

## BOX 4

### COMPLEXITY OF LITHUANIAN GOODS EXPORTS<sup>24</sup>

**The structure and specialisation of exports are important as they can explain the differences of development levels between different countries.** In countries specialising in production and exports of more complex, technology-intensive and higher value-added goods the per-capita income levels and their growth are higher (e.g. Hausmann, Hwang, Rodrik 2007<sup>25</sup>, Hidalgo, Hausmann 2009<sup>26</sup>). More complex and higher quality products are usually related to greater labour productivity; therefore, in countries specialising in these products, the per-capita income levels (and, respectively, convergence) rise faster than in countries producing relatively simpler goods. Economic development is led by countries' ability to change their economic structure by both progressing towards more efficient economic activities (sectors) and companies in individual sectors, production of more complex new goods and by improving the quality of goods that are already being produced (Henn et al 2015<sup>27</sup>). The pace of such structural transformation while progressing from less efficient activities towards more effective ones indicates why some countries are able to converge faster than others (McMillan, Rodrik 2011<sup>28</sup>).

**In Lithuania, exports of low and medium complexity goods are predominant, whereas the share of exports of most complex goods has broadly remained unchanged over the recent years.**

**However, the share of least complex goods has been shrinking.** Chart A shows exports of Lithuanian-origin goods in 2008 and 2017 in terms of their complexity<sup>29</sup>. The horizontal axis represents product categories, whereas the vertical one represents their complexity. The size of the circles matches the share of exports of Lithuanian-origin goods. The chart only depicts those product categories where Lithuania has a revealed comparative advantage<sup>30</sup>. It shows that the share of exports of more complex exported goods (mostly machinery, equipment and vehicles) is relatively small, while the largest share of exports consists of food, furniture (articles of wood) and chemical products, the complexity of which is considered to be lower (although chemical products may be fairly complex). It should be noted that the structure of Lithuanian exports in 2017, compared to a decade ago, has broadly remained unchanged: the largest groups of exported products have not changed and distribution by complexity remained similar, yet diversification has been increasing. Therefore, progressing towards manufacturing of more complex goods is rather slow-paced. It is worth noting that even though diversification in Lithuania is comparatively high and it is classified as a country that should naturally move towards higher-complexity exports and industries (Freire 2017<sup>31</sup>), this is a long-term process. Moreover, growth of exports of medium-complexity rather than high-complexity technologies is the most robust in Lithuania's export structure.

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<sup>24</sup> For more information on the complexity of Lithuanian exports and their structural changes, see the Bank of Lithuania's publication "Convergence factors of Lithuania's economy and the importance of the labour market" to be published at the end of 2019.

<sup>25</sup> Hausmann R., Hwang J., Rodrik D. 2005: *What You Export Matters*. National Bureau of Economic Research, Working Paper No. 11905.

<sup>26</sup> Hausmann R., Hidalgo C. 2009: *The Building Blocks of Economic Complexity*. PNAS, Vol. 106, No. 26, 10570-10575.

<sup>27</sup> Henn C., Papageorgiou C., Spatafora N. 2015: *Export Quality in Advanced and Developing Economies: Evidence from a New Dataset*. WTO, Working Paper ERS-2015-02.

<sup>28</sup> McMillan M. S., Rodrik D. 2011: *Globalization, Structural Change and Productivity Growth*. NBER Working Paper No. 17143.

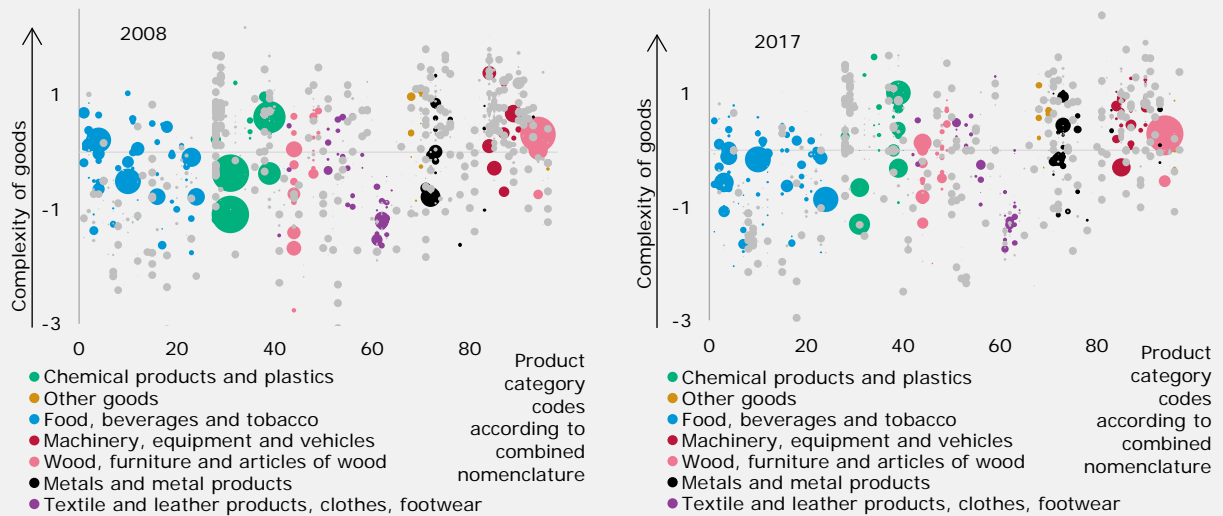
<sup>29</sup> For more details on this index, see <https://atlas.media.mit.edu/en>.

<sup>30</sup> A country has a revealed comparative advantage in a particular product if the ratio of exports of this product exceeds the total world trade that the product represents (based on Balassa's (1965) methodology). It reveals the country's manufacturing specialisation.

<sup>31</sup> Freire C. 2017: *Promoting Structural Transformation: Strategic Diversification vs. Laissez-faire Approach*. United Nations, DESA Working Paper No. 151.

**The structure and complexity of exported goods remained largely unchanged over the last decade: Lithuania specialises in medium-complexity product groups, yet diversification is gaining momentum.**

Chart A. Lithuanian exports\* classified by complexity\*\*



Sources: Statistics Lithuania, Atlas of Economic Complexity and Bank of Lithuania calculations.

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\* Of Lithuanian origin, excluding mineral products.

\*\* Grey colour marks product categories that are not exported and in which Lithuania does not have a revealed comparative advantage (it means that the ratio of exports of that product in the country does not exceed the ratio in total world trade).

**Even though growth of the complexity of Lithuanian exports is low, up until now it has put no significant limitations to convergence.** On the one hand, the complexity of exports is only one of many factors determining convergence as other important factors, including the quality of human capital and institutions, investment, and structural changes in the economy, play an important role as well. On the other hand, the complexity index does not fully include such aspects as changes in the quality of manufactured goods, improving labour productivity and efficiency in companies or the benefits of economy of scale. Lithuanian exports are quite well diversified and a significant amount of more complex goods is exported, even though their share in the whole structure of exports is still modest. It suggests that the country has the capacity and competence to produce more complex goods as well. Aiming for further income convergence, this potential has to be significantly increased.