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Research Notes in Economics

What Drives Portfolio Flows to Turkey? The Dynamics and a Historical Accounting of the Flows

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Abstract

Portfolio flows to emerging economies, as well as to Turkey, have been increasingly large and volatile in recent years. This paper aims to shed light on the drivers of portfolio flows to Turkey, for the preceding decade. The drivers are classified using the traditional “push vs. pull” framework, which we augment by a distinction between “cyclical vs structural” factors. While the relative importance of global and country-specific drivers varies over time, in the aftermath of the global financial crisis country-specific ones dominate in driving portfolio flows. Among the global drivers the risk appetite of investors matters most for portfolio flows. Among the domestic drivers, growth, country risk and real interest rate have the highest impact on flows. As for the cyclical vs structural distinction, although cyclical pull factors dominate the structural ones in driving flows, the contribution from the structurals is on the rise. In that respect, both financial resilience and the political and social attributes of the country seem to be important in attracting flows.

Özet

Gelişmekte olan ülkelere yönelen portföy akımları, son yıllarda giderek daha yüksek miktarlı ancak daha dalgalı bir seyir izlemektedir. Türkiye için de benzer bir durum söz konusudur. Bu çalışma, geçtiğimiz on yıllık dönemde Türkiye'ye yönelen portföy akımlarının belirleyicilerine ışık tutmayı amaçlamaktadır. Çalışmamızda portföy akımlarının belirleyicileri, geleneksel “iten-çeken faktörler” çerçevesine “döngüsel ve yapısal” faktörler ayrımı da eklenerek sınıflandırılmaktadır. Küresel ve ülkeye özgü dinamiklerin göreli önemi zaman içerisinde değişmekle beraber, küresel finansal krizin ardından ülkeye özgü dinamiklerin Türkiye’ye yönelen portföy akımlarında daha belirleyici olduğu gözlenmiştir. Küresel etmenler içerisinde, uluslararası yatırımcıların risk iştahı portföy akımları açısından en önemli belirleyicidir. Ülkeye özgü belirleyiciler arasında ise, akımlar üzerinde en yüksek etkiye sahip olan değişkenlerin büyüme, ülke risk primi ve reel faiz olduğu görülmektedir. Döngüsel ve yapısal ayrım çerçevesinde değerlendirildiğinde, ülkeye özgü döngüsel faktörler yapısal olanlara karşı baskın olsa da, yapısal faktörlerin önemi giderek artmaktadır. Bu bağlamda, gerek finansal sistemin sağlamlığı gerekse ülkeye özgü politik ve sosyal özellikler portföy akımlarını çekmede önem arz etmektedir.

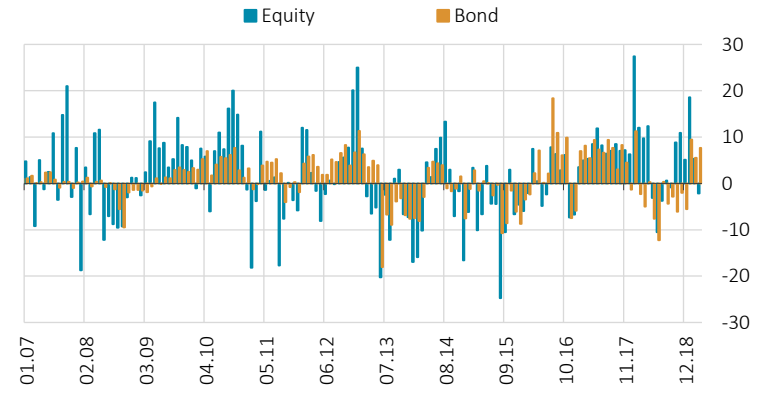
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1. Introduction

The period right after the 2008-09 global financial crisis (GFC) is characterized by globally abundant liquidity conditions and extremely low interest rates for a long time in advanced economies. This picture is accompanied with improved growth outlook, relatively higher interest rates and lower risk ratings for emerging economies (EMEs), leading to massive portfolio inflows (Figure 1). However, these inflows have become increasingly large and volatile. At the same time, asset prices in EMs have experienced large swings, in many instances coinciding with episodes of capital flow surges and reversals. The vast literature on capital flows focuses on identifying the factors that drive capital to emerging markets, and discovering those that most fully explain the waves of capital flows. In this context, the factors that encourage or hinder international flows of capital are categorized under two groups: (i) those that are external to the economies receiving the flow, referred to as push factors and (ii) those that are internal, referred to as pull factors, which is introduced by the seminal papers of Calvo, Leiderman and Reinhart (1993) and Fernandes-Arias (1996).

The overall findings in the literature seem to suggest that both push and pull factors matter, but their relative importance varies across recipient countries, types of flows and time.[1] When EM-specific policies and conditions are driving the flows, policy response should be to focus on making their domestic economies more resilient by improving institutions, deepening financial markets and enhancing macroeconomic and prudential policies.

Figure 1: Portfolio Flows Towards Emerging Economies (Billion $)



Source: EPFR.

Furthermore, the distinction between cyclical versus structural factors is considered to be complementary to that between pull versus push factors. While cyclical factors, by nature, reflect short-term determinants, structural factors are more long-term and related to fundamentals of an economy.[2] Therefore, the relative impact of the drivers of capital flows has important consequences for policy making (Hannan, 2018).

The GFC in 2008 also hit the Turkish economy, which contracted the following year. However, thanks to its financial consolidation following the 2000 – 2001 crisis, Turkey was one of the few countries that did not experience a financial crisis since the contraction was mainly due to weak external demand. Hence, with the increase in portfolio flows on a global scale in the aftermath of the GFC, Turkey was one of the countries attracting international portfolio flows. Yet, in the last couple of years, mainly after 2016, Turkey's share in portfolio inflows to EMs has declined which intrigued us to dig into the main drivers of these flows.

[1] See Hausman and Wongswan (2011); Fratzscher (2011); Fratzscher et. al. (2013); Mishra et. al. (2014); Ahmed and Zlate (2014) and Ahmed, Coulibaly, Zlate (2015).

