Redistributive Effects of the Taxation of Couples and Families: A Microsimulation Study of Income Tax

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Abstract – This study examines the budgetary and redistributive effects of marital and family income taxation in France. On the basis of the INES microsimulation model, it proposes a complete methodology for individualising incomes and the various tax schemes targeting couples and families. By comparing income tax in 2017 with a fictitious situation in which it would have been applied on an individual basis, the effects of marital and family taxation are seen to be significant and overwhelmingly beneficial: 13 million households gain, benefiting from a total of 27.7 billion euros. 1.1 million households lose out, primarily those for which marital taxation is not offset by gains from family taxation. 40% of the total effect is due to marital taxation and 60% is due to family taxation. The wealthiest 15% of people are those who benefit the most from marital taxation (48% of the gains, compared with less than 25% for the poorest 50%).

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Keywords: income tax, family tax quotient, redistribution, inequality, microsimulation

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Within the French tax system, income tax is one of the main instruments used for vertical redistribution, i.e. along the standard of living scale. The progressive nature of its scale reduces the standard of living of wealthier people to a greater extent than it does for poorer people. However, due to the marital and family components included in its calculation, income tax also brings about horizontal redistribution, based on the configuration of the households and regardless of their income on the one hand, towards couples who are married or in a civil partnership and, on the other hand, towards families with children (see Échevin, 2003). These marital and family income tax mechanisms have been the subject of political debates and have undergone significant change in recent years: in 2013 and 2014, the effects of the family tax quotient were mitigated by lowering its cap, and between 2012 and 2017, the tax relief scheme was partly aimed at couples. In 2017, Emmanuel Macron's programme proposed allowing couples to choose whether or not to be taxed on an individual basis, according to a right to choose scheme.

This study aims to estimate the budgetary and redistributive effects of the tax schemes targeting couples who are married or in a civil partnership and families with dependants. The redistributive effects are indeed important for the evaluation of the socio-fiscal system. The study starts by presenting the general marital tax schemes before evaluating their effects on tax revenue and on redistribution by examining the changes in the distribution of standards of living that result from the existence of these tax schemes. It aims both to present the distribution of households that would gain and that would lose out in the event that these schemes did not exist, estimations of the budgetary amounts that they represent, and how these effects are spread across the marital and family taxation schemes. The analysis is based on the 2017 version of the Ines microsimulation model.

This study contributes to the literature on this subject in a number of ways. Firstly, it adopts a broad approach to marital and family taxation by integrating the tax quotient schemes, as well as secondary fiscal rights, and decomposes their effects under clear and straightforward assumptions. The taxation of families is examined including all the schemes relating to dependants rather than just the family quotient scheme. The analysis is conducted within a coherent framework that distinguishes the effects of family and marital taxation without the need for assumptions regarding household behaviour. In order to achieve his, we implement a sequential estimation of the effects of marital taxation, then the effects of family taxation. This methodological innovation offers two main advantages. On the one hand, it allows the estimated effects to be summarised in the sense that all current income tax schemes can be determined by adding together the effects of marital taxation and family taxation. On the other hand, it provides a novel estimation of marital taxation, since it isolates its effect without having to make assumptions regarding the distribution of family schemes within couples. In addition, the study deviates from some of the usual assumptions regarding the distribution of income within couples in that it distributes non-individualisable income in proportion to individual income, whereas most studies split it equally between the partners.[1] This approach to estimating the marital schemes nonetheless allows us to adopt a method similar to that used in the existing literature for the effects of family taxation; in particular, recent institutional reports (Haut conseil à la famille, 2010; Conseil des prélèvements obligatoires, 2011; Assemblée nationale, 2014) have documented some of the impacts of the marital and family tax quotients. This study therefore provides an update for 2017, since the income tax legislation has recently changed. Finally, it provides detailed results by family configuration and standard of living categories.

The marital and family tax schemes benefit the vast majority of households, and the effects are significant: 13 million households gain, with the benefit totalling 27.7 billion euros. 1.1 million households lose out, primarily those for which marital taxation is not offset by the benefits of family taxation. Around 40% of the total effect is due to marital taxation and 60% is due to family taxation. Those households that benefit gain an average of 2,120 euros per year, while those that lose out lose 400 euros. Due to the progressivity of income tax, the wealthiest 15% of people benefit the most from marital taxation: they receive 48% of the total gains, while the poorest 50% receive less than 25% of the gains.

The rest of this article begins with a quick description of the principle of marital and family taxation in France (Section 1). Section 2 is dedicated to describing a new method for estimating the gains and losses associated with

1. This assumption has only a small impact on the results, due to the small proportion of income that is non-individualisable. Conversely, it appears to be more consistent with the results of Frémeaux & Leturcq (2019), who show that the wealth held by couples has changed significantly during the period between 1998 and 2010, leading to the individualisation of wealth and an increase in wealth inequality between partners.

the marital and family income tax schemes. Particular attention is paid to the assumptions regarding the individual distribution of income within couples and the calculation of tax credits and reductions. The effects of marital and family taxation are then studied together and then separately (Section 3), and conclusions are presented in the final section.

1. Marital and Family Taxation

1.1. Principles and Foundations of Income Tax in France

In France, the income tax is paid at the level of tax households and takes account of the number of children; it is therefore referred to as marital and family taxation: the amount of tax paid depends on both marital status and the number of dependants. One the one hand, couples who are married or in a civil partnership must be taxed jointly, which means that they pool their declared income and their tax is calculated at the level of the tax household to which the two partners belong. On the other hand, each child reduces the amount of tax paid by his or her family. These two characteristics of the French tax system are rare, even exceptional, at the global or European level (Collombet, 2013).

Couples and families taxation is largely based on the mechanism of the tax quotient, i.e. the number of tax units taken into account. The allocation of one tax unit to each partner of a couple who is married or in a civil partnership makes it possible to calculate the average income tax for the couple. The number of tax units also increases with the number of children. These two schemes are referred to as the marital tax quotient and the family tax quotient, respectively. They were introduced at the initiative of Adolphe Landry[2] in 1945. They result from the constitutional requirement to take account of contributory capacity at the family level. Indeed, the progressive nature of the income tax scale and the calculation based on the number of tax units within a fiscal unit can benefit couples who are married or in civil partnerships, as well as families with children, by reducing the amount of tax that they pay. The general family quotient scheme also includes specific situations, such as the care of disabled persons or being a single parent, as well as an increase from the third dependant and is therefore particularly advantageous for large families. Other indirect mechanisms, such as the pooling of tax credits and reductions, or even certain types of non-individualisable income, can accentuate or attenuate the effects of the marital and family tax quotients.

In order to calculate taxable income, the income is pooled at the level of the tax household (the fiscal unit) and divided by the number of tax units: one unit for each partner in the couple who are married or in a civil partnership,[3] a half-tax unit for the first two children and an additional tax unit from the third child onwards (Table 1). The progressive income tax scale is then applied to this ratio; the amount of tax by unit is then multiplied by the number of tax units. The number of tax units taken into account with the family quotient is calculated on the basis of the number of dependants in the household. This relates to children under the age of 21 or those aged under 25 who are in education, as well as to disabled children living within the fiscal unit, regardless of their age. In cases where children alternate their place of residence, the tax units that relate to them are divided by two and shared between the parents. In addition, additional half tax units are granted to single parents, i.e. those who take care of children or disabled persons alone. Each disabled person within a household gives rise to an entitlement to an additional half tax unit.

Due to the progressive nature of the income tax, couples with unequal incomes and families pay lower tax than they would if they were taxed individually in the case of a household with no tax credits or reductions and not affected by the tax relief scheme.

Although the general principle behind the calculation of income tax for couples and families has remained unchanged since 1945, the tax legislation has changed frequently with regard to specific schemes for couples and families. In particular, two schemes that impact upon the

2. French politician and economist who was also behind the roll-out of family benefits in 1931 and the creation of the Family Code in July 1939.
3. Couples who are not married or in a civil partnership are not considered to be couples for the purposes of tax legislation. The study adopts this convention such that partners of cohabiting couples are considered as two distinct fiscal units.

Table 1 – **Number of tax units by family configuration of the household**

Configuration of the household	Single			Couple			From the 3rd child onwards
	No children	1 child	2 children	No children	1 child	2 children	
Number of allowances	1	1.5	2	2	2.5	3	+1

effects of the marital tax quotient have been changed recently: tax relief and the employment premium (*prime pour l'emploi*, PPE). These were the two main schemes that incorporated components that related only to individual characteristics and not to the household, which could make joint taxation unfavourable, as shown by Eidelman (2013): in 2011, 21% of jointly taxed couples would have benefited from reporting their income separately, mainly as a result of these schemes. The effects that we would expect to see with the 2017 legislation are therefore different due to these changes in the way that the tax is calculated. Two other changes have had an impact on the effects of marital and family taxation as a result of their more or less progressive nature.

