# 6. Public Finance

Fiscal policy supported growth particularly through public consumption expenditures in 2016 when economic growth started to decelerate. Accordingly, public consumption expenditures had a direct contribution of 1 point to the GDP growth, which was registered as 2.9 percent in 2016. In this period, fiscal policy instruments in the form of consumption and investment incentives also spurred economic activity. In particular, tax reductions were introduced to certain real property sales in the final quarter of 2016 to boost private consumption demand. Additionally, on 8 December 2016, the Economic Coordination Committee announced a series of measures and incentives aimed to provide financial support for the real sector and stimulate investments, employment and exports. Meanwhile, to restrain possible deterioration in the budget and maintain fiscal discipline resulting from expansionary fiscal policies, the SCT rates on automobiles and tobacco products were raised toward the end of the year, which, however, posed an upward pressure on consumer inflation in 2016.

Accordingly, the central government budget deficit posted a slight year-on-year increase and hit 1.1 percent in 2016. Lower tax revenues amid the troubled tourism sector and the sluggish economic activity as well as the rising primary expenditures caused the budget deficit to widen (Box 6.1). However, surging non-tax revenues, falling interest expenditures, SCT adjustments on fuel, tobacco products and automobiles in addition to the revenue generated by Law No. 6736 on the Restructuring of Certain Receivables put a cap on the deterioration of the budget performance.

The MTP is based on the projection that current expenditures will be taken under control and growth will essentially be boosted by public investments in 2017. Owing to the recently enforced measures and the incentive package, the budget deficit in 2017 is estimated to remain slightly above the MTP target.

## 6.1. Budget Developments

In the first quarter of 2017, the central government budget balance posted a deficit of 14.9 billion TL, while the primary budget balance recorded a surplus of 3.9 billion TL (Table 6.1.1). In this period, budget performance exhibited a slight year-on-year deterioration due to soaring budget expenditures vis-a-vis the modest rise in tax revenues.
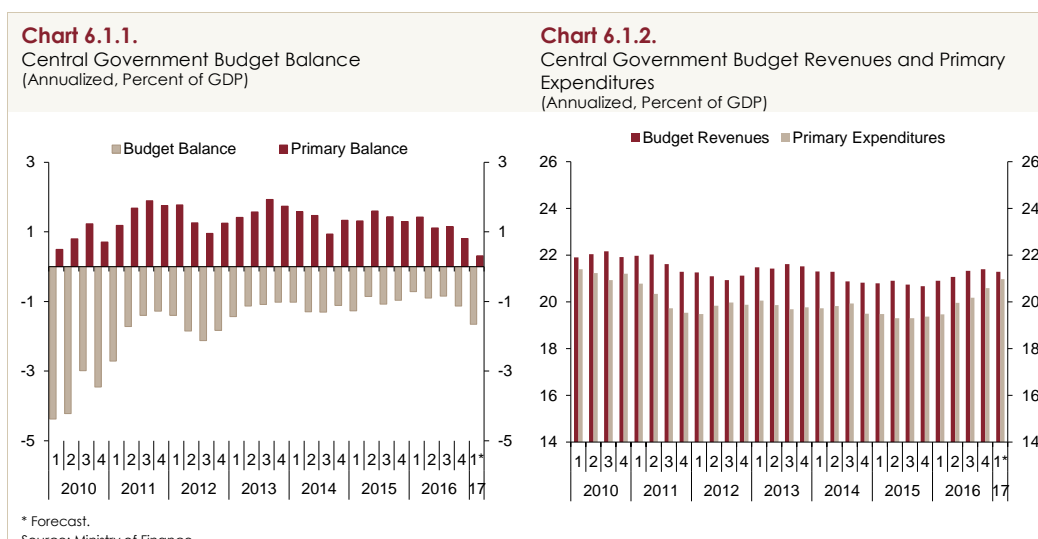
In this period, tax revenues increased at a relatively milder rate with 12 percent from the same quarter of the previous year, while non-tax revenues dropped by 7 percent and the central government budget revenues increased by 9.9 percent. Primary expenditures increased well above budget revenues and soared by 22.2 percent in the first quarter of 2017, causing the primary surplus to decline slightly on an annual basis.

