

## 4. Supply and Demand Developments

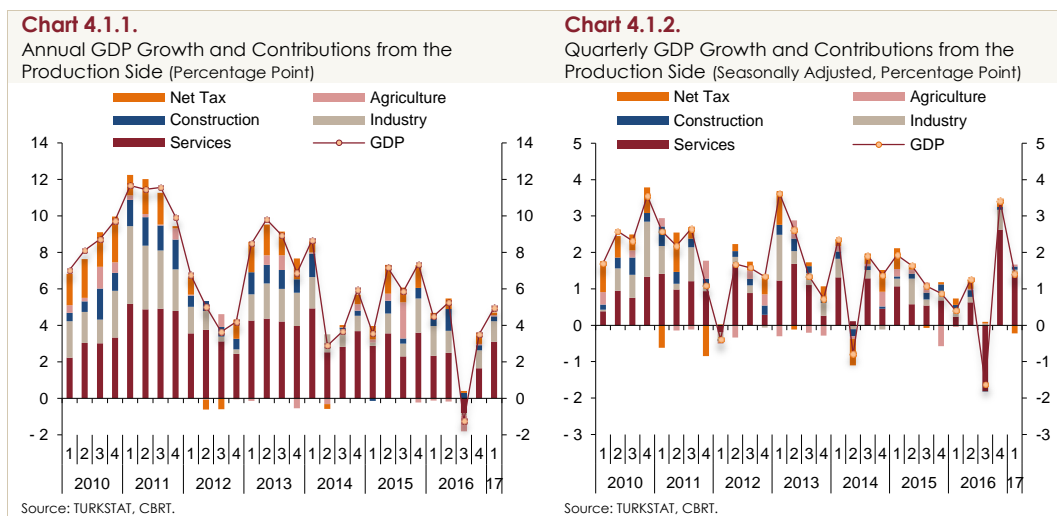
Second-quarter economic growth was slightly higher than the April Inflation Report projection. Key drivers of the quarterly growth included exports, construction investments and public spending. Machinery and equipment investments remained muted while private spending slowed amid brought-forward demand. Additionally, both the jump in exports of goods and the partial recovery in tourism revenues buoyed up growth in this period. The high contribution from net exports to quarterly growth hinted at a growth composition in favor of the current account balance.

Leading indicators suggest that economic activity recovered at a much faster pace in the second quarter. Industrial production data for the April-May period and the second quarter's BTS and PMI indicators signaled a more robust industrial growth than in the previous reporting period. Not only the manufacturing industry but also services, retail trade and construction have seen buoyant activity lately. The consumer demand for categories subject to incentives remains strong while investments signal some pickup after the sluggish first quarter. All in all, economic recovery appears to have spread across a wider range of sectors compared to the previous reporting period.

Domestic demand continues to improve as economic recovery seeps through the labor market, while net external demand continues to stimulate growth as exports of goods strengthen across all sectors and countries. Economic activity is expected to recover further on the back of accommodative incentives and measures. On the other hand, the uncertainty over monetary policies of advanced economies, the course of capital flows and geopolitical developments put downward pressure on growth in 2017 as in recent years.

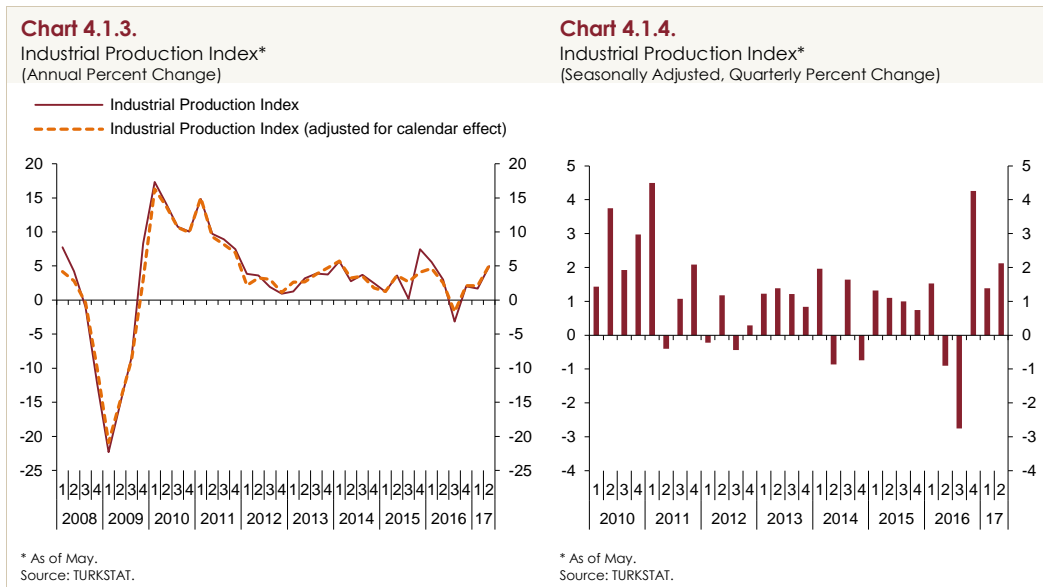
### 4.1. Supply Developments

In the first quarter of 2017, GDP grew by 5.0 percent year-on-year and by 1.4 percent quarter-on-quarter in seasonal and calendar-adjusted terms. The main drivers of the annual GDP growth in the first quarter were, in order of prevalence, services and the industrial sector, while other sectors made a smaller contribution (Chart 4.1.1). Quarterly growth, on the other hand, was spurred by services, whereas agricultural, industrial and construction sectors provided only a slight contribution (Chart 4.1.2). The quarter-on-quarter drop in net taxes can be attributed to the recent tax incentives.

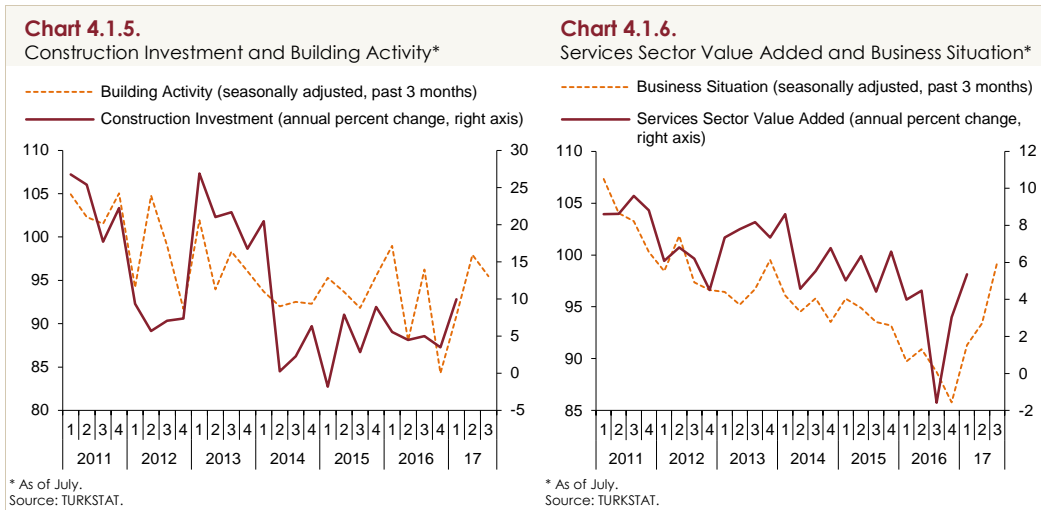


April and May data for industrial production point to much stronger economic activity than in the first quarter (Charts 4.1.3 and 4.1.4). However, adjusted for the other transport vehicles sector that were highly volatile through April and May, the underlying industrial production rose more moderately in the second quarter than in the first one. Over the April-May period, production remained on the rise across export-oriented manufacturing industries such as base metals, rubber and plastics, machinery and equipment as well as electrical equipment and vehicles, while activity in manufacturing industries oriented towards the domestic market accelerated from the first quarter thanks to renewed consumer demand.

