Regularly measuring the non-take-up of the RSA and the employment bonus: method and results

Cyrine Hannafi, Rémi Le Gall (ERUDITE, université Paris-Est Créteil ; DREES), Laure Omalek et Céline Marc (DREES)

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FOREWORD

Reducing the non-take-up of minimum social benefits is one of the priorities of the anti-poverty policy (Cour des Comptes, 2022). When people do not receive benefits to which they are entitled, there is an increased risk of poverty and exclusion, especially when the benefits in question are intended for those most in need. More broadly, combatting the non-take-up of benefits is a long-term challenge to reduce the social and economic costs of poverty by providing better access to services, food, housing and healthcare (Eurofound, 2015).

Figures are available on the subject, with analyses that are useful for understanding the difficulties of access to social benefits for certain groups. However, most of these figures are not generalisable because they are based on surveys of specific populations such as those known to charitable associations (Secours catholique and Odenore, 2021). Public statistics[1], in particular the Directorate for Research, Studies, Evaluation, and Statistics (DREES), seeks to produce regular and "representative" statistics to quantify this not-take-up phenomenon more broadly and to identify those affected (Gonzalez, Nauze-Fichet, 2020). Furthermore, monitoring this phenomenon over time would enable evaluation of the efficacy of measures aimed at reducing non-take-up. Indicators of non-take-up of social benefits have been established in some European countries, without however going as far as regularly measuring the phenomenon. The United Kingdom is an exception – it publishes annual take-up rates of the main income-related benefits (DREES, to be published).

The difficulty in measuring the non-take-up lies mainly in accessing sufficiently informative data sources representative of the French population in order to be able to accurately simulate the complexity of social systems and therefore identify eligible persons, as well as monitoring the recipients of social benefits (actual beneficiaries), all in a coherent manner. In early 2011 in France, shortly after the introduction of the earned income supplement (*Revenu de solidarité active*, [RSA]), the non-take-up of this benefit was assessed using a special survey by the Department for the Organisation of Research, Studies and Statistics (DARES). This type of operation had the advantage of combining the measurement of non-take-up with in-depth analysis of its causes and underlying behaviour. However, the financial cost of the survey was high, which has prevented it from being repeated in the last ten years. Furthermore, this survey did involve certain measurement difficulties.

Seeking to produce a more regular and less costly representative measurement of non-take-up, the work carried out in this report is based on INSEE's (National Institute of Statistics and Economic Studies) Tax and Social Incomes Survey (ERFS). This survey contains a large amount of individual information that simultaneously allows simulating eligibility for these benefits (with the help of the INES tax-benefit microsimulation model) and comparing households simulated as eligible with households that actually receive benefits (observed in the ERFS survey through matching with data from the organisations that pay these benefits, mainly the National Fund for Family Allowances [CNAF]).

In line with the government's anti-poverty strategy, this project to improve the measurement of non-take-up of social benefits, led by DREES, began in the autumn of 2019 in collaboration with the CNAF and the University Paris-Est Créteil (UPEC). It received financial support from the Interministerial Delegation for the Prevention of and Fight against Poverty (DIPLP), with the **main objective of assessing the possibility of regularly measuring the non-take-up of RSA and the employment bonus (*Prime d'Activité*, [PA]), which is reliable enough to be published.** This project also benefited from support and expertise from INSEE (Aliocha Accardo, Jorick Guillaneuf and Julie Labarthe), as well as other subject specialists (Sandra Bernard and Pierre-Yves Cabannes [DREES], Antoine Rode [Observatory of Non-take-up], Stéphane Donné [CNAF], Pascale Novelli [Secours catholique] and Muriel Pucci [Paris 1 Panthéon-Sorbonne University]).

This report marks a first step in the extensive work undertaken by DREES to attempt to produce a regular measurement of non-take-up of two benefits (RSA and the PA), for which no such monitoring systems yet exist. This work will be undertaken with the intention of analysing the determinants of non-take-up and, above all, consolidating its quantification, particularly for the PA. This second step will require improving the accuracy of data on the sub-annual resource trajectories of individuals likely to receive these benefits. As such, the National Council for Statistical Information (CNIS) issued a favourable[2] opinion on the statistical experimentation project that aims to recover the monthly resources of individuals in the ERFS survey through the monthly resource framework[3] (DRM). The success of this project will be critical in advancing the measurement of non-take-up of social benefits.

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[1] The National Council for Statistical Information (CNIS), which ensures cooperation between producers and users of official statistics, tackles the non-take-up of social rights in a separate opinion in its 2021-2023 "mid-term" report (https://www.cnis.fr/instances/moyen-terme) and organises regular progress reviews on the topic.

[2] https://www.cnis.fr/wp-content/uploads/2021/11/CR_2021_2eme_reunion_COM_services_publics.pdf

[3] Personal information database relating to the monthly resources of social benefit recipients: earned income and other types of income (pensions, social assistance, etc.).

SUMMARY

In France, the measurement of non-take-up of social benefits is most often incomplete, local and episodic (Gonzalez, Nauze-Fichet, 2020). To measure this phenomenon, researchers traditionally use specific surveys or compare existing survey data or administrative data and use microsimulation methods.

The fundamental challenge in measuring non-take-up lies in collecting the information needed to simulate eligibility, as well as measuring the actual take-up of benefits. The coherence of these two pieces of information makes it possible to detect non-take-up. However, screening those eligible is always approximate insofar as the information needed to implement the rules for calculating entitlement to benefits (e.g. income, marital status, residence status, employment status) can never be monitored perfectly, regardless of the data source. For non-recipients, this information is in fact missing in government data that manages benefits, and is imprecise in the survey data. Moreover, in the survey data, the take-up of benefits may be poorly measured if it contains only approximate declarative information or if matching with government data is incomplete. Finally, to avoid skewing the estimate, the comparison of eligibility and actual take-up of benefits also assumes a common basis for observation (i.e. the same sample of people) over the same period of time.

Shortly after the introduction of the earned income supplement (RSA), the non-take-up of this benefit was assessed using a special survey carried out in 2010-2011 by the Department for the Organisation of Research, Studies and Statistics (DARES), which is part of the Ministry of Labour, Employment and Economic Inclusion. The advantage of this type of operation is that measuring non-take-up can be combined with in-depth analysis of its causes and underlying behaviour. However, this is a costly operation[4] that can only be done on an ad-hoc basis and is subject to measurement difficulties.

For a less costly and more regular measurement of non-take-up, the use of survey data on resources in the general population, produced periodically and backed by a tax-benefit microsimulation model, seems more appropriate. Based on these tools, this *DREES report* proposes a method for estimating the non-take-up of two benefits: the earned income supplement and the employment bonus (PA). This work shows that it is possible to regularly measure the non-take-up of RSA. **In 2018, one third of RSA-eligible households would have been non-recipients each quarter, and one fifth would have been for pro-longed periods throughout the year.** The unpaid sums corresponding to the non-take-up of RSA would reach €750 million, per quarter, in the area covered[5]. However, **additional data, which is currently unavailable, is still needed to estimate the non-take-up of the PA.**

The tax and social incomes survey (ERFS) is produced annually by INSEE. By the wealth of information that it contains and its large representative sample of the French population (although limited to ordinary housing in metropolitan France), it is an essential stand-alone basis for measuring non-take-up. For each reformed social welfare home, it allows both simulation of eligibility, based on the INES tax-benefit microsimulation model, as well as observing the actual take-up (based on the matching of social data from the CNAF [National Fund for Family Allowances] and the CCMSA [Central Agricultural Social Mutual Benefit Fund]). Through the detailed analysis that it allows, this comparative approach makes it possible to develop consolidated indicators, with limitations that must be overcome. In particular, the number of RSA-recipient households in the ERFS survey is 20% lower than the number observed in the comprehensive CNAF data, across a similar scope and timeline. The main reason for this difference in numbers appears to be related to an underrepresentation of households with no income in the ERFS. Under the hypothesis that this underestimation affects both the simulation of those eligible and the observation of recipients, **it is possible to estimate a consistent non-take-up rate by comparing recipients and those eligible within the ERFS (Part 1).** The overall estimate of the non-take-up rate of RSA would not change significantly if a higher proportion of social welfare households with no income were taken into account.

Some of the RSA and PA recipients are not simulated as eligible by the microsimulation model (*beta error*): this is the case for 17% of RSA recipients and 39% of PA recipients **(Part 2)**. This inaccuracy in estimating eligibility – an unavoidable phenomenon – can be explained in part by internal processing in the ERFS survey (imputations of income or benefits to statistically similar individuals), as well as by omissions or errors in declarations, both in the survey data and in the information communicated to the Family Allowance Fund (CAF). **The lack of information on sub-annual variations in income is also a potentially significant source of error, especially for the PA, whose scale is based on monthly earned income.** Better knowledge of sub-annual resource trajectories would be a decisive element in validating, refining and/or improving the method.

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[4] The 2010-2011 survey cost €800,000 and involved the equivalent of three full-time staff over two years.

[5] In the category of "ordinary" housing in metropolitan France (ERFS category), excluding aggregated households with no disposable (or declared) income, excluding social welfare households where the person of reference is over 64 years of age or is a student or on parental leave, excluding beneficiaries of a disability pension or those who have disabilities, and excluding discrepancies in marital status between the Employment survey and the CNAF. This sub-category leads us to consider 84% of households receiving RSA in the ERFS survey, and 70% of all recipients in 2018 (whole of France, all housing). The estimate of the unallocated financial sum would be larger if it covered a broader scope.

Access to the monthly resource framework (DRM)[6] would therefore be a contributing factor in better measuring non-take-up. Pending further investigation, **the initial results therefore only relate to the RSA**, which is generally intended for people who are least likely to find employment and whose income variations over the year are lower on average.

The presence of simulated non-eligible recipients raises the question of their inclusion in **the calculation of non-take-up (Part 3**). With the exception of observation issues relating to take-up, which can be explained by cases of imputations of RSA amounts in the ERFS survey or by cases of discrepancies between the marital status declared in the ERFS survey and the status known to the CAFs, we can assume that these non-eligible recipients would have been simulated as eligible with a perfect simulation. Their presence results from insufficiently precise information in the ERFS (on monthly income, for example) or from unavoidable approximations in the implementation of legal rules to simulate eligibility. Under the hypothesis that these approximations would generate a similar number of "people incorrectly considered non-eligible" (recipients or not) as "people incorrectly considered eligible," the non-take-up is ultimately estimated by comparing all of the recipients observed to all of the simulated eligible persons[7]. **The non-take-up rate of RSA is therefore estimated at 34% on average per quarter, and at 20% in the long term** (three consecutive quarters). On first analysis, it appears to be higher for people under the age of 30, for couples without children, graduates, those living with their parents or owning their own home, and those living in rural communities or in the Paris region. Entitlements that non-recipients would receive would reach €330 per month per consumption unit[8], an amount of the same order of magnitude received by recipients, even though slightly more non-recipients are eligible for small amounts.

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[6] The DRM is a personal information database relating to the monthly resources of social benefit recipients: earned income and other types of income (pensions, social assistance, etc.). It is jointly led by the French National Old-Age Insurance Fund (CNAV) and the Department of Social Security (DSS).

[7] Quarterly eligibility is estimated for calendar quarters (the year beginning in January) and annual earnings are allocated over the course of the year based on the retrospective employment activity calendar.

[8] To calculate RSA entitlement, one consumption unit is allocated to the first adult in the household, 0.5 for an additional person (couple without children or single-parent family with one child), 0.3 for the first child between a couple and the second child in a single-parent family, and 0.4 for any additional child.

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■ PART 1: ESTIMATING NON-TAKE-UP BASED ON THE TAX AND SOCIAL INCOMES SURVEY (ERFS)

Identifying the non-take-up of a benefit requires estimating the eligible population, as well as knowing the population of recipients, i.e. the actual beneficiaries. The approximation of these two populations makes it possible to measure non-take-up. Non-recipients are those who, although eligible, do not receive the social benefit in question.

Two types of data sources can be used to measure this phenomenon: specific ad-hoc surveys of a sample of individuals representative of the population targeted by the benefit, or regular general population surveys on welfare[9] (Hernanz, et al., 2004). What these sources have in common is the wide range of information available to assess entitlement eligibility. This includes age, family situation, employment status, various resources received, etc. Based on this information, eligibility for benefits is "simulated" by calculating the amount of benefits to which the household could be entitled. The quality of the results is determined by the accuracy and reliability of the information needed to assess eligibility,[10] as well as the proper enforcement of the rules defined for calculating entitlement, which must be similar enough to those enforced by the organisations that pay the benefits.

A special survey, carried out at the end of 2010 and beginning of 2011 by the Department for the Organisation of Research, Studies and Statistics (DARES) as part of the work of the national committee for the evaluation of RSA, was used to evaluate the non-take-up of the earned income supplement (RSA). The advantage of this type of operation is that measuring non-take-up can be combined with in-depth analysis of its causes and underlying behaviour. However, this is a costly operation[11] that can only be done on an ad-hoc basis and is no stranger to measurement difficulties (see Part 2, point 2.1).

For a reliable, less costly and more regular measurement of non-take-up, the use of regular surveys on resources and living situations in the general population seems more appropriate. The Tax and Social Incomes Survey (ERFS), which combines the wealth of declarative data from the continuous employment survey with administrative data on resources (all taxable income and benefits received), seems to be the most relevant data source for identifying non-take-up (see point 1). On the other hand, it could suffer from flaws of representation, especially for low incomes (see point 2). Nevertheless, when taking these flaws into account, the estimate of the non-take-up rate would be only slightly affected (see point 3).

1   The ERFS survey currently appears to be the most appropriate source for measuring a non-take-up rate of earned income supplement (RSA) and the employment bonus (PA)

1.1   A rich, representative and regular individual basis

The ERFS survey **is an annual general population survey representative of aggregated households living in ordinary accommodation in metropolitan France** and is produced by Insee (The National Institute of Statistics and Economic Studies)[12]. It makes it possible to observe, within a single source, almost all tax-benefit income and transfers as well as a wide range of socio-demographic information. It is **the baseline nationwide survey on the measurement and distribution of income, inequality of living standards and income poverty.** It is based on a sample of approximately 110,000 people from 50,000 responding aggregated households (see Appendix 1).

The ERFS has many benefits for measuring and analysing the non-take-up of social benefits:

- the wealth of information in the employment survey (in Q4 of the year), backed by tax and social security data (for the same year), provides detailed knowledge of individual and family situations, and of all income received during the year

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[9] These organisations have information on the take-up of benefits, either declarative (a question in the survey) or administrative, through a match with data from social protection organisations.

[10] As with observing take-up, the data used to simulate eligibility may be declarative or come from a match with administrative data. In either case, reporting biases or mismatches can lead to underestimation or overestimation of entitlement and interfere with the measurement of non-take-up.

[11] The 2010-2011 survey cost €800,000 and involved the equivalent of three full-time staff over two years.

[12] The ERFS results from a matching of the continuous employment survey (data from Q4 of the year) with the tax files (from the annual income tax returns) of the General Directorate of Public Finances (DGFiP) and those available to the National Fund for Family Allowances (CNAF), the French National Old-Age Insurance Fund (CNAV) and the Central Agricultural Social Mutual Benefit Fund (CCMSA) on benefits paid in the same year.

(including all social benefits within the scope of the resources evaluated for the receipt of RSA and PA). This knowledge is valuable for building resource bases and simulating eligibility for these benefits;

– the ERFS survey is already the input base for the INES tax-benefit microsimulation model[13]. The RSA and PA eligibility simulation modules can therefore be implemented directly, which limits programming costs and improves responsiveness. As the tax-benefit legislation is updated each year in INES, implementing the calculation rules can therefore be easily mobilised (see Appendix 1);

– to observe take-up, matching with data from social organisations allows us to observe the amounts of benefits actually received (in this case, RSA and PA) without any declarative bias linked to the survey;

– the annual output of the ERFS survey would provide a regular measurement of non-take-up.

The eligibility and take-up of these benefits can therefore be linked to the same category and the observed amounts can be individually compared to the simulated amounts.

1.2   Limitations in estimating a non-take-up indicator

However, there are several limitations to using the ERFS that must be taken into account to obtain reliable estimates of non-take-up and to analyse the significance of these estimates:

■ **The scope of the survey is restricted to ordinary housing in metropolitan France**. People who are homeless, living in non-family households or in temporary housing (workers' hostels, student residences, emergency accommodation, hotels, mobile homes, etc.) are therefore excluded from the analysis, as well as those residing in overseas departments and regions[14]. Some people who are more likely to receive RSA and/or the PA are therefore not included in the estimation of the non-take-up rate.

■ **The ERFS data is released at a later stage, in the autumn of year *N+2*, relating to the year of *N***. This discrepancy between the time of measurement and the period it covers reduces the scope for more up-to-date monitoring of measures aimed at reducing non-take-up.

■ Some resources are released individually by INSEE (e.g., employment income and replacement income) while others are grouped by **aggregated household** (e.g. social benefits and wealth income). However, the aggregated household unit, which includes all persons sharing one house[15] is a **different concept from the notion of a family or "social welfare household"**, which is the unit of payment for social benefits. Aggregated household resources must therefore be broken down by social welfare households in order to precisely define the scope of eligibility and take-up.

■ **(Tax and social) resources are only released annually.** However, the RSA and PA are benefits that are based on assessing resources from the last three months prior to the entitlement review. This requires knowledge of the resources collection on a sub-annual level.

1.3   These limitations can be partially overcome

Determining the scope of social welfare households formed by those surveyed in the ERFS survey, within the meaning of the RSA and PA, is mainly based on knowledge of family ties, on the inclusion of young adults who may or may not be dependent on their parent, and on individual employment status (see Part 2). The INES microsimulation model is used to account for these households (see Appendix 2).

Social benefits traditionally combined as an aggregated household are reallocated as social welfare households using an intermediate ERFS table provided by INSEE (see Appendix 2). This table specifies, on an individual level, the origin of social matching (CNAF, CNAV or CCMSA) and the payment of benefits for each social file. The idea is to consider that each matched individual is representative of the social welfare household built within INES to which it belongs. Access to this intermediate ERFS table has also provided a sub-annual timeline of benefit payments, which improves the link between eligibility and take-up (see Part 2 and Appendix 5).

Earned and replacement incomes are paid monthly or quarterly based on the retrospective calendar of employment activity of the last twelve months from the Employment survey. Although this information from the Employment survey makes it possible

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[13] Tax-benefit microsimulation models are analytical tools that make it possible to analytically represent regulations and/or the economic environment and quantitatively assess the effects of reforms at an individual level, on a representative sample of individuals (Legendre, 2019). The INES model, a co-creation of INSEE and DREES, and more recently of the CNAF, simulates the main taxes and social benefits in France. The model can simulate any year of recent legislation on any recent survey year of the ERFS (Fredon, Sicsic, 2020).

[14] At the end of 2019, 3% of employment bonus recipients and 11% of RSA recipients were residing in overseas departments and regions (comprehensive data from the CNAF [FR6]).

[15] Information from income tax returns is also determined by tax households but only persons residing in the surveyed household (i.e. in the same aggregated household) are kept in the category.

to estimate monthly resources, this estimate is inevitably imperfect (even distribution of resources according to the main labour force status declared in the previous months by the respondents) [see Appendix 5].

The question of an "up-to-date" estimate of non-take-up based on the ERFS available with at least a two-year difference has not been analysed. The focus here is on the reliability of a method for estimating non-take-up from 2018 of the ERFS survey. However, for a more up-to-date measure, the INES tax-benefit microsimulation model could be used, taking into account additional hypotheses. Work could be carried out in a second phase by turning to nowcasting methods, i.e. a leading indicator, similar to what exists for the poverty rate (Fontaine, Fourcot, 2015).

Finally, the ERFS category cannot be modified and all statistically representative analyses will be limited to aggregated households living in ordinary accommodation in metropolitan France. Only ad-hoc surveys could improve the analysis of the entire resident population in France.

2 Overcoming the problem of underestimation of RSA recipients

In order to measure non-take-up directly from the ERFS survey, it is necessary to assess the quality of the ERFS survey in relation to the take-up observed in the comprehensive data. To carry out this evaluation, with the help of intermediate data from the ERFS survey[16], we compared the number of beneficiaries of social welfare households and the financial sums accounted for in the survey with the information contained in the CNAF's six-month monthly reference files (FR6), the comprehensive source of RSA and PA payments (see Appendix 1). This comparison was carried out in the category of ordinary housing in metropolitan France, for which it is therefore necessary to perform specific processing in the administrative data[17]. The analysis has enabled the identification of gaps that are known to some extent (gaps established in the ERFS production balance sheets and other sources), but it has the advantage of specifying their characteristics and some of their causes, in particular thanks to in-depth work on the scope of social welfare homes (see Appendix 2).

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[16] In concrete terms, this is a table provided by INSEE's Household Income and Wealth Division, which makes it possible to identify, within each aggregated household, the individual(s) found as a result of social matching, and, where applicable, the amounts collected from the various social benefits in the administrative files (see Appendix 2).

[17] The six-month reference files (FR6) produced by the CNAF are extensive. A specific filter to detect recipients in non-ordinary housing is created based on information provided by recipients of housing benefits, RSA and the employment bonus about their housing situation. The CNAF definition of ordinary housing does not completely match the INSEE's definition (see Part 1, point 2.2.1 and Appendix 3).

2.1 RSA recipients are underestimated in the ERFS survey compared to the comprehensive CNAF data (FR6), with a comparable category and timeframe

2.1.1 Underestimation of 20% of the recipients and 16% of the financial sums of RSA

In a comparative concepts category, RSA-recipient households appear to be clearly underestimated in the ERFS survey compared to observations from the CNAF's comprehensive data. Over the whole of 2018, in metropolitan France and among residents in ordinary housing, the recipients are 20% lower in the ERFS survey and the financial sums are 16% lower, representing a difference of €1.4 billion (Table 1). For the PA, the data sources are similar and the underestimation is smaller: -6% in numbers and -1% in financial sums.

Table 1 Households receiving RSA and the PA in metropolitan France during 2018 according to the ERFS survey and the CNAF's comprehensive data (FR6)

		RSA		PA	
		Households	Financial sum	Households	Financial sum
		(in millions)	(in billions of €)	(in millions)	(in billions of €)
FR6 (Comprehensive data from the CNAF)	All recipients	2.27	9.81	4.22	5.08
	of which ordinary housing[1]	2.07	8.83	3.97	4.82
ERFS (Tax and Social Incomes Survey)	Overall EFRS	1.69	7.5	3.84	4.94
	– of which matched with CNAF	1.61	7.23	3.72	4.76
	– of which matched with MSA	0.03	0.11	0.13	0.18
	– of which were imputed	0.04	0.17	0	0
ERFS-FR6 difference in CNAF category – ordinary housing	**Absolute**	**-0.42**	**-1.43**	**-0.25**	**-0.06**
	Relative (as a %)	**-20%**	**-16%**	**-6%**	**-1%**

1. Filter by last known housing situation in the FR6.
Note > The ERFS-FR6 difference is calculated excluding MSA matches.
Interpretation > Of the 2.27 million households receiving RSA identified by the CNAF in 2018 (at least once a year), 2.07 million are identified in ordinary housing. The ERFS survey accounts for 1.69 million households receiving benefits, of which 0.03 million are households receiving the agricultural social mutual fund (MSA). On a comparable category (excluding non-ordinary housing and MSA matches), the difference is 0.42 million, i.e. 20% fewer benefit recipients in the ERFS survey than in the comprehensive CNAF data.
Champ > Metropolitan France, PA and RSA recipients at least once a year (including increased RSA, excluding Christmas bonuses).
Source > FR6 2018 (comprehensive monthly data from the CNAF produced with six months of historical data in order to be considered stable) – ERFS 2018 INSEE-DGFiP-CNAF-CNAV-CCMSA (construction of social welfare households from INES in 2018).

These relative differences are similar quarterly (table 2), slightly smaller in terms of the number of households receiving benefits. It can be deduced from this that among all recipients over the year, the proportion of recipients receiving the benefits several quarters in the year is slightly higher in the ERFS survey than in the CNAF data.

