

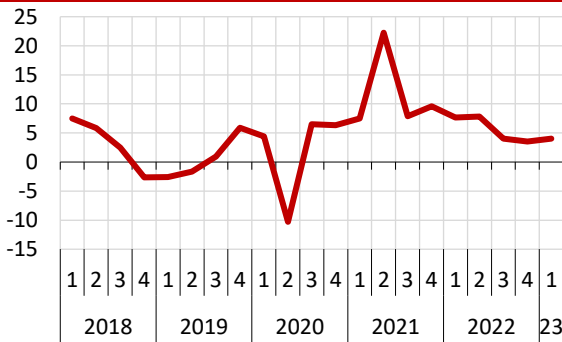
Macro: Weaker growth in Q1 than leading indicators implied

In Q1, growth was weaker than our expectations and continued to be driven by domestic demand. On the production side, the sum of the sectoral value added yields 3.1% q-o-q and 6.1% y-o-y growth, which points to a much stronger economic activity than the published headline GDP growth (q-o-q: 0.3%, y-o-y: 4.0%) and more in line with our previous projections. This technical yet substantial difference due to chain-linking methodology will be taken back in the coming quarters, and will be a factor that will complicate the economic interpretation of the data in the remaining quarters of the year.

In the first quarter, domestic demand continued to grow on the back of private consumption and investments, while the public sector limited the quarterly growth. Net exports, on the other hand, made a negative contribution to both annual and quarterly growth. Although data on stock changes make it difficult to make a sound analysis, we consider that domestic demand conditions, particularly in private consumption, are inflationary, while the composition of aggregate demand continues to increase external imbalances. Data for the second quarter indicate that economic activity remains strong due to the strong domestic demand, supported by the post-earthquake recovery and strong credit growth. In this context, we expect a strong quarterly growth in the second quarter, including the contribution of the technical recovery stemming from chain indexation. **In 2023, we continue to see a high probability of an annual growth of over 4%.**

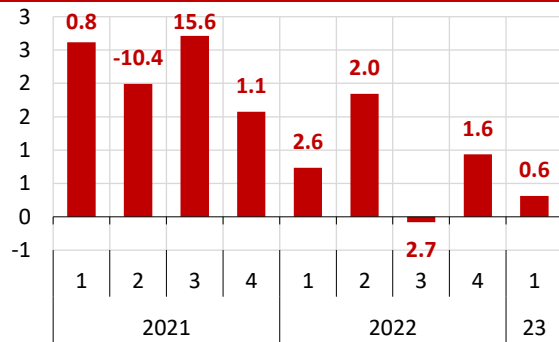
Gross Domestic Product (GDP) increased by 4.0% y-o-y (3.8% calendar adjusted) and 0.3% q-o-q- in seasonally adjusted terms in the first quarter of 2023. It was much lower than our forecast (7.0%) and slightly above market expectations (3.2%-3.9% increase) (Charts 1 and 2).

Chart 1. GDP (y-o-y)



Source: TURKSTAT

Chart 2. GSYİH (seasonally adjusted., q-o-q)



Source: TURKSTAT

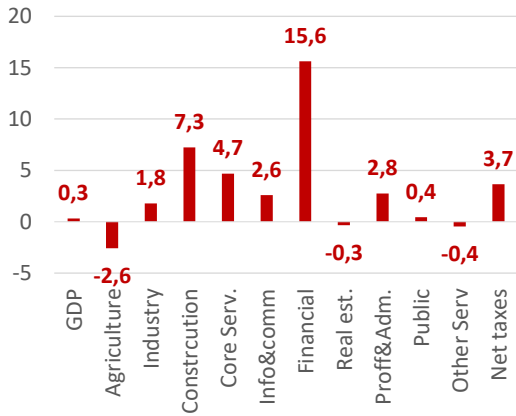
The published growth rate was far from our economic interpretation based on leading indicators and macroeconomic developments. However, as we will give details in the following section, the sectoral breakdown of GDP on production side implies a different economic outlook than the headline growth and is more in line with our past evaluations. The divergence between the GDP growth and the growth of the sum of the all sectors stems from the GDP calculation method. TurkStat changed the GDP calculation method at the end of 2016.¹ In this context, one of the important changes was the use of administrative records in calculation. Another was the transition to the chain linked volume method for the price-adjusted GDP data calculation. According to this method, the prices of the previous year are used instead of the price in a fixed year in order to adjust for the price effect. Further, annual overlapping for chain-linking is preferred in order to obtain more consistent results with annual GDP estimations. On the other hand, in that method, the sum of the sub-sectors may not give the total GDP (non-additivity problem).

