

STRUCTURAL MODELLING OF ASSET PRICES AND CONSUMPTION: THE ROLE OF THE WEALTH EFFECT

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Abstract

This study investigates the existence of the wealth effect by examining the interaction between consumption and asset prices in the Turkish economy. The impact of fundamental economic indicators such as money supply, housing price index, bond interest rate, BIST 100 index, and exchange rate on consumption were analyzed with the Structural Vector Autoregression (SVAR) model. The findings show that increases in money supply, housing prices, and exchange rate positively affect individuals' perception of wealth and increase consumption. An increase in bond interest rates means that bond prices decrease, restricting consumption. Although the effect of the positive shock in BIST100 increases consumption in the short term, it has a decreasing impact in the long term. The study's results reveal the existence of the wealth effect in Türkiye and important clues that policymakers should consider in developing consumption-supporting strategies.

Keywords: Asset Prices, Consumption, SVAR Model

JEL Codes: D53, E21, E44

VARLIK FİYATLARI VE TÜKETİMİN YAPISAL MODELLEMESİ: SERVET ETKİSİNİN ROLÜ

Öz

Bu çalışma, Türkiye ekonomisinde tüketim ile varlık fiyatları arasındaki etkileşimi inceleyerek servet etkisinin varlığını araştırmaktadır. Para arzı, konut fiyat endeksi, tahvil faiz oranı, BIST 100 endeksi ve döviz kuru gibi temel ekonomik göstergelerin tüketim üzerindeki etkileri Yapısal Vektör Otoregresyon (SVAR) modeli ile analiz edilmiştir. Bulgular, para arzı, konut fiyat artışları ve döviz kurunun bireylerin servet algısını pozitif etkileyerek tüketimi artırdığını göstermektedir. Tahvil faiz oranlarının yükselmesi tahvil fiyatlarının düştüğü anlamına gelir bu da tüketimi kısıtlayıcı bir etki yaratmaktadır. BIST100'deki pozitif şokun etkisi kısa dönemde tüketimi artırsa da uzun dönemde azaltıcı bir etkiye sahiptir. Çalışmanın sonuçları, Türkiye'de servet etkisinin varlığını ve politika yapıcılar için tüketimi destekleyici stratejilerin oluşturulmasında dikkate alınması gereken önemli ipuçlarını ortaya koymaktadır.

Anahtar Kelimeler: Varlık Fiyatları, tüketim, SVAR Modeli

JEL Kodları: D53, E21, E44

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INTRODUCTION

According to the life cycle model (Modigliani and Brumberg, 1954), consumers use the wages they earn from labor income and the assets in their financial and non-financial wealth to meet their lifetime consumption. In consumption models where the wealth effect is taken into account, it is seen that consumption is tried to be explained by household wealth together with economic variables such as expectations about future income, permanent income, and demographic factors. Thus, even if individuals' wages remain the same, if there is any change in their wealth, their current consumption and future consumption expectations are affected.

Studies on consumption theory (see Chinloy and Jud, 2004; Altissimo et al., 2005; Georgakopoulos, 2019) state that consumption can be affected by a shock originating from interest rates, exchange rates, credit volume, stock prices, and housing prices, leading to lower/higher consumption levels through various transmission channels. Monetary policy can affect aggregate demand by changing consumer spending through transmission channels such as the credit, interest, exchange, and wealth channels.

The study aims to determine the dimensions of the wealth effect in Türkiye and to analyze the effects of changes in asset prices on individuals' consumption expenditures using the structural vector autoregression (SVAR) model. For this purpose, broadly defined money supply, housing price index, 2-year bond interest rate, BIST100 index, and exchange rate are used as explanatory variables. The SVAR model is used as a powerful tool in decomposing the dynamic effects of these financial variables on consumption and makes it possible to evaluate the reactions of the economy to shocks in different periods. Considering the characteristics of the Turkish economy and the critical role played by financial markets, a better understanding of the effect of wealth on consumption behavior can provide important information for policymakers.

This article aims to contribute significantly to the limited literature on the Turkish economy by investigating the roles of several wealth indicators on consumption. In particular, using both real and financial wealth variables broaden the perspective of the analysis, allowing for more appropriate policy designs. The research proceeds as follows: The next section provides the theoretical background and a review of the relevant literature. The dataset and methodology are explained in Section 3. Section 4 presents the analysis results, and Section 5 presents the general evaluation of the results and policy recommendations.

