3 The case of France

This case study reviews how distributional implications related to equality are integrated into budgeting processes and inform budgetary decisions in France. It discusses the practices currently in place, how they are set up in the country's public expenditure frameworks, and how they are supported at the technical level through a range of microsimulation models and data sources. As highlighted in this case study, the field of distributional impact analysis in France is marked by a variety of actors and tools. This variety allows for the transparent comparison of results, which remarkably tend to converge despite different methodological approaches. While additional efforts are necessary to ensure the comparability of outputs and their systematic inclusion in the budget cycle, this robustness lends credibility to the public debate around distributional impacts and how they affect inequality in France.

3.1. A review of recent trends in income inequality in France

3.1.1. Market income inequality

Disposable income inequality, which refers to income after taxes and transfers, is well documented in France. However, to gain a comprehensive understanding of the redistributive impact of the tax and benefit system, it is crucial to also examine market income inequality, which refers to income before redistribution in the form of taxes, transfers, and benefits. Figure 3.1 plots the evolution of the Gini coefficient for market income from 2005 to 2019, focusing on the working-age population (ages 18-65) to increase comparability between countries with public pension schemes and those with obligatory private pension schemes[1]. It shows that market income inequality for the working-age population has been relatively stable over the last 15 years, increasing by 3.5% from 2005 to 2019.

Figure 3.1. Income inequality before taxes and transfers, 2005 to 2019

France, Gini coefficient, market income (working-age population, 18-65)
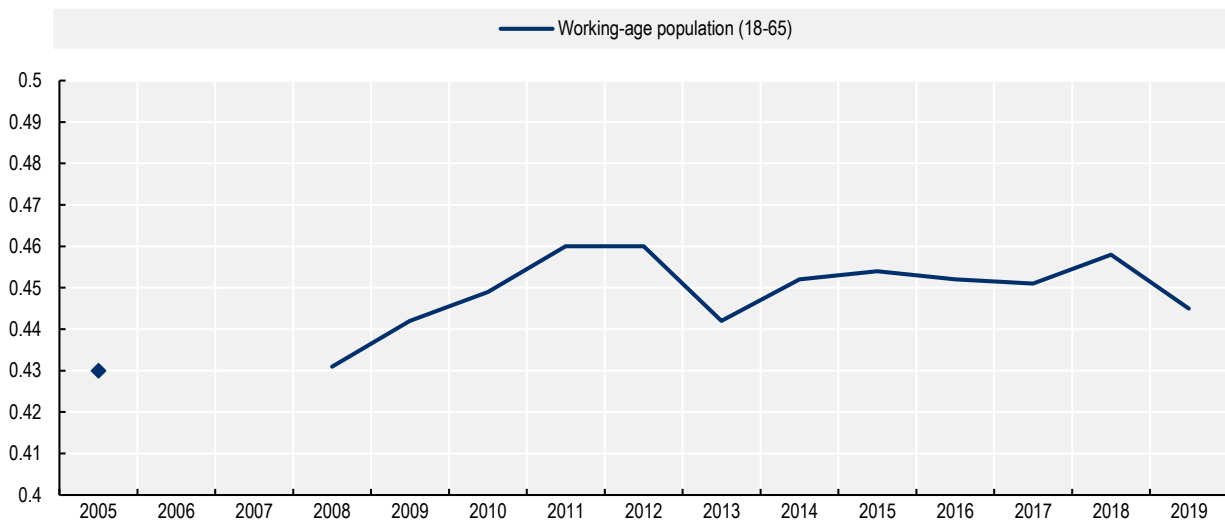
Note: Data for the working-age population (disregarding the effect of public pension schemes). Change in income definition in 2012.
Source: OECD Income Distribution Database, data extracted on 22 June 2023.

By this metric, France is –after Bulgaria and Greece– the European Union (EU) member state with the highest level of market income inequality for the working-age population. However, it is worth noting that because France's retirement age is below 65 years old, some pensioners are included in its working-age population. Because public pensions are excluded from market incomes, French retirees will therefore have market incomes close to null, thus skewing the distribution of income. A 2020 study by France Stratégie showed that when reintegrating pension incomes, France -while less unequal- is still below the European median in terms of income equality before redistribution (see Figure 3.2 below) (Rousselon and Viennot, 2020[1]).

Figure 3.2. Income inequality before redistribution, including pensions

European Union, Gini coefficient, primary income including pensions
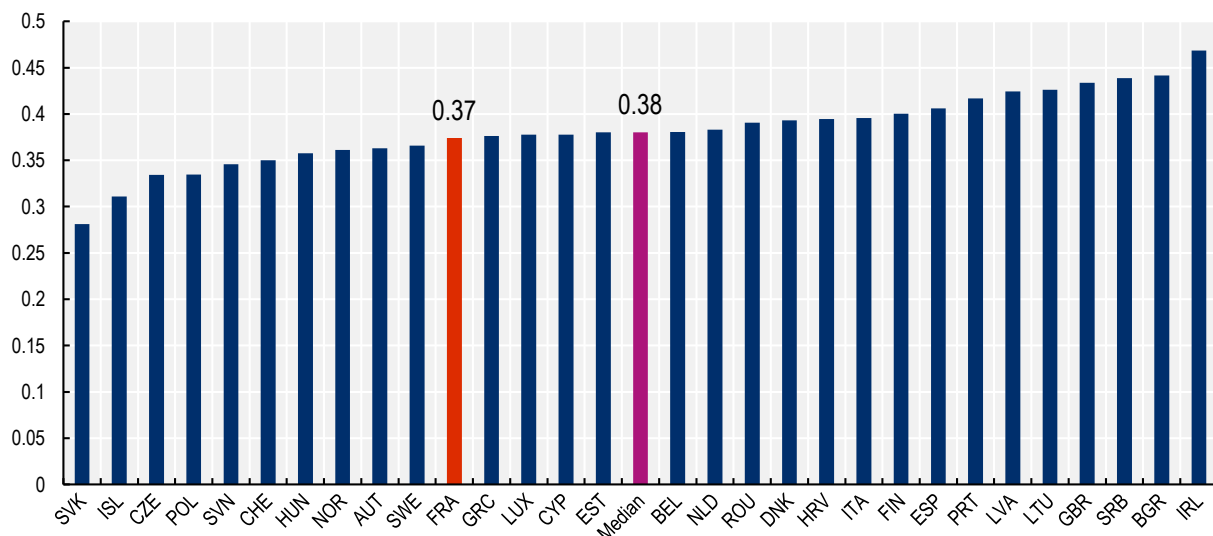

Source: Calculations by France Stratégie based on EU SILC data for 2017 income (Rousselon and Viennot, 2020[1]).

