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Credit growth and current account balance[☆]

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ABSTRACT

In this paper, we investigate the relationship between different loan types and the current account balance along with its sub-components. Our empirical results suggest that a rise in total loans inevitably leads to a deterioration in the current account balance. This relationship is preserved in the case of the goods trade balance, but it becomes statistically insignificant and disappears if the services trade balance is considered. When we examine different types of loans, our findings indicate that both consumer and corporate loans have sizeable and negative effect on both the current account and goods trade balances with the impact of consumer loans being much higher. We also report that only corporate loans have a significantly negative relationship with the services trade balance although the concurrent effect is rather small.

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1. Introduction

Credit growth can boost economic activity, employment and exports in the short and long term but it has an adverse effect on the external balance by fueling the demand for imported goods. In emerging economies that have not yet completed their financial deepening process, high credit growth rates are thought to be normal. It should be noted, however, that rapid credit expansion, especially high consumer credit growth, may lead to large deteriorations in the current account (CA) balance. Therefore, we aim to quantify the relationship between loan growth and the external balance by employing the data for Türkiye. We also study the impact of total loans and its subcomponents on the current account, goods and services trade balances, separately.¹

[☆] The views expressed in this paper are only those of the authors and should not be interpreted as reflecting those of the Central Bank of the Republic of Türkiye.

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¹ Throughout the paper, words for credit and loan, business and corporate, household and consumer are used interchangeably.

Many studies in the economics literature have concluded that rapid credit growth is a leading indicator for balance of payments and banking crises.² Jorda et al. (2010) investigated whether the CA balance, alongside other economic fundamentals, contains any information on a possible financial crisis. To this end, a dataset for 14 developed countries over the 1870–2008 period was used to build a logit model to determine the variables affecting the likelihood of a financial crisis. Although the CA deficit is predictive of a financial crisis, it is not as statistically significant as credit expansion. The results reveal that there is a statistically significant and higher correlation between credit growth and CA deficit for the post-1975 period. This result suggests that rapid loan growth after 1975 is synchronized with widening CA imbalances. Following Jorda et al. (2010), Elekdag and Wu (2011) found similar results suggesting that credit booms are jointly associated with deteriorating bank and corporate balance sheet soundness. They listed symptoms of overheating as: large capital inflows, widening CA deficits, buoyant asset prices, and strong domestic demand. Therefore, it is crucial to monitor credit growth closely. These studies point to the fact that to achieve macroeconomic and financial stability, we need to

² Borio and Lowe (2002); Jorda et al. (2010).

understand the relationship between the external balance and credit growth.

In addition to loan growth, the composition of loan growth is also important in terms of the magnitude of its impact on the external balance. Academic studies suggest that sub-components of loans have different effects on household and corporate sectors' consumption, savings, and investment behaviors.³ Theoretically, consumer loans are expected to increase the CA deficit through rising consumption and imports, while corporate loans are expected to widen the deficit in the short run through the demand channel by increasing investments, and to decrease it in the medium and long run by boosting production and exports. The role of household and business credit on economic dynamics has been extensively investigated after the contribution of Beck et al. (2012).⁴ However, few studies focus on the link between different types of loans and external balance. Büyükkarabacak and Krause (2009) find, in a panel of 18 emerging market countries for the period 1995–2004, that lending to consumers reduces net exports, while lending to firms increases net exports. Their findings imply that a rise in exports due to an increase in credit for business investment is greater than the increase in imports from acquiring foreign capital, raw materials and intermediate inputs for production. Similarly, Islam (2017) finds that higher shares of credit going to firms means a higher export share in gross domestic product (GDP) and stronger trade balance. Ekinci and Omay (2020) construct a dataset for 43 countries between 1986 and 2015. They examine the role of business and household credit growth as well as total credit growth on the CA balance. When the roles of the components of credit are examined, the study shows that an increase in household credit causes an economically and statistically significant deterioration in the CA balance, whereas an increase in business loans has no significant effect. Coricelli et al. (2006) in their country specific analysis based on a sample consisting of New Europe countries document a negative impact of household credit growth on the trade balance for the period 1996–2004. On the other hand, contrary to Büyükkarabacak and Krause (2009), they report a negative and significant relationship between corporate loans and the trade balance. The country specific analysis conducted in Coricelli et al. (2006) reveals that the negative impact of business credit on the trade balance is prevalent in Romania, Türkiye and Hungary. On the other hand, the impact of business credit on the trade balance appears insignificant for several countries such as Bulgaria, Croatia, Estonia, and Latvia where bank credit represents a small share of total financing needs of companies. Similar to Coricelli et al. (2006), Toraganlı and Ertuğrul (2016) report that both household and firm loans have negative effect on the CA dynamics in Türkiye, arguing that the strong import dependency of industrial production and the increasing share of business credit to non-tradables are the main reasons for the negative impact of firm credit on the CA balance. All these studies imply that there is a consensus on the effect of consumer loans. However, there are contradictory results about the net impact of corporate loans on the external balance.

Policy makers, when confronted with the need to control credit growth, should not ignore the asymmetric effects of consumer and corporate loans on the external balance. A policy that does not consider such asymmetry may have adverse effects on a country's comparative advantage. Our paper is related to the literature that studies the relation between loan types and the CA balance. We examine the empirical link between loans and the CA balance with

³ See Coricelli, Mucci and Revoltella (2006); Büyükkarabacak and Krause (2009); Toraganlı and Ertuğrul (2016).

⁴ This study finds that bank lending to enterprises, not to households, drives the positive impact of financial development on economic growth.

a focus on the components of loans by borrower (household/firm) and the sub-components of the CA balance. We find that a rise in consumer loans widens the CA and goods trade deficit more than the same amount of increase in corporate loans. We also observe that corporate loans increase the services account deficit while consumer loans have no significant effect. Furthermore, all models show that there is a negative and statistically significant relation between the real exchange rate and the CA deficit including the sub-components. The rest of the paper is organized as follows: Section II presents some stylized facts regarding the components of the CA balance to provide intuition for the empirical setup. In Section III, after describing data and methodology, the empirical results are discussed. The last section concludes.

