Organisation for Economic Co-operation and Development

Women in Global Value Chains[1]

1. Introduction

Recent years have seen growing concerns that the impact of globalisation may have created winners and losers and that more concerted efforts are needed to *Make Trade Work for All*. A significant focus of these efforts has been at the sectoral level and on the skills and occupations of the workers affected. However, partly reflecting limited data, there has been considerably less commentary on the gender impact of globalisation, particularly concerning whether the impact of structural shifts created by globalisation have had a disproportionate impact on female employment rates, when compared to the economy as a whole. This note presents first insights into the relationship between gender and trade, focusing on the role of female employees in Global Value Chains.

2. Methodology

The analysis of female employment in global value chains was produced based on combination of the TiVA ICIO (2008-2014) with a vector of labour input by industry, measured in hours worked as reported in the National Accounts, broken down by gender. The breakdown by gender was derived from Labour Force Surveys, which is the only source that produces such breakdowns at a sufficiently detailed level to support such analysis, using a combination of total employees (male/female) broken down by industry, corrected for the average weekly working hours to adjust for the fact that in many countries, women work fewer hours on average. Further details on the calculations, as well as on the various simple estimations that were made in case of missing data, are described in Annex A.

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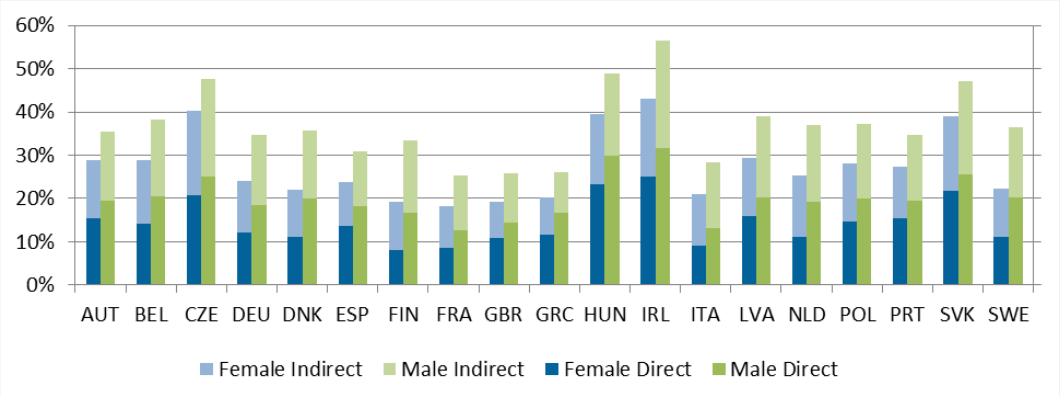
3. Results

The share of female employment embodied in exports is lower than that of male employment

Across OECD countries, on average 27% of female employment is dependent on exports (either directly or indirectly). In contrast, 37% of male employment is dependent on exports (see Figure 1. Shares of male and female employment embodied in exports, 2014Figure 1). Differences are particularly prominent in the Nordic countries (Denmark, Finland, Sweden) as well as in the Netherlands and Germany. Figure 1 also shows that on average, the share of employment embodied in exports is much larger in small open economies such as Hungary, Ireland and the Czech Republic, than in large countries like France of the UK.

Figure 1. Shares of male and female employment embodied in exports, 2014

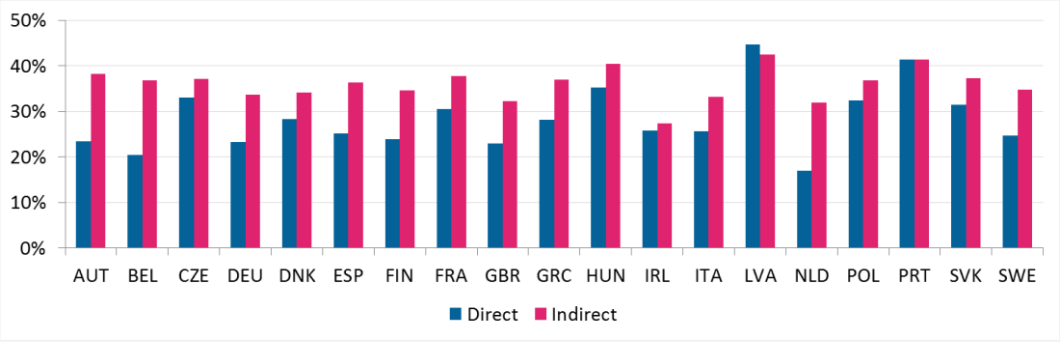


Source: OECD Statistics and Data Directorate Estimates

Women's share in indirect *channels significantly higher*

Moreover, there are strong gender differences in the way in which male and female employment is supported by exports. In nearly all economies, women's share in employment sustained by exports is significantly higher in indirect channels (i.e. at the upstream suppliers of firms that subsequently export) compared to direct channels (i.e. at the exporting enterprises themselves). For example, in Germany, women's share of jobs sustained through direct manufacturing exports was just over 20% in 2014, but close to 35% of jobs that are indirectly sustained by trade (Figure 2).

