

Gender in Trade - variables through linking enterprise and employment data

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What sort of sources are available to us in Finland? (not a comprehensive list!)

- International trade
 - International trade in goods (ITGS) collected by the Finnish Customs
 - International trade in services (ITS) survey
 - Reconciled international trade in goods and services in national accounts/balance of payments
- Employment statistics
 - FOLK: a collection of employment-related datasets compiled for Statistics Finland's Research Services platform
 - Data is derived from administrative registers
 - Structural earnings statistics
 - Income register from Tax Authority
- Other business statistics
 - Structural business statistics (SBS) covering turnover, value-added, employment
 - OFATS: affiliates abroad
 - IFATS: Foreign affiliates in domestic economy
 - Enterprises' research and development -survey
 - Business demography covering enterprise age
 - And others...
- Miscellaneous registers:
 - Self-assessed taxes from Tax Administration
 - VAT Information Exchange System data from Tax Administration



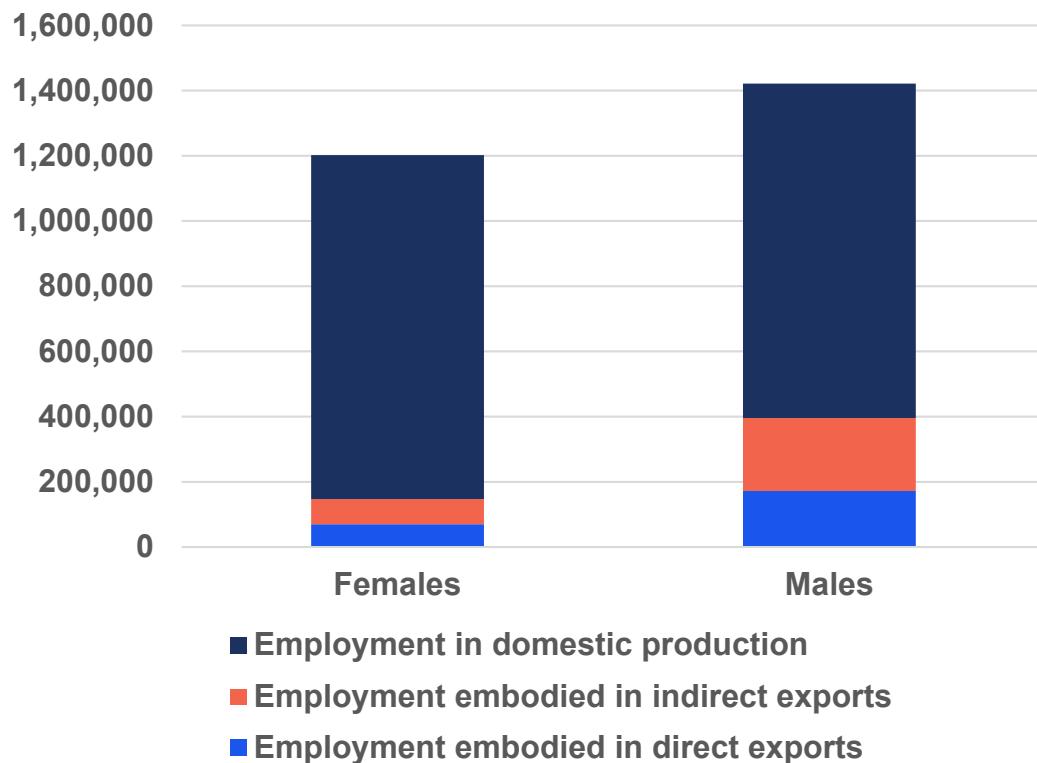
What is published currently regarding gender in international trade?

- Only one experimental statistics: [Trade in Value-added](#) (TiVA)
 - There are a few TiVA initiatives, the most commonly known is arguably OECD's TiVA. The one referred here is a national variant developed together with OECD that utilizes microdata in combination with macro-level statistics.
- Methodologically advanced in the sense that it includes estimates on exports' indirect employment effects (jobs created through exporting firms' backward linkages). However, in terms of linking employment and enterprise data, not very advanced.
 - Each employee is allocated to one primary job according to the last week of the year. No special consideration for part-time workers.
 - There might also be distortions due to differences in macro/micro-level data and the methodology used.
- Additional breakdowns in the publication: industry, size class, foreign ownership, educational attainment for employees
- Based on the microdata it would be possible to calculate e.g. wage differentials across employee characteristics (gender, educational attainment, age, occupation, nationality) and enterprise characteristics (industry, size class, foreign ownership).
 - There have been some statistical exercises doing just that in the past few years, but so far no regular compilation of statistics.

