6. Public Finance

In the first half of 2017, fiscal policy supported economic growth through a number of new measures and incentives as well as public investment and spending, which are intended to generate funding for the real sector and to boost investment, employment and exports. The budget deficit widened in the first half of the year due to these measures and incentives as well as temporary allowances such as the postponement of the premium payment in January, February and March to the fourth quarter of 2017. However, with tax revenues poised for growth amid continued economic recovery and the lifting of temporary measures, the second half of the year may witness a smaller increase in the budget deficit.

The first half's surging budget deficit led by increased public spending and the adoption of temporary measures was financed mostly by domestic borrowing. The domestic debt rollover ratio soared at a more significant pace than in previous years, to 114.3 percent in the first half of 2017. However, the growing global risk appetite and the increased share of foreign investors in domestic debt stock caused the domestic borrowing rate to rise only slightly (Box 6.1).

The MTP is based on the projection that current expenditures will be kept under control and growth will essentially be boosted by public investments in 2017. Due to adoption of the recent measures and incentives package, the 2017 budget deficit is estimated to remain slightly above the MTP target.

6.1. Budget Developments

In the first half of 2017, the central government budget balance posted a deficit of 25.2 billion TL while the primary budget balance recorded a surplus of 1.8 billion TL (Table 6.1.1). In this period, the budget performance exhibited a notable year-on-year deterioration due to soaring budget expenditures vis-à-vis the modest rise in tax revenues.
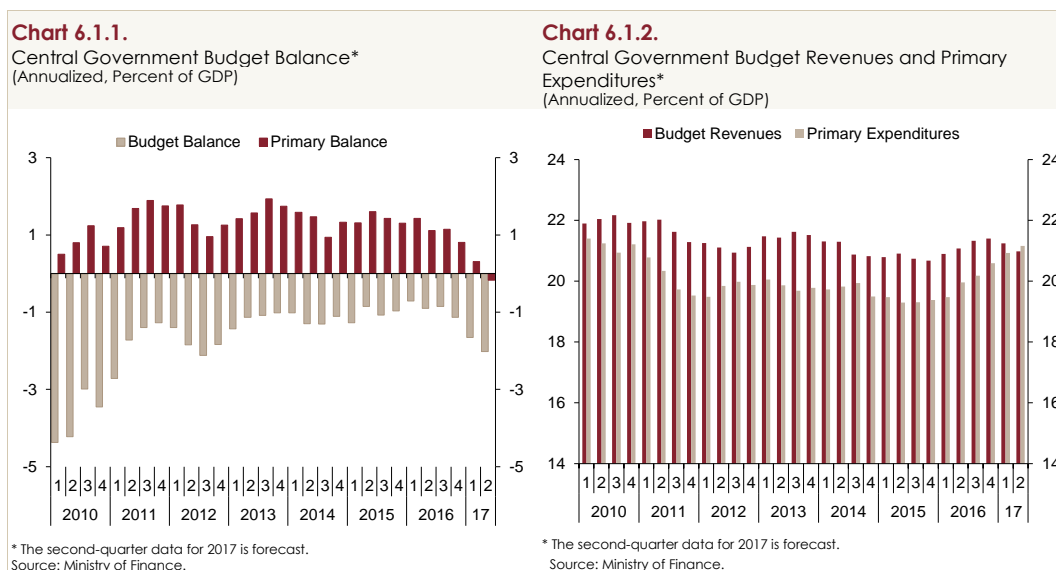
In this period, tax revenues increased at a moderate 13.6 percent year-on-year while non-tax revenues dropped by 13.3 percent, causing central government budget revenues to rise by only 8.8 percent. Meanwhile, soaring by 20.2 percent in the first half of 2017, primary expenditures exceeded budget revenues, leading to a dramatic year-on-year decline in the primary surplus.