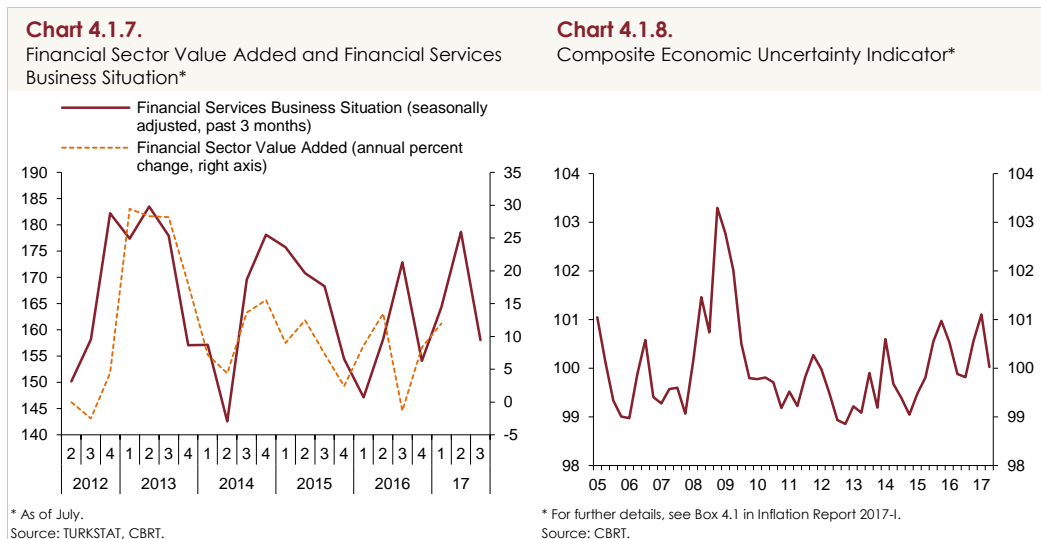
In this period, the production of capital goods posted a sharp quarter-on-quarter increase, which was largely driven by other transport vehicles and automobiles. Excluding these industries, the production of capital goods grew at a more modest rate, on a par with the overall investment outlook. The production of consumer goods increased at a moderate clip, mostly on the back of sectors subject to tax incentives, such as furniture and home appliances. The production of non-durable goods, on the other hand, remained flat in the first half of 2017, suggesting that the recovery in the labor market and domestic demand has yet to pick up steam.



Having boosted quarterly growth in the first quarter, construction investments are expected to remain robust in the second quarter amid ongoing infrastructure investments and rising housing sales (Chart 4.1.5). This outlook is also shared by suppliers of construction inputs, especially producers of other non-metallic minerals.



Indicators for services suggest that the value added for the services sector will continue to rise in the second quarter (Chart 4.1.6). This increase is expected to be more widespread than in the first quarter thanks to the ongoing improvement in the labor market and domestic demand. Serving as a major component of services and being highly correlated with consumer demand, the value added for trade is likely to pick up in the second quarter amid growing domestic demand. The value added for the finance and insurance industry, another subcategory of services, is closely linked with the banking sector. Having accelerated in the second quarter mainly on account of the Credit Guarantee Fund loans, financial sector activity might also have positive implications for its value added (Chart 4.1.7).

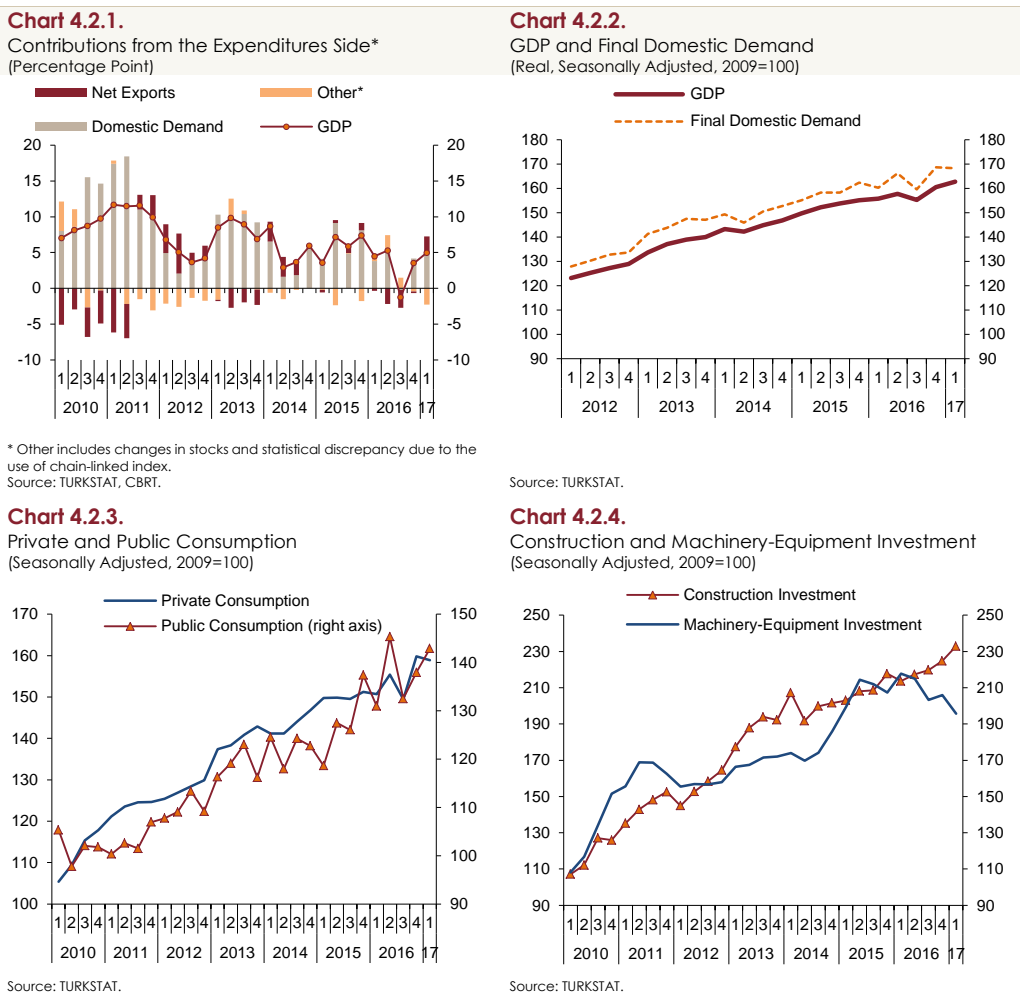


In short, current indicators suggest that economic recovery strengthened by spreading across more sectors in the second quarter. Industrial sector activity gained momentum, while the domestic demand growth led by rising employment and decreased uncertainty may also help boost services sector activity (Chart 4.1.8).

