# Policy Research Working Paper

# Turkey

# An Empirical Assessment of the Determinants of the Current Account Balance

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#### Abstract

Turkey has moved rapidly from a current account that was relatively in balance up to the turn of the millennia, to sustaining relatively large current account deficits over the past 15 years. Using annual data from 1986 to 2017 and a jackknife model-averaging estimator, the paper estimates the relationship between the current account balance and a set of determinants that are broadly consistent with the cross-country literature. These determinants include private sector credit, public expenditure, real exchange rate changes, gross domestic product growth relative to the rest of the world, trade openness, international oil prices, foreign direct investment levels, past net foreign assets, inflation volatility, and global levels of uncertainty. The analysis then decomposes the predicted current account balance for five-year periods to illustrate the factors that have driven the current account over time. Over 2003–07, a large current account deficit became established in Turkey, driven by an expansion of credit to households and rapid gross domestic product growth, coupled with improved macroeconomic stability that supported higher spending and therefore imports. Since then, the negative effect of household credit has abated, but was replaced in 2008–17 by an expansion of credit to the corporate sector as a driver of the current account deficit. The current account balance in Turkey is also found to be less persistent than.

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## Turkey: An Empirical Assessment of the Determinants of the Current Account Balance<sup>1</sup>

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# Acronym list

BoP	Balance of Payments
CA	Current account
CAB	Current account balance
CAD	Current account deficit
EMDE	Emerging markets and developing economies
FDI	Foreign direct investment
GDP	Gross domestic product
GVC	Global value chains
NFA	Net foreign assets
PPP	Purchasing power parity
REER	Real effective exchange rate
ТОТ	Terms of trade
UMIC	Upper-middle income country
VXO	CBOE Volatility Index

## I. Introduction

The current account balance (CAB) can be seen in two different ways. First, the current account balance can be expressed as the difference between the value of imports and exports of goods and services plus net factor payments and net transfers. As the trade balance tends to be the largest component of the current account, a current account deficit often, although not always, implies a trade deficit, although this need not be the case as countries also earn and pay income and send and receive transfers, most commonly in the form of interest and dividends and remittances. Second, the current account balance also represents the difference between national saving and investment, both public and private. As such, the current account balance indicates a country's position as international net debtor or creditor (for further detail see Annex 1).

While there is no preferable current account position, certain positions are more consistent with a country's stage of development, and the appropriate policy stance depends on the structure of the economy and the underlying drivers. Understanding the drivers of the current account in conjunction with the external developments is crucial for a policy stance even when the current account is not necessarily the target of policy actions. Countries at early stages of their development tend to be net borrowers because, with less abundant capital, their economies offer higher returns to investment relative to developed economies. Countries which aim to diversify their export structure can finance the part of the transformation via lower current account balances. Yet, when a country runs a current account deficit, it is accumulating liabilities to the rest of the world that are financed by flows in the financial account that have to be paid back eventually. Solvency requires that the country can eventually generate sufficient current account surpluses to repay what it borrowed to finance the current account deficits. Therefore, whether a country should run a current account deficit or borrow more depends on the extent of its foreign liabilities and on whether the borrowing will finance investment with a higher marginal product than the interest the country must pay on its foreign liabilities. Even if the country is intertemporally solvent, its current account deficit may become unsustainable if it is unable to secure the necessary financing. While some countries, such as Australia and New Zealand, have been able to maintain current account deficits averaging about 4 to 5 percent of GDP for several decades, others, such as Mexico in 1995, Thailand in 1997, and others during the recent global crisis (IMF 2018) experienced sharp reversals of their current account deficits after private financing withdrew during the financial crisis. These reversals can be highly disruptive because private consumption, investment, and government expenditure must be cut abruptly when foreign financing is no longer available. Thus, large and continuous current account deficits have the potential to make the economy more vulnerable to shocks, with an associated negative effect on the growth prospects (Calvo et al, 2006).

The issue of current account sustainability and its determinants has risen to the fore in recent months as interest rates in developed countries have begun to rise and external financing has become costlier. Nowhere has this been more evident than in Turkey, which suffered a sharp depreciation of its currency in 2018 as investors pulled money out, in turn leading to significant financial sector instability and domestic economic pressure, particularly given existing high levels of exposure to foreign exchange-denominated debt. From the beginning of 2018 to end-September, Turkey's nominal effective exchange rate depreciated by 37 percent. The causes of this sharp adjustment have been variously cited as concerns over political developments, particularly as disagreements between the leaders became apparent in August, the relatively high current account deficit and external financing requirement and growing domestic economic imbalances.

This paper sets out to build a more in-depth understanding of the drivers of current account imbalances in Turkey, and in doing so, to highlight policies that may help avoid CA imbalances becoming unsustainable. Emerging economies, including Turkey, witnessed a marked reduction in their current account balances in the aftermath of the 2008-09 global financial crises. A combination of stronger domestic demand relative to developed countries and international interest rates at historically low levels allowed emerging countries to finance growing investment and consumption by borrowing from abroad relatively cheaply. Worsening of current account balances caused financing concerns in several countries, especially given the perspective of rising global interest rates following normalization of monetary policy in advanced economies. This paper sets out to apply statistical and econometric analysis to the question of what has driven changes to the current account in Turkey over time. In doing so, questions of the sustainability of the current account deficit are discussed in the context of its drivers, and projections are presented for future scenarios.

This paper starts with a review of current account developments over the longer-term, followed by an in-depth analysis of current account dynamics, and possible future policy implications. The rest of the paper is structured as follows: Section I presents the context of the study including a detailed descriptive trend analysis of Turkey's current account, its components, and related variables; Section II presents the results of the econometric exercise to identify the determinants of the current account; Section III sets out forecast scenarios and sensitivity analysis around possible future realizations of determinants and the current account.

#### Overview of recent literature on the current account in Turkey

There is a large literature analyzing current account balances, both across countries and within. Empirical analyses on determinants of the current account typically map it as a ratio to GDP to factors affecting saving and investment. Some surveys provide a discussion of an extensive list of CA determinants in the literature: Calderón, Chong, and Loayza (2002), Cusolito and Nedeljkovic (2013), IMF (2013), Devadas and Loayza (2018). These determinants are used in several empirical studies and/or in the baseline External Balance Assessment (EBA) econometric model run by the IMF (IMF 2018, 2013). Box 1 in next section provides a discussion of the literature on the determinants that are retained for our empirical model.

Much research in Turkey has focused on the sustainability of the current account deficit (CAD), although differing time periods and methodologies have given rise to a range of different conclusions, illustrating the difficulty in arriving at an ex-ante assessment of CAD sustainability. Turkey's current account has been the subject of several research papers over time, particularly following current account liberalization in the early 1980s. Given the changing nature of the current account over time, we will highlight studies after 2000 that focus on sustainability, much of which is summarized in Topalli & Dogan (2016). A variety of different methods employed have given rise to different conclusions - that Turkey's CAD is sustainable, is not sustainable, or may be sustainable under certain conditions. A further reason for the heterogeneity in findings in this literature is the relatively fast-changing nature of the current account position as time has gone by, with more recent studies covering a period of larger and longerrunning CADs tending to find the situation less sustainable. Traditional tests of stationarity provide mixed results and do not clearly point to current account deficits being unsustainable, in contrast to some more qualitative assessments such as Akçay & Ücer (2008). Recent papers that build on this strand of work come to different conclusions. Turan et al (2016) note that based on the degree of cointegration between imports and exports, in the longer term the current account deficit is not sustainable. On the other hand, Abbasoğlu et al (2018), employing the approach adopted by Engel and Rogers (2006), find that the CAD is sustainable in the long-term if Turkey's growth performance relative to the rest of the world continues at a similar rate as it has in the last 15 years. Finally, external assessments, notably the IMF's External Sector Assessment are carried out periodically, the most recent of which is part of the IMF's 2018 Article IV Consultation Staff Report. This assessment indicates that while the real effective exchange rate is not out of line with fundamentals, the current level of the current account (at 5.5 percent of GDP in 2017) is higher than warranted by fundamentals, with a norm CAD estimated to lie in the range of 0.5 and 2.5 percent of GDP.

Relatively fewer recent studies have looked at the economic determinants of the current account balance in Turkey. Those that have, have tended to find that energy import dependence, real exchange rate movements, and the investment and/or saving rate were some of the most important drivers of the CAB in Turkey. Some studies, such as Kara & Sarıkaya (2014), decompose the structural and cyclical components of the CAD. They suggest that the cyclical component of the CAD has subsided in the latter part of their period of analysis of 1998 to 2007 due to policy measures taken at the time, but the structural deficit remained unaffected. Research led by Clarke & Zaidi (2014) into the determinants of the current account found that, among others, the main drivers of the enlarged deficit were a low national saving rate, relatively low productivity growth, and high import costs, particularly for energy commodities. Yurkdakul & Cevher (2015) subjected the CAB and a range of macroeconomic variables to Granger causality testing and identified that the real effective exchange rate was the most significant causal driver of the current account balance. Finally, Topalli & Dogan (2016) employed a Markov-switching model to assess the non-linear impact of different variables on the current account in either a contractionary or expansionary state,

using data from 1990 to 2014. Their research identified energy consumption, openness to trade, GDP, the exchange rate and investment as the most important determinants of the current account.

This paper contributes to the literature on the determination of the current account deficit in Turkey in several ways. First, by covering a period under analysis of 1980 to 2017, this is the longest quantitative, multi-variate time series study on Turkey's current account balance to our knowledge. Secondly, we use and extend a methodology developed by Cusolito and Nedeljkovic (2013) that was first piloted in Turkey in 2013 and since then has been used in an increasingly large number of countries. This methodology uses a novel model-averaging technique to overcome small-sample issues and aims to overcome the most serious issues of endogeneity by careful selection of variables and instrumentation approaches.

