Inequality and Redistribution in France, 1990-2018: Evidence from Post-Tax Distributional National Accounts (DINA)

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Abstract. This paper presents post-tax Distributional National Accounts (DINA) for France. That is, we combine national accounts, tax and survey data in a comprehensive and consistent manner to build homogenous annual series on the post-tax, post-transfer distribution of national income by percentiles over the 1990-2018 period, with detailed breakdown by age, tax and transfer categories. We come with three main findings. First, taxes and transfers reduce total income inequality (as measured by the ratio between average incomes of the top 10% and bottom 50% groups) by 23% on average in France over this period. This is significant, but less than in the US (34%). The reason why overall inequality is much smaller in France than in the US (more than twice as small, according to this indicator) is entirely due to differences in pretax inequality (themselves due to a complex combination of factors: access to education, wage formation, etc.) rather than in secondary redistribution (i.e. policies affecting the gap between the pretax distribution and the post-tax post-transfer distribution of income). Next, due to the large role of indirect taxes, social contributions, and income capital exemptions, the overall profile of taxation is structurally regressive in France (i.e. very top groups pay lower effective tax rates than groups just below them), a feature that has been reinforced in 2017-2018. Third, monetary transfers benefit mostly older age groups in France, and leave unaffected the low relative position of younger age groups. These series are currently being extended to cover the entire 1900-2018 period and to better take into account in-kind transfers.

Section 1. Introduction

The issue of how to select the most adequate policies to reduce inequalities has attracted considerable interest both in academia and in general public debate, most notably with the significant increase documented over the last decades. However, despite numerous research efforts, comparable estimates of redistributive policies remain deceptively scarce, both across time and countries, thus limiting the possible analysis of the long-term determinant of inequality. In this paper, we attempt to construct long-term homogeneous series of post-tax income inequality for France, and show that the new resulting series can be used to better understand the determinants of inequality.

Following the pioneering work by Kuznets (1953) and Piketty (2003), a number of authors have used income tax data to construct long-run series of top income shares (see Atkinson and Piketty, 2007, 2010, for a global perspective on top incomes). Although these series have contributed to improve our understanding of inequality trends, they suffer from important limitations (Atkinson, Piketty and Saez, 2011). In particular, they cover only the top part of the distribution. They are based on fiscal income, which can diverge from national income because of tax exempt income, tax avoidance and evasion. Finally, they focus on pretax income inequality and are therefore silent on redistributive effects of public policies between and across countries. To overcome these shortcomings, two recent papers attempt to construct long-term income series of "distributional national accounts" (DINA): pretax and post-tax DINA series for the U.S. (Piketty, Saez and Zucman, 2018), and pretax income series for France (Garbinti, Goupille-Lebret and Piketty, 2018).

This paper has two main objectives. Our first objective is related to the measurement of income inequality. From a methodological perspective, our key contribution is to construct new French income series on the post-tax, post-transfer distribution of national income by percentiles over the 1990-2018 period, with detailed breakdown by age, tax and transfer categories. These series are obtained by combining national accounts, tax and survey data, and simulating or imputing all taxes and transfers, in a comprehensive and consistent manner. We also present and discuss different ways of measuring tax progressivity using alternative concepts of income.

Our second objective is to use these new series in order to better understand the redistributive impact of taxes and transfers on inequality. We also compare our French estimates with those from Piketty, Saez and Zucman (2018) for the U.S., as a first attempt to exploit cross-country differences in pre- and post-tax inequalities.

We obtain four main findings. First, taxes and transfers reduce total income inequality (as measured by the ratio between average incomes of the top 10% and bottom 50% groups) by 23% in France on average over the 1990-2018 period. This is significant, but less than in the US (34%). This conclusion applies both to upper-end and lower-end redistribution, and to every sub-period. The reason why inequality is much smaller in France than in the U.S. (more than twice as small, according to this indicator) is entirely due to differences in pretax inequality (which can themselves be attributed to a complex combination of factors: access to and financing of education and other skill-enhancing services; access to and organization of the health system; institutions affecting wage formation processes, including minimum wage, role of unions, etc.) rather than in secondary redistribution (i.e. policies affecting the gap between the pretax distribution and the post-tax post-transfer distribution of income). Our findings suggest that policy discussions on inequality, both in France and the US, should in the future focus on primary redistribution (i.e. policies affecting the pretax distribution of income) as much as on secondary redistribution. It is likely that this conclusion on the France vs. US comparison also applies to other European countries.

Second, we find that the redistribution of the French tax and transfer system has nevertheless increased over the period, starting from 17% in 1990-99 to 30% in 2010-18. This increased progressivity of the system comes mostly from reductions in non-contributive social security contributions for the bottom 50% of individuals and tax increases for the top 10%. This trend has counteracted the increase in pre-tax inequality leading to a relatively constant level of disposable income inequality in France, as opposed to the U.S. situation where the more modest increase in progressivity has not matched the dramatic increase in pre-tax inequality.

Third, due to the large role of indirect taxes, social contributions, and income capital exemptions, the overall profile of taxation is only mildly progressive, with high level of taxation for both low income and top income groups. The progressivity of the tax

system peaks in France for the top 1% group, and becomes regressive for the highest income shares (i.e. very top groups pay lower effective tax rates than groups just below them). This top-end regressivity of the French tax system was temporary halted in 2013-2016, but it reappeared in 2017-2018 with the reform of the wealth tax and the creation of a flat-tax for capital incomes.

Fourth, monetary transfers benefit mostly older age groups in France, and leave unaffected the low relative position of younger age groups. Monetary transfers represent about 4% of national income in France throughout the 1990-2018 period. On average, monetary transfers received by bottom 50% incomes represent approximately 7% of average national income, and about 2%-3% of average national income for the upper income groups (again relatively stable over the 1990-2018 period). These series are currently being extended to cover the entire 1900-2018 period and to better take into account in-kind transfers.

Apart from the income inequality literature, our study contributes to several strands of the literature. First, this paper relates to the large literature, initiated by Pechman and Okner (1974), that studies the progressivity and the tax burden of tax and transfer systems (for work related to France, see Bourguignon, 1998; Landais, Piketty and Saez, 2011; Chanchole and Lalanne, 2012; Eidelman, Langumier and Vicard, 2013; Bozio, Breda and Guillot, 2018).[1] Our key contribution to this literature is to construct long-term, annual series of pretax and post-tax income for France that provide a comprehensive view of how government redistribution affects inequality. Indeed, our French series cover the entire distribution, are fully consistent with national accounts, and take into account all forms of taxes and government expenditure.

Second, our study complements the macro literature that analyzes the role of taxes and transfers on inequality dynamics (Kaymak and Poschke, 2016; Hubmer, Krussel and Smith, 2017; Piketty, Postel-Vinay and Rosenthal, 2018). The use of our detailed micro series of pretax and post-tax income could improve the ability of

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[1] Bourguignon (1998); Chanchole et Lalanne (2012), and Eidelman, Langumier et Vicard (2013) use microsimulation models and household surveys to estimate the progressivity of the tax and transfer system for one or two given years. Bozio, Breda and Guillot (2018) analyzes the impact of social security contributions on labor income inequality over the 1976-2010 period. The paper most directly related to ours is Landais, Piketty and Saez (2011), which combine tax data with national accounts to estimate tax rates by pretax income groups for a given year. See also Piketty and Saez (2007), Mirrlees and al. (2010), Sutherland and Figari (2013) with EUROMOD, Bengtsson, Holmlund and Waldenström (2016), and OECD work by Zwijnenburg et al. (2016) for cross-country comparison exercises.

macroeconomic models to reproduce distributional dynamics over time (Ahn and al., 2018).

Third, our paper contributes to the broad literature on the determinants of pretax income inequality. This literature has typically discussed the relative role of education policies (Katz and Murphy, 1992; Chetty et al., 2017), minimum wage (Lee, 1999), compensation bargaining (Piketty, Saez and Stantcheva, 2014), international trade and technological change (Rosen, 1981), as driving forces of increased inequality. Our results suggests that such primary redistribution— policies, rules and mechanisms impacting pretax income inequality—could matter much more than secondary redistribution in explaining differences in overall inequality between the U.S, France and possibly other European countries. Our findings call for a better comprehension of the role of primary redistribution on inequality.

We should also emphasize that the present paper is part of a broader multi-country project, namely the WID.world project, with the aim of providing long-term homogeneous series of income and wealth consistent with national accounts in as many countries as possible in the coming years.[2]

The rest of this paper is organized as follows. In section 2, we describe our data sources and methodology. In section 3, we present our main results regarding the overall magnitude of secondary redistribution in France and the extent to which it reduces pretax inequality levels. In section 4, we present detailed results on the profile of tax progressivity and regressivity and the role played by different categories of taxes. In section 5, we present detailed results on the profile of transfers and the role played the different categories of transfers and the way they benefit to different age groups. In section 6, we offer concluding comments and discuss research perspectives.

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[2] See Saez and Zucman 2016; Garbinti, Goupille-Lebret and Piketty 2016; Martinez-Toledano (2017) for work on wealth inequality in the U.S., France and Spain, respectively. See also Morgan (2017), Alvaredo, Assouad and Piketty (2018), Novokmet, Piketty and Zucman (2018) and Piketty, Yang and Zucman (2018) for recent work on pretax income inequality in Brazil, the Middle East, Russia and China, respectively.

Section 2. Data sources and methodology

In this section we describe the concepts, data sources and main steps of the methodology that we use in this paper in order to construct our income distribution series. Broadly speaking, we combine three main types of data: national accounts; fiscal data (income tax returns); and household surveys. We first present our income concepts. We then describe our data sources and methods to derive pretax and post-tax income series for France over the 1990-2018 period. Complete methodological details of our French specific data sources and computations are presented in the Online Data Appendix along with a wide set of tabulated series, data files and computer codes.[3]

2.1. Income concepts and data sources

Income concepts

Our income distribution series are constructed using income concepts that are based upon national accounts categories.[4] As such, four basic income concepts (with a number of variants) are of interest: pretax national income and pretax factor income, post-tax disposable income and post-tax national income. By construction, average income per adult is equal to average national income per adult for all concepts (except post-tax disposable income). National income is defined as GDP minus capital depreciation plus net foreign income, following standard national accounts guidelines (SNA 2008).

Pretax income (or pretax national income) is our benchmark concept to study the distribution of income. Pretax income is equal to the sum of all income flows going to labor and capital, after taking into account the operation of the pension system, but

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[3] We also refer the readers to our companion paper (Garbinti, Goupille-Lebret and Piketty, 2018), where we further describe the sources and methods used for the construction of pre-tax DINA series for France. A longer and more complete discussion of the general methodological issues involved in creating DINA estimates (not specific to France) is presented in Alvaredo et al. (2016).

[4] The reason for using national accounts concepts is not that we believe they are perfectly satisfactory. Our rationale is simply that national accounts are the only existing attempt to define income and wealth in a consistent manner on an international basis.

before taking into account other taxes and transfers. That is, we deduct pension and unemployment contributions, and add pension and unemployment distributions.

Factor income (or pretax factor income) is equal to the sum of all income flows going to labor and capital, before taking into account the operation of the pension and unemployment system. That is, we do not deduct pension and unemployment contributions and exclude pension and unemployment distributions as they are not factor incomes. One problem is that retired individuals typically have very small factor income, so that inequality of factor income tends to rise mechanically with the fraction of old-age individuals in the population, which biases comparisons over time and across countries. This is why we use pretax national income as our benchmark concept of pretax income.[5]

Post-tax disposable income is defined as pretax income minus all forms of taxes plus all individualized monetary transfers.

Post-tax national income is equal to the sum of all income flows going to labor and capital, after taking into account the operation of the pension and unemployment system, and also after taking into account all forms of taxes and transfers (monetary transfers, in-kind transfers, and collective consumption expenditure). In other words, post-tax income is defined as post-tax disposable income plus in-kind transfers and collective consumption expenditure.

Note also that our income series refer to the distribution of income among equal-split adults (i.e. the income of married couples is divided into two).[6]

We compute national income and the various subcomponents of pretax and post-tax national income using the official national accounts established by the French

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[5] Note that looking at the distribution of factor incomes among the working-age population can yield additional insights: it allows to better measure the distribution of labor costs paid by employers (see our companion paper Garbinti, Goupille-Lebret and Piketty 2018 for a presentation of factor income series).

[6] Alternative series of pretax income at the tax-unit level (married couples and singles) as well as individualistic-adults series (i.e. labor income is allocated to each individual income earner within the couple) could be found in our companion paper Garbinti, Goupille-Lebret and Piketty (2018).

national statistical institute (INSEE) for the 1949-2018 period.[7] All data files and complete methodological details are given in Online Appendix A.

In the present paper, we investigate the impact of the tax and transfer system on inequality. Therefore, we focus on the construction and the comparison of pretax national income, post-tax disposable income, and post-tax income series.

Data sources

We start with the micro-files of income tax returns that have been produced by the French Ministry of Finance since 1970. We have access to large annual micro-files since 1988. These files include about 400,000 tax units per year, with large oversampling at the top (they are exhaustive at the very top; since 2010 we also have access to exhaustive micro-files, including all tax units, i.e. approximately 37 million tax units in 2010-2012). Before 1988, micro-files are available for a limited number of years (1970, 1975, 1979, and 1984) and are of smaller size (about 40,000 tax units per year).

These micro-files allow us to estimate the distribution of fiscal income, i.e. income reported on income tax returns. In order to estimate the distribution of national income (pretax and post-tax), we need to combine income tax micro-files with other data sources, namely national accounts and household surveys, and to apply a number of imputation/simulation rules. We start by describing how we move from fiscal income to total pretax income, before describing how we deal with taxes and transfers to obtain post-tax income.

2.2. Construction of pretax national income series (1990-2018)

We start with pretax national income series. The gap between fiscal income and national income can be decomposed into three components: tax-exempt labor income, tax-exempt capital income, and production taxes. Before we take each of these three components in turn, note that income tax micro-files allow us to split fiscal

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[7] For the transfers, we also rely on CNAF and DREES files that report the number of beneficiaries and the aggregate amount of each transfer since 1946.

labor income into three components (wages; pension and unemployment benefits; and labor component of mixed income, which we assume for simplicity to be equal to 70% of total mixed income) and fiscal capital income into four components (tenant-occupied rental income; dividend; interest; and capital component of mixed income, i.e. 30% of total mixed income).[8]

From fiscal labor income to pretax labor income

Tax-exempt labor income, which we define as the gap between national-accounts labor income and fiscal labor income, consists mainly of non-contributive social security contributions (SSCs) and, to a lesser extent, of non-taxable compensation items such as health benefits and a number of other in-kind benefits.[9] To capture total pretax labor income, we proceed as follows. We compute non-contributive SSCs (employer and employee) by simulating the complexity of the different SSC schemes in each year.[10] In the absence of specific information, we simply impute non-taxable compensation items in proportion to fiscal labor income.

From fiscal capital income to pretax capital income

Tax-exempt capital income raises more complicated issues. Fiscal capital income differs from national capital income for three main reasons. First, some capital income components are fully tax-exempt and therefore not reported in income tax returns. Tax-exempt capital income includes three main components: income going to tax-exempt life insurance assets[11]; owner-occupied rental income; other tax-

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[8] Fiscal capital income also includes realized capital gains, but we do not use this variable for imputation purposes in our benchmark series (because it is too lumpy). Income tax micro-files also allow us to split mixed income into different forms of self-employment activities (BIC, bénéfices industriels et commerciaux; BNC, bénéfices non commerciaux; BA, bénéfices agricoles), but we do not use this decomposition.

[9] Non-contributive SSCs refers to contributions funding either health care spending or child benefits. Note that we have also computed contributive SSCs (or unemployment and pension contributions), which are excluded by definition from pretax income but included in factor income (see Section 2.1).

[10] Our simulation takes into account the different SSC schedules as well as reductions in employer SSCs and flat-rate income tax (CSG and CRDS). For more details, see online Appendix B and stata code. See also Bozio, Bredat and Guillot 2018 for a more complete description of SSC schemes in France.

[11] More precisely, this category regroups income attributed to life insurance and pension funds. Before 1998, life insurance income was entirely exempt from income tax. Since 1998, only capital income withdrawn from the account are taxed (see Goupille-Lebret and Infante 2017 for more details). As a

exempt interest income paid to deposits and saving accounts. Second, some capital income components are included into the income tax returns but their aggregate may differ from those reported in national accounts due to tax avoidance or tax evasion. For example, a significant part of dividends is missing in the tax data.[12] Finally, corporate retained earnings and corporate taxes are not directly received or paid by individuals and are therefore excluded from income tax. One need to make implicit incidence assumptions on how to attribute them. As a result, these elements are either missing or under-reported in the income tax returns and need to be imputed.

Regarding owner-occupied housing, life insurance assets, and deposits and saving accounts, we use available wealth and housing surveys in order to impute these assets on the basis of labor income, financial income and age. We then attribute the corresponding asset income flows on the basis of average rates of return observed in national accounts for this asset class (See our companion paper Garbinti, Goupille-Lebret and Piketty 2018 for more details).

For capital income components reported in the income tax micro-files[13], we conduct the following reconciliation exercise. We simply adjust proportionally each of these capital income components in order to match their counterpart in national accounts (reported in Online Appendix A, Table A8).[14] The assumption behind this simple adjustment is that tax evasion and tax avoidance behaviors do not vary along each income-specific distribution. Alstadsaeter, Johannesen and Zucman (2019) provide evidence that tax evasion rises sharply with wealth. Our assumption is therefore very conservative and our results should be seen as a lower bound of the true level of income concentration.

Regarding corporate retained earnings and corporate taxes, we impute them in proportion to individual dividends, life insurance income, and interests, i.e. total

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result, total life insurance income reported in the tax data correspond to less than 5% of its counterpart in national accounts.

[12] Individuals can legally avoid dividend tax using complex tax optimization strategies. Such schemes imply that dividends have to be distributed to and kept in holding companies. Dividend tax will eventually occur when the holding company will distribute dividends to its shareholders.

[13] i.e. tenant-occupied rental income; dividends; interests from debt assets; and capital component of mixed income (i.e. 30% of total mixed income).

[14] That is, we multiply each individual capital income component reported in the micro-files by the corresponding national-income/fiscal-income ratio.

financial income excluding tax-exempt interest income paid to deposits and saving accounts.[15] More precisely we impute to individuals the fraction that can be attributed to individuals, i.e. we subtract the fraction of domestic corporate capital that can be attributed to the government.

Incidence of production taxes

Finally, note that production taxes (in the SNA 2008 sense) include a number of indirect taxes, which in effect are paid by corporations before they can distribute labor and capital income flows, and are therefore excluded from fiscal income.

These productions taxes are split into four categories: i) sales and excise taxes, which include value added taxes and several taxes on energy products, tobacco, alcohol beverages, among others; ii) professional taxes; iii) household property taxes; iv) taxes on wages. We attribute to individuals these taxes using the following incidence assumptions and imputation rules. First, commercial taxes and, sales and excise taxes are borne by consumers only, proportionally to consumption (disposable income minus saving). Second, we assume that household property taxes only fall on housing assets and attribute them to individuals in proportion to their housing assets. Finally, we consider taxes on wages only fall on labor and impute them proportionally to social security contributions.

More generally, we should stress that our implicit tax incidence assumptions are relatively rudimentary and could be improved in future estimates. However, we have tested a number of alternative tax incidence assumptions, and found only second-order effects on the level and time pattern of our pretax income series.