Table 2 ERFS-FR6 comparisons: number of recipients and financial sums paid from the RSA and PA, per quarter in 2018

RSA	Recipient households (in millions)			Financial sum (in billions of €)		
	FR6 2018	ERFS 2018	ERFS-FR6 difference as a %	FR6 2018	ERFS 2018	ERFS-FR6 difference as a %
Q1	1.63	1.40	-14%	2.20	1.88	-15%
Q2	1.63	1.38	-15%	2.20	1.85	-16%
Q3	1.63	1.38	-15%	2.21	1.85	-16%
Q4	1.64	1.36	-17%	2.23	1.85	-17%
Quarterly average	**1.63**	**1.38**	**-15%**	**2.21**	**1.86**	**-16%**

PA	Recipient households (in millions)			Financial sum (in billions of €)		
	FR6 2018	ERFS 2018	ERFS-FR6 difference as a %	FR6 2018	ERFS 2018	ERFS-FR6 difference as a %
Q1	2.72	2.68	-2%	1.12	1.11	-2%
Q2	2.72	2.67	-2%	1.18	1.16	-2%
Q3	2.76	2.72	-2%	1.19	1.19	-1%
Q4	2.98	2.93	-3%	1.31	1.31	-1%
Quarterly average	**2.82**	**2.75**	**-2%**	**1.21**	**1.19**	**-1%**

Interpretation > In the first quarter of 2018, in the category in question, there were 1.63 million households receiving RSA in the FR6 data compared to 1.40 million in the ERFS survey. 14% fewer RSA recipients were identified in the ERFS than in the comprehensive data produced by the CNAF.
Champ > Metropolitan France, ordinary housing (in the FR6, filter by last known situation) – PA/RSA recipients at least once in the quarter, including increased RSA, excluding Christmas bonuses. ERFS: CNAF matched or imputed amount.
Source > FR6 2018 (comprehensive monthly data from the CNAF produced with six months of historical data in order to be considered stable) – ERFS 2018 INSEE-DGFiP-CNAF-CNAV-CCMSA (construction of social welfare households from INES in 2018).

2.1.2 The number of single persons is underestimated, while the number of couples is overestimated

For both the PA and RSA, single-person households or single-parent families are underrepresented in the ERFS sample compared to the comprehensive CNAF data (FR6), whereas couples, with or without children, are overrepresented (figure 1).

These differences could, in part, be linked to discrepancies in family situations between what is observed in the administrative data (the last known situation) and what is indicated in the survey (the situation in the last quarter) for the same social welfare household. However, when restricting only to recipients in the last quarter of 2018 in both sources, there are also differences in family structure, with a deficit of single person households with or without children in the ERFS survey compared to the comprehensive CNAF data. This deficit remains particularly pronounced for RSA.

These differences in family structure between the social welfare households defined in the ERFS survey and those found in the comprehensive CNAF data do not explain the differences found in the paid financial sums. In fact, when matching with social data, the ERFS recovers all the amounts paid for each recipient, regardless of the family situations declared to the CNAF, even if these situations do not correspond to that identified in the survey. As for the difference in **the number of households receiving benefits**, the effect can only be marginal as there are few cases where several benefit claimant files are associated with the same ERFS household. However, any difference in family situations could affect the simulation of eligibility (see Part 2) and the consistency between eligibility and take-up (see Part 3).

Figure 1 **Number of recipients and financial sums of RSA and PA in Q4 of 2018, according to the family structure of the social welfare household**
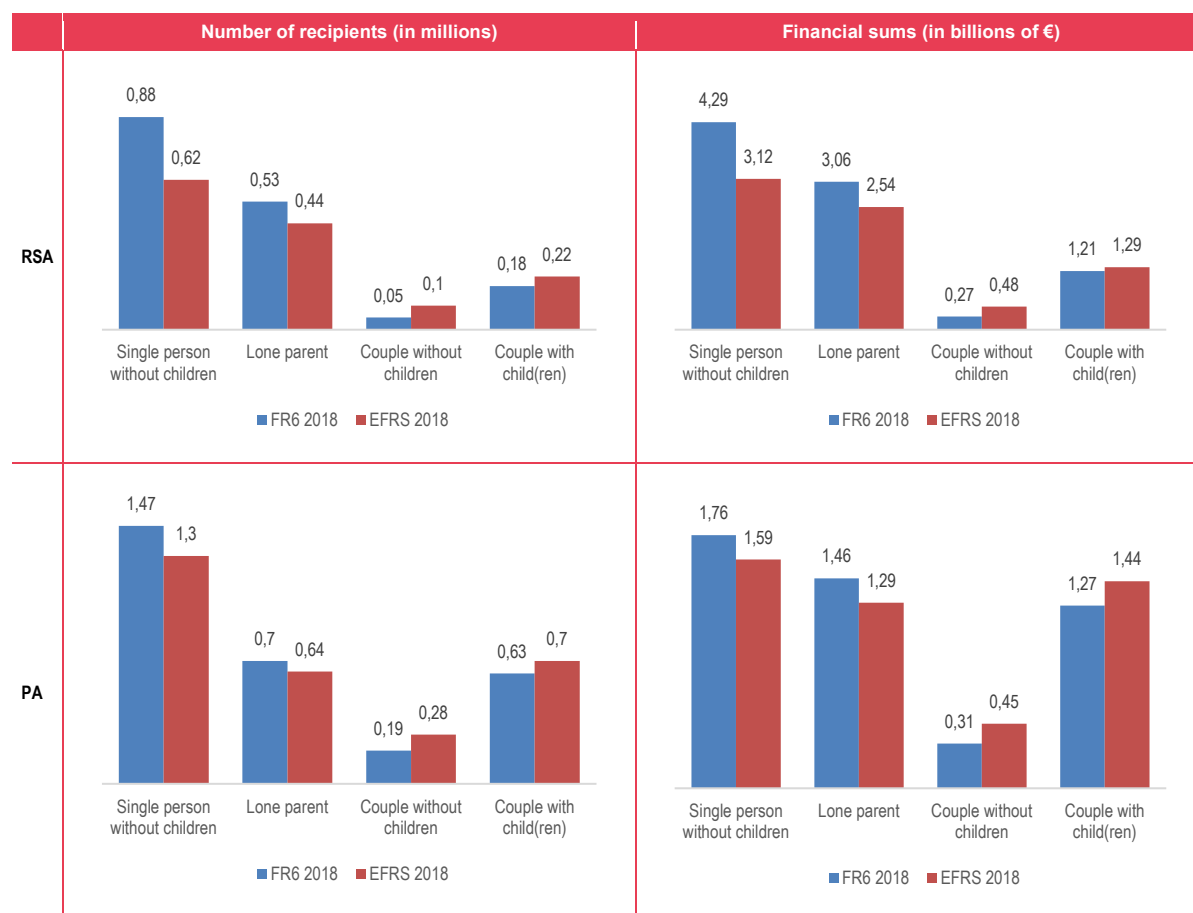
Interpretation > In the fourth quarter of 2018, in the comprehensive CNAF data (FR6), 880,000 social welfare households are made up of single persons without children receiving RSA, whilst this figure is 620,000 in the ERFS survey.
Champ > Metropolitan France, ordinary housing (in FR6, filter by last known situation) – PA/RSA recipients in Q4 of 2018 (including increased RSA, excluding Christmas bonuses). ERFS: CNAF matched or imputed amount.
Source > FR6 2018 (comprehensive monthly data from the CNAF produced with six months of historical data in order to be considered stable) – ERFS 2018 INSEE-DGFiP-CNAF-CNAV-CCMSA (construction of social welfare households from INES in 2018).

2.1.3 Households with no income from employment nor replacement income are underrepresented

The difference observed for RSA recipients focuses almost exclusively on households with **no earned income (salary or income from being self-employed) or replacement income (unemployment or pension)** (figure 2)[18] and raises the question of **representation** of the ERFS survey on this particular sub-population (see point 2.2.2).

Figure 2 Number of RSA recipients in 2018, in the ERFS survey and in the CNAF (FR6) comprehensive data by annual earned income and replacement income of the household

Legend:
- ■ Earned and replacement income = €0
- ■ Earned and replacement income unknown
- ■ Earned and replacement income > €0

Interpretation > In the FR6s, 770,000 households receiving RSA at least once a year have no earned or replacement income, compared to 590,000 in the ERFS survey, which represents a difference of 2% fewer recipients with no income in the ERFS survey compared to the comprehensive CNAF data.
Champ > Metropolitan France, ordinary housing (in FR6, filter by last known situation), RSA recipients at least once in the year(including increased RSA, excluding Christmas bonus). ERFS: CNAF matched or imputed. FR6: 2018 recipients receiving benefits in 2020 based on their 2018 income (not offset) and whose family situations have not changed (9% of RSA recipients in 2018).
Source > FR6 2018 (comprehensive monthly data from the CNAF produced with six months of historical data in order to be considered stable) – ERFS 2018 INSEE-DGFiP-CNAF-CNAV-CCMSA (construction of social welfare households from INES in 2018).

2.2 The most likely explanation for the difference found appears to be a lack of representation of low-income households in the ERFS survey

The differences between the ERFS survey and the comprehensive data on the number of households receiving benefits potentially have multiple causes. This includes difficulty in identifying ordinary housing in the comprehensive CNAF data, a lack of matching with social data in the ERFS survey which would not be rectified by imputations made in the survey, or a problem of representation in the ERFS survey which could underestimate the number of very low-income households likely to receive RSA.

To estimate a rate of non-take-up, it is important to determine these causes since, depending on the case, they may affect only CNAF recipients, only recipients from the ERFS survey (and not those eligible), or both recipients and those eligible.

Exploring a range of possibilities that could lead to an overestimation of RSA-recipient households in the comprehensive CNAF data or an underestimation in the ERFS survey leads to the conclusion that **only a lack of representation in the ERFS survey of low-income households could explain the differences found between the two sources.** Other identified causes can only play a marginal role. All the avenues explored are set out in detail in Appendix 3. We will present the contextual framework below.

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[18] This finding has been established by comparing the incomes of RSA recipients in the ERFS with those from a sub-sample of CAF recipients whose 2018 incomes were found in 2020. These are recipients who received benefits in 2020 based on their 2018 income (not offset) and whose family situations have not changed, i.e. 9% of RSA recipients in 2018.

- **Difficulty in identifying households living in ordinary accommodation in the comprehensive CNAF data.** The filter used to narrow the scope of analysis to households living in ordinary housing leads to 9% of RSA recipients and 6% of PA recipients being removed in the FR6[19] files. This proportion is not insignificant, but may not be sufficient, in which case the number of recipients in the comprehensive CNAF data would be overestimated compared to that observed in the ERFS survey.

  A comparison between the comprehensive data from the CNAF and the DREES survey on recipients of minimum social benefits (BMS 2018) shows that some of the RSA recipients declared as "accommodated free of charge by private individuals" in the FR6 data and considered as such to be in ordinary housing with the filter used, are in fact in non-ordinary housing, mainly in mobile homes (according to responses to the BMS survey). They should therefore be removed from the category. However, excluding these situations would only reduce the difference observed with the ERFS by 3%, in terms of numbers and financial sum. Furthermore, the proportion of RSA recipients in ordinary housing does not appear to be higher in the processing of the FR6 files than in the BMS survey, which does not suggest an overestimation of ordinary housing in the CNAF's comprehensive data.

- **Mismatches with social files not rectified by the imputation of resources step in the ERFS.** These mismatches are corrected by INSEE, by imputing RSA to persons who declared receiving the benefit in the Employment survey[20]. The partial aspect of this information could lead to insufficient imputation of RSA to mismatched recipients. However, upon closer examination of the imputation results, this hypothesis seems **unlikely**.

- **Inconsistencies in declaring family situations to the CAF and ERFS.** These inconsistencies could lead to variations in the number of households receiving benefits, particularly for people in relationships, according to the Employment survey, who would declare themselves without a spouse to the CAF and would therefore receive each benefit separately (see *below*). In the ERFS survey, only one household would be defined for the couple, by combining the amounts received, whereas this could concern two different files, thus two households, in the comprehensive data. **This would not explain the ERFS-CNAF differences in financial sum (see point 2.1.2). It could help explain the fact that, among RSA recipients, couples are overrepresented and persons without a spouse are underrepresented in the ERFS survey compared to the observations of the CNAF, but can only marginally explain the difference in the number of recipients.** In fact, few multiple cases are found for the same household in the ERFS survey (1% of the difference in numbers would be explained by this theory for the RSA).

- **Composition of social welfare homes within aggregated households from the ERFS survey for young adults living together.** The breakdown of aggregated households into social welfare homes may result in some young people remaining dependent on their parents. But in reality, there are several households with children and parents each receiving social benefits. This reduces the number of social welfare households in the ERFS survey compared to that observed in the social welfare data. However, as mentioned in the previous point, cases where several social welfare files are matched within the same social welfare household simulated in the ERFS are infrequent – **less than 1% of the difference in numbers would be explained by this theory for the RSA.**

- **Duplication of files in the comprehensive CNAF data (FR6).** In the comprehensive CNFA data, take-up is analysed at least once a year. However, the information system does not allow for monitoring those relocating during the year, nor those getting into a relationship or separating. These events lead to new files being created. The same recipient may therefore have several files. However, these events do not affect the aggregation of benefits paid during the year because there is no overlap in the entitlement payment. This would therefore help to explain the difference in numbers, but not in financial sum. However, **only 3% of recipients would be counted twice** due to relocation, getting into a relationship or separating during the year.

All of these avenues cannot explain the extent of the difference between the ERFS survey and the comprehensive data from the CNAF, both in terms of numbers and financial sums. This finding points to a **lack of representation in the ERFS survey, which mainly concerns low-income aggregated households**, or persons within these households likely to receive minimum social benefits, in particular persons temporarily accommodated in ordinary housing (persons temporarily accommodated with a private individual). A comparison with the DREES survey on those receiving minimum social benefits (BMS 2018), which makes it possible to identify those housed, and with the INSEE file on localised disposable income (Filosofi), for low-income aggregated households, seems to support this hypothesis (see Appendix 3):

- **Underestimation of people temporarily accommodated in ordinary aggregated housing.** The ERFS survey would underestimate the number of housed people potentially receiving minimum social benefits. From the information available on the housing situation of RSA recipients in the BMS survey and in the ERFS survey, the proportion of those who would

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[19] Among households residing in metropolitan France.

[20] Based on the questions of the Employment survey on the perception of different social benefits at the time of the survey, asked each quarter to people on the 1st and 6th times.

be accommodated within aggregated households can be estimated, according to a similar definition[21], at 18% in BMS survey and 15% in the ERFS survey[22]. If true, this difference would represent 10% of the ERFS-CNAF difference in numbers and 7% of the difference in financial sum.

■ **Underestimation of very low-income aggregated households in the ERFS survey.** The number of aggregated tax households estimated from the ERFS (28 million) appears slightly higher than that observed in Filosofi for metropolitan France[23] (+2%). However, the number of aggregated tax households with no earned or replacement income, or with monthly incomes of less than €500 per consumption unit[24] seems to be lower (figure 3), which would suggest that these aggregated households are underrepresented in the survey.

Figure 3 Difference between ERFS and Filosofi on the number of aggregated tax households, by earned income and monthly replacement income of these aggregated households per consumption unit in 2017
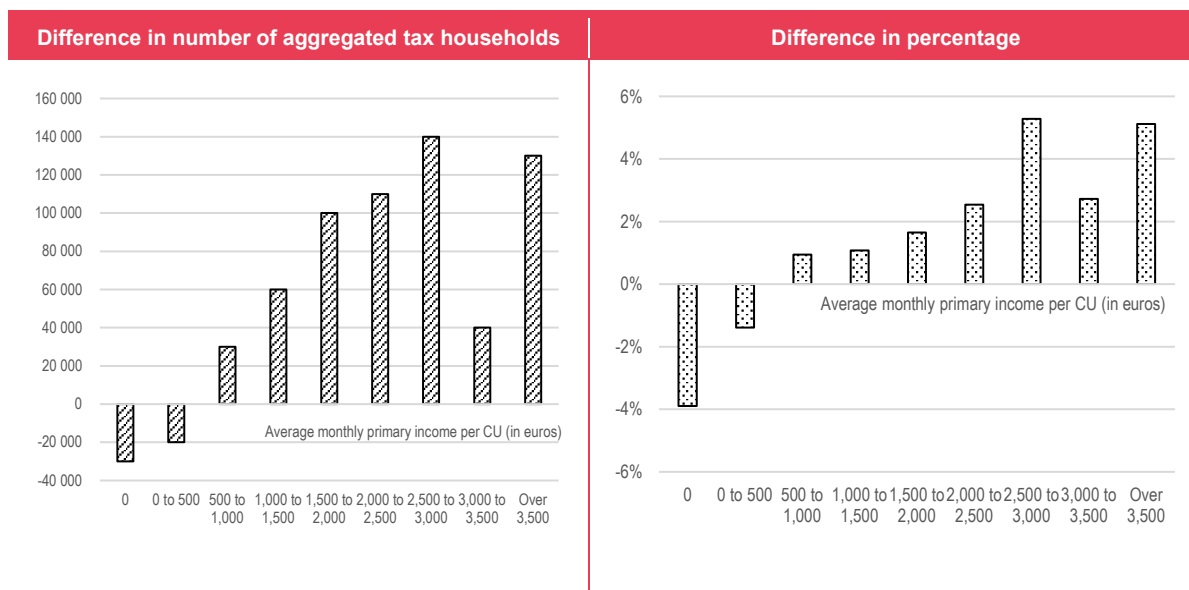
Interpretation > In 2017, the number of aggregated tax households with no monthly earned and replacement income per consumption unit appears to be 30,000 lower in the ERFS than in the Filosofi.
Champ > Metropolitan France, aggregated tax households in ordinary housing.
Source > ERFS 2017 and Filosofi 2017.

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[21] In the ERFS, "accommodated" households are those, defined within the meaning of RSA, that do not contain the reference person of the aggregated household or their possible spouse. In the BMS survey, the answer to the question "DA1: You are housed or accommodated by..." "4. A person who lives in the household" is used, as well as any answer to the question "DA2: Is it..." followed by a list of options detailing the relationship with the person accommodated, except if it is accommodation with the spouse.

[22] In the BMS survey, this proportion corresponds to the share of households accommodated at the end of 2018 among all social welfare households receiving RSA in the last quarter of 2017. In the ERFS survey, this is the share of accommodated households at the end of 2017 among all RSA recipients in Q1 of 2017.

[23] The ERFS and Filosofi are in the same category of ordinary housing. However, the level of observation differs between the two sources. The Filosofi uses the concept of an **aggregated tax household,** which is the aggregation of all tax households linked to the same address. This notion of an aggregated tax household goes beyond the scope of the aggregated household in the ERFS (all persons primarily sharing the same house) because each tax return may include persons who live mainly elsewhere (Appendix 1).

[24] The number of consumption units (CU) is defined according to the "modified" OECD (Organisation for Economic Co-operation and Development) scale, by the following rule: CU = 1 for the first person in the aggregated household; CU = 0.5 for any other person 14 years of age or older and CU = 0.3 per person under the age of 14. The number of CUs can be directly observed in the Filosofi. In the ERFS, this is not the case (the information is known when it comes to the aggregated household but not the aggregated tax household, because some people in the aggregated household may not be in the aggregated tax household, and, by contrast, not all the people in the aggregated tax household may be in the aggregated household), it is necessary to start from the information contained in the tax fields. Therefore, the "declared" variable is used to identify the dates of birth of the declarant, their spouse and tax-dependent children.

3 Measuring those eligible and recipients from the same source (ERFS)

3.1 The ERFS sheds light on the quality of estimation

Measuring non-take-up that would compare the overall number of RSA recipients to the number of those eligible from two different sources (administrative data would give the number of recipients whilst the number of those eligible would be estimated from a survey) does not make it possible to qualify the take-up and eligibility of each individual. Measuring non-take-up from a single source, in this case the ERFS, makes it possible to simulate eligibility, based on the INES tax-benefit microsimulation model, and to observe actual take-up (based on the matching of social data from the CNAF and MSA).

Only by comparing take-up and eligibility from the same source individually can the quality of estimation of non-take-up be assessed. Measuring eligibility and take-up individually from the ERFS survey makes it possible to describe the characteristics of the non-recipient population and to verify that benefit recipients are simulated as eligible based on the information available in the survey. Therefore, this intricate level of analysis allows us to make the result more reliable and, more fundamentally, to analyse the determinants that contribute to this phenomenon.

3.2 The lack of representation of low-income households from the ERFS survey potentially affects both those eligible for and receiving RSA

If the underrepresentation of very low-income households is the main reason for the underestimation of RSA recipients in the ERFS survey, there is no reason why this underrepresentation should not also affect the simulation of those eligible. To avoid skewing the measurement of non-take-up, it is therefore necessary to compare those eligible and recipients from the ERFS survey.

Furthermore, in the ERFS survey a higher proportion of households with no income (potentially underrepresented households) would have little effect on the estimation of the RSA non-take-up rate (see Part 3, point 3.3). Therefore, a lack of representation of low-income individuals would not call into question the estimation of the RSA non-take-up rate from the ERFS survey.

By contrast, if two different sources were used, with the number of RSA recipients observed from the CNAF comprehensive data on one side, and those eligible simulated by the INES model from the ERFS data on the other, the non-take-up rate of RSA would in fact be underestimated. The relatively large number of RSA recipients observed by the CNAF would have to be corrected downward in one way or another to make it consistent with the measurement of eligibility, without being able to calibrate this correction precisely.

PART 2: SIMULATING ELIGIBILITY AGAINST THE COMPLEXITIES OF LEGISLATION, MANAGEMENT RULES AND INDIVIDUAL AND FAMILY SITUATIONS

Any simulation is dependent on the quality of the data on which it is based and on how benefit entitlement rules are modelled. Whilst the ERFS survey is currently the most comprehensive data source available for simulating eligibility for social benefits, it cannot fully understand all individual situations and their changes over time. The complexity of social benefit entitlement and the varying family situations make it necessary to make simplifying assumptions to simulate eligibility. Estimation errors are therefore inevitable, as illustrated by the presence of households receiving benefits identified as non-eligible. The importance of this phenomenon provides an indication of the quality of the simulation.

1 Microsimulation cannot simulate all the complexities of entitlement and individual situations

The amount of RSA and PA entitlement depends primarily on the family situation and resources of all members of the social welfare household. It depends on a very broad range of resources, assessed over the three months prior to the date the entitlement review is filed (for RSA or the PA). Mechanisms for offsetting certain resources may apply in certain situations, in the event of job loss or the end of replacement income. The simulation is committed to applying all the legislative and regulatory provisions as best as possible according to the remodelled situation of each household (see Appendix 4 for a detailed presentation of these provisions), but it cannot incorporate them all.

1.1 For RSA and PA, entitlement depends on the family structure and is based on the resources of all the members of the household

RSA, a differential benefit, is the last safety net of social protection, which supplements household resources up to a standard rate (guaranteed income), depending on the family situation. In 2018, this guaranteed income averaged €550 per month for a single person (or single pregnant person)[25], and €990 for a couple with one child. This amount may be increased for a single person with one or more children or for a pregnant woman[26]. By contrast, even if the household has no resources, this guaranteed income is most often reduced by the amount of a "set housing rate".

The PA is an earned income supplement aimed at workers with low incomes, which allows an increase in earned income to ultimately result in an increase in their disposable income. The amount paid increases proportionally to earned income in order to compensate for the loss of income support and to create a back-to-work incentive mechanism. It then gradually decreases as resources increase, until it is no longer paid. In order to moderate the gradual reduction of the benefit and to encourage everyone to work, the PA includes bonuses for each person in the household earning more than half a monthly salary[27]. The level of resources beyond which the benefit decreases (set rate), as well as its maximum limit, therefore depends on the family situation, family resources, and on each family member's employment status. In the same way as for the RSA, this amount can be increased for a single person with one or more dependent children.

The evaluation of entitlement therefore **requires a clear definition of each household's situation** (see Appendix 2), as young adult children, for example, may form an independent household depending on their income and individual choices. Therefore, young people between the ages of 18 and 25 may be linked to their parents' household (either for income support or for the PA) or separated from it. If they are working, they can apply for an PA in their own right (accessible from the age of

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[25] €545 per month from January to March, then €551 from April to December.

[26] This increase applies for one year after a separation regardless of the age of the children and can be extended until the youngest child is 3 years old.

[27] At the end of 2018, a single person receiving only earned income and housing benefits could receive up to €290 per month of employment bonus for a monthly salary equal to 40% of the minimum wage rate, with entitlements then decreasing to below €160 in terms of minimum wage and stopping after 1.3 times the minimum wage rate. In January 2019, individual employment bonuses were significantly increased (their maximum amount rising from 12.75% to 29.10% of the set rate for a single person). The maximum amount of the employment bonus for a single person receiving housing benefits is still around €300, around 0.4 times the minimum wage rate, but there is less degression after that – the benefit can be received up to 1.5 times the minimum wage rate (i.e. approximately €1,600 net).