#### Turkey's current account balance, external balance, and their components

#### An expanded current account deficit after 2001

From the mid-1980s to 2002, Turkey's current account was on average in balance but has since moved into a deficit. From 1985 to 2001, Turkey's average CAD was 0.5 percent of GDP. However, net gold imports, which are an important form of saving for Turkish households and a reserve item held by the Central Bank, also averaged 0.5 percent of GDP over the period, and netting off gold imports meant that there was an average CAD of 0 percent over those 17 years. Turkey last recorded an annual current account surplus in 2001 (Figure 1), and since then it has incurred a CAD of 4.5 percent of GDP on average per year. The CAB is relatively volatile, with both business cycle trends and year-to-year volatility. The current account is quite variable from year to year, with a standard error of 2 percent of GDP over the period. In the post-2000 period, there are clearly discernable peaks and troughs which coincide with business cycles and the CAB and GDP trends appear closely related (Figure 2).





Turkey's CAD has been roughly comparable to the average of all upper middle-income countries (UMICs), and in most years, smaller than the average for non-natural resource dependent UMICs. At an average of 4.5 percent of GDP per year, Turkey's CAD since 2002 has similar to the average of (today's) UMICs of 4.2 percent and less than the average for non-natural resource dependent UMICs (-6.9 percent) of which Turkey is one (Figure 3).

#### Driven by import expansion, particularly of intermediate goods

The CAD expansion was primarily driven by a growing deficit in the balance of trade in goods, led by rising imports, of which part was due to rising oil prices. The net balance of trade in goods has been negative in almost all of the last 35 years and the trade deficit expanded post 2002 (Figure 4). Both export and import flows grew markedly over the past four decades as the country has moved from a closed, import-substitution model to an open, export-oriented growth model. Exports in Turkey over the period have a relatively high foreign content, so we would expect to see growing imports to support an increasing base of gross exports, and this seems to be the case in the

period up to 2001. However, ever since, exports as a share of GDP have leveled off (Figure 5), while imports have continued to rise (Figure 6). This is clear when considering their change over time: From 1980 to 2001, exports increased by 21.1 percentage points of GDP, while imports rose by 13.7 points. From 2001 to 2017, exports declined by 0.2 percentage points as a share of GDP, while imports grew by a further 7.2 percent of GDP. Turkey is a net oil importer, and as Figure 7 shows, its net oil import bill is sizeable and has grown, much of which has been due to higher oil prices post-2000. However, net energy imports rose from 2.6 percent of GDP prior to 2002 to 4.3 percent, only accounting for a small proportion of the total increase in imports over that period.









**Turkey's openness (trade to GDP) grew only slightly post 2001, at a time when its trading partners were rapidly expanding trade.** Turkey's openness ratio grew from a very low level to around 40 percent by 2001 and 50 percent by 2005, but since then has shown no further sign of increasing. By contrast, the weighted-average openness of Turkey's trading partners is higher, and the gap has increased, especially after the GFC (Figure 8). Therefore, it is interesting to note that Turkey's relative reduction in openness has not apparently been accompanied by a reduction in the CAD over the period, and the next section will provide more evidence on the relationship between openness and the CAD, controlling for other variables.



An increased savings-investment gap has been mostly driven by the imports of intermediates, and to a lesser extent by imports of capital goods. Figure 9 decomposes the trade in goods balance into its components: capital goods, intermediates, consumer goods and other goods. Among these categories, Turkey is only a net exporter of consumer goods. Figure 10 shows the contribution of each of these components to annual change of the trade deficit in goods. Both figures reveal that the imported intermediates are the biggest contributor of the trade deficit in goods.







Although Turkey is one of the OECD countries with relatively low foreign content in its exports (Figure 10), its foreign content has been increasing, which has contributed to the trade deficit, and thus the CAD. Indeed, the foreign content of Turkish exports has almost doubled from 13 percent in 2001 to 22 percent in 2014, as Turkey's integration into global value chains has increased considerably in the last two decades.

#### Historically low national savings and rising investment gave rise to a savings-

#### investment gap

Both national saving and investment have grown since 2001, but investment increased more rapidly, leaving open a substantial gap financed by external funds. At the time of the 2001 crisis, national saving was low, and reached a minimum of 19.9 percent in 2003. Since then, the national saving rate has been gradually increasing and as of the latest year stands at 25.8 percent of GDP - its highest level in the last four decades (Figure 12) and no longer low by international standards. The increase in investment can be seen evolution of constant-price shares of expenditure components of GDP (Figure 13). The only component that grew more than imports since 2001 was investment, which increased its share of GDP by nearly 11 percent. This was at the expense of private consumption and exports which both declined in relative magnitude over the period. While national accounts data are not available to disaggregate investment between the public and private sectors, fiscal data (Figure 14) show that government investment expenditure declined as a share of GDP over the period, so this increase in investment share can be attributed to private, rather than public, investment.







### Improved economic conditions and increasing global liquidity facilitated investment

#### growth

A much more conducive economic environment, including a free-floating lira, has supported increased investment. For the two decades prior to 2000, inflation in Turkey was very high, volatile, and rising - reaching above 100 percent at one point and never less than 30 percent, making investment decisions challenging. Inflation then fell rapidly following the 2001 crisis, and by 2004 was in single digits (Figure 15), with a positive real interest rate contributing to increased appetite for private investment. Since 2001 when the lira was freely floated, the real effective exchange rate (REER) has been effective in avoiding Balance of Payments (BoP) crises, which had occurred

twice in the previous decade. After peaking around 2010, the REER was already gradually dropping (Figure 16) before the collapse of the Lira in 2018. Peak current account deficits in the period prior to 2002 have tended be symptomatic of and precipitate an economic crisis, which occurred in 1994 and in 2001. However, since then, larger deficits have been sustained, particularly as financing inflows have increased and the exchange rate has been free to adjust.



A rapid expansion of private sector credit, especially to corporates, is also likely to have contributed to higher investment and CADs. The large increase in private sector investment over the past 15 years has been associated with a rapid scale-up in private sector credit (Figure 17). Most of this credit went to the corporate sector, rather than to households, with corporate credit rising exponentially from almost nothing in 2001 to over 60 percent of GDP in 2017. At the same time, elevated investment was associated with a steadily falling incremental capital-output ratio (ICOR) (Figure 18), implying that positive effect of investment on the CAB weakened over time. This expansion was facilitated by a period of increasing global liquidity, especially in emerging markets and developing economies (EMDEs). Net capital inflows to EMDEs grew from a low level in 2000 to reach a peak of US\$1 trillion in 2007 and 2010 before falling again as U.S. monetary policy began tightening (Figure 19). Increased availability of external financing







# *Initially led by FDI, the CAD has increasingly been financed by shorter-term financing flows*





Financing of the widening CAD since the early 2000s was initially led by inward FDI, but increasingly it has become financed by shorter-term financing which is more volatile. Sustained, sizeable CADs over the last 15 years have meant that Turkey's international investment position has been negative and its stock of net foreign liabilities has grown (Figure 20). With continued CADs and growing external debt, the national gross external financing requirement (GEFR) has increased, especially post-GFC (Figure 21). Figure 22 and Figure 23 illustrate the composition of the financial account.<sup>2</sup> Net inward FDI was small until 2001, after which it expanded to reach a peak of 3.5 percent of GDP in 2006 (Figure 23) and declined afterwards. The gap post-2006 was filled by a mix of 'other' (bank loans and foreign currency deposits) and portfolio (mostly debt securities) financing. Since capital account liberalization, there have been four portfolio flow reversals leading to net outflows (Figure 22), but otherwise Turkey has generally been a recipient of net inflows. Overall, the use of shorter-term current account financing, which is often associated with greater volatility, increased sharply after the onset of the GFC, aligned with the period when very low interest rates in advanced economies led to inflows into many EMDEs in a 'search for yield'.

<sup>&</sup>lt;sup>2</sup> The capital account has been zero or negligible in all years, while errors and omissions are small and without a clear trend.





## II. What is behind the Turkish Current Account balance? The determinants of the Current Account

In this section, we analyze the determinants of the current account over the period 1986-2017 and the presentation is structured as follows. First, we discuss the estimated sensitivity of Turkey's CAB to several determinants (for more on the methodology, please see Box 2, and the Toolkit for the Analysis of Current Account Imbalances by Cusolito and Nedeljkovic, 2013). Second, we combine the information on the estimated sensitivities with the evolution of these determinants, to calculate their contributions to the CAB. All along, the prospective determinants are grouped according to their sensitivity to policy actions.

### How sensitive is Turkey' Current Account Balance to policy malleable and nonmalleable determinants?

The estimated CA determinants model performs well on average. Figure 24 shows the actual with the modelpredicted CA dynamics. During the period 2004-2006 the model underestimates the size of CA deficit but fits the recent dynamics very well.

#### Box 1

CONCEPTUAL FRAMEWORK FOR THE ANALYSIS OF DETERMINANTS OF THE CURRENT ACCOUNT BALANCE

We begin with the notion that the current account balance reveals the difference between national saving (private and public) and national investments (private and public). To identify the underlying drivers of the CAB, we relate that balance with the drivers of national saving, investments, government deficits and trade competitiveness related factors that may affect the current account directly (with indirect effects on saving and investment):

$$CA(X_{CA}) = S_P(X_S) - I_P(X_I) + S_G - I_G$$

where  $X_S$  are private consumption/saving determinants,  $X_I$  denotes factors that affect private investment and  $X_{CA}$  denotes factors that may influence the current account directly (for example, the export/import determinants, past FDI inflows). Assuming exogeneity of the trade drivers  $X_{CA}$  the current account balance is defined as:

$$CA = g(X_S, X_I, S_G, I_G, X_{CA})$$

and the function  $g(\bullet)$  is assumed linear.

