CURRENT ACCOUNT DEFICIT IN TURKEY: CYCLICAL OR STRUCTURAL?

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Abstract: *Turkey's high current account deficit has been at the core of macroeconomic policy discussions in recent years. Quantifying the role of cyclical factors in driving the current account fluctuations is essential for designing an appropriate policy response and evaluating the impact of policy measures. Using a simple methodology, this study extracts the cyclical component of the current account in Turkey, with special reference to its three main drivers; namely foreign demand, domestic demand and foreign trade prices. We argue that the underlying (cyclically-adjusted) current account deficit has displayed a persistent deteriorating trend during 1998-2007 period before stabilizing around 6 percent of GDP in recent years. Decomposing the current account deficit into cyclical and non-cyclical factors allows us to assess the impact of recent policy actions. Our computations suggest that, although the policies pursued by the central bank and other authorities since 2011 have removed the cyclical part to a great extent, there remains a sizeable component of the deficit to be dealt with more structural policies.*

Key Words: *Current Account Balance, Foreign Trade, Business Cycle, Cyclical Adjustment, Filtering.*

JEL Code: *E32, F14, F32.*

1. Introduction

Current account deficit and associated macro financial risks have been at the core of policy discussions in recent years in Turkey. High import intensity in aggregate production and past experiences with boom-bust cycles have led policymakers to consider modest growth (or smooth landing) as a policy option from a financial stability perspective, especially when global risk appetite and liquidity conditions become weak and instable. Following the quantitative easing by advanced economies, rapid credit growth and excessive appreciation pressures driven by capital inflows and consequent deterioration in the external accounts have increased the fragility of the Turkish economy. In response to this development, several complementary measures have been taken by the policy authorities to contain the deterioration in current account balance since end-2010. To this end, the CBT has changed its policy framework by adopting financial stability as a supplementary objective, where the exchange rate and credit policies were geared to contain the current account deficit. Moreover, BRSA has made a number of regulatory changes to tighten the credit conditions and thus to curb excessive credit growth.

Although these attempts demonstrate the increased awareness for designing coordinated policy actions against macrofinancial risks, there are still important questions that need to be answered in order to design appropriate policies: At a given period, what fraction of the current account deficit can be attributed to cyclical factors? Under which conditions should monetary policy react to the current account deficit? Exploring these questions is important in designing a proper policy against current account imbalances. This study aims to find some of the answers by decomposing the current account balance into cyclical and non-cyclical components. Such decomposition will not only help to assess whether there is a structural shift in the underlying current account balance through time, but also provide important information regarding the impact of recent countercyclical policies on the underlying trend. Hence, it is crucial to have a cyclically adjusted view of current account balance to understand the extent of the limitations of short-run policies and thus design appropriate combinations.

The paper is organized as follows: The next section provides a descriptive history of the current account developments in Turkey during 1998-2014. A brief review of the related literature is presented in Section 3. Section 4 introduces the notion of cyclically adjusted current account balance and explains the methodology. The results are discussed in Section 5 and finally Section 6 concludes.

2. A Cursory Look at the Current Account Developments in Turkey

Imports move closely with aggregate economic activity in Turkey due to high intensity of imported input component in the production process, which causes current account balance to be highly sensitive to economic cycles (Figure 1).

Figure 1. GDP and Imports Growth (y-o-y, Percent)
Source: TURKSTAT.

Figure 2. Current Account Balance (Percent of GDP)
* Projection.
Source: TURKSTAT, CBT.
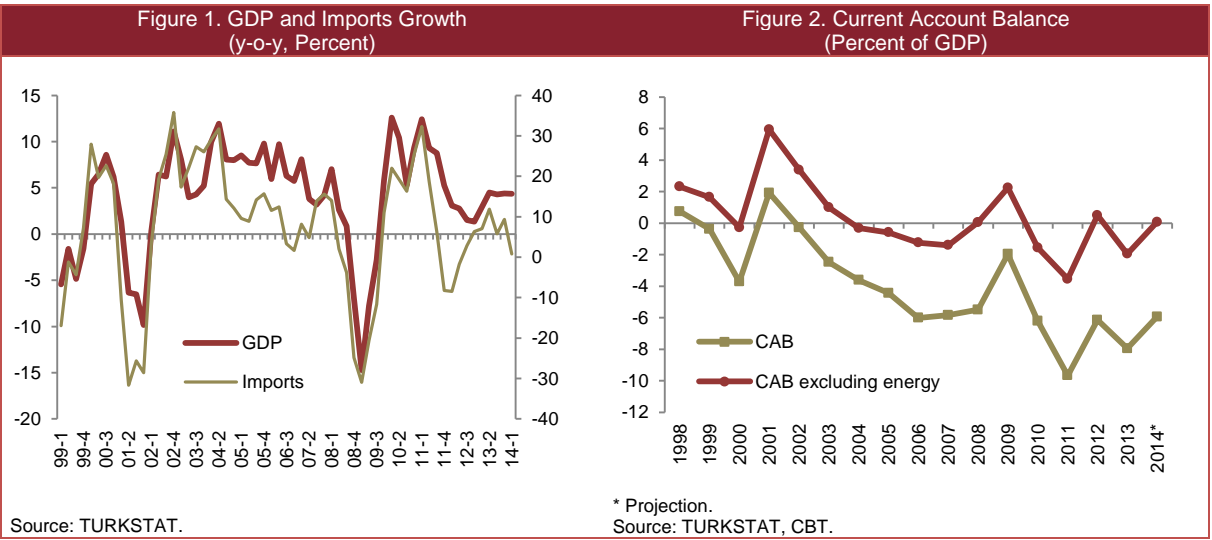
The striking feature of the current account balance in Turkey is the persistent deteriorating trend since 1998. The current account balance, which was in surplus in 1998, turned increasingly into deficit in time, averaging 7.5 percent during the post-crisis episode (Figure 2). At first glance, one can observe that improvement episodes in the current account balance have generally coincided

with crisis periods such as 2001 and 2009. The recent reversal in the current account deficit (2011-2014 period) is somewhat different in nature, as the economy has not run into any crisis during this period but Turkish authorities have implemented a number of measures to contain the deterioration in the current account deficit. Our methodology of decomposing the cyclical factors will provide insights regarding the nature of the recent improvement in the current account deficit.

