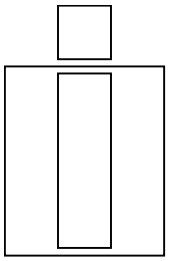

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WPIOX 09-013

Gulay Gunluk-Senesen and Umit Senesen

Decomposition of Labor Demand by Employer Sectors and Gender for Turkey: Findings for Major Exporting Sectors

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Code: WPIOX 09-013

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Archives: Impact analysis

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Date of submission: October 30, 2009

DECOMPOSITION OF LABOR DEMAND BY EMPLOYER SECTORS AND GENDER FOR TURKEY: Findings for major exporting sectors[1]

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Abstract

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JEL: C67, J16, J23

1. Introduction

The purpose of this paper is to assess the employment generation potentials of major exporting sectors (wearing apparel, textiles, motor vehicles, transportation, basic metals, communication equipment and trade) in the Turkish economy and gain insight into the likely impacts on employment of contractions in final demand in the current global crisis environment. The input-output methodology we propose is calibrated for 2002, for which the most recent I-O data are available.

The Turkish economy is characterized by growth without employment in the post-1980 liberalisation era, with a switch from import-substitution to export-led development policy accompanied by complementary liberalization of trade and financial transactions (Gunluk-Senesen, 1998; Guncavdi et al., 2003). The export boom, especially of manufacturing products in 1990s and 2000s was an outcome of increased capacity utilization and labour productivity, thus employment generation of leading export sectors remained low. Increased penetration of imports (both

intermediate and final) in the favourable environment of foreign portfolio flows and overvalued exchange rate, from 1990s on, contributed towards a persistent high rate (around 10 %) of unemployment[2]. The already low rate of labour participation of women decreased in due course (Baslevent and Onaran, 2004; Toksoz, 2007).

The Turkish case presents a contradiction to the assertions of the orthodox trade theory since export performance especially in low-tech labour intensive manufacturing sectors relied on low wages and did not compensate for labour substitution in the rest of the economy (Aysan and Hacihasanoglu, 2007; Kizilca and Metin-Ozcan, 2008; Onaran, 2009). As discussed in Baslevent and Onaran (2004), female employment improved in services sectors and feminisation of employment in manufacturing due to the export boom is hardly the case for Turkey, despite advances in clothing and textile sectors.

Turkish export demand is found to be insensitive or inelastic to exchange rate and price, but elastic to income (Aysan and Hacihasanoglu, 2007; Cosar, 2002). The share of EU-27 in Turkish exports was 57 % in 2002, which becomes 64 % with other European countries. Though similar figures for 2008 are lower (48 % and 60 % respectively), Europe is still a very significant trade partner. As of February 2009, unemployment rates in Turkey reached 19 % for males and 22.5 % for females in non-agricultural activities as a whole. Thus the current global crisis poses serious threats for employment in the near future for both genders.

The paper is organized as follows: we introduce the input-output methodology we developed in the next section. In section 3, we present our procedures to derive sectoral employment data with respect to gender and our observations on the structure of employment and exports of Turkey in 2002. Model findings for the selected sectors are presented in section 4. A general assessment is made in the concluding section.

2. Methodology

The common practice for finding direct and indirect labour requirements (by skill or gender or total) in response to final demand changes involves multiplication of the direct labour coefficients matrix (**L**) by the sectoral output vector (x), which translates into the multiplication of the Leontief inverse (**R**) by final demand vector (y):

$$\mathbf{L}\,\mathbf{x} = \mathbf{L}\,\mathbf{R}\,y = \mathbf{E}\,y \qquad (1)$$

where

l_{cj} : labour category c (in persons or hours) employed per unit output of sector j

(gender, c =1, 2; or skill, c =1,2,…, C; j = 1,…, n)

x : sectoral output vector, j = 1,…, n

$\mathbf{R = (I-A)^{-1}}$, where **A** is the direct input coefficients matrix.

r_{jk} : direct and indirect output expansion in sector j induced by final demand k

y : sectoral final demand vector, k = 1,…, n

(e.g. see Gu and Whewell Rennison, 2005; Nakajima, 2008; Steenge and Bockarjova, 2007; Wolff, 2006)

A typical element of **E** (=**LR**), e_{ck} , shows demand for labour category c induced by final demand (policy) sector (k). $\Sigma_c e_{ck}$ shows the total labour requirement in the economy generated by one unit increase in the final demand of sector k, or in short, backward labour linkage of sector k.

Note that the location of employment generation, that is, the employer sector (j) is missing but inherent in this expression, because the above defined relations in fact give: $e_{ck} = \Sigma_j e_{cjk}$. Exposing this dimension would require decomposition of e_{ck} with respect to the employer sector j also. Then e_{cjk} would show the requirements for labour category c induced in the employer sector j by final demand of k.

Adapting the methodology for imports in Gunluk-Senesen and Senesen (2001) to employment information, all three dimensions, c, j and k, of labour requirement can be captured as follows:

$$\mathbf{G^k = L < R^{*k} >} \qquad (2)$$

Here, $\mathbf{< R^{*k} >}$ is a diagonal matrix of (n, n) , formed by the k^{th} column of **R**, i.e. $\mathbf{(I-A_d)^{-1}}$ diagonalized for sector k, such that $r^{*k}_{jj} = r_{jk}$

$\mathbf{G^k}$ decomposes final demand (k) induced labour requirements by category (c) and by employer sector (j) improving the information content of final demand (k) induced labour requirements by category (c) in equation (1).

A typical element of $\mathbf{G^k}$, $\mathbf{g^k_{cj}}$, then stands for c type labour requirement (direct + indirect) by the j^{th} sector induced by one unit of the k^{th} sector's final demand.

The row sums of $\mathbf{G^k}$ give e_{ck} , backward labour linkages of k for category c, i.e.

$$\mathbf{\Sigma_j g^k_{cj} = e_{ck}} \qquad (3)$$

and the column sums of $\mathbf{G^k}$ give backward labour linkages of k in sector j, i.e.

$$\mathbf{\Sigma_c\, g^k_{cj}} = \mathbf{< i'L >\, R} \tag{4}$$

where i' is the row vector of unity for summation and $\mathbf{< i'L >}$ is the diagonal matrix of total labour coefficients under homogeneous labour assumption. Hence

$$\mathbf{\Sigma_c\, \Sigma_j\, g^k_{cj}} = \mathrm{i'} \mathbf{< i'L >\, R} = \Sigma_c\, e_{ck} \tag{5}$$

is the backward labour linkage of sector k in the economy, as in equation (1).

The information content of this approach can be improved by incorporating the total flow concept of Szyrmer (1992). The model in equation (1) associates labour requirements (via outputs) with final demands. However, there are cases where association with final demand changes might be of little use. For example, a sector's activity might be fully or significantly intense in intermediate production rather than producing for final demand. Similarly a sector's domestic final demand could be negative due to heavy reliance on imports.[3] Also, association of a sector's labour demand with another sector's output (or growth) in the interconnected production environment sounds convenient for analytical purposes. Furthermore as discussed in Gallego and Lenzen (2005), total flow formulations of linkages are equivalent to those found with hypothetical extraction method.

The output multiplier in the total-flow tradition is

$$\frac{\partial x_j}{\partial x_k} = \frac{\partial x_j / \partial y_k}{\partial x_k / \partial y_k} = \frac{r_{jk}}{r_{kk}} \tag{6}$$

It is equal to 1 for $j=k$. Labour demand for type c of sector j associated with output of sector k could be expressed as:

$$l_{cj} \frac{r_{jk}}{r_{kk}} \tag{7}$$

Substitution of this definition into equation (2) enables conversion of labour impacts of final demand changes to those of output changes:

$$\mathbf{H^k = L < R^{*k} > < r^{-1}_{kk} > = G^k < r^{-1}_{kk} >} \tag{8}$$

$\mathbf{H^k}$ then shows labour requirements by category (c) and by employer sector (j) in association with the output of sector k. A typical element of $\mathbf{H^k}$, h^k_{cj} stands for c type labour required (direct + indirect) by the j^{th} sector in association with the output of sector $k \neq j$. Note that for $k = j$, h^k_{cj} = direct labour coefficients for j (l_{cj}), following equation (7).

