

THE EFFECT OF INDIVIDUAL CREDITS ON ECONOMIC GROWTH IN TURKEY

Türkiye’de Bireysel Kredilerin Ekonomik Büyümeye Etkisi

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ABSTRACT

Keywords

Economic Growth,
Personal Credits,
Johansen Cointegration
Analysis.

Anahtar Kelimeler

Ekonomik büyüme,
Bireysel krediler,
Johansen Eş bütünleşme
Analizi.

With the crisis experienced in 2008, in Turkey, growth targets changed, and a model of growth in which savings are directed to productive investments, was adopted, instead of consumption-based growth model. This change was expressed in 10th 5-Year Development Plan (2014-2018). In the recent years, in Turkey, besides the deepening saving deficit, current deficit, and increase in the debts of private sector form a vulnerability in economy, they threaten and make difficult to apply the targeted model. In order to achieve growth targets, it is seen that credit channels are often put into operation through banks. However, due to the fact that credits expand in uncontrolled way can lead Turkish Lira to be overvalued, current deficit to increase, and foreign capital inflow and interest rates to increase, controlling credit expansion has a great importance. In this context, in the study, it was aimed to be introduced the effect of vehicle credit, housing credit, consumer credit, and credit cards taking place in personal credit system on economic growth. In the direction of findings obtained in the study, for targeted growth to be provided with the productive investments foreseen, it will be possible to reveal that credit policies have effects in what direction.

ÖZ

2008 yılında yaşanan finansal kriz ile Türkiye’de büyüme hedefleri değişmiş, tüketim kaynaklı büyümeden, tasarrufların verimli yatırımlara yönlendirildiği bir büyüme modeli benimsenmiş ve bu değişim Onuncu Kalkınma Planı’nda (2014-2018) ifade edilmiştir. Son yıllarda Türkiye’de derinleşen tasarruf açığı, cari açık ve özel sektör borçlarının artması ekonomide kırılganlık oluşturmasının yanı sıra makroekonomik istikrarı da tehdit etmekte ve hedeflenen büyüme modelinin uygulamasını zorlaştırmaktadır. Büyüme hedeflerine ulaşmak için bankacılık sektörü aracılığı ile kredi kanalının sıklıkla devreye sokulduğu görülmektedir. Ancak kredilerin kontrolsüz olarak genişlemesi Türk lirasının aşırı değerlenmesine, cari açığın artmasına ve yabancı sermaye girişiyle faizlerin yükselmesine neden olabileceğinden kredi genişlemesinin kontrolünün sağlanması büyük önem arz etmektedir. Bu bağlamda çalışmada bireysel kredi sisteminde yer alan taşıt kredisi, konut kredisi, ihtiyaç kredisi ve kredi kartlarının ekonomik büyüme üzerinde etkisinin ortaya konulması amaçlanmıştır. Çalışmada elde edilen bulgular doğrultusunda öngörülen verimli yatırımlarla hedeflenen büyümenin sağlanması için kredi kanalı politikalarının ne yönlü etkisi olduğu ortaya konmuş olacaktır

1. INTRODUCTION

The relationship of financial development and economic development is among the leading issues continuously discussed by economists. Traditional theories accept that financial system does not play effective role in adapting the needs of real economy. Modern theories argue that financial system plays an effective role on economic growth in contrast to traditional theories, and that financial system is one of the important instruments of economic policy (Hermes and Lensink, 1996:7). In developed countries, it is seen that financial system has a highly developed feature and direct relationship with economic growth. Banking system forms the basis of financial system (Hermes and Lensink, 1996:7) in the developed countries, In some countries, market-based systems are seen to prevail. When banking system and market-based financing systems are individually evaluated, it is possible to express that the effect of financial system on economic growth is unidirectional. [The solution] of this problem is only possible with finding an answer to the question of "How must financial system work as a whole?". If financial system is developed together with economic growth, it will form one of the most appropriate instruments used in economic growth. Thus, with a system, in which financial decisions are more easily made, positive process expected in economic growth will have been experienced (Şener, 2012:176).