3.1.2. Disposable income inequality

In France, like in other countries, market income inequality is reduced through the system of taxes and benefits, which redistributes levies (taxes, social contributions, etc.) as social benefits (minimum social benefits "RSA", family allowances, pensions, invalidity, and housing benefits, etc.) or public services (education, health, etc.). Figure 3.1 plots the Gini coefficient of OECD countries before and after taxes and benefits to show the redistributive power of each system; the graph focuses on the working-age population to exclude the effects of pensions.

Figure 3.3. Differences in household income inequality among the working-age population pre- and post-tax and government transfers, 2019

OECD, Gini coefficient, working-age population (18-65)
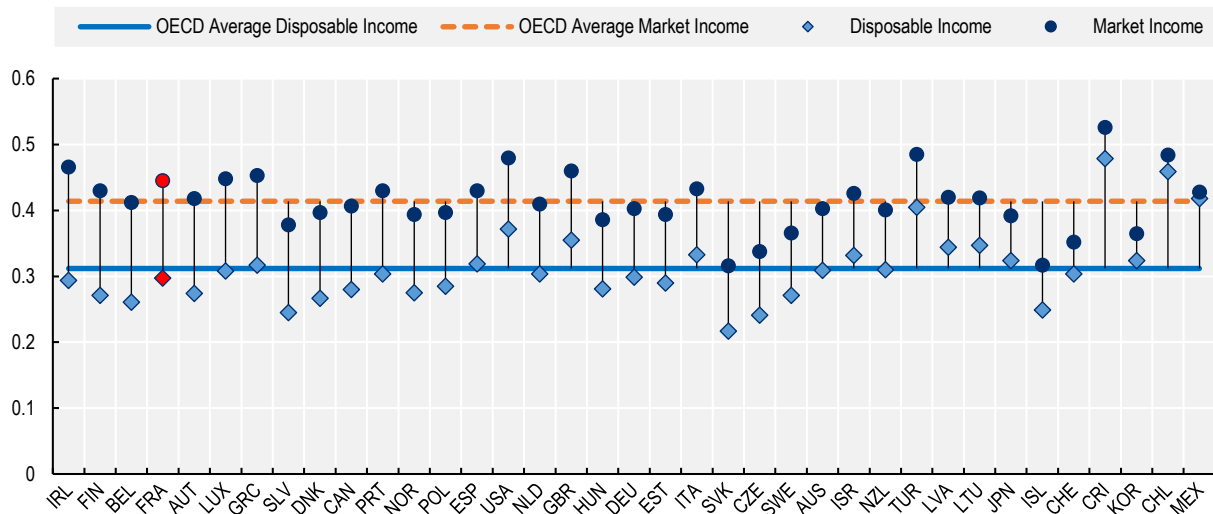
Note: Countries are ranked from the highest to the lowest difference before and after taxes. Before taxes and transfers data for Mexico are post taxes but before transfers. The latest data refer to 2019 for all countries except Costa Rica and the United States (2021); Australia, Canada, Latvia, Korea, Mexico, the Netherlands, New Zealand, Norway, Sweden and the United Kingdom (2020); Ireland, Italy, Japan and Poland (2018); Chile, and Iceland (2017). No data available before 2018 for Belgium and Japan or before 2015 for Luxembourg. Earlier data for Chile, Estonia, Sweden and the United States are from 2013.
Source: OECD Income Distribution Database, data extracted on 29 June 2023

As mentioned above, before taxes and benefits, income inequality is greater in France than the OECD average, with significantly higher market income inequality. However, the French system of taxes and benefits is one of the most redistributive in the OECD, reducing inequality by 32%. As a result, income inequality after taxes and benefits is close to the OECD average. For comparison, Ireland, Germany, Portugal, and the Netherlands all have a Gini coefficient close to France after taxes and transfers for their working-age populations. Again, it is important to recall methodological limitations: with a retirement age below 65 years old, some pensioners are included in the working-age population for France and will, therefore, negatively impacts the pre-distribution baseline.

The system of taxes and benefits also mitigates inequalities in living standards. In France, the equivalised disposable income of the top 20% of the income distribution sees a reduction of 21% after redistribution, while the bottom 20% experiences a 61% increase (INSEE, 2022[2]). As a result, the ratio between the two groups is reduced to 3.8. This reduction is even more important for the two extreme deciles of the income distribution. Before redistribution, the top 10% had an equivalised disposable income 19.6 times that of the bottom 10%. After redistribution, this ratio reduced significantly to 5.5 (INSEE, 2022[2]).

3.1.3. Regional Inequality

Equivalised disposable income refers to a household's total income divided by the number of household members as equivalised adults. In metropolitan France, Martinique, the Reunion Island, half of the population had an equivalised disposable income of EUR 22 320 in 2020 (INSEE, 2023[3]). This median figure, however, does not capture discrepancies across departments (i.e. subdivisions of administrative regions in France).

Figure 3.4. Median living standard by department in 2020

In EUR
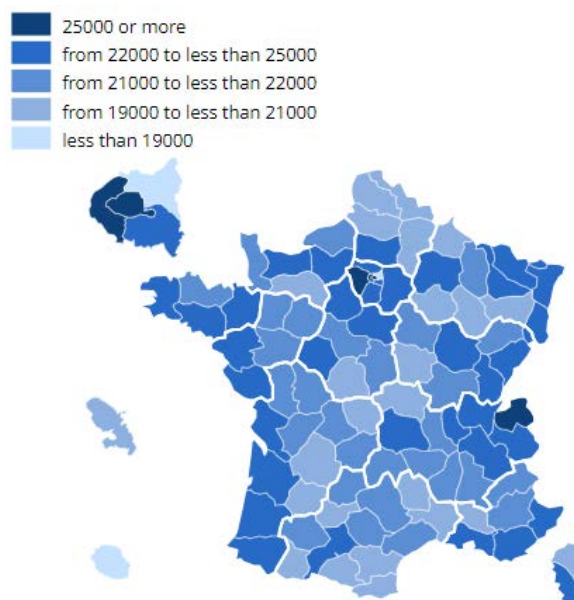
Source: (INSEE, 2023[3])

For instance, four departments enjoy a significantly higher median equivalised disposable income: Hauts-de-Seine (EUR 28 810), Paris (EUR 28 790), Yvelines (EUR 27 470), Haute-Savoie (EUR 27 030). On the low end of the distribution, we find the Seine-Saint-Denis department (EUR 18 470) and the overseas departments Martinique (EUR 19 200) and the Reunion (EUR 16 520) (INSEE, 2023[3]). Within departments, inequalities are most pronounced in border regions and around large cities where privileged populations coexist with more vulnerable ones.

