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The Impact of Tax and Benefit Systems on the Workforce Participation Incentives of Women

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ABSTRACT

This paper examines the impact of tax and benefit systems on the incentives for second earners to enter formal employment. The paper highlights how various tax design features create greater participation disincentives for second earners than for primary earners or single individuals. As second earners in OECD countries are more often women, these greater disincentives create significant gender-equity concerns. As second earners are also typically highly responsive to work disincentives, these features are likely to negatively impact economic growth. These disincentives stem from a range of policies including the choice of family-based rather than individual-based taxation, the use of dependent spouse tax credits and allowances, and the use of tax credits and benefits based on family rather than individual income. Reform options to address these issues will depend on countries' existing tax policy design choices. For countries where individual-based taxation is combined with some family-based provisions, reform of these family-based provisions to lessen their impact on second earner work disincentives may be warranted. For countries with family-based tax systems, the introduction of some individual-based provisions could be considered to mitigate the negative effects of family-based taxation on second earner work incentives.

RÉSUMÉ

Ce document examine l'impact des systèmes de prélèvements et de prestations sur les incitations pour les seconds apporteurs de revenu à intégrer un emploi dans le secteur formel. Il montre comment différentes caractéristiques de conception des prélèvements dissuadent davantage le second apporteur de revenu à exercer un emploi que l'apporteur principal ou le travailleur célibataire. Étant donné que, dans les pays de l'OCDE, les seconds apporteurs sont plus souvent des femmes, ces contre-incitations plus fortes créent d'importants problèmes d'égalité hommes-femmes. De même, les seconds apporteurs étant généralement très réactifs aux contre-incitations au travail, ces caractéristiques ont probablement un impact négatif sur la croissance économique. Ces facteurs dissuasifs résultent d'un ensemble de choix politiques, notamment l'imposition par foyer fiscal plutôt qu'individualisée, le recours à des allégements ou des crédits d'impôt pour conjoint à charge, et l'utilisation de prestations et de crédits d'impôt basés sur le revenu du foyer plutôt que sur le revenu individuel. Les réformes qui peuvent être engagées pour résoudre ces problèmes dépendront des choix de politique fiscale opérés par les pays. Pour ceux dans lesquels l'imposition individualisée est complétée par certaines dispositions propres à une imposition par foyer, il peut être judicieux de réformer ces dispositions en vue d'atténuer leur impact sur les contre-incitations des seconds apporteurs à travailler. Les pays dotés de systèmes d'imposition par foyer fiscal pourraient envisager de mettre en place des éléments d'imposition individualisée afin de réduire les répercussions négatives de l'imposition par foyer sur les incitations des seconds apporteurs à travailler.

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THE IMPACT OF TAX AND BENEFIT SYSTEMS ON THE WORKFORCE PARTICIPATION INCENTIVES OF WOMEN

Alastair Thomas and Pierce O'Reilly[1]

1. Introduction

Tax and benefit systems can affect men and women differently. Explicit gender biases – where tax and benefit provisions are legally linked to gender – are increasingly rare across OECD countries. However, implicit biases – where tax and benefit systems interact with gender differences in patterns of behaviour and income – remain common. Perhaps the most common implicit gender bias in tax and benefit systems is the greater disincentive often created by tax provisions for second earners – who tend to be women – to participate in the workforce as compared to primary earners or single individuals. This paper examines how tax provisions can exacerbate these disincentives; quantifies the total disincentives created by the tax and benefit systems; and discusses potential tax policy reform options. While tax and benefit systems will also have an impact on the number of hours a second earner works once in employment, and on the mix of hours worked by partners in a family, the focus of this paper is solely on the decision whether or not to enter employment.

Concern regarding the impact of tax and benefit systems on second earner work incentives is not limited to gender equity. There are also significant implications for efficiency, income inequality and inclusive growth. Empirical evidence shows that second earners tend to be highly responsive to work disincentives (OECD, 2011), and hence the imposition of substantial disincentives is likely to result in significantly lower participation by second earners than would otherwise occur. This is evidenced by the comparatively lower participation rates of women than men. Reducing disincentives can not only lower these distortions to economic behaviour, but will have a significant positive impact on GDP growth. Increasing second earner participation is also linked to lower income inequality (OECD, 2015) and lower child poverty (Del Boca, 2015). It will also be crucial in helping to address the demographic challenges associated with population aging in most countries.

The paper first focuses solely on the tax system. While all income taxes can be expected to discourage work[2], the specific design of an income tax system can affect the exact incentives workers face. This is

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1 . The authors are tax economists in the OECD's Centre for Tax Policy and Administration. The authors would like to thank David Bradbury, Nicola Brandt, James Browne, Bert Brys, Orsetta Causa, Sean Gibson, Michelle Harding, Herwig Immervoll, Asa Johansson, Anna Milanez, Maurice Nettley, Dominique Paturot and Delegates to the OECD's Working Party (No. 2) on Tax Policy Analysis and Tax Statistics for useful comments and suggestions. The authors would like to particularly acknowledge the guidance provided by Bert Brys in the development of the paper. Axelle Magnier, Dominique Paturot and Michael Sharratt assisted with the tax rate calculations presented in the paper.

2 . An income tax will lead to non-participation in the formal labour market if it reduces the after tax return to working below the taxpayers 'reservation wage' – the minimum wage that makes it worthwhile for the worker to enter employment. The reservation wage will be determined by a range of factors including the fixed costs of working (such as transport or child care costs), non-labour income, and the alternative uses of the worker's time. For workers participating in formal employment, theory highlights two conflicting effects of an income tax on the number of hours worked (as well as on broader margins such as effort): a substitution effect discouraging work (as an income tax reduces the relative price of leisure in terms of forgone consumption); and an income effect encouraging work (as the income tax makes the worker poorer). Empirical evidence (see,

particularly the case for second earners where a number of policy choices significantly affect the incentives for workers to enter the workforce (as well as incentives once in the workforce). The choice between individual- and family-based taxation is a prime example. Family-based taxation (where the family is taxed as a single unit on total family income) has been adopted by a number of countries and has a strong justification on horizontal equity grounds as it ensures that families with the same total income pay the same total income tax – irrespective of who has earned the income. However, in a family-based system with marginal tax rates that increase with income, a second earner is effectively taxed at higher marginal tax rates than a single individual would be (because the primary earner has already "used up" the lower tax brackets and any allowance available to the family).

Individual-based tax systems (where each individual is taxed separately on their income) often incorporate elements of a family-based system, for example by targeting tax allowances, credits or work-contingent benefits on the basis of family rather than individual income. While such an approach may strengthen the fairness of the system, it tends to decrease work incentives for second earners as families may lose some or all of the benefit of these provisions when the second earner enters or re-enters the workforce. Some countries also provide dependent spouse tax allowances or credits in order to lower the tax burden on the income of a primary earner who has a dependent (i.e. not employed in the formal labour market) spouse. These provisions also tend to lower work incentives for second earners as their partner, and consequently their family, will lose the benefit of the provision when the second earner enters or re-enters the workforce.

To illustrate the impact of these factors on second earner work incentives, the paper calculates and compares average tax rates faced by second earners with those faced by single individuals. Average tax rates for a second earner with or without children entering employment earning 67% of the average wage (with a partner earning the average wage) range from 48.7% in Belgium to 3.2% in Mexico. For a second earner without children, 24 of 34 OECD countries impose a higher average tax rate on the second earner than a single individual. For families with two children, this increases to 32 of 34 countries.

To place these tax rates in a broader context, the paper then turns to quantifying the total financial disincentive to enter employment created by the tax and benefit systems. Participation tax rates (PTRs) are calculated for 31 OECD countries measuring the combined impact of the taxation of earned income and the loss of out-of-work benefits on the financial incentive to enter employment.

While participation tax rates provide a picture of the broad disincentives faced by second earners, it is important to bear in mind that there are a variety of additional factors that also influence the incentives for individuals to enter the workforce, many of which cannot easily be incorporated into a summary indicator. These include: the availability and cost of child care; paid leave provisions (e.g. maternity, parental and sickness leave) and the existence of other unearned income (e.g. investment income). The availability and cost of child care, in particular, has been found to have a significant impact on the participation decision of mothers (see, e.g., Del Boca, 2015); as has paid maternity leave provisions (see, e.g., Low and Sánchez-Marcos, 2015).

As benefit eligibility can vary over time, PTRs are calculated for moving into work both from short-term unemployment and from inactivity from the formal labour market (where the second earner is assumed not to be eligible for unemployment benefits). The financial disincentive to move from short-term unemployment into work is found to be very high in most countries. PTRs for a second earner without children earning 67% of the average wage (with a partner earning the average wage) range from 94% in Portugal to 15% in New Zealand. PTRs are above 60% in 23 of 31 countries, and above 80% in ten

e.g., OECD, 2011) shows that taxes on labour income generally reduce hours worked (to varying degrees depending on the taxpayer), indicating that the substitution effect dominates the income effect.

countries. Results are very similar for families with children. In most countries the loss of out-of-work benefits (predominantly unemployment benefits) has a greater impact on PTRs than the taxation of earned income.

PTRs are significantly lower when moving from inactivity into employment, ranging from 49% in Belgium to 11% in Korea (without children), and from 59% in Slovenia to 10% in Greece (with two children). The lower PTRs predominantly result from the impact of tax provisions as most inactive second earners are not eligible for out-of-work benefits (as these are typically targeted based on family income) – and hence they have no benefit payments to lose on entering employment. In contrast, inactive single individuals would typically be eligible for some out-of-work benefits (e.g. social assistance) and would therefore tend to face higher PTRs than inactive second earners. Nevertheless, the PTRs for inactive second earners are often still substantial and, given the greater responsiveness of second earners to incentives than single individuals, they remain of significant concern.

The report also analyses how PTRs can vary for second earners entering employment at different income levels. Three broad patterns are evident in the majority of countries: PTRs are high irrespective of income level; PTRs tend to be higher at low income levels than at high income levels; and the contribution to PTRs of taxes relative to loss of out-of-work benefits tends to be larger at higher income levels.

Turning to consideration of potential tax reform options, the paper highlights the need to consider any reform in the context of the tax-benefit system as a whole. While a detailed analysis of potential benefit system reform is beyond the scope of this paper, active labour market policies (which link ongoing eligibility for out-of-work benefits with active job search and/or training requirements) are likely to be crucial to mitigating the disincentive effects of generous out-of-work benefits.

Regarding the tax system, there are a number of potential approaches to reducing second earner participation disincentives. In all cases, efficiency goals must be weighed against equity goals. Adopting pure individual-based taxation will minimise second earner work disincentives. For countries that choose to combine individual-based taxation with some family-based provisions, then there is merit in considering reform of these provisions to lessen their impact on second earner work disincentives. In particular, countries should consider linking provisions to individuals rather than work status. For example, a dependent spouse allowance/credit could be replaced with a refundable tax credit for each individual, or a tax credit that is transferrable between spouses. These would continue to provide support to one-earner families without increasing second earner work disincentives, although they would have an additional fiscal cost. Another option is to target an in-work tax credit based on individual rather than family income, or to introduce or increase the generosity of existing in-work tax credits targeted on individual income, though this would also have an additional fiscal cost and would less tightly target low-income families.

For countries that choose a family-based tax system in order to achieve particular equity goals, the introduction of some individual-based provisions may be warranted to mitigate the negative effects of family-based taxation on second earner work incentives. As above, a prime option is to target an in-work tax credit based on individual income. Other options include replacing a family-based basic tax credit/allowance with an individual-based tax credit, and providing a one-off “bonus” tax credit on entry (or re-entry) into employment.

Regarding the use of individual income-targeting provisions, these should be designed so that the desired group receives the support while minimising the negative effects of higher PTRs. One way this could be achieved is by applying a high phase-out of the support over a small range in the income distribution where there are comparatively few second earners. Where this is difficult to achieve, a lower phase-out rate may be necessary, although this will result in a higher fiscal cost.

A final option, irrespective of the underlying method of taxation is simply to lower statutory tax rates – which will reduce disincentives for all workers. However, this would come at significant revenue cost as well as reducing the redistributive impact of the personal income tax. Alternatively, a rate reduction at the lower end of the income distribution (where a significant proportion of second earners will be situated) could be funded as part of a broader revenue neutral tax reform by increasing rates further up the income distribution or by a shift toward other tax bases (see, for example, Brys, et al., 2016).

Whatever the reform option, it is important to consider its design in the context of the entire tax-benefit system. For example, less tight targeting of a tax credit could be offset by greater progressivity in the income tax schedule. Furthermore, where reform is not possible in the short run due to fiscal and/or political economy considerations, second earner disincentives should be taken into account in any major tax reform in the future so as to better reconcile equity and efficiency objectives in the tax-benefit system as a whole.

The paper proceeds as follows: Section 2 discusses the implications for gender equity of the taxation of second earners. Section 3 examines how tax provisions can exacerbate second earner participation disincentives. Section 4 extends this analysis to quantify the total financial disincentive for second earners to participate created by the tax and benefits systems, and section 5 discusses potential tax policy reform options.

2. Tax and gender

The equity of the tax system is usually assessed in terms of horizontal and vertical equity, but tax policy should also have regard to gender equity. Tax systems can affect men and women differently. Explicit gender bias occurs where tax provisions are legally linked to gender. Implicit bias arises where taxes and tax systems interact with differences in underlying patterns of economic behaviour associated with gender. In OECD countries, explicit bias is now extremely rare (one example is Israel which provides slightly higher tax credits to women than men). However, implicit bias does occur more frequently because the tax system discriminates against certain patterns of behaviour that may be more closely associated with one gender than the other.

Perhaps the most common implicit gender bias in tax systems – and a key focus of this paper – is the greater disincentive often created by tax provisions for second earners to participate in the workforce. As second earners tend to be women (see Figure 1), these greater disincentives for second earners create an implicit bias against women. The potential gains from reducing the disincentives faced by women are significant as female participation rates are lower than for men in all OECD countries (Figure 2).