In the study, which is among the first studies carried out on the subject, introduced by Schumpeter (1912), and in which supply-based hypothesis is discussed, in order for being able to direct financial development and countries and entrepreneurs experiencing capital deficiency to the effective investment areas, it is put forward that a large resource is formed (King and Levine, 1993). In a demand-follower hypothesis, introduced by Robinson (1952), while expressing that economic growth is the cause of financial development, the point that the fund real economy needs is provided through financial system for being able to provide the expected growth is emphasized (Robinson, 1952). In a feedback hypothesis, which supports this approach and takes place in the literature, it is mentioned about the presence of bidirectional relationship between economic growth and financial system.

With the financial crisis experienced in 2008, growth targets changed in Turkey. and a model of growth, where savings are directed to productive investments, was adopted, instead of consumption-based growth. This change was expressed in 10th 5-Year Development Plan (2014-2018). In the recent years, in Turkey, besides the deepening saving deficit forms an increase in the current deficit and debts of private sector and a vulnerability in economy, it threatens and makes difficult to apply the targeted model. . In order to achieve growth targets, it is seen that credit channels are often put into operation through banks. However, due to the fact that credits expand in uncontrolled way can lead Turkish Lira to be overvalued, current deficit to increase, and foreign capital inflow and interest rates to increase, controlling credit expansion has a great importance. In this context, in the study, it was aimed to be introduced the effect of vehicle credit, housing credit, consumer credit, and credit cards taking place in personal credit system on economic growth. In the direction of findings obtained in the study, for targeted growth to be provided with the productive investments foreseen, it will be possible to reveal that credit policies have effects in what direction.

2. CONCEPTUAL FRAMEWORK

It will be proper to begin to the subject by firstly defining individual credits. With a general expression, personal credits are defined as credits given to the persons or real persons on conditions that they are repaid after a certain time and using in purchasing goods and services. Personal credit, first used in USA in the world in 1928, experienced a rapid increase in the use of personal credit after 1950, depending on the development of technology and communications tools. (Kaptan, 2011: 4-5). In Turkey, the application of personal credit has been first began in 1988 and, beginning from 1990s, the use of application increasingly continued (Uzunlar, 1990: 72).

Banking sector, one of the largest channels of financial system introduces credit options that are in accordance with the developing technological conditions, in order to form a strong bank image, attract attention of consumers in market, and increase consumer portfolio. In banking sectors, it is seen that banks present credit opportunities under the different name and conditions. In personal credits, what is the main determinative is to allocate credit in the direction of paying power of person that receives

credit. In this context, in the marketing techniques of the different banks allocating credit in the sector, there are efforts to create difference (Aksoy, 2005: 75). However, although their names are different, in general, the different credit applications such as consumer credit, vehicle credit, housing credit, education credit, career credit, personal development and hobby credit purchase invoice credit, holiday credit, and female entrepreneurship credits are encountered (Demir,2015,42).

In the recent years, personal credits, which are often used by society and have a large place in banking products, in economies; at the production level; in income, in foreign currency inflow, provided by increase of export capability, in the increase of employment; in raising the profits of financial sector and, thanks to this, in reducing risk; in recording informal economy and at the points such as increasing tax revenues of government form important effects on economy. Beside its positive effects, if it is not properly used, it can cause foreign trade to unbalance and foreign trade deficits to increase, and inflation rates to rise up (Kılıç and Torun, 2018: 19). In this context, for economic growth to be able to provide, using personal credits in proper place and banking sector to properly direct system have a great importance.

3. DATASET AND LITERATURE SUMMARY

In this direction of the study, the summary of the studies related to the subject in the literature and definitions of variables used in the study were given place.

Literature Summary

In this section of the study, the studies dealing with the relationship between financial system and economic growth were summarized in Table 1.

Table 1. The studies introducing the relationship between financial development and economic growth

AUTHOR	SCOPE	METHOD	CONCLUSION
Xu (2000)	41 Countries	MVAR Model	Financial development is the result of economic growth.
Shan et al. (2001)	9 OECD Countries and China	VAR Model	It was identified that there was a reciprocal relationship between economic growth and financial development.
Al-Yousif (2002)	30 Countries	Panel Data Analysis	It was found that there was a reciprocal causality between financial development and economic growth i.e. that causality was bidirectional
Çetintaş and Barışık (2003)	Turkey	Granger Causality Analysis	Financial development positively affects economic growth.
Beck and Levine (2004)	40 Countries	Panel Data Analysis	It was identified that there was a positive directional relationship between financial development and economic growth.
Hondroyannis et al. (2005)	Greece	Granger Causality Analysis	It was identified that there was a bidirectional causality between financial development and economic growth
Yılmaz et al (2006)	Turkey	Granger Causality Analysis	It was identified that economic growth affected financial development.
Evin (2007)	Turkey	Granger Causality Analysis	It was seen that in the short period, causality was toward financial development from economic development, while in the long period, there was a weak relationship between financial development and economic growth in Turkey.
Güngör and Yılmaz (2008)	Turkey	Johansen-Juselius Co-integration	It was seen that there was a long term relationship between developments in financial market and economic growth. It

