



RESEARCH NOTES IN ECONOMICS

The Relationship of Consumer and Commercial Loans with Current Account Deficit in Turkey

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Abstract: In this paper, the relationship between consumer and commercial loan growths and current account deficit in Turkey is investigated. The regression results using 2003Q2-2015Q2 period reveal that in Turkey consumer loan growth negatively and statistically significantly affects current account balance, while commercial loan growth has no statistically significant effect. The results indicate that the new monetary policy framework of CBRT which takes into account the financial stability while keeping the price stability as the primary objective and the macroprudential measures taken by other related agencies work to enhance the financial stability in Turkey.

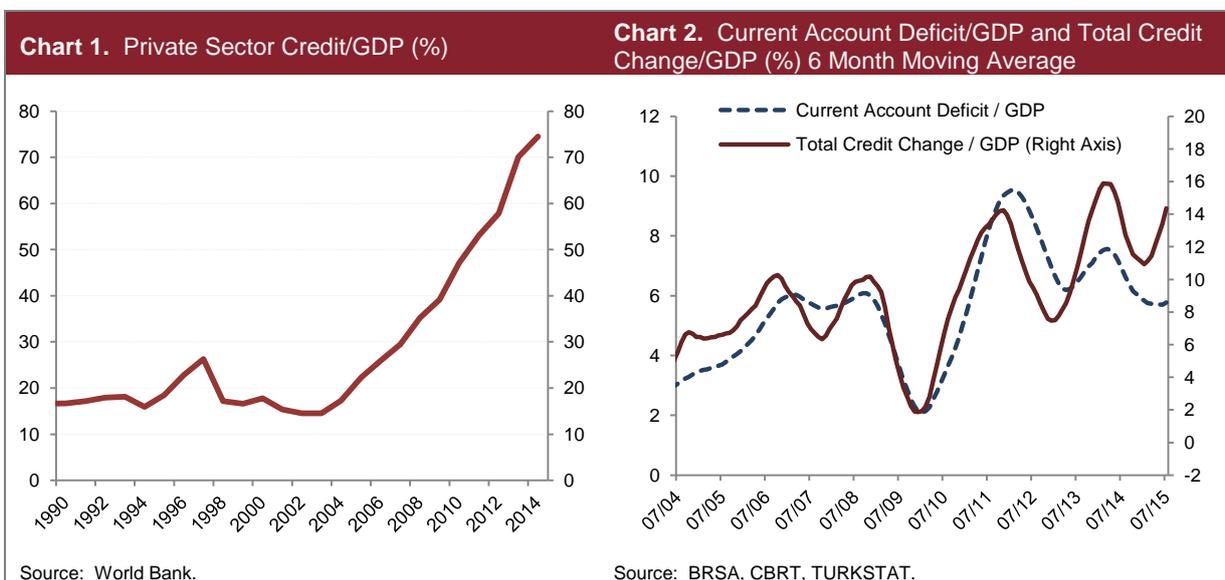
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1. Introduction