3.1.4. Gender income inequality

Wide income disparities also exist across genders. Among workers primarily employed in France's private sector, women earn, on average, 24.4% less than men in 2021 (INSEE, 2023[4]). This disparity can be partly explained by the differences in the number of hours worked, which is due to (1) women being employed less than men over a year; and (2) women occupying part-time positions more frequently than men. Importantly, these situations can be a matter of choice or necessity. Given equal working hours, women still earn 15.5% less than men on average (INSEE, 2023[4]).

As shown in Figure 3.5 below, the gender pay gap in France has been narrowing steadily over the past 25 years. Given equal hours, women earned 22.1% less than men in 1995, a gap which has now been reduced by 6.6 percentage points. This reduction is partly explained by changes in the distribution of jobs, with women occupying 37% of private sector managerial positions in 2021 as opposed to 23% in 1995 (INSEE, 2023[4]).

Figure 3.5. The gender pay gap has been steadily decreasing over the past 25 years

France, ratio of women to men's annual wages in the private sector (as a percentage)
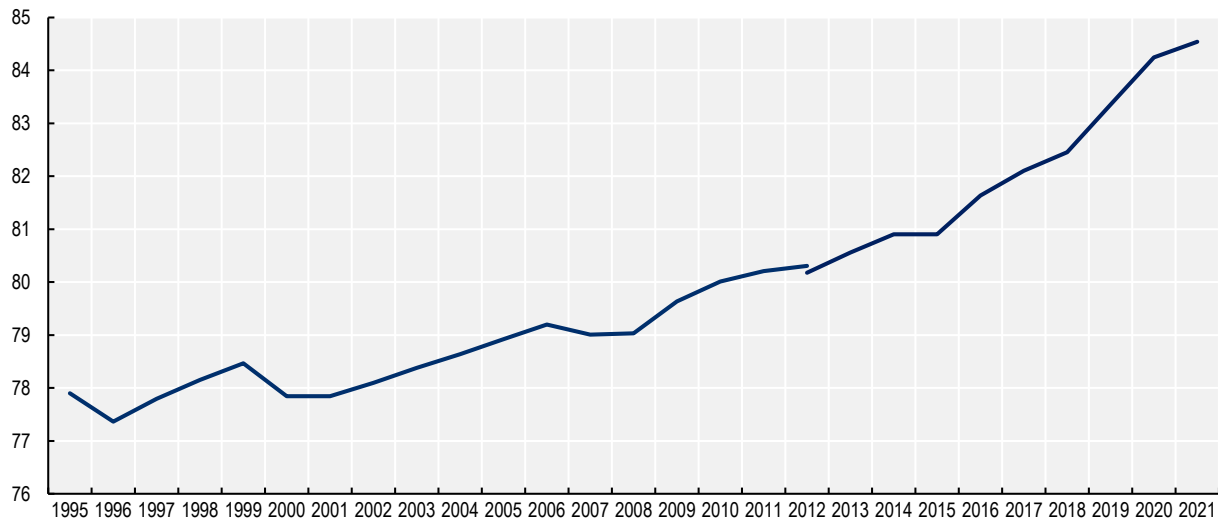
Note: change in income definition in 2012. Calculations for full-time equivalent wages in constant 2021 EUR.
Source: OECD calculations based on (INSEE, 2023[4]).

Over the same period, the gender gap for the number of hours worked has also been reduced from 14.9% in 1995 to 10.6% in 2021. This gap widened in the mid-1990s and early 2000s with the rise of part-time work before shrinking in the next 15 years as women worked relatively more hours and men relatively fewer (INSEE, 2023[4]). The gender gap in the number of hours worked has been relatively stable since 2015.

3.2. Budgeting frameworks related to inequality and well-being

Governments can mobilise budgetary tools and public expenditure to reduce income inequality. The use of public expenditure can include both direct public expenditure through the state or local government budgets, as well as a wide range of transfers and benefits, which are particularly developed in France. Beyond transfers and benefits, long-term inequalities can also be reduced through public expenditure in education, health, or infrastructure projects that benefit marginalised communities, such as building roads, schools, and hospitals or facilitating wider broadband access in underserved areas. While important, these are not necessarily subject to distributional impact analysis within public expenditure frameworks. A recent INSEE report consolidating expertise from a range of administrations and academic centres offered a comprehensive distributional analysis of economic accounts in France, proposing to develop a set of distributional accounts beyond the current national accounts framework and comparing the overall efficiency of the French tax and social transfer system in reducing inequality at various levels of income (INSEE, 2021[5]).

Overall, the key to using government expenditure to reduce inequalities is to ensure that programmes, services and social benefits funded by the government benefit disadvantaged individuals and communities and that they are effective in addressing the specific needs and challenges faced by these groups. In other words, budgeting and public expenditure can be used as a means to achieve societal objectives. In practice, embedding equality and distributional considerations into the budget and public expenditure decision-making process requires detailed information on the likely impact of proposed and ongoing public expenditure decisions on different groups in society.

This section reviews the tools used to estimate and assess the distributional implications of budgetary decisions in France. It reviews the different actors that produce Distributional Impact Assessments (DIAs), the main tools they use, and how their findings can inform decision-making processes and budgetary allocations.

3.2.1. Integration of DIAs in the budget process

To maximise the impacts of Distributional Impact Assessments, their results must feed back into the policy and budget cycles. Distributional information can be used to address inequalities across different phases of the budget cycle, either *ex ante* during the preparation of the budget, and spending measures either in sectoral ministries or in the ministry of finance, or *ex post* once budgetary measures have been approved and are being implemented.

Today, several actors –including ministries, agencies and research organisations– regularly conduct and publish the results of Distributional Impact Assessments and other distributional analyses related to reforms in the French tax and benefit system (CAE, 2022[6]). These institutions perform their analyses at different stages of the budget cycles, either on an *ex ante* or *ex post* basis (see Figure 3.6 below).