**Table 6.1.1.**
Central Government Budget Aggregates
(Billion TL)

|  | January-March 2016 | January-March 2017 | Rate of Increase (Percent) | Actual/Target (Percent) |
|---|---|---|---|---|
| Central Government Budget Expenditures | 131.7 | 159.7 | 21.3 | 24.7 |
| Interest Expenditures | 16.5 | 18.8 | 14.3 | 32.7 |
| Primary Expenditures | 115.2 | 140.8 | 22.2 | 24.0 |
| Central Government Budget Revenues | 131.7 | 144.7 | 9.9 | 24.2 |
| I. Tax Revenues | 108.5 | 121.6 | 12.0 | 23.8 |
| II. Non-Tax Revenues | 17.7 | 16.4 | -7.0 | 22.5 |
| **Budget Balance** | **0.0** | **-14.9** | **-** | **-** |
| **Primary Balance** | **16.5** | **3.9** | **-76.4** | **36.6** |

Source: Ministry of Finance.

In the first quarter of 2017, the central government budget deficit to the GDP ratio is estimated to stand at 1.7 percent in 2016 with a year-on-year increase of 1 point (Chart 6.1.1). In the same period, the primary budget surplus to the GDP ratio is expected to drop by about 1.1 points year-on-year to 0.3 percent.

**Chart 6.1.1.**
Central Government Budget Balance
(Annualized, Percent of GDP)



**Chart 6.1.2.**
Central Government Budget Revenues and Primary Expenditures
(Annualized, Percent of GDP)



* Forecast.
Source: Ministry of Finance.

Having accelerated in 2016, the central government primary expenditures to the GDP ratio continued to rise in the first quarter of 2017. In fact, the ratio is expected to hit 21 percent, increasing by 1.5 points in year-on-year terms mainly owing to the ongoing uptrend in current transfer expenditures (Chart 6.1.2). In the same period, the central government budget revenues to the GDP ratio is estimated to stand at 21.3 percent driven by the tax adjustments at end-2016.

Data regarding the first quarter of 2017 suggest that central government primary expenditures soared by 22.2 percent year-on-year particularly due to current transfers, capital expenditures and purchases of goods and services (Table 6.1.2). The significant rise in current transfers was fueled by social security deficit financing and the 5-point reduction in the employer's insurance premium. Personnel expenditures, which are major items of central government primary expenditures, remained relatively low. As for investment expenditures, capital expenditures and capital transfers soared by 52.9 and 66.9 percent, respectively. Public expenditures are expected to support economic growth in 2017 especially through investments.

**Table 6.1.2.**
Central Government Primary Expenditures
(Billion TL)

| | January-March 2016 | January-March 2017 | Rate of Increase (Percent) | Actual/Target (Percent) |
|---|---|---|---|---|
| **Primary Expenditures** | **115.2** | **140.8** | **22.2** | **24.0** |
| 1. Personnel Expenditures | 38.7 | 41.9 | 8.4 | 25.8 |
| 2. Government Premiums to SSI | 6.6 | 7.0 | 6.7 | 25.8 |
| 3. Purchases of Goods and Services | 9.2 | 11.1 | 19.8 | 21.2 |
| 4. Current Transfers | 54.2 | 71.4 | 31.7 | 28.7 |
| a) Duty Losses | 1.2 | 1.0 | -15.8 | 14.4 |
| b) Health, Pension and Social Benefits | 26.7 | 38.2 | 42.9 | 32.7 |
| c) Agricultural Support | 3.1 | 4.9 | 60.7 | 38.2 |
| d) Reserved Share Revenues | 15.7 | 17.7 | 12.4 | 25.2 |
| e) Transfers to Households | 1.9 | 2.8 | 46.2 | 21.1 |
| 5. Capital Expenditures | 3.3 | 5.0 | 52.9 | 7.5 |
| 6. Capital Transfers | 0.7 | 1.1 | 66.9 | 10.3 |
| 7. Lending | 2.6 | 3.3 | 29.9 | 25.9 |

Source: Ministry of Finance.

