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ARAŞTIRMA MAKALESİ / RESEARCH ARTICLE

THE RELATIONSHIP BETWEEN INFLATION AND CONSUMER CREDITS: FINDINGS OF THE ASYMMETRIC CAUSALITY TEST FOR TÜRKİYE

ENFLASYON VE TÜKETİCİ KREDİLERİ ARASINDAKİ İLİŞKİ: TÜRKİYE İÇİN ASİMETRİK NEDENSELLİK TESTİ BULGULARI

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Abstract

Inflation, which is defined as the continuous increase in the general level of prices, is one of the important factors that hinder the economic and social development of a country. On the one hand, inflation affects the amount of bank loans, on the other hand, bank loans can cause inflation. From this point of view, in this study, it is aimed to investigate the causality relationship between inflation and consumer loans for the period 2005/12-2023/06 in Türkiye. Whether or not there is causality between the variables, and if there is a causal relationship, the directions were analyzed using the "Toda-Yamamoto" method. According to the results of the Toda-Yamamoto causality test, a causal relationship was found between inflation and housing and vehicle loans at the 5% significance level. On the other hand, no mutual causality relationship was detected between the variables of inflation and consumer loans.
Keywords: Inflation, CPI, Consumer Credits, Todo-Yamamoto Causality Test
Jel Classification: F30, F41, G21.

Öz

Fiyatlar genel seviyesinin devamlı olarak yükselmesi olarak tanımlanan enflasyon, bir ülkenin ekonomik ve sosyal gelişmesini engelleyen önemli faktörlerden birisidir. Enflasyon bir yandan banka kredileri miktarını etkilerken diğer yandan, banka kredileri enflasyona neden olabilmektedir. Buradan hareketle bu çalışmada Türkiye'de, 2005/12-2023/06 dönemleri için enflasyon ve tüketici kredileri arasında nedensellik ilişkisinin araştırılması amaçlanmaktadır. Değişkenler arasında nedenselliğin "olup olmadığı, nedensellik ilişkisi varsa yönlerinin tespit edilmesi için karşılıklı olarak Toda-Yamamoto" yöntemiyle analiz edilmiştir. Toda-Yamamoto nedensellik testi sonuçlarına göre, %5 anlamlılık seviyesinde

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enflasyon ile konut ve taşıt kredileri değişkenleri arasında nedensellik ilişkisine rastlanılmıştır. Diğer taraftan enflasyon ve ihtiyaç kredileri değişkenleri arasında karşılıklı olarak herhangi bir nedensellik ilişkisi tespit edilmemiştir.

Anahtar Kelimeler: **Enflasyon, TÜFE, Tüketici Kredileri, Todo-Yamamoto Nedensellik Testi**

Jel Sınıflandırması: F30, F41, G21

1. Introduction

It has been identified that countries with high income levels, production capacity, and investment capacity have a high level of welfare in parallel with this issue. Within this scope, it is needed for high savings and the conversion of these savings into production, investment and employment increase so as to increase the living standards of the people. For this process, which will realize economic growth, a system that will also carry out brokerage operations is required. This system is manifested by channeling the crowd-funding created by banks from many sources to the points needed in the real economy (Bayır and Güvenoğlu, 2019). As the most valuable fund collectors of the system, banks display these funds as deposits on their balance sheets and record them in a passive framework. These funds, which are passive in the balance sheet, are forwarded to the places in need of funds and are seen in the balance sheet or in the bank accounts. These savings, which are prepared by banks and transferred to those in need of funds, are called loans. Consumer loans emerge as one of the most valuable intermediary services provided by banks. Consumer loans are provided to individuals to meet vehicle, housing and many other needs. The communication between banks and loan users is based on the elements of risk, trust, time and income. Therefore, it is observed that consumer loans are affected by macroeconomic factors such as interest rate, money supply, inflation rate, unemployment rate and economic development (Durmuş and Şahin, 2019).

Consumer loans are a type of credit extended to real persons or individuals to purchase goods or services apart from commercial activities, provided that they are collected within certain criteria. The first example of consumer loans in the world was seen in the United States of America in 1928. The use of consumer loans, the first application examples of which were seen in 1928, has increased rapidly after the 1950s in a consequence of the need for consumers to acquire new technology and communication tools. As to Türkiye, consumer loan was used for the first time in 1988, and then it started to spread throughout the banks in 1990 and became widespread with new application areas (Kılıç and Torun, 2018).