Figure 3.6. Integration of DIAs in the budget cycle
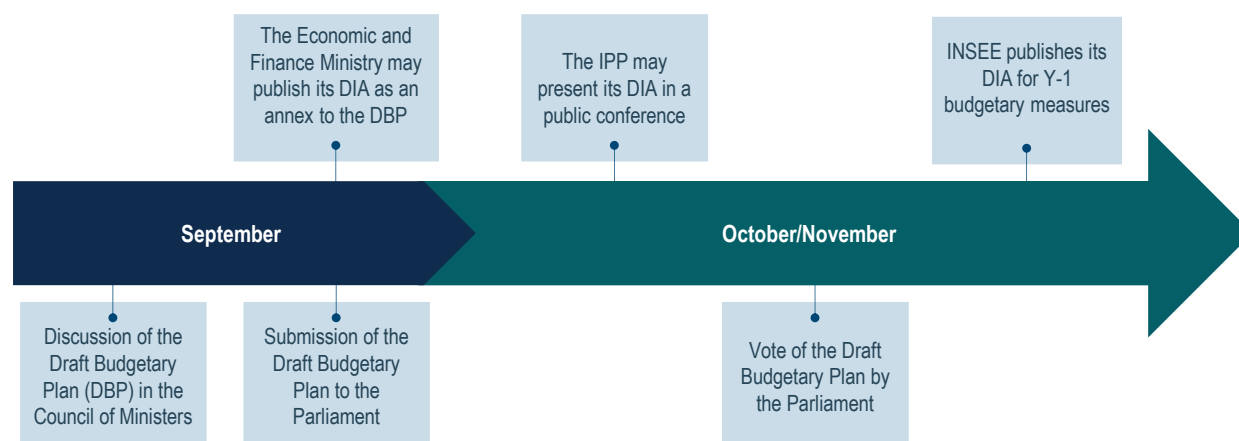
Source: French Treasury, adapted by the author.

Government ministries and agencies

- The **French Treasury (DG Trésor)** conducts Distributional Impact Assessments of the measures proposed in the Draft Budgetary Plan[2] (DBP) by government ministries and agencies. Prospective results are estimated for the upcoming budgetary year (Y+1) and beyond. The French Ministry of Finance may publish the DIA results in September alongside the presentation of the Draft Budgetary Plan. In such a case, the results are published in an annexe to the DBP, the Economic Social and Financial Report (RESF) (CAE, 2022[6])
- The analytical branch of social Ministries (DREES) and one of the largest social funds (CNAF) conduct *ex post* assessments of measures included in the previous budget (Y-1). This assessment provides a more comprehensive assessment of the year's reforms, as changes may occur during the year through amendments, supplementary budgets, or budget reallocations (CAE, 2022[6]).
- The National Statistical Office (INSEE) also publishes an *ex post* analysis of measures from the previous budgetary year in its annual "social outlook" ("Portrait Social"), where it offers an overview of inequalities and social trends in France (Ibid.).

Research institutes

- Two research institutions, the **Institute of Public Policies (IPP)** and the **French Economic Observatory (OFCE),** also publish annual assessments of the redistributive impact of the reforms included in the current budget (Y), usually alongside a cumulative assessment covering a longer period. The IPP can also publish an *ex ante* assessment of the DBP in October before the parliament votes on the bill in November/December (CAE, 2022[6]). These serve to inform the public debate. The IPP enjoys significant direct access to linked micro datasets, including through INSEE's CASD, which allows for detailed microsimulation results. Given the strength of its data, the IPP has developed expertise on some of the deeper distributional issues.

Scope of assessment

Whether they are *ex ante* or *ex post*, the assessments carried out by these institutions can also differ in the scope of their assessments. The IPP covers reforms to the tax and benefit system that have been voted by the sitting government and social partners during the assessment period (whether their implementation is immediate or not). Proposals voted prior to this assessment period are, therefore, not within the scope of the IPP's analysis (CAE, 2022[6]).

On the other hand, the OFCE and French Treasury consider all the legislative proposals for a given year so long as they impact the public finances of that year and can be quantified (CAE, 2022[6]). However, the Treasury and OFCE do not generally consider reform by social partners. The OFCE considers only voted legislation, while the Treasury also assesses budget proposals that have not yet been voted on. As previously mentioned, INSEE publishes in the fall (Y+1) an *ex post* review of policies related to redistribution in its wider "Social Outlook" publication on economic, social, and cultural issues.

3.2.2. Enabling environment

The development and implementation of tools and practices for the systematic consideration of inequalities in the budget process require well-designed expenditure frameworks and institutional arrangements that define clear roles and responsibilities. Key elements for an effective framework include a national strategy with measurable goals and targets; a legal or policy framework; supporting operational guidance and tools; mechanisms for cross-governmental co-ordination. This section reviews the practices in place in France to ensure the consideration of inequality and its implications in the budgetary process.

Integration of distributional considerations in budgetary processes

France is one of eight Euro Area member states that occasionally included DIAs in their Draft Budgetary Plans (DBPs) between 2015 and 2020, along with Austria, Estonia, Finland, Greece, Lithuania, Latvia and Malta (Bazoli et al., 2022[7]). As shown in Table 3.1 below, France included DIAs in three out of its last six DBPs. Over this period, only two countries consistently included at least one DIA in their DBP: Ireland and the Netherlands (see the other case studies in this report). In France, the organic law on finance laws does not mandate that distributional analyses be annexed to the draft budgetary plan (i.e. PLF in France). Such analyses are included on an ad hoc basis in the Economic, Social and Financial Report (RESF) annexed to the DBP at the request of the political leadership. However, the 13 April 2015 law made provision for the publication of new wealth indicators in policymaking and evaluation (Légifrance, 2021[8]).

Table 3.1. Use of Distributional Impact Assessments in budgetary processes in France, 2018-23

DBP year	2018	2019	2020	2021	2022	2023
Was at least one DIA included in the annexe to the DBP (RESF)?	Yes (p.74)	No	Yes (p.24)	No	Yes (p.42)	No

Source: author's review of France's DBPs, (DG Trésor, 2017[9]), (DG Trésor, 2018[10]), (DG Trésor, 2019[11]), (DG Trésor, 2020[12]), (DG Trésor, 2021[13]), (DG Trésor, 2022[14])

The number of budgetary measures covered in a DIA also varies across countries. In 2018, France performed a first joint DIA covering a wide range of budgetary measures. In 2020, France's DIA considered 21 budgetary measures over five policy areas: (1) welfare and social inclusion, (2) employment and welfare, (3) family support, (4) health, and (5) energy efficiency (Ibid.). Making France and Finland the only two countries in the Euro Area that include environment and energy-related policies in their DIAs (Bazoli et al., 2022[7]). In France, as in Estonia and Malta, the policies to be considered for DIA are chosen based on their relative economic importance (Ibid.).

