ODYSSEE-MURE

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Industry in North Macedonia – indicators and measures

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Industry in North Macedonia - introduction

- In the development of the overall Macedonian economy, industry has one of the most important places.

- The rapid development of industry is one of the main drivers of the entire economic development, of the change in socio-economic relations, the way of life of the population, the increased interest in technical progress, etc..

- State Statistical Office has been regularly calculating the industrial production index and other relevant metrics

- The presentation will cover some of the key highlights for the industry sector in North Macedonia, based on the data gathered for the Odysee database and MURE measures for industry part that are part of the database.

Industry in North Macedonia – key highlights

- Key Industrial Sectors:
  - ➢ Manufacturing *(largest sector)*
    - Automotive Components: Key players foreign direct investments in Free Economic Zones
    - Textiles and Apparel: Focused on EU exports.
  - ➢ Mining
    - Resources: Zinc, Lead, Copper, Marble, Limestone.
    - Major sites: Buchim Copper Mine, Sasa Lead-Zinc Mine.
  - ➢ Energy
    - Mix: Thermal, Hydropower, and growing Renewables (solar, wind).
  - ➢ Agri-Food Processing
    - Key exports: Wine, Dairy, Canned Vegetables.

Industry in North Macedonia – key highlights

Industrial Geography:

- Free Economic Zones (TIDZs): 15 zones (e.g., Skopje, Tetovo, Stip) with tax incentives.

Regional Specialization:

- Skopje: Automotive and heavy industry.
- East/Southeast: Mining and agri-processing.
- West: Textiles and light manufacturing.

SMEs Role:

- Over 90% of enterprises; key suppliers to export-driven industries.

Opportunities:

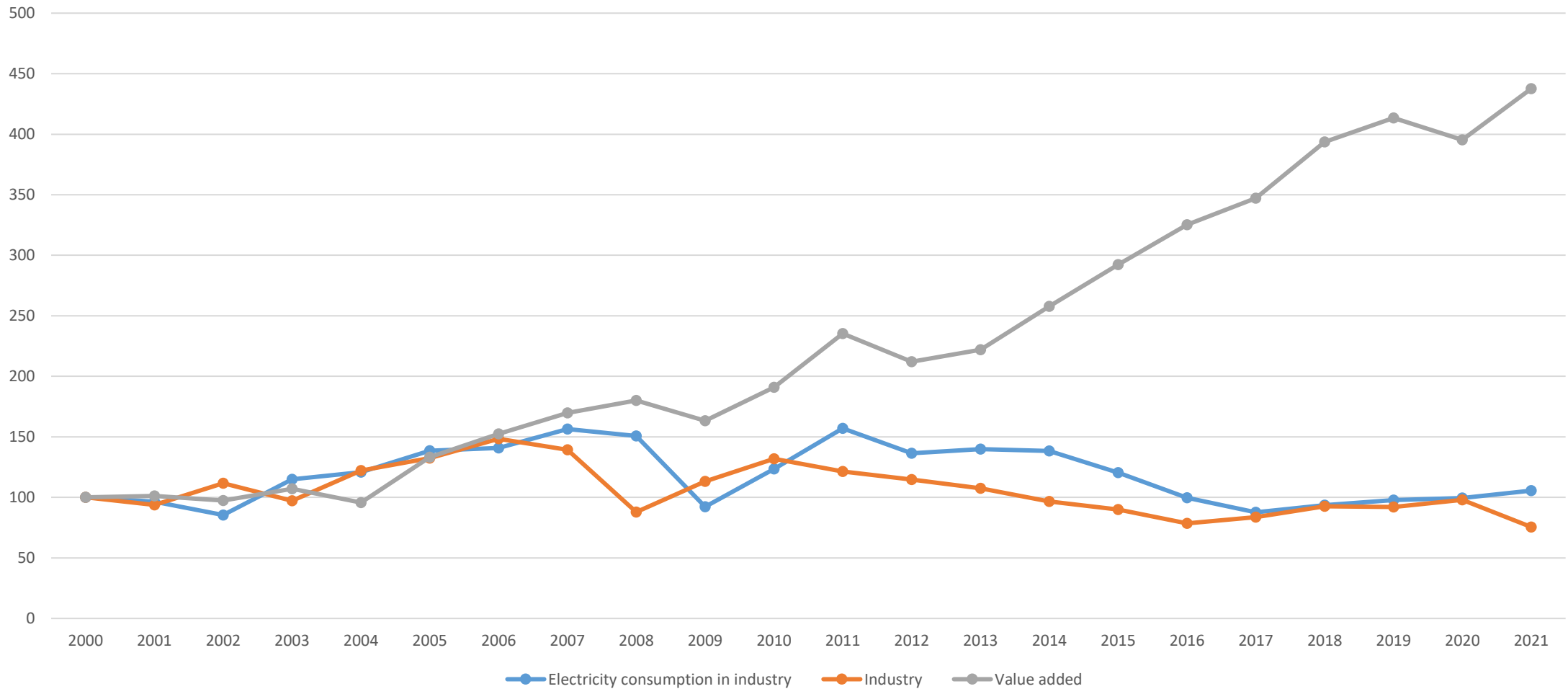
- Renewable Energy Expansion: Government targets for green transition create investment potential.
- Strategic Location: Positioned as a logistics hub in the Balkans, connecting Europe and Asia.

