Does Uncovered Interest Rate Parity Hold in Turkey?

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ABSTRACT: Most of the earlier empirical studies focusing on developed countries failed to give evidence in favor of the Uncovered Interest Rate Parity (UIP). After intensive financial liberalization processes and mostly preferred free exchange rate regimes, a new area of research starts to involve the investigation whether UIP holds for developing economies differently. Accordingly, we tested the UIP for Turkey's monthly interest rate and exchange rate data between 2002 and 2011. We run conventional regressions in the form of Ordinary Least Squares (OLS) and used a simple Generalized Autoregressive Conditional Heteroskedasticity (GARCH) analysis. The empirical results of both methods do not support the validity of UIP for Turkey. Thus, together with most of the earlier empirical studies focusing on developed countries and detecting the invalidity of UIP, we can argue that the experience of Turkey and developed economies are not different.

Keywords: Uncovered Interest Rate Parity; OLS; GARCH
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1. Introduction

The relationship between exchange rate and interest rate has been an active topic in open-economy macroeconomics. Especially, there has been a resurgence of attention over the past decade to the various aspects of how interest rates and exchange rates are linked by arbitrage conditions. In this context, Uncovered Interest Rate Parity (UIP) is one of the significant theoretical frameworks that are used repeatedly in analytical work in the relationship between exchange rate and interest rate. UIP implies that nominal interest rate differential between two countries must be equivalent to the future change in the spot exchange rate. Thus, UIP condition argues that economies with high interest rates should have depreciating currencies.

Most of the studies focusing on developed countries fail to give evidence in favor of the UIP hypothesis. Furthermore, the survey of these studies has shown that the currencies of countries with high interest rate have appreciated rather than depreciate as UIP would suggest (Engel, 1996). However, UIP is still a very attractive theoretical hypothesis and highly debated topic in literature. A notable feature of the earlier empirical literature rejecting mostly UIP is almost exclusively to rely on developed countries. Thus, new empirical studies attempt to shed light on the validity of UIP condition in developing economies.

Many developing countries have completed the liberalizing their financial markets in the late 1980s. Moreover, most of them have preferred Free Exchange Rate System since end of the 1990s. Therefore, economists get around examining the relation between exchange rate change and interest rate differential within the context of the UIP in developing countries. Thus, one of the new routes of the literature on analyzing UIP is orientated towards the studies focusing on the cases of developing countries (Alper et al., 2009:122).

Following the collapse of the stabilization policy based on a Crawling Exchange Rate Peg in 2001, Turkey has adopted freely Floating Exchange Rate Regime in the framework of Inflation

Targeting (IT) regime. Thus, Turkey also represents a good case study opportunity for testing UIP condition from the perspective of developing economies.

From the perspective of view indicated above, our paper examines whether uncovered interest rate parity condition holds for Turkey or not. Our basic aim is to determine the relation between interest rate differential and exchange rate change and put forward to a new contribution to economic literature concerning to testing for UIP condition in developing countries. Section 2 provides a literature review. Section 3 deals with methodology, data and empirical results. Final section concludes and makes some implications.

2. Literature Review

Testing of UIP condition arguing positive causality between the spot exchange rate movement and interest rate differential has long been a subject of research in economics. Engel (1996) provides a general survey of earlier literature and indicated that the most of the studies has developed a strong consensus that UIP works poorly. Furthermore, against to UIP condition, the majority of the papers found an adverse relation between the spot exchange rate movement and interest rate differential, which are called "forward premium bias" (Alper et al. 2009:116). Considering the studies newly performed, empirical findings also reveal the failure of UIP parity or "forward premium bias". Mylonidis and Semertzidou (2010) and Aslan and Korap (2010) differently tested the UIP hypothesis using the Generalized Method of Moments (GMM) procedure considering four bilateral exchange rates *vis a vis* the US dollar for UK pound, Canadian dollar, Australian dollar, and Japanese yen. Both studies uniformly verify the failure of the UIP condition.

Although earlier empirical evidence for developed economies within the context of the UIP condition is generally unfavorable, it is still an attractive topic to deal with the various aspects of UIP condition for developing countries. Indeed, one of the new routes of the literature on analyzing UIP is orientated towards the studies focusing on developing countries. After intensive financial liberalization processes and mostly preferred free exchange rate regimes, developing countries became a good candidate of field work for a new area of research concerning with testing UIP. Thus, new empirical studies attempt to shed light on whether developing and developed economies are different within the context of UIP estimations' results.