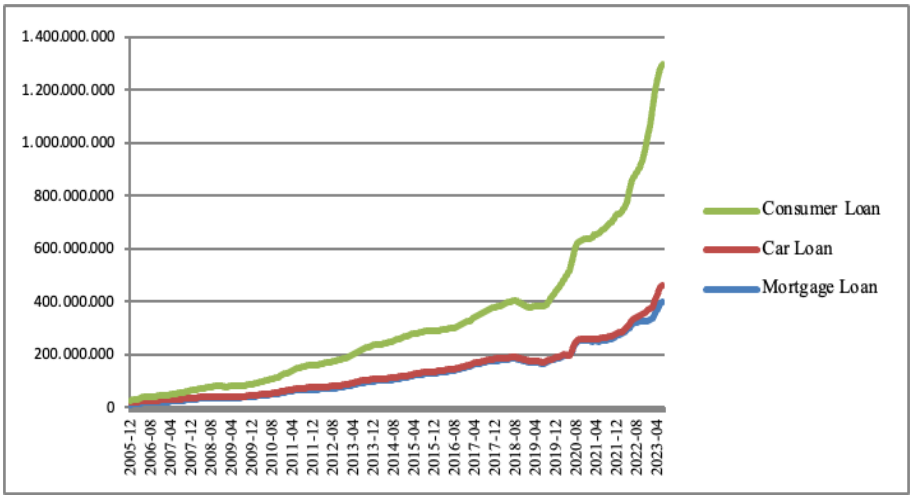

Figure 1. Monthly Course of Personal Loans in Türkiye (Thousand TL)

Source: Central Bank Electronic Data System, 2023.

Figure 1 shows the credit volumes of retail loans in Türkiye covering the period between 12/2005 and 06/2023. Considering the years, it is observed that housing and vehicle loans act together, while personal finance credits have shown a serious tendency to increase as of the beginning of 2020. With the Covid-19 pandemic period, a serious increase began in consumer loans, and afterward the demand for personal finance credits has increased even further due to reasons such as the effect of normalization and the decrease in purchasing power. Today, this uptrend continues.

In its simplest form, inflation, which is expressed as a continuous increase in prices in a wide range, is seen as an important obstacle to the economic and social progress of countries (Korkmaz, 2019). As price levels increase, all currencies, regardless of nationality, lose their purchasing power and lower quality goods and services can be purchased. As a result, inflation leads to a decrease in the power of money, as well as a depreciation against foreign currency and in the unit of account (Ateş and Kendir, 2022). This issue causes the eroding confidence in the currency, the shortening of the maturity period of investments, and the shifting of investments to weak foreign currencies and real estate. The fundamental of economic policies is the aim of increasing the welfare level of societies economically. Accordingly, in a market atmosphere where prices are in a stable order, all economic units can make decisions of investment, consumption and savings more accurately. Thus, in addition to the desired continuous growth, increased employment, high welfare, and a stable economy can be achieved (Avcı, 2020).

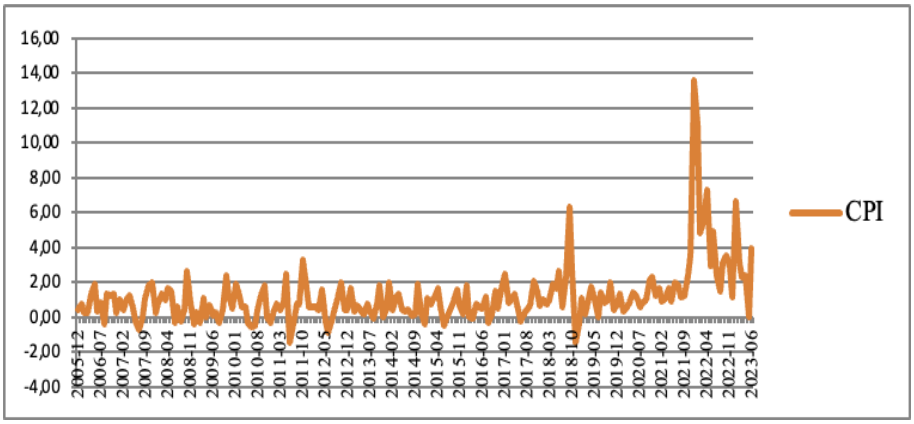

Figure 2. The Course of Monthly Inflation in Türkiye by Months

Source: Turkish Statistical Institute, 2023.