[2] For example, an inflow due to a strong domestic economy or due to a temporary decline in foreign interest rate demands completely different policy responses; a combination of fiscal tightening and exchange rate appreciation for the former and additional reserve accumulation for the latter to be exact.

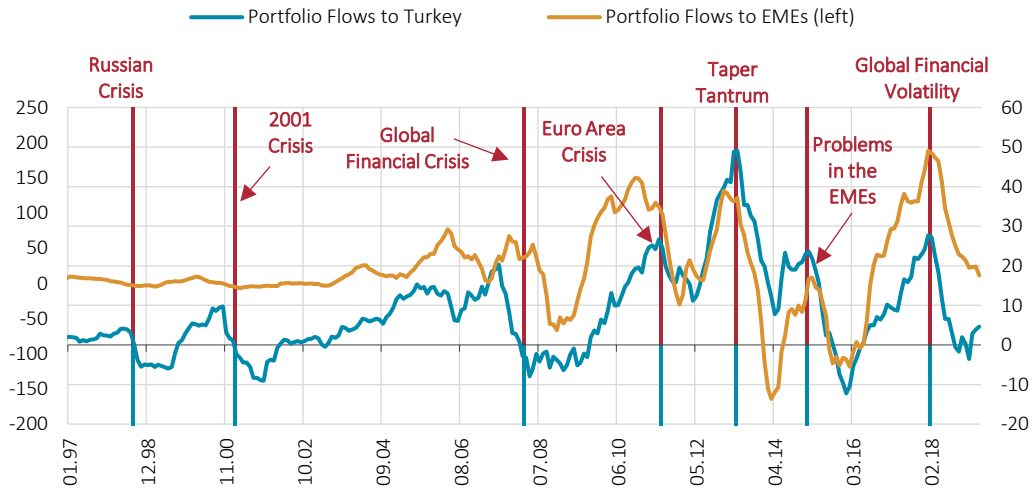
This study aims at identifying the relative impact of global and domestic drivers of portfolio flows towards Turkey over the last decade. The drivers are classified according to the standard "pull-push" framework, which is extended by incorporating the distinction between cyclical and structural factors. Against this background, we investigate the drivers of flows to Turkey from a quantitative historical decomposition perspective using Bayesian VAR framework. Our aim is to shed a light on possible implications for policy making in that respect.

2. Portfolio Flows Towards EMEs and Turkey

Between 2002 and 2007, Turkish economy grew steadily by an average of 7% and accordingly, in the first half of the 2000s capital flows resumed, largely as portfolio inflows. The GFC in 2008 also hit the Turkish economy and economic activity contracted in the following year. Yet, the main cause of the contraction was the weak external demand and Turkey was one of the few countries that did not experience a financial crisis owing to its improved fundamentals following the 2000–2001 crisis as well as to its financial markets being in the early stages of development.

Following the GFC, despite reaching much higher volumes than pre-crisis period, portfolio flows towards EMEs, as well as towards Turkey, became more and more volatile (Figure 2). A prolonged period of low interest rates in advanced economies has moved investors to high-yielding emerging market assets. While, presence of excessive global funds boosted investment and growth in EMEs and helped develop domestic financial markets, the behavior of global fund flows increased the volatility in asset markets, amplifying both boom and bust periods through balance sheet channels. Indeed, following the "taper tantrum" in May 2013, there has been sharp withdrawals from EME markets, which led to a sharp depreciation of their currencies, leaving the corporates with higher refinancing risks. Turkey, with no exception, has taken its share from the sharp withdrawal in equity and bond markets during this period.

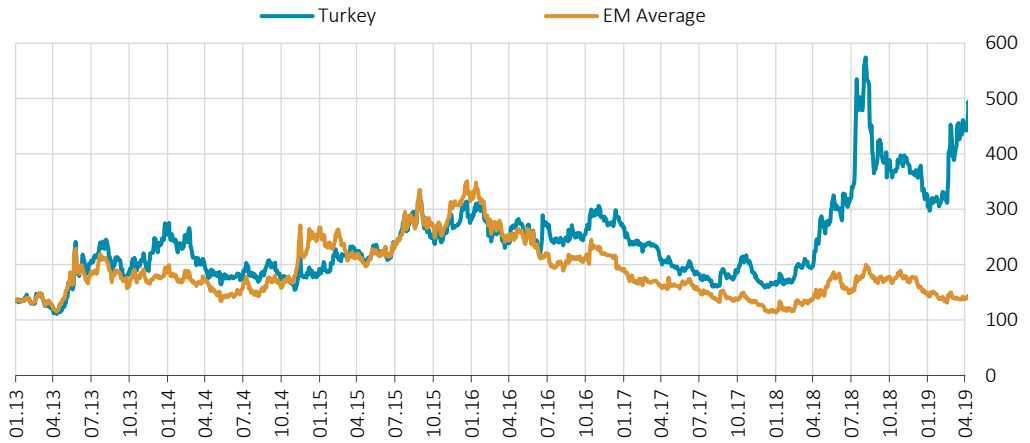
Figure 2: Portfolio Flows Towards EMEs and Turkey: a Historical Perspective (Billion $)



Source: CBRT, EPFR.

In the following period, specifically in 2015, the decline in commodity prices that EMEs produce and export, and expectations for Fed to raise interest rates were the most important two challenges that deteriorated the investor sentiments towards EMEs. Coupled with 2016 US presidential elections, and the elevated uncertainty over global economic policies afterwards, most specifically amid rising global trade tensions, EMEs suffered major capital outflows. This in turn led to considerable financial market melt-down in EMEs.

