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The Impact of Monetary Policy Shock on the Price of Storable Goods: A Case Study of Food

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In many economies, commodity price volatility is one of the sources of signaling to market players. Different experiences of price shocks have led economists to reconsider price shocks. Considering the effects of monetary policy on the inflation rate, the present study investigates the impact of monetary policy shock on the price of storable food commodities. In this regard, data for 2006: 01 to 2016:12 for Iran was investigated. The results show that a one percent increase in money supply and the interest rate on deposits increases food prices in the long-term by 0.18 percent and 0.82 percent, respectively.

Keywords: Monetary Policy Shock, Storable Goods, Food.
JEL Classification*:* E52, F31, Q14, Q18, Q28

1 Introduction

The most important goals of macroeconomic policies in general and monetary policies, in particular, are price stability, economic growth, and favorable employment level. Following a monetary system based on monetary wholes control, in Iran, it is tried to provide the cash needed for the manufacturing and investment sectors and avoid monetary expansion disproportionate to liquidity and inflation targets set out in the expansion plans (Central Bank of the Islamic Republic of Iran).

A review of central bank goals shows the special attention of monetary policymaker to inflation so that recently control of inflation has become a top priority of the central bank. In this context, the IMF, also by recommending inflation targeting, emphasizes that expansionary monetary policy in economies in which food and energy share in the consumption basket is more will have a stronger impact on inflation (IMF, 2011; Siami-Namini et al.,

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2017). Rising food prices will directly affect the cost of living. The importance of this impact on the poor and low-income households' doubles because food is a significant part of their income. In this context, the monetary policymaker should monitor the effects of its policies on food prices and adopt policies to minimize the burden of social and economic costs. Review of internal studies show that there has been no study in this area, so this study seeks to investigate the effect of monetary policy shocks on food prices (using the model Szilagyiova (2014) used in her doctoral dissertation on the British economy). The structure of the paper is as follows: in the second part, the theoretical foundation and research background are discussed in two subsections. Then, in the third and fourth sections, the research method and findings are presented. Finally, policy conclusions and policy recommendations are presented in the final section.

2 Theoretical Foundations and Research Background

The present section examines past studies and the progress of the issue in two parts of the theoretical foundation and research background. In this regard, the first part presents the theoretical foundations related to the theory of pricing of the storable and non-storable goods, and the second part presents the mutation theory; then, the research background is presented.

2.1 Theoretical Foundations

2.1.1 Theory of Determining the Price of Storable and Non-Storable Goods

In economics, the term "commodity" is a general term that can refer to various products. In this context, they may differ in terms of production, extraction, use of inputs, and storage capacity, which requires the application of appropriate theories based on the behavior of different goods (Szilagyiova, 2014). Nissanke (2010) divides goods into two groups of storable and non-storable. In this context, he refers to non-storable goods as a small group of products such as electricity and applies to storable commodities as goods such as oil, food, and metals. Turnovsky (1983) recognizes the distinction between storable and non-storable commodities in that storable products can be purchased at the final price and stored until the expiration of the futures contract.

The criterion of Chevallier & Ielpo (2013) is for the classification of storable goods based on flexibility. In this framework, he divides the storable goods into two categories: Group 1: Storable goods such as gold and silver whose stock fluctuates are slight; Group II: Storable goods such as agricultural goods and oil products which may not be immediately convertible and available. Besides, Pindyck (2001) highlights the role of innovation in the markets for storable commodities such as oil and food commodities and states that innovation reduces finished prices.

Emmons & Yeager (2002) knows the price of futures contracts as a measure of the distinction between storable and non-storable goods. He states that the price of futures contracts is not usually significantly different from the spot price and represents the sum of the spot price and shipping cost; whereas, in the case of non-storable goods, it is substantially different from the spot price and considered it to be due to unexpected changes in supply and demand.

