

#### Ekonomik ve Sosyal Araştırmalar Dergisi

The International Journal of Economic and Social Research

2023, 19(2)

#### The Impact of the Stock Market on the Inflation Rate in Iran's Economy

İran Ekonomisinde Borsanın Enflasyon Oranına Etkisi

#### Masoud SAADATMEHR<sup>1</sup>

Geliş Tarihi (Received): 29.10.2022 Kabul Tarihi (Accepted): 09.06.2023 Yayın Tarihi (Published): 31.12.2023

**Abstract:** Studies of the relationship between inflation and the stock market in different countries suggest that this relationship varies from country to country due to different economic structures. Therefore, in the present study, the effect of stock market on inflation control in Iran has been investigated. For this purpose, the annual data of 1990-2019 have been used with the help of the Autoregressive Distributed Lag method (ARDL). In the research model, inflation rate as a dependent variable and the value of stock market transactions along with liquidity variables, exchange rate and gross domestic product formed independent variables. The results showed that the variables of liquidity, exchange rate and GDP are positively affected and the value of trading in the stock market has a negative effect on inflation. Also, a one percent increase in the value of trading in the stock market has a negative effect on inflation. Also, a one percent increase in the value of trading in the stock market has a negative effect on inflation. Also, a one percent increase in the value of trading in the stock market has a negative effect on inflation. Also, a one percent increase in the value of trading in the stock market reduces the inflation rate in the Iranian economy by 1.47 percent. This effect is fully realized after 1.5 years. As a result, the stock market can be used as a tool alongside other monetary and financial instruments to control inflation. **Keywords:** Stock Market, Inflation Rate, Exchange Rate, Liquidity.

87

Öz: Enflasyon ile borsa arasındaki ilişkiyi farklı ülkelerde inceleyen çalışmalar, bu ilişkinin farklı ekonomik yapılar nedeniyle ülkeden ülkeye farklılık gösterdiğini ortaya koymaktadır. Bu nedenle bu çalışmada, İran'da hisse senedi piyasasının enflasyon kontrolü üzerindeki etkisi araştırılmıştır. Bu amaçla 1990-2019 yıllık verileri Otoregresif Dağıtılmış Gecikme yöntemi (ARDL) yardımıyla kullanılmıştır. Araştırma modelinde bağımlı değişken olarak enflasyon oranı ve borsa işlemlerinin değeri ile likidite değişkenleri, döviz kuru ve gayri safi yurtiçi hasıla bağımsız değişkenleri oluşturmuştur. Sonuçlar, likidite, döviz kuru ve GDP değişkenlerinin pozitif yönde etkilendiğini ve borsadaki işlem değerinin enflasyon üzerinde negatif bir etkiye sahip olduğunu göstermiştir. Ayrıca borsada işlem görme değerindeki yüzde birlik artış, İran ekonomisindeki enflasyon oranını yüzde 1,47 oranında azaltıyor. Bu etki tam olarak 1,5 yıl sonra gerçekleşir. Sonuç olarak, borsa enflasyonu kontrol etmek için diğer parasal ve finansal araçların yanında bir araç olarak kullanılabilir.

Keywords: Borsa, Enflasyon Oranı, Döviz Kuru, Likidite.

Attf/Cite as: Saadatmehr, M. (2023). The Impact of the Stock Market on the Inflation Rate in Iran's Economy. *Ekonomik ve Sosyal Araştırmalar Dergisi*. 19(2). 337-348.

İntihal-Plagiarism/Etik-Ethic: Bu makale, en az iki hakem tarafından incelenmiş ve intihal içermediği, araştırma ve yayın etiğine uyulduğu teyit edilmiştir. / This article has been reviewed by at least two referees and it has been confirmed that it is plagiarism-free and complies with research and publication ethics. https://dergipark.org.tr/tr/pub/ijaws

Copyright © Published by Bolu Abant Izzet Baysal University, Since 2005 - Bolu

<sup>&</sup>lt;sup>1</sup> Assistant Professor, Department of Economics, Payame Noor University, Tehran, Iran, m.saadatmehr@pnu.ac.ir.

