Examination of the exchange rate and interest rate channels of the monetary transmission mechanism during the inflation targeting: Turkey and Mexico countries examples[*]

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Abstract. *In this paper, the efficiency of the exchange rate and interest rate channels were investigated of the monetary transmission mechanism (MTM) in Turkey and Mexico. Quarterly data are used for Turkey 2002I – 2013II period and for Mexico 2001I – 2013I period were analysed for both Countries using the VAR (Vector Autoregressive) and FAVAR (Factor Augmented Vector Autoregressive) econometric methods. Obtained the findings in this paper namely, VAR Model results impulse-response functions showed that partially work of the interest rate channel in Turkey and of the exchange rate channel in Mexico. FAVAR Model impulse-response functions results have pointed out that did not work for both Countries of the exchange rate and interest rate channels.*

Keywords: exchange rate, interest rate channel, monetary transmission mechanism.

JEL Classification: C50, E50, E52, E58.

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1. Introduction

Monetary policy implementations may affect the economies directly or indirectly through specific mechanisms. It is crucial to be anticipated by economic agents the possible impacts and consequences of the monetary policy of the central bank will implement knowledge of the effects on the income level and general price level of the monetary policy changes.

It is defined and categorized in different ways of the Monetary Transmission Mechanism (MTM) concept and its channels. Monetary Transmission Mechanism (MTM) concept refers to the transmission on inflation of the monetary policy decisions (Taylor, 1995). According to Ireland (2005) MTM, is defined as the effects on the real variables of the policy-induced changes in nominal money stock or short-run nominal interest rate. MTM as a general framework, it is the mechanism explaining the effects the overall on the entire national economy indicators such as total production, employment and general price level to conduct monetary policy in a country where the authorities of monetary policy changes. MTM concept, before only when defined the effects on the aggregate demand and aggregate production today the effects on the general price level it will be investigated in addition to the effects on aggregate production.

MTM has been working through some channels. MTM channels classified in different forms generally, it is classified as interest rates, exchange rates, asset prices and credit channels in the literature. Mishkin (1995) examined MTM channels under four headings as interest rates, exchange rates, asset prices and credit channels. Generally, MTM cannels are based on such as classification the MTM literature. Sznajderska (2011) added in addition to the expectations channel to the classification of the MTM channels Mishkin (1995) indicated that the bank loans (narrow credit channel), balance sheet and risk-taking channels in studies conducted in recent years.

On the other hand Boivin et al. (2010) were evaluated in two categories the MTM channels Neoclassical and non-Neoclassical that including financial market shortcoming. Neoclassical channels are considered as the MTM's core channels. Core channels are determined as short-term policy interest rate, long-term interest rates, asset prices and exchange rate. It is classified non-neoclassical channels as credit-based channels.

Bofinger (2001) examined the MTM channels in three portions as quantity theory channel, interest rate channel and expectations channel (Phillips Curve).

Besides similarities there are also differences among the classification describing MTM channels. Mishkin (1995), Boivin et al. (2010) and Sznajderska (2011) were classified more extensive MTM channels. It affects preferred monetary policy instruments and practices in a country transmission process of MTM closely affected by the financial and real variables.

After the crisis, the significant transformations has occurred about monetary policy in some emerging economies where the financial crisis deeply affected. In this context, Central Bank of the Republic of Turkey (CBRT) has included the main purpose of price

stability as well as financial stability for policy purposes on the basis of a new objective composition in monetary policy in the process after the global financial crisis. Mostly as econometric methods Vector Autoregressive (VAR) Model, Vector Error Correction (VECM) and Factor Augmented Vector Autoregressive (FAVAR) Model methods were used in studies on the efficiency of the MTM for developed and developing countries in MTM literature.

In this paper, cause as examples of countries analysis Turkey's and Mexico's preference both countries it is to show similarities in terms of the phases in the economy and due to be implemented inflation targeting regime. There have been important developments both countries in monetary policies implementation after the financial crisis induced with the failure of the stability program applied in the close past.

Before 1980, the monetary policies is applied based on Keynesian Approach in Turkey, after 1980, the monetary policies have been implemented based on Monetarist Approach. Monetarist monetary policies has been implemented but the effects of Keynesian monetary policies has been also seen in nineties years.

The stabilization programs has been implemented based on the fixed exchange rate regime and these programs failed for both countries examined in this article in nineties years.

The Central Bank of the Republic of Turkey (CBRT) has come to more active position in terms of the implementation of the monetary policies with the structural and institutional reforms after the November 2000 and February 2001 crises, CBRT provided the objective and instrument independence with the regulations made in the Central Bank Law No 1211. The inflation targeting regime has begun to be implemented implicit since 2002 and official since 2006.

An economic stabilization program was implemented called "Pacto" and based on fixed exchange rate regime basis in Mexico in 1987. Mexico faced a monetary and finance crisis with the effect of international capital flows together with the financial liberalization process and implemented monetary and exchange rate policies in 1994. After the crisis, it is accepted that a contractionary monetary policy should be implemented and that the Central Bank should be transparent in monetary policy implementations in order to reestablish the credibility of the Central Bank and to reduce inflationary effects. After the monetary and finance crisis, flexible exchange rate regime has been introduced a significant change in monetary policy in Mexico in 1995. A new monetary program was put into practice that annual inflation target is determined the change in the monetary base and flexibility in 1996. In this Country, the inflation targeting regime has been passed since 2001, an annual target of three percent was set since 2003 and short-term interest rates were set as policy interest rates. Beside the monetary policy has begun to be implemented in order to sustain the stability of the national currency as well as economic growth since 2009.

Analyzed in this study and nowadays the official inflation targeting regime implementation changes on monetary policy objectives and instruments applied will also affect the efficiency of the MTM and its channels in a positive way for both countries. After the Global Finance Crisis 2007, it is stated that of the MTM affects the operation in positive way particularly changes about the composition of the monetary policy in Turkey.

The Monetarist Approach is analyzed using VAR and FAVAR methods of the MTM in Turkey and Mexico in the first part of this study, literature of the MTM has been examined. In the second part, econometric analysis was applied using VAR and FAVAR methods in terms of Monetarist Approach of the MTM in Turkey and Mexico.

2. Literature review

Bernanke and Blinder (1992) examined the effect on real variables of monetary policy in the US economy for the period 1959-1989. The data of the paper are monthly and VAR model method is applied in the study. The variables has been determined; industrial production index, manufacturing industry capacity utilization rate, non-agricultural employment, housing construction, retail sales, personnel income, new orders for durable goods in the manufacturing industry, personal consumption expenditures, narrowly defined Money supply, the effective interest rate on funds, the average return of three-monthly treasury bill rate, and the six-monthly treasury bills, commercial paper interest rate, one yearly fixed-term treasury securities.

Bernanke and Blinder (1992) has reached the conclusion that it is effective the monetary policy measured by shocks at the federal fund rate in the US economy for the period 1959-1989. In this context, obtained the findings are summarized in three parts in the paper first; the federal funds rate has been a good indicator for the monetary policy second; nominal interest rate have been a good estimator of real variables and the federal fund rate is an explanatory variable. Third; consistent with the view that monetary policy affects the composition of bank assets. Contractionary monetary policy with effect on bank loans also affected the sales of securities on the assets of the banks in short run.

Sims (1992) has done to investigate the effects of monetary policy on France, Germany, Japan, UK and US, monthly data were used in the study during the period 1965-1990 for France and England, during the period 1961-1989 for Germany, during the period 1965-1991 for Japan, the period 1958-1991 for US. Sims (1992) investigated the responses of other variables to short-run interest rate volatility through a MTM using the VAR model method. In the study, the VAR model consist of six variables (short term interest rate, narrow defined money supply, consumer price index, industrial production index, exchange rate) and four variables (short term interest rate, narrow defined money supply, consumer price index, industrial production index) it has been estimated in two different format. According to obtained the findings in the study, the increase in short-run interest rate has reduced industrial production and level Money stock for five countries during the

periods examined. The consumer price response to for France and Japan while in other countries the response is negative and weak. Obtained the findings, the effects on prices of monetary policy is weak and relatively insignificant in Germany and UK and the effect on production of monetary shocks are weak and negative in all of the countries examined except Germany.