Since all elements of $\mathbf{G^k}$ are divided by a scalar, r_{kk} , the row sums, the column sums, and the overall sums of $\mathbf{H^k}$ are equal to the corresponding definitions in equations (3) and (4) divided by r_{kk}, i.e.

$$\Sigma_j \mathbf{h}^k_{cj} = (1/r_{kk}) \Sigma_j \mathbf{g}^k_{cj} = \mathbf{e}_{ck} / r_{kk} \quad (9)$$

$$\Sigma_c \mathbf{h}^k_{cj} = (1/r_{kk}) \Sigma_c \mathbf{g}^k_{cj} = \mathbf{< i'L > R < r^{-1}_{kk} >} \quad (10)$$

Hence $\Sigma_c \Sigma_j \mathbf{h}^k_{cj} = (1/r_{kk}) \Sigma_c \Sigma_j \mathbf{g}^k_{cj} = (1/r_{kk}) \Sigma_c e_{ck}$ (11)

Incorporating gender in input-output employment modeling is relatively new [4]. One main underlying issue is the late recognition of the non-homogeneity of labour with respect to gender. The conceptual awareness then had to be complemented with the restructuring of data compilation to account for women's labour. Furthermore, household surveys, the basic source of such data on employment need to be matched with I-O sector classifications. Concentration of women's employment in the informal sector (e.g. see Toksoz (2007) for Turkey, Sinha and Khan, 2008 for India) and/or women's universally unpaid domestic labour in the home remain mostly unaccounted for in the market oriented data collection process. The Marxian Feminist modeling of women's labour in Hanappi and Hanappi-Egger (2003) highlights the interactions between labour and class categories within an I-O framework but also calls for the need for empirical verification.[5]

Measurement issues are recently discussed in Schaffer (2007) which shows that gender composition of labour measured in persons deviates from that measured in working hours, which turns out to be a better indicator for employment, capturing all types of jobs: full time and part time. The novelty of resorting to time-use surveys in Schaffer (2007) brings forth an important dimension in quantification in the usual I-O practice. Perhaps the most advanced elaboration up to date of employment within the I-O framework is undertaken in Van der Cruyce and Wera (2007), where varied labour multipliers are discussed with reference to product versus industry technologies.

3. The Data and Observations on Employment, Turkey, 2002

3.1 The data

There is no readily available data on employment with respect to sectors and genders for 2002, the year of the input-output data. We had to undergo a data estimation

process. Our data comes from three different sources of the TURKSTAT. The first one is the input-output tables in basic prices for 2002. These tables contain data for 59 sectors and are compiled in accordance with the 3rd revision of International Standard Industrial Classification of all Economic Activities (ISIC-Rev.3). The other source is the employment data collected through Labour Force Survey for 2002, though in a highly aggregated form. It contains only nine sectors and its classification is based on ISIC-Rev.2. More importantly it gives the employment data for the manufacturing sector as a whole without any details for its sub sectors.

In order to overcome these difficulties we followed two paths. One was to harmonize the sector classifications of the two sources and the other one was to use the third source, 2003 employment data in structural business statistics, to estimate proportionate distributions in sub sectors of the manufacturing sector.

We combined input-output data for the tabulation categories A (Agriculture, Hunting and Forestry) and B (Fishing) of ISIC-Rev.3 under major division 1 (Agriculture, Hunting, Forestry and Fishing) of ISIC-Rev.2 for which we had employment data. Categories C (Mining), E (Electricity, Gas and Water Supply), F (Construction) and I (Transportation, Storage and Communications) posed no problem because both classifications used them in the same manner. Therefore we aggregated input output data for them accordingly. The I-O data for categories G (Wholesale and Retail Trade) and H (Hotels and Restaurants) of ISIC-Rev.3 are aggregated as data for major division 6 (Wholesale and Retail Trade and Restaurants and Hotels) of ISIC-Rev.2. Similar operations were carried out to aggregate categories J (Financial Intermediation) and K (Real Estate, Renting and Business Activities) of ISIC-Rev.3 into major division 8 (Financing, Insurance, Real Estate and Business Services) of ISIC-Rev.2 and also categories L (Public Administration and Defense, Compulsory Social Security), M (Education), N (Health and Social Work), O (Other Community, Social and Personal Services), P (Private Households with Employee Persons) and Q (Extra-Territorial Organizations and Bodies) of ISIC-Rev.3 into major division 9 (Community, Social and Personal Services)) of ISIC-Rev.2.

The Manufacturing sector (category D) is treated rather differently since some of its sub sectors are the main focus of our paper. As TURKSTAT Labour Force Survey does not provide employment data for each sub sector for the year 2002, we used 2003 data collected by Structural Business Statistics Division of TURKSTAT. The data contained employment figures for 23 manufacturing sub sectors which are

categorized under the numbers of 15-37 in ISIC-Rev.3. However the definitions are not the same in both data sets. While Labour Force Survey data includes informal as well as formal employment, the other covers only the formal sector. Since data for hours worked is limited to 9 sectors in labour force surveys, we proceed with number of workers as indicators of employment.

Assuming that male and female employment ratios in each sub sector and total employment shares of each sub sector in manufacturing sector are more or less the same for the two data sets and have not changed considerably between 2002 and 2003, we calculated those ratios for 2003 data and applied them to the aggregate employment data of manufacturing sector for 2002. It seems that our assumptions hold quite well in general since TURKSTAT Labour Force Survey figures for female and male employment ratios for the manufacturing sector were 21.7 % and 78.3 % respectively, whereas our calculations yield 21.3 and 78.7 for the same ratios. Yet, we are not able to compare similar figures for each sub sector of manufacturing sector.

As a result we obtained input-output tables for domestic transactions for 31 sectors (8 main sectors and 23 sub sectors of manufacturing sector) to match the employment data we reorganized in the same manner.

3.2 Observations on gender composition of sectoral employment in 2002

Broadly speaking, employment in Turkey is mainly concentrated in services (47%), followed by agriculture (35 %) and manufacturing (18 %). Differences between genders in terms of sectoral composition of overall employment is striking especially for agriculture (male: 25 %, female 60 %) and services (male: 55 %, female 27 %). 19 % of males and 13 % of females are employed in manufacturing.

Figure 1.

As shown in Figure 1, apart from agriculture, overall employment is concentrated in trade and services. This is also the case for males. As for females, while employment in services is leading, (~ 15 %), it is followed by textiles and wearing apparel combined together (~ 8 %) and trade (~ 7 %). The proportions of other manufacturing sub sectors in female employment are less than 1 %, except food products. Sectoral proportions for male employment are generally higher than those for females. Textiles and wearing apparel combined together is the only activity where overall male share (5 %) is less than female share (8 %).

Figure 2.

As of 2002, 71 % of overall employment is male and 29 % is female. Figure 2 shows that shares are close in agriculture, while only 21 % of manufacturing and 17 % of services employment is women.

Again, apart from agriculture, wearing apparel and textiles are the most female intensive sectors, with shares of ~ 45 % and 31% respectively. Female share in the employment in textiles and wearing apparel combined together is 37 %. Relatively more female hosting sectors are tobacco products, communication equipment, financing institutions, services, chemicals, precision instruments, office machinery and electrical machinery. Female share is less than 20 % in all other sectors.

3.3 Observations on exports in 2002

Manufacturing products are leading in Turkish exports in 2002 with a share of 65 %, followed by services (31 %), and agriculture (4 %). Textiles and wearing apparel combined together constitute around 38 % of manufacturing exports and 25 % of total exports. Transportation and trade exports account for 82 % of services exports and 25 % of total exports. All other sectors except these four sectors, motor vehicles and basic metals have export shares smaller than 5 %. The vertical axis in Figure 3 shows sectors in terms of their significance in total exports (i.e. %, $Export_i$ /Σ $Export_i$)

Figure 3.

Regarding vulnerability to the external market conditions, export densities of sectors (i.e. %, $Export_i$ /$Output_i$) are perhaps better indicators. These densities are shown in the horizontal axis of Figure 3. Over 40 % of output of communication equipment, motor vehicles and wearing apparel are destined for external sales.

The cross plot of the indicators for export significance and density in Figure 3 serves as a basis in identifying the target sectors for our calculations. Wearing apparel sector stands out as a very significant sector with both indicators. Bottlenecks in its exports are expected to hit both the sector itself and Turkey's total exports, implying serious direct consequences for employment in the sector itself. There are 6 sectors which stand out in terms of both indicators as Figure 3 shows: wearing apparel, textiles, motor vehicles, transportation, basic metals and trade. These sectors together form 54 % of total exports in 2002. Though other transportation equipment sector has high export density, we exclude it due to its low export significance and also because of its vague coverage of non-motor vehicles. We include the communication equipment sector due to its high export density, though it share in exports is only 3 %.

4. Model findings

Before we present findings for leading sectors identified above, a quick look at the direct labour coefficients (l_{cj}) in Figure 4 is in order. Note that inverses of (l_j) coefficients indicate sectoral labour productivities, however one cannot distinguish those between genders, due to the inseparability of output with respect to genders. Figure 4, Panel (a) helps to compare the positions of females and males in terms of employment size standardized with output levels. As would be expected from prior discussion, agriculture and services stand out for both genders, while the former is an outlier partly due to highest female employment rate in agriculture.

Figure 4.

The cross plot in Figure 4, Panel (b) illustrates in the standardized context the gender inequality disfavouring females in general, and in trade and services in particular. Agriculture (far outlier) and wearing apparel sectors stand out with their high labour coefficients being closest ones to the equality line.

4.1 Employment generation potentials of final demands of selected sectors, $\mathbf{G^k}$

In our presentation of our findings with the $\mathbf{G^k}$ and $\mathbf{H^k}$ multipliers, we adapt the positive rhetoric of "employment generation of final demand increase" and "employment associated with output" however in the current crisis circumstances this can imply "employment contraction due to final demand squeeze" and "employment contraction associated with output". Labour impacts less than 0.15 are not reported here. Figures 5-12 display findings with both final demand, $\mathbf{G^k}$ and total flow or output, $\mathbf{H^k}$ multipliers for illustration purposes. Note that the full length of each bar indicates related $\mathbf{g^k}_{cj}$, while the lighter grey portions show h^k_{cj}.[6] Since own effects significantly dominate in all cases, we discuss sectoral composition of cross effects separately for better exposition. Findings with h^k_{cj} are analysed in the next section.