# 1. Introduction

Financial markets have the role of transferring financial resources from the non-productive sector to the productive sector. The importance of these markets is such that they are referred to as the main arteries of the economy. In the financial economy, the capital market plays an essential role in economic growth through the financing of enterprises, the optimal allocation of resources and increasing transparency in the economy. In the growth theories of the new classics such as Lucas, Romer and Grossman, the importance of the effect of financial development on economic growth has been implicitly emphasized. However, the studies conducted in different countries indicate that due to the existence of different economic structures, the relationship between the stock market and inflation is different from one country to another. Some studies report a positive relationship between these variables (for example, Ratanapauorn and Sharma, 2007; Groenewold et al., 1997; Abdullah and Hayworth, 1993; Dhakal et al., 1993; Hamao, 1988). Some other studies state that the relationship between the two variables is negative (for example, Humpe and Macmillan, 2009; DeFina, 1991; Chen et al., 1986; Fama, 1981; Fama and Schwert, 1977). Last, studies such as Cakan (2013), Pradhan (2011) and Morley (2002) document the existence of bidirectional causality between two variables. Given that, one of the main and important goals of governments is to control inflation. The central bank of each country uses various tools to control the amount of money and liquidity. On the other hand, the growth of money and liquidity, which are the main factors of inflation, depend on various factors, some of which are beyond the control of the central bank, including the behavior of commercial banks and people. So that the central bank is not able to control the liquidity and as a result the pressure of liquidity in various markets such as foreign exchange, gold and housing markets causes inflation. Due to the fact that the contractionary actions of the government and the central bank in curbing liquidity may cause stagnation in the economy, governments are looking for tools that can control inflation and manage liquidity in line with economic growth and production. put In this regard, the stock market as a tool has received serious attention. In Iran's economy, the stock market has recently been proposed by experts to control liquidity, and various views have been presented about it. Some analysts believe that by moving stray liquidity towards the capital market, brokering and wandering of liquidity can be prevented to a large extent. According to them, if the government can implement policies to direct the liquidity towards the capital market, both the stray liquidity will be collected and consequently the inflation will be controlled, and the proper financing of the enterprises will be done through the stock market, which can cause economic growth. Now, according to these issues, it should be investigated in a research that directing liquidity towards the capital market can be effective in controlling inflation in Iran or not. Therefore, the present research was conducted with the aim of investigating the impact of the stock market on inflation control in Iran. It should be noted that liquidity in Iran is increasingly increasing and every now and then one or more markets such as currency market, gold market, housing market, car market suffer from unbridled inflation. This research is compiled in five sections. After the introduction, in the second part, theoretical literature and empirical background are stated. Research methodology is given in the third part. Data analysis is done in the fourth part and the fifth part is dedicated to the conclusion.

#### 2. Literature Review

Fisher (1930) believes that there is no connection between the real and monetary sectors of the economy and the rate of return in the real sector is determined by factors such as capital efficiency and time preferences of savers and is independent of the inflation rate. According to this theory, in case of any change in the inflation rate, the real return remains unchanged and changes on the nominal return. In other words, there is a positive relationship between nominal stock returns and expected inflation. The reason for such a relationship is that efficient markets compensate the risk of investors against changes in the purchasing power of their money. Therefore, in inflationary conditions, one of the preferred options for investment is the stock market, which can act as a shield against inflation. In this situation, the demand for investing in the stock market grows. An increase in the demand for buying shares causes an increase in the price of shares and as a result, an increase in the value and volume of transactions. Therefore, with the absorption of liquidity in the stock market, on the one hand, stock prices increase, and on the other hand,



with the movement of liquidity from other markets to the stock market, the demand in those markets decreases and inflation decreases. In this regard, some theorists believe that the stock market collects money and distributes it in a more productive and efficient part of the economy (Caporal et al., 2004; Billmayer and Massa, 2009; Currie, 2010). In addition, the stock market can stimulate economic growth in a country by attracting people with cash to invest and creating a platform for investing in capital-intensive businesses (Levin, 1991; Levin and Zervos, 1996; Rousseau and Wachtel). , 2000; Arestis et al., 2001; Anisan and Olofisayo, 2009; Ho and Cheng, 2010). Fama (1981) explained the negative relationship between inflation and stock returns. According to FAMA, the negative relationship between real stock returns and inflation is caused by chain effects (Mousavi and Ragheb, 2013).

Various experimental researches have been conducted regarding the relationship between the stock market and inflation in Iran and the world.