3. The impact of tax provisions on second earner work incentives

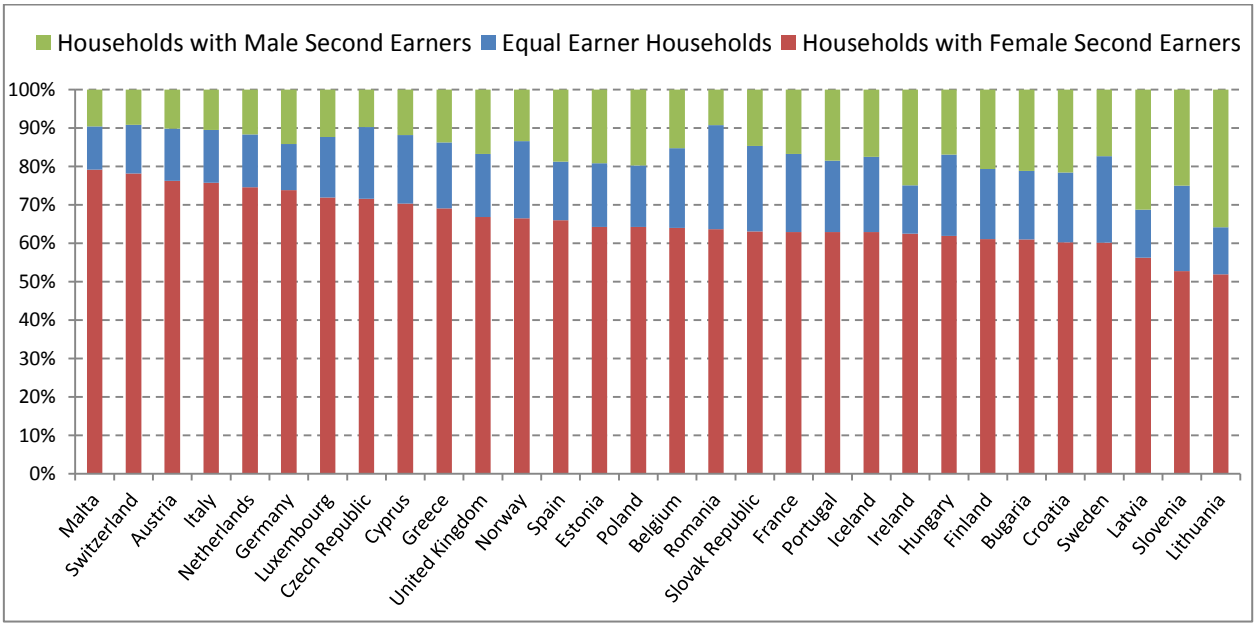
All income taxes can be expected to discourage work. However, some design features of tax systems can result in second earners facing a greater disincentive than other workers. Some countries adopt a purely individual-based system of labour income taxation, which results in all workers facing the same tax-induced disincentive to enter employment.

In contrast, a number of countries choose to adopt a purely family-based system of labour income taxation (where the family rather than the individual is the unit of taxation). Family-based taxation has a strong justification on equity grounds as it ensures that families with the same total income pay the same total income tax – irrespective of who has earned the income.[3] However, in a family-based system with

3. Note though that there are also equity arguments for individual taxation. For example, it is arguable that a one-earner family is actually better off than a two-earner family with the same total income because the one-earner family has additional time available for leisure or for non-market work (such as child care) that the two-earner

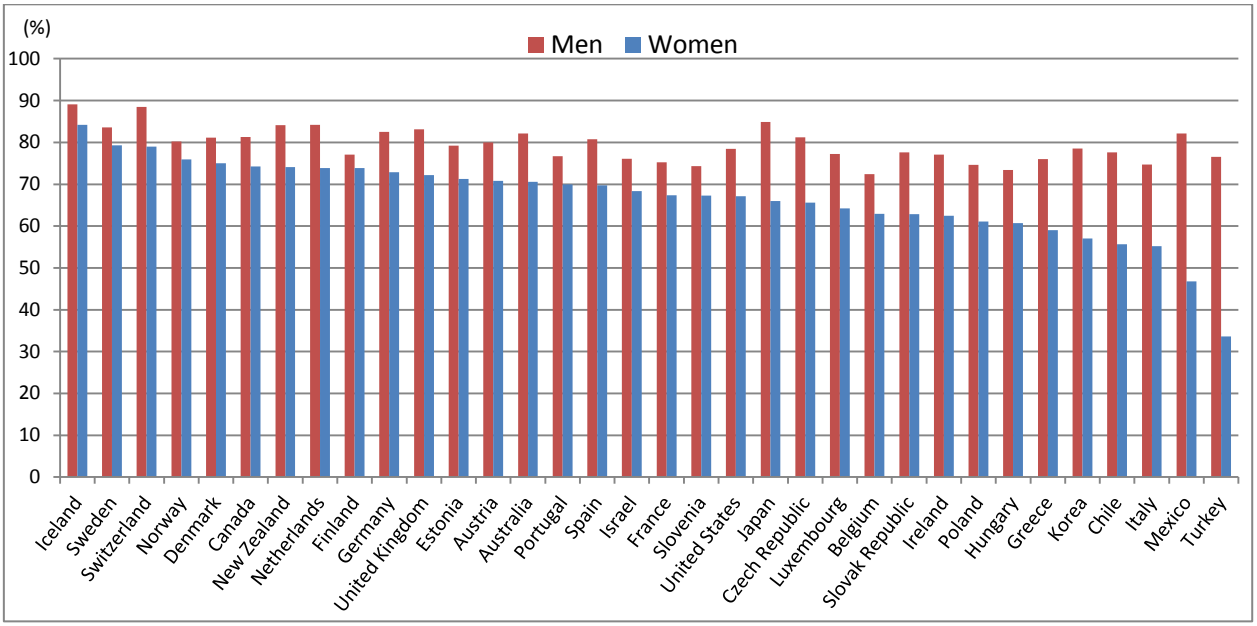
marginal tax rates that increase with income, a second earner is effectively taxed at higher marginal tax rates than a single individual would be (because the primary earner has already "used up" the lower tax brackets and any allowances available to the family).

Figure 1. Second earners by gender in EU countries, 2011



Source: EU Statistics on Income & Living Conditions (SILC). Data reflect share of earnings that the woman contributes to total household earnings. A woman is considered to have earnings roughly equal to her partner's if her share constitutes 45-55% of combined earnings. If a woman's share is less than 45%, the household is classified as female second earner. Single-earner households are included.

Figure 2. Labour force participation rates by gender, 2014



Source: OECD Employment database

family would have to pay for. Individual taxation ensures that the one-earner family pays more tax than the two-earner family in this situation.

A more common approach is for countries to apply individual-based taxation, but to incorporate into it elements of a family-based system. One way of achieving this is to target tax allowances, credits or benefits on the basis of family rather than individual income. For example, child tax credits in individual-based systems are often targeted on the basis of family income, as this can better direct support to those families in need (by avoiding supporting families with one low income parent and one higher income parent). While, at one level, such an approach may strengthen the fairness of the system, it tends to decrease work incentives for second earners as families may lose some or all of the benefit of these provisions when the second earner enters or re-enters the workforce.

Alternatively, some countries provide additional support to one-earner (or predominantly one-earner) families through a dependent spouse tax allowance or tax credit. Dependent spouse provisions provided to a primary earner may be withdrawn immediately on the second earner's entry into employment or may be reduced as the second earner's income increases. In either case, these provisions also tend to lower work incentives for second earners as the primary earner will lose some or all of the benefit of the provision when the second earner enters or re-enters the workforce.

Countries may also provide a tax credit or allowance that is transferrable to the spouse if unutilised (e.g. if they are not working). Such provisions have a complex impact on incentives. With a transferable tax credit, a family's tax burden will be lowered by the same amount whether the second earner works or not. As such, the credit will have no impact on the disincentive faced by the second earner to enter employment. However, in a purely individual system the primary earner would not be able to benefit from the second earner's tax credit, and hence the second earner's tax credit would actually *reduce* their disincentive to enter employment. In this sense a transferrable credit still has a negative impact on the second earner's participation incentive as compared to pure individual taxation.

Nevertheless, a transferrable credit may be seen as a better option than a dependent spouse credit which explicitly increases the second earner's disincentive to enter employment.[4] An alternative option would be to provide a refundable, rather than transferrable, tax credit. This would be neutral as compared to a purely individual-based system, as all individuals would benefit from the credit whether they worked or not. However, it would have a significant revenue cost and result in single individuals receiving the same level of support as a one-earner family – which may not be considered fair.

Table 1 summarises the presence of these provisions in OECD countries. Over the last 30 years there has been a clear movement away from family-based taxation, with 23 of 34 OECD countries applying individual-based taxation as of 2015. Only five countries apply pure family-based taxation (Estonia, France, Luxembourg, Portugal and Switzerland), while the remaining six countries provide some degree of choice regarding the unit of taxation. For countries that do apply individual-based taxation, most also have some family-based provisions: 11 of 23 countries withdraw some form of support on the basis of family income (in several cases eligibility for such support requires the presence of dependent children); and 12 countries provide some form of additional support for a dependent spouse, and three provide transferrable tax credits. As a result, only five countries (Chile, Finland, Israel, Mexico and Sweden) apply a purely individual system with no family-based elements.

4. A transferrable credit is also preferable to a transferrable allowance. With a transferable allowance the disincentive for a second earner to enter employment will still explicitly increase because the tax reduction lost by the primary earner will be greater than the tax reduction gained by the second earner (assuming the primary earner earns more than the second earner and faces a higher marginal tax rate).

Table 1. Individual vs family-based tax provisions in OECD countries, 2015

Country	Family-based / Individual-based / Optional	If individual-based:			Other
		Family-based credit, allowance or benefit withdrawal	Dependent spouse credit or allowance	Transferrable credit or allowance	
Australia	Individual	Yes			
Austria	Individual		Yes		
Belgium	Individual		Yes		Partial splitting
Canada	Individual	Yes		Yes	Partial splitting[1]
Chile	Individual				
Czech Republic	Individual	Yes	Yes		
Denmark	Individual			Yes	
Estonia	Family	-	-	-	
Finland	Individual				
France	Family	-	-	-	
Germany	Optional				
Greece	Individual	Yes			
Hungary	Individual	Yes			
Iceland	Individual			Yes	
Ireland	Family (individual option)				
Israel	Individual				
Italy	Individual	Yes	Yes		
Japan	Individual		Yes		
Korea	Individual		Yes		
Luxembourg	Family	-	-	-	
Mexico	Individual				
Netherlands	Individual	Yes	Yes	Yes	
New Zealand	Individual	Yes			
Norway	Optional				
Poland	Optional	Yes			
Portugal	Family	-	-	-	
Slovak Republic	Individual		Yes		
Slovenia	Individual	Yes	Yes		
Spain	Individual (family option)				
Sweden	Individual				
Switzerland	Family	-	-	-	
Turkey	Individual		Yes		
United Kingdom	Individual	Yes			
United States	Optional				

1. In 2014 and 2015, Canada allowed partial income splitting for families with at least one child under 18 whereby up to CAD 50 000 could be notionally transferred between spouses providing a tax saving for the family of up to CAD 2 000. This option was removed as of 2016.

Source: OECD (2016)

Figure 3 illustrates the effect of these provisions by comparing average tax rates faced by single and second earners entering employment. The average tax rate faced by a single individual is used as a proxy for a pure individual-based tax system. The average tax rate indicator used for a second earner is a family-based measure in order to incorporate the impact of the second earner's entry into employment on both their tax burden and that of their partner. It shows how much of the family's extra gross income (from the second earner's movement into employment) is lost in taxes on in-work income (personal income taxes plus employee social security contributions, net of any in-work benefit payments). This may differ from an average tax rate calculated on a purely individual basis and the legal tax burden imposed on a particular

individual. Calculations are made using the OECD's *Taxing Wages* models (see OECD, 2016).[5] Box 1 discusses the methodology for calculating the second earner average tax rate, and the strengths and weaknesses of the indicator.

Figure 3a compares the average tax rate for second earners earning 67% of the average wage with that for single individuals earning the same level of income in 2015. The primary earner is assumed to earn the average wage. Second earner average tax rates range from 48.7% in Belgium to 3.2% in Mexico, while single individual average tax wedges range from 35.4% to 3.2%, again in Belgium and Mexico. The average tax rate is higher for the second earner than for the single individual earning the same level of income (i.e. 67% of the average wage) without children in 24 out of the 34 OECD member countries. The largest differences in percentage point terms are in Belgium (13.2), Iceland (12.3), the Czech Republic (11.7), Germany (11.4), Luxembourg (11.3), France (10.8) and the Slovak Republic (10.2).

The large differences in France, Germany and Luxembourg (as well as smaller differences in Estonia, Ireland, Poland, Portugal, Spain, Switzerland and the United States) are due to family-based taxation. As noted above, under family-based taxation the second earner effectively pays tax at a higher part of the income tax rate schedule than a single individual would because the primary earner is already gaining the full benefit from the lower part of the tax rate schedule. This effect is exacerbated the greater the level of the primary earner's income. Even when the income tax thresholds for a family are higher than for an individual, this still generally results in the second earner facing higher marginal income tax rates than a single individual. For example, in Switzerland, the primary earner's income of approximately CHF 90 000 (the average wage) means that the first franc that the second earner receives (once their basic allowance is exhausted) is taxed at a personal income tax rate of 5%, whereas the first franc that a single individual receives is taxed at the zero rate.

In Belgium, the large difference is due to its partial splitting system. Under the partial splitting system, a notional amount of income is able to be transferred between spouses if one earns 30% or less of the family's total income. The second earner's entry into employment means that some of the primary earner's income that was previously attributed to the spouse (and hence taxed at a low marginal rate) is now taxed at the higher marginal rate of the primary earner.

The similarly large difference in Iceland is due to the presence of a transferrable basic credit. While taxation is on an individual basis, a working spouse can utilise the basic credit of a non-working spouse (or any unutilised credit of a working spouse). As such, when the second earner enters employment the family gets no additional benefit from the second earner's basic credit (because the primary earner had already been able to use it to reduce their tax burden). In contrast, an individual moving into work does benefit from their basic credit (as they did not receive it when not working). A smaller difference results from a similar transferrable tax credit in Denmark.

In the Slovak Republic, the large difference between single and second earner average tax rates is due to the loss of a dependent spouse allowance by the primary earner when the second earner enters employment. Smaller differences are generated by dependent spouse provisions in Japan, Korea and Turkey.