Table 6.1.1.
Central Government Budget Aggregates
(Billion TL)

	January-June 2016	January-June 2017	Rate of Increase (Percent)	Actual/Target (Percent)
Central Government Budget Expenditures	273.9	324.4	18.5	50.3
Interest Expenditures	26.4	27.0	2.3	46.9
Primary Expenditures	247.5	297.4	20.2	50.6
Central Government Budget Revenues	275.0	299.2	8.8	50.0
I. Tax Revenues	216.6	246.1	13.6	48.1
II. Non-Tax Revenues	47.3	41.0	-13.3	56.0
Budget Balance	**1.1**	**-25.2**	**-**	**-**
Primary Balance	**27.5**	**1.8**	**-93.6**	**16.5**

Source: Ministry of Finance.

The central government budget deficit to GDP ratio is expected to be up 1 point year-on-year to 2 percent in the first half of 2017 (Chart 6.1.1). In the same period, the primary budget balance to GDP ratio may drop by 1.3 points from the first half of 2016 to -0.2 percent.

Chart 6.1.1.
Central Government Budget Balance*
(Annualized, Percent of GDP)

■ Budget Balance ■ Primary Balance

Chart 6.1.2.
Central Government Budget Revenues and Primary
Expenditures*
(Annualized, Percent of GDP)

■ Budget Revenues ■ Primary Expenditures

* The second-quarter data for 2017 is forecast.
Source: Ministry of Finance.

* The second-quarter data for 2017 is forecast.
Source: Ministry of Finance.

Having accelerated since 2016, the central government primary expenditures to GDP ratio continued to climb in the first half of 2017. In fact, up by 1.2 points year-on-year, this ratio amounted to 21.2 percent in the first half of 2017, mainly due to the ongoing uptrend in current transfer expenditures (Chart 6.1.2). In the same period, the central government budget revenues to GDP ratio is estimated to hit 21 percent because of adjustments to tax revenues at end-2016 and slowing non-tax revenues.

Data for the January-June 2017 period suggest that central government primary expenditures jumped by 20.2 percent year-on-year particularly due to current transfers, capital expenditures and purchases of goods and services (Table 6.1.2). The significant rise in current transfers was fueled by social security deficit financing, transfers to households and the 5-point reduction in the employer's insurance premium. Personnel expenditures, the key item of primary expenditures, increased at a relatively slower pace. Among investment expenditures, capital expenditures and capital transfers surged by 33.5 and 52.5 percent year-on-year, respectively. In 2017, public expenditures are expected to spur economic growth especially through investments.

Table 6.1.2.
Central Government Primary Expenditures
(Billion TL)

	January-June 2016	January-June 2017	Rate of Increase (Percent)	Actual/Target (Percent)
Primary Expenditures	**247.5**	**297.4**	**20.2**	**50.6**
1. Personnel Expenditures	76.9	81.8	6.4	50.3
2. Government Premiums to SSI	12.5	13.4	6.8	49.3
3. Purchases of Goods and Services	22.4	26.4	18.1	50.7
4. Current Transfers	111.3	143.8	29.2	57.7
a) Duty Losses	2.5	2.5	2.9	35.3
b) Health, Pension and Social Benefits	52.6	76.0	44.5	65.2
c) Agricultural Support	8.3	8.2	-0.3	64.1
d) Reserved Share Revenues	30.4	34.5	13.5	49.3
e) Transfers to Households	5.2	8.3	60.0	61.8
5. Capital Expenditures	15.7	21.0	33.5	31.7
6. Capital Transfers	2.9	4.4	52.5	40.9
7. Lending	5.8	6.6	15.1	51.3

Source: Ministry of Finance.