2.2. Construction of post-tax national income series (1990-2018)

To move from pretax to post-tax income, we deduct all taxes and add back all transfers. We now present briefly the different elements of the French tax and

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[15] In France, tax-exempt saving accounts (like livret A) are financial products that are regulated by the State and used to finance social projects.

transfer system and how we simulate them. A more complete description of the methodology can be found in Online Appendix B.

The French tax and transfer system

The French tax system includes a large variety of taxes that we can regroup into five categories: indirect taxes, capital taxes, progressive income taxes, flat income taxes, and non-contributive social contributions.

Indirect taxes make up about 14% of national income today. It includes sales and excise taxes (80% of total indirect taxes), professional taxes, and residence taxes. Capital taxes amount to about 4% of national income and consist of corporate taxes, wealth taxes, property taxes, and bequest and gift taxes.

From 1991, France is characterized by the coexistence of two taxes on income: a progressive income tax — which is the historical income tax created in 1914 —and a flat income tax called general social contribution.[16] In addition to these two income taxes, capital income is also subject to several other types of social contributions with flat tax rates.[17] We regroup the general social contribution and the other types of social charges under the general term of "Flat income taxes" (7% of national income) and refers to the historical income tax as progressive income taxes (4% of national income).

Finally, non-contributive social contributions include all SSCs that are not dedicated to the financing of the pension and unemployment system as well as taxes on wages. Altogether, they make up to 11% of national income.

Government spending can be decomposed into three distinct categories: monetary transfers, in-kind transfers, and collective consumption expenditure.

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[16] The historical income tax is called "Impôt sur le revenu" (IR) and the general social contribution is called "contribution sociale généralisée" (CSG).

[17] Note that since 2018, the two income taxes and the different social contributions have been merged into a unique 30% flat tax for capital income.

Monetary transfers amount to about 4% of national income and include various types of housing benefits, family benefits, and social benefits.[18]

In-kind transfers are all transfers that are not monetary (or quasi-monetary) and can be individualized. They correspond to individual goods and services produced directly or reimbursed by government. In-kind transfers make up to 20% of national income (including 8% for health, 6% for education and 1.5% for culture and recreational goods and services).

Collective consumption expenditure regroups all consumption services that benefit to the community in general and cannot be individualized (spending on defense, police, the justice system, public infrastructure, etc.). It amounts to 10% of national income.

Simulation and imputations

In order to simulate the French tax and transfer system, we proceed as follows.

First, we exploit the richness of the income tax micro-files to simulate very precisely all monetary transfers and taxes levied on income (progressive and flat income taxes, and social security contributions). In particular, we are able to take into account all changes in tax schedules or specific tax deductions, exemptions and credits over time. We also use all socio-demographic variables reported in micro-files (number and age of dependents, marital status, disability status, etc.) in our simulation exercises.

Second, when the appropriate tax base is not directly observable in our micro-files, we use our estimated variables of wealth[19] and income as a proxy. Wealth taxes, property taxes, and residence taxes are computed using our estimated values of taxable wealth, housing assets, and rents paid, respectively. Although imperfect, this methodology still allows us to simulate the different tax schemes and the specific

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[18] The housing benefits regroup "Allocation de Logement Familiale" (ALF), "Allocation de Logement Personnalisée" (APL) and "Allocation de logement sociale" (ALS). The family benefits include "Allocation Familiale" (AF), "Complément Familial" (CF), "Allocation Pour Jeune Enfant" (APJE), "Prestation d'Accueil du Jeune Enfant" (PAJE), "Allocation de Rentrée Scolaire" (ARS) and "Allocation de Soutien Familial" (ASF). The social benefits regroup "Revenue de Solidarité Active" (RSA), "Prime d'Activité" (PPA), "Minimum Vieillesse" (MV) and "Allocation de Solidarité aux Personnes Agées" (ASPA).

[19] See Garbinti, Goupille-Lebret, Piketty (2016) for details about the construction of our wealth series.

exemptions, discounts and tax cap for low-income earners, disabled, widows or elderly. We should also stress that we have made every attempt to collect and use additional information from official reports to check and improve our simulations. For example, our simulations of wealth taxes are fully consistent with wealth tax tabulations, which report the number of taxpayers as well as average taxable wealth and tax paid by tax bracket. The number of beneficiaries of each monetary transfers is also consistent with the statistics provided by official reports (CNAF and DREES files).

Third, we have to impute the remaining taxes and transfers based on rules and tax incidence assumptions. As explained in the previous section, professional taxes, and sales and excise taxes are assumed to be bore by consumers only, proportionally to their consumption (disposable income minus saving). Corporate taxes is allocated proportionally to dividends, life insurance income, and interests. We now present the choices we made to allocate in-kind transfers and collective expenditure. As we know relatively little about who benefits from this government spending, we impute them based on two alternative scenarios. In our main scenario, we follow the choice made by Piketty, Saez and Zucman (2018) to impute in-kind transfers and collective expenditure proportionally to post-tax disposable income. This scenario has the advantage of being neutral: it assumes that the level of inequality is not affected by the provision of these transfers. This seems to be the most reasonable assumption to start with. Another advantage of this scenario is that French and U.S. post-tax income shares can be easily compared to each other as they rely on the same methodology. In order to assess the robustness of our series, the second scenario consists in distributing equally in-kind transfers (fixed amount per adult) rather than proportionally to post-tax disposable income. Online Appendix Figure 1 shows that the level of post-tax income inequality is relatively more important when using our alternative scenario (fixed amount per adult). However, the trend is not impacted by the methodological choice because in-kind transfers have been constant at around 18%-20% of national income over the period. We should stress that there are of course multiple ways of allocating in-kind transfers and collective expenditure. Our imputations of public good could be improved in future estimates.

Finally, in order to ensure that aggregate pretax and post-tax national incomes match exactly with aggregate national income, we follow Piketty, Saez and Zucman (2018) and attribute 50% of government deficit (or surplus) in proportion to taxes and 50% in proportion to transfers and expenditures. This assumes that fiscal adjustment will be borne equally by taxes and spending. In practice, this makes very little difference (except in years with very large deficit or surplus).

Section 3. How much does secondary redistribution reduce inequality?

We start by presenting our main results regarding the overall magnitude of secondary redistribution in France and the extent to which it reduces pretax inequality levels. In Section 4 and 5, we will present detailed decompositions by categories of taxes and transfers.

We report on Figure 1a the general evolution of pretax income inequality over the 1990-2018, as measured by the shares of total pretax income going to the top 10%, the bottom 50% and the middle 40% (i.e. the group in between the first two). The share going to the middle 40% has been relatively stable (a little above 45%), while the top 10% share has increased somewhat (which used to be about 30%, and seems to be heading toward 35%), at the expense of the bottom 50% share (which used to be a little below 25% and seems to be heading toward 20%). The general trend clearly goes in the direction of rising inequality, though it is of much smaller magnitude than the trend observed in the US (more on this below). The trend might have been temporarily halted by the 2008 recession, which led to a pause in top income growth.

We report on Figure 1b the evolution of the inequality of disposable income, i.e. pretax income minus all taxes plus all monetary transfers.[20] As one can see from Figures 1a-1b, secondary redistribution (i.e. the operation of taxes and monetary transfers) tends to reduce income inequality. In particular, the top 10% income share is reduced, while the bottom 50% income share is increased, so that at the end of the period both shares are virtually identical when we look at the distribution of disposable income, in spite of the large gap between the two when we look at the distribution of pretax income (see Figure 2a). Secondary redistribution has a more moderate impact on the gap between the income shares of the top 10% and the middle 40% (see Figure 2b).

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[20] In Appendix Figures XX, we also provide series on the inequality of post-tax income (i.e. disposable income plus in-kind transfers and collective consumption goods). We have decided to focus upon our findings regarding disposable income inequality because the allocation of in-kind transfers and collective consumption goods may be sensitive to imputation choices (see discussion in Section 2).

We attempt to quantify the overall magnitude of secondary redistribution in France over the entire 1990-2018 period on Table 1. As one can see, the top 10% income share is reduced by 9% by secondary redistribution on average over this period, while the bottom 50% income share is increased by 19% (and the middle 40% share is left virtually unchanged). One simple inequality indicator which can be used to assess the extent of redistribution is the ratio between the average income of the top 10% income group and the average income of the bottom 50% income group. In terms of pretax income, this ratio is equal on average to 7.1 over the 1990-2018 period, i.e. on average top 10% income earners make 7.1 times more than bottom 50% income earners (this follows mechanically from the fact that their income share is about 1.4 times larger than the bottom 50% income share, in spite of the fact that they are five times less numerous). In terms of disposable income, this ratio is reduced to 5.45, i.e. a reduction of 23% (see Table 1). In that sense, one can say that secondary redistribution reduced pretax inequality by 23% in France on average over the 1990-2018 period.

In the appendix, we also do the same computations using other inequality indexes such as the Gini index or the Theil index, and we find similar orders of magnitude.[21] We tend to prefer our simple indicator based upon the income ratio T10/B50, as it is more intuitive. Also it allows for a clearer decomposition of the role played by inequality and redistribution in the upper and lower segments of the distribution (while synthetic indexes like Gini and Theil tend to blur these distinctions). For instance, one can see that the 23% reduction in inequality comes primarily from the decline from bottom-end inequality. That is, top-end inequality (as measured by the ratio T10/M40 between the average income of the top 10% and the average income of the middle 40%) is reduced by 6% on average over the 1990-2018 period, while bottom-end inequality (as measured by the ratio M40/B50 between the average incomes of the middle 40% and the bottom 50%) is reduced by 18% (see Table 1).

How large is the reduction of inequality brought by secondary redistribution in France? While a 23% reduction in inequality is certainly significant, it is worth noting that this is not particularly large in comparison to the US. Piketty, Saez and Zucman

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[21] See Appendix Figures and Tables.

(2018), using the very same methodology, find that secondary redistribution reduces inequality – as measured by the T10/B50 ratio – by 34% on average over the 1990-2015 period (see Table 2). This larger magnitude of U.S. secondary redistribution is true both in the upper and lower parts of the distribution: the T10/M40 ratio is reduced by 13% in the US (vs. 6% in France), while the M40/B50 ratio is reduced by 25% in the US (vs. 18% in France). If we make similar computations for the different sub-periods (1990-1999, 2000-2009, 2010-2018), we always find the same rankings: the overall magnitude of secondary redistribution has increased in both countries over the 1990-2018 period, an increase which one can interpret as a policy response to rising inequality of pretax income (in particular due to the deteriorating employment and labor earning prospects of lower income groups), but for each sub-period the magnitude of secondary redistribution appears to be larger in the US than in France, both for the upper and lower parts of the distribution (see Table 2).

These findings certainly do not imply that secondary redistribution plays no important role in France. The magnitude of the reduction of inequality brought by secondary redistribution is highly significant in France: indeed secondary redistribution was able to annihilate the rise in pretax inequality in France over the 1990-2018 period, while it was not able to do so in the US, given the huge rise in pretax inequality (see Figures 3a-3c). However these findings imply that primary redistribution should receive at least as much attention as secondary redistribution.

We define primary redistribution (sometime referred to as "predistribution") as the set of policy and legal tools that can affect the primary distribution of income. This includes a large set of policies and institutions, including the education system (particularly the inequality in education spending across social groups), the labor market (especially the changing level of the minimum wage and the various legal rules affecting the role of unions and the bargaining power of workers), and other policies affecting the distribution of primary assets and capabilities (including the health system, the inequality of wealth and inheritance, etc.). Of course the fiscal system is part of primary redistribution, first because taxes are needed to pay for publicly funded education and other social services, and next because steeply progressive taxation of income and wealth can affect the formation of top end compensation packages and wealth inequality (see e.g. Piketty, Saez and Stantcheva (2014) and Piketty 2014). However we prefer to refer to these policies,

rules and mechanisms as "primary redistribution" because they affect inequality by impacting pretax inequality, as opposed to "secondary redistribution", which reduces inequality of disposable income for a given level of pretax inequality.

Our findings indicate that the only reason why overall inequality is smaller in France than in the US (and it is indeed much smaller: more than twice as small) is due to differences in pretax inequality. This is due both for the top 10% share (see Figure 3a) and the bottom 50% share (see Figure 3c). If we look at the evolution of our favored inequality index – the ratio T10/P50 between the average income of the top 10% income group and the average income of the bottom 50% income group – over the 1990-2015 period, we find that it is has increased from 11.4 to 18.9 in the US in pretax terms, and from 6.2 to 7.4 in France. Secondary redistribution has a larger magnitude in the US than in France, but this is far insufficient to compensate such a huge gap in pretax inequality: the T10/P50 ratio rose from 8.1 to 11.5 in the US, and declined slightly from 5.2 to 5.1 in France (see Figure 3c).[22] Needless to say, we are unable in the context of the present paper to identify the exact role played by the various policies and rules to account for the fact that pretax inequality is so much larger in the US than in France (e.g. the role played by the inequality in education spending, the level of the minimum wage, the health system, etc.). However our findings suggest that policy discussions in both countries should in the future focus on primary redistribution as much as on secondary redistribution. In the case of France, the main lesson is that we should be concerned both about making secondary redistribution more progressive and more effective (an issue we address in the next two sections) and about the promotion of policies that can reduce the inequality of primary incomes (particularly via the education system and labor market rules). In the case of the US, the main lesson is certainly that the key priority is to design policies that can correct for the collapse of the bottom 50% pretax income share and to improve the employment and labor earning prospects of lower income groups (which might require some drastic reform in the financing and organization of the education and health systems, as well as regarding the level of top end fiscal

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[22] We show in the appendix that the differences in old-age pension system between the two countries account for a relatively small part of these differences, i.e. we find roughly the same evolutions when we restrict to working age population. See Appendix Figures.

progressivity, which in postwar decades played a large role to curb down top managerial compensation and top-end wealth concentration of income and wealth).

Section 4. Decomposition of the structure of tax progressivity

We now provide detailed decomposition by tax categories and finer analysis of the overall progressivity of the French tax system. The first feature of the French tax system that needs to have in mind that the overall tax burden is relatively large: around 55% of national income if we include "contributive taxes" (i.e. social contributions that are used to finance pensions and unemployment insurance), and about 40% of national income if we exclude "contributive taxes" (see Figures 4a-4b). This large level of taxation – even when we exclude "contributive taxes" – is largely the counterpart of the relatively large set of public services and primary goods (e.g. education and health) financed by taxation, and which contribute to the formation of the distribution of capabilities and pretax income inequality.

The second important feature of the tax system is that it relies heavily on indirect taxes (such as the value-added tax, energy taxes, etc.), social contributions and flat income taxes (the so-called CSG, or *contribution sociale généralisée*, aimed primarily at financing the health system), and relatively little on capital taxes (a category in which includes corporate income taxes as well as inheritance and wealth taxes) and progressive income taxes (see Figure 4b).

If we know look at the overall profile of taxes in France, the main conclusion follows almost directly from the previous observation. The very large importance of indirect taxes (which tend to hit lower income groups at higher rates, because they tend to consume a higher fraction of their incomes) and social contributions (which also hit lower income groups at higher rates, both because they are partly capped and because they partly exempt capital incomes) create powerful structural forces pushing in the direction of a regressive tax system. This is partly compensated by progressive income taxes and capital taxes, so that the overall profile of the tax system is approximately flat over most of the distribution, except at the very top (usually within the top 1% or top 0,5%), where effective tax rates tend to fall. The extent to which the tax system becomes regressive at the top of the distribution varies significantly over years, however, and depends on how one measures tax progressivity or regressivity.

One way to proceed is to look at the distribution of factor income among working age adults, and to consider all taxes, including "contributive taxes". Given the very large importance of social contributions, and the fact that most of the contributions financing pensions and unemployment insurance are capped and exclude capital income, this leads to a tax profile that is strongly regressive at the very top. This is true throughout the 1990-2018 period, in particular from 1990 (see Figure 5a) to 2010 (see Figure 5b). This is less so in 2013-2016, where the profile is almost flat at the very top (see Figure 5c), due to a number of tax reforms conducted during this time period, in particular the inclusion of capital income into the progressive income tax schedule. However the tax system became again more regressive at the very top in 2017-2018 (see Figure 5d), due in particular to the reform of the progressive wealth tax (which now exempts all financial and business assets, i.e. most of the assets owned by top wealth holders) and the introduction of a flat tax for capital income.

Another way to proceed is to look at the distribution of pretax income, and to consider all taxes except "contributive taxes". This reduces the weight of social contributions, so this tends to downplay the regressivity of the tax system. The overall profile becomes slightly progressive over most of the distribution, and is still regressive at the very top. Between 1990 and 2010, the tax system becomes more progressive in the bottom part of the distribution, due to the reduction of employer social contributions on bottom wages (see Figures 6a-6b). In 2013-2016, the tax profile becomes slightly progressive at the very top, due to the tax reforms refereed to above (see Figure 6c). However it becomes regressive again for top income holders in 2017-2018 (see Figure 6d).

Yet another way to look at progressivity is to rank individuals by wealth percentile rather than by income percentile, or by using some combination of income and wealth, for instance some form of "augmented income" concept, define as the sum of income and wealth divided by life expectancy. If we do so, then the tax system becomes much more strongly regressive (see Figures 7a-7b). We believe all these

different ways of looking at the progressivity of the tax system are meaningful and complementary to one another.[23]

Ideally, one may want to look at progressivity by considering the percentiles of lifetime income of individuals belonging to given cohort, which in effect will lead to combination of income and inherited wealth. The data at our disposal does not allow us to do this completely, but looking at some simple combination of income and wealth, for instance with the "augmented income" concept is a way to go in this direction. Not taking wealth at all into account when assessing the progressivity of a tax system seems a bit extreme. In order to illustrate this point, note that the evolution of effective tax rates paid by the top 1% group in France in recent decades looks very different depending on whether one considers top income, top wealth or top augmented income (see Figures 8a-8c).

Finally, we should point out that this result about the structural top-end regressivity of the French tax system obviously does not mean that top income and top wealth individuals pay little taxes in France. The main feature of the French tax system – and to a large extent of most European tax systems – is that everybody has to pay relatively high taxes in order to finance for the large level of public good provision. The point is simply that in the general context of a system where everybody pays a lot of taxes, very top individuals tend to pay somewhat smaller effective tax rates, which can be difficult to justify and can lead individuals in the lower and middle segments of the distribution to question the legitimacy of the entire system and ask tax cuts for themselves. The usual argument that is given to justify top-end regressivity – i.e. in the context of free capital flows and little policy coordination, very rich individuals can move to other countries if we ask them to pay the same tax rates as poorer people do – is really a double-hedge argument, as many poorer individuals might conclude that they also want to benefit from lower tax rates (possibly at the cost of lower public good provision), and/or that the solution is to withdraw from international economic and financial integration altogether.

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[23] A complementary approach to this exercice could be to depict the evolution of tax progressivity over lifetime horizons such as Bengtsson et al. (2016). This would require access to panel data, which are not available for France.

We should also stress that if anything our estimates probably underestimate top-end regressivity: e.g., whenever there is a gap for a given income category (say for dividends) between amounts reported in tax returns and amounts recorded by national accounts, we attribute the missing income in a proportional manner to all income holders. In practice it is likely that high income holders use more intensively the various legal, semi-legal or non-legal schemes allowing to reduce the amount of taxable income (e.g. via various offshore entities). Finally, the estimates available for the US suggest that the overall tax profile does not display such a top-end progressivity. This seems to be due both to the lower level of regressive taxes (indirect taxes and social contributions) in the US, and also to the fact that the gap between capital income flows recorded in tax returns and in national accounts appears to be smaller (possibly due to greater tax enforcement capacity and/or less intense tax competition with neighboring countries). We should stress however that more data transparency would be needed in both countries and around the world in order to provide more precise and robust estimates of the overall profile of tax burden by income and wealth percentiles.

