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Economic Policy Uncertainty, Interest Rates And Inflation: Evidence From Selected Latin American Emerging Markets

Ekonomik Politika Belirsizliği, Faiz Oranları ve Enflasyon:Seçili Latin Amerika Yükselen Piyasalarından Bulgular

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ÖZ

Bu çalışmada, gelişmekte olan piyasalar içinde yer alan Latin Amerika ülkelerinden, Kolombiya, Şili, Meksika ve Brezilya'da 1998-2020 yılları arasında ekonomi politikası belirsizlik endeksi, faiz ve enflasyon oranları arasındaki ilişki TVP-VAR modeli ile analiz edilmiştir. TVP-VAR analizi sonucunda Kolombiya, Şili ve Brezilya'da kısa dönemde enflasyon, faiz oranları ve ekonomi politikası belirsizlik endeksi arasında pozitif bir ilişki olduğu sonucuna varılmıştır. Meksika ekonomisinde ise kısa dönemde enflasyon oranı ile ekonomi politikası belirsizlik endeksi arasında pozitif, faiz oranları ile negatif bir ilişkinin olduğu tespit edilmiştir. Dönem uzadıkça değişkenler arası ilişki poztife doğru değişim göstermektedir. Ayrıca çalışmada incelenen ülkelerde ekonomi politikası belirsizlik endeksinin enflasyon ve faiz oranları üzerindeki etkisinin uzun dönemde 0'a yakın olduğu sonucuna ulaşılmıştır. Kolombiya, Şili, Brezilya ve Meksika'da enflasyon ve faiz oranları ekonomi politikası belirsizlik endeksini etkilemekte, değişkenlerde belirsizliğe yol açabilmekte ve ekonomik beklentiler bu durumdan olumsuz etkilenebilmektedir.

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ABSTRACT

In this study, the relationship between the economic policy uncertainty index, interest and inflation rates between 1998 and 2020 in Latin American countries, Colombia, Chile, Mexico and Brazil, which are among the emerging markets, was analyzed with the TVP-VAR model. As a result of TVP-VAR analysis, it was concluded that there is a positive relationship between inflation, interest rates and economic policy uncertainty index in the short run in Colombia, Chile and Brazil. In the Mexican economy, on the other hand, it has been determined that there is a positive relationship between the inflation rate and the economic policy uncertainty index in the short run and a negative relationship with interest rates. As the period gets longer, the relationship between the variables changes positively. In addition, it was concluded that the effect of the economic policy uncertainty index on inflation and interest rates in the countries examined in the study is close to 0 in the long run. In Colombia, Chile, Brazil and Mexico, inflation and interest rates affect the economic policy uncertainty index, may cause uncertainty in variables, and economic expectations may be adversely affected by this situation.

1. Introduction

Uncertainty is the leading factor affecting the decision-making processes of economic agents. Keynes (1936) defined uncertainty as affecting economic decision-maker's preferences, expectations, and tendencies. The uncertainties that Galbraith discussed in his study in 1977, on the other hand, continue to exist today but have diversified and increased within the scope of globalization. Although different economic variables influence uncertainty, economic and political openness to the outside and

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vulnerability to shocks due to globalization have affected economic uncertainties through global and national economic variables.

Based on the neoliberal policies implemented within the scope of globalization in Latin America in the 1970s, tight monetary and fiscal policy, increasing the prices of public goods, keeping wages under pressure, liberalizing prices, gradually reducing import controls, devaluation, reducing public sector employment, privatizing public enterprises, liberalizing interest rates, took place (Foxley:1983). These economic policy practices resulted in increasing inflation, unemployment, economic stagnation, and budget imbalances. In addition, countries that have become open to shocks with the opening up have also become sensitive to national and international economic and political uncertainties. Therefore, in this study, the effect of the political economy uncertainty index on inflation and interest rates in Latin American countries, which have been struggling with inflation and other economic instability for many years, has been investigated.

With globalization, goods, services and capital moving between countries are directly affected by economic uncertainties and economic decisions such as consumption, investment, and production may change depending on these uncertainties. The effect of increasing uncertainty on the economic decisions of governments, businesses and households has led researchers to studies on the measurement of uncertainties in economic policies (Al-Thaqeb, Algharabali: 2019). In this context, it is seen in the literature that studies on the measure of economic policy uncertainty (EPU) are progressing on a sectoral or variable basis or based on a general index.

Despite various approaches, EPU takes its place in the literature as a variable that covers economic risks and uncertainties and can therefore have a positive or negative effect on macroeconomic variables (Istiak & Serletis, 2018).

According to the measurement methods used, the macroeconomic variables that economic policy uncertainty affects and is affected by may differ according to the periods and countries. In this context, it is observed that the literature that examines economic policy uncertainty mainly deals with examples of developed countries. However, as stated in the studies of Bloom in 2014 and Gil and Silva in 2018, uncertainties are more intense in markets with high political instability and price volatility.

It is essential to consider the relationship between the economic policy uncertainty index, inflation, and interest rate within the scope of the emerging market. For this reason, unlike other studies available in this article, the relationship between uncertainty and inflation and interest rates, which are among the fundamental macroeconomic variables, has been examined for selected Latin American countries (Colombia, Chile, Mexico, Brazil) that are among the emerging markets within the scope of TVP- VAR model. The reason for choosing the TVP-VAR model is that, unlike traditional VAR models, the coefficients and variance-covariance matrix in vector autoregressive models with stochastic volatility and time-varying parameters take different values at each time point. Since the coefficients can change over time, nonlinear structures and different lag lengths in the model can be determined. However, if the variance-covariance matrix has stochastic volatility, the changing variance and variables in the shocks' instantaneous nonlinear effects can be considered (Primiceri. 2005).

The remainder of the study is organized as follows: the second part is the EPU Index, Inflation and Interest Rates; the third part is the literature review; the fourth part introduces econometric analyses results; and finally, the fifth part covers the conclusion.

2. EPU Index, Inflation and Interest Rates

The global crisis and the danger of economic recession in recent years, unemployment, income distribution inequalities, price instabilities, immigration, and the global epidemic can be closely associated with economic policy uncertainty. As investment, consumption and production have moved beyond national borders due to globalization, the economic policy uncertainty (EPU) index has been an essential guide for economic agents in making their decisions.