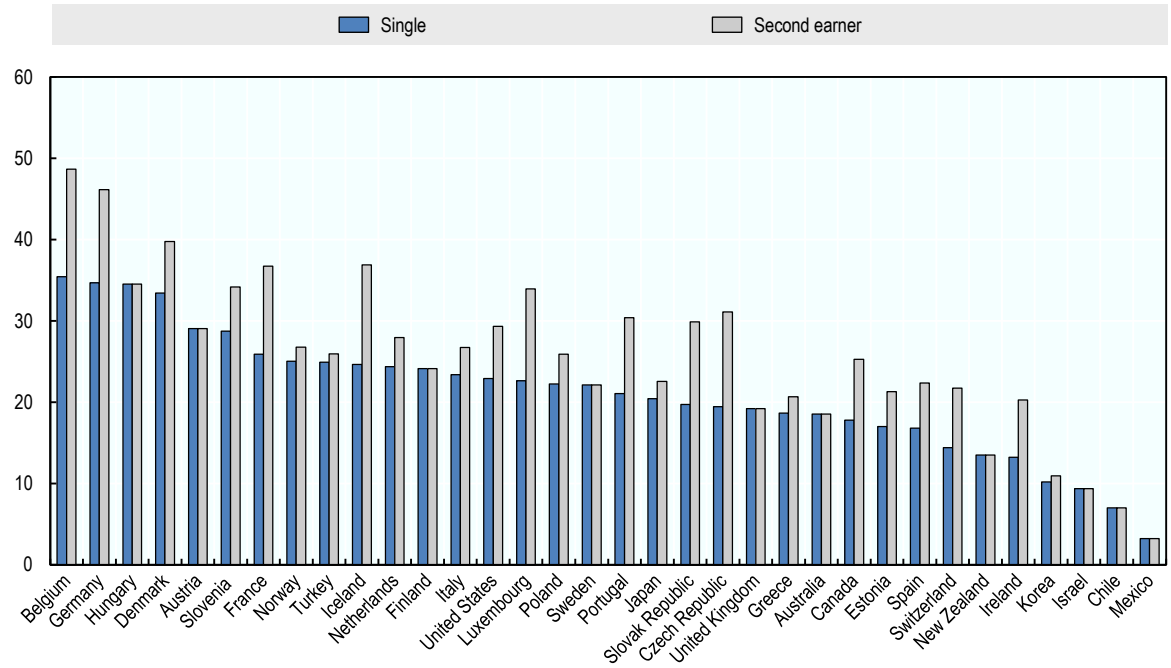
The large difference in the Czech Republic is also due to the loss of a dependent spouse tax credit. That said, the Czech Republic moves even further away from pure individual-based taxation by also targeting support to low-income families on the basis of family income. This element of family-based

5. For the six countries that provide the option of family- or individual-based taxation, the models adopt the following approaches: in Norway and Spain the models allow for the most advantageous option to be chosen. In Germany, Ireland, Poland and the United States, the modelling is based on family-based taxation only.

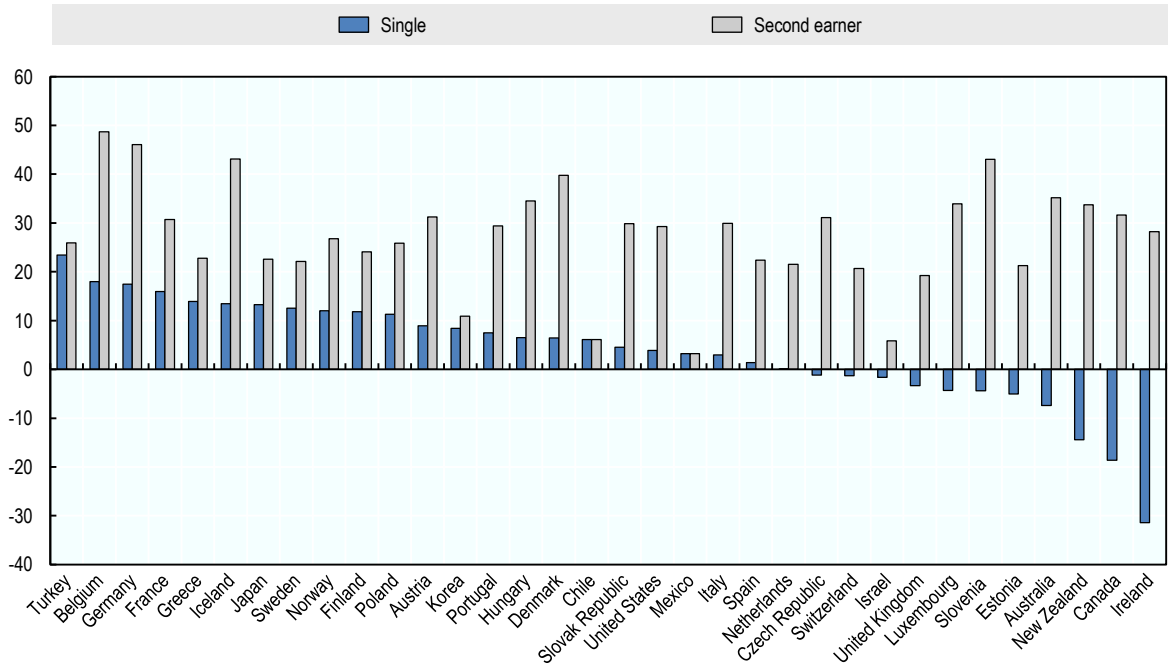
taxation is not captured in Figure 3a because the income level of the family considered is above the cut off for eligibility for the benefit.

Figure 3. Average tax rates, 2015

a. Single and second earner at 67% of the AW (primary earner at the AW level), no children



b. Single and second earner at 67% of the AW (primary earner at the AW level), 2 children



A number of other countries with individual-based systems also have higher tax rates for second earners than single individuals due to a combination of family-based withdrawal of tax credits, allowances or in-work benefits with dependent spouse provisions (e.g. Italy and Slovenia) or transferrable basic credits (Canada and the Netherlands).[6]

In contrast, Figure 3a shows no difference between single and second earner average tax rates in Australia, Austria, Chile, Finland, Hungary, Israel, Mexico, New Zealand, Sweden and the United Kingdom. In Chile, Finland, Israel, Mexico and Sweden this is because they apply individual-based taxation and do not augment this with family-based withdrawal of any provisions or dependent spouse provisions.[7] Australia, Hungary, New Zealand and the United Kingdom do withdraw certain benefits on the basis of family income, but eligibility is dependent on the presence of children. Meanwhile, Austria provides a dependant spouse credit, but only for families with children.

Figure 3b compares the average tax rate for second earners with two children earning 67% of the average wage with that for single individuals with two children earning the same level of income in 2015. The primary earner is again assumed to earn the average wage. Second earner average tax rates now range from 48.7% in Belgium to 3.2% in Mexico, while single individual tax wedges now range from 23.4% in Turkey to -31.4% in Ireland.

With children present, the average tax rate is now higher for second earners than for single individuals in 32 of the 34 OECD member countries. Furthermore, the differences in tax wedges tend to be far greater than was the case without children. The largest differences in percentage point terms are in Ireland (59.6), Canada (50.2), New Zealand (48.2), Slovenia (47.4), Australia (42.6), Luxembourg (38.3), Denmark (33.3), the Czech Republic (32.2) and Belgium (30.7). There are no differences in the net personal average tax rates between the second earner with children and the single parent in Chile and Mexico.

Some caution must be taken regarding the single parent - second earner comparison in Figure 3b. The larger differences in tax rates compared to Figure 3a reflect the fact that countries tend to provide more support to families with children than to those without children. As such, single individual average tax rates with children are lower than without children in every country except Mexico (and even negative in 10 countries). However, in many cases a one-earner family with two children would not be eligible for the benefits received by a single parent (due to the primary earner's income level), and hence the family would not lose the benefit of any such provision when the second earner entered employment.[8]

One effect that is more prevalent in Figure 3b than 3a is the impact of tax credit, allowance and benefit withdrawal on a family basis. As more families with children are eligible for benefits than those without children, more are subject to higher second earner average tax rates due to the family based withdrawal of these benefits. This includes Australia, Austria, and New Zealand where second earner average tax rates are now 16.7, 2.2 and 20.3 percentage points higher, respectively, than was the case

6 . Canada provides a primary earner with a spouse tax credit equal to the unutilised basic tax credit of their spouse. This is equivalent to providing a transferrable basic credit. Alternatively, a primary earner can claim an equivalent credit for another wholly dependent relative instead of the spouse tax credit. This credit is also equal to the unutilised basic tax credit of the spouse (if they have one). It is most often claimed by a single parent in respect of their child and ensures that single parent and two parent families receive the same amount of basic tax credit.

7 . Note though that Israel provides a higher tax credit for women than men.

8 . That said, a purely individual-based tax system would provide the same level of support to an individual with children irrespective of whether they had a spouse, and hence the difference between the single individual and second earner average tax wedges does still reflect a bias in the tax system against second earners, though an entirely understandable one given most countries desire to provide significant support to single parents.

without children, with the entire increase due to the withdrawal of tax credits and allowances on the basis of family income. While similar provisions are present in Hungary and the United Kingdom, their impact is not seen in figure 3b as they are targeted at families with income below the average wage. In total, second earner average tax rates are higher with children than without children in 15 countries as a result of the increased generosity of tax provisions for families with children, and the (partial or total) loss of these benefits on the second earner's entry into employment.

Box 1. Calculating an average tax rate indicator for second earners

To examine the disincentive created by the tax system for a second earner to participate in employment, this paper follows previous OECD work (see, for example, Jaumotte, 2004; OECD, 2007, 2011) to calculate an indicator of the average tax rate borne by the family on the second earner's movement into employment. This average tax rate indicator (ATR) is defined as:

$$\text{ATR} = \frac{\begin{array}{c}\text{Increase in income tax and employee SSCs (net of in-work benefits)}\\ \text{paid by the family as a result of the second earner entering the workforce}\end{array}}{\text{Increase in family gross income as a result of the second earner entering the workforce}}$$

The ATR indicator compares the financial position of a family in two different situations: when the second earner is in work ("IW"), and when the second earner is out of work ("OW"). This can be seen in the alternative definition below:

$$\text{ATR} = 1 - \frac{(\text{family net income})_{\text{IW}} - (\text{family net income})_{\text{OW}}}{(\text{family gross income})_{\text{IW}} - (\text{family gross income})_{\text{OW}}}$$

where family gross income is defined as income before payment of taxes or receipt of benefits; and family net income is defined as income after the payment of taxes on earned income (personal income taxes and employee social security contributions), and receipt of any in-work benefits. The indicator compares the financial position of a family in two different situations: when the second earner is in work ("IW"), and when the second earner is out of work ("OW"). The second term in the equation calculates the family's additional net income from the second earner moving into employment as a proportion of the family's additional gross income. One minus this amount is therefore the proportion of the additional gross income lost through taxation of earned income (net of in-work benefits).

Key assumptions underlying the indicator are that the decision for the second earner to enter the workforce is made: (1) subsequent to the primary earner's decision to participate; and (2) at the **family level** rather than the individual level. As such, the indicator takes into account any additional tax liability legally imposed on the principal earner that results from the second earner entering the workforce. For example, the loss of a dependent spouse allowance by the primary earner when the second earner enters employment will be incorporated into the average tax rate indicator. The indicator may therefore differ substantially from measures of who legally has to pay the tax. For example, in Germany spouses can choose between individual and joint income taxation. In the case of joint taxation, Germany treats the family as a taxable unit via an income splitting method. Legally, the splitting effect has to be attributed equally to the primary and second earner. As pointed out in OECD (2016), following this legal approach the second earner average tax rate would be lower than the calculations in this paper. The application of the legal splitting method results in lower tax rates for all family types in Germany (without children 37.4%, compared to 46.1% in this paper; with two children 31.2%, compared to 46.1% in this paper).

While the above assumptions are consistent with previous OECD work and are judged to provide an accurate depiction of the decision making process, alternate assumptions are possible that would lead to a different indicator being adopted. For example, if the second earner's participation decision was assumed to be made contemporaneously with the primary earner, then the average tax wedge faced by the entire family may be the preferable measure of the tax burden on both partners entering employment. Alternatively, if the second earner's participation decision was assumed to be made at the individual rather than family level (and where the second earner disregards any change in the primary earner's tax burden), then it may be appropriate to only take into account the tax burden legally imposed on the second earner as opposed to the increase in tax on the whole family.

Finally, it is important to bear in mind that the average tax rate indicator only takes account of the influence of tax on the participation decision, not of broader factors. These include: the availability and cost of child care; paid leave provisions (e.g. maternity, parental and sickness leave), the existence of other unearned income (e.g. investment income, spouse's income) and the loss of out-of-work benefits. For example, although German family-based taxation has not changed, the female employment rate has increased significantly by 10 percentage points between 2005 and 2014.[9] Since 2010 it has increased by more than three percentage points to almost 70% in 2014. This is well above the OECD average of 57.9%. This evidence suggests that, in the case of Germany, factors other than the tax system are more important for the work incentives of second earners. Factors beyond the specific design of the tax system may influence female labour market participation rates also in other OECD countries. The loss of out-of-work benefits can have a particularly large impact on participation incentives and is incorporated into the broader "participation tax rate" indicator presented in the next section of this paper.

4. Measuring the financial disincentive to participate

This section moves beyond tax design to quantify the total financial disincentive to work faced by second earners. To do this, it is necessary to consider the impact of both the tax and benefit systems, as the loss of out-of-work benefits when a second earner enters employment will reduce the financial return to working just as an explicit tax on earned income will.

The analysis in this section is based on participation tax rates calculated using the OECD's tax-benefit models for 2013 (the most recent year available at the time of preparing this report)[10]. These models cover 31 of the 34 OECD countries.[11] Second earner participation tax rates (PTRs) are an extension of the second earner average tax rates calculated in section 2 to incorporate the receipt of out-of-work benefits. PTRs calculate how much of the gross income earned from the second earner's movement into employment is "taxed" away in the form of lost out-of-work benefits, reduced income tested benefits, and taxation of in-work income. As in the average tax rate calculations, taxes on in-work income include personal income tax and employee social security contributions, net of any in-work benefit payments (whether administered through tax or benefits systems). Employer social security contributions are not included in the calculations. Out-of-work benefits modelled include unemployment, social assistance, family and housing benefits.[12] Box 2 discusses the calculation of participation tax rates in more detail.

An added complexity with the calculation of PTRs is the potential variation of benefit entitlements over time. As such two separate scenarios are considered in the analysis:

- the movement into formal work from short-term unemployment from the formal labour market – where the second earner is assumed to have been eligible for unemployment benefits; and

- the movement into formal work from inactivity[13] from the formal labour market – where the second earner is assumed not to have been eligible for unemployment benefits (either due to length of unemployment or not meeting job-search requirements).

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9 . OECD Short-Term Labour Market Statistics, Employment rate, Aged 15-64, Females

10 . Subsequent to the completion of this report, tax-benefit model data for 2014 has become available.

11 . Mexico and Turkey do not provide data for the OECD's benefit system modelling. Chile provides data for the modelling, but data was not provided in time to be included in the dataset used for this paper.

12 . For more detail on the OECD tax-benefit models, see: www.oecd.org/social/benefits-and-wages.htm

13 . The use of the term 'inactive' or 'inactivity' refers to inactivity from the *formal* labour market. An 'inactive' second earner may, of course, be engaged in productive non-formal labour market work, such as child care.