Considering the course of inflation between 12/2005 and 06/2023 in Türkiye over the years, it is seen that it was affected by both economic and political developments in the world and in our country. The global economic crisis in 2008 and the aftermath of the crisis between Türkiye and the USA in 2018 due to the effect of the Pastor Brunson-induced crisis, as a result of the upward movement in exchange rates, caused a deterioration in the markets and naturally increased inflation. The inflation, which showed a horizontal course during the Covid-19 pandemic period, has entered into an upward trend again with the effect of the supply crisis that started in the world at the end of the pandemic, the increase in the prices of commodities in general with the effect of the Russia-Ukraine war and the instabilities in the economy management.

In the literature, it is stated that the changes in bank loans are sensitive to inflation, insomuch that the intermediary role of banks in financial markets is negatively affected by the risks accordingly. Thus, economists who argue that the amount of credit provided by the bank is affected by inflation, say that policy providers first need to create a stable price atmosphere so that banks can fulfil their intermediary role efficiently and support economic growth. By this means, with the anti-inflationary practices provided, banks can efficiently carry out their intermediary role in the financial ecosystem and support a stable economic growth (Karahan and Gürbüz, 2017).

After the crisis in the Turkish economy in 2001, various measures were taken to improve the macroeconomic order. Inflation targeting also has an important place among these measures. In the beginning, by targeting implicit inflation in 2002, and then explicit inflation in 2006, significant changes were made in the monetary policy. Although these brought-into-action targets were seen as the right developments for Türkiye in order to cope with inflation, it has also been determined that sometimes the desired levels cannot be achieved during the implementation process. Additionally, the developments in inflation in this period and in the following period had an impact on many elements

of the real and financial ecosystem, and most of the macroeconomic problems (developments) proceeded in this line (Bölükbaş, 2019).

The aim of this study is to analyze whether there is a causal relationship between inflation and individual bank loans in Türkiye. From this point of view, in the study, the analysis was made by using the data related to the variables belonging to the period of 12/2005-06/2023. There are previous studies on the subject in the literature. The fact that the methodology and date range used in this study cover a wide period and consist of current data adds originality to the study. After the introductory part, in which a general evaluation of the subject is made, a literature review was conducted in which previous studies on the subject were examined. In the third part, information about the data set and variables used in the analysis was given, and then the study was concluded with the findings and conclusion part of the study.

2. Literature Review

In the literature, it has been seen that studies were frequently carried out to determine the relationship between bank loans and inflation. In these studies, it has been concluded that there is neither a impact from inflation to bank loans, nor a relationship from bank loans to inflation, nor a relationship between inflation and bank loans. In the literature search, it has been observed that there are many domestic and foreign studies that overlap with the result of the existence of a relationship from inflation to consumer loans, which is the finding of the study.

When the foreign sources for the literature are analyzed, it was seen that the results of the studies of Boyd et al. (2001), Bikker (2004) and Haigt (2007) are consistent with the existence of a relationship from inflation to consumer loans, which is the finding of the study. Boyd et al. (2001) analyzed the effect of inflation on bank loans in 65 countries by using panel regression and dynamic panel analysis (GMM) method using data from 1960-1995. As a result of the analysis, they found that inflation reduces the bank loan supply. Bikker (2004), in his study, investigated the relationship between credits and business cycle variables for the period 1979-1999 in 26 OECD countries with the panel data method and found a strong relationship between credits and inflation. In his own study, Groen (2004) used vector error correction model (VECM) for the Netherlands and the United States and found that the increase in bank loans increased inflation. In their study, Calza and Sousa (2006) analyzed the effect of credit shocks on output and inflation in EU countries using the data for the period of 1981-2002 and found that credit shocks had an effect on inflation. Eslamloueyan and Darvishi (2007), in their study, investigated the relationship between bank loans and inflation in the Iranian economy for the 1959-2002 period using the boundary test method. As a result of the analysis, they found that bank loans and inflation are cointegrated in the long run, but bank loans do not affect inflation in the short run. Haight (2007) investigated the relationship between inflation and credit demand for the USA using the IS Curve and Taylor Rule analysis. As a result of the study, it was seen that the very low inflation rate increased the loan request. Ziramba (2008), in his study, used the autoregressive distributed lag (ARDL) boundary test in his study and concluded that bank loans have a positive effect on the inflation rate in South Africa in the long run. Huy Vu (2010), in his study, investigated the relationship between credit

growth and inflation rate in Denmark, Norway and Sweden by using the panel data analysis method for the period 1998-2008, and as a result, he found that credit growth has statistically significant effects on inflation. In his study, Moinescu (2012) investigated the relationship between bank loans and inflation in EU countries with the Panel Regression model using the 2000-2011 period data and found that the increase in personal loans increased inflation.