DIAs included in the DBP are conducted by economists working at the French Treasury, which offers on-the-job training on the use of its microsimulation model. An inter-administrative working group was established between 2012 and 2017 to facilitate the sharing of models and methods used in microsimulations underpinning DIA and to compare results in light of methodological differences (CAE, 2022[6]).

3.3. Tools for assessing the distributional impacts of budget decisions

In addition to a robust framework and an enabling environment, systematically embedding considerations related to equality in budgeting and spending decisions also requires supporting guidelines and operational tools. Different tools can be used to assess the distributional impacts of changes in policies and new spending measures. This section reviews the tools used to conduct Distributional Impact Assessments in France, as well as the different actors that use these tools to inform budgetary decisions.

3.3.1. The different actors and their tools

Tax-benefit microsimulation models are widely used to assess the distributional impacts of public spending measures in France. These models use micro-level data on individual characteristics, income and spending to simulate the effects of policy changes across different groups in the population. While these models are primarily aimed at informing the design and implementation of tax and benefit policies, they can also be used to inform budgetary allocations.

In France, three main models are used to assess the distributional impacts of policies; each is owned by different institutions and has its own strengths and weaknesses.

1. **INES** is jointly developed by the National Statistics Institute (INSEE), the analytical branch of the social ministries (DREES) and the largest social fund (CNAF).
2. **SAPHIR** has been developed and maintained by the French Treasury (DG Trésor) since 2008.
3. **TAXIPP** has been developed and owned by the Institute of Public Policy (IPP) since 2012.

Access to all three models is open to external users. TAXIPP has been public since its inception in 2012, whereas access to INES was made public in 2016, and the source code of SAPHIR was made public in 2018, following a request by the Commission for Access to Administrative Documents (DACA). Unlike models used in other countries, none of the models used in France relies on the EU's EUROMOD model, as its only advantage over the aforementioned models is comparability with other EU member states, which is not a key

concern for France (Bazoli et al., 2022[7]). As is the case in Ireland, Finland and Greece, the data used for DIA in France can be easily accessed by registered people such as researchers (Bazoli et al., 2022[7]).

Despite their differences, all these models require comprehensive data on households and individuals to estimate the effects of proposed policies on different population groups. Demographic characteristics and detailed information related to income and expenditure can be collected from surveys or administrative sources. These sources are used to build samples representative of the population that serves as the foundation for accurate and reliable results. Survey sources generally include household or individual-level surveys, such as labour force surveys (SILC in the EU), income and expenditure surveys, and other issue-specific surveys. As for sources of administrative microdata, they typically include tax records or social security databases. Administrative data can be used in conjunction with survey data (e.g. through matching and data validation) or on its own. This section reviews the main features of the different tax-benefit microsimulation models used in France and their respective data sources.

INES

Initially introduced by INSEE in 1996, Ines is now jointly developed by INSEE, the DREES and the CNAF. The model relies on data from INSEE's Tax and Social Income Survey (ERFS[3]), which provides detailed information on each one of the 50 000 households included in the sample. This data is also matched with tax returns to obtain precise and reliable information on income ((Fredon and Sicsic, 2020[15])).

In total, INES can leverage over 1 000 data points per household to simulate the various benefits to which they are entitled and the taxes they will pay. Thanks to a large representative sample of metropolitan France, INES can capture the diversity and complexity of real-life cases.

INES is developed in the SAS programming language and can be adjusted to simulate simple reforms (e.g. increases in minimum benefits) and complex ones (e.g. individual tax rates). For each household in the sample, the model can estimate the effect of a reform on taxes, benefits and living standards. It can also be used to determine who would be the winners and losers of a specific reform, albeit not accounting for behavioural changes. The model is updated every summer in order to estimate the impact of legislation from the previous year. For example, Ines will be updated in the summer of 2023 to estimate legislation from 2022.

The INSEE uses INES for its annual Social Outlook ("*Portrait Social*"), an *ex post* assessment of the redistributive effects of social and fiscal measures. Among other uses, INSEE uses INES to estimate real-time or near-real-time economic indicators (nowcasting) and to estimate net social expenditure for Eurostat and the OECD. INES can also be leveraged in the context of in-depth analysis to inform social and economic debates related to income redistribution, taxation or social protection. These analyses can require the development of additional modules that cover a wider range of transfers (DREES, 2020[16]).

SAPHIR

Like the INES model, the SAPHIR model also relies on the Tax and Social Income Survey (ERFS) dataset. The model is designed to be representative of the year in which budgetary measures will be implemented in terms of demography, legislation, unemployment and income levels. Because the model can simulate a counterfactual with no changes to the French tax and benefit system, it can be used to conduct a prospective analysis of the upcoming measures included in the draft budgetary plan (Amoureux, Benoteau and Naouas, 2018[17]). By simulating the tax and benefit legislation in place at a given point in time, SAPHIR can estimate the impact of a policy change on each household's revenues and taxes. The redistributive effects of budgetary measures can be computed for living standards and other common indicators of inequality and poverty (e.g. household's gains and/or losses per living standard decile). However, integrating dynamic supply side or labour market effects of benefits is difficult for data that are to be integrated by the Ministry of Finance in its Economic, Social and Financial Report submitted together with

the budget ((Ministère de l'Economie et des Finances, France, 2020[18])). The 2020 RESF report cited an analysis by the OECD to outline some of these labour market effects.

The French Treasury uses SAPHIR to assess the redistributive effects of measures in the DPB. When they are published, the results are annexed to the DPB, which is made public in September. SAPHIR is also used for specific policy issues. For example, the minimum wage (SMIC) working group uses the model to prepare its annual report. Finally, SAPHIR is a static model that does not account for households' behavioural changes that could induce changes to the tax and benefit system, such as the decision to participate in the labour market or not.