On the revenue front, central government budget revenues were up 9.4 percent year-on-year in the first quarter of 2017 (Table 6.1.3). In this period, despite the relatively lower prospects for private consumption expenditures, tax revenues recorded a mild increase by 12 percent owing to SCT adjustments and additional tax revenues generated by Law No. 6736. Meanwhile, non-tax revenues receded by 7 percent due to the year-on-year decline in privatization revenues.

**Table 6.1.3**.
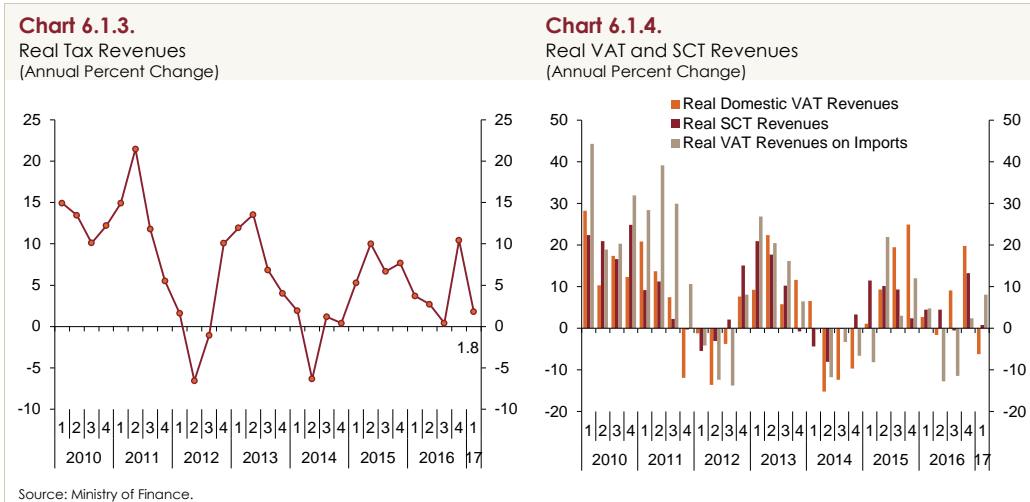Central Government General Budget Revenues
(Billion TL)

| | January-March 2016 | January-March 2017 | Rate of Increase (Percent) | Actual/Target (Percent) |
|---|---|---|---|---|
| **General Budget Revenues** | **126.2** | **138.1** | **9.4** | **23.6** |
| **I-Tax Revenues** | **108.5** | **121.6** | **12.0** | **23.8** |
| Income Tax | 22.9 | 25.0 | 9.2 | 22.9 |
| Corporate Tax | 10.3 | 12.6 | 22.8 | 27.3 |
| Domestic VAT | 13.1 | 13.5 | 2.9 | 23.7 |
| SCT | 25.3 | 28.1 | 10.9 | 20.6 |
| VAT on Imports | 17.9 | 21.4 | 19.3 | 25.5 |
| **II-Non-Tax Revenues** | **17.7** | **16.4** | **-7.0** | **22.5** |
| Enterprise and Property Revenues | 2.2 | 2.4 | 11.9 | 14.2 |
| Interests, Shares and Fines | 7.8 | 8.0 | 3.5 | 21.4 |
| Capital Revenues | 6.5 | 4.8 | -26.3 | 30.9 |

Source: Ministry of Finance.