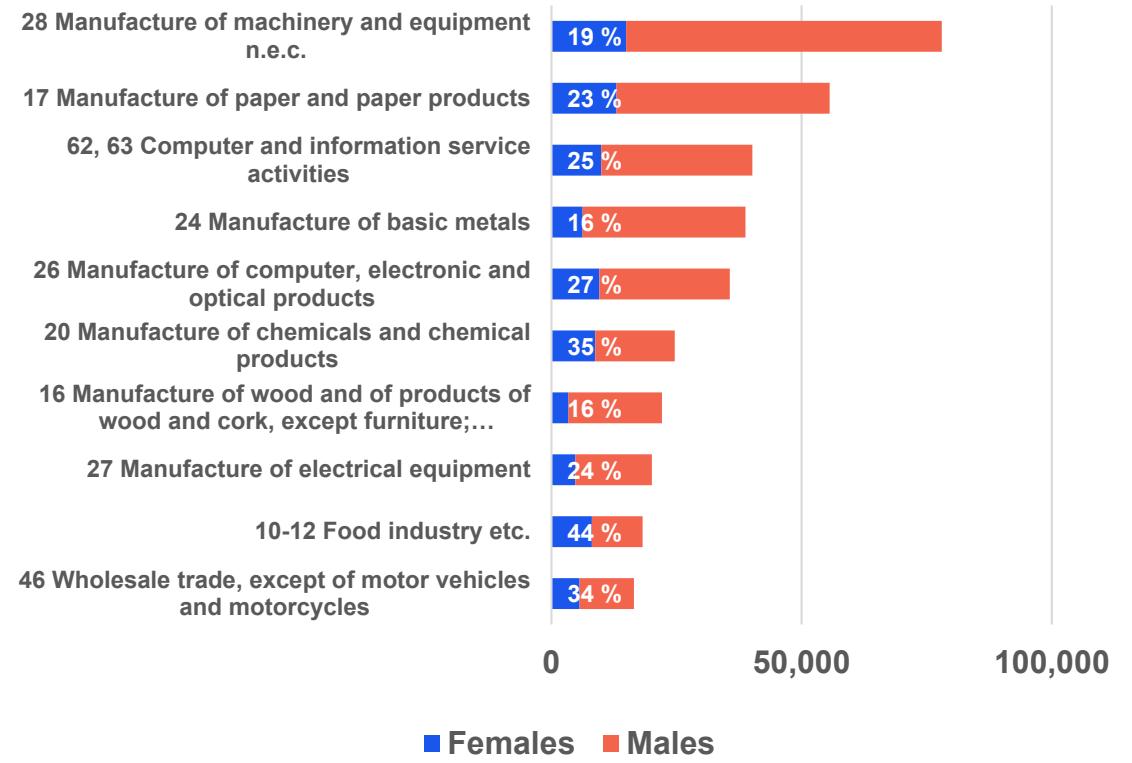


Some examples from TiVA

Number of employees (in full-time equivalents) in exports and domestic production by gender in 2020

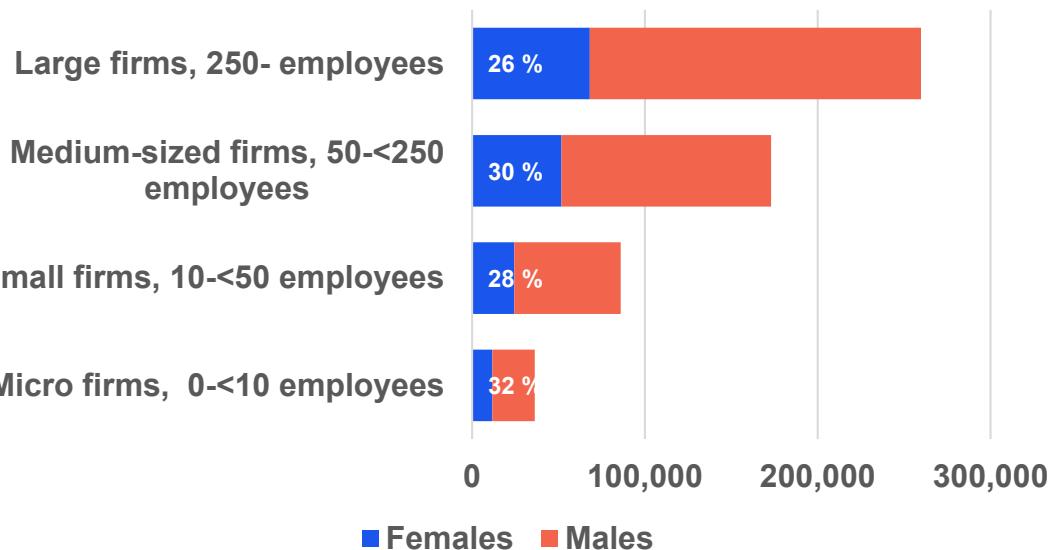


Ten largest industries by number of employees embodied in their exports (directly and indirectly) in 2020, percentage refers to the female share