Section 5. Decomposition of the structure of transfers

We now provide detailed decomposition by transfer categories and finer analysis of the overall progressivity of the French transfer system. Excluding pensions and unemployment benefits, the total value of transfers – including monetary transfers, in-kind transfers (in particular education and health) and collective consumption goods (including police, public infrastructures, etc.) – has been relatively stable in France over the 1990-2018 period, around 30-35% of national income (see Figure 9a). It should be noted however that monetary transfers represent a relatively modest part of the total, i.e. about 4% of national income in France. Monetary transfers can themselves be split into three major components, namely social benefits (including the minimum income scheme), family benefits and housing benefits (see Figure 9b).

These monetary transfers have always been targeted toward lower income groups, and the level of progressivity and targeting appears to have been relatively stable over the 1990-2018 period, at least as a first approximation. That is, throughout the period, we find that bottom income groups have received the equivalent of about 8% of average national income in monetary transfers, while upper income groups have received equivalent of about 2% of average national income (see Figure 10a). We see little trend in these patterns over time (see Figure 10b).

Our estimates also allow us to decompose the redistributive role of taxes and transfers by age group. The interesting finding is that secondary redistribution seems to have relatively little impact on the relative income of the different age groups, in spite of the fact that age-based inequality is relatively large. The only clear pattern is that older individuals (over age 60) tend to benefit a little more than others, mostly at the expense of the 50-to-60 age group (see Figures 11a-11b). This again seems to apply throughout the period. The low relative position of younger individuals (especially 20-to-30 year-old) is virtually unaffected by secondary redistribution. This can be related to the fact that younger individuals (below 25) do not have access the minimum income scheme, and more generally to the fact that family allowances play a relatively large role in the French transfer system.

Section 6. Concluding comments and research perspectives

In this paper, we have presented post-tax Distributional National Accounts (DINA) for France. That is, we have combined national accounts, tax and survey in a comprehensive and consistent manner to build homogenous annual series on the post-tax, post-transfer distribution of national income by percentiles over the 1990-2018 period, with detailed breakdown by age, tax and transfer categories.

We should stress again that our methods and results should be viewed not as a final product, but rather as part of an on-going attempt to provide more and more complete and transparent inequality statistics. As better sources and methods become available, we will revise and improve our series accordingly. In particular, we are currently extending our series to cover the entire 1900-2018 period and to better take into account in-kind transfers, and future versions of this work will include these extended series.

Finally, we emphasize that many of the important policy issues touched upon in this work – e.g. regarding the respective role of primary and secondary redistribution – can only be analyzed more fully when we have more countries with consistent pretax and posttax DINA series. It is the purpose of the WID.world project to encourage and standardize the collection of such inequality series, so as to allow for a better informed public discussion on these important issues.

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Table 1. How much does fiscal redistribution reduce inequality in France?

Income shares (averages 1990-2018)	Pretax	Disposable	Disposable /Pretax
Top 10%	31,6%	28,8%	91%
Middle 40%	46,2%	44,9%	97%
Bottom 50%	22,2%	26,4%	119%

Inequality indicators (ratios between average incomes) (averages 1990-2018)	Pretax	Disposable	Disposable /Pretax
Total inequality (T10/B50)	**7,11**	**5,45**	**77%**
Upper inequality (T10/M40)	2,73	2,57	94%
Lower inequality (M40/B50)	2,61	2,13	82%

Reading. Total inequality, as measured by the ratio between the average incomes of the top 10% and the bottom 50%, drops from 7,11 to 5,45 in France on average over the 1990-2018 period, i.e. by 23%, when we look at the distribution of disposable income (after all taxes and cash transfers) rather than at the distribution of pretax income.

Table 2. Fiscal redistribution in France: comparisons across time periods and with the US

Inequality indicators (ratios between average incomes), Disposable/Pretax	France 1990-2018	1990-1999	2000-2009	2010-2018
Total inequality (T10/B50)	**77%**	**83%**	**77%**	**70%**
Upper inequality (T10/M40)	94%	98%	95%	89%
Lower inequality (M40/B50)	82%	85%	81%	79%

Same for the US	1990-2015	1990-1999	2000-2009	2010-2015
Total inequality (T10/B50)	**66%**	**67%**	**66%**	**62%**
Upper inequality (T10/M40)	87%	88%	86%	87%
Lower inequality (M40/B50)	75%	76%	77%	71%

Reading. Total inequality, as measured by the ratio between the average incomes of the top 10% and the bottom 50%, drops by 23% in France on average over the 1990-2018 period, and by 34% in the US on average over the 1990-2015 period.

Figure 1a. Pretax income inequality in France, 1990-2018
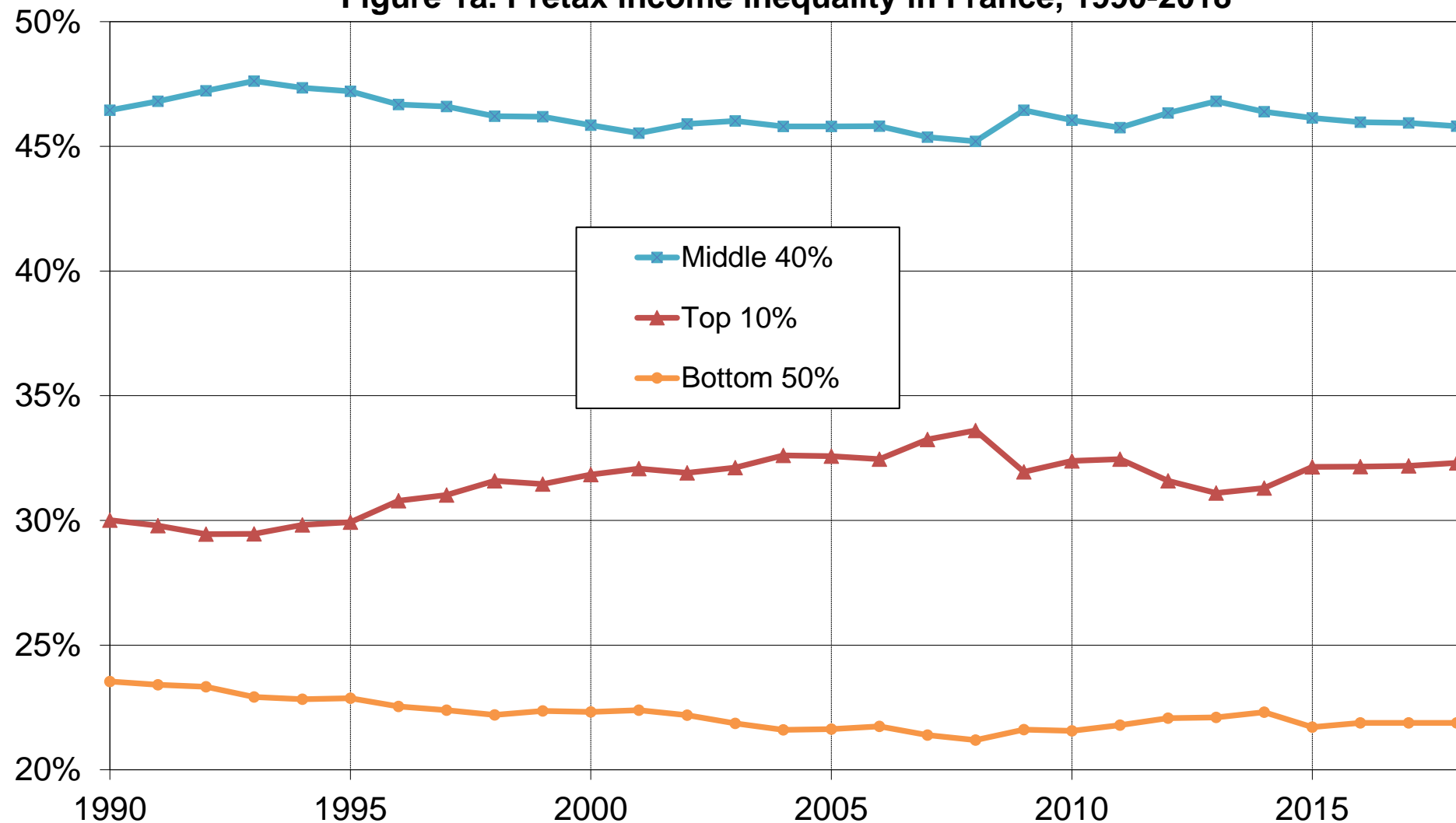
Distribution of pretax national income (before all taxes and transfers, except pensions and unempl. insurance) among adults. Shares in total pretax income. Equal-split-adults series (income of married couples divided by two).

Figure 1b. Disposable income inequality in France, 1990-2018
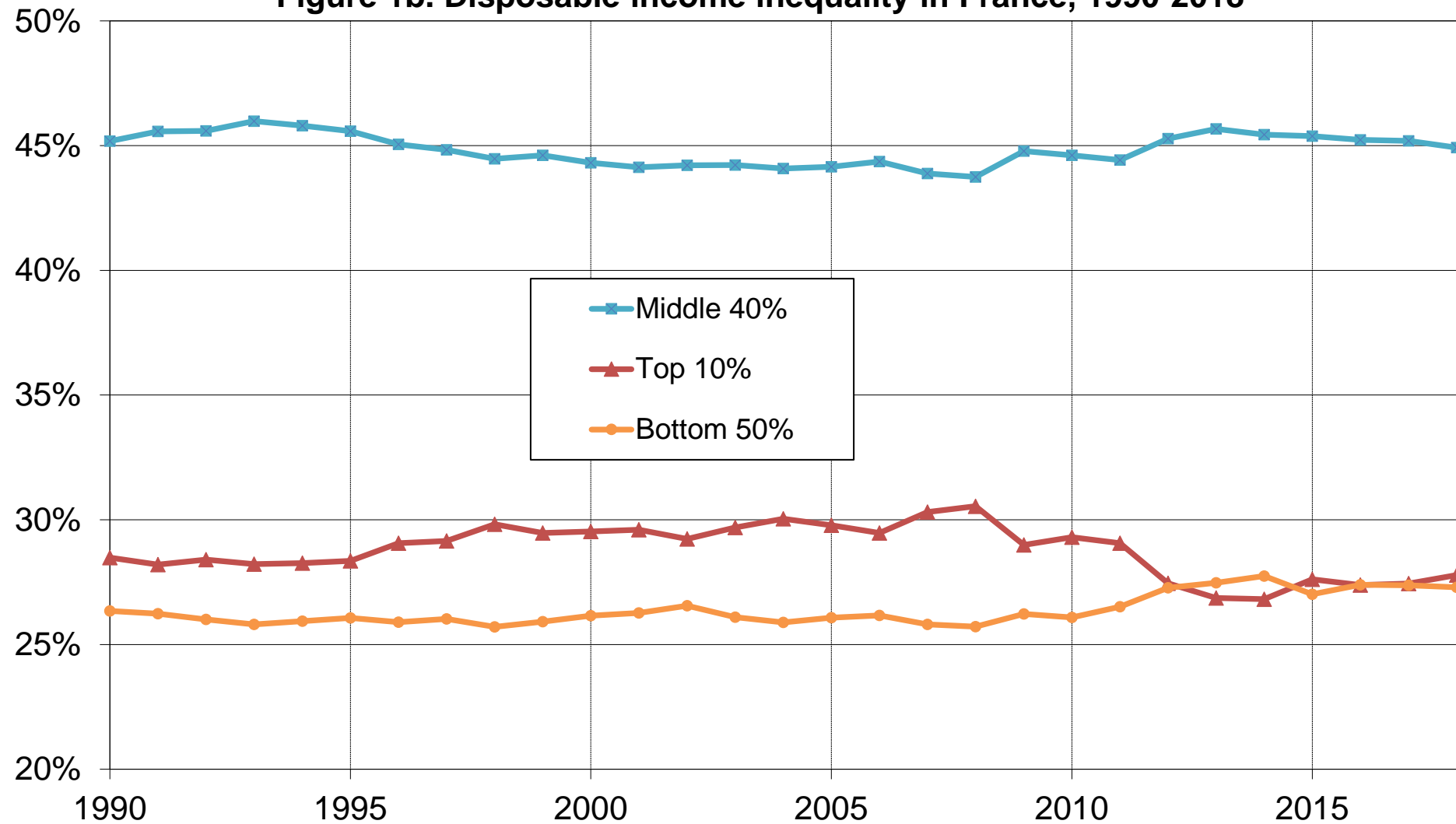
Distribution of disposable income (pretax income minus all taxes plus monetary transfers) among adults.
Shares in total disposable income. Equal-split-adults series (income of married couples divided by two).

Figure 2a. Top 10 % and bottom 50% income shares: pretax vs. disposable
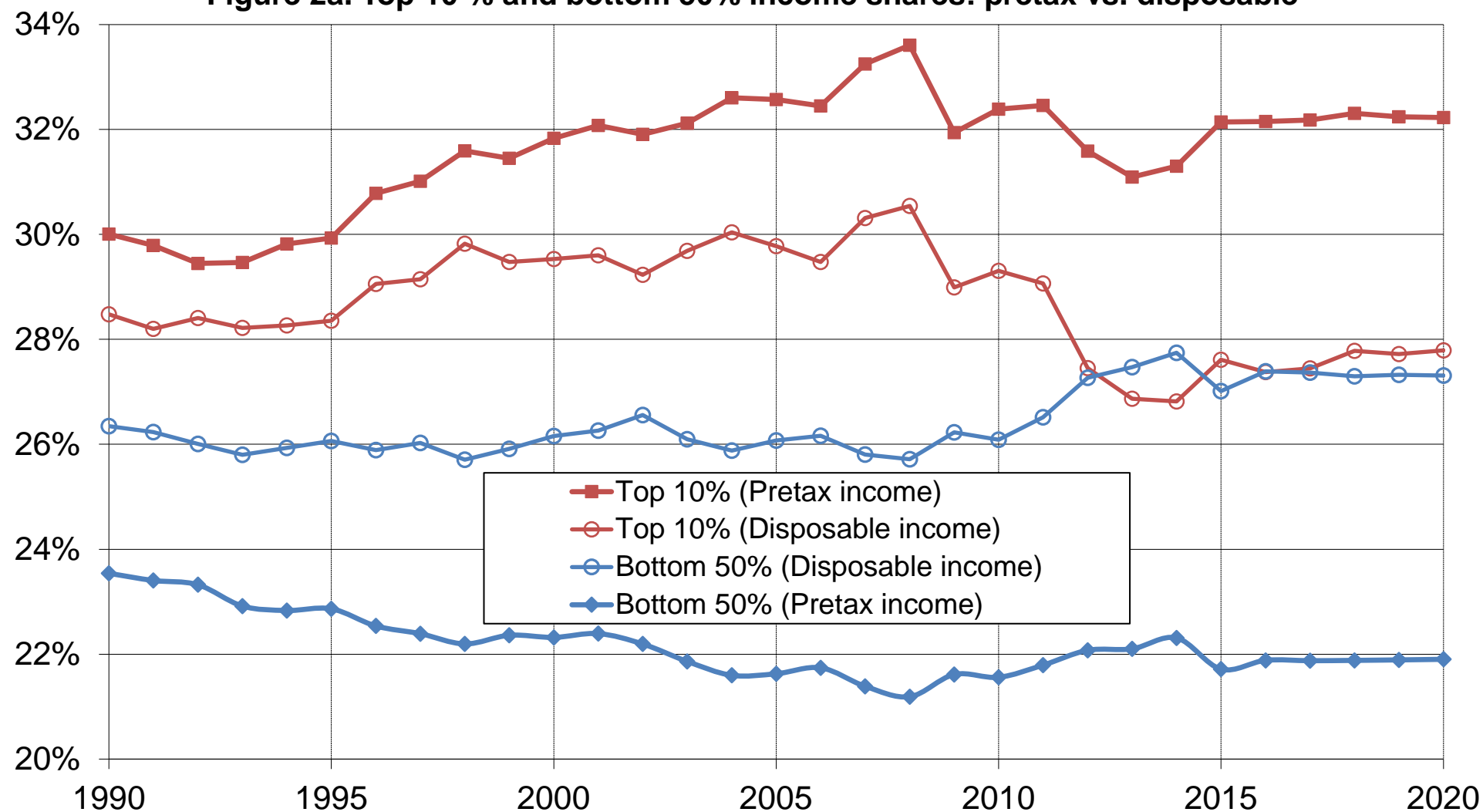
Distributions of pretax national income and disposable income among adults.
Shares in pretax and disposable income. Equal-split-adults series (income of married couples divided by two).

Figure 2b. Top 10 % and middle 40% income shares: pretax vs. disposable
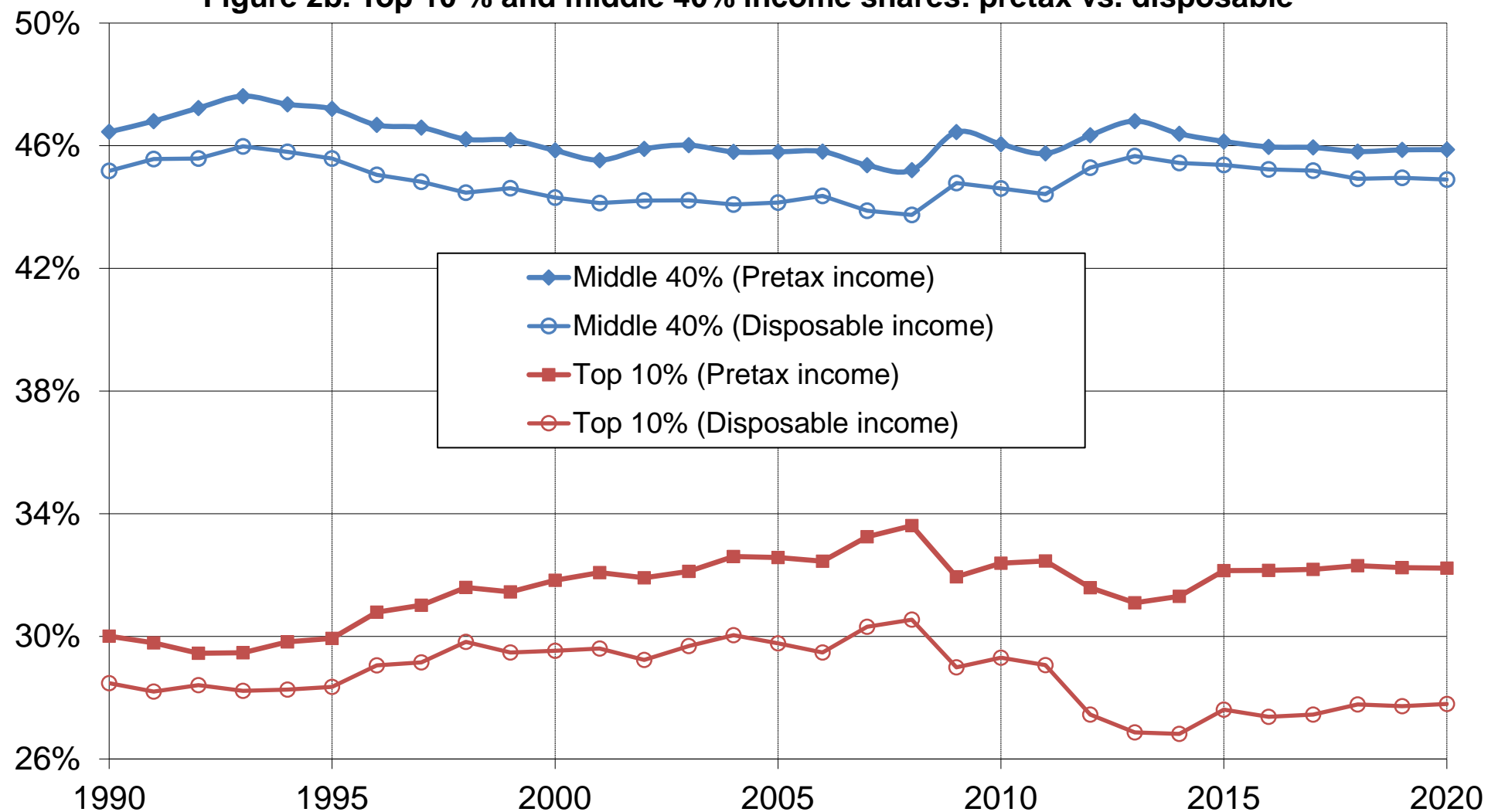
- Middle 40% (Pretax income)
- Middle 40% (Disposable income)
- Top 10% (Pretax income)
- Top 10% (Disposable income)

Distributions of pretax national income and disposable income among adults.
Shares in pretax disposable income. Equal-split-adults series (income of married couples divided by two).