The measurement methods of the EPU index, which significantly impact economic decisions, are observed to progress based on a variable or a general index. For example, the economic policy uncertainty index discussed in this study is a news-based index developed by Baker, Bloom and Davis in 2016 that can be classified under the general index. In this index, a data set is compiled from the newspaper coverage frequency of the political-economy word groups determined monthly. As Baker, Bloom and Davis mentioned in their study, "*in constructing economy policy index, they aimed to capture uncertainty about who will make economic policy decisions, what economic policy actions will be undertaken and when, and the economic effects of policy actions. To do so, they first count articles in 10 leading U.S. newspapers that contain the following triple of terms: "economic" or "economy"; "uncertain" or "uncertainty"; and one or more of "congress," "deficit," "Federal Reserve," "legislation," "regulation" or "White House." Next, they scaled the raw EPU count by the number of all articles in the same paper and month, standardized the variability of the scaled EPU counts, and averaged over newspapers by month*."

Another index used in analyzing political economy uncertainties is the Global Economy Political Uncertainties Index. (GEPU). Although the GEPU covers more information around the world and tracks global uncertainty trend that helps more in forecasting volatility, it's base is EPU index (Yu & Song, 2018). Therefore, EPU was preferred in this study.

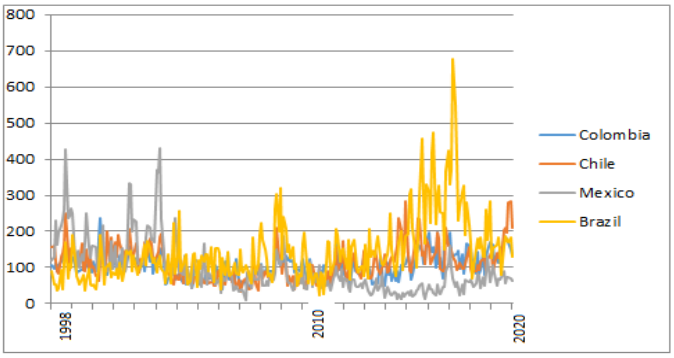
The index calculated based on selected news is then adapted in different studies for developed and developing countries.

(Baker, Bloom and Davis (2016), Chile: Cerda, Silva and Valente (2016), Baker, Bloom, Davis and Wang (2013 Gil and Silva (2018)). In studies examining the relationship between the economic policy index and macroeconomic variables, the examples of developed countries are mainly discussed. Unlike other studies, samples of selected Latin American countries included in emerging markets and have different structural features are examined in this study. The reason for choosing the countries included in the emerging markets in the study is the economic characteristics of these markets. Samonis(2013) defined the distinctive features of emerging markets as low political stability, rapid political changes and increased risk, economic instability, rapid economic changes and increasing risk environment, undeveloped infrastructure services, undeveloped legal infrastructure, and high growth rates. Despite these structures, the international economic performance of emerging markets is enhanced by these countries' openness and competitive systems. These structural features of emerging markets can differentiate these economies and economic policy uncertainties from developed countries. Compared with other emerging market economies, the socioeconomic development of Latin American countries has been the reason for the preference of these countries in this study. As Mendoza and Haris (2021) stated, Latin America has steadily become a favored destination in foreign direct investment compared to other emerging-market) regions, such as Asian Emerging markets except for China. Over the last two decades, the middle class has expanded and the number of people living in poverty in the region has fallen by nearly half. In addition to these structural changes, there is a cyclical story linked to the recovery of the commodity cycle and its potentially positive impact on local economic growth(Mendoza and Haris, 2021). Therefore, in this study, Colombia, Chile, Mexico and Brazil, which are the 4 Latin American countries (According to the MSCI index, it is defined as five emerging markets among Latin American countries. Peru, Colombia, Mexico, Chile, and Brazil (https://www.msci.com/our-solutions/indexes/emerging-markets). Although Peru is an emerging market, it was excluded because the EPU index could not be reached).

Emerging markets' growing economic size and technological significance are among the most significant forces shaping the global economic and financial market landscape. MSCI(Morgan Stanley Capital International.)The Emerging Markets(EM) Index was launched in 1988, including ten countries. Currently, it captures 24 countries across the globe. According to the MSCI Global Investable Market Indexes (GIMI) Methodology, the MSCI EM Index is designed to dynamically reflect the evolution of the emerging markets opportunity set and help investors meet global and regional asset allocation needs (https://www.msci.com/our-solutions/indexes/emerging-markets). Among 24 countries in the MSCI, emerging markets index and have less place in the literature regarding economic uncertainties will be discussed.

Unlike developed economies, emerging markets have relatively high political and economic risks and instabilities. In Figure 1, although the economic policy uncertainty index has followed a fluctuating course in all four countries, the fluctuations in 2008 and after were more pronounced. These fluctuations in the political economy uncertainty index may positively or negatively affect different macroeconomic variables in these countries and/or be affected by these variables.

Figure 1: Colombia, Chile, Mexico and Brazil EPU Index



Source: https://www.policyuncertainty.com/20/06/2020

Although the economic policy uncertainty index is related to many macroeconomic variables, the relationship between uncertainty and inflation and interest rates variables is emphasized in this study. The reason for choosing these two variables is that these variables are not included among the economic words used in determining the economic policy index. The studies of Cerda, Silva and Valente (2016), and Gil and Silva (2018) were taken as the basis for forming the Latin American country indexes, which are the subject of this study. In these studies, the economic policy uncertainty index was determined by using the words "Policy (P) Politic* or tax* or regulation or regulations or tax collection or reform or congress or senate or congressman or fiscal spending or public spending or fiscal deficit or public debt or fiscal budget or Central Bank or Ministry of Finance Uncertainty (U) Uncertain or uncertainty Economic (E) Any word beginning with "econ," such as to include words like "economist," "economic" and "economy ."The subject of this study is the relationship between uncertainty and interest and inflation rates, the last two being variables that are not directly involved in the formation of the index in terms of the reliability of the model to be applied in this context.

The economic policy uncertainty index and related macroeconomic variables in Colombia, Chile, Mexico, and Brazil were examined by the TVP-VAR model.