## 4.2. Demand Developments

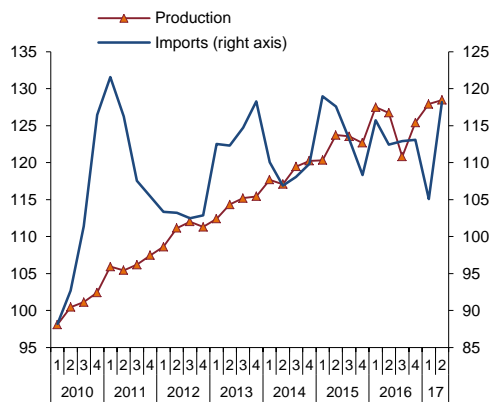
The data on GDP from the expenditures side indicate that final domestic demand added more to annual growth in the first quarter of 2017 compared to the previous quarter, while net exports provided a positive contribution to growth for the first time since early 2016 (Chart 4.2.1). Among components of domestic demand, private and public consumption as well as construction investments were the key drivers of annual growth, whereas machinery and equipment investments saw a large year-on-year contraction.

Seasonally adjusted data reveal that GDP posted a further quarter-on-quarter increase thanks to the first-quarter upsurge in net external demand (Chart 4.2.2). After soaring rapidly in the last quarter of 2016 owing to partially eased macroprudential measures, the brought-forward demand for automobiles and the bright outlook for some housing-related sectors, private consumption spending weakened in the first quarter of 2017. Public spending, on the other hand, provided a strong impetus to quarterly growth in the first quarter (Chart 4.2.3). On the investments front, construction investments continued to rise through the first quarter thanks to incentives, whereas machinery and equipment investments remained subdued because of elevated uncertainty and the depreciated Turkish lira (Chart 4.2.4).



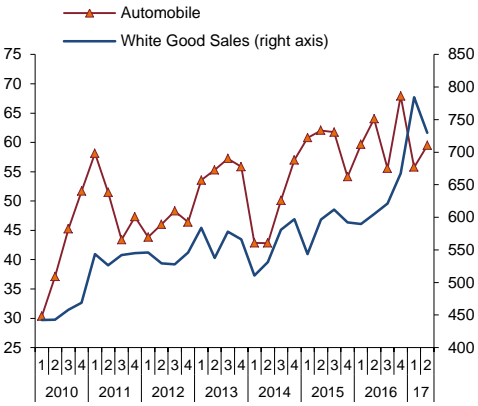
Private demand for imported goods grew stronger in the second quarter of 2017. Over the April-May period, the production of consumer goods remained on the rise while their imports recorded a steep increase from the first quarter (Chart 4.2.5). After shrinking drastically in the first quarter of 2017 amid brought-forward demand, automobile sales appear to be back on an upward track in the second quarter. Meanwhile, white good sales slightly weakened in the second quarter but remained well above 2016 levels (Chart 4.2.6). Also taking into account the second-quarter data, private spending is expected to grow further on a yearly basis in the second quarter (Chart 4.2.7). Moreover, rising consumer loans and rekindled consumer confidence signal stronger consumer demand for the second quarter (Chart 4.2.8).

**Chart 4.2.5.**  
Production and Imports of Consumer Goods\*  
(Seasonally Adjusted, 2010=100)



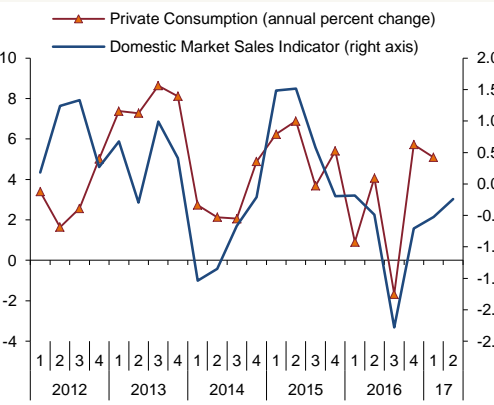
\* As of May.  
Source: TURKSTAT, CBRT.

**Chart 4.2.6.**  
Automobile and White Good Sales  
(Seasonally Adjusted, Thousand)



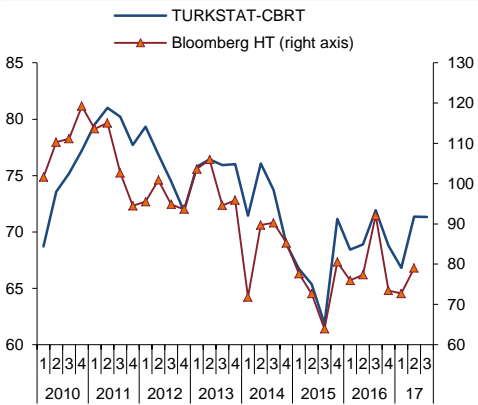
Source: WGMA, AMA, CBRT.

**Chart 4.2.7.**  
Private Consumption and Domestic Market Sales Indicator\*



\* Domestic market sales indicator shows the average of the annual percentage changes in automobile sales, white good sales, retail trade sales, SC index and EITE series.  
Source: WGMA, AMA, AYD, CBRT.

**Chart 4.2.8.**  
Consumer Confidence\*

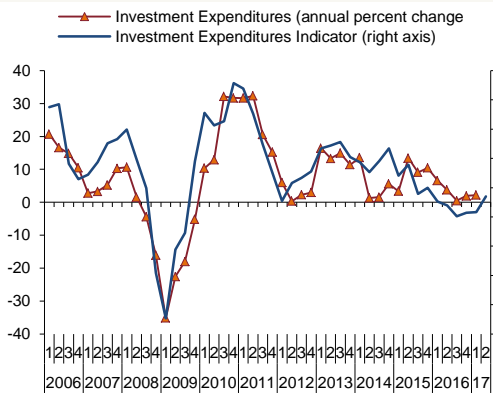


\* As of July.  
Source: TURKSTAT, Bloomberg HT.

Indicators hint at a mild recovery in investments in the second quarter (Chart 4.2.9). Reduced uncertainty and the improved tendency of firms' fixed capital investments also contribute to a more benign investment demand outlook compared to the first quarter (Charts 4.2.10 and 4.2.11). In the second quarter of 2017, domestic market oriented firms saw higher recovery in their investment expectations than exporting firms due to rising domestic demand, which shows that the recovery in domestic demand can provide a stimulus for investments. Among sectors supplying construction inputs, the production of non-metallic minerals as well as rubber and plastics continued to climb in the April-May period, suggesting that construction investments will remain buoyant in the second quarter (Chart 4.2.12).