Figure 5 depicts own employment effects ranked by total employment generation. Trade activities stand out with its own employment generation effect. This high total employment effect is associated with male employment as potentials for female employment are rather low. This gender gap is observed even more strikingly for motor vehicles, transportation and basic metals. Impact on male labour in textiles is almost twice of that on female labour. The gender gap is much lower for wearing apparel, where female employment generation potential is highest compared with the other selected sectors.

Figure 5.

Textiles

Textiles final demand would induce employment mainly in trade and agriculture as shown in Figure 6. This ordering is reverse for females. Employment generation in finance and chemicals is common for both genders, while male employment in transportation is more significant.

Figure 6.

Wearing apparel

Figure 7 shows leading sectors for wearing apparel which are textiles, trade and agriculture. Note that transportation and leather products would also demand male labour, but not female labour significantly. Employment in financing institutions is generated for both genders.

Figure 7.

Basic Metals

Leading sectors are trade, transportation, agriculture and mining related activities for overall employment generation as shown in Figure 8. Impact on female employment is very low as would be expected. However, employment effect for females in trade is as significant as basic metals itself for females (Figure 5).

Figure 8.

Communication equipment

Figure 9 shows that trade is significantly leading in overall employment generation and also for males. Other important sectors are agriculture, transportation (males) and financing institutions. Employment effect for males in trade is greater than that in communication equipment itself (Figure 5).

Figure 9.

Motor vehicles

Employment for both males and females is generated in a larger number of manufacturing sectors, like metal products, rubber and plastic, basic metals, along with agriculture, trade, transportation and financing institutions. Figure 10 also shows that variety is less for females, and impacts notably low.

Figure 10.

Trade

Though incomparably low with respect to the employment generated in the sector itself (Figure 5), employment generation in agriculture is outstanding for both

genders. As shown in Figure 11, transportation and financing institutions are significant for males, transportation being insignificant for females.

Figure 11.

Transportation

Figure 12 shows that employment is generated in trade, financing institutions, agriculture and services. The pattern is identical for both genders, though the multipliers fro females are significantly low and employment in services is insignificant.

Figure 12.

The following generalizations can be made from these sectoral findings:

1. Employment generation is highest in the sector of the policy or final demand sector (k).
2. Among our selected sectors, trade and wearing apparel stand out with largest employment generation potentials in the economy.
3. Impacts on female employment generation are lower than on male employment in general.
4. Sectoral diversity is less for females. Hence overall sectoral composition of impacts is determined by males.
5. Employment for both genders is generated significantly in agriculture, trade and financing institutions by final demands of leading export sectors.
6. Female and male employment impacts are very close in agriculture, mainly due to close shares in agricultural employment.
7. Trade stands out as a significant employer sector for all policy sectors, for both genders.
8. Employment generation in transportation and services is significant for males, though not for females.
9. Employment generation effects in high-tech sectors like office machinery, electrical machinery and precision instruments are very low.
10. For all policy sectors, lowest employment generation is observed in tobacco products, its intermediate supply links being very few and very low, it supplies mainly for private consumption.

4.2 Employment generation potentials associated with outputs of selected sectors, H^k

We will discuss findings with total flow or output, H, multipliers for the selected sectors only briefly here, as the sectoral patterns of employment association are in general very similar to those discussed above based on Figures 5-12. One exceptional point is noted in Figure 8. Female and male employment in agriculture, as well as male employment in mining associated with the output of basic metals turns out to be negligible, though final demand multipliers are significant.

There are several discrepancies in the rankings of the employer sectors, but the associated labour in all these cases is less than 1 person, less than 0.5 to be more specific.

In conformity with the definition of total flow, H^k, multipliers, they are smaller than G^k multipliers, and the deviations between H^k and G^k multipliers are directly related to the size of the r_{kk} . The r_{kk} values in ranked order for our leading export sectors are: 1.46 for textiles, 1.32 for basic metals, 1.23 for transportation, 1.12 for motor vehicles, 1.10 for communication equipment, 1.09 for trade, 1.06 for wearing apparel. Note that we can interpret **G-H** values as indicators of hypothetical extraction multipliers.

Figure 5 shows that employment in absolute terms associated with domestic output of trade in trade, of wearing apparel in itself are leading. However, textiles sector has the largest **G-H** difference for own employment impact. In other words, textiles is the most vulnerable sector for both male and female and thus total employment, during a contraction in its final demand. Highest cross impact is observed on trade. Along this line of reasoning, despite its significance in exports, employment in wearing apparel sector turns out to be less vulnerable for both genders in the absence of a final demand impetus.

5. Conclusions

This paper is an attempt to find out the employment generation potentials of leading export sectors in Turkey, and assess its implications for likely contractions in final demand in the current global crisis environment. Common employment input-output models relate overall labour requirements to final demand. Since our concern is to also locate these labour requirements, we developed a methodology to decompose common labour multipliers with respect to employer sectors. We estimated sectoral

employment data with respect to gender and used the 2002 input-output data, which was aggregated for 31 sectors to comply with employment data.

The crucial characteristics of the Turkish economy in the last decades in this context are: low employment generation, penetration of imports, and high income elasticity of exports and low rate of labour participation of women. Female employment is concentrated mainly in agriculture and services, the share of manufacturing activities being low.

The G multipliers indicate that trade generates highest employment for males and wearing apparel generates highest employment for females. For both genders, employment generation potentials of major export sectors are stronger in agriculture, trade and financing institutions, while they are very limited in manufacturing sub sectors. Trade stands out as a significant employer sector for all policy sectors. Impacts on female employment generation are lower than on male employment in general. Male employment generation in transportation and services is more frequent while these sectors are not significant for female employment. Finally, employment generation effects in high-tech sectors are very low. These patterns overlap in general with the patterns found with H multipliers, though the levels are lower, an expected outcome. Textiles sector stands out with highest deviations from G multipliers, for both genders. Employment associated with its output would be hit hardest by bottlenecks in the rest of the economy with trade being the leader.

The quick recovery of the Turkish economy from the severe crisis in 2001 was due to the favourable conditions in the world economy. The current global crisis is characterized by the acute problem of widespread unemployment, which placed job creation in the centre of government agendas. Policy design in this context is bound to take intersectoral aspects of employment generation. Whether this will take into account gender imbalances in labour participation and employment concurrently remains a challenging question globally.

Acknowledgements: Gulay Gunluk-Senesen's work was supported by the Research Fund of the University of Istanbul: Project no. UDP-3654. Special thanks are due to Haluk Levent (Galatasaray University) for guidance on employment data. We also thank Mehmet Kula (TURKSTAT) and Husamettin Nebioglu (Undersecretariat of Foreign Trade, Turkey) for clarification in trade data.

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Figure 1. Sectoral composition of employment with respect to gender, Turkey, 2002