Bernanke and Blinder (1992), Sims (1992) are the reasons why it is taken as priority, they are the first time the VAR method has been used analyzing the effects on macroeconomic variables of monetary policy shocks.

Romer and Romer (2004) examined the effects on production and inflation of monetary shocks in US economy for the period 1969-1996. In the study VAR model method is used, the variables are determined for the econometric modelling; industrial production, consumer price index for final goods and federal fund rate. Obtained the results pointed out that monetary policy is very effective on production and prices in US economy. Accordingly, the implementation of a contractionary monetary policy has affected the production and reducing prices.

Seyrek et al. (2004) examined Monetarist Approach and New Keynesian transmission mechanism in terms of Turkey for the period 1968-1996. The series used in the study in which the externality analysis is applied; money supply, total credit volume, interest rate, price change, GDP. The findings of Seyrek et al. (2004) supported the Monetarist Approach and showed that the money supply variable is exogenous, it shows that this variable can explain other variables along with the total credit volume change. Therefore, the New Keynesian Approach has made the claim of money supply endogen in terms of Turkish economy is invalid.

Bernanke et al. (2005) proposed factor augmented vector autoregressive (FAVAR) model method by improving the vector autoregressive (VAR) model where the effects of monetary policy shocks on the economy are estimated. In this context, they have brought together the factor model and the structural VAR model in FAVAR method.

Bernanke et al. (2005) examined the effects of monetary policy shocks in the US economy with the FAVAR method developed by factor models and structural VAR model methods. In this context, monthly data were used in the study and it was examined during the period January 1959-August 2001. For the study one hundred twenty variables were identified belong to US economy, these variables were evaluated as twelve groups, these twelve groups are composed as twelve groups including real output and income employment and working hours, consumption, housing construction and sales, real stocks and orders, stock price exchange rates, interest rates, Money and loan amount quantities, price indices, other various variables. In these variables groups, assuming that the federal fund rate is the only observable factor the system is shocked by this variable. In the study, the variables are classified as slow-moving and fast-moving. An each of the variables is given the transformation codes. Obtained the findings show that the FAVAR model has method provides a consistent and logical measurement of the economic effects in US

economy during the period 1959-2001. Therefore, while there are decline for real activities and prices following the monetary policy and a decrease for monetary aggregates.

Boivin et al. (2008) examined whether the MTM was influenced by the common currency conditions with the transition to the common currency EURO in six EURO Countries; Germany, France, Italy, Spain, Netherland and Belgium. It was examined during the period 1980-2007 and quarterly data were used in study. Thirty three variables were used for each country in which the FAVAR method is applied in the study. When the variables are grouped in the study the variables are determined such as interest rate variables, real exchange rate, deflator variables, gross domestic product, consumption expenditure variables, foreign trade variables, production related variables, price indices, employment and labor force variables and monetary aggregate variables.

Boivin et al. (2008) obtained the results in their study showed that the responses to monetary policy shocks were different in EURO region countries during the period 1980-2007. When the interest rate shock is applied, the interest rate and consumption response of Italy and Spain are stronger the response of Germany. A homogeneity has emerged in terms of transmission mechanism and a decrease in the effects of monetary shocks has been revealed with the transition to EURO currency.

Butkiewicz and Ozdogan (2009) have examined the role of financial structure based reforms after 2000-2001 crisis in achieving the monetary policy objectives and the effects on MTM channels in Turkish Economy during the period 1996-2007. In the study, firstly it was examined during the period 1996-1999 before 2000-2001 crisis then during the period 2002-2007 after 2000-2001 crisis for Turkey. Obtained the findings supported the financial reforms implemented after the crisis in Turkish economy. In the context, the effects on production of monetary policy shocks was more effective after the crisis and had a weak effect on prices. Also, it was found to be stronger in after crisis period than before the crisis the effect of the exchange rate channel on economy, in Turkish economy during their period 1996-2007. It has been determined that the asset price channel is not active in both periods, the credit channel is operating very poorly and it is only effective in short-run for pre-crisis period.

Büyükakın et al. (2009) examined the exchange rate channel of the MTM in Turkish economy during the period 1990-2007. Monthly data were used VAR model method is applied in the study. The variables determined for VAR modelling of the study; real interest rate, real effective exchange rate index, net exports, gross domestic product with fixed prices, wholesale price index and interbank money market interest rate. In the econometric analysis, it was estimated the dynamic responses of real exchange rate, net export, production and prices against to monetary policy shocks. The findings showed that the monetary policy shocks have had effective on prices and have played an important role exchange rates in MTM in Turkish economy during the period 1990-2007.

Erdoğan and Beşballı (2009) examined the functioning of the MTM bank credit channel by using monthly data during the period 1996-2006 in Turkey. The variables were determined for the econometric modelling of the study such as; total deposit of banks, total credit of banks, total securities portfolio of banks industrial production index, wholesale price index, interbank money market overnight interest rate. According to the impulse-response results, it has been found that the bank lending channel is partially functioning due to financial dominance and the weight of public banks within the financial system in Turkey during the period 1996-2006.

Örnek (2009) tested the effects on real economy and prices of monetary policy shocks, the functioning of monetary transmission channels and the efficiency of these channels by using quarterly data for Turkey during the period 1980-2006. VAR model method is applied and the variables determined for econometric modelling; the real GDP, the interbank money market interest rate, the real effective exchange rate, IMKB national 100 index, the consumer price index and the deposit bank total credits in the study. The impulse-response function and variance decomposition results pointed out that the interest rate and the exchange rate channels are significant and active, the asset price and credit channels are insignificant and passive in Turkish economy during the period 1990-2006.

Boivin et al. (2010) examined the effects of monetary policy shocks on economic activity in Canadian economy for period 1969-2008. Both monthly data and quarterly data were used, VAR model and FAVAR model methods were applied in the study. For monthly data set of the study three hundred and forty eight series were used and for quarterly data set eighty seven series were used. Obtained the results of the study indicated that there is no evidence that the effects on economic activity of monetary policy shocks are significant in Canadian economy during the period 1969-2008.

Boivin et al. (2010) examined the MTM in US economy for the periods 1962-1979 and 1984-2008. The findings of the study using the monthly data and the FAVAR method were applied namely; Neoclassical Channels; interest rate, direct investment expenditures, the substitution in between periods in wealth and consumption are effective but also affect trade through the exchange rate.

Cambazoğlu and Güneş (2011) examined the effectiveness of the MTM channels in Turkish and Argentine economies for the period 2003-2010. Monthly data set were used and VAR model method was applied in the study. For this purpose, five variable VAR models have been established for both countries, the variables determined for VAR model; the interbank money market overnight interest rate, the bank deposits, the bank credits, consumer price index and industrial production index. The responses of the production and the price level against bank loans and overnight interest rates were examined in the study. Obtained the findings point out that money and credit channels are effective in both countries for the period 2003-2010.

Artar (2011) examined the effects of monetary policies implemented in Turkey after 2000 year on selected macroeconomic variables such as inflation, industrial production, IMKB-100 index, real effective exchange rate and current account deficit. VAR model method was employed for the period 2003-2008 using monthly data. According to VAR model results, the effect of interest rate shock on the real and financial variables was found to be limited in short-run while it was more effective in long-run in Turkish economy for the period 2003-2008. Therefore, CBRT's interest rate policy has a weak effect on macroeconomic variables in short-run and it has stronger influence in long-run.

Cambazoğlu and Karaalp (2012) examined the effects of the MTM on total output and prices of the exchange rate channel in Turkey for the period 2003-2013. Monthly data set were used in the study and VAR model method was applied. The variables used for VAR model estimation, short-term interest rate, real effective exchange rate, net export volume, consumer price index and industrial production index. The results of the study show that the exchange rate channel is an extremely active and effective channel in Turkish economy for the period 2003-2013. In this context, the fact that exchange rate channel caused real depreciation after monetary expansion aggregate demand affected positively and caused the inflation rate to increase.