The prediction hypothesis examines the relationship between future price changes and monetary policy. The emphasis of the prediction hypothesis is based on the prediction accuracy of future prices. If the prediction is more likely to be accurate, this will help in understanding the future price movements and will, therefore, send a valid and earlier signal about expected inflation (Yang et al., 2001). In this context, food prices can be predicted according to monetary and currency policies, as well as control policies directly through agricultural-specific policies (such as pricing of agricultural products, guaranteed purchases and subsidies) or indirectly (such as upstream policy on essential goods) and to be a tool in the hands of policy-maker to control inflation (Gospodinov, 2018).

2.1.2 Overshooting Theory

The famous overshooting theory was first presented by Dornbusch (1976) as an explanation for exchange rate fluctuations. He showed that foreign exchange jumps occur when spot prices respond too much to unexpected changes in the money supply, and thus exceed its long-term equilibrium value and, in other words, jump. After each initial jump, the exchange rate should return to its long-term equilibrium. Subsequently, Frankel (1986) based his argument on the assumption that monetary policy has a significant effect on real commodity prices. Increasing inflation leads to the transfer of money to the commodity market. Therefore, increasing demand for goods combined with rising inflation expectations will lead to lower commodity prices. As he further explains, the rise in the nominal interest rate due to rising inflation will lead to the exit of the commodity market. Frankel (1986) directly applied the overshooting model presented by Dornbusch (1976) through the simple substitution of foreign exchange prices for agricultural commodities. Frankel's (1986) model assumption on overshooting is that a tight monetary policy (which can be seen as a long-run supply decline) results in a decrease in commodity prices; in the short run, however, there is no price change under this condition.[1] The Arbitrage condition (which is a certain assumption of the Frankel model) is held for storable goods, meaning that interest rates gain cannot exceed the expected rate of increase in the price of goods and the cost of their storage. The price of the commodity is expected to jump to achieve more capital gains (which is sufficient to offset higher interest rates). Bogton and Branson (1988) extended Frankel's (1986) original model to the relationship between raw material prices and product prices. In this context, they incorporate the theoretical relationship between raw material prices and product prices with the role of expectations in price changes due to monetary policy changes. They assumed that in the case of unexpected monetary decisions, the price of raw materials would jump, and this jump would shift to the price of the product as well (Szilagyiova, 2014).

Frankel's (1986) model is as follows:

$$m - \alpha Pm - (1-\alpha)Pc = \phi y - \lambda i \tag{1}$$

In equation (1), P_m Denotes commodity price; P_c raw material price; m: logarithm of nominal money; α: product share in consumer price inflation, y: real output, and i: official nominal interest rate which applies to the relationship between inflation of expected commodity prices and interest rate. Thus, $i=P_c+b$, where b represents net storage costs and real gain of storage of raw material for end-use. Based on relation (1), graph (1) is plotted, where S represents the money market equilibrium.

[1] Because it is assumed that the price of goods in the short run is constant. The decline in money supply will lead to an increase in interest rates.

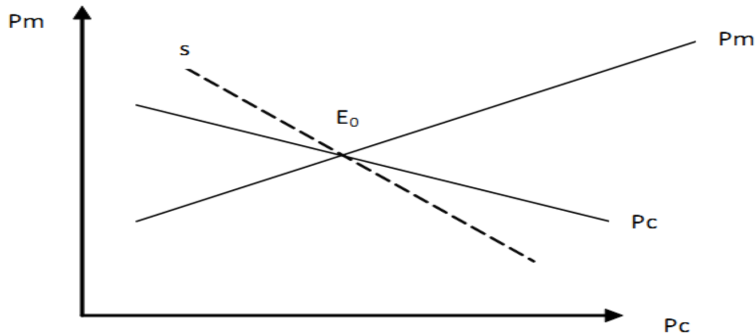

Figure 1. Commodity Prices and Production Prices. Source: Szilagyiova (2014)