Figure 3a. Top 10% income share: France vs U.S. (pretax and disposable income)

Legend:
- U.S Pretax income
- U.S. Disposable income
- France Pretax income
- France Disposable income
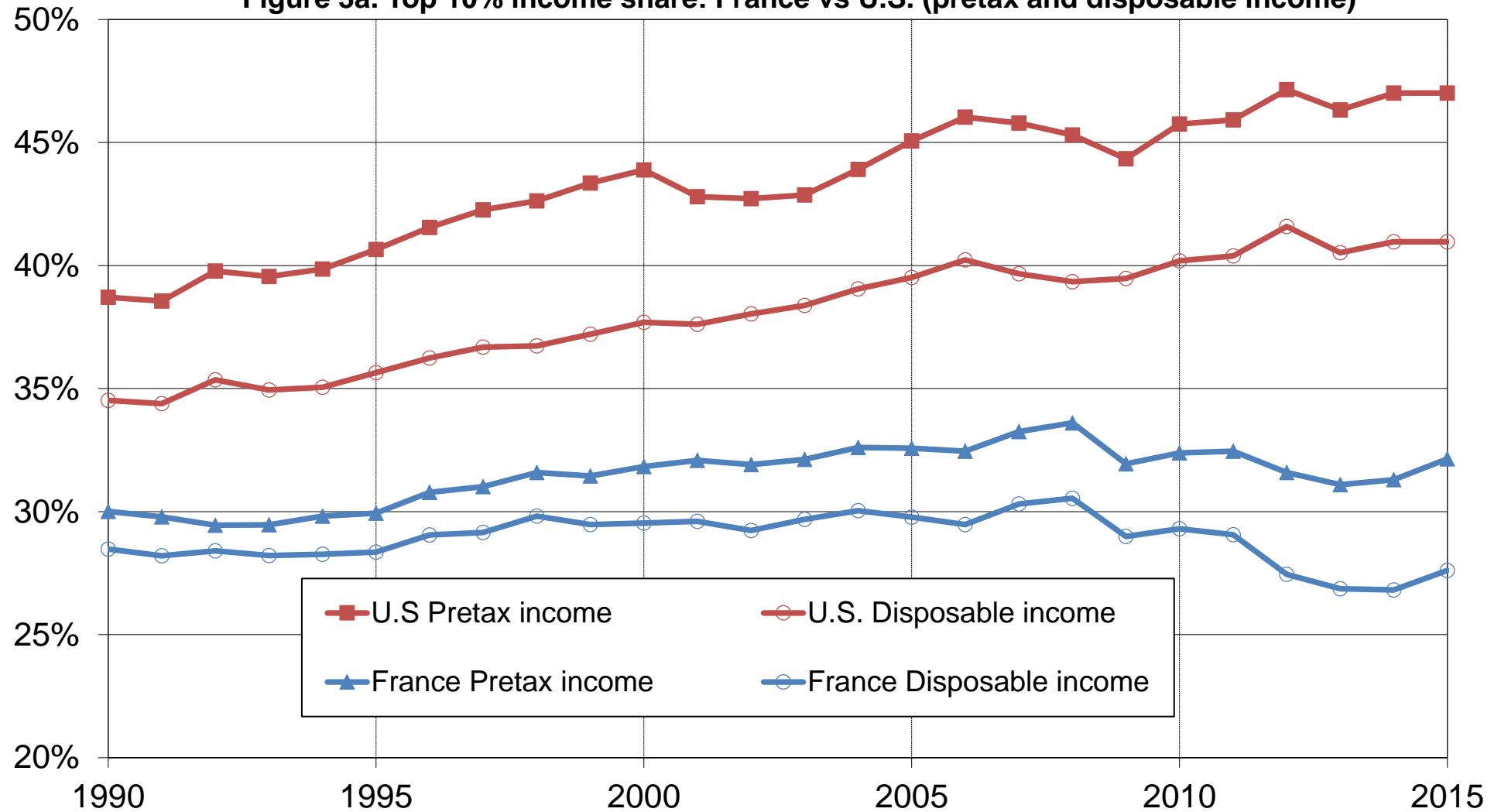
Distribution of pre-tax and disposable income among adults.
Equal-split-adults series (income of married couples divided by two).

Figure 3b. Bottom 50% income share: France vs U.S. (pretax and disposable income)

Legend:
- U.S. Disposable income
- U.S Pretax income
- France Disposable income
- France Pretax income
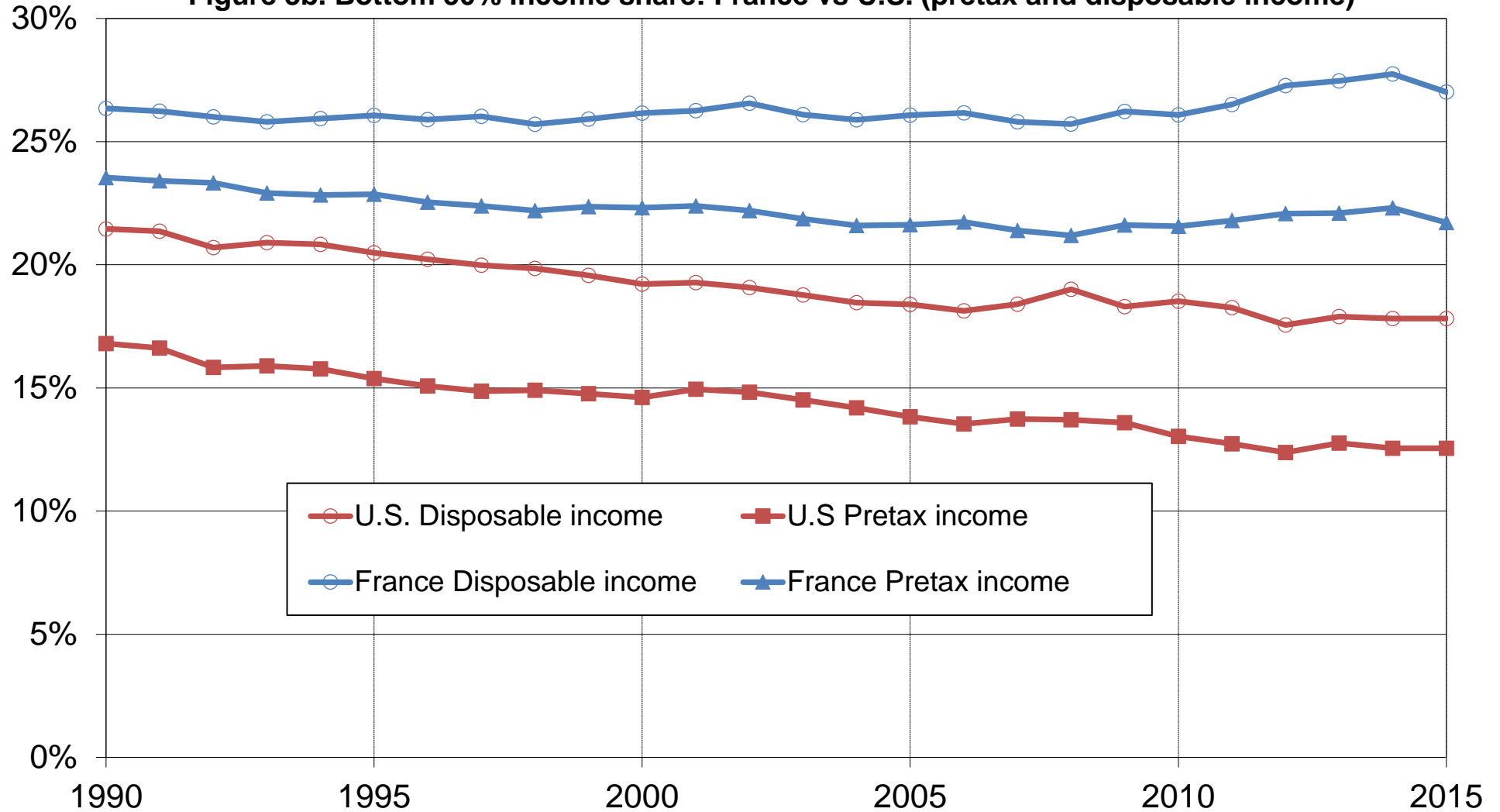
Distribution of pre-tax disposable income among adults.
Equal-split-adults series (income of married couples divided by two).

Figure 3c. Primary inequality and fiscal redistribution: France vs. US
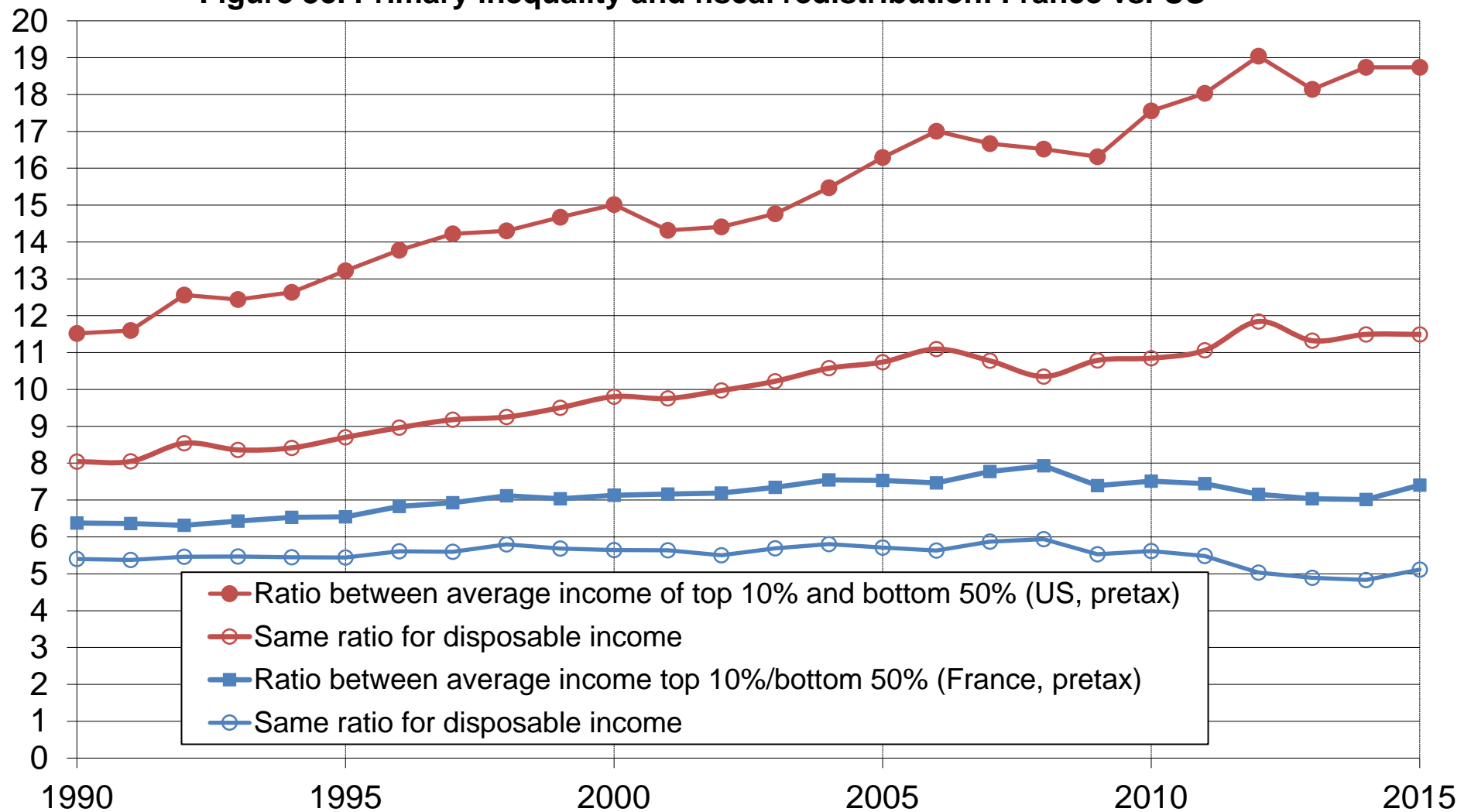
Legend:
- Ratio between average income of top 10% and bottom 50% (US, pretax)
- Same ratio for disposable income
- Ratio between average income top 10%/bottom 50% (France, pretax)
- Same ratio for disposable income

Distributions of pretax national income and disposable income among adults.
Equal-split-adults series (income of married couples divided by two).

Figure 4a. Structure of taxes (% national income), France 1990-2018

Contributive social contributions

Indirect taxes

Capital taxes

Progressive Income taxes

Flat income taxes

Non contributive social contributions
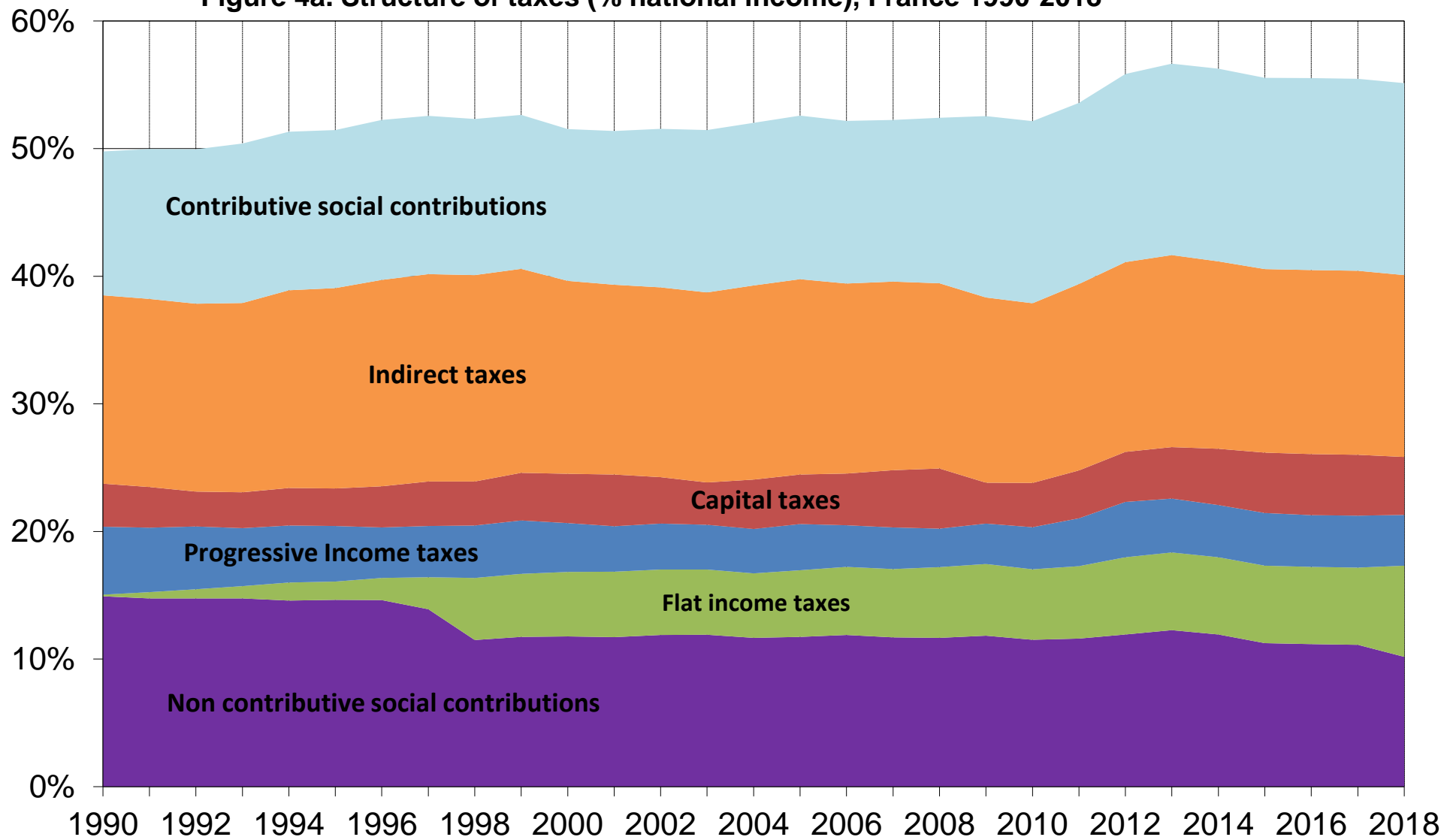
Figure 4b. Structure of non-contributive taxes (% national income), France 1990-2018
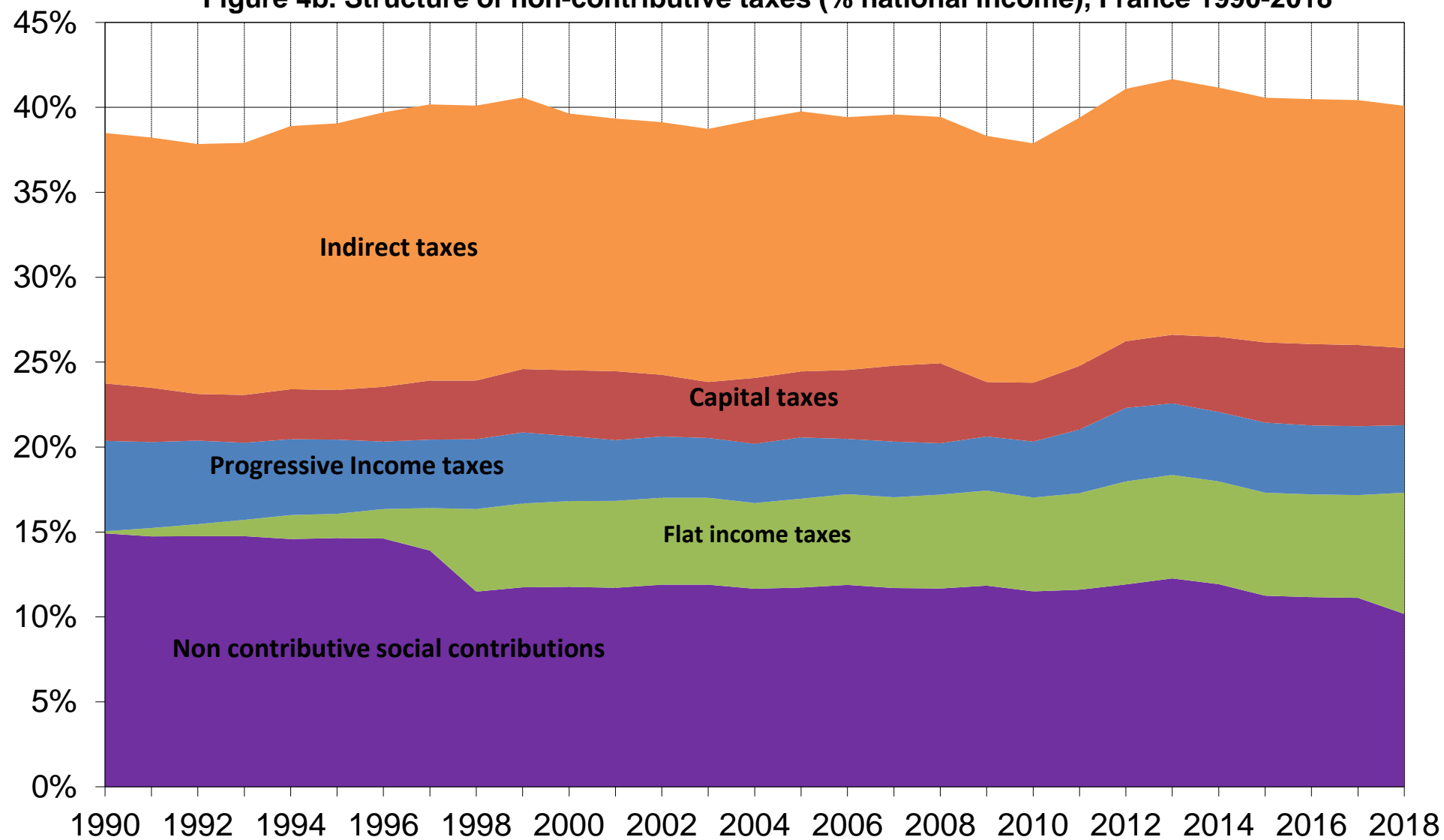
Indirect taxes