Box 2. Calculating a participation tax rate indicator for second earners

To examine the disincentive created by the tax-benefit system as a whole for a second earner to participate in employment, this paper follows previous OECD work (see, for example, OECD, 2007, 2011) to calculate participation tax rates on the second earner's movement into employment. The participation tax rate indicator (PTR) is defined as:

$$\text{PTR} = \frac{\begin{array}{c}\text{Increase in income tax and employee SSCs (net of in-work benefits)}\\ \text{paid by the family plus the decrease in out of work benefits received by the}\\ \text{family as a result of the second earner entering the workforce}\end{array}}{\text{Increase in family gross income as a result of the second earner entering the workforce}}$$

As with the ATR indicator, the PTR indicator compares the financial position of a family in two different situations: when the second earner is in work ("IW"), and when the second earner is out of work ("OW"). This can be seen in the alternative definition below:

$$\text{PTR} = 1 - \frac{(\text{family net income})_{\text{IW}} - (\text{family net income})_{\text{OW}}}{(\text{family gross income})_{\text{IW}} - (\text{family gross income})_{\text{OW}}}$$

where family gross income is defined as income before payment of taxes on earned income (personal income taxes and employee social security contributions) and receipt of any work-contingent and/or out-of-work benefits; and family net income is defined as income after the payment of taxes on earned income and receipt of any work-contingent and/or out-of-work benefits. The second term in the equation calculates the family's additional net income from the second earner moving into employment as a proportion of the family's additional gross income. One minus this amount is therefore the proportion of the additional gross income lost through taxation of earned income (net of work-contingent benefits) and withdrawn out-of-work benefits.

The same key assumptions underlie the PTR indicator as underlie the average tax rate indicator. That is, the decision for the second earner to enter the workforce is made: (1) subsequent to the primary earner's decision to participate; and (2) at the **family level** rather than the individual level.

An added complexity regarding PTR calculations is variability in benefit entitlement over time. In many countries, unemployment benefits are only received for a limited period of time before they are either reduced in magnitude or cease entirely. Once eligibility for unemployment benefit ceases, social assistance payments may be provided or increased, but these generally result in a different overall level of benefit support. To take account of this variation in benefit eligibility, two separate scenarios are considered: (1) the move from short-term unemployment into work, where the second earner is assumed to have been eligible for unemployment benefits; and (2) the move from inactivity (from the formal labour market – they may be undertaking non-market work) into work where the second earner is assumed not to have been eligible for unemployment benefits (either due to length of unemployment or not meeting job-search requirements). As benefit entitlement may depend on prior work history and earnings level, the worker is assumed to be 40 years old with a long and (previously) uninterrupted employment history, and to have previously earned the same level of income as when they re-enter the workforce.

There are some limitations to the use of PTRs in examining work incentives. A key limitation is their static nature which means that they cannot capture dynamic effects. For example, a low-paying job may be seen as a stepping stone to a better career and greater long-term earnings prospects (OECD, 2011, 2006). Furthermore, as noted above, the influence of benefit payments on work decisions can vary over time. For example, the withdrawal of an unemployment benefit on entering work may initially create a strong disincentive to participation, but the closer the beneficiary is to losing eligibility (in the case of a time-limited benefit) the weaker the disincentive effect will be.

The decomposition made in the analysis between the impact of tax and benefit systems on work incentives is also to an extent illustrative, as the classification of certain measures can be open to interpretation. For example, a refundable tax credit (that is paid out to a taxpayer if tax liability is exhausted) could be interpreted as either a negative tax or a benefit payment. The impact of the taxation of benefit payments could also be allocated to either the tax or benefit systems. Distinctions may also relate simply to the administrative approach taken. For example, in-work support can be implemented through the tax or benefits system, with either approach providing the same support and having the same impact on work incentives.

As with the average tax rate indicators, it is once again necessary to specify income levels for which the calculations are made. The base scenario adopted is the same as for the average tax rate calculations: the second earner moving into employment earning 67% of the average wage, with the primary earner assumed to earn 100% of the average wage. Results for these income levels are presented in the first two parts of this section. The third part of the section then considers how PTRs vary for second earners entering employment at higher and lower income levels. In each case, the PTRs are decomposed into their various tax and benefit components to help identify the driving factors behind the overall financial disincentives to enter employment.

Moving from short-term unemployment into work

Figure 4a presents the PTR for a second earner with no children moving into work from short-term unemployment earning 67% of the average wage. This takes account of the taxation of in-work income as well as the loss of unemployment benefits and any other benefits received such as social assistance, housing and family benefits. The primary earner is assumed to earn the average wage. PTRs range from 94% in Portugal to 15% in New Zealand. Overall, the results show a very strong financial disincentive to enter employment in the majority of countries – with PTRs above 60% in 23 of 31 countries, and above 80% in 10 countries. The PTRs are substantially higher than the average tax rates for the same worker presented in section 2, illustrating the importance of also taking account of the loss of out-of-work benefits in examining financial disincentives to participate in employment.

Looking at the decomposition of the PTR, the loss of out-of-work benefits creates the majority of the financial disincentive to work in most countries. The only countries where benefit withdrawal does not play a role are Australia and New Zealand. These two countries operate unemployment benefit rather than earnings-linked unemployment insurance schemes with targeting based on family income. As such, the primary earner's income level prevents the second earner from claiming any benefit, hence there is no benefit withdrawal on entering employment.

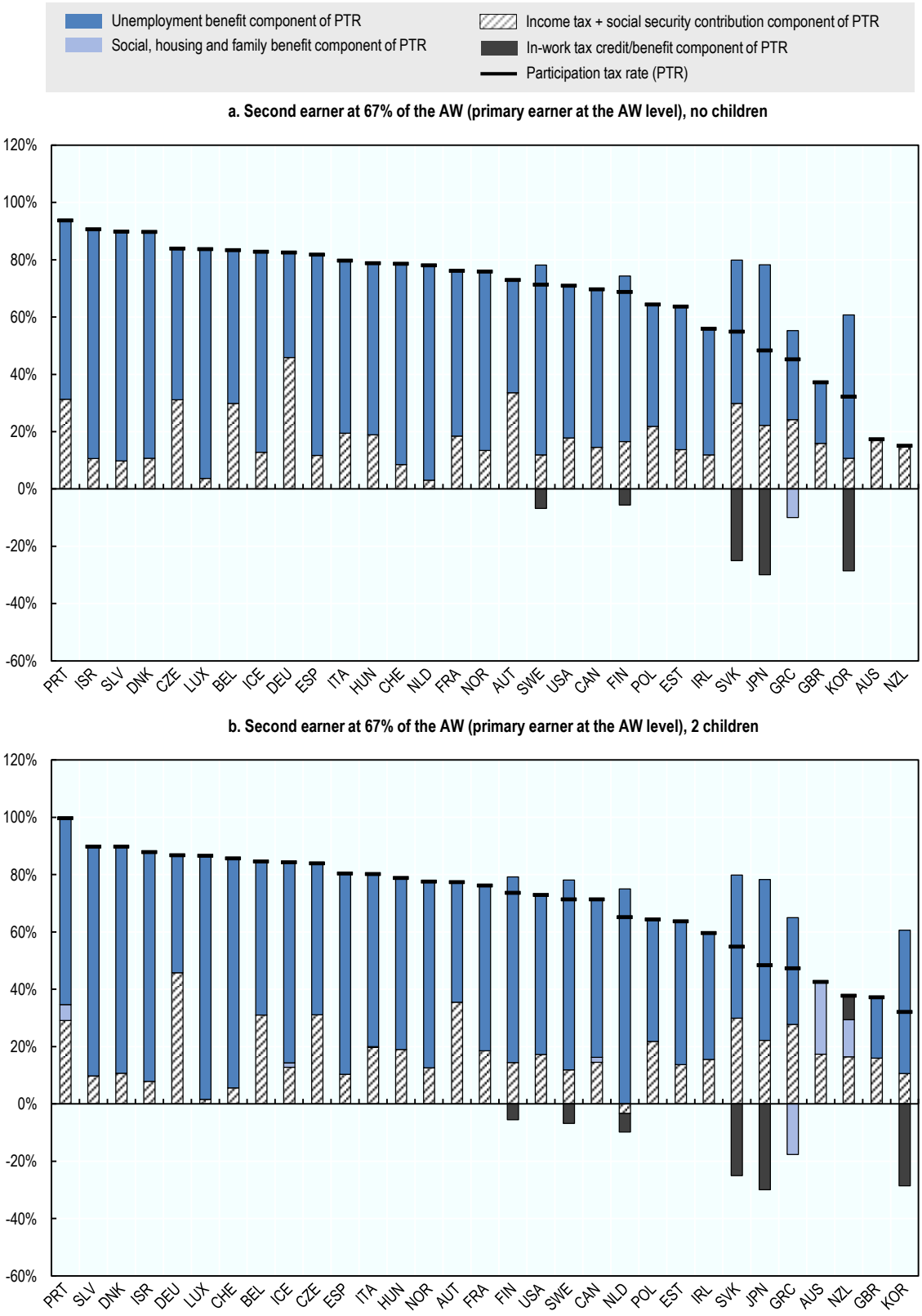
Comparison of these results with the average tax rate results in Figure 3a is difficult for two reasons. First, and most obviously, the years of analysis are slightly different (2013 vs 2015). More significantly though, the interaction of the tax and benefit systems means that for a number of countries the tax component of the PTR indicator will not equate to the average tax rate calculation, even for the same year. This is because a number of countries tax out-of-work benefit payments. Consequently, the tax components of the PTRs in Figure 4a are reduced by the amount of the tax no longer paid on the out-of-work benefits no longer received.[14] An implication of this is that some of the effect of the taxation of earned income on the PTR is hidden by its combination with the taxation of out-of-work income.

The decomposition also highlights the impact of in-work tax credits and benefits in reducing the overall financial disincentive to participate. For example, in the Slovak Republic, Japan and Korea, PTRs would be above 60% if not for the presence of in-work support lowering the PTR by more than 20 percentage points in each case. These can be either permanent measures that provide the same support to the worker each year such as in the Slovak Republic, a one-off payment such as in Japan, or both such as in Korea. In Greece, a family benefit that increases with earned income also acts to reduce the PTR.

Figure 4b presents the PTR for a second earner with two children, again moving into work from short-term unemployment earning 67% of the average wage. The primary earner is again assumed to earn the average wage. PTRs now range from 100% in Portugal to 32% in Korea. Overall, the results are very similar to those for a second earner without children, with PTRs above 60% in 23 countries, and above 80% in 10 countries.

14 . The loss of a taxable benefit payment on entry into employment has two separate effects – an increase in the PTR due to the loss of the net benefit, and a decrease in the PTR due to tax no longer being paid on the benefit.

Figure 4. Decomposition of 2nd earner participation tax rate: short-term unemployment to full time work (2013)



The slight increase in the PTR in Portugal results predominantly from a one-earner family with children being eligible for a family benefit that is partially lost (in addition to the unemployment benefit) when the second earner enters employment. With a PTR of 100%, the second earner will now not be any better off financially working than when unemployed, at least in the short run while they retain full eligibility for the unemployment benefit. This may create an incentive to delay return to employment until benefit eligibility ceases.[15]

Looking at the decomposition of the PTR, the loss of out-of-work benefits again creates the majority of the financial disincentive to work in most countries. The tax component of the decomposition again shows the net effect of both taxation of earned income and reduced taxation of out-of-work benefit income. In Australia and New Zealand, benefit withdrawal now plays a small role as the presence of children entitles one-earner families to housing and/or family benefits, which are partially lost when the second earner enters work. Nevertheless the PTRs for these two countries remain comparatively low at around 40%. In New Zealand, the presence of children also entitles families to an income-tested in-work tax credit. However, in the scenario considered in Figure 4b, the family is actually in the phase-out region of the tax credit so they lose some of the credit previously received when the second earner was unemployed. This highlights the complex effects that in-work tax credits and benefits can have on work incentives.[16]

Moving from inactivity from the formal labour market (or long-term unemployment) into work

Figure 5a presents the PTR for a second earner with no children moving into formal work from inactivity from the formal labour market earning 67% of the average wage. This takes account of the taxation of in-work income as well as the loss of social assistance, housing and family benefits. The second earner is assumed to be ineligible for unemployment benefits. The primary earner is assumed to earn the average wage. PTRs are significantly lower than for the move from short-term unemployment in almost every country. Nevertheless, PTRs are often still substantial, ranging from 49% in Belgium to 11% in Korea, and above 30% in 12 of 31 countries. Given the greater responsiveness of second earners to incentives than single individuals (see, e.g. OECD, 2011), they remain of significant policy concern.

The fall in PTRs is almost entirely due to the absence of any benefit withdrawal.[17] The PTRs in most cases simply reflect the taxation of the income earned on the second earner's entry into the workforce – and hence Figure 5a largely replicates the average tax rate results from Figure 3a (though with slight difference due to the different years that are modelled).

The lack of any benefit withdrawal in most countries is due, firstly, to the second earner's ineligibility for an unemployment benefit, but also to the family-based income testing of most social assistance, housing and family benefits – meaning that second earners without children are typically not eligible for any out-of-work benefits. In contrast, inactive single individuals would typically be eligible for at least some out-of-work benefits, and would therefore tend to face higher PTRs than inactive second earners. Indeed OECD (2011) finds PTR results for inactive single individuals to be far higher than for inactive second earners. This result places a caveat on the impact on work incentives of the high PTRs presented in Figure 4 for short-term unemployed second earners. The loss of time-limited unemployment benefits driving many of the high PTRs will have less of a disincentive effect on participation of second earners than of single individuals as, unlike for single individuals, these time-limited benefits will not typically be replaced (to some extent) in the longer term by social assistance and other out-of-work benefits.

15. Though on a lifetime basis they would be better off returning to work sooner, preventing skill atrophy, and increasing future expected earnings.

16 . See OECD (2011) for further discussion.

17 . The only exception in Figure 5a is Denmark where the second earner loses a very small amount of housing benefit on entering employment.