3. Literature Review

The literature examining the relationship between the economic policy uncertainty (EPU) index and macroeconomic variables is relatively recent. Although EPU is closely related to many macroeconomic variables, economic growth is one of the most prominent variables that it directly affects. For example, bloom (2009) and Balcılar et.al. (2016) concluded that EPU has a statistically

significant effect on economic growth and affects future growth projections (Handley & Limao, 2015).

EPU influences firms' investment levels, investment decisions (Kang et al., 2017, Wang et al.,2014), employment (Baker et al., 2016, Forester,2014) and exchange rate(Mueller et al., 2017, Balcılar, 2016).

Studies that find the effect primarily negative are becoming more prominent in the literature. For example, Rodrick stated in his 1991 study that uncertainties had a negative impact on investment and production, while Stock and Watson (2012) found that economic policy uncertainties had a negative effect on the output level and unemployment in the United States during the 2007-2009 period. On the other hand, De Wind and Grabska stated in their study in 2016 that economic policy uncertainties negatively affected the domestic production level.

High uncertainty has an adverse impact on the real economy (Istiak 2020). Increased uncertainty makes firms delay their spending and investment plans and also exerts a negative effect on prices. (Bloom 2014). Parallel to this, High inflation spurs uncertainty in households' spending and firms' investment decisions (Aisen and Veiga 2006). As Ivanovski and Churchill(2019) mentioned"the empirical literature. has emphasized factors such as interest rate, income, inflation rate and exchange rate as the primary determinants of money demand." Therefore, the effect of uncertainty on inflation and interest rates primarily focused on money demand. From the demand side of the literature, Choi and Oh (2003) developed a money demand function model and found that uncertainty significantly affects the demand for money. Bahmani-Oskooee et al. (2013, 2015) found the short-run, inversely impact of uncertainty on the money demand function. In another study supporting this result, it was concluded that there was an asymmetric effect of EPU on the demand for money (Bahmani- Oskooee and Maki-Nayeri 2019). Ivanovski and Churchill(2019) determined that the economic policy uncertainty measure has positive long-run effects on the demand for money in Australia. Ghosh et al. 2022 found an adverse impact of EPU on the macroeconomic variables, like interest rate, exchange rate, and inflation in the Indian economy. Unlike other studies, Gürsoy (2021)concluded that there is no causal relationship between economic uncertainty and inflation in Turkey.

In this context, among the relatively limited studies that deal with EPU's relationship with interest rates and inflation, Jones and Olson, in their 2013 study, analyzed the relationship between uncertainty, output and inflation following Baker's 2013 index by using monthly data between 1985 and 2012 using the DCC-GARCH model. This study concluded that there was a positive correlation between the inflation rate and uncertainty in the late 1990s and early 2000s. Istrefi and Piloui, on the other hand, analyzed the relationship between uncertainty and inflation expectation in the US and Eurozone using the structural VAR model in their 2014 study. In the study, it has been determined that uncertainty affects long-term inflation expectations. Furthermore, Grier et al. (2004) concluded an asymmetrical reaction between inflation and uncertainty in their study using the GARCH method between 1947 and 2000 for America. Also, Istiak and Alam tested the relationship between EPU and inflation expectation with the structural VAR model in their study on the US, using monthly data between 1985-and 2019 in 2019. As a result of the study, it was concluded that there is an asymmetrical relationship between uncertainty and inflation expectations.

Studies testing the relationship between economic policy uncertainty and interest rates are limited. In the study conducted by Colombo in 2013, the economic effects of the uncertainties in the US on the Eurozone were analyzed using the structural VAR method. It was concluded that there was a significant relationship between EPU and interest rates.

Belke et al., in their study in 2018, using the FAVAR model for 18 OECD countries, found that uncertainties have a robust negative effect on economic activity, consumer prices, equity prices and interest rates. On the other hand, Kang, Ratti, and Vespignani (2017) analyzed the effects of global uncertainties using the Bayesian VAR method and concluded that global uncertainty shocks has a downward impact on global output, prices and interest rates.

Unlike the mentioned studies, the relationship between inflation, interest rates and economic policy uncertainty is covered within the scope of 4 Latin American countries that are among emerging markets. Therefore, in the study, the relationship between inflation, interest rates and the economic policy uncertainty index was analyzed using the monthly data of Colombia, Chile, Mexico and Brazil between 1998-2021, using the TVP-VAR method. . As Qureshi (2021) stated, the Covid pandemic has had a substantial impact on many macroeconomic variables. For this reason, in this study, these dates were preferred to exclude the pandemic period's effects.

4. Econometric Analysis Results

In the study, the TVP-VAR method was used to determine the effects of interest rate and consumer price index change rates on the economic policy uncertainty index change rate in Colombia, Chile, Mexico and Brazil. The variables used in the study covering the period of 1998: 01-2020 (* Since the years in which the variables analyzed in the study are available for all countries are the 1998-2020 period, these years were preferred): 01 months are defined in Table 1 as follows:

Table 1. Defining the Variables

Variables	Definition
INF	Logarithmic first difference consumer price index
INT	Logarithmic first difference interest rate (short term)
EPU	Logarithmic first difference economic policy uncertainty index

* INF variable is seasonally adjusted with the Census X-12

method.

** The data of the variables were obtained from the OECD database.

The TVP-VAR model developed by Primiceri, which allows the change of coefficients over time and has the form of a state-space model, is shown in equation (1) as follows.

$$y_t = c_t + B_{1,t}y_{t-1} + \ldots\ldots + B_{k,t}y_{t-k} + u_t \quad (1)$$

In equation (1), y_t is an $n \times 1$ vector of observed endogenous variables; c_t is an $n \times 1$ vector of time-varying coefficients that multiply constant terms; $B_{i,t}, i = 1, \ldots, k,$ are $n \times n$ matrices of time-varying coefficients; u_t, are heteroskedastic unobservable shocks with variance-covariance matrix Ω_t and the triangular reduction of Ω_t is defined by $A_t\Omega_t A_t' = \sum_t \sum_t'$.