On the one hand, the cap on the family tax quotient was lowered from 2,236 euros to 2,000 euros in 2013, and then to 1,500 euros in 2014; the last reduction had been in 1998.[4] In 2017, the reduction in tax brought about by the family tax quotient could not exceed 1,512 euros per half tax unit.

On the other hand, the rates and thresholds of the tax brackets have also changed. In 2017, there were five brackets with marginal rates ranging from 14% to 45% above 152,260 euros of taxable income. Since 2000, three main changes have been made:

- in 2007, the number of brackets was reduced from seven to five, with an upper rate of 40% and a lower rate of 5.5%. The upper rate was 54% and the lower rate was 9.5% in 2000;

- in 2013, a sixth bracket was created, bringing the upper limit to 45%;

- in 2015, the number of brackets was reduced to five again by increasing the rate for the first bracket to 14% and raising its threshold from 6,011 euros to 9,690 euros.

The legal framework for general income taxation has undergone significant change since 1945, most notably with the creation of the CSG[5] in 1991 (for a description of the history of legislative developments, particularly with regard to the scale, over the long term, see André & Guillot, 2014). The CSG, which is a wholly individualised tax, is not taken into account in this study. Changes have also recently been made to the way in which capital income is taxed, with it being partially integrated into the progressive income tax scale between 2013 and 2017, followed by a flat-rate deduction of 30%, which *de facto* individualises the taxation of income from wealth (see André, 2019, on the changes in the effects of marital taxation between 2012 and 2017).

1.2. Debates on the Characteristics of Income Tax

The characteristics of income tax have been the subject of many studies. Marital and family taxation are at the centre of the debates regarding the objectives and impacts of the tax instrument through the comparison, in particular, of horizontal redistribution (between different types of household with the same standard of living) and vertical redistribution (between households with different standards of living). The direct effects depend on how progressive the income tax scale is. The greater the vertical redistribution of the scale, the greater the horizontal redistribution of the marital and family tax quotients. In the case of a proportional tax scale, the marital and family tax quotient schemes would have no effect. One of the characteristics of income tax is that it places a greater burden on higher-income households in terms of their contributions, thereby playing a part in the vertical redistribution effected by the socio-fiscal system as a whole. By convention, we will refer to this characteristic as "vertical redistribution".

Grobon & Skandalis (2014) provide a summary of the issues at stake in the debate by providing the main critical references (e.g. Landais *et al*., 2012) alongside arguments that justify these family tax schemes (cf. Sterdyniak, 2012). The article by Allègre *et al*. (2021) in this issue offers a detailed and up-to-date discussion of this.

Firstly, the mandatory joint declaration and the consideration of family responsibilities have existed since 1945. Since then, social norms have changed, as have the characteristics of the French economy. In particular, among people aged 15-64, women's participation rate has increased from around 50% in the 1970s to 65% in 2010 (and 68% in 2020), while that of men has fallen from 83% in 1975 to around 75% since 2010. And, up until the 1960s, wives needed their husband's permission to work or to open a

4. This capping scheme limits the effects of tax gains resulting from dependants by fixing the maximum benefit that can result from the family quotient. Introduced in 1983, it has changed in line with the general scale, being adjusted for inflation each year, with the exception of 2011 due to the freezing of the scale between 2011 and 2013. Other capping parameters exist for single people, widows/widowers and divorcees with dependent children.

*5. The general social contribution (*contribution sociale généralisée*, CSG) is based on a broader tax base than income tax and rates that are proportional to different types of income. Deducted at source, the CSG is often ignored to the point that some people state that households that are not subject to income tax do not pay any tax: in reality, the average tax rate (income tax plus CSG) of the poorest households has been around 5% since 2000.*

bank account. The socio-fiscal system has also been changed, most notably through the creation of tax expenditure aimed at families, benefiting non-parental forms of childcare.

The socio-demographic characteristics have also changed over the long term, such as the increase in the level of education among women. According to Bouchet-Valat (2018), in the majority of couples in France in 2016, the woman was the most highly educated of the partners; this was not so case prior to the 1960s. The pooling of resources within couples has also changed (see Frémeaux & Grégoire-Marchand, 2018). However, this pooling is not always complete among couples who practice it (Ponthieux, 2012). The marital and family tax scheme is therefore based on ways of life that have changed. Couples who are not married or in a civil partnership are not considered as couples for tax purposes; the study into the redistributive effects of income tax will make it possible to highlight those who benefit from these schemes and to what extent.

Another aspect of the debates concerns the incentive schemes resulting from a lower marginal tax rate to the wealthier spouse than they would have been subject to if taxed individually. On the one hand, this can be interpreted as a subsidy for couples with differing incomes. On the other hand, this favours domestic specialisation within the couple by making the trade-off more unfavourable to the secondary contributor, i.e. the member of the couple who does not work or whose salary is lower. However, three quarters of women in couples earn less than their partner (Morin, 2014). Therefore, the marital tax quotient taxes the labour supplied by women more heavily than that supplied by men (Échevin, 2003). Carbonnier (2007) estimates a negative elasticity, i.e. the probability of a partner being active in the labour market decreases with the rate at which their potential salary will be taxed. According to André (2019), the mandatory joint taxation of couples increases the marginal tax rate of the secondary contributor, three-quarters of whom are women, by 5.9 points. Kalíšková (2014) estimates, on the basis of Czech data, that the introduction of joint taxation in 2005 was followed by a drop of three percentage points in the employment rate of married women with children, which is comparable to the two percentage points that LaLumia (2008) estimated for the 1948 reform in the United States. Taking account of these derivative effects within the scope of a static microsimulation approach would require behavioural assumptions to be made that are beyond the scope of this study. In addition, the tax unit scheme differs from the number of consumption units and is therefore non-neutral with respect to the usual statistical convention used to measure equivalence scales. Indeed, INSEE uses consumption units to measure poverty and inequality.[6] The effects along the standard of living scale are analysed based on the usual framework of monetary redistribution: in order to compare households of different sizes or composition, disposable income is measured as a ratio of the total household income to the number of consumption units. The standard of living measured in this way incorporates the benefits of being in a couple (whether it be a legal or common-law union), due in particular to economies of scale in joint expenditure. Disposable income is the result of both the distribution of the primary income received by households and the application and redistribution performed by the socio-fiscal system. However, Martin & Périvier (2018) show that the standard of living of single-parent families and single persons is overestimated by the usual consumption units and therefore underestimates their poverty rate. These are the same family configurations that are not affected by the gains resulting from marital taxation.[7]

Furthermore, there is a relative inconsistency between social entitlements and tax law in so far as, unlike income tax, social security benefits do not take account of the marital status.[8] However, unlike the gains associated with the family tax quotient, which were capped at 1,512 euros per half-tax unit in 2017, there is no legal cap on the gains resulting from the marital tax quotient.[9] The current tax system is often criticized for its complexity, which stems in particular from the calculation of the number of tax units, since tax expenditure is sometimes based on married couples and sometimes on families. In order to illustrate the effects at play, the current situation will be compared with a more simple

6. The scale used (known as the OECD scale) is based on the following weighting: 1 consumption unit (CU) for the first adult in the household and 0.5 CU for any additional individuals aged over 14, and 0.3 CU for children aged under 14. Allègre et al. *(2021) propose an evaluation of a reform in which the number of tax units for a couple would correspond to their number of consumption units.*

7. The theoretical studies by Moyes & Trannoy (1999) highlight the fact that the quotient scheme within the French tax system is consistent with a measure of independence between the reduction in inequality brought about by a tax system and the use of single people as a reference when comparing types of families (relative Lorenz criterion).

8. See in particular Table 4 in Allègre et al. *(2021).*

9. They may be mechanically capped in the case of very high incomes, for example in the polar case where one member of the household has no income and the other has an income double the threshold for triggering the exceptional payment for high earners, i.e. reference tax income of one million euros. In this case, the couple's income is taxed at the highest marginal rate of the tax system and an increase in the income of the primary contributor does not result in any further gain from the marital tax quotient.

scenario involving a uniform tax credit for each dependant.

Finally, the mandatory nature of joint taxation is also discussed. France presents an exception in this respect: the majority of countries either apply fully separate taxation (the most common system within EU countries, see Collombet, 2013) or take account of partners' income in a different form, by means of a tax credit or a tax reduction. Some allow people living in a couple to choose between being taxed individually or jointly. Only Switzerland still adopts a system equivalent to that applied in France, with Luxembourg having introduced the right to choose in 2018, following in the footsteps of Portugal, which did so in 2016. Germany and Spain apply joint taxation with the option to choose to be taxed individually. Belgium, Italy, the United Kingdom and Canada include tax expenditure in different forms for a spouse with lower income. Other countries, such as Austria, Finland, Greece and Sweden practice strict individual taxation.[10]

Although it is advantageous for the majority of couples, the mandatory nature also results in some losing out, in so far as it may be in a couple's interest to declare their income separately as a result of individualised schemes within the system used to calculate income tax (see Amar & Guérin, 2007 and Eidelman, 2013). This study also proposes an update of such similar studies, and a quantification of the number of couples declaring their tax jointly, in spite of the fact that this may lead to losses in terms of their disposable income. This results in an attenuation of Eidelman's (2013) findings due to changes in the way in which income tax is calculated; however, some couples who are married or in a civil partnership still lose out as a result of this compulsory joint taxation.