THEORETICAL BACKGROUND AND LITERATURE REVIEW

Consumption expenditures are one of the basic components of the national income function. Since Keynes's (1936) General Theory, different theories have been put forward regarding consumption. Keynes emphasized that when real income increases, total consumption will also increase, but this will be less than the increase in income. Following Keynes, Duesenberry (1949) stated that current consumption is affected not only by income but also by previous period consumption. Pigou (1941) emphasized the positive relationship between wealth and consumption. Consumption expenditures are a function of both wealth and income. Therefore, it is thought that the change in the values of the assets in the wealth portfolio owned by the household will also affect consumption expenditures. This change in consumption expenditures, independent of permanent income, is called the "wealth effect". Modigliani and Brumberg (1954) first mentioned the wealth effect in the life cycle model. The wealth effect is associated with the life cycle of the consumption or permanent income hypothesis developed by Ando and Modigliani (1963). Accordingly, it is assumed that the current income of individuals and their expected lifetime income affect current consumption. Accordingly, individuals can save and spend a portion of their income in the future. The saved income is the primary source of wealth. For this reason, increases and decreases in wealth affect individuals' consumption expenditures.

The wealth effect refers to the effect of changes in the value of assets (stocks, real estate, bonds, foreign exchange accounts, etc.) held by individuals on their consumption behavior. It is based on the fact that when the value of their assets increases, people feel wealthier and, therefore, tend to spend more. When there is an increase in the prices of stock markets, real estate prices, or other types of assets, the owners of these assets feel richer. For example, if the value of a house or investment portfolio increases, these individuals think they have more wealth. This increase in wealth can increase individuals' tendency to spend even if their future income expectations do not change. Increasing the perception of wealth can cause individuals to be less afraid of economic uncertainties and consume more. The wealth effect is a mechanism based on individuals changing their spending and saving behaviors depending on changes in asset prices. While an increase in asset prices encourages consumption spending, a decrease in asset prices can limit these spending. Therefore, the wealth effect plays an important role in economic growth and stability.

Modigliani (1971) defines the consumption function by which consumers maximize their utility subject to a lifetime income constraint as follows:

$$C = c[W + H(Y)] \quad (1)$$

In Equation 1, C is consumption, c is the marginal propensity to consume, W is wealth, and $H(Y)$ is the present value of expected income. From this point on, the effect of wealth on consumption depends on the marginal propensity to consume.

This study examines the effect of wealth on the Turkish economy. In particular, the effects on consumption are analyzed through indicators representing asset prices and financial markets such as money supply, housing price index, bond interest rates, BIST100 index, and exchange rate. Each variable affects individuals' perception of wealth and spending behavior differently. For example, an increase in money supply can lead to more liquidity in the market, facilitating access to credit and reducing borrowing costs (Judijanto, Hutaauruk, and Sarmiento, 2024). This situation can positively affect consumption by increasing individuals' propensity to spend. In developing economies such as Türkiye, an expansion in money supply can increase households' spending capacities, but it can also lead to inflationary pressures, creating a dual effect on consumption.

Homeownership constitutes a significant portion of household wealth in Türkiye (Vardar and Koç, 2021). Increases in housing prices can strengthen households' perception of wealth and lead to a tendency to spend more. While rising housing prices allow individuals to obtain loans more efficiently by using their homes as collateral, they can also use these loans for consumption expenditures. However, decreases in housing prices can be perceived as a decrease in household wealth and can restrict spending tendencies (Coşkun, 2016).

Bond interest rates have a decisive effect on general interest rates, directly affecting borrowing costs and investor behavior. High interest rates can increase individuals' borrowing costs and restrict their consumption expenditures. At the same time, changes in interest rates can affect asset prices and cause fluctuations in individuals' perception of wealth (Cambazoğlu, 2010). The BIST100 index is also an indicator that directly affects investors' perception of wealth. An increase in stock prices can increase investors' wealth, encouraging them to spend more. On the other hand, declines in BIST100 can negatively affect investors' perception of wealth, causing them to tend to cut back on their spending (Bayır and Güvenoğlu, 2020). Therefore, fluctuations in the BIST100 index can play a decisive role in investors' consumption behavior. Finally, the exchange rate directly affects cost inflation and consumer prices in import-heavy economies like Türkiye. Increases in the exchange rate can increase the prices of imported products, reducing consumer purchasing power. On the other hand, an increase in the exchange rate can increase export and tourism revenues. It can also positively affect consumption by increasing the spending power of those who earn foreign exchange income. In this context, the increase in the exchange rate brings a complex mechanism that includes both positive and negative effects of the wealth effect.