Over January-June 2017, central government budget revenues increased by 8.8 percent year-on-year (Table 6.1.3). Tax revenues, on the other hand, recorded a moderate increase of 13.6 percent owing to the first half's partially improved private spending as well as SCT adjustments and tax revenues

generated by Law No. 6736. Meanwhile, non-tax revenues dropped by 13.3 percent due to the year-on-year decline in privatization revenues.
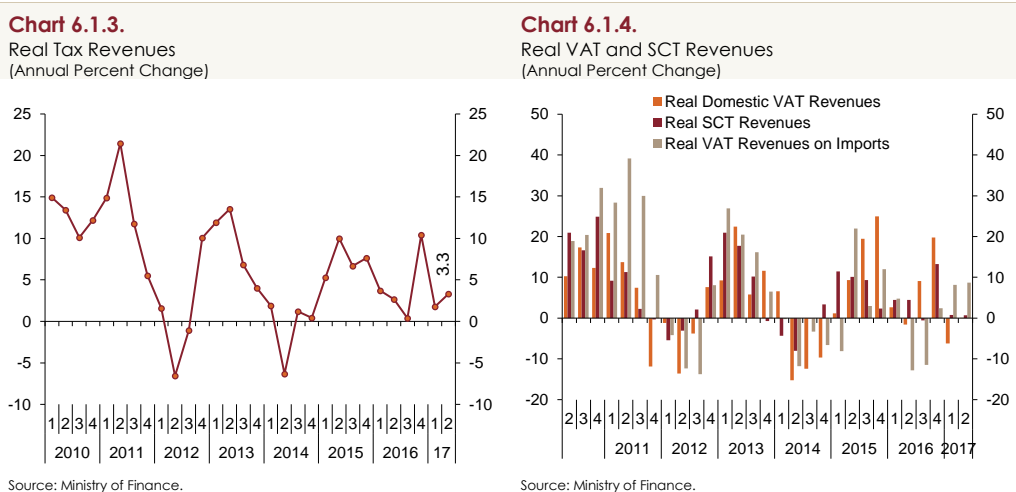
Table 6.1.3.
Central Government General Budget Revenues
(Billion TL)

	January-June 2016	January-June 2017	Rate of Increase (Percent)	Actual/Target (Percent)
General Budget Revenues	**263.9**	**287.1**	**8.8**	**49.1**
I-Tax Revenues	**216.6**	**246.1**	**13.6**	**48.1**
Income Tax	46.2	50.3	9.0	46.2
Corporate Tax	20.5	27.0	31.6	58.6
Domestic VAT	24.2	25.9	6.9	45.3
SCT	54.6	61.0	11.6	44.7
VAT on Imports	36.9	44.4	20.3	53.1
II-Non-Tax Revenues	**47.3**	**41.0**	**-13.3**	**56.0**
Enterprise and Property Revenues	17.0	14.7	-13.8	85.6
Interests, Shares and Fines	17.3	16.9	-2.1	45.1
Capital Revenues	10.7	7.0	-35.0	45.2

Source: Ministry of Finance.

