Improved timeliness for production- and consumption-based greenhouse gas emissions

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Growing interest internationally and in Sweden for preliminary production ghg and consumption-based

- IMF data gaps initiative

- Eurostat

- Swedish government enquiry – "Sweden's global climate impacts", 2022

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AIM

- To evaluate the accuracy of Statistics Sweden's:

  - preliminary year statistics on greenhouse gas emissions with a production perspective
  - preliminary economic statistics that can be used as input data in Statistics Sweden's input-output model

  compared to the final statistics

- To propose and evaluate a simple model to produce preliminary year statistics on greenhouse gas emissions with a consumption perspective

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Preliminary input data evaluated:

Greenhouse gas emissions:
- Preliminary AEA (sum of four quarters)

Production value:
- Production value index (sum of published quarterly values)
- Production value index (national accounts confidential dataset)
- National accounts preliminary valued added (sum of quarters)

Final demand:
- National accounts preliminary final demand (sum of quarters)

Focus on consumption-based emissions from Swedish production. Imports considered later
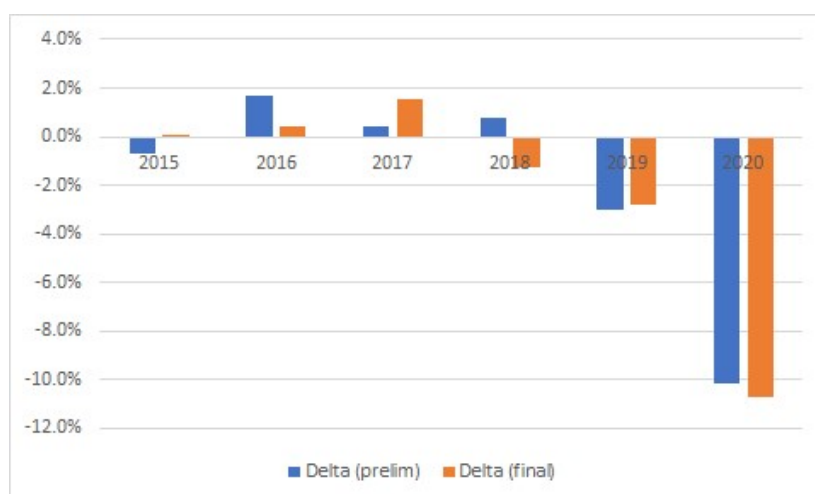
Simple method for improved timeliness

- Starting point: preliminary year GHG emissions from production (34 industries and households)

- Reclassifiy to 91 industries

- Premultiply with normalized symmetric make table imputed from previous year to get ghg emissions vector for 91 product groups

- From emissions vector above calculate preliminary consumption-based emissions with imputed input-output table and final demand from previous year

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Comparing overall differences for preliminary and final yearly GHG emissions (production)

GREENHOUSE GAS EMISSIONS

			PEARSON COEFF.
Preliminary greenhouse gas emissions from production	34 industries	2020 vs 2019	0.98
Preliminary greenhouse gas emissions from production	91 product groups	2019 vs 2018	0.87
Preliminary greenhouse gas emissions from consumption (domestic prod. only)	93 product groups	2019 vs 2018	0.84
FINAL DEMAND			
Total final demand, preliminary national accounts	91 industries	2019 vs 2018	0.69
PRODUCTION VALUE			
Production value index, fixed prices, published	91 industries	2019 vs 2018	0.65
Production value index, fixed prices, national accounts confidential dataset	91 industries	2019 vs 2018	0.73
National accounts preliminary value added in current prices	91 industries	2019 vs 2018	0.82
National accounts preliminary value added in fixed prices	91 industries	2019 vs 2018	0.76

Discussion and future work

- Evaluation has demonstrated that the simple method for timely consumption-based greenhouse gas emissions can produce statistics that are sufficiently reliable

- Current data suggest that the inclusion of preliminary economic data in the method could provide marginal improvement – more data points would be useful here

- In the current project the possibility to produce preliminary data for consumption-based emissions arising from Sweden's imports will also be evaluated

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Thanks! Tack!

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