Arabacı and Baştürk (2013) examined the efficiency of the MTM interest rate channel in terms of fiscal dominance. In the study which the VAR model method is employed monthly data are used. The variables used for VAR model estimation of the study; overnight interest rate, government borrowing interest rates, fixed capital formation, domestic consumption of residential households, gross domestic product, consumer price index. According to the findings of Arabacı and Baştürk (2013) has revealed that there are differences between before and after 2004 year the functioning of the interest rate channel in Turkey. The decline in fiscal dominance after 2004 year has emerged as a development the increases the functioning of the interest rate channel in Turkey. On the contrary, if the fiscal dominance is high before year 2004, the efficiency of the interest channel has decreased in Turkey.

Yıldırım (2013) examined the effect on the bank credit channel of the economic integration process using the annual data is twelve members countries of European Monetary Union (EU) including; Germany, Austria, Belgium, Finland, France, Netherland, Ireland, Spain, Italy, Luxembourg for the period 2003-2013. They have been determined the variables for the panel least squares method modelling; output ratio of banks, foreign assets-output ratio of banks, ratio of foreign asset-liabilities of banks and financial crisis 2008, puppet-output ratio, real per capita interest rate, monetary policy interest rate and bank deposits variables.

The results of Yıldırım (2013) show that he monetary policy implemented on the interest rate shock has shown that the shock does not have an effect on the credit volume and the credit channel is not effective.

Table 1. *Literature Summary-1*

Author	Country and Period	Method	Result
Bernanke and Blinder (1992)	US (1959-1989)	VAR	The monetary policy measured by shocks through federal fund rate is influential on real activity.
Sims (1992)	France, Germany, Japan, England, US (1958-1991)	VAR	The findings show that the effect on prices of monetary shocks is weak and relatively insignificant in Germany and England while the effect of monetary shocks on production is weak and negative in all countries except for Germany
Romer and Romer (2004)	US (1969-1996)	VAR	Monetary policy is very influential on production and price s in US economy.
Seyrek et al. (2004)	Turkey (1968-1996)	Externality Analysis	The money supply variable is an external variable in Turkey.
Bernanke et al. (2005)	US (1959-2001)	FAVAR	There has been a decrease in real activities and prices following the monetary policy and a decrease in monetary aggregates in US economy.
Boivin et al. (2008)	Germany, France, Italy, Spain, Netherland, Belgium (1980-2007)	FAVAR	A homogeneity has emerged in terms of transmission mechanism and a decrease in the effects of monetary shocks has been revealed after the transition to the EURO.
Butkiewicz and Ozdogan (2009)	Turkey (1996-2007)	VAR	The effect on economy of the exchange rate channel is strong, while the effect of credit channel is weak before and after the crisis in Turkish Economy. It has been determined that the interest channel is strong after monetary reforms.
Büyükakın et al. (2009)	Turkey (1990-2007)	VAR	It has been found that monetary policy shocks have an impact on prices and the exchange rate channel plays an important role in the MTM in Turkish economy for the period 1990-2007.
Erdoğan and Beşballı (2009)	Turkey (1996-2006)	VAR	It has been found that the bank lending channel operates partly due to financial dominance and the weight of public banks within the financial system in Turkey during the period 1996-2006.
Örnek (2009)	Turkey (1990-2006)	VAR	Interest rate and exchange rate channels are significant and active while asset price and credit channels insignificant and passive in Turkish Economy during the period 1990-2006.
Boivin et al. (2010)	Canada (1969-2008)	VAR FAVAR	Monetary policy shocks don't have an impact on economic activity in Canadian economy.
Boivin et al. (2010)	US (1962-1979) (1984-2008)	FAVAR	The MTM was found to be effective.
Cambazoğlu and Güneş (2011)	Turkey Argentina (2003-2010)	VAR	Money and credit channels are effective in Turkey and Argentina for the period 2003-2010.
Artar (2011)	Turkey (2003-2008)	VAR	CBRT's interest rate policy has a weak effect on macroeconomic variables in short-run and it has a stronger effect in long-run.
Cambazoğlu and Karaalp (2012)	Turkey (2003-2013)	VAR	The exchange rate channel is a very active and effective channel in Turkish economy during the period 2003-2013.
Arabacı ve Baştürk (2013)	Turkey (2001-2008)	VAR	An improvement in the functioning of the interest rate channel a decrease of financial dominantly in Turkey after 2004.
Yıldırım (2013)	EU Countries and Turkey (2003-2010)	Panel Least Squares	Credit channel is not effective in Turkish economy.

3. Econometric methodology

According to the monetarist approach VAR and FAVAR methods have been applied in this section the econometric analysis of the MTM in Turkey and Mexico.

3.1. Data set and variables

The data used in the study were provided by the IFS 2013 CD-ROM published by IMF. The data used are quarterly and cover in Turkey implementation the period 2002I – 2013II. The reason for preferring 2002 as the initial period for implementation is that the year is initial period of the implicit inflation targeting regime in Turkey. The variables and dataset are shown in Table 2 used for Turkey analysis.

Table 2. *The variables and data set information used for Turkey analysis*

Variable	Period	Description
IPI	2002:Q1-2013:Q2	Industrial Production Index (Seasonal Adjustment) (2005=100)
M1	2002:Q1-2013:Q2	Narrow-Defined Money Supply
M2	2002:Q1-2013:Q2	Broad-Defined Money Supply
M3	2002:Q1-2013:Q2	Broadest-Defined Money Supply
DR	2002:Q1-2013:Q2	Deposit Rate
RIR	2002:Q1-2013:Q2	Real Interest Rate
HCE	2002:Q1-2013:Q2	Household Consumption Expenditures
GCE	2002:Q1-2013:Q2	Government Consumption Expenditures
GFCF	2002:Q1-2013:Q2	Gross Fixed Capital Formation
SPI	2002:Q1-2013:Q2	Stock Price Index (2005=100)
CPI	2002:Q1-2013:Q2	Consumer Price Index (2005=100)
ER	2002:Q1-2013:Q2	Exchange Rate (SDR)
ERend	2002:Q1-2013:Q2	Exchange Rate (End of the Period)
NER	2002:Q1-2013:Q2	Nominal Exchange Rate
Imp	2002:Q1-2013:Q2	Import
Exp	2002:Q1-2013:Q2	Export (c.i.f.)
Credit	2002:Q1-2013:Q2	Banking Sector Domestic Credit Volume
Res	2002:Q1-2013:Q2	Reserve Money
SD	2002:Q1-2013:Q2	Savings and Deposits

All variables listed Table 2 used for the implementation of the FAVAR Model, firstly A VAR Model has been estimated some of the variables are selected six narrowed model variables are preferred for Turkey; RIR (Real Interest Rate), Credit (Banking Sector Domestic Credit Volume), IPI (Industrial Production Index, Seasonal Adjustment, 2005 = 100), CPI (Consumer Price Index, 2005 = 100), SPI (Stock Price Index, 2005 = 100), NER (Nominal Exchange Rate).

The data used are quarterly and do include during the period 2001I – 2013I for Mexico Analysis. The reason for the preference of 2001 as the starting year is that the inflation targeting regime has started to be implemented since 2001 in Mexico.

Table 3. *The variables and data set information used for Mexico analysis*

Variable	Period	Description
GDP	2001:Q1-2013:Q1	Gross Domestic Product (Prices in 2003)
IPI	2001:Q1-2013:Q1	Industrial Production Index (2005=100)
MIPI	2001:Q1-2013:Q1	Manufacturing Industrial Production Index
Mining	2001:Q1-2013:Q1	Mining Sector Production
COP	2001:Q1-2013:Q1	Crude Oil Production
M1	2001:Q1-2013:Q1	Narrow-Defined Money Supply
M2	2001:Q1-2013:Q1	Broad-Defined Money Supply

Variable	Period	Description
M3	2001:Q1-2013:Q1	Broadest-Defined Money Supply
M4	2001:Q1-2013:Q1	M4
M4A	2001:Q1-2013:Q1	M4A
MIR	2001:Q1-2013:Q1	Money Market Interest Rate
TBR	2001:Q1-2013:Q1	Treasury Bound Rate
DR	2001:Q1-2013:Q1	Deposit Rate
HCE	2001:Q1-2013:Q1	Household Consumption Expenditures
GCE	2001:Q1-2013:Q1	Government Consumption Expenditures
GFCF	2001:Q1-2013:Q1	Gross Fixed Capital Formation
SPI	2001:Q1-2013:Q1	Stock Price Index (2005=100)
WPI	2001:Q1-2013:Q1	Wholesale Price Index (2005=100)
CPI	2001:Q1-2013:Q1	Consumer Price Index (2005=100)
RER	2001:Q1-2013:Q1	Real Effective Exchange Rate
Exp	2001:Q1-2013:Q1	Exports of Goods and Services
Imp	2001:Q1-2013:Q1	Imports of Goods and Services

The variables and data set used for Mexican analysis are shown in Table 3. All of the series used for the implementation of the FAVAR model were selected for estimation of the VAR model by selecting some of them in Table 3.

