

LIS

Working Paper Series



No. 769

Work/Family Arrangements across the OECD: Incorporating the Female-Breadwinner Model

Helen Kowalewska, Agnese Vitali

July 2019
(revised in February 2020)



CROSS-NATIONAL
DATA CENTER
in Luxembourg

Luxembourg Income Study (LIS), asbl

Work/Family Arrangements across the OECD: Incorporating the Female-Breadwinner Model

Helen Kowalewska, Postdoctoral Research Fellow at the University of Oxford,
UK¹

Agnese Vitali, Associate Professor of Demography at the University of Trento,
Italy²

Abstract

In analysing heterosexual couples' work-family arrangements over time and space, the comparative social policy literature has settled on the framework of the 'male-breadwinner' versus 'dual-earner' family. Yet, in assuming men in couple-families are (full-time) employed, this framework overlooks another work-family arrangement, which is the 'female-breadwinner' couple. Including female-breadwinner couples matters because of their growing prevalence and, as our analysis shows, greater economic vulnerability. We perform descriptive and regression analyses of Luxembourg Income Study microdata to compare household incomes for female-breadwinner couples and other couple-types across 20 industrialised countries. We then consider how labour earnings and benefit incomes vary for 'pure' breadwinner couples comprising one wage-earner and one inactive/unemployed partner according to the gender of the breadwinner. We find that pure female breadwinners have lower average individual earnings than male breadwinners, even after controlling for sociodemographic characteristics and occupational and working-time differences. Furthermore, welfare systems across most countries are not working hard enough to compensate for the female breadwinner earnings penalty, including in social-democratic countries. Once controls are included in our regression models, it never happens that pure female breadwinners have higher disposable household incomes than pure male breadwinners. Thus, our study adds to a growing body of evidence showing that female-breadwinner families sit at the intersection of multiple disadvantages. In turn, these couples offer comparative scholars of the welfare state an 'acid test' case study for how effectively families are protected from social risk. Our results additionally highlight how cross-national differences in the female breadwinner income disadvantage do not fit neatly with established welfare typologies, suggesting other factors – in particular, labour market characteristics and the economic cycle – are also at play.

Keywords: Breadwinning; Earnings; Female breadwinners; Gender; Household employment; Luxembourg Income Study; Male-breadwinner model; Work-family arrangements; Women's employment

¹Department of Social Policy and Intervention, 32 Wellington Square, University of Oxford, OX1 2ER. Helen.Kowalewska@spi.ox.ac.uk

²Department of Sociology and Social Research, University of Trento, Via Verdi, 26 - 38122 Trento, Italy. Agnese.Vitali@unitn.it

Introduction

The gendered division of paid and unpaid work within heterosexual couple-households has transformed across industrialised countries in recent decades. In describing and analysing this change, studies of work-family arrangements and policies have settled on the framework of the 'male-breadwinner' versus the 'dual-breadwinner' family (e.g. Esping-Andersen, 1999; Gornick and Meyers, 2009; Von Gleichen and Seeleib-Kaiser, 2018). At the normative level, social policies have shifted away from explicitly supporting men to do all the paid work and women to do all the unpaid domestic work, and towards assuming and prescribing 'employment for all' (Orloff, 2006). This is evidenced by the expansion of work-family policies designed to encourage women's employment, the trend towards 'defamilialising' services that enable care to take place outside of the family, and a tightening of the link between employment and social rights. In terms of couples' actual behaviours, the proportion with two wage-earners has increased as the share with one wage-earner has declined (e.g. Daly, 2011; Lewis, 2001; Lewis et al., 2008).

However, an additional 'type' of household employment is becoming more prevalent among couples, whereby the woman is the sole or main wage-earner: the so-called 'female-breadwinner' arrangement.¹ While female-breadwinner families have featured in cross-national studies of couple-households' employment arrangements, these studies do not analyse in-depth female breadwinners' economic characteristics or how these compare with those of male breadwinners (Dotti Sani, 2018; Haas et al., 2006; Hook, 2015; Sánchez-Mira and O'Reilly, 2019). Our study contributes to filling this 'gap'. Using microdata from the Luxembourg Income Study, we compare the economic characteristics of female-breadwinner couples with those of other couple-types across 20 industrialised countries. We then dig deeper into observed income inequalities between couples in which the woman is the only wage-earner and couples in which the man is the only wage-earner, examining how individual labour earnings and household benefit incomes vary between these two couple-types across different countries.

Comparing the situations of female-breadwinner versus male-breadwinner couples is imperative for ensuring that families are not unduly penalised when the woman rather than the man is the breadwinner, especially since female breadwinning is often not a short-lived arrangement (e.g. Bryan and Longhi, 2018; Drago et al., 2005). Although mainstream and feminist scholars typically describe the dual-earner model as the most gender-egalitarian arrangement, relying on a

single breadwinner may be the only realistic option for some families during some parts of the life-course. Job loss, career changes and breaks, parenthood, caring for a sick or elderly relative, illness, disability, and individual agency and choice can mean that it is neither feasible nor desirable for both members of the couple to be in employment at the same time, at least on a full-time basis. Consequently, breadwinning should be a genuinely non-gendered opportunity so that men and women can, if necessary, 'take turns' in being the main wage-earner according to the shifting needs and wants of the family and individuals within it (Gerson, 2010). That means there may be some time spent under a male-breadwinner arrangement, some time under a dual-breadwinner arrangement, and some time under a female-breadwinner arrangement, so that eventually everything 'balances out' and a gender-egalitarian division of breadwinning is reached in the long-run. Supporting such fluidity in couples' employment arrangements can also make families resilient in the face of economic uncertainty: if one member of the couple has his or her hours cut or becomes jobless, the other can increase his or her labour supply to effectively 'compensate', thereby helping to reduce inequalities between work-rich and work-poor households.

It is not immediately clear whether families headed by a female breadwinner will necessarily be worse-off than male-breadwinner couples. On the one hand, some studies explain the rise in female-breadwinner households as a by-product of poor economic outcomes among low-skilled men (e.g. Dotti Sani, 2018; Harkness and Evans, 2011). When the man loses his job, the woman becomes the sole provider out of economic necessity. Women's more disrupted and part-time career histories and broader gender segregation and inequalities in the labour market may in turn mean that female breadwinning is associated with lower household incomes and earnings compared with male breadwinning (e.g. Harkness and Evans, 2011). On the other hand, other studies have drawn attention to the rise in educational hypogamy, whereby the woman has a higher level of education than her partner. Educational hypogamy increases the odds that the female partner will be the breadwinner (e.g. Klesment and Van Bavel, 2017). Furthermore, women in educationally hypogamous couples can potentially exert more power within their relationships and influence their partners to reduce their hours of employment, which may reduce men's relative contribution to household earnings (Kanji, 2013). Hence, it is plausible that female breadwinners have similar if not higher incomes compared with male breadwinners, especially given that male breadwinning is concentrated among the lower-educated (e.g. Hook, 2015).

Yet against this second hypothesis, our results suggest that female breadwinning as compared with male breadwinning and dual breadwinning places couples at

risk of having a low income. We find that across all 20 countries, female breadwinners *never* achieve higher disposable household incomes than male breadwinners. This is partly explained by a female breadwinner earnings penalty: women who are the sole wage-earners in their household earn less as individuals than their male counterparts once controls for sociodemographic characteristics and occupational and working-time differences are included in our regression models. In addition, female-breadwinner households do not always receive higher average benefit incomes than their male counterparts, suggesting welfare systems in most countries are not working hard enough to compensate for female breadwinners' lower average earnings, including in social-democratic countries. Therefore, integrating the female-breadwinner couple into the male breadwinner/dual breadwinner framework that dominates comparative studies of work-family arrangements and policies is important not only because of their greater occurrence, but because of their greater economic vulnerability, too. Our results additionally highlight how cross-national differences in the female breadwinner income penalty do not fit neatly with established welfare typologies. We suggest that economic and labour market conditions and other broader structural conditions, in addition to social policies and welfare regimes, matter for explaining these cross-national differences and should also be brought into studies of household employment and incomes.

The next section summarises existing studies of household employment patterns and how an analysis of female breadwinning fits into this. We then outline our data and approach in the third section and our findings in the fourth. We conclude by drawing insights for the social policy literature.

Patterns of Breadwinning

Since the mid-1990s, the concept of the 'social investment state' has come to dominate debates on the welfare state within academic and policymaking contexts. Behind this concept is the idea that social policies designed to 'invest' for the future can help welfare states adapt to the dual challenges of increased demands for state social provision and a smaller tax-base under post-industrialism. Crucial to achieving the goals of social investment is the promotion of a 'dual-breadwinner' family model, whereby men and women provide for their own welfare through their individual participation in paid employment. Proponents of social investment highlight the lower rates of childhood poverty and – where work-family reconciliation supports are adequate – higher fertility

rates among dual-breadwinner couples compared with their single-earner counterparts (e.g. Esping-Andersen 2002; Esping-Andersen 2016).

As Figure 1 shows, dual, full-time breadwinning is most common in Scandinavian countries. This is rooted in cultural support for women's employment (e.g. Haas et al., 2006), a recognition that care is important and a shared social concern (e.g. Craig and Mullan, 2010), and highly 'defamilialising' policies (e.g. Gornick and Meyers, 2009). Central and Eastern European countries also have comparatively high levels of dual, full-time breadwinning. This reflects the legacy of socialism, which encouraged women's full-time employment, even if women retained responsibility for unpaid work in the family (e.g. Pascall and Lewis, 2004). Still, rates of dual breadwinning are lower than in Scandinavia, while male breadwinning is more prevalent. Mass deindustrialisation under the collapse of communism and the dismantling of highly feminised public services impacted negatively on women's employment rates. There has also been resistance to feminism in certain post-Soviet countries and a 'refamilialisation' of policies away from supporting women's employment and towards promoting traditional gender roles, whether implicitly or explicitly (e.g. Glass and Kawachi, 2001; Pollert, 2003; Saxonberg and Sirovátka, 2006).