			was found that there was an unidirectional relationship between banking sector and economic growth from economic growth to banking sector.
Yucel (2009)	Turkey	Granger Causality Analysis	Financial development has an important effect on economic growth.
Keskin and Karşıyakalı (2010)	Turkey	Engle-Granger co-integration method and Granger causality error correction model.	It was determined that the direction of the relationship between financial development and economic growth from economic growth to financial development in both long term and short term.
Özcan and Ari (2011)	Turkey	VAR Model	In Turkey, it was identified that there was a unidirectional relationship between financial development and economic growth and that the direction of this relationship was from economic growth to financial development.
Leitao (2012)	Euro (27) regions	Panel Data Analysis	It was identified that bank credits made slower investment activity in Eurozone and, thus, negatively affected economic growth.
Tuna and Bektaş (2013)	Turkey	Granger Causality Analysis	. The findings obtained show that there was not any causality relationship between credit volume and economic growth.
Aydın et al. (2014)	Turkey	Toda Yamamoto Causality Analysis	It was concluded that financial development caused economic growth
Caporale et al. (2015)	10 European Union Countries	Regression	The effect of financial development on economic growth is extremely limited.
Contuk and Güngör (2016)	Turkey	Asymmetric Causality Test	Test results show the presence of a relationship from economic growth to financial developedness.
Yüksel and Adalı (2017)	Turkey	Toda Yamamoto Causality Analysis	It was found that there was a causality from financial development to economic growth
Karahan et al. (2018)	Turkey	VECM Model	It was found that there was a bidirectional causality between financial development and economic growth
Helhel, (2018)	Vulnerable 5-Countries	VECM, DOLS and FMOLS Tests	It was found that there was a causality from economic growth to financial developedness.
Aydın(2019)	Vulnerable 5-Countries	Westerlund Co-integration Method	In the long term, it was identified that there was a positive and significant relationship between financial development and economic growth.

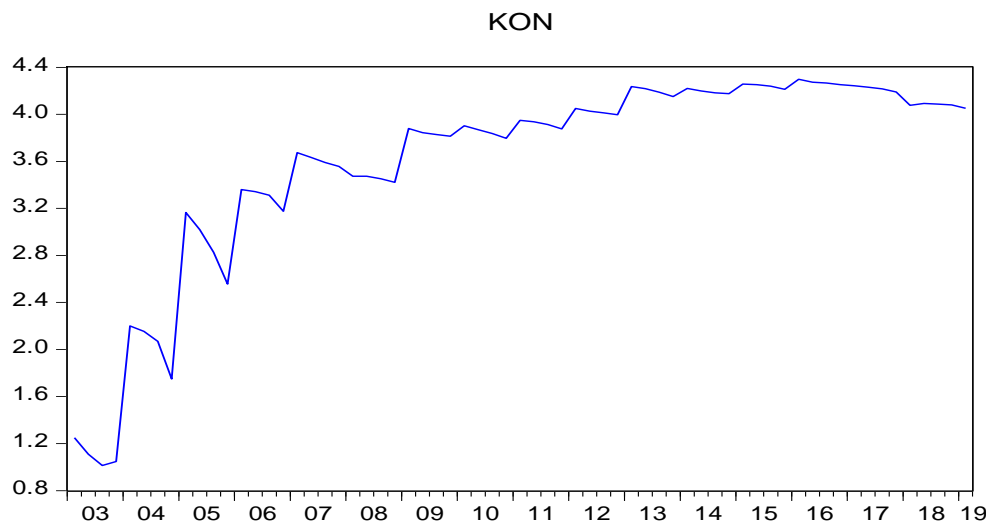
Dataset

The variables used in application and their abbreviations are given in Table 2. In econometric model, analysis period is the period of [2003.Q1-2019.Q1] and quarterly data were based on. In the process of obtaining data, datasets in the electronic addresses of www.tbb.org.tr and www.tcvd.gov.tr were utilized. The variables were first made free from seasonality, then, in order to eliminate trend effect, analyses were made after they were made stationary in the first difference. Analyses were made by means of Analizler Eviews 10.0 Software.