Accordingly, there has been an increasingly resurgence of attention to the various aspects of how interest rates and exchange rates are linked by the special conditions in developing countries. Indeed, structural differences between developed and developing economies required a special treatment for testing UIP condition in developing economies. From this point of view, the existence of additional "premium" for default risk, intensive policy actions of central bank and relatively frequent structural breaks in developing countries are crucial. These distinguish features of developing markets creates extra reasons for the unfavorable empirical evidence for the UIP condition. Thus, it is very difficult to argue, a priori, that the UIP should hold in developing economies much more compared to developed ones (Alper et. al, 2009, pp. 122-127).

The existence of default risk as a significant property of developing countries can be attributable in part to additional "premium" on assets and the deviation from UIP condition. While UIP assumes that agents have rational expectations and are risk neutral, the rejection of the UIP condition, of course, indicates one or more of these assumptions fail. If the assumption of rational expectations can be retained, then the failure of the UIP can be attributable to the failure risk neutrality. Thus, if investors are risk averse, it is possible to consider the existence of a "premium" due to exchange rate risk, which contributes to the deviations from the UIP condition. However, one has to also consider the possibility of having a "premium" for default risk arising from the essential characteristics of developing economies like incomplete institutional reforms, volatile economic condition and weaker macroeconomic fundamentals (Alper et. al, 2009:126). Hence it is plausible to expect that developing market assets offer an additional premium to investors for default risk beside exchange rate risk, which result in deviations from the UIP condition much more compared to developed economies.

Concerning the additional premium on assets arising from default risk in developing markets, Suarez and Sotelo (2007) explored the interest rate behavior in Latin American Countries including Argentina, Brazil, Chile, Colombia and Mexico between 1996 and 2005. Their co-integration analysis and causality tests strongly indicated that default risk provides valuable information about the

behavior of domestic interest rates. They also determined that external debt ratios to GDP and government revenue are important determinants of default risk. More specifically, Domowitz et al., (1998) analyze the magnitudes and determinants of the risk premia for Mexico in the early 1990s. By the separating of the major components of risk premia like "country premium" and "currency premium", they found that both of them are economically significant and help to explain the trends in equity returns.

Within the context of testing for the UIP condition, another distinctive feature of developing economies is policy actions of central bank. So over-react tendency of central bank towards exchange rate movements has significant implications for deviations from the UIP condition. Thus, a central bank intervention is possible to state other reasons for the unfavorable empirical evidence for the UIP condition in developing countries. McCallum (1994) formally shows that monetary authorities have some tendency to resist rapid changes in exchanges by using interest rate as a policy tool. According to his Policy Response Hypothesis, UIP does not work since monetary authorities manage interest rate differentials so as to resist rapid changes in exchanges rates.

Ferreira (2004) also supported to the view that policy actions simultaneously interact with change in exchange rate for the emerging markets like Argentina, Brazil, Chile, Mexico and Turkey between 1995 and 2004. Thus, he indicated that central bank policies have implications for deviations from the UIP condition. More specially, Cavoli and Rajan (2006) undertaken a series of related simple empirical tests of the dynamic links between monetary sterilization of capital inflows and uncovered interest rate differentials in the five south Asian economies (Indonesia, Korea, Malaysia, the Philippines and Thailand) over the period 1990-1997. They show that deviations from the UIP condition may be a result of complete monetary sterilization towards capital inflows

The existence of relatively frequent structural breaks in emerging markets is another distinctive feature within the context of testing for the UIP condition. In this regard, identifying and modeling structural breaks provide a base for understanding the UIP condition better. Goh et al., (2006) examined the effects of regime switch date including several phases of financial liberalization and periodic capital controls on the nature of deviations from UIP in Malaysia over 1978-2002. They provided an evidence of how the UIP deviations have evolved over time and how the changes in the volatility of the have coincided with major changes in financial liberalization in Malaysia. However, Mansori (2003) could not find an evidence for the effect of structural break on the validity of UIP condition during the period 1994-2002 in three Central European emerging economies. He tried to investigate whether the introduction of euro and the adoption of accession partnerships with the EU have an effect on the UIP condition for Poland, Hungary and the Czech Republic. His finding suggested that accounting for structural breaks do not seem to matter whether UIP condition holds.