¹ <https://data.tuik.gov.tr/Bulten/Index?p=Donemsel-Gayrisafi-Yurt-Ici-Hasila-III.-Ceyrek:-Temmuz---Eylul,-2016-21513>

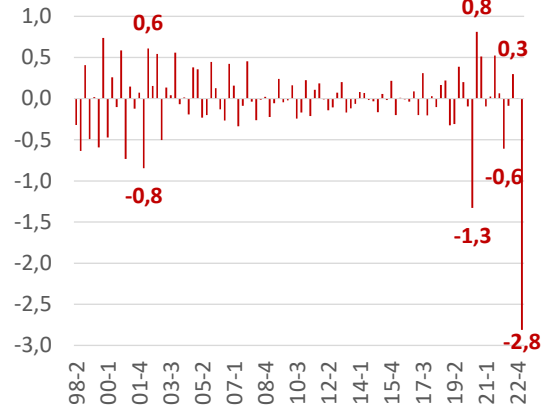
According to the seasonally adjusted data of the production side, except agriculture, industry, construction, services and net tax items recorded very strong quarterly increases in the first quarter (Chart Annex-1.a, Table 1). However, quarterly GDP growth was quite limited at 0.3%. Historically non-additivity is always an issue. However, as can be seen in Chart Annex-1.b, it has historically been close to zero on average, while in no quarter has it been as strong as in 2023 Q1. **According to our calculations, the quarterly change of the sum of the sectoral value added in Q1 is 3.1% and points to a very strong growth momentum.**

Chart Annex-1. GDP Estimation with Chain-Linked Volume

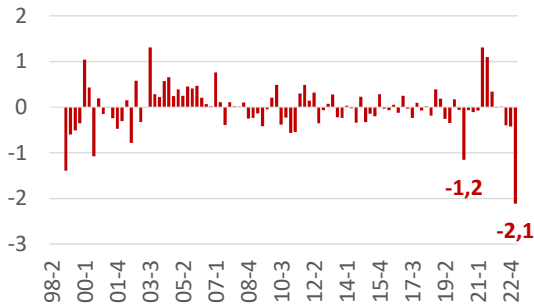
a. GDP from production side (q-o-q, seas.adj)



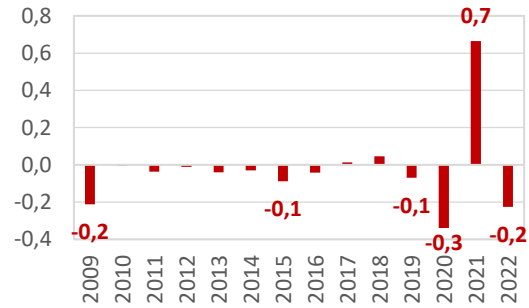
b. Divergence due to the non-additivity problem* (q-o-q, % points)



c. Divergence due to the non-additivity problem* (y-o-y, % points)



d. Divergence due to the non-additivity problem* (y-o-y, % points)



* Shows the difference between the published GDP growth and the growth of the sum of all sectors comprising GDP. Source: Turkstat, Akbank

A similar outlook is also present in the annual growth account in the first quarter. The difference there is also at the highest ever level with 2.1 points in the first quarter (Chart Annex-1.c). Therefore, **the sum of the sub-items yields an annual growth exceeding 6% and a quarterly growth exceeding 3% in Q1.** In parallel to our previous projections, this economic activity outlook seems to be more compatible with improving external demand conditions and robust domestic demand conditions driven by loose financial conditions and the increasing supportive stance of the public sector, despite the restraining effects of the earthquake.

So why does this difference occur? This difference is more likely to occur in periods when the divergence between the different deflators used in the calculation of national income grows and when price indices deviate more strongly from the averages of previous years. We think that the rapid increase in the CPI and D-PPI in the recent period and the sharply widening of the gap between them and the sharp movements in commodity prices were effective in this development. While there were

similar movements in price indices during the pandemic period, non-additivity problem became evident.