TAXIPP

TAXIPP is developed by the Institute of Public Policies (IPP) and benefits from the expertise of the Paris School of Economics (PSE). Unlike the INES and SAPHIR models, which rely on both survey and administrative sources, TAXIPP relies solely on administrative data (IPP, 2023[19]). TAXIPP uses a demographic file on housing and individuals (FIDELI) as its main data source. This data is then statistically matched with FELIN, a sample of 500 000 households from income tax data with exhaustive representation of the top 0.4% of earners (Bozio, Guillot and Lafféter, 2015[20]). The IPP also "ages" its data to conduct its assessments. The current version of TAXIPP (2.2) is underpinned by the following administrative sources:

- The FIDELI database collects comprehensive income data from income tax, housing tax and property tax files.
- The FELIN database contains detailed information on the income tax returns of 500 000 households, including an exhaustive representation of top incomes.
- The DADS database contains employee-related information provided by employers.
- The BNS database contains information on self-employed persons.

TAXIPP is used for academic research and –of particular interest to this case study– to evaluate budgetary proposals. Every year, the IPP and the Center for Economic Research and Application (CEPREMAP) use TAXIPP to evaluate reform proposals to the French tax and benefit system. This annual evaluation exercise informs the public debate around the Draft Budgetary Plan (Bozio, Guillot and Lafféter, 2015[20]).

Static models

All three models are static models that do not account for possible behavioural changes resulting from policy changes. Instead, they focus on the mechanical effect of such change in terms of redistribution. That is, these models work under the assumption that, except for the reform itself, other factors will remain constant. However, in some cases, the reform itself may cause changes in behaviour. For example, widening the eligibility criteria of social benefits may not mechanically result in more recipients if newly eligible beneficiaries are not aware of this change or do not complete the necessary procedures.

3.3.2. Comparability of results

For each model, the results of the microsimulation will depend on the counterfactual against which the policy change is estimated. Since the Treasury, INSEE and OFCE all use models underpinned by the same ERFS dataset, their results should be relatively close – this is generally found to be the case with differences within 2% (CAE, 2022[6]). The IPP, however, uses a wider database that also includes data on French overseas territories and non-ordinary households (e.g. mobile and community housing). As a result, the average living standards calculated by the IPP are lower, particularly for the lower end of the distribution. Still, and as noted by the CAE, it is quite remarkable that despite this variety of actors and tools, DIA results generally tend to converge. Some notable exceptions include ad hoc analyses that

account for behavioural changes or leverage additional sources to complement their main databases (CAE, 2022[6]).

Box 3.1. Exceptional extension of the activity allowance in 2019

All three models were part of an exercise to estimate the effect of a 2019 policy change to the activity allowance ('prime d'activité'). The changes were two-fold: (1) a EUR 90 increase in the maximum individual allowance (from EUR 70.49 to EUR 160.49); and (2) widened eligibility. The goal of this exercise was to compare the convergence (or divergence) of results among the different. In this particular example, the Treasury, INSEE and OFCE all have similar results for ordinary households, albeit somewhat higher for the OFCE, with 4 billion compared to 3.7 billion for the INSEE and Treasury (CAE, 2022[6]). As for the IPP, one would expect greater impact among the lower end of the distribution as a result of the wider sample coverage, and thus a greater overall impact as well. However, the total budgetary cost estimated by the IPP is lower. In its review of the different models, the Council of Economic Analysis (CAE) suggests that this discrepancy be further investigated.

Figure 3.7. Extension of the activity allowance

Impact on living standards, %
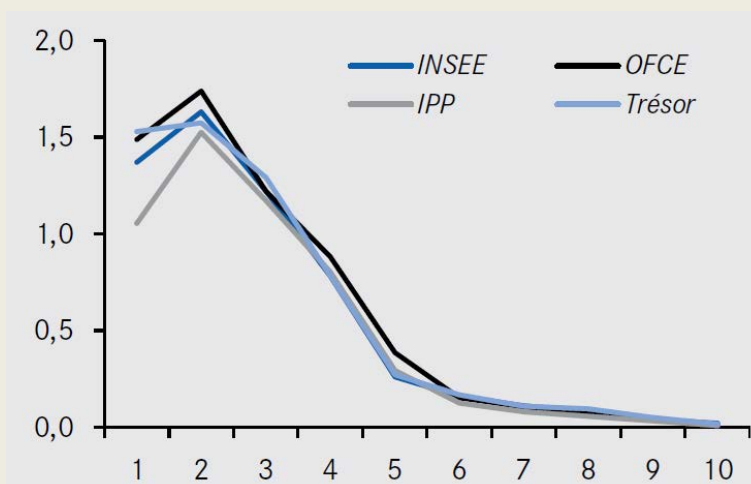
Source: INSEE, OFCE, French Treasury and CAE via (CAE, 2022[6])

3.3.3. Disaggregation of results

As shown in the figure below from the Economic, Social and Financial Report for 2020, DIA results annexed to the DBP are disaggregated by living standard deciles. In its technical note, the Council of Economic Analysis suggested that the distributional impact of policy changes also be examined by household and individual characteristics (CAE, 2022[6]). While this is possible for some individual characteristics such as gender and age, public administrations in France do not collect information on race, therefore preventing such disaggregation of the results in the future.

Figure 3.8. The distributional impact of measures implemented in the 2017-2022 term
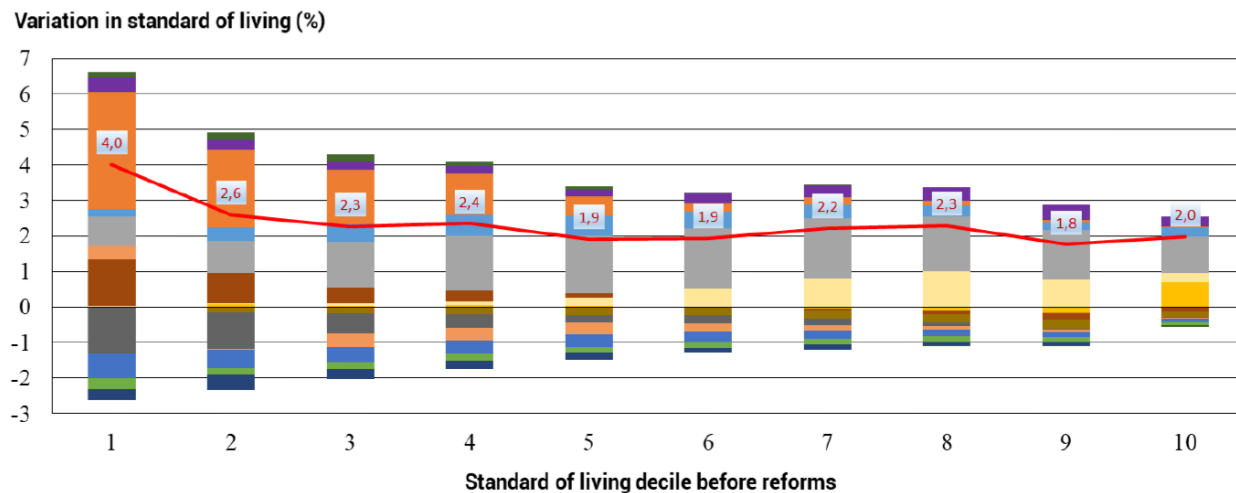

Source: (DG Trésor, 2021[13])

3.4. Data and information infrastructure

Figure 3.9 provides an overview of the different data sources used by tax-benefit microsimulation models in France. Through the ERFS dataset, SAPHIR and TAXIPP both rely on a combination of survey and administrative sources, whereas TAXIPP relies on administrative data alone. The next section delves deeper into the implications of these different data sources on the precision and reliability of results.

