Box 2.3

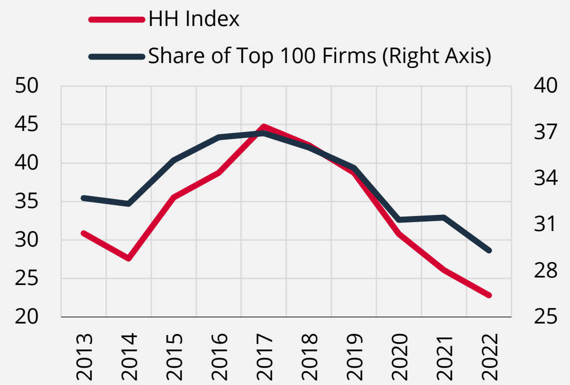
Broadening the Exports Base and Resilience to External Demand Shocks

Studies conducted at the firm level reveal that the responses of firms to external shocks may differ according to their size. Most of the studies have shown that large firms can react differently to smaller firms to the common shocks affecting all firms, and the heterogeneity of the responses affects the economy-wide response to these external shocks. In his study of the USA, Gabaix (2011) argues that while the idiosyncratic movements of the 100 largest firms explain approximately one-third of the variations in the total production level, the "granular" fluctuations in the economy due to the weight of large firms become more pronounced in parallel with the concentration in production. Wagner (2013) found similar results for the manufacturing sector in Germany and emphasized that the response of the largest firms to external shocks is important for understanding the overall volatility in manufacturing industry production.

The literature also shows that exports made by large firms are more sensitive to external demand shocks than those by small firms, and that exports from larger enterprises decrease relatively more during periods of contraction in foreign demand. Antràs (2020) argues that because large firms are more integrated into global value chains compared to small firms, this causes large firms to be more sensitive to external shocks. Di Giovanni et al. (2020) emphasize that large firms play a key role in the reflection of external shocks on the local economy, as they are more involved in production networks. Bricongne et al. (2022) show that the determinant of the contraction in exports in France during the Global Financial Crisis and the global pandemic was the decline in the exports of large exporting companies. This study calculated that 67% of the shrinkage in total exports in 2020 was due to the decrease in exports of this group, although the share of those companies in the top thousand according to the export size in total exports was 41%. Aldan et al. (2023), on the other hand, reveal that the majority of the increase in exports in Türkiye in 2011-2021 period was due to the increase in SME' exports. This box discusses how the decrease of large firms' weight in total exports, or a broadened exports base, increases the macro-scale resilience against external shocks.

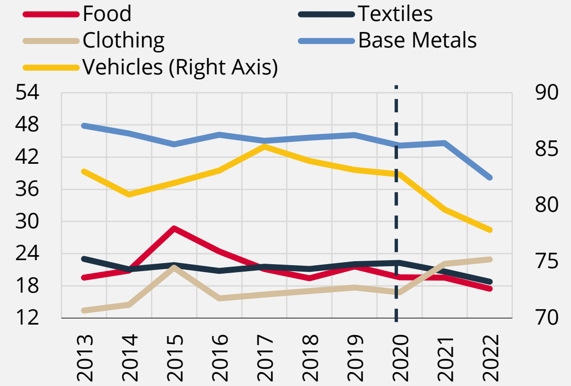
In order to monitor the course of the concentration in exports in Türkiye, the Herfindahl-Hirschman (HH) Index and the share of the top 100 exporting companies in total exports were calculated on an annual basis using the Ministry of Trade micro database containing company and foreign trade data (Chart 1). Accordingly, as of 2022, the share of the first 100 companies in total exports was approximately 29%. The HH index, which shows the degree of concentration or competition in the export market and is calculated by adding the squares of the corporate shares in total exports, was 22.8 as of 2022. On the other hand, both indicators reveal that the share of large exporting companies in total exports has decreased since 2018 and as new smaller firms enter the export market, exports base tend to broaden in this period.

Chart 1: Herfindahl-Hirschman (HH) Index and the Share of Top 100 Exporting Firms in Total Exports (%)



Source: CBRT, Ministry of Trade.

Chart 2: Share of Top 10 Firms' Total Exports of the Five Largest Export Sectors (%)



Source: CBRT, Ministry of Trade.