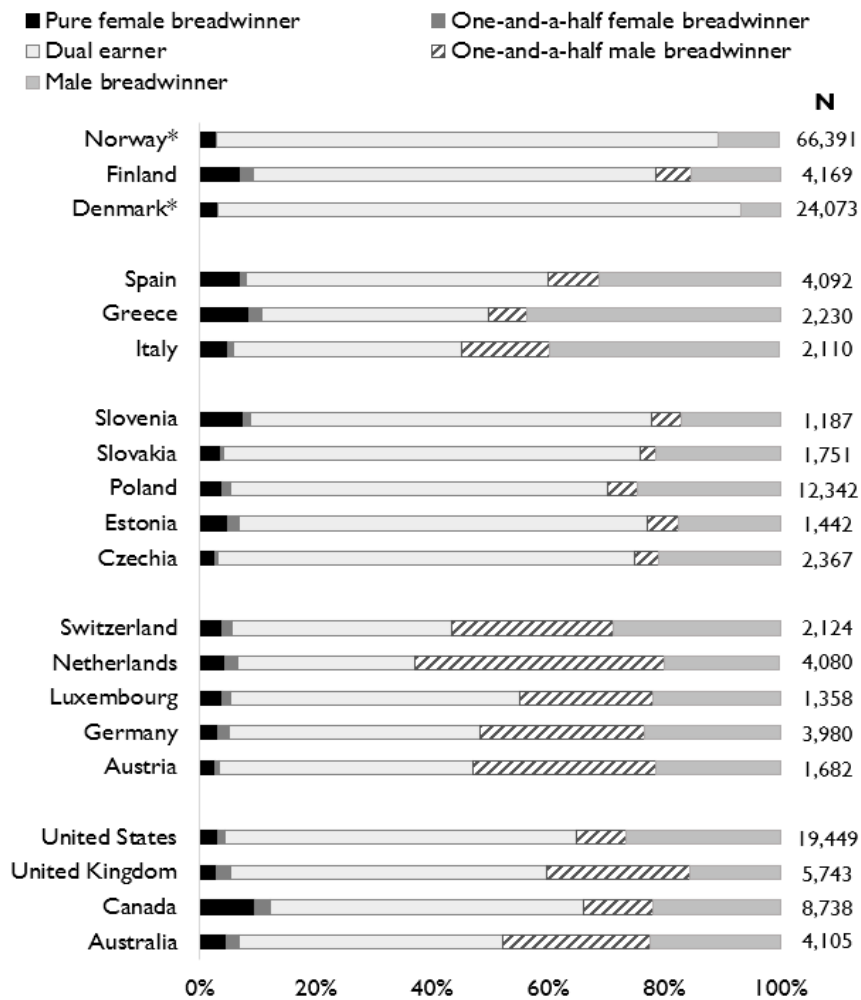


Figure 1. Distribution of household-level employment arrangements among heterosexual couples across 20 countries.

Notes. ‘Pure female breadwinner’ = woman is the only wage-earner. ‘One-and-a-half female breadwinner’ = woman works ≥ 30 hours per week, man works < 30 hours. ‘Dual earner’ = both members of the couple work a similar number of hours. ‘One-and-a-half male breadwinner’ = man works ≥ 30 hours, woman works < 30 hours. ‘Male breadwinner’ = man is the only wage-earner. To correct for under-sampling, we use weighted percentages for all countries. Country sample sizes are unweighted. Data on the prevalence of one-and-a-half male breadwinners and one-and-a-half female breadwinners are unavailable for countries marked with *. In such cases, these couple-types are included in the ‘dual earner’ category.

Sources. Own calculations using the Luxembourg Income Study database, Wave 10 (~2016) or 9 (~2013).

Elsewhere, dual, full-time breadwinning is less pervasive. In most Anglo-Saxon and Continental countries, many couple-households approximate a ‘one-and-a-half’ male-breadwinner model, under which the man works full time and the woman works part time (Lewis, 2001; Figure 1). This reflects predominantly market-based provision of care services (e.g. the United Kingdom) and/or partial

state care services (e.g. the Netherlands), as well as strong male-breadwinning norms and extensive part-time employment opportunities (e.g. Hook, 2015; Lewis, 2001; Lewis et al., 2008). Meanwhile, in Southern European countries and, to a lesser extent, the United States, most couples are either sole male breadwinners or dual, full-time breadwinners. However, overall figures mask a polarisation in breadwinning: while higher-educated women are primarily in full-time employment with a full-time employed partner, lower-educated women are mostly inactive or unemployed with a breadwinning partner (Hook, 2015; Lewis et al., 2008; Sánchez-Mira and O'Reilly, 2019). The under-provision of state care services and work-family reconciliation policies and a relative scarcity of part-time jobs shut lower-educated and poorer mothers who are unable to afford market solutions to work-family conflicts out of the labour market. The higher incidence of male breadwinning among lower-income couples in Mediterranean countries is also connected with strong familialism, whereby the family is expected to be the main provider of care and welfare (e.g. Esping-Andersen, 2009; Hook, 2015).

Yet, Figure 1 highlights another set of work-family arrangements currently overlooked in the male breadwinner/dual breadwinner framework that dominates comparative studies of work-family arrangements and policies, which tends to assume that men in couple-households are (full-time) employed (Hook, 2015). Here, we are referring to the 'female-breadwinner' couple. Replicating the distinction made in existing literature between male-breadwinner families according to whether the woman is not in employment or is working part-time, we differentiate between 'pure' female-breadwinner couples, in which the woman is the only wage-earner and the man is inactive or unemployed, and 'one-and-a-half' female-breadwinner couples, in which the woman is in full-time employment and the man is in part-time employment.

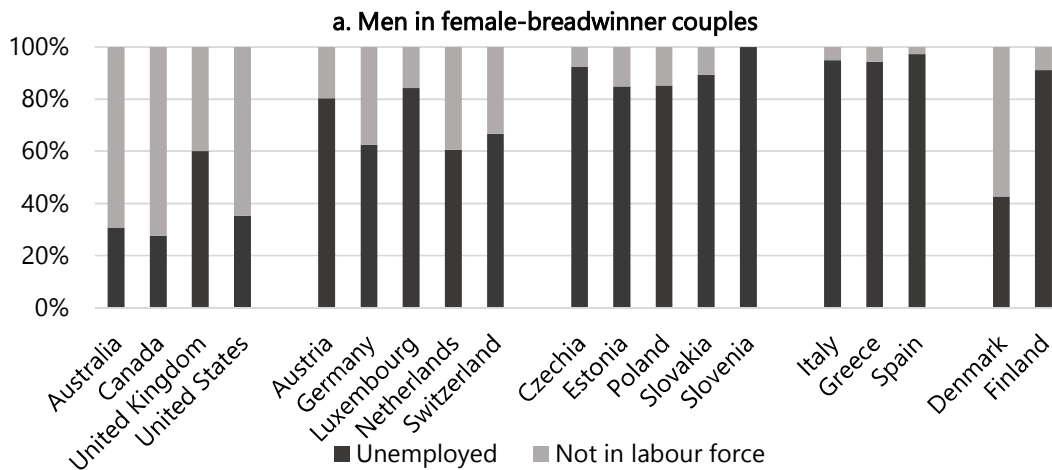
Figure 1 shows that while female-breadwinning remains relatively rare in Denmark, Norway, Czechia, Austria, Slovakia, the United States and Germany, it is more prevalent elsewhere. In Canada and Greece, female breadwinners account for 12 percent and 11 percent of couples respectively. In Finland, Slovenia and Spain, between 8 and 9 percent of couples have a female breadwinner. In other countries, the figure is around 5-7 percent. Still, a finding common to all countries is that 'pure' female breadwinners outnumber one-and-a-half female-breadwinner couples: of all female breadwinners, around three-quarters on average across all countries belong to the pure subtype.

So, while the prevalence of male/dual breadwinning aligns with established welfare regime typologies, patterns of female breadwinning are a less neat fit. Higher rates of female breadwinning are found in countries that are representative of different welfare regime types. Arguably, cross-national patterns of female breadwinning are indicative of broader factors besides welfare regime types and social policies alone, including cultural ideals and models, economic necessity, and labour market opportunities, which are factors often side-lined in the comparative literature on work-family arrangements (Pfau-Effinger, 1998; Sánchez-Mira and O'Reilly, 2019).

Slovenia and Finland illustrate how a complex mix of labour market factors, cultural and policy legacies, and welfare-state characteristics might help to explain a higher prevalence of female breadwinners, especially 'pure' female breadwinners. Figure 2a provides a breakdown of the labour force status (inactive versus unemployed) of men in pure female-breadwinner couples by country. In Finland, 91 percent of men in pure female-breadwinner couples are unemployed; in Slovenia, all men in pure female-breadwinner couples are unemployed. Rates of dual, full-time breadwinning are also high in these countries (Figure 1). Altogether, these figures suggest that pure female-breadwinner families in these countries are potentially often a 'default' arrangement: when the man in a dual-earner household loses his job, the already-employed woman automatically becomes the sole breadwinner. After all, women's full-time employment is the norm in both countries. In Slovenia, the state has a long-standing commitment to women's full-time, continuous employment, having followed Scandinavian countries in the design of its work-family policies. Less widespread female breadwinning in other post-Soviet countries may be linked to lower public support for women's employment (Poland and Slovakia) and policies that are more encouraging of women's long-term withdrawal from employment (Czechia and Estonia) (e.g. Javornik, 2014). Meanwhile, in Finland, the legacy of the agrarian family-economy model, in which women contributed equally to the family business, together with the political weakness of groups trying to establish the housewife model have kept women's full-time employment rates higher than in other Scandinavian countries (Pfau-Effinger, 2004). More prevalent female breadwinning in Finland may also relate to higher male unemployment: as of 2016, 9 percent of men in Finland were unemployed compared with 6 percent in Denmark and 5 percent in Norway (OECD, 2020).

The frequency of female breadwinning in Spain and Greece similarly reflects labour market and economic factors in addition to welfare state ones (Sánchez-

Mira and O'Reilly, 2019). Couples comprising an employed man and inactive/unemployed woman are commonplace in these countries, particularly among the lower-educated (Hook, 2015; Lewis et al., 2008; Sánchez-Mira and O'Reilly, 2019). At the same time, studies have suggested a strong 'added worker effect' in Mediterranean countries: when the male partner loses his job, the female partner is likely to compensate by increasing her labour supply (Bredtmann et al., 2018). In this context, then, a high share of 'pure' female breadwinners is likely associated with job loss among male breadwinners. Spain and Greece shared high male unemployment rates in 2016 of 17 percent and 19 percent respectively (OECD, 2020), reflecting the prolonged impacts of the 2008 recession on male-dominated industries (e.g. Sánchez-Mira and O'Reilly, 2019). The strength of familism and low levels of social protection in Mediterranean countries add to the financial incentives and pressures for inactive women to enter employment when the male breadwinner loses his job.



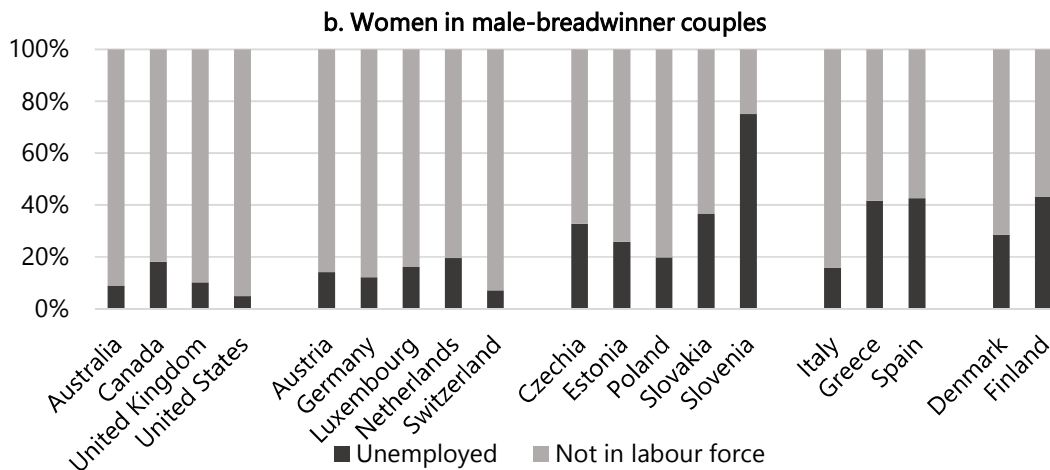


Figure 2. Labour force status of non-employed partners in female-breadwinner and male-breadwinner couples by country.