When the domestic sources for the literature are examined, it is seen that the results of Alper et al. (2001), Kaya and Doğan (2005), Arslan and Yapraklı (2008), Yiğitbaş (2014), Karahan and Gürbüz (2017) in their studies are in accordance with the existence of a relationship from inflation to consumer loans, which is the finding of the study. Alper et al. (2001) examined the relationship between inflation and bank loans for Türkiye using regression analysis. As a result of the study, it is concluded that the increase in inflation reduces bank loans. Kaya and Doğan (2005) used data envelopment analysis in their study investigating the relationship between inflation and bank loans for Türkiye and concluded that the decrease in inflation increased bank loans. In their study for Türkiye, Arslan and Yapraklı (2008) examined the relationship between bank loans and inflation with the data for the 1983-2007 period using the Johansen cointegration test and error correction model. As a result of the analysis, they found that loans affect inflation positively in the long run, but inflation affects loans negatively. They also found a reciprocal causality relationship between the variables. Akçacı and Yöntem (2011) investigated the relationship between consumer price index (CPI) and loans for Türkiye by using regression and Granger causality analysis and concluded that there is a positive relationship between consumer loans and CPI. However, in this study, it has been determined that there was no significant relationship between housing and vehicle loans and CPI. In his study, Yiğitbaş (2014) examined the relationship between bank loans and business cycle fluctuations in the Turkish economy for the period 1987-2013 by using the Johansen Cointegration Test and Vector Error Correction Model. As a result of the analysis, it has been found that inflation has a reducing effect on real bank loans in the long run. Karahan and Gürbüz (2017) investigated the relationship between individual bank loans and inflation in Türkiye using the data for the period 2002-2016 using the Johansen Cointegration Test and Error Correction Model method. As a result of the analysis, they determined that the effect of inflation on bank loans is stronger. Kılıç and Torun (2018), in their study, investigated the effect of individual loans on inflation in Türkiye for the period 2004-2015 using the Granger Causality test. As a result of the analysis, while they found a reciprocal causality relationship between personal credit cards and inflation, they found a unilateral causality relationship from inflation to vehicle loans, however, they could not find any causality relationship between inflation and consumer loans. Korkmaz (2019), in his study, examined the relationship between the loan utilization rate and the inflation rate in Türkiye using the data for the 2005-2018 period with symmetric and asymmetric conditional variable variance models, and as a result, he determined that the increase in consumer loan utilization rates increases the volatility in inflation rates. Avcı (2020) used multiple linear regression model in his study investigating the relationship between macroeconomic factors and bank loans and inflation rate. As a result of the study, he found a significant relationship between the inflation rate and the current account deficit, unemployment rate and bank loans. In their study, Erkan and Ceylan (2021) examined the long-run relationship

between inflation uncertainty and credit volume using the bounds test based on the ARDL method. They concluded that inflation uncertainty has a negative impact on credit volume in the Turkish economy. Eroğlu and Yeter (2022) tested the relationship between inflation, exchange rate and credit growth in Türkiye using Fourier-Shin Co-integration Analysis. They found that credit growth is an important determinant of inflation in Türkiye over the whole period, but exchange rate pass-through is a more important determinant of inflation in the post-2017 period. Ateş and Kendir (2022) analyzed the effect of banks and loans provided by banks on the inflation deflator in OECD countries. Using panel data analysis, they concluded that loans extended by banks to the private sector, commercial banks and non-performing loan ratios have an effect on the inflation deflator.

3.Data and Methodology

3.1 Purpose and Scope of the Research

The aim of the study is to analyze whether there is a causal relationship between inflation and individual bank loans in Türkiye. Inflation is determined depending on the changes in the Consumer Price Index (CPI). Morgage loans, car loans and consumer loans are considered within the individual bank loans. In this context, monthly data between 12/2005 and 06/2023 were used for analysis. The purpose of determining the data range in this way is because the oldest available date for vehicle loans is 12/2005. It differs from the studies in the literature because the date range covers a wide and current period.