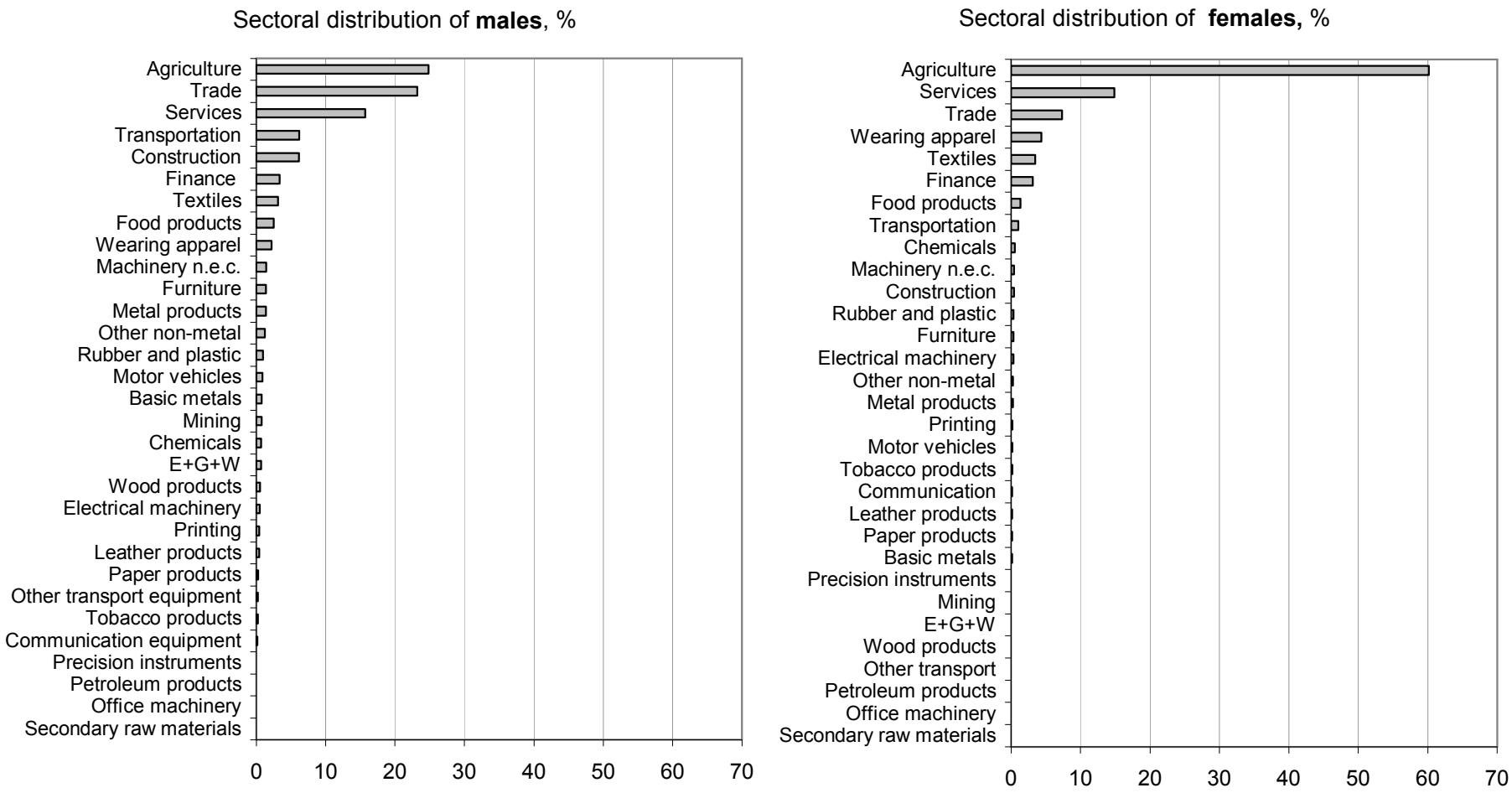


Figure 2. Female shares in sectoral employment (%), Turkey, 2002

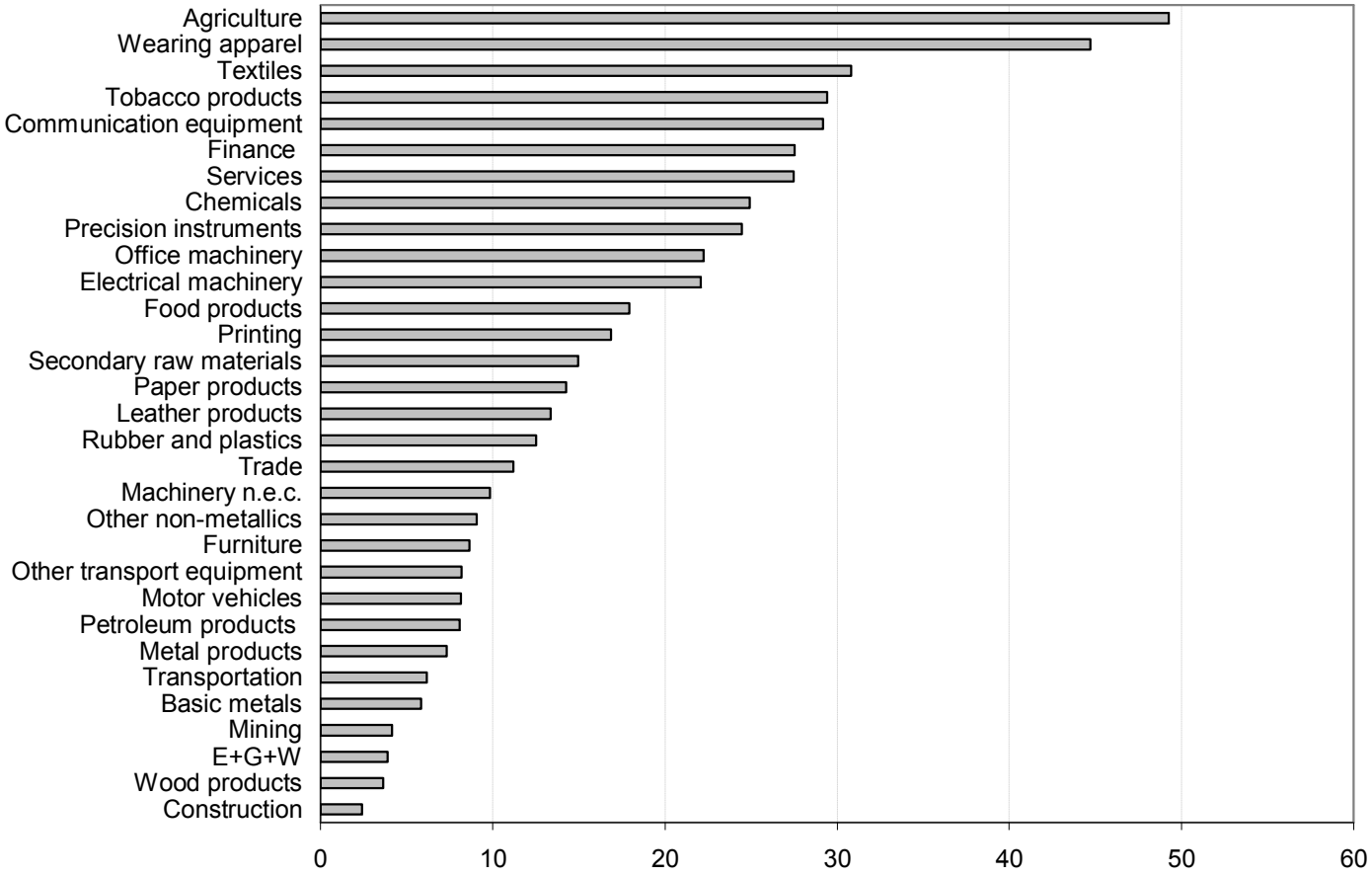


Figure 3. Export density and export significance of sectors (%) Turkey, 2002

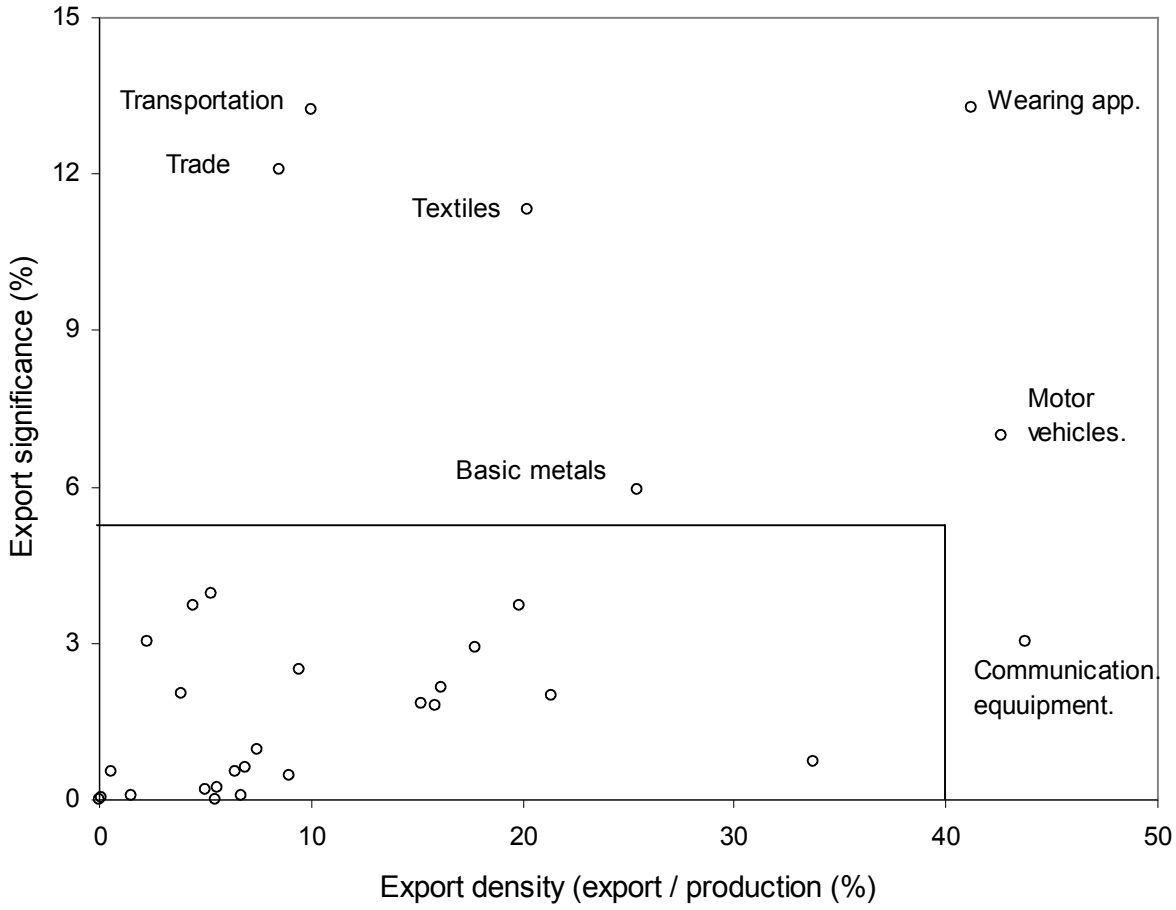
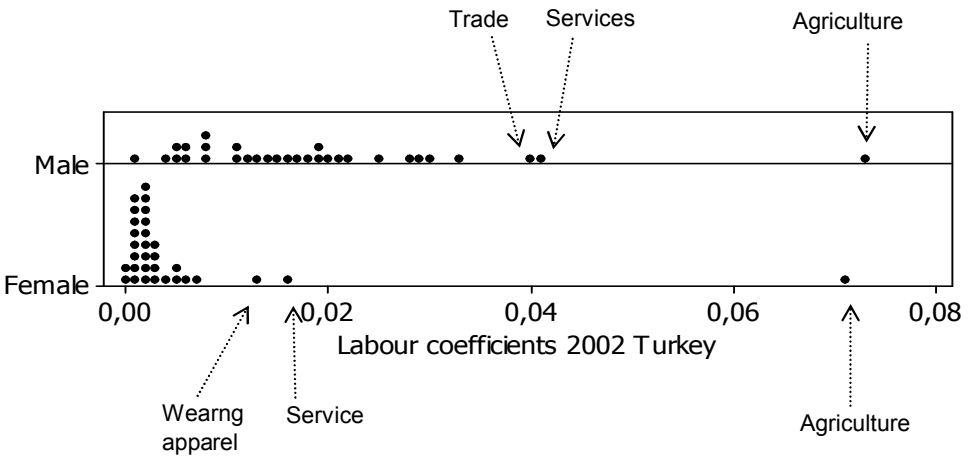