Graph (1) shows the relationship between raw material prices and product prices that are reversed. In equilibrium and at the point E_0, it is expected that the price of raw materials will remain at the current level, and the interest rate will be equal to the actual earnings of the storage of raw material for end-use. In this context, the question arises: What is the reaction of commodity and raw material prices to monetary shocks? In response to the question, Bogton and Branson (1988) state that commodity prices are gradually adjusted, but raw material prices are rapidly adjusted with new information about future inflation expectations. Therefore, in the short term, because of the higher rate of adjustment of the price of raw materials, the cost of products will increase temporarily. The rise in raw material prices, until they are considered a jump, can be explained by assumption of the (money supply change) model and short-term official interest rate fluctuation. Keynes (1930) named this market condition as the Gibson paradox because classical economics theory assumed that the nature or complete equilibrium of the market for interest rates were constant over time. If this were true, then upward changes in market rates would generally create a gap between the natural rate and the market, causing a decreasing gap between desirable savings and investment rates.

Similarly, downward changes in market interest rates will lead to inflationary pressures (Sargent, 1973). The truth is that this theory does not match the pattern inherent in the Gibson paradox. Keynes (1930) interprets it as the relationship between price and interest rate and states that when market rates are lower than average, commodity prices tend to rise. In this case, the natural interest rate is considered as net storage costs and actual raw material maintenance income for end-use (Szilagyiova, 2014).

In the long run, the overall price level will adjust to the changes in the money supply and the price of raw materials will drop; that is, it will move so high parallel to the line S that the money supply curve, interest rate, and price will reach a new long-term equilibrium at E_1 (graph 2). The concepts above show how a monetary shock leads to a price jump.

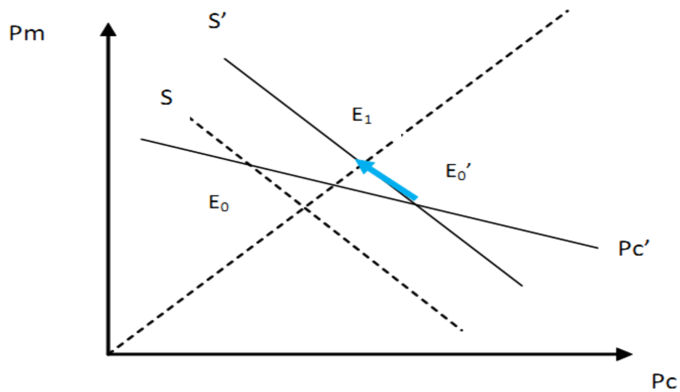

Figure 2. Monetary Shock Resulting in a Jump. Source: Szilagyiova (2014)

Figure 3 illustrates the response of raw material prices to supply-side shocks based on the assumption that price increases do not lead to monetary policy. The black line represents the main equilibrium in the market; a supply-side shock shifts the equilibrium upwards, so the initial line P_m moves down towards the line P_c and creates a new long-run equilibrium.

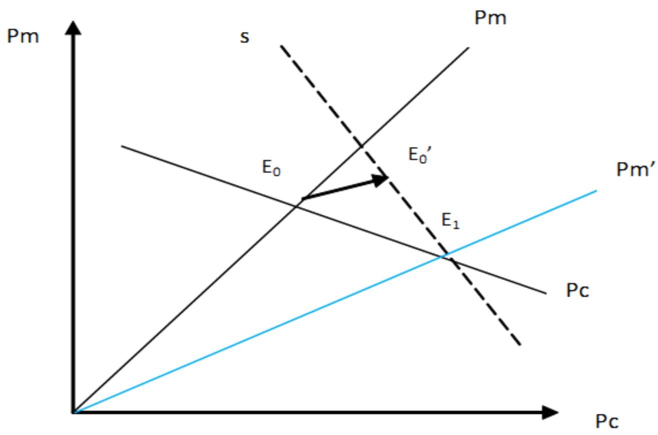

Figure 3. Supply-Side Shock. Source: Szilagyiova (2014)

