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KIEL MARINE SCIENCES



Universidad
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Energy Use Patterns in German Industry – Evidence from Micro Data

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The more energy intensive firm?

Finishing of Textiles?



Source: Textildruck Imst (www.tdimst.at)



Casting of metals?

Source: Heunisch Guss, via Wikipedia

Energy intensity of gross output (2006)

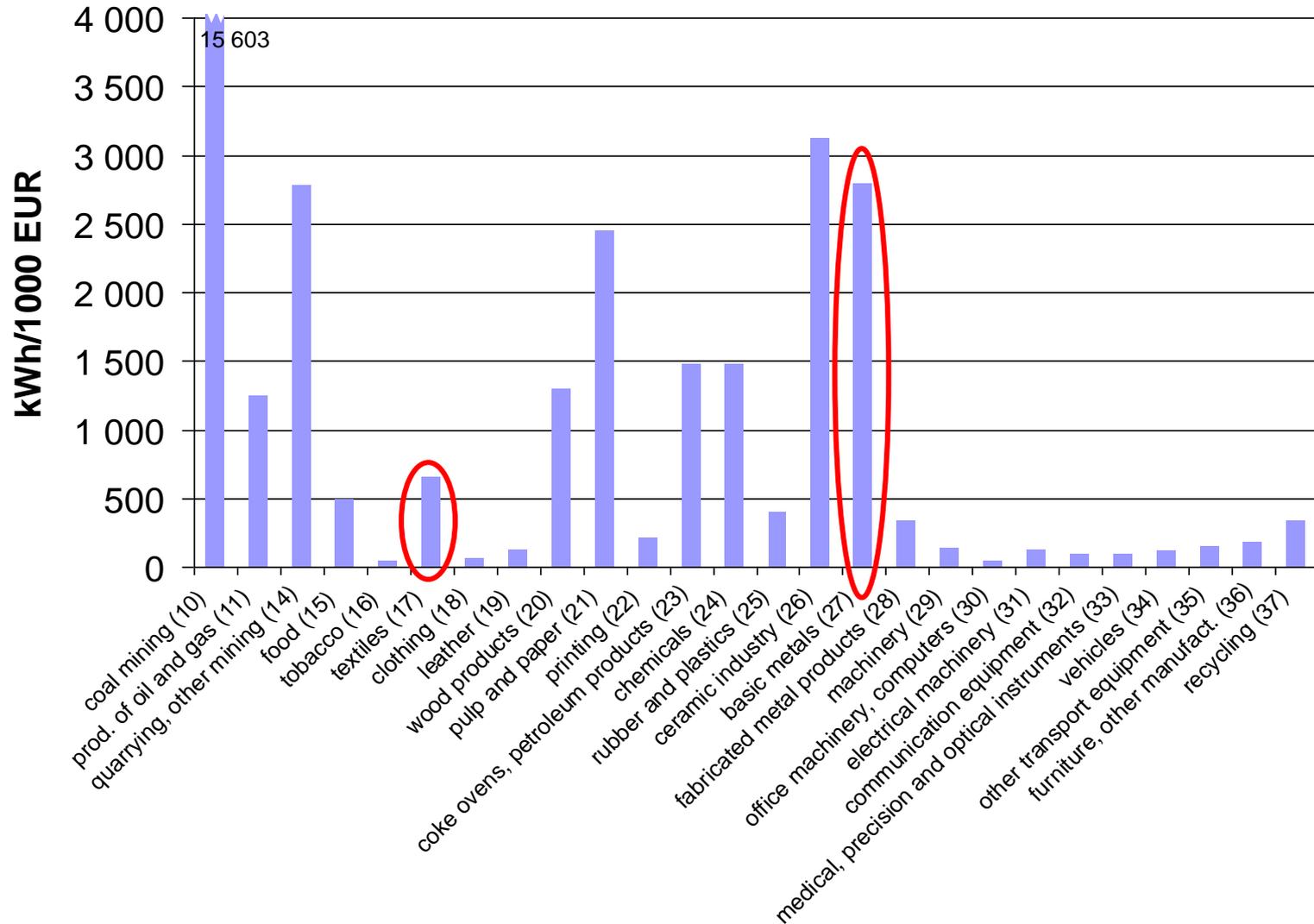
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Introduction

