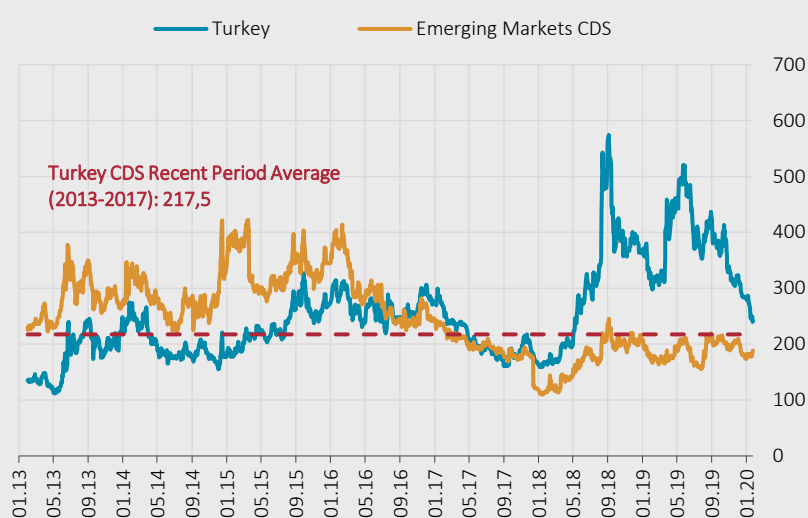


## Box 5.2

### Effects of Macroeconomic Indicators on Turkey's Risk Premium

Turkey's risk premium is still high compared to the risk premium of EMEs, but it converged to the average of the 2013-2017 period with a decline in this reporting period. (Chart 1). In addition to an increase in the global risk appetite, this decline is attributable to expansionary global monetary policies and Turkey-specific macroeconomic developments. In this box, the main macroeconomic variables affecting the country risk premium are analyzed, and the reasons for the decrease in the risk premium are examined.

**Chart 1: Turkey and Emerging Countries CDS (5-Year Maturity, Basis Points)**



Source: Bloomberg.

Last Observation: 23 January 2020

The insurance premium demanded against the risk of default carried by foreign currency bonds, as discussed in the “external vulnerability” literature, depends on the level of the current account deficit, international reserve adequacy indicators, public budget, the net international investment position, inflation, real growth, the external debt stock, the sensitivity of corporate balance sheets to exchange rates and interest rates of the respective country, geopolitical risks, institutional quality and the global risk appetite (Duran and Küçükşarac, 2016; Akçelik and Fendođlu, 2019).

Similar to the studies in the literature, determinants of the country risk premium for 10 EMEs are analyzed from an econometric perspective. The extent of the impact of macroeconomic indicators that show external vulnerability on Turkey's risk premium is examined. Our sample countries consist of Brazil, Chile, Colombia, Indonesia, Malaysia, Mexico, Russia, South Africa, Thailand, and Turkey. Our sampling period is 2005Q1-2019Q2. The method is fixed effects panel regression. The 5-year CDS is preferred as the country risk premium since it is the most liquid. Real GDP growth, inflation, public budget balance/GDP, international gross reserves/GDP, non-financial corporate FX Debt/GDP level and its first difference, net international investment position/GDP, current account balance/GDP, inflation and growth volatilities, and VIX are used as explanatory variables in estimations.<sup>1</sup>

<sup>1</sup> Year dummy variables are also included in the models.

Both stock and flow variables were taken into account as external fragility indicators with different model selections and the results of the estimation are presented in Table 1. While the effect of main macroeconomic indicators in Model 1 is taken into consideration, the change in foreign currency debt of non-financial corporations in Model 2 and Model 3 is included in the estimations. In addition, inflation and growth volatilities were taken into account in Model 3, while another international indicator of vulnerability, a net international investment position, was used in Model 4.

**Table 1: Fixed Effects Panel Regression Results**

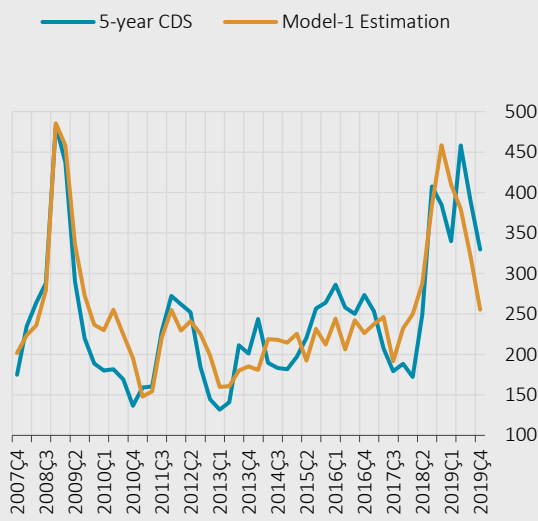
Dependent Variable: CDS	Model 1	Model 2	Model 3	Model 4
CPI Annual Inflation	9.569*** (1.224)	10.815*** (1.255)	11.414*** (1.389)	12.558*** (1.438)
GDP Real Annual Growth	-5.928*** (1.158)	-2.543* (1.359)	-1.847 (1.344)	-2.460*** (0.925)
International Gross Reserves / GDP	-1.949*** (0.674)	-1.256*** (0.458)	-1.682*** (0.617)	0.139 (1.247)
Public Budget Balance / GDP	-8.726*** (1.509)	-8.493*** (1.424)	-5.333*** (1.795)	-9.585*** (1.221)
Current Account Balance / GDP	-0.719 (0.857)			
Non-Financial Corporate FX Debt / GDP	2.615*** (0.650)			
Change in Non-Financial Corporate FX Debt / GDP		2.113 (2.805)	4.436* (2.597)	
Volatility Index (VIX)	4.737*** (0.605)	7.036*** (0.835)	7.274*** (0.824)	5.471*** (0.475)
Inflation Volatility			14.090*** (3.114)	
Growth Volatility			4.797** (2.425)	
Net International Investment Position / GDP				0.093 (0.065)
Constant Term	28.428 (19.798)	-14.910 (21.507)	-39.963* (24.246)	8.381 (21.931)
R <sup>2</sup>	0.693	0.779	0.812	0.866
Number of Observations	576	570	470	356
Number of Countries	10	10	10	9