Concerning the studies newly realized to test UIP for developing countries; it seems that GARCH Methods becomes popular as a modern time series analysis as well as traditional regression analysis using OLS. Lily et al., (2011) tested the UIP in Malaysia using quarterly data span from 1998Q1 to 2010Q3 and running conventional regressions and simple GARCH analysis. The empirical results do not support for three bilateral exchange rates *vis a vis* the Malaysian ringgit for Singaporean dollar, UK pound and Japanese yen. Erdemlioğlu and Alper (2007) used the same methodologies and examined the UIP for the dates between December 2001 and June 2007 in Turkey. Their results indicated that UIP does not hold and moreover deviation from UIP goes up over time during the period considered in Turkey.

3. Methodology, Data and Empirical Results

Turkey represents a good case study opportunity for testing UIP condition after adopting Inflation Targeting commitment and freely Floating Exchange Rate Regime in 2001. Accordingly, empirical assessment of UIP for the monthly data from 2002M01 and 2011M12 in Turkey has been indicated by two econometric methods. Firstly, we run conventional regression (OLS) on the time series of change in exchange rate and interest rate differential, as the dependent and independent variable respectively. Secondly, we produced the time series of deviation from UIP, as the difference between changes in exchange rate and interest rate differential, and examined whether deviation from UIP is persistent or not. For this aim, we made the volatility analysis of deviation from UIP using ARCH and GARCH Methods.

The data set consist of observation of TL/USD exchange rate, interest rate of Turkey and United States as the domestic and foreign interest rates respectively. The monthly exchange rate data and the domestic interest rate data of Turkey as Treasury Interest Rate have been obtained from the Central Bank of Turkey (CBRT). The monthly interest rate data of United States as Treasury Interest Rate has been sourced from Federal Reserve Economic Data (FRED).

3.1 Regression Analysis

Uncovered Interest Parity is a simple relationship between nominal interest rates and nominal exchange rates. Under the rational expectations and risk-neutrality assumptions, if the conditions for risk-free arbitrage exist, the difference between the forward and spot exchange rate will equal to the interest rate differential among home and foreign countries. Following the Chinn (2006) formulation, UIP can be indicated below;

$$F_{t,t+k} - S_t = i_{t,k} - i^{\bullet}_{t,k} \tag{1}$$

where $F_{t,t+k}$ is the forward exchange rate obtaining at time (t) for a maturity date at (t+k) while S_t is the spot exchange rate at time (t) – units of domestic currency against one unit of foreign currency. $i_{t,k}$ and $i^{\bullet}_{t,k}$ are the domestic and foreign interest rates observed at time (t) for a maturity (k) period ahead.

To the extent that investors are risk averse, the forward exchange rate can differ from the expected future spot rate by a premium demanded from investors in order to compensate for the perceived risk of the given financial instrument. Thus forward exchange rate defined with the risk premium, Φ, and current market expectation of the nominal exchange rate for (t+k) given all available information at (t) time, $S^{\varepsilon}_{t,t+k}$ is:

$$F_{t,t+k} = S^{\varepsilon}_{t,t+k} + \Phi_{t+k} \tag{2}$$

Substitute Eq. (2) into Eq. (1);

$$S^{\varepsilon}_{t,t+k} + \Phi_{t+k} - S_t = i_{t,k} - i^{\bullet}_{t,k} \tag{3}$$

Rearranging Eq. (3) gives

$$S^{\varepsilon}_{t,t+k} - S_t = i_{t,k} - i^{*}_{t,k} - \Phi_{t+k} \tag{4}$$

As the first basic assumption of UIP, rational expectation of market participants can be defined that future spot exchange rate, S_{t+k}, equals current market expectation of the nominal exchange rate for (t+k) given all available information at (t) time, $S^{\varepsilon}_{t,t+k}$, plus the rational expectations forecasting error realized at time (t+k) from a forecast of the exchange rate made at time (t), ε_{t+k}.

$$S_{t+k} = S^{\varepsilon}_{t,t+k} + \varepsilon_{t+k} \tag{5}$$

Rearranging Eq. (5) gives

$$S^{\varepsilon}_{t,t+k} = S_{t+k} - \varepsilon_{t+k} \tag{6}$$

Now, substituting Eq. (6) into Eq. (4) and rearranging new equation will enable us to apply rational expectations assumption into UIP condition:

$$S_{t+k} - S_t = i_{t,k} - i^{\bullet}_{t,k} - \Phi_{t+k} + \varepsilon_{t+k} \tag{7}$$