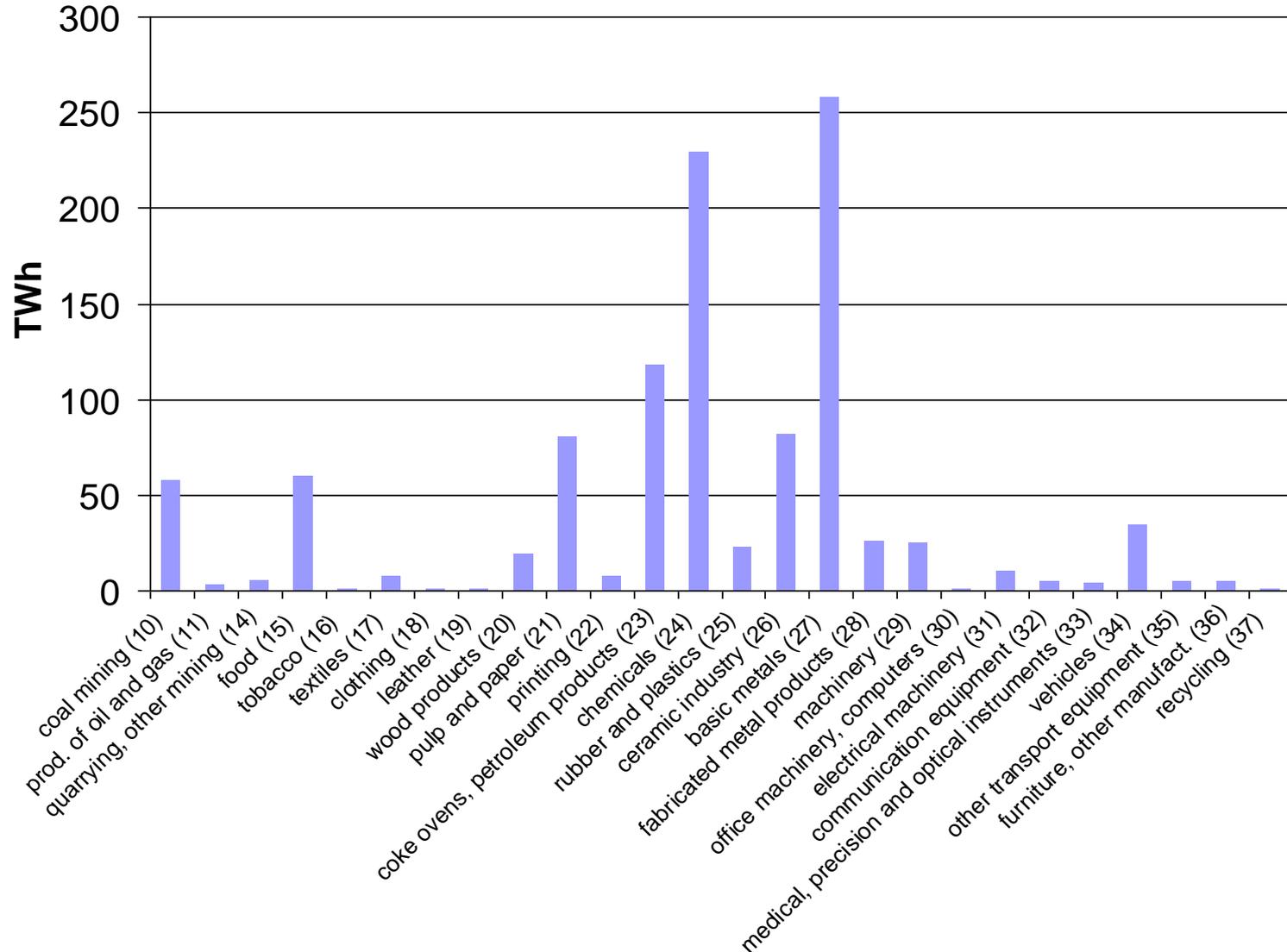
Data

Within- sector
Heterogeneity

Conclusion



Total final energy use per 2-digit-sector (2006)



