

# LESS MATERIAL PROJECT<sup>1</sup>

## The Country Profile of Türkiye for Materials: Material Consumption and Intensity

by Sedat Alataş, 23 May 2023

Figure 1 compares the global trend in domestic material consumption, material footprint, and income with Türkiye. As can be observed, there has been an upward pattern in global material use over time, nearly doubling between 1990 and 2019 in terms of both domestic material consumption and material footprint. Türkiye individually verifies this global trend, albeit with a steeper pattern, showing a 279% growth in domestic material consumption and a 211% increase in material footprint during the same time period. Besides, as the global outcome grows higher than the two other material consumption indicators (compared to 1990), we confirm the relative decoupling of economic development from material consumption at the global level. However, this finding is only supported by the material footprint indicator (for the 1990-2019 period) in Türkiye as there exists a significant increase in domestic material consumption, particularly after 2017. There is no doubt that this outcome significantly differs depending on the time period considered. Besides, as an emerging economy, it would be a more expected result that Türkiye achieves a relative decoupling in terms of domestic material consumption rather than material footprint or in both. Therefore, we should approach this outcome with caution. In order to broaden our knowledge on this issue, further analysis or even empirical tests are required.<sup>2</sup>

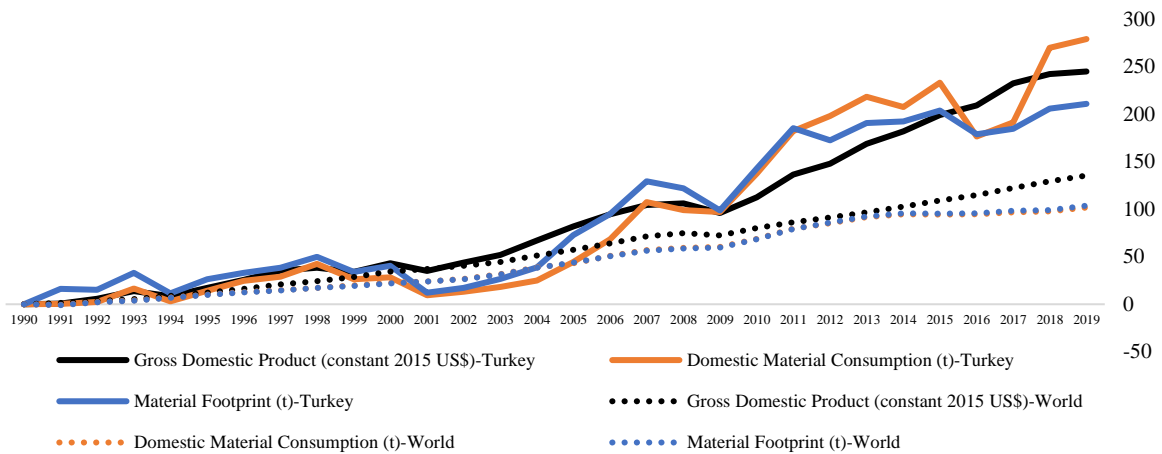
In 2019, 12.37 tonnes of materials have been consumed globally per person. With 22.09 tonnes, Türkiye uses more materials than the global average. The next five economies, which use more materials per person than Türkiye, are Sweden, China, Israel, the United States of America, and the United Arab Emirates. On other hand, Poland with 19.03, South Korea, Hungary, Russia, and Germany with around 17-15, the UK and Portugal with about 11 tonnes per capita use less materials than Türkiye [1].

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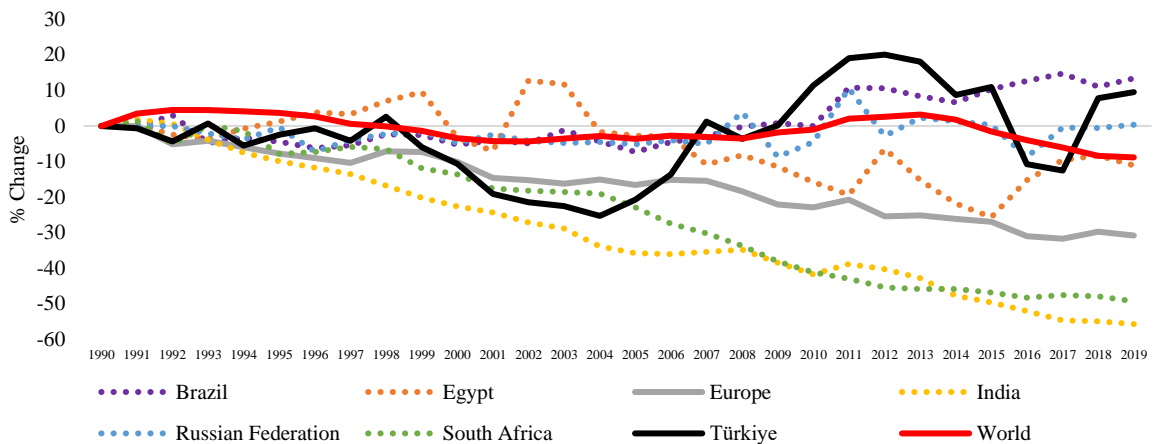
<sup>2</sup> This finding is based on a simple and straightforward calculation: if the percentage change of material footprint or domestic material consumption from 1990 to 2019 (growth formulation) is higher than in gross domestic product, it refers to the relative decoupling.

**Figure 1** Materials and Gross Domestic Product



Source: [1] and [2]

**Figure 2** Material intensity



Source: [1]

The worrying trend for materials in Türkiye is further supported by the material intensity indicator, which is measured by the ratio of domestic material consumption to gross domestic product (kg/USD). Figure 2 displays the material intensity performance for some selected countries from 1990 to 2019. As can be seen, the material intensity performance of Türkiye is highly fluctuating over the years. There has been a declining trend from 1999 to 2006, which suggests improved material efficiency. Yet, this favorable outcome is eroding after 2006 and material intensity is beginning to increase by 2019. Although on average Türkiye does better than some emerging economies, such as Russia, South Africa, Brazil, India, or Egypt (Türkiye's average material intensity is lower than that of these countries from 1990 to 2019), Türkiye

performs poorly, especially when compared to Europe and the long-term success of India and South Africa.

## References

- [1] United Nations Environment Programme International Resource Panel. (2022). Global Material Flows Database. <https://www.resourcepanel.org/global-material-flows-database>
- [2] The World Bank. (2023). The World Bank Development Indicators Database. <https://databank.worldbank.org/source/world-development-indicators>

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