Figure 4. Direct labour coefficients, L_{cj}, Turkey, 2002

(a)



(b)

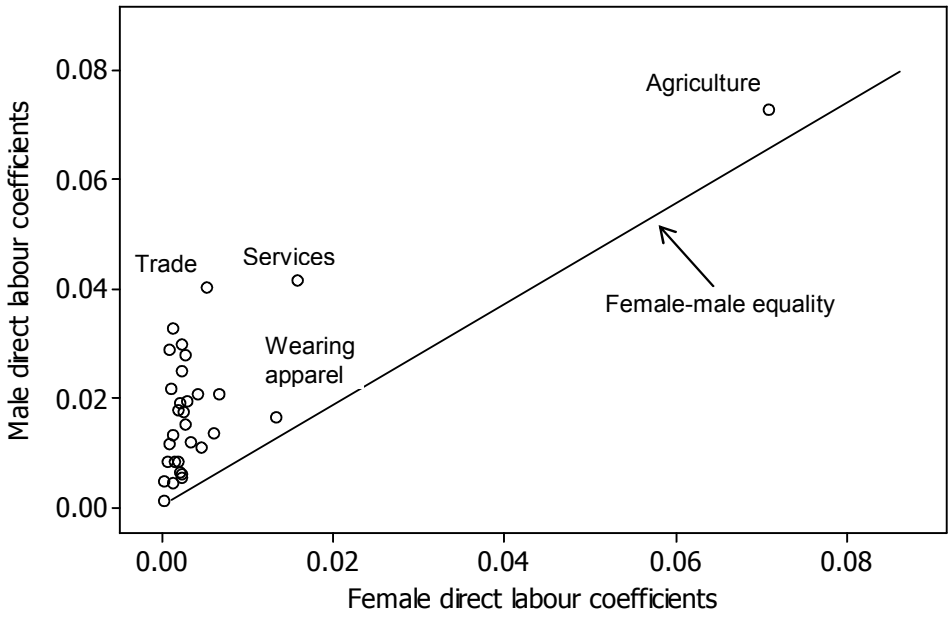


Figure 5. Own effects for employment generation / association (1000×persons/bn TL)

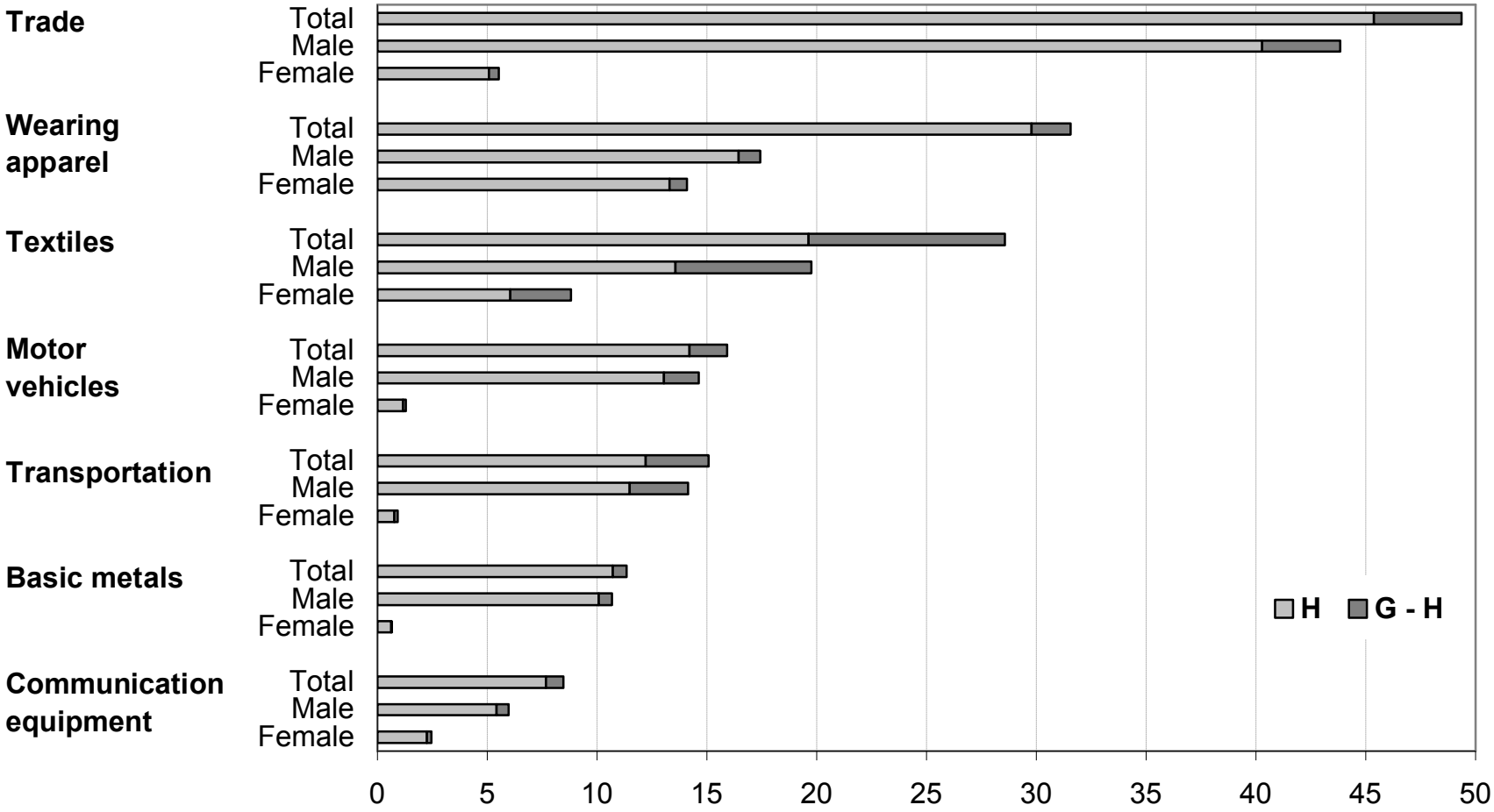


Figure 6. Policy sector: **Textiles**, employment generation / association (1000×multiplier)