When monetary policy falls out of the model, raw material prices rise to a new equilibrium $E_0^{'}$ and will continue to rise, while product prices will fall toward a new equilibrium E_1. Although traditional theories explain the motivation for storage, they are not suitable for interpretation of the commodity market in the 2000s. Within this framework, new approaches to traditional theories and explanations for factors influencing price increases have been proposed. Although these theoretical models of price behavior help understand commodity prices traditionally, they were less able to explain what happened in the 2000s. Continued increases in the price of storable commodities indicate that prices are influenced not only by traditional factors but also by factors such as liquidity surplus and speculation that go beyond supply and demand theory. According to Bafis and Haniotis (2010), the main driver of commodity price changes (especially food commodities) is the strong relationship between energy prices and non-energy commodities. They also reject the hypothesis that environmental fuels significantly determine food commodity prices. According to Gilbert (2010), the origin of price changes during 2007-2008 is monetary policies that led to higher food prices by investing in agricultural futures markets. Carter et al. (2011) know the main core of food commodity price increases in supply and demand shocks (coupled with a decrease in stocks) and monetary expansion policy, which resulted in pressure to raise food prices. Belki (2013) found that food prices coincide with global liquidity, thus stating that food prices are highly dependent on liquidity changes, indicating that monetary expansion policy through excessive liquidity was the main cause of these changes.

2.2 Research Background

Theoretical studies consider three main pillars of the price of goods. First, as many commodities are used as inputs in the production process, their demand and prices will increase as the world economy grows (Kilian, 2009; Kilian & Murphy, 2013; Alquist & Coibion, 2013). Second, because the price of commodities is determined by the US dollar, the depreciation of the dollar will lead to a decline in commodity prices in the local markets, and as a result of increased demand for such commodities, their prices will increase. Thus, the exchange rate affects the competitiveness of the production and purchasing power of consumers (Schuh, 1974; Frankel, 1986; Saghaian et al., 2002; Cho et al., 2002). Third: Since monetary policy affects commodity prices, low-interest rates lead to a decline in production at present and increase the incentive to maintain inventory, which will result in increased demand for its commodity derivatives. As a result, base commodity prices will rise (Cabrales et al., 2014). In this sense, the low-interest rates pursued by most central banks in developed countries will lead to excess liquidity; thereby, this liquidity will flow to the commodity market (Baffes & Haniotis, 2010). In this context, there are numerous empirical studies and evidence that investigated the effect of monetary policy changes on variables such as interest rates (Kuttner, 2001; Landier et al., 2013), exchange rates (Fatum & Scholnick, 2008), stock returns (Bernanke & Kuttner, 2005) or market bubbles (Fischbacher et al., 2013). Using Dornbusch overshooting hypothesis, Frankel (1985) suggests that monetary policy and interest rates are factors influencing commodity prices. In the Frankel model, a decrease in the nominal money supply will result in a decrease in the real money supply. It will lead to an increase in interest rates, which in turn will lower real commodity prices. So the last change will lead to overshoot of the new equilibrium downward, thereby meeting people's expectations of higher interest rates. In the long run, all real effects will disappear. Besides, the decline in interest rate will lead to higher commodity prices above the equilibrium level in the short run. As a result, firms start to innovate, and investment projects will be profitable; As a result, commodity supply will increase, while simultaneous demand for future commodities will fall as investors believe prices are above equilibrium. During this time of adjustment, the level of aggregate prices will move along a path similar to that of commodity prices.

Reviewing most empirical studies show that they are focused on the effect of monetary policy and oil prices throughout the whole economy (Bernanke et al., 1997; Ardeni & Freebairn, 2002; D'Amico & King, 2010; Neely, 2010; Hancock & Passmore, 2011; Krishnamurthy & Vissing-Jorgenson, 2011; Wright, 2011). However, some other studies have considered the monetary policy to be an element contributing commodity price fluctuations, since commodity prices respond to monetary changes in the long run, but there is a predictable deviation from neutral in the short term. This case states that monetary changes can have short-term effects on commodity prices. Here are some of the critical points in empirical studies.