Across sub-items, the mild surge in tax revenues was driven by SCT, the domestic VAT and income tax revenues, while the increases in the VAT on imports and corporate tax revenues were also relatively high. On the other hand, the rise in total SCT collection remained weak due to the slow pace of increase in SCT revenues on oil, natural gas products and motor vehicles. However, revenues from the SCT collection on tobacco products and alcoholic beverages posted a relatively higher growth in the first quarter 2017. Meanwhile, the VAT on imports surged by 19.3 percent in the first quarter of 2017 compared to the January-March period of 2016 especially due to the depreciation of the Turkish lira.
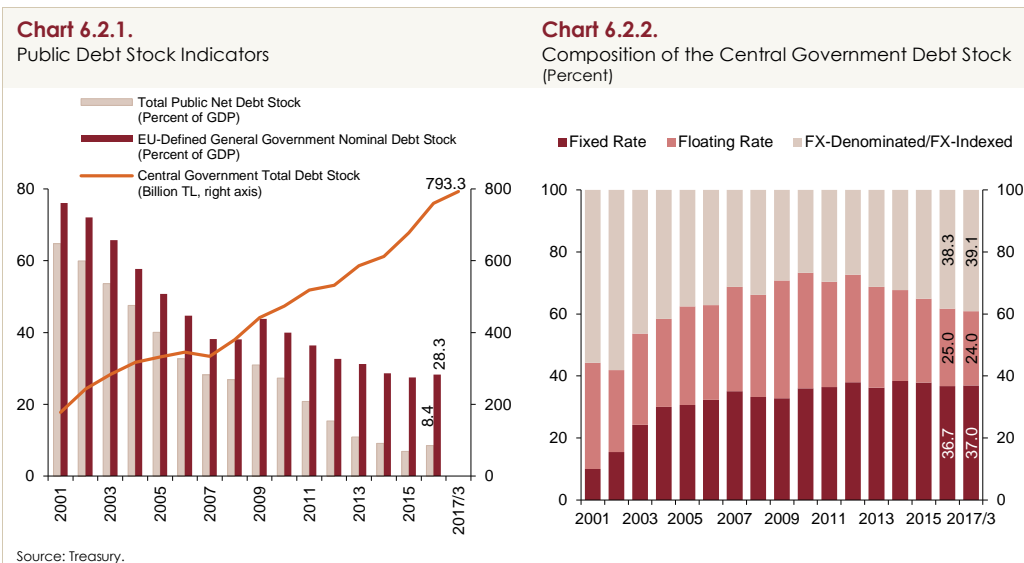
In annual percentage change terms, real tax revenues took off in the last quarter of 2016, but lost pace in the first quarter of 2017 and increased only by 1.8 percent (Chart 6.1.3). This slight rise is attributed to adjustments to certain tax rates in the last months of 2016[1] and the collection of taxes pursuant to Law No. 6736. Across sub-items, collection of VAT on imports displayed an outstanding performance with an annual increase of 8.1 percent in real terms in the first quarter of 2017 (Chart 6.1.4).

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[1] Tax adjustments were introduced to fuel in September, automobiles in November and tobacco products in December.

**Chart 6.1.3.**
Real Tax Revenues
(Annual Percent Change)



**Chart 6.1.4.**
Real VAT and SCT Revenues
(Annual Percent Change)

Real Domestic VAT Revenues
Real SCT Revenues
Real VAT Revenues on Imports
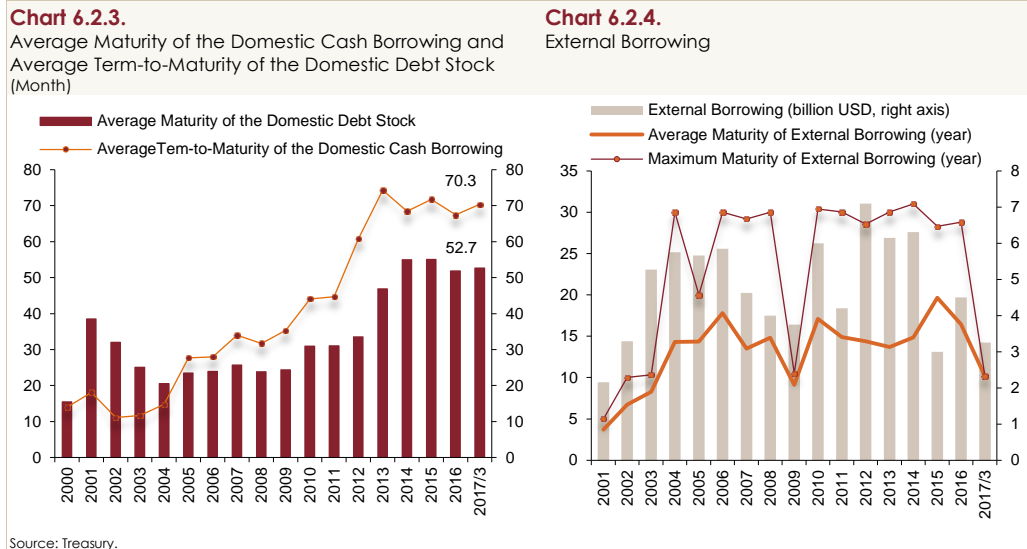