As regards the tax advantage related to children, some countries apply tax credits or flat-rate deductions for dependants. Schemes that run independently of parents' income prioritise vertical redistribution, i.e. to the relative benefit of the poorest people; other countries aim to reconcile the standards of living of couples with different incomes and family responsibilities. Portugal and Luxembourg are the two other countries that implement the tax unit-based family tax quotient system (see Collombet, 2013). In 2013, Germany, Greece, Luxembourg, the Netherlands, Portugal and the United Kingdom allowed childcare costs to be deducted. The measurement of the fiscal cost of the family forms part of a broader framework of the measurement of society's expenditure on children. This social effort by the Nation was estimated at 4% of GDP in 2013 (see André & Solard, 2015).

In 2017, income tax amounted to 73 billion euros, or 24.6% of total tax revenue. In spite of the size of the financial sums involved, the redistributive effects of marital and family taxation are only partially documented. The main recent source is the report by the Haut conseil à la famille (HCF, 2011) and its Appendix 3 in particular, which presents simulations of reforms carried out by the Directorate-General of the French Treasury using the Saphir[11] model. The findings presented in our study can be compared with these estimations for a similar methodology, i.e. for the effects on families, but not for the effects of marital taxation, which differ due to the sequential calculation in our study. There are three other sources of methodological discrepancies with comparable studies within the existing literature, namely the year of estimation (in this case, 2017), the method used to allocate non-individualisable income (in this case, on a *pro-rata* basis) and the scope of the schemes included (in this case, all schemes that are dependent on marital status and dependants).

2. Estimation of the Impact of Income Tax on Married Couples and Families

2.1. Microsimulation Using the Ines Model

The Ines model simulates the effects of French social and fiscal legislation (for a detailed description of the model, see Fredon & Sicsic, 2020). We use the 2017 version of the model for this study. The model is based on INSEE's *enquête Revenus fiscaux et sociaux* (data based on tax and social sevenue – ERFS), which brings together socio-demographic information from the *enquête Emploi* (the French Labour Force Survey), and data from the CNAF, CNAV and CCMSA, and details of income declared to the tax authorities for the purposes of calculating income tax. The 2015 ERFS is based on a sample of approximately 50,000 households or around 130,000 individuals, representative of the population living in ordinary housing in metropolitan France. These individual data are "aged" and adjusted on the basis of aggregated auxiliary information gathered from other sources in order to reflect the structure and income of the

10. See, for example, Table 2 in Allègre et al. *(2021), which lists the different systems applied in OECD countries.*
11. This microsimulation model is similar to the Ines model used in this study. It relies in particular on data from the ERFS.

population in 2017. They therefore become representative of the 28 million ordinary households in metropolitan France in 2017.

The model is based on the assumption that households do not change their behaviour in terms of marriage and labour supply in response to legislative or regulatory changes, and that such changes do not have any short-term impact on prices.

The evaluation of the budgetary and redistributive effects consists of comparing a reference situation, in this case a fictitious individualised tax, with the legislation in force for the tax paid in 2017 on income from 2016. Household gains and losses are then calculated as the difference between the two situations. The aggregated effects are then obtained on the basis of individual effects using the weightings within the Ines model. The method is referred to as microsimulation, since it calculates a fictitious situation for each observation, in which the legislation is modified.

The calculation assumptions used for microsimulation studies are often crucial and allow for a better understanding of the simulated effects. Below we will describe the way in which income and tax expenditure (tax credits and reductions) are individualised. From a methodological point of view, the approach allows the effects of marital and family taxation to be decomposed. The method used to simulate these separate effects is described below.

Generally speaking, we adopt a broad vision of the marital and family schemes. The first difference with most of the literature concerns the individualisation of tax. Rather than retaining an equal distribution between the partners, non-individualisable income is distributed on a *pro-rata* basis, i.e. proportional to the partners' individual incomes; the same applies to certain tax credits and reductions. Unlike other studies, the aim is to capture income inequalities within couples who are married or in a civil partnership in greater detail (additional estimates to test the sensitivity to this assumption are presented in the Online Appendix – link at the end of the article).

In addition, the approach adopted seeks to incorporate effects that are not usually taken into account, most notably family arrangements as a whole, in order to provide a comprehensive estimate of the marital and family income tax schemes. In practice, we extend these concepts of marital and family taxation to tax credits and reductions, as well as to tax relief. In the case of individual taxation, eligibility for a tax credit or reduction is determined for each partner by comparing an individual cap with their individual incomes. Likewise, the amount paid is not dependent on marital status.

Finally, we propose a sequential calculation of the marital tax quotient based on an individualised tax and then of the family tax quotient based on a marital tax. This implies that there will be discrepancies with the results of other studies that would assess the marital and family tax quotients separately by comparing them with the real situation. By focusing on the internal consistency of its assumptions, this method makes it possible to avoid making behavioural assumptions when assessing the marital tax quotient: with the marital tax simulated in this way, it is not necessary to distribute family schemes, such as additional tax units for dependants, between the two partners of a couple. This innovative method therefore offers the advantage of being robust, as it does not require assumptions regarding the distribution of family mechanisms between parents. It allows the overall effect to be decomposed as the sum of two distinct sub-effects. Nevertheless, the consequence of this is that it inflates the effect that is usually estimated[12] for the marital schemes, since the estimates for these schemes depend on the order in which they are simulated. This method therefore measures two mechanisms *(i)* the gain brought about by marital taxation in a theoretical situation in which there are no family schemes and *(ii)* the gain brought about by family taxation within a system that is already based on marital taxation.

In addition, the precision of the results depends in particular on the quality of the income tax simulation within the Ines model. If we do not include settlement payments by the self-employed and the flat-rate levy, and if we take account of tax credits and reductions, the amount of tax simulated by the Ines model is 66.2 billion euros for 2017 for ordinary households in metropolitan France. If we include the flat-rate levy and the settlement payments made by the self-employed and extend the coverage to all households in France, the amount of income tax estimated by the Ines model is 73.7 billion euros for 2017, which is very close to the 74 billion euros actually received by the tax authorities that year. We will now describe the main assumptions of the simulation, and in particular those that concern the distribution of income and tax expenditure.

12. The studies in the literature usually compare the real situation to a counterfactual situation where only one type of scheme is absent, considering the family or marital schemes in isolation.

2.2. Individualisation of Income and Tax Credits and Reductions

In order to evaluate the effects of the marital and family tax quotients, a counterfactual situation is required in which taxes are individualised. The tax that would be paid in the event that each member of a fiscal household is taxed as if they were living alone and without dependants must therefore be calculated. This fictitious tax individualises income and neutralises all the tax units, as well as all other marital and family-based schemes used to calculate tax (for methodological details, see the Online Appendix). Household gains and losses are calculated as the difference between the disposable income of the households under the two situations.

The first step allocates to each member of the fiscal household the share of the income that relates to them. Wages, pensions, annuities and self-employed income are processed without any specific assumptions, since they are declared in a box linked to the individual in the household who receives that income. Conversely, income from securities and investments, capital gains and property income are declared at the level of the household and cannot be individualised on the basis of the simple information included in the tax returns. Here, we distribute this income between the partners on a *pro-rata* basis according to their individual incomes. The proportion of income that cannot be individualised amounts to an average of 3% of gross household income.[13] However, a dependant household member with their own income is not allocated a share of the non-individualisable income.

Once these individual incomes have been distributed, tax is simulated separately for each member of the household in the same way as it would be calculated for a single person. Tax, tax relief, tax credits and tax reductions are calculated separately for each member of the household. The caps on eligibility for tax credits and reductions are also individualised. As regards tax credits and reductions, the way in which their benefits are shared between partners is determined according to three scenarios:

(1) if it depends on the receipt of individualisable income, it is calculated at individual level;

(2) if it depends on financial or real estate acquisitions, it is distributed according to the key used to distribute non-individualisable income;

(3) if it depends on expenditure relating to joint household expenses (e.g. energy-efficiency improvements, home help), it is divided equally between the partners.

This set of assumptions assumes that no behavioural changes take place, particularly in the distribution of non-individualisable income (for example by paying income from wealth to the partner with the highest income, which could reduce the total amount due if the partners were taxed separately).