where A_t is the lower triangular matrix $A_t = \begin{bmatrix} 1 & 0 & \ldots & 0 \\ \alpha_{21,t} & 1 & \ddots & \vdots \\ \vdots & \ddots & \ddots & 0 \\ \alpha_{n1,t} & \ldots & \alpha_{nn-1,t} & 1 \end{bmatrix}$ (2)

and $\sum_t$ is the diagonal matrix

$$\sum_t = \begin{bmatrix} \sigma_{1,t} & 0 & \ldots & 0 \\ 0 & \sigma_{2,t} & \ddots & \vdots \\ \vdots & \ddots & \ddots & 0 \\ 0 & \ldots & 0 & \sigma_{n,t} \end{bmatrix} \quad (3)$$

From this diagonal representation, equation (4) is obtained.

$$y_t = c_t + B_{1,ty_{t-1}} + \ldots + B_{k,ty_{t-k}} + A_t^{-1}\sum_t \varepsilon_t \quad (4)$$
$$V(\varepsilon_t) = I_N$$

Stacking in a vector B_t all the right-hand side coefficients, equation (4) transforms into equation (5)

$$y_t = X_t'B_t + A_t^{-1}\sum_t \varepsilon_t \quad (5)$$
$$X_t' = I_n \otimes [1, y_{t-1}', \ldots., y_{t-k}']$$

The symbol $\otimes$ in equation (5) denotes the Kronecker product.

The formulation of the state-space model is concluded by determining the changes in parameters of time-varying coefficients using the following three transition equations.

$$\beta_t = \beta_{t-1} + u_{\beta_t}, \quad (6)$$

$$\alpha_t = \alpha_{t-1} + u_{\alpha_t}, \quad (7)$$

$$log\sigma_t = log\sigma_{t-1} + u_{\sigma_t}, \quad (8)$$

$$\begin{pmatrix} \varepsilon_t \\ u_{\beta_t} \\ u_{\alpha_t} \\ u_{\sigma_t} \end{pmatrix} \sim N\left(0, \begin{pmatrix} I & 0 & 0 & 0 \\ 0 & \sum_\beta & 0 & 0 \\ 0 & 0 & \sum_\alpha & 0 \\ 0 & 0 & 0 & \sum_\sigma \end{pmatrix}\right) \quad (9)$$

It is assumed that β_t and α_t in equations (6) and (7) are modeled as random walks, and the standard deviation σ_t in equation (8) is assumed to evolve as geometric random walks. However, it is assumed that the coefficients showing instantaneous relationships between variables evolve independently in each equation. It is emphasized that this assumption facilitates inference and increases the efficiency of the prediction algorithm (Primiceri, 2005, Çatik & Coskun, 2019, Nakajima,2011).

To implement the TVP-VAR application, the series of variables used in the study must be stationary. Structural breaks may occur in the economy over time due to factors such as war and economic crisis. These structural breaks are not considered in first generation unit root tests such as ADF and PP. This situation weakens the power of first-generation unit root tests. To eliminate this deficiency, the unit root test was developed by Perron (1989), in which structural breaks are treated as exogenous. However, in the Perron test, structural breaks were criticized because they were included as exogeneous in the model. Then, taking into account these criticisms, the one-time break Zivot and Andrews (1992) test was developed in which structural breaks were determined endogeneously In this test, structural breaks in the series are not taken into account in the null hypothesis of non-stationarity. Lee and Strazicich (2003) showed that the series would not be stationary despite a structural break in unit root tests that consider two breaks in the series. Therefore, Lee and Strazicich (2003) unit root test is employed in the study and the results are presented in Table 2.

Table 2. Lee-Strazicich Unit Root Test Results

Variables	Countries							
	Colombia		Chile		Mexico		Brazil	
	Test stat.	Break Dates	test stat.	Break Dates	test stat.	Break Dates	test stat.	Break Dates
INF	-5.45 (-4.99)* [5]**	2000:03 2014:09	-6.62 (-4.96) [6]	2009:06 2010:06	-10.63 (-5.04) [1]	2000:08 2016:08	-6.70 (-5.04) [4]	2003:07 2016:07
INT	-7.79 (-4.96) [1]	2006:07 2010:05	-18.35 (-4.86) [1]	2000:08 2000:12	-9.23 (-4.86) [7]	2000:06 2001:06	-8.87 (-4.99) [8]	2002:09 2013:06
EPU	-15.59 (-4.90) [1]	2005:10 2006:04	-15.16 (-5.04) [2]	2005:11 2009:09	-18.42 (-4.86) [1]	2016:12 2017:10	-18.00 (-4.90) [1]	2005:12 2006:03

* denotes critical values, ** denotes suitable delay lengths

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The estimation phase was started after it was determined that the series of variables used in the study did not contain unit roots. Parameter estimation with TVP-VAR is performed by Bayesian methods using the MCMC algorithm. For this, the initial parameter values are given in the form of $u_{\beta_0} = u_{\alpha_0} = u_{\sigma_0} = 0$ and $\sum_{\beta_0} = \sum_{\alpha_0} = \sum_{\sigma_0} = 10 \times I$. The initial default definitions depending on these values are shown in the following equation.

$$(\sum_{\beta})_i^{-2} \sim Gamma\ (20,0.01), (\sum_{\alpha})_i^{-2} \sim Gamma\ (2,0.01), (\sum_{\sigma})_i^{-2} \sim Gamma\ (2,0.01)$$

In the above representation $(\sum_{\alpha})_i^{-2} \ldots . (\sum_{\sigma})_i^{-2}$ shows the i[th] diagonal elements of the $\sum_{\alpha}$ and $\sum_{\sigma}$ matrices. The results of the TVP-VAR analysis (In the TVP-VAR analysis application, the delay lengths were determined according to the Akaike information criterion) Performed in the light of these explanations are presented in the following tables and figures.