Schuh (1974) examined the relationship between commodity prices and monetary policy and found that the value of the US dollar hurt US agricultural exports. Chambers & Just (1982), Frankel (1986), Orden & Fackler (1989), Dorfman & Lastrapes (1996), and Saghaian et al. (2002) found that increased money supply would result in higher commodity prices. Frankel (1986) found that prices of manufactured goods responded less strongly to monetary shocks than the prices of agricultural commodities. He argues that the relatively slow pace of adjustment in the prices of manufactured goods to monetary changes has resulted in a price jump in agricultural commodities. Siami-Namini et al. (2016) concluded that US monetary contracts had a significant negative effect on the price index of total commodities and commodity sub-indices such as food price index, agricultural raw material price index, corn price, and crude oil price, all of which reinforce the overshooting hypothesis. Also, in another study, Siami-Namini and Hudson (2017) concluded that the exchange rate fluctuation has transmitted to international prices of agricultural commodities. However, some other empirical studies reject the prediction of the commodity price overshooting hypothesis. Robertson and Orden (1990) and Belongia (1991) argue that the price of the commodity initially reacts less strongly to the level of the money stock. Lapp (1990) stated that monetary shocks did not affect commodity prices. Lai et al. (1996) found that if monetary shocks are unexpected, commodity prices will jump, but if the price of manufactured goods reacts consistently, the reverse will happen for commodity prices. Choi and Kove (1993) conclude that the positive monetary shock will result in a short-term jump in agricultural commodity prices and that macroeconomic variables will affect agricultural prices but not in the reverse direction. Cho et al. (2002) stated that long-run changes in the real exchange rate have a significant negative effect on the long-run changes in relative commodity prices and the inflation rate influences the relative commodity price changes in the short run. Frankel (2006), Scrimgeour (2010), and Anzuini et al. (2012)

concluded that lower interest rates would lead to higher commodity prices. By giving an important role to commodity prices in total inflation and production, asset allocation, and investor sentiment, Gospodino and Jamali (2013) argue that one should pay more attention to monetary policy impact on commodity prices. Arsenio and Ledios (2013) examined the effect of monetary policy on commodity prices through storage level and found that endogenous changes in interest rates had undesirable effects on commodity prices through storage. Roza (2013) also provided evidence that monetary policy influenced commodity prices. However, his research has focused on traders' reactions to information on monetary policy decisions, macroeconomic status, and news on maintained reserves. Rosa (2013) found supportive evidence that commodity prices strongly responded to information provided on interest rate changes and oil reserves.

3 Research model

This study, citing Szilagyiova's (2014) modeling, highlights the following VECM relationship for modeling the relationship between monetary policy and food price index:

$$d(\log(F_t) = EC(B_1 \log(F_{t-1})) + B_2 \log(M_{t-1}) + B_3 \log(I_{t-1}) + B_4) +$$
$$C_1 d(\log(F_{t-1}))+ C_2 d(\log(M_{t-1}))+ C_3 d(\log(I_{t-1}))+ C_4 + C_5\ d(\log(O_t))$$

Where, F: food price index, M: liquidity volume, O: crude oil price index, I: interest rates on state bank deposits; d: Difference; Log: Logarithm; EC: Long-term to short-term error correction coefficient. This study uses monthly data to model the relationship between monetary policy and commodities (especially crude oil and food) during 2004-2016. Preference of monthly data over seasonal and annual data is due to answering research questions satisfyingly. In other words, the statistical analysis based on the expected signs of the coefficients and their significance in the monthly data is better than the seasonal and annual data. In this context, it should be noted that according to the study by Anzuini et al. (2012), crude oil price index (O) and food price index (F) are used to move the prices of the storable commodity. But unlike their study, data on the total commodity index is not included. Because this index is not a good source of information needed to assess the impact of monetary policy shocks (Szilagyiova, 2014). Brent oil prices are extracted from the Statistics Center of the International Energy Agency (IEA, 2017) and are used as a global oil price index. The index is a simple average of three oil prices of Brent, Fateh Dubai, and West Texas Intermediate. The FAO index (2017) is also used for the food price index which shows the average price of the five major commodity groups (including legumes and cereals, vegetable oils, dairy products, meat, and sugar) and the weight of the commodities are determined based on their share in each group. The monetary volume (M) available from the central bank is used to measure monetary policy or, in other words, to measure the effect of liquidity as an indicator of money supply. On account interest rates on state bank deposits (I) are also used to calculate the indirect effects obtained from the Central Bank of Iran Web site. To avoid the problem of heteroskedasticity all variables were logarithmized. It should be noted that all data have been seasonally adjusted using Dagum's (1979) method in EViews.9 software. Finally, EViews.9 has been used to estimate the research model.

