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**Article**

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## TAXATION AND FEMALE LABOR SUPPLY IN OECD COUNTRIES

### Female labor force participation rates

Labor force participation rates for women have increased in recent years, but are still substantially lower than those of men in many OECD countries (OECD 2016). Table 1 shows female labor force participation in 2014 for selected countries and for the OECD average according to calculations by the International Labour Organization (ILO 2016). On average, 50.9% of women participated in the labor force in the OECD member countries, while the corresponding rate for men was 79.7% (OECD 2016; ILO 2016). However, there is substantial heterogeneity across countries: the Nordic countries, pioneers in gender equality (UNDP 2011), exhibit high female labor force participation rates of 70.3% in Iceland, 61.2% in Norway, 60.2% in Sweden and 58.7% in Denmark. Female labor force participation is intermediate in other major OECD economies, like the US (56.3%), the UK (55.8%), Germany (53.7%) and France (50.6%). Lower rates are reported for the Southern European countries of Greece (41.1%), Italy (39.7%) and Malta (37.8%). With a rate of 29.3%, the labor force participation of women is lowest among the countries listed in Table 1 in Turkey.

In many countries, policymakers aim to provide equal employment opportunities for men and women and target higher female labor force participation rates. In particular, major goals are to reduce the gender pay gap and to make combining family and career plans easier for parents (Jaumotte 2003). This is even more important as many OECD countries face demographic challenges and fostering female labor force participation can help to overcome expected shortages in labor supply. Moreover, some ageing societies are experiencing increasing pressure on their pay-as-you-go pension systems, which could be mitigated if labor market participation were to become more attractive for women (Braun et al. 2015). Government policies related to this, however, vary largely (The Economist 2016). One measure that may generate barriers and distortions suppressing female labor force participation is income taxation.

### Second earner income taxation

Labor income taxes discourage work. Garibaldi and Wasmer (2004) show that the female labor supply is highly responsive to variations in tax rates, especially when market activities are easily substituted by home production. In the presence of gains from specialisation in household economies, many partners pool their incomes and decide jointly on labor supply, depending on household taxation. Hence, labor supply decisions and the distorting impact of taxes should be considered at the household- and not only at the individual level. From the perspective of an income maximizing household, many countries' tax systems implicitly treat secondary earners in couples differently to single individuals

**Table 1**

Female labor force participation rates in selected countries	
	Female labor force participation rate, 2014
Austria	54.7
Belgium	47.6
Czech Republic	51.3
Denmark	58.7
Estonia	56.3
Finland	55.4
France	50.6
Germany	53.7
Greece	44.1
Hungary	44.9
Ireland	53.1
Italy	39.7
Luxembourg	50.6
Netherlands	58.3
Poland	48.9
Portugal	54.9
Slovak Republic	51.2
Slovenia	52.2
Spain	52.5
Sweden	60.2
United Kingdom	55.8
Iceland	70.3
Norway	61.2
Switzerland	61.8
Turkey	29.3
Australia	58.7
Canada	61.4
Japan	48.7
Korea	50.1
New Zealand	61.9
United States	56.3
OECD Average	50.9

Source: ILO 2016.

(Triest 1990; Smith et al. 2003). This potentially affects the labor supply of secondary earners, which is often the female partner (OECD 2012).

In a recent report, the OECD (2016) calculated average tax rates (ATR) for secondary earners taking into account household composition and overall household tax

burden. The secondary earner ATR is defined as the ratio between the increase in income tax plus employee social security contributions (SSC) and the additional gross household income as a result of the secondary earner entering the labor force:

$$ATR = \frac{\text{Increase in income tax, employee SSC (net of cash benefits)}}{\text{Increase in family gross income}} \\ \text{(as a result of secondary earner entering the workforce)}$$