3.2. Unit root analysis

Firstly, unit root test have been done in order to determine whether the series are stationary used in the study, after that stationary analysis of all series was performed using Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) unit root test methods logarithmic transformations were performed and all series except NFO and RFO used for Turkey application. The "Schwarz Information Criteria" is based on the implementation of the ADF Unit Root Test with delay (lag) values determined. The ADF Unit Root Test results are shown in Table 4.

Table 4. *Augmented Dickey-Fuller (ADF) unit root test results (Turkey)*

Variable	Level		First Difference		
	Intercept No Trend	Intercept Trend	Intercept No Trend	Intercept Trend	Result
IPI	-1.3961(0)	-2.6191(1)	-5.0387(0)*	-4.9834(0)*	I(1)
M1	-1.9512(0)	-1.9881(0)	-8.1867 (0)*	-8.6002(0)*	I(1)
M2	-2.0440(0)	-0.8576(0)	-6.1482(0)*	-6.5868(0)*	I(1)
M3	-2.0842(0)	-0.9027(0)	-6.1791(0)*	-6.6405(0)*	I(1)
DR	-2.7395(1)	-3.3880(0)	-5.6725(0)*	-5.9716(0)*	I(1)
RIR	-1.9689(0)	-1.6383(0)	-4.9123(0)*	-5.0012(0)*	I(1)
HCE	-2.8714(2)	-2.3890(4)	-5.1354(1)*	-5.7433(1)*	I(1)
GCE	-1.3076(2)	-2.6851(3)	-28.4556(2)*	-30.8665(2)*	I(1)
GFCF	-2.0210(5)	-2.9633(5)	-3.0281(4)**	-4.8037(2)*	I(1)
SPI	-1.5082(1)	-2.5531(1)	-4.7963(0)*	-4.7677(0)*	I(1)
CPI	-2.1413(5)	-2.3074(5)	-3.9762(3)*	-6.0252(4)*	I(1)
SDR	-2.1207(0)	-3.1275(0)	-6.2841(1)*	-5.4977(5)*	I(1)
NERend	-1.6741(0)	-2.1803(0)	-5.9882(1)*	-6.1929(1)*	I(1)
NER	-1.4754(0)	-1.9684(0)	-6.2308(0)*	-6.2102(0)*	I(1)
Exp	-2.0352(3)	-2.4855(2)	-4.3045(2)*	-4.5848(2)*	I(1)
Imp	-2.2436(0)	-2.6491(0)	-3.4710(4)**	-3.6824(4)**	I(1)
Credit	-1.8080(3)	-1.9937(3)	-5.4928(0)*	-5.8820(0)*	I(1)
Res	-0.3683(0)	-2.9800(0)**	-7.6007(0)*	-7.5152(0)*	I(1)
SD	-1.9548(0)	-0.6383(0)	-5.7631(0)*	-6.1671(0)*	I(1)

* PP indicates that the alternative hypothesis is accepted according to 1% significant level.
** PP indicates that the alternative hypothesis is accepted according to 5% significant level.
Note: Values indicate lag values in parentheses.

According to the results given in Table 4, the series are non-stationary in the study according to the levels both intercept-no trend and intercept-trend, 1% and %5 have been made stationary by taking first difference. According to the ADF unit root test results, it is found that all series are stationary in the first difference [I(1)], the series are distributed around a certain average. The lag values were determined based on the automatic selection of "Newey-West Bandwidth" which is the preferred method of spectral estimation "Default (Bartlett Kernel)" in implementation of the Phillips-Perron (PP) Unit Root Test. PP unit root test results are given in Table 5.

Table 5. *Phillips-Perron (PP) unit root test results (Turkey)*

Variable	Level		First Difference		Result
	Intercept No Trend	Intercept Trend	Intercept No Trend	Intercept Trend	
IPI	-1.4295(2)	-2.3006(1)	-4.9108(5)*	-4.8410(5)*	I(1)
M1	-2.7196(9)	-1.9307(4)	-8.1475(1)*	-8.4508(2)*	I(1)
M2	-2.0557(1)	-0.8576(0)	-6.1456(1)*	-6.5959(2)*	I(1)
M3	-2.1024(1)	-0.9027(0)	-6.2219(2)*	-6.6405(1)*	I(1)
DR	-5.0542(5)*	-3.4615(5)	-5.6728(1)*	-5.9805(1)*	I(1)
RIR	-1.9484(3)	-1.8774(2)	-4.8011(5)*	-4.8021(7)*	I(1)
HCE	-3.1141(1)**	-3.3371(1)	-5.9627(3)*	-6.6618(7)*	I(1)
GCE	-1.9049(13)	-8.6494(13)*	-28.0426(11)*	-26.9926(10)*	I(1)
GCFC	-2.9205(7)	-3.2309(3)	-6.3231(4)*	-6.3709(5)*	I(1)
SPI	-1.0112(1)	-1.9495(1)	-4.6582(5)*	-4.5598(6)*	I(1)
CPI	-3.8896(6)*	-8.6839(25)*	-	-	I(0)
SDR	-2.2188(3)	-3.3981(3)	-7.7654(3)*	-8.0363(4)*	I(1)
NERend	-1.7005(2)	-2.2103(2)	-6.8516(2)*	-7.5627(5)*	I(1)
NER	-1.5824(5)	-1.9684(0)	-6.2193(3)*	-6.2252(4)*	I(1)
Exp	-3.1393(11)**	-2.1264(6)	-7.4709(3)*	-7.9050(5)*	I(1)
Imp	-2.9558(13)**	-2.5595(7)	-6.0432(16)*	-6.9233(21)	I(1)
Credit	-1.1562(3)	-1.1377(3)	-5.5914(3)*	-5.8836(1)*	I(1)
Res	-0.1735(9)	-3.1518(2)	-8.6253(7)*	-8.5000(7)*	I(1)
SD	-1.9548(0)	-0.6383(0)	-5.7564(1)*	-6.1733(2)*	I(1)

* PP indicates that the alternative hypothesis is accepted according to 1% significant level.
** PP indicates that the alternative hypothesis is accepted according to 5% significant level.
Note: Values indicate lag values in parentheses.

According to the PP Unit Root Test results all series have reached the first degree [I(1)] result which are given in Table 5 both of which are intercept-no trend and intercept-trend at 1% and 5% significance levels. Thus, the series were distributed around a certain average in long-run. According to the results shown in Table 5, it has been determined that only the CPI series are stationary with respect to the level values [I(0)] and ADF unit root test results differently. In this case, ADF unit root test results are taken as basis.

It was examined whether all the series were stationary firstly, unit root tests were performed except for the series MIR, TBR and DR series are used in the study and belong to Mexico with logarithmic transformations. ADF and PP Unit Root Test methods were used for unit root analysis of the series. Schwarz Information Criteria was used to determine the lag values in implementation of ADF Unit Root Test. ADF Unit Root Test results are shown in Table 6.