Fuel shares for selected 2 and 3-digit sectors (2006)

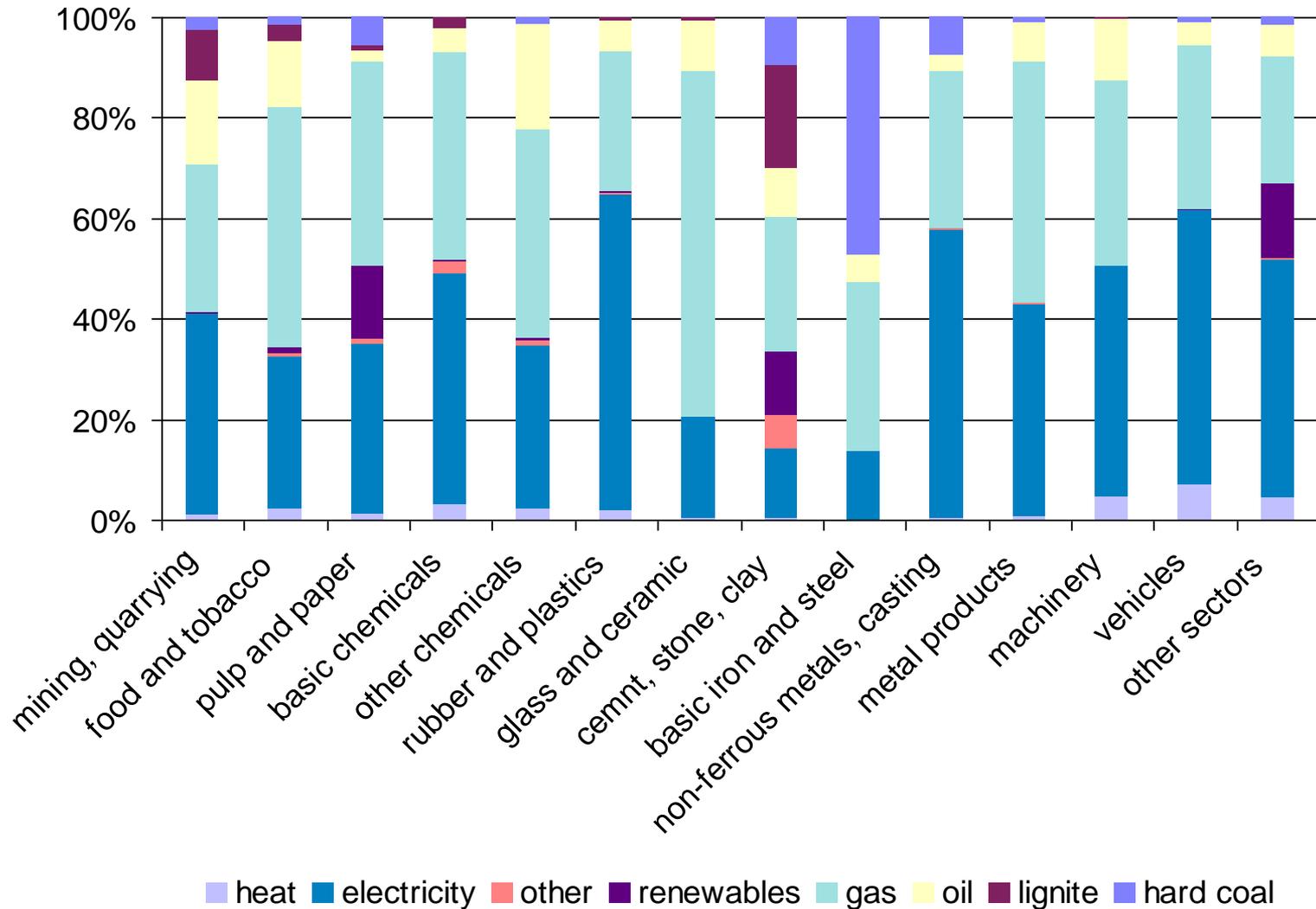
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Heterogeneity within sectors?

