

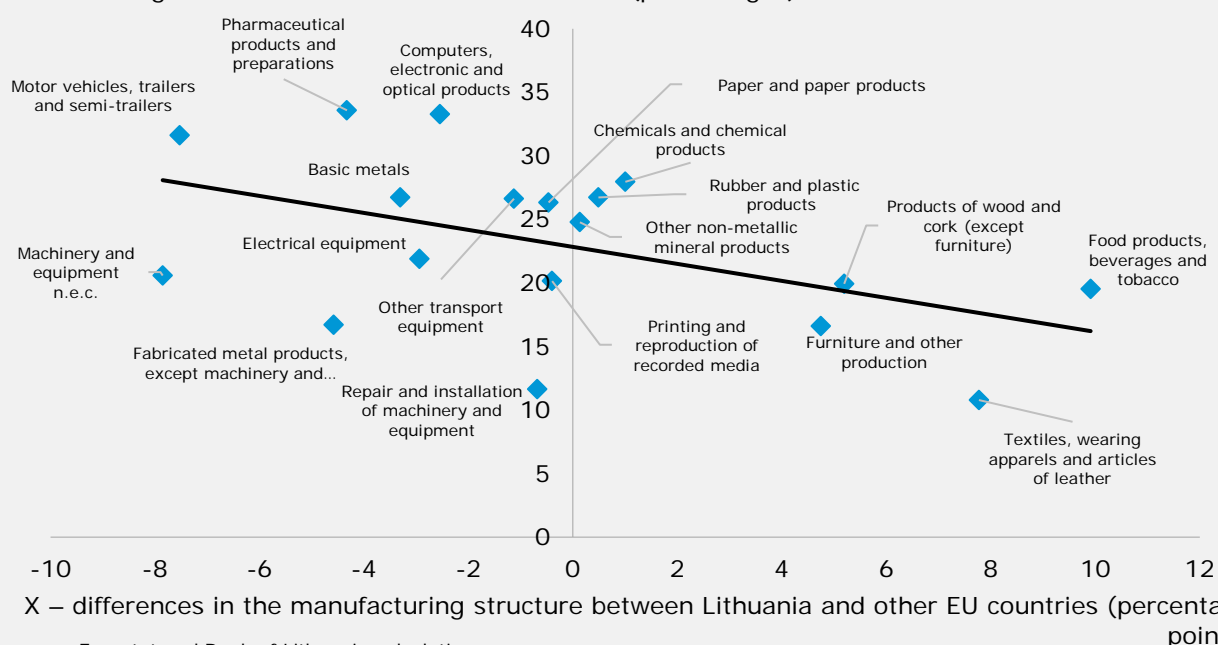
## BOX 1. MANUFACTURING STRUCTURE'S IMPACT ON INVESTMENT<sup>6</sup>

In 2003–2017, the investment-to-value added ratio in Lithuania was lower than the EU average, although quite close to its level. Despite the fact that investment intensity of most economic activities in Lithuania is similar to the corresponding EU indicators, it was substantially lower in the country's several major economic activities. One of them is manufacturing. Investment expenditures of this activity in the EU Member States amounted, on average, to 22.7% of value added, while in Lithuania this indicator stood at only 15.7%. Such a lag raises some questions, as from the perspective of economic theory, developing countries need to invest more in order to catch up with more advanced economies. Very often it was related to the factors from the supply side, e.g. unfavourable credit conditions or lack of motivation to invest on the back of low labour costs. However, a part of the answer to this question may lie in Lithuania's manufacturing structure.

### Lithuania's manufacturing sector is more oriented towards manufacturing activities with lower investment intensity.

Chart A. Relation between EU Member States<sup>7</sup> investment intensity of manufacturing activities and differences in the manufacturing structure between Lithuania and other EU Member States (at current prices)

Y – the average EU investment-to-value added ratio (percentages)



Sources: Eurostat and Bank of Lithuania calculations.

**One of the factors that could partly explain a lower investment intensity level in manufacturing, compared to the EU, is Lithuania's specialisation in the manufacturing of products that are less capital-intensive and receptive to investment.** Despite the fact that the investment data of the Lithuanian manufacturing activities is not publicly available, when evaluating indicators of the EU Member States<sup>7</sup>, differences in investment intensity can be observed across manufacturing activities. In general, investment intensity in engineering, chemical and pharmaceutical industries is higher than in textile, food, wood and furniture industries. This is important, as in fact the latter industries create a larger share of value added in the Lithuanian manufacturing sector than the EU average (see Chart A). In Lithuania, the value added generated by the manufacturing of food, tobacco and

<sup>6</sup> For more information on the impact of Lithuania's economic structure on investment performance, see the article entitled "[A Picture of Investment in Lithuania](#)", Bank of Lithuania, *Occasional Paper Series*, 2021, No 35.

<sup>7</sup> Due to limited data, indicator of the EU Member States in the box is comprised by the average of Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Greece, the United Kingdom, Latvia, Portugal, Romania, Slovakia, Finland, Sweden and Hungary.

beverages is higher by almost 10 percentage points compared to the EU average, the manufacturing of clothes and leather – by roughly 8 percentage points, while that of wood and cork products as well as furniture – by nearly 5 percentage points. The fact that the structure of the Lithuanian manufacturing activities is less investment-intensive is demonstrated by the counterfactual analysis where the structure of manufacturing activities in the EU Member States was replaced with the Lithuanian structure without changing the investment intensity level of separate manufacturing activities. The indicator resulting from this calculation was by 1.7 percentage points lower than the factual investment intensity of manufacturing in the EU Member States. This difference corresponds to almost a quarter of the lag between Lithuania's and EU Member States' manufacturing sectors' investment intensity levels and, when assessing the overall investment intensity of the country, to almost a fifth.