Figure 3.9. DIA actors and tools in France
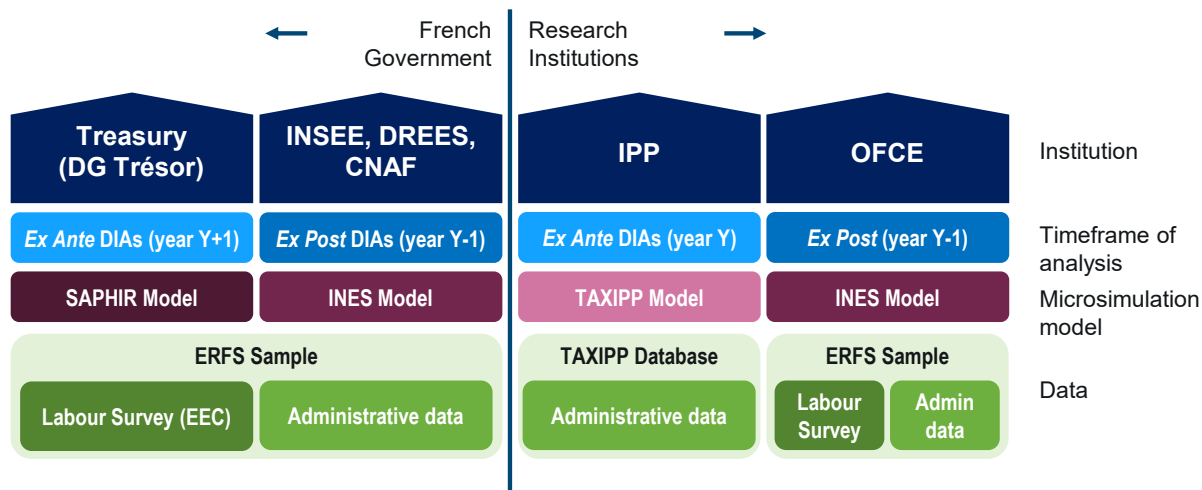
Source: author

Tax-benefit micro-simulation models use a variety of data sources to model the effects of ongoing and proposed policies on individuals and households. These sources can include administrative data from government agencies, self-reported data from household surveys, and other sources of economic and social data. The specific data sources used in a particular model may vary depending on the goals and objectives of the model and the information needed to achieve them. Overall, the goal of using these data sources is to provide a detailed and accurate picture of the target population and how it would be affected by a change in policy.

An essential element of introducing distributional consideration in budgeting processes is the availability of representative data. The population coverage of the sample on which a model relies is also key in ensuring its representativeness. However, as noted previously, the data sources used to conduct DIAs in France vary across models. The results from microsimulations, therefore, need to be compared in light of these methodological differences.

3.4.1. Tax and Social Income Survey (ERFS)

The INES and SAPHIR models are both underpinned by the ERFS dataset, which contains information on approximately 50 000 households. This dataset is based on survey data from the French labour force survey and administrative data from tax and social registries. The ERFS dataset is compiled every three years by the national statistics institute (INSEE) based on information collected as part of the fourth quarter of the wider labour force survey administered annually by the INSEE. In France, the labour force survey - as defined at the European level- is known as the Continuous Employment Survey (EEC). This survey targets a representative sample of households in metropolitan France, therefore excluding people living in overseas territories, mobile housing, community dwellings and homeless people.

Income-related data from the continuous employment survey (EEC) is self-reported and can therefore contain false, misreported, or missing information. To mitigate this problem, income data from the ECC is matched with administrative data from tax and social registers. As a result, the ERFS sample of a given year Y relies on the following:

- **The fourth quarter of the ECC of year Y**, which contains self-reported data at the individual level, such as the professional situation of household members over 15 years old.
- **Tax records** from the Public Finance Directorate (DGFiP), which contains exhaustive information from tax returns for the year Y+1 based on income received in year Y. This excludes all reported incomes and housing taxes paid.
- **Social benefit registries** from the National Family Allowance Fund (CNAF), Agricultural Social Mutual organisation (MSA), and the National Old-Age Insurance Fund (CNAV), which contain information on benefits received in year Y.

Both INES and SAPHIR rely on data from the ERFS sample. When assessing policy proposals for the upcoming year (N+1), the most recent ERFS data is for the year Y-3. To mitigate this limitation, each institution "ages" its data, meaning that observations are reweighted to account for demographic changes or changes in unemployment levels. The French Treasury and OFCE, because they conduct *ex ante* analyses, both age their data over four years. Whereas INSEE, because it conducts *ex post* analyses, only ages its data over two years (CAE, 2022[6]).

3.4.2. Data and precision of results

Because TAXIPP relies on a larger data set with 500 000 households compared to 50 000 for INES and SAPHIR, it can also achieve a finer level of granularity. TAXIPP allows for analysis at the percentile level while, on the other hand, it may be difficult to precisely measure differences in income for the top 5% or even the top 10% of households with SAPHIR and INES (CAE, 2022[6]).

Table 3.2. Comparing tax-benefit microsimulation models in France

	SAPHIR	INES	TAXIPP
Owner	French Treasury	INSEE, DREES, CNAF	IPP
Additional users		OFCE	
Creation	2008	1996	2012
Sample size	50 000 households	50 000 households	500 000 households
Population covered by the sample	63.5 million	63.5 million	67 million
Data source	Survey and administrative data	Survey and administrative data	Administrative data
Precision	Decile	Decile[1]	Percentile (except for the first 5%)[2]

1. INSEE statistics from the ERFS survey are usually broken down by ventiles, while DIA results are usually broken down by decile.
2. Due to the inherent complexity of measuring living standards at the lower end of the income distribution.
Source: author based on (CAE, 2022[6]) and interviews.

