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VALIDITY OF TAYLOR'S RULE FOR INFLATION TARGETING STRATEGY: THE CASE OF KAZAKHSTAN

Many variables known to be the most important indicators of the economy can act both as cause and effect. In this study, the relations between interest, inflation, and exchange rate are discussed based on the political economy of Kazakhstan, and the results show that the changes in the inflation rate cause interest and exchange rate fluctuations. On the other hand, some argue reverse causation where interest rates and exchange rates are the cause and inflation is the result. According to the Taylor Rule, the short-term lending rates of central banks should move in the same direction as the gross domestic product and the targeted inflation rate. This ensures the predictability of the monetary policies of central banks. But the original Taylor Rule does not include the exchange rate as one of its variables. Therefore, in this study updates the Taylor Rule to include the real exchange rate. Thus, the validity of the Taylor Rule, which is known to be valid for developed countries, is tested for Kazakhstan. Taylor Rule is analyzed through the Vector Autoregressive Model using monthly data for the period 2015:11-2021:11, in which inflation targeting policy is adopted in Kazakhstan. Findings showed that policy rates in Kazakhstan do not act according to the Taylor Rule, but fluctuations in interest rates are caused by the exchange rate rather than the industrial production index. The invalidity of the Taylor Rule may be due to the high inflation rate and the failure of decision-makers to choose the right policy tools promptly.

Keywords: *economic indicators, inflation, interest rate, exchange rate, GDP, Taylor rule, consumer price index, industrial production index, vector autoregressive model, Kazakhstan.*

Кілт сөздер: *экономикалық көрсеткіштер, инфляция, пайыздық мөлшерлеме, валюта бағамы, ЖІӨ, Тейлор ережесі, тұтыну бағасының индексі, өнеркәсіптік өндіріс индексі, вектор авторегрессивті моделі, Қазақстан.*

Ключевые слова: *экономические индикаторы, инфляция, процентная ставка, обменный курс, ВВП, правило Тейлора, индекс потребительских цен, индекс промышленного производства, векторная авторегрессионная модель, Казахстан.*

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Introduction. When employing the inflation targeting policy, a monetary authority seeks to achieve its target using a reaction function. At this point, the monetary authority chooses either a rule-based or a non-rule-based (optional) policy. The inflation targeting regime dictates central banks to use inflation rates as an anchor to achieve their ultimate goal, price stability. Central banks try to influence inflation expectations through their policies and can achieve their goals by shaping the expectations of economic units, thanks to their credibility.

In the literature, the main empirical framework used for the analysis of the monetary policy stance is Taylor's rule. This study briefly defines Taylor's rule, which the National Bank of Kazakhstan used to analyze monetary policy after the devaluation in Kazakhstan in 2014, and explains the policy rate with inflation and output gap. Through Taylor's work, rule-based monetary policy became popular. Taylor's rule determines the nominal interest rate using the difference between actual inflation and the targeted inflation rate, and the difference between actual output and potential output [1].

The main purpose of this study is to test whether the short-term lending rates of central banks are in line with the deviations between the gross domestic product (GDP) and the inflation target.

The inflation targeting regime is an institutional arrangement in which the central bank's main mandate is to target a specific medium-term

inflation rate consistent with the national macroeconomic stability. The main policy instrument is the official policy interest rate, which is adjusted when the inflation rate projected over the forecast horizon deviates significantly from the inflation target announced by the central bank. Adoption and implementation of effective and reliable inflation targeting regimes often depend on a variety of circumstances. First, the central bank's main task is to keep the inflation rate close to the official target. Second, the pressures that may disrupt the national economy should prevent the bank from focusing on this main objective, such as government budget financing or exchange rate policies, and should not conflict with the central bank's core mandate. The basic meaning of the inflation targeting regime is that price stability has priority over all other targets such as exchange rate stability.

The monetary policy reaction function developed by Taylor [1] is as follows:

$$i_t = r^*\delta(\pi_t - \pi^*) + \omega(\gamma_t - \gamma_t^*)$$

Here i_t is the central bank's current interest rate in year t, the π_t is the current inflation rate in year t, $(\pi_t - \pi^*)$ is the difference between the actual inflation rate from the long-run target for inflation rate (π^*), and $(\gamma_t - \gamma_t^*)$, the output gap, is the difference between the actual employment level and the full employment level γ_t^* of the country. The δ and ω variables, on the other hand, measure the sensitivity of the Central Bank's interest rates to the inflation gap and output gap, respectively.

