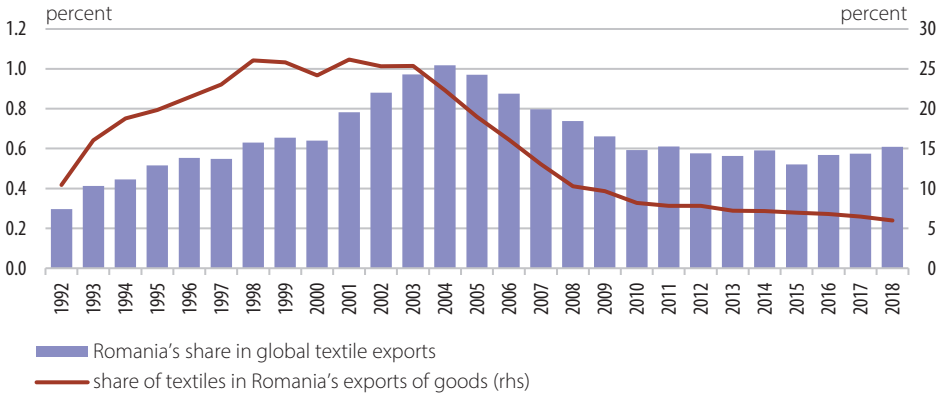
Box 5. Long-term growth drivers in the textile industry in Romania

The textile industry[1], which has a well-established tradition in Romania, thrived in the second part of the 1990s and the first part of the 2000s, but afterwards it entered a downtrend compared to both the same industry in the other countries and other economic sectors in Romania. According to World Bank data, Romania's share in global textile exports increased from around 0.3 percent in 1992 to around 1 percent in 2004, subsequently declining in 2005-2010 to approximately 0.6 percent in 2018 (Chart A).



Note: The aggregate referred to as "textile industry" comprises: manufacture of textiles, manufacture of wearing apparel and manufacture of leather and related products.

Chart A
Share of textile industry exports

Source: WITS (World Bank), NBR calculations

Behind the decline in the domestic textile industry stood a number of factors among which the lifting of restrictions on export quotas following the phase-out of the Multi-Fibre Arrangement (MFA) and WTO Agreement on Textiles and Clothing (ATC)[2] quota systems, with global purchasers becoming free to source apparel in any amount from any country[3]. Thus, amid, *inter alia*, the structural changes in Romania's economy, the share of textiles in Romania's exports of goods rose significantly in 1992-1998; afterwards it floated around 25 percent and then plunged to about 6 percent in 2018.

The economic shock caused by the COVID-19 pandemic impacted significantly Romania's textile industry, the output declining by 35 percent year on year in 2020 Q2, given the partial overlapping with the state of emergency[4]; the textile industry thus underwent one of the largest contractions across manufacturing (Chart B). Therefore, in order to understand these developments and long-to-medium term prospects, it is necessary to perform a structural analysis on the textile industry

1 In this Box, unless separately mentioned, manufacture of textiles, manufacture of wearing apparel, and manufacture of leather and related products (corresponding to NACE Rev. 2 divisions 13, 14, and 15, respectively) will be analysed altogether as a single industry, i.e. the textile industry.

2 The ATC was in place between 1995 and 2005 and provided for a transitional safeguard mechanism to be applied after the termination of the MFA quota system in 1994.

3 This trade liberalisation wave gave the upper hand to large producers based in East Asia, while also leading to the development of strong intermediaries (Staritz, 2012). Consequently, Romania's global market share decreased (Frederick and Staritz, 2012).

4 In 2020 Q2, the industrial output dropped by approximately 27 percent in annual terms.

over the last two decades. This Box refers to the domestic and international environment in which these developments took place and provides an empirical analysis of the causes underlying the relative decline in this industry.

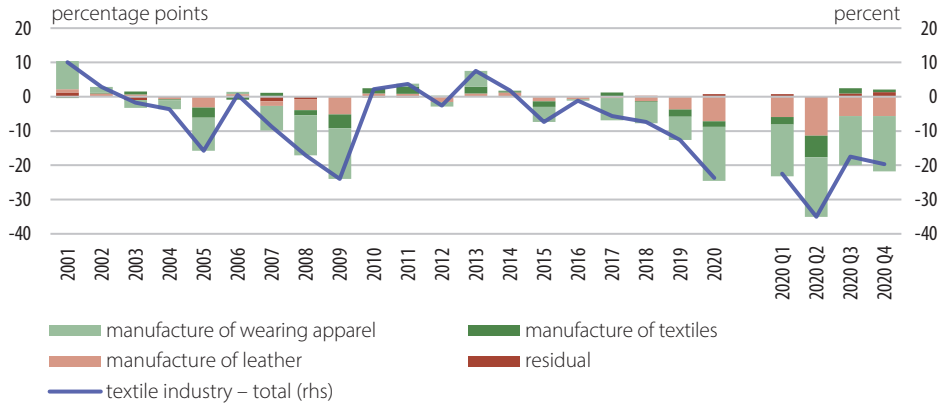


Chart B
Annual growth rate of output in the textile industry

Note: The aggregate referred to as "textile industry" comprises: manufacture of textiles, manufacture of wearing apparel and manufacture of leather and related products.