For most of the remaining years in our sample, rapid economic growth has been associated with a clear deteriorating trend in external balances. The deterioration seems to have driven partly by cyclical factors such as economic growth and commodity price cycles. For instance, current account deficit increased sharply during the period of strong economic growth following 2001-crisis, reaching 6 percent of GDP in 2006. Despite the slowdown in economic activity current account deficit remained at high levels in 2007 and 2008 due to elevated levels of commodity prices, before falling sharply in the post-Lehman period.

After the global crisis, the current account deficit increased dramatically once again as the Turkish economy witnessed strong domestic demand coupled with weak external demand, leading to a record-high deficit as almost 10 percent of GDP. Finally, the policy measures taken in 2011 have led to a slowdown in economic activity and a sizeable reduction in the current account deficit down to 6 percent in 2014.

3. Literature

The literature on the underlying trends of external balances refers to a number of concepts such as *norm current account*, *sustainable current account* and *cyclically adjusted current account*. These concepts rely on different economic approaches but can be seen as complementary to each other. First two of these approaches provide information on the level of the current account that is consistent with economic fundamentals, while the last one (the approach followed in this study) focuses on extracting the cyclical part of the current account to identify its underlying trend. All of the three concepts are widely used in country assessments and medium-term projections made by international organizations as well as policy making institutions, in order to gauge the need for implementing medium/long-run structural reforms and/or conducting short-run economic policies.

Norm current account calculations based on the *macroeconomic balance* approach depart from the structural determinants of savings and investment and aim at identifying structural current account balance implied by the fundamentals of an economy. These studies that investigate the relationship between structural indicators (such as the level of economic development, demographic structure (young and old dependency ratios), energy dependency, fiscal balance, financial depth, net asset position, institutional quality, etc.) and current account mostly employ panel/cross-section estimation techniques. Conventional wisdom regarding developing countries including Turkey is that high pace of investment growth as a by-product of convergence process adversely affects current account balances. On the contrary, precautionary saving behavior arising from the experiences of past crises, low levels of health and social

security expenditures, weak institutional quality and shallow financial markets are considered as the factors improving structural current account balance by raising the propensity to save.

While macroeconomic balance approach is based on the link between structural determinants of savings and investment, *sustainability* concerns emerge as another point of view in external balance assessments. This alternative approach focuses on the countries' net external indebtedness and defines the "*norm*" as the current account balance outlook that would stabilize the ratio of net foreign assets to national income. Oriented from the principle balance of payments equivalence, the *sustainability approach* reaches at a current account balance that is consistent with a target level for net foreign assets under certain assumptions on growth and inflation.

This study is about measuring the underlying trend of the current account balance from a cyclical-adjustment perspective. We aim at identifying the trend current account balance in Turkey by extracting its cyclical component. A misalignment between the underlying trend and norm/sustainable levels would call for countercyclical policies and/or structural measures to maintain the consistency of actual balance with fundamentals. To our knowledge, the pioneering work of Hooper and Tryon (1984) in this field was the first attempt to investigate the cyclical factors behind current account dynamics with the following question: "How would the current account outlook have changed if USA, Japan and Germany had operated at their potential output levels?". More recent literature modifies the notion of *underlying current account balance* as the outlook where domestic and foreign economies have zero output gaps and the lagged effects of exchange rates are completed. The difference between underlying current account and norm/sustainable current account is called as the *current account gap* in this approach. A significantly positive or negative current account gap would necessitate an adjustment in real exchange rates in today's external assessment terminology.

The findings of selected studies on the Turkish economy are summarized in Table 1. For example, Bénassy-Quéré et al. (2008) calculated the underlying current account deficit as 4.6 percent of GDP for the year 2005, which nearly doubled its norm level at that time. Medina et al. (2010) assert that such cases point to the need for a real exchange rate adjustment to maintain rebalancing in the economy.

More recent studies assign a significant role for cyclical factors in explaining the high current account deficit (nearly 10 percent of GDP) in 2011. Besides, IMF (2012b) implies the need for a real depreciation in TL by referring to the remarkable gap between the underlying trend and norm level of the current account balance in 2011. Röhn (2012) highlights the difference between actual and norm current account figures in the post-2000 era and attributes this deviation to the relative cyclical position (relative output gap) of Turkey compared to the OECD region (but no explicit numerical assessment on cyclical effects were provided). Miao (2012) investigated the relationship between current account balance, industrial production, consumer credits and oil prices in a cointegration framework and found significant evidence for the short-run dynamics (cyclical factors) in explaining the rebalancing (the improvement in the current account balance) in 2012.

Table 1. Selected Studies on Turkey (Percent of GDP)		
	Norm CAB	**Underlying CAB**
Lee et.al. (2008)	3.4	
Akçay and Üçer (2008)	3.5	
Bénassy-Quéré et.al. (2008)	2.2	4.6 (for 2005)
IMF (2010)	2.4	
Medina et.al. (2010)	4.9	3.1 (for 2014)[1]
Bussière et.al. (2010)	2.5	
Röhn, O. (2012)	3.0-5.5	
IMF (2012a)	3.0[2]	
IMF (2012b)	4.0	7.3 (for 2011)

(1) Based on the projections of the IMF World Economic Outlook 2009.
(2) The report does not provide an exact figure; instead the norm current account balance is considered as around 3 percent of GDP. The original expression in page 4 of the report is as follows: "With a current account deficit norm of around 3 percent and the actual deficit 2–4 percentage points of GDP above what can be explained by fundamentals and desired policy settings, the real exchange rate appears overvalued by some 10–20 percent."

As summarized above, most of the existing studies on Turkey place a structural focus on current account dynamics either from a *macroeconomic balance* or *sustainability* perspective. On the contrary, the approaches with cyclical point of view seem to be scarce. Underlying current account figures are generally calculated in a limited number of studies, especially in the country reports prepared by international organizations. Purposefully, these figures are provided for a given year (the year for country assessments), not as time series. To our knowledge, there has been no specific study that provides a time series of cyclically adjusted current account balance for Turkey. Our study aims to fill this gap and hence contribute to a better understanding of the effective limits of cyclical policies in current account adjustment. By doing so, we also construct a benchmark indicator of the underlying trend of external balance for Turkey to be compared with structural measures of the current account.

