table 1 and Table 2. The probability in the descriptive statistics indicates that the current account variable is normally distributed, with Jarque–Bera statistic of 1.901.526 and 0.386446 probability value. The probability in the descriptive statistics indicates that the financial depth variable (money supply) is not normally distributed, with Jarque–Bera statistic of 1.739.586 and probability value 0.000167.

First, a correlation test was used to examine the degree of association among the variables. This was necessary to avoid the multicollinearity problem. The results are shown in Table 2. All the values of the correlation coefficients were less than 0.8 in absolute terms. This is an indication of the absence of a multicollinearity problem.

Second, the series was examined for unit roots. To determine the stability levels of the variables, the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests were used. The results of the ADF and PP unit root tests are given in Table 3.

Table 1: Descriptive Statistics

	ca	*m2*
Mean	8.541.383	1.337.726
Median	9.194.126	8.893.973
Maximum	1.589.279	3.135.455
Minimum	0,980334	4.138.577
Std. Dev.	3.241.178	9.140.782
Skewness	-0,267244	0,828594
Kurtosis	2.640.554	1.975.702
Jarque-Bera	1.901.526	1.739.586
Probability	0,386446	0,000167
Sum	9.395.522	14714,99
Sum Sq. Dev.	1.145.070	910737,5
Observations	110	110

ca= the percentage of current account balance to GDP, m2= the percentage of money supply to GDP.

Table 2: Correlation matrix

	ca	*m2*
ca	1,000000	-0.757027
m2	-0.757027	1,000000

Table 3: Unit Root Test

Variable	**Fixed**		**Fixed and Trends**		**Fixed**		**Fixed and Trends**	
	ADF Level	**ADF 1st diff**	**ADF Level**	**ADF 1st diff**	**PP Level**	**PP 1st diff**	**PP Level**	**PP 1st diff**
ca	-2.63(0)***		-4.167(0)*		-2.654(4)***		-4.224(5)*	
m2	1.209(0)	-8.587(0)*	-1.831(0)	-8.914(0)*	0.930(3)	-8.581(5)*	-1.856(5)	-8.840(8)*

*, **, and *** respectively show 1%, 5% and 10% significance levels

As can be seen in Table 3, the current account deficit variable has a stable level value of I(0) in both ADF and PP tests, while the financial depth variable is stable in the first degree I(1). Both variables do not appear to be stable variables at I(2) levels and above. In this situation the ARDL bounds test approach can be applied.

Firstly in the ARDL bounds test approach, to test the presence of a long term relationship between the variables, the unrestricted error-correction model is estimated. According to the method of Kamas & Joyce (1993), the most appropriate lag length for this model begins with the largest lag length and determines the most appropriate lag length by looking at the smallest

value for either AIC or SC criteria. In this research to determine the most appropriate lag length, the AIC criteria were taken as a basis. As the variable observations comprise quarterly data, the largest lag length was determined as 4; the most appropriate lag length where AIC criteria is a minimum level was identified as 1. With this lag length, as the dependent variable includes the lag length the Breusch-Pagan Lagrange multiplier (LM) statistic was used and no autocorrelation problem was encountered. (As the trend variable was insignificant, the trend variable was not included in the model.)

In Table 4 the bound test results with the ca variable as dependent variable are shown. The F statistic calculated to test the presence of a long term relationship between current account deficit and financial depth and the upper and lower limit values obtained from Pesaran vd. (2001) are also shown.

When the results obtained from the bounds test are assessed, the $H_0: \alpha_3 = \alpha_4 = 0$ hypothesis proposing there is no long term relationship between current account deficit and financial depth is rejected. As the F statistic, calculated from the unrestricted error model with the regression constant and without the trend variable, is larger than the lower limit I0 and upper limit I1 values at the 5% level of significance, it is concluded there is a long term relationship between the variables. In other words, current account deficit and financial depth series are cointegrated.

In the ARDL model used to analyze the long term relationship between the variables, the most appropriate lag length for the current account deficit variable is 1, while it is determined as 0 for the financial depth variable. The AIC criteria were used as basis to identify the lag length. As the trend variable in the estimated ARDL (1,0) model was statistically insignificant, the trend variable was not added to the model. The estimation results from the ARDL (1,0) model are shown in Table 5.

When the estimation results from the long term ARDL (1,0) model are examined, the financial depth variable is statistically significant and as the coefficient of this variable is negative, it is understood that there is a negative relationship between current account deficit and financial depth in the long term, in accordance with theoretical expectations.

After the long term relationship between current account deficit and financial depth is determined, to identify the short term relationship the ARDL model recommended by Pesaran et al. (2001) was used, as with the long term balance model. For the short term estimation, equation (3) was used. To determine the lag length for the variables in the model, as with determination for the long term ARDL model, the method defined by Kamas and Joyce (1993) was used and the lag length was identified according to AIC criteria. Accordingly, the lag length was determined as 4 for the current account deficit variable and as 2 for the financial depth variable. The estimation results for the short term ARDL (4,2) model are given in Table 6.