Table 3. TVP-VAR Parameter Estimation Results-Colombia

Parameter	Mean	Standard Deviation	%99 Confidence Intervals	CD	Inefficiency
$(\sum_{\beta})_1$	0.0028	0.0026	[0.0172,0.0309]	0.411	10.61
$(\sum_{\beta})_2$	0.0134	0.0008	[0.0115,0.0157]	0.382	3.62
$(\sum_{\alpha})_1$	0.0857	0.0363	[0.0367,0.2222]	0.049	138.08
$(\sum_{\alpha})_2$	0.0849	0.0497	[0.0350,0.3724]	0.121	148.23
$(\sum_{\sigma})_1$	0.7665	0.0908	[0.5573,1.0261]	0.558	78.28
$(\sum_{\sigma})_1$	0.2613	0.0622	[0.1246,0.4463]	0.870	60.30

$s_{b1} = (\sum_{\beta})_1,\ s_{b2} = (\sum_{\beta})_2,\ s_{a1} = (\sum_{\alpha})_1,\ s_{a2} = (\sum_{\alpha})_2,\ s_{\sigma1} = (\sum_{\sigma})_1,\ s_{\sigma2} = (\sum_{\sigma})_2$

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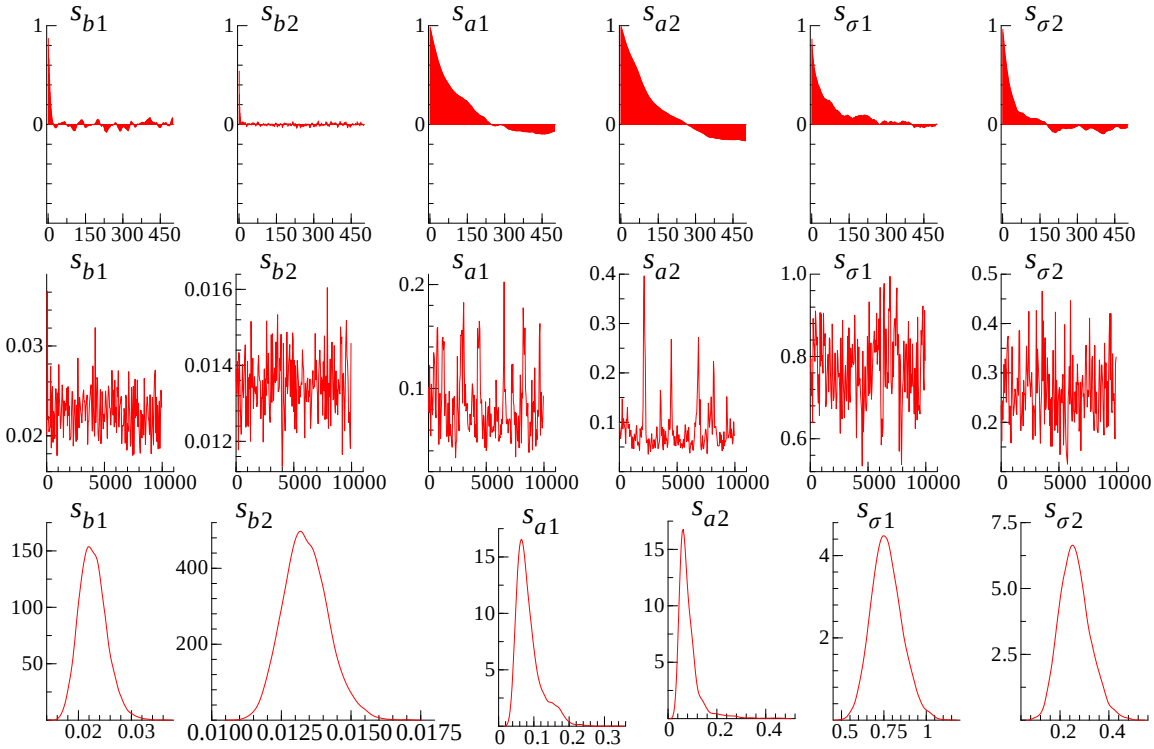

Figure 2. Sampling Autocorrelation Path, Sampling Path and Posterior Density Function-Colombia

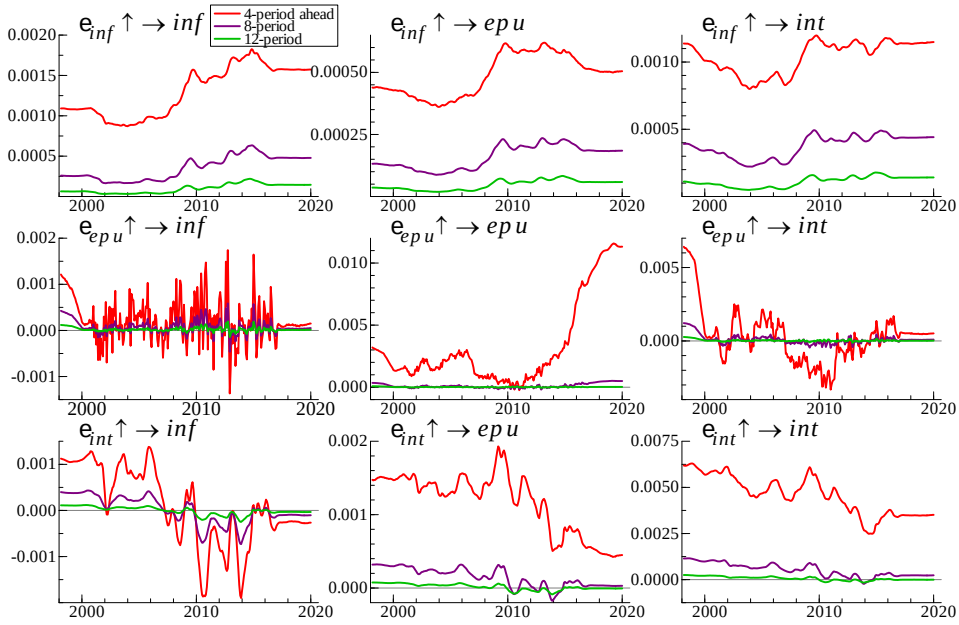

Figure 3. TVP-VAR Model Impulse-Response Analysis Results-Colombia

Table 4. TVP-VAR Parameter Estimation Results-Brazil

Parameter	Mean	Standard Deviation	%99 Confidence Intervals	CD	Inefficiency
$(\sum_{\beta})_1$	0.0225	0.0025	[0.0169, 0.0302]	0.749	10.43
$(\sum_{\beta})_2$	0.0206	0.0021	[0.0161, 0.0271]	0.845	11.70
$(\sum_{\alpha})_1$	0.0824	0.0329	[0.0381, 0.2424]	0.113	100.75
$(\sum_{\alpha})_2$	0.0737	0.0444	[0.0323, 0.3114]	0.394	31.74
$(\sum_{\sigma})_1$	0.3480	0.0898	[0.1741, 0.6132]	0.117	55.85
$(\sum_{\sigma})_1$	0.2859	0.0797	[0.1278, 0.5258]	0.821	58.49