Here, the most important question for the future is how this technical impact will be reflected in the growth data for the rest of the year. **Past experience indicates that these decreases were offset by technical increases in the following two quarters**, in periods of similar movements in quarterly change (Chart Annex-1.b). On the annual growth side, our observation is that the year-to-year differences try to converge to zero even in years when the volatility of the additivity problem increases between quarters (Chart Annex-1.d). **In this context, it is likely that annual and quarterly growth in the second quarter will be much higher than the leading indicators imply.**

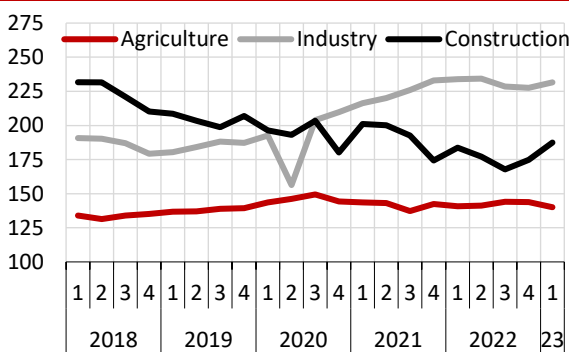
Finally, along with the annual accounts to be shared with the national income data to be published on August 31, the revision made in tourism revenues last year will be reflected retrospectively to the national income accounts and the seasonality adjustment models will be updated. For this reason, it is worth noting that the calculations we have made may change with these updates.

Production Side:

In the first quarter of the year, **the construction and services sector contributed positively to annual growth, while the added value of industry and agriculture made a negative contribution** (Table 1 and 3). While the annual growth in the services sector spread to all sub-sectors, wholesale-retail trade, transportation-storage, accommodation-food services (core services), which was also positively affected by tourism, became the highest increasing component with 12.4%. While the industrial value added contracted by 0.7% in line with the IPI, the decrease in the agricultural value added was 3.8%. The fact that the earthquake limited industrial production in February also played a role in the negative value of the industrial value added. We think that drought-induced effects play a role on agriculture.

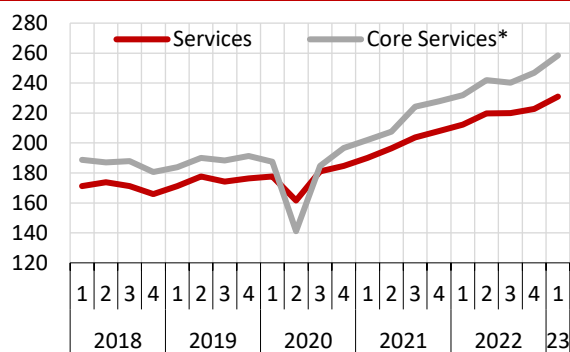
According to seasonally adjusted data, value added increased strongly in all sectors except agriculture. The rate of increase was 1.8% for industry, 7.3% for construction, 3.7% for total services and net tax. On the industrial side, the manufacturing industry showed a stronger outlook with 3.0%. While the increase in construction that started in the last quarter continues, the level of added value reached its highest level since the third quarter of 2021 with the cumulative increase in the two quarters. We expect the recovery trend in construction value added to continue in the coming period due to the reconstruction of the earthquake zone. On the services side, the increases in core services, information and communication, and finance and insurance activities came to the fore. Other services, real estate and public administration were relatively weak (Table 1).

Chart 3. Value Added by Sectors (seasonally adjusted, 2009=100)



Source: TURKSTAT

Chart 4. Value Added by Sectors (seasonally adjusted, 2009=100)



* The sum of retail and wholesale trade, transport and storage, accommodation and catering services
Source: TURKSTAT



Table 1. The Growth of GDP and Sub-Items from the Production Side (%)