Figure 2. Share of women in direct and indirect domestic employment sustained by manufacturing exports, 2014

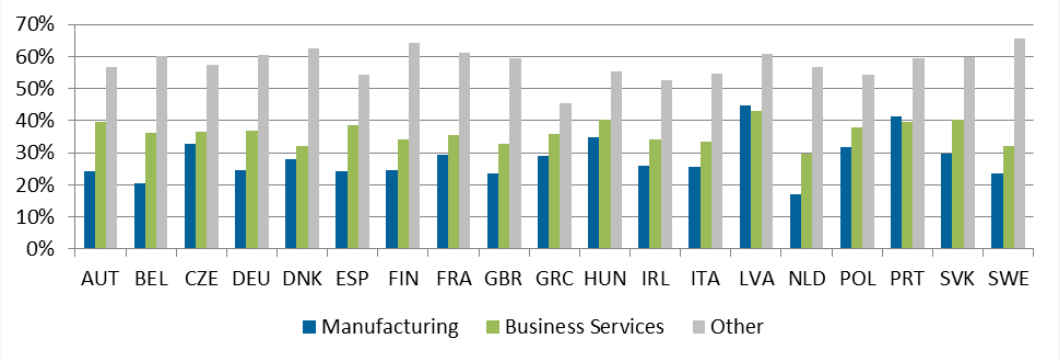


Source: OECD Statistics and Data Directorate Estimates

Women predominantly work in services

The difference in female labour participation across industries largely accounts for the different participation of male and female employees in GVCs. The share of female labour input in the total is much higher for business services and other (mainly non-market services) than in manufacturing, where in OECD countries on average only 1 in 4 employees is female.

Figure 3. Share of female labour input, by industry

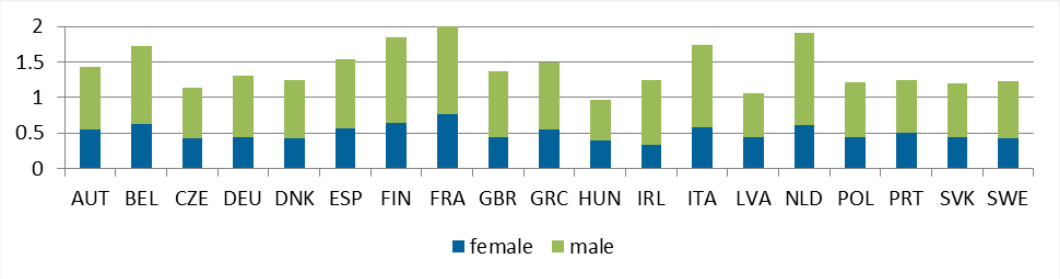


Source: OECD Statistics and Data Directorate Estimates

Each unit of labour input in manufacturing exports generates an half an additional unit of female upstream labour input

Even if employment in the manufacturing industry remains male-dominated, the backward linkages this industry generates do create more female employment. As Figure 4 shows, for each unit of labour input in (direct) manufacturing exports, and additional 0.5 units of female labour input is generated upstream, as well as an additional 0.9 units of male labour inputs. Put differently, each job in manufacturing exports generates on average 1.5 additional jobs upstream, a third of which reflects female employment.

Figure 4. Units of upstream labour (male and female) generated by each unit of labour in manufacturing

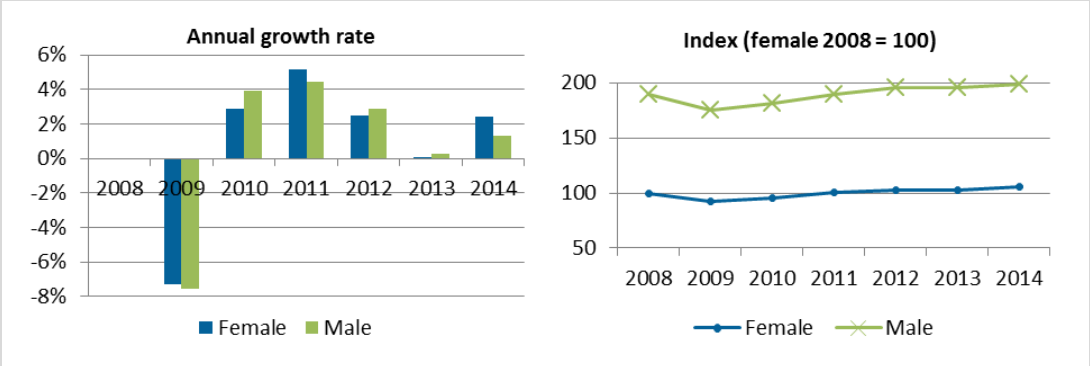


Source: OECD Statistics and Data Directorate Estimates

Overall, the economic crisis – and the recovery period – has impacted male and female employment in GVCs equally...