18). Simulating eligibility for these two benefits assumes a correct split, for young people, between parental home and separate home[28].

Given the information available, the option used in the simulation consists of choosing the most favourable situation, the one that gives entitlement to the maximum amount of benefits for the aggregated household. For the simulation of earned income, 240,000 young people were therefore separated from the family household, i.e. nearly 40% of the eligible households aged 18 to 25. This situation may not correspond to the situation known to the CAF for the recipients.

1.2   A wide range of resources are taken into account

Whether for RSA or the PA, assessing entitlement is based on the total resources received by the household members. Simulating entitlement therefore requires **precise knowledge of the different sources of income** included in the scope of the entitlement assessment:

- earned income (salaries or earned income from those who are self-employed);
- replacement income (unemployment benefits, pension, daily allowances, etc.);
- wealth income[29];
- housing subsidies[30];
- family benefits (some are excluded, however, such as the back-to-school allowance, age-related increases in family allowances, a portion of the family support allowance [ASF] and the increase in the family supplement [CF]) and several other social benefits, including disabled persons allowance.

Simulation of eligibility therefore depends on the level of precision achieved by the ERFS in capturing the variety of incomes taken into account when calculating entitlement. Some types of income are excluded from the scope of the survey (e.g. internship grants, supplementary disability allowance) [see Appendix 5]; others are imputed statistically (non-taxable financial income, or income that could not be recovered through matching with tax or social sources). Finally, wealth holdings are not determined in the ERFS survey. These elements will be taken into consideration when assessing the accuracy of the simulation.

1.3   Resources are assessed on a quarterly basis (monthly for the PA)

RSA and PA are allocated for three months (quarter of entitlement) as an identical amount (fixed payment), based on the resources of the three months preceding the application. This is the **reference quarter**.

For RSA, the average monthly level of resources received during this reference quarter is taken into account when calculating entitlement.

For the PA, entitlement is assessed for each month of the reference quarter. The amount allocated corresponds to an average of monthly entitlements. Only months worked grant eligibility for the bonus. Since entitlements are calculated on a monthly basis and take into account the individual earned income of each member of the household, **the accurate simulation of the PA requires even more detailed knowledge than for the RSA of the monthly resource amounts, in particular the earned income received.** In fact, even for those with stable year-round jobs, entitlement to the PA will vary depending on fees, overpayments, back payments, or late payment of wages in a given month. This variability in entitlements from one month to the next can be difficult to grasp and is all the more important in the case of a variable trajectory, interspersed with periods of employment and unemployment for example.

In addition, the **reference quarter depends on the date the application is filed.** Therefore, as of June, a given household may be eligible for income received in March-April-May, but not necessarily for income received in January-February-March, and vice versa. However, to simulate eligibility, it is necessary to refer to fixed quarters (see Appendix 5).

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[28] Young people between the ages of 18 and 25 can also receive an employment bonus in their own right while remaining linked to the parental home for other benefits, such as housing benefits (up to the age of 21) or RSA.

[29] As far as wealth income is concerned, only taxable income is taken into account for the entitlement of the employment bonus. For RSA, non-taxable wealth income (e.g. interest from the *Livret A* – a tax free instant access savings account) is added, as well as the assets themselves (invested capital or real estate) if they are not income-earning (see Appendix 4).

[30] Housing subsidies are included in the RSA and employment bonus resource base, up to a set rate. The set housing rate is 12% of the set rate for a single person (an average of €66 per month for RSA in 2018), 16% of the set rate for a two-person household (i.e. €132 per month), and 16.5% for a household of three or more people (€163). The set housing rate also applies to households that own their own home (with no repayment costs) or that are housed free of charge (including young people living with their parents free of charge).

⇨ The choice was made to use **calendar quarters**, with one year consisting of four quarters. However, the simulation of entitlement for the first quarter of the year cannot be estimated. This is because the ERFS survey does not have available income from the last quarter of the previous year[31]. The analysis is therefore restricted to the second, third and fourth quarters of the year[32]. Eligibility is thus simulated for April-May-June based on January-February-March incomes, for July-August-September based on April-May-June incomes, and for October-November-December based on July-August-September incomes. This choice implies that for some recipients, a discrepancy between the simulated entitlement and the amount actually paid is inevitable, if the payment of entitlement corresponds to a quarterly period different from the calendar quarterly period.

1.4 For RSA, a mechanism for offsetting resources makes it possible to adapt to changes in individual situations

For potential RSA applicants, the regulations provide a mechanism to offset earned or replacement income received during the reference period. This means that this income is cancelled and not taken into account in the study of RSA entitlement if it is no longer received or compensated for by a substitute income. This affects, in particular, people who lose their jobs and are not entitled to unemployment benefits, or unemployed people whose entitlement expires. This loss of income can be assessed from the month in which it occurs, without waiting for the time when the calculation of the entitlement is updated to the new quarterly reference period.

However, it is difficult to account for offsetting income as required by the regulations because it is difficult to identify the exact timeline of income loss (see Appendix 5 and Part 3). In 2018, according to the CNAF data, 10% of RSA-recipient households benefited at least once during the year from an offsetting of a portion of their resources.

1.5 Even after six months, overpayments and back payments of benefits are frequent

There is evidence of the difficulty in grasping the reality of sometimes complex and often changing individual situations. The amounts of RSA and the PA paid by the CAFs based on the quarterly declarations of the recipients are often subject to overpayments or subsequent back payments. In 2018, 25% of PA-recipient files were affected by overpayments, 85% were affected by back payments[33]. For RSA, the rates amount to 20% for overpayments and 55% for back payments.

In most cases, these overpayments or back payments occur in the first few months after the entitlement has been paid. In the CNAF files that are passed on to INSEE in order to be matched with the Employment survey, entitlements are consolidated with six-months of historical data. The monthly amounts paid on a given date therefore include most of these adjustments, reallocated to the corresponding quarter of entitlement.

Overpayments and back payments six months after the month of entitlement remain, and, by definition, cannot be taken into account in the comprehensive CNAF data consolidated at six months, nor in the ERFS survey. 8% of PA recipients' files are affected by overpayments after six months, 9% for RSA files; 10% of PA files are affected by back payments after six months, 2% for RSA. However, these amounts can be later reallocated. Some recipients may therefore become non-recipients once the flow of overpayments has been taken into account. On the other hand, some non-take-up households may be detected as recipients once the back payments are taken into account. Nevertheless, these corrections do not fundamentally interfere with the eligibility simulation (see point 2.3).

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[31]Similarly, income from the fourth quarter of the year, which is used to estimate entitlement in the first quarter of the following year, is not used.

[32] In a typical use of the INES microsimulation model, the calculation of eligibility for RSA and the employment bonus for a given quarter depends on the resources for that same quarter. Therefore, eligibility is calculated throughout the year. This is not the case in the work presented in this *DREES report* where the measurement of eligibility is more comparable to the rules for granting entitlement, which assesses the resources received in the three months preceding the application.

[33] Over the course of 2017, "approximately 60% of uncontrolled gross back payments rectify the same month's entitlement or the month prior to their detection. Most often, they are the result of receiving or processing the declaration of means after the benefit payment date. If the recipient does not submit their declaration of means on time, the employment bonus will be suspended. Once the declaration of means has been received and processed, the suspension will be lifted and the payment will be made by way of a gross back payment. In about 20% of cases, these gross back payments correspond to entitlement access." (Chantel, 2018).

1.6   Certain situations are excluded from benefit entitlement

Granting RSA and the PA is contingent upon administrative criteria that can be partially understood from the ERFS data:

- Age and work requirements apply for RSA and the PA. Therefore, as is the case with students, young people under the age of 25 are not eligible for RSA, except in special situations (having a dependent child(ren), impending birth); apprentices are only eligible for the PA if they receive a minimum income each month. These conditions can be largely identified in the survey.

- People on parental leave (in the meaning of the employment law), who are not eligible for RSA, can also be identified (although these situations may be under-reported).

- On the other hand, people on unpaid leave or on a leave of absence cannot be identified. They could be simulated as wrongly eligible for RSA.

- When it comes to non-nationals, it is difficult to assess because it is not known whether they meet the conditions of residence – some of them could therefore also be wrongly eligible. However, these situations appear to be quite marginal (see Part 3).

1.7   The microsimulation from the ERFS survey takes into account many of these allocation rules

The wealth of information in the ERFS data enables it to simulate many of the allocation rules for these two benefits:

- Knowledge of family ties within aggregated households, the age of each member, and their own resources helps define social welfare households (in the meaning of RSA and the PA) with limited risk of error – see Part 1 and Appendix 2.

- The annual resources declared to the tax authorities are known precisely, whether they are individual earnings or non-individual earnings such as wealth income[34], as well as social benefits received during the year.

- Social and family benefits can be specifically allocated to the household that receives them and during the actual entitlement period, thanks to intermediate tables provided by INSEE (tables prior to the integration of social data in the ERFS survey) [see Appendix 2].

- Individual income (from work, unemployment, pensions, etc.) can be paid monthly over the entire calendar year under certain assumptions by making use of the retrospective monthly calendar of declared earnings from the Employment survey. This calendar collects the primary work status of individuals for each month prior to the survey. By identifying changes in situations from one month to the next, it also enables simulation of the offsetting of certain incomes in the resource bases. For RSA, this offsetting amounts to 15% of eligible households, a large proportion of which (7%) become eligible as a result (see Part 3).

- Finally, it is possible to identify certain specific situations that do not qualify for RSA or the PA, or that make the simulation fragile, such as people on parental leave (non-eligible), receiving disability pensions (likely to receive the supplementary disability allowance [ASI] not known in the ERFS survey), or people with disabilities. The simulation can then be conducted on a slightly restricted category (see point 1.9).

1.8   However, not all entitlement rules can be perfectly integrated

Despite all its advantages, microsimulation cannot perfectly simulate all the legislation and rules for granting rights in force, especially in complex and changing situations – for example, in the event of a change in your family situation or work during the year, generating losses of income that can be offset or, in general, variations in resources from one month to the next, simplifying assumptions are necessary.

Changes in your family situation during the year are difficult to identify in the ERFS survey, as the aggregated household situation is only known at the time of the survey, i.e. in the last quarter of the year[35]. The simulation therefore evaluates the

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[34] Including non-taxable income (e.g. *Livret A* savings account): non-taxable financial income and life insurance income are imputed in the ERFS. This imputation does not accurately reflect the actual income derived from these products by the households in question (it aims to represent a statistical reality regarding the population), and could also overestimate the amounts actually received by the lowest income households that are potentially eligible for RSA. However, this income represents only a small part of the resources simulated for these households. Whether or not they are included in the resource base has very little impact on the simulated number of those eligible.

[35] The ERFS survey can be matched with all waves of the Employment survey in the year *N* in order to retrieve additional information on family situations in previous quarters. However, the data released from the ERFS survey did not allow for this process to be carried out, as the identifiers in the Employment survey were different from those in the ERFS survey. Moreover, this information would only be available throughout the year for those surveyed in previous quarters.

quarterly entitlements based on the family situation at the end of the year, even if, in reality, these situations may have changed and resulted in different entitlements at the beginning of the year.

Adding to this difficulty is the flawed understanding of sub-annual income. The monthly calendar of employment activity, which is declarative, only gives a schematic overview of the past year. Only the main work status, as declared by the respondents, is known (employed, self-employed, unemployed, retired, housed, etc.), so that a person who has worked all year will receive the same amount of salary each month. Consequently, receiving one-off bonuses will be spread out over the year. The same is true for people who declare themselves unemployed, even though the benefits they receive will decrease over time, becoming null and void after a certain period of entitlement. Finally, accumulating several types of income in the same month (salary and unemployment benefit, for example) cannot be precisely understood[36].

Furthermore, as mentioned above (see point 1.6), some particular situations cannot be identified from the ERFS survey (people on unpaid leave, for example, or who do not meet the conditions of residence or duration of residence in the region). However, these situations seem to affect only a very limited proportion of households simulated as eligible (see the case of non-nationals from outside the European Union) [Part 3 point 1.2].

1.9   Choosing the category of analysis

In order to limit certain sources of inaccuracy in the simulation among those mentioned above, the category used to produce the non-take-up indicator has been reduced in relation to the ERFS category. Therefore, we conduct our analyses on all social welfare households:

■ residing in ordinary housing, in metropolitan France (ERFS category);

■ belonging to aggregated households with positive or zero reported income and disposable income;

■ whose reference person[37] is not a student and is less than 65 years old during the quarter of entitlement (in order to take into account the obligation that falls to RSA recipients to assert their rights to the solidarity allowance for the elderly [ASPA]);

■ not receiving a disability pension (to take into account the obligation to claim the supplementary disability allowance [ASI]);

■ with no household member having a disability[38] (simulation of RSA or PA eligibility from the ERFS survey being uncertain for this population).

Each quarter, a total of 37,378 individuals are removed from the initial scope of the 2018 ERFS survey (which includes 113,247 individuals)[39] in order to focus on all social welfare households in which the reference person (or their spouse) is of working age (excluding disability). Taking into account the weighted values, the scope of analysis covers 1.26 million households receiving RSA on a quarterly average basis (or 91% of the ERFS category)[40] and 2.72 million households receiving the PA (or 98% of the ERFS category).

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[36] In addition, information from the calendar of employment activity is not always filled in. Additional processes are performed using the INES microsimulation model to complete missing information from other responses in the survey.

[37] The concept of reference person is not identical to that used by the ERFS (oldest male, giving priority to the oldest worker). The criteria for designating the reference person of the household includes the following procedures if the household is made up of several persons: the **oldest** person is designated; if several persons in the household have the same age, the **woman** is designated among these persons; after all these criteria, if there are still women with the same age in the household, then the reference person of the household is selected **at random**.

[38] People with disabilities are identified in the ERFS survey through their income tax return, as certain amounts entitle them to tax benefits in case of disability, or when one of the members of the household receives the disabled adults' allowance (AAH) or the disabled child's education allowance (AEEH). The population identified in this way differs slightly from that officially recognised as disabled by the departmental home for people with disabilities (MDPH).

[39] 83% of the individuals removed from the category are removed because of the age criteria of the household's reference person; 7% of the individuals removed are done so when they belong to an aggregated household receiving a disability pension; 7% when their social welfare household is made up of people with disabilities; 2% because of the household's reference person's job status (student); 1% when they belong to a household with a negative declared or disposable income.

[40] This sub-category represents three quarters of the households receiving RSA in France, taking into account those who do not live in ordinary housing or who reside in the overseas departments. It is possible the households that fall within the category not covered by the analysis are experiencing specific non-take-up, which cannot be measured in the context of this file.

2 An illustration of the methodological difficulties encountered: the presence of non-eligible recipients

As an illustration of the difficulties in accurately capturing all situations, the simulation results in a significant proportion of RSA and especially PA recipients being considered as non-eligible. This phenomenon, which is inherent in many studies on non-take-up and is an indicator of the quality of the simulation, requires particular attention here in order to understand its main driving forces. Its importance leads to postponing the estimation of a non-take-up rate of the PA until further analysis of sub-annual variations in income is carried out.

2.1 An inevitable phenomenon: such cases already existed in the specific survey on the non-take-up of RSA conducted at the end of 2010

In the specific survey on non-take-up conducted in 2010-2011 by Dares, among people potentially eligible for RSA (in the last quarter of 2010)[41], **9%** of Basic RSA recipients alone, **20%** of Active RSA recipients alone, and **13%** of both Basic and Active RSA recipients were theoretically ineligible (table 3). Therefore, **10%** of all Basic RSA beneficiaries and **18%** of Active RSA beneficiaries were not simulated as eligible according to the survey, which shows the difficulty of simulating eligibility perfectly, despite a special survey for measuring the phenomenon of non-take-up.

Table 3 Distribution of RSA recipients in Q4 of 2010 by the eligibility simulation results in the 2010-2011 RSA quantitative survey

	All recipients (in thousands)	of which are non-eligible recipients	
		in thousands	as a %
Basic RSA only	727	63	**9%**
Active RSA only	429	87	**20%**
Basic + Active RSA	260	34	**13%**

Interpretation > At the end of 2010, among the 727,000 basic RSA recipients alone, 63,000 were not simulated as eligible following the eligibility test, i.e. 9% of them.
Champ > Mainland France, ordinary housing.
Source > Quantitative survey on the RSA, 2011, Dares – first phase telephone survey; authors' calculations.

The reasons given in the analysis are diverse (Domingo, Pucci, 2011): possible errors in the person's declaration of receiving benefits at the time of the survey, an adjustment situation (back payments) related to a previous entitlement, or approximations of the eligibility test. Even with a special survey relating to RSA, simplifications had to be made to the questionnaire used to estimate entitlement, preventing certain situations from being understood (no application of the mechanisms for offsetting or full cumulation[42] for example, or a simplified recognition of daily social security allowances, one-off bonuses or even set housing rate). In addition, the reference quarter used in the survey was not necessarily the same as the actual quarter of benefit payment.

Relative to this survey, situations of overpayments and back payments (reallocated to the corresponding quarter of entitlement) are better taken into account in the ERFS survey, even more so if we include those paid after six months (see point 1.5). In addition, the ERFS survey provides very detailed knowledge of the household's annual income, observed from tax or social security returns, but it arguably does not capture as well the household's detailed family and financial situation at the time the entitlement is calculated.

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[41] Conducted as part of the work of the RSA evaluation committee, this survey was carried out in two phases. The first was conducted in late 2010 by telephone among 15,000 households selected from their tax returns as having low incomes in 2008. This quantitative survey was specifically designed to reproduce an RSA eligibility test, in keeping with the entitlement simulators put online by the CNAF. Thus, it makes it possible to compare the theoretical eligibility for the benefit, based on this test, and its actual perception, according to the declarations of the people surveyed. The second phase of the survey focused on qualitative data and was conducted face-to-face at the beginning of 2011 with 3,300 people drawn from the respondents of the first phase identified as theoretically eligible for RSA. See "RSA non-recipients" essential no. 124, July 2012, CNAF and appendix 1 of the final report of the RSA national evaluation committee, December 2011.

[42] The "full cumulation" mechanism has since been replaced by a simpler system of fixed payment of the RSA over the three months of the entitlement quarter, regardless of changes in the recipient's situation during that quarter (except for possible offsets in case of some income loss).

2.2   The "beta error": an indicator of the quality of the simulation

In the academic literature, simulated non-eligible recipients (R.NE) are compared to all recipients, whether eligible (R.E) or not (R.NE), to measure the "beta error" rate, or second-order error[43]:

$$\beta_{error} = \frac{R.NE}{R.E + R.NE}$$

Quantifying this error allows analysts to provide an indication of the quality of the simulation: if this indicator is high, the simulation may prove to be unreliable.

In studies from other countries, the authors do not systematically choose to present this indicator, and most of the time the number of non-eligible recipients is not mentioned. Nevertheless, in the main Belgian study on the non-take-up of the equivalent of RSA (Bouckaert, Schokkaert, 2009), the beta error amounts to 11% of recipients. In Harnish's (2019) study for the German equivalent of RSA from 2005 to 2014, the beta error hovers between 15% and 20%. By contrast, the annual productions measuring non-take-up of the main British social welfare benefits do not provide any information on the simulation error (see the *DREES report,* Quantifying non-take-up in Europe, to be published)

2.3   A limited proportion of errors for RSA, more significant for the PA

The microsimulation from the 2018 ERFS survey has a higher "beta error" than the 2010-2011 specific survey, but for RSA it is still relatively limited (table 4). Among households receiving RSA in a given quarter, **17% are simulated as non-eligible** (12% in financial sum). Among households receiving the PA, on the other hand, **nearly 40% on average are non-eligible** (27% in financial sum).

Table 4 Proportion of non-eligible households among RSA and PA recipients in 2018 (beta error)

	RSA				PA			
	Number (in millions)		Financial sum (in billions)		Number (in millions)		Financial sum (in billions)	
	Recipient	Beta error	Recipient	Beta error	Recipient	Beta error	Recipient	Beta error
Q2	1.27	18%	1.70	12%	2.64	40%	1.15	28%
Q3	1.26	17%	1.69	11%	2.67	38%	1.16	26%
Q4	1.25	17%	1.71	13%	2.84	39%	1.25	26%
Average	**1.26**	**17%**	**1.70**	**12%**	**2.72**	**39%**	**1.19**	**27%**

Note > Beta error = $\frac{RNE}{RE + RNE}$

Interpretation > In the second quarter of 2018, 1.27 million households were RSA recipients, of which 18% were simulated as non-eligible after the eligibility test.

Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative (or declared) disposable income, excluding social welfare households where the reference person is over 64 years of age or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities. Overpayments and back payments of entitlements of more than six months taken into account.

Source > EFRS 2018 – INES eligibility simulation in 2018.

These proportions of those not eligible among RSA and PA recipients take into account the amounts of overpayments and back payments older than six months, reallocated to the quarter of entitlement to which they relate. Taking into account overpayments that revoke entitlement reduces the number of non-eligible recipients[44]. However, this allocation tends to lower the share of those non-eligible among the recipients very marginally. Therefore, for RSA, the number of non-eligible recipients is

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[43] Whilst the proportion of non-recipients among those eligible would be characterised as a first-order error.

[44] For a given month of entitlement, the resumption of overpayments is likely to reduce the number of non-eligible recipients (if the overpayment relates to the entire benefit), whilst back payments are likely to increase the number of eligible recipients. Taking these entitlement corrections into account was made possible by an original improvement of the ERFS survey using data from the CNAF information system: overpayments (FIIC) and back payments (FRIC) tables. These two monthly tables can be matched with the recipient's file number, which makes it possible to identify the history of overpayments and back payments. For each overpayment/back payment, we know the timeline of the entitlement to which monitoring is assigned. For example, an overpayment amount for the individual "Y" detected in May 2018 for employment bonus entitlement paid between December 2017 and February 2018. We therefore use this information to determine for each month of 2018 all overpayments and back payments detected six months or more after an entitlement was paid, up until December 2020 (the latest available data). From this information, we calculate the **net overpayment**, which is the difference between an overpayment amount and a back payment amount for each file in a given month (a positive net overpayment indicates a total overpayment that exceeds the back payments; a negative net overpayment indicates a back payment of entitlement). Then the months of entitlement are rectified by this net overpayment. If this monthly entitlement is below the payment threshold (€6 for RSA and €15 for the employment bonus), then the recipient becomes a non-recipient for that month. Conversley, if there was no payable amount of entitlement but after rectification this amount becomes positive, then the household becomes a recipient.

reduced by approximately 2%, and their share in the total number of recipients is reduced by less than 0.3%. For the PA, the impact is almost zero.

2.4 Half of non-eligible RSA recipients are affected by differences in family situations between the ERFS survey and CNAF data, or by income imputations made in the ERFS survey

Income imputations or benefit amounts in the ERFS survey (as a result of mismatches with tax or social sources), as well as differences in family situations with the comprehensive CNAF data, are likely to generate non-eligible recipients (as well as people incorrectly considered eligible, non-recipients). The situation taken into account to simulate eligibility potentially differs from the situation known to the CAF to calculate entitlement (box 1).

In fact, these situations amount to 51% of non-eligible RSA recipients (table 5), compared to only 17% of eligible recipients: 33% had differences in family situations (of which 19% had differences in marital status [without income imputation]; 6% had differences in marital status [with income imputation]; 6% had differences in the number of children only [without income imputation]; 2% had differences in the number of children only [with income imputation]), 12% had work or replacement income imputations[45] without variations in family situations, and 6% had RSA imputations (and possibly other benefits).

Table 5 Explanation of the simulation error (beta error) for RSA (in %)

	Non-eligible recipients		Eligible recipients	
	Number (in thousands)	Financial sum (in millions of euros)	Number (in thousands)	Financial sum (in millions of euros)
All recipients (quarterly average)	218	206	1,044	1,492
Including:				
non-similarities of marital status between ERFS and FR6, without income imputation	*19%*	*26%*	*3%*	*3%*
non-similarities of marital status between ERFS and FR6, with income imputation	*6%*	*7%*	*1%*	*1%*
non-similarities of the number of children (with no difference in marital status) without income imputation	*6%*	*6%*	*6%*	*6%*
non-similarities of the number of children (with no difference in marital status) with income imputation	*2%*	*3%*	*1%*	*1%*
imputation of earned or replacement income in the ERFS (excluding non-similarities of family situations)	*12%*	*14%*	*5%*	*4%*
imputations of RSA (and possibly other benefits) in the ERFS	*6%*	*5%*	*2%*	*2%*
"Explained" total	*51%*	*60%*	*17%*	*17%*

Interpretation > On average, in 2018, of the 218,000 RSA-recipient households simulated as non-eligible, 51% could be explained by both non-similarities of family situation and by income and benefit imputations. On average, in 2018, non-similarities of marital status between the ERFS and FR6 (without income imputation) account for 17% of non-eligible recipients.
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative disposable (or declared) income, excluding social households where the reference person is over 64 years old or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities. Overpayments and back payments of entitlements of more than six months taken into account.
Source > EFRS 2018 - INES eligibility simulation in 2018.