Figure 3: Five-Year CDS Premium

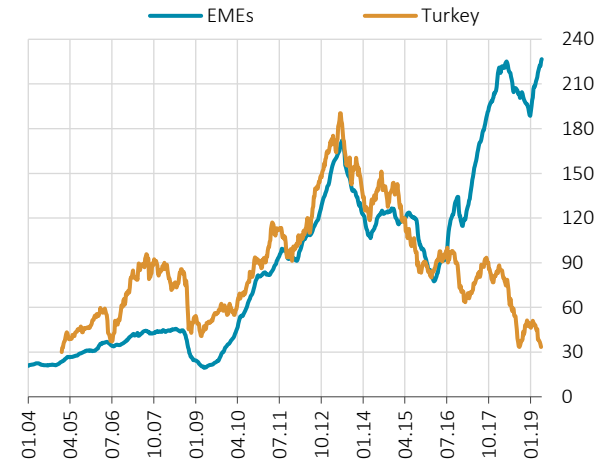


Source: Bloomberg, CBRT.

Considering the geopolitical developments in 2016 on top of the elevated uncertainty, capital outflows from Turkish financial markets were also severe. EMEs enjoyed a rebound of portfolio inflows as of early 2017, thanks to the waning uncertainty about the Fed's future monetary policy despite the ongoing tightening. Turkey, displayed a different picture in attracting portfolio flows. We witnessed a higher risk premium starting from 2016 for Turkey relative to the emerging economies (Figure 3). While EMEs started attracting inflows, flows towards Turkey continued their steady decline that became evident after July 2016 especially for bond flows (Figure 4 and Figure 5).

The brisk and steady course of portfolio inflows to emerging economies in 2017 proved stronger in January 2018. However, due to the turmoil in global financial markets in early February, portfolio inflows towards emerging economies saw an interruption. Inflows subsequently resumed but could not keep up the pace of 2017 due to tight financial conditions in advanced economies, lingering geopolitical uncertainties and increased protectionism in global trade. Owing to these developments portfolio flows to EMEs have lost steam and the downward trend in the share of Turkey has continued (Figure 4, Figure 5 and Figure 6).[3]

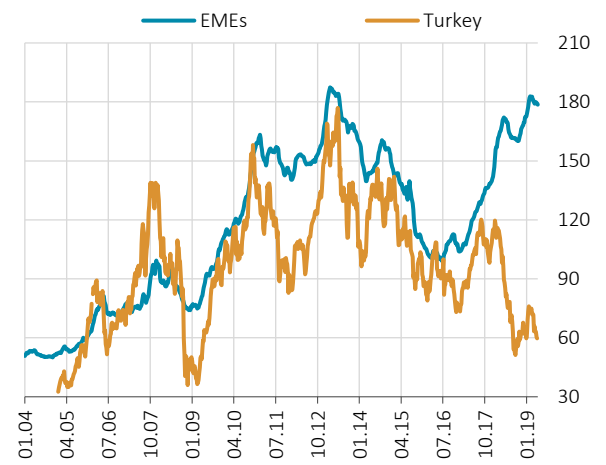
Figure 4: Inflows to Bond Markets (July 2017=100, Stock)*



Source: EPFR, CBRT.

* Exchange rate, price and fund basket adjusted.

Figure 5: Inflows to Equity Markets (July 2017=100, Stock)*



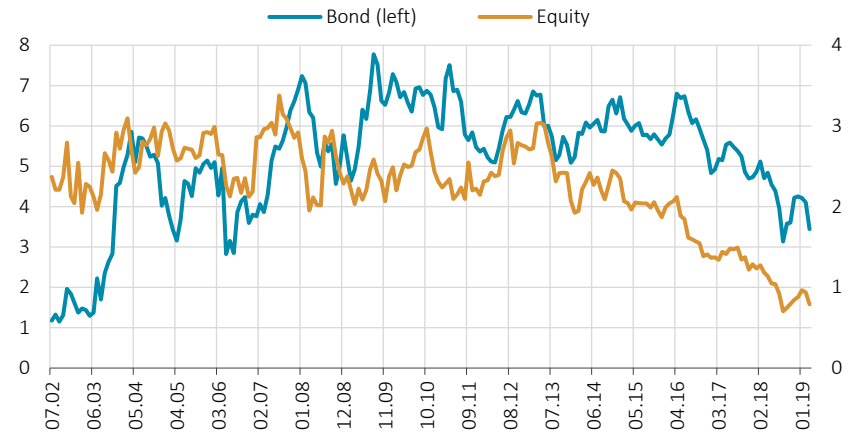
Source: EPFR, CBRT.

* Exchange rate, price and fund basket adjusted.

[3] Turkey's bond holdings of non-residents as of January 2019 is approximately $ 17 billion. If 6.5% share of last decade on average had been maintained, it would have been around $ 30 billion. Non-resident Turkish equity holdings is approximately $ 27 billion as of January 2019. If 2.5% share of the last decade had been maintained on average, the said equity holdings would have been about $ 90 billion.

Aforecited brief history sheds light on the changing relative importance of the global and domestic factors on portfolio flows through time. Therefore we would like to elaborate more in detail on the potential drivers of portfolio flows.

Figure 6: Share of Turkey in Total Portfolio Flows Towards EMEs (%)



Source: EPFR.

3. Drivers of Portfolio Flows: Pull vs Push and Cyclical vs Structural

Throughout the literature, drivers of portfolio flows are most commonly analyzed within a pull-push framework. “Push” factors are defined as the factors that determine the supply of flows to the recipient country which are driven by external developments and are common to all recipient countries. Although a number of different push factors are analyzed in various studies, over time there emerged a consensus in the related literature on the push factors. Global liquidity conditions, investors’ risk appetite and monetary policies of major economies are found to play a major role in explaining flows to emerging markets. “Pull” factors, on the other hand, are characterized as country specific or internal economic factors and domestic policies of the recipient country. Therefore, they are considered to be demand for flows and may vary for different emerging economies. From a different perspective, pull factors also reflect the resilience of recipient countries and their potential ability to cope with large and volatile capital flows, given the potential risks associated with them (IMF, 2012). However, unlike push factors, there is no consensus in the literature over the impact of pull factors on flows.