2. Current Account Balance and Its Components

The CA balance is closely monitored by many policy-makers and meticulously studied by many researchers because it carries extremely valuable information about the state of the economy under consideration and shows whether a country needs external financing.

Looking at the historical course of the CA balance of Türkiye, there has been a deficit every year except for 2019 (Fig. 1). The main source of the deficit has been the goods trade balance whereas the services trade balance has always been positive. High tourism and transportation revenues have been the main reasons for the stable surplus in the services account. Given that the net international investment position has been negative for a very long time, income balance has also been negative but its impact on the CA balance is small when compared to the goods trade balance.

To shed more light on the goods trade balance, it is separated into three parts: energy, unprocessed gold and core goods. Core goods are defined as the goods other than gold (from now on gold refers to unprocessed gold unless otherwise is stated) and energy. For many years, the energy trade balance has been sizably negative and the main factor behind the CA deficit of Türkiye. The size of the energy trade deficit is very sensitive to global energy prices and is only slightly affected by domestic demand conditions. Although the contribution of the gold balance is more limited, it also varies periodically. The gold trade balance has been generally negative because it has been traditionally used as a store of wealth in addition to being an intermediate good for jewelry.

When it comes to the core goods balance that excludes gold and energy products, the story seems to have changed after 2017, indicating a possible structural transformation. While the core goods trade balance contributed to the CA balance negatively between 2003 and 2017, it has been contributing positively to the CA balance since 2018. In 2019, it posted a surplus so large that turned the CA balance from negative to positive in a year when the economic growth was positive. The core trade balance remained positive in the following years and limited the CA deficit.

Next, we explore the relationship between credit use and the CA balance with the help of Fig. 2. Total loans change refers to the periodic change in the stock. To remove the impact of exchange rate depreciations or appreciations, the change in total loans is adjusted for exchange rate movements as the total credit variable includes corporate loans denominated in foreign currencies such as US dollars and euros. A visual investigation of the historical data in the figure reveals that total credit use and the CA deficit generally move together. This observation further suggests that there seems to be a relationship between the two series that needs to be analyzed quantitatively and thoroughly.

Total loans mainly comprise consumer and commercial loans. The stock of commercial loans is much larger than the stock of consumer loans. Similar to total credit use, these two sub-items

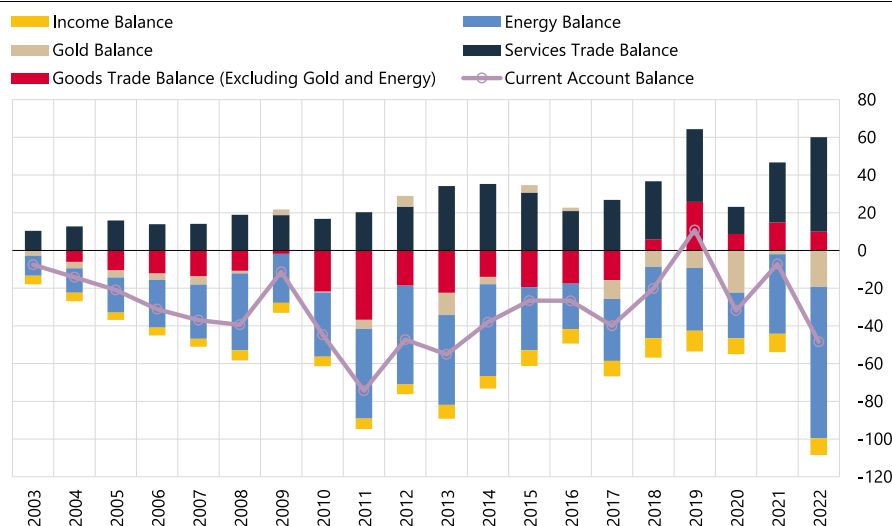


Fig. 1. Current account balance and its components.
Source: Central Bank of the Republic of Türkiye (CBRT)

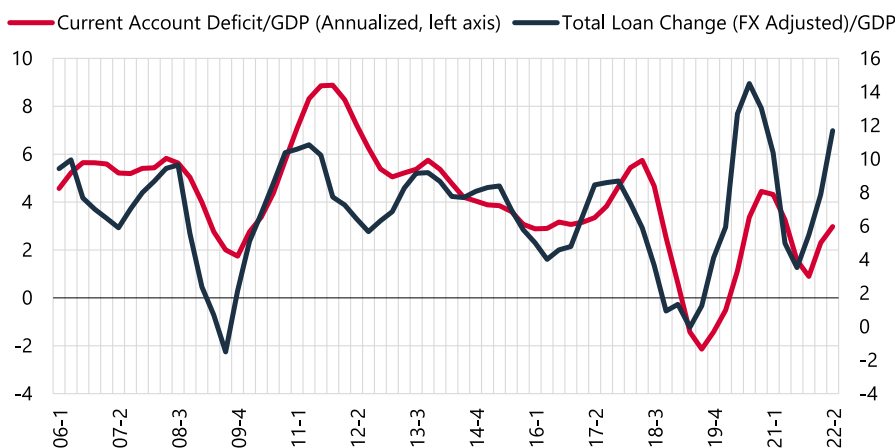


Fig. 2. Current account Deficit/GDP (annualized) and total loan change (FX Adjusted)/GDP.
Sources: Banking Regulation and Supervision Agency (BRSA), CBRT

exhibit co-movement with the CA deficit (Figs. 3 and 4). This picture further supports our approach that points out the importance of comprehensively examining the effect of credit utilization on the CA balance and quantifying the relationship.⁵