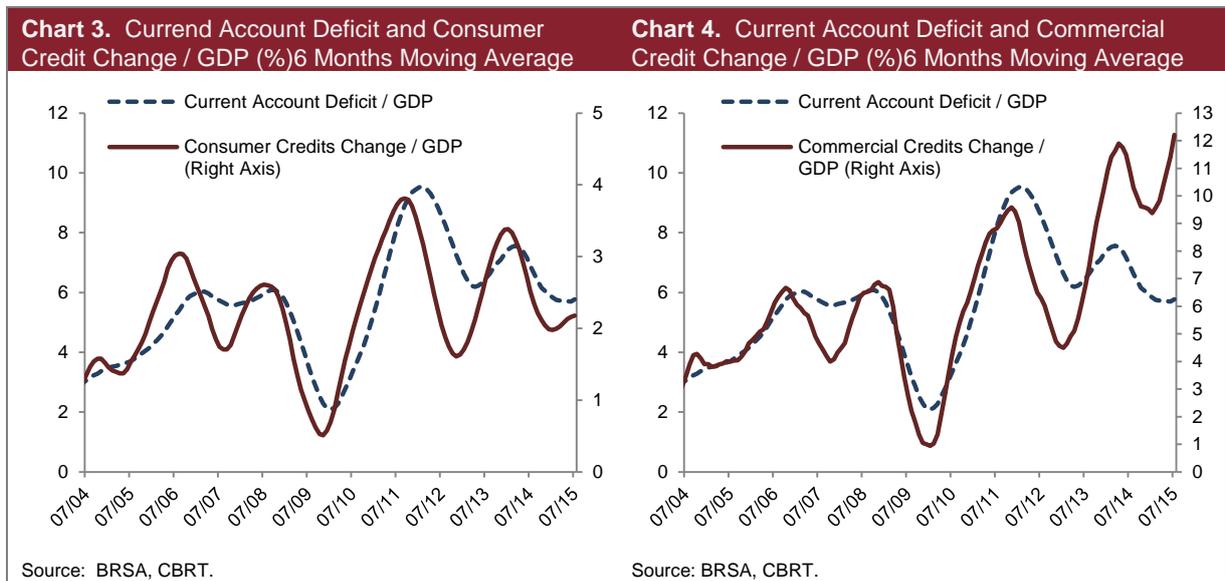
From 1990s up until 2003 private sector loan volume in Turkey tend to be low. It was 17 percent of the GDP in 1990 and 15 percent in 2003, but after 2003 commercial loan volume began to increase rapidly and it reached 75 percent of the GDP in 2014 (Chart 1). Financial deepening is a crucial aspect of economic development process and close monitoring of loan developments is crucial for designing policies aimed at macroeconomic and financial stability.

An important aspect of the loan developments in terms of macroeconomic stability is its relation with the current account balance. In the period following the global financial crisis Turkish economy grew rapidly, while during this period annual growth rate of total loans approached 40 percent. Moreover, the ratio of annual change in the loan stocks (defined as the use of annual net loans) to the current GDP reached 14 percent in mid-2011 (Chart 2). When the loan demand increases rapidly in a short period and domestic financial sources fall short to cover this increase, the additional loan demand might be met by foreign inflows, but this would negatively affect the current account balance. As seen in Chart 2, high loan growth and current account imbalances are highly correlated. Also a trend of appreciation in domestic currency can accompany this relation.



Excess rates of loan growth and its unbalancing effect on current account along with an appreciation trend in domestic currency can increase macro-economic risks. In a framework of volatile global financial markets, high levels of current account deficit also increases the need for foreign finance, rendering the economy much more vulnerable to external economic

conditions. At the end of 2010, CBRT developed a new policy framework to control such macro-financial risks. In tandem with the measures implemented by other regulating agencies, loan growth rates and current account deficit decreased to reasonable levels, and concurrently appreciation of Turkish Lira died down. Although the mentioned adjustments have usually occurred at the time of crises in the past, absence of any concurrent contraction in the economy suggests that the political measures successfully obviated the imbalances of the economy. In the light of these recent developments, it is crucial to clarify the relation between loans and current account imbalance.



In Chart 3 and Chart 4, net consumer and commercial loans are shown along with the current account deficit. There are different reasons that differentiate these two items' relations to the current account. For designing political measures to balance the current account and to maintain financial stability, it is also important to understand if the relation between loans and current account deficit is differentiating with respect to the sub-items of the loan.