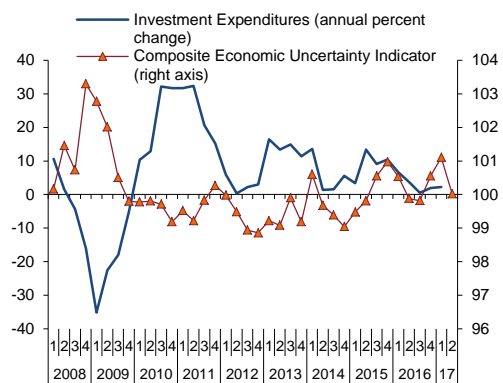
**Chart 4.2.9.**

Investment Expenditures and Investment Expenditures Indicator\*



**Chart 4.2.10.**

Investment Expenditures and Composite Economic Uncertainty Indicator

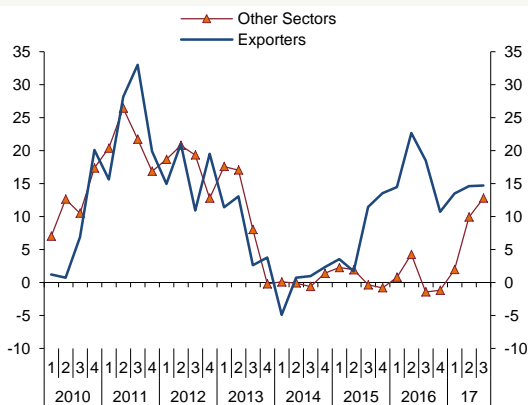


\* Investment expenditures indicator shows the average of the annual percentage changes in production and imports of capital goods and mineral products as well as commercial vehicle sales, housing sales and FX-denominated loans, construction sector orders, commercial loan rate and capacity utilization rate (manufacturing, services, trade, construction).  
Source: TURKSTAT, CBRT, AMA.

Source: CBRT.

**Chart 4.2.11.**

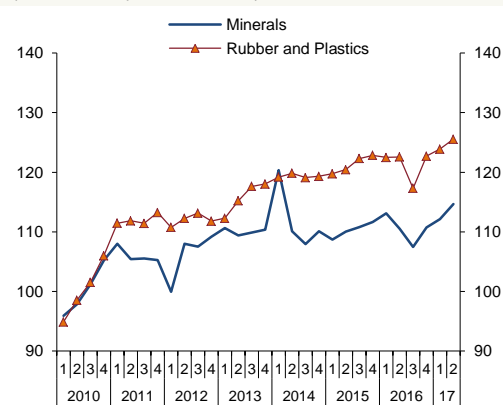
BTS Investment Expenditure Expectations\* (Seasonally Adjusted, Up-Down, 12-Month-Ahead)



\* As of July.  
Source: CBRT.

**Chart 4.2.12.**

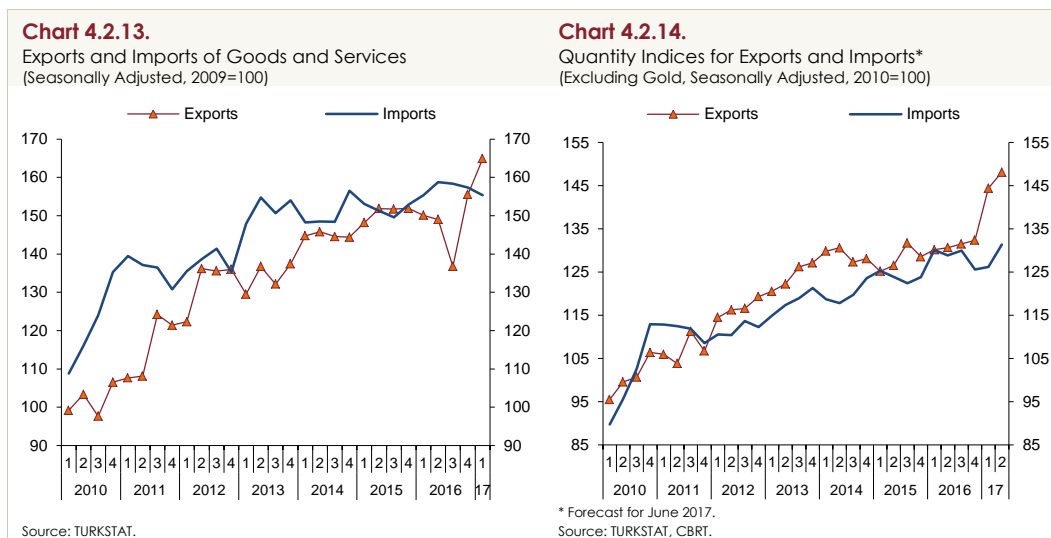
Production of Minerals, Rubber and Plastics\* (Seasonally Adjusted, 2010=100)



\* As of May.  
Source: TURKSTAT.

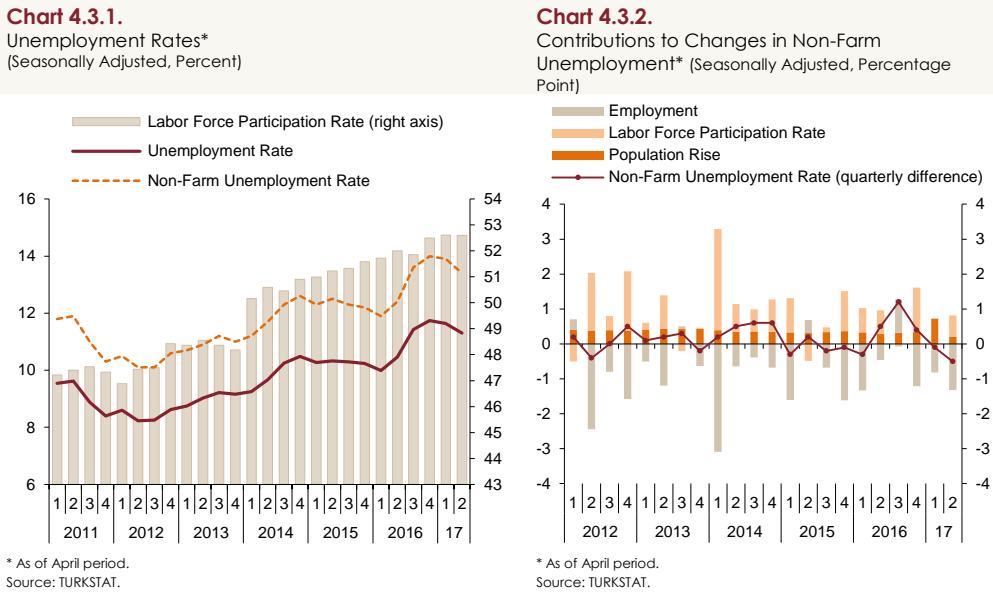
Exports of goods and services continued to surge at a solid pace in the first quarter of 2017, while their imports slackened in quarterly terms (Chart 4.2.13). Thus, net exports added substantially to quarterly growth in the first quarter. Quantity indices excluding gold portray a relatively robust underlying trend in foreign trade and suggest that exports of goods maintained their strong momentum in the second quarter while the imports thereof somewhat recovered (Chart 4.2.14). The upturn in the global economy, especially in the EU, and the flexibility in market diversification stimulate exports (Box 4.2). However, with domestic demand and imports on the rebound, net exports may contribute less to quarterly growth, but give a strong impetus to annual growth in the second quarter.