More generally, we assume that no behavioural change takes place with regard to the distribution of tax credits and reductions between partners. This choice is consistent with the framework of the Ines model, which assumes the absence of short-term behavioural reactions. It is straightforward and easy to read and provides an overall effect without the need for a set of additional behavioural assumptions. It is also justified by the existence of legal constraints, such as ownership of a flat or a savings account, which provide the couple with some fixed income from wealth in the short term. As a result, this fictitious simulation is not a complete description of what a fully individualised tax would look like.

2.3. Decomposition of the Effects of Marital and Family Taxation

The study therefore simulates a counterfactual individual tax: the effects of marital and family taxation are deducted by establishing the difference between that and the tax observed in the reference situation involving individualised taxation. This section explains how the gains and losses resulting from the marital and family tax quotients are decomposed.

In order to evaluate marital taxation, the income of partners who are married or in a civil partnership is grouped within the fiscal household, and any income earned by dependants is disregarded. The tax is then calculated in the same way as in the real situation for 2017 for couples who were married or in a civil partnership, as if they had no dependent children. This means that the caps on tax credits and reductions are multiplied by two for the couples and the tax relief is applied jointly. Conversely, income earned by dependants other than the partners continues to be considered individually, and the presence of dependants is not taken into account when assessing eligibility for tax credits and reductions. The amounts of the gains and losses brought about by marital taxation are then calculated as the difference between this marital taxation and individual taxation.

13. Around 50% of households do not receive any non-individualisable income. The proportion is below 10% for 90% of households. It exceeds 62% for 1% of households.

At the marital tax stage, all amounts paid are made independent of the number of dependants. Finally, the tax schemes that are fully associated with family taxation (reduction for married dependants and deductions for child support paid) are considered out of scope and cancelled.

We therefore consider the following to form part of the family tax quotient: the reduction for married dependants, which replaces the increase in the family tax quotient in the event that of a married child within the fiscal household; the deduction for child support paid to children and increases in the tax credit or tax reductions depending on the number of dependants.

In order to simulate the effects of the family tax quotient, income earned by dependants is then added to the household income, and the corresponding half-tax units are included in the tax calculation. The caps on eligibility for tax credits and reductions depend on the number of dependants. The tax calculated in this manner corresponds to tax as it was applied in 2017 in France and simulated by the Ines model without any variation in legislation. The effects brought about purely by family taxation are therefore calculated as the difference between this and the marital tax presented above.

This method is sequential, since it first simulates marital taxation on the basis of individual taxation and then simulates family taxation. This makes it possible to identify the effects brought about by marital taxation alone, without taking into account the family component, which is intrinsic in the real tax. For this purpose, the tax units corresponding to dependants are not split between the partners, as the counterfactual situation is that of an individual without children or dependants.

3. The Redistributive Effects of Marital and Family Tax

This section presents the main results regarding the effects of the marital and family taxation schemes.

3.1. Tax Structure and Aggregated Effects

Firstly, the schemes assessed in this study have effects on the distribution of taxes. Fiscal revenue from income tax and the distribution of households subject to taxation differs depending on the scenario (Table 2). A household is shown as taxable in the case of individualised taxation if one of its members is subject to taxation. Marital and family taxation renders 4.7 million households non-taxable (one in six households). All of these tax schemes bring about a reduction in tax of 27.7 billion euros when compared with the fictitious situation in which they do not exist. In the absence of these schemes and without changing the way in which tax is calculated or household behaviour, the total real tax in 2017 increases by 42%. Average tax changes in the same way, by 412 euros in the fictitious individual case and by 395 euros in the real case. Two-thirds of households are subject to taxation in the case of the fictitious tax, compared with one half in the current situation. Around 40% of the total effect is due to marital taxation and 60% is due to family taxation.

The marital and family tax quotients therefore have very significant budgetary effects. By way of a comparison, all tax credits and reductions subject to the general cap amount to 8.7 billion euros, i.e. three times less than those devoted to couples and families in the broader sense.

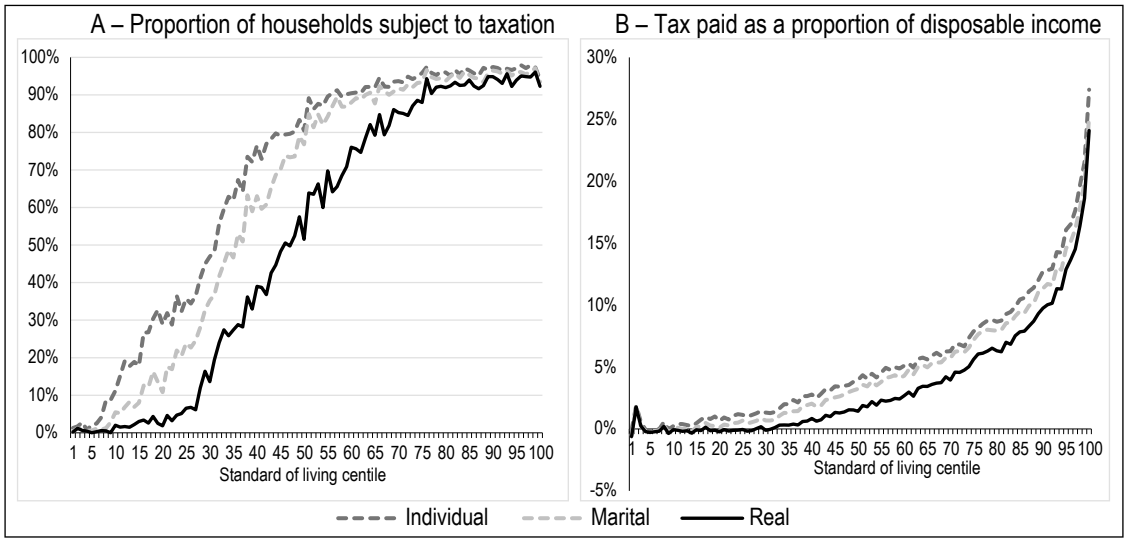
The proportion of households subject to taxation and the proportion of disposable income paid out in tax varies significantly depending on standard of living for each of the different scenarios considered (individualised, marital and real). When applied together (real tax), the marital and family tax schemes render a large proportion of households non-taxable, an effect that is marked from the first standard of living categories (Figure I-A). The effects of marital taxation drop off from the median standard of living upwards, while the family schemes play a role up to the eighth

Table 2 – **Households subject to taxation and tax paid, by scenario**

Income tax	Households subject to taxation		Tax paid	
	In million	In %	Total in billion euros	Average per month in euros
Individual	19.1	67.6	93.7	412
Marital	17.4	61.5	82.6	402
Real	14.4	50.8	66.0	395

Notes: The structure of the households is assumed to remain unchanged in the case of all types of tax. A household is deemed to be subject to taxation in the case of individualised taxation if at least one of its declaring members is subject to taxation.
Sources and Coverage: INSEE, ERFS 2015 updated in 2017; INSEE-DREES, Ines model, metropolitan France, ordinary households whose income is positive or nil and where the household reference person is not a student. Calculations by the authors.

Figure I – **Households subject to taxation and tax paid according to standard of living**



Notes: The standard of living is that calculated according to the income tax in force in 2017, referred to as real tax. The averages are calculated based on all of the households in the sample.
Reading note: At the median standard of living, 80% of households are subject to tax under individual taxation, but only 52% under family taxation. The wealthiest 5% devote 26% of their disposable income to tax when taxed as individuals (20% in the real case, with marital and family schemes).
Sources and coverage: See Table 2.

decile.[14] These effects stem in particular from the different distributions of family configurations along the distribution of standards of living (see below). As regards the tax reduction resulting from these schemes, it is particularly marked for households above the median standard of living (Figure I-B).

More precisely, the isolated effect of the scale accounts for the vast majority of the overall effect linked to marital and family taxation. The remaining effects consist of the effect of tax relief and the effect of tax credits and reductions (see André & Sireyjol, 2019).

The number of households that gain and lose out under the various schemes, as well as the associated gains and losses, are presented in Table 3. By convention, households are considered to have gained or lost out in the event that their annual tax changes by more than ten euros.[15]

Thirteen million households (46% of all households) gain in the sense that they pay less tax. 1.1 million households lose out as a result of the mandatory taxation of couples who are married or in a civil partnership.[16] The losses suffered by the households that lose out are smaller (401 euros per year on average) than what other households gain (average gain among households that benefit of 2,160 euros): the net average effect of marital and family taxation is 1,953 euros.

3.2. The Heterogeneity of Effects and Redistribution

Households that gain and lose out under the dual system of both marital and family tax are

14. Individuals are classified according to the disposable income of the household to which they belong. The deciles are the values that divide this distribution into ten equal parts. Therefore, the first decile (marked D1) is the standard of living below which the poorest 10% of people are positioned; the ninth decile (marked D9) is the standard of living below which 90% of individuals are positioned.