By focusing on the underlying determinants of saving and investment, the specification is partially related to the intertemporal approach to the current account (Sachs, 1981, Obstfeld and Rogoff, 1996). Our specification constitutes an augmented version of these models, as it aims to capture and disentangle the impact of as many potential determinants of the current account as possible, rather than discriminating between the competing intertemporal models by choosing a limited number of variables in the reduced form that correspond to a specific model. From an empirical point of view, the reduced-form specification is related to a large empirical literature which uses various econometric techniques to identify the relationships between the current account and a set of macro and socio-economic variables (see Debelle and Faruqee, 1996, Calderon, et al., 2002, Chinn and Prasad, 2003, for early applications in the increasingly expanding literature).

The prospective determinants are classified according to their sensitivity to policy decisions, and the sign of their expected effect on the current account balance (Table 1).

Table 1

#### PROSPECTIVE DETERMINANTS OF THE CURRENT ACCOUNT BALANCE IN TURKEY

#### EXPECTED EFFECT ON THE CURRENT ACCOUNT BALANCE

	Positive	Negative	Ambiguous
SENSITIVITY TO POLICY	DECISIONS		
Sensitive to policy in the short run	<ul><li>Fiscal balance</li><li>Inflation volatility</li></ul>	<ul> <li>Credit to private sector (households and companies)</li> <li>Government expenditures,</li> <li>REER appreciation</li> </ul>	
Sensitive to policy in the medium run			<ul><li>Trade Openness</li><li>FDI</li></ul>
Sensitive to policy in the long run	Income	Income growth	
External	<ul> <li>Main trading partners' income growth</li> <li>Terms of trade</li> <li>Global uncertainty</li> </ul>	• Oil prices	
Others	Lagged current     account/GDP		Net foreign     assets

Source: Authors' elaboration based on literature review.

The dependent variable in the analysis is the ratio of the current account balance to GDP. The explanatory variables, their expected relationship with the current account balance, and how they are measured in the model are described below:

- <u>Credit to the Private Sector</u>: It is a proxy of financial deepening and aggregate demand. Relaxed borrowing constraints can reduce current private saving and stimulate investment by increasing funding. Both channels affect the current account negatively. The credit to private sector as a share of GDP is used in the baseline specification. In an alternative specification, it is broken down in credits to households and credits to non-financial corporations.
- <u>Government expenditures/fiscal balance (government revenue less expenditures)</u>: Higher government expenditure and/or a lower fiscal balance can result in a lower current account balance, through government spending and its effects on aggregate demand and saving. Depending on the interplay of complementary versus crowding out effects of government spending, it may also lead to higher private consumption and investment (Chinn and Prasad 2003), also lowering the CAB. On the other hand, a reduction of fiscal balances can prompt an increase in private savings, in the expectation of future tax increase, a possibility known as the Barro-Ricardian Equivalence. Empirical findings consistently show a significant link between lower fiscal

balances and bigger current account deficits - more so through lower national saving than higher investment. We use both public-sector expenditure and the public-sector balance as proxies for fiscal stance in our estimates.

- <u>Real Effective Exchange Rates (REER)</u>: Real appreciations induce an expenditure switching effect away from domestic goods and into foreign goods for a given level of expenditure, which reduces the CAB, all else equal. We use the REER based on the consumer price index.
- <u>Relative income</u>: Developing economies are likely to run current account deficits due to their need for financing economic development. According to this "stages of development" hypothesis, the CAB in poor countries is low as their economies start to grow and import more physical capital; later as the country develops its saving rate increase, and the CAB improves (Engel and Rogers, 2006). Empirically, the CAB and development have a positive relationship. Relative income is proxied by the deviation of real GDP per capita in purchasing-power parity (PPP) terms from the weighted-average GDP of its trading partners.
- <u>Relative GDP growth</u>: Higher average output growth (or productivity) may either reduce or increase the CAB depending on whether it signals a temporary or permanent increase in income. If temporary, saving would rise and the deficit decline, especially in the short term. Since agents are more likely to expect future income increases in a booming economy (signaling permanent income increase), consumption and investment would increase, and the CAB would deteriorate. Empirical results suggest that on balance, the CAB tends to deteriorate with higher average output growth (or productivity). We use real GDP growth as a deviation from the weighted-average GDP growth of its trading partners as a measure of economic growth.
- <u>Trade openness</u>: It can induce both more exports and imports, thus it has an ambiguous effect on the CA. Less open economies may import less, which may improve the CAB. However, the same countries may have difficulties servicing external liabilities, resulting in higher debt service costs and a lower CAB. Also, the better access to foreign financial markets associated with trade openness facilitates payments for international transactions and can lead to higher investment (Chinn and Prasad 2003). Empirically, trade openness appears to have a positive impact on the current account. In addition, international trade is an important channel for technology transfer, which could lead to output growth in the long run and improve the CAB. Recent research focuses on the potential explanatory power from production and trade structures. Conceptually, upon joining global value chains (GVCs), downstream economies in the production process (countries with relatively low ratios of domestic value-added exports to gross exports) experience improvements in competitiveness that are temporary (as other countries eventually catch up), prompting a forward-looking saving motive in relation to the income boost from higher exports (ECB 2017). Empirically, countries participating in GVCs appear to have higher CABs the more downstream they are and lower CABs the more upstream they are (ECB 2017; Haltmaier 2015). Trade openness is measured by the sum of exports and imports as a share of GDP as a deviation from the weighted-average openness of its trading partners.
- <u>Terms of trade (ToT)</u>: ToT, the ratio of a country's export prices to its import prices, can have potentially two opposing effects on the CAB via the saving and investment channels. Ceteris paribus, a positive ToT shock lead to an improvement in the current account via increase in saving due to larger current income relative to the permanent income (the Harberger-Laursen-Metzler effect). But a ToT improvement may also affect (increase) the optimal capital stock, leading to increased investment and hence a worsening of the current account. Which of the two effects dominates depends in part on the persistence of ToT shocks the greater is the persistence, the more dominant is the investment effect. Empirically, positive ToT changes and higher ToT volatility are positively related to the current account.
- <u>Oil Prices</u>: For a net oil importer like Turkey, higher oil prices directly and negative affect the oil trade balance, and thus the CAB. As a robustness check, we use the net oil trade balance as the dependent variable as explained in next section.
- <u>Foreign Direct Investment (FDI)</u>: It has ambiguous effects a priori on private domestic investment and the CAB. FDI can crowd out domestic investment when local and offshore firms compete for scarce domestic resources (e.g. labor or finance). But FDI may also generate local spillovers that 'crowd in' domestic investment. Gross FDI may also worsen the current account, depending on the imported content, the amount of profits repatriated, and the export orientation of multinationals. We use lagged FDI as a share of GDP to capture its delayed effect on the CAB.

- <u>Net foreign assets (NFA)</u>: They can affect the current account balance in two opposing ways. First, a large stock of foreign liabilities (negative NFA) will require a country to run current account surpluses to pay them off (negative relationship). Second, the country will need to pay interest on those liabilities, generating outbound income payments and thus tilting down the current account (positive relationship). Empirical evidence supports a positive relationship, which means that the CAB deteriorates with more negative NFA. However, this relationship may not hold for very highly indebted nations, possibly due to more heightened concerns about sustainability (IMF 2013). We use lagged NFA to avoid endogeneity issues.
- <u>Macroeconomic uncertainty</u>: Higher macroeconomic uncertainty naturally leads to a rise in saving since risk-averse households set aside resources as a precaution against possible adverse changes in income (Skinner 1988; Zeldes 1989). The buffer stock theory of consumption (Carroll 1992) also suggests that agents facing incomplete markets and borrowing constraints respond to changes in labor market conditions by altering their stock of precautionary wealth. As for investments, the asymmetric nature of adjustment costs makes downside uncertainty more important than upside uncertainty (Abel and Eberly 1994). Indeed, disinvestment is costlier than investment, and favorable shocks have a smaller effect on profitability than adverse shocks. To reduce the risk of being locked into unprofitable irreversible projects, firms facing macroeconomic uncertainty may become reluctant to invest (Dixit and Pindyck 1994; Servén 1998). Therefore, higher macroeconomic uncertainty is expected to increase saving, reduce investment and improve the CAB. Given the long history of double-digit inflation in Turkey, we take inflation uncertainty (measured as the volatility over the previous 24) as a proxy for macroeconomic uncertainty. In specification checks we also use alternative windows (36 months) in construction of the variable.
- <u>Global uncertainty</u>: Higher global uncertainty is expected to increase saving and reduce investment in line with the buffer-stock theory. Moreover, higher volatility in the global financial market is associated with lower availability of foreign financing for emerging markets, thereby contributing positively to the current account balance. We use Cboe's volatility index (VXO), which measures the volatility in financial markets, as a proxy of global uncertainty.
- <u>Lagged current account balance</u>: At an annual frequency, current account balances tend to show high persistence associated with habit formation in consumption and saving, or agglomeration effects in investment. We capture this persistence by including the lagged values of the dependent variable.

Finally, we include a dummy variable to control for the impact of the 1994, 2001-2002 and 2009 crises on the current account.

Source: Authors' elaboration based on literature review.