Another categorization of the drivers of international portfolio flows is put forth as (i) cyclical and (ii) structural factors. Koepke (2015) argues that the classification of structural and cyclical factors is complementary to that of pull-push framework. Pull factors can be structural or cyclical in nature, as can be push factors. Cyclical factors, in a broad sense, can be defined as time varying factors, that are more short-term in nature and that often vary across different phases of the business cycle, such as real GDP growth and interest rates. The strength of economic indicators (such as economic growth, budget deficit, foreign debt, foreign exchange reserves) and country specific risk indicators are the cyclical drivers that would “pull” international investors (Hannan, 2018). Structural factors, on the other hand, are more long-term in nature and relate to the fundamental structure of an economy, such as its institutions, policy and regulatory frameworks. In other words, structural factors are slow moving variables that represent specific characteristics or features of the economy. In this respect, international investors are “pulled” by attractive structural factors in a country with sound macroeconomic fundamentals and safe institutional environment, which offer profitable investment opportunities to global investors.

In this respect, an integrated approach that enfolds both structural and cyclical factors would rule out the risk that the importance of structural factors on portfolio flows is understated[4].

4. Data

We select a set of pull and push variables based on the existing literature. Among these variables we also differentiate between the cyclical and structural forces that shape the evolution of portfolio flows. Table 1 provides the drivers of portfolio flows used in our analysis. The cyclical push factors consist of (1) the VIX index as a measure of global risk appetite, (2) Manufacturing PMI of advanced economies as a measure of prospects for economic activity, (3) US shadow rate to reflect the US monetary policy stance, capturing both its conventional and unconventional aspects. We use the shadow rate calculated by Krippner (2016). As for the structural push factors we use (1) share of institutional investors in advanced economies[5], calculated using the EPFR database and (2) the global economic policy uncertainty index by Baker, Bloom and Davis (2016). Certainly, there are other critical structural push factors[6] which could be exploited but based on data availability at monthly frequency we could only use the rising share of institutional investors and global economic uncertainty as structural drivers of portfolio flows in our analysis.

The cyclical pull factors include (1) CDS index of Turkey to capture the country riskiness, (2) Manufacturing PMI of Turkey as a measure of prospects for economic activity, (3) the domestic real interest rate is calculated both in ex-ante and ex-post terms using the weighted average marginal funding cost of CBT. For ex-post rates the realized inflation is utilized, while for ex-ante rates 1- year ahead expected inflation from Expectations Survey of CBT is used.

As for the structural pull factors[7], we use two composite indices obtained from PRS Group's International Country Risk Guide (ICRG) with the aim of analyzing the potential risks to international business operations, etc. We use two major categories of the ICRG indicators; namely political and financial risk ratings. Political risk rating has 12 components, as listed in Table 1, which cover both political and social attributes of the country. It reflects the business environment in a country covering indicators such as governance, democratic accountability, bureaucracy quality, etc. Financial risk rating is derived from 5 different indicators to provide a means of assessing the country's external financial resilience (Table 1). In other words, it is an indicator for measuring a country's ability to meet its external financial debt obligations. For both indicators, the lower the total risk point the higher the risk associated with the country.

[4] Belke and Volz (2018) argues that in periods like post-GFC, when interest rates are too low for long and policy uncertainty is high, the importance of structural factors on portfolio flows is understated.

[5] Institutional investors have long-term investment strategies when allocating their assets. That is to say, these investors do not change their investment strategies frequently, to put it differently, they do not take the short-term market fluctuations into serious consideration. It should be a strategy to shift away from certain emerging markets, in order for these type of investors to re-allocate their funds (IMF, 2014). In other words, institutional investors, unlike retail investors do not have a strong tendency to buy or sell at the same time. Thus, it is important to know the presence of institutional investors in global asset markets, as the tendency in co-movement of flows from investors to funds is another source of destabilization on EME assets.

[6] Structural push factors used in the literature also include regulatory changes in international capital markets, integration of world capital markets (Fernandes-Arias 1996), portfolio diversification, information and communication technology (Koepke, 2015).

[7] Structural pull factors used in the literature include trade openness, FX reserves, exchange rate regime, institutional quality, income per capita, capital openness, financial development and productivity improvements in recipient countries, the opportunity for risk diversification, country creditworthiness (World Bank (1997) and Hannan (2018)).

Table 1: Classification of the Drivers of Portfolio Flows

	Push factors	Pull factors	
Cyclical	➢ *Global risk appetite (VIX)* ➢ *Advanced economy output (PMI_AE)* ➢ *Advanced economy monetary policy stance (US shadow rate)*	➢ *Country risk (CDS_TR)* ➢ *Domestic output (PMI_TR)* ➢ *Domestic real interest rate (Ex-post / ex-ante)*	
Structural	➢ *Share of institutional investors in advanced economies* ➢ *Global economic policy uncertainty*	*Political Conditions:* • Government Stability • Socioeconomic Conditions • Investment Profile • Internal Conflict • External Conflict • Corruption • Military in Politics • Religious Tensions • Law and Order • Ethnic Tensions • Democratic Accountability • Bureaucracy Quality	*Financial Vulnerability:* • Foreign Debt as a % of GDP • Foreign Debt Service as a % of Exports of Goods and Services • Current Account as a % of Exports of Goods and Services • Total Official Reserves as Months of Import Cover • Exchange Rate Stability

The portfolio flow variable is the total monthly equity and bond flows to Turkey, obtained from the CBT database. Our database spans a sample period from May 2005 to April 2019 at monthly frequency. All variables used in the estimation process are stationary. In that respect, global economic policy uncertainty, US shadow rates and Turkish real interest rates are used in first differences.