15. This assumption makes it possible to consider households whose simulated tax only changes as a result of rounding at the various stages of calculation to be considered as neutral. In the absence of simulation constraints on rounding, it would be necessary to measure the effects from the first euro.

16. A legally married couple may lose out on marital taxation when the sum of their incomes exceeds the cap for benefiting from tax relief in the case of joint taxation, but where the difference in income between the two partners is sufficiently large for the partner with the lowest income to have benefited from it if they had been taxed separately. In this case, the sum of the tax paid by the two partners if they were to be taxed separately would be lower than the tax paid if the couple were to be taxed jointly, since the loss brought about by the absence of tax relief for the couple exceeds the gain resulting from the marital tax quotient. In addition, a loss associated with the tax relief may also arise if both partners benefit jointly from the tax relief, as the cap for a couple is less than double the individual cap.

Table 3 – **Effects of the marital and family tax schemes in 2017**

	Thousands of households		Euros per year		
	Who gain	Who lose out	Gain	Loss	Net effect
Marital taxation	7,054	2,531	1,696	-367	1,151
Family taxation	9,333	29	1,782	-671	1,775
Marital and family taxation	13,015	1,140	2,160	-401	1,953

Notes: The effects are calculated based on the household concerned.
Sources and Coverage: See Table 2.

distributed differently along the standard of living scale. The proportion of households that gain increases with standards of living; those that lose out are particularly concentrated between deciles 6 and 8. The average amount that the households gain increases in line with standards of living: it is 812 euros on average for the 145,000 households subject to taxation among the poorest 10% that gain and 4,549 euros on average, i.e. 5.6 times more, for the 1.9 million households belonging to the wealthiest 10% that gain.

Figure II-A shows the proportion of households for which individual taxation is or is not in their interest according to their standard of living. Figure II-B shows the average amounts of gains and losses for each standard of living segment. The proportion of gains increases up to the median households, and then stabilises at around 60% of households among the wealthiest 50% of households. The losses are concentrated around the fifth decile. The vast majority of the losses are linked to marital taxation (see André & Sireyjol, 2019).

When looked at in relation to the standard of living of households, the gains are greater for the wealthiest households and increase in line with standards of living. For the poorest 20%, the average gains made by the households that benefit are below 2% of standard of living (Figure II-B). Indeed, the majority of these households are not subject to taxation under the two situations in question. For the wealthiest 15%, the gains increase significantly and exceed 5% of standard of living on average. Relative to standard of living, the gains made by the wealthiest 5% of households that benefit are twelve times higher than those made by the poorest 5% of households. Looking at marital taxation only, these gains are even higher among very high earners, as can be seen in the comprehensive tax data (see André, 2019). By way of a comparison, the wealthiest 15% pay 74% of the real tax, while the poorest 50% pay 1.3%.

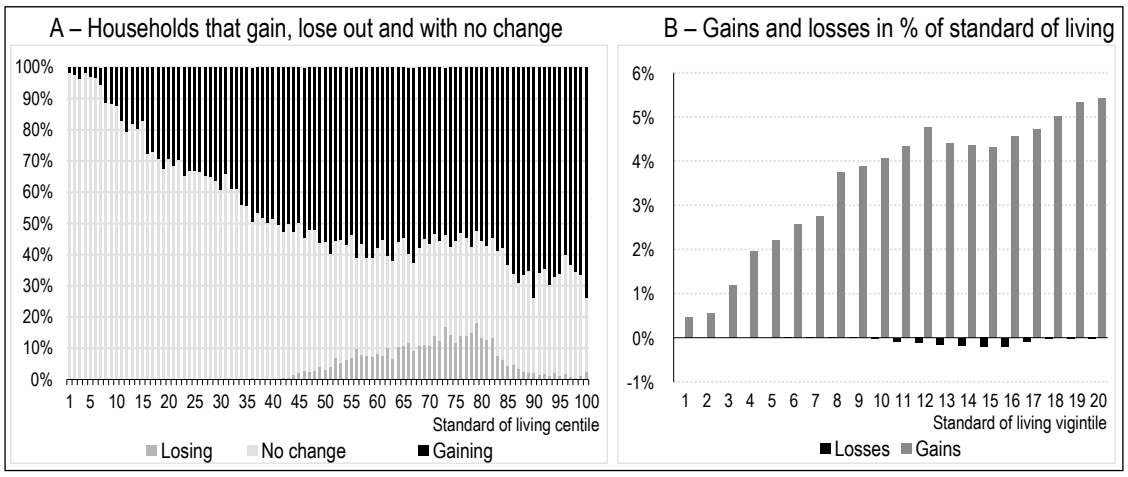
In addition, the average losses of households that lose out are significantly smaller, below 0.2% of standard of living, and show a bell-shaped profile when compared with the standard of living of the household. They are zero for the poorest 50% and negligible for the wealthiest 20%. While remaining low, the losses are greater between the 6th and 8th deciles, reaching a maximum of 0.2% of standard of living on average around the eighth decile.

The concentration of gains results from two effects. The gains brought about by marital taxation are greater the bigger the gap between the income of the two partners and the higher the sum of the couple's income.

The effects of marital taxation are anti-redistributive in the sense that it is the wealthiest households that benefit more from it. The same is true of family taxation, from which wealthier households benefit more due to the family quotient scheme. This results from the differences in family configurations by standard of living and the greater presence of couples at the top end of the scale, as well as mechanically, since without the effect of the tax base or tax credits and reductions, the wealthier a household is, the more tax they pay (see André & Sireyjol, 2019).

According to Morin (2014), the differences in income within couples, including both earned

Figure II – **From individual taxation to marital and family taxation**



Notes: The standard of living is that calculated according to the income tax in force in 2017.
Reading note: Of the median households in the 50th centile, 3.2% lose out, 40.7% see no change and 56.0% gain. The median households positioned between the 10th and 11th vigintiles that gain benefit from a 4.1% lower reduction in their standard of living due to marital and family taxation.
Sources and coverage: See Table 2.

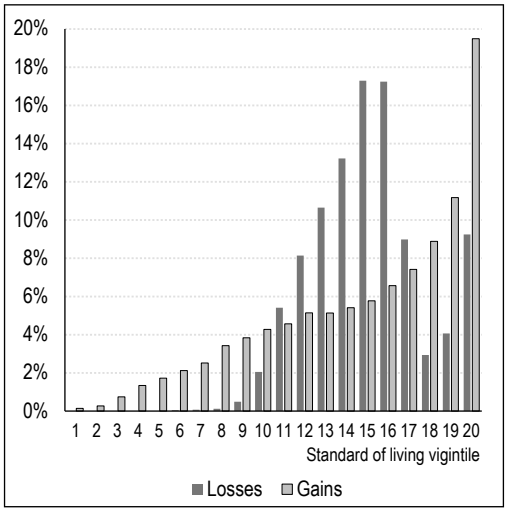
income and replacement income, are more pronounced among poor and wealthy households and are therefore less pronounced among couples with intermediate or relatively high incomes. In addition, inequalities are more pronounced among married couples or couples with children than among other couples. Within couples who are married or in a civil partnership, the proportion of income declared by the secondary contributor represents 35% of household income on average (André, 2019). Among those couples, 75% of the main contributors are male and 22 female, while 3% had equal incomes.

Ultimately, the wealthiest households benefit from a greater share of the gains linked to the marital and family characteristics of income tax: the wealthiest 15% obtain 40% of the total gains, while the poorest 50% share 20% of the gains (Figure III).

It is possible to calculate a poverty threshold[17] and standard of living inequality indicators in the simulated situations (marital or individual taxation). Table 4 presents a decomposition of the effects of marital and family taxation on the main poverty and inequality indicators. The poverty rate increases by 0.9 points and the Gini index by 0.004 when compared with the fictitious situation in which tax is individualised. This effect results from the relative measure of poverty. Indeed, the marital and family income tax increases the poverty threshold and therefore the median standard of living. Reducing taxes, particularly for the wealthiest households, actually deforms the distribution of standards of living and increases poverty and inequality when compared with a situation in which those schemes do not exist.

However, these effects should be interpreted with caution, since the tax revenues in the situations being compared are not the same. Indeed, these are partial effects that do not reflect what the situation would be if there were a constant budgetary envelope (see below for a fictitious scenario that changes the method of taxation with a constant budgetary envelope). However, the effects of a socio-fiscal scheme on inequality and poverty are heavily dependent on the intensity with which the transfers are targeted and the volume of the sums redistributed.

Figure III – **Distribution of gains and losses by standard of living**



Reading note: The wealthiest 5% of households (highest vigintile) account for 9.2% of the losses and 19.5% of the gains.
Sources and coverage: See Table 2.