Pradhan et al. (2013) investigated the relationship between inflation and stock market in 16 Asian countries. In this research, annual data in the period of 1988-2012 and Granger causality test were used. The results indicate a two-way relationship between inflation and the stock market.

Sati et al (2013) have investigated the effect of financial development on inflation in Bangladesh. This study has been done using seasonal data in the time period of 1976-2012 using the cointegration method. The results show a positive relationship between financial development and inflation in Bangladesh.

Suleiman et al (2016) in a research have investigated the impact of stock market development on the inflation rate in five countries: Bangladesh, India, Nepal, Sri Lanka and Pakistan. This research was conducted using annual data in the period of 1989-2012 using panel data method. It shows that the development of the stock market in the long term can reduce inflation.

Fouejieu (2017) in a study examined the relationship between inflation and stock market stability in 26 emerging countries using the GMM approach. This work has been done using seasonal data in the period of 2000-2010. The results of his study showed that the inflation rate causes instability in the stock market of these countries.

Hanan and Shata (2017) have investigated the relationship between inflation and the stock market in Jordan using annual data from 1978 to 2015. This research, which has been conducted in a cointegration method, shows that increasing the value of transactions in the stock market increases the rate of inflation.

In a study, Albalsco et al (2018) examined the relationship between inflation and stock prices in the United States. This research has been done using monthly data in the time period of 2002-2015 using the cointegration method. The results show that inflation has a negative effect on stock prices in the long run.

Sathyanarayana and Gargesa (2018) have investigated the relationship between inflation and stock returns in selected countries. This research was conducted using monthly data in the period of 2000-2017 and using Pearson's correlation coefficient. The results show that for the countries of India, Austria, Belgium, Canada, Chile, China, France and Ireland, there is a negative correlation coefficient between inflation and stock returns. But in the countries of Brazil, Indonesia, Japan, Mexico, Spain and Turkey, this coefficient is positive.

Wang and Li (2020) have investigated the relationship between stock returns and inflation in China using continuous wavelet analysis. This has been done using monthly data in the time period of 1995-2018. The results show that there is a positive relationship between stock returns and inflation in China.

Azizi et al (2012) have investigated the relationship between stock returns and inflation in Iran. This research was conducted using annual data from 1991-2008 using the maximum likelihood method. The results show that stock returns have a negative relationship with the inflation rate.

Mousavi and Ragheb (2013) have investigated the effect of inflation rate on stock market performance in Iran with seasonal data in the period of 2001-2010. This research has been carried out using the method of self-explanatory vector pattern with wide intervals. The results show that the effect of the inflation rate on the variables of transaction value and transaction volume is positive in the long term.

Pedram et al (2013) investigated the asymmetric effects of inflation on stock prices in the Tehran Stock Exchange using the impulse reaction function (IRF) method. This research was conducted using seasonal

data from 2001-2011. The results show that inflation has an asymmetric effect on stock prices. So that the negative effects caused by the increase in the inflation rate on the stock price index are more than its positive effects.

In a research, Shahrazi et al. (2022) have investigated the effect of global commodity prices, exchange rates and stock market returns on inflation in Iran. In this research, a structural vector autoregression (SVAR) model and monthly data in the period of 2009-2018 have been used. The results show that the effect of global commodity prices on the inflation rate in Iran is greater than the effect of stock returns and exchange rates.

Azizi et al (2012) have studied the relationship between stock returns and inflation in Iran. The results show that stock returns are negatively related to inflation.

Mousavi and Ragheb (2014) have studied the effect of inflation rate on stock market performance. The results show that the effect of inflation rate on the variables of transaction value and trading volume is positive in the long run.

Pedram et al (2014) have investigated the asymmetric effects of inflation shocks on stock prices in the Tehran Stock Exchange. The results show that inflation has an asymmetric effect on stock prices. So that the negative effects of rising inflation on the stock price index are greater than its positive effects.

Heidari and Rafah Kahriz (2017) have examined the stability of the stock market due to inflation. The results show that the inflation rate has a positive and significant effect on stock returns in the high-yield regime (bull regime), but in the low-yield regime (bear regime) this effect is not significant.

Najafi et al (2019) have studied the effect of inflation rate on stock returns on the Tehran Stock Exchange by Johansen cointegration. The research results show that inflation in the short run has a negative effect on investment in the stock market.