Following Taylor [2], Taylor's Rule can be expanded to include the exchange rate and the expanded formulated is as follows:

$$i_t = r^*\delta(\pi_t - \pi_t^*) + \omega(\gamma_t - \gamma_t^*) + \vartheta(e_t - e_t^*)$$

Svensson was critical of the Taylor Rule. According to Svensson, although there have been many academic and econometric studies on the Taylor Rule, no central bank has used the Taylor Rule in their actual operations. In addition, Svensson states that Taylor Rule-oriented policies are an important obstacle to the development of different monetary policies. He claims that the Taylor Rule and similar applications will not yield definite results. According to Greenspan, these policy practices are not healthy because they are based on the idea that past relationships will continue in the future. However, there is no guarantee that the relations in the past will hold in the future as well [3].

Another criticism of the Taylor Rule is based on the example of the Japanese Economy. In 1992-1998, the Japanese economy entered a significant recession period and interest rates remained at zero. Under such low inflation and low-interest rates, it is impossible to produce a policy using Taylor's Rule. According to Kuttner and Posen (2004), even if Taylor's Rule is used, it will be very difficult to predict the movement of potential national income when the inflation rate is zero [4].

Therefore, we believe that the new monetary policy proposals presented here will contribute to the literature. In the following section, we summarized the previous studies on the subject. Afterward, we touched on econometric models and methods and presented empirical findings. Finally, the study concludes with evaluations.

Literature review. Zayed analyzed Bangladesh's monetary policies concerning bank interest rates, inflation rate, and the output gap in the period 1972-2016 according to Taylor rule. He used ADF, PP, KPSS, OLS, GMM, CUSUM, and CUSUMQ methods to test the relationship between variables and the stability of the OLS model. He found that there is a relationship between the variables and Taylor's rule was not applied in the analyzed period. He concludes that the Bangladesh bank should implement a moderate monetary policy with the help of bank interest as the main policy tool so that it can reduce the output gap and inflation rate by protecting the money supply in the Bangladesh economy [5].

Zhang and Pan, on the other hand, found that the Chinese central bank preferred to adjust nominal interest rates by constructing a false output gap, which is defined as the deviation of the real output growth rate and the target growth rate. They analyzed the monetary policy preferences of the People's Bank of China in different interest rate regimes according to Taylor's rule. They found that in the high-interest regime, the central bank adjusts the nominal interest rate against the inflation rate and the alleged output gap, but there is no evidence that the central bank adjusts the nominal interest rate in the low-interest regime. They identified the lower limit for the interest rate and the weakening of policy effects due to the liquidity trap as possible reasons why the Chinese central bank chose not to adjust nominal interest rates according to the alleged output gap [6].

Coşar and Köse, in their study, calculated the monthly financial stability index for Turkey cov-

ering the 2002-2017 periods within the framework of factor analysis using financial and economic indicators. Findings calculated using the Kalman Filter Method and the extended Taylor rule revealed that the policy rate of the Central Bank of the Republic of Turkey is affected by the financial stability indicator [7].

Fournier and Lieberknecht presented a model-based fiscal Taylor rule, defined as a change in structural baseline equilibrium, and a toolkit for assessing fiscal stance. This hysteresis is based on the government's normative buffer stock model, which includes key channels such as cyclic multipliers and risk premium. A simple fiscal Taylor rule appears as a function of past government debt, past output gap, and past structural primary balance. The simulations show that some advanced economies could better manage their fiscal stances over the past 20 years and offer fiscal stance advice over the medium term [8].

Beckworth and Hendrickson modified the standard New Keynesian model by predicting that the central bank has imperfect information about the output gap and therefore must estimate the output gap based on previous information. Estimation errors can potentially lead to unexpected changes in the short-term nominal interest rate, unlike a standard monetary policy shock. They showed that the Federal Reserve's estimation errors could account for 13% of fluctuations in the output gap. In addition, their simulations show that under imperfect information conditions, the nominal GDP targeting rule will produce lower volatility in both inflation and the output gap compared to the Taylor Rule [9].