Standard deviations are indicated in parenthesis. \*\*\*, \*\*, \* denotes statistical significance of 1%, 5% and 10%, respectively.

Estimation results indicate that inflation and its volatility, growth and its volatility, international gross reserves level, public budget balance, foreign currency debt of non-financial corporations and global risk appetite have a significant effect on the CDS premium for the countries in the sample (Table 1). The model results show that stock variables in particular prove more effective on risk premium. Moreover, correlations among the variables used in the models can affect the significance of certain variables. It should be noted that divergence may occur between model results implied by macroeconomic indicators and the CDS risk premium due to country-specific factors such as geopolitical risks, sensitivity to global / regional developments, political uncertainty or credibility deficit etc.

As for Turkey, Model-1 estimation results imply that falling inflation, recovering economy, rising global risk appetite, increasing international reserves level and improving current account balance have a lowering effect, while widening budget deficit has an increasing effect on the CDS premium in 2019 compared to the previous year.<sup>2</sup> Since the first quarter of 2019, the CDS premium has remained above the level implied by macroeconomic indicators (Chart 2). The decline in inflation, the economic recovery, and global risk appetite, respectively, are the main factors underlying the fall in the CDS level of Turkey in the last quarter of 2019 compared to the end of the previous year (Chart 3). The reduction in foreign currency debt supported the fall in the risk premium as well. In this period, the CDS premium estimated in the model posted a decline, 57% of which stemmed from the fall in inflation, 23% from the increase in the growth rate and 16% from the increase in global risk appetite (Chart 3).

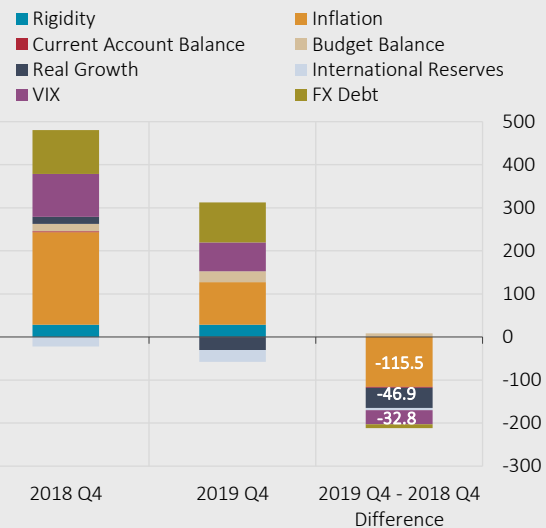
**Chart 2: Turkey CDS Premium and Model-1 Estimation (Basis Point)<sup>3</sup>**



Source: Authors calculations.

Last Observation: 2019 Q4

**Chart 3: Contributions of Factors in Turkey CDS Premium (Basis Point)<sup>4</sup>**



Source: Authors calculations.

Last Observation: 2019 Q4

In sum, the regression analysis for the determinants of the country risk premium suggests that the decline in the risk premium of Turkey in 2019 was mainly due to the improvement in macroeconomic indicators, with inflation in the lead, as stated in the MPC decisions. Maintaining a sustained disinflation process and the resulting decline in the country risk premium supports economic activity by contributing to the fall in long-term interest rates. Improved growth prospects ultimately decrease the country's risk premium, creating a positive cycle and reducing trade-offs to lower inflation.

**References**

Akçelik, F. and Fendođlu, S. (2019). "Country Risk Premium and Domestic Macroeconomic Fundamentals When Global Risk Appetite Slides," CBRT Research Notes in Economics, No. 19/04.

Duran M. ve Kùçüksaraç D. (2016). "How Different are the Factors Affecting the Credit Ratings of Developed and Emerging Countries?" CBRT Research Notes in Economics, No. 16/09.

<sup>2</sup> Similar results are obtained in other models.

<sup>3</sup> In the regression over the level, residuals are stationary.

<sup>4</sup> For the non-financial corporate FX debt and GDP, forecast values for the quarter of 2019Q4 were used.