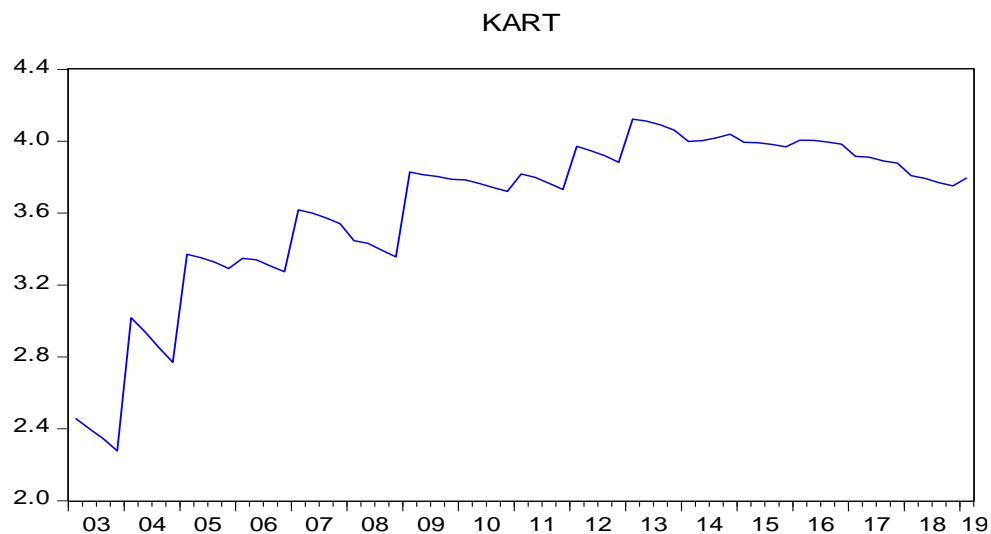
Table 2. Variables used in the Analysis

Variables	Abbreviations	Data Resource
Real GDP	lgdp	Central Bank
Credit Cards (Million TL)	lkart	TBB
Consumer Credits (Million TL)	lihr	TBB
Vehicle Credits (Million TL)	loto	TBB
Housing Credits (Million TL)	lkon	TBB

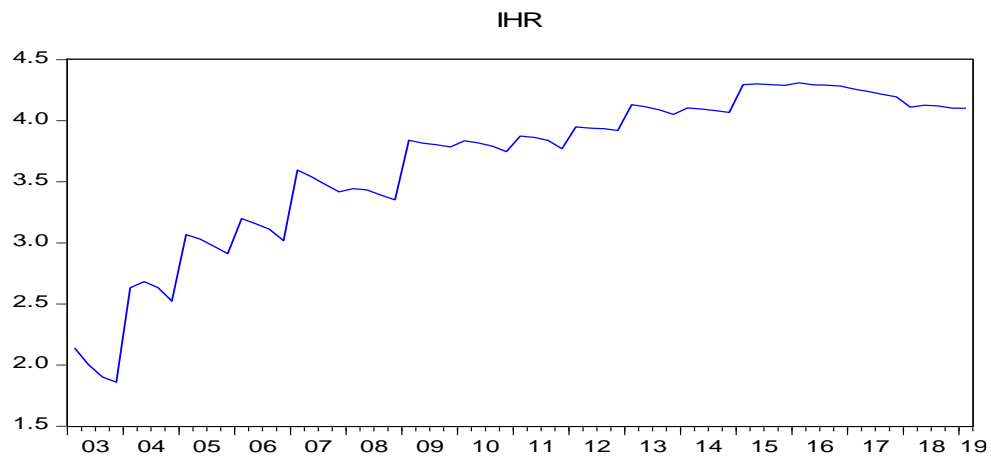
Firstly depicting graphs of the series, their course was examined in the years.



