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ANALYSING SOCIO-FISCAL POLICIES THROUGH THE LENS OF GENDER INEQUALITY

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Summary

The tax and benefit system probably affects men and women differently because of the differences in living situations and behaviours that mean that men and women do not enjoy the same tax arrangements, and do not necessarily respond in the same way to changes in public policy. However, identifying the effects of a change to our tax and benefit system on the inequalities between men and women is a relatively complicated process: because men and women live and interact in the same collective fiscal entities (family or other household units), resources are often pooled, even if only partially. In order to measure the effects on an individual level of a change to the tax and benefit system, we must first investigate how resources are allocated and the tax burden is shared among the individuals of the household receiving said benefits or liable for those tax payments. We propose a methodology based on four different rules of distribution, which gives us intervals for the effect of a budgetary measure on women on the one hand, and for men on the other. Applied to the income tax reform of 2015, we find that this policy would have resulted in higher average gains for men, of between 1.20 and 8.10 euros per year. ■

- A gender analysis is obligatory today for any new bill, but putting it into practice in the case of bills in the area of public finance remains unsatisfactory.
- Identifying the individual effect of socio-fiscal reform requires an understanding of how income, particularly taxes and benefits, is shared among members of a family or other fiscal unit. At present, there are few studies that show such distribution in detail.
- A multi-method approach, using different hypotheses about income distribution within collectivities and comparing their results, gives us a value interval in which the real effect of a budgetary measure on sub-groups can be found.
- We observe that, regardless of the hypothesis used about the pooling of resources within the fiscal household, the gains associated with the 2015 income tax reform are slightly higher for men.

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Why conduct gender analysis of budgetary policies?

Despite some advances in the area of gender equality, inequalities between men and women persist. Because of gender differences in social roles, leading to different behaviours on the one hand and to discrimination on the other, women experience inequality in matters of hiring, salary and career path, as well as in the private sphere. While women's participation in the work force is steadily increasing, they remain the majority of those not in paid work – among parents of three young children, only 43.6 per cent of women are in paid employment, compared with 93.7 per cent of men[1] – and they are over-represented in unpaid domestic work[2] . Among paid workers, women's hourly rate is lower than men's by an average of 18.4 per cent[3]. This wage gap is only partially explained by the difference in occupations; the "unexplained" part probably consists of discriminatory behaviour. These inequalities of situation and of wages lead to income inequalities: among the total of individuals, whether working or not, waged or not, women receive, on average, 35 per cent less annual income than men[4].

The socio-fiscal system – that is, all the rules governing taxes and benefits, which usually depend on income – does not take into account cultural and behavioural differences, and it is applied in a universal manner, without regard for gender. However, **differences in social norms and income differences, which often mean that taxes and benefits have differential effects on men and women**, can either aggravate or, contrarily, diminish inequalities between the sexes. Thus, income differences between them can mean that men and women do not enjoy the same means-tested tax arrangements and benefits. Moreover, a policy, even if it is of equal benefit or loss to men and women, might have different gendered behavioural effects: for example, because the time allotted to domestic work and paid work differs between men and women, we observe that women's responses to a policy encouraging employment are much more marked than the responses of men.

Hidden for a long time, these potential gendered effects of the socio-fiscal system are now a matter of some concern. Designing public policy that does not increase gender inequalities is a response to equity concerns and to the desire to create real equality between men and women. Following the recommendations of the European Commission and the Council of Europe, and the example of other countries, including Finland and Austria, France is gradually adopting "gender budgeting", that is, the design and assessment of bills relating to the budget – the finance bill (PLF) and the social security financing bill (PLFSS) – from a gender-equality perspective.

After having introduced, in 2001, a systematic evaluation of the efforts made by various ministries in favour of gender equality, then in 2006 a budget programme aimed at tackling inequalities between men and women ("Programme 137"), the circular of 23 August 2012 obliges the government to produce a gender analysis of every new bill. Thus, since the 2013 PLF, the "Preliminary evaluations of the articles of the bill" presented in annexes to the PLF include an analysis of their "impact in terms of equality between men and women".

However, **according to the preliminary evaluation of the 2016 Budget, none of the measures in the 2016 PLF has any impact on gender inequality**[5]. The same was the case for the 2015 budget. The evaluation criterion for measuring a policy's effects on gender equality appears to be simply whether a person can, legally, benefit from the policy. The actual effects of changes to the socio-fiscal system on women and men require analysis on an individual level, and hence are rarely discussed and never quantified.