Across sub-items, the mild increase in tax revenues was driven by revenues collected from SCT, domestic VAT and income tax, while revenues collected from VAT on imports and corporate tax increased at a relatively faster pace. On the other hand, total SCT collection remained muted due to the sluggish growth of SCT revenues from oil, natural gas and motor vehicles. However, revenues from SCT on alcoholic beverages and tobacco products grew at a relatively faster pace in the first half of 2017. Meanwhile, VAT on imports recorded a sizeable year-on-year upturn of 20.3 percent in the first half of 2017 largely due to the Turkish lira depreciation.
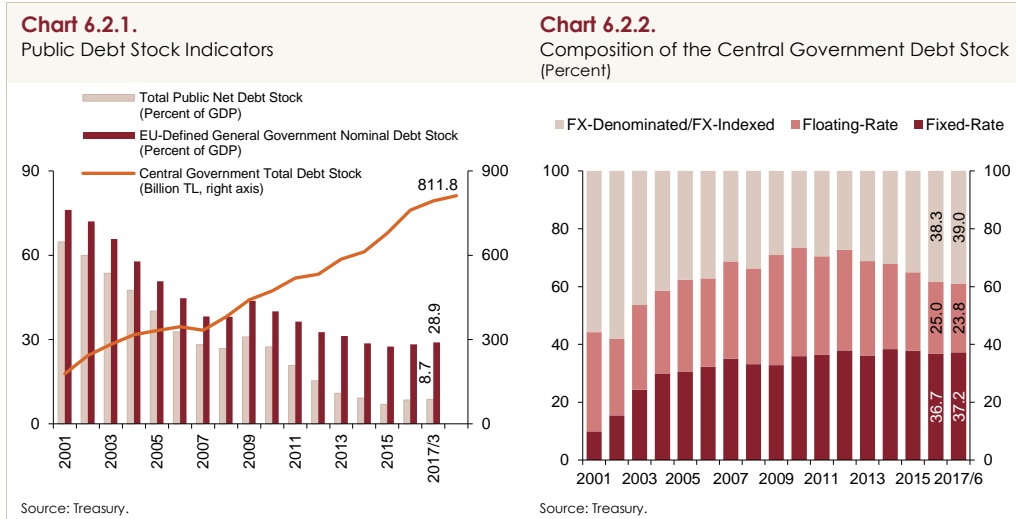
In annual percentage change terms, real tax revenues lost momentum in the first quarter of 2017 after picking up in the last quarter of 2016, but steered back to recovery in the second quarter of 2017, growing by 3.3 percent (Chart 6.1.3). Main drivers of this increase include the rebounding economic activity as well as the adjustments[1] to certain tax rates in the last months of 2016 and tax revenues generated by the Law No. 6736. Across sub-items, the collection of VAT on imports soared by an impressive 8.7 percent year-on-year in real terms over the second quarter of 2017 (Chart 6.1.4).

Chart 6.1.3.
Real Tax Revenues
(Annual Percent Change)

Source: Ministry of Finance.

Chart 6.1.4.
Real VAT and SCT Revenues
(Annual Percent Change)

Real Domestic VAT Revenues
Real SCT Revenues
Real VAT Revenues on Imports

Source: Ministry of Finance.

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[1] Tax adjustments were applied to fuel, automobiles and tobacco products in September, November and December, respectively.
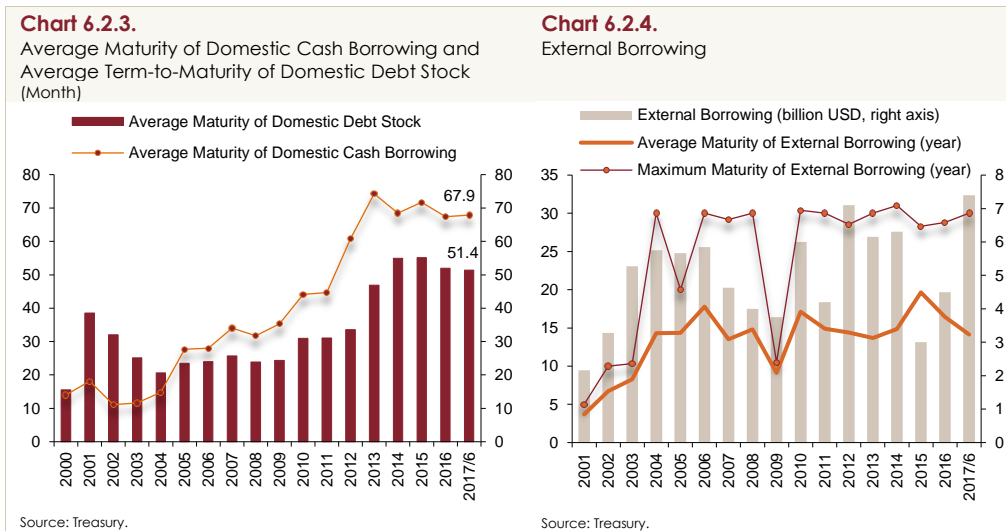
6.2. Developments in the Public Debt Stock

The total public net debt stock to GDP ratio and the EU-defined general government nominal debt stock to GDP ratio inched up in the first quarter of 2017 on an annual basis (Chart 6.2.1). The EU-defined general government nominal debt stock to GDP ratio was 28.9 percent in the first quarter of 2017.