3.3. Effects by Type of Family

The marital and family income tax schemes apply to tax households comprising a couple or those with dependent children. Given the difference that exists between the concept of the tax household and that of the household as defined by INSEE (a group of people living in the same dwelling), some single-person households may benefit: for example, where a child is linked to the household for tax purposes, but their primary residence is elsewhere. It is therefore possible to benefit from tax reductions for adult dependants within a fiscal household, without them belonging to the same household. Conversely, partners who are not married or in a civil partnership and who submit their tax declarations separately do not benefit from the marital or family income tax schemes, since they belong

17. The poverty threshold is equal to 60% of the median of the standards of living calculated in these two situations.

Table 4 – **Poverty and inequality standard of living indicators, by scenario**

	Individual	Marital	Real	Real – individual
Poverty rate (as a %)	12.2	12.2	13.1	0.9
Poverty gap (as a %)	16.6	17.1	17.2	0.7
Gini index	0.277	0.279	0.281	0.004
D9/D1	3.18	3.21	3.27	0.01
P95/P5	4.72	4.79	4.86	0.15
Poverty threshold (euros)	12,110	12,212	12,516	406

Sources and coverage: See Table 2.

to two different tax households. Aside from this observation, households comprising a couple with children are very heavily over-represented among the households that gain, in so far as they potentially benefit from both mechanisms.

As the effects largely result from the application of the scale, i.e. the family quotient scheme, they are highly dependent on the family configuration. Tables 5, 6 and 7 list the numbers of people concerned, together with the gains and losses for each type of family. They make it possible to describe the horizontal redistribution brought about by the tax quotient system.

Of the 13 million households that gain, 39% are couples with one or two children, even though they only account for 21% of the population. Single people as defined by INSEE make up 35% of households, but only 11% of the households that gain.[18] Almost half of single-parent families benefit (1.2 million of 2.5 million); 79% of the 1.5 million couples with three or more children gain, compared with 49 of the 8 million couples without children (Table 5).

Of the 2.5 million households that lose out as a result of marital taxation, 1.4 million are covered by the family schemes, such that the number of households that lose out under both schemes combined is 1.1 million (Table 6).

18. The number of single people who benefit is not zero, since the family quotient scheme includes adult, student or disabled children who do not necessarily live in the household, but belong to the same tax household. Around one in five of the single people who gain also only benefit from the deduction for child support. The rest are single people with additional tax units, primarily as a result of the half-tax unit for disability or previously being a single parent, for example.

Table 5 – **Households that gain by family configuration**

Family configuration	All households		Marital taxation		Family taxation		Real	
	thousands	%	thousands	%	thousands	%	thousands	%
Single people	9,936	35.1	106	1.5	1,384	14.8	1,471	11.3
Single-parent families	2,471	8.7	34	0.5	1,196	12.8	1,210	9.3
Couples without children	8,057	28.5	3,417	48.4	1,201	12.9	3,917	30.1
Couples, 1 or 2 children	6,053	21.4	2,670	37.9	4,460	47.8	5,074	39.0
Couples, 3+ children	1,477	5.2	735	10.4	948	10.2	1,165	9.0
Complex households	283	1.0	92	1.3	145	1.6	177	1.4
Total	28,277	100.0	7,054	100.0	9,333	100.0	13,015	100.0

Sources and coverage: See Table 2.

Table 6 – **Households that lose out by family configuration**

Family configuration	All households		Marital taxation		Family taxation		Real	
	thousands	%	thousands	%	thousands	%	thousands	%
Single people	9,936	35.1	14	0.6	10	29.9	18	1.6
Single-parent families	2,471	8.7	n.s	n.s	n.s	n.s	n.s	n.s
Couples without children	8,057	28.5	1,252	49.5	11	39.0	1,005	88.1
Couples, 1 or 2 children	6,053	21.4	1,059	41.8	n.s	n.s	111	9.7
Couples, 3+ children	1,477	5.2	175	6.9	0	0.0	n.s	n.s
Complex households	283	1.0	27	1.1	0	0.0	n.s	n.s
Total	28,277	100.0	2,531	100.0	29	100.0	1,140	100.0

Notes: ns stands for not significant.
Sources and coverage: See Table 2.

Table 7 – **Annual tax, average gain and total gain, by family configuration**

Family configuration	Average gain (euros)	Total gain		Average loss (euros)	Total loss	
		million euros	%		million euros	%
Single people	1,206	1,774	6.3	-449	-8	1.7
Single-parent families	1,737	2,102	7.5	-3,314	-10	2.1
Couples without children	1,765	6,912	24.6	-388	-390	85.2
Couples, 1 or 2 children	2,432	12,341	43.9	-439	-49	10.7
Couples, 3+ children	3,901	4,545	16.2	-158	0	0.0
Complex households	2,436	432	1.5	-350	n.s	n.s
Total	2,160	28,106	100.0	-401	-458	100.0

Notes: ns stands for not significant.
Sources and coverage: see Table 2.

In total, 44% of the gains benefit couples with one or two children, a family configuration that benefits from both the marital and family schemes (Table 7). The latter gain an average of 2,432 euros from marital and family taxation. 85% of the losses are incurred by couples without children, for whom marital taxation would not be in their interest as a result of the individual schemes still being used to calculate their tax (see André, 2019).

Figure IV shows the share of disposable income that is devoted to tax by family configuration and by standard of living, split into twenty categories, each comprising the same number of individuals. There is little change to the profile for single people. The proportion of their standard of living that is devoted to tax is significant from the fourth standard of living decile upwards. It exceeds 15% for the wealthiest 5% and changes little with the application of different scenarios. Conversely, marital and family taxation brings about a significant change in these profiles for other family configurations.

In the absence of the marital tax quotient, the profile of taxes paid as a proportion of disposable income would be similar between couples and single people, with the exception of those in the wealthiest standard of living categories due to the higher average income of couples.

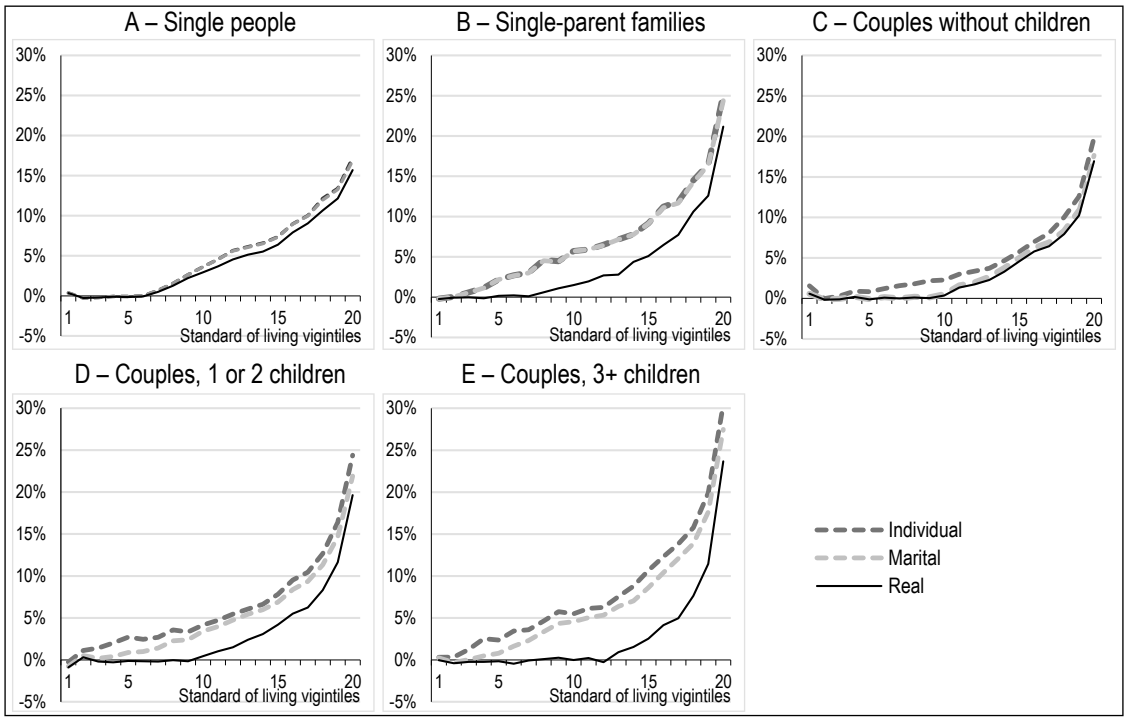
3.4. The Effects of Marital and Family Taxation

The above findings highlight significant monetary and redistributive effects. When looked at in combination, marital and family taxation brings about a significant horizontal redistribution between the different types of families. In this section, we will analyse the decomposition of these effects by isolating the schemes linked solely to the marital tax schemes.

The gains from marital taxation largely only concern couples with or without children (96.3% of the gains), while those from family taxation also benefit single-parent families for a total of 2 billion euros (12.2% of the gains) and 11.3 billion euros for couples with children, or 68.2% of the gains (Table 8).