3. Data and empirical evidence

Enhanced credit facilities may increase total demand and thus affect the CA balance by facilitating both households' purchase of goods and firms' financing of investment and operating costs. In this paper, we aim to quantify the effect of both total and different loan types, such as consumer and corporate loans, on both the CA balance and its sub-components (goods and services trade balance) over the period of 2005Q1-2022Q2 in Türkiye. A simple empirical model is designed for this purpose, and different specifications are estimated. The study uses quarterly data. The data for the CA deficit

is compiled from the Central Bank of the Republic of Türkiye (CBRT) balance of payments statistics, and loan data is retrieved from the webpage of the Banking Regulation and Supervision Agency (BRSA). Real effective exchange rate (REER) data is taken from Real Effective Exchange Rate statistics of the CBRT Electronic Data Distribution System. The GDP data is taken from Turkish Statistical Agency (TURKSTAT). The terms of trade (ToT) variable is calculated as the ratio between the index of export prices and the index of import prices, which are taken from TURKSTAT. The CA deficit variable used in the models is obtained as the ratio of seasonally adjusted quarterly CA deficit data to seasonally adjusted current quarterly GDP; and consumer, corporate and total loan variables, used in the models, are calculated as the ratio of the quarterly changes in the loan stock to current quarterly GDP.⁶

⁵ Similar figures for the goods and services trade balance are shown in Appendix I.

⁶ According to the Augmented Dickey-Fuller Unit Root Test (ADF) results, all the variables used in the regressions are stationary.

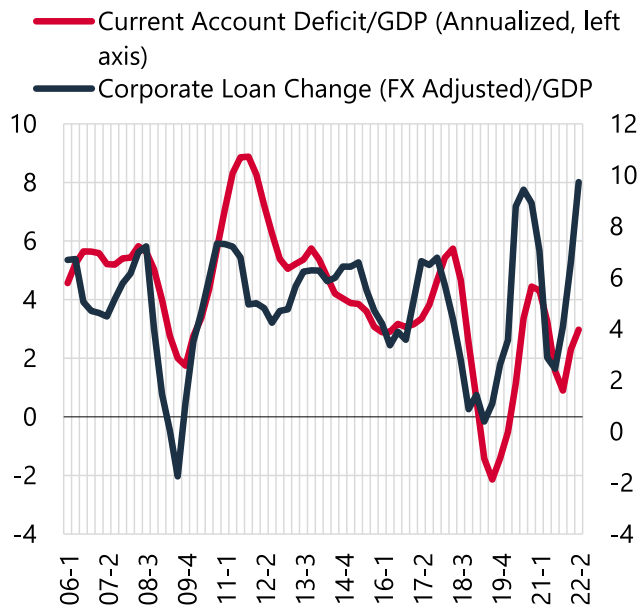


Fig. 3. Current account Deficit/GDP (annualized) and corporate loan change (FX Adjusted)/GDP. Sources: BRSA, CBRT

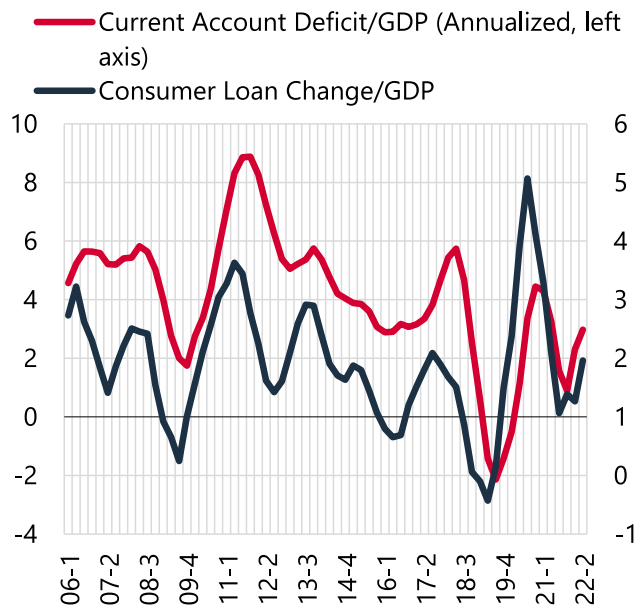


Fig. 4. Current account Deficit/GDP (annualized) and consumer loan Change/GDP. Sources: BRSA, CBRT

$$\left(\frac{CAB}{GDP}\right)_t = c + \alpha \sum_{i=1}^l \left(\frac{CAB}{GDP}\right)_{t-i} + \beta_1 \sum_{i=0}^l \left(\frac{\Delta Total Loans}{GDP}\right)_{t-i} + \beta_2 \sum_{i=0}^l (\Delta REER)_{t-i} + \beta_3 \sum_{i=0}^l (\Delta ToT)_{t-i} + \beta_4 (Dummy) + \varepsilon_t \tag{1}$$

$$\left(\frac{CAB}{GDP}\right)_t = c + \alpha \sum_{i=1}^l \left(\frac{CAB}{GDP}\right)_{t-i} + \beta_1 \sum_{i=0}^l \left(\frac{\Delta Consumer Loans}{GDP}\right)_{t-i} + \beta_2 \sum_{i=0}^l \left(\frac{\Delta Corporate Loans}{GDP}\right)_{t-i} + \beta_3 \sum_{i=0}^l (\Delta REER)_{t-i} + \beta_4 \sum_{i=0}^l (\Delta ToT)_{t-i} + \beta_5 (Dummy) + \varepsilon_t \tag{2}$$

The empirical model given in Equation (1) is constructed to understand the relationship between the CA balance and total loan growth. We extend our analysis by focusing on different type of loans and estimate Equation (2). Models similar to (1) and (2) are also used in the goods trade balance equations. In the services trade balance regressions, the terms of trade variable is excluded from the models.