Chart 6.2.1.
Public Debt Stock Indicators

Chart 6.2.2.
Composition of the Central Government Debt Stock
(Percent)
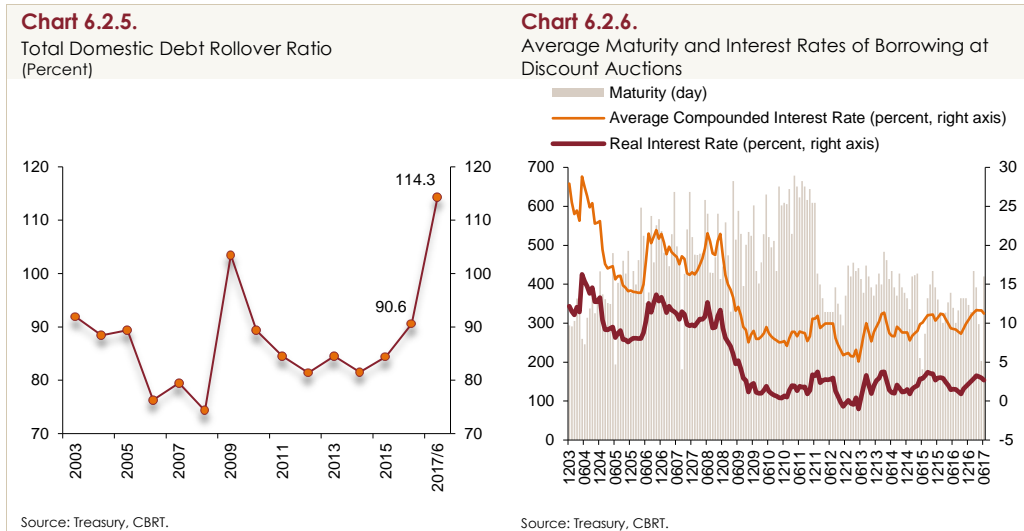

Source: Treasury.

Source: Treasury.

In June 2017, the share of fixed-rate and FX-denominated/FX-indexed securities in the total debt stock increased from 2016, while the share of floating-rate securities declined slightly, owing to the high level of net external borrowing and the fact that domestic borrowing was mostly financed by fixed-rate securities in this period. The higher share of external borrowing in the budget deficit financing restricted the growth of domestic borrowing in the first two quarters of 2017.

The average term-to-maturity of the domestic debt stock has been flat since 2016 at 51.4 months (Chart 6.2.3). In January-June 2017, external borrowing by bond issues stood at 7.4 billion USD with its average maturity falling to 14.1 years (Chart 6.2.4).

Chart 6.2.3.
Average Maturity of Domestic Cash Borrowing and Average Term-to-Maturity of Domestic Debt Stock
(Month)

Chart 6.2.4.
External Borrowing

Source: Treasury.

Source: Treasury.

Having accelerated from 2016, the domestic debt rollover ratio reached 114.3 percent at the end of June 2017, while the external debt rollover ratio stood at 166.2 percent (Chart 6.2.5). The average compounded interest rate and real interest rate[2] recorded a month-on-month downtick in June (Chart 6.2.6).

Chart 6.2.5.
Total Domestic Debt Rollover Ratio
(Percent)

Source: Treasury, CBRT.

Chart 6.2.6.
Average Maturity and Interest Rates of Borrowing at Discount Auctions

Maturity (day)
Average Compounded Interest Rate (percent, right axis)
Real Interest Rate (percent, right axis)

Source: Treasury, CBRT.

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[2] Real interest rates are calculated by subtracting the 12-month-ahead inflation expectations of the CBRT Survey of Expectations from nominal interest rates (average annual compounded interest rate at the Treasury's TL-denominated zero-coupon securities auction).