Finally, applying the second basic assumption of UIP, risk-neutral behavior, $\Phi_{t+k} = 0$, gives UIP condition:

$$S_{t+k} - S_t = i_{t,k} - i^{\bullet}_{t,k} + \varepsilon_{t+k} \tag{8}$$

Departing from Eq. (8), in order to test UIP condition, the following regression model will be estimated,

$$\Delta S_{t+k} = \beta_0 + \beta_1 \left(i_{t,k} - i^{\bullet}_{t,k} \right) + \varepsilon_{t+k} \tag{9}$$

Where left-hand side of Eq. (9), ΔS_{t+k} , is the realized change in the exchange rate from (t) to (t+k). In the right side of equation, $\left(i_{t,k} - i^*_{t,k} \right)$ and ε_{t+k} denotes the interest rate differential and rational expectations' forecast error, respectively. While using the Eq. (9) for testing the UIP condition in the literature, the null hypothesis of UIP can be expressed as $H_0;\ \beta_0 = 0\ and\ \beta_1 = 1$. Thus the domestic interest rate must be higher than the foreign interest rate by an amount equal to the expected depreciation of the domestic currency.

We run conventional regression using OLS in Eq. (9) on validity of UIP for the monthly data from 2002M1 to 2011M12 in Turkey. As the data set, change of monthly TL/USD exchange rate (DER) and Treasury Interest Rate differential between Turkey and United States (IDIF) are used. Before running conventional regression on UIP condition, we test whether time series of interest rate differential and change in exchange rate are stationary or not. Table 1 presents the unit root test results in terms of ADF and PP Test, by indicating the stationary of both variables at 1% and 5% significance levels.

Table 1. Unit Root Test Results for Time Series

	ADF (Augmented Dickey Fuller)	PP (Philips Peron)
IDIF	-3,135**	-3,268*
DER	-8,051*	-7,475*

*, ** denote significant at 1% and 5 % levels, respectively

Regression model in Eq. (9) has been estimated in order to test UIP condition in Turkey for the period 2002:01–2011:12. The empirical results presented in Table -2 shows that the UIP condition in Turkey is not supported. The joint null hypothesis ($H_{0;}\ \beta_0 = 0$ and $\beta_1 = 1$) is rejected by Wald test at 1 % significance level. R-squared (R^2) is also extremely low, which means that variation in the interest rate differential cannot explain the variation of change in exchange rate. In conclusion, the interest rate differential between Turkey and the United States is not able to explain the change in the TL/USD spot exchange rate.

Table 2. Estimated UIP Regression Model Results

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
β_0	0.002011	0.005559	0.361756	0.7182
β_1	0.000303	0.000204	0.014891	0.9881
Wald Test	*R-squared*	*DW stat*	*S.E. of reg.*	*Sum squ. res.*
30124349* (0,0000)	0.000002	1.325893	0.038498	0.174892

* denotes significant at 1% level.

3.2 GARCH Analysis

In this part of the study, we examined the time series generated by deviation from UIP in order to test the validity of UIP condition for Turkey in a more detailed way. Time series of deviation from UIP calculated as the difference between changes in exchange rate and interest rate differential. From the point of us, it is crucial to determine whether time series generated by deviation from UIP has a specific pattern or not. Persistence or mean reverting refers to the tendency of time series to converge towards its long run value. Thus if a time series has a persistent or mean reverting property then it behaves in a specific pattern rather than purely chaotic form in a long term.

Even time series has a conditional variance, if the variance of time series is persistent or mean reverting then such time series are also persistent or mean reverting. Therefore, in order to determine the long run tendency of deviation series from UIP, we examined the its variance process using the

ARCH and GARCH Models proposed by Engle (1982) and Bollerslev (1986) respectively and stand for autoregressive conditional heteroskedasticity and generalized autoregressive conditional heteroskedasticity. Persistence or mean reverting process of variance is generally captured from coefficients of ARCH and GARCH Models. In other words, mean reverting or persistence variance is a feature embedded in the ARCH and GARCH Models (Engle, 2001, p. 163).