Table 1 summarizes the simple regression results where the dependent variable is defined as the ratio of CA balance to GDP (CAB/GDP). Model 1 is estimated as a baseline model in which the change in the exchange rate-adjusted total loans (as a ratio of GDP) and the quarterly change in the real exchange rate are used as independent variables. When choosing the lag length for each independent variable, we test up to four lags and keep only those with statistically significant coefficient estimates and then choose the specification with the lowest Schwarz Information Criterion (SIC). Regression results suggest that there is an inertia in the ratio of CAB/GDP. Findings imply that a one-percentage-point increase in the ratio of total loans to GDP results in an approximately 0.21-percentage-point rise in CA deficit (as a ratio of GDP) in the same

period. When we try higher lags of the total loan variable, we find that the first and second lags have statistically insignificant coefficient estimates while the third and fourth lags have significant coefficient estimates. Because adding the third and fourth lags increases SIC, we keep only the concurrent value of the total loan variable. Similar logic is applied for the selection of the lags of real exchange rate, and it is concluded that the model has the lowest SIC value when only the first lag of REER is included. A rise in the real exchange rate also increases the CA deficit. This finding suggests that a decrease in the real exchange rate or in other words, the depreciation of the Turkish lira (TL), affects the CA balance positively.

The regression coefficients in the second model where the ToT variable is included are almost the same as the coefficients in the first model. In other words, inclusion of the ToT variable does not alter the coefficient estimates of the other right-hand-side variables. The coefficient of ToT variable which is defined as the ratio of export prices to import prices is estimated to be positive but not significant in statistical terms. In models (3) to (6), consumer and corporate loans are used as separate explanatory variables instead

Table 1
Current account Balance/GDP.

	1	2	3	4	5	6
CAB/GDP _(t-1)	0.79*** (0.04)	0.79*** (0.05)	0.79*** (0.04)	0.79*** (0.04)	0.79*** (0.04)	0.77*** (0.05)
ΔTotal Loans/GDP _(t)	-0.21*** (0.03)	-0.21*** (0.03)				
ΔConsumer Loans/GDP _(t)			-0.33** (0.13)	-0.33** (0.13)	-0.50*** (0.09)	-0.50*** (0.09)
ΔCorporate Loans/GDP _(t)			-0.17*** (0.06)	-0.17*** (0.06)		
(ΔCorporate Loans-ΔConsumer Loans)/GDP _(t)					-0.17*** (0.06)	-0.17*** (0.06)
ΔReal Effective Exchange Rate _(t-1)	-0.08*** (0.03)	-0.08*** (0.03)	-0.08*** (0.03)	-0.08*** (0.03)	-0.08*** (0.03)	-0.08*** (0.03)
ΔTerms of Trade _(t)		0.03 (0.04)		0.03 (0.04)		0.03 (0.04)
Constant	0.77*** (0.24)	0.79*** (0.24)	0.78*** (0.24)	0.80*** (0.24)	0.78*** (0.24)	0.80*** (0.24)
Observations	69	69	69	69	69	69
R ²	0.86	0.86	0.87	0.87	0.87	0.87
Adjusted R ²	0.85	0.85	0.85	0.85	0.85	0.85

1 ***, ** and * indicate statistical significance at 1%, 5% and 10%, respectively.

2 Standard errors are given in parentheses.

3 Total and corporate loans are exchange rate adjusted.

Table 2
Goods trade Balance/GDP.

	1	2	3	4	5	6
GTB/GDP _(t-1)	0.72*** (0.07)	0.73*** (0.05)	0.72*** (0.07)	0.73*** (0.05)	0.72*** (0.07)	0.73*** (0.05)
ΔTotal Loans/GDP _(t)	-0.16*** (0.04)	-0.16*** (0.03)				
ΔConsumer Loans/GDP _(t)			-0.24** (0.12)	-0.22* (0.13)	-0.37*** (0.11)	-0.37*** (0.11)
ΔCorporate Loans/GDP _(t)			-0.13** (0.06)	-0.14*** (0.05)		
(ΔCorporate Loans-ΔConsumer Loans)/GDP _(t)					-0.13** (0.06)	-0.14*** (0.05)
ΔReal Effective Exchange Rate _(t-1)	-0.08*** (0.02)	-0.09*** (0.02)	-0.08*** (0.02)	-0.08*** (0.02)	-0.08*** (0.02)	-0.08*** (0.02)
ΔTerms of Trade _(t)		0.12*** (0.04)		0.12*** (0.04)		0.12** (0.04)
Constant	-0.51 (0.40)	-0.32 (0.35)	-0.48 (0.38)	-0.30 (0.34)	-0.47 (0.38)	-0.30 (0.34)
Observations	69	69	69	69	69	69
R ²	0.85	0.87	0.85	0.87	0.85	0.87
Adjusted R ²	0.83	0.85	0.83	0.85	0.83	0.85

1 ***, ** and * indicate statistical significance at 1%, 5% and 10%, respectively.

2 Standard errors are given in parentheses.

3 Total and corporate loans are exchange rate adjusted.

of the total loans. Coefficient estimates of models (3) and (5) are identical, in which the difference between corporate and consumer loan variables is used in model (5) in order to handle the possible multicollinearity due to the high correlation between these two variables. Models (4) and (6) are estimated by adding the ToT variable to models (3) and (5), respectively. In general, the inclusion of the ToT variable does not significantly change the results with

respect to consumer and corporate loans. Thus, regression results for model (3) are taken as the baseline results while the others are estimated for robustness check. While a one-percentage-point rise in consumer loans increases the CA deficit by 0.33 points, a one-percentage-point increase in corporate loans raises it by 0.17 points. In other words, consumer loans increase the CA balance almost twice as much as the same amount of commercial loans. We also include dummies in the estimation process which are significant for all specifications.⁷

Next, we analyze the impact of loan developments on the goods trade balance (GTB) and report the results of various regression models in Table 2. The dependent variable is the GTB as a ratio of GDP. In Model (1), GTB is regressed on total loans as a ratio of GDP, percentage change in the real exchange rate and the lagged dependent variable as well as some dummy variables. Model (2) extends the first model by including the percentage change in the

⁷ In current account balance estimations, we use several dummies to control for the impact of some major events on the current account balance. Our first dummy variable is for the second quarter of 2009 and accounts for the effects of the Global Financial Crisis. We also employ dummies for the second quarter of 2011, between the second quarter of 2017 and the first quarter of 2018, inclusively, and the first quarter of 2022 to control for the start of Syrian civil war, extensive use of loans through the credit guarantee fund with the Treasury's support, and the large depreciation of Turkish lira (TL), respectively.