Box 6.1	Effects of Foreign Investors' Share on the Long-Term Borrowing Rate

The recent surge in the domestic debt rollover ratio prompts the question of how this will affect the domestic borrowing rate. Thus, it is important to identify the determinants of the long-term domestic borrowing rate. This box analyzes the determinants of long-term domestic borrowing rate, focusing on the effects of foreign investors' share in the domestic debt stock.[3]

The share of foreign investors in the domestic debt stock affects the long-term borrowing rate through three different channels: i) creating an additional source of demand for domestic borrowing, ii) contributing to a deeper domestic financial market by widening the investor base of the debt stock, iii) improving the efficiency of the bond market.[4]

Turkey, like other emerging economies, attracted massive capital flows following the global financial crisis in 2008 and 2009. The share of foreign investors in the domestic debt stock climbed to 18.3 percent in this period from its pre-crisis average of 11.6 percent. In addition to foreign investors' preferences for long-term TL borrowing instruments, push factors like low interest rates and quantitative easing in advanced economies, and pull factors such as Turkey's sound macroeconomic fundamentals also played role in this surge.

Data and Methodology

The causal relationship among variables should be taken into account in estimating the effect of foreign investors' share on long-term rates. In order to remedy any possible endogeneity due to the bi-directional causality, this box utilizes the vector error correction model (VECM), which is also widely used in the literature to address this problem. In addition, this model also allows to decompose the short-term and long-term effects of foreign investors' share on the long-term borrowing rate. Estimations are conducted using monthly data, covering the January 2006-May 2016 period. The dataset includes short-term and long-term interest rates, foreign investors' share in the domestic debt stock and medium-term inflation expectations as well as VIX and MOVE in order to capture global risk appetite.

The determinants of the borrowing rate are selected based on a term structure model.[5] Accordingly, long-term interest rates are determined by short-term interest rates, the spread between short-term and long-term interest rates, inflation expectations, share of foreign investors in domestic borrowing (fs) as well as global and country-specific risks and uncertainties. Given the average maturity of the domestic debt stock, the long-term borrowing rate is set to be the 5-year government bond rate (i_5y), while the short-term interest rate is the overnight repo rate (ref), which is the benchmark policy rate. The variable obtained from the spread between the 3-month Treasury bond rate and the benchmark rate is the short-term rate spread (sspread), which has an informative value regarding the short-term financial conditions and risk premium as well as the slope of the yield curve. Additionally, the spread between the 2-year government bond rate and the benchmark interest rate (lspread) is also included in the analysis given its impact on the long-term slope of the yield curve as well as on long-term financial conditions and risks. Inflation expectations (exp) are 24-month-ahead expectations obtained from the CBRT Survey of Expectations. Global uncertainties and risks are captured by VIX and MOVE.

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[3] This box is based on Yılmaz and Yüksel-Yücel (2016).
[4] This is based on Peiris (2010), Du and Schreger (2015), Ebeke and Lu (2015).
[5] Ebeke and Lu (2015) use the same approach.

Results for the long-run dynamics captured by the VECM method are shown in Table 1. Accordingly, a 1-point drop in foreign investors' share causes an increase of 3 to 5 basis points in the 5-year government bond rates in the long run (Table 2). The coefficient for foreign investors' share is estimated to be -0.03 and -0.05, which is in line with the findings of similar studies. The significance of foreign investors' share in the long term may imply that factors determining the foreign investors' preferences may also affect long-term interest rates. The coefficient of error correction term is negative and significant as expected, which suggests that the long-run cointegrating relationship is significant and equilibrium will be restored in case of a deviation from long-run equilibrium.[6]

Table 1. Long-Run Equation from VECM for Long-Term Interest Rates				
Dependent Variable: 5-Year Government Bond Rate (i_5y)				
	(1)	(2)	(3)	(4)
Short-term interest rate (ref)	0.92*	0.92*	0.93*	0.93*
	(71.054)	(71.504)	(72.028)	(72.23)
Inflation expectations (exp)			0.17***	0.16***
			(1.83)	(1.71)
Foreign investors' share (fs)	-0.05*	-0.05*	-0.03**	-0.03**
	(-3.11)	(-3.17)	(-1.97)	(-1.98)
Constant	2.96*	2.99*	1.57*	1.66*

Notes: MOVE is used as an exogenous variable in equations (1) and (3), while VIX is used in equations (2) and (4). Values in parenthesis are t-statistics, while *, **, *** denote p-values for 1, 5 and 10 percent, respectively.