4 Research Findings

The present section reviews the research findings in several subsections. In this regard, the unit root test, cointegration test, vector error correction model, impulse response analysis, and variance analysis are presented respectively.

4.1 Unit Root Test

Before estimating the model, it is necessary to perform a unit root test. The results of the test are presented in Table (1).

Table 1

Unit Root Test

test	Augmented Dickey-Fuller (ADF)				Phillips-Perron				Result
variable	levels		difference		levels		difference		
	Critical quantity	Prob.	Critical quantity	Prob.	Critical quantity	Prob.	Critical quantity	Prob.	
M	0.11	0.96	-10.30	0.00	0.05	0.96	-10.56	0.00	I(1)
F	-0.10	0.94	-4.59	0.00	-0.38	0.90	-13.18	0.00	I(1)
I	-1.51	0.52	12.40	0.00	-1.52	0.52	-12.40	0.00	I(1)
O	-2.42	0.13	-10.27	0.00	-2.41	0.13	-10.30	0.00	I(1)

Source: Research calculations

As table 1 shows, all variables in the model are I (1). Therefore, the Johansen test is used to determine the number of cointegrating vectors, and the long-run relationships are investigated through VECM models.

4.2 Cointegration Test

According to Sims, it is necessary to the number of lags in the VAR model. Because of the over parameterized, we must rely upon the Parsimony

Principle. The Bayesian-Schwartz and Akaike and Hanan-Quine criteria are used to determine the optimal VAR pattern. Table (2) shows the test results of all three models. As shown in Table (2), it is clear that, according to the AIC, SC and HQ criteria, the appropriate lag lengths are 1, 1, and 1, respectively. The last step before estimating the model is to determine the cointegrating vectors by the maximum eigenvalue test and the trace test.

Table 2
Test to Determine the Optimal Lag for the Model

AIC	SC	HQ	Lag
-12.61*	-12.24*	-12.46*	1
-12.55	-11.95	-12.31	2
-12.41	-11.45	-12.08	3
-12.42	-11.14	-12.07	4
-12.29	-10.78	-11.90	5

Source: Research calculations

Based on the information in Table 3, the results of the trace test and the maximum eigenvalues test are different according to the type of pattern. According to the fifth model and the trace test, this study considers one long-run relationship among model variables.

Table 3
Number of Long-Term Relationships Based on the Selected Pattern

Model	Status	Test	Number of relationships
1	No intercept and trend	Trace	2
		maximum eigenvalues	0
2	restricted intercept and no trend	Trace	1
		maximum eigenvalues	0
3	unrestricted intercept and no trend	Trace	0
		maximum eigenvalues	0
4	restricted intercept and trend	Trace	1
		maximum eigenvalues	0
5	unrestricted intercept and trend	Trace	1
		maximum eigenvalues	0

Source: Research calculations

4.3 Vector Error Correction Model

The results of the VECM are presented in Table (4).