Table 3
Services trade Balance/GDP.

	1	2	3
STB/GDP _(t-1)	0.92*** (0.04)	0.93*** (0.04)	0.93*** (0.04)
ΔTotal Loans/GDP _(t)	-0.02 (0.01)		
ΔConsumer Loans/GDP _(t)		0.03 (0.06)	-0.01 (0.05)
ΔCorporate Loans/GDP _(t)		-0.03** (0.01)	
(ΔCorporate Loans-ΔConsumer Loans)/GDP _(t)			-0.03** (0.01)
ΔReal Effective Exchange Rate _(t-1)	-0.02* (0.01)	-0.02* (0.01)	-0.02* (0.01)
Constant	0.39*** (0.11)	0.34** (0.15)	0.34** (0.15)
Observations	69	69	69
R ²	0.91	0.91	0.91
Adjusted R ²	0.90	0.90	0.90

1 ***, ** and * indicate statistical significance at 1%, 5% and 10%, respectively.

2 Standard errors are given in parentheses.

3 Total and corporate loans are exchange rate adjusted.

ToT as an additional independent variable. The findings of the first two models suggest that a one-percentage-point increase in total loans reduces the GTB-to-GDP ratio by 0.16 percentage points in the same period. In other words, an increase in total loans that is equal to one percent of GDP raises the goods trade deficit by an amount that is equal to 0.16 percent of GDP. If we consider the consequential impact of unit loan expansion through the lagged dependent variable, the total rise in trade deficit climbs up to 0.57 percent of GDP.

In Models (3) and (4), we replace total loans with consumer and corporate loans and run the same regressions. To handle the possible multicollinearity problem due to the high correlation between consumer and corporate loans, we again include the difference between the two loan types as a ratio of GDP instead of corporate loans in Models (5) and (6). These models produce the same coefficient estimates as Models (3) and (4), respectively with higher statistical significance as the multicollinearity issue is alleviated. According to the estimation results, a one-percentage increase in consumer loans lowers GTB by 0.24 percentage points whereas the same increase in corporate loans leads to a smaller impact in GTB, a reduction of 0.13 percentage points. These results are very suggestive of the conclusion that a rise in consumer loans widens the goods trade deficit more than the same amount of increase in corporate loans.

Additionally, all models indicate that there is a negative and statistically significant relationship between the change in real exchange rate and GTB.⁸ A one-percentage-point decrease (real depreciation) reduces the goods trade deficit by 0.08 percentage points in the current period and by around 0.3 percentage points when the subsequent impacts are counted. So, the findings imply that any real depreciation of the exchange rate improves the GTB. Moreover, we show that there is a statistically significant and positive relationship between the ToT and GTB with a simultaneous elasticity of 0.12 and a cumulative elasticity of 0.44. Any

⁸ Aydın and Gül (2020), Kazdal and Gül (2021), and Gül (2018) find similar results with respect to the effect of the real exchange rate.

⁹ In goods trade regressions, we use the dummies for the second quarter of 2009 to account for the effects of the Global Financial Crisis, between the second and fourth quarters of 2011 to control for the effects of the Syrian civil war, between the second quarter of 2017 and the first quarter of 2018 to check for extensive use of loans through the credit guarantee fund with the Treasury's support, and the first quarter of 2022 to control for the large depreciation of the Turkish lira (TL).

improvement in the ToT translates into a rise in the GTB. Finally, our findings suggest that there is a high inertia in the GTB as reflected by the high coefficient estimate of the lagged dependent variable.⁹

Similar regressions are estimated using the services trade balance as the dependent variable and findings are summarized in Table 3. Unlike the CA and goods trade models, we estimate only three models in the absence of the ToT variable for services. There is no publicly available price data for services exports and imports. Our findings reveal that total loans as a percentage of GDP has a statistically insignificant effect on the services trade balance. Nevertheless, the coefficient estimate of total loans has a negative sign which is in line with the findings from the CA and goods trade balance. In other words, total loan growth seems to have a negligible impact on the services trade balance.

Models (2) and (3) produce the same coefficient estimates but the latter replaces corporate loans with their difference from consumer loans to overcome the possible multicollinearity issues. When we divide loans into consumer and corporate loans, the coefficient of consumer loans is found to be statistically insignificant whereas the coefficient of corporate loans is statistically significant at the 5 percent level. In the light of these findings, a one-percentage increase in corporate loans exacerbates the services trade deficit by 0.03 percentage points in the same period, which is a small concurrent effect when compared to the impact of the same change on the goods trade deficit. When the subsequent effects of corporate loans are considered, the total impact rises to 0.42 percent of GDP, which is close to the cumulative impact of corporate loans on goods trade balance. This occurs because the estimated inertia in the services trade balance is obviously higher than both the CA and goods trade balances and the effect of any shock in the services trade balance lasts much longer than in either the goods trade balance or CA balance. Once again, our results imply a negative relationship between the real exchange rate and services trade balance. A one-percentage-point real depreciation leads to a cumulative improvement of nearly 0.3 percentage points in the services trade balance.¹⁰

¹⁰ In services trade regressions, we include dummy variables for the second, third and fourth quarters of 2020, separately to capture the impact of the Covid-19 pandemic on the services trade balance. We also use a dummy variable for the last quarter of 2021 to signify the effect of a large depreciation in TL on services trade balance.

4. Conclusion

Türkiye is an emerging market economy that has a large capital accumulation gap. One consequence of this is that loans will continue to have a crucial role in the financing and sustainability of growth until the country's financial markets deepen sufficiently. The empirical results suggest that any rise in total loans increases both the CA and goods trade deficit. In this respect, the effect of loans on the goods trade balance and accordingly, on the CA balance requires close monitoring for both price and financial stability. In addition, when the effect of sub-components of loans are decomposed, we see that a rise in consumer loans widens the current account and goods trade deficit more than the same amount of increase in corporate loans. This finding is important for two reasons. First, the evidence on the impact of corporate loans is mixed while there is consensus on the effect of consumer loans. Second, though the stock of corporate loans is much larger than the stock of consumer loans, the effect of consumer loans on the current and trade account balance is much stronger.

