

## Mixed Trends in the Correlation Between Energy Consumption and Economic Growth in European Union Member States

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### Abstract

Energy consumption efficiency will be of paramount importance in 2023 due to the first global energy crisis experienced worldwide. The central question of this paper is how energy consumption and economic growth have been related to each other and how they have interacted in time and space in the European Union. Correlation calculations show the relationship between the two indicators per Member State, and hierarchical cluster analysis is applied to the results. The analysis is based on data regarding the European Union Member States for the period of 2010-2019. The results show that there was no robust, strong correlation between the GDP and the energy consumption of the member countries. Another result shows that the reduction did not hurt economic growth in the Member States where energy consumption fell significantly. Finally, the study highlights the methodological shortcomings of studies on the correlation between energy consumption and economic growth.