Notes. Data on partners' labour force status are not available for Norway.

Sources. Own calculations using the Luxembourg Income Study Database Wave 10 (~2016) or 9 (~2013).

High rates of female breadwinning in Canada are more perplexing, mainly because prior comparative studies on household-level employment arrangements have neglected this country. They could be linked to a higher male unemployment rate in Canada compared with other Anglo-Saxon countries (OECD, 2020). They could also relate to the incentive structures embedded in the welfare state. For Canada and other Anglo-Saxon countries, a comparatively high percentage of men in female-breadwinner households are inactive rather than unemployed (Figure 2). More generous inactive benefits compared with unemployment assistance can discourage non-employed individuals with a full-time employed partner from registering as unemployed. In addition, the means-testing of benefits in Anglo-Saxon countries, which are based on a couple's circumstances rather than those of the individual and are targeted at low-income families, creates poor financial incentives for the inactive partners of breadwinners to enter employment. This is because the labour income gained is often negated by the sharp drop in income from benefits, which are withdrawn steeply as household earnings rise (e.g. Kell and Wright, 1990; Nolan, 2006).

Overall, then, we see that a non-negligible share of heterosexual couple-households across industrialised countries is now headed by a female breadwinner, even if the prevalence varies. But what are the economic (dis)advantages of being in a female breadwinner rather than male-breadwinner couple? Thus far, studies have neglected this issue. We contribute to addressing this 'gap'.

Data and Approach

We use individual and household-level data from the Luxembourg Income Study (LIS) for 20 countries from Waves 9 (~2013) or 10 (~2016). Unlike datasets focused on Europe, the LIS dataset allows for including three additional liberal welfare states besides the United Kingdom – namely, Australia, Canada, and the United States – so that our sample is more balanced in terms of different welfare regimes. Still, comparability across countries must be treated with caution, as the LIS harmonises existing country-specific surveys into a common framework *ex-post*.

Our sample is restricted to households containing two heterosexual cohabiting spouses/partners aged 18–65, with or without children. Couples in which one or both partners are in education, disabled, or retired are excluded. Also excluded are couples in which both partners are unemployed/inactive, couples living solely on capital income, and couples living with other adults who are not their children.

Our main independent variable is the couple's employment arrangement (variable 'emp'), which captures the main current activity status as self-assessed by the respondent at the time of the survey or in the income reference time period.² Definitions of full/part-time employment are based on the regular or usual hours worked at all jobs currently held (variable 'hourstot'). Thus, this variable has five categories:

1. *'Pure' male breadwinner (MBW)*. Man employed; woman not employed.
2. *One-and-a-half male breadwinner (1.5M)*. Man employed full-time (≥30 hours per week); woman employed part-time (<30 hours).
3. *Dual earner (DE)*. Man and woman employed for a similar number of hours.
4. *One-and-a-half female breadwinner (1.5F)*. Woman employed full-time; man employed part-time.
5. *'Pure' female breadwinner (FBW)*. Woman employed; man not employed.

For four countries, information on number of hours worked is unavailable. For two of these countries – Poland and Slovenia – we use self-reported information on whether the person works part time (variable 'ptime'). For the remaining two countries – Denmark and Norway – we can only use three categories of employment arrangements: (i) 'pure' male breadwinner, which corresponds with Category 1 above; (ii) dual breadwinner, which merges Categories 2–4; and (iii) 'pure' female breadwinner, which matches Category 5. Table 1 reports basic descriptive statistics of the pooled sample across all countries by couple-type.

In a first step, we model household incomes via linear regression as a function of couple-type in interaction with country. Our dependent variable, disposable household income (variable 'dhi'), encompasses cash and non-cash labour income, income from capital, public and private pensions and other public social benefits, and cash and non-cash private transfers net of taxes and social contributions. We control for the following basic characteristics: age of woman and man (linear and quadratic term); education of woman and man: low (ISCED 0-2), medium (ISCED 3&4), or high (ISCED 5-8); number of children (0,1,2,3+); and whether there is a child aged 5 or less. For Denmark and Norway, the regression is run on the subsample of couples that are either dual earners, pure male breadwinners, or pure female breadwinners.

In a second step, we compare the economic characteristics of pure male-breadwinner and pure female-breadwinner households by running two additional linear regression models. We focus on differences between pure breadwinner couples only in this part of the analysis, as the small sample sizes of one-and-a-half female-breadwinner couples in each country prevent us from running meaningful regression models to compare their situation with one-and-a-half male-breadwinner couples. Our dependent variables are:

- i. Individual labour income earned by the breadwinner over the last year (variable 'pilabour'). This includes cash payments and the value of non-monetary goods and services received from dependent employment in addition to profits and the value of goods from self-employment and the value of own consumption.
- ii. Benefit income for the household over the last year (variable 'ipubsoc'). This includes all cash social security transfers (excluding public pensions) stemming from insurance, universal or assistance schemes, and in-kind social assistance transfers.

Again, the outcome is couple-type interacted with country. In a first set of models, our control variables are the same as in the model for disposable household income. In a second set of models, we also control for the occupation of the main breadwinner - labourer/elementary (ISCO 9), other skilled workers (ISCO 3-8, 10), managerial/professional (ISCO 1&2) - and the number of hours worked. When introducing these two controls, the regression is run on a restricted sample, as information on occupation is missing for Canada, Italy and Norway while information on hours worked is missing for Denmark, Norway, Poland and Slovenia.

For cross-national comparability, our dependent variables are expressed in 2016 US dollars using the Purchasing Power Parity and a deflator obtained from World Bank Indicators. To reduce distortions from extreme values, we bottom-coded incomes to zero and top-coded them to ten times the country median. Additionally, we use a logarithmic transformation for all dependent variables. This transforms the originally skewed income distributions into variables that are approximately normally distributed, making them suitable for linear regression. We use robust standard errors to correct for possible heteroskedasticity.

Individual labour and benefit incomes in LIS are reported gross of taxes and social contributions for most countries except Slovenia, Italy and Poland, for which taxes and contributions are insufficiently captured or not captured at all. When comparing income measures across countries, one should take these differences into account, as observed income differences across countries might result from different measurements used (Nieuwenhuis et al., 2017).³ Yet, we are interested in differences among couples *within the same country*, rather than differences *between* countries; hence, such issues are less of a concern for our analysis.

Results

Figures 3-5 present the results of our regression models in a graphical form; the Supplemental Material gives details of our estimates. As Figure 3 shows, dual-earner couples have the highest incomes of all couple-types. 'Pure' breadwinner couples, in which only one member of the couple is employed, tend to have the lowest disposable household incomes of all couple-types after controlling for basic sociodemographic variables. Moreover, in 12 out of 20 countries, pure female breadwinners have lower total disposable household incomes than pure male breadwinners. Such differences remain statistically significant after controlling for occupation and number of hours worked (see also Figure S1 in Supplemental Material). In the remaining eight countries (Austria, Canada, Finland, Greece, Luxembourg, Netherlands, Slovenia and Switzerland), differences are not statistically significant. Even so, the results show that, when controlling for basic sociodemographic information, it never happens that pure female breadwinners have higher household incomes than pure male breadwinners.

Earnings play a role in explaining this income disadvantage for pure female-breadwinner couples. Slovenia is the only country for which we see no earnings difference between pure female breadwinners and pure male breadwinners,

which might help to explain why differences in total household incomes are also not significant between these two couple-types. Nevertheless, in every other country, pure female breadwinners' average individual labour earnings are lower compared with those of pure male breadwinners (Figure 4). This earnings disadvantage is statistically significant everywhere. Table 1 shows that men heading pure male-breadwinner households typically work longer hours than women who head pure female-breadwinner couples and are more likely to work in managerial and professional occupations but less likely to be in elementary occupations. Yet, earning differences between pure male and pure female breadwinners persist when controlling for working hours and occupation (Models 2-4 in Table S3 in Supplemental Material).

Benefit incomes also help to explain observed differences in household incomes. Among couples in receipt of social-security transfers, pure female-breadwinner households receive higher average benefit incomes than pure male-breadwinner households in half of the countries (Figure 5). However, female breadwinners' higher benefit incomes are statistically significant only in Greece, Luxembourg, the Netherlands, and Switzerland. Unlike elsewhere, higher benefit incomes in these countries help to bring female breadwinners' total household incomes in line with those of male breadwinners, so that differences in disposable household incomes between the two couple-types are not statistically significant.⁴ Conversely, in the remaining half of the countries, pure female-breadwinner couples receive *less* in benefits than pure male-breadwinners couples, despite female breadwinners' significantly lower labour incomes. Female breadwinners' lower benefit incomes are statistically significant for Australia, Czechia, Estonia and Slovakia.

Table 1. Descriptive characteristics by couple-type of pooled sample for 20 industrialised countries.

	MBW	1.5 M	DE	1.5 F	FBW
Share of couple-type among all couples	25.55%	14.32%	54.47%	1.5%	4.17%
Mean age of woman	42.23	44.38	43.10	47.26	45.02
Mean age of man	43.43	45.29	43.97	48.72	45.80
Share of women with high education (ISCED 5-8)	31.07%	39.72%	52.34%	50.94%	36.96%
Share of men with high education (ISCED 5-8)	35.00%	41.81%	43.67%	42.04%	26.74%
Share of women with low education (ISCED 0-2)	25.83%	12.84%	8.29%	7.51%	20.70%
Share of men with low education (ISCED 0-2)	24.49%	14.91%	11.86%	12.54%	28.34%
Share of women in managerial/professional occupations (ISCO 1&2)	-	22.26%	38.18%	42.22%	29.02%
Share of men in managerial/professional occupations (ISCO 1&2)	32.68%	38.58%	36.35%	29.10%	-
Share of women in labourer/elementary occupations (ISCO 9)	-	11.86%	5.05%	4.55%	12.16%
Share of men in labourer/elementary occupations (ISCO 9)	8.05%	5.37%	5.86%	11.10%	-
Mean number of hours worked by woman	-	19.18	40.23	40.30	36.05
Mean number of hours worked by man	43.26	44.16	43.61	19.20	-
Share of women holding multiple jobs	-	4.78%	4.88%	5.89%	4.56%
Share of men holding multiple jobs	3.48%	5.52%	4.60%	8.42%	-
Share of women in temporary employment	-	14.46%	10.93%	9.69%	21.61%
Share of men in temporary employment	13.34%	6.68%	8.13%	28.96%	-
Mean number of co-residing own children	1.58	1.44	1.10	0.94	1.14
Share of families with at least one child aged 0-5 years	38.27%	27.25%	19.74%	15.35%	21.56%
Mean number of years worked by man during entire career	21.85	24.22	23.15	25.90	22.61
Mean number of years worked by woman during entire career	11.58	18.12	18.82	21.30	19.61
Mean disposable household income (US\$ 2016)	55,717	70,608	79,200	68,154	43,663
Mean social benefit income (US\$ 2016)	3,583	2,241	1,402	1,933	5,093
Mean labour income earned by the woman (US\$ 2016)	1,453	19,642	40,179	44,805	32,138
Mean labour income earned by the man (US\$ 2016)	57,015	61,710	53,500	27,329	5,994
Median disposable household income (US\$ 2016)	40,417	56,847	65,670	54,422	34,303
Median social benefit income (US\$ 2016)	1,096	994	0	0	1,573
Median labour income earned by the woman (US\$ 2016)	0	15,000	31,000	34,909	21,451
Median labour income earned by the man (US\$ 2016)	36,000	46,408	40,664	18,000	0
Mean log disposable household income	10.636	10.935	11.084	10.881	10.399
Mean log social benefit income	8.126	7.841	7.446	7.761	8.291
Mean log labour income earned by the woman	8.290	9.470	10.309	10.338	9.951
Mean log labour income earned by the man	10.543	10.704	10.594	9.689	8.886
N.	28,532	12,038	125,054	1,320	6,469