Capital taxes

Progressive Income taxes

Flat income taxes

Non contributive social contributions

Figure 5a. Taxes paid by factor income percentile, France 1990

Indirect taxes

Capital taxes

Progressive income taxes

Total Social Contributions
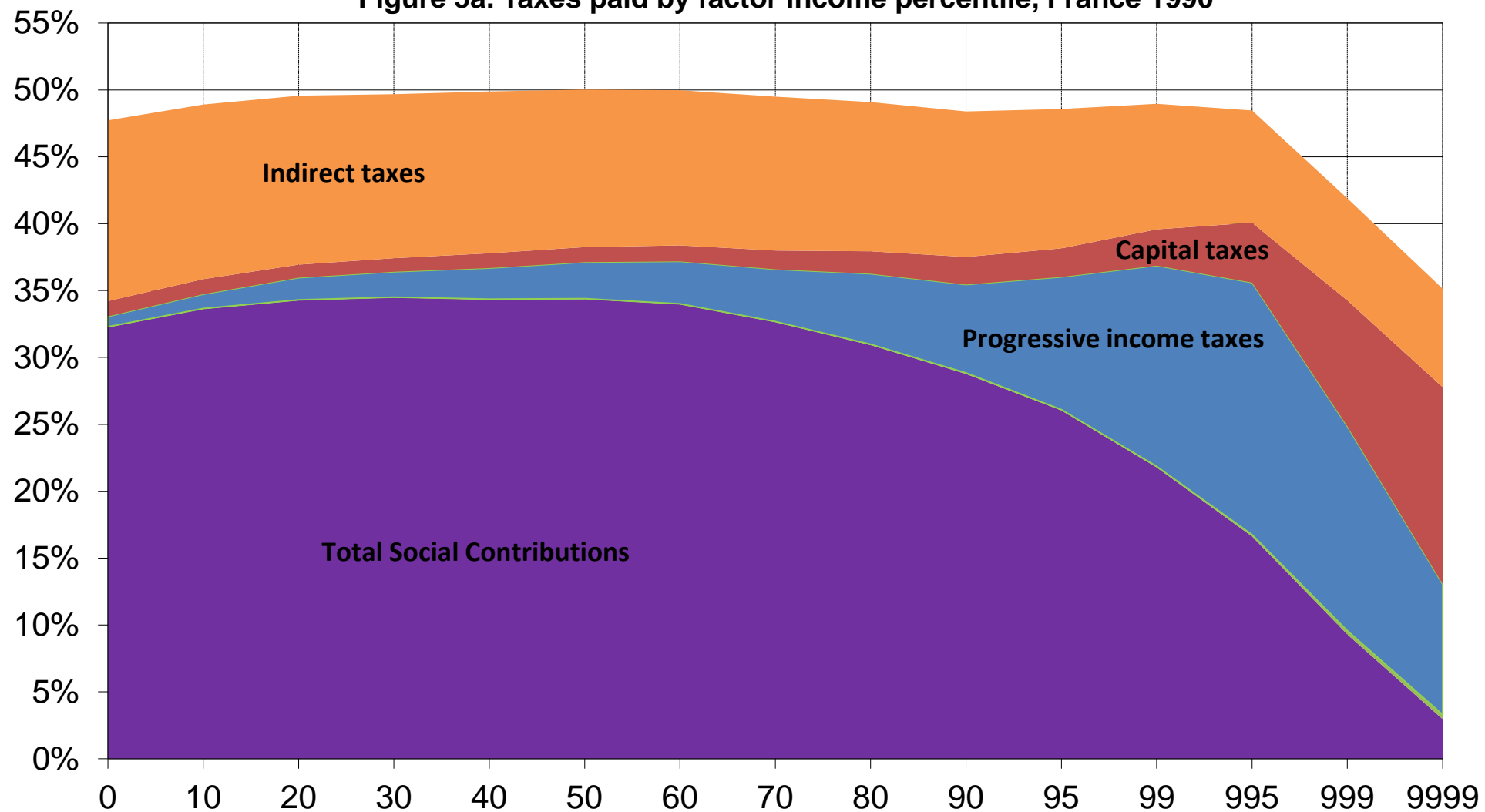
Distribution of factor national income among working population, i.e. adults aged 25-60 y.o working at least part-time.

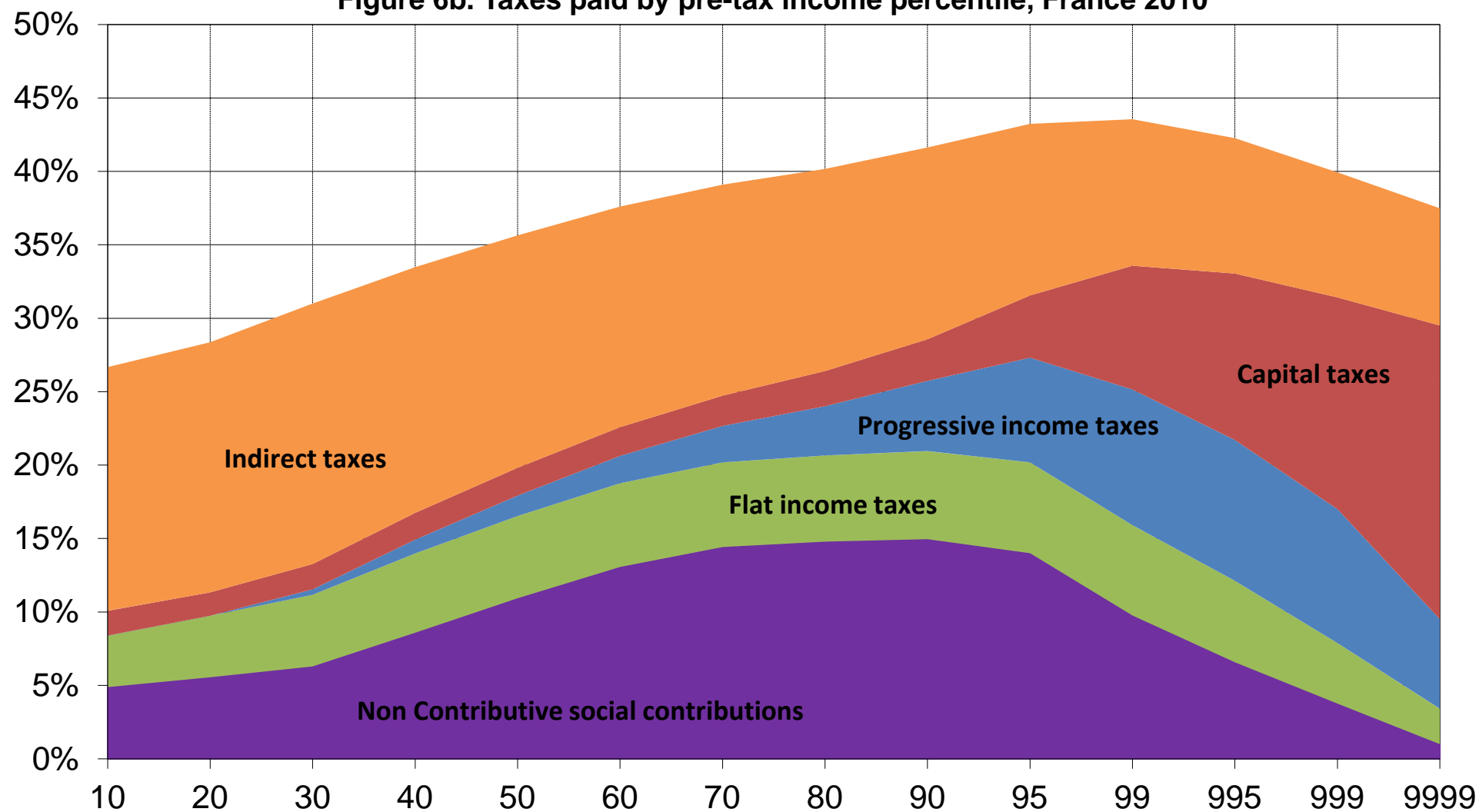# Figure 5a. Taxes paid by factor income percentile, France 2010
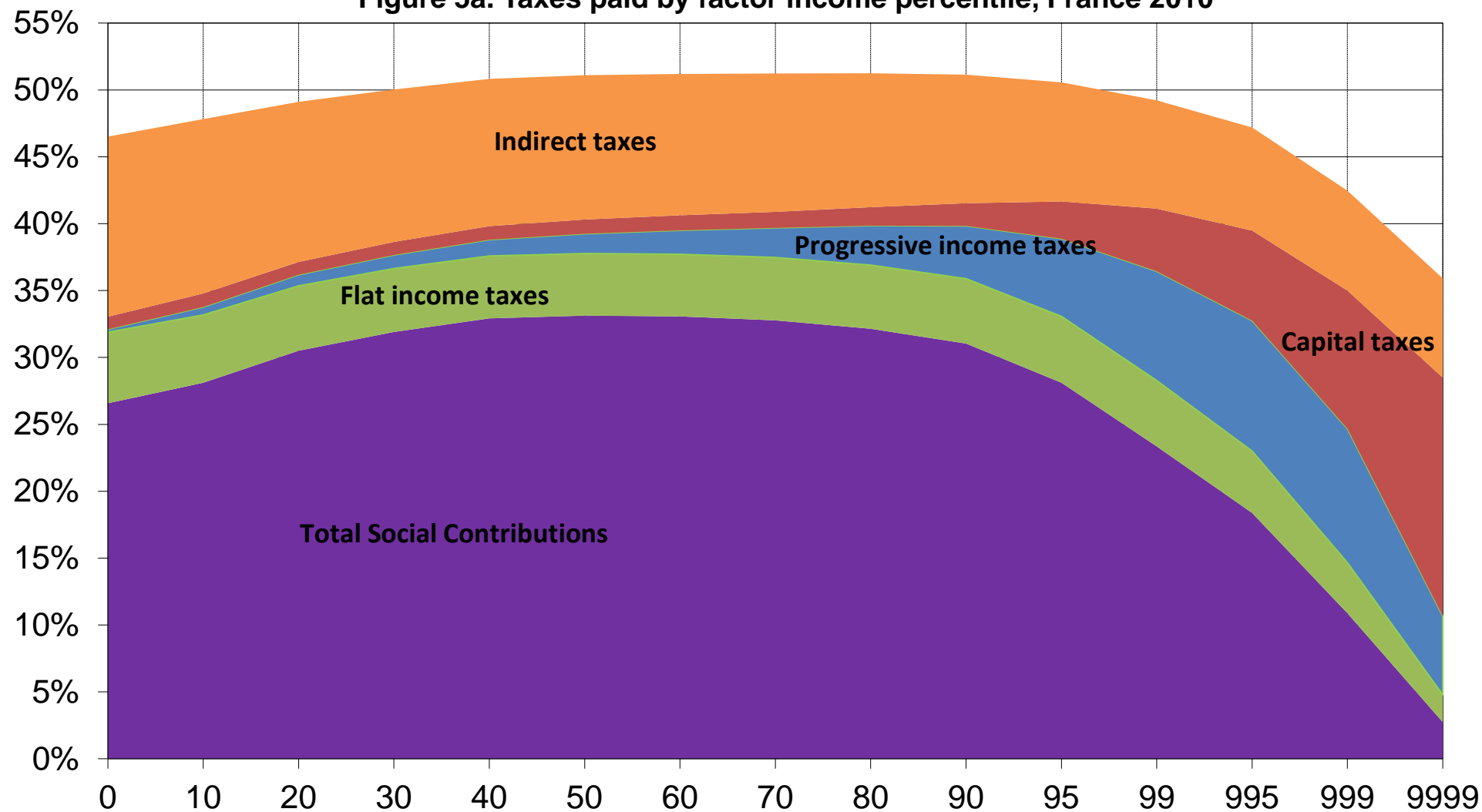
Indirect taxes

Progressive income taxes

Flat income taxes

Capital taxes

Total Social Contributions

Distribution of factor national income among working population, i.e. adults aged 25-60 y.o working at least part-time.

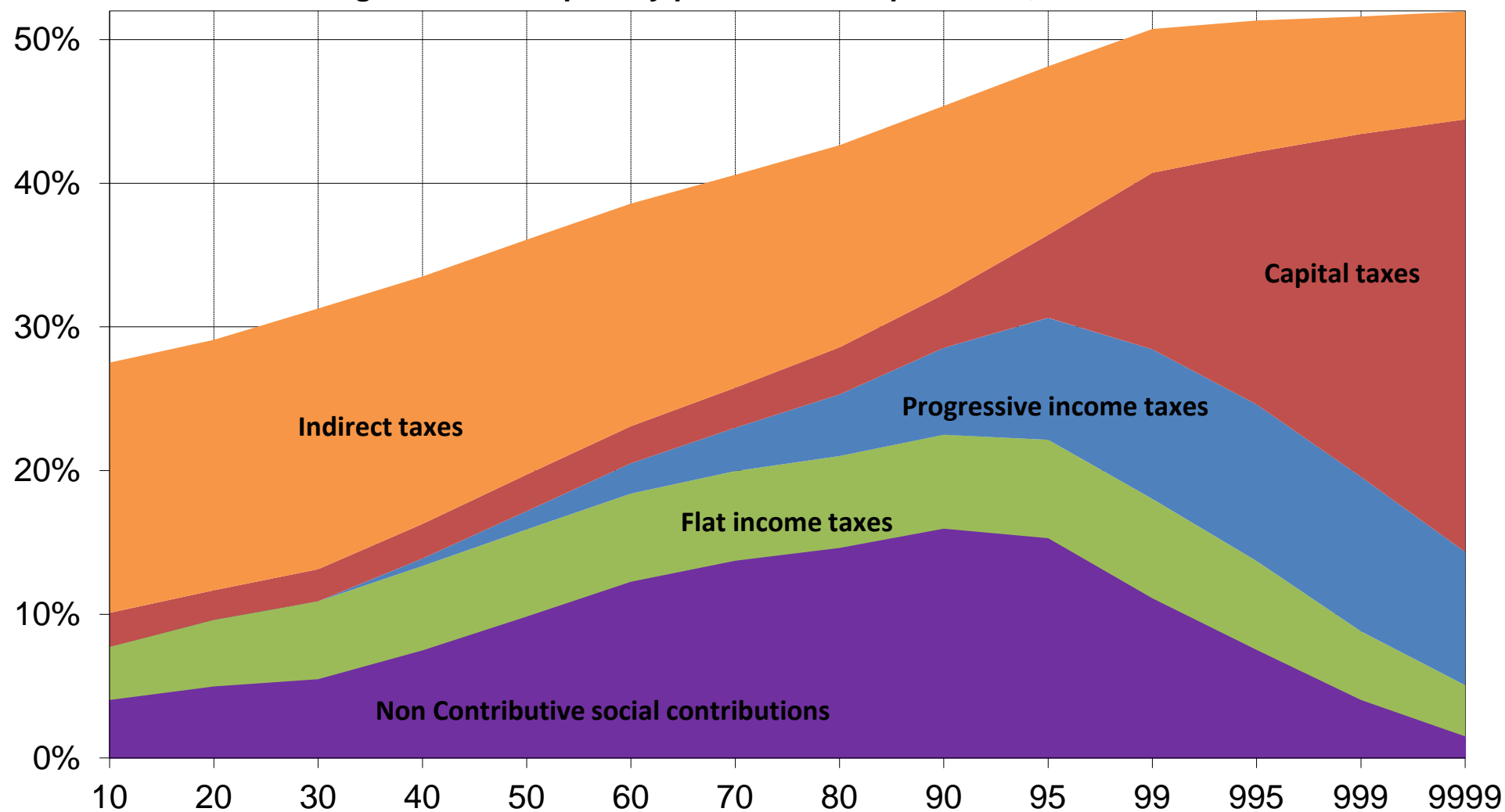**Figure 5c. Taxes paid by factor income percentile, France 2016**
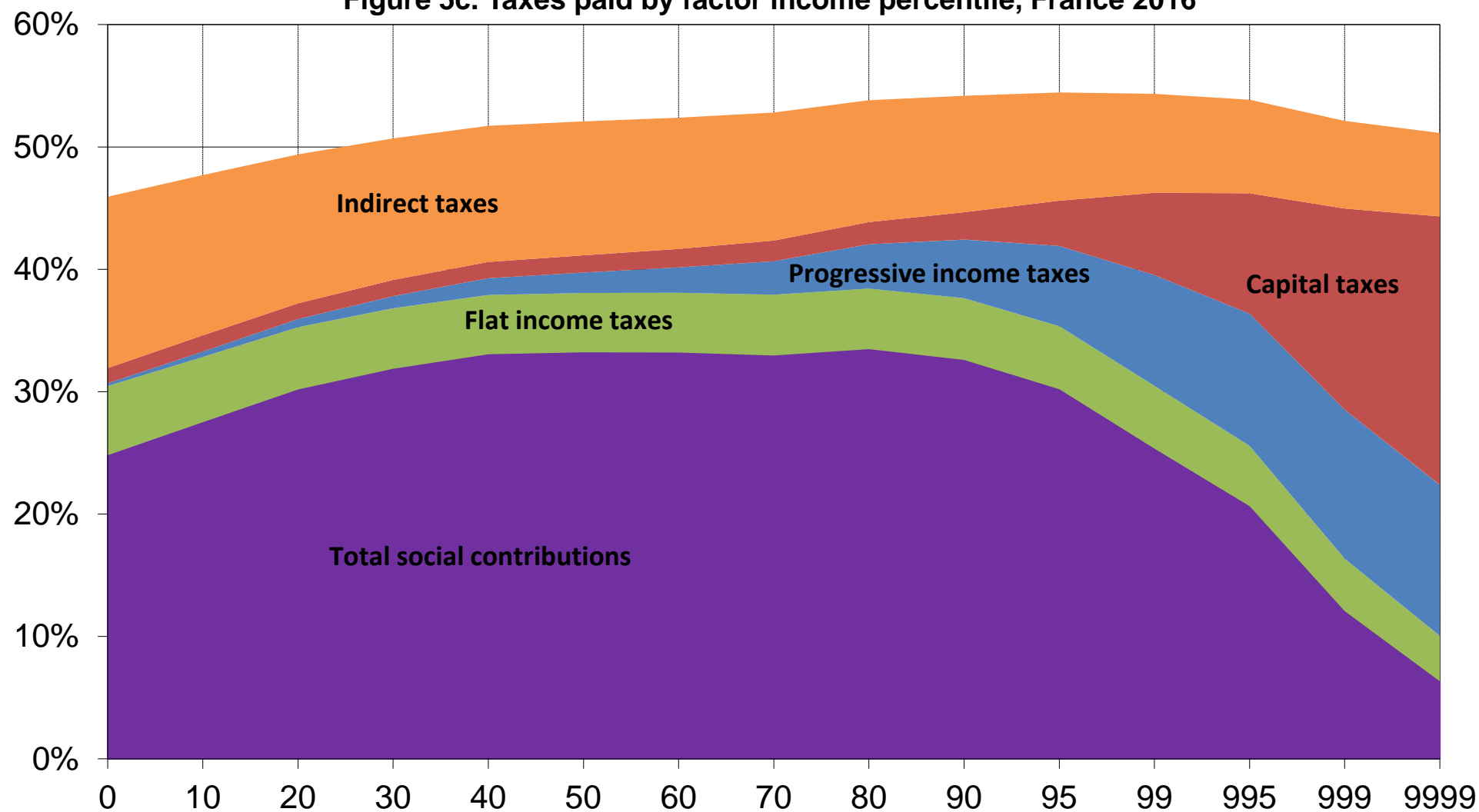
Indirect taxes

Progressive income taxes

Capital taxes

Flat income taxes

Total social contributions

Distribution of factor national income among working population, i.e. adults aged 25-60 y.o working at least part-time.

