

TECHNICAL ANNEX

Statistical correlations

Statistical correlations are computed between consumer energy prices and individual prices of industrial goods or services, the variables are expressed as annual growth rates over the period from January 2011 to December 2022.

Sectoral energy intensity

I use the input-output tables of 2019 in purchasers' prices to obtain sectoral energy intensity. The share of energy is computed as the sum of energy products to output, where energy is coke and refined petroleum products (CPA19), electricity, gas, water, steam and air conditioning (CPA_D), and output (P1). The classification as a "goods" or "services" is carried out according to the final product of the sector.

The intensity of energy use is relatively higher in manufacturing processes such as water supply, manufacture of furniture or non-metallic mineral products (glass, ceramic products, cement, etc.) (see Chart 5). In the service sectors, in turn, the intensity of energy use is relatively higher for air or water transport, entertainment and recreational activities, and sewerage and waste collection (see Chart 6).

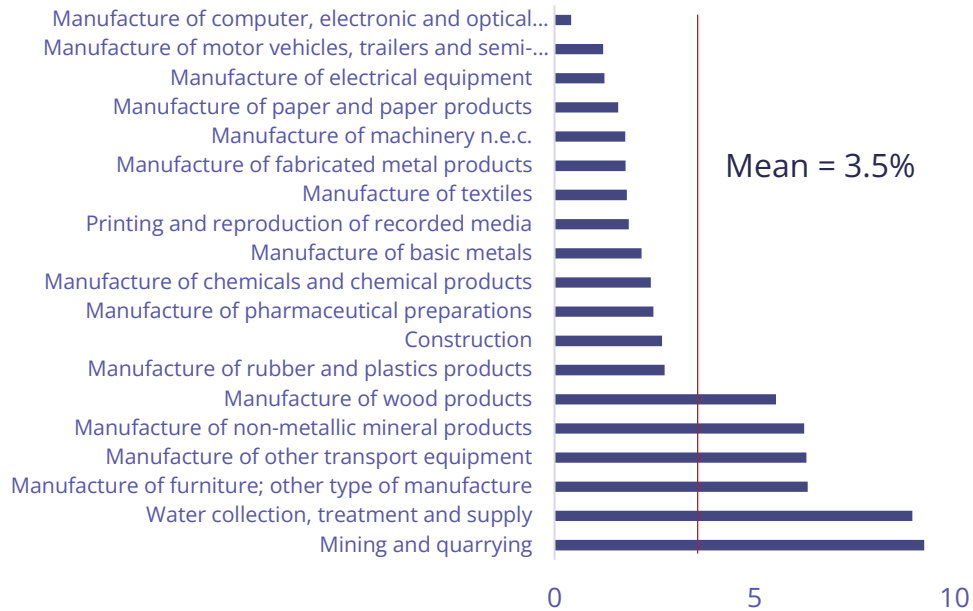
Input-output tables are based on the product classification by economic sectors (CPA 2.1), while consumer prices are based on the classification by household consumption expenditure (COICOP). Unfortunately, the two classifications differ, and it is not possible to match the respective consumer product for each sector, and, accordingly, it is not possible to determine the share of energy for each consumer product. I use only those sectors for which the consumer product can be matched. For example, consumer goods in "furniture and home furnishings" are not energy-sensitive according to the assessment of VAR models (in Table 1). However, the respective sector can be found for this consumption category – manufacture of furniture, which, according to the input-output tables, is relatively energy-intensive. Hence, consumer goods item "furniture and home furnishings" is considered as energy-sensitive.

Econometric relationships

Vector autoregression models (VAR) are used to obtain the impact of consumer energy prices on the prices of industrial goods and services. Bivariate VAR models are assessed for each pair of individual price of industrial goods and price of consumer energy. Trivariate VAR models are assessed for each individual price of services along with the price of consumer energy and wages. Service prices are assessed along with wages because it constitutes a significant share of costs in services. Variables are expressed as annual growth rates. The VAR models are assessed with monthly data, two lags, over the period from January 2005 to December 2022.

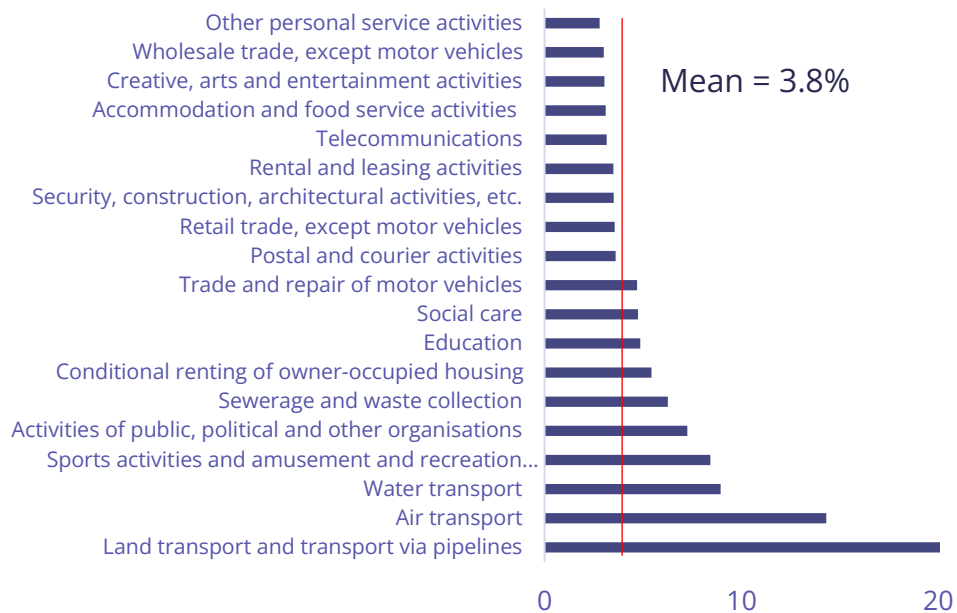
A consumer price item is considered as “energy-sensitive” if the VAR impulse response function of energy price shock to individual consumer price is a statistically significant after 12 months with 95% confidence interval. In some cases, a component is considered as "energy-sensitive" at a 68% confidence interval, marking it in Table 1.

Chart 5. **Share of energy in total output for sectors in manufacture of goods (%)**



Notes: Eurostat, author's calculations.

Chart 6. **Share of energy in total output for services sectors (%)**



Notes: Eurostat, author's calculations.