Brimbetova, in her study, tried to determine the characteristics of the inflationary process in Kazakhstan after the pandemic and to determine the socio-economic consequences of inflation in the country. The inflation rate in Kazakhstan over the past 27 years has had a very negative impact. The socio-economic consequences of inflationary processes are also very important. In this study, an algorithm is proposed to examine the issue to solve inflation-related problems correctly. The recommendations place special emphasis on the need to examine monetary policy in the context of the economic downturn. Considering the consequences of pandemics, special attention is paid to the structuring of the anti-inflation policy [10].

Ybrayev analyzed the dynamic effects of Kazakhstan's fiscal policy on local inflation using quarterly data for the period 2005Q1-2020Q1. His variables are government expenditures, current account deficit, and money stock (M2), and inflation rate, respectively. The Vector Autoregression Model was used and the results showed that a fiscal policy shock has specific and positive effects on the inflation rate. While social protection expenditures, in particular, add 1% to inflation in the short run, government capital expenditures do not have a significant impact on inflation dynamics in the long run. In general, the author proposes a few policy recommendations to ensure that fiscal policy is not affected by inflation [11].

Main part. Econometric analysis. In this section, the monthly data for the period 2015:11-2021:11, in which Kazakhstan adopted the inflation targeting regime, are tested empirically according to the Taylor Rule, extended using the exchange rate. First, we will introduce our data set and econometric model and provide information about the method. Empirical findings are presented in the following section.

Data set and model. Table 1 shows the information about the model and variables used to test the validity of the Taylor Rule.

Table 1

Model and variables*

Variables	Explanation	Resources
IR	National Bank of Kazakhstan Interest Rate (IR)	National Bank of Kazakhstan
CPI, 2013=100	Consumer Price Index (CPI)	Agency for Strategic planning and reforms of the Republic of Kazakhstan Bureau of National statistics
IPI, 2013=100	Industrial Production Index (IPI)	Agency for Strategic planning and reforms of the Republic of Kazakhstan Bureau of National statistics
REER, 2013=100	Reel Effective Exchange Rate (REER)	National Bank of Kazakhstan

* *The industrial production index is used as the representative of GDP*

Various methods are used when calculating the potential values of macroeconomic variables, in other words, the long-term equilibrium values of macroeconomic variables. In this study, we used the Hodrick-Prescott (HP) filtering method to calculate the potential values. In the following sections, Interest rate, logarithmic Consumer Price Index, logarithmic Industrial Production Index, and logarithmic Real Effective Exchange Rate will be denoted by the abbreviations IR, CPI, IPI, and REER, respectively.

Methods. This study uses the Vector Autoregressive Model (VAR) approach developed by Sims [12]. These models are primarily used to examine the relationships between macroeconomic variables and the dynamic effects of random shocks on the system of variables. All the variables in the VAR model developed by Sims to model without distinguishing between internal and external variables are internal. Therefore, VAR is a simultaneous model. The most important reason why simultaneous equation systems are preferred is that the relationships between economic variables are complex. The complexity in the relationships between economic parameters creates difficulties in determining the dependent and independent variables in the econometric model. These difficulties also significantly affect the consistency of results. Therefore, in simultaneous equation systems, these complexities are removed by placing various constraints on the structural model. The VAR model eliminates these problems. The VAR model is frequently preferred by researchers because it detects dynamic relationships in simultaneous equation systems without imposing any constraint on the structural model. In VAR analysis models, there is no need to distinguish between internal and external variables. In this respect, the VAR model differs from simultaneous equation systems. In addition, the lags of the dependent variables in VAR models make it possible to make strong predictions for the future [13].

The standard bivariate form in the VAR model is as follows:

$$yt = a1 + \sum b1iyt{-}i\ p\ i{=}1 + \sum b2ixt{-}i + p\ i{=}1\ u1t$$
$$xt = c1 + \sum d1iyt{-}i\ p\ i{=}1 + \sum d2ixt{-}i + p\ i{=}1\ u2t$$

In this system of equations, u represents zero-mean, normally distributed random error terms with a common variance of zero with their own lagged values, and p represents the lag length. One of the most important advantages of VAR models is that the autocorrelation problem can be solved by increasing the lag lengths of the variables. This is provided by the assumption that the variables are unrelated to their lagged values. Also, the error term u is unrelated to the variables on the right side of the model. Since only the lagged values of the endogenous variables are on the right of the above equations, the problem of simultaneity is eliminated. Thus, the system of equations in the model or each equation can be predicted with the traditional LSM [14].