The difficulties of gender analysis

In practice, measuring the impact on women and men of a reform of the tax and benefit system is complicated. Indeed, how can we identify the effect of a reform on an individual, when individuals usually live in larger, interactive, collective entities? Within these groupings – households, families, fiscal units – resources are usually partially shared. Because of such interactions between individuals, it is thus difficult to know the "real" level of resources enjoyed by an individual. For example, the increase in one person's pension payments can also benefit other members of the family by increasing total shared resources. Those resources might not be shared equally between household members, but rather according to another rule of distribution which is not the same from one household to another.

Measuring the impact of a taxation or benefit reform at an individual level requires measuring the way in which the benefits received and the taxes imposed are shared among the members of the same fiscal household

Forms and degrees of sharing of resources vary considerably from one household to another

The management of household resources seems to take highly varied forms. For example, while some couples pool all of their resources, others keep theirs completely separate. In France, two thirds of couples pool their incomes, while 19 per cent of couples keep them separate. The others pool part of their income, to varying degrees, using a "kitty" for collective expenses and the rest of their income for personal expenditure. Finally, when the pooling is partial, each person's contribution to the kitty is made according to a variety of logics. While in the majority of cases it is proportional to income, it can also be equal or take the form of a sharing of expenses per "field" (food, rent, etc.).

1. Insee (2014), « Enquête Emploi en continu 2013 », Insee Résultats n°161, table PACT09.
2. Clara Champagne, Ariane Pailhé and Anne Solaz (2015), « Le temps domestique et parental des hommes et des femmes : quels facteurs d'évolutions en 25 ans ? », Economie et Statistique n°478-479-480.
3. Amine Chamkhi (2015), « Les écarts de salaires entre femmes et hommes par zones d'emploi », Dares Analyses n°20.
4. Thomas Morin (2014), « Ecarts de revenus au sein des couples : Trois femmes sur quatre gagnent moins que leur conjoint », Insee Première n°1492.
5. For just two policies (increase in military pensions for surviving partners, and revision of cash pensions for veterans of the war in Algeria and of combat in Tunisia and Morocco), while they appear to apply equally to women and men, we note that the beneficiaries are mostly women in the first case and almost exclusively men in the second case.

6. Sophie Ponthieux (2012), « La mise en commun des revenus dans les couples », Insee Première n°1409.

The pooling of resources within household units, even when only partial, thus complicates the analysis of policy measures at an individual level. Indeed, in the face of this diversity of resource-sharing modes, what distribution rule for pooled resources should be used to analyse the effects of reform of the socio-fiscal system at the individual level? Until now, no empirical study has gauged the way in which received benefits and imposed taxation are shared between individuals within the same household unit. We can, however, rely on works that deal more generally with the sharing of income within households. These studies reveal the principal determinants of resource-sharing among members of a household.

The main determinants of resource sharing

The contribution of each to household resources seems to be a central determinant of the manner in which the resources are shared out. In fact, no matter how they are pooled (fully or not, and if not, then proportional or not to the income of each), **the rule for sharing total household resources seems to depend on the bargaining power of the individuals making up the household unit**. This bargaining power seems to be strongly tied to the share of the resources brought to it by the individual[7]. Individual incomes, such as labour income and individual transfer incomes and benefits, thus play a role in the bargaining power of individuals and in their capacity to benefit from a larger share of total household resources.

Bargaining power also rests on other elements. Individual opportunities in the labour market seem to have some weight in negotiations about resource sharing. Facing a lower rate of unemployment than a partner seems to increase the chances of a more favourable share of resources[8]. The credibility of a threat to quit the household also seems to be a determining factor in the distribution of resources. Thus, some studies highlight the role of a divorce threat in resource-sharing between spouses[9]. Such a threat from a woman is deemed credible if the "gender ratio" of the local marriage market, the ratio of men to women in the area, is in her favour, increasing her opportunities for leaving the partnership.

Finally, the share of household income that women receive seems to grow with the household's standard of living. Dividing households into three groups according to their living standards, researchers show that in Canada, the share of household income that women receive varies between an average of 40 per cent for the least well-off and 60 per cent among the most well-off[10]. Other studies report similar results for the Netherlands and the United States[11].