Notes. 'MBW' = man is the only wage-earner; '1.5 M' = man works \geq 30 hours per week, woman works <30 hours; 'DE' = man and woman work similar hours; '1.5 F' = woman works \geq 30 hours, man works <30 hours; 'FBW' = woman is the only wage-earner. All figures for 1.5 M and 1.5 F exclude Denmark and Norway, as information on employment hours is missing. Luxembourg Income Study definitions of labour-force status and number of working hours are based on the time of the survey for most countries, whereas labour incomes are for the past year. So, while the partners of pure breadwinners are not currently engaged in paid work, they may have earned something over the last year if they were previously employed. It is for this reason that the mean labour incomes for the partners of pure breadwinners >\$0. Mean number of years worked by men and women during entire career are averages based on Austria, Czechia, Estonia, Germany, Greece, Luxembourg, the Netherlands, Slovakia, and Spain only.

Sources. Own calculations using the Luxembourg Income Study Database Wave 10 (~2016) or 9 (~2013).

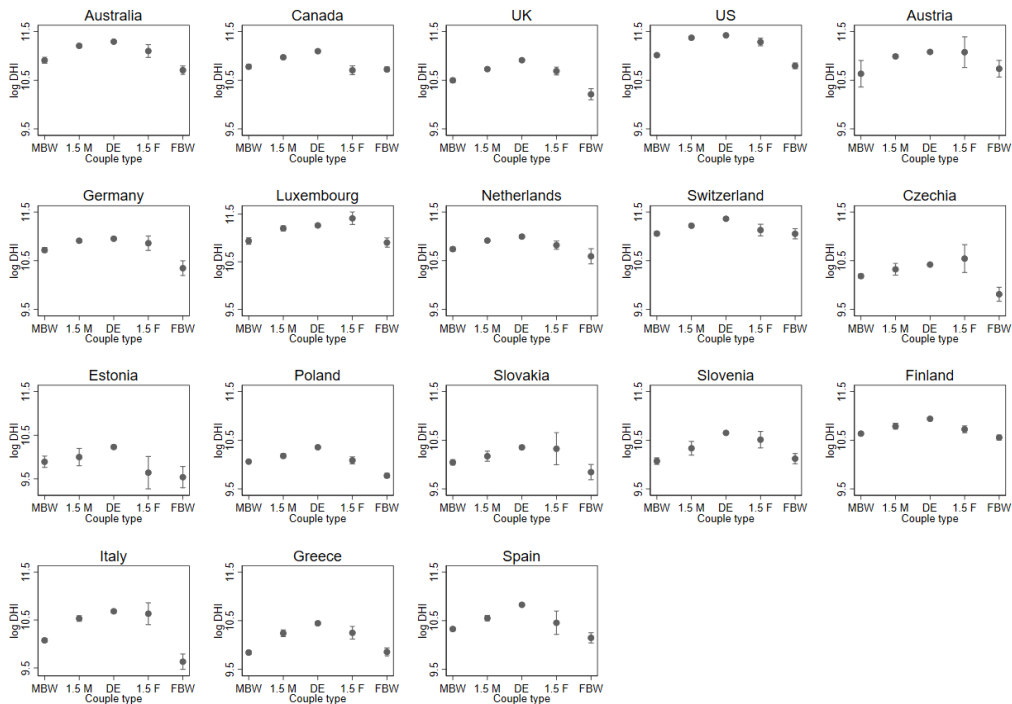


Figure 3. Predicted logarithm of disposable household incomes from linear regression model with 95% confidence intervals.

Notes. The following classification of couple-types is used: 'MBW' = man is the only wage-earner; '1.5 M' = man works ≥ 30 hours per week, woman works < 30 hours; 'DE' = man and woman work similar hours; '1.5 F' = woman works ≥ 30 hours, man works < 30 hours; 'FBW' = woman is the only wage-earner. Results are based on estimates from Model 2 in Table S1 (Supplementary Material), i.e. including controls for age and education of woman and man, number of children, and whether there are any children aged under 5.

Sources. Own calculations using the Luxembourg Income Study Database, Wave 10 (~2016) or 9 (~2013).

Turning to differences among female breadwinners, the results reveal substantial heterogeneity. Across all 18 countries for which we have data on one-and-a-half female breadwinners, we find these women have higher average household incomes than pure female breadwinners, although these differences are not statistically significant in six countries (Figure 3). (This mirrors the differences observed between pure male-breadwinner and one-and-a-half male-breadwinner couples, in that the latter tend to have higher average incomes.) As the descriptive statistics show (Table 1), women heading one-and-a-half female-breadwinner couples are of a higher socioeconomic status than women heading pure female-breadwinner couples across the pooled sample and have the highest average labour incomes of women across *all* couple-types. The household incomes of one-and-a-half female breadwinners are further boosted by higher individual labour earnings for the male secondary earner, who is also more likely

to be higher-educated and less likely to be lower-educated than men in pure female-breadwinner couples.

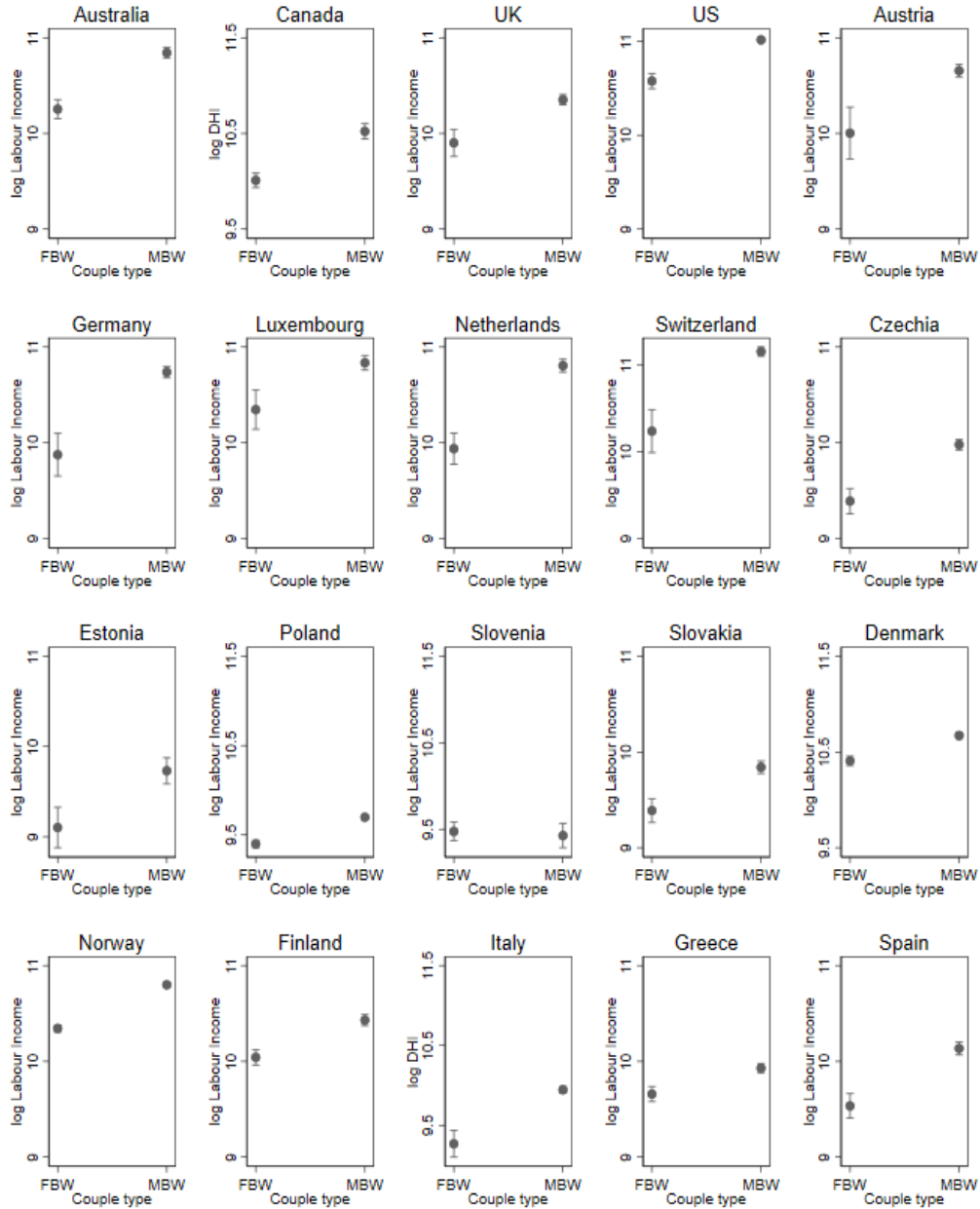


Figure 4. Predicted logarithm of individual labour income earned by the breadwinner from linear regression model with 95% confidence intervals.

Notes. 'MBW' = man is the only wage-earner; 'FBW' = woman is the only wage-earner. Results are based on estimates from Table S3, Supplementary Material. For Italy and Canada, we report predictions from Models 3, as information on occupation is missing. For Denmark, Slovenia and Poland, we report predictions from Model 2, as information on number of hours is missing. For

Norway, we report predictions from Model 1, as information on occupation and hours worked is missing. For all other countries, we report predictions from Model 4.

Sources. Own calculations using the Luxembourg Income Study Database, Wave 10 (~2016) or 9 (~2013).