Results. The variables used in the VAR model should not contain a unit root process. Therefore, first of all, it is necessary to determine the stationarity of the variables. For this purpose, the Extended Dickey-Fuller (ADF) unit root test was used to reveal the stationarity of the variables before the application. The unit root test results of the variables are shown in Table 2.

Table 2

Results of adf unit root testing*

Variables	ADF Test		First Difference	
	Statistics	Probability	Statistics	Probability
Interest rate (IR)	-1,51674	0,3955	-12,55742	0,0001
Reel Effective Exchange Rate (REER)	-2.32511	0.1670	-8.42192	0.0000
Consumer Price Index (CPI)	-1.25703	0.6451	-5.02168	0.0001
Industrial Production Index (IPI)	3.27439	0,9961	-8.55389	0.0000

** Compiled by the authors based on their own research*

The H_0 hypothesis of the ADF test is built on the existence of a unit root. ADF test statistics showed that all variables in the model were stationary after the first difference. In other words, it is I(1). Model variables must be stationary to perform VAR analysis. Therefore, the model should be constructed by taking the first difference of all variables. To apply impulse response functions and variance decomposition method, first of all, the VAR lag length should be determined.

Since the data is monthly, analysis is made up to a maximum of 6-8 delays [22]. The test results for determining the appropriate VAR model are shown in Table 3.

Table 3

VAR Lag order selection criteria*

Lag	LogL	LR: sequential modified LR test statistic (each test at 5% level)	FPE: Final prediction error	AIC: Akaike information criterion	SC: Schwarz information criterion	HQ: Hannan-Quinn information criterion
0	587.7580	NA	1.40e-13	-18.24244	-18.10751	-18.18928
1	664.4360	141.3750	2.11e-14	-20.13862	-19.46397*	-19.87285
2	693.3178	49.64063	1.42e-14	-20.54118	-19.32681	-20.06278*
3	708.5750	24.31613	1.48e-14	-20.51797	-18.76388	-19.82694
4	728.2280	28.86533*	1.36e-14*	-20.63212*	-18.33831	-19.72848
5	742.1149	18.66059	1.52e-14	-20.56609	-17.73256	-19.44982
6	756.2071	17.17489	1.74e-14	-20.50647	-17.13322	-19.17758
7	771.0102	16.19089	2.01e-14	-20.46907	-16.55609	-18.92755
8	787.6424	16.11242	2.30e-14	-20.48883	-16.03613	-18.73468

** Compiled by the authors based on their own research*

Table 3 results show that, according to the Sequential Modified LR test statistic (LR) and Final Prediction Error (FPE) Akaike Information Criterion (AIC) information criteria, the appropriate lag length is (4). Therefore, the model without autocorrelation is VAR (4).

After deciding on the appropriate VAR model, generalized impulse-response functions and variance decomposition methods will be used. To determine the variable that has the most impact on a macroeconomic variable, variance decomposition is performed. On the other hand, the effect of a shock in a variable on other variables in the model is determined through impulse-response analysis. Thus, it is decided whether the variables considered to be effective can be used in economic policies or not using action-response functions.

Table 4 shows the variance decomposition results of the interest rate variable.

Table 4

Variance decomposition of ınterest rate (ır)*

Period	Standard Error	Interest Rate (IR)	Industrial Production Index (IPI)	Reel Effective Exchange Rate (REER)	Consumer Price Index (CPI)
1	0.461707	100.0000	0.000000	0.000000	0.000000
2	0.498390	94.88334	0.515563	4.213780	0.387320
3	0.580110	90.86946	1.727415	6.428743	0.974378
4	0.628496	91.19867	1.482957	6.068692	1.249679
5	0.673489	90.53663	2.012281	6.262282	1.188809
6	0.698297	90.29648	2.101020	6.451812	1.150691
7	0.719331	90.10596	2.035160	6.544642	1.314234
8	0.736871	89.85198	1.942283	6.796440	1.409300
9	0.747767	89.63119	1.956904	7.022455	1.389452
10	0.756030	89.66944	1.935251	6.996573	1.398738