It is probable that an increase in consumer loans would have an unbalancing effect on the current account deficit, because it would increase demand for consumption, and this demand would likely tend towards imported goods. Also, when the supply capacity of an economy is constant, the financing of a demand increase by consumer loans may trigger an

overall price hike. This may cause a real appreciation in the local currency, which may function as an additional channel to widen the current account deficit.¹

The use of commercial loans to finance firms' imported inputs may expand the current account deficit, while a simultaneous output growth may limit the widening of the current account deficit assuming no deterioration in the production structure in favor of imported inputs. Moreover, the use of commercial loans in investments may first widen the current account deficit due to partial reliance on external funds and/or utilizing imported inputs in investment. However, the subsequent growth in output capacity will curb the widening of the current account deficit by supporting supply. Besides, increased output capacity may also promote exports, which will reduce the current account deficit. In case firms' loan constraints are binding for exports, a rise in commercial loans may directly cause lower current account deficit through growth in exports.

The paper proceeds as follows: Section 3 discusses the related literature briefly and presents the data. Section 3 gives the regression results. Section 4 concludes.

2. Related Literature and Data

Necessity for close monitoring of the growth of the loans for financial stability is a well accented issue in the economic literature. For example, Mendoza and Terrones (2008) emphasized that there is a systematic relation between rapid loan growth and the increase in asset prices, economic growth, appreciation of the real exchange rate and deterioration of the current account deficit. In addition to these, the researchers underline the increase in the firms' leverage and banks fragility during rapid loan growths calling attention to the fact that most of the crises in emerging countries are related to rapid loan growth. Mendoza and Terrones (2008) argue that rapid loan growths are generally followed by banking crises, currency crises and sudden-stops. Using a broad sample of emerging and developed countries, Ekinçi, Erdem and Kiliñç (2015), analyzed the determinants of the current account balance, found that there is a strong relation between loan growth and the current account balance, and that the acceleration of loan growth have a deteriorating effect on current account balance especially in emerging countries.

Jorda, Schularick and Taylor (2011a), using annual data over the period of 1870-2008, found that loan growths are the most important indicator of financial stability. Jorda, Schularick and Taylor (2011b) point out that financial crises cost more heavily than ordinary

¹In their study, Ögünç and Sarıkaya (2015) find that consumer loans have a higher inflationist effect than commercial loans for equal monetary amounts of loan increase.

recessions, and underline that expansion periods with higher loan growths cause much deeper crises with significantly slower recoveries. Bulut, Fazilet and Kiliç (2016) emphasize that the sudden current account deficit correction is more likely if deficit is high, and probability of sudden correction is higher in emerging countries.

Differentiating effects of commercial and consumer loans on the economy are also discussed in the literature. Büyükkarabacak and Valev (2010) suggest that macroeconomic effects of the growth in commercial and consumer loans could be dissimilar. Growth in consumer loans increases household indebtedness without changing the income level in the long term; in contrast, the growth in commercial loans could also increase the income in the long term. In this respect, they point out that consumer loan growth is an important indicator of banking crises; commercial loans, although being also related to banking crises, statistically have less power as an indicator. Beck et al. (2012) suggest that commercial loans are positively related with economic growth where consumer loans are not, and commercial loans have a positive effect on relieving the income inequality contrary to consumer loans which have not.

There are only a few studies about the relation of the current account deficit and loan composition. Coricelli et al. (2006) analyze the macroeconomic effects of individual loans in seven European countries, including Turkey, at a monthly and quarterly frequency, over the period of 1999-2004. This study found that individual loans in Turkey statistically significant to disrupt the trade balance; but commercial loans, on the contrary, improve the trade balance. The results are similar for other European countries. In this study, loan variables used as difference from HP trends, and analysis is country based.

Büyükkarabacak and Krause (2009) examined the relation of trade balance and loan composition in 18 emerging countries, including Turkey, for the period of 1987-2005. According to this study consumer loans' effect on external balance is negative, but commercial loans' effect is positive. In the study, loan variable is calculated as ratio of total stock loans to GDP. This might be somehow problematic. While foreign trade balance is a flow variable, loan itself is a stock variable. Instead of comparing flow and stock variables, it would be more preferable to examine the relation with a flow-like data which could be constructed using the ratio of the change in the loan stock to GDP². Although we follow Büyükkarabacak and Krause (2009) in this study, we prefer to use loans as flow variables