Source: NIS, NBR calculations

The textile industry is one of the most globalised industries in the world, exhibiting particular features when compared to other sectors: relatively low initial investment, easy transfer of technologies and high labour intensity. Thus, according to literature, the development of the textile industry is a first step towards creating an export-oriented industrial sector (the report by OECD, WTO and IDE-JETRO, 2013; Staritz, 2012). Moreover, the textile industry offered firms the opportunity to establish themselves in global value chains and subsequently upgrade to higher value-added activities. Shifting towards higher value-added activities depends on firms' capacity to master services which are integral to the efficient functioning of the value chain, for example transport and logistics, design, branding, advertising and retailing (OECD, WTO and IDE-JETRO, 2013).

Starting with the 2000s, significant changes were detected in the textile industry worldwide, driven by (according to Staritz, 2012) the dynamics of global value chains, the changes in corporate strategies after the phase-out of the MFA and ATC quota systems in 1994 and 2005, respectively, and the growing importance of markets in large developing countries and regional markets (accelerated by the international economic crisis and the declining global demand for apparel exports, especially in large-income countries).

The literature captures the competitive nature of the textile industry at international level, which can generate stronger pressures (for instance, keeping costs at a low level), as well as unusually high volatility in this sector. The issue of competitive pressures on a liberalised market is a highly important one, including for those countries generally deemed to have a favourable position in the textile industry[5]. According to Staritz (2012), competitive pressures are often passed on to employees, with implications for wages, labour conditions and standards, which

[5] See Prasad and Sonali (2005) and Asuyama *et al.* (2010) for a discussion on India and Cambodia in term of competitiveness.

somewhat reduces the favourable impact of the textile industry on economic progress. A further challenge is that many low-income countries are integrated into apparel global value chains (GVCs) through FDI, which facilitates access to merchandising and sourcing networks but at the same time hinders upgrading – given the location of higher value functions and decision-making power at head offices abroad. In this context, government policies in host countries focused on investment and particularly FDI attraction, and not necessarily on furthering upgrading of employees' skills or the linkages with local economy (Staritz, 2012).

Plank *et al.* (2012) review the trends and challenges in the fast fashion segment, which relies on a business model seeking quick response to fashion changes and consumers' demands , high production flexibility, low costs and high quality; the paper presents case studies on Morocco and Romania. Although firms headquartered in EU-15 played a key role in ensuring demand for such products and, implicitly, employment with a favourable impact on economic progress, this business strategy had mixed results as concerns the quality of jobs[6]. In particular, the short production and delivery cycles and hardly predictable orders have negative implications in terms of flexible employment relations, unrealistic production targets, excess overtime and high labour intensity. Plank and Staritz (2014) note that Romania's integration into Western European apparel networks led to a disintegration of the domestic textile and apparel complex, which came to play a part in assembly manufacturing only. The sector saw heterogeneous developments, with often non-linear and uneven advances and drawbacks amid the mainly survival-oriented strategies implemented by firms, at odds with the idea of progress often referred to by literature.

Empirically, the estimates of the production function using microeconomic data at firm level[7] confirmed for Romania too the conclusions of literature, emphasising the substantial contribution of labour to gross value added (GVA, between 77-83 percent depending on the textile sub-sector under consideration)[8], while those of capital and total factor productivity (with the latter estimated as a residual) ran low (Table A). A similar methodological approach was used to estimate separately the production function for exporting firms and non-exporting firms in the textile industry[9]. The outcomes indicate that the contribution of labour to GVA is significantly lower for exporting firms than for non-exporting firms, with the former reporting instead a larger contribution from total factor productivity, which is indicative of their benefiting from more investments in technologies and innovation. Nevertheless, even for exporting firms, labour contribution continues to prevail.

6 Plank *et al.* (2012) mention that literature often fails to fully consider social outcomes alongside economic outcomes; thus, in authors' view, although the GVC expansion has been an important source of employment in many developing and transition countries, the improvement in social standards and working conditions was limited, including for the permanent labour force.

7 The method used for estimations was that described by Levinsohn and Petrin (2003), with corrections for endogeneity. The database used includes annual balance sheet information on the universe of firms with majority private capital in the economy during 2012-2019.

8 During 2012-2019, the compensation of employees accounted for 63 percent (according to the national accounts data) of the gross value added of the textile industry (including the three sub-sectors), following an upward trend to reach 70 percent in 2019.