If we exclude differences in family situations or imputation of resources from the scope of the analysis, the proportion of those not eligible among RSA recipients would fall to 11% (6% in financial sums) [table 5b].

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[45] There are also wealth income imputations in the ERFS survey (for income from non-taxable savings accounts, life insurance or income from products subject to withholding tax). Taking it into account or not, however, has little impact on eligibility and on the simulated entitlements, either for RSA or for the employment bonus.

Proportion of non-eligible RSA recipients (beta error) with or without imputations and differences in family situations

	Number (in thousands)	Financial sum (in millions of euros)
All recipients	1,262	1,698
of which a proportion are non-eligible	**17%**	**12%**
All recipients excluding differences in imputations and family situations	977	1,315
of which a proportion are non-eligible	**11%**	**6%**

Interpretation > On average, in 2018 the proportion of non-eligible recipients is 17%. By excluding resource imputations and differences in family situations among all recipients, the beta error reaches 11%.
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative disposable (or declared) income, excluding social households where the reference person is over 64 years old or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities. Overpayments and back payments of entitlements of more than six months taken into account.
Source > EFRS 2018 - INES eligibility simulation in 2018.

Box 1 **Factors explaining the presence of non-eligible recipients**

Differences in family situations (marital status or number of dependent children) can be explained by discrepancies (in the ERFS survey, the family situation is surveyed in the fourth quarter, whereas the CNAF data identifies the last known situation in the entitlement quarter[46]), by reconstructing homes within aggregated households in the ERFS survey, which sometimes involves certain assumptions (mainly the choice of whether or not to exclude a dependent person depending on which situation is more advantageous for the aggregated household in the entitlement simulation) or simply by different declarations to the Employment survey and the CAFs.

Among households receiving RSA in a given quarter, deviations in family situations amount to an average of 33% of those not eligible, compared to 10% of those eligible. In the fourth quarter, they amount to 30% of those not eligible and 6% of those eligible. In view of the relative stability of this proportion over the quarters, the discrepancy of the timeline between the family situations indicated in the ERFS survey (corresponding to that declared in Q4) and the family situations known to the CAF for previous entitlement quarters does not appear to be the main reason for these deviations.

Imputations of RSA amounts, carried out by INSEE during the production of the ERFS survey to make up for mismatches with social data (see Part 1), relates to 6% of recipients households each quarter, but are non-eligible households, compared to only 2% of eligible recipient households. The method of imputation, which only partially takes into account the income received, explains this result (refer to the ERFS annual production review). The PA may be subject to imputations in the ERFS survey based on coverage rates after matching. However, this is not always the case, as these types of imputations were not necessary for the 2018 ERFS survey.

Imputations of other social benefits (family benefits, housing allowances, disabled adults' allowances) similarly relate to households not matched with the social source, which declare having received such benefit in the Employment survey when a question is available, otherwise using other information. Since these households are not found in the social source, they can only be RSA recipients if the RSA amounts have also been imputed. In fact, these situations amount to only 2% of non-eligible recipients, compared to 1% of eligible recipients.

Imputations of earned or replacement income[47] are carried out for recipients absent from the tax source but found in the social sources (2% of the ERFS sample), or for individuals not found in either the tax or social sources, but who are part of an aggregated household whose other members have been found (1.9%). In the first instance, incomes are retrieved directly from the social data. They can be up-to-date incomes for RSA or PA recipients throughout the year (entitlement is then theoretically well simulated) or, for recipients in another situation, incomes from two years before in the year *N-2.* The risk of error in the sense of an overestimation or underestimation of up-to-date incomes, is then greater. In the second instance, when the person is not found in the social data source, their income is imputed using econometric methods, based on their individual characteristics. The individual amounts imputed are unlikely to correspond to the real situation, even if they are similar on average.

Imputations of earned or replacement income amount to 20% on average of non-eligible RSA recipients (8% of whom are also affected by differences in family situations), compared to 6% of eligible recipients.

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[46] This concerns the family situation used to review entitlement, as indicated in the recipient file. This information was obtained by making use of additional data from the FR6 file.

[47] Imputations of earned and replacement income can be directly identified individually in the data released by INSEE. Wealth income is also subject to imputation in the course of the ERFS. Simulating with or without imputed wealth income has very little impact on RSA or employment bonus eligibility.

2.5 For the PA, deviations in family situations and resource imputations only explain a small proportion of the simulation errors

Among households receiving the PA in a given quarter whilst simulated as non-eligible, 23% relates to differences in family situations between the ERFS survey and the CNAF administrative data (of which 12% relates to non-similarities of marital status [without income imputation]; 1% relates to non-similarities of marital status [with income imputation]; 8% relates to deviations in the number of children only [without income imputation]; 2% relates to deviations in the number of children only [with income imputation]), and 7% relates to earned income imputations[48] without differences in family situation). **In total, 30% are affected by at least one of these situations, compared to 20% of eligible recipients (37% vs. 20% in financial sum)** [table 6].

Table 6 Explanation of the simulation error (beta error) for the PA (in %)

	Non-eligible recipients		Eligible recipients	
	Number (in thousands)	Financial sum (in millions of euros)	Number (in thousands)	Financial sum (in millions of euros)
All recipients (quarterly average)	1,054	315	1,664	872
Including:				
non-similarities of marital status between ERFS and FR6, without income imputation	12%	15%	2%	2%
non-similarities of marital status between ERFS and FR6, with income imputation	1%	1%	1%	1%
non-similarities of the number of children (with no difference in marital status) without income imputation	8%	10%	8%	8%
non-similarities of the number of children (with no difference in marital status) with income imputation	2%	3%	1%	1%
imputation of earned or replacement income in the ERFS (excluding non-similarities of family situations)	7%	8%	8%	8%
Total "Explained" total	**30%**	**37%**	**20%**	**20%**

Interpretation > On average, in 2018, of the 1.05 million PA-recipient households simulated as non-eligible, 30% could be explained by both non-similarities of family situations and income and benefit imputations. On average, in 2018, non-similarities of marital status between the ERFS and FR6 (without income imputation) account for 20% of non-eligible recipients.
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative disposable (or declared) income, excluding social households where the reference person is over 64 years old or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities. Overpayments and back payments of entitlements of more than six months taken into account.
Source > ERFS 2018 - INES eligibility simulation in 2018.

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[48] The employment bonus may be subject to imputations in the ERFS survey based on coverage rates after matching. However, this is not always the case, as these types of imputations were not necessary for the 2018 ERFS survey.

Therefore, three quarters of the non-eligible PA recipients are not linked to deviations in either family situations or income imputations. **By removing these situations from the scope of analysis, the proportion of non-eligible recipients remains particularly high at 36%** (22% in financial sum) [Table 6b].

Table 6b **Proportion of non-eligible PA recipients (beta error) with or without imputations and differences in family situations**

	Number (in thousands)	Financial sum (in millions of euros)
All recipients	2,719	1,187
of which a proportion are non-eligible	**39%**	**27%**
All recipients excluding differences in imputations and family situations	2,061	892
of which a proportion are non-eligible	**36%**	**22%**

Interpretation > On average, in 2018, the proportion of non-eligible PA recipients stands at 39%. By excluding resource imputations and differences in family situations among all recipients, the beta error reaches 36%.
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative (or declared) disposable income, excluding social welfare households where the reference person is over 64 years of age or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities. Overpayments and back payments of entitlements of more than six months taken into account.
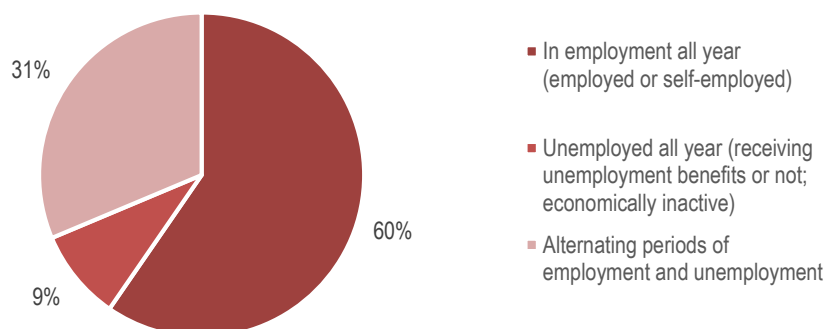**Source >** ERFS 2018 - INES eligibility simulation in 2018.

2.6 Better knowledge of sub-annual variations in income seems essential to improve the simulation of eligibility and to consolidate the measurement of non-take-up, particularly for the PA

Once differences in family situations and the existence of imputations in the ERFS survey are ruled out, the main explanation for the presence of non-eligible recipients would be a **failure to account for sub-annual variability in social welfare household resources.** This is because the ERFS survey contains only annual income aggregates, with monthly or quarterly incomes broken down according to responses to the Employment survey's retrospective calendar of employment activity questionnaire.

This explanation is more relevant for the PA than for RSA, given that the households likely to benefit from the bonus have all, by definition, received earned income at some point during the year. By contrast, a large proportion of potential RSA recipients did not receive any earned or replacement income during the year, which limits the risk of error linked to the quarterly (or monthly) payment of this income.

In fact, among the 75% of households not eligible for the PA that are not affected by any of the explanations mentioned in the previous point (table 6), the reference person is in employment in six cases out of ten all year round, and they alternate between being in work and unemployment in three cases out of ten (figure 4). Thus, the way in which their income is distributed during the year potentially has a major effect on their entitlement to benefits.

Figure 4 Annual activity of reference persons in simulated non-eligible households that are recipients of the PA

- In employment all year (employed or self-employed)
- Unemployed all year (receiving unemployment benefits or not; economically inactive)
- Alternating periods of employment and unemployment

Interpretation > In 2018, 60% of the reference persons in simulated non-eligible households that are recipients of the PA are employed all year round; 9% are unemployed but another person in the household may be employed.
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative disposable (or declared) income, excluding social households where the reference person is over 64 years old or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities, and excluding discrepancies in marital status in the Employment/CNAF survey. Excluding differences in family situations between the ERFS survey and comprehensive CNAF data and excluding imputations of income or benefits.
Source > EFRS 2018 – INES eligibility simulation in 2018.

To investigate this avenue in more depth, DREES is already exploring ways to better measure the impact of the variability of entitlements over the course of the year, by using the monthly information contained in the CNAF statistical files (FR6):

- the comparison between the income used to calculate entitlement and the monthly income used in the simulation would allow to evaluate the impact of this "simulated" monthly payment;
- taking into account the actual reference period rather than calendar quarters for the calculation of entitlement would also make it possible to refine the timeline of entitlement.

Nevertheless, these initial investigations are only conducted on households receiving CAF benefits matched with the ERFS survey.

To overcome this limit, the mobilisation of the monthly resources framework (DRM), led by the Department of Social Security (DSS) and the French National Old-Age Insurance Fund (CNAV), is considered in order to better simulate eligibility for all households in the ERFS survey.

Pending the results of these investigations, **the high rate of simulation errors associated with the PA and a too partial explanation of this phenomenon, will not propose an estimate of the non-take-up rate of the PA. Only a measurement of non-take-up of RSA will therefore be presented in Part 3.**

■ PART 3: CALCULATING A TAKE-UP RATE BY COMPARING RECIPIENTS AND ELIGIBILITY IS NOT STRAIGHTFORWARD, EVEN IF BOTH ARE FROM THE ERFS SURVEY

Calculating a non-take-up rate involves comparing eligible households and recipient households, measured in a consistent way. The work on measuring take-up and eligibility conducted in Parts 1 and 2 has been done in this way:

- the ERFS survey allows us to simulate eligibility and observe take-up on the same sample of people, and in the same temporality. Any possible discrepancies between the eligibility measurement period and the observation period of take-up are reduced by allocating overpayments and back payments, even after 6 months, to the actual quarter of entitlement;
- the scope of analysis has been restricted to those households for which it is believed that eligibility can be correctly simulated (working-age population, excluding specific situations for which there is a lack of data);
- the possible biases in terms of representation of the ERFS survey theoretically relate to both the recipients and those eligible, without necessarily affecting the consistency between these two populations (see above). The analysis of these biases shows that the lack of representation of no income households would not strongly impact the estimate of non-take-up rates.

Nevertheless, the eligibility simulation is based on assumptions. It is therefore necessarily imperfect, which is partly reflected in the presence of non-eligible recipients. Deciding how to take these households into account, by studying the reasons for their presence, is also necessary to propose a method for calculating a non-take-up rate (see point 1). After processing the differences in marital status between the ERFS and the social source, the hypothesis is that those wrongly ineligible are comparable in number to those wrongly eligible. **The choice made to calculate a non-take-up rate is to compare the total number of observed recipients (including non-eligible recipients) to the total number of those simulated as eligible.** For the PA, the number of non-eligible recipients is symptomatic of the fragility of the simulation and the difficulty in reporting sub-annual income variations with sufficient accuracy from the ERFS survey. Additional investigations, making use of other sources, are needed to consolidate the simulation. **Therefore, the results presented relate exclusively to the RSA.**

<u>The non-take-up rate of RSA would therefore amount to 34% on average per quarter, and to 20% on a permanent basis over the course of the year</u> (see point 2). Two avenues are explored to test the sensitivity of the estimate (see point 3). First and foremost, we analyse the lack of representation from the ERFS survey by integrating more low-income households on an ad-hoc basis. Next, we test the effect of a variation in the set rate of RSA in order to understand the sensitivity of the non-take-up indicators for households similar to the eligibility threshold in terms of resources.

1   How do you take non-eligible recipients into account?

Apart from cases where the RSA amounts have been allocated, the observation of take-up corresponds to the recipients' entitlement situation with regard to the social organisations (CAF or MSA). The presence of non-eligible recipients therefore refers to the measurement of eligibility.

Some of these households may be objectively ineligible based on their situation described in the ERFS survey. Receiving benefits may then result from either discrepancies (persons eligible at the beginning of the year, but no longer eligible at the date of the survey, for example after getting into a relationship), or from a declaration (particularly family situations) to the social welfare organisations that do not correspond to the "reality" of the ERFS. As for reflecting non-take-up behaviour in relation to an eligible population, these situations should ideally be removed from the category.

Secondly, non-eligibility could simply result from a simulation error. These households may have been simulated as eligible with a perfect measurement, but they were simulated as ineligible because of approximations in the eligibility measurement. Imputations of resources in the ERFS survey, for example, or imperfect quarterly reporting of income, can lead to this. The question is then whether these people "incorrectly" considered non-eligible (whether or not they are recipients) are offset by an equivalent number of people "incorrectly considered eligible" (de facto non-recipients).

Apart from differences in marital status, the other factors leading to the presence of non-eligible recipients do not reveal systematic biases that tend to overestimate or underestimate the measurement of eligibility. This result leads to all recipients incorrectly considered eligible being reported in a restricted category.

1.1 Differences in family situation between the ERFS survey and CNAF administrative data

Differences in family situations exist between the information contained in the ERFS survey and from the CNAF. These differences may concern the marital status and/or the number of children.

Among RSA-recipient households, the differences in marital status mainly concern **people observed as couples in the ERFS survey but declared without a spouse in the comprehensive CNAF data** used to calculate entitlement[49]. As already mentioned, these differences may in part result from couples entering a relationship between the date of observation in the CNAF's comprehensive data and the date of the survey, or from different declarations to the CAFs and to the Employment survey, for any other reason. They affect more than a quarter of the recipients simulated as ineligible for RSA, compared with only 4% of eligible recipients (table 7). The contrasts (single individuals in the ERFS survey and couples in the comprehensive CNAF data) are almost non-existent[50].

In view of the situation observed in the ERFS, which prevails for the simulation of eligibility, it can be considered that people in relationships, but considered as single to receive RSA and therefore recipients, should not be eligible. It therefore seems fair to exclude them from the category, otherwise the situations of take-up (with regard to eligibility situations) will be overestimated.

More generally, it is proposed to exclude the calculation of all RSA-recipient households from the category, for which a difference in marital status between the ERFS survey and the CNAF data is observed. This reduces the proportion of those ineligible among recipients (beta error) from 17% when including marital status differences to 14% when excluding them[51].

Table 7 Differences in family situations between the ERFS survey and comprehensive CNAF data for households receiving RSA in 2018

	Non-eligible recipients			Eligible recipients		
	Q2	**Q3**	**Q4**	**Q2**	**Q3**	**Q4**
Number of ERFS households (in thousands)	**230**	**210**	**220**	**1,040**	**1,050**	**1,040**
including non-similarities of marital status	**27%**	**29%**	**25%**	**4%**	**4%**	**4%**
Couple in the ERFS survey vs single person in the CNAF	26%	29%	25%	4%	3%	4%
Single person in the ERFS survey vs couple in the CNAF	0%	0%	0%	1%	0%	0%
including non-similarities on the number of children only	**8%**	**7%**	**9%**	**7%**	**6%**	**6%**
(number of children ERFS > CNAF)	4%	3%	4%	5%	4%	4%
(number of children ERFS < CNAF)	4%	4%	5%	2%	2%	2%
All discrepancies in family circumstances	**35%**	**36%**	**34%**	**12%**	**10%**	**10%**

Note > The household family structure in the ERFS survey is that declared by individuals surveyed by the Labour Force Survey (EEC) in the fourth quarter of 2018. The family structure used in the comprehensive CNAF data (FR6) is the last known status of the quarter of entitlement.
Interpretation > In the second quarter of 2018, of the 228,000 simulated as non-eligible RSA recipients, 27% are affected by non-similarities of marital status.
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative (or declared) disposable income, excluding social welfare households where the reference person is over 64 years of age or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities.
Source > EFRS 2018 - INES eligibility simulation in 2018; CNAF comprehensive data (FR6).

Regarding the number of dependent children, the differences are less severe and the situation appears to be more balanced, with differences between the survey data and the CNAF data found on both sides (more children in one or the other source, depending on the case), among recipients who are not eligible for RSA as well as among those who are eligible (table 7).

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[49] The family structure in the ERFS survey is that which corresponds to the fourth quarter of the year on the scope of the rebuilt RSA household. The administrative family structure of RSA recipients can be known each month in the CNAF files (also related to the ERFS survey). The two concepts are therefore not completely similar. A difference in marital status is identified when the last known status from the recipient file in the entitlement (calendar) quarter is different from that in the ERFS survey (see Box 1).

[50] People in relationships are less likely to be eligible for or receive RSA due to limited resources than people without a spouse. Among RSA recipients, it is therefore not surprising to note more people without a spouse according to the CAFs but in a relationship in the ERFS survey (often non-eligible, in fact) than the other way round, whereby single persons in the ERFS survey who would be in a relationship according to the CAFs are more likely to be eligible for and non-recipients of RSA.

[51] In 2018, these situations affected an average of 100,000 households each quarter, or 7% of RSA-recipient households in the ERFS survey. This represents a financial sum of €186 million, or 10% of the financial sums paid each quarter for RSA in the ERFS category.

Differences in the number of children (with no differences in marital status) affect approximately 7% of recipients (eligible or not).

It would be possible to exclude these situations from the scope of the calculation, but this exclusion could only apply to households receiving RSA and not to all those eligible. As their distribution is relatively balanced, we believe it is best to keep these situations within the scope – even if they may generate situations of ineligibility or false eligibility, there is no evidence that one of these situations necessarily takes precedence over the other.

1.2 A plausible hypothesis: wrongly eligible individuals are comparable in number to wrongly non-eligible individuals

If we exclude differences in marital status, the study of the various ways in which eligibility can be biased makes it plausible to assume that the number of wrongly eligible individuals is comparable to the number of wrongly non-eligible individuals, and therefore that there is no systematic upward or downward bias.

Imputations of RSA amounts for households not found in the administrative social data may generate non-eligible recipients, but also potentially eligible non-recipients. It is not the simulation of eligibility that is at issue here, but rather the imputation of take-up. Because of the method used (box 1), the imputation may not accurately target the right people in a given quarter. Given that the legitimacy of the imputation method is not in question, it can be assumed that the errors in either direction offset each other.

The imputations of social benefits, like the **imputations of personal income**, can affect eligibility since they are included in the RSA resource base. It is also possible that these processes work both ways, generating both wrongly eligible and wrongly non-eligible people. In other words, the effects should balance out between people for whom these incomes are overestimated and others for whom it is the opposite. In fact, the proportion of households whose individual incomes have been imputed is similar (around 20%) among eligible and non-eligible RSA recipients.

Differences in the number of dependent children, as discussed above, tend to balance out – the number of children in the ERFS survey may be higher or lower than that known from social sources. This suggests that this creates differences in one direction (people incorrectly considered eligible) as well as in the other (people incorrectly considered non-eligible).

Finally, the lack of knowledge of the **conditions of residence for non-nationals** could lead to households being considered eligible when in fact they are not, which would lead to an overestimation in the number of eligible households[52]. However, non-nationals who do not meet the conditions of residence are very much in the minority among those eligible for RSA, as they are among recipients. In particular, non-Europeans who have been in the country for less than five years represent just over 1% of simulated eligible households, both non-recipients and recipients (figure 5). Their presence in the sample therefore does not create any particular bias.

Figure 5 Share of households whose reference person is a non-national among those eligible for and recipients of RSA
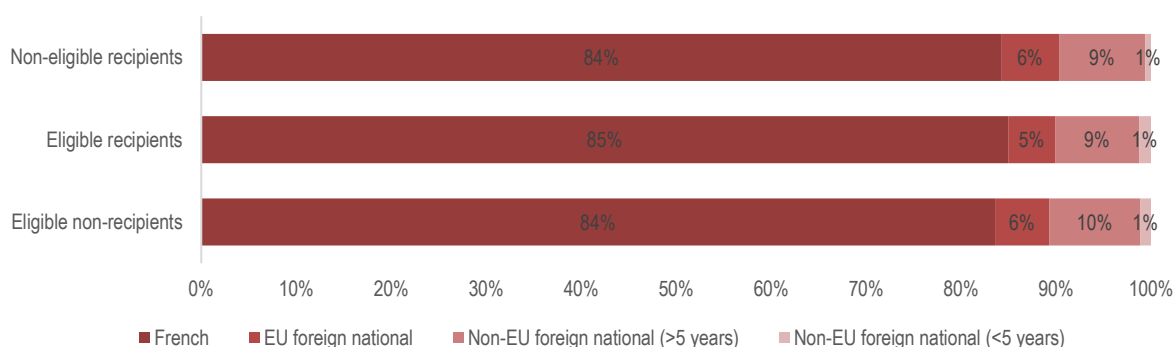
Interpretation > On average in 2018, 9% of the reference persons in households receiving RSA and simulated eligible persons were not nationals of a European Union member country, but have resided in France for more than five years.
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative disposable (or declared) income, excluding social households where the reference person is over 64 years old or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities, and excluding discrepancies in marital status in the Employment/CNAF survey.
Source > EFRS 2018 – INES eligibility simulation in 2018.

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[52] Conditions of presence in the country (at least nine months in the year) also concern persons of French nationality.

Apart from these situations, the main avenue for altering the measurement of eligibility relates to the **estimation of the quarterly income on which the simulation is based**, which involves assumptions of paying annual income on a monthly basis. These assumptions may create non-eligible recipients, but they may also create people incorrectly considered eligible, de facto non-recipients. These difficulties in taking into account sub-annual variations in income can lead to both an overestimation and an underestimation of the number of those eligible. The same applies to the use of fixed (calendar) reference quarters, when the reality is more complex. Taking into account the offsetting of resources is a trickier issue. Its impact in simulating eligibility and non-take-up rates is discussed in point 2.3.

1.3 Comparing the total number of recipients in the ERFS survey to the total number simulated as eligible

In the restricted category chosen (which excludes in particular all aggregated households where there is a discrepancy in the marital status reported in ERFS survey and in the CAF data), in the end, it seems acceptable to assume that the number of eligible households and the number of recipient households are consistent, in the sense that there is no systematic bias to overestimate or underestimate each other.