4. Cyclically Adjusted Current Account Balance: Concept and Methodology

In order to conduct a cyclical adjustment of the current account balance, we need to answer the following question: What would be the level of the current account balance should the domestic and external demand be at their "normal" levels (had they not deviated from their long term trends)? In order to answer this question, we compute the contributions of external and domestic business cycles on the current account balance at a given time.

Figure 3 depicts that the main determinant of the current account balance in Turkey is the trade balance for goods and services. The remaining terms in the current account (shown by the shaded area in Figure 3) follow a largely stable course through time, and hence can be largely neglected for the purpose of this study. Therefore, we will focus on the trade balance for the rest of the paper and will not conduct any cyclical adjustment to the items such as income balance and current transfers.

Figure 3. Current Account and Goods/Services Balance (Annualized, Percent of GDP)
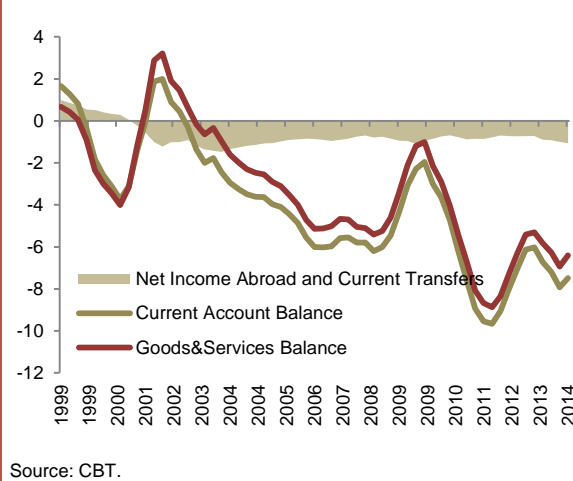
Diagram 1. Business Cycle and Trade Outlook

Source: CBT.
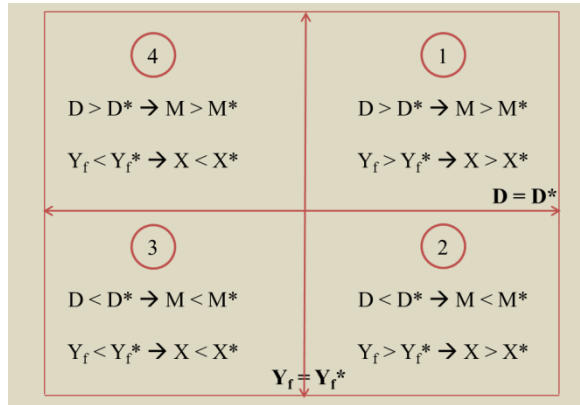
Cyclical adjustment to goods and services balance requires decomposition of exports and imports into their transitory and permanent components. In accordance with the previous studie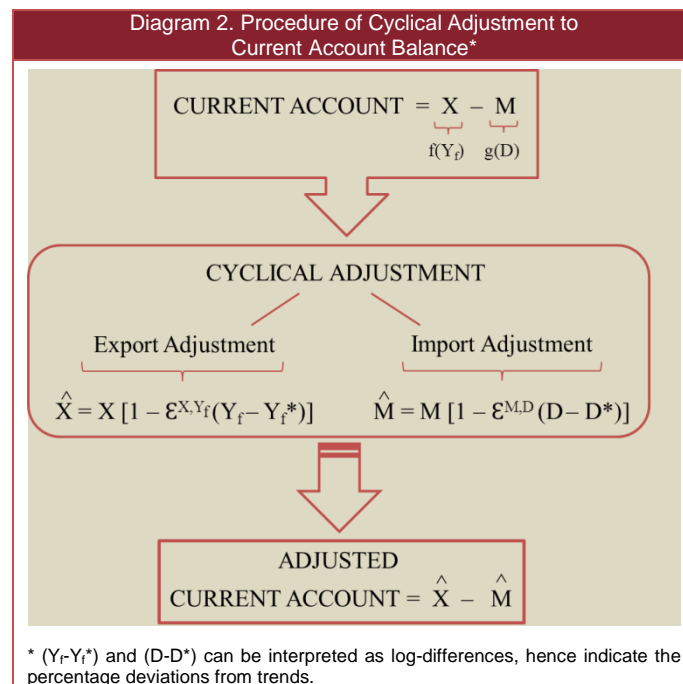s on the Turkish economy, we presume foreign and domestic demand as the primary determinants of exports and imports respectively. Possible combinations of imports/domestic demand and exports/foreign demand that can simultaneously occur over a business cycle are illustrated in Diagram 1. Here, D, M, Y_f, and X stand for domestic demand, imports, foreign demand and exports respectively. Starred figures denote long-run trends of corresponding variables.

The interpretation of Diagram 1 is straightforward. For instance, region 4 represent the periods where domestic demand (foreign demand) stands above (below) its long-run trend. "Strong domestic demand-weak foreign demand" combination corresponds to the worst scenario for external balances, just as was the case in Turkey after the global crisis during 2010-2011. Naturally, the most favorable cyclical stance for the current account outlook can be characterized by "strong foreign demand-weak domestic demand" mixture in region 2.

The framework in Diagram 1 implies that the cyclical position of domestic demand (foreign demand) can be mapped to cyclical position of imports (exports) relative to its trend. Hence, our starting point for the cyclical adjustment to current account is the estimation of long-run trends of aggregate demand components. The percentage deviations from these trends can be interpreted as the cyclical sources of the fluctuations in current account and one can use trade elasticities (ε) to adjust imports and exports accordingly (Diagram 2).[3]

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[3] Çebi and Özlale (2012) follow a similar approach in calculating structural budget balance for Turkey.

Diagram 2. Procedure of Cyclical Adjustment to Current Account Balance*

$$CURRENT\ ACCOUNT = \underbrace{X}_{f(Y_f)} - \underbrace{M}_{g(D)}$$

CYCLICAL ADJUSTMENT

Export Adjustment

$$\hat{X} = X\,[1 - \varepsilon^{X,Y_f}(Y_f - Y_f^*)]$$

Import Adjustment

$$\hat{M} = M\,[1 - \varepsilon^{M,D}(D - D^*)]$$

ADJUSTED
$$CURRENT\ ACCOUNT = \hat{X} - \hat{M}$$

* $(Y_f - Y_f^*)$ and $(D - D^*)$ can be interpreted as log-differences, hence indicate the percentage deviations from trends.