Table 6. *Augmented Dickey-Fuller (ADF) unit root test results (Mexico)*

Variable	Level		First Difference		Result
	Intercept No Trend	Intercept Trend	Intercept No Trend	Intercept Trend	
GDP	-3.4293(3)**	-1.8149(3)	-6.4534(1)*	-5.8178(2)*	I(1)
IPI	-1.2418(1)	-2.6853(1)	-3.9936(0)*	-3.9316(0)**	I(1)
MIPI	-1.5074(0)	-2.6082(0)	-7.2150(0)*	-7.1502(0)*	I(1)
Mining	-1.3149(0)	-2.1974(0)	-7.7664(0)*	-7.7705(0)*	I(1)
COP	-0.5534(1)	-2.1712(0)	-8.9880(0)*	-6.5914(1)*	I(1)
M1	-0.1097(4)	-2.4863(4)	-3.8170(3)*	-3.7207(3)**	I(1)
M2	-1.3665(0)	-2.7295(0)	-6.5180(1)*	-6.7457(1)*	I(1)
M3	-0.3668(2)	-3.4848(0)*	-7.3321(1)*	-7.2715(1)*	I(1)
M4	0.5778 (2)	-3.4633(0)	-7.3790(1)*	-7.3560(1)*	I(1)
M4A	-0.0700(2)	-3.5506(0)**	-7.8152(1)*	-7.7237(1)*	I(1)
MIR	-1.4696(6)	-4.0564(1)**	-4.8283(0)*	-4.6320(0)*	I(1)
TBR	-2.5336(1)	-3.5101(1)	-5.8034(0)*	-5.5433(0)*	I(1)
DR	-1.9283(1)	-3.6266(1)**	-4.8472(0)*	-4.4124(0)*	I(1)
HCE	-2.3224(4)	-2.0475(4)	-3.1532(3)*	-3.7458(3)*	I(1)
GCE	-1.4853(1)	-1.7961(3)	-4.3127(3)*	-4.7223(3)*	I(1)
GFCF	-2.7140(4)	-1.9286(4)	-3.7267(2)*	-4.0083(2)**	I(1)
SPI	-1.9665(0)	-3.4251(1)	-7.9755(0)*	-8.0011(0)*	I(1)
WPI	-1.9225(3)	-1.2109(3)	-4.1413(1)*	-4.8887(1)*	I(1)
CPI	-2.0172(3)	-1.3188(3)	-3.8561(1)*	-4.8914(1)*	I(1)
RER	-2.7667(0)	-2.7206(0)	-9.6365(0)*	-9.5946(0)*	I(1)
Exp	-2.5941(0)	-1.0604(0)	-9.2811(0)*	-9.8829(0)*	I(1)
Imp	-2.6064(4)	-1.5093(4)	-6.5100(2)*	-7.9470(2)*	I(1)

* PP indicates that the alternative hypothesis is accepted according to 1% significant level.
** PP indicates that the alternative hypothesis is accepted according to 5% significant level.
Note: Values indicate lag values in parentheses.

According to the ADF Unit Root Test results in Table 6, all the series are stationary according to first difference and that when the first differences are taken of the series, they do not contain the unit root 1% and 5% significance levels and intercept-no trend and intercept-trend in both formats.

The Default (Bartlett-Kernel) Spectral estimation method is preferred when the lag values are determined "Newey-West Bandwidth" automatic selection is based on while applying the Phillips-Perron (PP) Unit Root Test. PP Unit Root Test results are given in Table 7.

Table 7. *Phillips-Perron (PP) unit root test results (Mexico)*

Variable	Level		First Difference		Result
	Intercept No Trend	Intercept Trend	Intercept No Trend	Intercept Trend	
GDP	-0.5880(12)	-1.4034(6)	-7.4277(5)*	-10.2766(12)*	I(1)
IPI	-0.5787(2)	-2.1693(3)	-3.8868(4)*	-3.8192(4)**	I(1)
MIPI	-1.4763(5)	-2.6520(3)	-7.3558(8)*	-7.2959(8)*	I(1)
Mining	-1.1138(5)	-2.0280(5)	-7.8575(8)*	-8.0916(11)*	I(1)
COP	-0.7488(1)	-2.0189(3)	-9.0598(2)*	-10.1483(3)*	I(1)
M1	-1.4764(11)	-7.2567(13)*	-18.5693(13)*	-19.1852(13)*	I(1)
M2	-3.1102(12)**	-2.6533(8)	-8.1937(12)*	-11.5272(12)*	I(1)
M3	0.2278(12)	-3.5119(4)**	-8.8592(12)*	-8.7648(12)*	I(1)
M4	0.6230 (12)	-3.4842(4)	-9.2513(12)*	-9.2767(12)*	I(1)
M4A	-0.1933(12)	-3.4884(2)	-8.9994(12)*	-8.8493(12)*	I(1)
MIR	-4.7604(3)*	-4.9838(3)*	-	-	I(0)
TBR	-4.7843(4)*	-5.1158(4)*	-	-	I(0)
DR	-4.6691(4)*	-5.1531(4)*	-	-	I(0)
HCE	-1.3138(12)	-2.7782(7)	-8.5631(12)*	-10.1389(12)*	I(1)

Variable	Level		First Difference		Result
	Intercept No Trend	Intercept Trend	Intercept No Trend	Intercept Trend	
GCE	-1.9037(12)	-7.6032(5)*	-19.8671(12)*	-21.1138(12)*	I(1)
GFCF	-1.2422(6)	-1.2078(3)	-8.8574(0)*	-8.9273(3)*	I(1)
SPI	-0.8689(1)	-1.2868(0)	-4.3665(7)*	-4.2983(7)*	I(1)
WPI	-0.9839(3)	-1.9274(2)	-3.9907(5)*	-4.1044(8)*	I(1)
CPI	0.6884 (12)	-3.4231(6)	-8.1558(12)*	-8.2072(12)*	I(1)
RER	-1.9769(0)	-2.9337(2)	-6.9890(4)*	-7.0037(4)*	I(1)
Exp	-0.5781(12)	-3.6729(12)	-10.3807(9)*	-10.3685(10)*	I(1)
Imp	-0.6763(12)	-4.5257(3)*	-13.8321(12)*	-13.9076(12)*	I(1)

* PP indicates that the alternative hypothesis is accepted according to 1% significant level.

** PP indicates that the alternative hypothesis is accepted according to 5% significant level.

Note: Values indicate lag values in parentheses.

According to the results in Table 7, MIR, TBR and DR series were stationary concluded with the level values, all the series belonging to all other variables are stationary with the first difference values.

When the unit root tests results are evaluated according to both methods, there was a difference between ADF and PP results in terms of MIR, TBR and DR series. In such a case the ADF Unit Root Test results are taken as basis.

3.3. VAR and FAVAR Model Impulse – Response Functions Analysis

VAR model method is an econometric method widely used to analyze the effects of monetary policy. The impulse-response functions obtained from the VAR model results examine the response of the other variables in the model against shock, based on a certain confidence interval if shocks are given from one of the model variables.

Sims (1992) developed the VAR Model in his study of the response of macroeconomic variables to monetary policy shocks in the German and US economies. Some variables were considered exogenous were considered exogenous and examined during the period 1958-1976 for Germany and during the period 1949-1975 for US.

The described variables are characterized as endogenous variables in an equality system, the variables in the descriptive position are also referred to as exogenous variables or predetermined variables (Kutlar, 2000, p. 190).

According to the VAR model method some variables are considered as external variables and this method is based on the least squares estimation method. VAR model estimates using the least squares method commonly used in econometric analyzes give better results than complex simultaneous equations systems. The VAR model method is the best way to show the effects of monetary policy shocks on the economy, assuming that the constraints are at a minimum level (Ornek, 2009, pp. 109-110).

The VAR model is shown in the following equation (1). According to this;

$$X_t = A_1\chi_{t-1} + ... + A_P X_{t-p} + u_t \tag{1}$$

Equation (1), A_i (i = 1,..., P), (K × K) dimension coefficient matrix and the error term process $u_t = (u_{1t},..., u_{Kt})'$ K dimension, the means is zero, $E(u_t u_t') = \Sigma u$ it is "White Noise" process with covariance matrix. In short, *ut~iid (0, Σu)* 'dir (Lütkepohl, 2007).