Figure 5. Decomposition of 2nd earner participation tax rate: inactivity into full time work (2013)

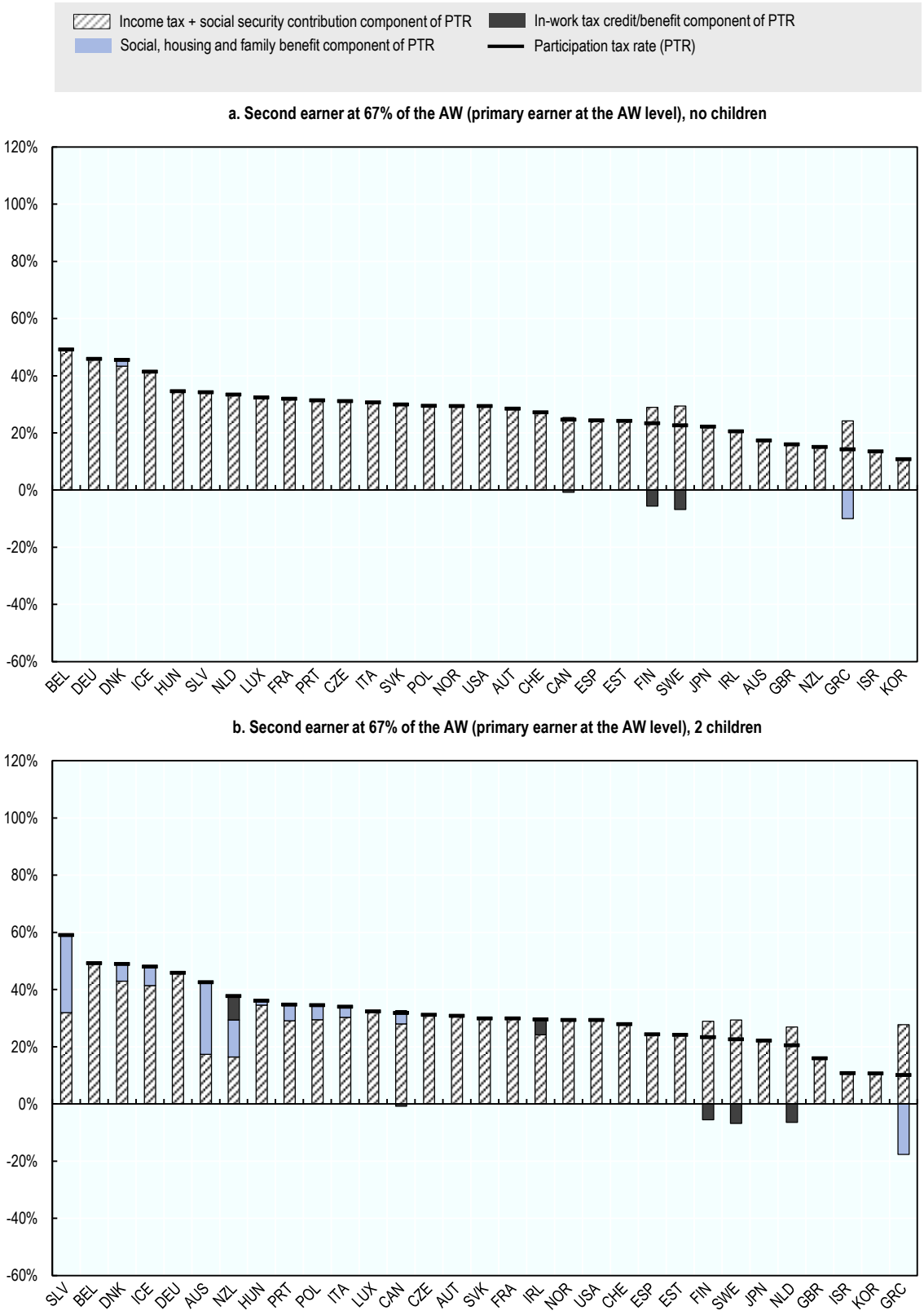


Figure 5b presents the PTR for a second earner with two children, again moving into work from inactivity earning 67% of the average wage. The primary earner is again assumed to earn the average wage. PTRs are now slightly higher, ranging from 59% in Slovenia to 10% in Greece, but still far lower than for the move from short-term unemployment.

The slightly higher PTRs in the presence of children are due, in part, to a number of countries (Slovenia, Denmark, Iceland, Australia, New Zealand, Hungary, Portugal, Poland, Italy, and Canada) providing some social assistance payments to one-earner families with children. Additionally, as illustrated in Figure 3b, second earner average tax rates increase in several countries due to family-based withdrawal of tax credits/allowances.

Moving from short-term unemployment into work at varying income levels

We now extend the above analysis to consider a second earner moving from short-term unemployment into work at different income levels ranging from 5% to 200% of the average wage. As in previous analysis, the primary earner is assumed to earn 100% of the average wage.[18] The results for all 31 countries modelled are presented in the annex. For brevity, we focus below on results for a selection of countries that best illustrate the major trends found in the results across all countries.

The results across the 31 OECD countries confirm the general picture presented in Figure 4a of high PTRs for second earners in most countries. However, there is typically some variation across the 5-200% income range. Overall, three broad patterns are evident in the majority of countries:

- PTRs are high right across the 5-200% of the average wage income range.
- While PTRs remain high across the 5-200% income range, they tend to be higher at low income levels than at high income levels.
- The contribution to PTRs of taxes relative to benefit withdrawal tends to be larger at higher income levels.

These "typical" results are illustrated in Figure 6 for Portugal for a second earner without children entering employment. Portugal was shown in Figure 2 to have the highest PTR across the 31 countries for a second earner entering employment earning 67% of the average wage. Figure 6 shows that the PTR remains at roughly this level across a wide range of incomes, from around 45-125% of the average wage. Beyond this range the PTR remains high, but also illustrates the decreasing pattern noted above.

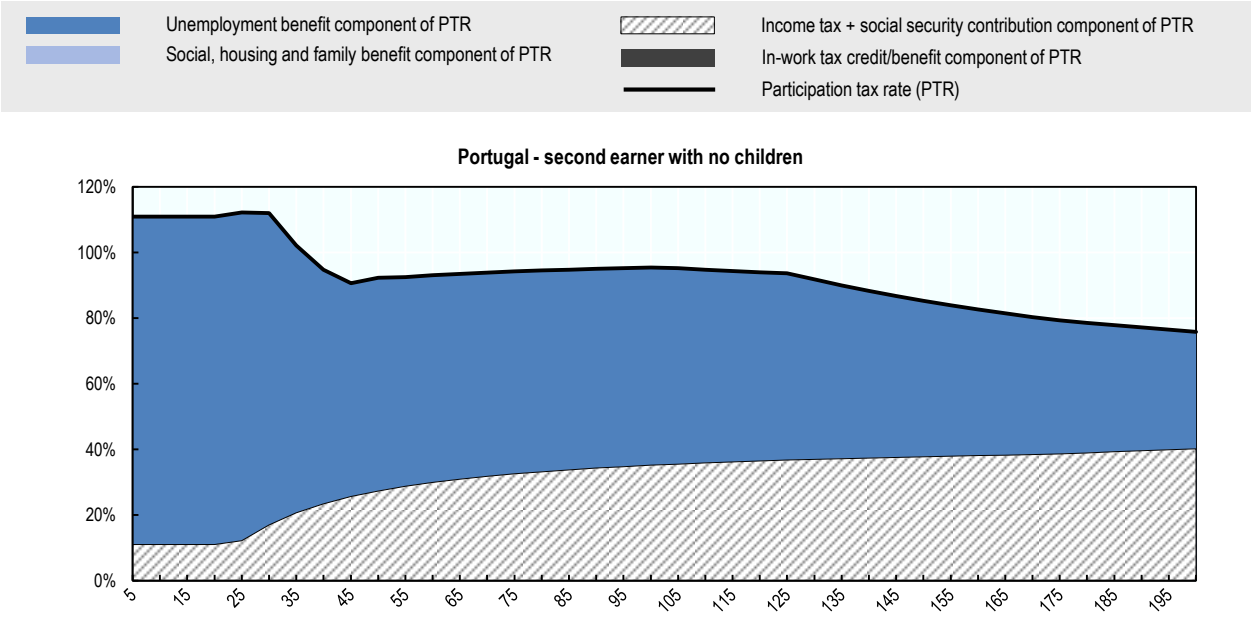
At very low income levels (up to around 30% of the average wage), a second earner considering entering employment faces a PTR above 100%, meaning that they will be financially worse off entering employment than remaining unemployed. This is likely to impact a significant number of second earners considering moving into part-time work.[19] Meanwhile at high income levels, PTRs are lower, though still considerable – with a second earner moving into work at twice the average wage still facing a PTR of 76%.

18 . Calculations were also made with the primary earner's income equal to 67% of the average wage instead of 100%. Patterns of results were similar to those at 100% of the average wage, and hence are not presented here.

19. Some caution should be taken when considering results for workers at very low income levels (e.g. below 30% of the average wage) as the tax rules used in the OECD's tax-benefit models are those applicable to a full-time worker, and some rules may not apply equivalently to a part-time worker. For example, some part-time workers will not be eligible for an earned income tax credit that has a minimum hours-worked requirement. Additionally, the presence of minimum wage rules may mean there are no full-time workers at very low income levels.

Figure 6. Decomposition of second earner participation tax rate: short-term unemployment to full-time work

By level of second earner income expressed as % of average wage (primary earner income = average wage), 2013



Finally, the progressive impact of the PIT system can be seen coming into play and increasing the tax burden faced by the second earner at higher income levels. Similarly, the negative effect of benefit withdrawal is lower at higher income levels. Typically this reflects the loss of a maximum benefit entitlement at higher income levels (as occurs in Portugal at 128% of the average wage). This fixed maximum benefit amount becomes a smaller proportion of higher second earner income levels. In contrast, income ranges over which the benefit withdrawal component of the PTR stays constant reflect the linking of higher unemployment benefits to higher levels of pre-unemployment income (recall that the results assume the second earner received the same level of income prior to unemployment as they receive on re-entry into employment).

The overall pattern of PTRs decreasing as income increases emerges as the proportionate reduction in benefit withdrawal outweighs the increase in taxation. As noted earlier, gender wage differences suggest that the average female second earner will earn less than the average male second earner. The decreasing pattern of PTRs in most countries therefore means that female second earners are likely to face larger work disincentives than male second earners.

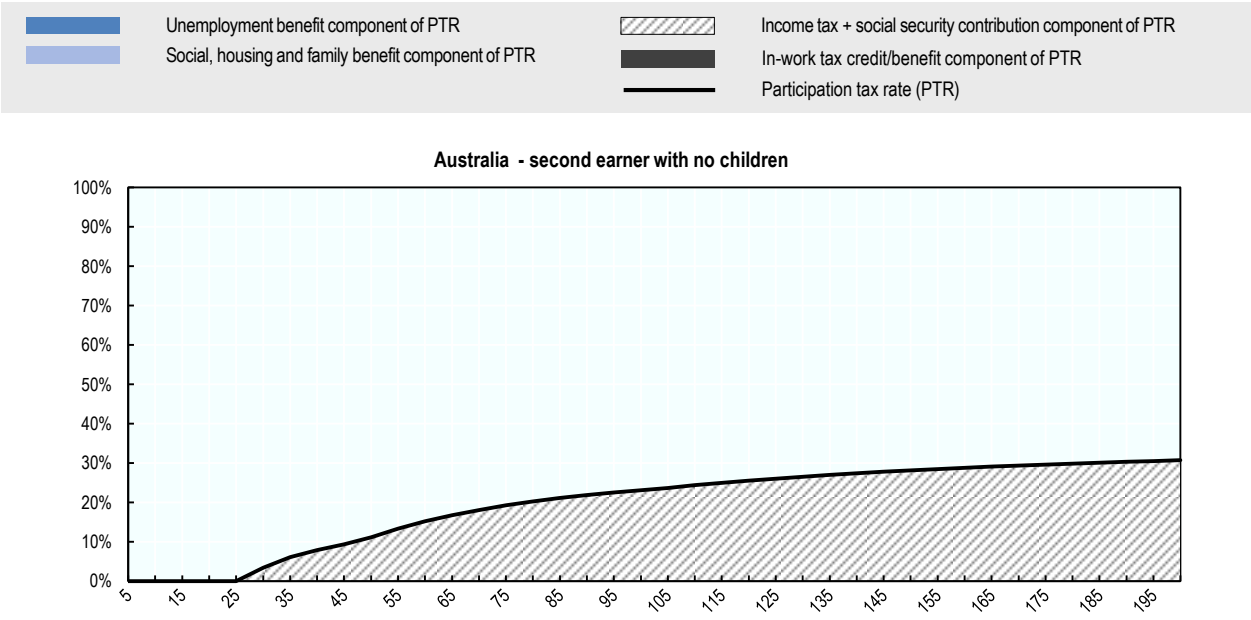
Other countries with very high PTRs across the entire income range include France, Germany, Luxembourg and Switzerland. Most other countries tend to have similarly high PTRs across much of the income range, but larger variation at high and low income levels.

As was illustrated in Figure 4a, not all countries exhibit high PTRs. The two major outliers in this regard are Australia and New Zealand which are the only two countries for whom PTRs remain below 50% across the entire 5-200% income range. Figure 7 presents the results for Australia for a second earner without children entering employment. As a one earner family without children earning the average wage is not entitled to benefit payments, there is no benefit withdrawal on the second earner's entry into employment at any income level. As such, the PTR is solely influenced by the taxation of earned income. The progressive nature of the PIT system can be seen clearly through the steadily increasing PTR as income increases. Benefit withdrawal does have an impact in Australia for a family with two children (see annex). This increases the PTR particularly at low income levels, but it still peaks at a comparatively low

47% before falling to around 40% at high income levels. New Zealand exhibits similar results to Australia (see annex).

Figure 7. Decomposition of second earner participation tax rate: short-term unemployment to full-time work

By level of second earner income expressed as % of average wage (primary earner income = average wage), 2013



Another pattern exhibited by a significant number of countries is the imposition of exceptionally high PTRs at very low income levels. This is illustrated in Figure 8 which presents the PTRs for a second earner without children moving into work in Estonia. On entry into employment, the second earner loses their eligibility for the unemployment benefit. At very low income levels (and hence very low pre-unemployment income levels), the unemployment benefit lost is a fixed minimum amount which is far greater than the income earned from re-entering employment. This leads to extremely high PTRs that then fall quickly as income increases. This common pattern is also seen in Belgium, Denmark, Estonia, Finland, Greece, Ireland, Spain, Sweden and the United Kingdom. While only applying at very low income levels, these extreme PTRs are likely to discourage some movement into part-time work. That said, even in countries without minimum benefit amounts or where unemployment benefits are gradually reduced PTRs are typically still very high.

The Estonian results also highlight that PTRs do not decrease with income in all countries. The flat PTR across most of the income range in Figure 8 is due to the lack of any progressivity in the PIT, and no maximum unemployment benefit entitlement being reached. A similar result occurs in the Slovak Republic.

The negative income tax component of the PTR at low income levels highlights the impact of the taxation of benefit payments discussed in the previous section. At low income levels, the tax that was paid on unemployment benefits is greater than the tax paid on the earned income of the second earner. A similar effect can be seen in various countries, including: Belgium, Denmark, Finland, Ireland, Luxembourg, the Netherlands and Sweden.

The analysis in Figure 4a also highlighted the impact on PTRs of in-work tax credits and benefits in several countries. The impact on PTRs at different income levels can be seen for Japan in Figure 9. Japan provides a one off in-work benefit in order to mitigate the effect of the loss of unemployment benefits on

participation incentives. It is calculated as a percentage of the remaining (one-year time-limited) unemployment benefit that would have been paid out. The effect of the in-work benefit can be seen in Figure 9 lowering the PTR significantly across the entire range of second earner incomes. The resulting PTRs, which are less than 50% across the majority of incomes, are some of the lowest across countries.