Challenges:

- Energy Dependence: Reliance on imported fossil fuels.
- Infrastructure Needs: Modernization required for transport and digital connectivity.

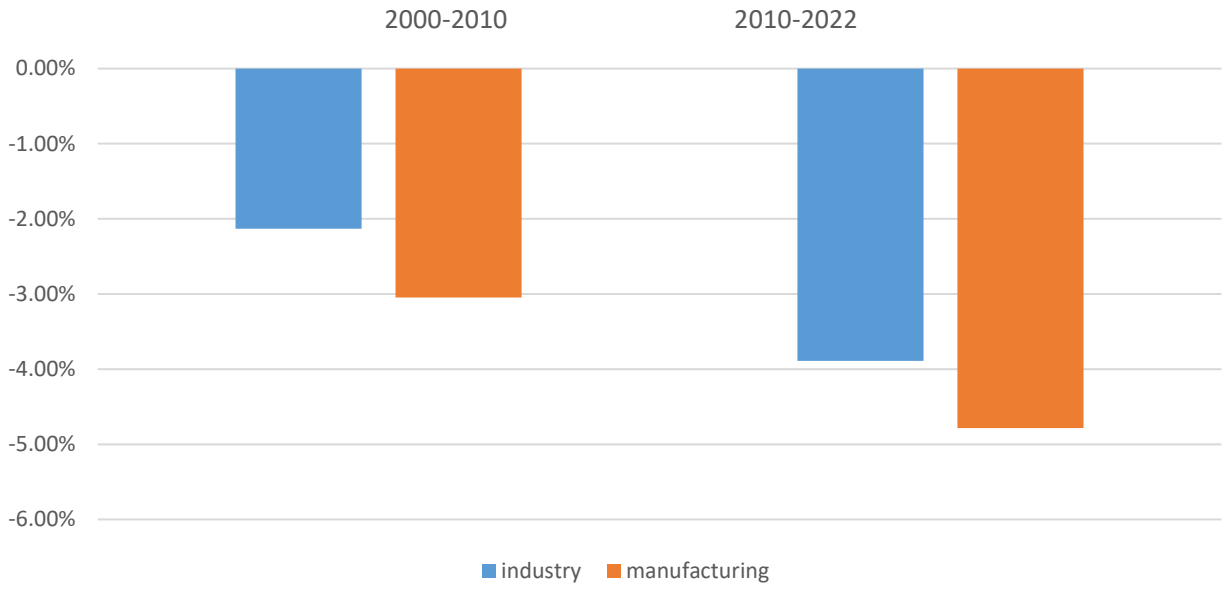
Trends in total energy consumption of industry/ manufacturing, value added (2000=100)

Divergence between the metrics , reflecting structural changes in industry and efficiency improvement