Table 4: Bounds Test Results

k*	F statistic	Critical Values (5% Level of Significance)	
1	5.655601	Lower Limit (I0)	Upper Limit (I1)
		3.62	4.16

* k shows the number of independent variables

Table 5: ARDL Model Estimate Results and Long-Term Coefficients

Parameters	Coefficient	Standard deviation	t-statistic	p
Fixed	3.346.581	0.893852	3.744.001	0.0003**
ca_{t-1}	0.719666	0.070088	1.026.805	0.0000*
$m2$	-0.007294	0.002484	-2.936975	0.0041**
Long-term coefficients				
Fixed	11.937845	0.926301	12.887658	0.0000*
$m2_t$	-0.026021	0.005699	-4.566218	0.0000*

*, **, respectively show 1% and 5% levels of significance

Table 6: Short Term ARDL (4,2) Model Estimate Results

Parameters	Coefficient	Standard deviation	t-statistic	p
Fixed	0.087353	0.155800	0.560676	0.5763
ca_{t-1}	1.137729	0.287229	3.961048	0.0001*
ca_{t-2}	0.050332	0.093103	0.540611	0.5900
ca_{t-3}	0.170745	0.104524	1.633548	0.1056
ca_{t-4}	0.019587	0.102861	0.190426	0.8494
$m2_t$	0.009843	0.016883	0.583015	0.5613
$m2_{t-1}$	-0.001086	0.016566	-0.065582	0.9478
$m2_{t-2}$	-0.027402	0.016514	-1.659333	0.1003
ECT_{t-1}	-1.361691	0.315890	-4.310654	0.0000*

* 5% level of significance

According to the results obtained from the short term ARDL (4,2) model, the current and lagged values of the financial depth variable are statistically insignificant, showing there is no relationship between current account deficit and financial depth in the short term. However, it is understood that the value of current account balance in past periods was effective on current account balance. The value of current account deficit rate with 1 lag period is statistically significant. The negative coefficient of the ECT_{t-1} variable is in accordance with statistical

expectations. However, the error correction term coefficient being larger than -1 indicates that fluctuations in the system will come to balance in the long term.

5. Discussion of Findings

The bounds test results provide the necessary preconditions for variables to integrate with each other. The statistical significance of the coefficients in the long term ARDL model indicates that there is a long term balance relationship between current account deficit and financial depth. The research revealed a negative and significant correlation between financial depth and current account deficit in Turkey.

However, the low financial depth coefficient may be explained by not including other determinants of current account deficit in the model. In this study the dependent variable is the current account deficit as a ratio to gross national income (GDP), while the independent variable is money supply as ratio to gross national income. However, in the related literature many variables are chosen as determinants of the current deficit. They are the lagged current account deficit, the domestic output growth rate, private and public saving ratios with respect to GNDI, the share of exports in GNDI, the real effective exchange rate, the terms of trade, the extent of balance of payment controls, the black market premium, the output growth rate of industrialized countries, and the international real interest rate (Calderon et al., 2000).

In the short term there is no significant and negative correlation between financial depth and current account deficit as in the long term. However, the negative and statistically significant error correction term confirms once more that there is a correlation between the two variables in the long term.

The result obtained in this study is that as the financial depth level of the economy increases, there will be an improvement in current account deficit levels. The obtained results do not support the argument of Chinn & Prasad (2000) that there is a positive relationship between financial depth and current account deficit in developing countries. However, it supports the view of Blanchard and Gravazzi (2002) and Calderon et al. (2000) proposing that an increase in saving rates will contribute to a fall in current account deficit.

6. Conclusion and Recommendations

According to the results, there is a long-term relationship between financial depth and the current account deficit, but there is no short-term relationship. In addition, there is a negative relationship between the current account deficit variables and financial depth indicating that as financial depth increases, there is an improvement in the current account deficit.

Turkey's current account deficit is predominantly a result of low national savings and not high investment (IMF, 2014b). The savings level in an economy affects current account deficit through the financial depth channel. As a result it is necessary to use economic policies to increase savings levels. The basic aim of this research is to show policy makers in Turkey that financial depth level is a determinant of current account deficit levels. This is important in terms of developing a more correct and radical approach to economic policies to lower the current account deficit, especially. It is known that the savings level in an economy is linked to many factors such as stable and strong macroeconomic policies, real interest rates, inflation rates and disposable income.

Since 2001 Turkey has become more dependent on foreign savings. In recent years in Turkey the present savings deficit problem is not due to high public deficit as in the 1990s but due to lower savings by the private sector and especially households (World Bank, 2013). In order to encourage more savings and transfer of these savings to commercial banks, it is necessary to increase the real interest rate deposits and to reduce the transaction fees and commission. However, an important case encountered in Turkey in recent years is the growth of credit linked to an increase in credit card and consumer loans, pushing individuals in the lowest income group into negative savings and this prevents any increase in saving rate in the economy. At this point, it is important take into account the adverse effects of credit growth on savings in monetary policy applications.

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