It therefore seems legitimate to calculate the take-up rate by comparing all the recipients in a given quarter (R), whether eligible (R.E.) or non-eligible (R.NE.), to all the those eligible in that same quarter (E). The non-take-up rate (NTUR) is then obtained by the difference:

$$NTUR = 1 - \frac{R}{E}$$

$$equal\ to:\ NTUR = \left(1 - \frac{(R.E + R.NE)}{E}\right) . 100$$

Because of its structure, this measurement can also be written:

$$NTUR = \frac{E - R}{E}$$

or:

$$NTUR = \left(\frac{NR.E - R.NE}{E}\right) . 100$$

The number of non-recipients (NR), in the numerator, can therefore be defined as the difference between the total number of those eligible and the total number of recipients, or as the difference between the number of eligible non-recipients (NR.E) and the number of non-eligible recipients (R.NE)[53].

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[53] Because of the imprecision of the simulation, it cannot be considered that all eligible non-recipients (NR.E) can be an unbiased estimator of non-recipients (NR). In fact, among them, those who were wrongly eligible should have been simulated as non-eligible. Similarly, among the non-eligible non-recipients, some should have been simulated as eligible.

Box 2 **Different formulas for measuring the non-take-up rate**

It is possible to develop alternative measures for calculating the non-take-up rate depending on the method used for taking into account non-eligible recipients. The underlying assumptions differ depending on the formula used:

(1) If we focus on just those eligible and do not take into account the non-eligible recipients (for example, if we assume that their presence is only due to fraud and that they are actually non-eligible according to the applicable criteria), we can calculate non-take-up in a given quarter using the following method, by including only eligible recipients in the numerator:

$$NTUR = \left(1 - \frac{R.E}{E}\right).100$$

This formula assumes that all those considered eligible in the simulation are genuinely eligible (perfect simulation and nobody incorrectly considered eligible) and that non-eligible recipients are only cases of fraud, which are two strong hypotheses. Otherwise, this would result in the number of eligible households in relation to the number of eligible recipients being overestimated (which would lead to the non-take-up rate being overestimated). This calculation method was applied as part of the study into non-take-up of the Belgian *revenu de solidarité* (Bouckaert, Schokkaert, 2011), and the study into the non-take-up of the German minimum income benefit (Harnisch, 2019).

(2) If, despite the imperfections in the entitlement simulation, we deem the <u>number</u> of eligible persons to be correctly simulated on the whole (i.e. the number of people incorrectly considered eligible and the number of people incorrectly considered non-eligible are comparable) and the number of recipients to be correct, we can calculate the non-take-up rate for a given quarter by calculating the ratio of the total number of observed recipients to the total number of people considered eligible in the simulation:

$$NTUR = \left(1 - \frac{(R.E + R.NE)}{E}\right).100$$

In this case, the presence of non-eligible recipients would be explained by approximations in the eligibility simulation, without the number of eligible people necessarily being called into question, or by imputations made in regard to recipient households (not necessarily targeting the real recipients, but others similar to them).

This formula may also be preferred if it is assumed that eligible people and recipients are equally subject to bias (if the survey underrepresents recipients and eligible people in equal measure, for instance). **Based on the analysis of the available data, this is the formula used in this** ***DREES report.***

In a theoretical article, Duclos (1995) justifies the use of this formula, assuming that the agency paying out the benefits does not make errors in assessing entitlement. On the other hand, it is the analysts (researchers or others) who may be mistaken in the eligibility simulation, which is due to errors in the information on which they rely (survey data, some declarative information, concepts of time, income, analysis unit [household, families or individuals] and socioeconomic aspects that are often poorly understood, etc.). This then gives rise to the hypothesis that the analysis would estimate the correct number of eligible individuals (between the false eligible recipients and the false ineligible recipients).

(3) If we consider that the number of eligible individuals appears to be underestimated when compared to the number of beneficiaries, an "intermediary" formula can be used. This includes non-eligible claimants in the total number of eligible individuals and in the total number of claimants: all of the recipients observed are thus retained in the numerator while the number of eligible individuals in the denominator is increased.

$$NTUR = \left(1 - \frac{RE + RNE}{E + RNE}\right).100$$

This indicator was chosen in the reference study on non-take-up of social security in Finland (Bargain *et al.*, 2012). Publications by the Department for Work and Pensions in the United Kingdom opt to use this formula by studying the rate of take-up, rather than the rate of non-take-up (DWP, 2020).

In its design, the first formula gives the highest rate of non-take-up and the second formula gives the lowest rate of non-take-up. If there are no ineligible beneficiaries (beta error null), the three formulas give the same result.

2 In 2018, one third of RSA-eligible households would be non-recipients each quarter, and one fifth for an extended period of time

2.1 On average, 34% of eligible households do not take up RSA each quarter

In 2018, each quarter, it is estimated that on average, of the 1.76 million social welfare households living in ordinary housing in metropolitan France and eligible for RSA[54], 1.16 million receive the benefit and 600,000 do not take it up[55]. Therefore, more than three out of ten households that are eligible do not receive it (34%).

With regard to the budget, 32% of the sums that should be allocated to those who are likely to benefit from the allowance were not paid. The unpaid sums corresponding to non-take-up of the RSA would reach €750 million, per quarter, related to coverage (table 8). The estimate of the unallocated financial sum would be larger if it covered all residents in France, including those in non-ordinary housing.

Table 8 Average rate of non-take-up of RSA in 2018

	Number of house-holds	Financial sum	Average monthly amount of the enti-tlement	Average monthly amount of the enti-tlement per CU
	(in thousands)	(in millions of euros)	(in euros)	(in euros)
Eligible households (E)	1,760	2,310	440	330
of which are non-recipients (E.NR)	*760*	*880*	*390*	*300*
Recipient households (R)	1,160	1,560	450	340
of which are non-eligible (R.NE)	*160*	*130*	*270*	*210*
Non-recipient households (NR = E- R)	600	750	420	330
Non-take-up rate (= NR / E)	34%	32%		
Beta error (= R.NE / R)	14%	8%		

CU: consumption unit (in the context of RSA).
Note > The amounts of entitlement for RSA recipients are those paid by social organisations. The amounts of entitlement for eligible non-recipients are simulated.
Interpretation > Every quarter on average, in the category indicated above, 1.76 million social welfare households are eligible for RSA and 1.16 million are beneficiaries; as a consequence, 598,000 are not recipients of the benefit. This figure of 598,000 also corresponds to the number of eligible non-recipients (758,000), minus those of non-eligible recipients (159,000).
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative disposable (or declared) income, excluding social households where the reference person is over 64 years old or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities, and excluding discrepancies in marital status in the Employment/CNAF survey.
Source > EFRS 2018 - INES eligibility simulation in 2018.

These results are similar to those taken from the quantitative survey on RSA carried out by DARES at the end of 2010, start of 2011 (Domingo, Pucci, 2011). The rate of non-take-up of RSA is thus estimated at 36% on average: 36% for the core component only and 33% for the key and active component. The rate of non-take-up of active RSA only was estimated at 68%[56].

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[54] Excluding households where the reference person is over 64 years of age or is a student or on parental leave, excluding beneficiaries of a disability pension or those who have a disability, and excluding the discrepancies in marital status between the ERFS and the CNAF.

[55] This number of 600,000 also corresponds to the number of households simulated as being eligible but not receiving the benefit (760,000) minus the number of recipient households that are not simulated as being eligible (160,000): this 160,000 should reflect those who are wrongly eligible (or "false eligible recipients", effectively non-recipients) minus those who are "falsely ineligible" non-recipients (table 8).

[56] These results have been obtained by correlating with the numerator all of the non-recipients (minus the number of households claiming RSA at the time of the survey) and all of the eligible individuals in the denominator (Domingo, Pucci, 2011).

2.2   Non-recipients have entitlements that are relatively similar to those of recipients

The average simulated amount of RSA which non-recipient households can claim in a given quarter is **€330** per month and per consumption unit (CU) in the context of RSA[57], equalling an amount that is slightly less than that effectively received by recipient households (**€340**). Even if non-recipients are relatively better equipped financially than recipients, their unclaimed entitlements thus remain relatively significant. This result confirms the observations from the DARES survey on RSA beneficiaries, which concluded that non-recipients could claim social benefits equivalent to those received by the recipients (Domingo, Pucci, 2011).

For non-recipient households, taking into account an average base of resources (starting with the eligibility test) per consumption unit estimated at €247 per month, not receiving RSA would lead to an average financial loss of 57%[58]. Single people suffer from the greatest relative loss of income.

The median amount of benefit (like half of households receiving a lesser amount and the other half a higher amount) is at around €360 per month per CU, for both recipients and non-recipients[59] (6a graphic). Non-recipients are overrepresented among smaller sums (9% of them receive lower amounts at €50 per month and per CU compared to 6% of recipients), but they are also over-represented with regard to higher amounts.

More specifically, 30% of recipient households receive a monthly RSA of between €470 and €480 per CU, which corresponds to the full-rate amount allocated to households with no resources, reduced from the set housing rate (for homeowners, those with free accommodation and those receiving housing benefit higher than the set rate) and only 4% receive a higher amount. 20% of non-recipient households have simulated entitlements of between €470 and €480 per CU and 10% would have higher entitlements: the data indicates that they apply for a set housing rate less often, especially in the case of renters who do not receive housing benefit (see point 2.4).

Figure 6a **Distribution of rights to RSA for recipients and non-recipients**

Monthly amount of RSA (per CU)

Non-recipients (600,000 households)   Recipients (1.16 million households)
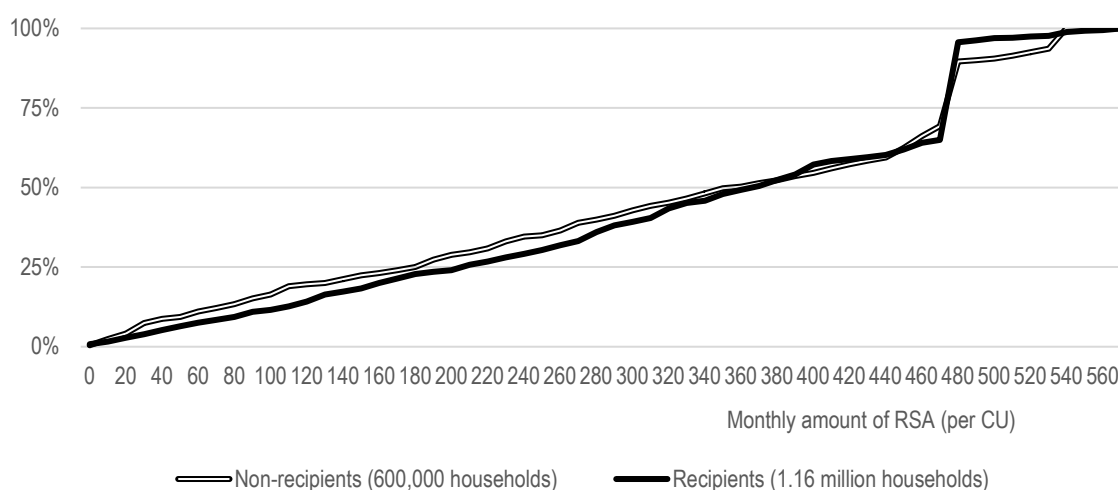
Note > The amounts of RSA entitlement are simulated for non-recipients. The amounts of entitlements are those actually paid for recipients.
Interpretation > Each quarter in 2018, on average, 25% of non-recipients of RSA receive non-transferred monthly amounts of less than €180 per consumption unit (in the context of RSA).
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative disposable (or declared) income, excluding social households where the reference person is over 64 years old or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities, and excluding discrepancies in marital status in the Employment/CNAF survey.
Source > EFRS 2018 - INES eligibility simulation in 2018.

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[57] To take into account the range of family structures in households, we use the equivalence scale used in the RSA scale to build up the consumption units: CU = 1 for the first person in the household, 0.5 for an additional person (couple without children or single-parent family with 1 child), 0.3 for the first child in a couple and the second child in a single-parent family, and 0.4 for any additional child.

[58] The financial loss is calculated from the share of unpaid resources out of all of the resources that should be available, meaning the resources received and the unpaid RSA. Analytically, we estimate the loss according to the following method: $PM = \frac{RSA}{Basic\ resources + RSA}$.

[59] It should be noted that the number of non-recipient households is achieved by calculating the difference between the number of eligible households and the number of recipients (or between the number of eligible non-recipients and those of non-eligible recipients, cf. formula at 1.3). It is therefore possible to estimate the number of non-recipients for each amount of the benefit.

Box 3 A quarter of non-eligible recipients receive benefits of less than €50 per month and per CU

The simulated non-eligible recipient households are more often on the cusp of eligibility than eligible recipients and thus receive the lowest amounts: a quarter of them receive less than €50 per month and per CU (in the context of RSA) compared to barely 4% of eligible recipients (figure 6b). This corroborates the hypothesis of estimation in the simulation process, which results in these households being incorrectly tilted towards non-eligibility.

Figure 6b Distribution of RSA amounts received by recipients

Monthly amount of RSA (per CU)

⎯⎯⎯ Non-eligible recipients (160,000 households)   ▬ ▬ ▬ Eligible recipients (1 million households)

▬▬▬ Recipients (1.16 million households)
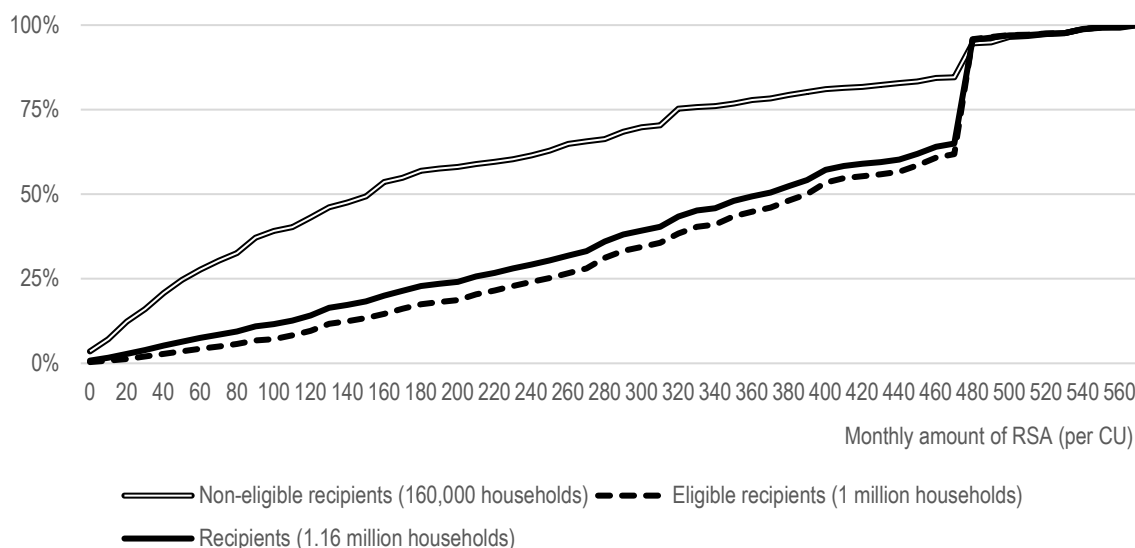
Interpretation > Each quarter in 2018, on average, 25% of simulated non-eligible recipients of RSA receive transferred monthly amounts of less than €50 per consumption unit (in the context of RSA).
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative disposable (or declared) income, excluding social households where the reference person is over 64 years old or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities, and excluding discrepancies in marital status in the Employment/CNAF survey.
Source > EFRS 2018 - INES eligibility simulation in 2018.

From the opposite perspective, other households may incorrectly shift from non-eligibility to eligibility: thus we can expect that their benefits will be less than for all eligible individuals.

In fact, the proportion of households with simulated benefits of less than €50 per month is higher among eligible non-recipients than among eligible recipients (13% compared to 4%) (figure 6c). This gap can be explained in two ways:

- on one hand, some eligible non-recipient households can be incorrectly simulated as eligible: most often those on the cusp of eligibility, they potentially have lower benefits than those who are "really" eligible;

- on the other hand, non-recipients potentially have lower benefits than recipients because the fact of having lower benefits may be a factor in non-take-up.

However, this second hypothesis does not appear to be at the forefront with regard to estimated benefits for all non-recipients, whether simulated eligible or not (the proportion of households with RSA benefits below €50 per month is estimated at 9% for non-recipients compared to 6% for recipients [figure 6a], illustrating a gap that is clearly narrower than that observed for only those eligible).

Figure 6c **Distribution of simulated RSA amounts for those eligible**

Eligible non-recipients (760,000 households) — ▪ ▪ ▪ Eligible recipients (1 million households)
Eligible persons (1.76 million households)

Interpretation > Each quarter in 2018, on average, 25% of households eligible for RSA receive monthly simulated amounts of less than €190 per CU (in the context of RSA).
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative disposable (or declared) income, excluding social households where the reference person is over 64 years old or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities, and excluding discrepancies in marital status in the Employment/CNAF survey.
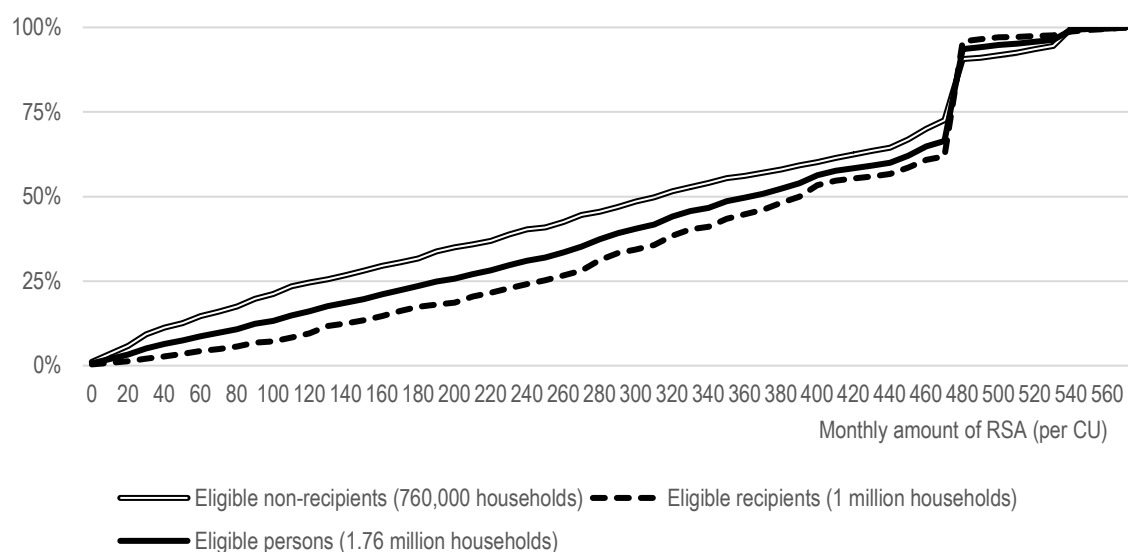**Source >** EFRS 2018 - INES eligibility simulation in 2018.

For eligible recipients, we also show that the distribution gap between the sums of simulated benefits and allocated benefits is very narrow (figure 6d).

Figure 6d **Distribution of allocated or simulated RSA amounts for eligible recipients**

Eligible recipients (effective payments) — ▪ ▪ ▪ Eligible recipients (simulated payments)
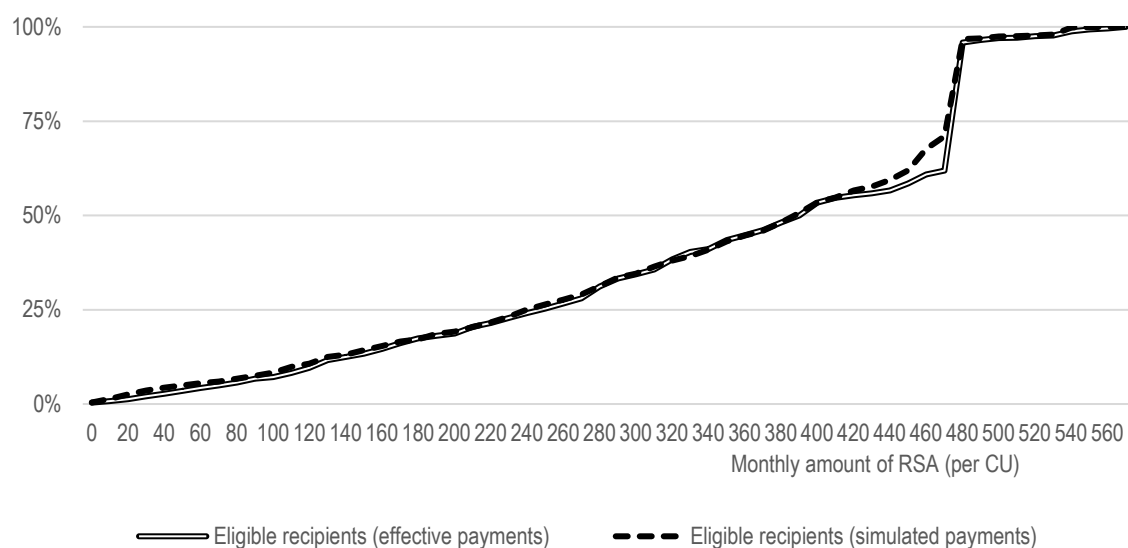
Interpretation > Each quarter, on average, 25% of households eligible to receive RSA receive monthly allocated or simulated amounts of less than €250 per CU.
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative disposable (or declared) income, excluding social households where the reference person is over 64 years old or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities, and excluding discrepancies in marital status in the Employment/CNAF survey.
Source > EFRS 2018 - INES eligibility simulation in 2018.

2.3   Not simulating income offsets would reduce the rate of non-take-up by 4 percentage points

The simulation of resource offsetting mechanisms based on ERFS is a somewhat risky exercise due to the uncertainties in the real month-on-month evolution of earned and replacement income received. However, the simulation of offsetting, although imperfect, brings us closer to the rules of eligibility and avoids underestimating the number of eligible individuals.

Therefore, in the ERFS survey, income offsetting is simulated each quarter on average for 141,000 households that are eligible for RSA (equal to 8%), of which 107,000 (75%) become eligible as a result and 34,000 would be simulated as eligible, even without applying this measure[60].

The households concerned are those with earned or replacement income during the last reference quarter and whose loss (during the last reference quarter or the start of the quarter for the benefit) has not been compensated by substitute income for at least two months (see Appendix 4). The income in question is thus removed from the basic resources of the quarter being considered.

The simulation of this measure is showed by an increase in the number of eligible households, *a priori* closer to reality, although the number of recipients observed remains the same. Therefore, it impacts the increase in non-take-up: without simulation of offsetting, the rate of non-take-up for RSA would be 4 points lower in actual figures (30% versus 34%) and 5 points lower in financial mass (table 9).

Table 9 Effect of offsetting on the measurement of non-take-up (on average in a quarter)

		Number of households (in thousands)		Financial sums allocated (in millions of euros)	
		Recipient	Eligible	Recipient	Eligible
With offsetting	Total	1,163	1,761	1,562	2,311
	Beta error	14%		8%	
	NTUR	**34%**		**32%**	
Without offsetting	Total	1,163	1,654	1,562	2,143
	Beta error	15%		9%	
	NTUR	**30%**		**27%**	
Difference	Total	0	107	0	168
	Beta error	-1 ppt		-1 ppt	
	NTUR	**+4 ppt**		**+5 ppt**	

Interpretation > In 2018, on average, simulating the offsetting of resources in ERFS does not change the total number of recipients (1.16 million households), but does increase the number of those eligible by 107,000 households. This simulation would reduce the beta error by 1 percentage point, and increase the rate of RSA non-take-up by 4 percentage points.
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative disposable (or declared) income, excluding social households where the reference person is over 64 years old or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities, and excluding discrepancies in marital status in the Employment/CNAF survey.
Source > EFRS 2018 - INES eligibility simulation in 2018.

Of the recipients, one portion becomes eligible with offsetting, which has the effect that the share of those who are non-eligible (beta error) is reduced: from 15% to 14% in actual numbers and from 9% to 8% in financial mass. However, this reduction is limited because a large majority of households made eligible by offsetting are non-recipients: only 13% of them are RSA beneficiaries (15,000 on average per quarter out of 107,000).

Households that are made eligible by offsetting tend to be eligible for only one quarter more often than others: for example, in the second quarter of 2018, 17% of them were only eligible in this quarter, compared to 7% for all of those eligible (table 10). However, in the majority of cases, **offsetting only anticipates eligibility that would have been obtained in the following quarter anyway**: 61% of those eligible in the second quarter due to offsetting will remain eligible for three quarters.

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[60]In addition, 251,000 households remain ineligible for RSA despite offsetting of a portion of their resources: this most often concerns couples (more than 90%), where the spouse's resources are also included in calculating the benefit.