5. Methodology

We set up a VAR framework for the variables defined in the preceding section. Taking into account the relatively small sample size and large number of variables, estimation via classical methods could lead to imprecise estimation of the parameters, thus we adopt Bayesian principles while estimating the VAR. We exploit the BEAR toolbox by Dieppe, et. Al (2018) in estimating the model. The VAR model is written as follows:

$$y_t = A_1 y_{t-1} + A_2 y_{t-2} + \cdots \ldots + A_p y_{t-p} + C x_t + \varepsilon_t \text{ , where } t = 1,2, \ldots . T$$

In this setup, y_t is the vector of endogenous data, x_t is the vector of exogenous regressors, which is only the constant term in our case, p is the lag length and ε_t is the vector of residuals that follows a multivariate normal distribution, $\varepsilon_t \sim \aleph(0, \sum)$. If we write the vector of coefficients as $(A_1, A_2, \ldots . A_p \; C)'$ we can rewrite the model in more compact notation as $= XB + \varepsilon$, where X represents the endogenous and exogenous variables of the model. For estimation purposes, the parameters of interest are the coefficients of the model, B, and the residual variance-covariance matrix, $\sum$. Finally, in vectorized form, the model is written as follows:

$$y = (I_n \otimes X)\beta + \varepsilon$$

We estimate the model under Normal-Wishart priors. In that respect, for the prior distribution of the coefficients (β) we assume a multivariate normal distribution and for the variance-covariance matrix of the residuals $(\sum)$ we assume an inverse Wishart distribution, as follows:

$$\beta \sim \aleph(\beta_0, \sum \otimes \Phi_0) \text{ and } \sum \sim IW(S_0, \alpha_0)$$

For β_0, which is the prior mean of the coefficients, we use the conventional Minnesota prior by Litterman (1986). Since, in our case the variables are all stationary we prefer a value of 0.8 for own first lag coefficients. The matrix Φ_0 is a function of four hyperparametrs $(\lambda_1, \lambda_2, \lambda_3, \lambda_4)$, which control the variance of the VAR coefficients. For these hyperparameters, we use the values that are known to typically work well in the literature, which are 0.1, 1, 2 and 100 respectively. The prior scale parameter, S_0, is determined according to univariate AR regressions.

The VAR is estimated using two lags and the structural identification of the model is carried out through Choleski factorization. The Choleski ordering of the variables entering the VAR is specified as follows:

$$\{Gl.ec.pol.uncert., VIX, US_{shadow\ rate}, PMI_{AE}, Political\ con._{TR}, Financial\ vul._{TR}, Real\ int.rate_{TR}, PMI_{TR}, CDS_{TR}, Flows_{TR}\}^{8}$$

In this ordering, we place the push factors first, namely the global economic policy uncertainty, the risk appetite of global investors, the US shadow rate and the PMI of advanced economies, so that they are exogenous to Turkey-related variables. Moreover, since we want all global variables to be exogenous to Turkey, not only at the contemporaneous relation, which is already ensured by the Cholesky ordering, but also at the lagged level, we impose block exogeneity in the estimation of the VAR. Among the pull factors, we first place the structural variables in the Cholesky ordering and then the cyclical ones. We place the portfolio flows last in the VAR, so that they react contemporaneously to all other variables in the system.

6. Main Findings

We start by presenting the results of the VAR with the impulse response functions of the portfolio flows following a shock to each of the remaining variables in the model. We then proceed to the forecast error variance decomposition and the historical decomposition of portfolio flows to Turkey.

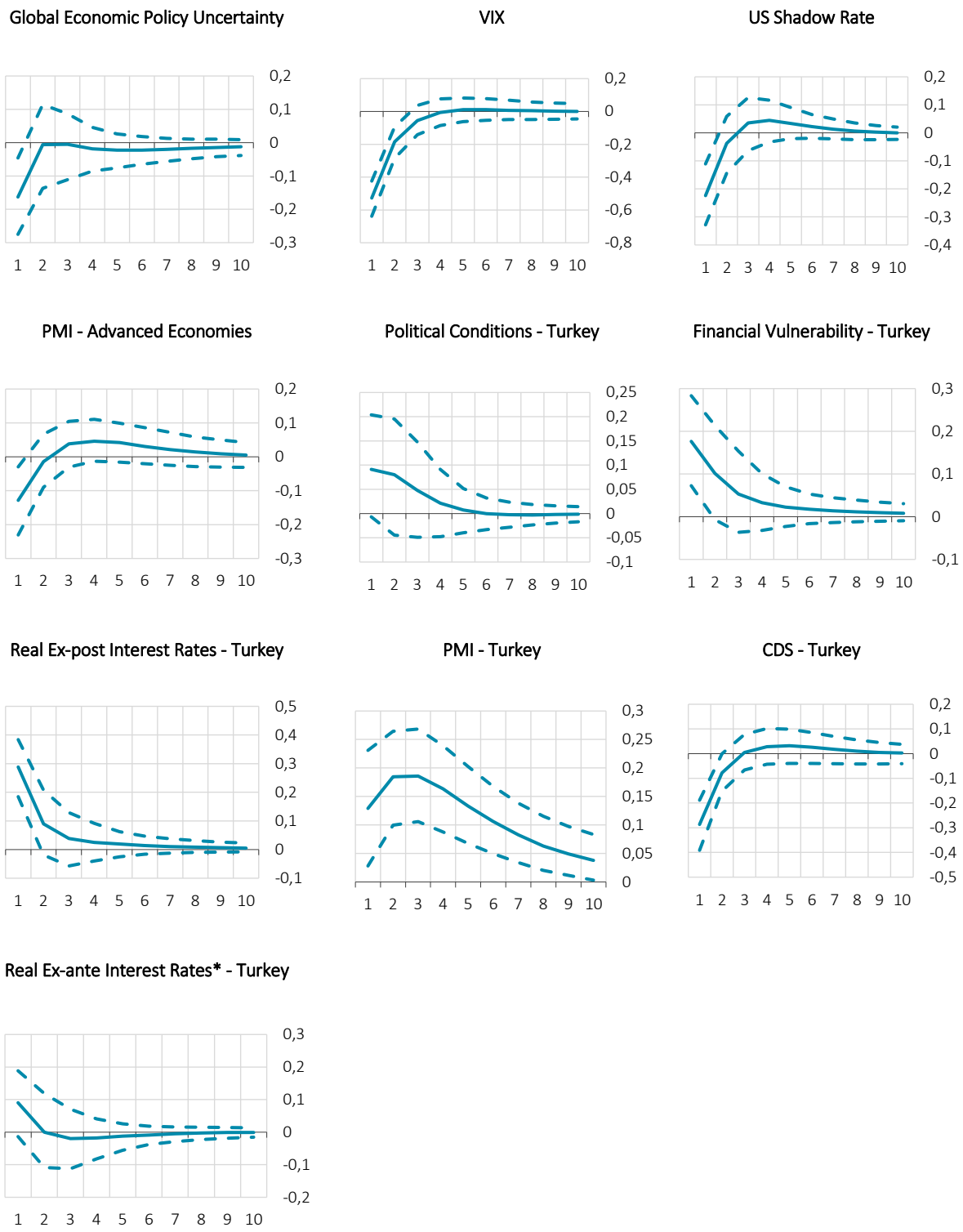
Figure 7 presents the impulse response functions for the portfolio flows following a shock to the variables included in the VAR. The shocks are defined as a one-standard- deviation change in each of the variables in the system, one at a time.