7. See for example Michal Myck, Olivier Bargain, Miriam Beblo, Denis Beninger, Richard Blundell, Raquel Carrasco, Maria-Concetta Chiuri, François Laisney, Valérie Lechene, Ernesto Longobardi and Nicolas Moreau (2006), "The Working Families' Tax Credit and Some European Tax Reforms in A Collective Setting", Review of Economics of the Household, 4(2), p. 129–158.
8. See for example Olivier Bargain, Denis Beninger, François Laisney and Nicolas Moreau (2002). "Positive and Normative Analysis of Tax Policy: Does the Representation of the Household Decision Process Matter? Evidence for France". Article presented to the EEA '02 conference in Venice.
9. See for example Pierre-André Chiappori, Bernard Fortin and Guy Lacroix, "Marriage Market, Divorce Legislation, and Household Labor Supply", Journal of Political Economy, 110 (2002), 37-72. For an estimation of the effect of the gender ratio on the sharing of resources in the case of France, see Nicolas Moreau, (2000). «Une application d'un modèle collectif d'offre de travail sur données françaises ». Économie et Prévision, 146(5), p. 61–71.
10. Martin Browning, François Bourguignon, Pierre-André Chiappori and Valérie Lechene (1994), "Income and Outcomes: A Structural Model of Intrahousehold Allocation", Journal of Political Economy, 102(6), p. 1067–96.
11. Laurens Cherchye, Bram De Rock and Frederic Vermeulen (2008), "Economic well-being and poverty among the elderly: an analysis based on a collective consumption model", IZA - Discussion paper, (3349). Laurens Cherchye, Bram De Rock, Arthur Lewbel and Frederic Vermeulen (2015), "Sharing rule identification for general collective consumption models", Center for economics studies - Discussion paper.

A multi-method approach to estimating the gendered effects of a budgetary measure

The way in which resources are distributed within household seems, then, both complex and highly variable from one entity to another. This demands that we formulate hypotheses about the distribution. Based on the literature, we propose several rules for the distribution of the sum of taxes and benefits among individuals of the same household unit.

A first way to distribute the tax load among the members of the liable household unit (the fiscal unit in the case of income and wealth taxes) is to assume that the members share the burden equally (**Method 1**). This is the hypothesis that is used in most models to assess the effects of a tax policy at the individual level. The contribution of the methodology developed here is to propose three alternative ways of sharing the tax burden.

The second sharing principle rests on the strong evidence of the importance of individual contributions to household resources. This method assumes that the tax burden is shared between members of the tax unit in proportion to their income (Method 2). According to this hypothesis, if an individual brings in 60 per cent of the taxable income of a household, then we assume that he or she will pay 60 per cent of the total income tax bill.

We can also take into account the importance of the relative incomes of individual members in a finer manner, as well as the bargaining game between individuals, by applying the Shapley value (Method 3). This general method for distributing at an individual level a result obtained collectively consists of comparing the result that would have been obtained alone with the result that was obtained collectively. This method seems particularly well adapted to sharing the burden of income tax among the individuals of a household tax unit: indeed, the amount depends on the behaviour of each member of the household, and would be different (and often, higher in total) than if they had declared their incomes separately. The Shapley value method leads to the individual who gains the most from a joint income tax declaration making the greatest contribution to the tax payment owed by his or her household. The Shapley value formula is as follows :

$$\frac{\textit{Individual Income Tax}+(\textit{Household Income Tax}-\textit{Individual Income Tax of the spouse})}{2}$$

For example, for a household unit comprising a married or de facto couple, we assume that the tax bill for one member of the couple is the sum of the tax that would have been paid if one partner had made an individual declaration and the difference between the tax owed by the household and the tax that the other partner would have paid if he had made an individual declaration, and divided by two.

Nevertheless, this distribution principle can lead to a negative tax bill. In that case, we assume that the person pays not only all of the tax, but also compensates his partner with a cash transfer for the gains generated by the collective declaration. A fourth method thus takes up the Shapley value but corrects the result so as to avoid negative individual tax amounts. We exclude the possibility of transfer among members of the same fiscal unit. We assume that the individual who gains the most from a joint declaration pays all of the tax bill but does not compensate her partner (Method 4).

Table 1: Example of sharing of the income tax burden of a household unit

		Amount of taxe paid to income declaired			
	Annual income	Method 1	Method 2	Method 3	Method 4
Fiscal unit	*35,155*	*2,110*	*2,110*	*2,110*	*2,110*
Partner 1	7,765	1,055	468	- 188	0
Partner 2	27,390	1,055	1,642	2,298	2,110

Note: If the tax bill is shared equally between the two partners in the household tax unit (Method 1), then each of the partners pays 1,055 euros in tax. Sources: ERFS FPR 2011 ; TAXIPP 0.4

Table 1 presents an example of sharing the income tax burden among members of the fiscal unit according to the four methods just outlined.