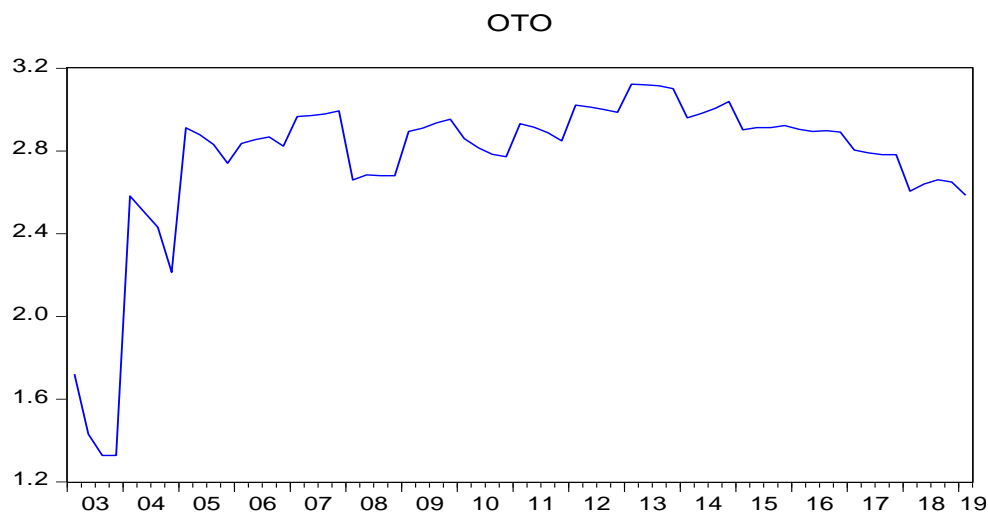
When the variable of housing credits was examined, it showed the rise tendency in the early 2004 but in the later 2004, it again entered a fall process. In the first and second quarter of the year 2005, entering a rapid recovering process, it again started to fall in the early 2005. In the mid-2006, it again rose and continued to the course of floating exchange rate. With the effect of 2008 Global Crisis, it rose in the last quarter of the same year. By the first quarter of the year 2019, it is seen that the course of sectorial credits actualized at the high levels and that variations were in the form of close levels.



When regarded to series, beginning from 2003, the use of individual credit card rose until the year 2004 in the serious rates. In the last quarter of the year 2004, the rate that entered decreasing course again entered the rising course in the first quarter of the year 2005. By the year 2006, the use of credit card, whose course did not vary too much, beginning from 2007, together with again risen variation, a serious decrease showed in the last quarter of the year 2008. After this date, by the first quarter of 2013, it followed a rising course and, since the year 2013, it has continued in the declining course in the low rates.



It attracts attention that continuous fluctuations were experienced in the course of consumer credits and these credits followed a continuous rising course. It is seen that the highest increases were experienced in the third quarter of the year 2003 and in the last quarters of the years 2006 and 2008.



When the course of vehicle credits is dealt with, it is seen that very fast increase was experienced in the last quarter of the year 2003. In the next period, an increase was experienced. In general, due to yearend campaigns of automotive sector, it is seen that the amount of credit used rose in the last quarter.

4. THE STUDY RESULTS

Unit Root Results

Unit root test results of the series was examined in the framework of “model with trend and constant” which includes both constant and trend. In this examination, series is not stationary at their level values. Therefore, the first differences of all series were taken. Series became stationary by taking the first difference.

The results of unit root test were given in Table 3.

Table 3. The results of Unit Root

Variables	ADF		PP	
	Level	1 st Difference	Level	1 st Difference
lgdp	-3,0821	-4,9714*	-2,9008	-9,7920*
lkon	-1,7268	-18,6673*	-1,7268	-18,6673*
Lihhr	-0,8651	-3,9244*	-1,7180	-16,5298*
loto	-2,8379	-9,1984*	-2,3377	-17,4470*
lkart	-2,4677	-9,5821*	-1,7268	-18,6673*

Note: The sign * shows the significance at the 1% level. For optimal lagging length, AIC information criterion was used.

When the results of unit root were examined, it is seen that series carry unit root, namely, that it is not stationary. When the first difference of all series were taken, it was concluded that all series became stationary. In other words, it was identified that series were I(1) that was 1st degree integrated. That series are integrated in its 1st degree points out that there may be a co-integration relationship between series.