Trends in energy intensities in industry and manufacturing

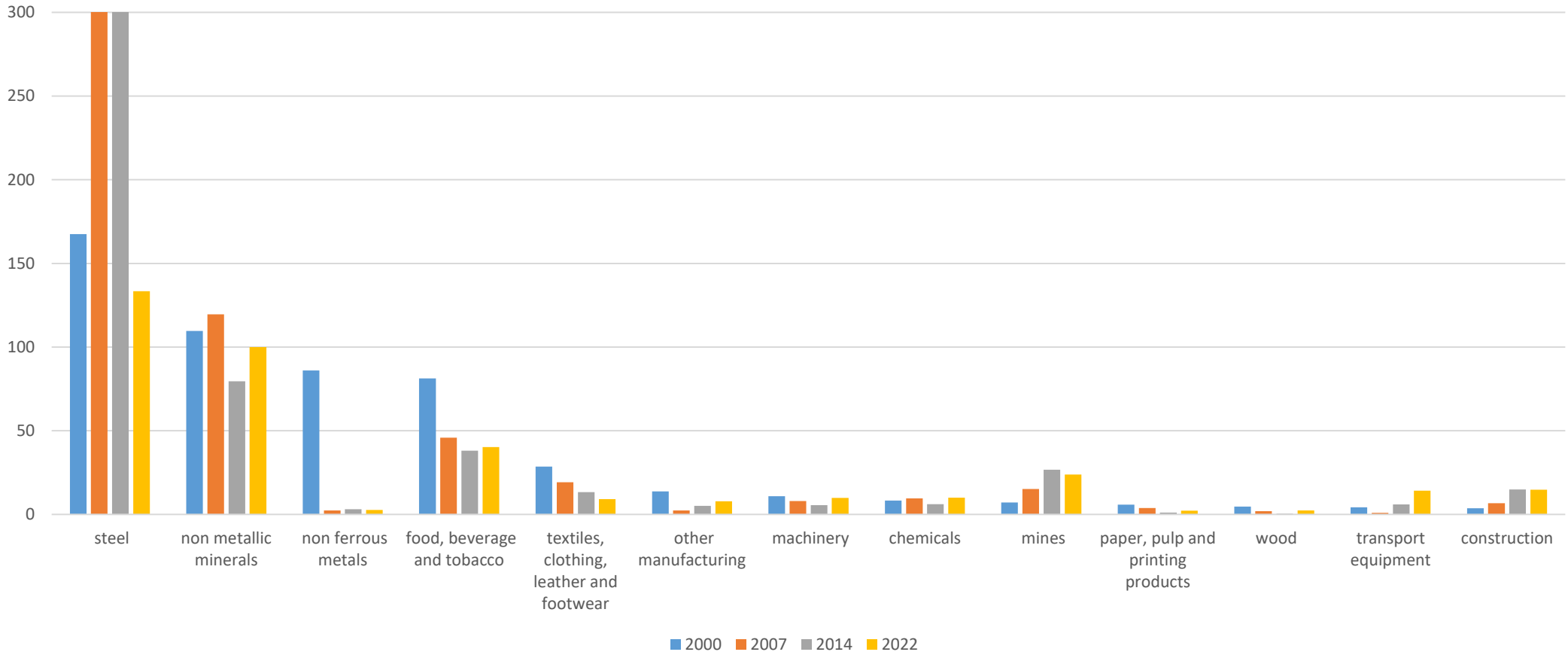
- Energy intensity in North Macedonia's industry and manufacturing sectors has shown a declining trend over recent years, reflecting efforts to improve efficiency.
- Despite this, the country's energy intensity remains higher than the EU average, although it is below the regional average
- Higher drop in manufacturing compared to the broader industry sector due to: transition and structural changes, intense competition from global markets, limited diversification



- Industry sector, with its reliance on energy production and mining, has been more stable, though it faces challenges related to energy transition and environmental policies