The economic crisis significantly impacted global value chains and the employment embodied in exports. As Figure 5 indicates, employment in GVCs across the 19 OECD countries included in this study, declined 7.4% in 2009, to recover to pre-crisis levels by 2011. No significant difference in growth in male and female employment could be observed at this aggregate level.

Figure 5. Male and female employment embodied in exports: impact of economic crisis



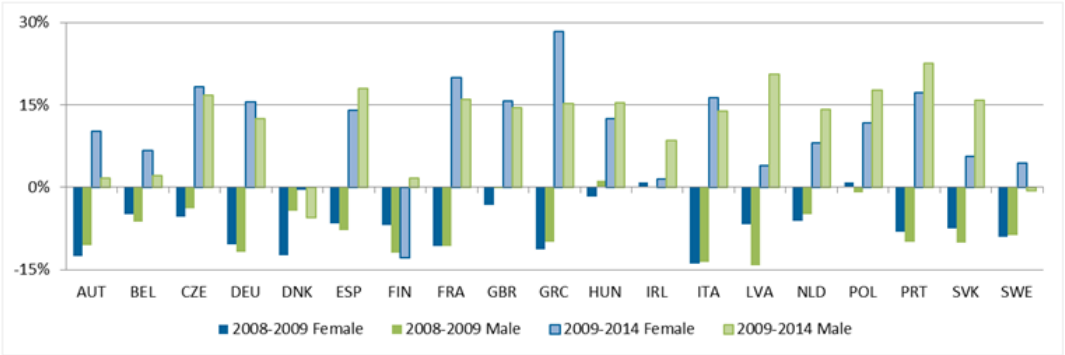
Source: OECD Statistics and Data Directorate Estimates

…but important differences exist across countries...

At the country level however, important variation in growth rates exist. For example, in Austria, Denmark, Greece and Italy, female employment embodied in exports declined more than male employment in GVCs between 2008 and 2009, but also recovered (or declined less, in the case of Denmark) more strongly thereafter.

In contrast, in Spain, Portugal, Poland and Slovakia, male employment in GVCs was hit harder but recovered stronger as well. Differences between recovery rates of male and female employment were particularly prominent for Spain, Netherlands, Slovakia, Ireland and Poland, where male employment recovered faster, and in Czech Republic, Germany, France, Greece and Italy, where female employment saw higher growth rates.

Figure 6. Male and female employment embodied in exports: growth rates

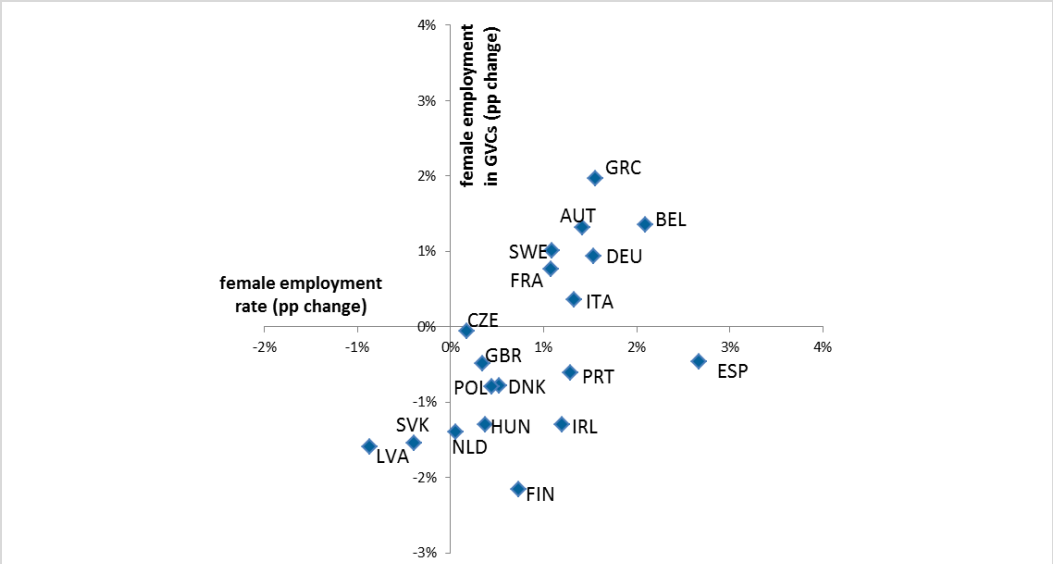


Source: OECD Statistics and Data Directorate Estimates

…often reflecting changes in the overall share of female employment.