The developing empirical literature has established a model between consumption and wealth shocks and has mainly focused on developed economies. These models predict that unexpected wealth shocks will change the permanent income of households and thus affect the life cycle pattern of saving and consumption (Lettau and Ludvigson, 2004). In particular, the unstoppable increase in housing prices has increased the interest in studies on the effects of housing wealth. Altissimo et al. (2005) state that in European countries, the wealth channel is the most crucial channel through which asset prices affect economic activity. Permanent asset price increases have a substantial effect on consumption. Benjamin, Chinloy, and Jud (2004) examined the consumption function in the US economy by separating it into two parts: the real estate market and financial assets. According to the study's findings, the effect of the increase in real estate wealth on consumption is considerably more significant than the increase in financial assets. Similarly, Case, Quigley, and Shiller (2005) examined the link between housing wealth, financial wealth, and consumer spending increases. The analysis shows that housing wealth has a statistically significant and large effect on consumption. Carroll, Otsuka, and Slacalek (2011) reached a similar conclusion for a panel of US states. In working with microdata, Bostic, Gabriel, and Painter (2009) provided evidence that housing wealth has a more significant effect on consumption than other financial wealth. Coskun et al. (2018) investigated the relationship between stock and housing wealth and final consumption in 11 developed countries. According to the findings, income mainly explains consumption, and housing wealth positively contributes to consumption. In addition, a negative relationship is found between consumption and stock wealth. The authors prove that stock and housing wealth are developed countries' primary sources of consumption growth. Ciarlone (2011) investigated the effects of housing and financial wealth on consumption in developing countries and concluded that both positively affect consumption. However, the effect of housing wealth on consumption is more significant than stock wealth. Peltonen, Sousa, and Vansteenkiste (2012) obtained similar results in their study investigating the effects of wealth on developing countries. Accordingly, housing wealth significantly impacts consumption in countries with underdeveloped financial markets and low income. In contrast, financial wealth significantly impacts consumption in countries with more developed financial markets. It was concluded that both stock and housing wealth have a small impact on consumption in Latin American countries, while in Asian countries, the impact of housing wealth on consumption has increased in recent years. Georgakopoulos (2019) showed that financial and housing wealth positively affect consumption in the Maltese economy. In addition, it was found that the impact of housing wealth on consumption is more pronounced than financial wealth. Simo-Kengne, Gupta, and Bittencourt (2013) analyzed the impact of housing prices on consumption in the South African economy. They concluded that the increase in housing prices significantly impacts consumption. Kundan Kishor (2007) showed that a dollar increase in housing wealth for the USA increases consumption by seven cents,

while a dollar increases in financial wealth increases consumption by only three cents. He attributed this difference to the fact that financial wealth shocks are temporary and housing wealth shocks are permanent.

In addition to the studies in the literature that have found that housing wealth has a more significant effect on consumption (see Barata and Pacheco, 2003; Dreger and Reimers, 2011), there is also evidence that financial wealth has a more significant effect. Slacalek (2009), in his study examining the effects of financial wealth and housing wealth on consumption in developed economies, found that financial wealth has a more significant effect on consumption than housing wealth in countries other than the UK and the US. In addition, the wealth effect is relatively weak in countries outside the Eurozone. Similarly, Sousa (2009) and Rodil-Marzabal and Menezes-Ferreira-Junior (2016), who study the Eurozone, have provided evidence that financial wealth has a more significant effect on consumption than housing wealth. In their analysis of the Italian economy, Bassanetti and Zolino (2010) concluded that both housing and financial wealth positively affect consumption. In addition, financial wealth has a more significant effect compared to housing. De Bonis and Silvestrini (2012) have similar results in their study of OECD countries. Accordingly, while both financial and real wealth affect consumption, the effect of financial wealth is more incredible. Šonje, Časni, and Vizek (2014) investigated the effects of stock and housing wealth on consumption in developed and developing economies. The analysis results showed that the wealth effect caused by stocks is strong in developed countries and weak in developing countries. The wealth effect caused by housing is vital in developing countries.

The literature is somewhat limited when the studies conducted in Türkiye are examined. Bayır and Güvenoğlu (2020) examined the relationship between housing prices, BIST100, and consumption expenditures. According to the analysis results, housing wealth increases do not affect consumption, while decreases have a decreasing effect on consumption. Both increases and decreases in BIST100 have significant effects on consumption. Akın (2008) examined the effect of wealth on consumption from a different perspective and divided consumption into durable and non-durable. The analysis results showed that housing wealth has no effect on durable consumption in the long term but has a positive effect on non-durable consumption. On the other hand, wealth originating from stocks does not affect the consumption of non-durable goods but is effective on the consumption of durable goods. Guler (2012) emphasized that the effect of housing wealth on consumption increased after the 2001 economic crisis and that while there was a positive relationship before the 2001 crisis regarding the effect of financial wealth on consumption, this relationship became insignificant after the financial crisis. The findings of Alp and Seven (2019) are interesting. Their studies investigating the effects of stock and housing wealth on consumption concluded that housing wealth increases consumption while stock wealth decreases it. Ceritoğlu (2017) investigated

the effects of housing price changes on consumption. Accordingly, it was concluded that housing price changes positively affect consumption. Similarly, Afşar and Yüksel (2022) presented evidence that housing price changes significantly affect consumption.

DATA AND METHODOLOGY

Data

The impact of asset prices on consumption in the Turkish economy will be analyzed using quarterly data for the period 2005:Q1- 2024:Q2. For this purpose, a model with 5 explanatory variables will represent asset prices. Table 1 shows the analyzed variables and their explanations.