For a better understanding of the procedure, a simple numerical illustration is presented below in Table 2. Assume that the realized (unadjusted) value of exports and imports is 100 $ for each, thus current account is on balance. At the same time, let domestic and global demand be 10% and 5% above their long term trends respectively. That means, assuming demand elasticity of 2 for imports and 1 for exports, actual imports and exports are higher than their "normal" levels by 20$ and 5$ respectively. Therefore, cyclically adjusted current account balance—the balance that would have materialized had the external and domestic demand not deviated from their long term trends, would be in surplus by 15 $.

X	M	CAB	D-D*	Y_f-Y_f*	Adjusted X	Adjusted M	Adjusted CAB
($)	($)	($)	(%)	(%)	($)	($)	($)
100	100	0	10	5	95	80	15

Table 2. An Hypothetical Example of Cyclical Adjustment to Current Account Balance

As in the illustration above, balance of payments statistics are denominated in dollars, thus current account balance is not only affected by domestic and foreign demand expressed in real terms but also by international prices. Similar to cyclical fluctuations in demand conditions, price movements may also be of temporary nature and may blur the current account outlook. From this point of view, one should smooth out the excessive fluctuations in prices to make accurate inferences on the underlying current account. In this respect, we slightly augment our procedure of cyclical adjustment to control for the deviations of import and export prices from their long-run

trends. Accordingly, the cyclical adjustment process in Diagram 2 can be modified as in Diagram 3:[4]

<div style="border:1px solid #800000;">

Diagram 3. Cyclical Adjustment Procedure Modified with Prices*

$$\hat{X} = X\,[1 - \mathcal{E}^{X,Y_f}(Y_f - Y_f^*) - (P_X - P^*_X)]$$

$$\hat{M} = M\,[1 - \mathcal{E}^{M,D}(D - D^*) - (P_M - P^*_M)]$$

* (Yf-Yf*), (D-D*), (Px-Px*) and (Pm-Pm*) can be interpreted as log-differences, hence indicate the percentage deviations from trends.

</div>

Here P_X and P_M represent export and import price indices respectively, where $(P_X - P^*_X)$ and $(P_M - P^*_M)$ denote percentage deviations from their trends. In this way, imports and exports are corrected for the fluctuations in foreign trade prices around trend as well as for the cyclical movements in domestic and foreign demand.

4.1. Long-run Trends
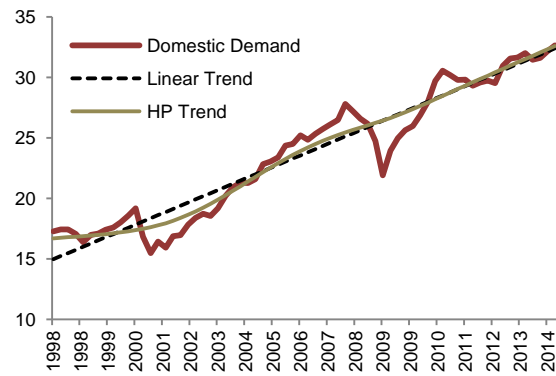
Imports and Exports

As formulated in the previous section, cyclical adjustment to current account requires estimation of the percentage deviations of domestic and foreign demand from their long-run trends. Among various methods of time series decomposition, we employ linear and Hodrick-Prescott (HP) filters for the sake of simplicity.[5] Estimated trends and corresponding gaps (cycles) for aggregate demand components are presented below in Figures 4-7. The gaps for external demand obtained from the two separate filters turns out to be significantly different for recent years (Figure 7). This uncertainty prompts us to consider a linear combination of these alternative indicators as explained in detail in Section 5.

Table 3 summarizes the cyclical positions of domestic and foreign demand for the whole sample. 1999-2000, 2005-2008, 2011 and 2013 are the periods of above-trend domestic demand, while 2001 and 2009 crises are characterized by deep slacks. Foreign demand tells the same story for 2005-2008, implying that this overheating phase was not specific to Turkey, it was rather a global issue. Nevertheless, the recovery phase after the 2009 crisis has revealed distinct characteristics for emerging and developed economies, leading to a divergence between domestic and external demand. In contrast to rapid growth in domestic demand in Turkey during 2010-2011, the revival in the export partners has been subdued as economic activity in these countries fell short of their long-run trends since 2008.

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[4] Under normal conditions foreign trade prices affect trade quantities, and vice versa. Here, we make a simplifying assumption and ignore the interrelation between prices and quantities.

[5] Filtering procedure relies on quarterly data for 1998-2012 with a smoothing parameter of 1600 for the HP filter (see Hodrick and Prescott (1997)). On the other hand, Alp et al. (2011) suggest optimal smoothing parameter for Turkey as 19 and 98. These relatively small values for the smoothing parameter naturally make the trends (gaps) more (less) volatile. Since such behavior of the cycle does not fit the objective of this study, we choose to proceed with the standard smoothing parameter (1600).

Figure 4. Domestic Demand (at 1998 Prices, Billions TL)	Figure 5. Domestic Demand Gap (Percent)

Source: TURKSTAT, Authors' calculations.
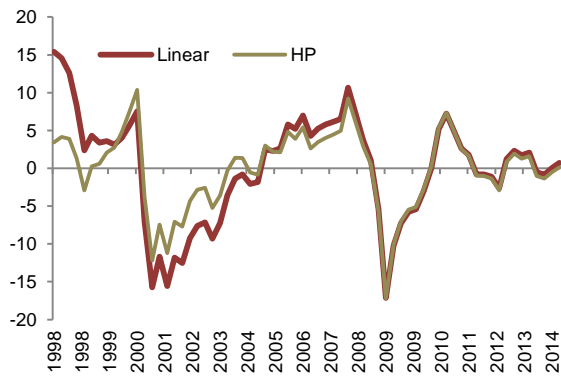
Source: TURKSTAT, Authors' calculations.