The changes in female employment in GVCs observed between 2008 and 2014 are positively correlated with changes in the share of women in total employment. However, whereas in nearly all OECD countries the share of women in total employment grew, the level of change was much lower, and often negative, for the share of female labour input embodied in exports. In the upper right quadrant of **Error! Reference source not found.**, in countries like Greece, Belgium, Germany, Austria, Sweden, France and Italy, a higher share of women in total employment was directly coupled with a higher share of women employment in GVCs. However, in countries like Denmark, Netherlands, Poland, the UK, this relationship was weaker, whereas in Spain and Portugal, where the share of women in total labour input grew, their share in export-supported employment declined.

Figure 7. Percentage point change in female share in employment and in female share in employment in GVCs, 2008-2014



Source: OECD Statistics and Data Directorate Estimates

Annex A. Calculation of female labour input

The calculation of the vector of female labour input consisted of a combination of a) labour input measured in hours worked according to the National Accounts (i.e. fully consistent with the TiVA ICIO); b) total employees by industry broken down by gender from the EU Labour Force Surveys; and c) average hours per working week, by industry and gender, again from the EU LFS. Each of these sources required further editing to estimate missing data, as described in more detail below, prior to the calculations.

Hours worked from OECD national accounts statistics

Data on hours worked by industry (ISIC Rev 4, 2 digit) were collected for all OECD countries from the OECD National Accounts database. For those countries where only more aggregate data was available (e.g. a grouping of several 2-digit ISIC industries), breakdowns to more detailed industries were made using the more disaggregate information, from the same source, on the number of persons. This was the case for Belgium, Germany, France, UK, Italy, Lithuania and Latvia. For Portugal, where data for 2009 and 2008, as well as for 2014, were missing, similar estimates were made using the structure of 2010, and 2013, respectively.

In addition, for Spain (years 2012-2014), Hungary (years 2008-2009), no information on hours worked by industry was available at all. In these cases, estimates were made using either the growth rates of total hours worked (applied to all industries) and/or persons. The data were subsequently aggregated to TiVA industries using an ISIC Rev.4 – ISIC Rev.3 2-digit conversion table.

Data from EU LFS on employees by industry and gender

Data on number of employees by industry (ISIC Rev.4, 2-digit), broken down by gender, were derived from the EU Labour Force Surveys. Missing data were filled first via simple derivations (e.g. if only information on total and male employees was available, female employees were deducted as the residual), and subsequently complemented by simple linear interpolations and constant extrapolations, both on the absolute figures as well as on the % of female (male) employees in the total.

Data on number of employees were subsequently converted and aggregated to TiVA industries using the same conversion table as mentioned above, after which the % of female employees was calculated for each TiVA industry. A final round of imputations, using national averages, was used to fully complete the dataset (although this only involved 69 country-industry combinations, predominantly in small countries: e.g. 13 industries in Iceland, 13 in Estonia, 11 in Latvia, 8 in Lithuania).

Data from EU LFS on average working hours (part time work)

To correct for differences in average working hours between men and women (notably due to the higher incidence of part-time work among women), LFS data on average hours per week of men and women were used, again broken down by industry (although at a higher level: main categories (letters) instead of 2-digit). Only few data points were missing, which were imputed using simple extrapolations and linear interpolations. For those activities that were missing entirely (e.g. several countries did not report on average female workweeks in Mining and quarrying (B) or on male or female workweeks in

Activities of households as employers (T) or Activities of extraterritorial organisations (U), the data for the industry that most resembled it were used instead (e.g., B (mining) was proxied by C (manufacturing), while workweeks in T and U were estimated with those in R (arts, entertainment, recreation)).

Calculation of the share of female labour input

Combining the two LFS sources, the share of female labour input (L^F share) was subsequently calculated as follows:

$$L^F share = \frac{E^F \times H^F}{\left((E^F \times H^F) + (E^M \times H^M)\right)}$$

where E represents the number of employees, H the average number of hours worked per week, and the subscript F and M reflects female and male, respectively. By multiplying the L^F share with the number of hours worked consistent with national accounts, the vectors of male and female labour input were be obtained.