In order to perform a more detailed analysis of the effects of marital taxation on the one hand and the effects of family taxation on the other hand, Figure V shows the proportion of households subject to taxation by standard of living for each family configuration. It highlights that the tax quotient schemes have a massive effect on the extent to which families are subject to taxation and have different effects on different types of family. Couples below the fifth decile benefit from the marital tax quotient. The effects

Figure IV – **Tax paid, in % of the standard of living, by scenario and family configuration**



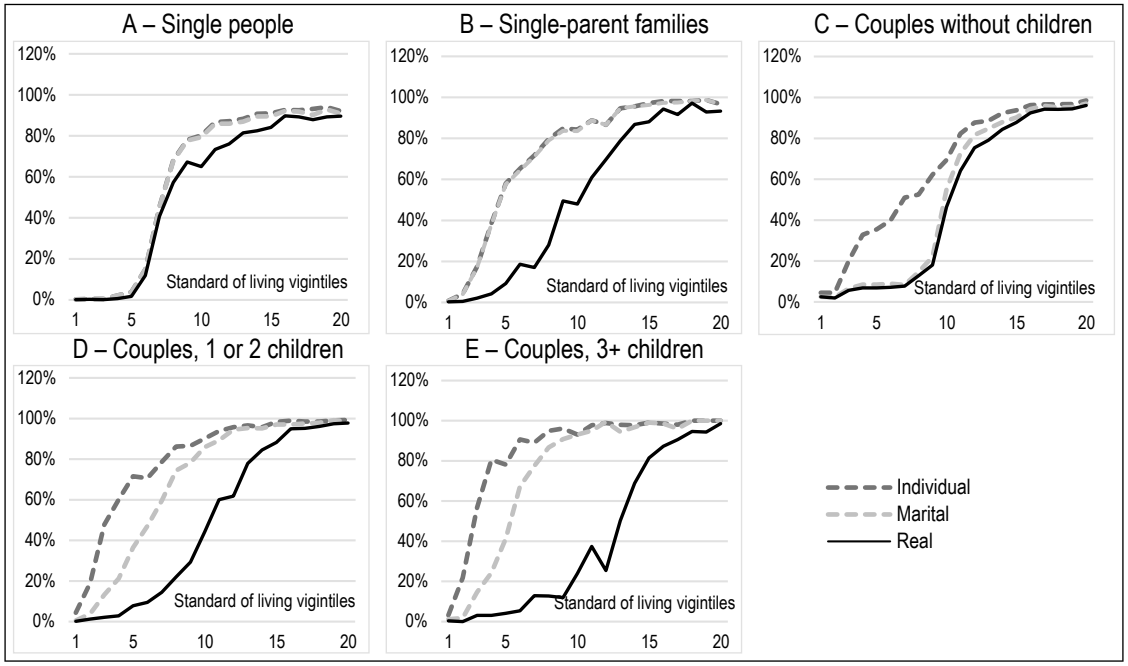
Notes: The standard of living is that calculated according to the income tax in force in 2017. The standard of living categories are calculated on the basis of all individuals and remain fixed.
Reading note: See Figure I-B.
Sources and coverage: See Table 2.

Table 8 – **Total gain from the two schemes by family configuration**

Family configuration	Marital taxation		Family taxation	
	million euros	%	million euros	%
Single people	218	1.8	1,558	9.4
Single-parent families	72	0.6	2,033	12.2
Couples without children	5,606	46.9	1,430	8.6
Couples, 1 or 2 children	4,472	37.4	8,162	49.1
Couples, 3+ children	1,434	12.0	3,171	19.1
Complex households	159	1.3	282	1.7
Total	11,961	100.0	16,636	100.0

Notes: Due to the differences between households as defined by INSEE (cohabiting in the same dwelling) and fiscal households (persons linked to the same tax return), some families without children as defined by INSEE can be seen to be benefiting from family taxation: this is because they can link dependants who do not live with them. In the case of marital taxation, there are also people who can be observed to be benefiting from these schemes, even though they are not living as a couple: this is due to the fact that they may have separated during the year and therefore continue to benefit from this even though they are living alone. Likewise, some cohabiting couples who are neither married nor in a civil partnership are neutral with respect to these schemes from the point of view of taxation, but are viewed as couples by INSEE.
Sources and Coverage: See Table 2.

Figure V – **Proportion of households subject to taxation by scenario and family configuration**

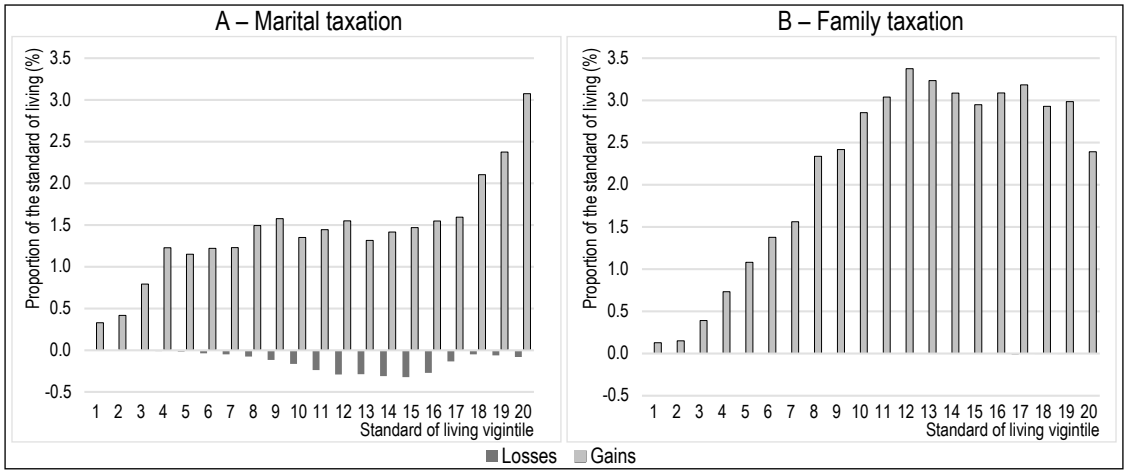


Notes: The standard of living is that calculated according to the income tax in force in 2017.
Reading note: See Figure I-A.
Sources and coverage: See Table 2.

of the family tax quotient are observed up to the eighth decile and are especially evident when it comes to the extent to which couples with three or more children are subject to taxation.

This difference in the effects of marital and family taxation can be seen through the decomposition of the gains and losses by standard of living (Figure VI). Due to the difference in the cap on the number of tax units for dependants, but not for couples who are married or in a civil partnership, the effects of marital taxation increase among the wealthiest 15%, while the effects of family taxation decrease. Indeed, unlike the gains associated with the family tax quotient, which were capped at 1,512 euros per half-tax unit in 2017, there is no legal cap on the gains resulting from the marital tax quotient. The cap on the family tax quotient is a scheme that is primarily concentrated on the top end of the standard of living distribution. It concerns fewer than 3.5% of the poorest 75% of households, while 86% of the households affected by the cap belong to the wealthiest 20%, with 28% of those falling into the wealthiest 5%. Therefore, unlike the marital tax quotient, the concentration of the gains linked to the family tax quotient is reduced as a result of this cap. The effects of marital taxation are more anti-redistributive in the sense that the relative benefit is greater for the wealthiest households (see a breakdown of

Figure VI – **Average gains and losses by standard of living**



Notes: The standard of living is that calculated according to the income tax in force in 2017.
Reading note: The average gains from marital taxation schemes exceed 3% of standard of living for the wealthiest 5% of households.
Sources and coverage: See Table 2.

households that win, lose and are neutral under marital taxation on the one hand, and under family taxation on the other hand in the Online Appendix).

3.5. Vertical or Horizontal Redistribution of Family Taxation: Illustration with a Flat-Rate Tax Credit For Each Dependant

Assessing the redistributive effects of the socio-fiscal schemes primarily relies on the counterfactual scenarios selected. There are potentially many such reference situations, but if they are to be compared with one another, they must be presented within the same envelope. Here, we will present the redistributive effects of a marital tax with a single tax credit for each dependant. We have chosen an identical amount for illustrative purposes in order to simply highlight the scale of the budgetary amounts involved.

More precisely, the tax calculation being simulated here corresponds to a tax that would work in the same way as it would have under the French system in 2017 for the marital tax quotient, but with the family tax quotient removed and replaced with a single tax credit that would benefit all tax households with dependants, regardless of whether they are taxed or not. We are therefore comparing two systems of marital taxation with identical budgetary envelopes, one where the marital quotient scheme remains unchanged (real tax) and the other where it is replaced by a uniform tax credit for each dependant. The amount of this credit that would ensure an unchanged budgetary envelope, i.e. that would bring in the same tax revenue as the tax that was actually in force in 2017, is estimated at 1,021 euros. In other words, the family-only (and not marital) income tax schemes correspond to a total that would amount to 1,021 euros per dependant for each household.