² In Turkey over the period of 1987-2005, the rate of loan stock to GDP followed fluctuating but stationary course. In this regard, use of stock or flow data in analyses might not create an important economic or technical problem. But after 2005, a strong and steady upward trend in the loan stock-to-GDP ratio observed in Turkey. In this context analyzing the foreign trade balance or the current account deficit relation to loan stock become economically and technically problematic. Similar upward trends are also observed in other emerging countries.

instead of stock. In their recent study, Mian et al. (2015) examined the macroeconomic effects of consumer loans, covering a large group of countries, mostly over the period of 1990-2012. In this study they use loan stock-to-GDP ratio as loan variable and they found that the increase in consumer loans attenuates economic growth and increases unemployment, and deteriorates the external trade balance.

Table 1. Descriptive Statistics

	Current Account Deficit (CA) / GDP (%)	CA (exc. Gold and energy) /GDP (%)	Quarterly GDP Growth	Real Efektive Exchange Rate	Total Credit Growth/GDP	Commercial Credit Growth/GDP	Consumer Credit Growth/GDP	Commercial Credit/Total Credit
Mean	-5.48	-0.20	1.19	109.73	9.24	6.39	2.17	69.34
Median	-5.61	-0.20	1.15	109.66	9.33	6.02	2.20	67.88
Maximum	-0.40	2.60	5.52	127.73	22.63	16.43	4.97	83.40
Minimum	-10.28	-4.59	-6.90	96.91	-0.58	-1.75	-0.77	65.52
Std. Deviation	2.23	1.42	2.17	7.66	5.32	4.35	1.20	4.17
Observations	49	49	49	49	49	49	49	49

This study discusses whether the effects of commercial and consumer loans on the current account deficit differentiate over the 2003Q2-2015Q2 period for Turkey. A simple empirical model designed for this purpose, and different specifications are estimated. The study uses quarterly data. The data of current account deficit is compiled from the Central Bank of the Republic of Turkey (CBRT) balance of payments statistics, and loan data is retrieved from webpage of Banking Regulation and Supervision Agency (BRSA). Real exchange rate data is taken from Real Effective Exchange Rate statistics of CBRT Electronic Data Distribution System. The GDP data are taken from Turkish Statistical Agency (TURKSTAT). Current account deficit excluding gold and energy data which is used in the robustness tests is formed by subtracting net gold and energy trade from the current account deficit data. The current account deficit variable used in the model is obtained as ratio of seasonally adjusted quarterly current account deficit data to seasonally adjusted current quarterly GDP; and net consumer, commercial and total loan variables are calculated as ratio of the quarterly changes in the loan stock to current quarterly GDP. GDP growth in any quarter is the percent increase of that quarter's seasonally adjusted GDP vis a vis the previous quarter. Descriptive statistics of the data used in the study is shown in Table 1. Also, in the Appendix 1, Chart 5 gives time-series of some data.

3. Regression Results and Discussion

Based on the discussion in the previous sections, to understand the relationship between commercial and consumer loans with the current account deficit, the empirical model given in equation 1 below is constructed. We use one period lag of current account deficit variable, GDP growth, real effective exchange rate (with one period lag) as control variables besides the loan variables. Moreover, for robustness check, we replicate the analysis with the variable of current account deficit excluding gold and energy which is generated by subtracting the gold and energy trade from the previous current account variable. Although the model is based on the theoretic framework put by Büyükkarabacak and Krause (2009), the loan variables are preferred to be constructed as flow variables where the mentioned study uses stock variables.

$$CA_t = \alpha + \beta_1 CA_{t-1} + \beta_2 GDP\ GROWTH_t + \beta_3 REER_{t-1} + \beta_4 CONSUMER_{t-1} + \beta_5 COMMERCIAL_{t-1} + e_t \quad (1)$$