**Table 2**

Average tax rates for singles and calculated average tax rates for secondary earners				
	Net personal average tax rates on second earners at 67% of average earnings, no children	Net personal average tax rates on second earners at 67% of average earnings, 2 children	Net personal average tax rates, single persons at 67% of average earnings, no children	Secondary earner relative tax rates, no children (column 1/column 3)
Austria	28.7	31	28.8	1.0
Belgium	49.1	49.1	35.9	1.4
Czech Republic	31.1	31.1	19.1	1.6
Denmark	39.6	39.6	33.1	1.2
Estonia	22.6	22.6	18.2	1.2
Finland	23.8	23.8	23.9	1.0
France	35.2	31.1	26.7	1.3
Germany	46.0	46.0	34.5	1.3
Greece	21.2	23.3	19.2	1.1
Hungary	34.5	34.5	34.5	1.0
Ireland	20.9	28.9	13.6	1.5
Italy	27.3	30.5	23.8	1.1
Luxembourg	32.9	32.9	22	1.5
Netherlands	29.2	22.8	24.7	1.2
Poland	25.8	25.8	22.1	1.2
Portugal	30.9	34.7	19.5	1.6
Slovak Republic	29.9	29.9	19.5	1.5
Slovenia	43.2	34.2	28.7	1.5
Spain	24.3	24.3	18.5	1.3
Sweden	21.8	21.8	21.8	1.0
United Kingdom	19.6	19.6	19.5	1.0
Iceland	36.9	43.6	23.9	1.5
Norway	27.0	27.0	25.2	1.1
Switzerland	21.8	20.7	14.4	1.5
Turkey	25.8	25.8	24.5	1.1
Australia	17.8	33.9	17.7	1.0
Canada	25.3	32.1	17.8	1.4
Japan	22.4	22.4	20.2	1.1
Korea	11.3	11.3	10.1	1.1
New Zealand	13.4	35	13.4	1.0
United States	29.3	29.3	22.9	1.3

Notes: Marginal rates expressed as a percentage of gross wage earnings. Average tax rates for second earners 67% of average earnings, primary earner 100% of average earnings without children (column 1), with children (column 2). Average tax rates for singles 67% of average earnings (column 3). Relative tax rate as ratio between second earner and single ATR (without children) (column 4=column 1/ column 3).

Source: OECD 2016.

In most countries this measure differs from the ATR of singles earning the same income for several reasons. First, some countries allow joint tax filing for married or registered partners. In Germany, for example, it is possible for couples to apply for so-called income splitting: A couple's joint income can be divided and taxed at each partner's marginal tax rate. While similar tax schemes for couples were common in many OECD countries at the beginning of the 1970s, today most countries tax partners' incomes individually (OECD 2016). However, even countries where partners are taxed separately often offer provisions for depending spouses, which are fully or partially lost in dual earner households. For example, in Slovenia a dependent family member allowance exists and in Canada a single earner family has a spouse tax credit (OECD 2016). Most OECD countries additionally provide support for families with children, which often depends on overall family income and, thus, also affects secondary earner ATR.

Table 2 presents ATRs for secondary earner income at 67% of the average gross wage earnings in the country. The primary earner earns 100% of average gross labor income in this scenario. The numbers account for changes in family tax payments, which are due to the secondary earner entering the labor force conditional to the fixed labor supply of the primary earner. Secondary earner ATRs are presented for families without children (column 1) and with two children (column 2). Additionally, column 3 shows ATRs for single individuals earning 67% of average gross earnings. Column 4 presents the tax rates of secondary earners without children relative to those of singles (column 1/column 3). All numbers refer to data from 2014.

Table 2 shows that, due to the above mentioned family allowances, the secondary earners' ATRs in the majority of countries are higher than the rates for singles at 67% of average earnings. According to the calculations presented, secondary earners and singles are only taxed equally in Hungary. In many countries, ATRs for secondary earners are even higher than those for single earners with 100% of average earnings (OECD 2016). On the one hand, this goes against the fundamental idea of progressive tax systems to tax lower incomes at lower rates; and it potentially reduces incentives for the second earner to enter the labor force. On the other hand, however, it can be argued that family allowances and joint taxation schemes treat different family models for the division of labor more equally from the household income perspective if the taxable unit is considered to be the household as a whole.