Those eligible through offsetting are most often non-recipients in the quarter in which the offsetting is carried out: in the second quarter, 80,000 households out of 95,000 were non-recipients. As for recipients, the majority will remain eligible for the following quarters (56% over three quarters) but are still non-recipients in the vast majority of cases.

Table 10 Duration of eligibility and the impact of offsetting for those eligible (in thousands)

		Duration of eligibility			
		Overall (thousands)	of which 1 quarter	of which 2 quarters	of which 3 quarters
In second quarter	Those newly eligible due to offsetting	95	17%	22%	61%
	of which are eligible non-recipients	*80*	19%	25%	56%
	Total number of eligible persons	1,724	7%	9%	84%
	of which are eligible non-recipients	*728*	13%	14%	72%

Interpretation > In the second quarter of 2018, of the 95,000 households that became eligible for RSA due to the offsetting of resources, 17% were only for this quarter, 22% for two quarters and 61% for three quarters.
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative disposable (or declared) income, excluding social households where the reference person is over 64 years old or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities, and excluding discrepancies in marital status in the Employment/CNAF survey.
Source > EFRS 2018 - INES eligibility simulation in 2018.

2.4 A higher rate of non-take-up for those in a couple with no children, graduates, young people, homeowners, living in rural areas or in the Paris urban area

In this section, we shall present the initial descriptive elements in line with certain sociodemographic characteristics of non-recipients. An econometric estimate of determinants of non-take-up will be carried out in later studies in order to better understand the results, with all other factors being equal. Specifically, the use of the temporal dimension of data (using quarters as scale) would make it possible to estimate take-up behaviour using a dynamic panel data model. The wealth of information in the ERFS would also help present stigmas linked with perception of take-up.

Having children reduces non-take-up, especially for isolated women: 16% of isolated women with children had not taken up RSA, compared to around half (49%) of couples without children (table 11). The proportion of non-recipients of RSA is generally limited in households that already receive another benefit. Therefore, of those eligible for RSA, 18% of beneficiaries of housing benefits, 21% of those receiving family benefits and 16% of those receiving the PA do not take it up, compared to 57%, 40% and 39% of non-recipients of these allowances, respectively. Proximity to benefits office services is likely to facilitate access to information on entitlements to RSA and the processes in order to receive them (Domingo, Pucci, 2014).

Non-take-up of RSA is most common in households of homeowners (61%) or those housed free of charge (46%) than among renters, especially those in social housing: 33% of private renters and 15% of renters in council housing who are eligible for RSA do not resort to it. This is also the case for 45% of social welfare households in a rural community or an urban area of fewer than 5,000 residents, versus less than 20% of those living in a mid-size urban area with between 20,000 and 100,000 residents. Limited access to public services and to administrative services in rural areas could explain this result in part. However, the rate of non-take-up appears to be equally high for the Paris urban area (46%).

Non-take-up of RSA is higher among young people between 25 and 29 years old (44%) and among higher education graduates (54%). This may be in part due to temporary living situations, especially for young people finishing studies. The high rate of non-take-up for higher education graduates may also be explained by an "unrecognised need" (thinking that they are going to find a job), by money transferred from parents to their child and by the effect of stigma associated with receiving RSA.

Lastly, households in which the reference person was self-employed over the three months of the reference quarter are more likely to be non-recipients than others: 65% of them did not take up the benefit, compared to 29% of households in which the reference person was declared unemployed for the quarter without receiving benefits[61].

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[61] The concept of active comes from the calendar of employment activity completed in the Emploi survey. Each month, the calendar provides information on the primary positions of respondents regarding the job market (in employment, salaried or self-employed, unemployed or inactive). This observation takes place through the monthly breakdown of earned and replacement income, taken from tax sources, to create a typology of situations in the job market for a given quarter. Therefore, someone is

The highest beta error was observed among couples without children (32%). Therefore, the eligibility simulation appears to be more sensitive to this family structure, possibly because the resources of both parties in the couple must be taken into account (inconsistencies in the domestic situation being removed among recipients). Social welfare households in which the reference person alternates between activity and unemployment throughout the reference quarter also present a higher rate of beta error (38%). Resources that are not stable over the course of the year (or over the course of the same reference quarter) are also difficult to take into account using the calendar of employment activity alone, which explains the lack of precision in this population category.

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considered as being unemployed and receiving benefits if they declare that they are unemployed during the calendar of employment activity for the entire reference quarter and if they have received employment benefits over the course of the year.

Table 11 Rate of non-take-up of RSA in 2018 (quarterly average), according to the characteristics of the social welfare household

Characteristics...			NTUR	Eligible households (in thousands)	Beta error
... of the social welfare household	Family situation	Single woman without children	36%	339	18%
		Single man without children	40%	591	10%
		Single woman with child(ren)	16%	465	10%
		Single man with child(ren)	59%	50	18%
		Couple without children	49%	81	32%
		Couple with child(ren)	41%	235	21%
	Accommodation occupation status	Owner (incl. homebuyer)	61%	259	18%
		Council housing renter	15%	559	12%
		Private tenant	33%	616	16%
		Free housing	46%	328	10%
	Urban area (UA) of residence	Rural town or with fewer than 5,000 residents	45%	343	15%
		5,000 to 20,000 residents	30%	151	17%
		20,000 to 100,000 residents	18%	235	15%
		100,000 or more residents (excluding Paris UA)	28%	680	12%
		Paris urban area	46%	351	13%
	Receipt of HB	Yes	18%	1,046	14%
		No	57%	715	14%
	Receipt of FB	Yes	21%	568	14%
		No	40%	1,193	14%
	Receipt of PA	Yes	16%	391	9%
		No	39%	1,369	25%
	Monthly amount of RSA benefit (per consumption unit)	less than €150	39%	329	38%
		Between €150 and €299	33%	361	14%
		Between €300 and €449	30%	367	9%
		More than €449	34%	704	6%
...of the reference person in the household	Age group (in complete years at 31/12)	Under 25 years old	8%	34	3%
		Between 25 and 29 years old	44%	320	17%
		Between 30 and 39 years old	29%	448	13%
		Between 40 and 49 years old	30%	431	16%
		Between 50 and 59 years old	38%	389	12%
		Between 60 and 64 years old	35%	140	12%
	Qualification level	Higher education graduate	54%	377	21%
		Baccalaureate	36%	347	17%
		CAP/BEP professional diplomas	29%	452	14%
		No diploma	23%	585	9%
	Activity during the reference quarter	Salaried	36%	315	24%
		Self-employed	65%	126	20%
		Unemployed receiving benefits	37%	165	31%
		Unemployed not receiving benefits	29%	657	3%
		Inactive	32%	340	4%
		In and out of work/unemployment	27%	159	38%
TOTAL			**34%**	**1,761**	**14%**

HB: housing benefit; FB: family benefit; PA: employment benefit.
Note > The criteria for designating the reference person of the household includes the following procedures if the household is made up of several persons: the **oldest** person is designated; if several persons in the household have the same age, the **woman** is designated among these persons; after all these criteria, if there are still women with the same age in the household, then the reference person of the household is selected **at random**.
Interpretation > In 2018, of the 339,000 single women without children eligible for RSA, 34% on average do not take it. 18% of those receiving RSA were considered to be ineligible by the simulation.
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative disposable (or declared) income, excluding social households where the reference person is over 64 years old or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities, and excluding discrepancies in marital status in the Employment/CNAF survey.

2.5 Of the households eligible in a given quarter, 20% would permanently not take it up (three consecutive quarters)

The timing plays an important role in non-take-up (Van Oorschot, Math, 1996). Non-take-up becomes permanent if a social welfare household does not claim the benefit between when they become eligible and when they no longer are. Non-take-up can also be temporary (or deferred) if the claim does not immediately follow becoming eligible or if the payment of the benefit is shifted from the date of the claim. The rare (and older) studies that focus on the temporal aspect of take up highlight that the majority of claimants expected a certain amount of time after becoming aware of the existence of the benefit and their eligibility, which would indicate that the deferred part of non-take-up is significant in this trend.

The ERFS reveals that the majority (60%) of households simulated as eligible and non-recipients in a given quarter (in the second, third or fourth quarter of 2018) are eligible for these three quarters and are also non-recipients in the three quarters in which they are eligible. The situation of non-take-up thus appears to be a "permanent" situation in that if a household does not take up the benefit in an eligible quarter, this is unlikely to change later in the year. At the same time, this result indicates that there are cases of temporary non-take-up that are both linked to the eligibility that can vary from one quarter to the next and to temporary decisions that can lead to taking up the benefit later in the year, or to no longer taking it up.

The share of non-take-up that is considered permanent (60%), calculated for non-recipients simulated as eligible, can be forecast from estimates of "real" non-recipients[62]. For 600,000 households that are non-recipients of RSA in a given quarter (in the category used, cf. table 8) 60%, or 360,000, would therefore be non-recipients for three consecutive quarters. This represents, on average, 20% of eligible households in the relevant quarter. Thus, 20 out of 100 households eligible for RSA would be non-recipients for three quarters.

The rate of permanent non-take-up among those eligible in a given quarter can be written as:

$$NTUR_{permanent} = \frac{E.NR_{Q2\ and\ Q3\ and\ Q4}}{E.NR_T} * \frac{NR_T}{E_T}$$

in which:

- $E.NR_{Q2\ and\ Q3\ and\ Q4}$ *indicates the number of households that have been simulated as eligible and non-recipient for three consecutive quarters (at Q2, Q3 and Q4),*
- $E.NR_T$ *indicates the number of households that have been simulated as eligible and non-recipient in a given quarter (on average in Q2, Q3 and Q4),*
- NR_T *indicates the number of non-recipient households in a given quarter (on average in Q2, Q3 and Q4),*
- E_T *indicates all of those eligible in a given quarter (average number in Q2, Q3 and Q4).*

In the first analysis, the characteristics of households that are non-recipients of RSA all year do not noticeably differ from those of other non-recipients (see point 2.4).

3 Two robustness tests for results

In order to qualify the robustness of results, two avenues were studied to test the sensitivity of the estimate for the rate of non-take-up. First and foremost, we shall analyse the lack of representation for low-income households in the ERFS survey by integrating more low-income households on an ad-hoc basis. Secondly, we shall test the sensitivity of non-take-up on the resource eligibility threshold in order to understand the uncertainty in the estimate of the number of eligible social welfare households.

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[62] Due to the presence of "false non-eligibles" and "false eligibles", which have been taken into account to determine their number, we cannot identify or individually track non-recipients. As previously indicated (in 1.3 of section 3), the number of non-recipients is defined by the difference between the total number of those eligible (E) and the total number of recipients (R) or by the difference between the number of non-recipients simulated as eligible (E.NR) and the number of recipients simulated as non-eligible (R.NE), which amounts to the same in mathematical terms: **NR = E – R = E.NR – R.NE**.

3.1 The lack of representation for low-income households in the ERFS survey has very little impact on the measurement of non-take-up

The comparisons with the FiLoSoFi measure (see Appendix 3) suggest that aggregated tax households with zero annual earned and replacement activity would be missing in the ERFS. The number of social welfare households concerned is a priori higher, as a financial household can include several social welfare households.

The proportion of non-recipient RSA households out of households with no earned or replacement income present in ERFS is slightly higher than for other households (36% versus 34% on average), meaning under-representation of these households without income in the ERFS could lead to underestimating the measurement of non-take-up of RSA.

However, the difference with the rate of non-take-up is minimal, as adding 30,000 households without either earned or replacement income for those eligible for RSA and applying to them the same rate of non-take-up that is calculated for ERFS households with zero income (or 36% on quarterly average) would increase the rate of non-take-up of RSA by only 0.04 percentage points (table 12). Even by raising slightly the number of missing households to 100,000, the rate of non-take-up would only increase by 0.1 percentage point and would remain unchanged.

Ultimately, this result shows that the lack of representation of zero-income households would not strongly impact the estimate of non-take-up rates.

Table 12 **Potential impact on the rate of under-representation of households without income of non-take-up of RSA**

	Non-eligible recipients	Eligible recipients	Eligible non-recipients	Beta error	TNR
Reference	159	1,003	758	13.7%	33.9%
Households with zero income	5	666	381	0.7%	35.9%
Scenario 1: 30,000 social welfare households missing without primary income	-	1,022	769	13.4%	34.0%
Scenario 2: 100,000 social welfare households missing without primary income	-	1,067	794	13.0%	34.0%

Interpretation > On average in 2018, adding 30,000 social welfare households without primary income eligible for RSA slightly reduces the share of non-eligible recipients from 13.7% to 13.4% and the rate of non-take-up of RSA increases slightly from 33.9% to 34.0%.
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative disposable (or declared) income, excluding social households where the reference person is over 64 years old or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities, and excluding discrepancies in marital status in the Employment/CNAF survey.
Source > EFRS 2018 - INES eligibility simulation in 2018.

3.2 The rate of non-take-up is relatively stable on the eligibility threshold of resources

The distribution of annual income observed in the ERFS each quarter according to the retrospective calendar of activity is based on several simplifying assumptions in the INES microsimulation model, which can lead to inaccuracies in the eligibility simulation (see Part 2, point 1.7). In order to test the sensitivity of our results once the income has been calculated by quarter, we shall measure the elasticity between resources at the RSA eligibility threshold and the rate of non-take-up. In other words, we are looking to qualify the uncertainty of estimating the number of those eligible by measuring the robustness of our indicators for households whose resources are close to eligibility for RSA (in terms of resources).

The increase (or the decrease, respectively) of eligibility thresholds decreases (increases) the number of non-eligible recipients, while it increases (decreases) the total number of those eligible with flexibility that is slightly stronger when increases than when decreasing (table 13).

The increase (decrease) of eligibility thresholds slightly decreases (increases) the rate of non-take-up, which remains relatively stable (from -1 ppt to +1 ppt around the reference level for RSA). In number of households, the beta error is also slightly affected by an increase (decrease) in eligibility thresholds.

Table 13 Variation in the set rate (SR) of RSA and impact on those eligible and rates on non-take-up

	Recipients	Eligible persons	Eligible recipients	Eligible non-recipients	Non-eligible recipients	Beta error	NTUR
SR -3%	0%	-1%	-1%	-2%	3%	0	-1
SR -1%	0%	0%	0%	0%	0%	0	0
Reference situation	1,163	1,761	1,003	758	159	14%	34%
SR +1%	0%	1%	1%	2%	-4%	-1	1
SR +3%	0%	2%	1%	4%	-7%	-1	1

Interpretation > On average in 2018, increasing the set rate (SR) of RSA by +1% had no impact on the number of recipients (the rate of variation is 0%), but increases the number of eligible parties by 1%. The share of non-eligible recipients decreases by 1 percentage point and the rate of non-take-up increases by 1 percentage point.
Champ > In metropolitan France, ordinary housing; excluding aggregated households with negative disposable (or declared) income, excluding social households where the reference person is over 64 years old or is a student or on parental leave, excluding recipients of a disability pension or those who have disabilities, and excluding discrepancies in marital status in the Employment/CNAF survey.
Source > EFRS 2018 - INES eligibility simulation in 2018.

■ CONCLUSION

Based on the survey on tax and social income carried out by INSEE (ERFS), which takes place annually to monitor the distribution of income on a representative sample of the French population (in ordinary housing and metropolitan France) and based on an INES tax-benefit microsimulation model, the studies presented in this *DREES report* show that it is possible to measure non-take-up of earned income supplement (RSA) on a regular basis. On the other hand, complementary studies will be required for the employment bonus (PA).

In fact, thanks to the extent of information that the ERFS contains and the wealth of complementary information[63], the ERFS makes it possible to, on one hand, simulate the eligibility of these two benefits and, on the other hand, to compare eligible households and households that are actually beneficiaries[64] to measure non-take-up. In 2018, the average quarterly rate of non-take-up for RSA is thus estimated at 34%, corresponding to €750 million of RSA benefits not allocated per quarter in the area covered. One fifth of parties eligible for RSA would permanently not take it up (three consecutive quarters). Although these estimates can always be improved, insofar as the information needed to apply the methods for calculating the entitlement to benefits can be never observed in its entirety (regardless of the method and the type of data), they enable a longitudinal monitoring of the trend using fixed methodology (and thus any errors within the methodology must be always be taken into account) and can highlight the characteristics of the groups concerned. In a first analysis, those living in a couple and with no children, graduates, young people, homeowners, living in rural areas or in the Paris urban area are the most relevant groups for non-take-up of RSA.

The estimate of non-take-up of PA, based on this same survey, proves to be more difficult because the lack of precise information on the variations in income over the course of the year is a potential source of too great an error for the benefit, the amount of which is calculated using monthly declarations of earned income. This lack of precision is less problematic for RSA beneficiaries who are far removedfrom the world of work and are often without earned income. The experimental ERFS matching project with the monthly resource framework (DRM), which contains the monthly column for different individual income, would be the perfect approach to both better understand income trajectories over the year and to make measurements of non-take-up more reliable.

Although measuring the non-take-up rate is a significant challenge for public statistics, understanding the determinants of this trend is just as significant for understanding the various levers that could mitigate it. In line with studies already carried out on the determinants of non-take-up of statutory minimum benefits in France (Terracol, 2001; Domingo, Pucci, 2014; Chareyron, 2018), the determinants of non-take-up of RSA will be analysed by making use of the wealth of information available in the ERFS survey and will be completed by taking into account the temporal aspect of the trend (sustainable or temporary character over the year).

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[63] Routine access to intermediate data of ERFS (especially that taken from social matching) to establish social welfare households and complementary CNAF data to take into account the overpayments and back payments from more than six months previous, which would make it possible to recreate the method and regularly monitor non-take-up of RSA on an annual basis.

[64] The beneficiaries are observed in ERFS via matching with data taken from social organisations, primarily CNAF, for RSA and PA.

■ TO FIND OUT MORE

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Appendix 1.   Sources and tools

The simulation studies presented in this report are primarily based on survey data on INSEE fiscal and social income (**ERFS 2018**) and on algorithms taken from the **INES** socio-fiscal microsimulation tool, which is developed jointly by INSEE, DREES and CNAF. Also used were CNAF statistical reference files (**Allstat-FR6** files), which give an exhaustive view of the benefits allocated to CAF beneficiaries (family benefits, housing benefits, PA and statutory minimums). Two other data sources were used for comparison with ERFS on specific points: the DREES survey on beneficiaries of statutory social minimums (**BMS 2018**) and the **FiLoSoFi** measure on fiscal and social income, produced by INSEE.

The Tax and Social Incomes Survey (ERFS)

The ERFS survey, produced by INSEE, is the national-level reference source for the production of statistics and studies on income, standards of living and financial poverty, and concerns persons residing in France's metropolitan areas in ordinary housing. Persons living in non-family households (retirement homes, religious communities, university accommodation, prisons, workers' hostels, etc.) or precarious housing (emergency accommodation, hotels, mobile homes, etc.) as well as the homeless are not included.

The ERFS is based on a large sample of around 110,000 individuals for 50,000 aggregated households responding to the Emploi survey (an **aggregated household** is made up of all individuals living at a primary residence in accommodation surveyed, regardless of the link between them). The income comes from the use of administrative sources that are matched with a representative sample of the entire population taken from the Emploi survey. Therefore, every year, **the ERFS is compiled through matching between three types of data sources:**

- respondents to the Labour force survey (LFS) in the 4th quarter of the year;
- fiscal sources, provided by the General Directorate of Public Finances (DGFiP), namely data taken from tax declarations on income, which identified all the taxable income received over the year and the files related to council tax from 1 January of the respective year;
- the files from the National Fund for Family Allowances (CNAF), the French National Old-Age Insurance Fund (CNAV) and the Central Agricultural Social Mutual Benefit Fund (CCMSA), which give the amounts of benefits allocated by these organisations over the year.

The ERFS also circulates an estimate of financial income that is exempt from tax or generated by products subject to withholding tax.

The sums of allocated benefits, taken from social sources, are combined in the ERFS as aggregated households. For the needs of studies presented in this report, an **intermediary table** established by INSEE and taken from the matching process with data from organisations managing social benefits has been used. This makes it possible to collect information on the benefits received each month of the year for social welfare households.

During the matching process, certain aggregated households and individuals in the Emploi survey were not found in the tax sources, so their income remains unknown. Depending on the case, the aggregated households concerned may be removed from the survey or be subject to questions about their missing income. In 2018, at least one tax declaration has been found for 97% of aggregated households in the LFS. However, within these aggregated households, some may be absent from tax declarations found; their income is thus imputed[65]. Of the 3% of aggregated households for which there is no tax declaration[66], some may be found in social sources: their income is also imputed based on information given in this source[67]. Aggregated households for which no tax or social information could be found were removed from the survey. The ERFS was then re-weighted in order to be representative of the entire metropolitan population in ordinary housing.

Further detail can be found on the INSEE website: https://www.insee.fr/en/metadonnees/source/serie/s1231/documentation-methodologique.

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[65] On the other hand, other people may appear in tax declarations, even though they are not part of the aggregated household. These people, and their income, are not taken into account. This most often concerns dependent children who do not live in the family home for a reason for which living under the roof of the tax declarant is not needed (children under 25 years old who are studying, children under 21 years old, children with disabilities living in specialised institutes) and children who are subject to shared custody and are absent at the time of the survey.

[66] This is the case, for example, of students who owe council tax, but are linked to their parents' income declaration.

[67] For example, it is possible to collect income for the year *N* for RSA beneficiaries every year or the income dated from year *N-2* for recipients of means-tested family benefits.

The statistical reference files for CAF beneficiaries (definitive data): CNAF-Allstat FR6

The family branch of social security is equipped with consistent monthly statistical data that describes the circumstances of CNAF social benefit recipients. This data is called "Allstat". The Allstat records make it possible to ensure monthly statistical monitoring of benefits allocated by CAF. For each month of the benefit, there are three records corresponding to three retrieval periods:

- FR1: with one month of historical data;
- FR2: with two months of historical data;
- FR6: with six months of historical data.

This means that there are 36 (12 x 3) Allstat records every year. The quality of information on beneficiaries and their rights to benefits increases with the retrieval period. The later the record, the better the chance that they include "latecomer" claimants, who make their application after the deadline, in addition to the various adjustments that can be provided in the file (overpayments and back payments). These are the FR6 records, definitive data, which have been used to carry out comparisons between ERFS and administrative data on a number of beneficiaries and financial masses (see Part 1).

The data observation unit is the **claimant file**. A file can cover several people (usually a family): the principal individual in the file (the person identified as being the "contact" for CAF), their spouse and their dependent children for at least one of the benefits allocated[68]. With regard to the PA, a young working adult can have their own claimant file if they receive the bonus themselves and also appear on their parents' claimant file if they remain dependent on the parents for receiving other benefits, such as housing benefit or RSA. A unique and anonymous identifier is assigned to each claimant file (number of the CAF department + encrypted enrolment number).

The files contain three types of variables: those that are used to calculate benefits; those that indicate the benefit to be received and the amount allocated for each benefit; those that are used only to produce statistics (few in number and often of lesser quality). The variables describe:

- the claimant and any spouse: sex, year of birth, marital status, employment status, nationality, etc.;
- their dependent children: year of birth, residence status with regard to family benefits, lack of one parent giving entitlement to family support allowance (ASF);
- the legal benefits that they receive;
- individual social action assistance that they received;
- income of the claimant's household;
- the occupied accommodation: occupation status, area, etc.

In addition to the Allstat reference files, CNAF also has specific monthly records that trace **all allocated overpayments and back payments**, in addition to the months of benefit, according to which these adjustments apply: the overpayment (FIIC) and back payment (FRIC) tables. These two monthly tables can be matched with the recipient's file number, which makes it possible to identify the history of overpayments and back payments. For each overpayment/back payment, we know the timeline of the entitlement to which monitoring is assigned. For example, an overpayment amount for individual "Y" detected in May 2018 for PA benefit paid between December 2017 and February 2018. These tables were used in the studies for this *DREES report* to reallocate the overpayments and back payments for the month that have been regularised after more than six months.

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[68] Depending on their age, children may be considered dependent when allocating one benefit and not for another: for example, a 22 year old may be counted as dependent for allocating RSA, but not for family benefits. Information on dependent children is given in the claimant file for each benefit allocated.

The survey on recipients of statutory minimums (BMS)

The survey on recipients of statutory minimums (BMS), carried out by DREES, is included in the statistical observation measure for struggling populations. Its primary objective is to better understand the living conditions of those who receive statutory minimums.

The latest version of the survey was carried out in the fourth quarter of **2018** in metropolitan France, Réunion and Martinique on 12,200 people who, on 31 December 2017, received a minimum income support (earned income supplement [RSA], specific solidarity allowance [ASS], disabled adult allowance [AAH], minimum old-age income) or the PA, and are drawn from an inter-system national sample of claimants receiving additional solidarity income and social minimums (ENIACRAMS).