In relation to benefits, the salient collective unit is no longer the household. Although the precise definition of the receiving entity varies depending on the benefit being considered, we maintain the household unit. The first step is to add up the different benefits received. Second, we must define a key or principle for the sharing of this amount among the members of the household unit. In addition to equal sharing (Method 1), we define a second form of distribution: sharing in inverse proportion to individual incomes (Method 2). According to this method, a household member who brings in 60 per cent of the resources will receive 40 per cent of the total amount of benefits received by the household. Table 2 presents an example of benefits sharing according to the two methods described here.

Table 2 : Example of the sharing of social benefits received by a household

	Annual income	Amount of social benefits received Method 1	Method 2
Household	*16,326*	*10,988*	*10,988*
Adult 1	9,795.60	5,494	4,395.20
Adult 2	6,530.40	5,494	6,592.80

Lecture: If the amount of benefits received by the household is shared equally between the two members, then each household member receives 5,494 euros. Sources : ERFS FPR 2011 ; TAXIPP 0.4

An example: the effects of the suppression of the first income tax bracket

By applying this method of analysis to the reform of the income tax scale introduced with the 2015 Budget, we show not only the importance of investigating the differential gendered effects of the changes but also the determining role of the choice of sharing principle.

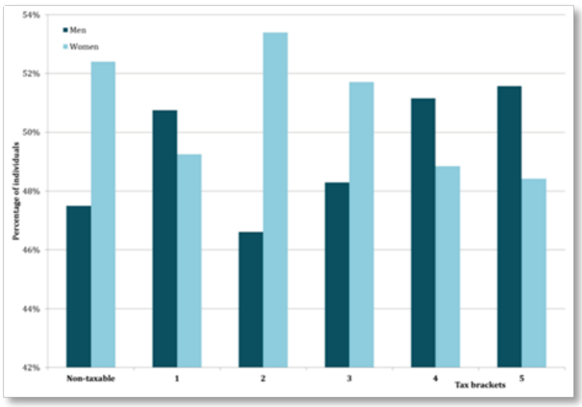
The 2015 tax reform consists in deleting the first bracket in the taxable income scale. In 2014, the first bracket of net declared income ("revenu fiscal de reference", RFR) was between 6,011 and 11,991 euros, to which applied a tax rate of 5.5 per cent. With the reform, the rate for the new first bracket, whose entry threshold was lowered to 9,960 euros, increased to 14 per cent. The fiscal units that benefited from this reform are those that are taxable but still earn low incomes, insofar as they fall within the first bracket of the tax scale. That corresponds to the fiscal units situated in the fifth decile of the RFR by tax share[12] However, the fiscal units with a higher RFR can also benefit from this policy reform, since the non-taxation of income falling below the entry threshold of the first bracket reduces the total amount of tax.

Analysing the effects on men and women

We noted above that the preliminary assessments of budget measures on the criterion of equality between men and women seem to be based on the general principle of equal rights to social benefits; the preliminary evaluation of reform introduced in the 2016 Budget is no exception and thus has reports no particular impact on equality between men and women. We can, however, investigate a possible differentiated gender effect of this tax reform. In fact, as Figure 1 shows, more women belong to non-taxable households than men, and they are slightly less numerous than men in the first tax bracket.

12. The RFR is divided by the number of shares used to calculate the family quotient

Figure 1 : Percentage of women and men belonging to taxable household units, by tax bracket



Note: Among the people belonging to a taxable fiscal unit in the first bracket of the tax scale, 49 per cent are women.

NB: This graph shows the percentages of women and men who belonged to taxable household units in 2013, by tax bracket.

Sources : ERFS 2013 ; TAXIPP 0.4

In order to measure the effects on an individual level of this reform, and thus to compare the effects on women and men, the first step is to divide among the members of a household the amount of tax to be paid had the reform not been introduced. This amount is then compared to the tax to be paid following the reform, distributed using the same method. Table 3 presents the average annual gains resulting from the reform, shown separately for women and men according to the different sharing principles.