$s_{b1} = (\sum_{\beta})_1,\ s_{b2} = (\sum_{\beta})_2,\ s_{a1} = (\sum_{\alpha})_1,\ s_{a2} = (\sum_{\alpha})_2,\ s_{\sigma1} = (\sum_{\sigma})_1,\ s_{\sigma2} = (\sum_{\sigma})_2$

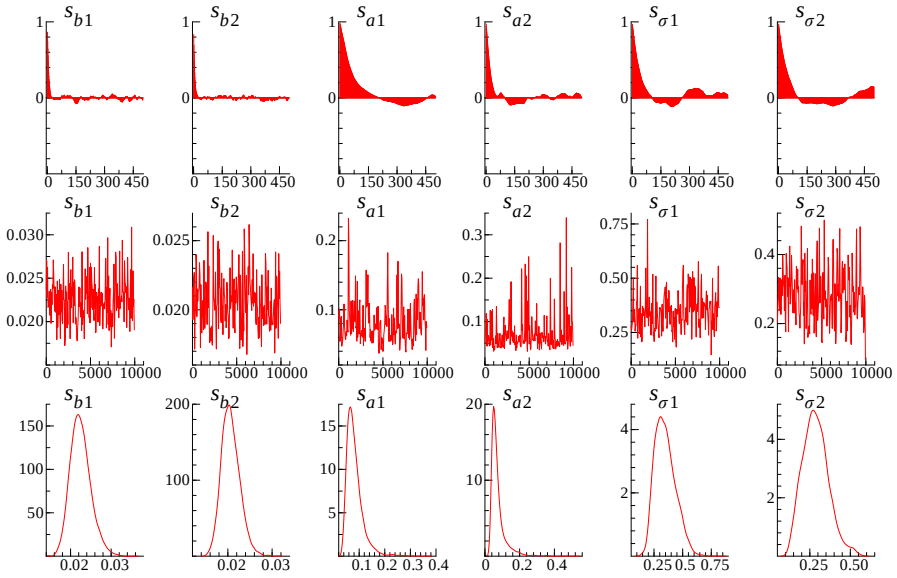

Figure 4. Sampling Autocorrelation Path, Sampling Path and Posterior Density Function-Brazil

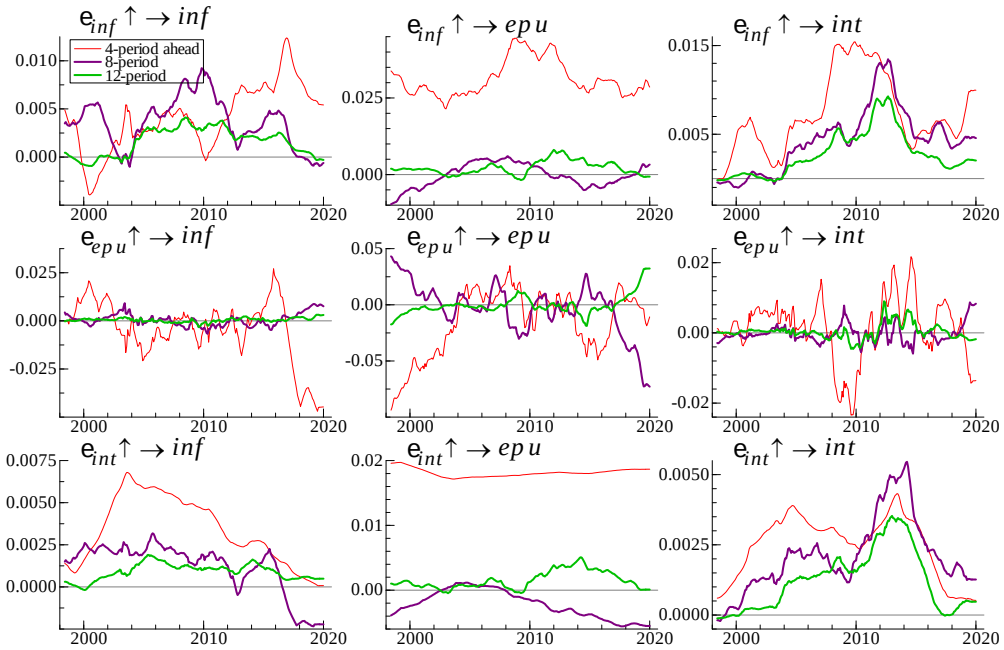

Figure 5. TVP-VAR Model Impulse-Response Analysis Results-Brazil

Table 6. TVP-VAR Parameter Estimation Results-Chile

Parameter	Mean	Standard Deviation	%99 Confidence Intervals	CD	Inefficiency
$(\sum_{\beta})_1$	0.0227	0.0026	[0.0172,0.0305]	0.873	12.56
$(\sum_{\beta})_2$	0.0187	0.0017	[0.0149,0.0238]	0.140	10.90
$(\sum_{\alpha})_1$	0.0828	0.0322	[0.0347,0.1998]	0.036	115.74
$(\sum_{\alpha})_2$	0.1104	0.0463	[0.0398,0.2758]	0.225	88.41
$(\sum_{\sigma})_1$	0.9191	0.1110	[0.6448,1.2395]	0.256	123
$(\sum_{\sigma})_1$	0.2490	0.0654	[0.1129,0.4459]	0.170	70.27

$s_{b1} = (\sum_{\beta})_1,\ s_{b2} = (\sum_{\beta})_2,\ s_{a1} = (\sum_{\alpha})_1,\ s_{a2} = (\sum_{\alpha})_2,\ s_{\sigma1} = (\sum_{\sigma})_1,\ s_{\sigma2} = (\sum_{\sigma})_2$