Table 4
VECM Estimation

	Intercept	Log(I)	Log(M)	Log(F)
	309.36	-0.82 (-4.17)	-0.18 (-3.79)	1.00
Short-term relationship				
EC	log(O)	D(log(I))	D(log(M))	D(log(F))
-0.004 (-1.80)	0.02 (2.97)	-0.009 (-0.44)	-0.04 (-0.22)	-0.12 (-1.26)

Source: Research calculations

The VECM model is presented in Table (4) as a standard form. In the long-run relationship, all variables are significant at the 99% level. In the standard long-term relationship format, all variables on the left side of equality and the right equal zero, so for the analysis of the sign of the variables, the food price variable on the left side of equity remains, and other variables are moved to the right by changing the sign. In this context, a one percent increase in the money supply would result in a 0.18 percent increase in food prices in the long run. Given the error correction relationship, it can be said that the short term effects of money supply changes on food commodity prices are not significant. The above findings confirm the shock effect of Frankel (1968) and Szilagyiova (2014). The premise of Frankel's (1968) model of shock is that a tight monetary policy (which can be seen as a long-run supply increase) results in an increase in commodity prices; however, in the short run, there is no action under these conditions because it is assumed that the price of goods is constant in the short-run (Szilagyiova, 2014). A one percent decrease in the profits rate of the deposit will cause a 0.82 percent decrease in long-term food prices. Given the error correction relationship, it can be said that the short-term effects of deposit interest rate changes on the food commodity prices are not significant. In this context, the arbitrage condition (which is a particular assumption of the Frankel model) holds to the storable goods, since the interest rate yields are higher than the expected rate of increase in the price of goods and their storage cost. The price of commodities is expected to overshoot to achieve more capital gains (which is sufficient to offset higher interest rates).

Given the error correction relationship, it can be said that the effects of oil prices (included in the model exogenously) on the increase in food commodity prices are significant. This result is in line with the claims of Bogton and Branson (1988); they argue that world food prices are often the result of bad supply shocks or significant increases in input costs (which increases the likelihood of supply shocks).

4.5 Impulse Response

The most critical step after model estimation is to evaluate the dynamic and interrelated relationships between the endogenous variables of the model. In this framework, the effects of the dynamic response of the model's endogenous variables to the food price shock are examined. Figure 4 shows the dynamic response of food price variables, liquidity volumes, and on account interest rates on government bank deposits to food price shocks. The impulse response functions are orthogonal. In this graph, the horizontal axis is time, and the vertical axis is the magnitude of the deviation from the initial value. The confidence interval indicates the significance of the shock effect, so the effectiveness of the food price shock effect is evaluated by being in the range of two dashed lines outside the horizontal axis. That is, the food price shock has a significant impact on the model's endogenous variables when the two dashed lines are outside the horizontal axis; otherwise, it is said that the impact of the shock is stochastic.