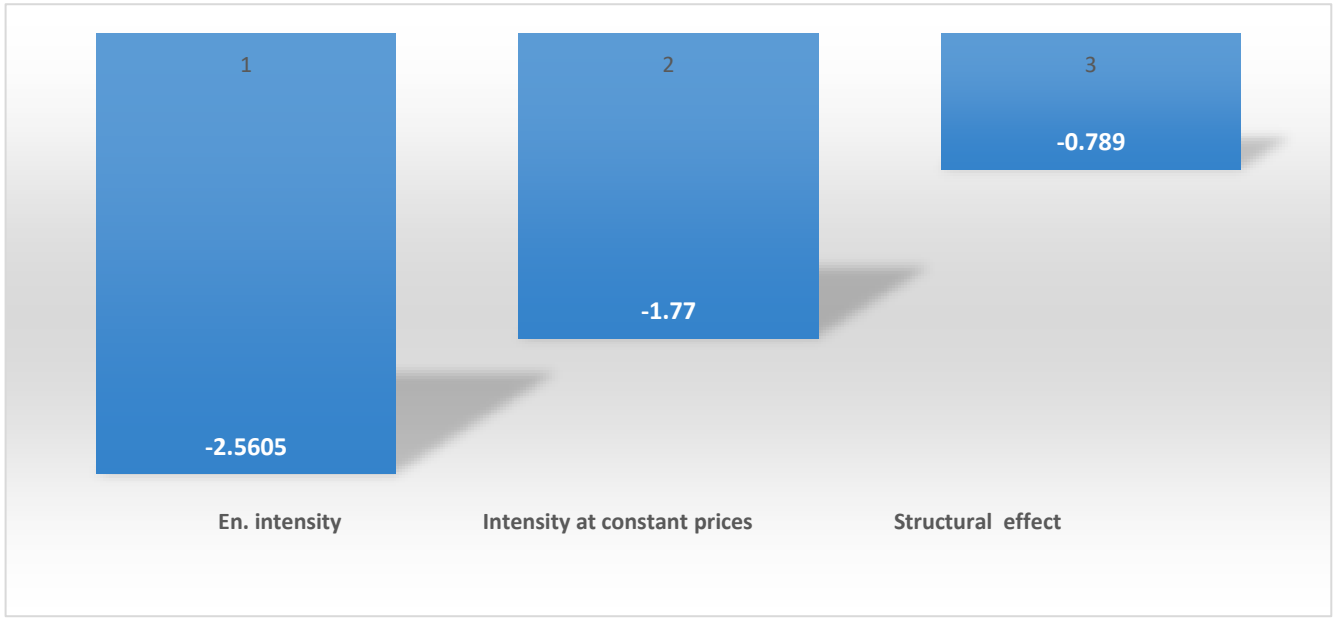
Consumption breakdown by branch in industry and manufacturing

- Presents energy consumption by branch in **Mtoe** for selected years 2000, 2007, 2014, 2022
- Steel - highest share around 50 % of the consumption