First, we assess the impulse responses to a one-standard deviation shock to the pull variables. We start with the cyclical ones. A one standard deviation shock to ex-post real interest rate of Turkey, which corresponds to, approximately, a 1 percentage point change (0.96 percentage point change, exactly) leads to a 0.29 point increase in flows to Turkey, on impact, which is significant. To put it more conveniently, a 1 percentage point increase in Turkish real ex-post interest rates leads to a 290 million USD worth of portfolio flows to Turkey within the first month after the shock. We also run our VAR model using the ex-ante real interest rates instead of ex-post rates. The reaction of flows to a shock to ex-ante rates is positive on impact, as it is the case for ex-post rates, though it is not significant.

Another pull factor in our analysis is the CDS of Turkey. We see that the portfolio flows deliver a strong and significant response to a shock to CDS. A one standard deviation shock to CDS (approximately 23 basis points increase) leads to 286 million USD worth of portfolio outflows from the country on impact. Another cyclical pull factor in our model is the growth prospects of the Turkish economy, captured by PMI. A one standard deviation shock to the manufacturing PMI of Turkey (approximately 1.4 points increase) leads to a 0.13 point increase (equivalent to 130 million USD) in portfolio flows to Turkey and the effect of the shock is much more long lived compared to shocks to other financial variables. As for the structural pull variables, a shock to both political conditions and financial vulnerability (a positive shock indicates a bettering of conditions) increases portfolio flows to Turkey on impact, though it is not significant for political conditions. The magnitude of the reaction of flows to a one standard deviation change in each of these indicators is much bigger for the financial vulnerability index.

[8] For the definitons of the variables, refer to Table 1.

Figure 7: Impulse Response Functions (Response of Portfolio Flows to 1 Std. Deviation Shocks, %)



Source: Authors' calculations.
Note: Estimated structural impulse response functions (solid lines) and the associated confidence intervals (dotted lines) are presented. The impulse responses represent the responses of the total portfolio flows to Turkey to a one-standard-deviation shock to the rest of the variables included in the VAR, one at a time.
* Real ex-post and ex-ante rates are used interchangeably in the VAR. The impulse responses of other variables are quite similar when we use ex-ante real interest rates instead of ex-post real rates, thus we abstain from presenting them separately.

Next, we assess the impact of the push variables. We start with a VIX shock, which has the highest impact on portfolio flows to Turkey, among both domestic and global drivers. Considering an increase in VIX, which means a decline in the risk appetite of global investors, we see a sharp decline of portfolio flows to Turkey. The decline is statistically significant on impact.

To quantify the impact, one standard deviation shock to VIX, which corresponds to a 3.9 point increase in VIX, leads to a 0.53 point decline in total portfolio flows to Turkey on impact, that is, approximately 530 million USD worth of portfolio outflows. US monetary policy stance is another cyclical push factor of portfolio flows in our analysis. Figure 6 shows that a one-standard deviation shock to US shadow rate, corresponding to a tightening of US monetary policy by approximately 0.27 points, reduces the total portfolio flows to Turkey by 0.22 point (approximately 220 million USD) on impact and the response is significant. The growth prospects of advanced economies, as captured by PMI, is another cyclical push factor in our analysis. A one-standard deviation shock to the PMI of advanced economies (approximately 0.92 points increase) leads to a decline of flows to Turkey, which is significant on impact. As for the structural push variables, we use the share of institutional investors in advanced economies and the global economic policy uncertainty. Since a shock to the share of institutional investors led to insignificant and very small responses of flows we dropped it from the VAR. As for the global economic policy uncertainty, a one-standard deviation shock to uncertainty, corresponding to an approximately 33 points increase in the index, leads to a decline of flows on impact, which is significant and in line with our expectations.

We now show the relative importance of a given structural shock in explaining the volatility of the portfolio flows. For this purpose, we compute the forecast error variance decomposition implied by our VAR results, which is provided in Figure 8. In that respect, the variance of portfolio flows appears to be mostly due to its own shocks, which is around 65 percent. This could reflect the importance of idiosyncratic factors at higher frequency -which would probably be lower at a quarterly or annual frequency. It should also be noted that our model does not capture other factors such as the fund-manager decision-making behavior, which could also effect this result. For the rest of the variance, we see that the risk appetite of global investors is the most important contributor to the volatility of portfolio flows to Turkey. Owing to the high contribution of the risk appetite, global factors, on aggregate, are contributing slightly more to the variance of flows compared to the domestic factors; 16.3 percent and 14.5 percent, respectively. Among the domestic factors, the growth prospects, the risk sentiment associated with the country and the real interest rate seem to be the highest contributors to the variance of flows. In both cases, cyclical factors dominate the structural factors in contributing to the variance of portfolio flows.