Figure 5d. Taxes paid by factor income percentile, France 2018
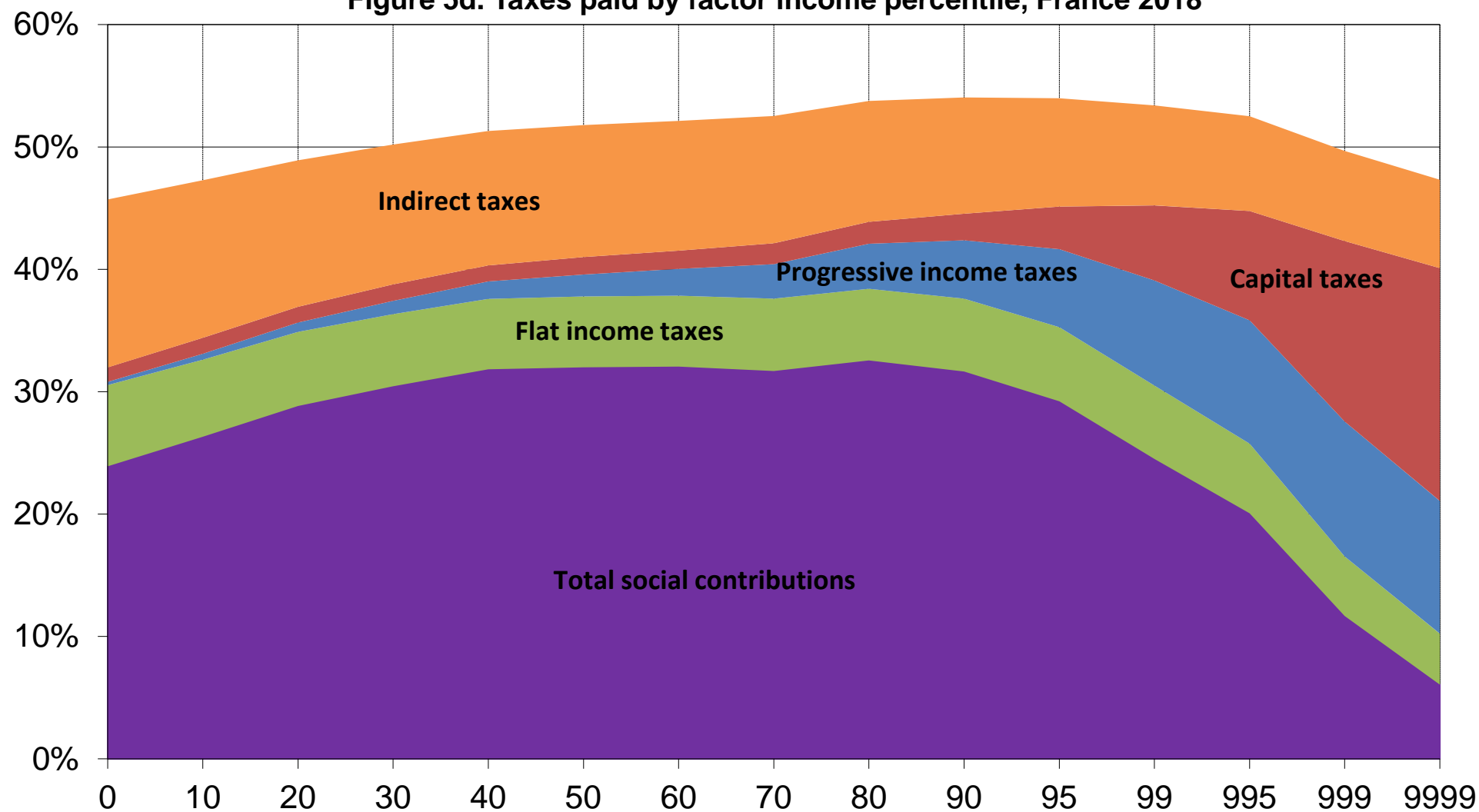
Indirect taxes

Progressive income taxes

Capital taxes

Flat income taxes

Total social contributions

Distribution of factor national income among working population, i.e. adults aged 25-60 y.o working at least part-time.

Figure 6a. Taxes paid by pre-tax income percentile, France 1990
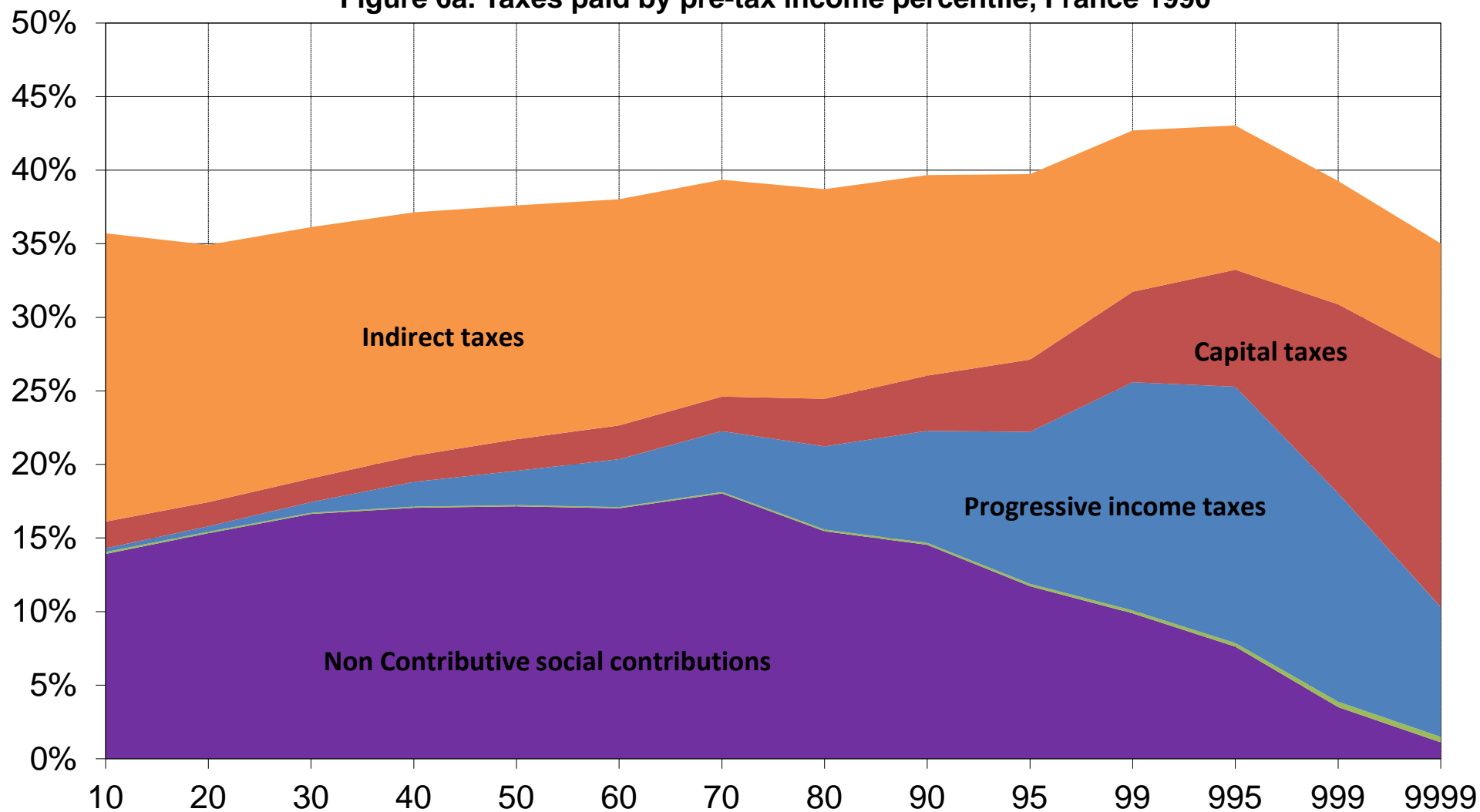
Indirect taxes

Capital taxes

Progressive income taxes
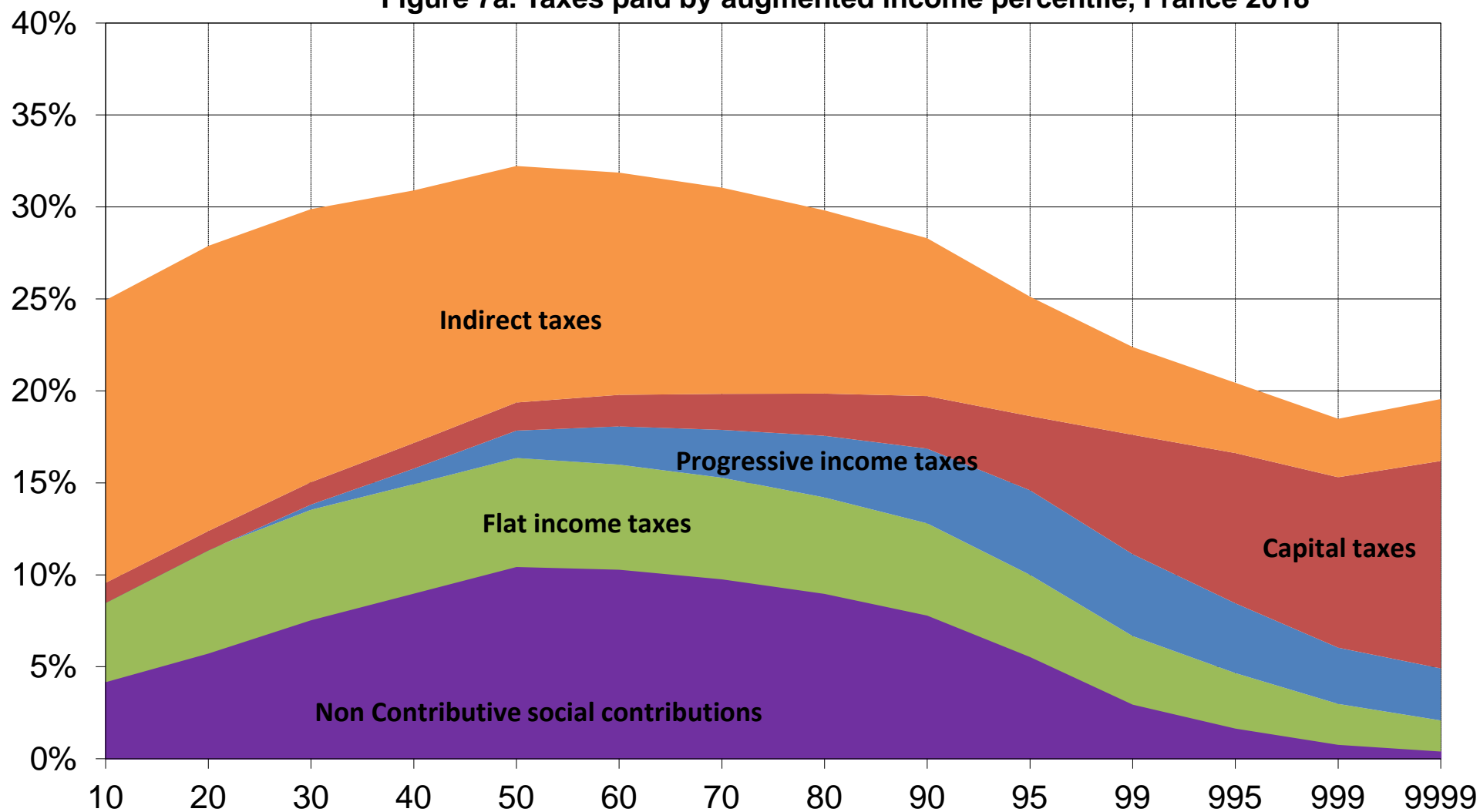
Non Contributive social contributions

Distribution of pre-tax national income among adults. Equal-split-adults series (income of married couples divided by two).

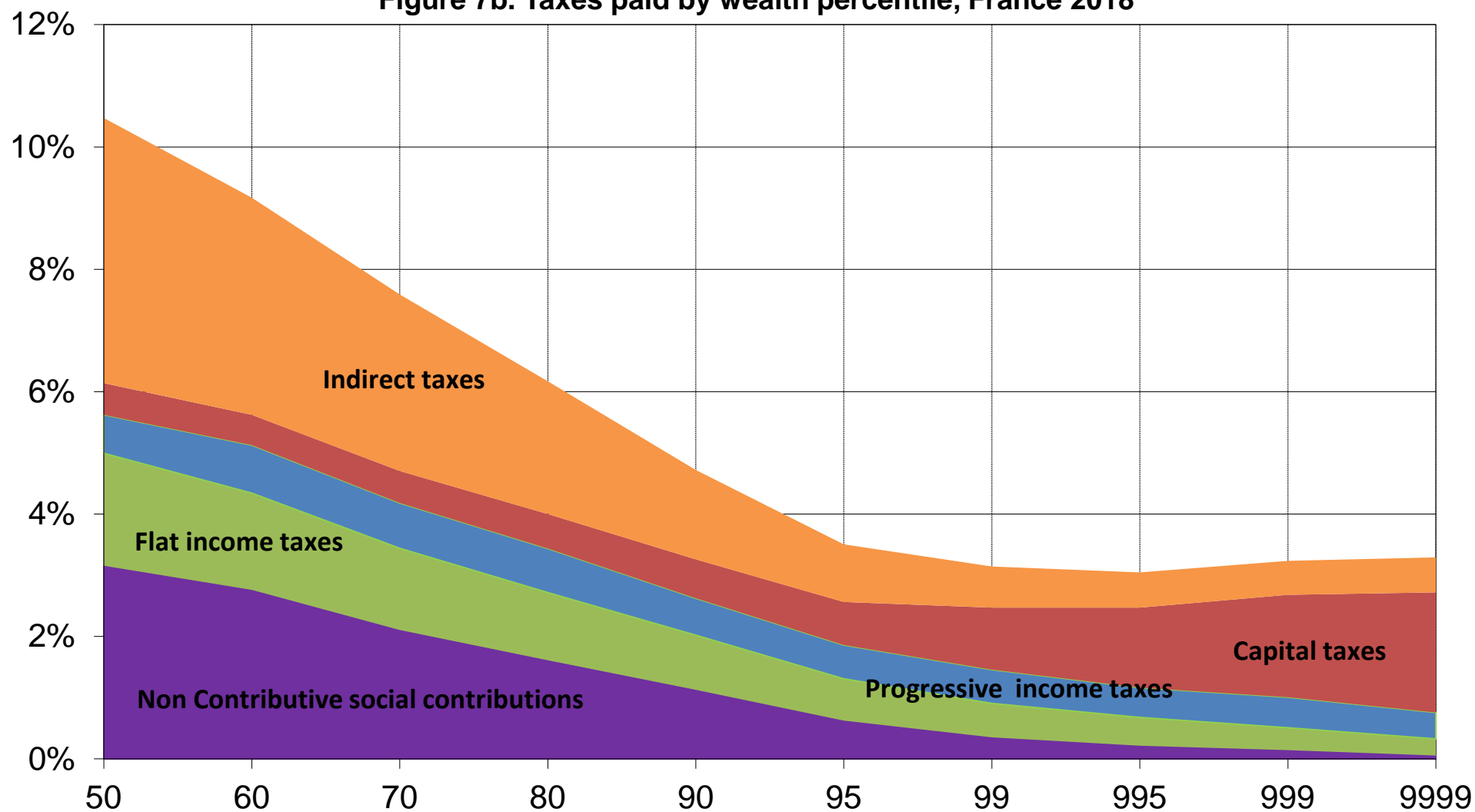Figure 6b. Taxes paid by pre-tax income percentile, France 2010

Figure 6c. Taxes paid by pre-tax income percentile, France 2016

Capital taxes

Indirect taxes

Progressive income taxes

Flat income taxes

Non Contributive social contributions

Distribution of pre-tax national income among adults.
Equal-split-adults series (income of married couples divided by two).