In sum, economic activity continued to pick up in the first quarter of 2017, while net exports buoyed up quarterly growth in the face of waning domestic demand. Indicators for the second quarter of 2017 show that economic recovery is on solid footing and has spread across a wider range of sectors (Box 4.1). In this period, domestic demand has been more robust than in the first quarter and exports of goods have seen large upswings across all sectors and countries. Moreover, both public investment spending as well as recent measures and incentives are expected to boost economic activity in the second quarter.

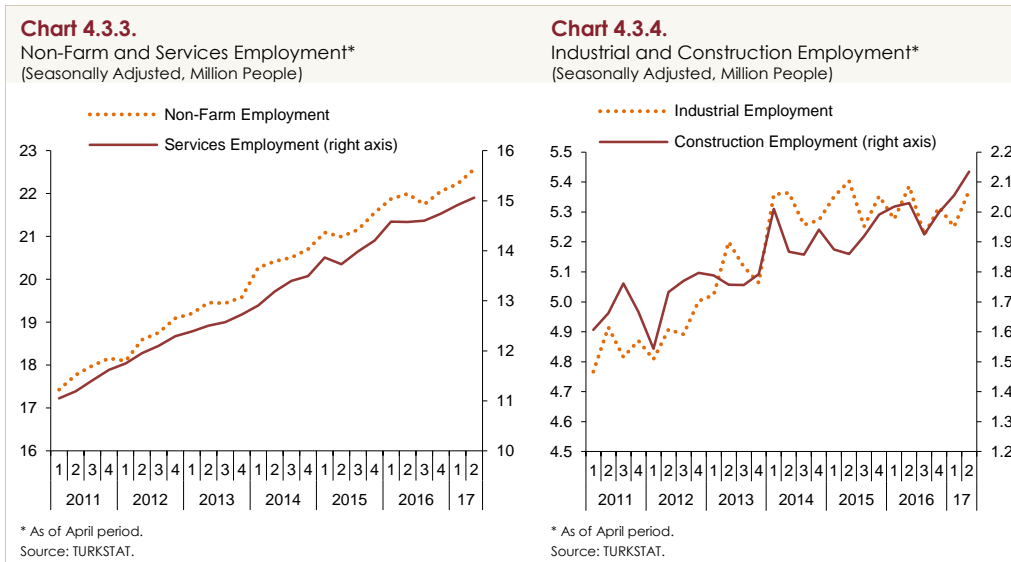


### 4.3. Labor Market

After trending upward through 2016, unemployment rates have shown a downward trajectory since the onset of 2017 (Chart 4.3.1). In the first quarter, the seasonally adjusted total unemployment rate dropped by 0.1 point quarter-on-quarter to 11.6 percent owing to rising non-farm employment. Although economic recovery fed only marginally into the labor market in the first quarter, unemployment rates declined at a more rapid pace thanks to strengthening economic recovery and continued employment growth in the second quarter. In the April period covering March, April and May, the seasonally adjusted total unemployment rate and the non-farm unemployment rate fell to 11.3 and 13.4 percent, respectively (Chart 4.3.2).



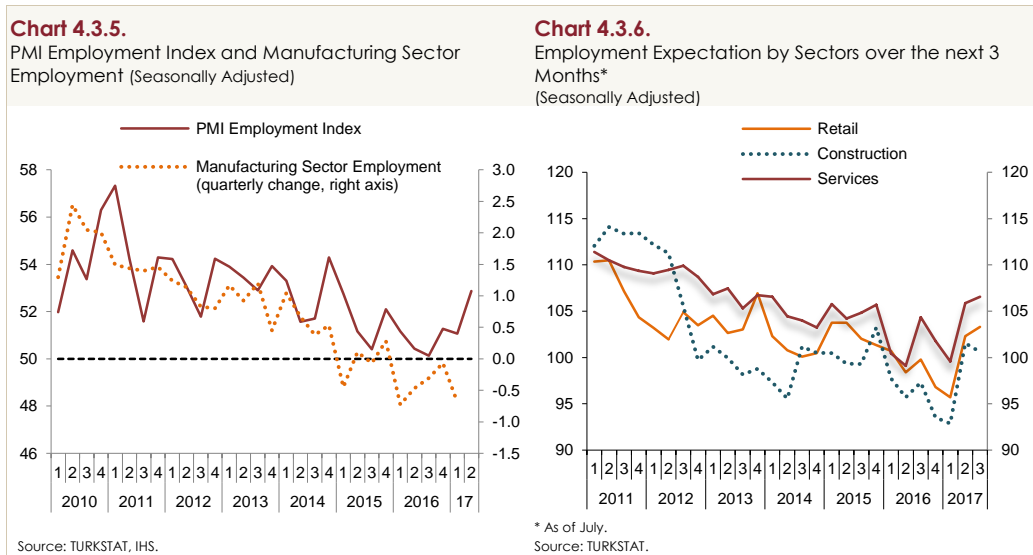
In April 2017, non-farm employment grew by 1.5 percent from the first quarter (Chart 4.3.3). This growth was led by all sectors. In this period, industrial and construction employment rose by an outstanding 2.3 and 3.9 percent, respectively (Chart 4.3.4). On the other hand, services employment grew at a more moderate pace.



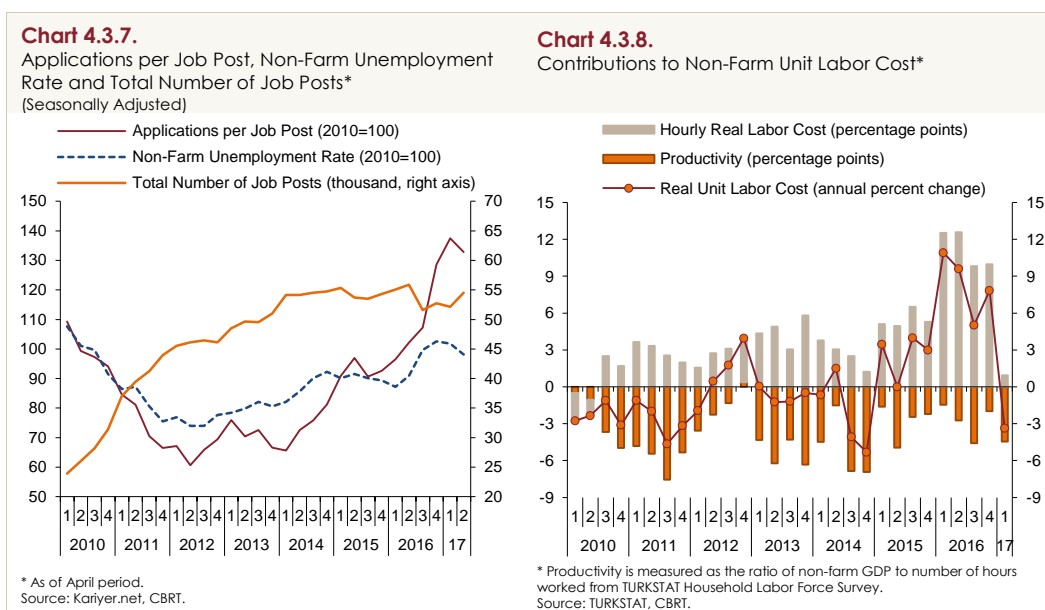
Leading indicators continued to signal economy-wide employment growth for the upcoming period. The PMI employment index accelerated in the second quarter, suggesting that the first-quarter employment losses of the manufacturing sector can be recovered (Chart 4.3.5). Likewise, employment expectations over the next 3 months posted an increase across services, retail trade and construction sectors (Chart 4.3.6).