	Annual Growth				Quarterly Growth (seas. adj.)			
	2022-Q2	2022-Q3	2022-Q4	2023-Q1	2022-Q2	2022-Q3	2022-Q4	2023-Q1
GDP	7.8	4.0	3.5	4.0	1.8	-0.1	0.9	0.3
Agriculture	-2.0	2.3	-0.3	-3.8	0.3	2.0	-0.2	-2.6
Industry	8.3	0.6	-3.0	-0.7	0.2	-2.5	-0.5	1.8
Manufacturing	9.7	2.0	-1.6	1.6	0.4	-2.0	-0.2	3.0
Construction	-10.7	-15.0	2.0	5.1	-3.5	-5.3	4.2	7.3
Services	12.0	8.6	7.5	8.6	3.5	0.1	1.3	3.7
Core Services*	18.1	7.0	8.6	12.4	4.3	-0.7	2.8	4.7
Information and Communication	4.4	12.7	5.2	8.1	-0.3	5.4	0.0	2.6
Financial and Insurance Activities	26.6	21.6	13.4	11.2	10.8	-11.9	-1.5	15.6
Real Estate Activities	4.2	4.2	4.8	1.4	1.2	1.1	1.2	-0.3
Professional, Administrative and Support Service Activities	11.4	12.5	9.1	12.0	5.5	3.8	-0.4	2.8
Public Administration**	2.0	7.5	4.7	3.6	0.5	3.5	-0.1	0.4
Other Services	2.7	6.5	6.2	7.8	1.8	3.1	4.3	-0.4
Net Taxes (Tax - Subsidies)	-1.0	2.3	1.5	9.0	-0.2	2.0	0.7	3.7

* Retail-Wholesale Trade, Transport-Storage, Accommodation-Catering

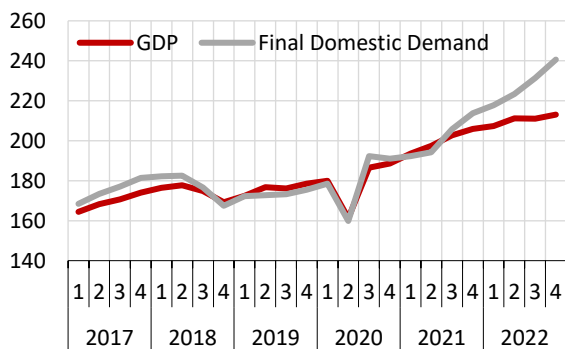
** Public Administration, Education, Human Health and Social Work Activities

Source: TURKSTAT, Akbank

Expenditure Side:

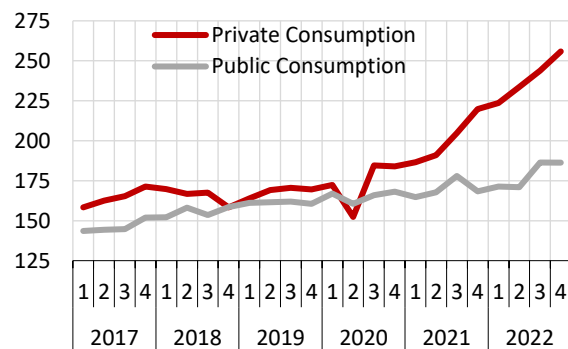
Total demand continued to grow in the first quarter, driven by domestic demand, particularly private consumption, on an annual and quarterly basis (Charts 5 and 6, Table 2). Private consumption expenditures increased by 0.8% compared to the previous quarter and lost momentum compared to previous quarters, but annual growth remained high with 16.2%. In fact, the retail volume index, card spending and other indicators of consumption pointed to a stronger private consumption outlook in the first quarter. As a matter of fact, the current financial conditions and high wage increases in the high inflation environment were the factors that supported the private consumption demand in the meantime. The **public sector**, on the other hand, seems to have limited the quarterly growth through consumption expenditures. However, this outlook is inconsistent with the strong increases in real expenditures, which we calculated based on the central government budget data for the first quarter, mainly due to the purchases of goods and services. While **investments** increased on a quarterly and annual basis, the relatively strong course in machinery and equipment investments was maintained (Chart 7). Despite the strong course in tourism, the contribution of **net exports** was negative (yoy: -2.8 points, quarterly: -0.7 points) due to the loss of momentum in goods exports and the strengthening of gold imports (Chart 8).