Ebrahimi (2019) in a study has investigated the relationship between macroeconomic variables and the stock market in Iran. This research has been done using monthly data in the period of 2005-2017 using data mining algorithm. The results of implementing ten different weighting models on the data showed that the three variables of inflation rate, trade balance and GDP are important variables in determining the stock price index in Iran.

A review of the theoretical and empirical literature on the relationship between inflation and the stock market shows that there is no clear answer in this regard and the results obtained are different from one country to another. Researches that have been conducted in Iran (such as Azizi et al. 2011, Mousavi and Ragheb 2013 and Pedram et al. 2013) have examined the relationship between inflation and stock returns, and these researches actually show the amount of stock returns. have investigated in inflationary conditions and have not investigated the impact of the stock market on the inflation rate. Therefore, there is a research gap in this regard. Therefore, in this research, an attempt has been made to investigate the effect of the stock market on inflation in Iran. In other words, this research is looking for the issue of whether it is possible to attract the stray liquidity in the Iranian economy by managing the stock market and prevent fluctuations in other markets and inflation in the economy. Therefore, the current research is new in Iran and is completely different from the previous research.

# 3. Methodology

The purpose of this study is to investigate the impact of stock market on inflation in the Iranian economy. The research model is modeled for the Iranian economy using the article by Pardahan et al (2013) and the article by Soleiman et al (2016). The research model in Equation (1) is logarithmic.

$$P_{t} = \beta_{0} + \beta_{1} LNGDP_{t} + \beta_{2} LNEX_{t} + \beta_{3} LNM_{t} + \beta_{4} LNTRV_{t}$$
(1)

In Equation (1), Pt is the percentage rate of inflation based on the consumer price index as a dependent variable. The GDP logarithm (LNGDPt), the exchange rate logarithm (LNEXt), the liquidity logarithm (LNMt) and the stock market value logarithm (LNTRVt) are independent variables. In the theoretical



justification of the presence of independent variables in the model, it can be said that in all economic theories, liquidity has been proposed as a factor influencing inflation. Also, economic prosperity and production growth are usually accompanied by rising prices. In the Iranian economy, one of the factors causing inflation, which has been addressed in various studies, is the increase in the exchange rate, which has been referred to as imported inflation. The variable value of stock market transactions is included in the model as an indicator through which the stock market can affect inflation. In fact, it is assumed that the higher the index, the more liquidity is absorbed in the stock market and therefore less liquidity in the gold, currency, car, housing, etc. markets, which leads to a reduction in turbulence in these markets. And consequently inflation is controlled.

The research data is related to the period of 1990-2019 which has been collected from the time series database of the Central Bank of the Islamic Republic of Iran. The year 1990 is the first year after the war and the year 2019 is the last year for which statistics and information were available. Table (1) shows the descriptive statistics of the data including mean, standard deviation, maximum, minimum, skewness and elongation. It is observed that the skewness of all variables is in the range (-2, 2) and the variables are normal in terms of skewness. Also, the amount of elongation of all variables is in the range (-2, 2) and indicates that the variables are normal in terms of elongation.

Table 1: Statistical description of model variables						
Variable	Mean	Standard deviation	Max	Min	Skewness	kurtosis
Р	19.03	9.38	49.11	9.01	1.524	2.704
LNM	13.235	1.993	16.543	10.042	-0.020	-1.204
LNEXR	9.012	0.986	10.608	7.235	-0.175	-0.453
LNGDP	14.214	0.291	14.605	13.710	-0.140	-1.60
LNTRV	10.021	2.713	13.779	4.170	-0.455	-0.939

The autoregressive distributed Lag method (ARDL) is used to estimate the model. The use of traditional methods in econometrics for experimental studies is based on the assumption of stationary of variables. But studies in this area show that in the case of many time series, this assumption is incorrect and most of these variables are unstable. This may cause fake regression. Therefore, according to the theory of cointegration in modern econometrics, it is necessary to use methods in estimating functions when using time series that pay attention to the problem of stationary and cointegration. The autoregressive distributed lag method is one of the methods in which, unlike the Johansen-Josilius method, where all variables must be stable from the first degree, the degree of stationary of the variables does not have to be the same and only by determining the intervals. Suitable for variables, the appropriate model can be selected. Therefore, according to these considerations, ARDL method has been used in this study. The autoregressive distributed lag method can be shown as follows (Nofaresti, 1999, 93).