Data from Kariyer.net indicate that the total number of job posts was up in the second quarter. In addition, applications per job post, which are closely associated with unemployment rates, recorded a quarter-on-quarter fall for the first time since the third quarter of 2015 (Chart 4.3.7). Against this backdrop, employment is expected to increase further while unemployment is likely to remain on the decline.



In 2016, unit labor costs soared due to large minimum wage hikes and lower productivity gains, which put upward pressure on inflation in spite of government subsidies to employers. The lower minimum wage hike in 2017 (8 percent) and the continued government subsidy that put a lid on rising employer costs led to more subdued wage-driven cost pressures compared to 2016. In fact, real unit wages posted a notable year-on-year decrease across services and industrial sectors in the second quarter of 2017 (Chart 4.3.8).



To sum up, as of early 2017, the ongoing deterioration in the labor market has halted and unemployment rates have started to decline. This downward trend has been more pronounced than in the first quarter thanks to economy-wide employment gains in the second quarter. Amid stronger economic recovery, the upcoming period might bring more solid employment growth and further drops in unemployment rates.

#### 4.4. Outlook for 2017

Recent data releases suggest that economic recovery is strengthening and downside risks to economic activity have abated. Thus, the growth outlook for 2017 has improved. The global economic rebound, particularly in the EU, the relatively more stable tourism revenues, the flexibility in market diversification and the cumulative TL depreciation all boost exports.

Measures and incentives intended to stimulate domestic demand are fostering domestic demand through various channels. The Credit Guarantee Fund loans, employment incentives, the macroprudential support for consumer loans, the VAT support for the housing sector and the tax reductions on home appliances and furniture have helped generate more widespread growth as of the second quarter. The confidence channel also bolsters growth as economic recovery feeds fully into the labor market and financial market volatility weakens. However, the pace of recovery in tourism revenues, the uncertainty over monetary policies of advanced economies, the course of capital flows and geopolitical developments pose downside risks to growth in 2017.

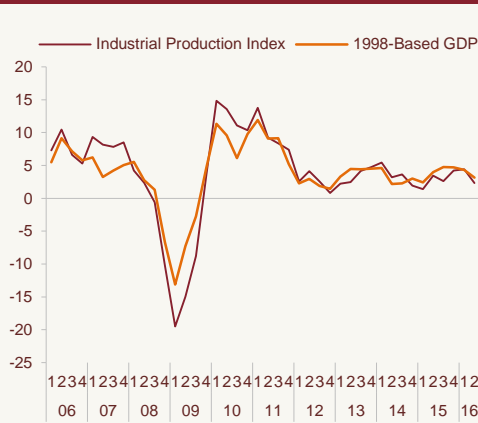
In the period ahead, firms are likely to see further buoyant activity on the back of substantial incentives and measures. Amid more stable growth, strengthening employment gains will stimulate private consumption through the income channel. Investments, on the other hand, are expected to recover more gradually on the back of lessened uncertainty and renewed confidence. Nevertheless, these incentives and measures might have brought some expenditures forward, and thus, the employment and growth outlook in the forthcoming period will be shaped both by investments that will enhance productivity growth and also by investments that will expand employment opportunities.

Box  
4.1

## GDP Forecasts with New National Income Series

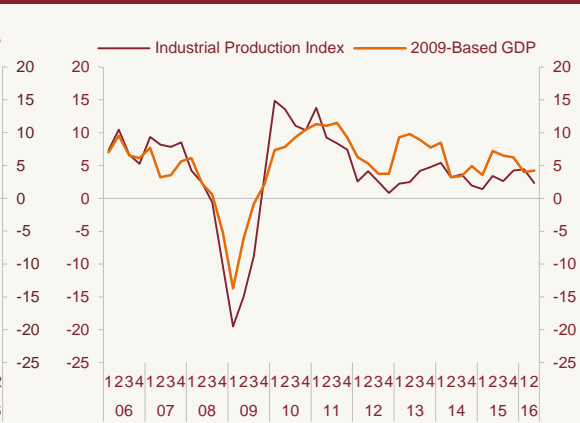
TURKSTAT has been publishing 2009-based chain-linked GDP volume indices since the third quarter of 2016 instead of 1998-based GDP. Accordingly, TURKSTAT has started to use Revenue Administration data and also expanded the coverage of firms in measuring the new GDP series. Consequently, both nominal and real GDP growth rates were revised upwards with the new series. Moreover, new items were included to GDP calculations, which caused a weaker relationship between GDP and industrial production. This prompted a need for alternative indicators for forecasting GDP (Charts 1 and 2). This box discusses what type of indicators can be monitored to track economic activity in the new period and which variables can be used to forecast GDP.

**Chart 1.** Industrial Production Index and 1998-Based GDP (Adjusted for Calendar Effect, Annual Percent Change)



Source: TURKSTAT.

**Chart 2.** Industrial Production Index and 2009-Based GDP Series (Adjusted for Calendar Effect, Annual Percent Change)



Source: TURKSTAT.

A comprehensive dataset was formed to determine indicators that might be used to monitor and forecast the new GDP.<sup>1</sup> The series were classified under five categories: real sector indicators (273 series), survey-based data (75 series), financial data (45 series), price statistics (134 series) and budget statistics (8 series). The dataset also includes some transformed series as well as derived data. Accordingly, based on some criteria such as length and regularity of the series, the main dataset was reduced to include 379 variables from 535 variables.

A series may be considered to be useful in forecasting GDP by looking at various statistics. Stock and Watson (2003) asserted that one may conduct a regression analysis using equation (1) and check the statistical significance of the parameter  $\beta_1$  in order to infer whether variable X can be used to forecast variable Y and the statistical significance is measured by the respective t-statistics. Accordingly, equation (1) was regressed for each of the 379 selected variables in the dataset individually and this produced a significant relation with GDP in only 170 cases.

$$Y_{t+h} = \beta_0 + \beta_1 X_t + u_{t+h} \quad (1)$$

<sup>1</sup> For further details, see Günay and Yavuz (2017).

However, the forecast performance of a variable depends not only on its statistical significance but also on its economic significance. Stock and Watson (2003) suggested that one may look at the  $R^2$  values in equation (1) to determine whether variable X is intuitively meaningful in forecasting variable Y. Trivially, higher  $R^2$  values imply higher explanatory power. Against this background, using all variables in the dataset, the highest  $R^2$  value obtained for new GDP series is estimated to be 0.8, whereas using 1998-based GDP, the  $R^2$  is above 0.95.