All information about the economy is not included in the analysis in the standard VAR and structural VAR analyzes. Bernanke et al. (2005), assuming that the additional information Kx1 unobserved factors summarize represent the vector F_t;

$$\begin{bmatrix} F_t \\ Y_t \end{bmatrix} = \Phi(L) \begin{bmatrix} F_{t-1} \\ Y_{t-1} \end{bmatrix} + v_t \tag{2}$$

Equation (2), is a transition equation is polynomial with a reasonable lag value of the limited d row $\Phi(L)$ represents the preliminary limitations in the structural VAR model. v_t is the error term and its average and covariance matrix is zero. In equation (2), (F_t, Y_t) is a VAR system, if there are $\Phi(L)$ conditions for Y_t for F_{t-1} to be zero reduced to standard in Y_t otherwise equation (2) is preferred for FAVAR analysis. And it is assessed on the marginal contribution of additional information on the F_t. Can't be estimated directly because the FAVAR method described in Equation (2) is unobservable.

For a moment, assume that we have some amount to informational time series N×1 dimension X_t vector. N, the number of informational time series is large (In particular, N is greater than T; T is the number of periods) and is greater than the number of factors (K + M < N). We assume that X_t is related to unobservable factors (F_t) and observable factors (Y_t) in the informational time series. According to this;

$$X_t' = \Lambda^f F_t' + \Lambda^y Y_t' + e_t' \tag{3}$$

Equation (3) is the observation equation and Λ', is the N × K – dimensional factor loading matrix. Λ^y is the size of N × M and e_t is the vector of N × 1 dimensional error terms and is assumed to be weakly related or unrelated, depending on whether the averages are estimated by zero and basic components and likelihood estimates. Equation (3) implies that X_t, in which F_t is able to interpret the same lags of the original factors, depends only on the current and non-delayed values of the unconstrained factors in practice.

Bernanke et al. (2005) two approaches were taken, namely equation (2) and equation (3). Firstly, $C_t = (F'_t, Y'_t)'$ which specified in equation (3), is the "Two-Stage Principal Component Approach" which determines a non-parametric path of the area where the main components emerge. The second approach is "One-Stage Bayesian Probability Approach". In the first stage, the main components of C_t, the main components of X_t were first estimated by using K+M in the "Two-Step Main Component Approach". When the number of N major components is used the number of correct factors is small, the main components are continuous in both F_t and Y_t. F_t was obtained as part of the area covered by C_t, not covered by Y_t. In the second stage, the factor augmented vector autoregressive (FAVAR) model was estimated by standard methods according to (2) equation with F_t of F_t. In the study, it is assumed that joint estimators are based on likelihood-based Gibbs sampling techniques. Gibbs sampling approach provides empirical estimation of the factors and their marginal intensities of the parameters through the repeated sampling procedure.

Determination of factors;

The factors are all obtained by the main components (1) through the observation equation in two-stage estimation. In this case, the limiting factors of $F'F/T = I$ may be preferred for limited loading at $\Lambda f'\Lambda f/N = I$. Two approach also provide the same principal component $F\Lambda f'$ and the same factor field (space).

Bernanke et al. (2005), the likelihood method was applied to Gibbs sample at the first stage (joint estimation stage) the factors were determined both in the observation equation and the transition equation. In this case, the factors (F_t) must be determined in order to be able to determine the conversion to $F^*_t = AF_t - BY_t$ format, A is K × K and not singular, B is K × M. Limitation is preferred VAR dynamics (2) described in the equation and must be implemented the limits of equation (3). F_t' can be obtained in equation (3) as in equation (4) below;

$$X_t = \Lambda^f A^{-1} F_t^* + (\Lambda^y + \Lambda^f A^{-1} B)Y_t + e_t \tag{4}$$

The factors should be defined and loaded.

$$(\Lambda^f A^{-1} = \Lambda^f \quad \text{and} \ \Lambda^y + \Lambda^f A^{-1} B = \Lambda^y) \tag{5}$$

Both methods are different in many ways. It is a distinct advantage that two-stage approach is simple. In contrast, the transition equation is not used for estimation the factors in this approach.

In equations (4) and (5), the estimation system is used not only for dynamic responses of the basic variables in Y_t, but also for revealing dynamic responses in the series included in X_t in FAVAR method. In this framework, they can be controlled not only by three or four variables but by the behavior of many variables.
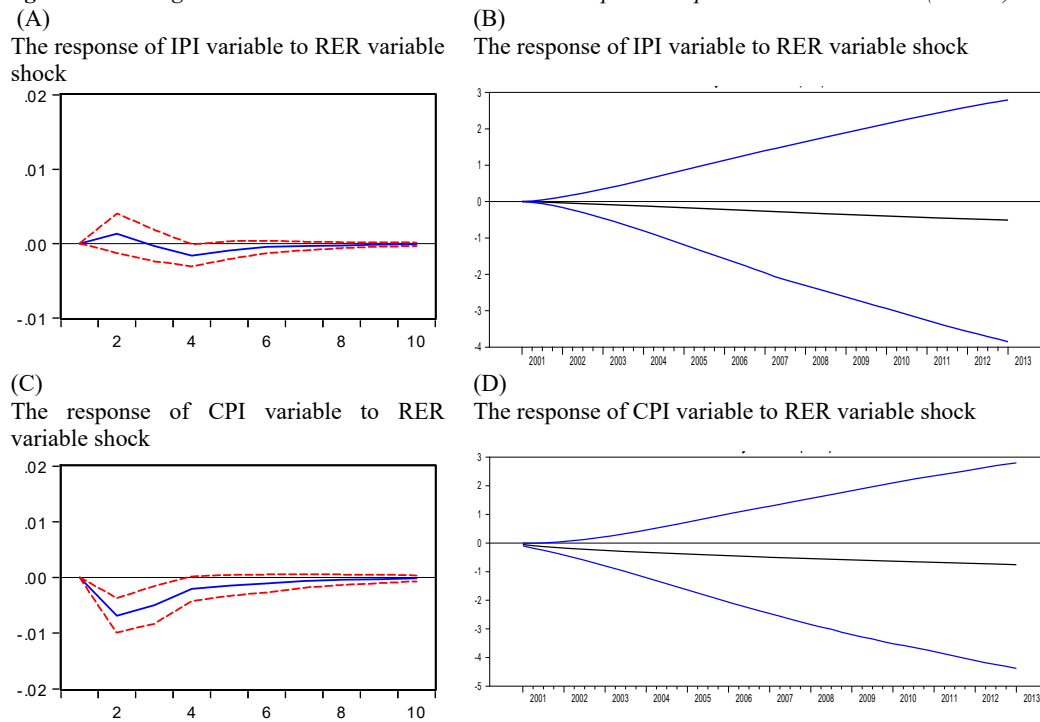
The impulse-response results are shown in Figure 1 in terms of the exchange rate channel. Accordingly, the responses of IPI and CPI variables was different for a unit standard deviation of 95 percent confidence interval applied to the exchange rate variance in response to external shocks. According to Figure 1, (A) panel, the response of the IPI variable resulted in an insignificant against the shock in NER variable, in panel (C) of Figure 1, the response of the CPI variable is positive and significant against shock in NER variable, while the effect is gradually decreasing from this period when it is maximum in the second period.

Figure 1. *Exchange Rate Channel VAR and FAVAR Model Impulse-Response Function Results (Turkey)*