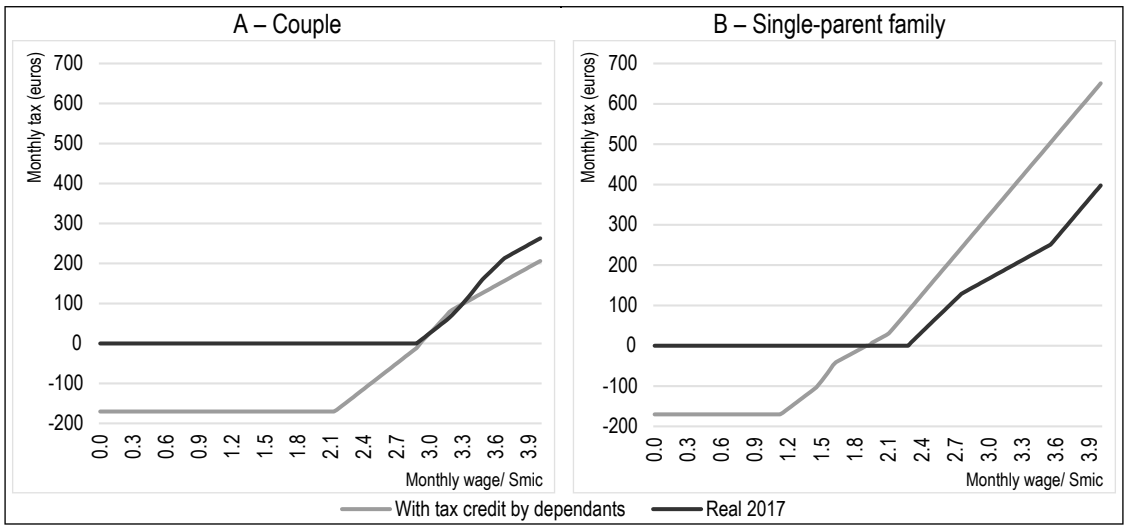
In the variety of possible cases, the simulated fictitious scenario seeks to illustrate the scale of the vertical redistribution brought about by the current family tax quotient system. One objective of a counterfactual calculation of this type is to assess the relative scale of horizontal and vertical redistribution with tax revenue remaining unchanged. From a redistributive point of view, a flat-rate tax credit is equivalent to a benefit[19] that is not dependent on income; in this sense, it changes the progressivity of the socio-fiscal system. This fictitious scenario demonstrates that there is a wide range of schemes that take account of family responsibilities and that vertical redistribution is not necessarily at odds with horizontal redistribution.

The equal tax credit for all dependants greatly poor families who benefit from the tax credit since it is paid to families who do not pay tax and do not benefit from the family tax quotient as they are not subject to taxation. Figure VII shows, for example, the impact on the amount of tax paid by families with two children.

For couples with two children, all tax households benefit in the scenario involving a single tax credit (Figure VIII). Employees earning between 0 and 2.4 times the minimum wage benefited the

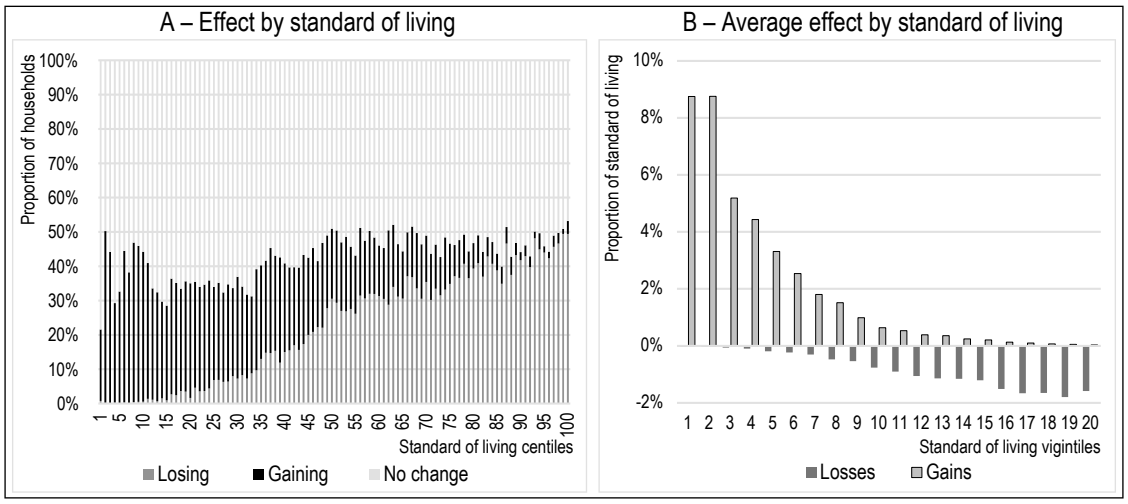
19. A benefit is considered to be redistributive if its proportion in relation to primary income decreases in line with standard of living or increases more slowly than income. A deduction is said to be redistributive if its proportion in relation to income increases with standards of living. It is considered to be neutral in terms of inequality if it is proportional to income.

Figure VII – **Monthly tax based on net wage as a proportion of the minimum wage (Smic) for a household with two children**



Sources: DREES case study model, authors' calculations.

Figure VIII – **Effect of the tax credit per dependant scenario**



Notes: The standard of living is that calculated according to the income tax in force in 2017.
Sources and coverage: See Table 2.

most. After this, the gain reduces as the amount of tax paid by households increases and where the family tax quotient applies in the counterfactual situation.

In the case of single-parent families, the gains are greater among the poorest households. However, losses occur among those earning in excess of 2.1 times the minimum wage. Indeed, these households do not benefit from the marital tax quotient and lose the benefit arising from the increase in the family tax quotient for single persons.

In this scenario, which involves the introduction of a flat-rate tax credit for each dependant, the number of households subject to taxation is 54.4%, an increase of 3.7 points. The effects on the poverty and inequality indicators are massive. The poverty rate falls to 11.0% (-2.2 points) and the poverty gap to 15.4% (-1.8 points). The Gini index falls by 11.4 points. The D9/D1 interdecile ratio (and the P95/P5 intervingtile ratio, respectively) falls from 3.16 to 3.05 (and from 4.76 to 4.53, respectively).

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In 2017, the marital and family tax schemes in the broad sense reduced tax revenue by 27.7 billion euros in metropolitan France. As a result of these schemes, 5 million households were no longer subject to taxation, 13 million households saw a reduction in their tax bill and 1 million households saw their tax bill increase when compared with a situation in which these

schemes would not exist. These estimations are made on the basis of unchanged behaviour or, more precisely, on the basis of the behaviour observed among the people in question according to the tax legislation in force and without adapting this to a change in the way that tax is calculated.

Sixty per cent of the gains associated with these schemes benefit couples with children. In addition, half of these gains are obtained by the wealthiest 25% of households due to the progressive nature of income tax. Indeed, the number of households that benefit and their average gains increase in line with standards of living, particularly as a result of the effect of the marital tax quotient, which is not legally capped. The average losses incurred by households that lose out are significantly smaller, below 0.03% of standard of living, and show a bell-shaped profile when compared with the standard of living. The average gains are higher, but increase sharply with standards of living: from less than 2% of standard of living for the poorest 20%, they exceed 4% of standard of living for the richest 50%. The wealthiest 10% see their standard of living increase by more than 5%.

Generally speaking, the redistributive effects of the socio-fiscal schemes are heavily dependent on who they are targeted at and the size of their budget. In order to extend the analysis, it would be necessary to simulate scenarios involving legislative variants inspired by foreign cases with a constant budgetary envelope. The findings presented in connection with family taxation remind us that the vertical and horizontal redistributive effects are strong, but underline that the horizontal and vertical dimensions can be reconciled to the degree decided upon by the legislator. An example in which there is a trade-off between horizontal and vertical redistribution is the cap that is only applied to the family tax quotient. As mentioned in the HCF report (2011), a plethora of possibilities can be envisaged (use of consumption units rather than tax units, flat-rate reduction or tax reduction that is proportional to income, consideration of the ranking of children or the partner's income, etc.). Conversely, the effects measured in this study are primarily based on the characteristics of income tax: the more progressive the scale, the greater the effects. However, recent changes in taxation have seen a shift in income taxation from income tax to the CSG (André & Guillot, 2014). This other income tax is not progressive and is paid on an individual basis. Therefore, the recent reductions in income tax in favour of increases in the CSG have lessened the effects of marital and family taxation within the tax system. □

Link to the Online Appendix:
https://www.insee.fr/en/statistiques/fichier/5430846/ES-526-527_Andre-Sireyjol_Online-Appendix.pdf

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