$$Q(L,p)Y_{t} = \alpha_{0} + \sum_{i=1}^{k} \beta_{i}(L,q_{i})X_{it} + U_{t}$$
(2)

In formula (2),  $\infty_0$  is intercept of regression, Yt is the dependent variable, and L is the lag operator, which is:

$$(3)$$

In Equation 3 we have:

$$Q(L, p) = 1 - Q_1 L^1 - Q_2 L^2 - \ldots - Q_n L^p$$
(4)

$$\beta_{i}(L,q_{i}) = 1 - \beta_{i1}L - \beta_{i2}L^{2} - \dots - \beta_{iq}L^{q_{i}}$$
(5)

The optimal number of lags for each variable can be determined using the criteria of Akaik, Schwarz-Bayesian and Hanan Quinn. In ARDL method, long-term relationship estimation is done in two steps. In the first stage, the existence of a long-run relationship between the variables of the model is tested. To do this, the band test provided by Narayan is used. In this test, if the value of the test statistic is higher than the high band, there is a long-term relationship between the model variables. If the value of the test statistic is less than the lower band, there is no long-term relationship, and if the value of the test statistic is between the top and bottom bands, this test can not confirm the existence or non-existence of a long-term relationship.

If the existence of a long-run relationship between model variables is proven, long-term coefficients are estimated and inferences about their value are made. The coexistence cointegration between economic variables provides the basis for the use of error correction models. The error correction pattern relates short-term fluctuations to their long-term values. When the two variables X and Y are cointegrated, there is a long-run equilibrium relationship between them. Of course, in the short term there may be unequilibrium. In this case, the relation error sentence (6) can be considered as an equilibrium error.

$$Y_{t} = \beta X_{t} + U_{t}$$

$$U = Y - \beta X$$
(6)

This error can now be used to link the short-term Yt behavior to its long-run equilibrium value. For this purpose, equation (7) can be written.

$$\Delta Y_t = \alpha_0 + \alpha_1 \Delta X_t + \alpha_2 \hat{u}_{t-1} + \varepsilon_t \tag{7}$$

In Equation (7)  $\varepsilon_t$  is a white noise and  $u_{t-1}$  is regression estimation error in Equation (6) with a lag. Such a pattern is known as the error correction model (ECM), in which changes in Yt are related to the equilibrium error of the previous period. We put the error correction sentence (ECT), which is the same as the regression error sentence of the long-term static pattern, as an intermittent explanatory variable in the ECM

pattern and obtain short-term dynamics. The ECT coefficient indicates the rate of adjustment towards equilibrium and is expected to be negative in terms of the signal.

#### 4. Result

# 4.1. Stationary of variables

Augmented Dickey-Fuller (ADF) test was used to evaluate the stationary of the variables. In this test, the number of lags required to eliminate correlation was determined based on the Schwartz-Bayesian criterion. The results of the stationary test are given in Table (2). The results show that all model variables are stable after one-time differentiation, so the stationary is of the first degree.

			Tuble 2. Vallable Stationary test results			
Variables	Lag	Intercept	Trend	Statistics ADF	Critical value	Result
LNCPI	2	*	-	1.63	2.98	Non stationary
LNCPI	1	*	*	3.042	3.59	Non stationary
D LNCPI	1	*	-	3	2.98	Stationary
LNM	0	*	-	0.61	2.98	Non stationary
LNM	1	*	*	3.34	3.59	Non stationary
D LNM	0	*	*	3.87	2.98	Stationary
LNEXR	1	*	-	1.29	2.98	Non stationary
LNEXR	1	*	*	2.80	3.59	Non stationary
D LNEXR	0	*	-	3.15	2.98	Stationary
LNGDP	0	*	-	1.21	2.97	Non stationary
LNGDP	0	*	*	1.49	3.58	Non stationary
D LNGDP	0	*	-	5.28	2.98	Stationary
LNTRV	0	*	-	2.21	2.97	Non stationary
LNTRV	0	*	*	3.22	3.58	Non stationary
D LNTRV	0	*	-	6.71	2.98	Stationary

Table 2:	Variable	stationary	test results

# 4.2. Short-term model estimation (Dynamic Model)

In this section, using the collected data related to the period 1990-2019, the short-term model (dynamic model) was estimated by ARDL method. The number of lags was determined based on the Schwartz-Bayesian index with a maximum of two lags. The tests of classical hypotheses as well as the functional form test of the model were performed, the results of which are shown in Table (3). According to the results, the accuracy of the structural form of the model was confirmed using a Ramsey reset test. Also, the accuracy of classical regression assumptions was confirmed.