**Table 1.** Ranking of Top-10 Highly Correlated Indicators with GDP by Various Criteria

	t-statistics (2006Q1-2017Q1)	R2 (2006Q1-2017Q1)	Out-of-Sample Performance (2011Q1-2017Q1)
Indicator-1	PMI Input Inventory	Production of Sectors with Export Share above 20 percent	Production of Sectors with Export Share above 20 percent
Indicator-2	Production of Sectors with Export Share above 20 percent	Production of Manufacturing Sector	Production of Sectors with Export Share above 40 percent
Indicator-3	PMI Employment Index	Industrial Production	Production of Manufacturing Sector
Indicator-4	Industrial Production	Production of Sectors with Export Share above 40 percent	Production of Capital Goods
Indicator-5	Production of Sectors with Export Share above 40 percent	Production of Sectors with Export Share between 20 and 40 percent	Industrial Production
Indicator-6	Production of Manufacturing Sector	Production of Domestic Market Oriented Sectors	Real VAT Revenues on Imports
Indicator-7	Production of Capital Goods	Production of Capital Goods	Production of Sectors with Export Share between 20 and 40 percent
Indicator-8	Production of Sectors with Export Share between 20 and 40 percent	Production of Foreign Market Oriented Sectors	Production of Foreign Market Oriented Sectors
Indicator-9	Production of Foreign Market Oriented Sectors	Production of Fabricated and Metal Products	Production of Fabricated and Metal Products
Indicator-10	Production of Domestic Market Oriented Sectors	Machinery and Equipment Production	Production of Consumer Goods

Table 1 shows the t-statistics and  $R^2$  values of top-10 indicators that are highly correlated with the new GDP series. For better interpretation of the results, each variable is shaded in different colors. According to the results, the correlation between industrial production and GDP is still higher than other indicators. Yet, instead of using industrial production directly, utilizing derived series obtained from the weighted sum of sectors based on their export structure is also beneficial. For example, using production data for sectors with an export share above 20 percent gives the highest  $R^2$  value.

The results in the first two columns are based on t-statistics and  $R^2$ , which shed some light on the relation between the relevant variable and the GDP growth for the whole period but overlook the fact that these relations can change in time. In other words, the magnitude of parameter  $\beta_1$  and its statistical and economic significance may vary over time. Thus, Stock and Watson (2003) stated that it would be helpful to include the out-of-sample performance of variables when examining their forecasting performance. This method seeks to answer the question of what kind of forecast errors would occur if this indicator was used to make forecasts based on past data. To this end, forecasts for each quarter within the estimation period can be generated successively from the regressions.

The last column of Table 1 shows top-10 indicators that provide the best out-of-sample forecast when single-variable models are used. The results imply that indicators selected based on their out-of-sample

performance may differ from indicators selected based on their t-statistics and  $R^2$  values. For example, real VAT revenues on imports is left out according to its t-statistics and  $R^2$  values, but it is in the list based on its out-of-sample performance. Indicators for industrial production, on the other hand, appear in all of the lists. Nevertheless, as shown in Chart 2, the weakening relation between industrial production and GDP in recent years leads to large forecast errors.

Using only data for industrial production to forecast the new GDP data leads to poor forecasting performance, which may be improved by using data from other sources. Hence, around 30 thousand estimations were conducted to forecast GDP by using three-variable models. Table 2 shows the variables in best performing 100 models in the periods of 2011Q1-2017Q1, 2011Q1-2013Q4 and 2014Q1-2017Q1. The table also shows the frequency for top-10 indicators, where a higher frequency may signal a stable relation between the respective indicator and the GDP growth.

**Table 2.** Frequency of Top-10 Indicators in Best-Performing 100 Models

Period: 2011Q1-2017Q1	Number of Models	Period: 2011Q1-2013Q4	Number of Models	Period: 2014Q1-2017Q1	Number of Models
Real VAT Revenues on Imports	92	Real VAT Revenues on Imports	65	Production of Paper and Paper Products	73
Production of Sectors with Export Share above 20 percent	24	PMI Input Inventory	53	Imports of Unprocessed Fuel	28
PMI Input Inventory	20	PMI Employment Index	15	Production of Sectors with Export Share below 20 percent	24
Production of Paper and Paper Products	18	Real VAT Revenues on Imports	15	Real Tax Revenues	19
Manufacturing Sector Production	18	Imports of Solid Fuel	15	Real VAT Revenues on Imports	19
PMI Employment Index	13	Production of Sectors with Export Share above 40 percent	13	Non-Performing Consumer Loans Ratio	18
Production of Sectors with Export Share above 40 percent	9	Change in Consumer Loan Rate	12	Imports of Crude Oil and Natural Gas	16
Production of Consumer Goods	9	Production of Durable Goods	9	Production of Non-Durable Goods	10
Real Tax Revenues	8	Production of Sectors with Export Share above 20 percent	8	Manufacturing of Automobiles	8
Production of Textiles	8	Production of Capital Goods excluding Vehicles	8	Non-Performing Loans Ratio	8

According to the results, real VAT revenues on imports and real tax revenues appear quite frequently across the best models. This may be due to the inclusion of firm-level data in new GDP calculations. Therefore, in the upcoming period, new methods should be sought to use tax revenues more effectively in monitoring the economic activity and forecasting GDP.

Another striking observation is that the best models include the change in consumer loan rates for 2011Q1-2013Q4, while those for 2014Q1-2017Q1 include the non-performing loans ratio. This indicates that the

explanatory power of financial conditions in forecasting GDP has increased over time. Yet, this conclusion is rather tentative given the relatively short size of the estimation period. Obviously, a more reliable assessment can be made with a longer estimation period. Still, current analysis hints that financial conditions have increased informative value in forecasting GDP over time.

Regarding the use of industrial production data, the analysis finds evidence that sectoral developments need to be monitored closely. In this regard, the best models for 2011Q1-2013Q4 period include production of sectors with an export share above 20 percent, while those for 2014Q1-2017Q1 include production of sectors with an export share below 20 percent. These observations suggest that industrial production data should be used according to demand composition (domestic vs external demand) in order to obtain a better GDP forecast. In fact, depending on each sector, the production data might produce a different GDP forecast.

In conclusion, findings from single and three-variable models indicate that using sectoral details about budget data, financial indicators and industrial production is useful in monitoring and forecasting the new GDP series. TURKSTAT has recently announced that short-term business statistics such as industrial production, industrial turnover and retail sales will be revised in 2018 using data from the Revenue Administration and the SSI. Harmonizing these statistics with the GDP will have positive implications for the forecasting performance in the upcoming period.

#### **References**

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- Stock, J. and M. Watson, 2003, Forecasting Output and Inflation: The Role of Asset Prices, *Journal of Economic Literature*, 41(3): 788-829.