Chart 5. GDP ve Final Domestic Demand (Seasonally adjusted, 2009=100)



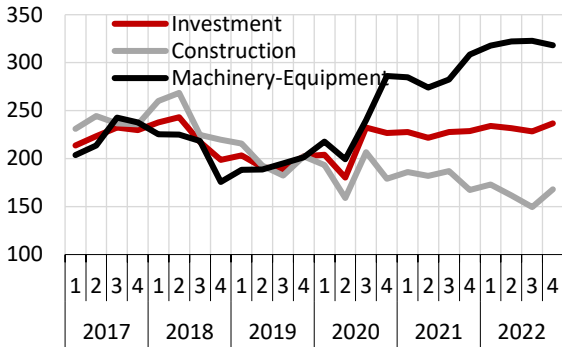
Source: TURKSTAT, Akbank

Chart 6. Consumption Expenditures (Seasonally adjusted, 2009=100)



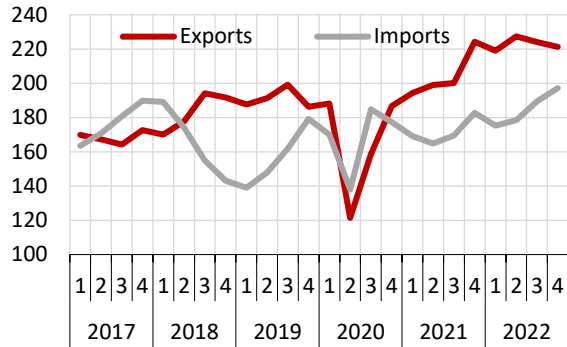
Source: TURKSTAT, Akbank

Chart 7. Investment Expenditures (Seasonally adjusted, 2009=100)



Source: TURKSTAT, Akbank

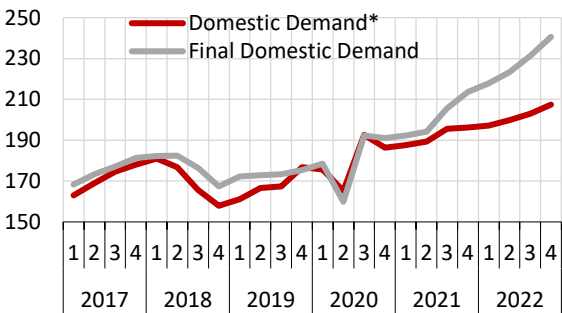
Chart 8. Goods and Services Exports and Imports (Seasonally adjusted, 2009=100)



Source: TURKSTAT

Inventory change, on the other hand, contributed 0.1 percentage point to quarterly growth and -6.0 points to annual growth (Table 3). Since this item includes the statistical error between the national income accounts in terms of production and expenditure, it is very difficult to interpret it economically. In addition, the difference between the growth of total of the sectors and the headline growth, which we have covered in detail at the beginning of the report, also affects the stock change data at the same rate. In terms of the cyclical state of domestic demand and a healthy assessment of inflation pressures, we find the information value of the domestic demand indicator, which includes stock changes, and the “private consumption + stock change” to be higher (Charts 9 and 10).

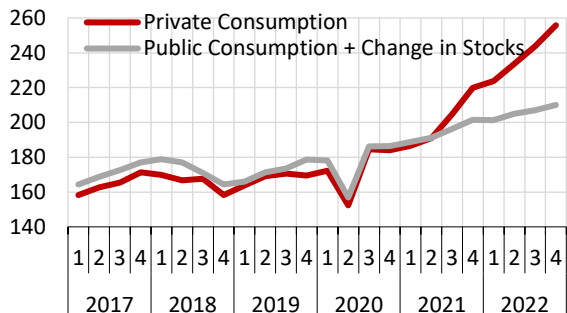
Chart 9. Domestic demand (Seasonally adjusted, 2009=100)



* Domestic demand is the sum of final domestic demand and change in stocks.