Some of the factors proposed as potential determinants are in fact jointly determined with the current account balance, notably the fiscal variables and NFA. To deal with this 'simultaneity' problem, we instrument variables that are likely to be endogenously determined with the current account balance. The instruments consist of lagged values of the variable in question, which are predetermined at time t. Pre-determination, however, does not necessarily imply 'exogeneity' if anticipation effects are present. For these reasons, a caveat is necessary: the results presented here should be read as conditional associations between variables, rather than as strict causal relationships.

Relative variables (i.e. relative income, relative GDP growth and trade openness) are defined as deviation from the weighted average of the trading partners. The weights for trading partners are based on the average importance of each country as an export destination for Turkey and the weights are calculated using the COMTRADE data. The final weights include the 30 largest trading partners.

Since annual data are used, estimation of single-country determinants puts relatively strong limits on the number of variables to be included in an OLS regression, even in the first step of general-to-specific exercise. Following Haddad and Nedeljkovic (2012) a preferable solution for confronting parametric model uncertainty and a limited number of observations is model averaging. Model averaging in the present context means that different combinations of the potential current account determinants (not all at once) are used as particular models and each

combination is estimated by OLS. The final estimate is obtained by averaging across all the estimated regressions using a suitable criterion to select individual model's weights. We use the Jackknife Model Averaging (JMA) estimator for non-nested and heteroscedastic models (Hansen and Racine, 2012) where the weights are chosen by minimizing a leave-one-out cross-validation criterion. In this way, a large number of variables can be included, while, at the same time, only single country estimation is performed (thus eliminating a heterogeneity-induced bias in the resulting parameter estimates of panel studies, Robertson and Symons, 1992, Pesaran and Smith, 1995). In total, we estimate between 6,475 and 9,948 different models, depending on the specification.

#### How sensitive is the Current Account Balance to individual factors?

The baseline specification is estimated using the standard definition of the CAB. Model estimates are summarized in Table 2 below. The first column of Table 2 reports the baseline specification, and the subsequent columns provide various extensions. All variables have the expected signs and coefficient magnitudes are mostly in line with the empirical evidence in other countries.

- An expansion in the credit stock decreases the current account balance. A 10 percent of GDP expansion of the credit stock in a given year decreases the current account balance by 0.2 percent of GDP. Following post-2002 easing of the borrowing constraints, fast credit expansion led to an increase in investment without a corresponding increase in private sector saving. To examine the credit effect further, Column 2 in Table 2 replaces the aggregate credit measure with credits to households and NFCs. While the estimated coefficients for other variables remain close to the baseline estimates, the credit variable estimates imply a relatively stronger reaction of the CAB to household credit expansion. This is expected given that corporate credit is associated with export growth (hence, potentially positive or less negative effect on CAB), compared to dominantly consumption-driven imports generated by household credit. Nevertheless, the effect on the CAB dynamics depends on the actual movements in the credit series that we look at in the following subsection.
- Public expenditure contributes negatively to the CAB. This is in line with the augmented inter-temporal models (see e.g. Bussiere et al, 2010) which imply that increases in fiscal expenditures and/or lower taxes may increase consumption and worsen the current account balance. The estimated effect is relatively small (a 10 percent of GDP increase in public expenditure decreases the current account balance by 0.2 percent of GDP), suggesting a limited effect of changes in the fiscal policy on the CA dynamics in the past. A regression with an alternative measure of the fiscal stance (public sector balance, Column 3) provides similar results.
- A depreciation of the real effective exchange rate (REER) improves the CAB. This is in line with the standard expenditure switching effect where REER depreciations make domestic goods relatively cheaper than foreign goods, inducing a switch away from foreign into domestic. The estimated coefficient suggests that this effect is modest, as a 10 percent depreciation of the REER improves the current account balance by 0.1 percent of GDP.
- Faster real GDP growth than trading partners lowers the current account balance. A 1 percent of additional growth in Turkey relative to its partners leads to a decline in the current account balance by 0.1 percent of GDP. As domestic demand, and consequently import demand, grows more rapidly than external demand for exports, the trade balance deteriorates, putting pressure on the current account. In this sense, the strong growth performance of the Turkish economy after 2002 (and above its trading partners) has contributed to CA deficits.
- Higher relative income has a positive effect on the current account, though not statistically significant. The current account deficits in the past were therefore partially related to the accumulation of capital goods and the process of the catching-up.
- Greater trade openness improves the CAB. The estimated effect of openness on the current account balance is positive as more open economies tend to have a larger tradable sector, and in line with the findings for developed and developing countries reported in Gruber and Kamin (2007) and Chinn and Ito (2007). This suggests that further trade integration of Turkey should have a beneficial effect on the current account.
- Improvements in terms of trade have a positive effect on the CAB. The estimated positive effect (0.01) on the current account balance signals a higher positive impact of the commodity price changes on domestic saving related to investment in the medium run, thus contributing to the current account improvements beyond the direct trade impact. The magnitude of the effect is relatively small compared to the emerging market literature suggesting lower vulnerability of Turkey to commodity price shocks, which can be attributed to a relatively high export diversification.

- **Oil prices have a negative effect on the current account.** Consistent with the Turkish dependence on oil imports, the result suggests that 10 percent increase in oil prices on average worsens the CAB by roughly 0.1 percent of GDP.
- Past FDI inflows have a negative effect on the current account, which is consistent with dynamics in Turkey over the past 15 years. An increase in FDI of 1 percent of GDP seem to increase the CAD by 0.34 percent of GDP. This suggests the potentially high import content of FDI, including foreign inputs and capital and potentially a significant amount of profits repatriated by foreign owners.
- Past NFA has a positive effect on the CAB. The estimated coefficient (0.02) is close to what is found in the literature for other developing and emerging markets (0.02-0.04). This is consistent with the cumulative negative NFA in the past shown in Figure 20 having contributed to the current account deficit. Yet, the relationship may change in the future if NFA decrease further. On a related note, Catao and Milesi-Ferreti (2014) suggests that countries with net foreign liabilities in excess of 50 percent of GDP are associated with steeper crisis risk.
- **Higher inflation volatility increases the CAB.** The precautionary motives for saving are amplified, which tend to have a positive impact on the CAB. This is relevant after the recent fall of the Turkish lira which will lead to an increase in inflation volatility in the short-term.
- **Higher global uncertainty has a positive effect on the current account.** This is in line with the positive impact of uncertainty on saving and the negative impact on investment due to precautionary behavior of risk-averse households and the asymmetric nature of firms' adjustment costs. Moreover, higher global uncertainty is associated with lower global liquidity and lower availability of foreign capital for financing current account deficit.
- The estimated CAB persistence is at the lower bound (0.14) typically found in the literature (0.1-0.59),<sup>3</sup> implying faster adjustment of the current account balance to transitory shocks, in line with the observed dynamics of the CAB. Conceptually, lower persistence implies higher flexibility of the CAB to externally smooth shocks to domestic saving and investment and a higher capacity of the country to maintain a current account deficit since, with lower persistence, they tend to adjust faster (Taylor, 2002). Lower persistence has been associated with increased financial openness and higher exposure to capital flows (Taylor, 2002), as well as with more flexible exchange rate regimes (Ghosh et al., 2014; Martin, 2016).

The baseline specification performs well on average: the difference between the implied current account balance and the observed balance is small at annual and five-year average levels throughout the period (Figure 24 and Figure 25), with in-sample R2 above 0.6. We compute non-overlapping five-year averages as the standard measure of the medium-term movements in the CAB (IMF 2013). The model captures well the peaks and troughs of the current account balance over the studied period, though it tends to slightly under-predict their magnitude. The recent CA deterioration is also captured well.

Alternate specifications do not indicate the base specification is mis-specified. In the alternative specification of column 2, Table 2, we broke down credit into credit to households and to non-financial corporations and their coefficients are also negative. In the third specification (column 3) we use the public-sector balance instead of public expenditures and its estimated coefficient is negative, but non-significant. This may be consistent with a low budget deficit that has been stable in the last years. Finally, the fourth specification (column 4) excludes the real effective exchange rate as in the current account determinants specification of IMF (2013) but all other coefficients do not vary significantly.

<sup>&</sup>lt;sup>3</sup> See Taylor (2002) and Table 1 and Table A2 in Beidas-Strom and Cashin (2011) for an overview of the literature.

Variable	1	2	3	4
Credit to private sector (in % of GDP)	-0.021***		-0.021***	-0.022***
Credit to households (in % of GDP)		-0.127***		
Credit to NFC (in % of GDP)		-0.015***		
Public sector expenditure (in % of GDP, lag)	-0.023*	-0.023*		-0.028*
Public sector balance (in % of GDP, lag)			0.006	
Real effective exchange rate (log)	-0.011**	-0.010**	-0.011**	
Relative income growth	-0.084***	-0.076***	-0.086***	-0.091***
Relative income (2y lag)	0.002	-0.001	0.003	0.003
Trade openness	0.008*	0.044**	0.009*	0.012*
Terms of trades (log change)	0.011*	0.010*	0.013*	0.011**
Oil prices (log change)	-0.008**	-0.007**	-0.009**	-0.009**
FDI (in % of GDP, lag)	-0.341**	-0.296**	-0.357**	-0.387**
Lagged CA balance	0.136**	0.118**	0.141**	0.149**
Inflation volatility	0.061**	0.053**	0.061**	0.064**
Global uncertainty, VXO (log)	0.003**	0.003**	0.003**	0.002*
Net foreign assets, NFA (in % of GDP, lag)	0.023***	0.026***	0.024***	0.025***
Dummy for crisis	0.023**	0.024**	0.023**	0.025**
Constant	0.040*	0.031*	0.039*	0.001
R2	0.64	0.65	0.633	0.630

#### Table 2: Estimated coefficients

Notes: Dependent variable is the CA balance (in percentage of GDP). All results are obtained using jack-knife model averaging procedure described in Box 1. \*,\*\*,\*\*\* report statistical significance at 10, 5 and 1 percent, respectively.