Figure 6d. Taxes paid by pre-tax income percentile, France 2018
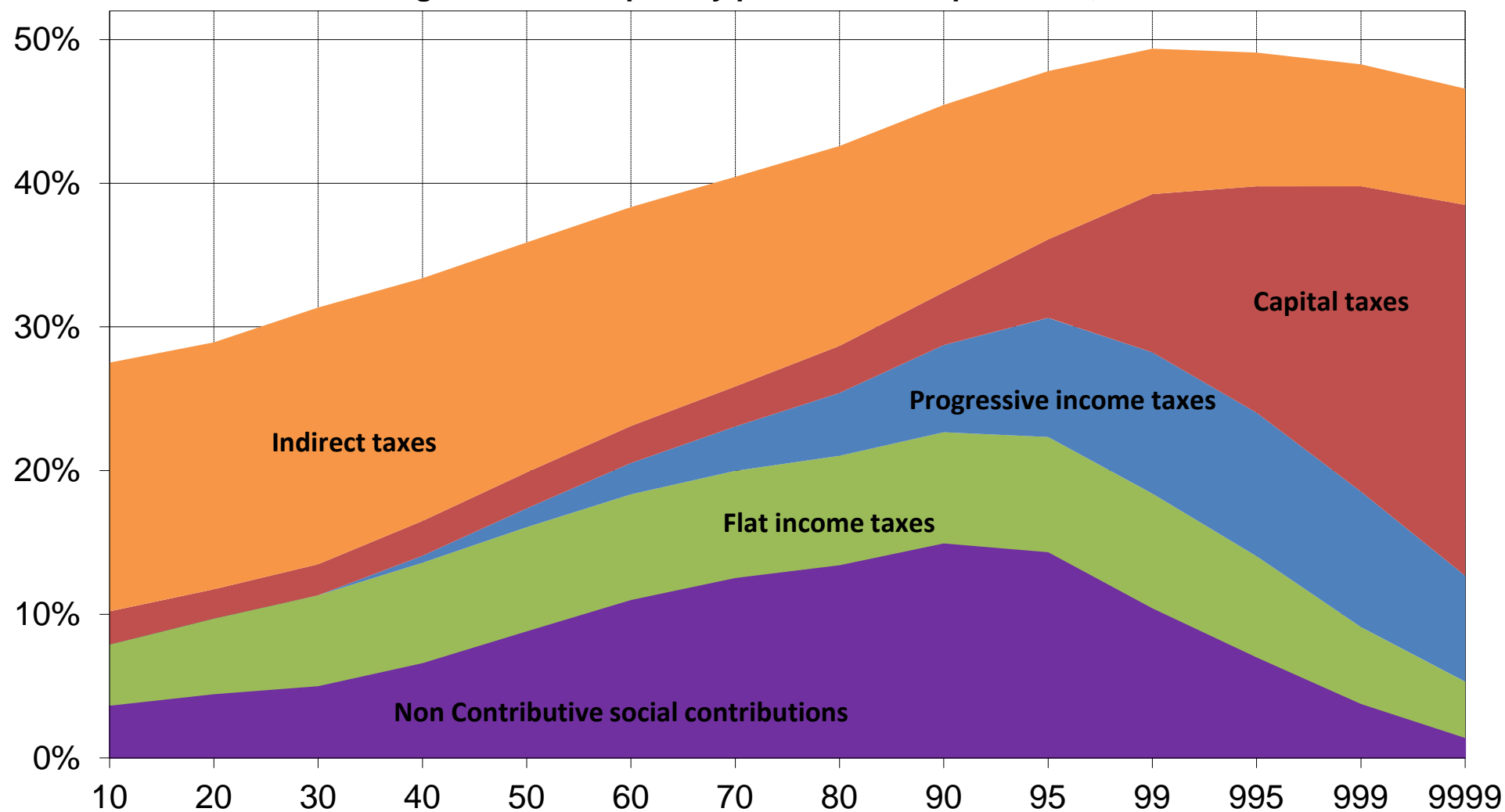
Distribution of pre-tax national income among adults.
Equal-split-adults series (income of married couples divided by two).

Figure 7a. Taxes paid by augmented income percentile, France 2018

Indirect taxes

Progressive income taxes

Flat income taxes

Capital taxes

Non Contributive social contributions

Distribution of augmented income among adults (pretax income + wealth divided by life expectancy).
Equal-split-adults series (income of married couples divided by two).

Figure 7b. Taxes paid by wealth percentile, France 2018

Indirect taxes

Flat income taxes

Non Contributive social contributions

Progressive income taxes

Capital taxes

Distribution of wealth among equal-split adults (wealth of married coupled divided by two).

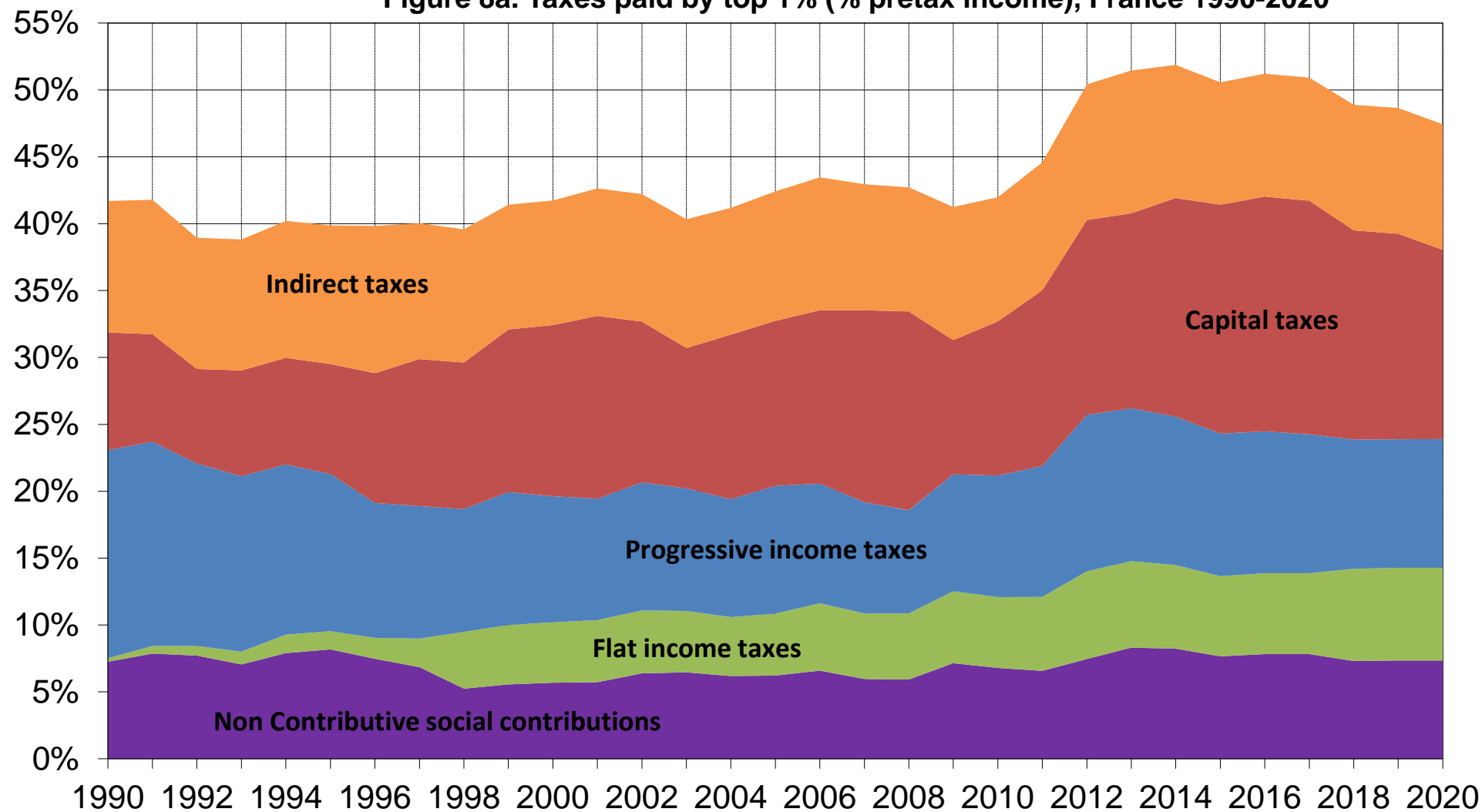Figure 8a. Taxes paid by top 1% (% pretax income), France 1990-2020

Indirect taxes

Capital taxes

Progressive income taxes

Flat income taxes

Non Contributive social contributions

Figure 8b. Taxes paid by top 1% (% augmented income), France 1990-2020

Indirect taxes

Capital taxes

Progressive income taxes

Flat income taxes

Non Contributive social contributions
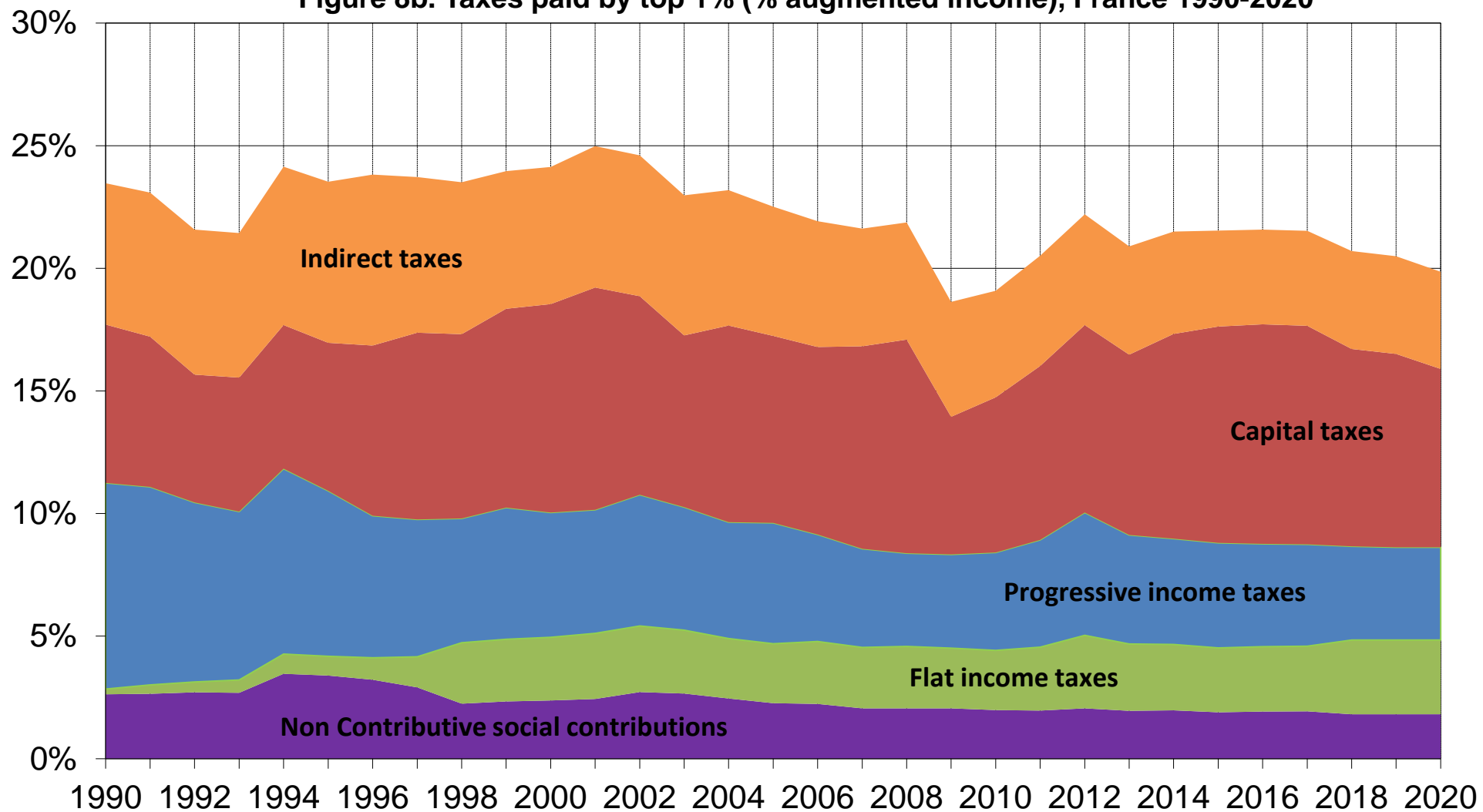
Figure 8c. Taxes paid by top 1% (% wealth), France 1990-2020

Indirect taxes

Capital taxes

Progressive income taxes

Flat income taxes

Non Contributive social contributions
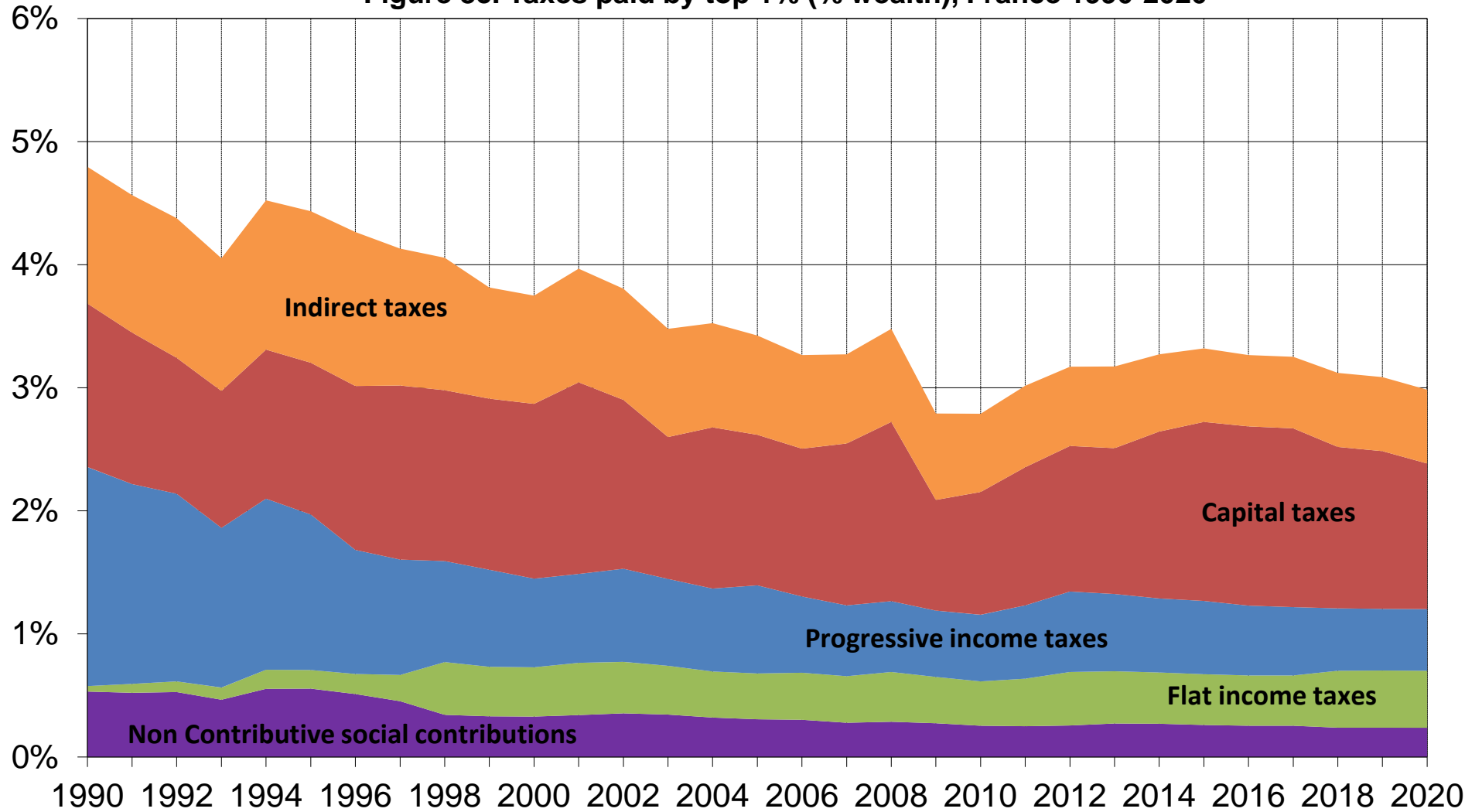
Figure 9a. Structure of transfers (% national income), France 1990-2018
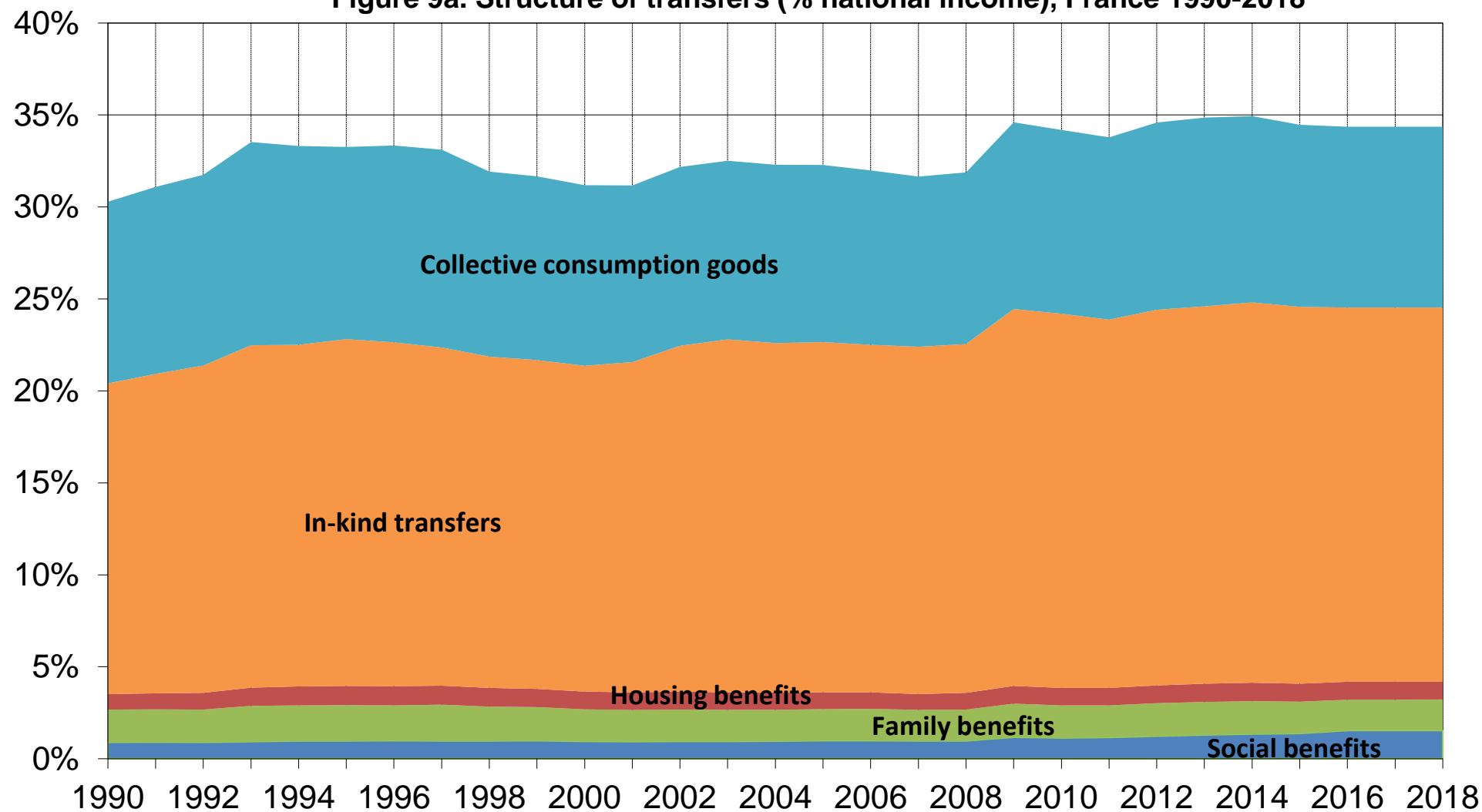
Collective consumption goods

In-kind transfers

Housing benefits

Family benefits

Social benefits

Distribution of pre-tax and post-tax national income among adults.
Equal-split-adults series (income of married couples divided by two).