3.2. Data Set and Method of the Research

This study, which aims to determine whether there is a causal relationship between inflation and individual bank loans in Türkiye and to determine the relationships between the variables, covers a total of 18 years and 211 months. The data set of the variables, "Turkish Statistical Institute (TUIK), Banking Regulation and Supervision Agency (BDDK) and T.C. Central Bank Electronic Data Distribution System (EVDS)" was collected from the websites. The explanations, abbreviations and data about the dependent and independent variables used in the analysis are summarized in Table 2.

Table 2. Explanations on Variables

Variables	Descriptions of Variables	Time Range	Data Period	Source
LOGCPI	Inflation Rate	12/2005 - 06/2023	Monthly	bddk.org.tr, evds2.tcmb.gov.tr, tuik.gov.tr
LOGMORTGAGE	Mortgage Loan			
LOGCAR	Car Loan			
LOGCONSUMER	Consumer loan			

3.3. Hypotheses of the Study

In the research, the hypotheses to be tested regarding whether there is a relationship between the variables and whether the data sets contain trends are determined as follows:

H_0: *There is no causality between retail loans and inflation.*

H_1: *There is a causal relationship between retail loans and inflation.*

3.4. Research Method

In the study, first of all, it is necessary to determine whether the series of the variables used in the analysis are stationary. In time series analysis, it is important that the series are stationary, that is, they do not contain unit roots. Since there is a spurious regression relationship between series without a unit root, the results will not reflect the real relationship (Gujarati, 1999). For this reason, "Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP)" unit root tests were applied to the series.

In traditional causality tests, the series must be made stationary. In Toda-Yamamoto (1995), causality analysis does not have such a requirement. In this way, the series contain more information and effective results are revealed. In order to apply this test, first of all, the lag length (m) must be determined with the help of the VAR model. Then, the highest degree of integration (d_{max}) is added to the lag length (p). The equations of the Toda-Yamamoto causality test are shown in the figure below (Toda and Yamamoto, 1995).

$$Y_t = \omega + \sum_{t-1}^{m} a_{1i}\, x_{t-i} + \sum_{i=1}^{m} \beta_{1i} Y_{t-i} + \sum_{j=m+1}^{dmax} \delta_{1i} X_{t-i} + \sum_{j=m+1}^{dmax} \theta_{1i} Y_{t-i} + \varepsilon_{1t} \qquad (1)$$

$$X_t = \varphi + \sum_{i=1}^{m} a_{2i}\, X_{t-i} + \sum_{i=1}^{m} \beta_{2i} Y_{t-i} + \sum_{j=m+1}^{dmax} \delta_{2i} X_{t-i} + \sum_{j=m+1}^{dmax} \theta_{2i} Y_{t-i} + \varepsilon_{2t} \qquad (2)$$

The appropriate lag length (m) can be determined with the help of information criteria and the maximum degree of integration (d_{max}) can be determined by unit root tests. In order to determine the existence of a reciprocal causality relationship between the variables, the hypotheses H_0:$a_{1i} = 0$ and H_0:$a_{2i} = 0$ are tested using the adjusted WALD test statistic. If the calculated MWALD test statistic value is greater than the X^2 table value with k degrees of freedom, the aforementioned hypotheses are rejected (Toda and Yamamoto, 1995).

4. Analysis Findings

In this part of the study, the tests applied and the results of the findings are presented in order to reveal the relationship between the variables.

4.1. Unit Root Test Results

Before proceeding to the causality analysis, it is necessary to check whether the series contain a unit root, that is, whether they are stationary. For this purpose, ADF and PP tests were carried out. The purpose of these tests is to prevent false regression. The results of the ADF and PP unit root tests are presented in Table 3 below.

Table 3. ADF and PP Unit Root Test Results

		ADF Test Statistic		Phillips-Perron Test Statistic	
Variables		**Level**	**First Difference (Δ)**	**Level**	**First Difference (Δ)**
LOGMORTGAGE		3,1754	-6,8239*	4,2004	-5,7597*
LOGCAR		2,4750	-3,6743*	12,2762	-3,8363*
LOGCONSUMER		3,7522	-4,1496*	8,0471	-3,6812*
LOGCPI		-4,333*	-	-7,1911*	-
Significance Level	1%	-3,4637	-3,4617	-3,4614	-3,4616
	5%	-2,8761	-2,8752	-2,8751	-2,8751
	10%	-2,5746	-2,5741	-2,5740	-2,5741

Note: Significant at *1%, **5%, ***10% significance level.