Corporate loans differ from consumer loans as they may provide significant improvement in the CA balance by financing new investment projects that has the potential to increase exports in the medium and long run. We also observe that corporate loans increase the services account deficit while consumer loans have no significant effect. However, we should emphasize that although corporate loans have a negative impact on the services trade balance, it has always contributed to the CA balance positively and largely. In this respect efficient distribution of corporate loans is very important in order to control the CA deficit. One avenue of further research would be to investigate the effect of corporate loans on different production sectors and the productivity as this would help us to understand through which channels corporate loans can improve the CA deficit. Additionally, all models show that there is a negative and statistically significant relation between the real exchange rate and the CA deficit including the sub-components.

We also show that the effect of ToT on the goods trade balance is positive and significant which implies that any improvement in the ToT contributes positively to the goods trade balance. Against this background, it is crucial to divert corporate loans to sectors which have high value added and strong export potential, and to investment projects in order to increase the value added in exports. On the other hand, the gradual decrease in the dependency of economic growth on loans, in other words, the gradual decrease in the cyclical component of loans through the deepening of financial markets, is an important factor observed in all successful examples of development.

Appendix I

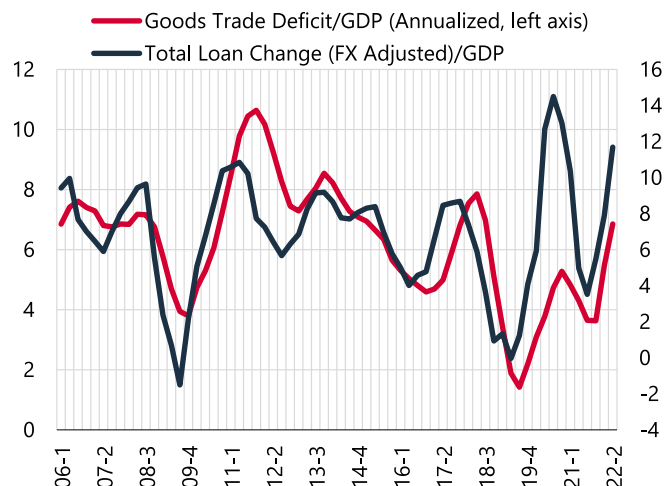


Fig. A-1. Goods Trade Deficit/GDP (Annualized) and Total Loan Change (FX Adjusted)/GDP.Sources: BRSA, CBRT

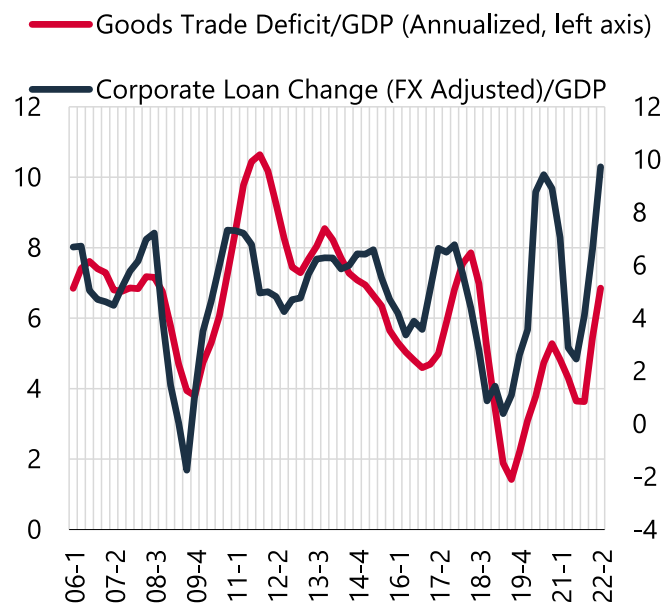


Fig. A-2. Goods Trade Deficit/GDP (Annualized) and Corporate Loan Change (FX Adjusted)/GDP.Sources: BRSA, CBRT

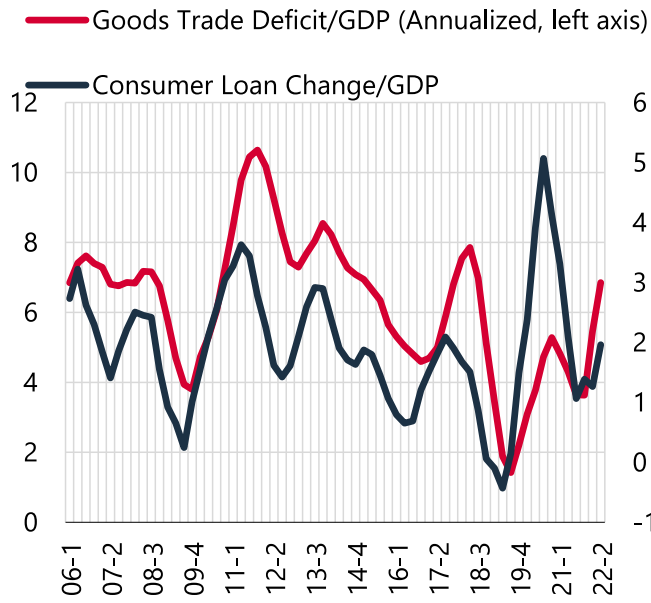


Fig. A-3. Goods Trade Deficit/GDP (Annualized) and Consumer Loan Change/GDP.Sources: BRSA, CBRT