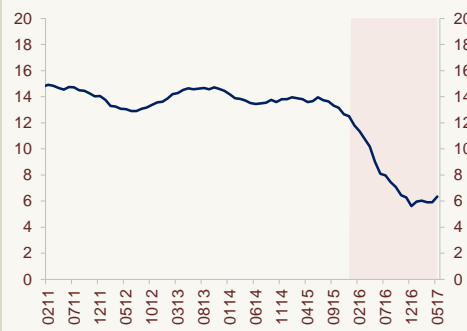
Box  
4.2

## The Resilience of Turkish Exports to Foreign Demand Shocks: The Case of Fresh Fruits and Vegetables

In the aftermath of the global financial crisis, Turkey's exports suffered from external demand shocks driven by geopolitical tensions, sluggish economic activity across oil-exporting countries caused by falling crude oil prices, and the EU sovereign debt crisis. However, despite these external demand shocks, Turkish exports remained on a steady rise in this period, which indicates that exporters were able to compensate for these negative spillovers by diverting their exports from those markets weighed down by demand and geopolitical problems towards other markets that were relatively less affected by these issues. In fact, in the 2008-2012 period marked by negative external demand conditions stemming from the EU, Turkish firms turned their attention toward less crisis-stricken Middle Eastern and African countries. Similarly, Turkey's market share in Russia and Iran has been shrinking since 2014 amid geopolitical tensions, but is growing steadily in the EU since early 2014.<sup>2</sup> Against this background, this box discusses the resilience of Turkish exports to external demand shocks with a special focus on fresh fruits and vegetables exported to Russia.

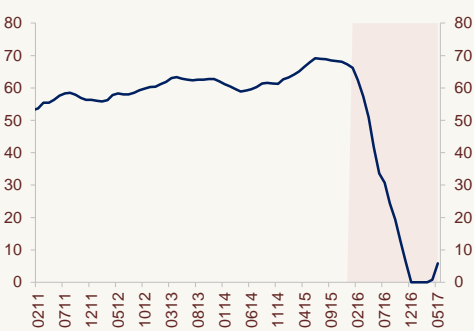
Russia imposed restrictions on some Turkish exports, particularly fresh fruits and vegetables, starting end-2015. Russia is Turkey's second biggest trading partner after Germany for exports of fruits and vegetables (Chart 1). Russia's market share for exports of fruits and vegetables fell from about 14 percent in 2015 to as low as 6 percent in 2016. The products most affected by these restrictions include tomatoes, grapes, cucumbers, peaches, apricots, onions and plums. The share of these products in total exports of fresh fruits and vegetables to Russia fell to zero in 2016 from about 70 percent before the restrictions (Chart 2).

**Chart 1.** Russia's Share in Turkish Exports of Fresh Fruits and Vegetables\* (12-Month Cumulative, Percent)



\* Shaded area denotes the Russian embargo period starting from January 2016.  
Source: TURKSTAT, CBRT.

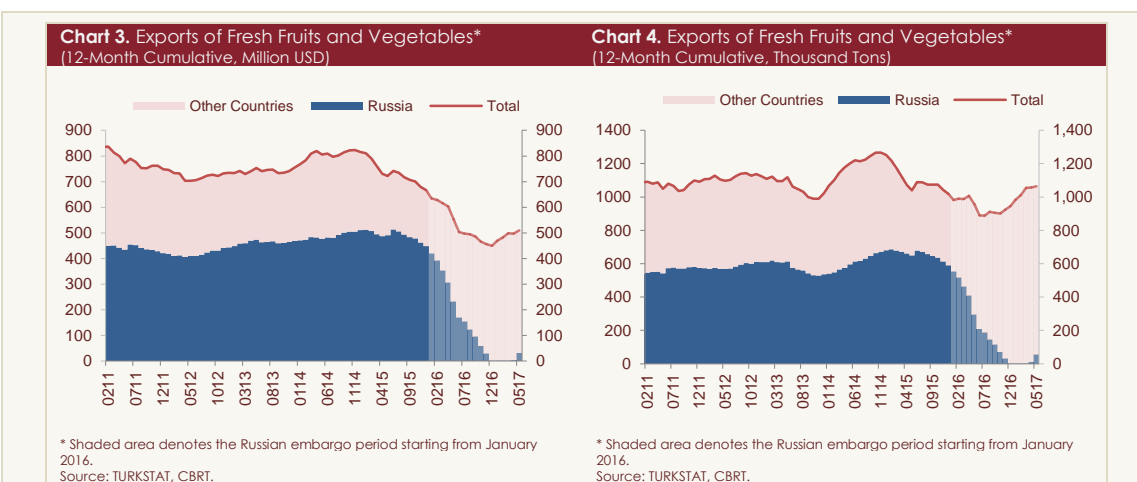
**Chart 2.** Russia's Share in Selected Export Items\* (12-Month Cumulative, Percent)



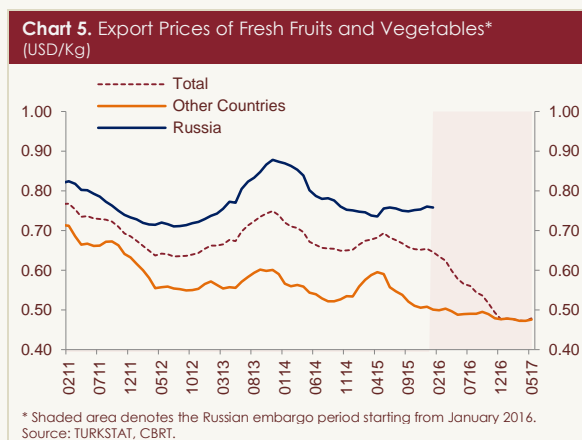
\* Selected items include tomatoes, grapes, cucumbers, peaches, apricots, onions and plums. Shaded area denotes the Russian embargo period starting from January 2016.  
Source: TURKSTAT, CBRT.

Charts 3 and 4 show Turkey's exports to Russia for selected export items in current prices and quantities, respectively. In December 2015, Russia accounted for 450 million USD (67 percent) of Turkey's annual exports in these selected items, which totaled 667 million USD. As of the embargo period starting from December 2015, annual exports to Russia plunged and reached zero as of December 2016. In the same period, Turkey's total annual exports dropped by 217 million USD for these selected items. In current prices, more than half of the embargo-driven loss was offset by increased exports to other countries.

<sup>2</sup> For further details, see CBRT (2016).



For a better understanding of the degree to which these negative spillovers were offset, one may look at annual changes in exports in quantity terms. Turkey's total exports for the selected items hovered above 1 million tons at the end of 2015, about 60 percent of which were destined for Russia. As a result of the restrictions, annual exports to Russia came to a complete standstill in December 2016, while total annual exports barely changed. Considering that total exports remained virtually unchanged in the 2011-2015 period, it may be concluded that almost all of the Russia-led contraction in annual exports was counterbalanced by increased exports to other countries.



On the quantity side, Turkey's exports for the selected items appear to be highly resilient to these restrictions. Hence, it may be inferred that the post-ban drop in annual exports at current prices was driven by price changes. The unit value is historically higher for exports of selected items to Russia than to other countries. Thus, diverting to other markets due to the Russian embargo caused export prices of selected items to go down (Chart 5).

To sum up, despite the Russian ban, Turkish exports of fresh fruits and vegetables remained intact in terms of quantity, suggesting that exporters of fresh fruits and vegetables were able to make up for the negative effects of external demand shocks by switching to existing or new markets. On the other hand, with Russia gradually lifting the bans on these products in 2017, not only those destined to Russia but also total exports of fresh fruits and vegetables are expected to pick up in both quantity and value.

**References**

CBRT, 2016, Recent Changes in Turkey's Export Market Shares, Box 4.1 in Inflation Report 2016-1.