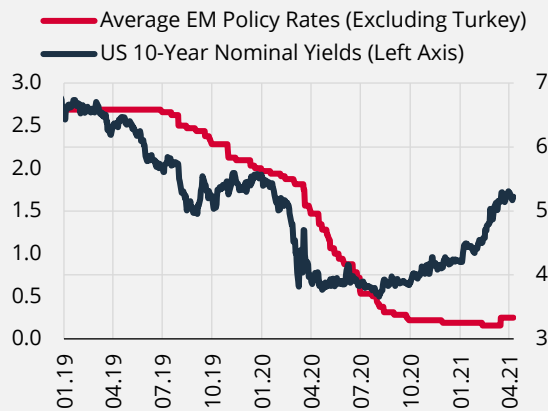


## Box 3.1

### Transmission of Fed Monetary Policy Shocks to Turkish Economy

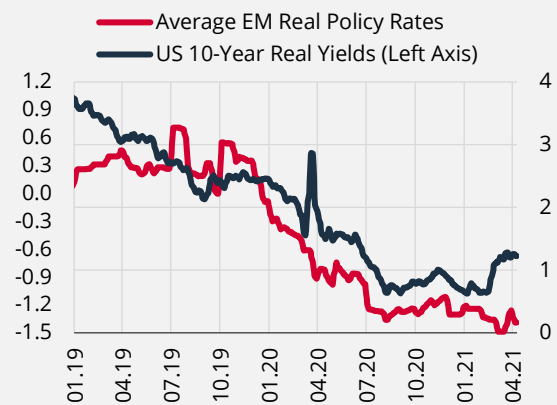
The monetary policies of advanced countries are the main determinants of the global financial cycle (Rey, 2015), which in turn causes significant joint movement between advanced and emerging market interest rates. In addition to adjusting policy rates in response to their domestic demand conditions, central banks also have to react to global supply and demand shocks. In this regard, as an important actor in the global financial cycle, the Fed's policy rate plays an important role for small, open economies such as Turkey's. Studies in the literature<sup>1</sup> demonstrate that interest rates of other countries move in tandem with policy and long-term interest rates in the USA and emphasize the importance of global and external shocks for developing countries.

**Chart 1: US Treasury Yields and EM Policy Rates (%)**



Source: Bloomberg.

**Chart 2: US 10-Year Real Yields and EM\* Ex Post Real Policy Rate (5-Day MA, %)**



Source: Bloomberg.

\* Emerging Markets: Brazil, Indonesia, S. Africa, Colombia, Mexico, Russia and Turkey.

The parallelism between US treasury bond yields and emerging market (EM) policy rates indicates a cycle in which global interest rates move together (Charts 1 and 2). In 2019, due to the weak global growth outlook and low inflation expectations, EM central banks accompanied the declining interest rates in the USA by their own rate cuts. Indeed, in the second half of 2019, Turkey also experienced an aggressive process of interest rate cuts. The pandemic led to an acceleration in US real interest rate cuts as of early 2020 and created an important space for monetary loosening for developing countries. US Treasury bond yields, which have been on the rise recently, are expected to reflect gradually on the policy interest rates of EM economies.

In the coming period, the course of the components of the US Treasury bond yields is important in terms of the risk appetite for the assets of developing countries like Turkey. Rising inflation expectations and strengthening growth expectations in the real economy create an upward room for maneuver for both inflation compensation and real interest rates. In an environment where US Treasury bond yields are on the rise, Fed policy rates are also expected to enter an upward trend at some point in line with inflation and growth expectations (Box 2.2).

<sup>1</sup> For the implications of US short and long-term interest rates and policy interest rates on developing countries in the international macroeconomics literature, see Georgiadis (2016), Caceres et al. (2016), Dedola et al. (2017).

The recent rise in US inflation expectations feeds market expectations that the Fed will be able to use the policy rate tool. Tightening global financial conditions and deteriorating risk appetite make the Turkish lira more sensitive to US interest rates and increase the sensitivity of domestic macroeconomic variables to a possible Fed monetary policy tightening. A structural BVAR model is employed in order to demonstrate the repercussions of a Fed monetary policy shock, domestic supply and demand shocks, risk premium shocks and global supply and demand shocks on a small-open economy such as Turkey (Tüzün, 2021). The shock identification of the model is based on the sign and zero restrictions presented in Table 1.