Results of Co-Integration Relationship

In analyzes made with non-stationary series, spurious regression may form. Therefore, Box and Jenkins(1970) suggested the process of taking difference in integrated series. However, in the long-term analyzes, since taking 1st difference makes difficult to make long-term relationships significant, the process of taking difference was criticized (Dolado, 2012). However, it is seen that the large majority of series used in the studies are stationary in the differences. In this context, in case that series are stationary at (I(1)) level, the presence of co-integration relationship can be mentioned about. At this point, the most frequently used co-integration test in the studies was Johansen Co-Integration Test (Çalışkan, 2013: 42). The hypotheses of Johansen Co-Integration Test are given as follows:

$$H_0: r=0 \text{ (There is no co-integration relationship)}$$

$$H_1: r>1 \text{ (There is co-integration relationship)}$$

In the study, 4 co-integration relationship was made. Co-integration model established in the study are given as follows:

$$\text{Model 1} \quad lgdp = \beta_1 + \beta_2 lihr + \varepsilon_1 \quad (1)$$

$$\text{Model 2} \quad lgdp = \beta_1 + \beta_2 lkon + \varepsilon_1 \quad (2)$$

$$\text{Model 3} \quad lgdp = \beta_1 + \beta_2 loto + \varepsilon_1 \quad (3)$$

$$\text{Model 4} \quad lgdp = \beta_1 + \beta_2 lkart + \varepsilon_1 \quad (4)$$

The results of Johansen Co-Integration Test are given in Table 4.

Table 4. The results of Johansen Co-Integration Test

Variables	lag	Max Eigen	95 % Critical Value	Trace	95 % Critical Value	Conclusion

		Statistical Value		Statistical Value		
lgdp and lihr	4	20.335	20,261	16.241	15.892	Co-integrated
lgdp and lkon	5	48.041	25,872	37.099	19.387	Co-integrated .
lgdp and loto	4	93,821	20,261	88.456	15,892	Co-integrated
lgdp and lkart	4	64.965	15.494	64.696	14.264	Co-integrated

It is seen that there is long term co-integrated relationship between the variables and that there is one co-integration vector providing this relationship. It was identified that all variables had long term relationship. In order to identify the direction of relationships and their effect coefficients, the results of normalized co-integration equation were obtained. According to the results of co-integration test made, rejecting H_0 hypothesis, it was concluded that there was at least one co-integration relationship between the series. In other words, through the results obtained, it is pointed out that there is a long term balance between series. In order to identify the direction of relationships and their effect coefficients, the results of normalized co-integration equation were obtained.. In other words, through the results obtained, it is pointed out that there is a long term balance between series. The predicted results of co-integration belonging to models are given as follows.

The results of co-integration prediction for Model 1

$$lgdp = 6,77610 + 0,7336lihr + \varepsilon_1$$

(0,34118) (0,08430)
[-8,70282] [-19,8608]

The results of co-integration prediction for Model 2

$$lgdp = 7,64588 + 0,480499lkon + \varepsilon_1$$

(0,00094) (0,03440)
[-5,47769] [-13,9676]

The results of co-integration prediction for Model 3

$$lgdp = 24,54163 - 1,286424loto + \varepsilon_1$$

(1,29491) (0,45560)
[-18,9524] [11,6032]

The results of co-integration prediction for Model 4

$$lgdp = 8,53947 + 0,289887lkart + \varepsilon_1$$

(0,04368)
[-6,63636]

According to the results obtained, it was identified that there was a negative directional relationship between economic growth and the use of consumer credit, housing credit, and vehicle credit. According to Model 1, 1% increase in the use of consumer credit increases economic growth by 0.73%. According to the results, obtained from Model 2, 1% increase in the use of housing credit increase economic growth by 0.48%. According to the results obtained from Model 3, 1% increase in the use of vehicle

credit reduce economic growth by 1.28%. Among the causes of that the effect of vehicle credit on economic growth is negative, it is considered that the intensity of using the imported automobile and the higher oil prices are among the important elements.

The results of Granger causality test are given in Table 5.