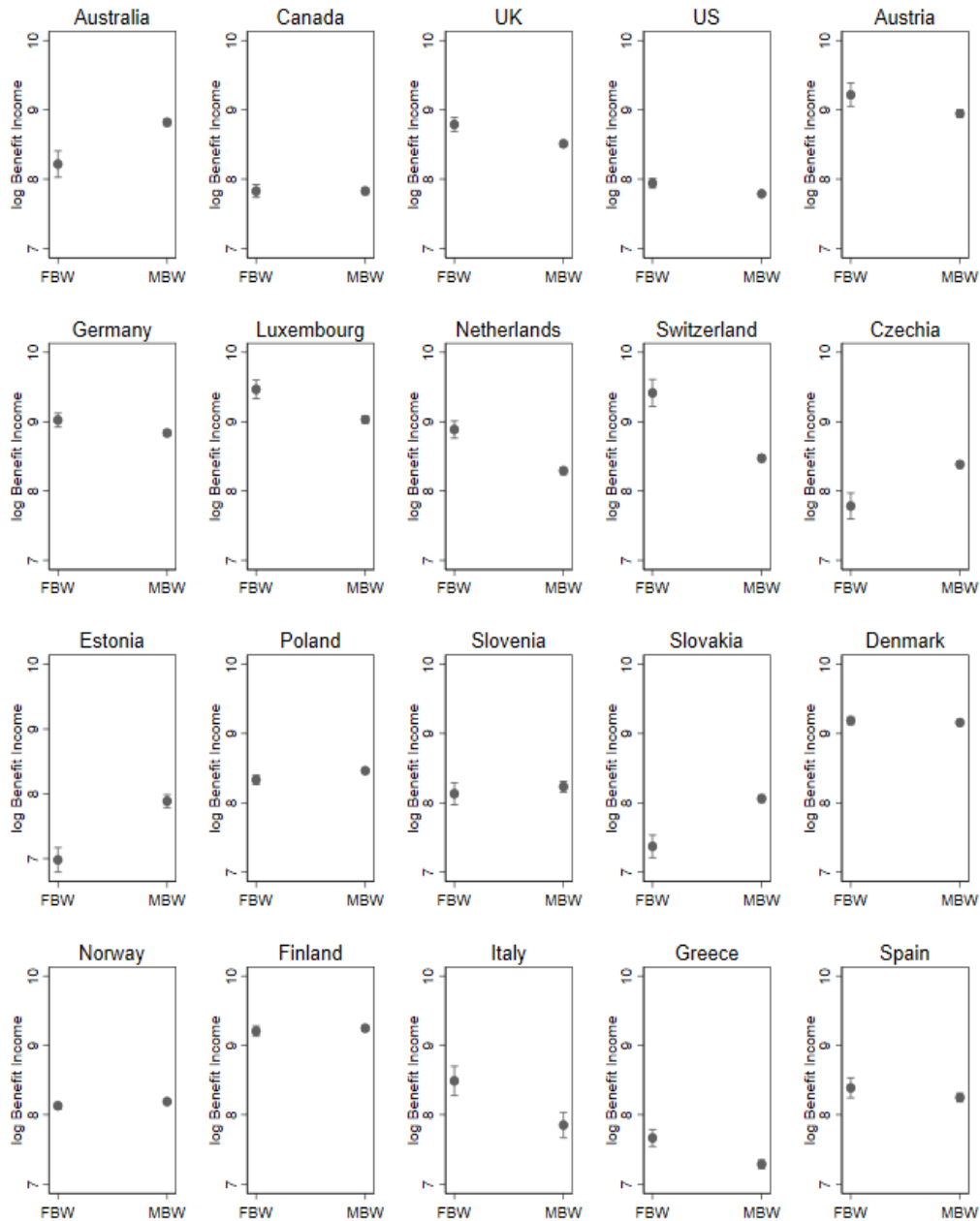


Figure 5. Predicted logarithm of household social benefit income from linear regression model with 95% confidence interval.

Notes. 'MBW' = man is the only wage-earner; 'FBW' = woman is the only wage-earner. Results are based on estimates from Table S4, Supplementary Material. For Italy and Canada, we report predictions from Models 3, as information on occupation is missing. For Denmark, Slovenia and Poland, we report predictions from Model 2, as information on number of hours is missing. For

Norway, we report predictions from Model 1, as information from both occupation and hours worked is missing. For all other countries, we report predictions from Model 4.

Sources. Own calculations using the Luxembourg Income Study Database Wave 10 (~2016) or 9 (~2013).

Finally, regarding differences between one-and-a-half breadwinners by gender, we find smaller household income disparities than for pure breadwinners (Figure 3). Furthermore, after controlling for basic sociodemographic variables, these differences are not statistically significant, with only two exceptions: in Canada, one-and-a-half male-breadwinner couples have a higher disposable household income than their female counterparts, whereas the opposite holds for Luxembourg. Yet, one-and-a-half female breadwinners still earn less as individuals, on average, than their male counterparts, despite their higher levels of education (Table 1).

Discussion and Conclusion

The purpose of this paper has been to highlight a case for integrating the female-breadwinner couple-type into the male-breadwinner/dual-breadwinner framework that underpins the literature on work-family arrangements and policies. Including female-breadwinner couples matters because of their growing prevalence and, as our analysis has shown, greater economic vulnerability. Prior research has drawn attention to the lower average incomes of sole-earner couples compared with dual-earner ones (e.g. Esping-Andersen, 2002). Our analysis has revealed that the gender of the sole earner also matters. Once controls for compositional differences and basic sociodemographic characteristics are included, it never happens that pure female breadwinners have higher household incomes than pure male breadwinners across all 20 countries in our study.

Even where gaps between pure female-breadwinner and male-breadwinner couples in terms of overall household incomes are narrow, this conceals the former's lower individual earnings. The female breadwinner earnings penalty persists even after controlling for occupation and number of hours worked in addition to sociodemographic characteristics. This penalty likely reflects women's secondary labour market position, which is upheld by gender cultures and policies that, despite being couched in such gender-neutral language as 'parents', encourage women to withdraw or reduce their labour force participation for motherhood and caregiving purposes without adequately targeting men's behaviour as fathers (e.g. Daly, 2011). In turn, women accumulate less on-the-job experience and seniority than men, are more likely to pass up additional

workplace responsibilities that clash with family responsibilities, and experience greater discrimination from employers, who (falsely) assume that women are less committed to their careers. Thus, women's earnings growth is lower over time compared with men (e.g. Budig and England, 2001). These factors might also help to explain why we see larger earnings penalties for breadwinning women in countries where policies encourage mothers to take long breaks from employment, adequate alternatives to home-based childcare are lacking, traditional gender norms remain strong, and/or the 'one-and-a-half male breadwinner' prevails; for example, Czechia, Germany, Italy, Poland, and the UK (e.g. Ciccio and Bleijenbergh, 2014; Hook and Pettit, 2016). In these settings, breadwinning women are more likely to have had discontinuous employment histories and/or periods spent working in part-time (and often lower-paid) jobs when compared with male breadwinners.

The female breadwinner earnings penalty may also reflect that some of these women are 'emergency' breadwinners, in that their breadwinner status is less a deliberate choice and instead a reaction to adverse economic circumstances (e.g. Drago et al., 2005). Prior research has found evidence for an 'added worker' effect across Europe, whereby non-employed women enter employment to compensate for their partner's job loss (Bredtmann et al., 2018). This could be the situation for many pure female breadwinners in our study. For such women, finding a 'good' job is complicated by time spent outside of the labour market and the aforementioned penalties associated with this, as well as a lack of demand-side opportunities if overall unemployment is high. Indeed, we find that pure female breadwinners in Mediterranean countries – where prior research has found a strong added worker effect for women under high male unemployment (Bredtmann et al., 2018) – have fewer years of labour market experience than pure male breadwinners, even if they have more years of experience than women in certain other couple-types. For instance, in Spain, pure male breadwinners have, on average, 26 years of employment experience compared with 19 years for pure female breadwinners.⁵ A theoretical implication of this finding is that labour market characteristics and economic cycles should be considered alongside family and other social policies in studies of work-family arrangements and incomes under different welfare regimes. As Haas et al. (2006) argue, women's employment behaviour cannot be directly read off from policies. Economic and labour market conditions and other broader structural conditions shape the structure of constraints and opportunities for women and help to explain cross-national patterns in female breadwinning. Potentially, these factors also shape households' incomes under the female-breadwinner arrangement and serve to widen inequalities between male-breadwinner and female-breadwinner households.

Consequently, the current policy imperative towards 'employment for all' (Orloff, 2006) is found wanting. Despite some acknowledgement by proponents of this agenda of gender disparities in paid work, getting more women into (any) employment to secure the financial sustainability of the welfare state is considered 'of utmost priority' (Hemerijck et al., 2016: p. 22). Nevertheless, we require a broader array of policies to reduce gender gaps in earnings and employment outcomes, and not just employment rates, such as educational programmes to counter gender stereotypes and gendered educational choices, or policies that encourage men to take up parental leaves (Bettio and Verashchagina, 2009). Such policies can better support families to hedge market risks, so that if the woman becomes the only wage-earner following her partner's job loss, this does not have the effect of widening inequalities between work-rich and work-poor households. They can also help to challenge norms that emphasise men's breadwinning: it is only through degendering unpaid care *and* paid employment that the gendered division of labour can be 'undone'.

Our analysis additionally suggests that benefits systems are generally not working hard enough to compensate for female breadwinners' lower average earnings. For most countries, differences in benefit incomes between pure male-breadwinner and pure female-breadwinner couples are not statistically significant, despite the latter's lower labour earnings. What is more, in Australia, Czechia, Estonia and Slovakia, pure female-breadwinner couples receive statistically significantly *lower* benefit incomes than their male counterparts. For Czechia, Estonia and Slovakia, this likely reflects lean employment benefits, as the partners of female breadwinners are overwhelmingly unemployed in these countries. Conversely, women in male-breadwinner couples are more likely to be out of employment for domestic reasons and receive leave and family allowances, which have become more generous since the transition to a market economy, particularly in Czechia and Estonia (e.g. Javornik, 2014). For Australia, it is potentially explained by the high proportion of pure female breadwinners with an inactive partner (69 percent), as these couples receive US\$3,488 less in benefit income than male-breadwinner couples with an inactive woman.⁶ There may be unobserved characteristics of female-breadwinner families containing an inactive partner in Australia that mean, for example, they are less likely to be entitled to certain benefits or take up those to which they are entitled. Alternatively, it may be explained by the fact unemployment support is not well-captured in the Luxembourg Income Study dataset for Australia. For most countries, the variable capturing benefit incomes comprises income from unemployment insurance, unemployment assistance, and/or unemployment benefits; but, for Australia, only unemployment benefits (Newstart Allowance,

Partner Allowance, and Youth Allowance) are included. Hence, female-breadwinner couples may show up as having lower average benefit incomes than male-breadwinner couples in our analysis because they are more likely to contain an unemployed partner (31 percent versus 9 percent).

Other literatures have already identified female breadwinners as a distinct analytical category due to their exposure to other forms of vulnerabilities. For example, female-breadwinner couples tend to have poorer relationship satisfaction, lower wellbeing and higher rates of union dissolution, while some studies have found men do not increase their share of housework under a female-breadwinner arrangement (e.g. Blom and Hewitt, 2019; Brennan et al., 2001; Grunow et al., 2012). Our study adds to a growing body of evidence that female-breadwinner families sit at the intersection of multiple disadvantages and social risks, such as having a low income, work-family conflicts, and becoming a single parent through relationship breakdown. Consequently, the female-breadwinner couple offers scholars of the welfare state an 'acid test' case study for how effectively institutional arrangements protect families from social risk.