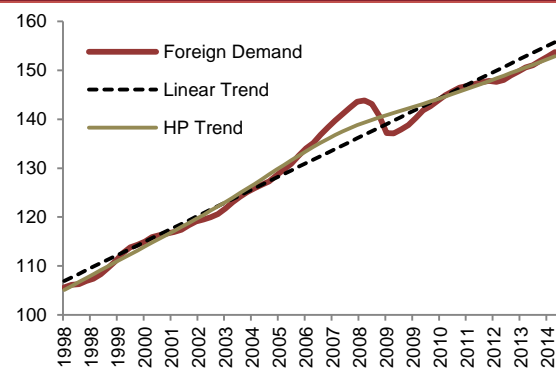| Figure 6. Foreign Demand* (1996Q1=100)	Figure 7. Foreign Demand Gap* (Percent)

* Foreign demand indicator is constructed as the export-weighted global GDP. See Çıplak et al. (2011).
Source: Authors' calculations.
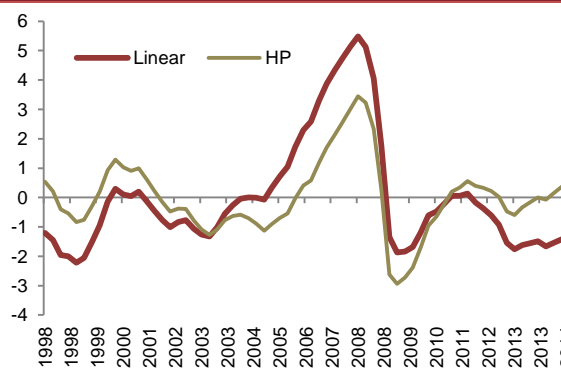
Source: Authors' calculations.

Table 3. Domestic and Foreign Demand Gap by Alternative Filters* (Percent)																		
		'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14
Domestic Demand	Linear	12.7	3.4	5.1	-12.5	-10.3	-6.8	-1.5	3.3	5.4	7.3	1.6	-10.1	-0.8	4.1	-1.3	1.8	-0.2
	HP	3.2	0.0	6.4	-8.7	-5.5	-2.9	0.3	3.0	3.9	5.6	0.9	-9.9	-0.6	4.1	-1.6	1.4	-0.7
Foreign Demand	Linear	-1.7	-1.7	0.1	-0.3	-0.9	-1.0	-0.1	0.5	2.5	4.5	4.1	-1.7	-0.6	0.0	-0.9	-1.6	-1.5
	HP	0.0	-0.4	1.0	0.4	-0.5	-1.1	-0.7	-0.8	0.5	2.4	2.3	-2.7	-0.9	0.4	0.0	-0.3	0.3

* Presented as the annual averages of quarterly data.
Source: Authors' calculations.

Focusing on the last couple of years provides a better understanding of the background of recent monetary policy framework in Turkey. In this respect, 2011 deserves special attention. At that time robust domestic demand (along with the real appreciation of domestic currency) was stimulating imports, where global outlook was not contributing much to exports. The unbalanced composition of aggregate demand led current account deficit to widen considerably, reaching almost 10% of GDP in 2011. The associated macrofinancial risks ultimately became the main

concern. Subsequently, coordinated macroprudential policy actions to slowdown the credit use and domestic demand has steered the economy toward rebalancing in the next 3 years (Table 3).[6] A sizeable adjustment in external balances has been achieved between 2011-2014 period, thanks to the real depreciation in TL and the slow down in credit growth.

Foreign Trade Prices

Foreign trade prices, just as real quantities, are affected by global business and liquidity cycles. Expansion and contraction phases in the global economy do not only shape external demand for small open economies but also cause large fluctuations in terms of trade from time to time. Therefore, identifying the underlying trend of current account necessitates adjustment for excessive fluctuations in foreign trade prices. To this aim, linear and HP trend estimates for import and export prices are presented in Figure 8-9 and Table 4.[7]

Figure 8. Import Price Index (2010=100)

Source: TURKSTAT, Authors' calculations.

Figure 9. Export Price Index (2010=100)

Source: TURKSTAT, Authors' calculations.
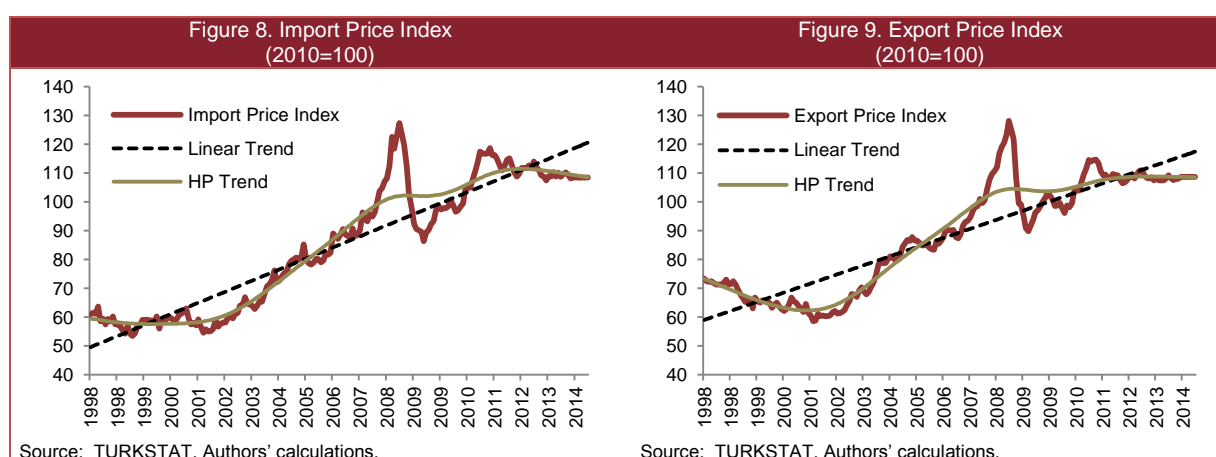
| Table 4. Foreign Trade Price Indices by Alternative Filters* | | | | | | | | | | | | | | | | | |
| (2010=100) | | | | | | | | | | | | | | | | | |
		'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14
Import	Unfiltered	59.7	56.4	58.9	58.8	58.0	64.6	75.0	80.2	87.1	95.5	114.7	92.3	100.0	114.9	111.9	110.1	108.8
	Linear	51.6	55.8	60.0	64.2	68.4	72.5	76.7	80.9	85.1	89.3	93.5	97.7	101.9	106.1	110.3	114.5	118.7
	HP	58.8	57.8	57.7	58.1	60.4	65.6	72.9	80.7	88.9	97.0	101.8	102.2	104.6	109.0	111.3	110.8	109.3
Export	Unfiltered	72.0	67.1	64.2	62.6	61.4	69.2	80.7	85.6	88.6	99.8	115.3	96.7	100.0	111.5	108.4	108.5	108.5
	Linear	60.7	64.1	67.6	71.0	74.5	77.9	81.4	84.8	88.3	91.7	95.2	98.6	102.1	105.5	109.0	112.6	115.9
	HP	71.4	67.3	64.0	62.5	64.2	70.0	77.8	85.2	92.5	100.0	104.2	103.9	104.6	107.0	108.5	108.8	108.7

* Presented as the annual averages of monthly data.
Source: TURKSTAT, Authors' calculations.