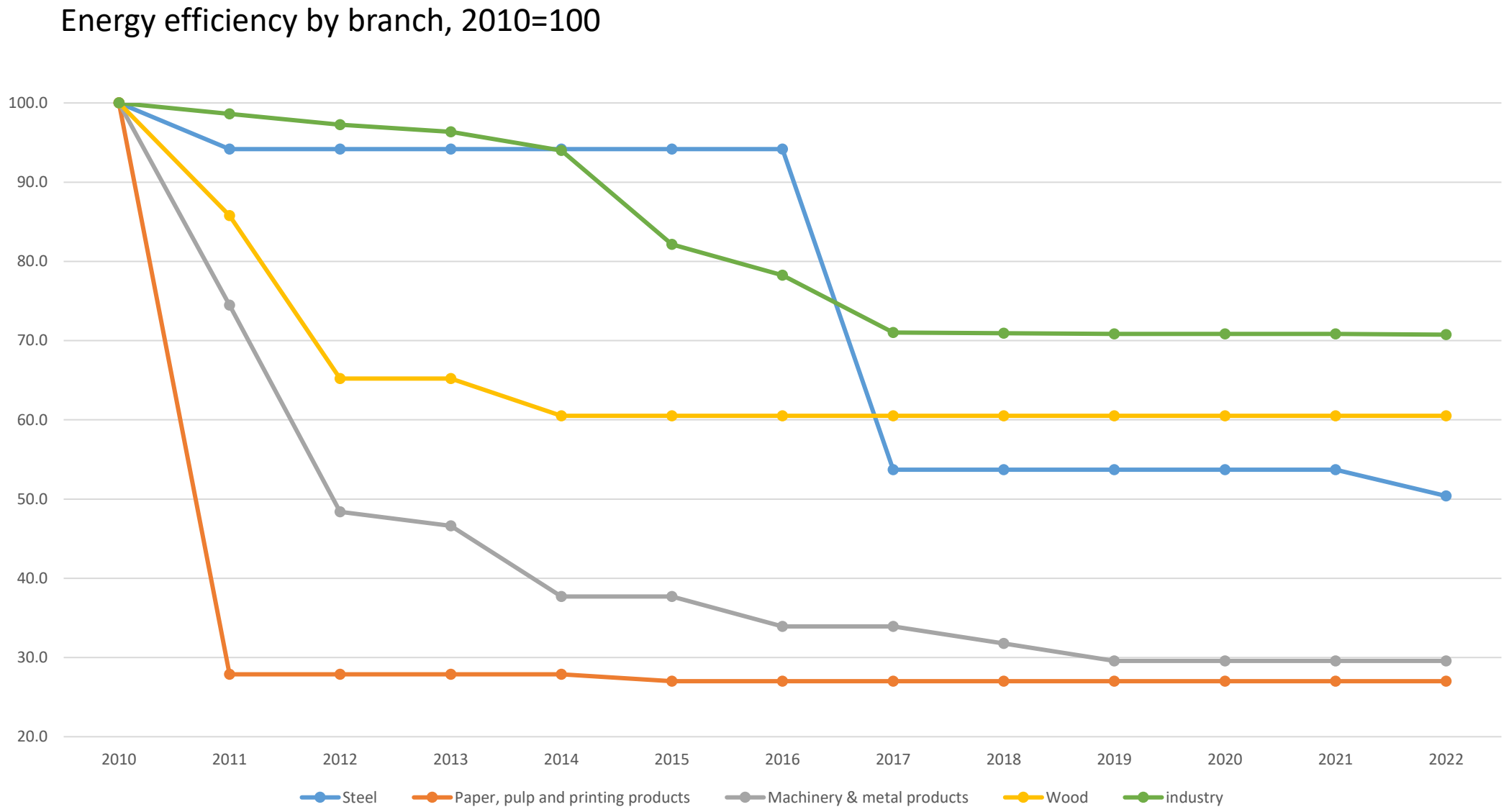


Impact of structural changes on industry intensity

- Some branches grow faster than others and, as a result, the share of each branch in the total value added of industry change over time - **structural changes in industry**
- If less energy intensive branches grow faster than energy intensive ones, this reduces the intensity of industry, which is not linked to energy efficiency
- In North Macedonia intensity of industry decreased by -2.56%/yr between 2010 and 2022
- At constant structure, it would have decreased by -1.77%/yr
- Structural changes towards less energy intensive branches contributed to decrease the energy intensity by 0,79%/yr, which explain ~30% of the reduction.