(A)
The response of IPI variable to NER variable shock

(B)
The response of IPI variable to NER variable shock

(C)
The response of CPI variable to NER variable shock

(D)
The response of CPI variable to NER variable shock
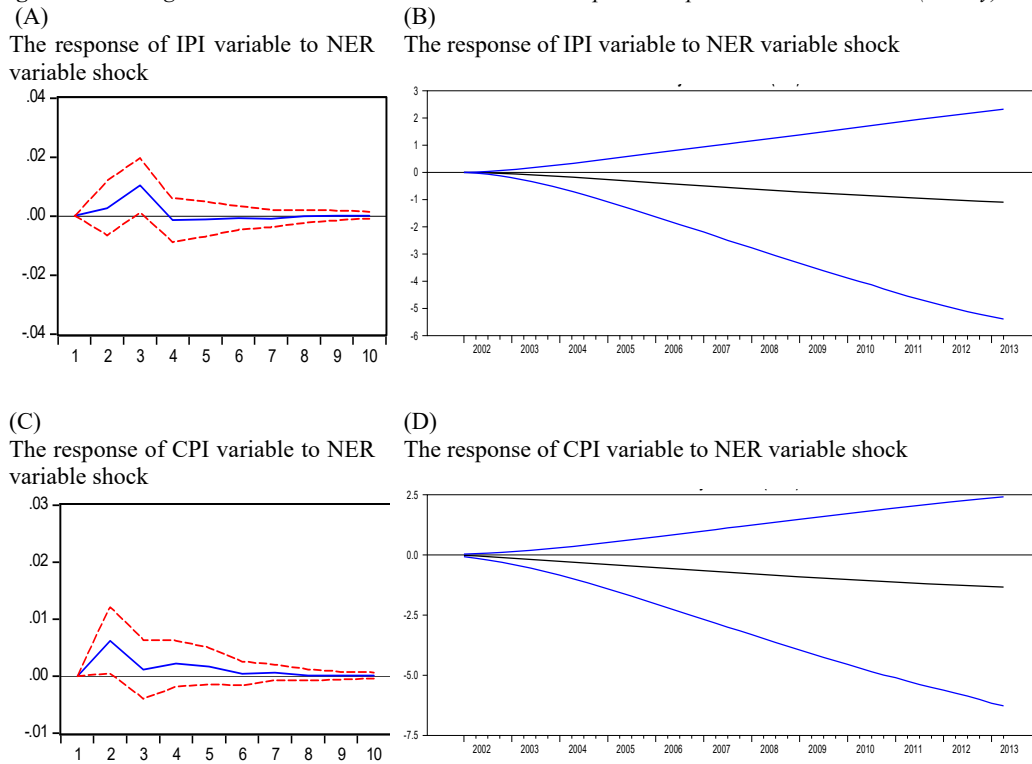
In Figure 1, (C) and (D) panels, the impulse-response function showed the results using the VAR model method of the MTM interest rate and bank credit channels partially effective in Turkey. The results obtained using the FAVAR method show that the MTM exchange rate channel does not work in Turkey.

VAR and FAVAR model impulse-response function results figures are shown in Figure 2 in terms of the exchange rate channel. In Figure 2, Panel (A), the response of the IPI variable was realized as insignificant when a standard deviation external shocks is applied to RER for a 95 percent confidence interval. In Figure 2 panel (C), the response of the CPI variable was negative and significant the maximum in the second period. The effect gradually faded after the second period.
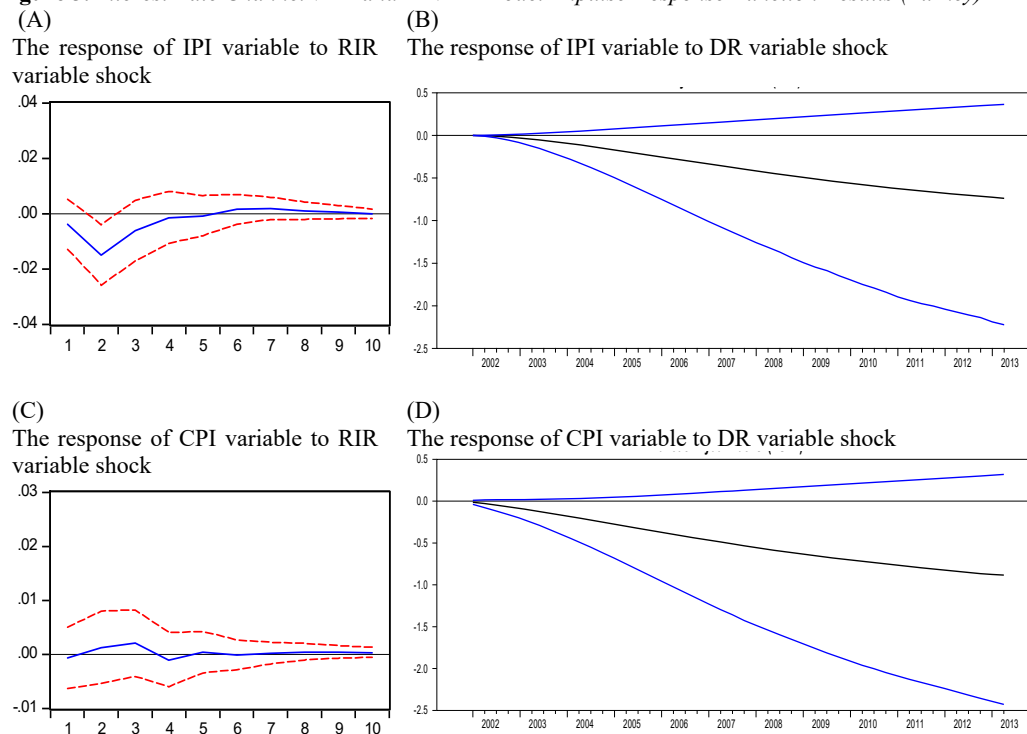
Figure 2. *Exchange Rate Channel VAR and FAVAR Model Impulse-Response Function Results (Mexico)*

(A)
The response of IPI variable to RER variable shock

(B)
The response of IPI variable to RER variable shock

(C)
The response of CPI variable to RER variable shock

(D)
The response of CPI variable to RER variable shock

According to the VAR model impulse-response function results figure shown in Figure 2 the MTM exchange rate channel that is partially active in Mexico.

According to FAVAR model, the monetary policy shock through TBR variable to the system the impulse response function results are shown in Figure 2, panels (B) and (D). The IPI and CPI variables did not give a significant response to the monetary policy shock applied through the TBR variable.

Impulse-response function figures obtained according to VAR model has shown of the MTM exchange rate channel is active in Mexico.

VAR model impulse-response function results are shown in Figure 3 in terms of interest rate channel. It is seen the response of the IPI variable to the RIR variable shock in Figure 3, panel (A). When a unit standard deviation external shock is applied for RIR variable for a 95 percent confidence interval, the response of the IPI variable to this shock is negative and significant, this response is at maximum level in the second period, the response diminished after this period and extinguished from the fifth period.

Figure 3. *Interest Rate Channel VAR and FAVAR Model Impulse-Response Function Results (Turkey)*

(A)
The response of IPI variable to RIR variable shock

(B)
The response of IPI variable to DR variable shock

(C)
The response of CPI variable to RIR variable shock

(D)
The response of CPI variable to DR variable shock

In Figure 3 panel (C), the response of CPI is seen to RIR variable shock. When a unit standard deviation an external shock is applied to RIR variable the response of CPI to shock is statistically insignificant.

In FAVAR model application, the monetary policy is applied to the system through DIR variable, FAVAR model impulse-response function results are given in Figure 3, (B) and (D) panels. An external shock was applied to DIR variable and the response of the IPI and CPI variables to shock was statistically insignificant.

The FAVAR model results are based on 95 percent confidence interval in terms of price index, the response of CPI variable to the monetary policy shock is statistically insignificant.

These econometric results have shown that the MTM interest rate channel is partly active in Turkey.

The VAR model impulse-response function results are shown Figure 4 in terms of interest rate channel for Mexico. In this context, the response of IPI and CPI variables resulted as insignificant when applying a standard deviation external shock to TBR variable for 95 percent confidence interval in Figure 4, panels (A) and (C).