Recent experience has proved that during the periods of excess liquidity and/or rapid growth in the global economy, as was the case in the run-up to the global crisis, international prices may also exceed their long term trends. As explained above, our cyclical adjustment process accounts

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[6] For detailed information on the new policy design of the CBT which incorporates rebalancing, see Başçı and Kara (2011), Kara (2012), Alper *et al.* (2013).
[7] Filtering procedure covers 1998-2012 period at monthly frequency and HP smoothing parameter is taken as 14400.

for such movements in prices. For example, we compute that the current account deficit to GDP could have been 1 percent lower in 2008, had import and export prices followed a "normal" course. On the contrary, cyclical effect of terms of trade on the current account reversed in 2009. During this year, the contribution of below-trend course of foreign trade prices to the improvement in the current account balance reached 0.9 percentage point of GDP (Figure 12).

4.2. Elasticities

After extracting the cyclical parts of domestic and external demand, the next step in our cyclical adjustment process is to estimate the demand elasticities (ε) of imports and exports. The simplest approach to this problem is to compare

Table 5. Average Annual Growth Rates of Demand Components (Percent)					
	X	**M**	**D**	**Y**	**Y$_f$**
1998-2012	6.0	7.6	4.3	4.0	2.4
2003-2012	6.8	9.2	5.7	5.2	2.2

Source: TURKSTAT.

the average growth rate of imports (exports) to that of domestic (foreign) demand for sufficiently long time series. Accordingly, the average growth rates of demand and trade components for two alternative samples are presented in Table 5 and the corresponding elasticities are illustrated in Table 6.[8] The variables in Table 5 stand for exports (X), imports (M), domestic demand (D), GDP (Y) and global GDP (Y$_f$) respectively. In Table 6, $\varepsilon^{X,Yf}$ denotes foreign demand elasticity of exports, while $\varepsilon^{M,D}$ and $\varepsilon^{M,Y}$ are domestic demand and income elasticities of imports.

Based on average growth rates for two alternative samples, demand elasticities of exports ($\varepsilon^{X,Yf}$) are calculated as 2.5 and 3.1, where demand elasticities of imports ($\varepsilon^{M,D}$) are 1.6 and 1.8 (Table 6). Keeping in mind that this approach is essentially equivalent to a single variable regression and ignores other determinants of imports and exports, we estimate additional trade equations incorporating real exchange rate (RER) along with income/demand as a robustness check. Besides, these equations are estimated for both levels and gaps, where the estimates for gaps are presented in paranthesis in Table 6. According to the estimations repeated for two samples, demand elasticities of exports ($\varepsilon^{X,Yf}$) and imports ($\varepsilon^{M,D}$) lie between 2.3-2.7 and 1.2-1.8 respectively.[9]

The literature on Turkey points to a wide range for demand elasticity of exports. For instance, Togan and Berument (2007) estimate a high elasticity ($\varepsilon^{X,Yf}$) as 3.4, whereas the estimates of Ulaşan and Şahinbeyoğlu (1999), Aydın et al. (2007) and Binatlı and Sohrabji (2009) vary between 0.9 and 1.5. On the other hand, our estimates for the demand elasticity of imports proved to be broadly consistent with the previous studies.

It is worth to note that, depending on its composition, the repercussions of GDP growth on current account and macro-financial risks would be totally different. For instance, during periods of strong capital inflows in Turkey, the associated appreciation in domestic currency and acceleration in bank lending typically lead to a domestic demand led growth, increasing the

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[8] The estimations for elasticities are based on the data on national accounts with 1998 base year.
[9] The foreign demand indicator (export-weighted global GDP) employed in this study does not cover Middle East and North Africa (MENA) region, thus do not fully represent the Turkish export markets and external demand. Diversification of export markets (rise in the share of MENA region versus drop in the share of European Union) after the global crisis might change the foreign demand gap and demand elasticity of exports. See Aldan and Çulha (2012).

"elasticity" of imports to GDP growth. Therefore, unlike previous studies, in order to capture the compositional aspects of the growth on the current account balance, we modeled imports as a function of domestic demand rather than national income. This allows us to make a better identification of the relative impact of domestic versus external demand on the current account. For a small open economy like Turkey, extracting endogenous (domestic) and exogenous (external) components of the cyclical part of the current account would facilitate appropriate design of economic policies concerned with macro-financial risks.

5. Results

The cyclical adjustment process of the current account deficit involves many uncertainties due to detrending of variables and estimation of trade elasticities. We adopt a fanchart approach to reflect these uncertainties as shown in Figure 10. Each line corresponds to a mixture of trade elasticities as well as different combinations of detrended series. For the detrending of domestic demand gap and trade prices, we construct various combinations shown in Table 3 and Table 4. Moreover, using the estimations in Table 6, we form combinations spanning the range of 1.2-1.8 for demand elasticity of imports and 2.3-3.1 range for demand elasticity of exports.[10] Accordingly, the fanchart presentation in Figure 10 includes eight different combinations.