Source: Author's calculations.

Additional estimates as robustness checks are reported in Table 3, where the baseline specification is reported in the first column. To examine the sensitivity of baseline results to changes in the gold trade balance, we add the lagged changes in world gold prices (which have a negative correlation with the gold trade balance (-0.30) and positive correlation with gold imports (0.48)) as an additional explanatory variable (Column 2); and estimate the baseline specification using as the dependent variable a measure of the current account that excludes the gold trade balance (Column 3) and that excludes the oil trade balance (Column 4). The coefficient of gold prices has an expected negative sign but not significant (Column 2). More importantly, estimates of main explanatory variables are not significantly different from baseline estimates.

In column 5, we exclude the crisis dummy variable. Not surprisingly given the short period, the average fit of the model worsens to some extent when these extreme observations are not explicitly controlled for. The crisis dummy exclusion, however, does not have a significant effect on the estimated coefficients for the remaining variables of interest. Finally, we allow for nonlinearity in the effect of the past net foreign liabilities accumulation on the CAB by adding to the baseline specification the interaction term for periods when the negative NFA is above 40 percent of GDP (Column 6). The interaction term captures the hypothesis that the strength of the effect on the CAB may change at higher levels of accumulated foreign liabilities (Catao and Milesi-Ferretti, 2014). The estimated coefficient for the interaction term, however, is not statistically significant, suggesting that the size of accumulated liabilities in the past was not sufficiently high to generate proportionally stronger effects on the CA. Indeed, Catao and Milesi-Ferretti (2014) documented that the risk of a balance of payments crisis increases when the stock of net foreign liabilities exceeds 50 percent of GDP, the size which has been reached only in 2017 in the case of Turkey.

Variable	1	2	3	4	5	6
	-	-	-	-	-	-
Credit to private sector (in % of GDP)	0.021***	0.019***	0.021***	0.019***	0.025***	0.022***
Public sector expenditure (% of GDP, lag)	-0.023*	-0.023*	-0.013*	-0.006*	-0.001	-0.021*
Real effective exchange rate (log)	-0.011**	-0.010**	-0.011**	-0.007*	-0.015**	-0.010**
Relative gdp growth	- 0.084***	- 0.078***	- 0.075***	-0.07***	- 0.102***	- 0.079***
Relative income (2y lag)	0.002	0.001	0.002	0.001	-0.001	0.002
Trade openness	0.008*	0.015*	0.007*	0.01*	0.004	0.011*
Terms of trades (log change)	0.011*	0.007*	0.007*	-0.002	0.010*	0.011*
Oil prices (log change)	-0.008**	-0.007**	-0.006**	-0.006**	-0.011**	-0.008**
Gold prices (log change, lag)		-0.003				
FDI (in % of GDP, lag)	-0.341**	-0.310**	-0.352**	-0.19**	-0.264**	-0.337**
Lagged CA balance	0.136**	0.126**	0.174***	0.028*	0.124*	0.135**
Inflation volatility	0.061**	0.057**	0.064**	0.032**	0.072**	0.060**
Global uncertainty, VXO (log)	0.003**	0.003**	0.002**	0.005**	0.004**	0.003**
Net foreign assets (in % of GDP, lag)	0.023***	0.022***	0.024***	0.008**	0.013**	0.031***
Net foreign assets (more than -40% of GDP, lag)						-0.006
Dummy for crisis	0.023**	0.024**	0.021*	0.023*		0.023**
Constant	0.040*	0.035*	0.043*	0.031*	0.040*	0.037*
R2	0.64	0.64	0.65	0.62	0.53	0.64

Table 3: Estimated coefficients: Additional robustness checks.

Notes: Dependent variable in estimates of Columns 1-2 and 5-6 is the CA balance (in percentage of GDP). Dependent variables of estimates in column 3 and 4 are the CA balance net of gold trade balance and net of the oil balance, respectively. All results are obtained using jack-knife model averaging procedure described in Box 1. \*,\*\*, \*\*\* report statistical significance at 10, 5 and 1 percent, respectively.

#### What are the key factors contributing to the Turkish Current Account dynamics?

In addition to understanding the *sensitivity* of the current account balance to each prospective determinant (as presented above), it is important to understand how each determinant has contributed to the observed current account dynamics. The distinction between sensitivity and contribution of a given determinant is important. The former concept tells us by how much the current account changes given a small change in one of the determinants. The latter concept combines information on the sensitivity with the actual changes in the determinant over the period and tells us how much of the observed current account deficit is attributable to changes in that determinant (details are found in Box 2).

Figure 26 reports the contributions of each determinant to changes in the CA balance over the non-overlapping fiveyear intervals, which capture changes in the underlying current account dynamics, while smoothing the effects of temporary shocks.

#### Box 2 How to read figures showing the contribution of different factors to the Current Account?

To better interpret Figure 26, that plots the contributions of different variables to Turkey's current account deficit, we use the imaginary case of the Fictional Republic of Uqbar, for the period 2012-2013 plotted in this box.

During that period, Uqbar ran a current account deficit of 4 percent of GDP, on average. The estimated model to identify how sensitive Uqbar's current account deficit was to a number of prospective determinants yielded a predicted deficit of 3 percent of GDP, one percentage point away from the actual of 4 percent. This prediction of 3 percent of GDP is the sum of the contributions of all determinants.

Notice that some of the determinants contributed negatively to the current account balance, that is, contributed to increase the deficit, while others contributed positively to the current account balance, in other words, contributed to offset the deficit. Altogether, the variables with positive contributions added a surplus of 5 percent of GDP to the CA balance, while the variables with negative contributions added a deficit of 8 percent of GDP. The net effect was a predicted deficit of 3 percent of GDP.

Those variables whose contributions offset the deficit are plotted above "zero", while those whose contributions increase the deficit are plotted below zero. For instance, export prices, FDI inflows, changes in the REER, relative openness and trading partners' growth were found to offset the current account deficit of Uqbar in different magnitudes (trading partners' growth, for example, contributed to offset the deficit by 1 percentage point of GDP). Instead, government expenditures, the lag of NFA, relative income and credit growth dynamics contributed to increase the deficit. For example, the contribution of government expenditures reached 2 percent of GDP.

Source: Authors' elaboration

Contributions of Different Factors to the Current Account Deficit in the Fictional Uqbar Republic (2013-2017)



**Domestic credit expansion and strong growth performance were major contributors to the current account deficit over the post-2002 period.** The strong growth of the domestic economy relative to the rest of the world boosted demand for imports beyond the increased demand for Turkish exports. Indeed, higher relative GDP growth

made a substantial negative contribution to the current account balance, especially during 2003-07 and, to a lesser extent, over 2013-17. At the same time, strong credit expansion became the main negative driver of the current account over the last two (2008-12 and 2013-17) periods. Decomposition of credit flows (based on estimates from Column 2 of Table 2) shows that while the growth in household credit contributed primarily to 2003-07 CA deficit widening, it was corporate credit expansion that drove the CAD more strongly over the most recent two periods.



Source: Authors' calculations.

A growing current account deficit from 2003 to 2007 was also associated with progress in macro-economic stabilization and the fall in macro-economic (inflation) uncertainty. In contrast, high inflation volatility had a positive effect on the CAB prior to the 2001-02 crisis, while its contribution in later periods was limited.

Real exchange rate appreciation over the late 1990s and the first decade of 2000s had a mild negative contribution to the deficit buildup. Real depreciation of the lira since 2012, however, has helped to partially offset the deficit over the last five years.

**Oil price movements and at a lesser extent the evolution of terms of trade were supportive of the recent CAB.** Lower oil prices since the aftermath of the 2008 financial crisis have had a positive impact on the current account, whereas the positive terms of trade shocks over 2013-17, had also a positive contribution in the last four years but at a lower extent.

**Despite the positive relationship between trade integration and the CAB, its actual contribution was negative over the post-2008 period.** This is induced by a sharp fall in trade in 2009 and 2010 as well as in 2015 and 2016, as shown in Figure 5 and Figure 6, which can be associated with the rise in anti-dumping and safeguard measures that Turkey has increasingly been using over the past few years against specific trading partners (Haddad and Nedeljkovic, 2013), but also an increase in non-tariff barriers, such introduction of new burdensome import requirements Indeed, relative trade openness variable has steadily decreased from an average of -17 percent of GDP over the 2003-07 period to -28 percent of GDP over the 2013-17 period (as illustrated in Figure 8). Similarly, FDI inflows had a mild negative contribution to the current account balance, largely during the 2003-07 period.

The average contribution of accumulated net foreign asset position to the current account balance has increased over the post 2008 period. The finding reflects a strong build-up of foreign gross liabilities, which led to a fall in net foreign asset position from the average 34.6 percent of GDP in 2003-07 to 48.5 percent of GDP over 2013-17 (and 56.9 percent at the end of 2017). These developments imply that further financial integration can have a consequent negative effect on the future income and the current account balance.

**Developments on the fiscal side had a limited effect on CA dynamics.** Changes in public expenditure contributed negatively to the CAB dynamics in a significant manner only over the 1998-2002 period. In line with relatively stable fiscal position, their contribution to the most recent changes in the CA balance was negligible.