Table 5. The results of Granger Causality Test

Null Hypothesis	F Sta.	Prob	Conclusion
The use of consumer credit is not the cause of economic growth.	2,8192	0,0258**	Ho: Rejected
Economic growth is not the cause of using consumer credit.	6,4975	0,0001***	Ho: Rejected
Expense of individual credit is not the cause of economic growth.	1,8188	0,1265	Ho: Accepted
Economic growth is not the cause of using personal credit card.	7,3232	0,0000***	Ho: Rejected
The use of housing credit is not the cause of economic growth.	1,046	0,4012	Ho: Accepted
. Economic growth is not the cause of using housing credit.	1,2377	0,3060	Ho: Accepted
The use of vehicle credit is not the cause of economic growth.	0,1698	0,9725	Ho : Accepted
Economic growth is not the cause of using vehicle credit.	2,6900	0,0037***	Ho Rejected

Note: The signs ***, **, * shows the significance at the 1%, %5, %10 levels.

According the results of Granger Causality Test, it was concluded that there was a bidirectional relationship between consumer credit and economic growth. In addition, among the results obtained, that there was a unidirectional relationship from economic growth to the use of credit card and vehicle credit takes place.

5. CONCLUSION AND DISCUSSION

One of the most indicators of that developedness levels of countries is the numbers of economic growth. Setting out from the numbers of growth in international arena, seeing the course of country economy has a great importance in terms of forming scenarios of the next economies. This case is one of indispensable requirements for Turkey attempting to complete the development process. Stable growth takes place among the mid and long term targets of Turkey, For the country to be able to realize this stable growth targeted, directing productive elements to the most effective resource is considerably important. For countries to be able to realize the stable growth, another necessary element is the presence of sufficient capital. The biggest barrier of the developing countries like Turkey is capital deficiency. The solution of this solution is possible through strong banking system.

In this study, the relationship between consumer credits in Turkey and economic growth were analyzed by means of econometric method, using dataset belonging to he period of 2003:01-2018:01 in quarterly frequency. As a result of co-integration analysis applied, in the range of the period studied, it was identified that there was co-integrated relationship between the variables in the long term. In short term, it was determined that there was bidirectional relationship between the use of consumer credit and economic growth from economic growth to the use of individual credit card and vehicle by means of Granger Causality Test. According to the results obtained in the study, it was identified that there was a positive directional relationship between economic growth and the use of consumer credit, housing credit, and credit card, while there was a negative directional relationship between economic growth and the use of vehicle credit. It was concluded that according to the Model 1, 1% increase in the use of consumer credit increases economic growth by 0.73: that according to the results obtained from Model 2, 1% increase n the use of housing credit increases economic growth by 0.48%; and that according to the results obtained from Model 4, 1% increase in the use of credit card increases economic growth by 0.28%. However, the case between economic growth and the use of

vehicle credit are more different. As also seen from the results obtained from Model 3, 1% increase in the use of vehicle credit reduces economic growth by 1.285%.

In the recent years, with the advance in technology, the use of credit card showed an increase in the higher rates. Besides that the increase in the use of credit card reduces saving rate, it causes increase of consumption. Albeit demand-oriented growth is sometimes criticized by many economists, some countries can prefer it to achieve the numbers of short-termed high growth. When regarded to the results obtained in the study, it is seen the conclusion that the use of credit card in Turkish economy increases economic growth. However, directing people to consumption also leads to the problem with saving deficit. In this context, realizing structural reforms, for saving deficit to increase more, properly directing the use of this policy instrument has a great importance.

In the recent years, it is accepted that one of the locomotives making the most contribution to Turkish economy is housing sector. Especially, that banking sector creates low-interest housing credit opportunity caused demand to increase. Depending on the development of the sector, many supply sector were positively affected from this process. When regarded to the results obtained from the study, among consumer credits, it is seen that housing credits make the biggest contribution to economic growth.

One of the striking results obtained in the study is the effect of vehicle credits on economic growth is negative directional. Among the most important causes underlying that vehicle credits negatively affect growth numbers, there is more demand for imported automobiles. The increase of demand for the imported automobiles are accepted as an element leading to income to decrease and leakages to increase. In addition, since the increase in vehicle demand also increases oil import, it must not be forgotten that it negatively affect economic growth. The results obtained from the study are complied with the results of the study carried out by Kar and Pentecost (2000) and Demir (2015).

Setting out from the results obtained from the study, it is seen that increasing credit volume is an indicator of that demand-based growth in Turkish economy is supported. However, as also earlier mentioned, since demand-based growth triggers inflationist process, properly directing the process has a great importance.

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