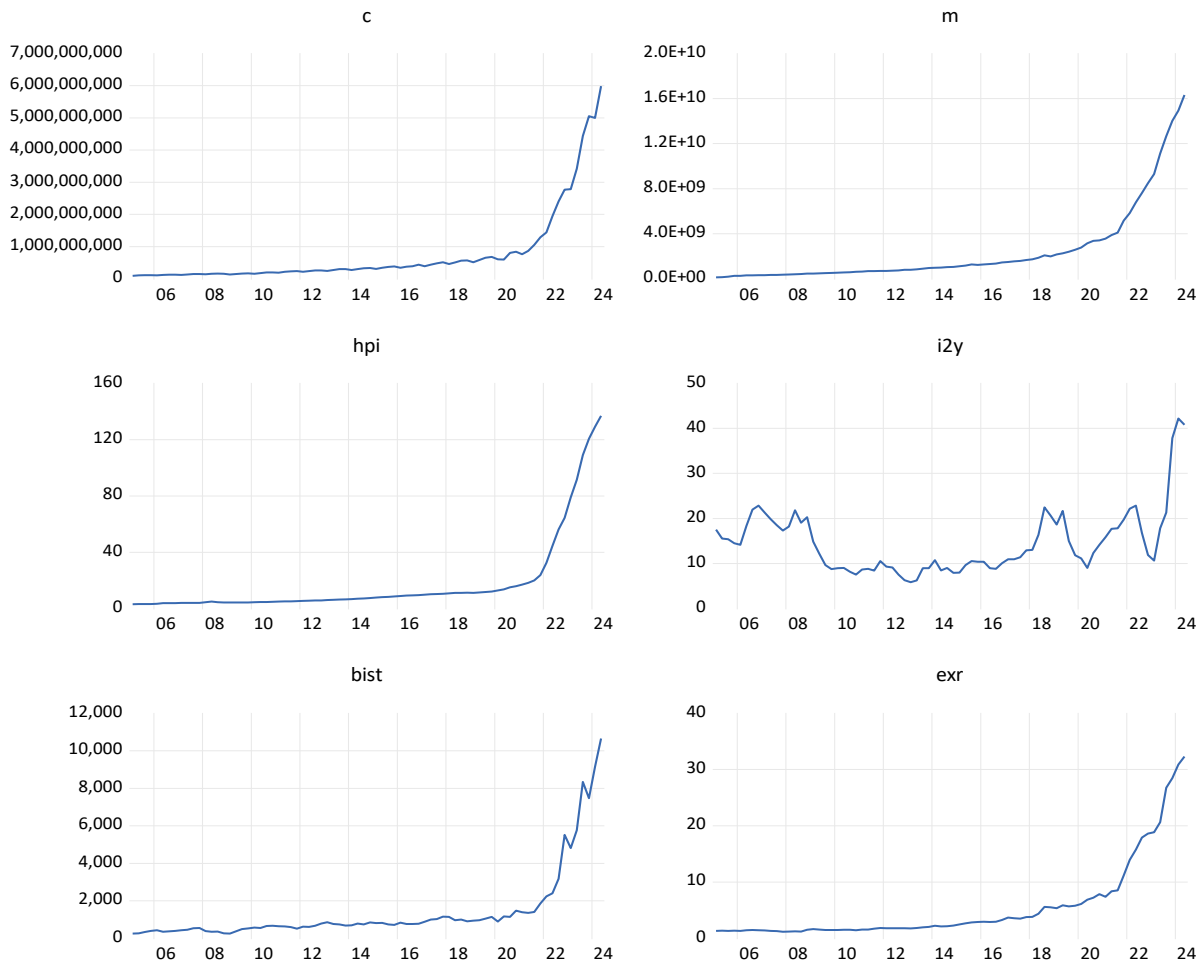
Table 1: Variables and their explanations

Variables	Explanation	Source
<i>c</i>	Consumption of households (Thousand TL)	TURKSTAT
<i>m</i>	M3 money supply	CBRT
<i>hpi</i>	Housing price index	TURKSTAT
<i>i^{2y}</i>	2-year term bond interest rate	investing.com
<i>bist</i>	BIST100 index	CBRT
<i>exr</i>	Exchange rate	CBRT