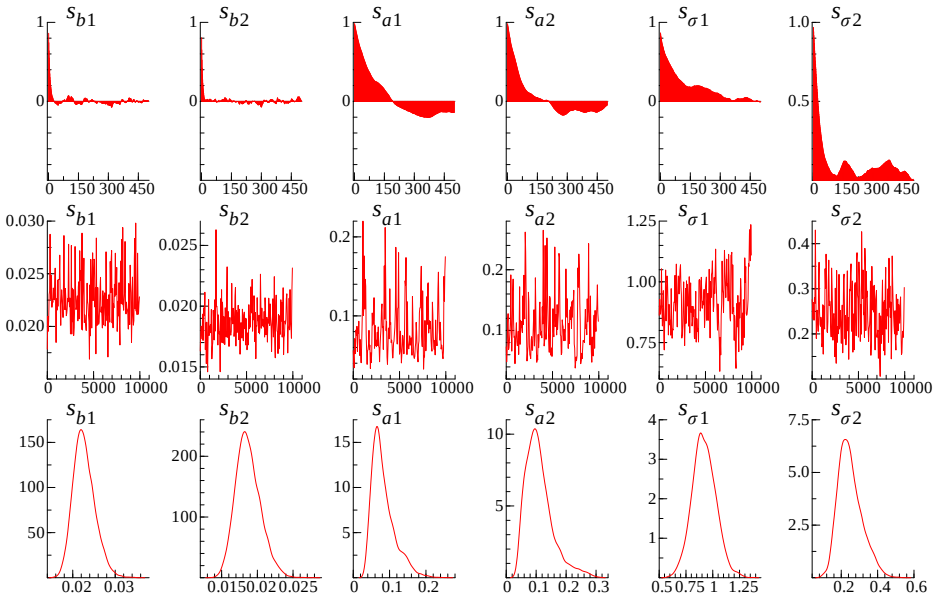

Figure 6. Sampling Autocorrelation Path, Sampling Path and Posterior Density Function-Chile

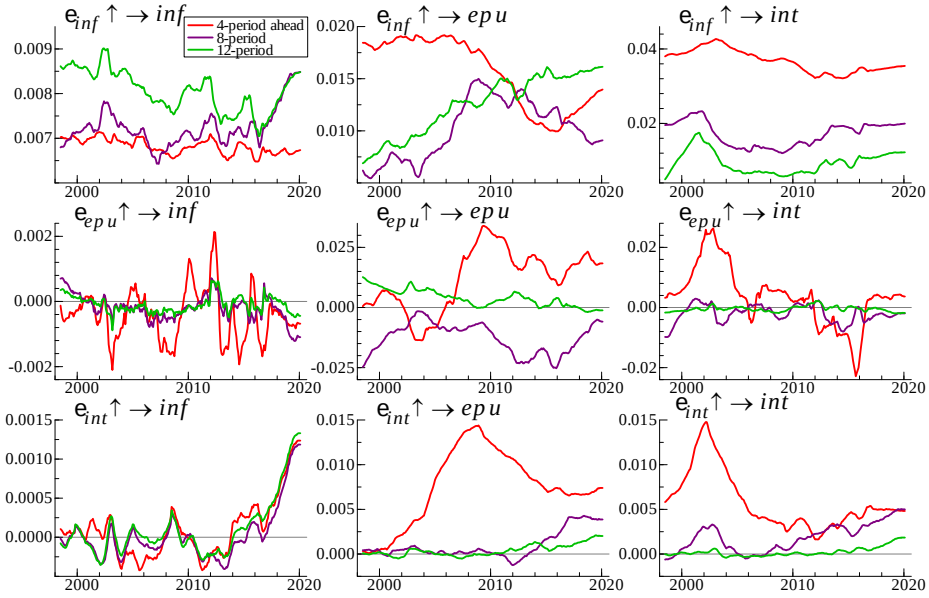

Figure 7. TVP-VAR Model Impulse-Response Analysis Results-Chile

Table 7. TVP-VAR Parameter Estimation Results-Mexico

Parameter	Mean	Standard Deviation	%99 Confidence Intervals	CD	Inefficiency
$(\sum_\beta)_1$	0.0228	0.0027	[0.0170,0.0316]	0.521	9.45
$(\sum_\beta)_2$	0.0155	0.0011	[0.0129,0.0186]	0.138	4.17
$(\sum_\alpha)_1$	0.0918	0.0399	[0.0355,0.2451]	0.916	101.96
$(\sum_\alpha)_2$	0.0993	0.0543	[0.0380,0.3919]	0.152	147.67
$(\sum_\sigma)_1$	0.5664	0.0898	[0.3772, 0.8587]	0.660	62.86
$(\sum_\sigma)_1$	0.2317	0.0606	[0.1070,0.4241]	0.124	65.63

$s_{b1} = (\sum_\beta)_1,\ s_{b2} = (\sum_\beta)_2,\ s_{a1} = (\sum_\alpha)_1,\ s_{a2} = (\sum_\alpha)_2, s_{\sigma1} = (\sum_\sigma)_1,\ s_{\sigma2} = (\sum_\sigma)_2$

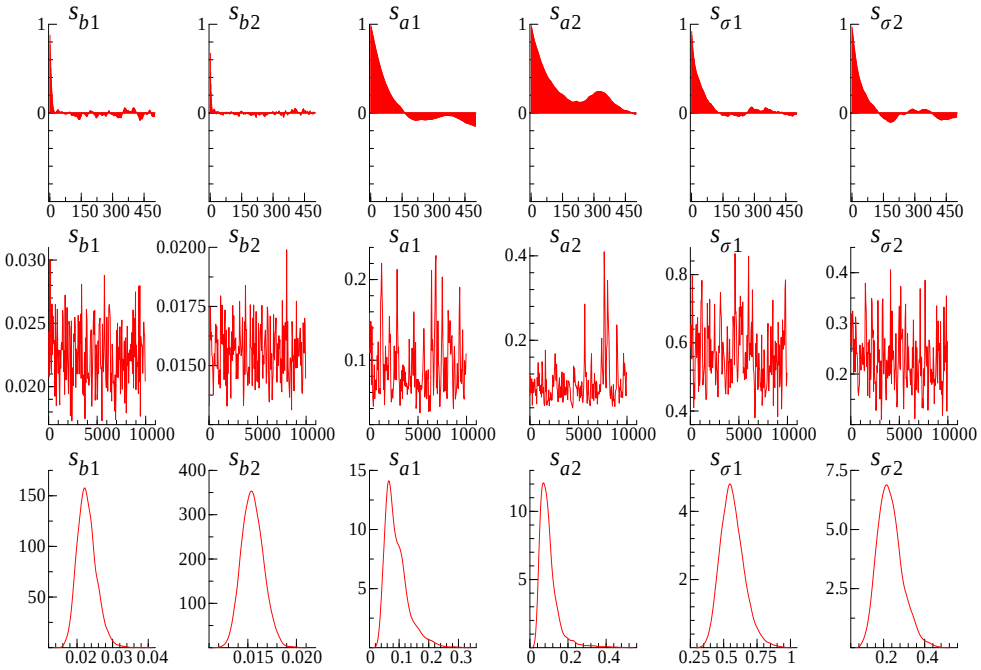

Figure 8. Sampling Autocorrelation Path, Sampling Path and Posterior Density Function-Mexico