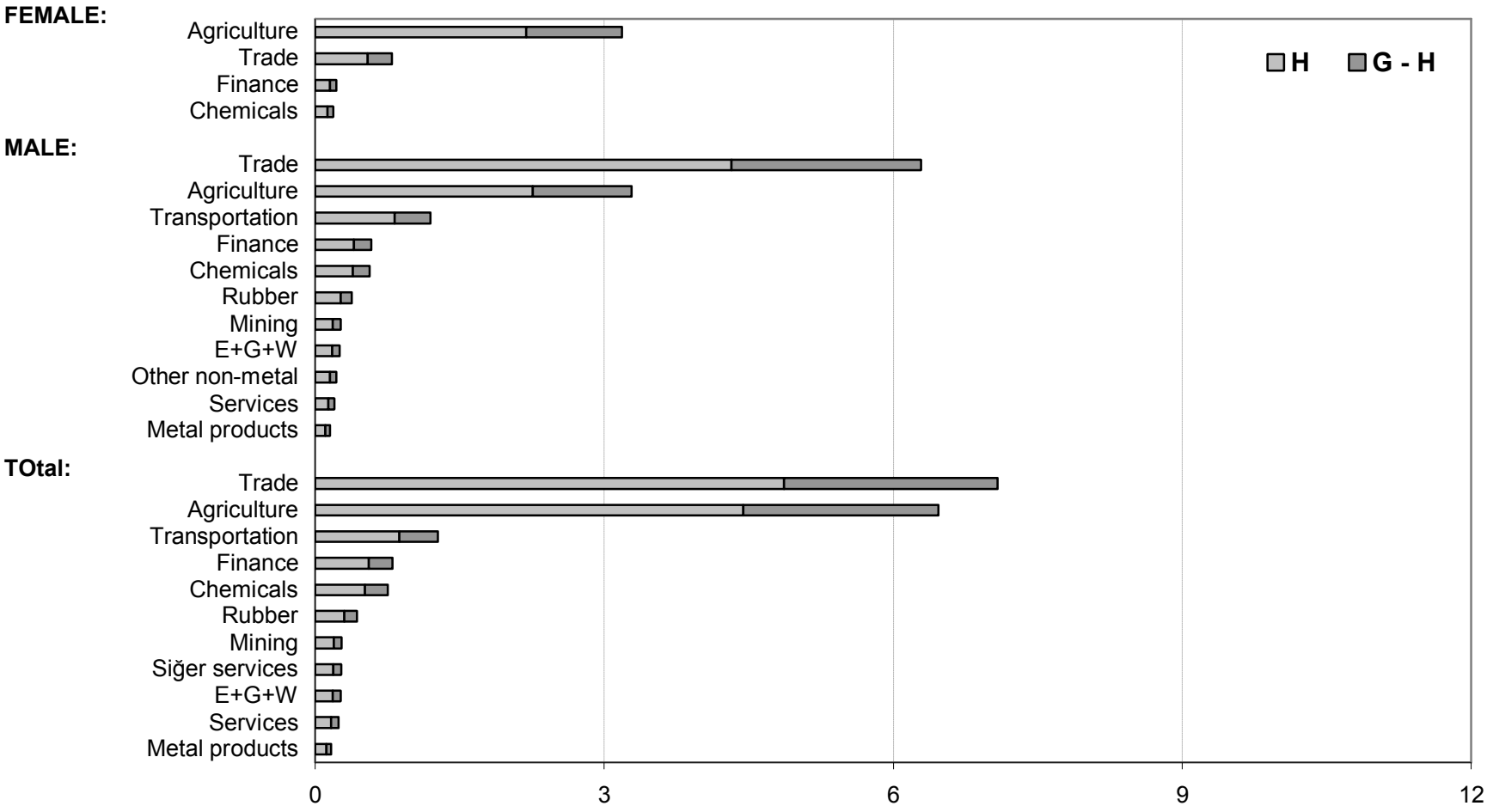


Figure 7. Policy sector: **Wearing apparel**, employment generation / association (1000×multiplier)

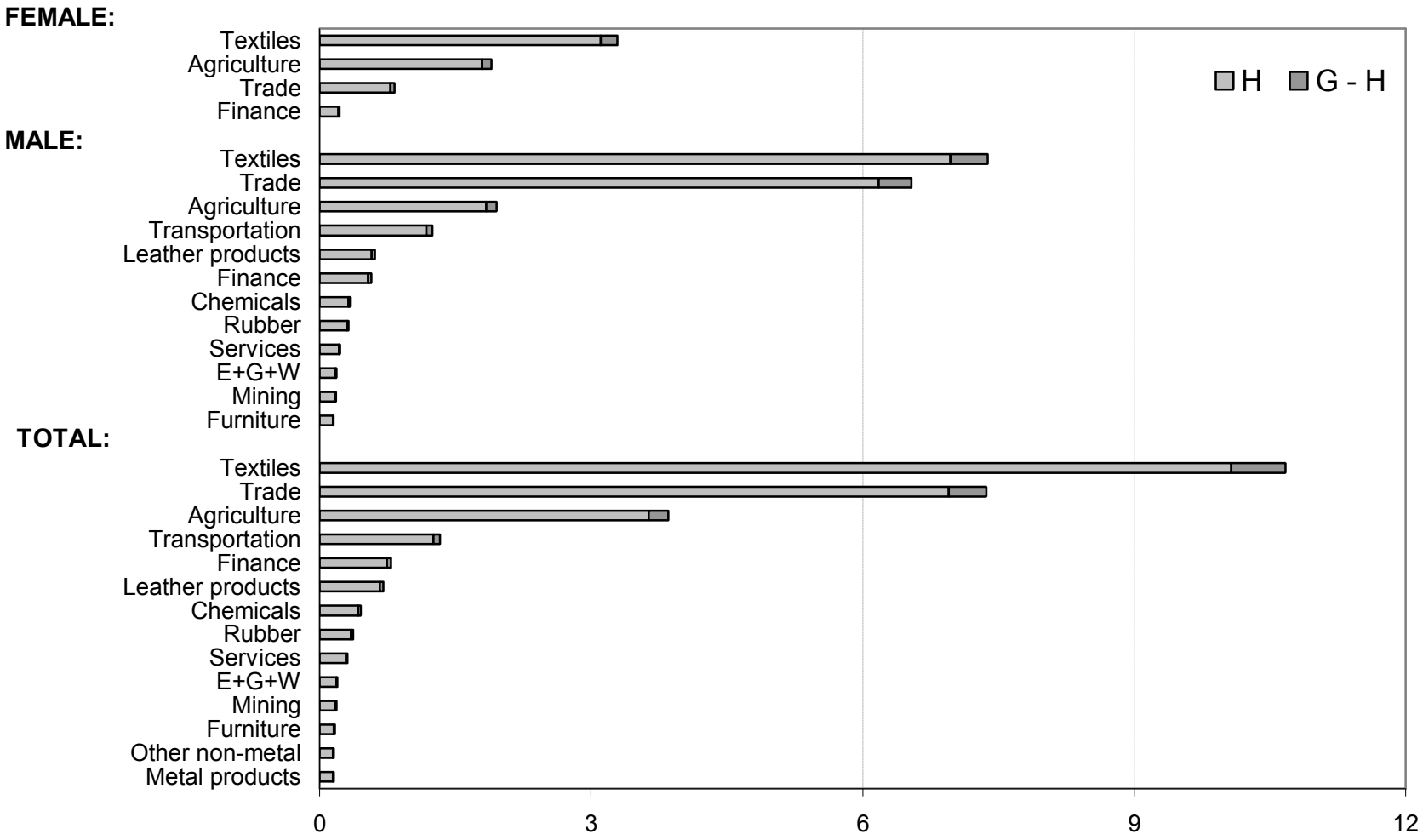


Figure 8. Policy sector: **Basic metals**, employment generation / association (1000×multiplier)