It follows three surveys carried out in 2003, 2006 and 2012 and highlights issues related to income and pre-allocated, and discretionary spending. For the most part, the 2018 aggregated household income was obtained from matching with administrative sources and other external files from INSEE, CNAF, CCMSA, CNAV, Sapsa and Pôle emploi job centre.

For ASS, AAH and minimum old-age income, those in the category are the beneficiaries. For RSA and the PA, which are family-related benefits, the claimant's spouse is also in the category.

Those surveyed may be in any living situation: in social housing, in a housing service, in mobile housing or homeless, etc. The only parties excluded are those living in certain institutions (retirement homes, supported living for people with disabilities, specialist supported living), those who passed away when the study was being carried out and those who are unable to respond in the long term due to health or disability.

The main themes of the 2018 questionnaire were as follows: family and professional status; financial situation; allocated spending (housing, transport, energy, telephone, etc.); material hardships; housing conditions; social life; health; dependency; support from organisations; opinions on statutory minimums. In particular, several questions were posed to beneficiaries regarding their housing situation at the time of the survey, and these were used in this report.

More information can be found on the DREES website:

https://drees.solidarites-sante.gouv.fr/sources-outils-et-enquetes/01-enquete-sur-les-beneficiaires-de-minima-sociaux-bms

Localised disposable income system (FiLoSoFi)

The localised disposable income system (FiLoSoFi), created by INSEE, is compiled through a comparison between the comprehensive fiscal data from the General Directorate of Public Finances (declarations of income for natural persons, council tax and the taxation file for individuals) and data on social benefits from the main organisations that manage these benefits (CNAF, CNAV, CCMSA).

The scope covered includes aggregated tax households that have completed at least one income declaration and are found in the council tax records, residing in metropolitan France, Martinique or Réunion. Households living in non-family households (retirement homes, homeless shelters, worker hostels, religious communities, university accommodation, prisons, etc.), those with no fixed address and those who are homeless are not included in the scope of FiLoSoFi. In 2018, this scope included almost 28 million "ordinary" aggregated tax households.

The **aggregated tax household**, a statistical unit in FiLoSoFi, brings together tax households identified in the same accommodation (households made up of more than six or ten tax households, depending on the type of taxation, are considered as non-family households and excluded from the scope). Unlike an aggregated household, which includes all people sharing the same accommodation, the aggregatd tax household does not include those who are present in the accommodation but not on the tax declarations that they report: au pairs, students in rented rooms, family members hosted but not listed in tax terms, etc. On the other hand, those not living in the home can be linked in the tax household. These are in particular young people or students under 25 years old who are not living with their parents, but are included in their tax declaration. Generally speaking, the aggregated tax household is an entity that is on average slightly larger than an aggregated household.

Thanks to its exhaustive nature, the FiLoSoFi device makes it possible to manage indicators of standard of living, inequalities and poverty on a geographic scale that is more precise than the ERFS.

Further detail can be found on the INSEE website:

https://www.insee.fr/en/metadonnees/source/operation/s1560/documentation-methodologique

https://www.insee.fr/en/metadonnees/source/serie/s1172?debut=0

The INES microsimulation model

The INES socio-fiscal microsimulation model, which was developed jointly with INSEE, DREES and CNAF, simulates the majority of social and fiscal payments and social benefits. Based on a large sample of individuals and aggregated households take from the Tax and Social Incomes Survey (ERFS), the model makes use of a collection of data that is rich in information on socio-demographic characteristics, accommodation, employment and income of individuals.

The INES model simulates the direct social and fiscal payments that every aggregated household must make (social contributions, generalised social contribution (CSG), social debt repayment contribution (CRDS), income tax), as well as the social benefits to which they are entitled: family benefits; housing support; statutory minimums; the PA. Retirement pensions, unemployment benefits and council tax are not simulated, but are given in the data. Income before contributions and benefits, details about these contributions and benefits and their standard of living are calculated for each aggregated household in the sample.

Studies carried out using this microsimulation model are incorporated in the fields of financial reallocation, taxation or social protection[69]. The model makes it possible to assess the effects of the socio-fiscal and its ex-post (reallocation analysis, assessment of reforms implemented every year, publications of advanced indicators of poverty and inequalities) and ex-ante (perspectives brought to reform projects) trends. It is used in particular as a support tool for reflection to respond to ad-hoc requests from various high councils, administrative supervision ministries and managing bodies (General Inspectorate of Finance (IGF), Cour des Comptes, General Inspectorate of Social Affairs (IGAS)).

INES is a "static" model: it does not take into account the changing behaviours of aggregated households, for example in terms of productivity or participation in the job market, which could lead to developments in the provisions of socio-fiscal legislation.

The model is written in the SAS programming language as a chain of more than 100 programs. The model code has been freely accessible since 2016.

Unlike the INES model, the studies carried out in this *DREES report* do not simulate all of the taxes and social benefits, but only the RSA rights and the PA. The social income that is included in the resource bases for these two allowances (family benefits, housing benefit – up to a set rate – and other social benefits received over the year) is not simulated and is issued directly by ERFS. In addition, to stay as close as possible to the legislation, entitlement to the PA or RSA for quarter *Q* are simulated according to the resources from the preceding quarter (therefore, they are only simulated for three quarters because the resources received in the previous years are not known in the ERFS), while the INES model simulates the entitlements over four quarters, averaging a simultaneity hypothesis for resources and entitlements.

The following operations are made possible by the use of certain model modules:

- the make-up of the social welfare households according to the scope specific to each of these two benefits (see Appendix 2);
- the monthly and quarterly breakdown of income based on their annual level and the retrospective calendar of employment activity in the Emploi survey (see Appendix 5);
- the make-up ofresource bases, taking into account the set housing rate;
- the simulation of RSA and PA eligibility based on the applicable legislation.

References:

- **Fredon, S., Sicsic, M.** (2020). Ines, le modèle qui simule l'impact des politiques sociales et fiscales. Insee, *Courrier des statistiques,* 42.
- INSEE website: https://www.insee.fr/fr/information/2021951

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[69] Since its inception, the INES model has been used as a decision-making tool to calibrate certain reforms on taxation and reallocation. Thus, the model has been used to calculate the implementation of the employment allowance, the first attempt at negative tax, in 2001, the establishment and implementation of RSA in 2009, the benefit for welcoming a young child in 2014 (Paje) and the employment bonus in 2016. In 2019, it was used to calibrate the measures to respond to social emergency following the yellow vests movement. In 2021, it makes it possible to fuel studies around the universal active income (RUA).

Appendix 2. Composition of social welfare households in ERFS

The social welfare household is the unit used to allocate social benefits, the amount of which depends on the composition of families. This needs to be reasoned based on the **social welfare household**, whether to qualify the differences between the Tax and Social Incomes Survey (ERFS) and the comprehensive CNAF data (FR6) on the number of recipients of the earned income supplement (RSA) or the employment bonus (PA)[70], or to simulate the eligibility for these two benefits.

Several social welfare households can coexist within a same aggregated household (or all people living in a same house, regardless of whether there is a family relationship): for example, in the case of a couple with a child, the latter does not have to be considered a dependent to receive the benefit, which would result in defining two social welfare households[71]. The scope of the household varies depending on the benefit: depending on their age, a child can therefore be considered a dependent in the context of RSA, but not for family benefits.

The concept of a social welfare household is not integrated into the ERFS survey, which combines the amounts of benefits received by recipients as an aggregated household. As a result, several actions have been carried out to define social welfare households in the ERFS and allocate them the correct amounts of resources in a "social welfare household database".

■ The **scope of social welfare households** is first and foremost defined "*ex nihilo*" for RSA and PA, based on the age of each member of the aggregated household, the family relationships between them, their professional status and other information available in the Emploi survey. An INES microsimulation model module specifically for the composition of social welfare households has been used to attribute to each individual in ERFS a "social welfare household" identifier specific to each benefit.

■ Once the social welfare households are defined, it is then a matter of **re-establishing their resources** (table A1). **If there is only one household in the aggregated household** (which is the case for 90% of households established for RSA and 85% of households for PA), the resources allocated to the household correspond to the amounts indicated in the ERFS for the aggregated household, without having additional information.

■ **In the event there are several households in the aggregated household**,

  – the individual income drawn from tax declarations are grouped according to each household and taxable income that cannot be calculated individually, such as the household wealth, are allocated to the social welfare household of aggregated household's reference person;

  – with regard to **social benefits**, an "intermediary table" provided by ERFS is used[72]. This is a table taken from ERFS matching with data provided by social organisations. On one hand, it indicates the existence of matching between an individual in the Emploi survey and a claimant identified by CNAF, CCMSA or CNAV (reference person in the file or possibly their spouse) and the realisation of an imputation of social benefits[73] and, on the other hand, provides the entirety of social benefits allocated each month of the year by the CAFs (only) for each file matched. Firstly, the amounts allocated by the CAFs are attributed to each household[74]. Secondly, the amounts allocated be the CCMSA or the CNAV, as well as the amounts imputed, which are not given by households in the intermediary tables, are deduced from the amounts attributed to the aggregated household and the CAF amounts allocated to each household.

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[70] On the other hand, this has no impact on the financial sums, which remain the same and are grouped by social welfare households or aggregated households.

[71] A social welfare household can also include people belonging to different aggregated households, for example, a student living outside the family home, but remaining a dependent of their parents to receive family benefits. These situations cannot be taken into account in ERFS, but are in theory relatively rare.

[72] This table was provided by INSEE's "Household Income and Wealth" division, which produces the ERFS, as part of the study presented in this *DREES report*.

[73] Imputations of benefits are carried out when no matching has been carried out between at least one member of the aggregated household and the claimants in social organisations (or their spouses) by using the question "Do you currently receive the following benefit(s)? (multiple choice)" from the Emploi survey. The amounts are imputed per household in line with the "hot deck" method, based on amounts received by families that have the same characteristics in terms of family composition and resources. In the intermediary table, information on the existence of imputation is only provided at the aggregated household level; if there are several households within the aggregated household, it is necessary to determine the households that are the subject of imputation to assign the amounts imputed.

[74] If there are several CAF recipients within the same ERFS household, checks are carried out to ensure that there are no duplicate amounts. Two scenarios can occur: if the amount of the benefit is the same, this amount is assigned to the household (this is the case in particular where the same social file is matched to two people in a couple); if the benefits amounts are different (rare scenario), the sum of the amounts are attributed to the household (this is mainly the case for two social files that have been separated over the course of a year). This process gives results that are consistent with the amounts in the ERFS for the aggregated household.

Table A1 Type of resources, status in the ERFS and processing carried out in the "social welfare household" database

	Type of resources	Status in the ERFS	Processing
(1) Earned and replace-ment income	Employment income (salaried employees and earned income for the self-employed)	Assessed on an individual level	Combined as a social welfare household
	Unemployment benefits		
	Pensions (retirement and other)		
(2) Social ben-efits	Family benefits (excluding increases in family supplement and family benefits, excluding the back to school allowance, up to a certain level for the family support benefit)	Combined as one aggregated household in the ERFS but given <u>for each claimant household</u> in the intermediary table taken from matching with CAF data	Allocation according to the "household" scope defined by the INES microsimulation model
	Housing benefit (for calculating the housing set rate)		
(3) Income from assets	Income from transferable securities; property income	Combined as an aggregated household and <u>not on an individual basis</u>	Allocation of the social welfare household containing the reference person for the aggregated household (with no other identification as-sumption)
	Non-taxable financial income		
(4) Other resources	Additional income, foreign income, other income		

Appendix 3. Explanation of gaps in number of beneficiary households and financial sums of RSA and PA between the ERFS and the comprehensive CNAF data (FR6)

The differences between the ERFS and the comprehensive data from CNAF on the number of households receiving benefits and the financial sums of the benefits allocated, especially RSA, potentially have multiple causes. This includes difficulty in identifying ordinary housing in the comprehensive CNAF data, a lack of matching with social data in the ERFS, which would not be rectified by imputations made in the survey, or a problem of representation in the ERFS, which could result in underestimating the number of very low-income households likely to receive RSA.

To estimate a non-take-up rate, it is important to determine these causes because, depending on the case, they may affect only observance of recipients in the FR6 files from CNAF, only recipients from the ERFS (and not those eligible), or both ERFS recipients and those eligible. The different explanations investigated and the results in terms of impact on the gaps are presented in this appendix. Only the two last explanations, which explore a possibility of under-representation in the ERFS for low-income households, would likely explain these gaps, at least in part.

Explanation no. 1: a potential underestimate of claimants living in "non-ordinary" housing in the comprehensive CNAF data?

The ERFS is based on a sample of people living in ordinary housing (excluding hostels, mobile housing, etc.) in metropolitan France. In the comprehensive CNAF data, the concept of ordinary housing is approached on the basis of information taken from management data on the housing situation declared by recipients of housing benefit, earned income supplement (RSA) and the PA: this concerns information that is useful for calculating their entitlement and the set housing rate. To estimate the category of ordinary housing, those who declare that they are living in hostels, in university accommodation, in hotels and those without a regular residence are excluded. Out of all claimants in metropolitan France, the filter used by CNAF[75] results in eliminating 9% of RSA recipients (and 6% of employment bonus [PA] recipients). This proportion is not insignificant, but it may be that it is still not sufficient.

⇨ **The shift in the definition of the concept of ordinary housing would contribute to explaining the differences in number and in sum.**

To explain this approach, the housing situation at the end of 2018 for those responding to the DREES survey on beneficiaries of statutory minimums (BMS 2018)[76] were compared with that given in their social CNAF file from 2018.

■ In the sample used to carry out this process, the proportion of RSA claimants listed as residing in non-ordinary housing appears to be lower in the BMS survey than with the CNAF filter (5.2% versus 5.6%)[77], which does not follow the context of underestimating these claimants in these CNAF data.

■ More specifically, out of the RSA recipients at the end of 2017, surveyed at the end of 2018 by the BMS survey and found in the CNAF's FR6 data at the end of 2018 (without necessarily receiving RSA on this date), the non-similarities of the housing situation between FR6 indications and BMS survey indications reach 4.6%, which is divided between 2.6% of claimants in ordinary housing in BMS and non-ordinary housing in CNAF and 2.2% vice versa (table A2). For the PA, the rates are 4.2%, 0.8% and 3.4%, respectively.

■ However, this crossing emphasises that a share of RSA claimants declared as being "housed for free by private individuals" in the FR6 data and considered as being in ordinary housing with the filter used are in fact in non-ordinary housing (in

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[75] Created by the PROMES hub for calculation needs, especially for the targets used in the INES model, the CAF filter includes four variables in the Allstat-FR6 file, which makes it possible to approach the concept of non-ordinary housing. Also drawn from this are the claimants living in hostels, CROUS university accommodation, nursing homes or long-term hospital residences, assisted housing (excluding for the elderly/those with disabilities), residences for the elderly/those with disabilities, in either free or paid collective accommodation and hotels, as well as those without stable housing, with or without the set housing rate.

[76] At the end of 2018, the BMS survey examined a sample of claimants who were among recipients of statutory minimums at the end of 2017 present in the national inter-regime sample of those who claim additional solidarity income and social minimums (ENIACRAMS). Several questions in particular were posed regarding their housing situation at the time of the survey (see Appendix 1). Their housing situation, whether in "ordinary" or "non-ordinary" housing, is assessed according to the same methods as in the ERFS.

[77] This 5.8% proportion is far lower than the equivalent proportion for all FR6 recipient households, which can be explained by the specificity of the sample used (recipient households one year earlier and found in the CNAF files).

accordance with standard definition used in BMS), primarily in mobile homes (1.3% of the sample). These situations represented around 10,000 households for €50 million of RSA allocated.

Table A2 BMS/FR6 links on the housing situation for RSA and PA claimants in 2018

	RSA			PA		
	Ordinary housing BMS	Non-ordinary housing BMS	TOTAL BMS	Ordinary housing BMS	Non-ordinary housing BMS	TOTAL BMS
Ordinary housing FR6	92.2%	2.2%	94.4%	94.8%	0.8%	95.6%
Non-ordinary housing FR6	2.6%	3.1%	5.6%	3.4%	1.0%	4.4%
TOTAL FR6	94.8%	5.2%	100.0%	98.2%	1.8%	100.0%

Interpretation > Of the RSA beneficiaries at the end of 2017 who responded to the BMS survey and were found in the CNAF data in 2018, 92.2% were in ordinary housing in the two data sources, 2.2% were in non-ordinary housing according to BMS and in ordinary housing according to the CNAF (unweighted results).
Champ > CNAF claimants (of RSA or of PA) at the end of 2017, respondents to the BMS survey at the end of 2018 and found in the CNAF FR6 files in 2018.
Source > BMS 2018 (except for the scope included); FR6 2018.

Explanation no. 2: errors in matching that are not caught by the imputation method

There are errors in matching the ERFS with the benefits files. Nevertheless, they are corrected by imputation of the benefit amounts for some aggregated households not found in the CNAF data, which means that they could be beneficiaries. The imputation is based on the questions of the Emploi survey, which were posed to respondents on the 1st and 6th times being surveyed and ask if they "currently" receive RSA or PA[78]. This question may not encompass all of the missing beneficiaries, because:

– not everyone is asked (only those on the 1st and 6th times being surveyed were questioned)[79];
– it only targets the time of the survey and not the entire year or the same quarter;
– people who do not respond entirely accurately (declarative bias): in fact, out of the matched CNAF beneficiaries of RSA in the fourth quarter who answered the question, one third declared that they did not receive RSA at the time of being asked.

⇨ **The errors in matching that are not caught by imputation could explain the differences in number and in sum.**

However, by examining the responses to this question with regard to actual perception of the benefit in CNAF data and the imputation carried out, it **appears unlikely that the number of non-matched recipients far exceeds the number imputed.**

■ Therefore, of the households in which at least one person responded "yes" to the question on receipt of RSA in the fourth quarter of 2017, only 5% have not been matched with CNAF data; an amount of benefits is then imputed (table A3). By staying limited to recipient households that answered the question, the proportion of those imputed is largely higher among those who answered "no" than who answered "yes" (13% versus 5%), which does not correspond with the error of imputation. As for non-respondents to the question of the Labour Force Survey (LFS) in the fourth quarter (taking place between the 2nd and 5th times being asked, 9% were the subject of imputation, which is equal to that observed among the recipients who were asked the question.

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[78] The amounts are then imputed with the "hot deck" method, based on amounts received by families that have similar characteristics in terms of family composition and resources.

[79] In practice, ERFS processing makes it possible to gather responses to questions for all surveys throughout the year, to the extent that a person who has not responded to the question or responded that they did not receive RSA in the fourth quarter, but declared in another survey that they will be eligible for imputation.

RSA recipients in the 2017 ERFS	Declared that they receive RSA in Q4 2017		
	Yes	No	No response
Matched (in thousands)	360	260	910
Not matched (RSA imputed) [in thousands]	20	40	90
Proportion of imputations	5%	13%	9%

Note > The question about receive RSA was only asked on the 1st and 6th times taking the survey, those between the 2nd and 5th times taking the survey at Q4 2017 are non-respondents.
Interpretation > Of all the RSA recipients in 2017 in the ERFS who responded that they received the benefit in the fourth quarter when answering the Emploi survey, the RSA amount may have been gathered by matching for 360,000 of them and may have been imputed for 20,000 others, equalling 5%.
Source > ERFS 2017

Explanation no. 3: differences between the family situation declared in the Emploi survey and that in CAF at the time of receiving the benefit

Inconsistencies in declaration of the family situation to CAFs and to the Emploi survey could lead to variations in the number of recipients, especially for people who are in relationships according to the Emploi survey and who declared themselves as single to the CAF, thus receiving benefits separately. In the ERFS, one single household will be considered (Appendix 2), while this would concern two different files in the comprehensive data. This inconsistency between the ERFS and the CNAF with regard to family situation may result from a change in the situation during the year or different declarations to CAF or the Emploi survey, for any other reason.

⇨ **The discrepancies in family situation could contribute to explaining the differences in number, but not in mass** since in the ERFS, the amounts gathered when there are several recipient files in the same "household" were combined.

The quantification of these phenomena is done via use of the intermediary ERFS table (see Appendix 2), which makes it possible to see couples (as declared in the Emploi survey) for whom two different amounts for the social benefit have been found.

■ These inconsistencies in the family situation cannot explain the difference in the number of recipients because few cases of multiple social files for the same ERFS household were found. However, it could explain the over-representation in the ERFS of recipients in a relationship (if one of the spouses was taken into account by CAFs to receive the benefit), to the detriment of single people and single-parent families.

Explanation no. 4: an imprecise composition of social welfare households within aggregated households of the ERFS?

The module for composing social welfare households in the ERFS, which uses the assumptions made in the INES socio-fiscal microsimulation model, may not be infallible (see Appendix 2). In particular, if young adults also living in the house are not excluded from their parent's household, even though in reality they each receive a benefit, this will reduce the number of recipient households estimated in the ERFS, compared to that observed in the CNAF data[80].

⇨ **The composition of social welfare households using the INES microsimulation model would contribute to explaining the different in number, but not the different in sums** (as the sums received by each claimant are combined).

As for the preceding explanation, the quantification of this trend is done using the intermediary ERFS table, which makes it possible to compare social welfare households as recorded in the CNAF data with that compiled in the ERFS (with regard to

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[80] Otherwise, if two social welfare households are created in the ERFS although there is only one, this will not have any impact on the number of beneficiaries (only one amount will be gathered) nor on the sums received (which will at first be allocated to the parent's household). In either case, these errors will, however, have an impact on the number of households and the sums eligible, as well as on the presence of non-eligible recipients.

RSA or PA). It is thus possible to list the ERFS social welfare households within which two different parties claiming the benefit have been found, including a dependent.

■ However, these cases are rare and are only the tip of the iceberg for explaining the differences, including for the PA.

Explanation no. 5: duplication of certain CAF claimant files

Relocating during the year, those getting into a relationship or separating are not indicated in the comprehensive CNAF data (FR6). These events lead to new files being created, to the extent that the same claimant can have several files over one year. It is not possible to identify these situation in the FR6s, which are statistical files, so identifying information about individuals is not available. On the other hand, these different files are found during matching with ERFS for a given claimant, and the sums are thus combined. These events do not affect the sum of benefits paid during the year because there is no overlap in the entitlement payment.

⇨ **Dividing the claimant files would help to explain the difference in numbers, but not in financial sum.**

■ An internal CNAF document and an internal INSEE document (Household Income and Wealth division) conclude that a 3% proportion of social welfare household files would be counted twice (without knowing the specific situation of RSA and PA recipients).

These first five explanations can only account for the difference noted in RSA between the ERFS and the comprehensive data from the CNAF to a certain extent, both in terms of numbers and financial sums. This finding indicates a **possible lack of representativeness in the ERFS among very low-income households**, which are likely to receive statutory minimums. Two explanations have been explored in a bid to underpin this hypothesis:

- an under-representation of people housed temporarily in aggregated households (young adults living with their parents, those living with a private individual) [explanation 6];
- an under-representation of very low-income aggregated households in the ERFS [explanation 7].

For this purpose, comparisons have been made with the DREES survey on recipients of statutory minimums (BMS 2018), on one hand, and with the FiLoSoFi device by INSEE, on the other hand. Although they do not explain the scale of the difference observed, these comparisons still provide consistent indicators that agree with under-representativeness of the survey with regard to the specific population of very low-income households.

Explanation no. 6: underestimation of people temporarily accommodated in ordinary housing.

The ERFS may not be representative of certain households that are likely to receive statutory minimums. This under-representation may concern those who are living in aggregated households temporarily.

⇨ **Under-representation of accommodated individuals in the ERFS could explain the differences in number and in sum.**

To explore the concept of an error in representativeness for accommodated individuals, the ERFS (year 2017) has been compared to the survey on recipients of statutory minimums (BMS) carried out at the end of 2018, which describes the specific type of housing at the time of the survey. In the ERFS, households "accommodated" within an aggregated household are defined (within the meaning of RSA and PA) as those that do not contain the reference person of the aggregated household. In the BMS survey, in order to be better aligned with this definition, claimants considered as "accommodated" are those who answered the question "You are housed or accommodated by..." "...a person who lives in the household" and all forms of response to the question that details the relationship with the person being accommodated, unless this is accommodation with the spouse.