Table 2 summarizes the results of a simple regression analysis based on quarterly data over the 2003Q2-2015Q2 period for Turkey. According to the results, the GDP growth stands out as an important explanatory variable for the current account balance. The change in total loans to the GDP, which is included in columns 2 and 6, is also found to be statistically significant with negative effects on the current account balance. In addition to consumer loans, commercial loans are added to equations in columns 3 and 7, while commercial loan share is included in columns 4 and 8 in order to handle the multicollinearity problem that would possibly arise from the high correlation of these two loan types. Accordingly, the current account balance seems to be related mostly with consumer loans. In other words, an increase in consumer loans has a statistically significant negative effect on the current account deficit, whereas an increase in commercial loans has no significant effect on the current account balance. These results are similar to the findings in the literature.

The fact that the effects of consumer and commercial loans on the current account deficit are different also entails informative value regarding the measures to be taken for the current account balance. The findings suggest that controlling total loan growth mostly by limiting consumer loans may improve the current account balance. Accordingly, the decelerating consumer loans and robust commercial loans, which are backed by the liquidity policies adopted by the CBRT and the macroprudential measures enforced by the BRSA to limit consumer loans are assessed to have a positive impact on the current account balance.

Table 2. Credit Growth and Current Account Deficit

	Dependent Variable: Current Account Deficit/GDP				Dependent Variable: Current Account Deficit(excluding gold and energy)/GDP			
	1	2	3	4	5	6	7	8
1 Period Lagged Current Account Deficit	0.810*** (0.072)	0.661*** (0.081)	0.625*** (0.085)	0.591*** (0.101)	0.729*** (0.142)	0.609*** (0.169)	0.613*** (0.152)	0.627*** (0.162)
GDP Growth	-0.259*** (0.091)	-0.263*** (0.074)	-0.212*** (0.073)	-0.194*** (0.071)	-0.136*** (0.040)	-0.157*** (0.037)	-0.163*** (0.047)	-0.119*** (0.034)
1 Period Lagged REER	-0.023 (0.022)	-0.027 (0.022)	-0.009 (0.028)	0.005 (0.026)	-0.030* (0.015)	-0.036** (0.016)	-0.038* (0.022)	-0.026 (0.016)
1 Period Lagged Total Credits Change / GDP		-0.107*** (0.038)				-0.055** (0.025)		
1 Period Lagged Commercial Credits Change / GDP			-0.040 (0.067)				-0.067 (0.051)	
1 Period Lagged Consumer Credits Change / GDP			-0.423* (0.231)	-0.543*** (0.168)			-0.024 (0.161)	-0.226** (0.094)
1 Period Lagged Commercial Credits / Consumer Credits				0.034 (0.054)				-0.016 (0.026)
Constant	1.713 (2.497)	2.331 (2.431)	0.208 (3.093)	-3.902 (5.851)	3.298* (1.638)	4.452** (1.849)	4.708* (2.481)	4.415* (2.585)
Observations	48	48	48	48	48	48	48	48
R-squared	0.71	0.75	0.76	0.76	0.68	0.71	0.71	0.70

*, **, *** indicates statistical significance in %10, %5 and %1 respectively

In addition to the specifications above, to check the robustness of analysis, additional specifications are estimated. The co-movement of commercial and consumer loans raise the question of multicollinearity. Hence, in the fourth column the portion of commercial credits in total credits is added to the equation beside the consumer credit variable. This enables us to analyze the affect of relative change in commercial loans to the consumer loans with current account deficit. In this specification the relation of consumer loans with current account is found to be similar to previous ones where commercial loan variable is statistically insignificant as before. Moreover, foreign GDP growth, commercial and consumer loan rates is used as explanatory control variables, however no significant change in the relation of consumer and commercial loans with current account deficit is observed.