#### **Policy implications**

The results have several implications. First, the impact of credit to the private sector on the CAB grew over time, in particular driven by higher credit to corporates. Credit to corporations more than doubled over the past 10 years, increasing from 30 percent of GDP in 2007 to 67.5 percent in 2017. Although an increase in credit a priori does not represent a potential negative effect as agents may be moving to a higher equilibrium level of debt, excessive credit growth can contribute significantly to an expanding, and less sustainable, CAD. As the descriptive analysis showed, much of this credit growth was used for business investment which, if sufficiently productive, would act to lower the CAB as a ratio to GDP by increasing exports of domestic value-added. However, in the case of Turkey, this effect has not prevailed, and points to a relatively low productivity impact of investment on average over the period, which can also be observed in a steadily declining incremental capital-output ratio from 2002 onwards. Much of the credit expansion in Turkey was fueled by external financing, which tends to be highly procyclical and therefore raise the risk of sharp corrections such as BoP crises in future. Moreover, the ensuing asset price booms may contribute to slower growth in saving as households tend to increase borrowing and reduce saving in asset inflation times. Regulatory financial policies aimed at restricting unsustainable credit growth would play an important role in this context, as would deepening domestic financial markets, in particular in their ability to effectively mobilize domestic resources for investment purposes.

Second, the buildup of the current account deficit was directly associated with the structure of growth generated by the 2001 reforms and also led to a negative net foreign asset position. Relatively strong macro fundamentals of the Turkish economy over the previous period and growth potential have resulted in strong growth of domestic investment and much slower growth of domestic saving. The gap was financed by increasingly available foreign sources, which also led to a negative net foreign asset position. The final outcome was that the prevailing growth model tightly linked a growing economy to widening of the current account balances. A high CAD and growing

exposure to volatile capital flows implies that Turkey would need to move to a growth model that breaks the link between growth and the current account deficit at some point in the future, with either national savings continuing to grow to more closely match investment, or investment declining.

Third, trade integration had a positive effect on the current account. The results indicate that measures that inhibited imports were actually associated with a worsening of the CAB, not an improvement, and conversely, the CAB and trade integration could be expected improve if barriers to trade, such as non-tariff measures, were to diminish. This finding, although contentious in policy circles, is consistent with evidence that increased availability of intermediate imports improves export potential and global value chain intergration. According to the U.S. Department of Commerce,<sup>4</sup> while generally in compliance with the WTO agreement, Turkey often fails to notify the WTO of changes to import requirements. When this occurs, companies' views are often not considered, nor are they given ample time in which to comply and adapt to changes in how they do business. These changes to import requirements can serve as non-tariff barriers such as implementation of reference price systems, lack of control certificates, new burdensome documentation requirements, and unnecessary and intrusive inspections. Even though customs legislation is a direct translation of EU legislation, there may be differences in how they are interpreted and, therefore, implemented. These hurdles also have a negative impact on exporting firms using foreign inputs and capital. Moreover, agricultural trade is subject to tariff quotas and price regulation, which have produced a high degree of protection. While the agricultural and pharmaceutical sectors have seen a number of protectionist and localization hurdles, these issues have also arisen in a number of industries like medical devices, apparel and ecommerce. This highlights the importance of structural policies to improve productivity growth and overall competitiveness, related in particular to improvements in education and training, innovation, the business environment, product market regulation and labor markets. Extension of the customs union with the European Union by, for example, including agricultural goods and services, would likely have a large impact on increasing trade integration and, according to these results, support an improved current account position.

Fourth, the negative NFA stock contributed to recent current account deficits and may continue to have negative effects in the future. While these developments are not negative per se since they imply further financial integration in addition to growth effects, the evidence of dominant income outflows from expanding FDI stocks in the current accounts of Eastern European comparator countries suggests another source of the potential future CA deterioration. Again, this stresses the importance of structural policies to improve export competitiveness since the bulk of the adjustment in the current account will most likely need to take place in the merchandise trade balance. In this dimension, development of local currency financial markets (in addition to providing a channel for expanding national saving) should have a positive effect on the income outflows since the higher share of lira denominated liabilities (mostly government bonds and equities) can mitigate the impact of the exchange rate movements on the income balance.

Fifth, while FDI inflows had a negative effect in the past, FDI is generally associated with increased productivity in the domestic economy, increased diversification and sophistication of the production and export bundles, thus reducing vulnerabilities associated with current account deficits, as well as benefiting the economy beyond its impact on the current account balance. The sectoral structure of FDI inflows may be important for the limited positive impact of the FDI flows on the past current account balances. The extent to which FDI in the non-tradable sectors may have indirect effects on overall competitiveness in the tradable sectors through spillover effects, and what are the key enabling mechanisms for these spillovers to materialize are still unclear and require policy attention. This and a better understanding of the drivers of profit repatriation/profit re-investment decisions could provide key evidence for the design of efficient investment promotion policies, that could, in turn, have a positive effect on the future current account balance.

In sum, policy measures needed to reduce the CAD include narrowing the domestic saving-investment gap by maintaining elevated levels of private savings, restricting further credit expansion, and structural polices to improve its overall competitiveness and productivity, such as removing non-tariff barriers.

<sup>&</sup>lt;sup>4</sup> Source: https://www.export.gov/article?id=Turkey-Trade-Barriers.

# III. How Much can the Current Account Deviate from its Path?

This section makes use of the parameters estimated in the previous section to simulate the future dynamics of the current account based on the projected values of its determinants. The current account balance is simulated over the medium term (2018-2022), using the coefficients from the current account determinants equation. We start by considering a baseline scenario that considers the projected values of the determinants. Then, we consider simulated additional scenarios for the current account after selected determinants are subject to a set of shocks or deviations from the baseline scenario, while the remaining determinants take the values of the baseline scenario.

#### The baseline scenario

The baseline scenario that considers the projected values of the determinants of the current account based on the IMF's World Economic Outlook (WEO), the World Bank Turkey country office staff estimates, and authors' projections for inflation and global uncertainty variables. We use actual values for 2018 where available and the latest available forecasts for 2019-2022. Table 4 below reports the values considered for the baseline indicators before difference, lag or log transformation. We assume that inflation volatility over the 2019-2020 period is above the previous five-year average, falling in 2022 to its 2010-2017 average level. We assume that global uncertainty remains relatively moderate in 2019 and slowly increases in 2020 and 2021. The projections for net foreign assets (in % of GDP) for 2020-2022 are generated endogenously, by adding 50 percent of the previous year's current account deficit to the stock of NFA. The projections for the remaining variables are obtained from World Bank staff projections and WEO. It is important to note that this simulation is akin to a static "what if" analysis rather than a general equilibrium forecast, and it should not be read as the latter. First, simulated shocks are deterministic and do not allow for stochastic interaction between the variables. Second, the underlying model is descriptive in nature, hence built to provide an accurate representation of the determinants of the current account balance, rather than to provide the best possible forecast.

Variable	2017	2018	2019	2020	2021	2022	Source
Credit to private sector (in % of GDP)	84.90	76.90	73.90	74.90	75.90	76.90	WB
Real effective exchange rate	73.36	62.36	57.99	50.95	55.00	58.00	WB
GDP growth	7.43	2.60	-2.537	2.541	2.961	3.008	WEO
GDP growth partners	3.37	2.78	2.32	2.09	2.00	1.97	WEO
Net foreign assets (share of GDP)	-0.54	-0.46	-0.44				WB
Oil prices	54.40	71.07	61.77	61.50	60.77	60.38	WEO
FDI (in % of GDP)	0.96	0.80	0.94	0.94	1.00	1.10	WB
Terms of trade	90.69	89.00	85.00	82.60	83.30	83.00	WB
GDP PC in PPP terms	24496	24850	23922	24233	24655	25100	WEO
GDP PC in PPP terms partners	37000	37652	38238	38749	39243	39737	WEO
Trade openness	53.87	59.40	58.40	60.60	58.80	60.00	WB
Trade openness partners	81.42	83.72	83.52	82.11	81.80	81.22	WEO
Inflation volatility	0.037	0.06	0.07	0.05	0.05	0.04	Own
VXO	9.60	16.52	18.00	20.00	22.00	23.00	Own
Public sector expend (in % of GDP)	21.78	22.30	23.00	22.30	21.90	21.90	WB

Fable	4: Projected	values for	current account	determinants:	the	baseline	scenario
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Source: Authors' elaboration

Under the baseline projection, the current account balance is expected to improve over the 2018-2022 period by 1.5 percent of GDP on average relative to the previous (2013-17) five year period (Figure 27). The model outof-sample predicts strong CAD reduction in 2018 by 1.3 percent of GDP, which is consistent with the realized CAD contraction (to 3.6 percent of GDP) in 2018. The CAD is projected to further decrease by additional 1.2 percent of GDP in 2019 (to -3.1 percent of GDP). The improvement in the CA over the 2018-2019 period is primarily driven by the projected credit contraction, weaker domestic growth, real exchange rate depreciation and higher macroeconomic uncertainty. The CAD is then projected to expand by a 0.4 percent of GDP in 2020 (to -3.5 percent of GDP) and by additional 0.2 percent of GDP in 2021 and 2022, yet remaining below the 2008-2017 average in 2022. The projected weak worsening of the CAB over 2020-2022 can be mainly attributed to the real GDP growth recovery, projected real exchange rate appreciation, slow increase in credit activity, higher accumulated levels of net foreign liabilities and the fall in inflation uncertainty.



Source: Authors' calculations.

While the CAB evolution over the 2018-2022 period is consistent with the IMF's April 2019 WEO projections of the current account dynamics, the magnitude of the current account deficit contraction differs from the one assumed in WEO. We must stress that the produced forecast arises from a model that is not optimized for forward projections. The model, however, allows exploring the sensitivity of the projected CAB path to a variety of alternative scenarios.