Figure 8: Variance Decomposition of Portfolio Flows (%)

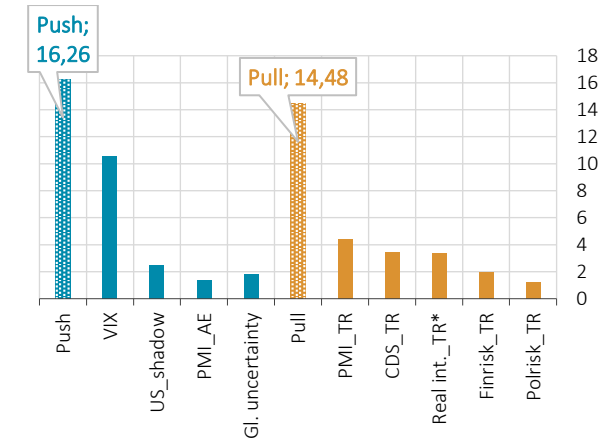
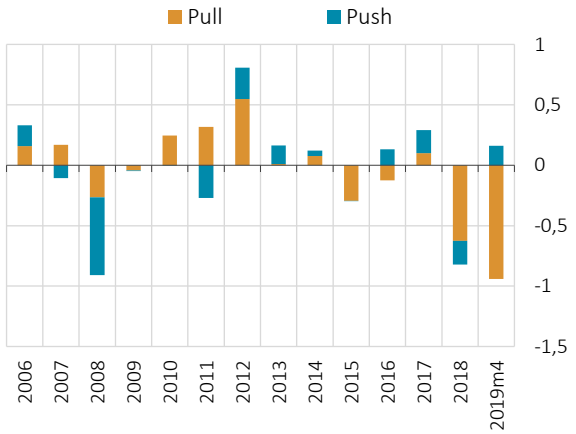


Figure 9: Historical Decomposition of Portfolio Flows
(Annual Average of Monthly Effects)



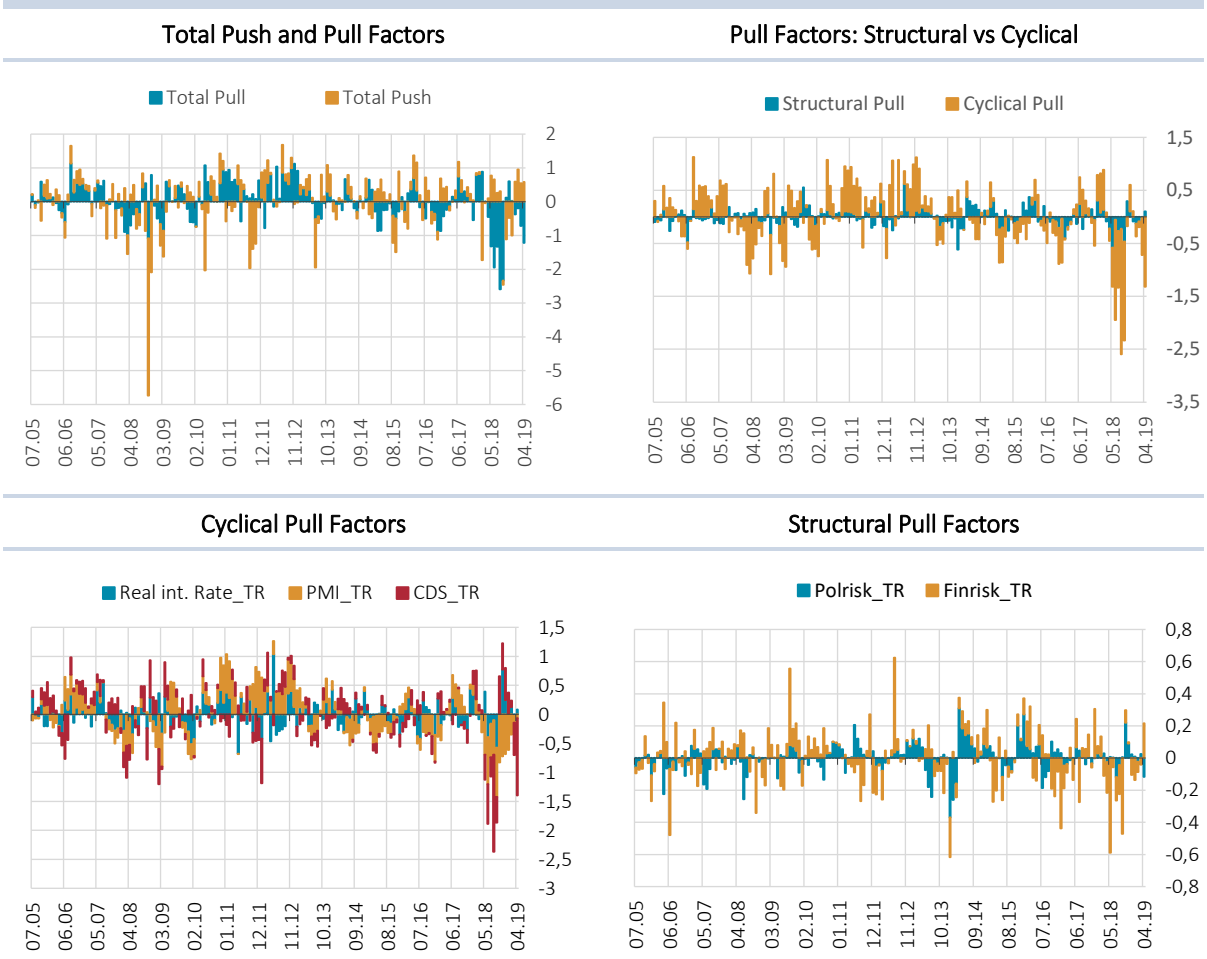
*Real ex-post interest rates.

Now, the question is "what is the contribution of each structural shock to the historical dynamics of the portfolio flows during our sample period?" For this purpose, we compute the historical decompositions from our VAR model. Figure 9 reveals the simple annual averages of the historical contributions of global and domestic drivers of portfolio flows. It shows that the relative importance of the domestic and global factors varies over time: At the onset of the global financial crisis, global factors are the dominant drivers of the flows, as it is the case for all emerging economies. Domestic factors gain strength and become the main driver of flows in the aftermath of the crisis. Looking at the very recent past, in 2017, while both global and domestic factors are almost equally contributing to the portfolio inflows, the portfolio outflows in 2018 and in the first four months of 2019 seem to be stemming mainly from domestic factors.