In addition to the robustness analysis mentioned above, to contain possible endogeneity and reverse causality issues, all specifications are also estimated using GMM method as in Coricelli et al. (2006). The results are given in Table 3 in Appendix. As can be seen, the signs of the coefficients and their statistical significancies are in compliance with those of the

Table 2's³. Moreover, as an additional robustness analysis, we also estimate a VAR model. In this structural model, all variables are subject to their own structural orthogonal shocks. GDP is also subject to the commercial and consumer loans' shocks and the current account is subject to the shocks of the GDP, commercial and consumer loans and the exchange rate. The impulse responses of this VAR model is given in Chart 6 in Appendix 3. According to these impulse responses, a one standard deviation increase in consumer loans statistically significantly decreases the current account deficits for 3 quarters while the commercial loans have no statistically significant effect. In sum, the negative impact of the consumer loans on the current account deficit is apparent in all the analysis provided thus far and our findings are consistent with the extant literature.

4. Conclusion

Covering the period between 2003 and 2015 in Turkey, our results indicate that consumer loans have negative and statistically significant impact on the current account deficit, while commercial loans have no statistically significant effect. These results imply the importance of the policies that aim to stabilize the external balance through affecting the credit growth and its composition.

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³ As instruments we used one period lagged values of current account deficit and GDP and up to two periods lagged values of all the other variables. J statistics are also given in Table 3.

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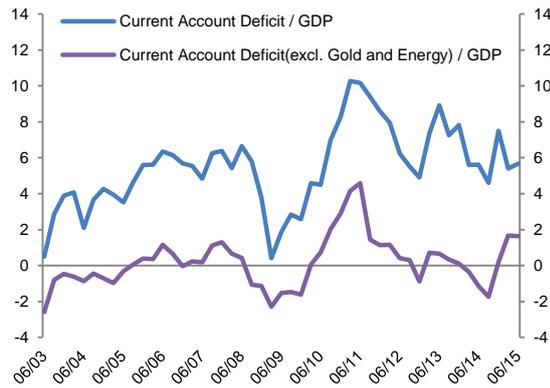
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Appendix 1:

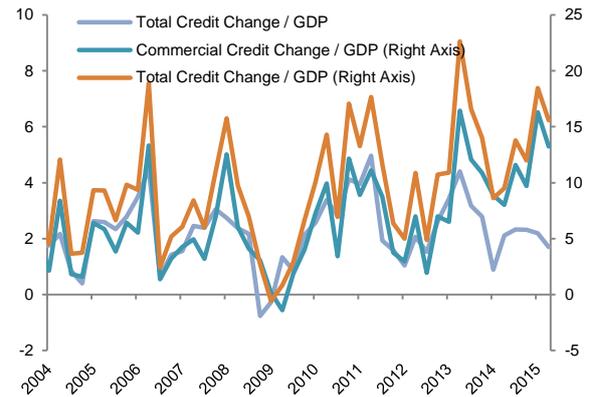
Chart 5: Some Data Used in the Analysis

Current Account Deficit and Current Account Deficit excluding Gold and Energy



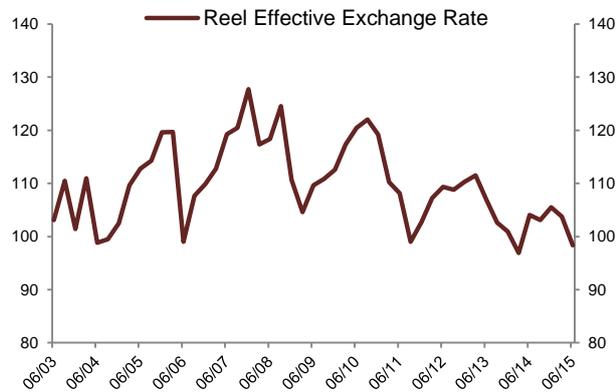
Source: World Bank

Credit Change / GDP (Total– Commercial – Consumer)



Kaynak: BRSA, CBRT, TURKSTAT.

Real Effective Exchange Rate (REER)



Kaynak: CBRT.