Figure 4. *Interest Rate Channel VAR and FAVAR Model Impulse-Response Function Results (Mexico)*

(A)
The response of IPI variable to TBR variable shock

(B)
The response of IPI variable to TBR variable shock

(C)
The response of CPI variable to TBR variable shock

(D)
The response of CPI variable to TBR variable shock
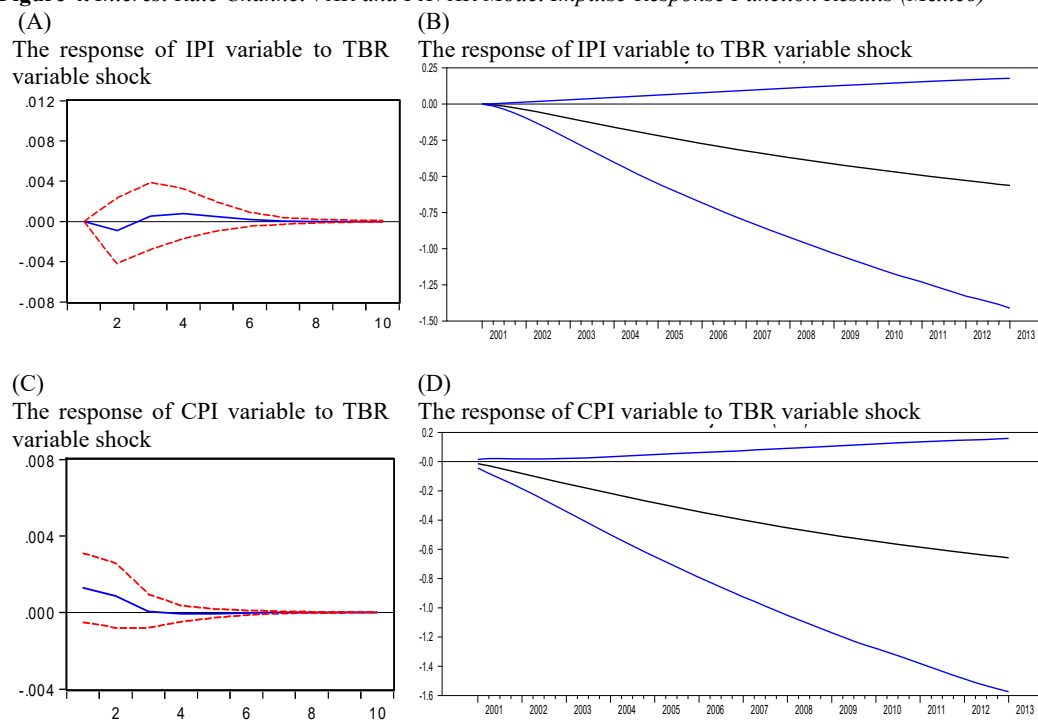
According to the FAVAR model impulse-response function results the response of the IPI and CPI variables to an external shock for TBR variable is insignificant in Figure 4, panels (B) and (D).

Obtained the econometric results above has shown that the MTM interest rate channel is not actively working in Mexico.

4. Conclusion

MTM channels it differs from country to country in terms of functioning and effectiveness with economic explanations in different forms. Because, factors such as applied monetary policies, the structure and depth of the financial system, openness level of the country's economy affect the functioning of the MTM.

The objective and means of classical monetary policy have been re-discussed after the global financial crisis. Naturally, there have been new developments in the objectives and instruments of monetary policy and a more active role in execution of monetary policies to central banks. Today, approaches are taken as the basis and stand out for the purposes of central banks as well as price stability and financial system stability. Monetary policy objectives and instruments designed for purposes price stability and financial system stability affects the process positively MTM. In an economy where financial stability is

realized together with price stability, the effectiveness of MTM will increase and will be more effective of monetary policies on economy especially on production and prices.

In this study, two countries including Turkey and Mexico were included in the analysis. Two countries mentioned above, the effects of MTM have been examined in terms of Monetarist approach. The reason for examination of two countries in analysis, there are similarities in terms of applied monetary policies and economic and financial conditions between both countries economies recently. Along with nineties, financial crises have arisen in financial structure where disruptions have played a significant role in both countries. After financial crises, structural and institutional reforms have been carried out and comprehensive changes have been made in monetary policies objectives and instruments in such countries. Inflation targeting regime is being implemented for both countries in recent years.

Turkey has had to struggle with high inflation with the eighties. As mentioned above, Monetarist monetary policies were implemented in Turkey during the period 1980-1989, money markets and financial system were integrated together with structural-institutional arrangements for the period 1986-1989. The required reserves ratios were used as an important instrument of monetary policy, from this period, open market operations became the policy instrument in execution of monetary policies. The use of monetary policy instruments has pointed to active use of monetary policies. The disruptions in financial structure came to fore with the influence of external factors during the 1990-2000 period.

The February 2001Crisis was experienced following the implemented of the stabilization program based on the failed fixed exchange rate regime in Turkey for year 2000. After the crisis, the new "Central Bank Law" was adopted and instrument independence was provided to the CBRT within the scope of the transition program to a strong economy. The monetary base has been targeted as the monetary size and has started to be applied with the implicit inflation targeting regime since 2002, the inflation targeting regime has been passed since 2006.

After the global financial crisis, there has been an important transformation in terms of monetary policy. In this context, the CBRT is based on a new policy that establishes a new and different policy composition and determines financial stability as well as price stability has created a new and different policy component since April of 2010. Accordingly, the CBRT has implemented two new monetary policy instruments, namely the interest rate corridor and the reserve option mechanism (ROM) during the execution of monetary policies. These monetary policy instruments have enabled the CBRT to carry out an active monetary policy.

With all this central banks have become more active in the conduct of monetary policies, monetary policy implementations are carried out in a structure focused on the financial structure. After the crisis, MTM works more effectively in Turkey. In this context, active monetary policies will be implemented by the CBRT in the forthcoming period and the continuation of the new policy component will affect the functioning of the MTM.

The Mexican economy has stepped up its search for sustainable economic growth and price stability in the eighties. A stabilization program named "Pacto" based on the fixed exchange rate regime was put into effect in 1987. In the nineties, a major financial crisis was experienced which could not adapt to the changes in international financial conditions and the implementations of the stabilization program based on the fixed exchange rate regime was unsuccessful in Mexico during year 1994. Inflation targeting regime started to be implemented since year 2000 following the stabilization programs aimed the removing the effects of the crisis.

Banco de Mexico has adopted it as its along with its economic growth target, it has accepted the preservation of the purchasing power of the national currency as an invariable priority in monetary policy implementations since year 2009.

Monetary policies has a new role to central banks and financial stability has also been seen as an indispensable objective as well as price stability after the Global Financial Crisis. In addition, the search for new monetary policy instruments has been discussed. The effects of monetary policies on the economy, especially on production and prices will develop positively in an economy in which financial stability is achieved along with price stability.

In this paper which examines the channels of MTM from the econometric side the effectiveness of Monetarist Approach in Turkey and Mexico, VAR and FAVAR methods have been employed in the analysis of the two countries implementing the inflation targeting.

Because the VAR model method allows econometric analysis with a limited number of variables, this method has been expanded and FAVAR method has been developed which allows econometric analysis with a large number of variables.

Six variable VAR model for Turkey and five variable VAR model for Mexico were estimated and impulse-response function figures were interpreted. FAVAR models have been estimated for both countries FAVAR method is applied nineteen variables for Turkey and twenty two variables for Mexico.

In this paper, according to the results the impulse-response function obtained by moving from the VAR model them MTM works partly in both countries, FAVAR model impulse response function results pointed out that of the MTM does not work in Turkey and Mexico.

Generally, significant findings were obtained on the functioning of the MTM in studies on the functioning of the MTM for developed and developing countries. Bernanke and Blinder (1992), Sims (1992), Romer and Romer (2004) obtained important evidences that the functioning of the MTM for developed and developing countries using the VAR model method.

Butkiewicz and Ozdogan (2009), Büyükakın (2009), Erdoğan and Beşballı (2009), Örnek (2009), Cambazoğlu and Güneş (2011), Artar (2011), Cambazoğlu and Karaalp (2012), Arabacı and Baştürk (2013), Yıldırım (2013) found that the MTM is working in Turkey

in the studies that examined the efficiency and functioning of the MTM using the VAR model method for Turkey.

When the studies are examined, the functioning and effectiveness of the MTM applied the FAVAR method for developed and developing countries Bernanke et al. (2005), Boivin et al. (2008), Boivin et al. (2010) obtained the results that the MTM partly works.

Obtained the findings in the study, while the VAR model results indicates that the channels of MTM partially work for Turkey and Mexico.

The findings using the VAR model supported in the study the findings of Cambazoğlu and Karaalp (2012), Büyükakın et al. (2009), Örnek (2009), Cambazoğlu and Güneş (2013), obtained the findings by the FAVAR method don't support the findings of such studies.

The contribution of this study to the MTM literature has been examined together with Turkey and Mexico and the VAR and FAVAR model methods have been used for the first time in both countries.

According to findings of this study, the central banks of both countries must continue to play an active role for monetary policies implementations. In addition to the central banks has adopted as well as the purpose of price stabilization as well as the aim of financial stability and putting the new monetary policy instruments in line with these objectives, it will be important in terms of the functioning of the MTM continuation of the inflation targeting regime.

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