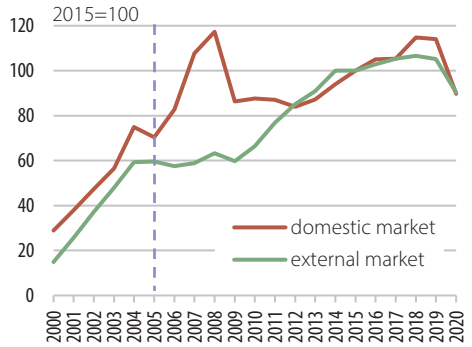
9 Non-exporting firms may be in many cases sub-contractors of exporting firms (i.e. indirect exporters), with the latter acting as direct contractors of international brands.

	Textiles	Apparel	Leather	Exporting firms	Non-exporting firms
	GVS	GVS	GVS	GVS	GVS
Labour	0.769***	0.799***	0.833***	0.572***	0.804***
	(38.4)	(71.28)	(52.23)	(27.24)	(93.71)
Capital	0.142***	0.139***	0.163***	0.136***	0.142***
	(6.23)	(13.61)	(7.23)	(6.00)	(13,63)
N	6,689	20,441	7,278	8,511	25,897

Z-test values are shown in parentheses, * p<0.05, ** p<0.01, *** p<0.001
Note: The production function is Cobb-Douglas. Each coefficient shows the contribution of the respective production factor to the production of gross value added (the dependent variable).
Source: Ministry of Finance, NBR estimates, data for the 2012-2019 period

Table A
Outcomes of estimations of the production functions

The impact exerted by the cessation as of 2005 of the protectionist measures in the ATC – which had allowed advanced countries to impose import quotas on developing countries in Eastern and South-Eastern Asia – can be seen in Chart C. The Chart shows the dynamics of the textile industry turnover on the external and domestic market, respectively. Thus, starting with 2005, export turnover saw a modest evolution under the impact of the new international trade context, while the output for the domestic market increased significantly until the global economic crisis, which affected Romania as of end-2008. Subsequent to this crisis, the two markets recorded again similar growth rates of the turnover. However, the sector reported a significantly slower rate of change overall starting with 2012 compared, for instance, to the period from 2000 to 2004.



Note: The aggregate referred to as "textile industry" comprises: manufacture of textiles, manufacture of wearing apparel and manufacture of leather and related products.

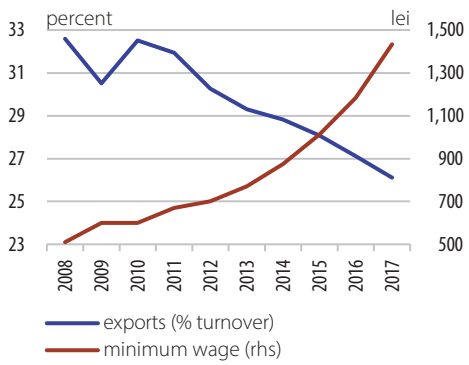
Source: Eurostat, NBR calculations

Chart C
Textile industry turnover on the domestic and external market

In order to explain the developments after 2005 (when the quota systems were removed), an analysis was made of the drivers of exports' share in the textile industry turnover between 2008 and 2017). Since it is a labour-intensive sector[10], a notable impact could be exerted by labour costs and the sizeable successive hikes in the minimum wage[11]. Chart D captures the evolution of exports' share in the textile industry turnover and that of the gross minimum wage between 2008 and 2017. It is to be noted that, once with the increase in the minimum wage, the exports' share in the turnover of companies in the textile industry saw a visible drop, which was temporarily paused by the global economic crisis in 2008.

10 A significant feature even for exporting firms (as previously shown).

11 In 2019, in the case of manufacture of wearing apparel - which hires over 50 percent of the employees in the textile industry – the monthly gross minimum wage amounted to lei 2,829, this sub-sector posting therefore the lowest average gross wage across manufacturing (NACE Rev 2, two-digit level). Manufacture of textiles (accounting for around 1/5 of the employees in the textile industry) and manufacture of leather and related products etc. (taking roughly 1/4 of the employees in the textile industry) reported average gross wages of lei 3,335 and lei 3,013 respectively in 2019. Gross minimum wage in 2019 stood at lei 2,080.



Note: The aggregate referred to as "textile industry" comprises: manufacture of textiles, manufacture of wearing apparel and manufacture of leather and related products.