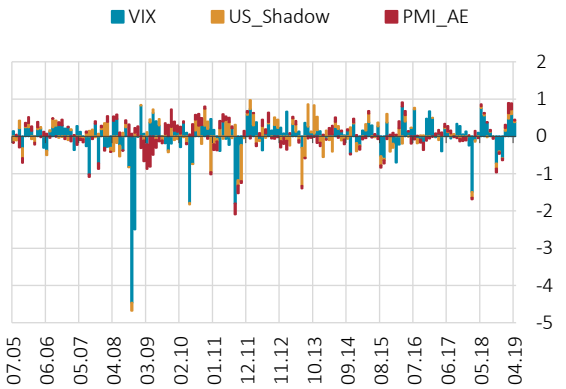
We now delve into the historical contributions of each factor to portfolio flows in more detail at monthly frequencies including the cyclical versus structural distinction both for domestic and global drivers (Figure 10). The first observation that leaps to one's eye is that the historical contributions from domestic drivers display a much more persistent nature compared to contributions that are more volatile from global drivers. Given the more volatile nature of global financial variables -most specifically VIX in our case- compared to more stable domestic macroeconomic fundamentals; this is in line with one's expectations. Both for the domestic and global factors, cyclical ones have always been more dominant in driving flows into or out of the country compared to structural ones.

Looking at the cyclical pull factors in more detail, the growth prospects of the country has been the most important driver of portfolio flows to Turkey almost throughout the whole sample period. The real interest rate and the riskiness of the country have been more or less of equal importance in driving flows. Looking at the recent past, all cyclical pull factors are contributing to the portfolio outflows observed in the second half of 2018.

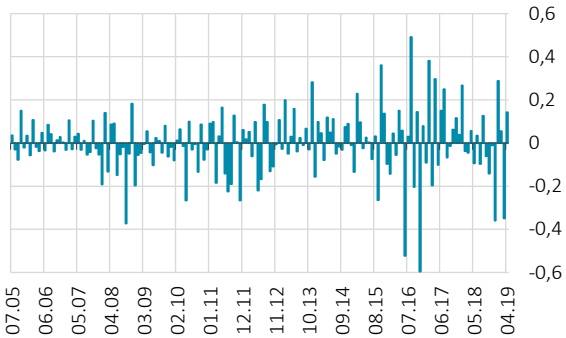
Figure 10: Historical Decomposition of Portfolio Flows: Pull vs Push Drivers (Monthly Effects)



Cyclical Push Factors



Structural Push Factor: Global Economic Policy Uncertainty



It is also noteworthy that, after the strong policy rate hike delivered in September 2018, real interest rate and CDS both contributed positively to the portfolio flows, while growth prospects had a negative contribution. Although cyclical pull factors dominate the structural ones, it is striking that the contribution from the structurals has been on the rise, roughly since 2012. We see that structural pull factors, along with the cyclical ones, are significant contributors to portfolio outflows in 2018. In more detail, both financial resilience and the political and social attributes of the country emerge as important drivers of portfolio flows throughout the sample period.

As for the global drivers, the risk appetite of global investors, captured by VIX, dominates all other drivers throughout the whole sample period. The monetary policy stance of US and the growth prospects of the advanced economies seem to be more or less of equal importance in driving flows, while the magnitude of their contributions with respect to each other changes over time throughout the sample. For instance, the negative contribution of the monetary policy stance of US increases right in the aftermath of the Taper Tantrum, which is when Fed's exit from its unconventional monetary policy was put into words for the first time which implies diminishing abundant global liquidity and less flows to emerging economies. On the other hand, recently, PMI of the advanced economies is contributing positively to the portfolio flows as the growth prospects of the advanced economies, most specifically, of the Euro Area, have been worsening for a while. The contribution of the uncertainty of the global economies policies, as a structural push factor, is on the rise, though in a volatile manner, roughly after 2016, which is in line with our expectations as uncertainty over global economy is being elevated since then amid rising trade tensions, political uncertainties, etc.

7. Conclusion

This study investigates the drivers of portfolio flows to Turkey, to reveal its dynamics with respect to cyclical vs. structural sub-classification of the global and domestic drivers. To this end, we employed a Bayesian VAR framework over a period from May 2005 to April 2019 and made use of impulse response functions as well as variance and historical decomposition techniques.

Our findings suggest that the relative importance of global and country-specific drivers varies over time. Although global drivers are more dominant at the onset of the global financial crisis, country-specific ones dominate in attracting flows to Turkey in the aftermath of the crisis. Moreover, although cyclical drivers matter more for flows compared to structural ones -which holds to be true for both global and domestic drivers-, the effect of the latter on flows is on the rise. To better present our findings, considering 1 standard deviation shocks to domestic drivers, portfolio flows are found to be most sensitive to ex-post

real interest rates, followed by the country risk premium and growth prospects, while reaction to ex-ante real rates are not significant. Nevertheless, historical decomposition analysis showed that the growth prospects of the country has been the most important driver of portfolio flows to Turkey almost throughout the whole sample period, while the real interest rate and country risk have been more or less of equal importance in driving flows. As for the structural pull factors, political & social attributes and financial resilience of the country are found to have similar impact on flows. In brief, the better the political and financial attributes of the country, the better the prospects for portfolio flows. As for the push factors, the global risk appetite is found to be the most important cyclical push factor in driving flows; followed by the US monetary policy stance and the growth prospects of advanced economies. It is also noteworthy that, among all drivers of flows, the risk appetite of global investors is the highest contributor to the volatility of portfolio flows to Turkey throughout our sample period.

In the aftermath of the global financial crisis, although advanced economies carried out long-standing quantitative easing programs, volatility in global growth and uncertainties in global economic policies linger. While at the same time, country-specific risk factors of emerging economies are still in place. Therefore, it is crucially important to implement effective macroeconomic policies in a coordinated manner to reduce vulnerabilities that should be supported by appropriate structural reforms. With this purpose in mind, a key policy implication of the analysis in this study is that emerging economies, as well as Turkey, can better harness the benefits of global liquidity by promoting an attractive business environment for international investors, as well as implementing necessary structural, macroeconomic and macroprudential policies to enhance the financial resilience of their country.

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