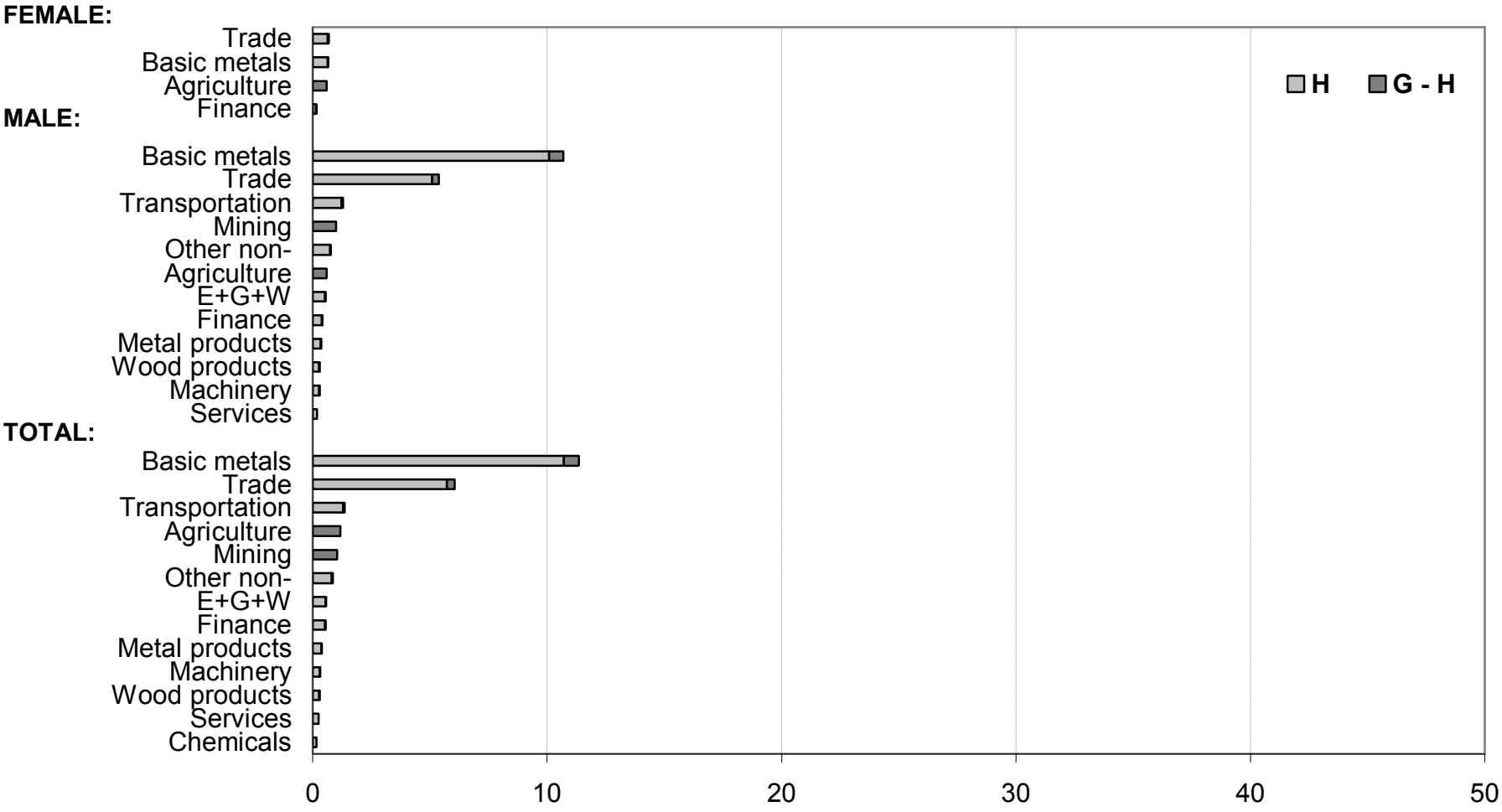


Figure 9: Policy sector: **Communication equipment**, employment generation / association (1000×multiplier)

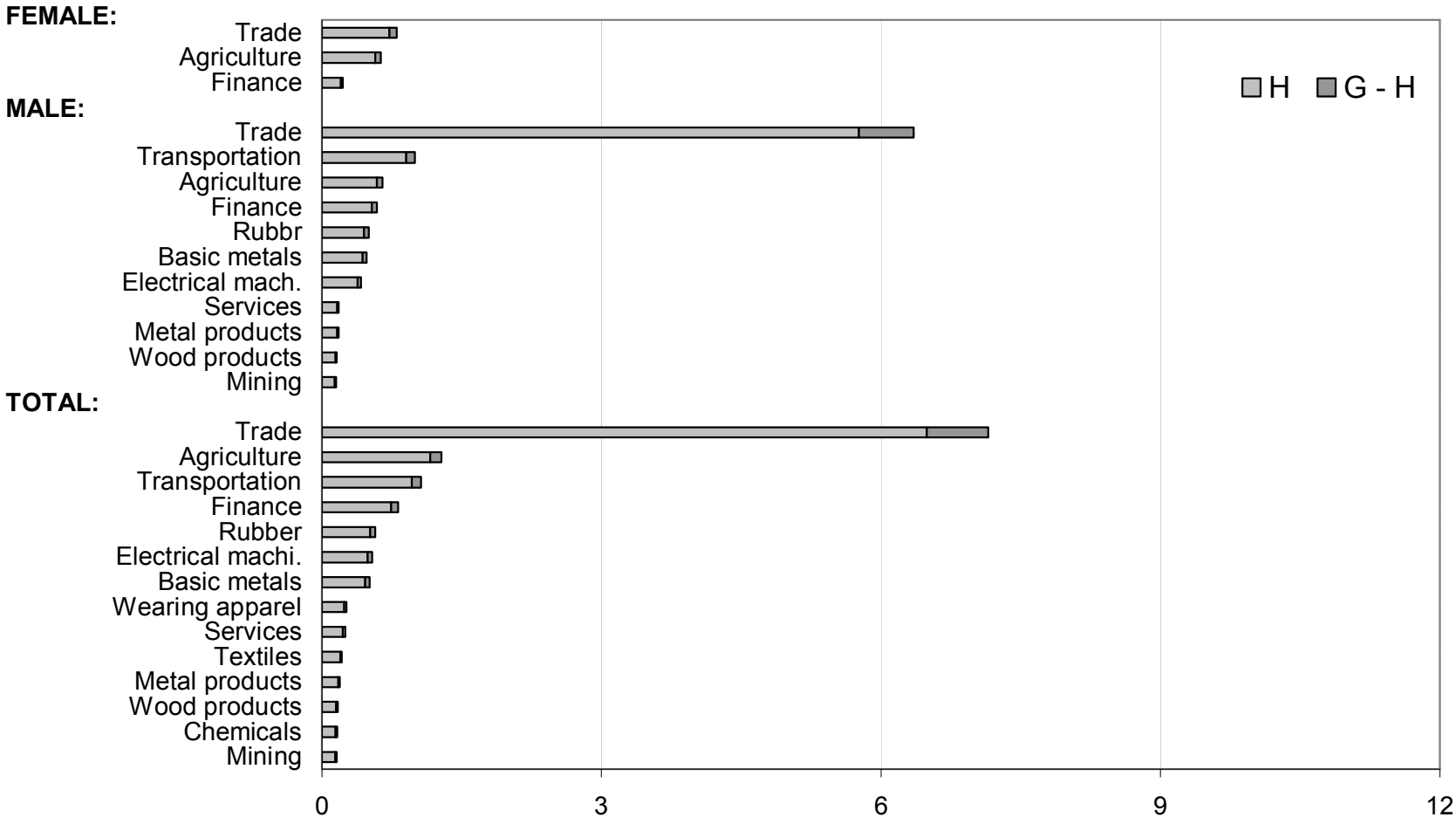


Figure 10: Policy sector: **Motor vehicles**, employment generation / association (1000×multiplier)

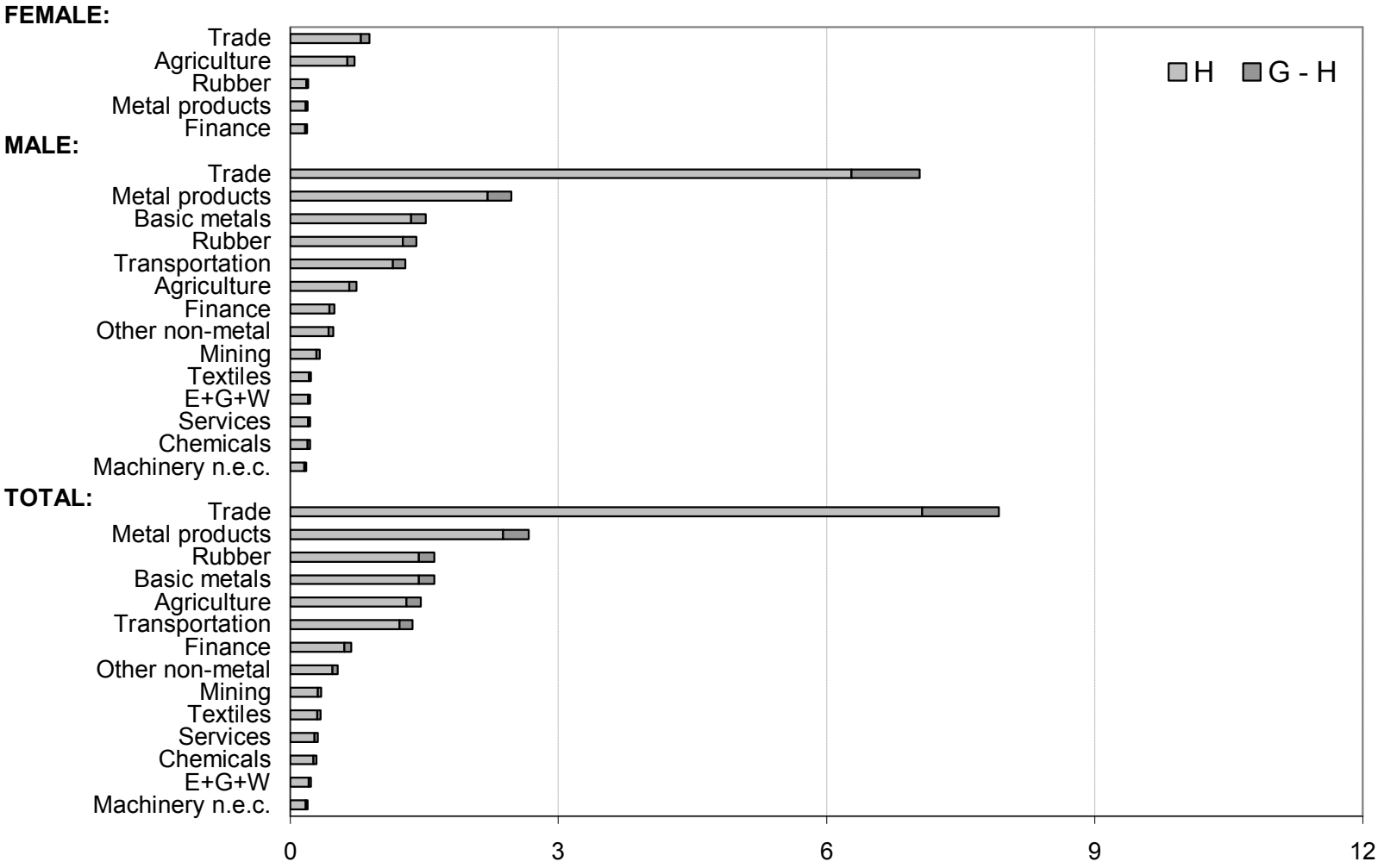


Figure 11: Policy sector: **Trade**, employment generation / association (1000×multiplier)