Outline

1. Introduction – energy data for Germany

2. A new data set

3. Within-sector heterogeneity

4. Conclusion

→ Discussion

Behind the scenes: Our micro dataset

- Around 48 000 establishments per year
 - All establishments with more than 20 employees
- More than 78 000 different establishments throughout the observation period
- Yearly data, so far 13 years (1995-2007)
- Information on production and energy characteristics
 - Purchases, use, non-energetic use, supply, stock of 15 different fuels (from 2003)
 - Detailed information on electricity trading and own electricity production (from 2003)
 - Calculation of emissions using emission factors
- But: Publication restrictions (confidentiality!)

Energy use is highly dispersed within sectors (top 10 sectors of 2006, MWh)

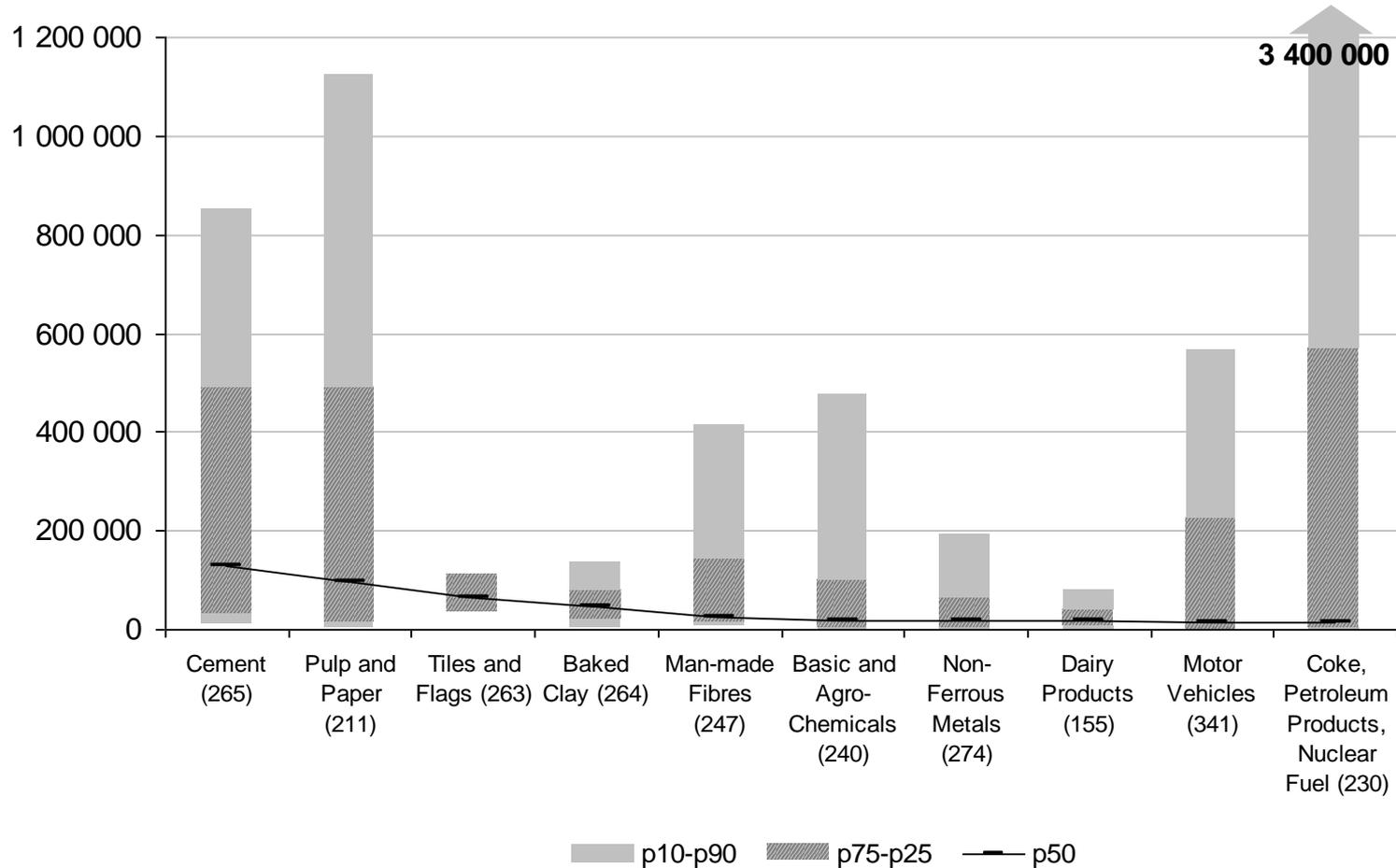
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Energy intensity is highly dispersed as well (top 10 sectors of 2006, kWh/1000 EUR)