A sector-based analysis shows that the concentration in all of the top five exporting sectors according to 2013-2022 averages, apart from clothing, decreased in the post-pandemic period in particular, and exports spread more widely (Chart 2). However, the top five sectors showing the largest decrease in concentration compared to the pre-pandemic period, are base metals, coal-oil, electrical equipment, and recorded media and vehicles sectors (Table 1). As of 2022, the first five manufacturing industry sectors, in which the export concentration or the share of major exporters in the sector's exports are relatively low, were food, textiles, furniture, clothing and fabricated metal sectors (Table 2).

Table 1: Sectors with the Largest Decrease in Concentration in 2019-2022 Period (%)

Sector Name	The Share of Top 10 Firms		Change
	2019	2022	
Base Metals	46.1	38.2	-7.9
Coal-Oil	87.3	79.8	-7.5
Electrical Equipment	56.6	49.6	-7.0
Recorded Media	54.4	48.6	-5.8
Vehicles	83.2	77.8	-5.3
Machinery and Equipment	39.6	34.3	-5.2
Furniture	25.7	20.6	-5.0
Food	21.7	17.5	-4.2
Textiles	22.0	18.8	-3.2
Computer-Electronics	76.0	73.3	-2.7

Source: CBRT, Ministry of Trade.

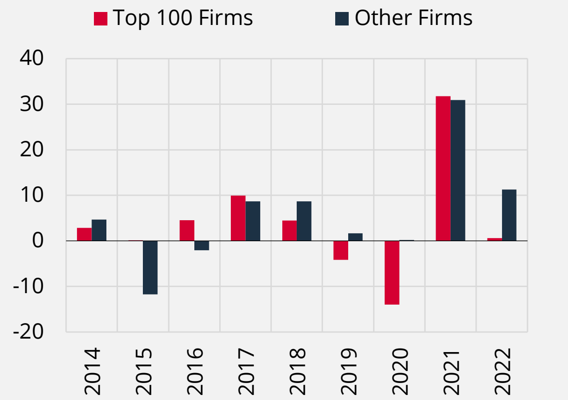
Table 2: Sectors with the Lowest Concentration as of 2022 (%)

Sector Name	The Share of Top 10 Firms
Food	17.5
Textiles	18.8
Furniture	20.6
Clothing	22.9
Fabricated Metal	24.0
Rubber-Plastic	30.7
Leather	32.9
Machinery and Equipment	34.3
Non-Metallic Minerals	34.4
Base Metals	38.2

Source: CBRT, Ministry of Trade.

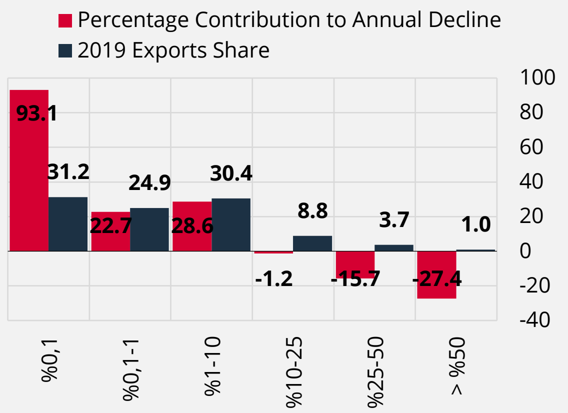
In order to show the relatively high sensitivity of large firms to external demand shocks, the annual growth of the total exports of the top 100 exporting firms in the 2014-2022 period was compared with that of those outside this group (Chart 3). In this context, in 2020, marked by significant shrinkage in foreign demand due to the global pandemic, the exports of large firms differed negatively from the exports of other firms. Additionally, consistent with the studies in the literature, it is noteworthy that the compensation of export losses after the foreign demand shock was relatively slow among large firms.

Chart 3: Exports of Top 100 Exporting Firms and Others (Annual % Change)



Source: CBRT, Ministry of Trade.

Chart 4: Percentage Contribution of Percentile Groups by Export Size to the 2019-2020 Total Export Decline and Their Shares in 2019 Exports



Source: CBRT, Ministry of Trade.