While determining the variables, data that can form household wealth was used. While examining the wealth effect, developments in money supply can directly affect asset prices. Stock and real estate prices especially respond positively to the expansion of the money supply. This increase in asset prices can increase individuals' wealth and spending tendencies. Bond interest rates are inversely related to bond prices. When interest rates decrease, bond prices increase. In this case, bondholders' wealth increases, positively affecting their spending tendencies. The perception of increasing wealth can lead to a behavioral change towards increasing consumption. Individuals who invest in long-term bonds, in particular, can increase their spending by realizing that the value of their assets increases as interest rates decrease. General economic conditions shape the relationship between the stock market and consumption, individuals' perception of wealth, and confidence in the markets. Increases in the stock market can lead to an increase in individuals' wealth. As stock portfolios gain value, investors feel richer. This perception of wealth can cause individuals to increase their spending. Especially for large investors, increases in the stock market create an increase in disposable income and, therefore, consumption. Although the exchange rate is generally thought to have a limiting effect on consumption, individuals with assets in foreign currency or households saving in foreign

currency are positively affected by the depreciation of the local currency. Those with investments in foreign currency may feel richer when the exchange rate increases, and this perception of wealth may lead to consumption. The wealth effect based on foreign currency may increase the propensity to spend in such individuals. Based on this, the time series graphs of the variables in the period under review are given in Figure 1.

Figure 1: Time series graphs of variables



Seasonal adjustment is performed in all series using the Census-X12 method. In addition, logarithmic transformations of the variables were made and included in the model.

Methodology

This study examines the interaction between consumption and asset prices using the Structural Vector Autoregression (SVAR) model, a variation of the VAR model developed by Sims (1980). The SVAR model uses additional structural matrices and restrictive estimates to transform the error terms in standard VAR models into uncorrelated structural shocks. The basic components of SVAR analyses are extracting structural shocks, impulse-response analyses, variance decomposition, and causality analyses (Martin, Hurn, and Harris, 2013). The SVAR model allows for obtaining simple and versatile results (Christiano, Eichenbaum, and Evans, 1996). A simple SVAR model can be written as follows:

$$A X_t = A_0 + A_1^s X_{t-1} + \dots + A_p^s X_{t-p} + B \epsilon_t \quad (2)$$

where A and A_i^s are structural variables, ϵ_t is the structural shock vector and error term in $(n \times 1)$, p is the maximum number of lags, X_t is the endogenous variables vector in $(n \times 1)$ and X_{t-1} is the lagged vector of these variables. Since shocks cannot be observed directly, a common practice to identify structural shocks is to multiply both sides of the equation by A^{-1} :

$$\begin{aligned} X_t &= A^{-1} A_1^s X_{t-1} + \dots + A^{-1} A_p^s X_{t-p} + A^{-1} B \epsilon_t \\ &= A_1 X_{t-1} + \dots + A_p X_{t-p} + v_t \end{aligned} \quad (3)$$

where $A_i = A^{-1} A_i^s$ is the reduced form lag matrix and $v_t = A^{-1} B \epsilon_t$ is the reduced form error structure. In the reduced form, the error terms are combined with the simultaneous effects of the variables and the structural model shocks.

The structural equations for each variable used in the analysis can be established as follows:

$$B \cdot \begin{bmatrix} c_t \\ m_t \\ hpi_t \\ i^{2y}_t \\ bist_t \\ exr_t \end{bmatrix} = A(L) \cdot \begin{bmatrix} c_{t-1} \\ m_{t-1} \\ hpi_{t-1} \\ i^{2y}_{t-1} \\ bist_{t-1} \\ exr_{t-1} \end{bmatrix} + \begin{bmatrix} \epsilon_t^c \\ \epsilon_t^m \\ \epsilon_t^{hpi} \\ \epsilon_t^{i^{2y}} \\ \epsilon_t^{bist} \\ \epsilon_t^{exr} \end{bmatrix} \quad (4)$$

In Equation 4, matrix B is the coefficient matrix containing the structural effects of the variables on each other, and $A(L)$ represents the lag polynomials. In a matrix template, the non-missing values (non-NAs) are a matrix that specifies fixed constraints on the corresponding matrix elements. All missing values (NAs)

cannot constrain the corresponding matrix. In a 3x3 sample model, the matrices A and B are shown in the following form:

$$A = \begin{pmatrix} 1 & 0 & 0 \\ NA & 1 & 0 \\ NA & NA & 1 \end{pmatrix}, \quad B = \begin{pmatrix} NA & 0 & 0 \\ 0 & NA & 0 \\ 0 & 0 & NA \end{pmatrix} \quad (5)$$

Based on this, the form of the constraints that need to be placed in the matrix will be as follows:

$$\begin{bmatrix} \epsilon_t^c \\ \epsilon_t^m \\ \epsilon_t^{hpi} \\ \epsilon_t^{i2y} \\ \epsilon_t^{bist} \\ \epsilon_t^{exr} \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 \\ a_{21} & 1 & 0 & 0 & 0 & 0 \\ a_{31} & a_{32} & 1 & 0 & 0 & 0 \\ a_{41} & a_{42} & a_{43} & 1 & 0 & 0 \\ a_{51} & a_{52} & a_{53} & a_{54} & 1 & 0 \\ a_{61} & a_{62} & a_{63} & a_{64} & a_{65} & 1 \end{bmatrix} + \begin{bmatrix} u_t^c \\ u_t^m \\ u_t^{hpi} \\ u_t^{i2y} \\ u_t^{bist} \\ u_t^{exr} \end{bmatrix} \quad (6)$$

This matrix shows how each variable is affected by shocks to other variables. Each coefficient a_{ij} in the matrix expresses the direct effect of the variables on each other in the order determined above. For example, a_{21} expresses the effect of a shock in money supply on consumption. A change in money supply can affect interest rates and, therefore, consumer spending. However, more specific market indicators such as housing prices or the BIST100 index may not directly affect money supply. Therefore, structural constraints are imposed. This decomposition allows us to understand the relationships between the variables better because it determines how each shock spreads through a particular economic channel.