#### Alternative scenarios

Alternatively, we envision five different scenarios for each of five key CA determinants: credit to private sector, real exchange rate, public expenditure, relative GDP growth, and inflation volatility, to assess the magnitude of their influence on the current account over 2018-2022. Each of these variables follows five scenarios as described in Table 5: the baseline scenario values (in Table 4), plus and minus one standard deviation from the baseline, and plus and minus two standard deviations from the baseline. Combining the five scenarios of each variable and the five determinants will give us a total of 3,125(=5^5) scenarios, while assuming other variables will adopt the pattern of the baseline scenario described in Table 4. We compute the evolution of the projected current account using the baseline model estimates under each of these combined 3,125 scenarios over 2018-2022 and show them in Figure 28.

Table	5:	Alternative	Scenarios for	selected	variables.
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Determinant	Scenarios
Credit to private sector	baseline,+5%,+10%,-5%,-10%
Public expenditures (G)	baseline,+2%,+4%,-2%,-4%
Real effective exchange rate (REER)	baseline,+5%,+10%,-5%,-10%
Relative GDP growth	baseline,+1%,+2%,-1%,-2%
Inflation volatility	baseline,+0.005,+0.01,-+0.005,-0.01



Source: Authors' calculations.

**Figure 29 reports the projected CA in the best line scenario**, in the upper-bound trajectory or best-case scenario from the previous estimates, in the lower-bound trajectory or worst-case scenario and in five scenarios where one single determinant deviates from the baseline scenario by roughly two standard deviations, while all remaining determinants stick to it.

Figure 29: Projected evolution of the current account in alternative scenarios



Source: Authors' calculations.

Notes: Cred.=Credit to private sector, REER= Real effective exchange rate (REER) , Gov.Exp= Public expenditures, Rel. Growth=Relative GDP growth, Inf.Vol.=Inflation volatility

Lastly, we consider two final alternative scenarios, outlined in Table 6, where we keep the values for all variables at their baseline values for 2018 and consider alternative paths for a subset of variables under each scenario.

Under the "Domestic expansion" scenario, the credit growth recovers in 2019 and continues increasing at the moderate pace thereafter. Real GDP growth contracts less in 2019 and is stronger by 0.5 percent relative to the baseline in each year (2020-2022). Depreciation of Lira is weaker in 2020, which together with higher inflation leads to smaller real exchange rate depreciation relative to the baseline in 2020 and subsequent RER appreciation. Inflation volatility remains high and elevated throughout the forecast horizon.

Under the "Adverse world" scenario, oil prices continue to increase over the 2019-2022 period, albeit with the smaller pace in 2021-2022. Terms of trade worsen, and the growth of trading partners is weaker by 15 percent relative to the baseline. Global uncertainty is assumed to increase more strongly relative to the baseline.

Variable	2017	2018	2019	2020	2021	2022
	Home Exp	pansion				
Credit to private sector (in % of GDP)	84.90	76.90	77.00	80.00	83.00	85.00
Real effective exchange rate	73.36	62.36	57.99	56.00	60.00	65.00
GDP growth	7.43	2.60	-1.00	3.00	3.50	3.50
Inflation volatility	0.037	0.065	0.075	0.055	0.055	0.045
	Adverse	World				
Oil prices	54.40	71.07	71.03	73.00	76.00	79.00
Terms of trade	90.69	89.00	82.00	79.00	80.00	78.00
GDP growth partners	3.37	2.79	1.97	1.77	1.70	1.67
VXO	9.60	16.52	21.60	24.00	25.00	26.00

Table 6.	Projections	for	different	scenarios
Table 0.	FIDJECTIONS	101	unierent	scenarios.

Figure 30 reports the estimates for two scenarios, which are presented as the deviation from the baseline projection. Under the "Domestic expansion" scenario, the current account balance could deteriorate in each year

by between 0.2 percent and 0.3 percent of GDP (relative to the baseline) which leads to deficit of above 4 percent of GDP in 2021 and 2022. Under the "Adverse world" scenario the current account deteriorates quickly by about 0.2 percent of GDP relative to the baseline and declines slowly thereafter. The decline is driven by higher global uncertainty which partially offsets assumed slower rate of changes in oil prices and in the terms of trade.

The scenario analysis suggests that the current account dynamics are more sensitive to changes in the domestic conditions relative to changes in the global environment. The results therefore suggest the importance of policy measures needed to reduce the domestic saving-investment gap; restrict further credit expansion and alleviate inflation pressures; and structural policies to improve the overall competitiveness (which also lead to higher trade openness). The results also show that in the absence of such measures the future path of the current account and the accumulated levels of the net foreign liabilities may pose an increasing risk to the external sustainability.



Source: Authors' calculations.

## **IV.** Conclusion

Following current account liberalization, Turkey's current account deficit became entrenched in the early 2000s and persisted up to the present year. Since 2001, Turkey's average current account deficit has been the equivalent of 4.5 percent of GDP per year. The increased deficit occurred at a time when Turkey was growing rapidly, moving to upper-middle-income status in the mid-2000s. Compared to other non-natural resource UMICs, Turkey's current account outcomes over the last 20 years have been similar, illustrating the common trend of running deficits while an economy is accumulating capital and catching up to higher income levels. In terms of the composition of Turkey's current account deficit, it was driven by a rapid expansion of imports, primarily intermediate imports (of which energy is an important component). At the same time, exports, which has grown robustly to 2000, stagnated as a share of GDP since then.

Associated with the growth episode post-2000s has been a range of structural reforms, including the free float of the Turkish lira, a strengthened policy framework for monetary policy, improving business environment and a reduction in inflation and other measures of economic volatility compared to previous decades in Turkey. All these factors created a more conducive environment for both investment and increased private consumption, and households reduced their holding of precautionary savings. In addition to this, private credit markets have become established with private sector credit growing from a negligible level in 2001 to over 70 percent of GDP in 2017.

Looking at the investment-savings equality, gross fixed capital formation rose sharply post-2001 and aside from a post-GFC dip, has continued at higher rates than the past in Turkey. At the same time, the national savings rate did not increase commensurately for much of the last 20 years, only showing clear signs of rising since 2011, and investment and been consistently higher than savings. Of course, this reflects the utilization of external capital to finance investment, which represented the financing of the current account deficit.

The financing of Turkey's current account deficit was initially met with substantial inflows of FDI - particularly over 2005 to 2007 - as well as portfolio and other investment flows. However, while net FDI continued to finance the deficit, it became a smaller proportion of financing post GFC, with the majority of the deficit financed by portfolio and other investment - mostly bank loans. As can be expected running substantially current account deficits over time, the level of net foreign liabilities had steadily risen over time, from about 20 percent of GDP in 1980 to 35 percent in 2000 and 50 percent by 2017.

The econometric analysis presented in Section II aims to assess the relative importance of these, and other, variables, in determining the current account in Turkey. The results show that changes in private sector credit, public expenditure, REER changes, GDP growth relative to trading partners, trade openness, terms of trade, oil prices, FDI and NFA levels, inflation volatility, and global uncertainty are all significant factors in determining the current account balance and yield plausible results. Compared to the literature, current account persistence in Turkey is found to be low, indicating a capacity to adjust more rapidly to shocks. When combining these estimates with the path of explanatory variables over the last 30 years, we present the model-predicted current account balance over five-year non-overlapping periods, decomposed by the contribution of each determinant. This exercise raises a number of policy-relevant conclusions. First, one of the most important drivers associated with current account deficit expansion was private sector credit growth - first to households and later to corporates. Second, we find that the CAD expansion was indeed associated with reduced economic volatility, which led to a reduction in precautionary savings and also led to an improvement in the risk-weighted investment outlook. Third, the finding that a relative stagnation of trade openness contributed to a widening of the CAD suggests that the simple policy formula of increased protection leading to lower deficits has not held true in Turkey over the period. While significant, the direct effect of REER and fiscal variables has a smaller contribution to the CAD. Finally, the accumulated net foreign liabilities have played a role in expanding the deficit, which from 2003 has gradually increased.

In Section III, we present simulations on possible future trajectories of the current account and the impact of various economic developments. Under a set of baseline forecasts aligned with prevailing World Bank staff estimates, the current account deficit is expected to become significantly smaller over 2018 and 2019 amid projected credit contraction, weaker domestic growth, real exchange rate depreciation and higher macroeconomic uncertainty. The deficit is expected to weakly increase over 2020-22 driven by growth and credit recovery, REER appreciation and net foreign liability accumulation. Overall, the model-based forecasts suggest lower five-year average current

account balance by 1.5 percent of GDP relative to the previous (2013-17) period. We carry out a set of different sensitivity analyses, including varying key explanatory variables by up to two standard errors, which shows a range of plausible outcomes around the central forecasts, with the range amounting to just under 2 percentage points of GDP. Constructed alternative scenarios that reflect stronger domestic growth outcomes, and a more adverse global outlook, respectively, are also presented.