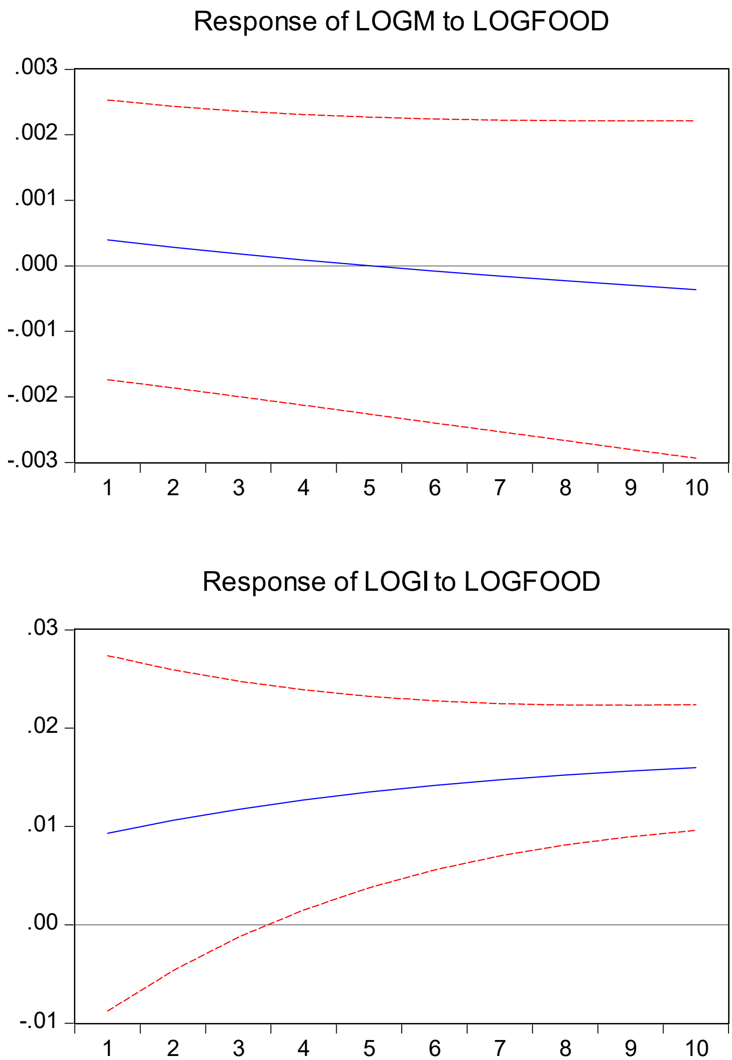

Figure 4. Dynamic Response of Model Endogenous Variables to Food Price Shock.
Source: research findings

According to chart (4), it can be said that a 1% increase in food prices will not have a significant effect on interest rates on state bank deposits for up to three months; but then they experience a 0.012 percent increase. Also, rising food prices have no significant effect on the money supply.

5 Discussion and Results Analysis

As can be seen from the results, the increase in money supply, and the interest rate on deposits has led to a rise in food prices. For the reasons, we can say that consumers (as opposed to policymakers) focus on item prices rather than price indices, and thus significant changes in energy or food prices can be an essential signal to people that inflation is rising and thus raise inflation expectations. According to Bullard (2011), relative price changes can lead to a significant shift in consumer inflation expectations as they observe commodity prices; but on the producer side, it is the oil price that affects production and distribution costs. So rising oil and food prices can pose challenges for policymakers to anchor inflation expectations. As Bernanke et al. (2004) stated, unanchored inflation expectations can only lead to monetary policy inefficiencies. Given the results associated with the impulse response analysis, it can be stated that commodity price disruption will have a significant impact on the economy. In this regard, the results of Lucia & Bartlett (2014) and Timilsina et al. (2011) also show that when the magnitude of the effect of commodity price increases is examined, the main focus is on the source of them. They stated that throughout history, most commodity shocks have been caused by supply disruption and have resulted in increased inflation and reduced output (De Gregorio, 2012).

6 Conclusion and Policy Recommendations

In many economies, commodity price volatility is one of the sources of signaling to market players (Monacelli, 2013). The mechanism of transmission and the magnitude of the effects of commodity price volatility depend on the prevailing view on monetary policy (Szilagyiova, 2014). For example, commodity price shocks in recent years are very different from those experienced in the 1970s and 1980s. Contrasting experiences of price shocks have prompted policymakers and academics to re-examine how are the responses to price shocks. Temporary shocks are generally considered to be short-term price shocks that do not require reaction of politicians, but unexpected increases in the commodity prices in the 2000s, which were deemed to be temporary shocks by policymakers, lasted in the market. Since the size and continuity of the rise in the price of goods were not anticipated, policymakers had made their decisions on the assumption that the shocks were transient. On the other hand, the persistence of commodity price shocks not only results in an adjustment of the economy but also an adjustment in the decisions of policymakers; because with the inflationary environment, adopting diminishing policies on commodity prices can lead to high costs that raise inflation expectations. The results showed that a one percent increase in money supply and the interest rate on deposit would increase food prices in the long-term by 0.18 percent and 0.82 percent, respectively. In this regard, considering the significance of model variables in the long-term, policymakers are recommended to set their policies based on long-term goals in planning for monitoring and controlling commodity prices.

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