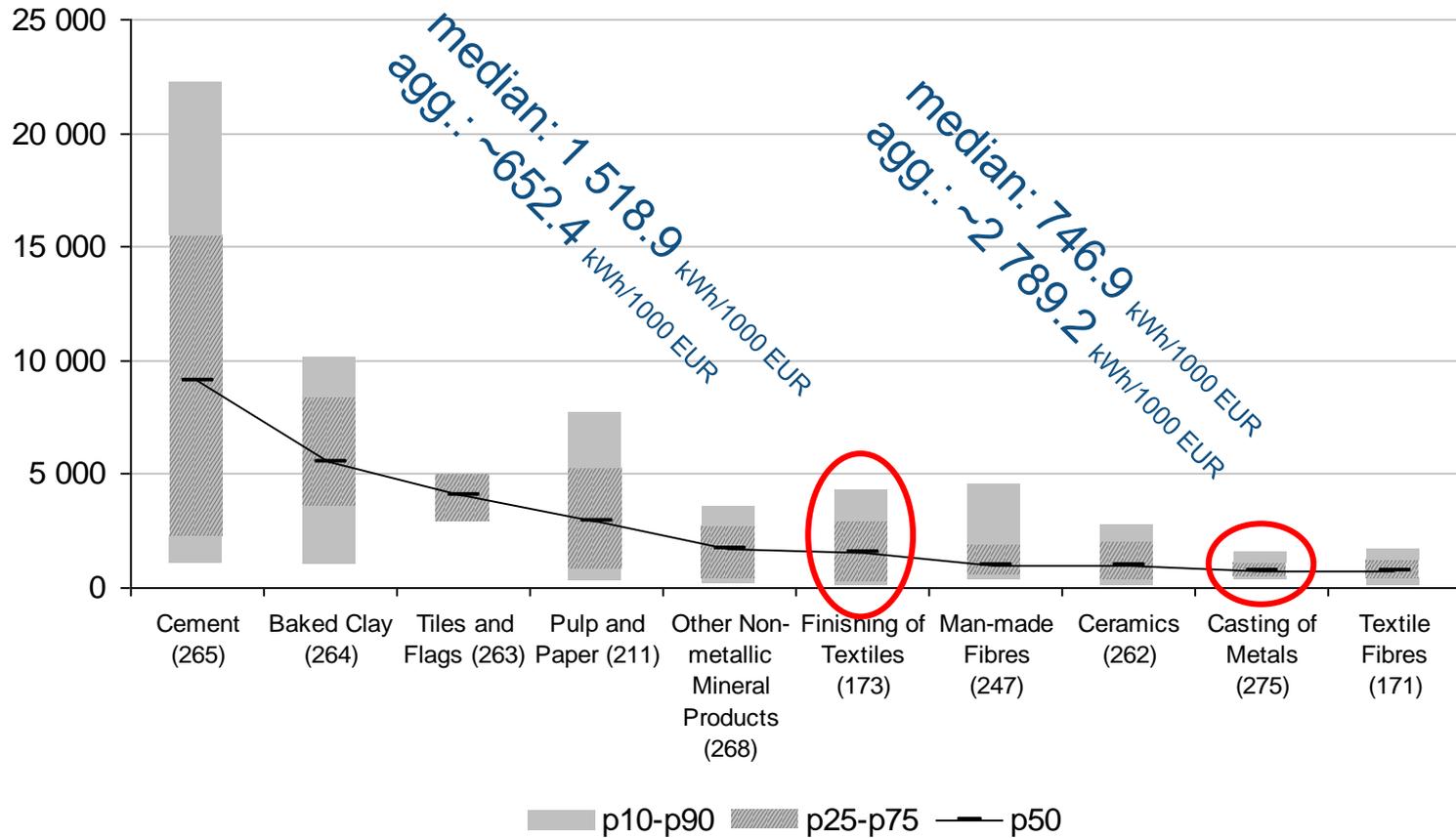
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Heterogeneity in energy intensity relative to the median (top 10, bottom 5 sectors of 2006)