That said, our analysis uncovered heterogeneity among female breadwinners. Regression models showed that one-and-a-half female-breadwinner couples, comprising a full-time employed woman and part-time employed man, have higher average household incomes than pure female-breadwinner couples across almost all countries. Descriptive statistics further revealed that, compared with pure female breadwinners, one-and-a-half female breadwinners are of a higher socioeconomic status as measured by individual labour earnings, occupation, and education. Accordingly, it is possible that the rise in female breadwinning will, alongside the growth of single-mother families among lower-educated women and dual breadwinning among higher-educated women, consolidate the 'diverging destinies' of families: while children born to higher-educated mothers are gaining advantages, children born to lower-educated mothers are falling behind (Hook, 2015; McLanahan, 2004). This is another reason why the social policy literature should pay attention to the trend towards greater female breadwinning.

Notes

¹The lone parent is the archetypal female breadwinner; however, including single mothers is beyond the remit of our analysis.

²As the LIS documentation explains, the variable 'emp' flags the main current activity status at the time of the survey. Where this is unavailable, the main activity status in the income reference time is used, as for Canada, Denmark, Germany, Italy, Norway and the US. In case this is not available either, as for Australia, employment status according to current labour force status is used instead. For more information on the 'emp' variable and how it is measured across countries, see the LIS documentation.

³For information on how taxes and social security contributions are collected in LIS, see the 'grossnet' variable.

⁴Differences in disposable household incomes for pure male-breadwinner versus pure female-breadwinner couples in Austria, Canada, and Finland are also not statistically significant, despite female breadwinners' statistically significant lower labour incomes and no differences in benefit incomes between the two couple-types. Other income sources included in the 'dhi' variable (e.g. from capital) may serve to narrow overall household income differences between the two couple-types.

⁵Table 1 gives the average number of years worked during the entire career for the pooled sample of men and women across each couple-type; data for individual countries are available from the authors upon request.

⁶Data on benefit incomes for pure female breadwinners across different countries by the partner's labour force status are available from the authors upon request.

Acknowledgements

The authors thank participants of the Family Lunch Research Group at the University of Southampton and the Female-Breadwinner Families Workshop, London, 12 December 2018, for their helpful comments on the research. Thanks also go to two anonymous referees for their valuable feedback on an earlier draft of this paper.

Funding

This research was funded by the Economic and Social Research Council under the Future Research Leaders Grant, 'Female-Breadwinner Families in Europe,' reference number ES/N00082X/1, and the Postdoctoral Fellowship, 'Social Policies to Support Women's Employment and Achieve Gender-Friendly Workplaces', reference number ES/S010793/1.

References

- Bettio, F and Verashchagina, A (2009) Gender Segregation in the Labour Market. Report, European Union, Luxembourg, March.
- Blom, N and Hewitt, B (2019) Becoming a Female-Breadwinner Household in Australia: Changes in Relationship Satisfaction. *Journal of Marriage and Family*. Online first available 26 December, doi: 10.1111/jomf.12653.
- Bredtmann, J, Otten, S and Rulff, C (2018) Husband's Unemployment and Wife's Labour Supply: The Added Worker Effect across Europe. *ILR Review*71(5): 1201-1231.
- Brennan, RT, Barnett, RC and Gareis, KC (2001) When She Earns More Than He Does: A Longitudinal Study of Dual-Earner Couples. *Journal of Marriage and Family*63(1): 168-182.
- Bryan, M and Longhi, S (2018) Couples' Labour Supply Responses to Job Loss. *The Manchester School*86(3): 333-357.
- Budig, M and England, P (2001) The Wage Penalty for Motherhood. *American Sociological Review*66(2): 204-225.
- Ciccia, R and Bleijenbergh, I (2014) After the Male Breadwinner Model? Childcare Services and the Division of Labour in European Countries. *Social Politics* 21(1): 50-79.
- Craig, L and Mullan, K (2010) Parenthood, Gender and Work-Family Time in the United States, Australia, Italy, France, and Denmark. *Journal of Marriage and Family*72(5): 1344-1361.
- Daly, M (2011) What Adult Worker Model? A Critical Look at Recent Social Policy Reform in Europe from a Gender and Family Perspective. *Social Politics* 18(1): 1-23.
- Dotti Sani, GM (2018) The Economic Crisis and Changes in Work-Family Arrangements in Six European Countries. *Journal of European Social Policy*28(2): 177-193.
- Drago, R, Black, D and Wooden, M (2005) Female Breadwinner Families. *Journal of Sociology*41(4): 343-362.
- Esping-Andersen, G (1999) *Social Foundations of Postindustrial Economies*. Oxford: Oxford University Press.
- Esping-Andersen, G (ed.) (2002) *Why We Need a New Welfare State*. Oxford: Oxford University Press.
- Esping-Andersen, G (2016) *Families in the 21st Century*. Stockholm: SNS Förlag.
- Gerson, K (2010) *The Unfinished Revolution*. Oxford: Oxford University Press.
- Glass, C and Kawachi, J (2001) Winners or Losers of Reform? Gender and Unemployment in Poland and Hungary. *Review of Sociology*7(2): 109-140.

- Gornick, JC and Meyers, MK (2009) Institutions That Support Gender Egalitarianism in Parenthood and Employment. In: Gornick JC and Meyers MK (eds) *Gender Equality: Transforming Family Divisions of Labour*. London: Verso, pp.3-64.
- Grunow, D, Schulz, F and Blossfeld, H-P (2012) What Determines Change in the Division of Housework over the Course of Marriage? *International Sociology*27(3): 289-307.
- Haas, B, Steiber, N, Hartel, M and Wallace, C (2006) Household Employment Patterns in an Enlarged European Union. *Work, Employment and Society* 20(4): 751-771.
- Harkness, S and Evans, M (2011) The Employment Effects of Recession on Couples in the UK. *Journal of Social Policy*40(4): 675-693.
- Hemerijck, A, Burgoon, B, Di Pietro, A and Vydra, S (2016) Assessing Social Investment Synergies. European Commission, Brussels,
- Hook, J (2015) Incorporating 'Class' into Work-Family Arrangements. *Journal of European Social Policy*25(1): 14-31.
- Hook, J and Pettit, B (2016) Reproducing Occupational Inequality: Motherhood and Occupational Segregation. *Social Politics*23(3): 329-362.
- Javornik, J (2014) Measuring State De-Familialism: Contesting Post-Socialist Exceptionalism. *Journal of European Social Policy*24(3): 240-257.
- Kanji, S (2013) Do Fathers Work Fewer Paid Hours When Their Female Partner Is the Main or an Equal Earner? *Work, Employment and Society*27(2): 326-342.
- Kell, M and Wright, J (1990) Benefits and the Labour Supply of Women Married to Unemployed Men. *The Economic Journal*100(400): 119-126.
- Klesment, M and Van Bavel, J (2017) The Reversal of the Gender Gap in Education, Motherhood, and Women as Main Earners in Europe. *European Sociological Review*33(3): 465-481.
- Lewis, J (2001) The Decline of the Male Breadwinner Model. *Social Politics*8(2): 152-169.
- Lewis, J, Campbell, M and Huerta, C (2008) Patterns of Paid and Unpaid Work in Western Europe. *Journal of European Social Policy*18(1): 21-37.
- Luxembourg Income Study (LIS) Database (n.d.) <http://www.lisdatacenter.org> (multiple countries; accessed May 2018 to January 2020). Luxembourg: LIS.
- McLanahan, S (2004) Diverging Destinies: How Children Are Faring under the Second Demographic Transition. *Demography*41(4): 607-627.
- Nieuwenhuis, R, Munzi, T and Gornick, JC (2017) Comparative Research with Net and Gross Income Data: An Evaluation of Two Netting Down Procedures for the Lis Database. *Review of Income and Wealth*63(3): 564-573.

- Nolan, P (2006) Tax Relief for Breadwinners or Caregivers? The Designs of Earned and Child Tax Credits in Five Anglo-American Countries. *Journal of Comparative Policy Analysis* 8(2): 167-183.
- OECD (2020) *Unemployment Rate (Indicator)*. doi: 10.1787/997c8750-en [Accessed 23 January 2020].
- Pascall, G and Lewis, J (2004) Emerging Gender Regimes and Policies for Gender Equality in a Wider Europe. *Journal of European Social Policy* 33(3): 373-394.
- Pfau-Effinger, B (1998) Gender Cultures and the Gender Arrangement. *Innovation* 11 (2): 147-166.
- Pfau-Effinger, B (2004) Socio-Historical Paths of the Male Breadwinner Model. *British Journal of Sociology* 55(3): 377-399.
- Pollert, A (2003) Women, Work and Equal Opportunities in Post-Communist Transition. *Work, Employment and Society* 17(2): 331-357.
- Sánchez-Mira, N and O'Reilly, J (2019) Household Employment and the Crisis in Europe. *Work, Employment and Society* 33(3): 422-443.
- Saxonberg, S and Sirovátka, T (2006) Failing Family Policy in Post-Communist Central Europe. *Journal of Comparative Policy Analysis* 8(2): 185-202.
- Von Gleichen, R and Seeleib-Kaiser, M (2018) Family Policies and the Weakening of the Male Breadwinner Model. In: Shaver S (ed) *Handbook on Gender and Social Policy*. Cheltenham: Edward Elgar, pp.153-178.

Supplemental Material: Additional Tables and Figures

Table S1. Estimates from linear regression model on logarithm of total disposable household income, all couple-types.

	Model 1			Model 2		
	Coef.	s.e.	P> t	Coef.	s.e.	P> t
Age of woman				0.015	***	0.003
Age of woman ²				0.000	*	0.000
Age of man				0.002		0.003
Age of man ²				0.000		0.000
Education of woman (Medium ref.)						
Low				-0.111	***	0.008
High				0.157	***	0.008
Education of man (Medium ref.)						
Low				-0.128	***	0.009
High				0.214	***	0.008
N. children (0 ref.)						
1.000				0.125	***	0.009
2.000				0.210	***	0.008
3+				0.283	***	0.010
Child aged 5 or below				-0.039	***	0.008
Constant	11.081	***	0.019	10.320	***	0.059
Couple type	Y			Y		
Country	Y			Y		
Couple type*Country	Y			Y		
<hr/>						
N.		82,618			82,083	
R ²		0.396			0.504	

Notes. Controls for couple-type, country, and interaction between the two are included in the regression model but their coefficient estimates are not reported due to space limitations (the number of coefficients equals to 4, 17 and 68, respectively).

Sources. Own calculations using the Luxembourg Income Study Database, Wave 10 (~2016) or 9 (~2013).