Before examining the variance process of the time series of deviation from UIP using ARCH and GARCH Models, we have to determine best fitting ARMA Model. Firstly we produced the UIP deviation series (Y_t) from difference between changes in exchange rate $(S_{t+k} - S_t)$ and interest rate differential $(i_{t,k} - i_{t,k}^*)$. Then we estimated the best fitting ARMA model for UIP deviation series (Y_t). In an ARMA Model, process of (Y_t) is function of not only weighted aggregation of its lagged value (AR) but also current and lagged value of error term (MA). Thus AR (p) and MA (q) Models together presents ARMA (p,q) Model like below:

$$Y_t = \delta + \phi_1 Y_{t-1} + \dots\dots + \phi_p Y_{t-p} + \varepsilon_t + \theta_1 \varepsilon_{t-1} + \dots\dots + \theta_q \varepsilon_{t-q}$$

$$= \delta + \sum_{i=1}^{p} \phi_i Y_{t-1} + \varepsilon_t + \sum_{i=1}^{q} \theta_i \varepsilon_{t-1} \tag{10}$$

In our study, we indicated that MA (2) fits well for the time series generated by deviation from UIP after detecting the residuals in regression analysis with the Q-statistics. Thus our MA (2) model is realized below:

$$Y_t = \mu + \beta_0 \varepsilon_t + \beta_1 \varepsilon_{t-1} + \beta_2 \varepsilon_{t-2} \tag{11}$$

Table 3 provides the estimation results of MA (2) Model. Accordingly, UIP deviation exhibiting the moving average process up to 2 lag could be realized by the significance of the each term individually and jointly from the F-test results. In this context, MA (2) is an appropriate process for the volatility model of UIP deviation by focusing the ARCH effect of the error terms.

Table 3. Estimated MA (2) Model Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	20.90380	1.704434	12.26437 *	0.0000
MA (1)	1.257703	0.048948	25.69491 *	0.0000
MA (2)	0.615875	0.056855	10.83236 *	0.0000
R-squared	S.E. of reg.	Sum squ. Res	.DW stat	F-Statistic
0.861927	6.490347	4928.578	0.681318	365.1877* (0.0000)

* denotes significant at 1% level.

After determining the MA (2) Model for UIP deviation, we performed Lagrange Multiplier (LM) Test whether ARCH effect exits or not. For this purpose, the squares of the error terms (ε_t) obtained from ARMA model of UIP deviation series are regressed on a constant and q lagged values. To allow for volatility clustering or conditional heteroskedasticity, assume that Var$_{t-1}$ (ε_t^2) = σ_t^2 = h_t. The equation below represents an AR (q) process for ε_t^2, which is usually referred to as the ARCH (q) model. Where h_t is a conditional variance $(h_t = \sigma_t^2)$ and ε_t is error term.

$$h_t = \omega_0 + \alpha_1 \varepsilon_{t-1}^2 + \dots\dots + \alpha_q \varepsilon_{t-p}^2 = \alpha_0 + \sum_{i=1}^{p} \alpha_i \varepsilon_{t-1}^2 \tag{12}$$

A simple Lagrange Multiplier (LM) test for ARCH effects can be constructed based on the auxiliary regression as in equation above. The null hypothesis is that, $H_0 : \alpha_1 = \dots\dots = \alpha_q = 0$, in the absence of ARCH components. The alternative hypothesis is that, in the presence of ARCH components, at least one of the estimated α_i coefficients must be significant. Test statistics is calculated by $LM_{ARCH} = TR^2$. If TR^2 is greater than the Chi-square table value, $(\mathcal{X}_{tab}^2)$, we reject the null hypothesis and conclude there is an ARCH effect in the ARMA model.

Table-4 presents ARCH effect test results. According to the Table, we reject the null hypothesis that there is no ARCH effect since $T. R^2$ is greater than the Chi-square table value. Thus,

we conclude that there is an ARCH effect in the MA (2) model of UIP Deviation. The probability of F-statistics also indicates that the null of no ARCH effect can be rejected at all significance level.

Table 4. ARCH Test of UIP Deviation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	31.01130	10.51347	2.949865 *	0.0038
RESID^2(-1)	0.249556	0.089510	2.788013 *	0.0062
R-squared	S.E. of reg.	T. R^2	F-Statistic	DW stat
0.62297	107.3950	7.413374 * (0.006474)	7.773017 * (0.006191)	1.517244

* denotes significant at the 1% level.