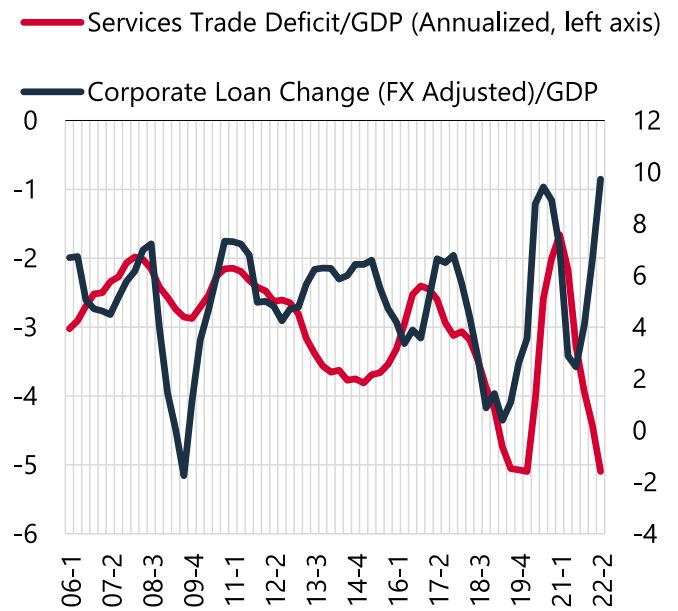


Fig. A-5. Services Trade Deficit/GDP (Annualized) and Corporate Loan Change (FX Adjusted)/GDP.Sources: BRSA, CBRT

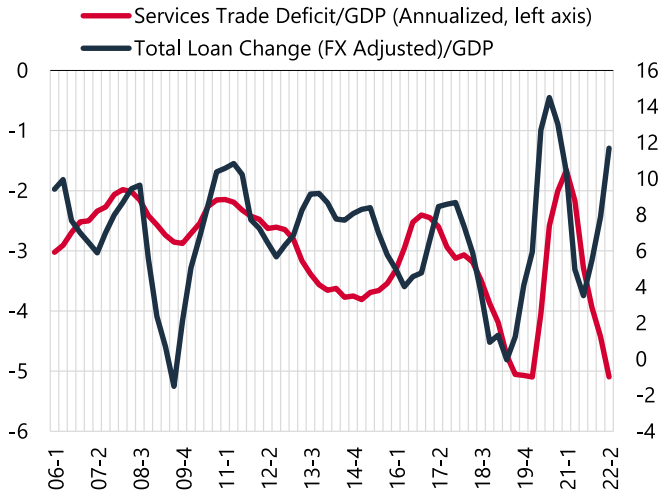


Fig. A-4. Services Trade Deficit/GDP (Annualized) and Total Loan Change (FX Adjusted)/GDP.Sources: BRSA, CBRT

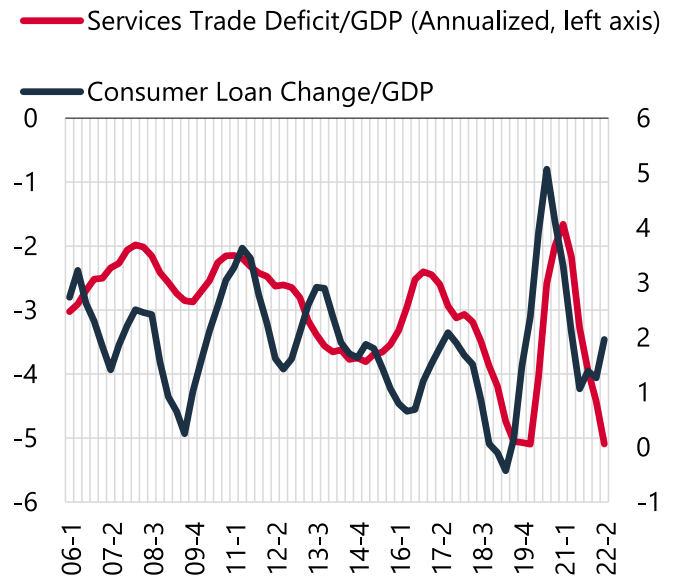


Fig. A-6. Services Trade Deficit/GDP (Annualized) and Consumer Loan Change/GDP.Sources: BRSA, CBRT

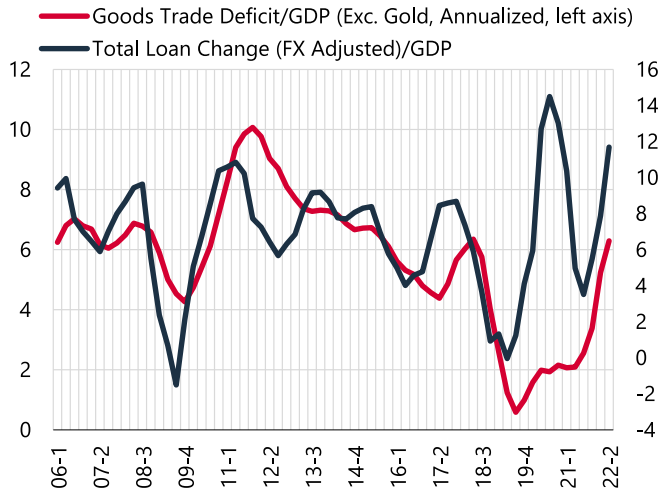


Fig. A-7. Goods Trade Deficit/GDP (Excluding Gold, Annualized) and Total Loan Change (FX Adjusted)/GDP.Sources: BRSA, CBRT

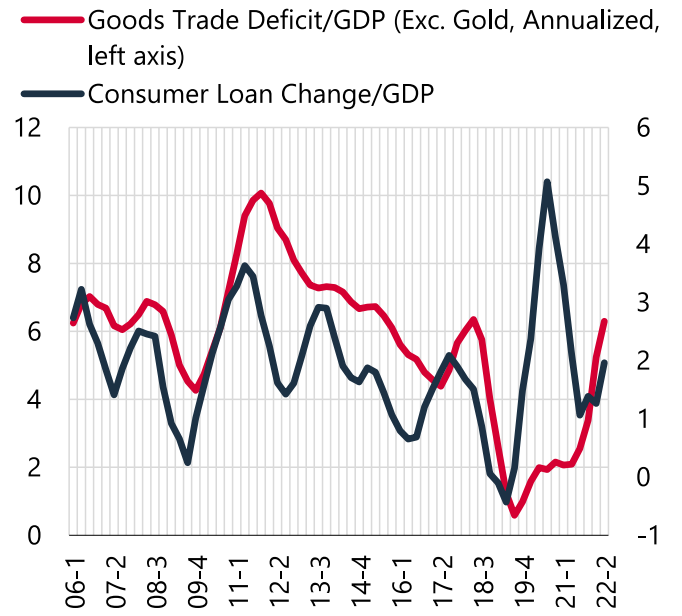


Fig. A-9. Goods Trade Deficit/GDP (Excluding Gold, Annualized) and Consumer Loan Change/GDP.Sources: BRSA, CBRT