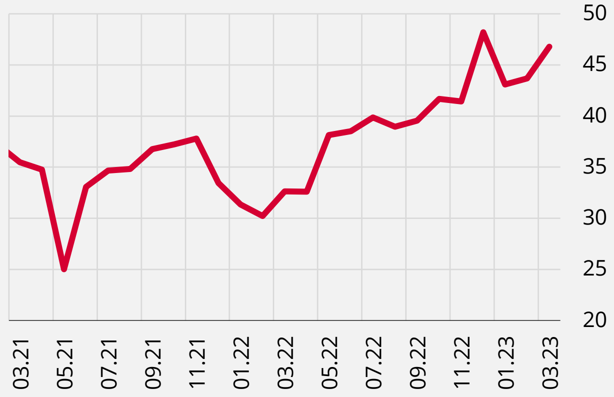
A more detailed analysis of the contributions to the contraction in exports in 2020 based on company groups reveals a similar picture. In this context, companies that exported in both years are divided into percentile groups according to their export sizes, and the percentage contribution of these groups to the total export change in 2019-2020 and their share in total exports in 2019 were compared (Chart 4). Assuming that all firms grow at the same rate, the percentage contribution of each group to the annual change in total exports is expected to be equal to its pre-shock share. However, although the firms that are in the 1 per thousand group according to their export size, realized approximately one-third of total exports excluding energy in 2019, approximately 93% of the contraction in total exports in 2020 was due to the decrease in the exports of these firms. In the same period, the percentage contributions to the annual change in exports of company groups, which were between 1‰ and 1%, and between 1% and 10% according to the export size were close to their export shares in 2019. On the other hand, although the export shares of small firms were relatively low, they contributed positively to annual export growth and limited the contraction.

The findings of the study are consistent with the findings of previous studies in the literature (Antràs, 2020; Di Giovanni et al., 2020), which stated that large firms are more sensitive to external shocks as they are more integrated into global value chains and production networks. In the face of lower demand for the goods of final consumer firms, to which large firms higher up in global value chains supply inputs, a decrease can be expected in the exports of supplier firms depending on the intensity of their forward linkages. In terms of backward linkages, demand-induced production or transportation problems in other firms, which are suppliers of inputs used by large firms in production, may similarly affect the exports of firms depending on their scope of integration into value chains.

In this context, it is considered that the continued broadening of exports in recent years will increase the resilience of the Turkish economy to foreign demand-induced shocks, and is also important for the sustainability of the acceleration in exports. Enhancing the access to finance of smaller firms plays an important role in supporting the production and export capacities of SMEs. Targeted loan policies make it possible to systematically improve this resilience. The targeted loan programs implemented by the CBRT also aim to facilitate SMEs' access to finance. With the steps taken in this direction, while the number of rediscount credit borrower companies was 3,499 at the end of 2021, this number reached 6,650 as of April 2023, and the share of SMEs in these companies increased from 58% to 81.7% in the same period. In line with this development, the share of SMEs in the amount of loans extended also increased, reaching 21.7% from 6.6%.

Similarly, advance loans against investment commitment also prioritize SMEs, as they aim to support highly efficient investments that will reduce imports and boost exports, reduce both external dependency and the current account deficit problem, and support sustainable growth. In this framework, SMEs accounted for 60% of the firms that used these loans in 2022, while this ratio reached 68% as of April 2023. In the same period, the SME share in terms of loan amount increased from 21% to 24%. On the other hand, the targeted approach in the CBRT’s rediscount credits and advance loans against investment commitment finds its reflections in TL corporate loans offered by the banking sector. Thanks to the opportunities provided by the targeted loan practices, the share of SMEs in total TL commercial loans, which was around 33% in December 2021, edged up to 50% as of March 2023 (Chart 5). While the aforementioned developments indicate broader access to finance in the recent period, it is considered that the CBRT's targeted loan programs will continue to contribute to the resilience of the Turkish economy to external demand shocks by supporting a broad-based access to finance, and hence, the exports base.

Chart 5: Share of SMEs in Total TL Commercial Loans (Flow, %)



Source: CBRT.

References

Aldan, A., Kurtaran, E. S., & Yazici, D. (2023). The Effect of SMEs on Export Dynamics, Research Notes in Economics No. 23/02, Research and Monetary Policy Department, Central Bank of the Republic of Türkiye.

Antràs, P. (2020). Conceptual aspects of global value chains, Technical report, World Bank Policy Research Working Paper No. 9114.

Bricongne J. C., Carluccio J., Fontagne L., Gaulier G. and Stumpner S. (2022). From Macro to Micro: Large Exporters Coping with Common Shocks, Bank of France Working Paper No. 881.

Di Giovanni, J., Levchenko, A. A. and Méjean, I. (2020). Foreign shocks as granular fluctuations, Technical report, National Bureau of Economic Research Working Paper No. 28123.

Gabaix, X. (2011). The granular origins of aggregate fluctuations, Econometrica, 79(3), 733-772.

Wagner, J. (2013). The Granular Nature of the Great Export Collapse in German Manufacturing Industries, 2008/2009. Economics, 7(1), 1-21.