	Table 3: Test of model assumptions			
Type of test	Statistics	Prop	Result	
Ramsey Reset Test	2.428	0.116	Confirm the functional form of the model	
ARCH Test	0.815	0.455	No heterogeneity of variance	
Breusch-Godfrey Test	1.768	0.191	No serial correlation	
Jarque-Bera Test	0.128	0.937	Confirmation of the normality of the residuals	

After reviewing the model validation tests, we now consider the results of short-term model estimation. The results of short-term estimates are shown in Table (4). In this estimate, the inflation rate is a dependent variable. As can be seen, the coefficients of all model variables are significant at the error level of less than 5%. The results show that liquidity and GDP in the same period affect the inflation rate, but exchange rate variables and the value of stock market transactions affect the inflation rate both in the current period and with a period of interruption.

	r.	Table 4: Short-term model estimation results			
Variables	Coefficient	S.d	t- Statistics	Prop	
LNM	3.70	1.31	2.82	0.011	
LNEXR	28.24	8.51	3.34	0.003	
LNEXR(-1)	-21.05	3.99	5.27	0.000	
LNGDP	2.17	0.953	2.28	0.033	
LNTRV	4.04	1.91	2.11	0.047	
LNTRV(-1)	-4.99	1.75	-2.85	0.009	
	R <sup>2</sup> =	= 0.753 DW	V = 2.21		

# 4.3. Estimation of long-term model

To estimate the long-run relationship between the model variables and also to estimate the elasticities, the possibility of a long-run relationship must first be examined. For this purpose, the Narayan band test was used. The results of this test are shown in Table (5). The value of F statistic of the test is 10.80, which is higher than the value of the high band (3.48), so the existence of a long-term relationship is confirmed.



		Table 5: Narayan band test results		
Statistics	Down Band	High Band	Result	
10.80	2.26	3.48	Confirmation of a long-term relationship	

Then, the long-run relationship was estimated, the results of which are reported in Table (6). As can be seen, all model variables at the error level of less than 5% have a significant effect on inflation in the Iranian economy. Liquidity, exchange rate and GDP have a positive effect and the value of stock market transactions has a negative effect on inflation. For the effect of all variables on the inflation rate is compatible with theoretical foundations. Among the model variables, the exchange rate variable with a coefficient of 8.64 has had the greatest impact on inflation in the Iranian economy, so that a one percent increase in the exchange rate increases the inflation rate by 8.64 percent, and In terms, it is the most important factor in creating inflation in the Iranian economy. After the exchange rate, the liquidity variable with a coefficient of 4.17 has the greatest impact on inflation, so that a one percent increase in liquidity increases the average inflation rate by 4.17 percent. The variable of GDP has also been effective in causing inflation in the Iranian economy, the inflation rate also increases by 3.36 percent. Of course, this increase in GDP in the Iranian economy, the inflation rate also increases by 3.36 percent. Of course, this increase in inflation is accompanied by economic prosperity.

Table 6: Results of long-term relationship estimation					
Variables	Coefficient	S.d	t- Statistics	Prop	
LNM	4.17	1.22	3.42	0.019	
LNEXR	8.64	2.68	3.22	0.028	
LNGDP	3.36	1.58	2.12	0.047	
LNTRV	-1.47	0.542	-2.69	0.035	

Table (6) shows the effect of stock market value on inflation that is the main purpose of this study. The results of the long-run relationship show that the variable value of transactions in the stock market has a negative effect on inflation. The coefficient of this variable is 1.47 and indicates that a one percent increase in the value of transactions in the stock market reduces the average inflation rate by 1.47 percent. Therefore, it can be used as a tool to control inflation in the Iranian economy. Although the impact factor of the value of transactions in the stock market is lower than other variables, but given the negative impact of this variable on inflation, it can be a policy tool to curb inflation. So that by supporting the stock market and managing liquidity in the economy and directing it to the stock market, part of inflation in the Iranian economy can be controlled.