GARCH (q,p) Model Specification is realized after detecting the ARCH effect on ARMA Model. In the GARCH (p,q) Model Specification, p refers to how many autoregressive lags, or ARCH terms, appear in the equation, while q refers to how many moving average lags are specified, which is often called the number of GARCH terms.

$$h_t = \omega_0 + \alpha_1 \varepsilon_{t-1}^2 + \ldots\ldots + \alpha_p \varepsilon_{t-p}^2 + \beta_1 h_{t-1} + \ldots\ldots + \beta_q h_{t-q}$$

$$= \omega_0 + \sum_{i=1}^{p} \alpha_i \varepsilon_{t-1}^2 + \sum_{i=1}^{q} \beta_i h_{t-1} \tag{13}$$

The conditional variance ($h_t = \sigma_t^2$) is a function of an intercept (ù), a shock from the prior period (á) and the variance from last period (â). The above equation states that the current value of the conditional variance is function of a constant and values of the squared residual from the conditional return equation plus values of the previous conditional variance. The conditional variance h_t in a GACRH Model is defined as a function of the past squared error terms e_{t-p}^2 and the conditional variance of past periods h_{t-1}.

The parameters in equation have to meet the following restrictions: $\omega_0 > 0$, α_i and $\beta_j > 0$, and $\alpha + \beta < 1$. These restrictions represent important information for the volatility model. Firstly, the mean of volatility will not be negative value. Second, the coefficiency of previous volatility and noise term are positive estimations that depict the stylized fact of volatility clustering. Thirdly, the sum of α_i and β_j measures the persistence of a shock to the variance which shows the mean reversion characteristic of volatility model. In other words, last restriction ($\alpha + \beta < 1$) symbolize the stationary variance requirement, which indicates that the GARCH Model is mean reverting and conditionally heteroskedastic, but have a constant unconditional variance (Engle, 2001, p. 160).

Table 5 presents estimated GARCH (1, 1) Model results. The three variables in the variance equation are listed as C, the intercept: ARCH (1), the first lag of the squared return: and GARCH (1), the first lag of the conditional variance.

Table 5. Estimated GARCH (1,1) Model Results

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	0.284822	0.135882	2.096093 **	0.0361
ARCH (1)	0.113285	0.095114	1.191048**	0.0336
GARCH (1)	0.770045	0.085441	9.012621 *	0.0000
R-squared	S.E. of reg.	Sum squ. Res	F-Statistic	DW stat.
0.825144	7.399344	6241.534	107.5933* (0.000000)	0.919736

*, ** denote significant at the 1% and 5 %, respectively.

The coefficients of ARCH and GARCH symbolizing α and β, respectively like in Eq. (13) are statistically significant at 5% levels. F-statistics is quite high and statistically significant. As a result, we have found the evidence of both significant ARCH and GARCH effects for the UIP deviation. More significantly the sum of ARCH (α = 0.11) and GARCH (β = 0.77) effects equals 0.88. In other words, stationary variance requirement ($\alpha + \beta < 1$) is provided. This indicates the persistent or mean reverting variance in the long run.

4. Conclusion

Most of the earlier empirical studies focused on developed countries and failed to give evidence in favor of the UIP hypothesis. After intensive financial liberalization processes and mostly preferred free exchange rate regime, developing countries represents a good case study opportunity for testing UIP condition. Accordingly, one of the new routes of the literature on analyzing UIP is orientated towards the studies focusing on the cases of developing countries.

From this point of view, we test UIP for Turkey adopting Inflation Targeting Policy under freely Floating Exchange Rate Regime after 2002. Using monthly data, we run conventional regressions and simple GARCH analysis on time series of deviation from UIP. The empirical results of both methods in our study do not support the UIP for Turkey. Thus we could not find an empirical result supporting UIP condition for developing countries by examining the case of Turkey.

Empirical findings of Turkish Case fit the results of newly started limited research on other developing countries showing invalidity of UIP. Thus, our study provide a fresh contribution to a new area of research concerning with investigation of whether UIP holds for developing economies differently. Together with most of the earlier empirical studies focusing on developed countries and detecting the invalidity of UIP, we can also argue that developing and developed economies are not different within the context of UIP estimations' results.

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