The coefficient of foreign investors' share in short-run equation in Table 2 is around -0.20, which implies that a 1-point decrease in foreign investors' share increases long-term interest rates by 20 basis points in the short run. Obviously, the effect of the foreign investors' share on interest rates is different in the short term from that in long term, with the impact being much stronger in the former (Table 2). This difference may be attributed to the fact that investors with speculative motives react more aggressively to short-term shocks than investors with long-term investment goals. Also, this difference is consistent with the fact that long-term interest rates depend more on the structural features of the economy than short-term interest rates. This long-term evidence supports similar findings for peer emerging economies, while the short-term evidence is unique to Turkey.

Meanwhile, risk indicators have a positive effect on interest rates as expected. A higher global risk appetite, which can be captured by lower MOVE and VIX, puts a downward pressure on long-term borrowing rates. On the other hand, a higher interest rate spread causes long-term interest rates to rise. As for inflation expectations and short-term interest rates, both are found to have no statistically significant effect on long-term government bond rates. It should be noted that a temporary increase in the domestic debt rollover ratio can only affect the long-term borrowing rate to the degree it drives the long-term interest rate spread higher in this model. However, as shown in Table 2, a possible uptick in the long-term interest rate spread may offset the effects of a higher global risk appetite or a rise in foreign investors' share on long-term borrowing rates.

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[6] The cointegration coefficient shows the speed of adjustment to long-run equilibrium after being subject to a shock, and it is expected to range between -1 and 0. Hence, a negative value estimated for the cointegration coefficient in this study indicates that the long-run equilibrium will be restored with the adjustment of the 5-year government bond rates.

Table 2. Short-Run Equation from VECM for Long-Term Interest Rates				
Dependent Variable: Change in 5-Year Government Bond Rate (Δi_5y)				
	(1)	(2)	(3)	(4)
Error correction term	-0.51*	-0.54*	-0.49*	-0.52*
	(-8.815)	(-9.541)	(-7.931)	(-8.619)
Autocorrelation term (Δi_5yt-1)	0.21*	0.2*	0.22*	0.21*
	(3.010)	(2.897)	(2.849)	(2.748)
Short-term interest rate (Δref$_{t-1}$)	0.06	0.06	0.05	0.05
	(0.765)	(0.799)	(0.632)	(0.661)
Inflation expectations (Δexp$_{t-1}$)			-0.008	-0.024
			(-0.025)	(-0.072)
Foreign investors' share *(Δyp$_{t-1}$)*	-0.21*	-0.22*	-0.20*	-0.22*
	(-2.957)	(-3.247)	(-2.867)	(-3.148)
Short-term interest rate spread (sspread)	0.31*	0.29*	0.28*	0.27*
	(4.142)	(3.970)	(3.779)	(3.546)
Long-term interest rate spread (lspread)	0.36*	0.38*	0.37*	0.39*
	(5.079)	(5.407)	(4.818)	(5.196)
MOVE	1.40*		1.43*	
	(3.500)		(3.549)	
VIX		1.09*		1.02*
		(3.953)		(3.617)
R^2	0.594	0.605	0.579	0.583

Notes: Values in parenthesis are t-statistics, while *, **, *** denote p-values for 1, 5 and 10 percent, respectively. MOVE and VIX are used in differenced logarithmic terms. Δ represent the monthly change of the respective variable.

In sum, the analysis shows that foreign investors' share and global risk appetite are major determinants of long-term interest rates in Turkey. In view of these results, it can be concluded that a tentative rise in the domestic debt rollover ratio or a temporary increase in financial market volatility, which may put upward pressure on borrowing rates in the short run, can be counterbalanced by higher foreign investors' share in the domestic debt stock and growing global risk appetite.

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