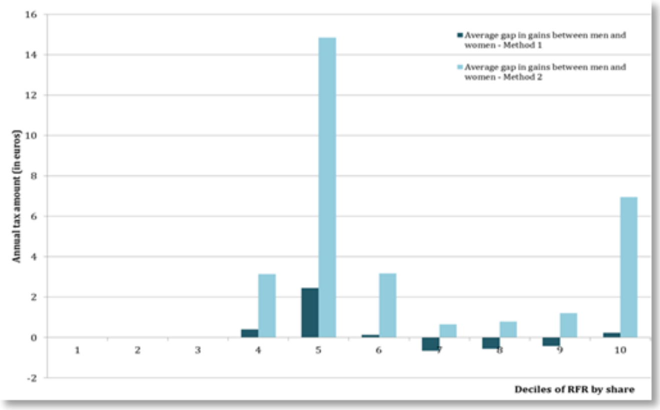
Table 3 : Average annual gains made from the suppression of the first income tax bracket, according to four different distribution principles (in euros)

	Method 1	Method 2	Method 3	Method 4
Men	17.8	21.5	25.5	25.8
Women	16.6	13.4	20.2	20.4
Gap	1.2	8.1	5.3	5.4

Note: The average annual gain from the suppression of the first tax-scale bracket is 21.5 euros for men, against 13.4 euros for women – that is, a difference of 8.1 euros per annum - when the share of the tax burden is proportional to income. NB: This table shows the average annual gains for women and men created by the suppression of the first income tax bracket, for the four different methods for sharing the tax burden among members of a household.
Source : ERFS 2013 ; TAXIPP 0.4

Regardless of which sharing principle is used, the average tax gain from the reform is greater for men than for women (Table 3). Thus, if the tax burden is shared among household members in proportion to their individual incomes, the average gain is 21.50 euros for men compared with 13.40 euros for women. We observe that the hypothesis concerning the sharing of income within the fiscal unit is very significant (Table 3). It is when the tax burden is shared in an egalitarian way (Method 1) that the reform gains gap between men and women is the smallest. Conversely, distribution of the burden that is proportional to individuals' contribution to household income (Method 2) results in the greatest gender gap in the tax reform gains. In effect, sharing the tax burden proportionally to income reproduces the income inequalities between men and women. This difference in effects of the reform on inequality between men and women is especially significant for the median deciles (4, 5 and 6) of the RFR per share, and in particular in the fifth decile, where the gender gap reaches almost 15 euros per annum in the case of proportional distribution, as against only two euros in the case of equal distribution (Figure 2).

Figure 2 : Difference in average gains from the income tax reform – Methods 1 and 2



Note: Assuming that the income tax bill is shared proportionate to income among members of a household unit, the difference between the average gain associated with the income tax reform for men of the fifth decile of RFR by fiscal share, and those of women in the same decile, is around 15 euros per annum.
NB: This graph shows the difference between the average gains for men and women, for income tax bill sharing according to Methods 1 and 2 and for each RFR by share decile.
Sources : ERFS 2013 ; TAXIPP 0.4

Conclusion

Combating inequalities between men and women effectively requires understanding how economic and social policies can affect them, even when that is not the goal of a given policy. Thus, consideration of a policy's potential effects on gender inequality must be integrated into the design of reforms to the tax and benefits system. Although desired, this gender budgeting remains largely incomplete: the preliminary assessment required for budget measures does not integrate the gender dimension well, because it limits it to the legal right to benefit from a policy measure. In reality, a quantitative assessment of the differing effects of a budget policy on women and men, notably those due to the identity of the actual beneficiaries, is difficult to conduct: it demands knowledge of the way in which the household unit shares its income.
For, because this sharing rule is likely to vary widely from one household to another, it must be subject to varying hypotheses. Our approach, which consists of calculating the gendered effects of a reform through the use of different principles of distribution of tax and benefits, in order to obtain an interval in which we will find the actual effect of the reform being considered, in terms of differences in gains and losses between men and women, reveals the crucial importance of the hypotheses used, as well as the gendered effects of socio-fiscal reforms.

We propose, then, a methodology that quantifies the gendered effects of budget reforms, so that preliminary assessments of budget bills according to gender inequality criteria can go beyond the simple question of equal legal access to the policy. But because it does not permit the precise quantification of a budget policy's effect on women and men, our method cannot replace an ex-post analysis of adopted budget measures, which identifies their contribution to an increase or reduction in gender inequalities by taking into account behavioural reactions. Such analyses also measure the more long-term effects of budget policies: thus, a policy that encourages women to stay "at home", by offering them financial assistance, will benefit them in the immediate term, but lead to their receiving a smaller pension.

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