Figure 8. Decomposition of second earner participation tax rate: short-term unemployment to full-time work

By level of second earner income expressed as % of average wage (primary earner income = average wage), 2013

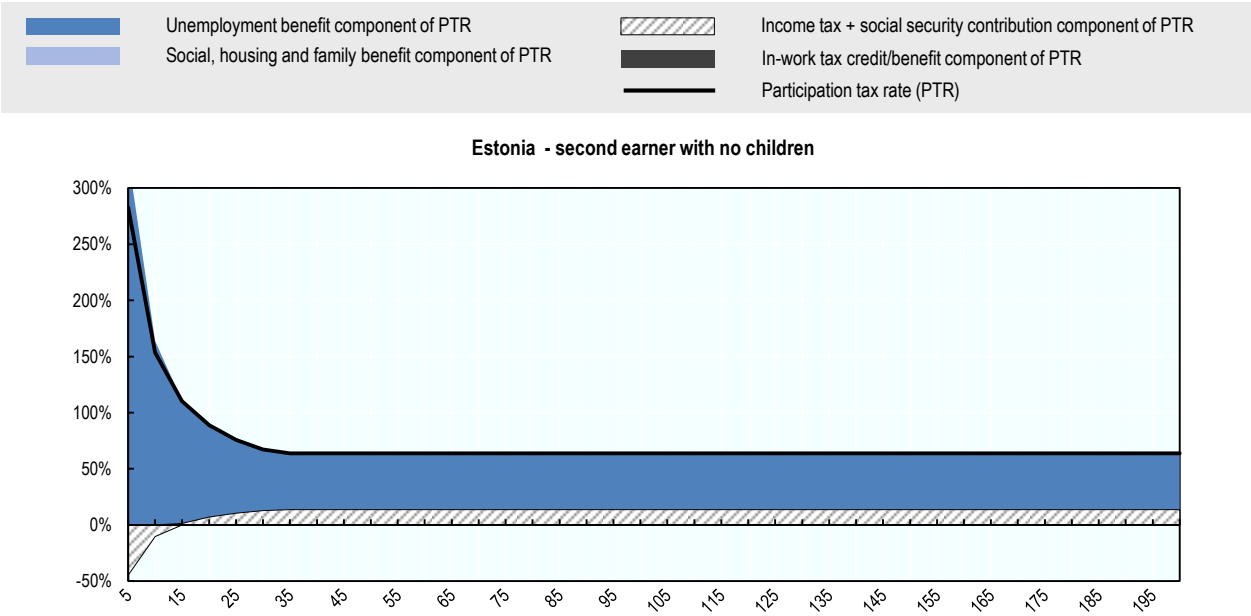
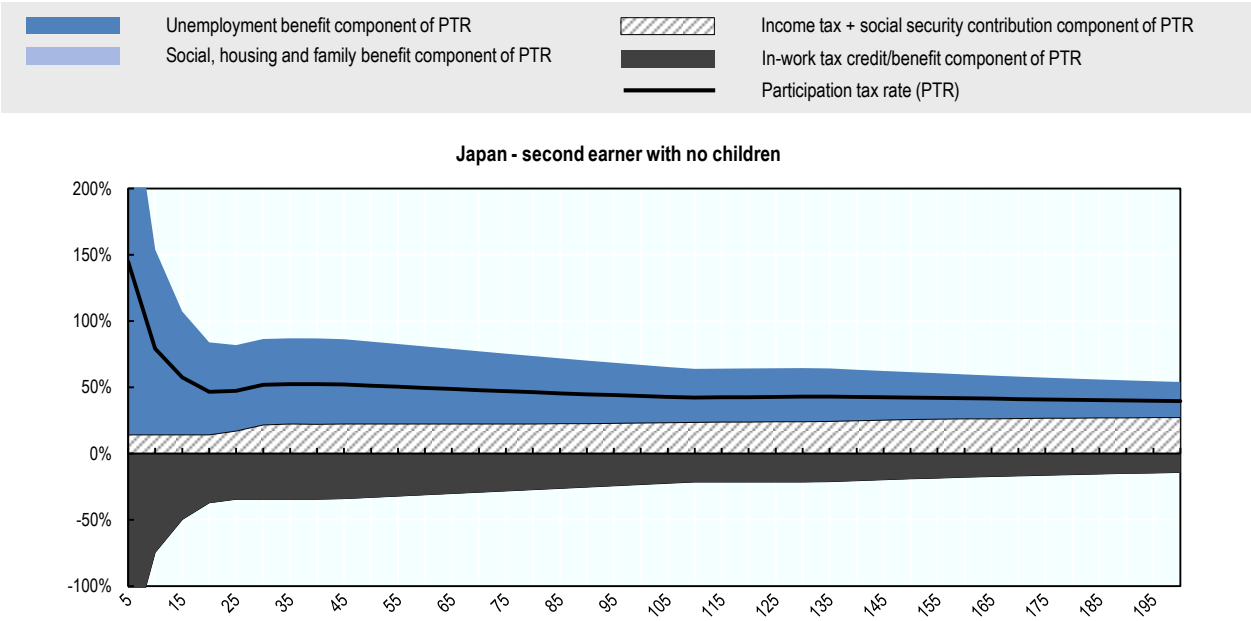


Figure 9. Decomposition of second earner participation tax rate: short-term unemployment to full-time work

By level of second earner income expressed as % of average wage (primary earner income = average wage), 2013



The effect of in-work tax credits or benefits reducing PTRs can also be seen in results presented in the annex for Finland, Korea, the Netherlands, the Slovak Republic and Sweden. In New Zealand, as was pointed to in Figure 4b, the contrasting impact of the phase-out of an in-work tax credit can be seen slightly increasing the PTR across a large income range (see annex). A significant number of other countries also provide in-work tax credits or benefits. However, these tend to be targeted specifically at very low-income families and hence are already fully phased out by the time income reaches 100% of the average wage, and so have no impact on the scenarios presented in this paper.

5. Tax Policy implications

This paper has examined how various tax system design features exacerbate the disincentives faced by second earners to participate in employment. These tax-induced disincentives have also been placed in the context of the overall participation disincentives created by the entire tax-benefit system. Overall disincentives are found to be very substantial in most countries, particularly for the short-term unemployed.

Tax systems are designed to balance equity and efficiency goals. To address equity goals, governments typically provide support to certain families, particularly those with children or with non-working spouses. In order to reduce the cost of these measures governments will generally also target support based on individual or family income. As the above results highlight, the provision of targeted support comes at a cost in terms of efficiency as the loss or withdrawal of this support results in high participation tax rates. Given that second earners are highly responsive to financial disincentives, these efficiency costs can be expected to be significant, with many potential second earners choosing not to work as a result. As second earners are more often women, there are gender-equity implications from discouraging participation of second earners.

In considering the merits of potential reforms to reduce these financial disincentives it is important to consider the tax-benefit system as a whole. While a detailed analysis of potential benefit system reform is beyond the scope of this paper, active labour market policies are likely to be crucial to mitigating the disincentive effects of generous out-of-work benefits. Such policies link ongoing eligibility for out-of-work benefits with active job search and/or training requirements.

Regarding the tax system, there are a number of potential approaches to reducing second earner disincentives. Adopting pure individual-based taxation will minimise second earner work disincentives, but may not be sufficient to address some equity considerations. For countries that choose to combine individual-based taxation with some family-based provisions, then there is merit in considering reform of these provisions to lessen their impact on second earner work disincentives. In particular, countries should consider linking provisions to individuals rather than work status. For example, a dependent spouse allowance/credit could be replaced with a refundable tax credit for each individual, or with a tax credit that is transferrable between spouses. These alternatives would continue to provide support to one-earner families without increasing second earner work disincentives, although they would have an additional fiscal cost. Another option is to target an in-work tax credit based on individual rather than family income, or to introduce or increase the generosity of existing in-work tax credits targeted on individual income, though this would also have an additional fiscal cost.

For countries that choose a family-based tax system in order to achieve particular equity goals, the introduction of some individual-based provisions may be warranted to mitigate the negative effects of family-based taxation on second earner work incentives. As above, a prime option is to target an in-work tax credit based on individual income. Other options include replacing a family-based basic tax credit/allowance with an individual-based tax credit, and providing a one-off “bonus” tax credit on entry into employment.

Regarding the use of individual income-targeting provisions, these should be designed so that the desired group receives the support while minimising the negative effects of higher PTRs. One way this could be achieved is by applying a high phase-out of the support over a small range in the income distribution where there are comparatively few second earners. Where this is difficult to achieve, a lower phase-out rate may be necessary, although this will result in higher fiscal cost. In general, the amount of support must be balanced against its fiscal cost and the disincentive effects of targeting the support, having regard for the broader equity considerations.

A final option, irrespective of the underlying method of taxation is simply to lower statutory tax rates – which will reduce disincentives for all workers. However, this would come at significant fiscal cost as well as reducing the redistributive impact of the personal income tax. Alternatively, a rate reduction at the lower end of the income distribution (where a significant proportion of second earners will be situated) could be funded as part of a broader revenue neutral tax reform by increasing rates further up the income distribution or by a shift toward other tax bases (see, for example, Brys, et al., 2016).

Whatever the reform option, it is important to consider its design in the context of the entire tax-benefit system. For example, less tight targeting of a tax credit could be offset by greater progressivity in the income tax schedule. Furthermore, where reform is not possible in the short run due to fiscal and/or political economy considerations, second earner disincentives should be taken into account in any major tax reform in the future so as to better reconcile equity and efficiency objectives in the tax system as a whole.

While the average tax rates and participation tax rates presented in this paper provide a picture of the broad disincentives faced by second earners, it is important to bear in mind that there are a variety of additional factors that also influence the incentives for individuals to enter the workforce. These include: the availability and cost of child care; paid leave provisions (e.g. maternity, parental and sickness leave) and the existence of other unearned income (e.g. investment income).

Finally, it is important to note that tax systems will not just affect incentives for second earners to enter formal employment, as analysed in this paper, but also the incentives for second earners already in employment to work more or less hours. Further work in this area is warranted.