### V. References

- Abbasoğlu, O., A. İmrohoroğlu, and A. Kabukçouğlu (2018). "The Turkish Current Account Deficit". Economic Inquiry, forthcoming.
- Alp, H., Y. S. Baskaya, M. Kilinc, and C. Yuksel (2012). "Stylized facts for business cycles in Turkey". Central Bank of the Republic of Turkey. Working Paper, (12/02).
- Akçay, C., and M. Üçer, (2008). "A narrative on the Turkish current account". The Journal of International Trade and Diplomacy, 2(2), 211-238.
- Beidas-Strom, S., and P. Cashin (2011). "Are Middle Eastern Current Account Imbalances Excessive?". IMF Working Paper WP/11/195.
- Calderon, C., A. Chong, and N. Loayza (2002). "Determinants of Current Account Deficits in Developing Countries." Contributions to Macroeconomics 2, Article 2.
- Calvo, G. A., A. Izquierdo and E. Talvi (2006). "Phoenix Miracles in Emerging Markets: Recovering without Credit from Systemic Financial Crises" NBER Working Paper No. 12101
- Carroll, C.D and D.N. Weil (1994). "Saving and Growth: A Reinterpretation". Carnegie-Rocherster Conference Series on Public Policy, vol. 40, No. 1, pp. 133-192.
- Cattaneo, O., G. Gereffi, S. Miroudot and D. Taglioni (2013), Joining, Upgrading and Being Competitive in Global Value Chains, Policy Research Working Paper No. 6406, World Bank.
- Catao, L. and G.M. Milesi-Ferretti (2014), "External Liabilities and Crises", Journal of International Economics, Volume 94, Issue 1,
- Chinn, M. and E. Prasad (2003). "Medium-term Determinants of Current Accounts in Industrial and Developing Countries: an Empirical Exploration". Journal of International Economics, Vol. 59, pp. 47-76.
- Chinn, M.D., and H. Ito (2007). "Current Account Balances, Financial Development and Institutions: Assaying the World's Saving Glut". Journal of International Money and Finance 26, 546-569.
- Chuhan, P., C. Claessens and N. Mamingi (1998). "Equity and Bond Flows to Latin America and Asia: The Role of Global and Country Factors". Journal of Development Economics. Vol. 55, No. 2, pp. 439-463.
- Claessens, S., M.Dooley, and A. Warner (1995). "Portfolio Capital Flows: Hot or Cold?" World Bank Economic Review, vol. 9, No. 1, pp. 153-174.
- Clark, L., and I. M. Zaidi (2014). "The external current account in the macroeconomic adjustment process in Turkey". Woodrow Wilson School of Public & International Affairs, Princeton University.
- Craighead, W. D. and D. Hineline, (2013). "As the Current Account Turns: Disaggregating the Effects of Current Account Reversals in Industrial Countries". World economy, 36 (12), p. 1516.
- Cusolito, A. and M. Nedeljkovic (2013). "Toolkit for the Analysis of Current Account Imbalances", International Trade Department, World Bank, DC.
- Devadas, Sharmila and Norman Loayza "When Is a Current Account Deficit Bad?" Research & Policy Briefs, No. 17, October 2018, the World Bank.
- Debelle, G. and H. Faruque (1996). "What Determines the Current Account? A Cross-Sectional and Panel Approach". IMF working Paper No. 58. IMF, Washington, DC.
- ECB (European Central Bank). 2017. "The Impact of Global Value Chain Participation on Current Account Balances A Global Perspective." Economic Bulletin Issue 2.
- Engel, C., and J. Rogers (2006). "The U.S. Current Account Deficit and the Expected Share of World Output". Journal of Monetary Economics 53, 1063-1093.
- Frankel, J. and A. Rose (1996). "Currency Crashes in Emerging Markets: An Empirical Treatment". Journal of International Economics. Vol. 41, pp. 351-366.
- Fratzscher, M. (2012). "Capital Flows, Push versus Pull Factors and the Global Financial Crisis". Journal of International Economics, vol. 88, No. 2, pp. 341-356.
- Ghosh, A., J. Kim, M. Qureshi, and J. Zalduendo (2012). "Surges". IMF Working Papers 12/22. IMF, Washington, DC.
- Gruber, J.W., and S. B. Kamin (2007). "Explaining the Global Pattern of Current Account Imbalances". Journal of International Money and Finance, 26, 500-522.

Haddad, M., and M. Nedeljkovic (2012). "Turkey: Managing the Current Account in Period of Volatility", World Bank note.

Hansen, B., and Racine, J. (2012). "Jackknife Model Averaging". Journal of Econometrics 167, 38-46.

Hausmann, R. and E. Fernandez Arias (2001), "Is Foreign Direct Investment a Safer From of Financing?" Emerging Markets Review, vol. 2, 1, pp. 34-48.

IMF (2009). "Balance of Payments and International Investment Position Manual", 6th Edition. Washington DC.

- IMF (2013). "The External Balance Assessment (EBA) Methodology: Technical Background." IMF Working Paper 13/272.
- IMF (2018. "External Sector Report. Tackling global imbalances amid rising trade tensions". Washington, DC, July
- IMF (2018). "2018 External Sector Report refinements to the external balance assessment methodology technical supplement". Washington, DC, July
- Kamin, S.B., J. Schindler and S. Samuel (2007). "The contribution of domestic and external factors to emerging market currency crises: an early warning systems approach". International Journal of Finance and Economics, Vol. 12, No. 3, pp. 317-336.
- Kara, H., and Ç. Sarıkaya, (2014). "Current Account Deficit in Turkey: Cyclical or Structural?". Koç University-TÜSİAD Economic Research Forum Working Paper Series.
- Milesi-Ferretti, G.M. and A. Razin (1996). "Sustainability of Persistent Current Account Deficits". NBER Working Paper 5467. National Bureau of Economic Research, Cambridge, MA.
- Milesi-Ferretti, G. M. and Razin, A. (2000). 'Current account reversals and currency crisis: empirical regularities', in Krugman P. (ed.), Currency Crises, Chicago IL: University of Chicago Press, pp. 285-323.
- Milesi-Ferretti, G. M. and Lane, P. R. (2006). "The external wealth of Nations mark II: Revised and extended estimates of foreign assets and liablities, 1970-2004". IMF Working Paper WP0609.
- Murat, S., E. H. Hobikoğlu, and L. Dalyancı (2014). "Structure and sustainability of current account deficit in Turkish economy". Procedia-Social and Behavioral Sciences, 150, 977-984.
- Obstfeld, M. and K. Rogoff (1996). "Foundations of International Macroeconomics", Cambridge, MA: MIT Press.
- OECD-WTO (2015) "Trade in Value Added: Turkey". Country note based in the Trade in Value Added (TiVA) database.
- Pesaran, M. H., and R. Smith (1995). "Estimating long-run relationships from dynamic heterogeneous panels". Journal of Econometrics 68, 79-113.
- Prasad, E. (2014) "The Dollar Trap: How the US Dollar Tightened its Grip on Global Finance", Princeton University Press.
- Robertson, D., and J. Symons (1992). "Some Strange Properties of Panel Data Estimators". Journal of Applied Econometrics 7, 175-189.
- Sachs, J. (1981). "The Current Account and Macroeconomic Adjustment in the 1970s". Brooking Ppapers on Economic Activity 1: 201-268.
- Topalli N., and İ. Dogan. (2016) "The structure and sustainability of current account deficit: Turkish evidence from regime switching". The Journal of International Trade & Economic Development. 25(4):570-89.
- Turan, Z., D. Barak, A. N. Berkman, and A. Nakiboğlu. (2016). "Sustainability of Current Account Deficit in Turkey (1989-2014)". International Journal of Economics and Financial Issues, 6(2), 807-812.
- Yurdakul, F., and E. Cevher (2015). "Determinants of Current Account Deficit in Turkey: The Conditional and Partial Granger Causality Approach". Procedia Economics and Finance, 26, 92-100.

# Annex 1: What does the Current Account Balance show?

The current account balance of a country comprises three subcomponents: the trade balance, the income balance and the transfer balance. The trade balance records all transactions with the rest of the world related to the exchange of goods and services. The income balance records net interest and dividend payments and earnings of domestically owned firms operating abroad. Finally, the transfer balance reflects net payments (that do not correspond to purchases of any good, service, or asset) received from the rest of the world, among which, the most notable corresponds to remittances received from nationals working abroad and sent by foreigners working domestically.

#### Current Account Balance (CAB) = Trade Balance + Income Balance + Current Transfers Balance

From another angle, the current account is the difference between what an economy produces and what it consumes and invests in a given period, or alternatively, the difference between saving and investment. When countries consume and invest more than what they produce, they need to borrow from the rest of the world to finance that gap. The current account deficit reflects that amount that a country borrows from the rest of the world to finance the investment and consumption in excess of its level of production.

#### CAB= [Output (GDP) - Consumption] - Investment

Or

#### CAB = Saving - Investment

The current account is also equivalent to the saving and investment gap and therefore reflects residents' consumption and investment decisions:

#### If Saving > Investment $\rightarrow$ The economy is a net lender of the rest of the world (CAB>0)

#### If Saving < Investment $\rightarrow$ The economy is a net borrower of the rest of the world (CAB<0)

The saving and investment can be decomposed further into the portions that are attributable to the public and private sectors. Thus, the current account balance can be expressed as the sum of the private sector's surplus (private saving,  $S_p$ , minus private investment,  $I_p$ ) and the government's surplus (tax revenues, T, minus government expenditures, G, which include current and capital expenditures or government investment):

#### $CAB = (S_p - I_p) + (T - G)$

Given the private sector balance (S<sub>p</sub>-I<sub>p</sub>), increases in fiscal deficits move with increases in current account deficits. Therefore, current account deficits and fiscal deficits are often referred as the "twin deficits."

A positive or a negative current account balance is not a bad thing per se, and it depends on the country's specific circumstances. For example, if a relatively poor country in its path to growth and constrained by low levels of domestic saving finances its fast investment rates through foreign capital, all other things equal, it will run a current account deficit. This deficit may be an inevitable path to economic development. On the other hand, current account deficits also arise because of public sector deficits. When governments spend more than what they collect in taxes, countries run current account deficits, all other things being held equal. These deficits, however, are unlikely associated to faster future growth, and will generate concerns about their sustainability.

These simple examples stress the importance of identifying the underlying sources of the current account deficit: is it mainly driven by fiscal deficits, by low private saving rates, or by high private investment rates?

Source: Authors' elaboration.