Figure 9b. Structure of cash transfers (% national income), France 1990-2018
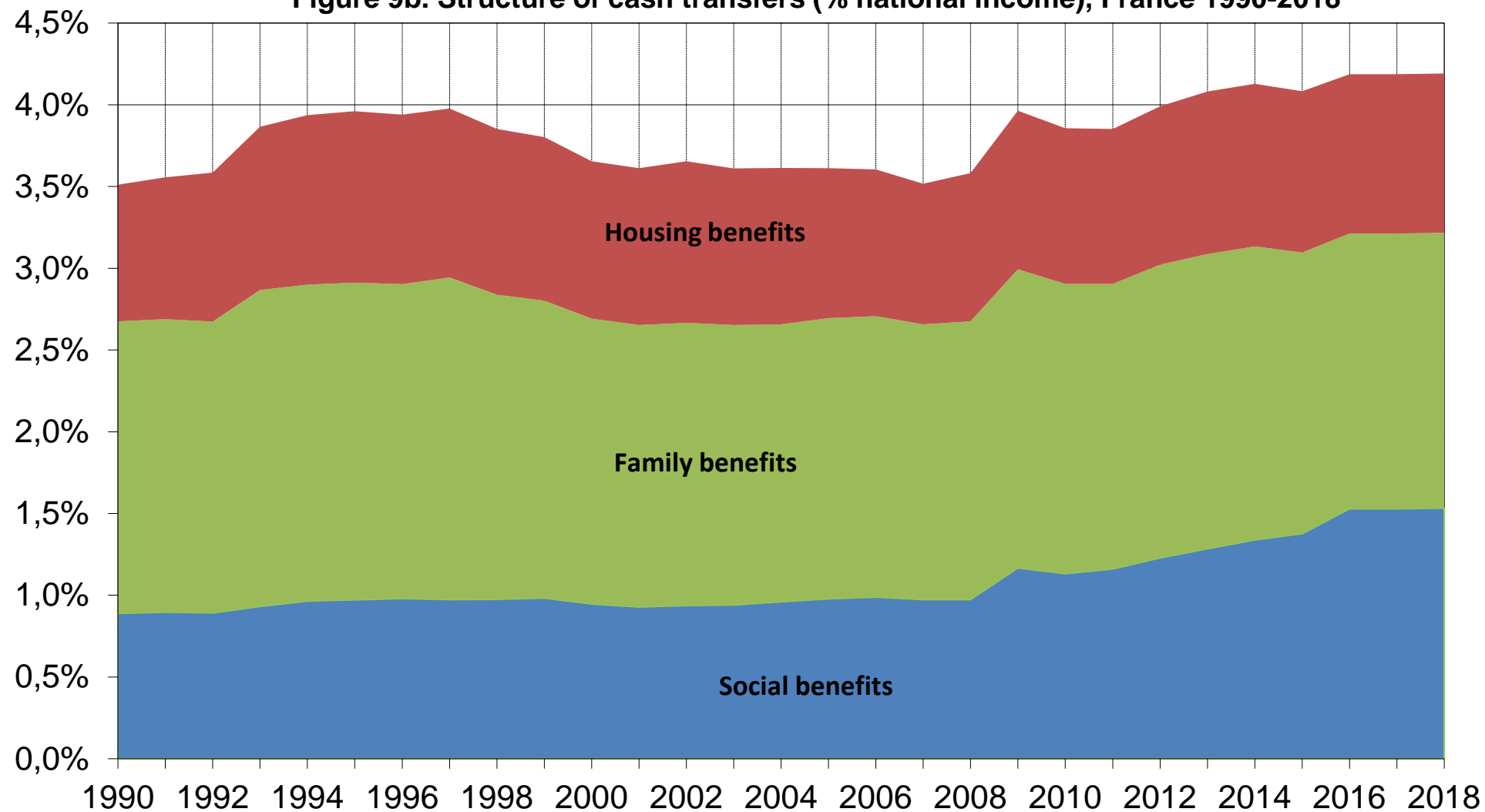
Housing benefits

Family benefits

Social benefits

Distribution of pre-tax and post-tax national income among adults.
Equal-split-adults series (income of married couples divided by two).

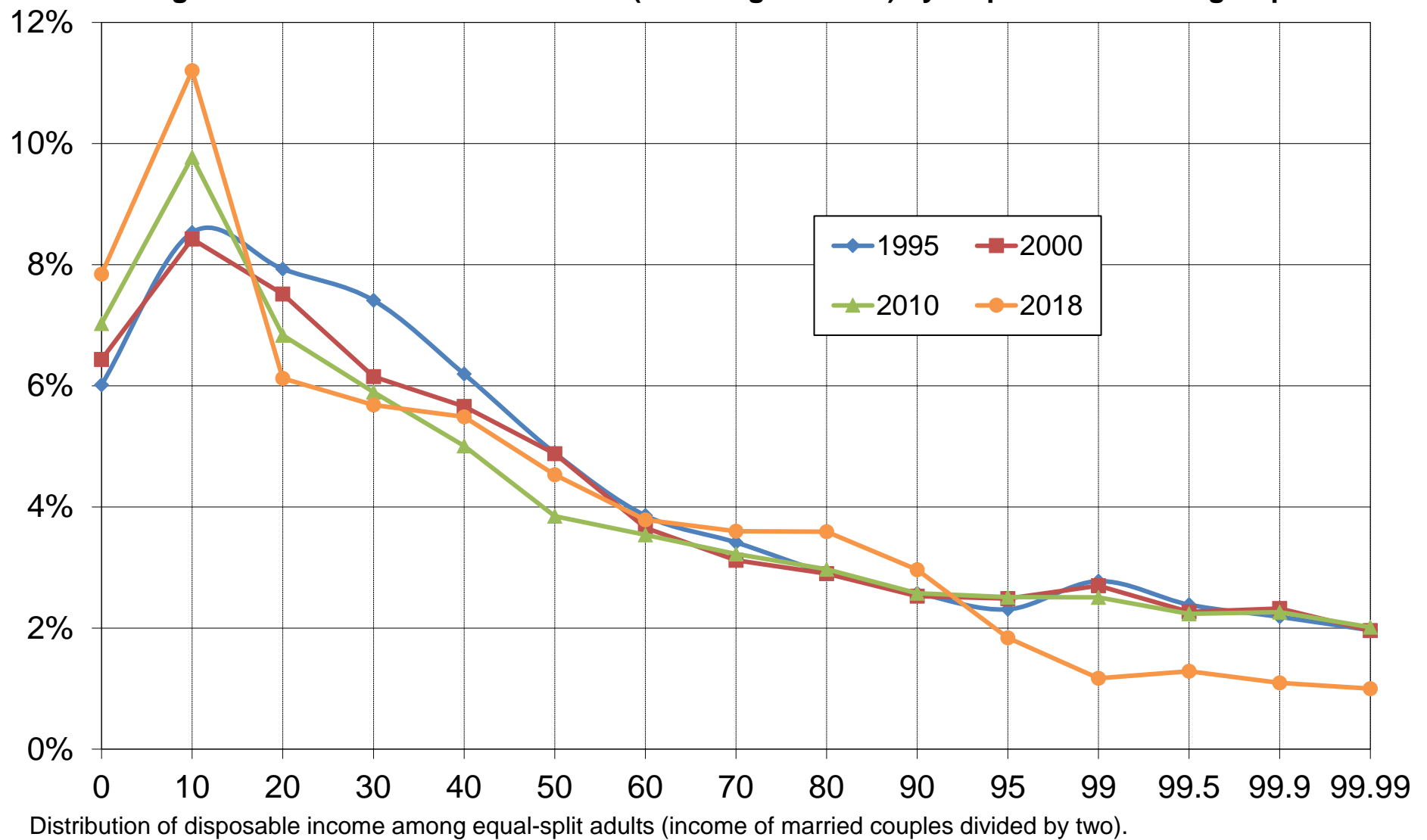**Figure 10a. Cash transfers received (% average income) by disposable income group**

Distribution of disposable income among equal-split adults (income of married couples divided by two).
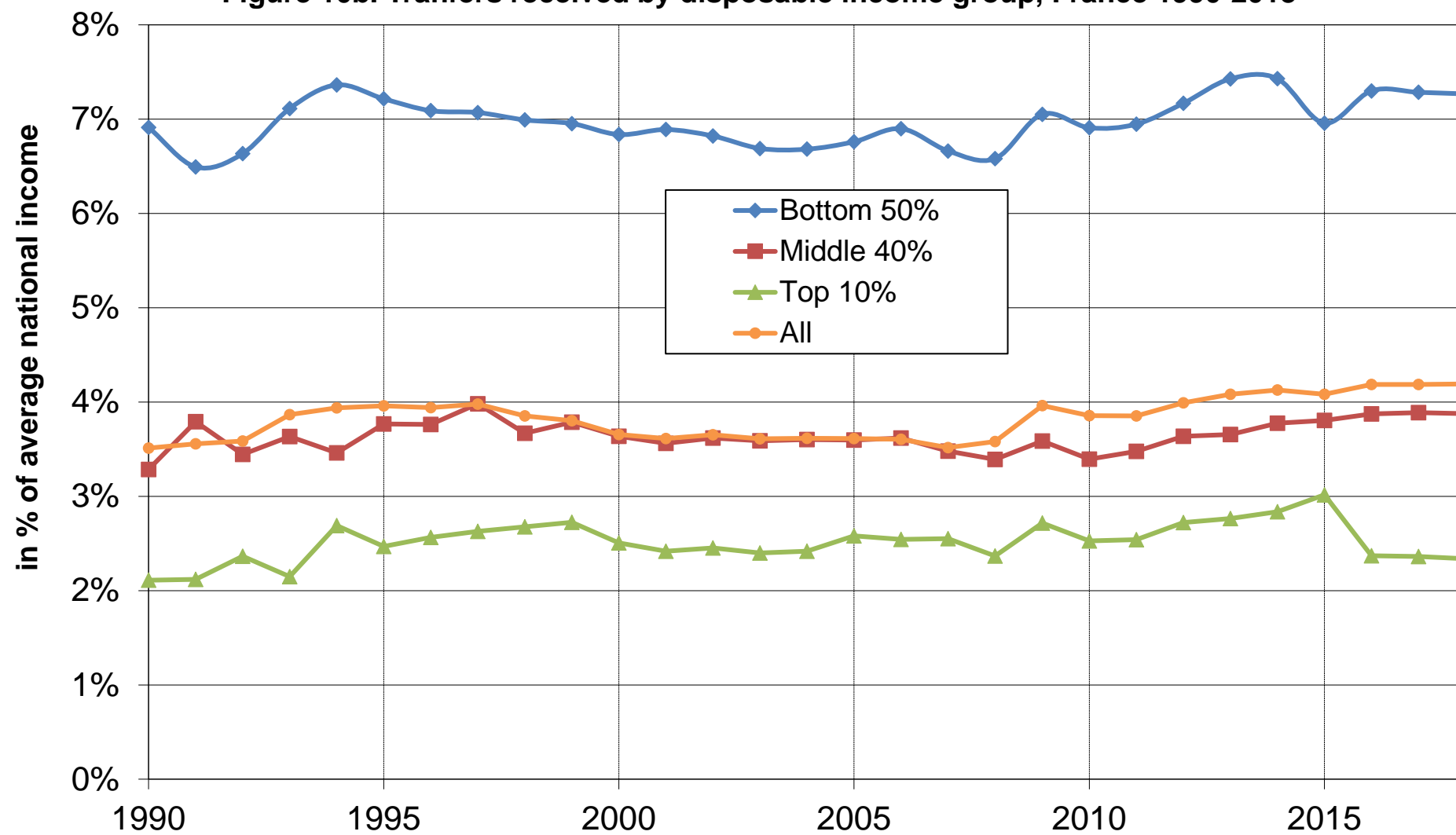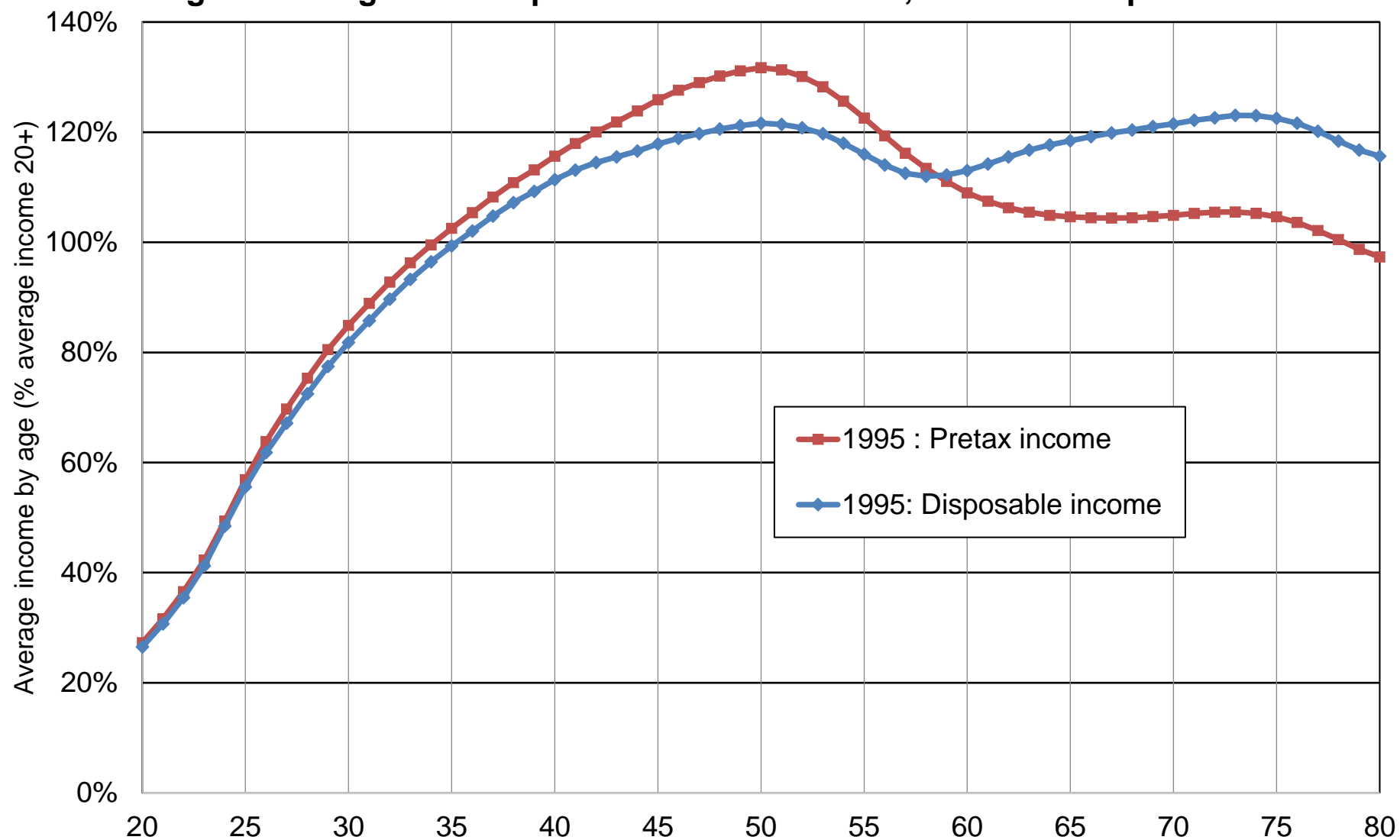
Figure 10b. Tranfers received by disposable income group, France 1990-2018
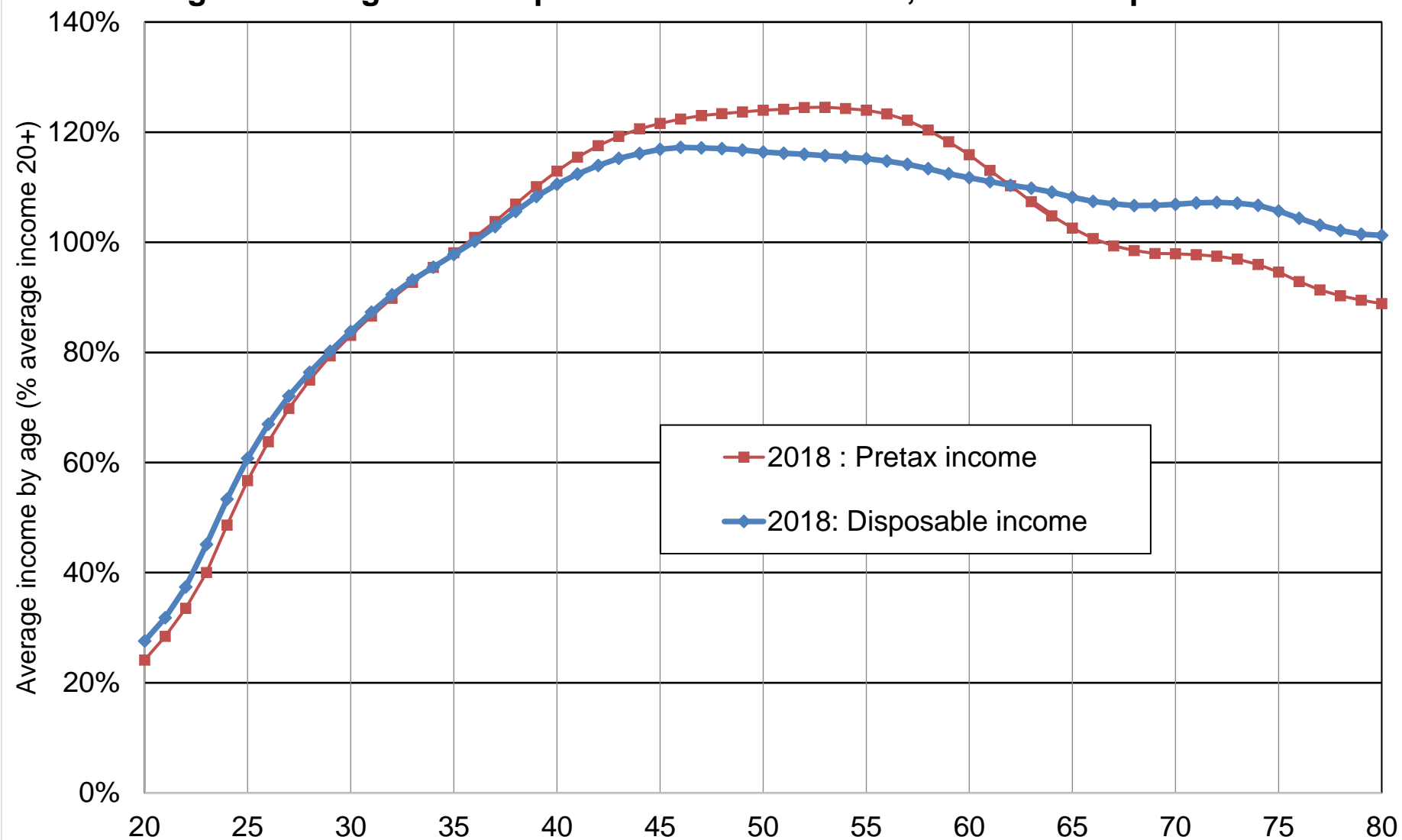
Distribution of disposable income among equal-split adults (income of married couples divided by two).

Figure 11a. Age-Income profile in France in 1995, Pretax vs Disposable

Average income by age (% average income 20+)

Legend:
- 1995 : Pretax income
- 1995: Disposable income

Distributions of pretax national and disposable income among adults.
Equal-split-adults series (income of married couples divided by two).

Figure 11b. Age-Income profile in France in 2018, Pretax vs Disposable

Distributions of pretax national income and disposable among adults.
Equal-split-adults series (income of married couples divided by two).