**Table 1: Structural BVAR Model Sign and Zero Restrictions**

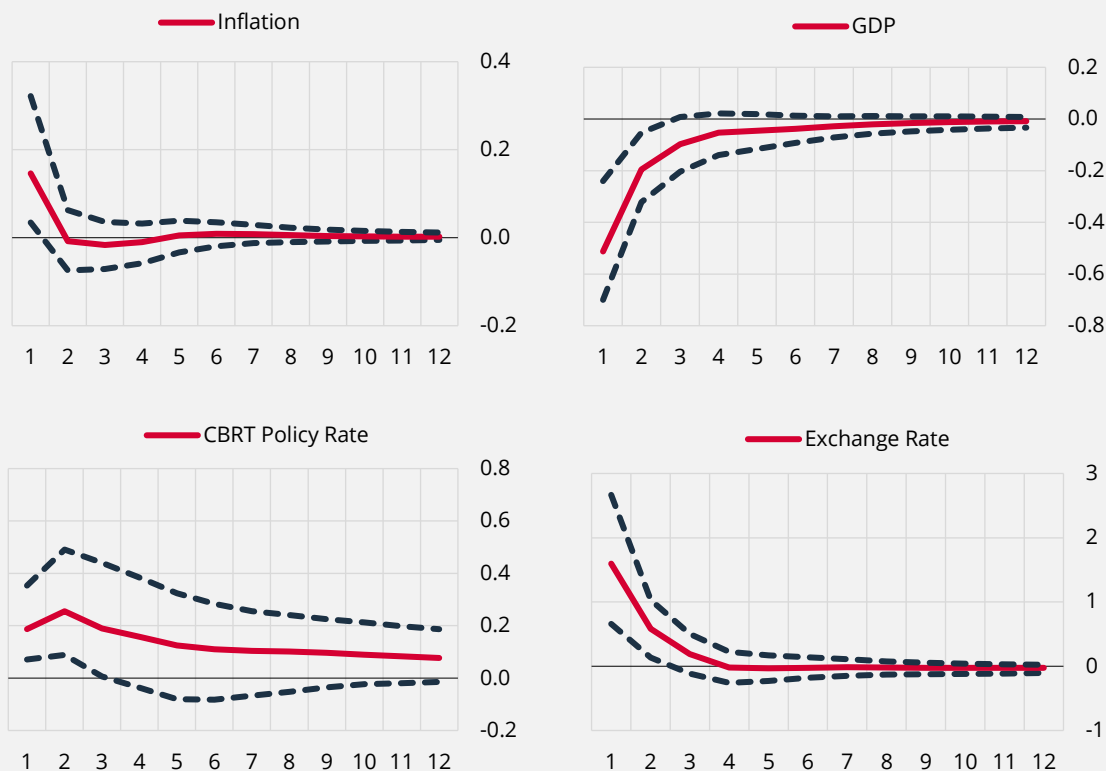
Shocks Variables	Domestic Monetary Policy	Domestic Supply	Domestic Demand	Risk Premium	Global Demand	Oil Price	Foreign Monetary Policy
Global Demand	0	0	0	0	+	-	●
Oil Prices	0	0	0	0	+	+	●
FED Policy Rate	0	0	0	●	●	0	+
Domestic Prices	-	-	+	-	+	+	●
Domestic Output	-	+	+	+	+	●	●
CBRT Policy Rate	+	●	+	●	●	●	+
Exchange Rate*	-	0	●	-	●	●	●

\* Negative sign (-) of the exchange rate means appreciation of the Turkish lira, all the restrictions are imposed on the first period of the structural shocks. Black points demonstrate the absence of any sign or zero restriction.

According to the sign restrictions, while the domestic monetary policy shock is defined as a tightening shock that decreases the inflation and domestic output, and leads to an appreciation in the Turkish lira, the foreign monetary policy shock is identified as a structural shock that causes an increase in the effective Fed funds rate as well as in the CBRT policy rate. The supply and demand shocks in the model are identified as structural shocks that move the inflation and economic activity in the opposite and same direction, respectively. As central banks do not react to the primary effects of supply shocks in the monetary policy literature, zero restrictions are added to the relevant cells. Since developing countries are small, open economies, domestic shocks have no effect on global variables (block externality assumption). Under the aforementioned sign and zero restrictions, following 12 quarters, the responses of the fundamental macroeconomic variables of the Turkish economy to a 10-basis-point foreign monetary shock are presented in Chart 3.

A positive shock in the Fed monetary policy is a costly exogenous shock that tightens external financial conditions and negatively affects the global risk appetite, simultaneously causing a contraction in activity and an increase in inflation. A 10-basis-point increase in the Fed policy rate causes tightening of external financial conditions, an increase in the costs of borrowing from abroad, and a deterioration in the balance sheets of firms with foreign currency liabilities due to the increase in the exchange rate. The tightening of external financing conditions causes the financing cost of the current account to rise, leading to an increase in the exchange rate so as to balance the current account deficit. While inflation increases due to exchange rate pass-through, economic activity shows an additional contraction due to the tightening of domestic monetary policy and domestic financial conditions, the latter being driven by the balance sheet channel. The model results reveal that, in the light of historical behavior patterns, as against the Fed monetary policy shock of 10 basis points, the domestic policy rate increased by an average of 20 basis points in the same quarter, which in turn, gave way to an economic contraction of 0.51% on average and a 0.15-point increase in inflation. While the impact on the domestic policy rate reached its highest level (26 basis points) with a one-quarter lag, the cumulative effect on growth also increased significantly in the following quarter. After the Fed's tightening, the effect on the Turkish lira depreciates by 1.6% in the first quarter, and this loss is started to be recovered with the domestic monetary policy reaction.

**Chart 3: Responses of Domestic Macroeconomic Variables to a 10-bp Fed Monetary Policy Shock\***



Source: Author's calculations.

\* Red lines demonstrate the median response to the shock, while the area between the dashed lines demonstrates the 68% credibility interval of the response.

The estimation results are consistent with the findings that emerging economies follow the monetary policies of advanced country central banks and react more than one to one. Although domestic financial conditions may exhibit a different tendency from external financial conditions in certain periods, this decoupling is far from being permanent and sustainable in terms of macroeconomic balances. Indicators related to global financial conditions, the course of US long-term bond yields in particular, remain important for Turkey and will be kept closely monitored in terms of their impact on risk appetite and the domestic monetary policy.

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