Source: Ministry of Finance.

## 6.2. Developments in the Public Debt Stock

Total public net debt stock to the GDP and the EU-defined general government nominal debt stock to the GDP posted an uptick in 2016 on an annual basis (Chart 6.2.1). In 2016, the EU-defined general government nominal debt stock to the GDP ratio stood at 28.3 percent.

**Chart 6.2.1.**
Public Debt Stock Indicators

Total Public Net Debt Stock
(Percent of GDP)
EU-Defined General Government Nominal Debt Stock
(Percent of GDP)
Central Government Total Debt Stock
(Billion TL, right axis)



Source: Treasury.

**Chart 6.2.2.**
Composition of the Central Government Debt Stock
(Percent)

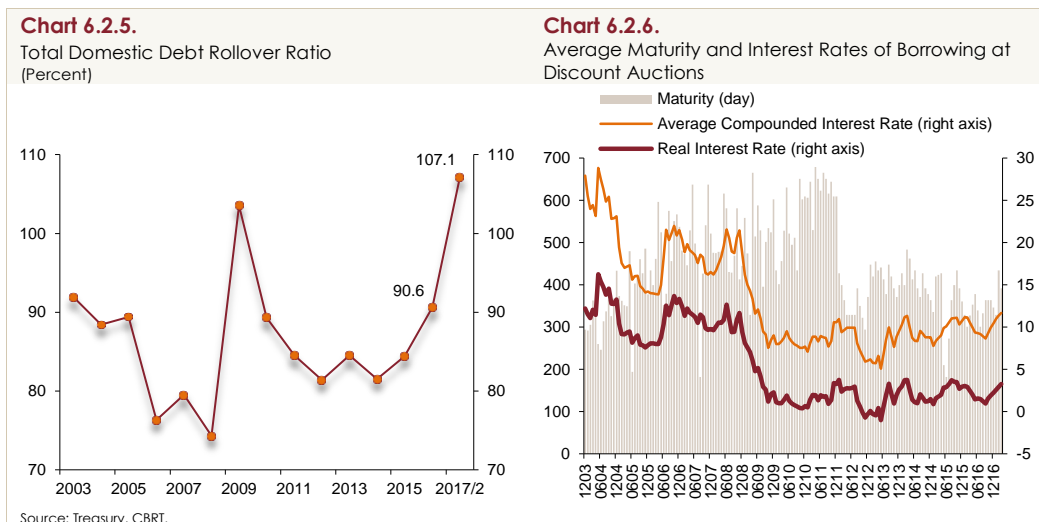Fixed Rate    Floating Rate    FX-Denominated/FX-Indexed



In March 2017, the share of fixed rate and FX-denominated/FX-indexed securities in the total debt stock increased from 2016, while that of floating rate securities recorded a decline. This decline was due to a greater share of fixed-rate securities in domestic borrowing and the high level of net external borrowing in this period. The larger share of external borrowing in the budget deficit financing restricted the domestic borrowing in the first quarter of 2017.