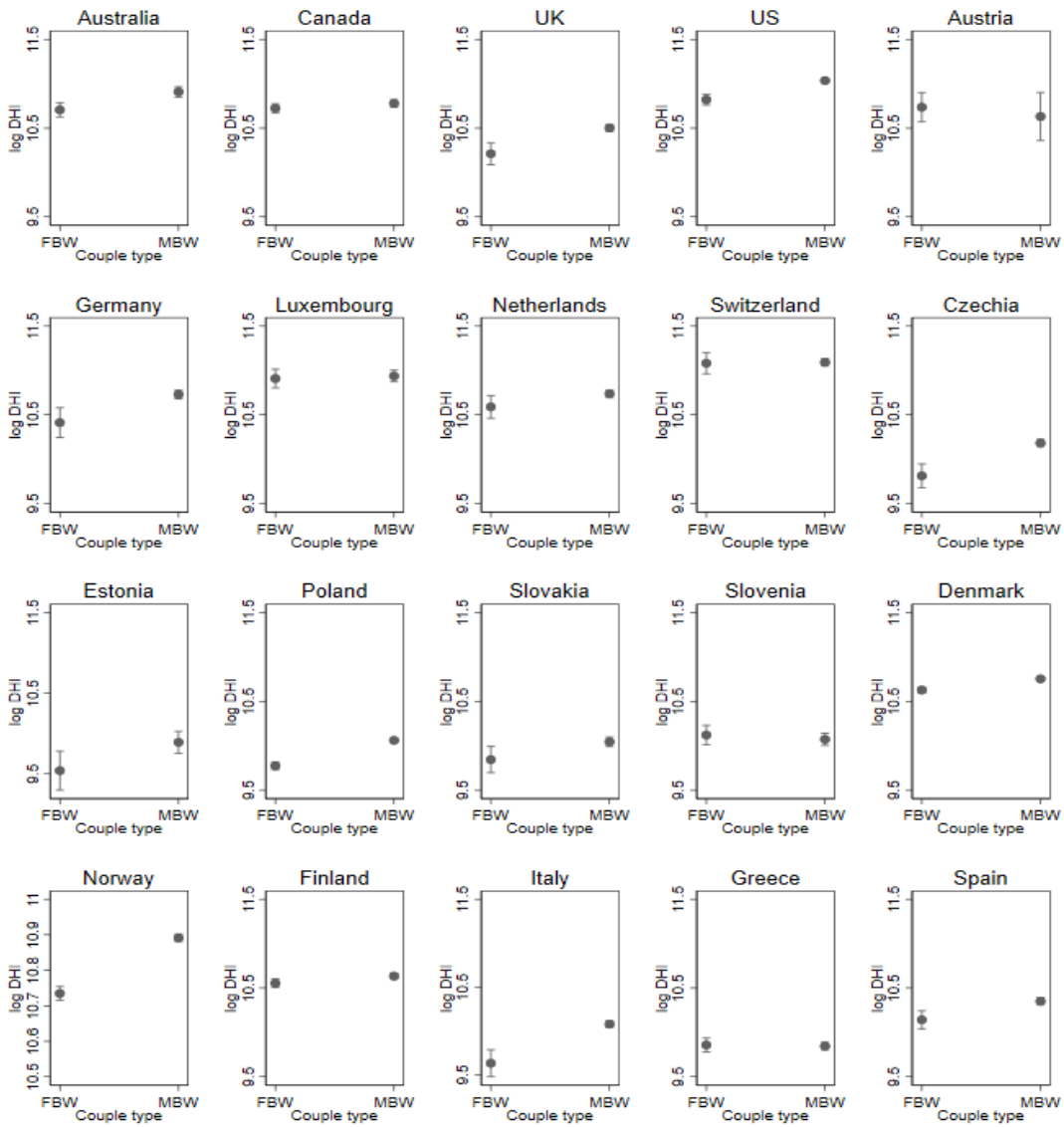


Figure S1. Predicted logarithm of disposable household incomes from linear regression models with 95% confidence intervals.

Notes. ‘MBW’ = man is the only wage-earner; ‘FBW’ = woman is the only wage-earner. Based on estimates from Table S2. For Italy and Canada, we report predictions from Models 3, as information on occupation is missing. For Denmark, Slovenia and Poland, we report predictions from Model 2, as information on number of hours is missing. For Norway, we report predictions from Model 1, as information from both occupation and hours worked is missing. For all other countries, we report predictions from Model 4.

Sources. Own calculations using the Luxembourg Income Study Database, Wave 10 (~2016) or 9 (~2013).

Table S2. Estimates from linear regression model on logarithm of total disposable household income, pure male breadwinners and pure female breadwinners.

	Model 1		Model 2		Model 3		Model 4	
	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.
Couple (Male breadwinner ref.)								
Female breadwinner	0.163	0.162	0.179	0.163	0.220	0.161	0.223	0.165
Country (Austria ref.)								
Australia	0.205	0.150	0.208	0.154	0.222	0.152	0.223	0.157
Canada	0.066	0.141			0.072	0.141		
Switzerland	0.332 *	0.140	0.329 *	0.142	0.331 *	0.141	0.329 *	0.142
Czechia	-0.373 **	0.145	-0.375 *	0.147	-0.386 **	0.146	-0.385 **	0.148
Germany	0.008	0.143	0.020	0.144	0.011	0.144	0.016	0.145
Denmark	0.119	0.141	0.148	0.143				
Estonia	-0.739 ***	0.159	-0.750 ***	0.162	-0.734 ***	0.162	-0.747 ***	0.165
Spain	-0.309 *	0.142	-0.268	0.142	-0.281 *	0.143	-0.241	0.143
Finland	-0.007	0.149	0.000	0.151	0.016	0.151	0.018	0.154
Greece	-0.768 ***	0.139	-0.728 ***	0.138	-0.787 ***	0.138	-0.743 ***	0.136
Italy	-0.504 ***	0.136			-0.486 ***	0.136		
Luxembourg	0.250	0.140	0.265	0.140	0.253	0.140	0.267	0.139
Netherlands	0.033	0.141	0.017	0.143	0.056	0.141	0.035	0.144
Norway	0.243	0.145						
Poland	-0.599 ***	0.137	-0.573 ***	0.136				
Slovenia	-0.562 ***	0.141	-0.517 ***	0.140				
Slovakia	-0.649 ***	0.142	-0.623 ***	0.141	-0.654 ***	0.142	-0.628 ***	0.140
United Kingdom	-0.213	0.147	-0.205	0.149	-0.200	0.148	-0.198	0.151
United States	0.259	0.146	0.277	0.149	0.272	0.147	0.277	0.150
Couple*Country								
FBW*Australia	-0.373 *	0.172	-0.382 *	0.173	-0.365 *	0.169	-0.378 *	0.172
FBW*Canada	-0.209	0.168			-0.219	0.167		
FBW*Switzerland	-0.069	0.173	-0.049	0.176	-0.028	0.171	-0.024	0.175
FBW*Czechia	-0.490 **	0.183	-0.506 **	0.182	-0.515 **	0.182	-0.525 **	0.182
FBW*Germany	-0.516 **	0.186	-0.406 *	0.191	-0.487 **	0.183	-0.405 *	0.190
FBW*Denmark	-0.313	0.162	-0.346 *	0.163				
FBW*Estonia	-0.534 *	0.220	-0.509 *	0.220	-0.588 **	0.222	-0.551 *	0.223
FBW*Spain	-0.312	0.170	-0.304	0.170	-0.340 *	0.168	-0.335 *	0.169
FBW*Finland	-0.258	0.169	-0.233	0.172	-0.281	0.168	-0.252	0.173
FBW*Greece	-0.220	0.167	-0.204	0.167	-0.245	0.166	-0.224	0.167
FBW*Italy	-0.516 **	0.179			-0.518 **	0.176		
FBW*Luxembourg	-0.021	0.172	0.017	0.171	-0.029	0.169	0.009	0.171
FBW*Netherlands	-0.264	0.182	-0.233	0.178	-0.223	0.176	-0.203	0.175
FBW*Norway	-0.359 *	0.162						
FBW*Poland	-0.489 **	0.164	-0.500 **	0.164				
FBW*Slovenia	-0.085	0.176	-0.109	0.176				
FBW*Slovakia	-0.355	0.189	-0.358	0.189	-0.386 *	0.188	-0.383 *	0.190
FBW*United Kingdom	-0.437 *	0.174	-0.415 *	0.176	-0.439 **	0.170	-0.415 *	0.175
FBW*United States	-0.329 *	0.165	-0.350 *	0.166	-0.355 *	0.164	-0.371 *	0.167
Constant	10.066 ***	0.230	10.218 ***	0.263	9.699 ***	0.263	9.925 ***	0.307
Age of woman	0.002	0.006	0.001	0.007	0.003	0.007	0.004	0.008
Age of woman^2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Age of man	0.000	0.006	0.001	0.007	0.000	0.007	0.000	0.009
Age of man^2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Education of woman (Medium ref.)								
Low	-0.092 ***	0.015	-0.070 ***	0.017	-0.098 ***	0.017	-0.077 ***	0.020
High	0.118 ***	0.022	0.081 **	0.024	0.106 ***	0.026	0.071 *	0.028
Education of man (Medium ref.)								
Low	-0.140 ***	0.017	-0.115 ***	0.021	-0.142 ***	0.020	-0.119 ***	0.024
High	0.224 ***	0.024	0.144 ***	0.024	0.219 ***	0.027	0.139 ***	0.027
N. children (0 ref.)								
1	0.200 ***	0.022	0.204 ***	0.026	0.194 ***	0.026	0.198 ***	0.030
2	0.317 ***	0.019	0.330 ***	0.021	0.308 ***	0.021	0.325 ***	0.024
3+	0.402 ***	0.022	0.423 ***	0.025	0.382 ***	0.025	0.409 ***	0.028
Child aged 5 or below	-0.016	0.017	-0.013	0.018	0.006	0.019	0.004	0.021
Occupation of breadwinner (Managerial and professional ref.)								
Other skilled workers			-0.200 ***	0.024			-0.193 ***	0.028
Labourers/elementary			-0.409 ***	0.029			-0.404 ***	0.034
N. hours worked by breadwinner					0.007 ***	0.001	0.006 ***	0.001
N.	32,243		20,797		18,367		14,773	
R^2	0.419		0.434		0.428		0.441	

Sources. Own calculations using the Luxembourg Income Study Database, Wave 10 (~2016) or 9 (~2013).

Table S3. Estimates from linear regression model on logarithm of labour income of breadwinner: pure male breadwinners and pure female breadwinners.