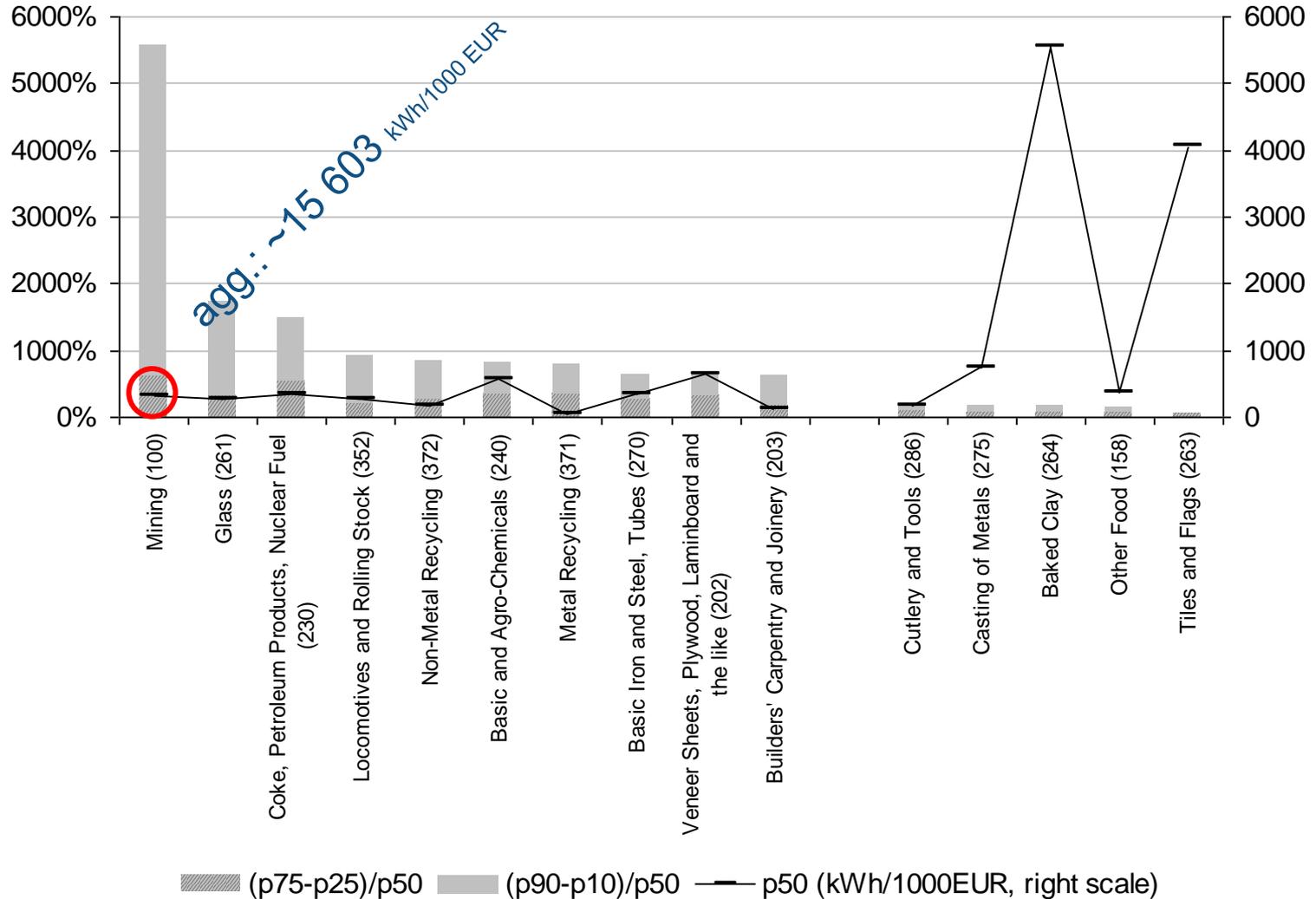
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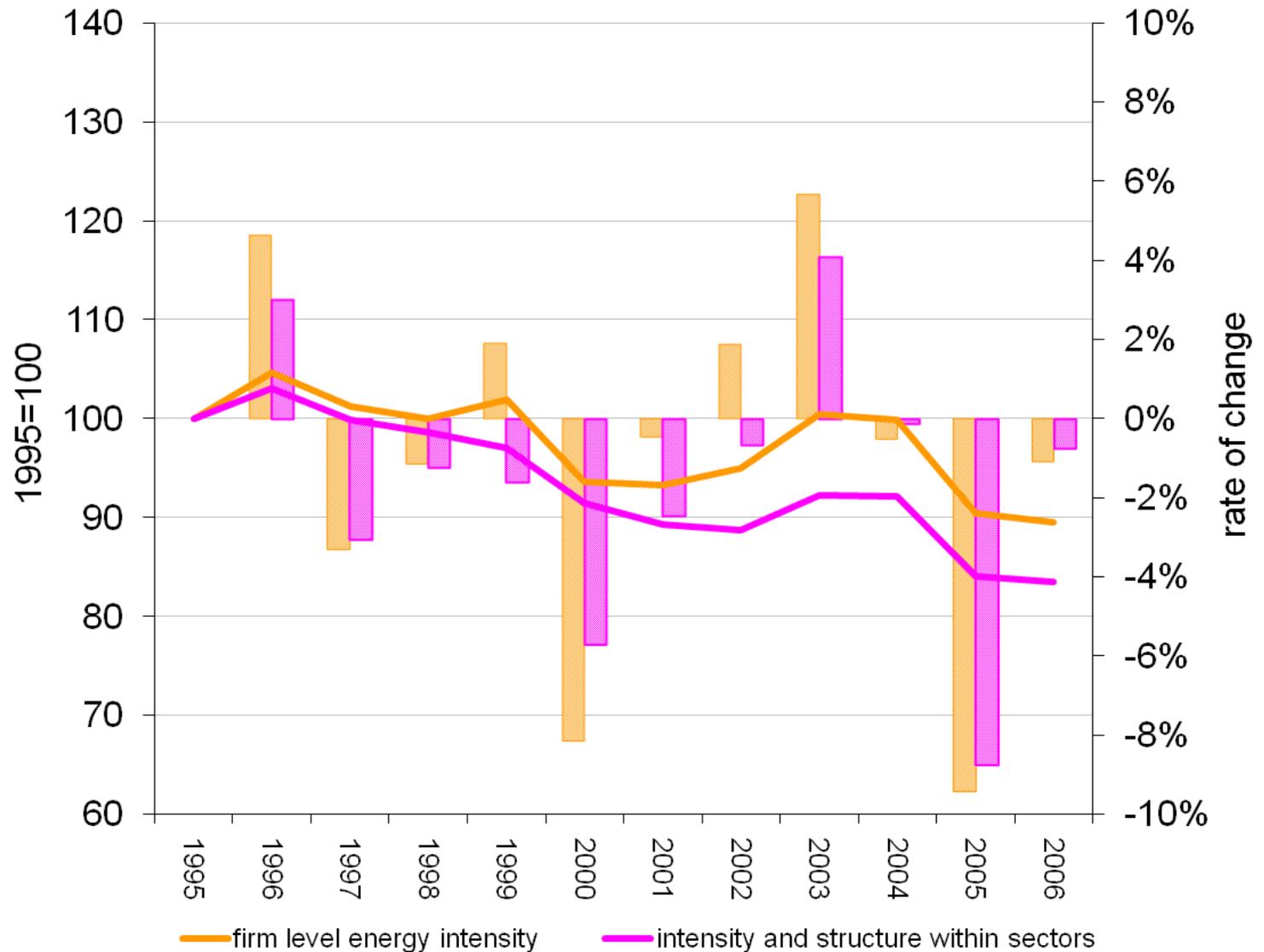
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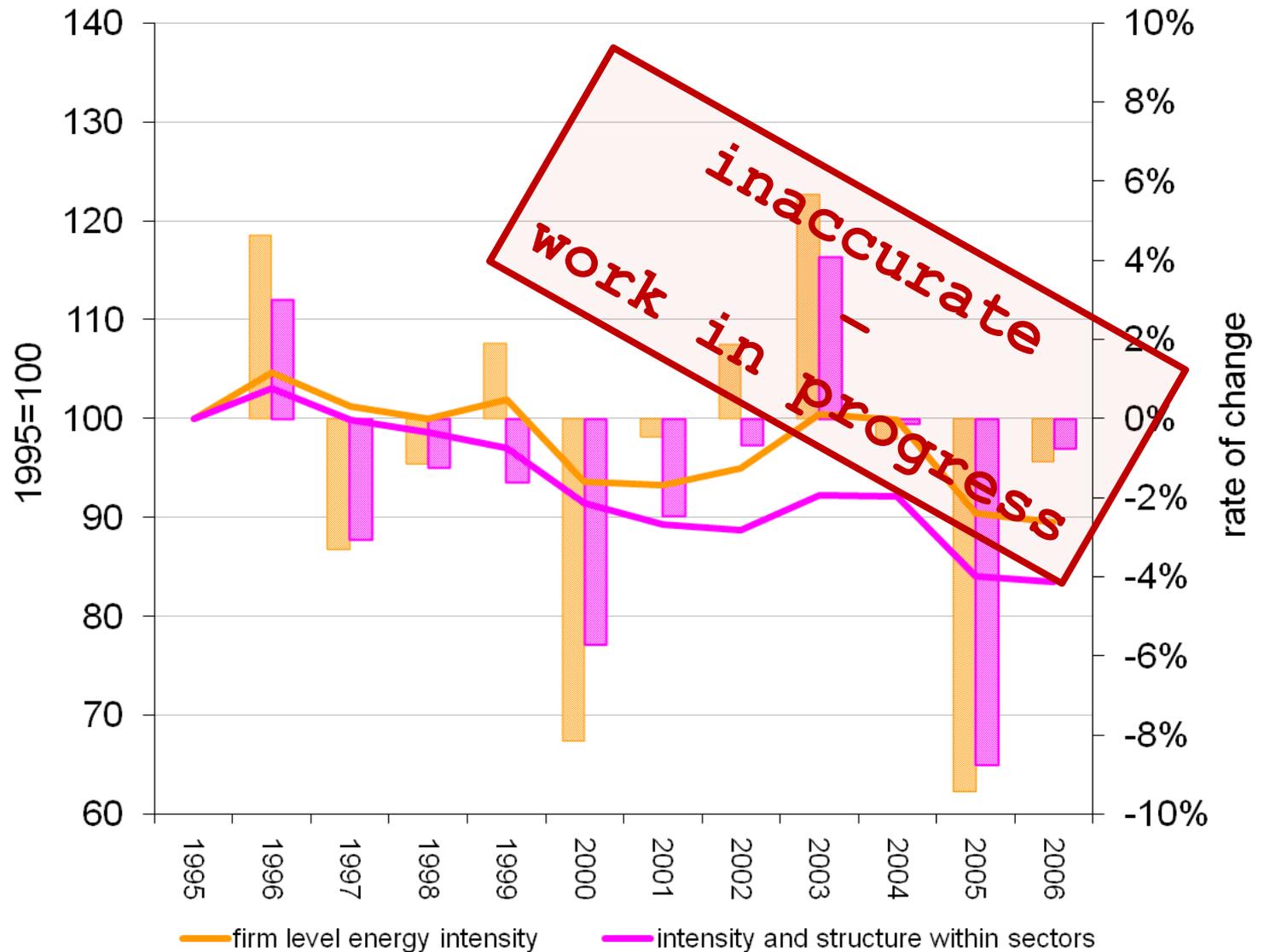
Conclusions from first results

- Heterogeneity in energy use patterns across establishments within sectors is significant and heavily influences aggregated results.
- Dispersion of energy intensity (also energy use) is not correlated with median energy intensity (energy use).

Change in CO₂-emissions due to changes in...



Change in CO₂-emissions due to changes in...





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