The average term-to-maturity of the domestic debt stock has been flat since 2016 with 51.4 months (Chart 6.2.3). In the first quarter of 2017, external borrowing by bond issues stood at 3.3 billion USD with the average maturity declining to 10.1 years (Chart 6.2.4).

**Chart 6.2.3.**
Average Maturity of the Domestic Cash Borrowing and Average Term-to-Maturity of the Domestic Debt Stock
(Month)

■ Average Maturity of the Domestic Debt Stock
—●— AverageTem-to-Maturity of the Domestic Cash Borrowing

Source: Treasury.

**Chart 6.2.4.**
External Borrowing

■ External Borrowing (billion USD, right axis)
—— Average Maturity of External Borrowing (year)
—●— Maximum Maturity of External Borrowing (year)

Having surged at the end of February 2017, the domestic debt rollover ratio reached 107.1 percent by posting a remarkable increase compared to 2016, while the external debt rollover ratio stood at 140.9 percent (Chart 6.2.5). The average real interest rate[2] has recently been on the rise (Chart 6.2.6).

**Chart 6.2.5.**
Total Domestic Debt Rollover Ratio
(Percent)

Source: Treasury, CBRT.

**Chart 6.2.6.**
Average Maturity and Interest Rates of Borrowing at Discount Auctions

■ Maturity (day)
—— Average Compounded Interest Rate (right axis)
—— Real Interest Rate (right axis)

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[2] Real interest rates are calculated by subtracting the 12-month-ahead inflation expectations of the CBRT Survey of Expectations from nominal interest rates (average annual compounded interest rate at the Treasury's TL-denominated zero-coupon securities auction).

| Box 6.1 | Cyclical Features of Tax Revenues in Turkey |
|---|---|

Business cycles have considerable effects on fiscal balances by affecting tax revenues through automatic stabilizers.[3] In periods of rapid growth, tax revenues increase and boost the budget balance, whereas in periods of contraction, tax revenues decline and deteriorate the budget balance. Accordingly, the direction and the size of the relationship between tax revenues and business cycles, i.e. the sensitivity of tax revenues to business cycles has a determining effect on the budget performance of all countries.

Budget revenues and expenditure items vary mainly according to business cycles and at the discretion of public authorities. In particular, public expenditures are mostly determined by discretionary decisions, while revenues are largely determined by business cycles. In general, business cycles do not affect tax revenues proportionately and some tax items have higher sensitivity to changes in economic activity. This poses a challenge against the establishment of a predictable scheme for fiscal revenues and expenditures. In this respect, this box analyzes the direction and the size of the sensitivity of main tax items to business cycles in Turkey.[4]

Table 1 presents the statistical analysis of the cyclical features of total tax revenues and major direct and indirect tax revenue items. The analysis covers the 2006Q1-2016Q3 period and also includes the quarterly real GDP series. Variables included in the analysis are de-trended by the HP filter.

| Table 1. Cyclical Features of Tax Revenues* | | | | | | |
|---|---|---|---|---|---|---|
| | GDP | Total Tax | Income Tax | Corporate Tax | Domestic VAT | SCT | VAT on Imports |
| **Volatility** | 0.014 | 0.029 | 0.028 | 0.127 | 0.046 | 0.031 | 0.064 |
| **Relative Volatility** | 1.000 | 2.071 | 2.000 | 9.071 | 3.286 | 2.214 | 4.571 |
| **Cyclicality** | - | pro-cyclical | pro-cyclical | pro-cyclical | pro-cyclical | pro-cyclical | pro-cyclical |
| **Autocorrelation (t,t-1)** | 0.307 | 0.367 | -0.170 | -0.180 | 0.276 | 0.384 | 0.371 |
| **Elasticity (new GDP)\*\*** | - | 1.03 | 0.92 | 0.91 | 1.00 | 1.04 | 1.18 |
| **Elasticity (old GDP)\*\*\*** | - | 1.44 | 1.22 | 1.34 | 1.41 | 1.46 | 1.74 |

\* Volatility denotes the standard deviation of the de-trended series, while relative volatility shows the ratio of the volatility of the respective tax item to the volatility of the GDP. Cyclicality represents the sign of the relation between tax item and the business cycle and is measured by the cross correlation coefficient between tax revenues and the real GDP. Autocorrelation corresponds to coefficient of the first-order autoregressive term of the cyclical component of the tax item. Elasticity is the percentage change in real tax revenues in response to a 1-percent change in the real GDP.
\*\* Elasticity calculated by the new GDP series based on 2009.
\*\*\* Elasticity calculated by the old GDP series based on 1998 for the 2006Q1-2016Q2 period.