	Model 1	Model 2	Model 3	Model 4
--	---------	---------	---------	---------

	Coef.		s.e.	Coef.		s.e.	Coef.		s.e.	Coef.		s.e.
Couple (Male breadwinner ref.)												
Female breadwinner	-0.677	***	0.166	-0.659	***	0.150	-	***	0.144	-0.529	***	0.136
Country (Austria ref.)												
Australia	0.094		0.048	0.092		0.04	0.136	**	0.045	0.127	**	0.044
Canada	-0.228	***	0.055				-	***	0.053			
Switzerland	0.312	***	0.048	0.297	***	0.04	0.298	***	0.044	0.283	***	0.043
Czechia	-0.604	***	0.047	-0.608	***	0.04	-0.641	***	0.045	-0.635	***	0.045
Germany	-0.057		0.049	-0.011		0.04	-0.041		0.046	-0.015		0.045
Denmark	-0.082		0.044	0.021		0.04						
Estonia	-0.978	***	0.078	-0.994	***	0.078	-0.961	***	0.082	-0.978	***	0.082
Spain	-0.548	***	0.050	-0.486	***	0.051	-0.501	***	0.049	-0.443	***	0.050
Finland	-0.289	***	0.048	-0.278	***	0.04	0.223	***	0.046	-0.219	***	0.045
Greece	-0.725	***	0.046	-0.663	***	0.04	-0.776	***	0.043	-0.713	***	0.043
Italy	-0.582	***	0.045				-	***	0.043			
Luxembourg	0.147	**	0.054	0.169	**	0.05	0.153	**	0.052	0.171	***	0.049
Netherlands	0.081		0.053	0.051		0.052	0.145	**	0.049	0.108	*	0.049
Norway	0.099	*	0.039									
Poland	-0.979	***	0.038	-0.934	***	0.03						
Slovenia	-1.242	***	0.081	-1.170	***	0.08						
Slovakia	-0.895	***	0.049	-0.843	***	0.04	0.897	***	0.048	-0.848	***	0.048
United Kingdom	-0.404	***	0.048	-0.401	***	0.04	0.383	***	0.045	-0.385	***	0.045
United States	0.171	***	0.040	0.198	***	0.039	0.184	***	0.038	0.188	***	0.038
Couple*Country												
FBW*Australia	0.069		0.179	0.044		0.163	0.092		0.154	0.068		0.146
FBW*Canada	0.172		0.175				0.154		0.153			
FBW*Switzerland	-0.122		0.229	-0.092		0.207	-0.017		0.193	0.013		0.184
FBW*Czechia	0.167		0.182	0.122		0.166	0.092		0.161	0.058		0.151
FBW*Germany	-0.147		0.216	0.026		0.200	-		0.185	0.049		0.175
FBW*Denmark	0.316		0.171	0.319	*	0.153						
FBW*Estonia	0.042		0.215	0.092		0.201	-		0.198	-0.028		0.191
FBW*Spain	0.116		0.182	0.124		0.167	0.068		0.161	0.075		0.153
FBW*Finland	0.267		0.174	0.301		0.158	0.206		0.151	0.244		0.143
FBW*Greece	0.324		0.173	0.354	*	0.157	0.255		0.151	0.289	*	0.142
FBW*Italy	0.082		0.193				0.070		0.168			
FBW*Luxembourg	0.313		0.214	0.382	*	0.186	0.274		0.181	0.337	*	0.164
FBW*Netherlands	-0.178		0.199	-0.129		0.173	-		0.169	-0.037		0.157
FBW*Norway	0.159		0.167									
FBW*Poland	0.318		0.168	0.301	*	0.151						
FBW*Slovenia	0.726	***	0.189	0.695	***	0.175						
FBW*Slovakia	0.241		0.182	0.229		0.166	0.156		0.160	0.152		0.152
FBW*United Kingdom	0.185		0.187	0.228		0.175	0.188		0.162	0.230		0.159
FBW*United States	0.234		0.171	0.214		0.156	0.179		0.149	0.163		0.142
Constant	9.444	***	0.145	9.881	***	0.161	8.663	***	0.160	9.150	***	0.175
Age of woman	0.034	***	0.008	0.026	**	0.009	0.035	***	0.008	0.030	**	0.009
Age of woman^2	0.000	**	0.000	0.000		0.00	0.000	**	0.000	0.000	*	0.000
Age of man	0.012		0.007	0.013		0.00	0.007		0.008	0.006		0.009
Age of man^2	0.000		0.000	0.000		0.00	0.000		0.000	0.000		0.000
Education of woman (Medium ref.)												
Low	-0.140	***	0.020	-0.111	***	0.023	-0.132	***	0.020	-0.109	***	0.023
High	0.171	***	0.019	0.108	***	0.019	0.151	***	0.020	0.098	***	0.021
Education of man (Medium ref.)												
Low	-0.191	***	0.020	-0.144	***	0.022	-0.186	***	0.020	-0.147	***	0.023
High	0.340	***	0.018	0.207	***	0.021	0.321	***	0.019	0.195	***	0.021
N. children (0 ref.)												
1.000	0.050	*	0.023	0.050	*	0.025	0.058	*	0.024	0.061	*	0.026
	0.110	***	0.024	0.118	***	0.025	0.115	***	0.025	0.131	***	0.026

2.000	0.037	0.028	0.038	0.03	0	0.046	0.030	0.061	0.032
3+									
Child aged 5 or below	-0.001	0.020	0.004	0.021	0.028	0.022	0.025	0.023	
Occupation of breadwinner (Managerial and professional ref.)			-0.349 ***	0.021			-0.332 ***	0.021	
Other skilled workers			-0.693 ***	0.036			-0.625 ***	0.035	
Labourers/elementary									
N. hours worked by breadwinner					0.019 ***	0.001	0.016 ***	0.001	
N.	31,687		20,563		18,179		14,661		
R ²	0.411		0.477		0.443		0.499		

Sources. Own calculations using the Luxembourg Income Study Database, Wave 10 (~2016) or 9 (~2013).

Table S4. Estimates from linear regression model on logarithm of benefit income, pure male breadwinners and pure female breadwinners.

	Model 1		Model 2		Model 3		Model 4	
	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.
Couple (Male breadwinner ref.)								
Female breadwinner	0.598 **	0.176	0.569 **	0.179	0.524 **	0.181	0.509 **	0.184
Country (Austria ref.)								
Australia	-0.142	0.078	-0.165 *	0.079	-0.172 *	0.078	-0.191 *	0.079
Canada	-0.943 ***	0.078			-0.961 ***	0.079		
Switzerland	-0.269 ***	0.075	-0.297 ***	0.078	-0.293 ***	0.078	-0.299 ***	0.078
Czechia	-0.623 ***	0.077	-0.617 ***	0.078	-0.622 ***	0.077	-0.620 ***	0.078
Germany	0.002	0.072	-0.066	0.074	-0.021	0.073	-0.067	0.074
Denmark	0.472 ***	0.074	0.394 ***	0.078				
Estonia	-1.052 ***	0.115	-1.047 ***	0.117	-1.066 ***	0.115	-1.061 ***	0.117
Spain	-0.476 ***	0.088	-0.509 ***	0.090	-0.491 ***	0.091	-0.513 ***	0.093
Finland	0.390 ***	0.073	0.374 ***	0.074	0.348 ***	0.074	0.340 ***	0.075
Greece	-1.564 ***	0.086	-1.580 ***	0.087	-1.537 ***	0.086	-1.551 ***	0.087
Italy	-0.965 ***	0.199			-1.001 ***	0.197		
Luxembourg	0.069	0.078	0.053	0.079	0.079	0.079	0.067	0.080
Netherlands	-0.537 ***	0.081	-0.564 ***	0.082	-0.550 ***	0.081	-0.569 ***	0.082
Norway	-0.652 ***	0.065						
Poland	-0.579 ***	0.065	-0.586 ***	0.066				
Slovenia	-0.556 ***	0.098	-0.560 ***	0.099				
Slovakia	-0.931 ***	0.078	-0.945 ***	0.079	-0.929 ***	0.078	-0.940 ***	0.079
United Kingdom	-0.504 ***	0.074	-0.521 ***	0.075	-0.522 ***	0.074	-0.531 ***	0.075
United States	-1.185 ***	0.063	-1.224 ***	0.064	-1.190 ***	0.064	-1.203 ***	0.064
Couple*Country								
FBW*Australia	-0.806 **	0.256	-0.811 **	0.261	-0.848 **	0.264	-0.838 **	0.268
FBW*Canada	-0.276	0.203			-0.290	0.207		
FBW*Switzerland	0.222	0.256	0.258	0.260	0.283	0.270	0.297	0.273
FBW*Czechia	-0.823 **	0.264	-0.813 **	0.263	-0.773 **	0.266	-0.765 **	0.267
FBW*Germany	-0.159	0.208	-0.247	0.215	-0.197	0.207	-0.239	0.213
FBW*Denmark	-0.484 **	0.188	-0.497 **	0.194				
FBW*Estonia	-1.266 ***	0.275	-1.260 ***	0.279	-1.176 ***	0.279	-1.177 ***	0.283
FBW*Spain	-0.299	0.231	-0.297	0.233	-0.306	0.237	-0.305	0.240
FBW*Finland	-0.341	0.195	-0.356	0.196	-0.325	0.198	-0.334	0.201
FBW*Greece	-0.154	0.223	-0.166	0.223	-0.115	0.227	-0.132	0.229
FBW*Italy	0.067	0.340			0.119	0.333		
FBW*Luxembourg	-0.060	0.233	-0.051	0.230	-0.028	0.233	-0.026	0.232
FBW*Netherlands	0.185	0.226	0.178	0.224	0.118	0.227	0.121	0.227
FBW*Norway	-0.436 *	0.182						
FBW*Poland	-0.538 **	0.191	-0.528 **	0.193				
FBW*Slovenia	-0.583 *	0.249	-0.578 *	0.250				
FBW*Slovakia	-0.910 ***	0.244	-0.900 ***	0.246	-0.846 **	0.247	-0.840 **	0.250
FBW*United Kingdom	-0.165	0.208	-0.146	0.211	-0.166	0.211	-0.149	0.215
FBW*United States	-0.274	0.188	-0.227	0.191	-0.231	0.194	-0.210	0.197
Constant	8.322 ***	0.265	8.308 ***	0.303	8.689 ***	0.302	8.618 ***	0.332
Age of woman	0.020	0.013	0.014	0.015	0.018	0.015	0.015	0.017
Age of woman ²	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Age of man	-0.006	0.013	-0.006	0.015	-0.006	0.015	-0.008	0.016
Age of man ²	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Education of woman (Medium ref.)								
Low	0.013	0.034	-0.009	0.037	-0.017	0.039	-0.026	0.041
High	0.018	0.032	0.066	0.035	0.033	0.035	0.078	0.037
Education of man (Medium ref.)								
Low	0.140 ***	0.035	0.124 **	0.038	0.138 ***	0.039	0.122 **	0.042
High	-0.106 **	0.032	-0.055	0.038	-0.088 *	0.035	-0.044	0.040
N. children (0 ref.)								
1	0.057	0.060	0.041	0.071	-0.028	0.067	-0.022	0.077
2	0.268 ***	0.060	0.249 ***	0.071	0.163 *	0.068	0.159 *	0.078

3+	0.759	***	0.063	0.744	***	0.074	0.638	***	0.072	0.637	***	0.083
Child aged 5 or below	0.363	***	0.034	0.381	***	0.037	0.416	***	0.040	0.436	***	0.042
Occupation of breadwinner (Managerial and professional ref.)												
Other skilled workers				0.090	*	0.038				0.070		0.039
Labourers/elementary				0.211	***	0.060				0.190	**	0.065
N. hours worked by breadwinner							-0.007	***	0.001	-0.006	***	0.002
N.	22,952			14,593			12,399			10,476		
R ²	0.295			0.318			0.320			0.347		

Sources. Own calculations using the Luxembourg Income Study Database Wave 10 (~2016) or 9 (~2013).