Source: NIS, NBR calculations

Chart D
Exports' share in the turnover of exporting companies in the textile industry and developments in the minimum wage

For a more in-depth analysis of the relationship between competitiveness and labour costs in the textile industry, a panel model was estimated to explain the developments in exports' share in the sector turnover during 2008-2017[12] in terms of production cost dynamics. Table B shows a summary of results. These indicate that, in the case of exporting firms, an increase by lei 100 in the gross minimum wage is correlated with a decrease by about 1.1 percentage points in exports' share in turnover. Firms with foreign capital hold, on average, a larger share of exports (by approximately 7 percentage points) in the sector turnover than firms with domestic capital. Also relevant are the hikes in costs of raw materials, but their (negative) impact on exports is a lower one. Mention should be also made that the Herfindahl-Hirschman concentration index (HHI)[13], calculated for the number of employees (HHI_empl), is not significant in explaining the share of exports in the sector turnover. The lack of statistical significance may be put down to the lack of variability of HHI, the latter running low throughout the period under review[14].

	EX (% turnover)	EX (% turnover)
Minimum wage (000)	-10.93***	-10,74***
	(-7.67)	(-7.41)
Costs of raw materials (% turnover)		-0.47***
		(-31.22)
Debt (% turnover)		-0.09***
		(-6.16)
Foreign capital (=1)		6.66***
		(11.74)
HHI_empl		400.74
		(0.92)

Z-test values are shown in parentheses, * p<0.05, ** p<0.01, *** p<0.001

Note: The aggregate referred to as "textile industry" comprises: manufacture of textiles, manufacture of wearing apparel and manufacture of leather and related products. All the observations are weighted by the number of employees of the firm, while standard errors are robust. The model contains fixed time and NACE Rev 2, two-digit level effects, while controlling for the county where the firm is headquartered. The dependent variable is the exports' share in turnover, EX (% turnover). The "minimum wage" variable refers to the gross minimum wage across the economy, expressed as thousands of lei; "costs of raw materials" are costs of raw materials expressed as a share in turnover; "debt" represents a firm's total debt to banks and NBFIs, expressed as a share in turnover; "foreign capital" is a binary variable (1=foreign capital, 0=domestic capital); HHI is the Herfindahl-Hirschman concentration index, calculated based on the number of employees. The sample considered exporting firms only.

Source: Ministry of Finance, NBR estimates

Table B
Results of estimations on cost competitiveness in the textile industry

12 A sub-sample of the period under review for which more detailed data were available.

13 HHI measures the degree of concentration/the level of competitiveness of a market/sector, in a range from 0 (extremely low concentration level/competitive market) and 1 (extremely high concentration level/monopolised market). In the present case, HHI is calculated based on the squared share of a firm's employee number in the total number of employees in the NACE Rev 2, two-digit level.

14 The values posted in 2008-2017 are below 0.1, which indicates an extremely low concentration in terms of the number of employees in the textile industry. However, this concentration level can be explained, *inter alia*, by the use of sub-contractors, a factor which is not empirically analysed in the present Box.

Thus, the estimates indicate that, in the textile industry in Romania, competitiveness is significantly correlated with the evolution of costs, mainly labour costs, in the context of a domestic market with low concentration, which is not prepared to adapt to higher production costs by adjusting the profit margin[15]. The prevalence of firms with a small market share, i.e. small- and medium-sized firms[16] in the textile industry, amid intensive use of labour and subdued wage earnings, as well as the existence of informal workers (Ajder *et al.*, 2018) renders the textile industry unattractive to potential employees[17].

To sum up, starting with 2005, the textile industry entered a downward trend in what concerns the production volume, number of employees and turnover. The relative decline was triggered by a significant episode of trade liberalisation, i.e. the phase-out of the import quota system in 2005, followed by a gradual deterioration of competitiveness amid higher labour costs and costs of raw materials, as firms in the textile industry were not prepared to adapt to sustained shocks. The small size of Romanian firms, the fierce competition across this sector, the strong dependence on (cheap) labour and implicitly the lack of economies of scale allowing for a drop in costs contributed to the sector's modest performance. Although this Box attempts to provide a comprehensive description of trends in the textile industry, it does not make an empirical analysis of factors that could each be subjected to independent analysis, such as the integration in global value chains or the comparative advantage of firms in Romania relative to manufacturers in emerging economies.

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15 Box 1 entitled "Price-cost margins in the real sector" (in the August 2018 *Inflation Report*) deals, *inter alia*, with the association between price-cost margins and concentration (the competition level) on a given market. It also presents the limitations of using the Herfindahl-Hirschman index.

16 The likelihood of employees in small- and medium-sized firms to be represented in trade unions is very low (International Labour Office, 1997).

17 There are many press releases in this respect: Economica.net (2014), at: https://www.economica.net/tot-mai-multi-angajati-din-textile-abandoneaza-munca-multa--pe-bani-putini--oricat-de-disperati-ar-fi_84262.html or Economica.net (2017), at: https://www.economica.net/cele-mai-multe-locuri-de-munca-vacante-astazi-in-romania-sunt-pentru-muncitori-necalificati-in-fabrici-de-confectii_134428.html

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