Impulse-response functions can also be used in SVAR models. The impulse-response analysis measures the effect of an increase or decrease in a variable on itself and other variables (Lütkepohl, 2007).

EMPIRICAL FINDINGS

The variables' stationarity levels were determined by the Augmented Dickey-Fuller (ADF) unit root tests developed by Dickey and Fuller (1979), the Phillips and Perron (PP) unit root tests developed by Phillips and Perron (1988), and the structural break unit root test by Lee and Strazicich (2004). In this context, the ADF, PP, and Lee & Strazicich unit root test results of the variables are given in Table 2.

Table 2: Results from unit roots tests

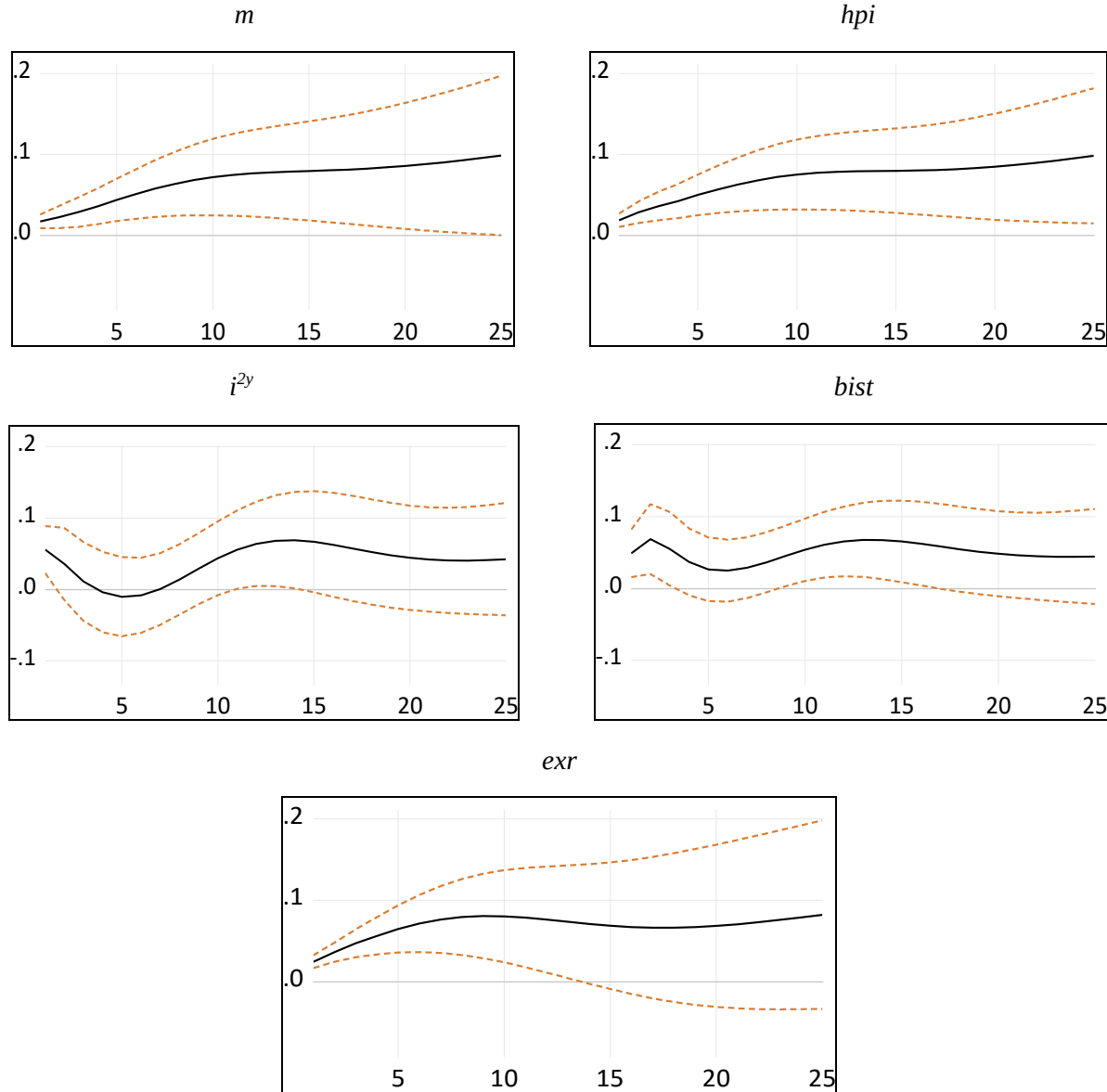
Variables	ADF		PP		Lee&Strazicich		Outcome
	Test stat.	Prob.	Test stat.	Prob.	Test stat.	Break Date	
<i>c</i>	7.1799	1.0000	4.8386	1.0000	-2.3211	2008Q4	I(1)
Δc	-3.4143	0.0571*	-4.4363	0.0006***	-3.3550	2018Q3	I(1)
<i>m</i>	1.4762	0.9991	0.7722	0.9930	-2.8602	2007Q4	I(1)
Δm	-4.7276	0.0002***	-4.9919	0.0001***	-2.8609	2018Q3	I(1)
<i>hpi</i>	0.6487	0.9902	3.8163	1.0000	-3.5734**	2008Q3	I(1)
Δhpi	-2.5963	0.0982*	-2.5963	0.0982*	-	-	I(1)
<i>i^{2y}</i>	-0.7852	0.8172	-1.3668	0.5943	-2.1876	2020Q2	I(1)
Δi^{2y}	-7.0076	0.0000***	-6.4003	0.0000***	-5.4656***	2012Q2	I(1)
<i>bist</i>	1.7690	0.9997	1.5688	0.9994	-2.2145	2009Q2	I(1)
$\Delta bist$	-7.7318	0.0000***	-7.8169	0.0000***	-5.6237**	2020Q2	I(1)
<i>exr</i>	3.9721	1.0000	5.7564	1.0000	-1.8964	2008Q3	I(1)
Δexr	-6.4811	0.0000***	-6.4816	0.0000***	-3.5008**	2008Q1	I(1)