According to the test results applied to control the stationarity of the series used in the research, it was determined that some variables of the series were not stationary, that is, they contained unit roots. The series were made stationary by taking the first differences of the variables containing the unit root.

4.2. Causality Analysis Results

Since all cointegration and causality analyses to be conducted after the stationarity analysis are based on vector autoregression models (VAR), it is necessary to determine the appropriate lag values for the VAR model to be established for each country. For this purpose, information criteria are utilized. Akaike (AIC), Schwarz (SC) and Hannan-Quinn (HQ) information criteria values calculated up to five lags are given in Table 4.

Table 4. Lag Lengths

		Delay Values				
	Information Criteria	1	2	3	4	5
CONSUMER	AIC	-3.544.864	-4.384.716	-4.457.368	-4.467.926	– 4.526160*
	SC	-3.446.258	-4.220.372	– 4.227287*	-4.172.107	-4.164.604
	HQ	-3.504.964	-4.318.215	-4.364.268	-4.348.225	– 4.379859*
MORTGAGE	AIC	-3.734.027	-4.307.225	-4.391.489	– 4.416308*	-4.394.780
	SC	-3.635.421	-4.142.882	– 4.161408*	-4.120.490	-4.033.224

	HQ	-3.694.127	-4.240.725	– 4.298388*	-4.296.608	-4.248.478
	AIC	-1.824.648	-2.466.717	-2.505.799	-2.498.464	-2.500.541
CAR	SC	-1.726.042	– 2.302374*	-2.275.718	-2.202.646	-2.138.985
	HQ	-1.784.748	-2.400.217	– 2.412698*	-2.378.763	-2.354.239

The optimal lag lengths of the VAR model can be examined with the help of Table 4. The most appropriate lag length according to the criteria of 5 lag lengths through Eviews 9 program is indicated with a (*) sign. Accordingly, the optimal lag length is determined as 3 for consumer and housing loans and 2 for auto loans.

The existence of causality between the series was investigated with the Toda-Yamamoto Model. Variables were tested against each other. While determining the causality between the series, the lag length (k) of the series was found according to the "Schwarz Information Criteria". Afterwards, "Wald Statistics" was applied to the (k) lagged values of this model and it was determined whether there was a causal relationship between the variables. Toda-Yamamoto Causality test results are presented in Table 5 and 6.

Table 5. Toda-Yamamoto Causality Test Results-1

"The Dependent Variable	Independent Variable	d_{max}	m	Chi-Square Test Statistic	Chi-Square P – Value	Relationship and Direction"
LOGCONSUMER	LOGCPI	3	3	2.7211	0.4366	NO RELATIONSHIP
LOGMORTGAGE		3	3	12.1698	0.0068*	CPI → MORTGAGE
LOGCAR		2	2	23.2080	0.0000*	CPI → CAR

* Significant at 0.05 significance level.

According to Table 5, it was seen that the H_0 hypothesis was rejected and the H_1 hypothesis was accepted in the hypotheses established towards the logCPI independent variable in the logmortgage and logcar dependent variable at the 5% significance level. In the logconsumer loan dependent variable, the H_0 hypothesis was accepted and the H_1 hypothesis was rejected. The test results show that there is a one-way causality relationship between housing and vehicle loans and logCPI. On the other hand, there is no causality relationship between general purpose loans and CPI.

Table 6. Toda-Yamamoto Causality Test Results-2

The Dependent Variable	Independent Variable	d_{max}	m	Chi-Square Test Statistic	Chi-Square P – Value	Relationship and Direction
LOGCPI	LOGCONSUMER	3	3	7.0658	0.0698	NO RELATIONSHIP
	LOGMORTGAGE	3	3	3.5937	0.3088	NO RELATIONSHIP
	LOGCAR	2	2	3.5568	0.1689	NO RELATIONSHIP

* Significant at 0.05 significance level.

According to Table 6, at the 5% significance level, hypothesis H_0 could not be rejected and hypothesis H_1 was rejected in the hypotheses formed towards the independent variables of Housing, Vehicle and General Purpose loans in the CPI dependent variable. In other words, it has been determined that there is no Granger causality relationship between mortgage, car and consumer loans and CPI for the examined periods.