Source: TURKSTAT, Akbank

Chart 10. Private Consumption (Seasonally adjusted, 2009=100)



Source: TURKSTAT, Akbank

Table 2. The Growth of GDP and Sub-Items from the Production Side (%)

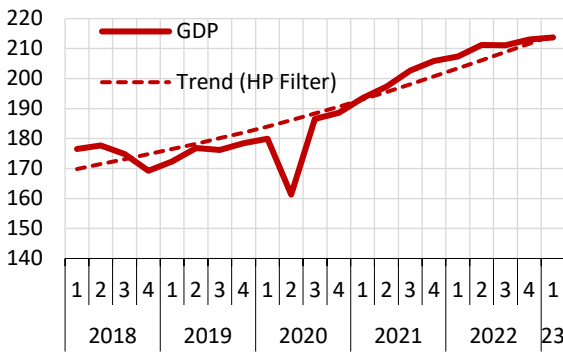
	Annual Growth				Quarterly Growth (seas. adj.)			
	2022-Q2	2022-Q3	2022-Q4	2023-Q1	2022-Q2	2022-Q3	2022-Q4	2023-Q1
GDP	18.5	17.6	14.8	14.4	3.7	5.1	4.1	0.2
Total Consumption	22.3	20.3	16.0	16.2	4.5	4.4	4.9	0.8
Private Consumption	1.6	4.7	9.0	5.3	-0.2	8.9	0.0	-3.1
Public Consumption	5.3	-0.8	2.6	4.9	-1.0	-1.5	3.7	3.2
Investment	-10.4	-20.3	0.3	1.3	-5.0	-7.7	12.4	1.7
Construction	19.1	14.6	2.3	8.0	0.9	0.6	-1.3	7.3
Machinery and Equipment	12.7	21.1	14.4	3.4	3.9	8.4	0.5	-8.5
Other Assets	16.4	12.4	-3.3	-0.3	3.8	-1.4	-1.3	-1.2
Exports	5.8	11.9	10.2	14.4	1.8	6.2	4.1	2.1
Imports	18.5	17.6	14.8	14.4	3.7	5.1	4.1	0.2
Domestic Demand	5.3	3.6	6.9	7.3	1.3	1.6	2.2	1.1
Final Domestic Demand	15.1	13.0	11.9	12.1	2.6	3.5	4.0	0.8

Output Gap:

The analysis of GDP and expenditure components together with their trends provides important information about the boom and bust phases of the economy. Accordingly (Charts 11 -14):

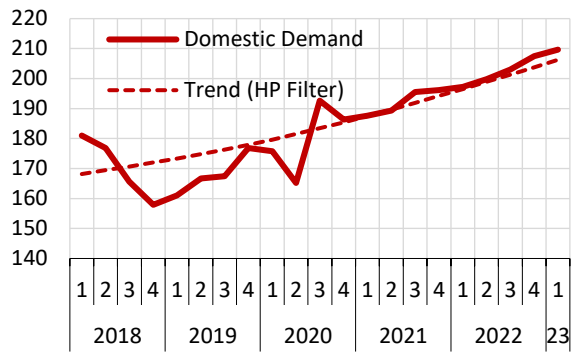
- **Domestic demand and private consumption continue to be above their long-term trends.** This indicates an inflationary level of domestic demand.
- Despite the strong increase in tourism, exports of goods and services fell below its trend with the course of exports of goods. The loss in exports due to the earthquake (approx.. 1 bn \$) also played a partial role.
- Despite the strengthening domestic demand, the return of the GDP to its trend due to exports indicates that the demand-side pressures on inflation continue, albeit to a lesser extent. However, as we mentioned before, the quarterly growth in the first quarter, when analyzed as the sum of sectoral added values, is at a much stronger level than the headline value and points to an inflationary activity outlook. We think that the strong loan momentum, more evident in the retail segment, also increases demand-side pressures.²

Chart 11. GDP Trend
(Seasonally adjusted, 2009=100)



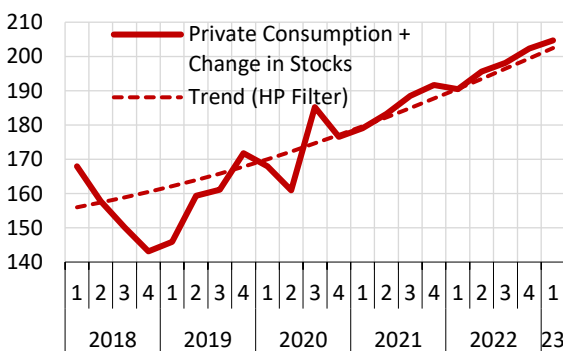
Source: TURKSTAT, Akbank

Chart 12. Domestic Demand Trend
(Seasonally adjusted, 2009=100)