***, **, and * indicates the statistical significance at the 1%, 5% and 10% significance level, respectively. Δ is the difference operator. Lee& Strazicich's 5% level test critical value is -3.4870

According to the unit root test results, the series are not stationary at the level levels. As a result of the difference operation, the series are stationary at the I(1) level. After determining the stationarity levels of the series, it is necessary to investigate whether there is a cointegration relationship between the variables. The cointegration test was examined within the framework of the Johansen approach. As a result of the Trace Test and Maximum Eigenvalue tests, it is stated that the null hypothesis that there is at least one cointegrated vector between the variables cannot be rejected (see Appendix 1). As stated by Lutkepohl (2005 and 2017), in the presence of a cointegrated relationship between non-stationary variables, asymptotic tests can be applied for VAR models estimated at the level, and the estimation results will be consistent. On the other hand, in the presence of a cointegrated relationship, estimating VAR models with first differences may lead to loss of information. For these reasons, the variables were included in the model at the VAR model levels to be estimated in this study. According to the results of diagnostic tests related to the model used (see Appendix 2), the error terms of the estimated VAR model are independent of autocorrelation and heteroscedasticity problems. Thus, the impulse-response functions obtained from the SVAR model can be evaluated. In this way, it will be possible to examine the source of variability in the model variables and the

dynamic responses of consumption expenditures to money supply, housing price index, bond interest rate, BIST100 index, and exchange rate. Figure 2 shows the consumption responses for the variables in question.

Figure 2: Consumption response to asset price shocks



Firstly, when the consumption response to the broadly defined money supply (m) is examined, it is seen to have a positive and continuously increasing trend. When the money supply expands, liquidity in the market increases, and access to credit becomes easier. This allows individuals to borrow more easily and spend more. In Türkiye, expansions in the money supply generally stimulate consumption and increase aggregate demand in the short term. In the analysis, this effect lasts for approximately 20 periods. When the response of consumption to a positive shock in the housing price index (hpi) is examined, the increase in