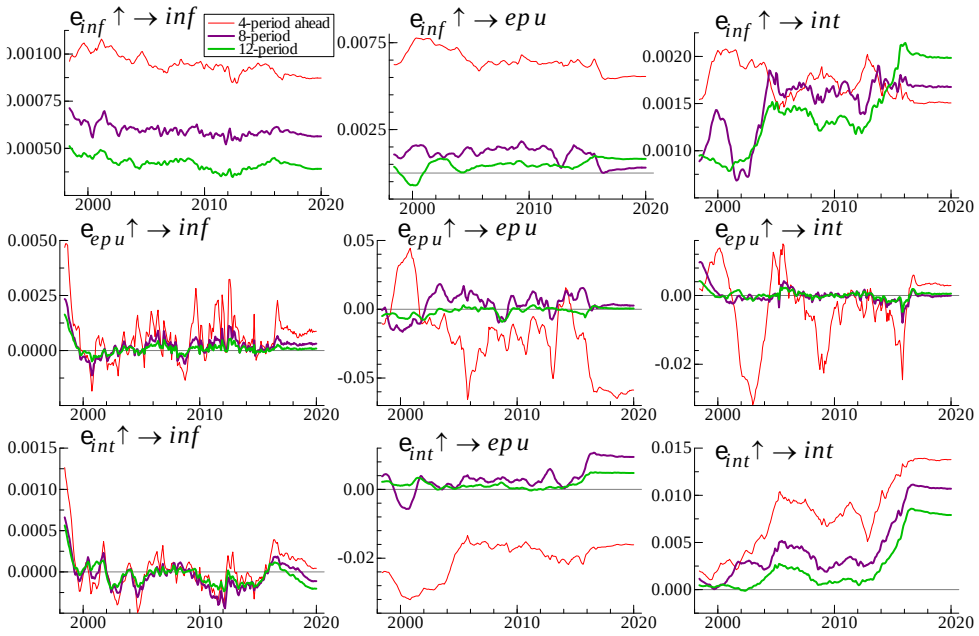

Figure 9. TVP-VAR Model Impulse-Response Analysis Results-Mexico

When the Geweke test results in Tables 3, 4, 5 and 6 are examined, it is seen that the null hypothesis, which states that the parameter distribution of the model established for each country is suitable for the posterior distribution, is accepted at the 1% significance level. This result shows that the estimates converge to the posterior distribution. On the other hand, when in Figures 2, 4, 6 and 8, the decrease in sample autocorrelation functions and the impulse-response functions obtained as a result of TVP-VAR analysis are examined in the short term (4-month period); it is determined that:

- In the face of a one-standard deviation shock in inflation and interest rates in the economies of Colombia, Brazil and Chile, the changing responses of the rate of change in the economic policy uncertainty index remained positive.

- In the face of a shock of one standard deviation in the inflation rate in the Mexican economy, the changing responses to the rate of change in the economic policy uncertainty index have been positive in the short run. Likewise, in the face of a standard deviation shock in the interest rates, the changing responses of the rate of change in the economic policy uncertainty index, which remained negative in the short term, became positive as the period extended.

5. Conclusion

While many economies are sensitive to economic and political uncertainties, this sensitivity increases, especially in emerging markets. Mexico, Chile, Colombia and Brazil, which are among the emerging markets, struggled with economic instabilities such as inflation in different periods, starting from the 1970s, and in this context, tried to provide stability with sometimes orthodox and sometimes heterodox policy practices. For this reason, the effect of economic and political uncertainties on inflation and interest rates is important for these countries.

In light of the results obtained, while the economic policy uncertainty index change rate reacts positively to a shock in inflation and interest rates in the economies of Colombia, Chile and Brazil in the short term, in the Mexican economy, in the case of a shock of one standard deviation in the inflation rate, the economic policy uncertainty index reacts positively in the short run and negative in the short run in case of a standard deviation shock in interest rates, and positively as the period extends. On the other hand, it has been determined that the effect of the economic policy uncertainty index on inflation and interest rates is close to zero(0) in the long term in the countries considered.

Unlike Gürsoy's study (2021), which concluded that there is no relationship between EPU and inflation, this study it was concluded that there is a positive relationship between inflation and uncertainty in the short run.

The results for Colombia, Chile and Brazil, are completely in line with the study of Jones and Olson in 2012 and Colombo in 2013 and partially with Gosh et al.(2022).It is concluded that rising consumer prices and fluctuating interest rates negatively affect the economic uncertainties in the countries studied. Economic policy uncertainties will negatively affect the economic decisions in emerging markets and cause production and investment decisions to change direction. Any negativity in economic expectations may adversely affect the growth target, which is among the fundamental economic objectives of the countries considered. In this context, providing price stability and reducing economic risks are essential in terms of lowering the economic policy uncertainty index. Thus, the fact that inflation and interest rates affect economic policy uncertainties in Colombia, Chile, Brazil and Mexico may

conclude that the instability in these variables may negatively affect the uncertainties and economic expectations. For this reason, monetary policies and price stability policies implemented in the mentioned economies are essential factors in preventing the uncertainties from increasing negatively.

In this context, the way governments follow in the management of monetary and fiscal policies impacts uncertainties. Transparent management of monetary and fiscal policies and perfect independence of central banks can be a solution to reducing uncertainties. In an environment where government intervention is lessened, the central bank can positively affect both price stability and interest rates by implementing inflation policies.

In the post2020 global pandemic period, the slowing world economy and increasing inflation in many economies are essential for emerging markets that need economic stability in terms of foreign investments. In this context, the impact of global economic and political uncertainties on macroeconomic variables in emerging market economies should be important for future studies.

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