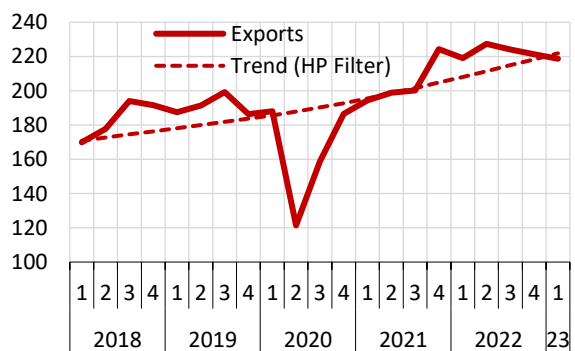
Source: TURKSTAT, Akbank

Chart 13. Private Consumption Trend
(Seasonally adjusted, 2009=100)



Source: TURKSTAT, Akbank

Chart 14. Exports of Goods and Services Trend
(Seasonally adjusted, 2009=100)



Source: TURKSTAT, Akbank

² For an assessment of the inflation forecasting power of the credit-augmented output gap indicators, see. CBRT Inflation Report, 2021-1, Box 3.1, "A Technical Evaluation of Output Gap Forecasts".

Table 3. Contribution to GDP Growth (Percentage Point)*

	Annual Growth				Quarterly Growth (seas. adj.)			
	2022-Q2	2022-Q3	2022-Q4	2023-Q1	2022-Q2	2022-Q3	2022-Q4	2023-Q1
GDP	7.8	4.0	3.5	4.0	1.8	-0.1	0.9	0.3
Agriculture	-0.1	0.2	0.0	-0.1	0.0	0.1	0.0	-0.1
Industry	1.8	0.1	-0.6	-0.1	0.0	-0.5	-0.1	0.4
Construction	1.7	0.3	-0.3	0.3	0.1	-0.3	0.0	0.5
Services	-0.7	-0.8	0.1	0.2	-0.2	-0.2	0.2	0.3
Core Services**	6.9	4.7	4.3	5.2	2.1	0.1	0.8	2.2
Information and Communication	4.2	1.7	2.1	3.0	1.1	-0.2	0.7	1.2
Financial and Insurance Activities	0.2	0.4	0.2	0.3	0.0	0.2	0.0	0.1
Real Estate Activities	1.3	0.9	0.5	0.6	0.5	-0.7	-0.1	0.7
Professional, Administrative and Support Service Activities	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.0
Public Administration***	0.6	0.6	0.5	0.6	0.3	0.2	0.0	0.1
Other Services	0.2	0.7	0.4	0.4	0.1	0.3	0.0	0.0
Net Taxes (Tax - Subsidies)	0.1	0.1	0.2	0.2	0.0	0.1	0.1	0.0
Total Consumption	13.8	12.9	11.6	11.6	2.9	4.1	3.5	0.1
Private Consumption	13.5	12.3	10.4	10.9	3.0	3.0	3.5	0.6
Public Consumption	0.2	0.6	1.2	0.7	0.0	1.1	0.0	-0.4
Investment	1.4	-0.2	0.6	1.2	-0.3	-0.4	0.9	0.8
Construction	-1.2	-2.3	0.0	0.1	-0.5	-0.7	1.0	0.2
Machinery and Equipment	2.2	1.5	0.3	1.0	0.1	0.1	-0.2	0.9
Other Assets	0.4	0.5	0.5	0.1	0.1	0.2	0.0	-0.3
Change in Stocks	-10.1	-9.3	-5.6	-6.0	-1.4	-2.2	-2.3	0.1
Net Exports	2.7	0.6	-3.1	-2.8	0.6	-1.6	-1.2	-0.7
Exports	3.9	2.8	-0.8	-0.1	0.9	-0.4	-0.3	-0.3
Imports	-1.1	-2.2	-2.3	-2.7	-0.3	-1.2	-0.9	-0.4
Domestic Demand	5.1	3.4	6.6	6.8	1.2	1.5	2.1	1.0
Final Domestic Demand	15.2	12.7	12.2	12.9	2.7	3.7	4.4	0.9

* The items may not sum up to GDP due to chain-linking methodology

** Retail-Wholesale Trade, Transport-Storage, Accommodation-Catering

*** Public Administration, Education, Human Health and Social Work Activities

Source: TURKSTAT, Akbank

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