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[3] Automatic stabilizers are fiscal policy elements like taxes (particularly income and corporate tax) and transfers (unemployment insurance) that stabilize the fluctuations in economic activity, which stem from the direct intervention of the fiscal policy.
[4] This box updates the statistical and econometric analysis in Çulha (2012) by the new GDP series and recent data. For further details, see Çulha (2012).

Findings obtained in the analysis show that tax revenues are more volatile than real GDP. This finding implies that fluctuations in tax revenues, particularly in indirect taxes, are larger than business cycles, mainly due to frequent amendments to the tax legislation. In addition, tax revenues are pro-cyclical, which indicates that tax revenues and the real GDP move in the same direction. Accordingly, tax revenues decrease in periods of economic contraction and increase in periods of expansion.

As for autocorrelation, a higher autocorrelation coefficient implies higher persistence in the cyclicality of the relevant tax item. Accordingly, the SCT, the VAT on imports and the domestic VAT are more persistently affected by business cycles. Autocorrelation coefficients of income and corporate tax revenues are relatively low. Therefore, direct taxes are less influenced by business cycles than indirect taxes.

Tax elasticity coefficient indicates the percentage change in the real tax revenue in response to a 1-percent change in the real GDP. The higher the elasticity coefficient, the more sensitive the respective tax item is to business cycles and the more affected it is by the changes in economic activity. Elasticity coefficients of income tax, a significant direct tax item comprising almost one fifth of total tax revenues, and corporate tax, comprising about 10 percent of total tax revenues, hover around 0.9 percent. This indicates that both tax items increase by around 0.9 percent in response to a 1-percentage point increase in the national income.

The elasticity coefficient of the SCT, which is the most significant item in indirect taxes constituting almost one fourth of total revenues is 1.04 percent, while the elasticity coefficient of the domestic VAT, another indirect tax item, is calculated as 1.0 percent, and that of the VAT on imports has the highest elasticity with 1.18 percent. Import demand in Turkey is mostly determined by domestic demand, particularly domestic investment demand, which renders the VAT on imports quite responsive to business cycles. The total elasticity of the indirect tax items, which comprise about 55 percent of total tax revenues in Turkey is 1.08 percent, indicating strong sensitivity to changes in economic activity.

Table 1 shows the comparison between the elasticity coefficients obtained from the new GDP series and the old GDP series. This comparison suggests that elasticity coefficients produced by the new GDP series is lower, especially in indirect taxes. The total elasticity coefficient for the SCT, the domestic VAT and the VAT on imports is 1.53 using the old GSP series, while the elasticity coefficient becomes 1.08 with the new GDP series. Due to the changes in the methodology and the coverage for measuring the GDP, the new GDP series is higher than the old GDP series, which is considered to be a factor to cause a decline in elasticity values. Meanwhile, the elasticity coefficient calculated by the new GDP series for indirect taxes is closer to the OECD average, which is 1 percent (Girouard and André, 2005).

Scatter diagrams plotted for the cyclical components of real tax revenue items and real GDP also point to a positive correlation between tax revenues and business cycles (Figure 1). In particular, the scatter diagram for the VAT on imports, which has the highest elasticity coefficient, confirms that it is the most sensitive tax item to business cycles. The domestic VAT, an indirect tax item, stands out as the most sensitive tax item to business cycles after the VAT on imports. As for direct taxes, income and corporate tax are less affected by business cycles than indirect taxes, and the income tax is more responsive to the fluctuations in economic activity than the corporate tax.