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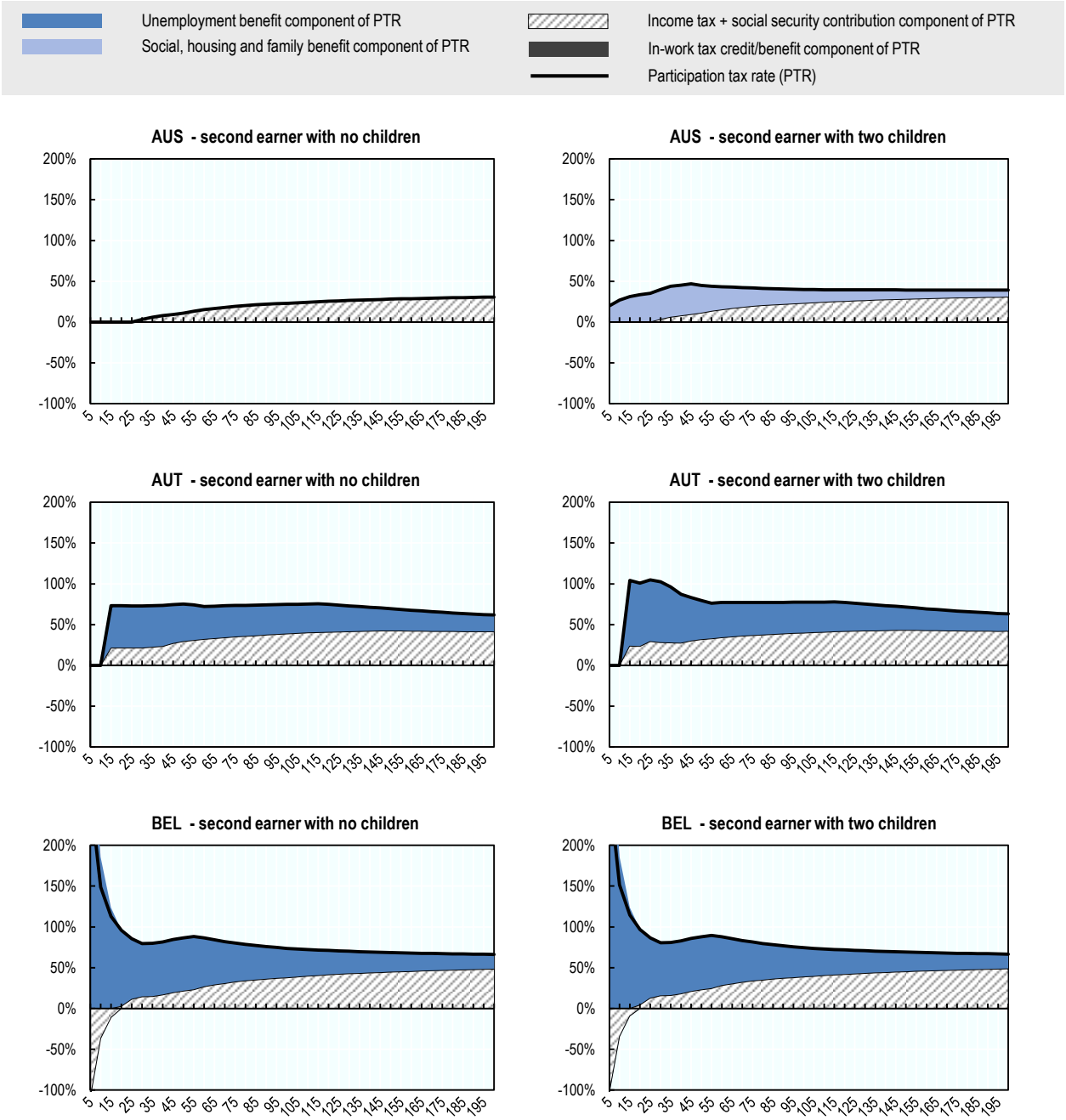
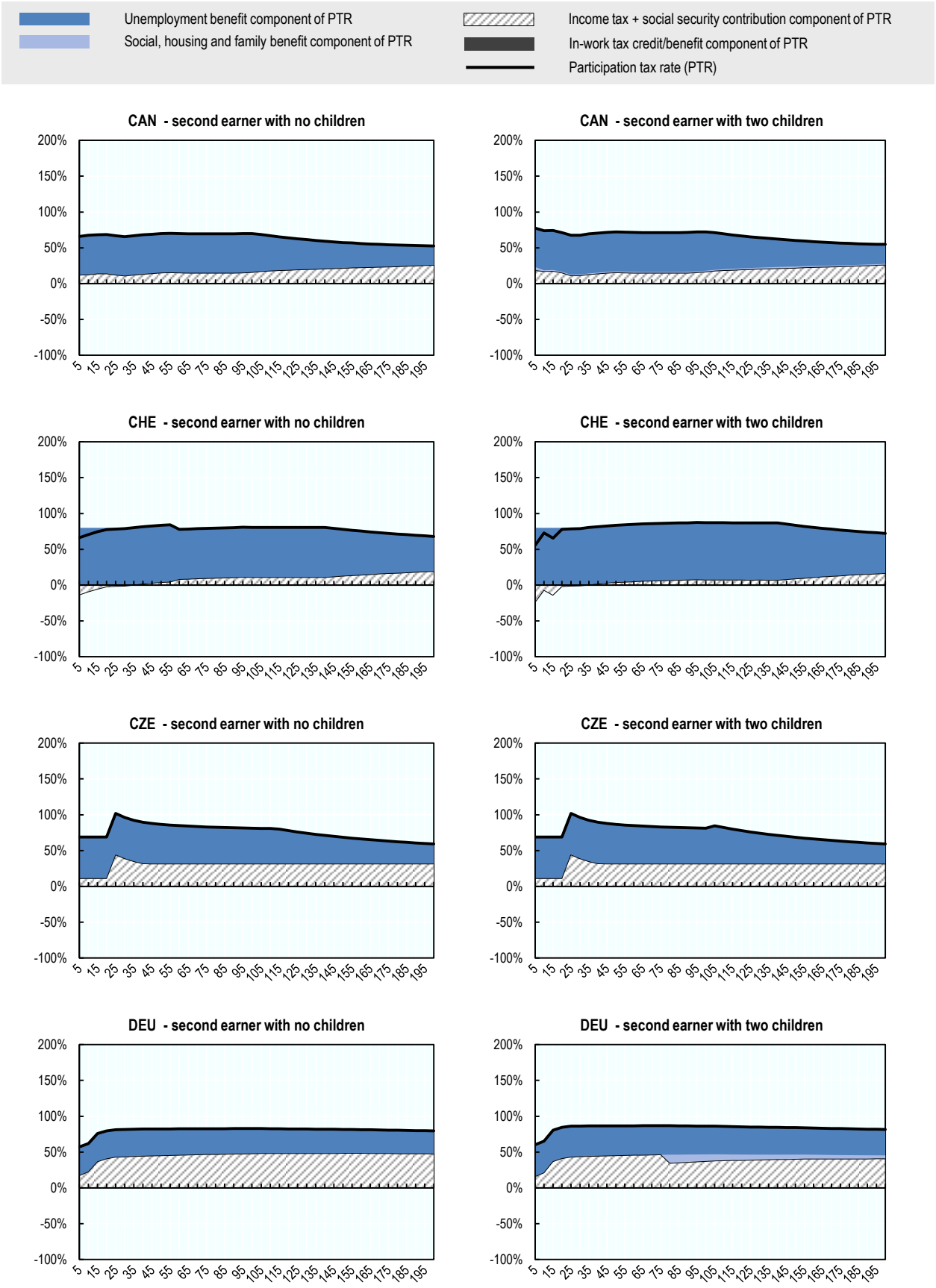
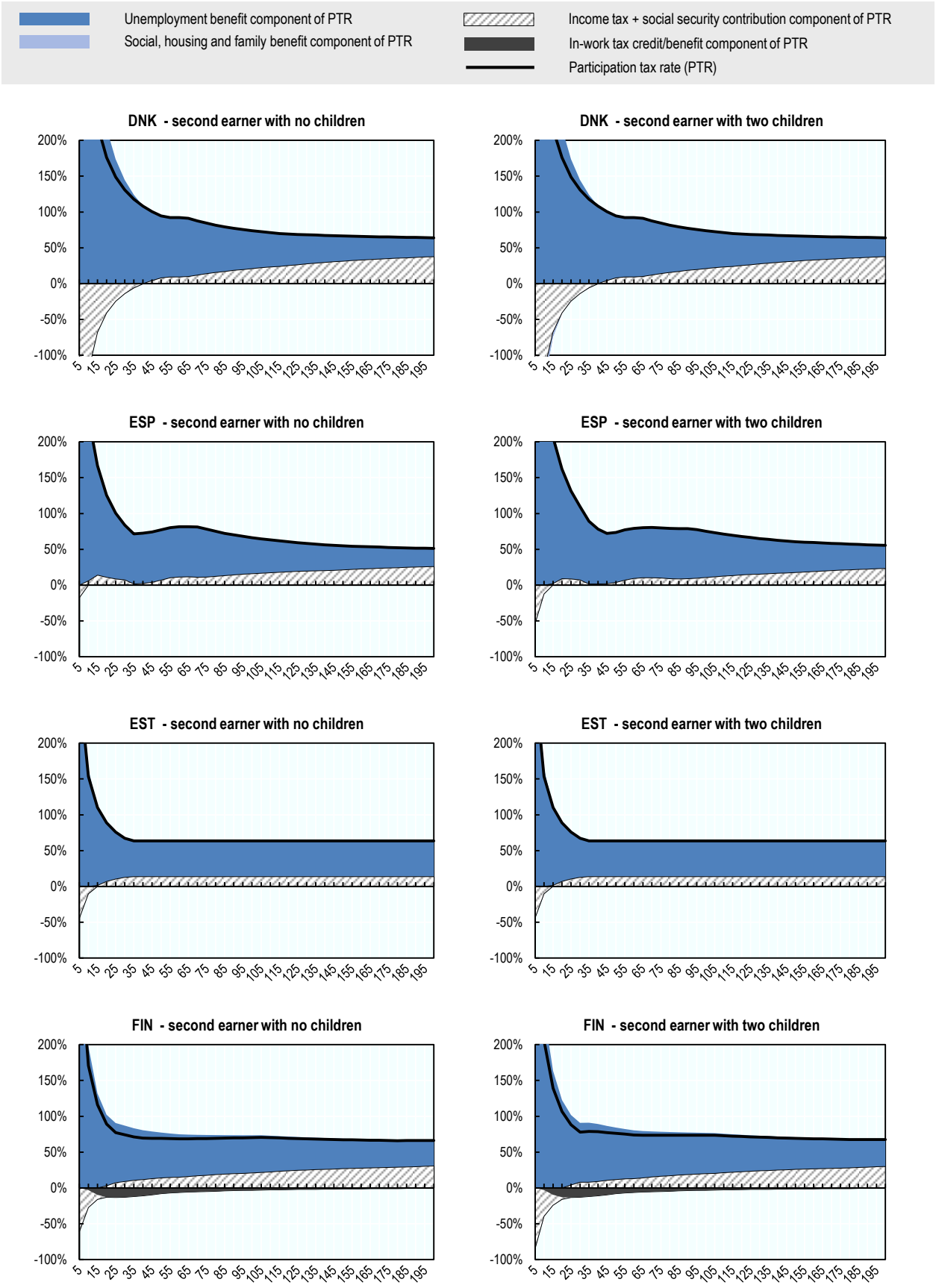
ANNEX

Figure A1. Decomposition of second earner participation tax rate: short-term unemployment to full-time work

By level of second earner income expressed as % of average wage (primary earner income = average wage), 2013




Unemployment benefit component of PTR
Social, housing and family benefit component of PTR
Income tax + social security contribution component of PTR
In-work tax credit/benefit component of PTR
Participation tax rate (PTR)
CAN - second earner with no children
CAN - second earner with two children
CHE - second earner with no children
CHE - second earner with two children
CZE - second earner with no children
CZE - second earner with two children
DEU - second earner with no children
DEU - second earner with two children
200%
150%
100%
50%
0%
-50%
-100%
5 15 25 35 45 55 65 75 85 95 105 115 125 135 145 155 165 175 185 195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Social, housing and family benefit component of PTR
Income tax + social security contribution component of PTR
In-work tax credit/benefit component of PTR
Participation tax rate (PTR)
DNK - second earner with no children
DNK - second earner with two children
ESP - second earner with no children
ESP - second earner with two children
EST - second earner with no children
EST - second earner with two children
FIN - second earner with no children
FIN - second earner with two children
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50%
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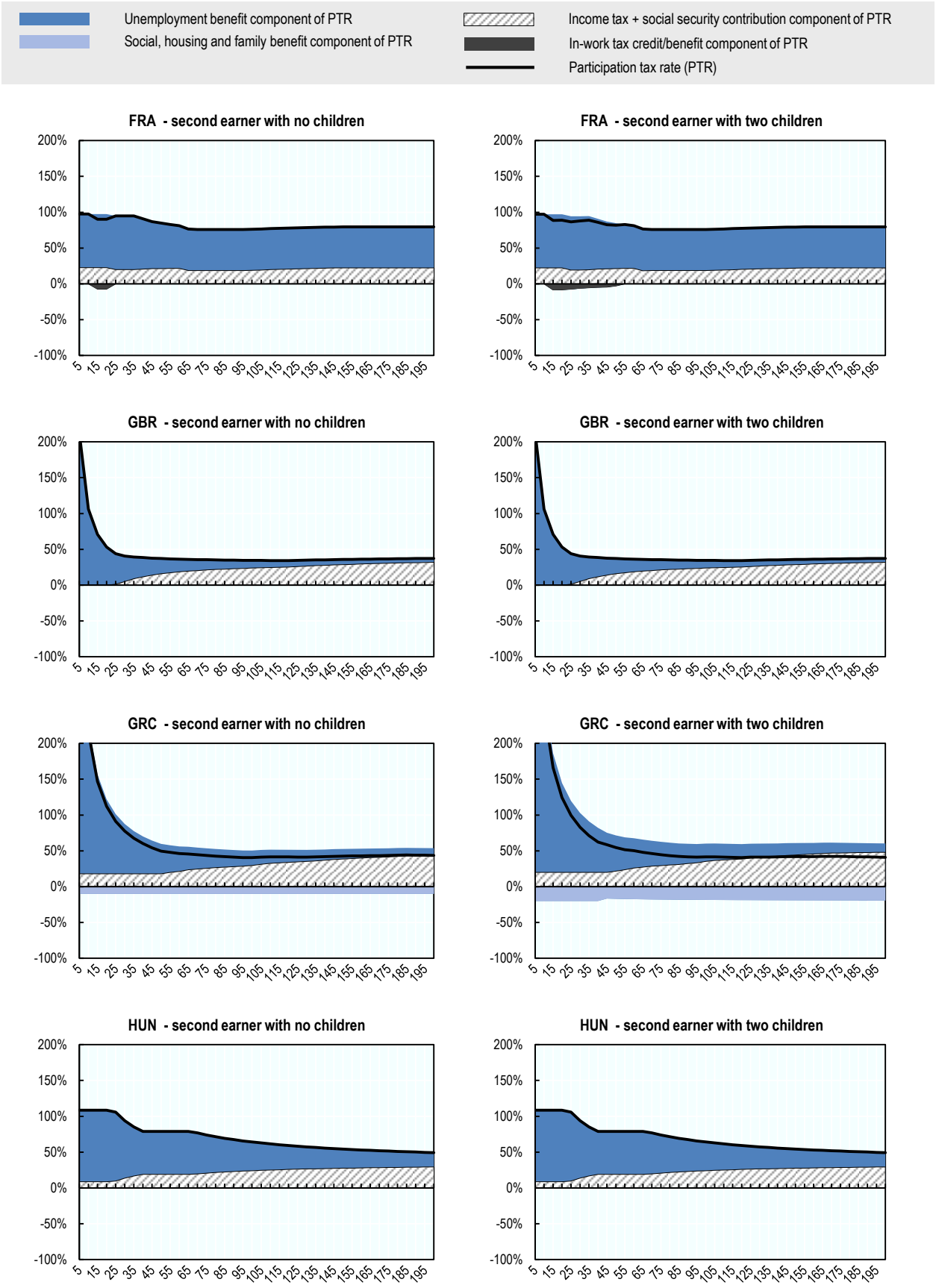
Unemployment benefit component of PTR
Social, housing and family benefit component of PTR
Income tax + social security contribution component of PTR
In-work tax credit/benefit component of PTR
Participation tax rate (PTR)
FRA - second earner with no children
FRA - second earner with two children
GBR - second earner with no children
GBR - second earner with two children
GRC - second earner with no children
GRC - second earner with two children
HUN - second earner with no children
HUN - second earner with two children
200%
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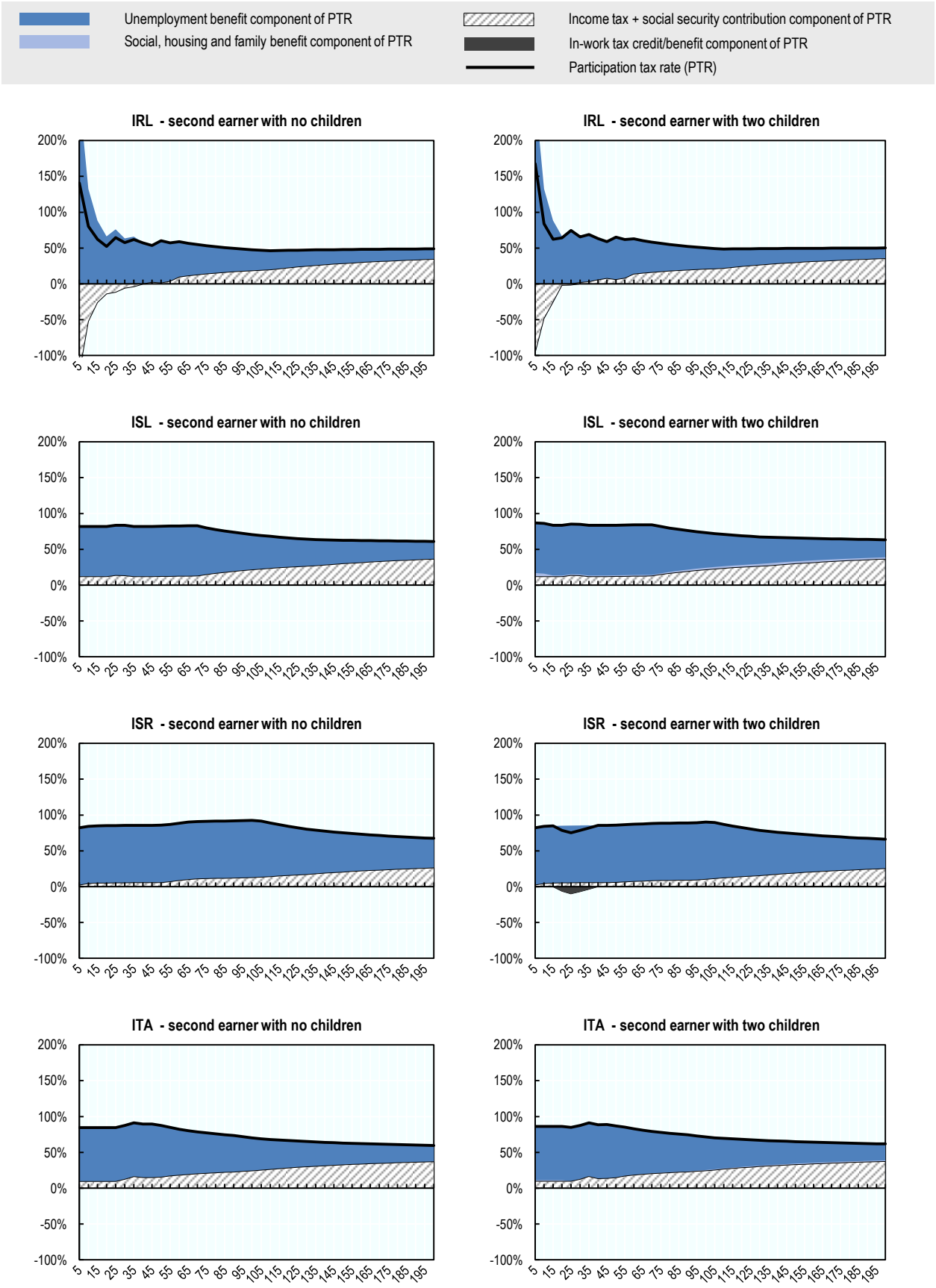
0%
-50%
-100%
5 15 25 35 45 55 65 75 85 95 105 115 125 135 145 155 165 175 185 195