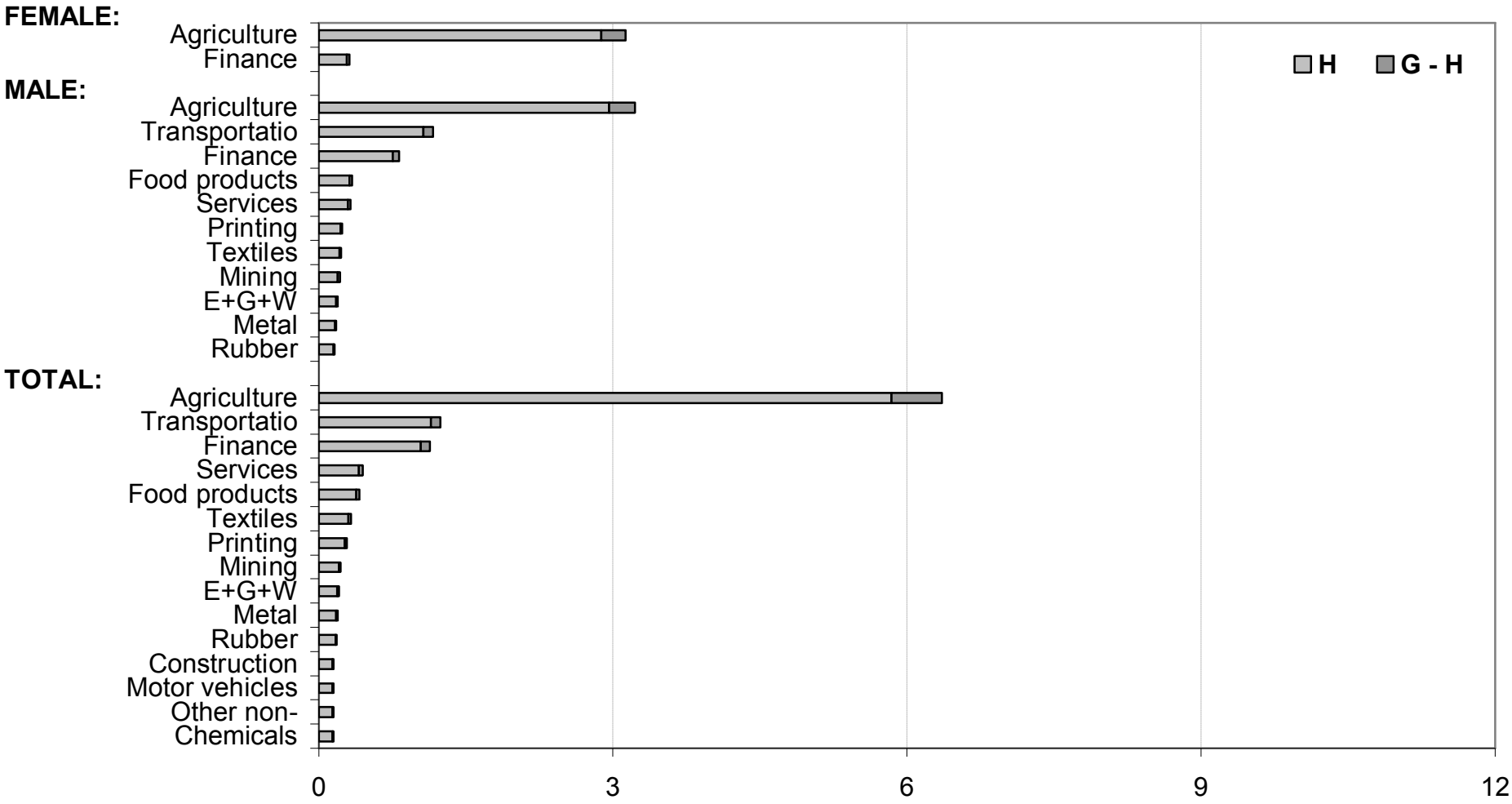
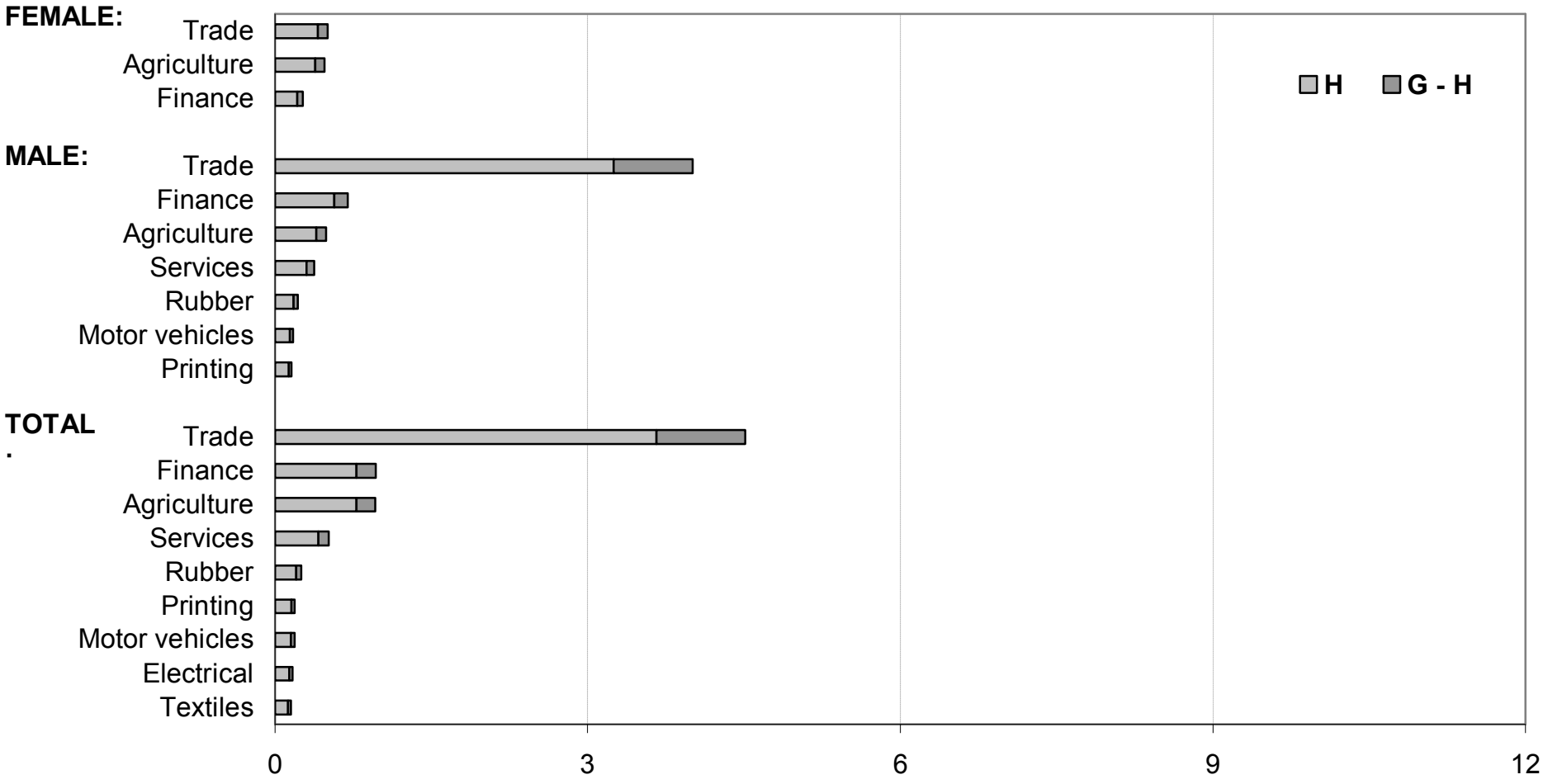


Figure 12: Policy sector: **Transportation**, employment generation / association (1000×multiplier)



NOTES

[1] Paper presented at *the 17th International Input-Output Conference*, July 13-17, 2009, University of São Paulo, Brazil.

[2] See Senesen and Gunluk-Senesen (2007) for import patterns. As the restructuring policies in Turkey and Mexico are very similar, observations on outcomes also overlap, e.g. see Ruiz-Napoles (2004).

[3] For example, out of 59 sectors in the 2002 I-O table for Turkey, 2 sectors have negative, 2 zero, and 5 sectors have very small final demands.

[4] See Sinha (2008), Sinha and Khan (2008) and Kim (2008) for recent SAM work which account for income distribution with respect to gender. Our analysis focuses on labour requirements, a basic condition for income generation.

[5] We will not deal with the issue of occupational segregation in formal market activity, its significance notwithstanding.

[6] Though they are not additive by definition, measurement units and scales are the same for both multipliers. Also note that equivalence of H multipliers with multipliers found by hypothetical extraction method enables analysis of G-H differences as net contributions to the economy, or employment in our case.