** Compiled by the authors based on their own research*

According to Table 4, at the end of the first period, the Interest Rate (IR) explained itself. This shows that it is the most exogenous among the variables in the model. In the third period, approximately 6% of the variance of the Interest Rate (IR) variable is explained by the Real Effective Exchange Rate (REER), 0.97% by the Consumer Price Index (CPI), and 1.72% by the Industrial Production Index (IPI). At the end of the tenth period, approximately 89% of the variance of the Interest Rate (IR) variable is explained alone. When other variables are exam-

ined, we see that at the end of the tenth Period, the Industrial Production Index (IPI) variable explains approximately 1.93% of the Interest Rate (IR) variance. The explanatory value of the Real Effective Exchange Rate (REER) variable was around 7%. Therefore, the variance decomposition findings show that after 10 periods, the changes in the Interest Rate (IR) are mostly explained by the Real Effective Exchange Rate (REER) and the Industrial Production Index (IPI).

Table 5

Variance decomposition of industrial production index (ipi)*

Period	Standard Error	Interest Rate (IR)	Industrial Production Index (IPI)	Reel Effective Exchange Rate (REER)	Consumer Price Index (CPI)
1	0.022871	2.867152	97.13285	0.000000	0.000000
2	0.028005	2.167463	97.48977	0.155136	0.187627
3	0.028370	2.854022	96.25249	0.232011	0.661475
4	0.030200	3.658801	90.68971	3.996345	1.655144
5	0.030865	3.676820	89.00257	5.654247	1.666367
6	0.031327	4.571834	87.13693	6.298517	1.992721
7	0.031628	4.505475	85.60289	7.921140	1.970493
8	0.031896	5.132504	84.90875	7.791596	2.167146
9	0.031945	5.147490	84.65946	8.011286	2.181761
10	0.032025	5.254690	84.59386	7.976409	2.175041

**Compiled by the authors based on their own research*

Table 5 findings showed that at the end of the first period, approximately 2.86% of the Industrial Production Index (IPI) variable is explained by the Interest Rate (IR). In the third period, approximately 2.82% of the variance in the Industrial Production Index (IPI) is explained by Interest Rate (IR), 0.66% by Consumer Price Index (CPI), and 0.23% by Real Effective Exchange Rate (REER). At the end of the tenth period, approximately 84.59% of the variance in the Industrial Production Index (IPI) variable is explained by itself. When other variables are examined, it is seen that the Industrial Production Index (IPI) explains approximately 5.25% of the Interest Rate (IR) variance at the end of the tenth period. It is around 8% on the Real Effective Exchange Rate (REER). Therefore, variance decomposition findings show that the changes in the Industrial Production Index (IPI) at the end of the tenth period are mostly explained by the Real Effective Exchange Rate (REER) and Interest Rate (IR).

Table 6

Variance decomposition of reel effective exchange rate (reer)*

Period	Standard Error	Interest Rate (IR)	Industrial Production Index (IPI)	Reel Effective Exchange Rate (REER)	Consumer Price Index (CPI)
1	0.013204	18.23529	4.121928	77.64279	0.000000
2	0.013495	17.71150	4.183335	77.75237	0.352794
3	0.014061	17.92116	7.117983	74.34737	0.613480
4	0.015154	20.72785	12.60430	64.80426	1.863591
5	0.015494	20.28662	12.22139	65.70557	1.786417
6	0.016082	18.86198	17.97195	61.15595	2.010117
7	0.016169	19.23296	18.19902	60.52545	2.042563
8	0.016389	18.78830	19.99274	59.22939	1.989569
9	0.016398	18.78384	20.01797	59.19113	2.007058
10	0.016458	18.84049	20.09948	58.78482	2.275207

** Compiled by the authors based on their own research*

According to Table 6, at the end of the first period, approximately 18.23% of the Real Effective Exchange Rate (REER) variable is explained by the Interest Rate (IR) and 4.12% by the Industrial Production Index (IPI). At the end of the tenth period, approximately 58.78% of the variance of the

Real Effective Exchange Rate (REER) variable is explained by itself. When other variables are examined, it is seen that the Real Effective Exchange Rate (REER) explains approximately 18.84% of the Interest Rate (IR) variance at the end of the tenth period. This is approximately 20.09% for the Industrial Production Index (IPI). Therefore, the variance decomposition findings show that the changes in the Real Effective Exchange Rate (REER) at the end of the tenth period are mostly explained by the Industrial Production Index (IPI) and the Interest Rate (IR).