# 4.4. Estimation of error correction model

The existence of a long-run relationship between a set of model variables provides a basis for using the error correction model in which short-term fluctuations are related to their equilibrium and long-term values. Therefore, the model error correction model was estimated, the results of which are shown in Table (7). What is important in the error correction model is the ECT(-1) coefficient. The value of this coefficient is equal to -0.65. The negativity of this coefficient confirms the existence of cointegration between the model variables and the existence of a long-run relationship. The value of this coefficient indicates that one percent change in the exogenous variables of the model affects the inflation rate by 0.65 percent in each period. In other words, any change in the independent variables of the model affect about a year and a half

Table 7: Results of estimating the error correction model Variables Coefficient S.d t-Statistics Prop DLNM 2.82 0.011 3.70 1.31 DLNEXR 28.44 8.51 3.34 0.003 DLNGDP 0.953 2.28 0.033 2.17DLNTRV 4.04 1.91 2.11 0.047 ECT(-1) -0.65 0.167 -3.87 0.000

of its full effect Indicates inflation. According to this interpretation, if the value of transactions in the stock market increases by one percent, after 1.5 years, the inflation rate will decrease by 1.47 percent.

# 5. Conclusion

In this study, the effect of stock market transactions on inflation in the Iranian economy was investigated. To do this, a model was used in which inflation as a dependent variable and the value of stock market transactions along with the variables of liquidity, exchange rate and GDP were independent or exogenous variables. The model was estimated by autoregressive distributed Lag method (ARDL). The results of model estimation showed that the variables of liquidity, exchange rate and GDP have a positive effect on inflation and the variable of value of transactions in the stock market has a negative effect on inflation. The exchange rate variable has the greatest impact on the inflation rate in the Iranian economy. So that by controlling the exchange rate, the inflation rate is greatly reduced.. After the exchange rate, the liquidity variable has the greatest impact on inflation on the Iranian economy. These results are consistent with previous findings and theoretical foundations. The results indicate that the growth of GDP is also associated with the growth of inflation in Iran. In fact, with the boom in production, the inflation rate also increases. The main finding and innovation of this research is that the inflation rate has a negative relationship with the value of transactions in the stock market. So that one percent increase in the value of transactions in the stock market reduces the inflation rate in the Iranian economy by 1.47 percent. As a result, the stock market can be used as a tool along with other monetary and financial instruments to control inflation. Therefore, policymakers are advised to provide stock market development by supporting the stock market and informing and educating everyone about the stock market. In this case, part of the liquidity from other markets such as foreign exchange, gold, cars, etc. has moved to the stock market, which will be effective in controlling inflation. The results of estimating the error correction model showed that if the value of transactions in the stock market increases by one percent, its full effect on the inflation rate is 1.47 percent, which will be realized after 1.5 years.

#### References

- Albulescu, T.A, Aubin, C. & Goyeau, D. (2018). Stock prices, inflation and inflation uncertainty in the U.S: testing the long-run relationship considering Dow Jones sector indexes. *Journal Applied Economics*, 49, 1-22.
- Azizi, F. Khodavisi, H & Johari, F. (2012). Investigating the relationship between inflation and stock returns of Tehran Stock Exchange: Evaluation of Fama succession hypothesis. *Quarterly Journal of Economic Research*, 12(2),135-117.