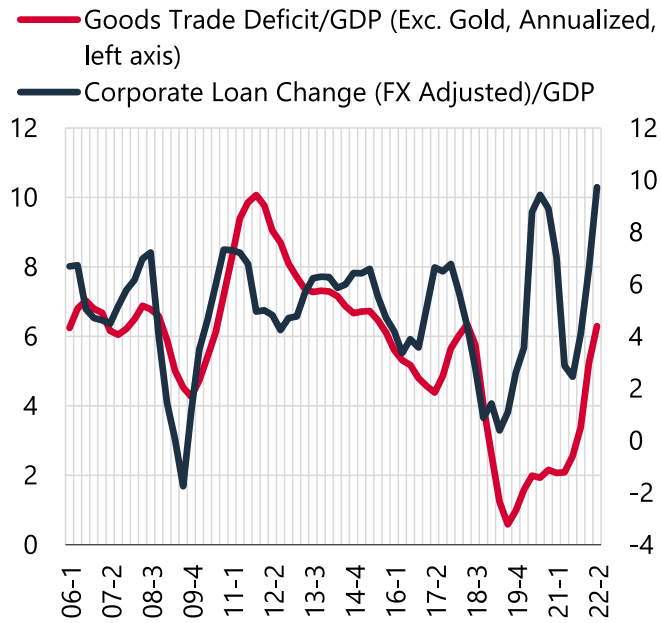


Fig. A-8. Goods Trade Deficit/GDP (Excluding Gold, Annualized) and Corporate Loan Change (FX Adjusted)/GDP.Sources: BRSA, CBRT

Appendix II

Table A-1
Goods Trade Balance Excluding Gold/GDP¹¹¹

	1	2	3	4	5	6
GTB_EXC_GOLD/GDP _(t-1)	0.88*** (0.04)	0.88*** (0.04)	0.88*** (0.04)	0.88*** (0.04)	0.88*** (0.04)	0.88*** (0.04)
ΔTotal Loans/GDP _(t)	-0.09*** (0.02)	-0.09*** (0.02)				
ΔConsumer Loans/GDP _(t)			-0.16 (0.12)	-0.17 (0.12)	-0.22** (0.10)	-0.23** (0.10)
ΔCorporate Loans/GDP _(t)			-0.07** (0.03)	-0.07** (0.03)		
(ΔCorporate Loans-ΔConsumer Loans)/GDP _(t)					-0.07** (0.03)	-0.07** (0.03)
ΔReal Effective Exchange Rate _(t-1)	-0.09*** (0.02)	-0.10*** (0.02)	-0.09*** (0.02)	-0.09*** (0.02)	-0.09*** (0.02)	-0.09*** (0.02)
ΔTerms of Trade_Exc_Gold _(t)		0.04* (0.02)		0.04** (0.02)		0.04** (0.02)
Constant	0.03 (0.28)	0.04 (0.29)	0.05 (0.28)	0.07 (0.29)	0.05 (0.28)	0.07 (0.29)
Observations	69	69	69	69	69	69
R ²	0.93	0.93	0.93	0.93	0.93	0.93
Adjusted R ²	0.92	0.92	0.92	0.92	0.92	0.92

1 ***, ** and * indicate statistical significance at 1%, 5% and 10%, respectively.

2 Standard errors are given in parentheses.

3 Total and corporate loans are exchange rate adjusted.

References

- Aydın, F., Gül, S., 2020. The Role of Real Exchange Rates in Export Price Determination. TCMB Ekonomi Notları, 20/06.
- Beck, T., Büyükkarabacak, B., Valev, N., Rioja, F., 2012. Who gets the credit? And does it matter? Household vs. Firm lending across countries. B E J. Macroecon. 12 (1).
- Borio, C., Lowe, P., 2002. Asset Prices, Financial and Monetary Stability: Exploring the Nexus". BIS Working Paper, p. 114.
- Büyükkarabacak, B., Krause, S., 2009. Studying the effects of household and firm credit on the trade balance: the composition of funds matters. Econ. Inq. 47 (4), 653–666.
- Coricelli, F., Mucci, F., Revoltella, D., 2006. Household Credit in the New Europe: Lending Boom or Sustainable Growth?". CEPR Discussion Paper, p. 5520.
- Ekinci, F., Omay, T., 2020. Current account and credit growth: the role of household credit and financial depth. N. Am. J. Econ. Finance 54, 101244.
- Elekdağ, S., Wu, Y., 2011. Rapid Credit Growth: Boon or Boom-Bust? IMF Working Paper, p. 241.
- Gül, S., 2018. Türkiye'de Reel Kur Hareketlerinin İhracat Üzerindeki Asimetrik Etkileri, 18/12. TCMB Çalışma Tebliği.
- Islam, R., 2017. Credit Composition, Output Composition and External Balances. World Bank Policy Research Working Paper, p. 8082.
- Jorda, O., Taylor, M., Schularick, M., 2010. Financial Crises, Credit Booms and External Imbalances: 140 Years of Lessons. NBER Working Paper, 16567.
- Kazdal, A., Gül, S., 2021. Türkiye'de İhracat ve Reel Kur Arasında Zamana Göre Değişen İlişki: Sektörel Düzeyde Güncel Bir İnceleme. TCMB Çalışma Tebliği 21/38.
- Toraganlı, N., Ertuğrul, M., 2016. Does credit composition matter for current account dynamics? Evidence from Turkey. J. Int. Trade Econ. Dev. 25 (8), 1090–1100.