Table 7

Variance decomposition of consumer price index (cpi)*

Period	Standard Error	Interest Rate (IR)	Industrial Production Index (IPI)	Reel Effective Exchange Rate (REER)	Consumer Price Index (CPI)
1	0.000839	6.414603	1.304078	10.20595	82.07537
2	0.000904	13.87502	1.512067	9.001223	75.61169
3	0.000927	13.24362	2.280755	8.561753	75.91387
4	0.000956	12.83432	7.287984	8.192948	71.68474
5	0.001006	11.85434	9.878576	7.471472	70.79561
6	0.001018	12.78687	9.637779	7.301834	70.27352
7	0.001025	12.61301	9.828744	7.668005	69.89024
8	0.001030	12.67546	9.750597	8.106076	69.46787
9	0.001038	12.92148	9.601780	7.981139	69.49560
10	0.001042	13.07191	9.545192	8.042549	69.34035

** Compiled by the authors based on their own research*

Table 7 shows that at the end of the first period, approximately 6.14% of the variance in the Consumer Price Index (CPI) is explained by the Interest Rate (IR), 10.21% by the Real Effective Exchange Rate (REER), and 1.3% by the Industrial Production Index (IPI). At the end of the tenth period, approximately 69.34% of the variance of the Consumer Price Index (CPI) variable is explained by itself. When other variables are examined, the Consumer Price Index (CPI) variable explains approximately 13.07% of the variance in the Interest Rate (IR) at the end of the tenth Period. This is around 9.54% for the Industrial Production Index (IPI). In addition, it is around 8.04% for the Real Effective Exchange Rate (REER). Therefore, variance decomposition findings show that at the end of the tenth period, the changes in the Consumer Price Index (CPI) are mostly explained by the Interest Rate (IR), Industrial Production Index (IPI), and Real Effective Exchange Rate (REER).

Conclusion. Central banks that adopt the inflation targeting regime often prefer the original Taylor Rule. It is believed that a rule-based monetary policy will increase the credibility of the central bank and facilitate its follow-up by economic agents. Because it is a simple and understandable model, the original Taylor Rule has been frequently preferred by monetary authorities after the importance of expectations of economic decision units is understood. After the 1990s, when central banks gained independence, the importance of exchange rate changes began to show itself seriously. One of the main reasons for the cyclical fluctuations in Kazakhstan is fluctuations in the exchange rate. Although central banks that follow an inflation targeting policy do not interfere with the exchange rate in principle, they can make covert interventions to reduce the volatility of the exchange rate to ensure financial stability. In 2015, with the establishment of minimum conditions for inflation targeting, Kazakhstan adopted explicit inflation targeting regime.

In this study, the extended Taylor Rule including the exchange rate variable is tested. VAR analysis is performed using monthly data of Kazakhstan for the period 2015:11-2021:11. The variance decomposition performed within the framework of the Taylor Rule shows that at the end of the tenth period, the changes in the Interest rate (IR) are mostly explained by the Real Effective Exchange Rate (REER) and Industrial Production Index (IPI).

These results show that Taylor's Rule is not valid for Kazakhstan, but fluctuations in interest rates are caused by the exchange rate rather than the industrial production index. The invalidity of the Taylor Rule may be due to the high inflation rate and the failure of decision-makers to choose

the right policy tools promptly. Despite adopting the inflation targeting regime, the inability of the National Bank of Kazakhstan to take adequate measures against exchange rate shocks causes both the actual inflation to deviate from the inflation target and the negative development of other macroeconomic indicators. In this study, a short-term policy interest rate was preferred and this is one of the limitations of our study. Future studies can examine the validity of the Taylor Rule using different interest rates, such as the interbank rate and the deposit rate.