Ekonomik ve Sosyal Araştırmalar Dergisi https://dergipark.org.tr/tr/pub/esad



- Cakan, E. (2013). Non-linear Causality between Stock Returns and Inflation Uncertainty: Evidence from the US and the UK. *International Business and Economics Research Journal*, 12 (1), 63-70.
- Cappelletti, G., Guazzarotti, G. & Tommasino, P.(2017). The stock market effects of a securities transaction tax: Quasi-experimental evidence from Italy. *Journal of Financial Stability*, 31, 81-92.
- Ebrahimi, M. (2019). Investigating the effect of large economic variables on the Iranian stock market using data mining algorithms. *Financial Economics Quarterly*, *13*(94), 309-283.
- Ellington, M., & Milas, S. (2019). Global liquidity, money growth and UK inflation. *Journal of Financial Stability*, 42, 67-74.
- Fouejieu, A. (2017). Inflation targeting and financial stability in emerging markets. *Economic Modelling*, 60, 51-70.
- Groenewold, N., O'Rourke, G., & Thomas, S. (1997). Stock Returns and Inflation: A Macro Analysis. Applied Financial Economics, 7, 127-136.
- Hanan, A.D., & Shatha, A.K. (2017). The relationship between inflation and stock market performance in Jordan. European Journal of Business and Management, 9(29), 142-150.
- Heydari, H. & Refah Kahriz, A. (2017). Investigating the Stability of the Stock Market as a Result of Changes in Inflation and Its Uncertainty. *Quarterly Journal of Econometric Modeling*, 3(8), 110-85.
- Humpe, A., & Macmillan, P. (2009). Can macroeconomic variables explain long-term stock market movements? A comparison of the US and Japan. *Applied Financial Economics*, 19 (2), 111-119.
- Kim, S., & Mehrotra, A. (2017). Managing price and financial stability objectives in inflation targeting economies in Asia and the Pacific. *Journal of Financial Stability*, 29: 106-116.
- Morley, B. (2002). Output, consumption and the stock market implications for European convergence. *Applied Economics*, 34, 317-323.
- Mousavi Haghighi, M.H., & Ragheb, M. (2014). The effect of inflation rate on stock market performance in Iran. *Monetary Banking Research*, 7(19), 125-142.
- Najafi, H., Pourghorban, M.R., & Ehsanfar, M.H. (2019). The effect of inflation and currency price fluctuations on stock prices on the stock exchange. National Conference on Economics, Development Management and entrepreneurship, Iran, University of Sistan Baluchistan.
- Noferesti, M. (1399). *Unit root and cointegration in econometrics*. Tehran: Rasa Cultural Services Institute, first edition.
- Pedram, M. Shirin Bakhsh, S., & Roostaei, A. (2014). Investigating the Asymmetric Effect of Inflation and the Stock Price Index of the Tehran Stock Exchange. *Quarterly Journal of Financial Knowledge of Securities Analysis*, 7(22), 61-75.
- Pradhan, R.P. (2011). Financial Development, Growth and Stock Market Development: The Trilateral Analysis in India. *Journal of Quantitative Economics*, 9 (1), 134-145.
- Pradhan, R.P., Arvin, M.B., Samadhan, B., & Taneja, S. (2013). The impact of stock market development on inflation and economic growth of 16 ASIAN contries: A panel VAR approach. *Applied Econometrics and International Development*, 13(1), 203-220.
- Ratanapakorn, O., & Sharma, S. C. (2007). Dynamic Analysis between the US Stock Returns and the Macroeconomic Variables. *Applied Financial Economics*, 17 (5), 369-377.
- Sathyanarayana, S. & Gargesa, S. (2018). An Analytical Study of the Effect of Inflation on Stock Market Returns. *IRA-International Journal of Management & Social Sciences*, 13(2), 48-64.

347

- Satti, S.L., Shahbaz, M., Mujahid, N. & Ali, A. (2013). Impact of Financial Development and Globalization on Inflation: The Role of Remittance and Economic Growth in Bangladesh. MPRA, no 51675. https://mpra.ub.uni-muenchen.de/id/eprint/51675
- Shahrazi, M., Ghaderi, S. & Sanginabadi, B. (2022). Commodity prices and inflation: an application of structural VAR. Applied Economics, Volume 0, Issue 0 pp. 1-11. Doi: 10.1080/00036846.2022.2108753
- Sulaiman, I., Arshed, N., & Hassan, M.S. (2016). Stock Market Development, Can it Help Reduce Inflation in SAARC Countries?. *Journal of Accounting, Finance and Economics*, 6(1), 101 – 110.
- Wang, R. & Li, L. (2020). Dynamic relationship between the stock market and macroeconomy in China (1995–2018): new evidence from the continuous wavelet analysis. *Economic Research*, 33(1), 521-539. doi: 10.1080/1331677X.2020.1716264
- Zhu, S., Kavanagh, E. & O'Sullivan, N. (2020). Inflation targeting and financial conditions: UK monetary policy during the great moderation and financial crisis. *Journal of Financial Stability*, 53, 1-16.