**Figure 1.** Scatter Diagrams of Real Tax Revenues and Real GDP*
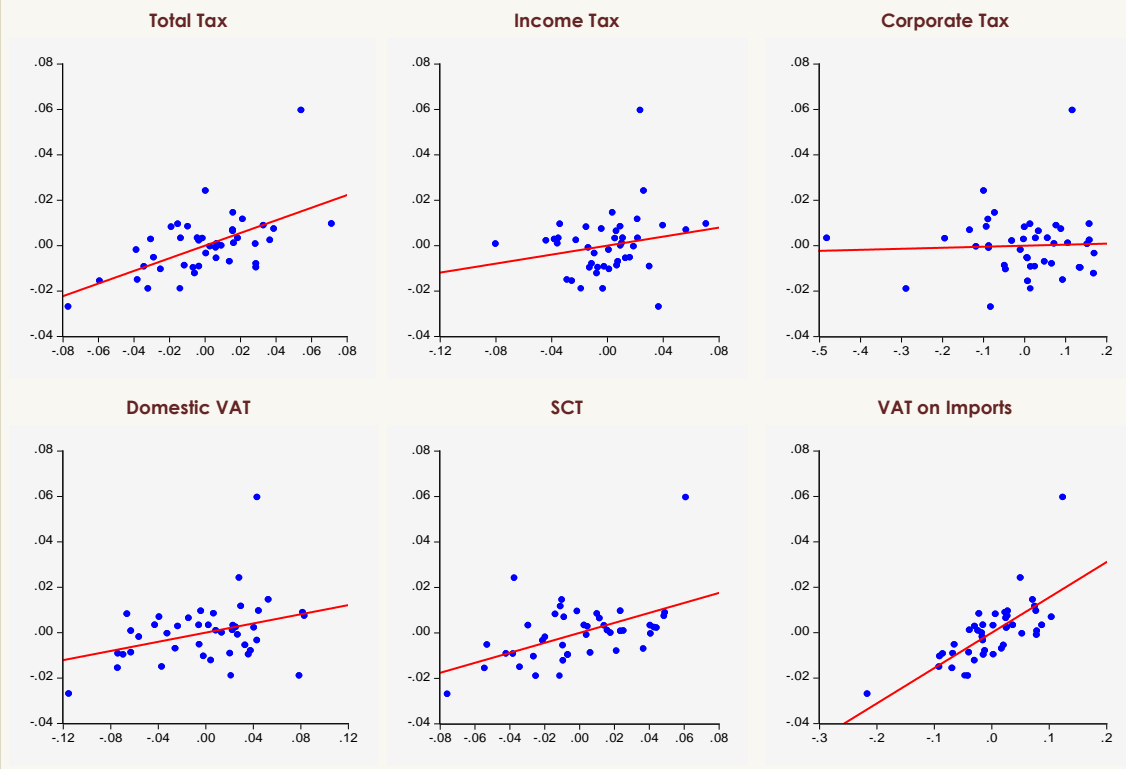


* Horizontal axes denote the respective tax item, while vertical axes displays the cyclical component of the GDP (the de-trended series). The red lines show the estimated regression lines.

In sum, all the analyzed tax revenue items are pro-cyclical, i.e. they move in the same direction with the real GDP and tax revenues are significantly affected by business cycles. The elasticity coefficient of total tax revenues is 1.03, while the VAT on imports is the most responsive tax item to business cycles having the highest elasticity coefficient. The SCT and the domestic VAT, which are also indirect tax items, have the biggest elasticity after the VAT on imports. Statistical analysis of tax revenues suggests that income tax is more influenced by the fluctuations in economic activity than corporate tax and that indirect taxes are more responsive to business cycles than direct taxes. The high sensitivity of tax revenues to business cycles indicates that the evaluation of the fiscal stance in Turkey should be based on the changes in the structural budget balance, which is obtained by adjusting the budget balance for cyclical movements (Çebi and Özlale, 2012).

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