Table 6. Elasticity Estimates by Alternative Methods			
	$\varepsilon^{X,Yf}$	$\varepsilon^{M,D}$	$\varepsilon^{M,Y}$
Average Growth Rates			
Sample: 1998-2012	2.5	1.8	1.9
Sample: 2003-2012	3.1	1.6	1.8
Linear Regression			
M=f(D, RER) and X=g(Y$_f$, RER)			
Sample: 1998-2012 Variable Definition: Level (Gap)	2.7 (2.4)	1.3 (1.8)	1.3 (2.1)
Sample: 2003-2012 Variable Definition: Level (Gap)	2.4 (2.3)	1.2 (1.6)	1.1 (1.9)
Other Studies			
Sample: 1987-1998 Ulaşan and Şahinbeyoğlu (1999)	1.2		
Sample: 1987-1999 Kotan and Saygılı (1999)			1.4
Sample: 1987-2003 Aydın et al. (2004)			2.0
Sample: 1987-2006 Aydın et al. (2007)	1.3-1.5		
Sample: 1970-2005 Togan and Berument (2007)	3.4		
Sample: 1988-2002 Kee et al. (2008)			1.3
Sample: 1999-2008 Binatlı and Sohrabji (2009)	0.9		1.1
Sample: 2003-2011 Aldan et al. (2012)			1.9[(1)]
Sample: 1999-2008 Eren (2013)			1.2

(1) Estimated for imports excluding energy.

Since we have taken a wide range of elasticities, not surprisingly, the cyclically adjusted series shown in Figure 10 display a diverse pattern, as the maximum-minimum differences calculated for each year are averaged at 1.7 percent. In order to have a more smooth, thus informative, variable that would help to track the underlying trend of the cyclically adjusted balance, we take simple average of all series (Figure 11), and interpret this as the ultimate cyclically adjusted current account balance. As expected, cyclically adjusted current

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[10] Because of the linearity of our methodology, we construct four combinations of trade elasticity including upper and lower bounds of the ranges. Accordingly, we use combinations of (1,2;2,3), (1,2;3,1), (1,8;2,3) and (1,8;3,1) for import and export elasticity of demand.

account balance follows a more stable course than actual figures, with a clear downward trend indicating about 0.5 percent deterioration each year. This may suggest a worsening in the structural component of the current account. It is interesting to note that most of the deterioration occurred before the global crisis and cyclically adjusted current account balance seems to have stabilized around 6-6.5 percent since then.

Figure 10. Cyclically Adjusted Current Account Balance Under Different Assumptions (Percent of GDP)

* Projection.
Source: Authors' calculations.

Figure 11. Cyclically Adjusted Current Account Balance (Percent of GDP)

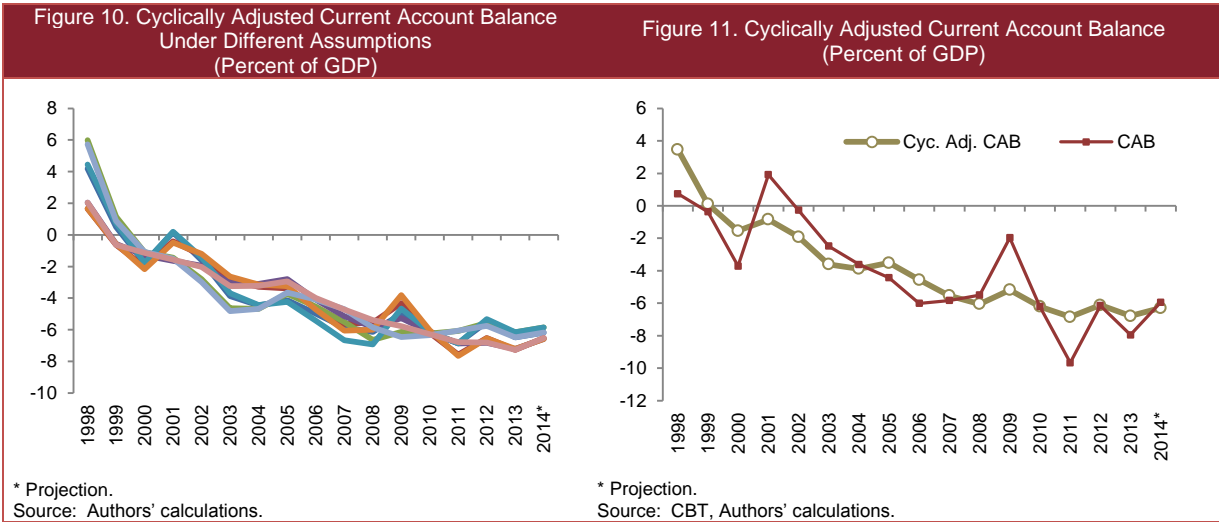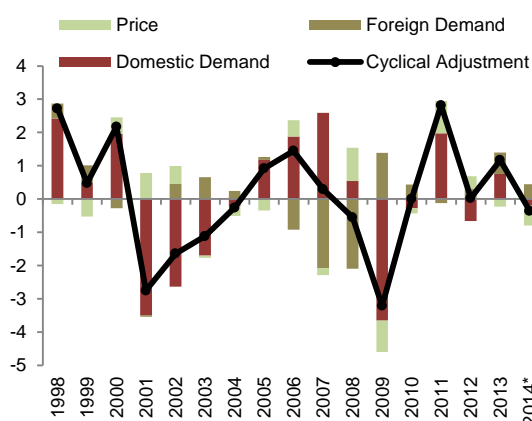* Projection.
Source: CBT, Authors' calculations.

Figure 11 depicts that, in some years there are stark differences between cyclically adjusted and unadjusted series. For example, right after the onset of the global crisis in 2009, the actual current account deficit to GDP ratio fell by 3.5 percent to 2 percent, where most of the decline stemmed from the crisis-related cyclical factors, and hence, was short lived. The same story holds for the 2001 crisis with a similar difference (almost 3 percentage points) between adjusted and unadjusted figures. On the contrary, cyclical factors led to a sharp deterioration in the current account deficit in 2011.

In order to have a better understanding of the drivers of the cyclical movements in the current account, Figure 12 decomposes the cyclical part into three main components: domestic demand, external demand and price (terms of trade). The figure shows that narrowing of the current account deficit in 2001 and 2009 can be mostly attributed to the contraction in domestic demand. The long-lasting slack in domestic demand had suppressive effects on the external deficit until 2005, while the recovery from the 2009 crisis was quick and the restrictive effect of domestically oriented cyclical factors on the deficit rapidly vanished. In 2011, not only domestic demand but also international prices affected current account balance adversely. Especially the combination of a weak external demand with strong domestic demand have led to a record-high deficit, reflecting the growing imbalances in the post-crisis dynamics. This picture explains why monetary and regulatory authorities have perceived this development as a macro financial risk and have taken rebalancing measures starting from the end-2010.[11]

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[11] To this end, the CBT has adopted a two-pillar approach. The first pillar was to slowdown credit growth and domestic demand, and the second one was to align the exchange rate closer with fundamentals. These policies were instrumental in engineering a rebalancing in the economy, which has been evidenced by the significant improvement in the current account balance.