housing prices creates an increase in household wealth and has a positive effect on consumption. Türkiye is a country where real estate investments are of great importance and the increase in housing prices increases the wealth of individuals, which can encourage consumption expenditures. In this respect, the findings are similar to those of Case, Quigley, and Shiller, (2005), Coskun et al., (2018), Afşar and Yüksel (2022). A one-standard-deviation positive shock in bond yields (i^{2y}) has a negative effect on consumption, and this effect disappears after about 1-2 periods. An increase in bond interest rates means a decrease in bond prices. This situation causes a decrease in the wealth of bondholders and may cause a decrease in consumption expenditures. Investors experience a decrease in their assets as bond prices in their portfolios decrease, creating a consumption-reducing effect through the wealth effect. Although a one standard deviation positive shock in the BIST100 index (*bist*), the stock market indicator, initially creates a wealth effect and increases consumption, this effect decreases after approximately 2 periods. Initially, investors feel richer with increases in stock values, and this perception of wealth may increase consumption. However, it would not be wrong to say that in the long run, due to the effects of uncertainties in the stock market, consumers restrict their future spending and reduce total demand and consumption. The study's findings are similar in this respect to Bassanetti and Zolino (2010). It is seen in the last panel of the figure that a positive shock in the last variable, the exchange rate (*exr*), also has a consumption-increasing effect. The effect of the exchange rate can be two-way. An increase in the exchange rate (depreciation of TL) increases the price of imported goods. In an import-heavy economy like Türkiye, an increase in the exchange rate restricts consumers' access to imported products and causes an increase in the general level of prices. This situation negatively affects consumption, especially as import-dependent consumer goods become more expensive. However, the existence of the wealth effect reverses the situation. In particular, the rapid exchange rate increases experienced in the Turkish economy in recent times have caused households to move away from the Turkish Lira as a means of storing value. Especially at the end of 2021, the application of currency-protected deposits has caused investors to turn to foreign exchange. Therefore, the increases in exchange rates have also caused an increase in wealth and positively affected consumption.

CONCLUSION

This study aims to reveal the existence of the wealth effect by examining the interaction between consumption and asset prices in the Turkish economy. The effects of basic economic indicators such as the BIST100 index, M3 money supply, bond interest rates, exchange rate, and housing price index on consumption were analyzed using the Structural Vector Autoregression (SVAR) model. The findings show the importance of asset prices on consumption decisions in the unique structure of the Turkish economy and the varying effects of wealth according to different asset types.

The study's findings revealed that stock changes, money supply, interest rates, exchange rates, and housing prices significantly affect individuals' consumption expenditures. In particular, the BIST 100 index showed that increases in stock prices positively affect investors' perception of wealth, leading to an increase in consumption expenditures in the short term. These results, which support the wealth effect of stocks, indicate that individuals tend to spend more when they feel richer. However, in the long term, the uncertainty brought about by fluctuations in stock markets may have a restrictive effect on consumption. This situation emphasizes the importance of market stability in maintaining consumer confidence in developing economies such as Türkiye. The expansion of the M3 money supply supported consumption by increasing liquidity in markets and facilitating access to credit. These increases in the money supply positively affected total consumption by increasing individuals' spending power. However, excessive expansion of the money supply may lead to inflationary pressures and have restrictive effects on consumption in the long term. This finding points to the necessity of a balanced approach to monetary policy. Increases in the housing price index have supported consumption by creating a perception of increased household wealth. Since housing is an essential means of wealth accumulation in Türkiye, increases in housing prices cause individuals to feel richer and increase their consumption expenditures accordingly. The wealth effect provided by the increase in housing prices stands out as a factor that supports households' consumption decisions.

The increase in bond interest rates has a negative effect on consumption. Increases in interest rates increased individuals' borrowing costs, and decreases in bond prices negatively affected investors' perception of wealth. In this case, individuals tended to restrict spending as they felt their assets were losing value. In economies like Türkiye, where borrowing costs strongly affect consumer behavior, high bond interest rates can have a restrictive effect on consumption. With the increase in the exchange rate, this effect developed in a positive direction as the spending capacity increased for those with foreign exchange income.

In conclusion, this study has revealed the importance of wealth on consumption behavior in Türkiye. The findings show that changes in asset prices directly affect individuals' consumption behavior and shape aggregate demand. In this context, understanding the effect of wealth on the Turkish economy plays a critical role in creating policies that support consumption. The study's findings provide important clues that policymakers should consider in their monetary and fiscal policy decisions. Managing the effects of changes in asset prices on consumption in a balanced manner is essential for economic stability and growth sustainability.

YAZAR BEYANI / AUTHOR STATEMENT

Araştırmacı makaledeki tüm katkının kendine ait olduğunu bildirmiştir. Araştırmacı herhangi bir çıkar çatışması bildirmemiştir.

Researcher declared that all contributions to the article were his own. Researcher have not declared any conflict of interest.

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APPENDIX

Appendix 1: Johansen cointegration test

Cointegrated Vectors	Eigenvalue	Trace statistic (prob.)
None	0.5520*	160.0271* (0.0000)
At most 1	0.4502*	99.7927* (0.0064)
At most 2	0.2421	54.9186 (0.2246)
At most 3	0.1856	34.1238 (0.2828)
At most 4	0.1582	18.7177 (0.2978)

Note: * Indicates that the null hypothesis is rejected at the 5% significance level. The values in parentheses under the relevant test statistics are probability values according to the 5% significance level.

Appendix 2: Serial correlation LM tests

Lag	d.f.	LRE statistics	Prob.
1	36	47.6866	0.0921
2	36	26.8210	0.8665
3	36	49.4492	0.6070
4	36	34.7628	0.5274
5	36	29.4030	0.7736

Appendix 3: Heteroskedasticity test

χ^2	df	Prob.
1572.858	1512	0.1347