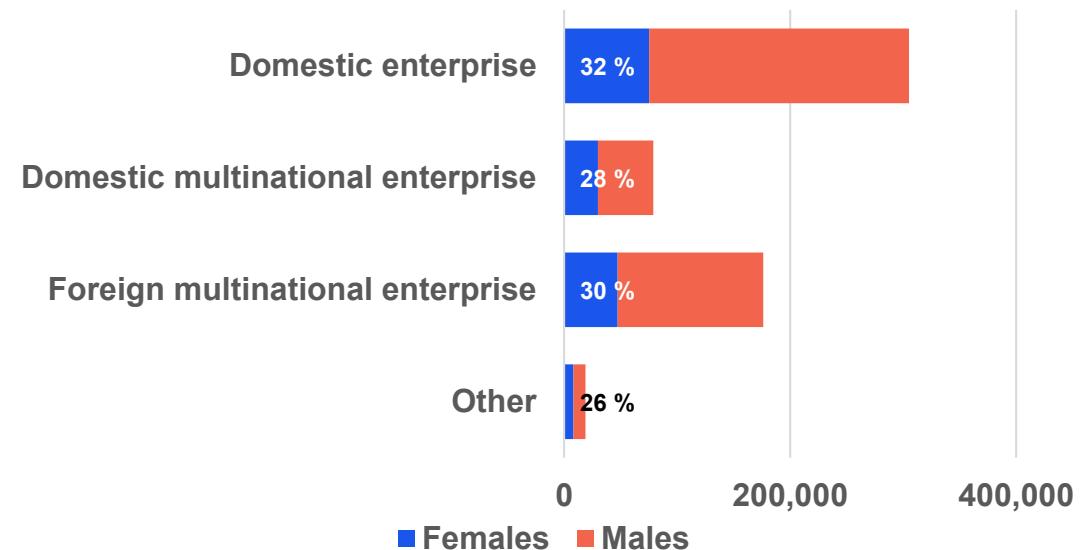


Some examples from TiVA

Employment dependent on exports by enterprise size class and gender in 2020, percentage refers to the female share



Employment dependent on exports by firm ownership and gender in 2020, percentage refers to the female share



What challenges have we encountered?

- In principle, linking should be simple enough.
 - Statistics Finland can access register-based data and survey data that covers both people and enterprises.
 - Everybody in Finland has an identity number and every legal unit in business register has an identifier.
 - And we have information on which enterprises/legal units employ which people.
- However, linking has proven to be more complicated than anticipated.
- Should an employee working in multiple enterprises be counted once or twice, thrice etc.?
 - If you want to include an employee only once, how do you define the primary employer? Highest wage sum? Longest duration of employment for the year in question? Employment during last week of the year?
- Part-time employees? Some sources don't include this information, but it should be addressed ideally.
- Different data sources are constructed for different reasons -> which might not suit your needs.
 - For example, the most promising register-based data on wages doesn't cover entrepreneurs (probably because their taxation is handled differently from wage-earners).
- Identifying the problems and their solutions is not easy coming from a business statistics background. Communication between employment and business statisticians is needed.



What challenges have we encountered?

- Business statistics are not necessarily aligned either. They are often based on surveys and samples. Additionally, there are conceptual differences.
- For example, when estimating employment effects of international trade based on ratio of exports/imports of to turnover/costs we noticed quite a few issues:
 - Pricing of products might be different in customs-based trade in goods (ITGS) compared to sales/turnover in structural business statistics (SBS), global production is not covered in ITGS, some investment-related imports are not reported as costs in SBS, turnover/sales might not be reported in calendar years...
- The problems mentioned here and before are not gender-specific. But because linking employees to enterprises is a general problem, it affects and potentially distorts gender-specific indicators alongside other employee characteristics. Even if this linking works perfectly, gender-specific indicators will be affected by differences in business statistics if trade-related indicators need to be combined with other business statistics.
- In the future, it would be useful to investigate how extensive these issues are and if they could be alleviated somehow.



In conclusion, we are still in the early days of investigating the topic. Thank you!