Real GDP Growth (% , Quarterly Change)



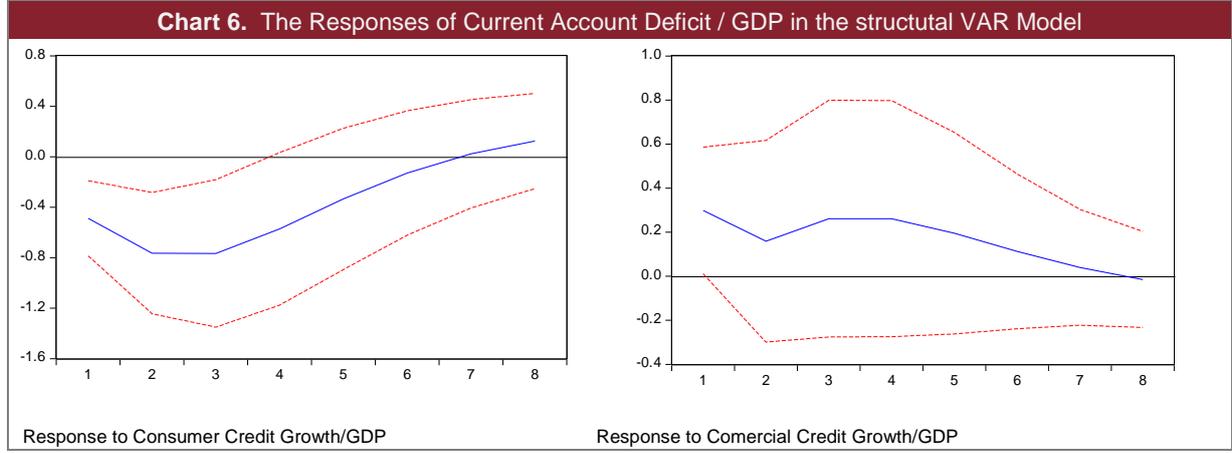
Kaynak: TURKSTAT.

Appendix 2:

Table 3. Credit Growth and Current Account Deficit (GMM)								
	Dependent Variable: Current Account Deficit/GDP				Dependent Variable: Current Account Deficit(excluding gold and energy)/GDP			
	1	2	3	4	5	6	7	8
1 Period Lagged Current Account Deficit	1.090*** (0.079)	0.877*** (0.143)	0.518*** (0.122)	0.541*** (0.167)	0.880*** (0.129)	0.522** (0.213)	0.306 (0.221)	0.357 (0.251)
GDP Growth	-0.538*** (0.163)	-0.385** (0.167)	0.102 (0.199)	-0.163 (0.165)	-0.180** (0.090)	-0.138** (0.063)	0.019 (0.122)	0.005 (0.109)
1 Period Lagged REER	-0.092** (0.037)	-0.060* (0.035)	0.048 (0.042)	0.035 (0.039)	-0.057** (0.022)	-0.036* (0.020)	-0.022 (0.031)	-0.009 (0.028)
1 Period Lagged Total Credits Change / GDP		-0.080 (0.058)				-0.122*** (0.045)		
1 Period Lagged Commercial Credits Change / GDP			0.045 (0.096)				-0.064 (0.072)	
1 Period Lagged Consumer Credits Change / GDP			-1.080** (0.433)	-0.995*** (0.267)			-0.500 (0.326)	-0.725*** (0.234)
1 Period Lagged Commercial Credits / Consumer Credits				0.085 (0.078)				-0.002 (0.037)
Constant	11.276*** (4.343)	6.939* (4.199)	-6.144 (4.691)	-10.049 (9.378)	6.339** (2.493)	5.096** (2.294)	3.609 (3.249)	2.553 (4.593)
Observations	45	45	45	45	45	45	45	45
R-squared	0.51	0.69	0.66	0.72	0.62	0.67	0.56	0.57
J Statistics	0.62	0.74	0.92	0.68	0.21	0.71	0.71	0.88

*, **, *** indicates statistical significance in %10, %5 and %1 respectively

Appendix 3:



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