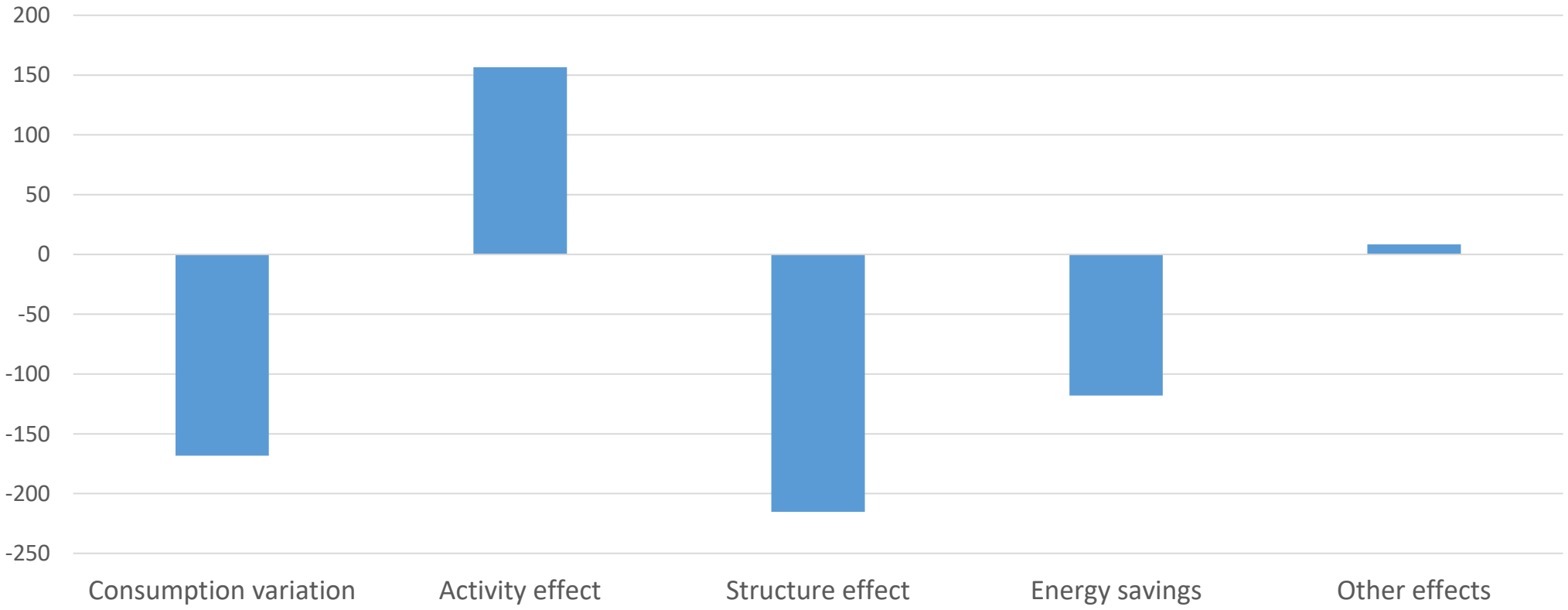


Trends in specific energy consumption and total ODEX



Decomposition of energy consumption variation in industry 2010-22

- Since 2010, the consumption of industry has decreased by 168 ktoe. This a result of various effects
- The growth in industrial activity contributed to increase consumption by 157 Mtoe;
- Energy savings more than offset most of this activity effect (-215 Mtoe).
- Structural effects towards less energy intensive branches also reduced consumption (-118 ktoe).



MURE measures for industry

- The National Energy and Climate Plan (NECP) outlines initiatives aimed at further reducing energy intensity.
- These include increasing the share of renewable energy in industrial processes and improving energy management systems.
- Three measures added in the data base:
  - Energy management in manufacturing industries
  - Introduction of efficient electric motors
  - Introduction of more advanced technologies

MURE measure: Energy management in manufacturing industries

- This measure considers the implementation of:
  - obligatory energy audits of large companies
  - the implementation of ISO 50001 standard
  - advanced measurement and introduction of new IT technologies
- Energy Efficiency Law provides articles that define energy efficiency and energy management in large enterprises (art. 15-16) translated in Rulebook on energy audits in large enterprises that fully transposes article 8 from EED.
- According to the Law, large enterprises are companies established in accordance with the Law on Commercial Companies which in each of the last two accounting years, i.e. in the first year of operation, have satisfied at least two of the three possible criteria
  - the average number of employees based on working hours exceeds 250 employees;
  - the annual income is over 10,000,000 euros in denar equivalent or
  - the average value (at the beginning and at the end of the accounting year) of the company's total assets is more than 11,000,000 euros in denar equivalent
- Improvement of the systems efficiency in manufacturing industries at an annual rate of 0.15%.
- In accordance with before mentioned criteria on which companies are classified, more than 20 companies are classified as large enterprises.

MURE Measure: Introduction of efficient motors and advanced technologies

- Introduction of efficient electric motors
  - Electric motors are responsible for a high share of the total electricity consumption in industries. This measure considers replacement of the obsolete motors currently in use, with new more efficient motors
  - Increase the competitiveness of the industrial products through the improvement of the efficiency in the production process and reducing the resources
  - According to the assumptions given in the NECP related to this measure, it is estimated that up till 2040 the share of efficient electric motors by 2040 will be 60%. Source of finance should come from private funds, donors through commercial EE loans.
- Introduction of more advanced technologies
  - Introduction of more advanced technologies in the industrial processes that will also enable use of more environmentally friendly fuels. Advanced industrial technologies present major opportunities for further reduction of the energy consumption and potentially lower costs as well as environmental benefits. In addition, they can help various industries to progress at a much faster rate

Thank you for your attention!

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