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ИНФЛЯЦИЯНЫ ТАРГЕТТЕУ СТРАТЕГИЯСЫ ҮШІН ТЕЙЛОР ЕРЕЖЕСІНІҢ ЖАРАМДЫЛЫҒЫ: ҚАЗАҚСТАН МЫСАЛЫНДА

Аңдатпа

Экономиканың ең маңызды көрсеткіштері болып табылатын белгілі айнымалылар себеп пен салдар ретінде әрекет етеді. Әсіресе Қазақстан экономикасында пайыз, инфляция және валюта бағамы арасындағы байланыс саяси экономика негізінде қарастырылады. Мысалы, инфляцияны себеп деп есептеп, пайыз бен валюта бағамының ауытқуы соның салдары деп қабылданады. Кейде керісінше пайыз бен валюта бағамын себеп деп көрсетіп, инфляцияны солардың салдары деп есептейді. Тейлор ережесіне сәйкес, орталық банктердің қысқа мерзімді несиелерінің пайыздық мөлшерлемесі жалпы ішкі өнім мен мақсатты инфляция деңгейімен бір бағытта өзгереді және бұл ереже орталық банктер жүргізетін ақшанесие саясатының болжамдылығын қамтамасыз етеді. Бірақ валюта бағамы бастапқы, түпнұсқадағы Тейлор ережесінің айнымалысы ретінде қабылданбайды. Сондықтан бұл зерттеу жұмысында Тейлор ережесіне нақты валюта бағамын қосу арқылы қайта модельдеу жасалды. Осылайша кейбір дамыған елдер үшін жарамды болып келген Тейлор ережесінің Қазақстан үшін жарамдылығы тексеріледі. Осы тұрғыда Тейлор ережесі Қазақстанда инфляциялық таргеттеу ретінде қабылданған 01.11.2015-01.11.2021 жж. кезеңдеріндегі ай сайынғы деректерді пайдалана отырып, Векторлық авторегрессивті модель арқылы талданады. Қазақстандағы пайыздық көрсеткіштер саясаты Тейлор ережесіне сәйкес әрекет етпейтіндігін нәтижелер көрсетті. Алайда пайыздық мөлшерлемелердің ауытқуы өнеркәсіптік өндіріс индексінен гөрі валюта бағамынан туындай екен. Тейлор ережесінің жарамсыздығы инфляцияның жоғары деңгейіне және шешім қабылдаушылардың дұрыс саясат құралдарын дер кезінде таңдамауына байланысты болуы мүмкін.

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ДЕЙСТВИТЕЛЬНОСТЬ ПРАВИЛА ТЕЙЛОРА ДЛЯ СТРАТЕГИИ ТАРГЕТИРОВАНИЯ ИНФЛЯЦИИ: НА ПРИМЕРЕ КАЗАХСТАНА

Аннотация

Многие переменные, известные как важнейшие индикаторы экономики, могут действовать как причина, так и следствие. В этом исследовании отношения между процентной ставкой, инфляцией и обменным курсом обсуждаются на основе политической экономики Казахстана, и результаты показывают, что изменения уровня инфляции вызывают колебания процентной ставки и обменного курса. С другой

стороны, некоторые утверждают обратную причинно-следственную связь, когда процентные ставки и обменные курсы являются причиной, а инфляция является результатом. Согласно правилу Тейлора, краткосрочные кредитные ставки центральных банков должны двигаться в том же направлении, что и валовой внутренний продукт и целевой уровень инфляции. Это обеспечивает предсказуемость денежно-кредитной политики центральных банков. Но исходное правило Тейлора не включает обменный курс в качестве одной из своих переменных. Поэтому в этой исследовательской работе обновляет правило Тейлора, чтобы включить реальный обменный курс. Таким образом, для Казахстана проверяется справедливость правила Тейлора, которое, как известно, справедливо для развитых стран. Правило Тейлора анализируется с помощью векторной авторегрессионной модели с использованием месячных данных за период 01.11.2015-01.11.2021 гг., в котором в Казахстане принята политика таргетирования инфляции. Результаты показали, что политика процентной ставки в Казахстане не действуют в соответствии с правилом Тейлора. Но колебания процентных ставок вызваны обменным курсом, а не индексом промышленного производства. Недействительность правила Тейлора может быть связана с высоким уровнем инфляции и неспособностью лиц, принимающих решения, своевременно выбрать правильные инструменты политики.