Unemployment benefit component of PTR
Social, housing and family benefit component of PTR
Income tax + social security contribution component of PTR
In-work tax credit/benefit component of PTR
Participation tax rate (PTR)
IRL - second earner with no children
IRL - second earner with two children
ISL - second earner with no children
ISL - second earner with two children
ISR - second earner with no children
ISR - second earner with two children
ITA - second earner with no children
ITA - second earner with two children
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-50%
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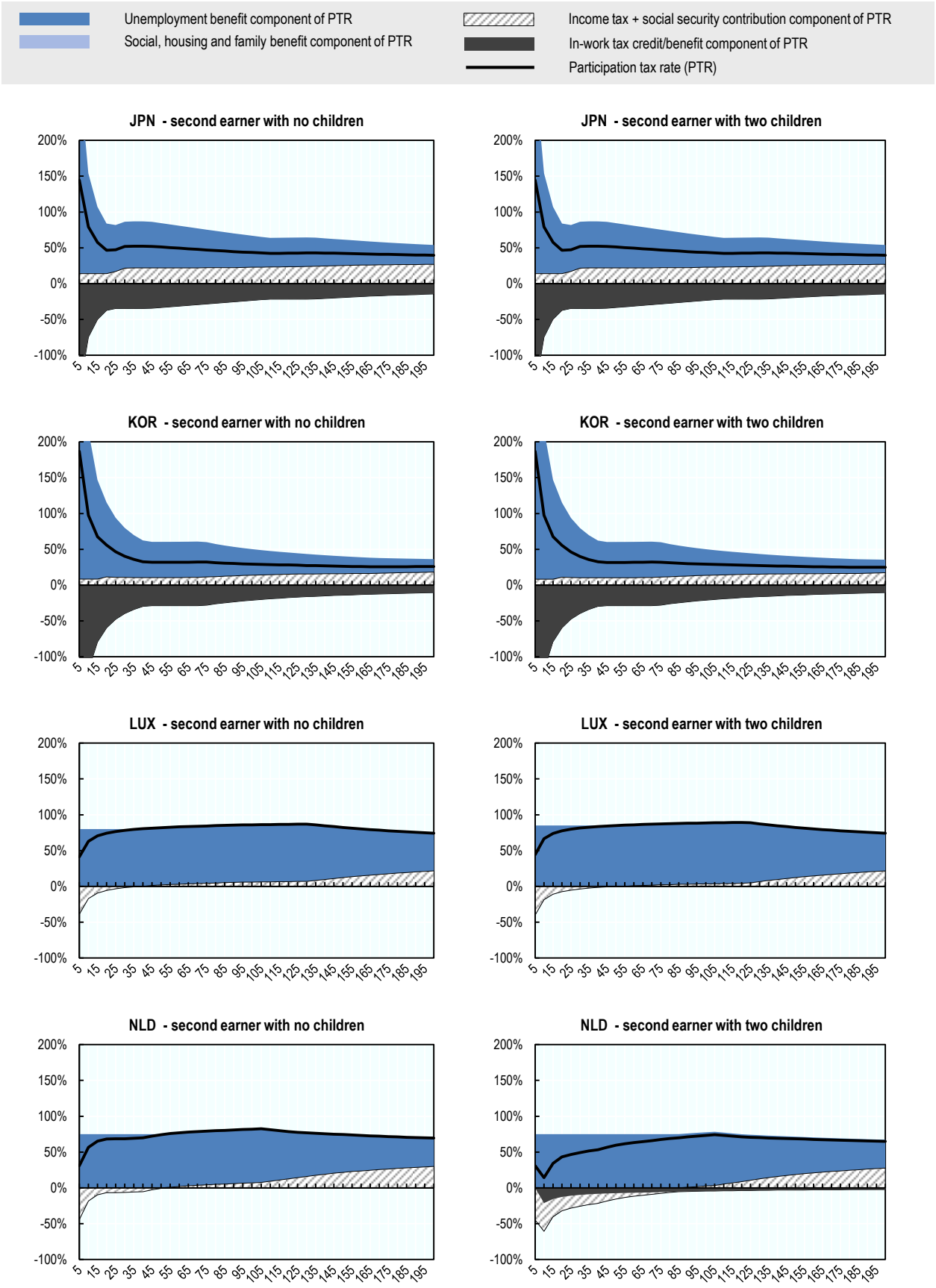
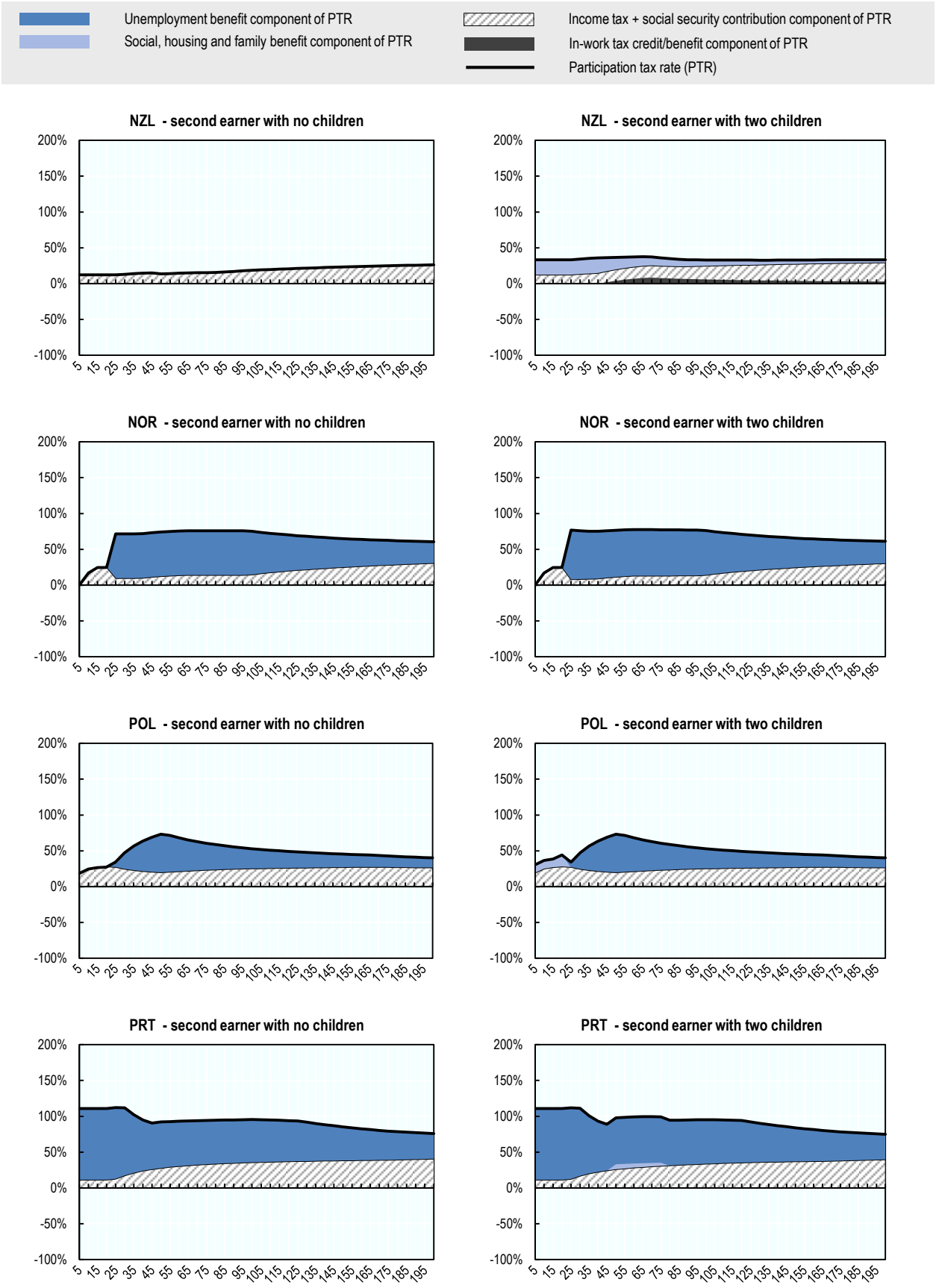
5 15 25 35 45 55 65 75 85 95 105 115 125 135 145 155 165 175 185 195


Unemployment benefit component of PTR
Social, housing and family benefit component of PTR
Income tax + social security contribution component of PTR
In-work tax credit/benefit component of PTR
Participation tax rate (PTR)
JPN - second earner with no children
JPN - second earner with two children
KOR - second earner with no children
KOR - second earner with two children
LUX - second earner with no children
LUX - second earner with two children
NLD - second earner with no children
NLD - second earner with two children
200%
150%
100%
50%
0%
-50%
-100%
5 15 25 35 45 55 65 75 85 95 105 115 125 135 145 155 165 175 185 195


Unemployment benefit component of PTR
Social, housing and family benefit component of PTR
Income tax + social security contribution component of PTR
In-work tax credit/benefit component of PTR
Participation tax rate (PTR)
NZL - second earner with no children
NZL - second earner with two children
NOR - second earner with no children
NOR - second earner with two children
POL - second earner with no children
POL - second earner with two children
PRT - second earner with no children
PRT - second earner with two children
200%
150%
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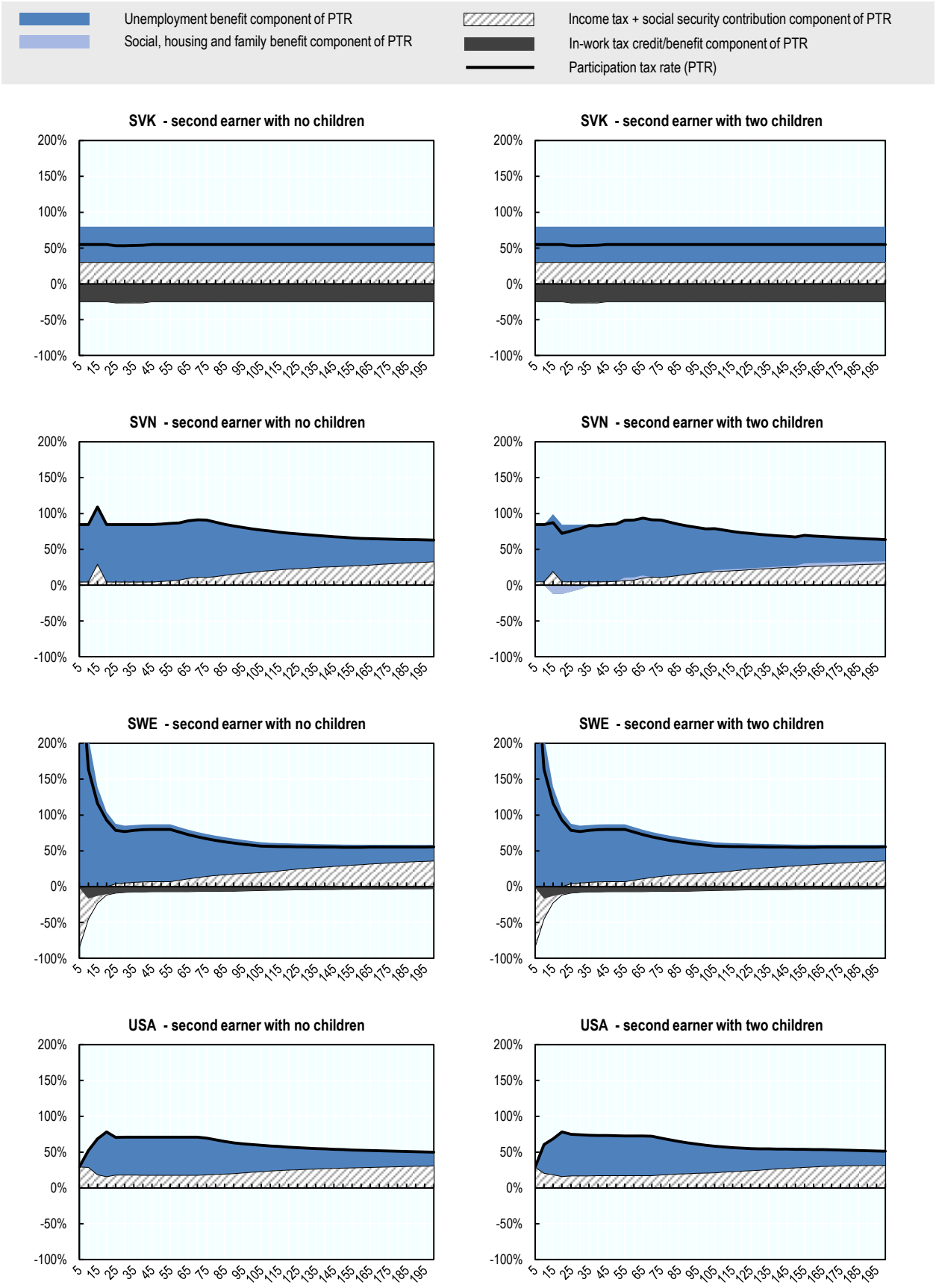
50%
0%
-50%
-100%
5 15 25 35 45 55 65 75 85 95 105 115 125 135 145 155 165 175 185 195


Unemployment benefit component of PTR
Social, housing and family benefit component of PTR
Income tax + social security contribution component of PTR
In-work tax credit/benefit component of PTR
Participation tax rate (PTR)
SVK - second earner with no children
SVK - second earner with two children
SVN - second earner with no children
SVN - second earner with two children
SWE - second earner with no children
SWE - second earner with two children
USA - second earner with no children
USA - second earner with two children
200%
150%
100%
50%
0%
-50%
-100%
5 15 25 35 45 55 65 75 85 95 105 115 125 135 145 155 165 175 185 195