Figure 12. Contributions to Cyclical Adjustment (Percentage Points)

Figure 13. Cyclically Adjusted Current Account Balance (Percent of GDP) and Real Exchange Rate (2005=100)

* Projection.
Source: Authors' calculations.
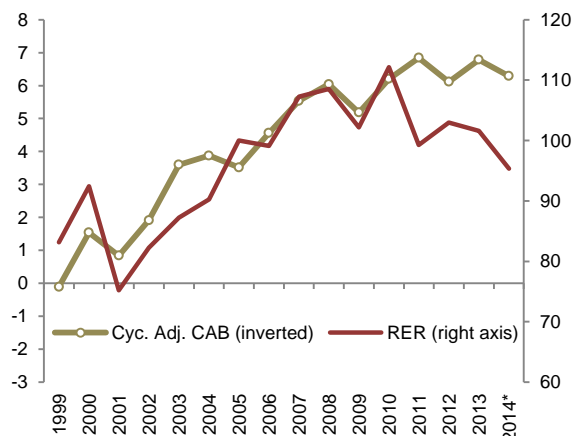
* Projection.
Source: Authors' calculations, OECD.

Next, we ask the question whether the cyclical adjustment process conducted above can be further improved by adjusting for net exports of gold. Gold has been a historically important item in the trade balance. The fluctuations in gold prices or temporary trade developments lead to a significant volatility in the nominal value of net exports of gold, distorting the underlying trend of the current account balance. The years 2012 and 2013 are extraordinary periods that deserve special attention. Net exports of gold to GDP, which was on average -0.5 percent during 2001-2011, materialized at +0.7 percent in 2012 and -1.4 percent in 2013.[12] Therefore, it may be informative to follow the cyclically adjusted balance by excluding the gold trade, which is shown in the last row of Table 7.

Table 7. Effect of Gold Trade in Cyclically Adjusted Current Account Balance (Percent of GDP)																	
	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14
Net Exports of Gold (billions dollar)	0.0	0.0	0.0	-1.0	-1.4	-2.5	-3.4	-3.8	-3.4	-4.3	-1.4	3.0	-0.5	-4.8	5.7	-11.8	-0.4
Net Exports of Gold	0.0	0.0	0.0	-0.5	-0.6	-0.8	-0.9	-0.8	-0.6	-0.7	-0.2	0.5	-0.1	-0.6	0.7	-1.4	0.0
Cyclically Adjusted CAB	3.5	0.1	-1.5	-0.8	-1.9	-3.6	-3.9	-3.5	-4.6	-5.5	-6.0	-5.2	-6.2	-6.8	-6.1	-6.8	-6.3
Cyclically Adjusted CAB Excl. Gold	3.5	0.1	-1.5	-0.3	-1.3	-2.8	-3.0	-2.7	-3.9	-4.9	-5.9	-5.7	-6.1	-6.2	-6.8	-5.3	-6.2

Source: TURKSTAT, Authors' calculations.

Excluding gold, the cyclically adjusted current account reveals an important finding: There seems to be a sustained and pronounced deterioration in the cyclically adjusted balance until 2008, suggesting a widening in the structural current account deficit. Starting from 2008, cyclically adjusted balance has stabilized and averaged at 6 percent. It should be noted that the halt in the deterioration of the underlying current account balance coincides with the reversal of the

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[12] In 2012 gold exports to Iran and United Arabic Emirates increased sharply for temporary reasons, which should be taken into account to have a more healthy view of the underlying trend of the current account balance.

appreciation trend in the real exchange rate during this period. The end of sustained real appreciation trend in 2008 may have contributed to the interruption of the worsening in the structural component of the current account (Figure 13).

6. Conclusion and Final Remarks

This study aims to derive cyclically adjusted current account balance for Turkey using a simple and intuitive method. We adjust for transitory movements of domestic demand, external demand, and terms of trade to obtain the cyclically adjusted current account to unveil its underlying trend.

Our results have important policy implications. Cyclical adjustment of the current account deficit provides valuable information regarding the limits of cyclical (non-structural) policies. Since cyclical policies cannot have a direct impact on terms of trade or external demand, domestic policies aiming to smooth cyclical fluctuations of the current account deficit have largely focused on the impact of domestic demand and imports. Our findings suggest that cyclical fluctuations are important in driving short term dynamics of the current account deficit, reaching as high as 3 percentage points in some years, mostly driven by domestic demand movements. These results lend support to the view that monetary policy and other cyclical policies may have some room for maneuver in smoothing the current account volatility. In fact, we show that following the policy response taken in 2011, the cyclical component of the current account deficit that can be attributed to the domestic demand has been largely removed.

Our results reveal the persistent deterioration in the cyclically-adjusted current account deficit during 1998-2007 period before stabilizing around 6 percent of GDP in recent years. It is interesting to note that the halt in the deterioration of the underlying current account balance have coincided with the reversal of the appreciation trend in the real exchange rate during this period. The two pillar approach of the CBT to macrofinancial stability, which explicitly aims to remove financial excesses and to avoid signficant exchange rate misalignments, may have contributed to the interruption of the worsening in the structural component of the current account.

Although the policies pursued by the central bank and other authorities since 2011 have helped the rebalancing process great extent, there remains a sizeable component of the deficit to be dealt with more structural policies. In this context, recently important steps have been taken to reduce the structural current account deficit.[13] However, the impacts of these measures are likely to be seen in the longer term. Therefore, our findings imply that bringing the current account deficit to reasonable levels in the short term would not be possible without sacrificing significantly from economic growth. Also given the weak demand conditions in the Euro area (our major trading partner), current account deficit is likely to continue to be a major challenge for macroeconomic and financial stability in the short term.

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[13] Structural reforms include the new private pension law as well as new incentives for investments that would decrease import and energy dependency.

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