As highlighted in Table 3.2 above, the field of distributional analysis in France comprises various actors and tools. This diversity allows for the transparent comparison of results, which can enhance the credibility of the public debate. As discussed previously, DIA results from different actors are found to be generally convergent. Still, there is a need to resolve methodological differences that can impact the comparability of results (such as data sources and the choice of counterfactual) as well as the scope of the analysis (i.e., specific measures or entire budgetary package). Such exchanges among different modellers can also drive improvements to their respective models and enable the pooling of effort, particularly regarding access to data (CAE, 2022[6]). In a 2022 technical note, France's Council of Economic Analysis (CAE) made recommendations to further improve the comparability and transparency of results, which included using a common structure to present key results.

References

Amoureux, V., I. Benoteau and A. Naouas (2018), *Le modèle de microsimulation Saphir*, https://www.tresor.economie.gouv.fr/Articles/380f1480-951e-4c97-ad8a-f820ca5268f0/files/a14b1f71-2b2d-4a65-82e5-22774e8d37b9. [17]

Bazoli, N. et al. (2022), *Study on Distributional Impact Assessment*, European Commission, https://doi.org/10.2767/511644. [7]

Bozio, A., M. Guillot and Q. Lafféter (2015), *Portée et limites du modèle Taxipp pour l'analyse redistributive des prélèvements obligatoires*. [20]

CAE (2022), *Micro-simuler l'impact des politiques publiques sur les ménages : pourquoi, comment et lesquelles ?*, Conseil Analyse Economique. [6]

DG Trésor (2022), *Rapport économique, social et financier - PLF pour 2023*, https://www.tresor.economie.gouv.fr/Articles/5b9dd056-db45-43ca-973d-2320c5157d59/files/7d5a8ecc-fc65-4a02-960d-000aa71a191b. [14]

DG Trésor (2021), *Rapport économique, social et financier - PLF pour 2022*, https://www.tresor.economie.gouv.fr/Articles/955572b2-749e-4e9f-9645-742bef30ff65/files/35e14352-1582-4d77-beef-75b8c7acebd0. [13]

DG Trésor (2020), *Rapport économique, social et financier - PLF pour 2021*, https://www.tresor.economie.gouv.fr/Articles/6efc6c82-e294-48ed-87a4-559ecc13747c/files/38833aa8-5cdd-45da-8ca2-e5b2fdffb352. [12]

DG Trésor (2019), *Rapport économique, social et financier - PLF pour 2020*, https://www.tresor.economie.gouv.fr/Articles/913ca061-93bb-44c7-a860-04468507d5bb/files/b1ac7248-60bc-4094-9029-1761bae604c2. [11]

DG Trésor (2018), *Rapport économique, social et financier - PLF pour 2019*, https://www.economie.gouv.fr/files/files/Actus2018/RESF_2019_web.pdf. [10]

DG Trésor (2017), *Rapport économique, social et financier - PLF pour 2018*, https://www.tresor.economie.gouv.fr/Articles/2017/10/03/publication-du-rapport-economique-social-et-financier-plf-pour-2018. [9]

DREES (2020), *Le modèle de microsimulation INES*, https://drees.solidarites-sante.gouv.fr/sources-outils-et-enquetes/le-modele-de-microsimulation-ines. [16]

Fredon, S. and M. Sicsic (2020), *Ines, le modèle qui simule l'impact des politiques sociales et fiscales*. [15]

INSEE (2023), *Dans le secteur privé, l'écart de salaire entre femmes et hommes est d'environ 4 % à temps de travail et à postes comparables en 2021 - Insee Focus - 292*, https://www.insee.fr/fr/statistiques/6960132#figure1_radio1 (accessed on 22 June 2023). [4]

INSEE (2023), *Niveau de vie et pauvreté des territoires en 2020 − Principaux résultats sur les revenus et la pauvreté des ménages en 2020 | Insee*, https://www.insee.fr/fr/statistiques/6692414?sommaire=6692394#consulter (accessed on 22 June 2023). [3]

INSEE (2022), *France, portrait social*. [2]

INSEE (2021), *Rapport du groupe d'experts sur la mesure des inégalités et de la redistribution,* [5]
Groupe d'experts de l'Insee, WIL, Depp, DG Trésor, Drees, IPP, Liepp, OCDE, OFCE, SIES,
INSEE Methode n° 138, Sous la direction de Jean-Marc Germain, Mathias Andre et Thomas
Blanchet, https://www.insee.fr/fr/information/5020893.

IPP (2023), *Méthodes TAXIPP*, Institut des Politiques Publiques, [19]
https://www.ipp.eu/methodes/taxipp-outils/ (accessed on 3 July 2023).

Légifrance (2021), *LOI n° 2015-411 du 13 avril 2015 visant à la prise en compte des nouveaux* [8]
indicateurs de richesse dans la définition des politiques publiques (1) - Légifrance,
https://www.legifrance.gouv.fr/loda/id/JORFTEXT000030478182 (accessed on
23 June 2023).

Ministère de l'Economie et des Finances, France (2020), *Rapport Economique Social et* [18]
Financier, https://www.tresor.economie.gouv.fr/Articles/913ca061-93bb-44c7-a860-
04468507d5bb/files/b1ac7248-60bc-4094-9029-1761bae604c2.

Rousselon, J. and M. Viennot (2020), *Inégalités primaires, redistribution : comment la France se* [1]
situe en Europe, France Strategie note d'analyse n97 2020,
https://www.strategie.gouv.fr/sites/strategie.gouv.fr/files/atoms/files/fs-2020-na-97-inegalites-
primaires-redistribution-decembre.pdf.

Notes

[1] Market income data from the OECD excludes public pension schemes but includes obligatory private
pension schemes.

[2] In France, the finance bill (PLF) and the social security financing bill (PLFSS) constitute together the draft
budgetary plan (DPB).

[3] Enquêtes Revenus fiscaux et sociaux (EFRS).
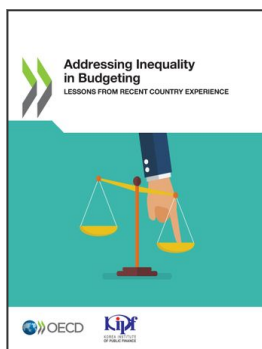
From:

Addressing Inequality in Budgeting
Lessons from Recent Country Experience

Access the complete publication at:
https://doi.org/10.1787/ea80d61d-en