5. Conclusion

Personal loans generally increase production, income, exports, foreign exchange inflows, employment, profits of the financial sector in an economy, cause risk distribution in the financial sector and thus reduce risk. In addition, it ensures that the informal economy is registered, increases the tax revenues of the state, and thus creates positive effects on the economy by increasing the budget revenues.

In addition to these positive effects of personal loans on the economy, there are also some important negative effects." Individual loans can increase the demand for imported goods, especially luxury imported goods. In this case, the deterioration of the foreign trade balance and the increase in foreign trade deficits may cause the country's current account deficit to grow. In addition to this negative effect, another important negative effect of individual loans on the economy and the society in general is that it increases the general level of prices or inflation. Individual loans increase the total demand in the economy through spending, if this demand is not met by an increase in production, goods and services in the market become scarce.

As determined in the economics literature, there is a mutual causality relationship between individual bank loans and inflation. The causality relationship that develops from retail bank loans to inflation arises from the increase in aggregate demand in the goods market of the expansion in retail loans. On the other hand, disruptions in the intermediation activities of the banking sector due to the uncertainty created by the inflation environment may lead to contractions in retail loans.

In this study, it was analyzed whether there is a causal relationship between inflation and individual bank loans in Türkiye. It is thought that the results obtained from the modeling established with the methods and data range used in the analysis part will contribute to the literature. The tests applied in order to reveal the relationship between inflation and consumer loans cover the period between 12/2005 and 06/2023. ADF and PP unit root tests from time series analyzes were used to examine the relationship between inflation and individual credit variables. In the study, whether there is a causal relationship between the dependent and independent variables, and if there is causality, the determination of its directions was tested with the "Toda-Yamamoto" method in the form of binary analysis.

According to Toda-Yamamoto test results; At the 5% significance level, it was seen that the H_0 hypothesis was rejected and the H_1 hypothesis was accepted in the hypotheses established towards the CPI independent variable in the mortgage and car loans dependent variable. In the consumer loan dependent variable, the H_0 hypothesis was accepted and the H_1 hypothesis was rejected. The test results showed that there is a one-way causality relationship between mortgage and car loans and CPI. According to the reciprocal test results where CPI is the dependent variable, it was seen

that the H_0 hypothesis was accepted and the H_1 hypothesis was rejected in the hypotheses established towards the mortgage, car and consumer loans independent variables, again at the 5% significance level. In other words, it has been determined that there is no Granger causality relationship between mortgage, car and consumer loans and CPI for the examined periods.

When the results of this study conducted by us were compared with other studies in the literature, Boyd et al. (2001), Alper et al. (2001), Bikker (2004), Kaya and Doğan (2005), Haigt (2007), Arslan and Yapraklı (2008), Yiğitbaş (2014), Karahan and Gürbüz (2017) show similarities with the results of their studies. On the other hand, Groen (2004), Calza and Sousa (2006), Eslamloueyan and Darvishi (2007), Ziramba (2008), Huy Vu (2010), Akçacı and Method (2011), Moinescu (2012), Kılıç and Torun (2018), differ with the results of the studies conducted by Korkmaz (2019). The reason for the different results is thought to be due to the difference in the data set, date range and methods used in the analysis.

Thus, the results obtained clearly revealed the suppressive effect of inflation in Türkiye on bank loans. This situation shows that special attention should be paid to anti-inflation policies in Türkiye in order for banks to effectively fulfill their intermediary duties in financial markets. In other words, anti-inflationary policies are an important requirement for the effective distribution of funds directed through banks in the financial system, due to the restrictive effect of inflation on bank loans. Accordingly, it is clear that anti-inflationary policies have a strategic importance in Türkiye. In fact, the central bank's fight against inflation becomes an important policy tool for economic growth by effectively distributing funds directed through banks in the financial system.

Consumer loans extended by banks to consumers cause banks' active and passive positions to change due to increases and decreases in the value of money in inflationary periods. Exchange rate, interest rate, changes in the maturity structure and purchasing power of consumers are among the macroeconomic variables that banks follow closely and cause constant position changes. Depending on the conjuncture of the country's economies or in times of crisis, macroeconomic data such as economic growth, employment and unemployment rate, interest rate, inflation rate, foreign exchange market rates, expenditure and savings rates of the public and private sectors, and monetary aggregates have negative effects on consumer loans.

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