**The manufacturing structure is also one of the factors that could partly explain the manufacturing sector's weak investment in R&D** (see Chart B). The manufacturing sector of the EU Member States allocated 4.4% of its value added to investment in R&D, while in Lithuania this indicator amounted to only 0.5%. Despite the fact that, as in case of the total investment, the data on investment in R&D by the Lithuanian manufacturing activities is not publicly available, when evaluating the indicators of the EU Member States, differences in investment in R&D can be observed across manufacturing activities. At the EU level, the highest investment level in R&D is observed in the pharmaceutical and engineering industries, the medium level – in the chemical industries, while the lowest one – in other fields, such as the textile, food, wood and furniture industries. Differences between the levels of investment in R&D are also substantial: during the reference period, the ratio between investment in R&D and value added in the pharmaceutical and engineering industries ranged from 5.9% to 16.3%, whereas in the textile, food, wood and furniture industries it rarely surpassed a 2% margin. Chart B suggests that during the period under review Lithuania specialised in the manufacturing activities that are less investment intensive in terms of R&D, as during the reference period none of the Lithuanian manufacturing activities with the highest investment level in R&D created a share of value added larger than the EU average. The fact that Lithuania's manufacturing structure is less investment-intensive in regards to R&D is demonstrated by the counterfactual analysis conducted in the same way as in case of total investment. The indicator resulting from this calculation was by 1.6 percentage points lower than the factual manufacturing activities' investment intensity in R&D within the EU Member States. This difference corresponds to around 40% of the difference in the level of the manufacturing sector's investment in R&D between Lithuania and the average of the EU Member States.

**The analysis presented in this box demonstrates that the Lithuanian manufacturing sector is lagging behind the EU in terms of the investment level, partially due to the structure of the country's manufacturing sector.** This is particularly relevant in the context of investment in R&D, as it partly shows that the manufacturing sector is still lacking industries oriented towards this type of investment. Taking this into account, the institutions involved in the shaping of innovation policies would benefit from paying a closer attention to and allocating more funds not to the direct promotion of investment in R&D but rather to the creation of the needed physical and human capital<sup>8</sup>, which requires quality education, proper infrastructure for the implementation of R&D, a functioning national innovation framework as well as the private sector's ability and inclination towards innovation<sup>9</sup>.

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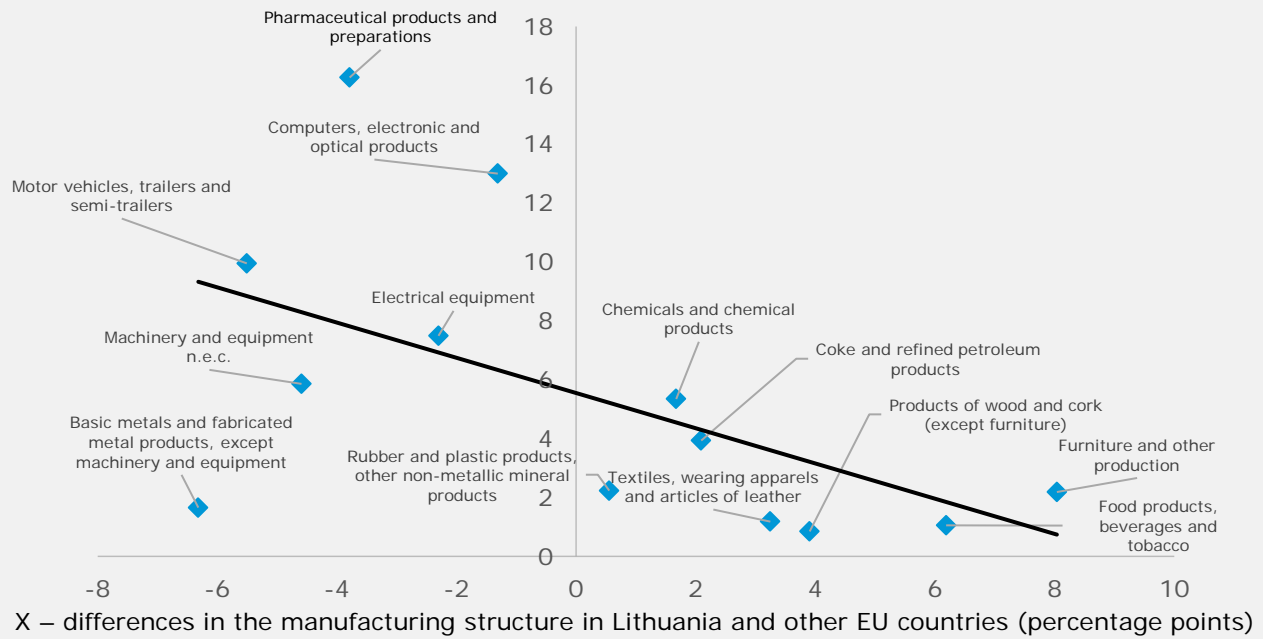
<sup>8</sup> Cirera, X. and Maloney, W. (2017), "[The Innovation Paradox: Developing-Country Capabilities and the Unrealized Promise of Technological Catch-Up](#)", World Bank.

<sup>9</sup> Goñi, E. and Maloney, W. F. (2014), "[Why Don't Poor Countries Do R&D?](#)", *Policy Research Working Paper*, No WPS 6811, World Bank.

**Industries that do not tend to invest in R&D create a higher value added in Lithuania's manufacturing sector**

Chart B. Relation between the level of EU Member States' manufacturing sectors' investment in R&D and differences in manufacturing structures in Lithuania and the EU Member States (at current prices)

Y – the average EU investment in R&D and value added ratio (percentages)



Sources: Eurostat and Bank of Lithuania calculations.