For families without children, ATRs for secondary earners are highest and above 40% in Belgium (49.1%), Germany (46.0%) and Slovenia (43.2%). Among the European countries the values are lowest for the UK (19.6%), Ireland (20.9%), Greece (21.2%), Sweden (21.8%) and Switzerland (21.8%). In some countries, secondary earners' ATRs change considerably for families with children under otherwise same assumptions. For New Zealand and Australia, for example, the measure increases by 21.6 and 16.1 percentage points respectively. On the other hand, it decreases the most for Slovenia (-9.0 percentage points) and the Netherlands (-6.4 percentage points). These mixed effects are due to differences in the design of child benefits: for countries in which these benefits are based on overall family income, the calculated second earner tax penalty becomes larger. Other countries provide special tax allowances or tax credits for families with children, which tends to reduce the second earner tax penalty compared to households without children. In the majority of countries, however, the presence of children does not have a large effect on the calculated secondary earner ATRs, as can be seen in Table 2.

Comparing columns 1 and 2 of Table 2 with Table 1 shows that female labor force participation is low in several countries with high second earner ATR (e.g. for Belgium), and in other countries where second earners are taxed comparatively little in the international context it is relatively high, e.g. in Switzerland, Sweden and the UK. However, in some countries income taxes are generally higher. This reduces family income and might provide additional incentives for the second earner to enter the labor force. To account for this fact, column 4 calculates the relative tax rate for secondary earners without children relative to singles, as presented in columns 1 and 3.

Calculations reveal relatively low ATRs for secondary earners in the Scandinavian countries Finland (1.0), Sweden (1.0) and Norway (1.1) with high female labor force participation rates (Table 1). The calculated ratios are also relatively low for the Netherlands (0.9), the UK (1.0), New Zealand (1.0) and Australia (1.0) and are accompanied by high female labor force participation rates in these countries. Higher relative secondary earner tax rates in the Czech Republic (1.6), the Slovak Republic (1.5), Slovenia (1.5), Luxembourg (1.5) and Belgium (1.4), for example, are correlated with a lower female labor force participation rate according to Table 1. These numbers provide some indicative evidence of the link between taxes for secondary earners and female labor

force participation. Using older data Jaumotte (2003) presents a more comprehensive econometric analysis of the issue conditional to several other economic and demographic characteristics of the countries. The patterns described above are generally in line with the findings of that study.

However, comparing Tables 1 and 2 shows that despite the comparatively low absolute or relative secondary earners ATR, female labor force participation rates are low in several countries (e.g. Greece, Japan and Turkey). On the other hand, some countries with high secondary earner ATR nevertheless have relatively high female labor force participation rates (e.g. Canada, Germany, Iceland, and Portugal).

### Policy context

Beyond taxation, other factors determine female labor force participation rates in an economy including the institutional environment in a country, like the public provision and quality of daycare services (Berger and Black 1992). Moreover, non-institutional factors are likely to play an important role, too. Fernández and Fogli (2009) argue that different preferences related to cultural background have a strong impact on female labor force participation. They show that female labor force participation rates in immigrant sending countries correlate strongly with the participation rates of immigrants' descendants in the US, where all groups are exposed to the same institutional environment. Moreover, Jaumotte (2003) argues that industry and occupational structures have an impact on the (reported) labor force participation rates of women in different countries. Part-time employment opportunities and incentives also play a major role in this context.

Nevertheless, as described above, a household level perspective on the effects of income taxation is important to understanding the labor supply decisions of couples. This is essential for evaluating tax policies in the light of many governments' goals to foster the labor force participation of women.

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