■ **This comparison aims to demonstrate that the proportion of those accommodated by RSA recipients is slightly less in the ERFS than in the BMS survey**: 15% at the end of 2017 in the ERFS (among RSA recipients in the first quarter of 2017) versus 18% at the end of 2018 in the BMS survey (among RSA recipients in the last quarter of 2017). However, in both the BMS and ERFS surveys, the vast majority of these accommodated individuals includes the children of the reference person (or their spouse), who are not *a priori* housed on an occasional basis.

■ If proven, this difference may result in an underestimation of 40,000 recipients that concerns approximately €100 million.

Explanation no. 7: a possible under-representation in the ERFS of very low-income aggregated households that are likely to receive RSA.

In addition to possibly under-representing certain individuals who have limited resources and may be living temporarily in aggregated households, the ERFS may also under-represent aggregated households without income or with very few resources.

⇨ **Under-representation of very low-income aggregated households in the ERFS could explain the differences in number and in sum.**

To test this hypothesis, the distribution of earned and replacement income (unemployment benefit, old-age pensions) in the ERFS has been compared to those seen in the localised disposable income system (FiLoSoFi) created by INSEE, for 2017[81]. The FiLoSoFi system gives a comprehensive annual description of all individual income taken from tax and social declarations (see Appendix 1). Comparing FiLoSoFi with the ERFS makes it possible to identify **potential under-representation of very low-income aggregated households in the survey, more specifically those with no earned and replacement income.**

The ERFS and FiLoSoFi are in the same category of ordinary housing. However, the level of observation differs between the two sources. The FiLoSoFi system uses the concept of an aggregated tax household, which is the aggregation of all tax households (according to the 2042 Cerfa declaration) linked to the same address. This concept of an aggregated tax household goes beyond the scope of the aggregated household in the ERFS (all persons sharing the same primary house) because each tax declaration may include persons who live mainly elsewhere. In 2017, FiLoSoFi included 27.5 million aggregated tax households in metropolitan France, which corresponds to 34.1 million tax households.

To better align with this concept of aggregated tax household in the ERFS, it is possible to use the "tax household" table, which describes each tax declaration found during the process of matching those surveyed in the Emploi survey and tax data. This table lists income for all members of the household, even those excluded from the ERFS scope because they are not living in the housing surveyed. Information on tax households is thus combined for the aggregated household: as a result, 28 million aggregated tax households are therefore counted, which is a slightly higher number than in FiLoSoFi, although the number of tax households appears to be slightly lower (table A4).

Table A4 Numbers of tax households and aggregated tax households in the ERFS and FiLoSoFi (with and without weighting)

	ERFS		FiLoSoFi
	Non-weighted number (number of observations)	Weighted number (in millions)	Number (in millions)
Number of tax households	60,225	33.3	34.1
Number of aggregated tax households	50,826	28.0	27.5

Interpretation > The number of tax households (taking into account weighting) rose to 33.3 million in 2017 in the ERFS and 34.1 million in the FiLoSoFi system.
Champ > Metropolitan France, ordinary housing.
Source > ERFS survey 2017 – FiLoSoFi 2017.

Once the aggregated tax households are defined, they can be compared with their earned and replacement income, namely:

– salaried employees and pay;
– non-salaried earned income (farming, commercial or non-commercial);
– unemployment benefits;
– pensions, retirement and private income.

In the ERFS, this income is taken from the tax declaration and therefore concerns only aggregated households and individuals for whom such a declaration has been identified (others being potentially dependent on declarants who live in other aggregated households, at least for some). To better identify low-income households that are possible RSA recipients, this aggregate is reported in number of consumption unit of the aggregated tax household[82].

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[81] The comparison of RSA sums does not provide assessment components because the RSA sums are underestimated in FiLoSoFi, for reasons linked to matching with social sources.

[82] The number of consumption units (CU) is defined as follows: CU = 1 for the first person in the aggregated household; CU = 0.5 for every other person 14 years of age or older and CU = 0.3 per person under the age of 14. The number of CUs in the aggregated tax household can be directly observed in the FiLoSoFi. In the ERFS, this is not the case (the information is known when it comes to the aggregated household but not the aggregated tax household, because some people in the aggregated household may not be in the aggregated tax household, and, vice-versa, not all the people in the aggregated tax household are necessarily in the aggregated household);

- The distribution of earned and replacement income appears to be overall similar in the two data sources (figure A1).

- However, a more thorough observation of the differences shows a slight discrepancy: there appears to be fewer aggregated households with earned and replacement income per CU of less than €6,000 annually in the ERFS than in FiLoSoFi, while there are more aggregated households with higher income, in contrast (see figure 2 in Part 1).

Figure A1 Distribution of annual earned and replacement income by consumption unit, by percentile
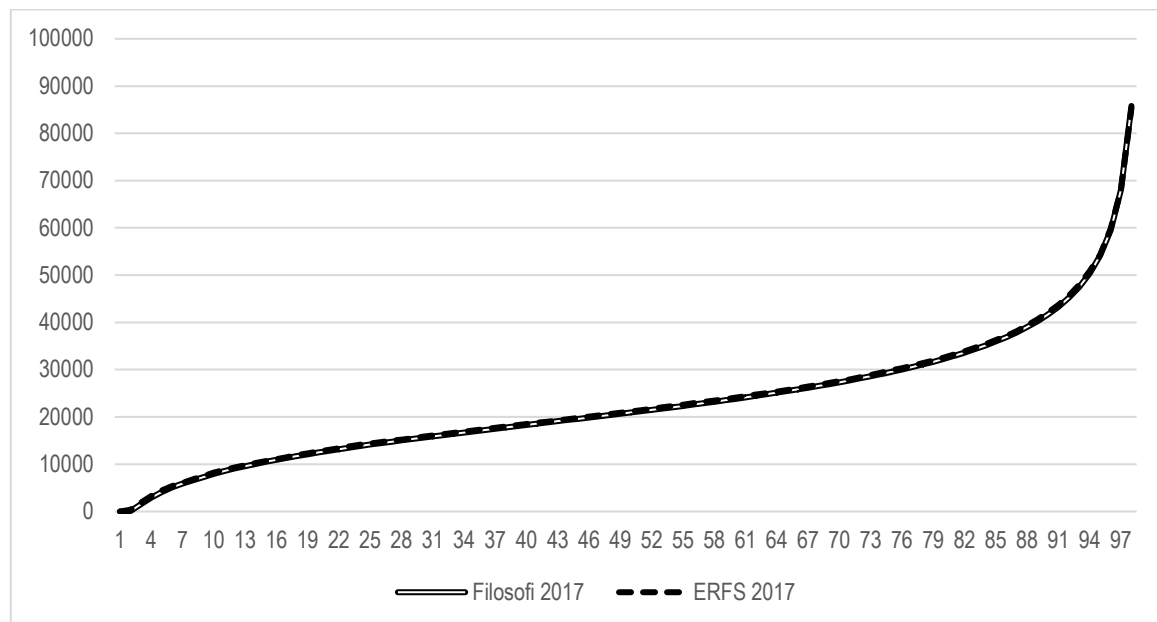
Interpretation > In 2017, 50% of aggregated tax households received annual earned and replacement income by consumption unit of less than €21,000 per year in the ERFS and in FiLoSoFi.
Champ > Metropolitan France – aggregated tax households in ordinary housing.
Source > ERFS survey 2017 – FiLoSoFi 2017.

- In fact, the maximum income of 5% of the least-paid aggregated tax households is lower in FiLoSoFi than in the ERFS (table A5). This report is consistent with under-representation of these very low-income aggregated households in the ERFS, even if it is difficult to confirm from this sole comparison.

Table A5 Annual percentiles of earned and replacement income by consumption unit

	P1	P2	P3	P4	P5	P10	P25	P50	P75	P90	P95
ERFS 2017	€0	€0	€352	€1,829	€3,277	€7,495	€14,089	€20,885	€29,353	€40,652	€50,925
FiLoSoFi 2017	€0	€0	€94	€1,494	€2,953	€7,298	€13,844	€20,693	€29,067	€40,253	€50,386

Note > Unit being observed: aggregated tax households.
Interpretation > In 2017, 10% of aggregated tax households in the ERFS received annual earned and replacement income of less than €7,300 (per consumption unit), while in FiLoSoFi, 10% of aggregated tax households received less than €7,500.
Champ > Metropolitan France – aggregated tax households in ordinary housing.
Source > ERFS survey 2017 – FiLoSoFi 2017

therefore, it is necessary to start from the information contained in the tax declarations, through which it is possible to identify the date of birth of declarants, their spouse and children who are dependent for tax purposes.

The criteria for receiving earned income supplement and the employment bonus are given in this appendix[83]. These two social systems are presented more comprehensively in the annual overview by DREES *Minima sociaux et prestations sociales - Ménages aux revenus modestes et redistribution* ("Statutory minimums and social benefits – Households with modest income and reallocation") (Cabanes, Richet-Mastain, 2021). The content of resource bases is specified and compared with that observed in the ERFS.

Earned income supplement

Earned income supplement (RSA), which came into force on 1 June 2009 in metropolitan France and on 1 January 2011 in the overseas territories and some overseas territorial authorities, replaced the minimum integration income (RMI), the single parent allowance (API) and the profit-sharing systems for returning to work, which were combined. Between 2009 and 2015, the RSA had a "social minimum" (basic RSA) and an "earned income supplement" (active RSA). The latter partly replaced the employment allowance, a fiscal measure for households that are entitled to more than the active RSA amount received. Since 1 January 2016, the employment allowance and active RSA have given way to the PA (see below).

The RSA is a separate allowance that supplements the household's initial resources so that they reach the threshold for guaranteed minimum income, or a set amount, the scale for which varies depending on the composition of the household. This concerns the last financial safety net of social protection, when all other benefits are exhausted or insufficient. It is allocated for three months, depending on the resources for the three preceding months.

Who can claim it?

You can claim RSA if you are at least 25 years old (on the month of their 25th birthday). However, those who are responsible for at least one child or are expecting can claim RSA before the age of 25. Furthermore, those between 18 and 25 years old, with no dependents and carrying out the equivalent of full-time employment for at least two years, whether consecutive or not, over a period of three years prior to their claim, are also eligible to claim to RSA (RSA Jeune).

Payment of RSA is not conditional on nationality. However, claimants who are EU citizens[84] must prove a right to residence and third-country nationals must hold a valid residence permit[85] and, if necessary, prove that they have been residing in France for five years.

Entitlement to RSA is also reserved for permanent residents of France, which involves stays of less than three months outside France.

Pupils and students are in the scope of application for RSA in a personal capacity, unless there is an exemption by the departmental council and unless they receive an increased set rate (see calculation of the benefit)[86].

Resources taken into account in allocating RSA

Entitlement to RSA is conditional on the resources of the social welfare household (as defined in RSA, meaning it includes dependent children under 25 years old). In this respect, the following resources for all members of the household are included in the basic resources[87]:

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[83] The legislative and regulatory framework for RSA is detailed in articles L262-1 to L262-58, as well as in articles R262-1 to R262-121 of the Social action and family code (*Code de l'action sociale et familiale*). The legislative and regulatory framework for PA is detailed in articles L841-1 to L847-1, as well as in articles R842-1 to R848-1 of the Social action and family code (*Code de l'action sociale et familiale*).

[84] European Union and European Economic Area.

[85] Residence permit, residence permit for Algerian citizens, temporary "professional employment" or "private and family life" residence permit, *Passeport talent* or student visa or a document confirming refugee status.

[86] Students in employment (salaried or not) who have an average monthly earned income (received in the last three months before their claim) of under €500 are considered students in the context of RSA and are not entitled to it. Conversely, if they receive income higher than €500 on average, they are considered active in the context of RSA and are entitled to the benefit (up to the set-rate amount of RSA).

[87] The following income is excluded from the calculation: employment bonus, the "Garantie jeunes" scheme, personalised return to work allowance, support in finding a first job (ARPE), the interim solidarity bonus, the disability compensation allowance (PCH), increase for a third party allowance, the compensatory allowance and the personalised autonomy allowance, which is to remunerate a third party outside the RSA household, benefits in kind due as part of the *Assurance maladie* insurance for

- Earned or total income (salaried employees, pay, earned income for the self-employed, internship bonuses, compensation paid to local elected officials, allowance for public service involvement, etc.)
  o including daily allowances;
  o including income for micro-entrepreneurs (sum of turnover or revenue declared monthly or quarterly after deduction of the fiscal lump sum allowance that is applicable depending on the industry sector);
  o including income for artists/authors;
- Replacement income:
  o unemployment benefit;
  o pensions, retirement and private income;
    ▪ including allowance for temporary disability.
- Social benefits
  o family benefits[88];
  o disabled adult allowance;
  o differential international allowance (ADI) and differential international supplement (CDI)
  o allowance for asylum seekers;
  o daily allowance to provide end-of-life care;
  o support in finding a first job.
- Wealth income
  o interest from invested capital, including that which is tax free (*Livret A*, sustainable development savings account (*livret développement durable*), the popular savings account (*livret d'épargne populaire*), home-buyer's savings account (*plan épargne logement*), etc.);
  o rent from property (housing, land, unit, parking, etc.) after deduction of all charges that do not contribute to maintaining or increasing wealth (property tax, insurance, management fees, etc.);
  o other invested capital and property that does not generate income (excluding the main residence), depending on their value.
- Other resources
  o child support received;
  o compensatory benefits;
  o damages paid to asbestos victims;
  o donations (gifts or bequests);
  o benefits provided to those who are destitute in the departments of Bas-Rhin, Haut-Rhin and Moselle;
  o maintenance allowance paid by social assistance for children to trustworthy third parties who have children as dependents.

Furthermore, the allocation of RSA is conditional on the household's obligation to assert their rights to all social benefits to which they are entitled: this is the principle of subsidiarity. The ancillary nature of RSA means that the recipient asserts rights to support payments for all members of the household and to social benefits: disability (including supplementary invalidity allowance); unemployment benefits, bereavement support payment; bereavement pension, income for occupational accident; solidarity allowance for the elderly (ASPA)[89]

Lastly, a benefit in kind for housing, known as the "set housing rate", is taken into account when the household is the occupying owner with no repayment charges, an occupant free of charge or they receive a housing benefit that is higher than the amount of the set housing rate (housing benefits are included in the resources within the set housing rate).

As a general rule, the sums taken into account in calculating RSA correspond to the average of resources received over the course of three months prior to the claim, but specific application rules must be applied.

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occupational accidents (AT) or medical benefits, maternity cover allowance, financial damages due to the victim of an occupational accident, the rehabilitation bonus and the "honour-code" loan due after an occupational accident, reimbursement of funeral costs due after an occupational accident, life insurance allocated by a social security scheme, the monthly benefit paid as part of the insertion in social life agreement (CIVIS), maintenance allowance for childcare providers or registered third parties, support in caring for children for single parents (AGEPI), the allowance for diversity in the civil service, grants paid by the State or local authorities, unless they are taxable, bonuses or compensation for volunteers, damages, the service allowance, loyalty and recognition benefits for voluntary firefighters, damages paid by the Guarantee Fun for Victims of terrorism and other crimes, civil service allowances for spouses, common-law partners, civil partners, employee meal vouchers.

[88] With the exception of: the education allowance for disabled children (AEEH), the daily allowance to care for children (AJPP), the back to school allowance (ARS), the increases in family benefit for age, the set-rate allowance, the increase in family supplement, part of the family support allowance, the supplement to freely choose the type of childcare, the childbirth bonus and basic allowance of the benefit for welcoming a young child (PAJE) in the three months following the birth of a child for recipients of the increased set rate.

[89] At 65 years old: for all eligible beneficiaries, asserting a claim to ASPA is mandatory.

Calculating the benefit

RSA is a differential benefit, meaning that the sum decreases as the household's resources increase[90]. Households whose initial resources exceed the guaranteed income level are not eligible for RSA. Thus, the calculation is:

$$RSA_f = MF_f - R_f$$

The RSA sum for the social welfare household, RSA_f, is calculated based on a lump sum that depends on the family composition (a couple or single, with or without children), MF_f, from which resources belonging to all members of the social household R_f are subtracted, as defined above (including the set housing rate).

As of 1 April 2021, the lump sum for a single person without a child is €565 per month[91]. This amount is increased by 50% for a couple or for the first child in a single-parent family, equalling €848 per month. The guaranteed amount is increased by 30% per child from the first child for a couple or a second child in a single-parent family. The amount increases by 40% per child from the third child. For example, the income guaranteed by RSA is €1,244 per month for a single-parent family with three children.

The RSA may be increased (increased RSA) under certain conditions. This increase is allocated on a temporary basis, with no conditions for age, to a single parent[92] with one or more children or for a pregnant woman who is single. If the conditions relating to resources or being a future or single parent are met, and provided that the individual is claiming all of their rights (especially to child support), the increase shall be granted up to the youngest child's third birthday or for 12 months if there is no child under three years old. In the event of an increase for a single parent, the guaranteed amount is equal to 128.412% of the lump sum for a single person and for each child; the RSA amount increases by 42.804%. Therefore, for a single person, before a child, the increased RSA is €968 per month as of 1 April 2021.

When applicable, the set housing rate for a single person is equal to 12% of the lump sum (or €68 monthly). In a two-person household, the rate is equal to 16% of the lump sum for two people (€136). In a household with three people or more, the rate is equal to 16.5% of the lump sum for three people (€168).

When calculating the benefit, some individual resources received during the third reference quarter may be **offset** if their loss is not balanced by substitute income. Therefore, the earned or combined income (including the daily social security allowances (IJSS) for illness, occupational accident and work-related illness, regardless of for how long they are received) and the unemployment benefits for the reference quarter, which are no longer received, assessed in the month of allocating entitlement and not compensated by substitute income, are cancelled.

Lastly, to determine the amounts of benefits to which claimants are entitled, there is a considerable volume of information exchanged every month between the benefits offices (CAF), the families and various organisations (job centres, tax services, etc.). On some occasions, updates to these files that are required because these exchanges highlight **overpayments** (the claimant receives too much) or **back payments** (sums due to the claimants). These checks may be carried out up to 24 months after payment of the benefit.

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[90] The minimum threshold for RSA payment is €6 monthly.

[91] In 2018, the year of the study, the lump sum was €550 on average.

[92] Those considered as being single include widow(er)s, those who are divorced, separated or single and those not living together permanently.

The employment bonus (PA)

The employment bonus (PA), which came into force on 1 January 2016, replaced active RSA and the employment allowance. Its goal is to encourage employment and to promote the purchasing power of low-income workers by ensuring that an increase in income from work translated into an increase in disposable income, which would otherwise be provided by all the contributions and social benefits. The PA is allocated in line with the social welfare household, but also includes individual bonuses so as to encourage employment for each member of the household.

Who can claim it?

All adults actually and continuously residing in France and who receive income from a professional activity are entitled to the PA, subject to the resources belonging to all members of the household. Pupils, students and apprentices, aged 18 years old and above, may also receive the PA if they are single parents (in accordance with the increase for single parents) or if they receive earned income of higher than €953 per month (in 2021).

Young people between 18 and 25 years old may receive the PA as soon as they start working, even if they live with their parents and are still considered part of the family household for other social benefits (especially RSA). However, they may stay linked to their parent's household, in which case their income will be taken into account when allocating the PA, as with all members of the household.

Resources taken into account in allocating the PA

The resources taken into account are the same as those defined in the basic resources for RSA (see above), with a few exceptions. In particular, tax-free wealth income (*Livret A*, young people's saving account (*livret jeune*), the popular savings account (*livret d'épargne populaire*), sustainable development savings account (*livret développement durable*), home-buyer's savings account (*plan épargne logement*), company's savings account), are not taken into account when calculating the right. Wealth that does not generate income is not taken into account.

A set housing rate is also applicable if the household does not pay for accommodation, if they are owners not repaying a mortgage or if they receive a housing benefit.

The RSA and the PA can be combined and they are not included in the respective scope of their basic resource.

Calculating the benefit

The PA is allocated for three months, depending on the resources for the preceding quarter[93]. Unlike the RSA, its amount is an average of the rights calculated according to each month of the reference quarter. The result of this is that two households receiving the same level of resources for three months, but spread differently over the period, will not receive the same amount of PA. For each month of the reference quarter, the rule is as follows:

$$EB_f = \left(MF_f + \theta . RA_f + \sum B_i \right) - max\left(MF_f ; R_f\right)$$

The amount of PA for the social welfare household, EB_f is equal to the difference between, on the one hand, the total of a lump sum, MF_f, of a proportion of the household's earned income, $\theta . RA_f$, and all individual bonuses related to employment B_i and, on the other hand, all of the household's resources, R_f, when they exceed the lump sum.

In other words, if all of the household's resources are less than the lump sum, then

$$EB = \theta . RA_f$$

In this scenario, there is no individual bonus for a single person, but not necessarily if the household includes several people.

If all of the household's resources exceed the lump sum, then

$$PA = MF_f + B_i - (1 - \theta) . R_f - AR_f$$

AR_f being the other household resources, including the set housing rate.

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[93] The minimum threshold for paying the employment bonus is €15 per month.

As of 1 April 2021, the **lump sum** for a single person without a child is equal to €554 per month[94]. As for RSA, this amount varies depending on the composition of the family (in line with the same rates of increase per additional member of the household) and may be increased temporarily in the case of a single parent who has one or more children or a pregnant woman who is single (in line with the same rates as for increased RSA).

Since October 2018, the "gradient" of the PA (parameter θ) has been equal to 61%.

The **individual bonus**[95] is allocated to each member of the household who has overall monthly earned income between 59x (or the equivalent of half monthly SMIC) and 120x the gross hourly guaranteed minimum growth wage (SMIC). Between these two limits, the amount of bonus increases linearly, reaching a maximum value equivalent to 29.101% of the lump sum for a single person, which is €161. This sum was considerably revalued in January 2019, from around €90 per month at SMIC level[96].

The form of the PA scale is unique: in the left side of the figure (when the household's resources are lower than the lump sum), the PA increases in line with earned income. This increase aims to overcompensate for the simultaneous decrease in RSA; once the resources are higher than the lump sum, the PA reduces in line with income, but this reduction continues a rationale of profit-sharing by means of the individual bonuses.

As of 1 July 2021, the threshold for no longer receiving PA is almost €1,800 (figure A2) for a single person with no child and with no resources other than their employment income and receipt of housing benefit (housing benefit is thus included in their resources). This point at which entitlement ends was shifted considerably in the revaluing of the PA in 2019.

To visualise the situation alongside other legislation years or other family compositions, the "Edifis" tool, which is an interactive model of cases developed by DREES, can be viewed on the DREES website at the following address: https://drees.solidarites-sante.gouv.fr/communique-de-presse/la-redistribution-socio-fiscale-en-2021-actualisation-de-la-maquette-edifis

Figure A2 **Monthly RSA and PA entitlement amounts according to the net salary of a single person (with no other source of income, except housing benefits)**
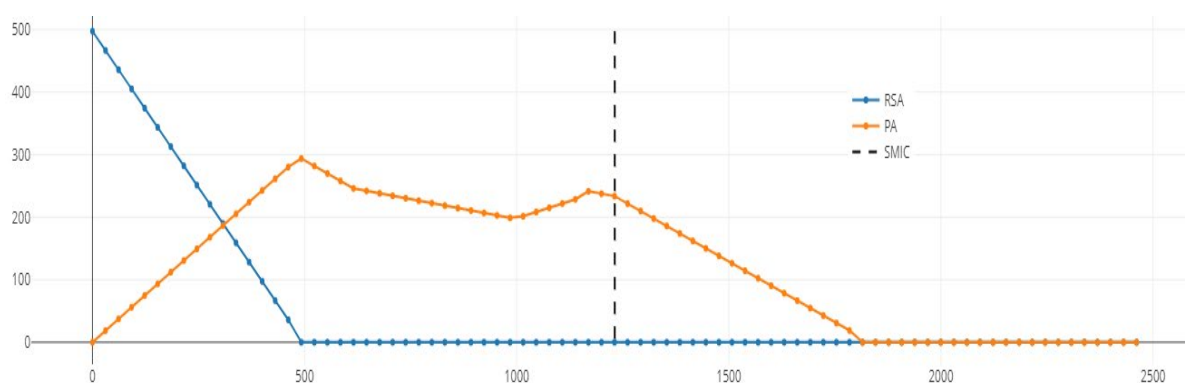
Note > The parameters used: single person without children, receiving no other form of taxable income, without a disability, and renting a property in zone 2. Montly income on horizontal axis ; montly RSA and PA amounts on vertical axis.
Source > DREES, EDIFIS, model dated 1 July 2021 using sample cases.

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[94] In 2018, the year of the study, the lump sum of PA was €535 on average.

[95] The rule for calculating the individual bonus is as follows:

$$B_i = \left(\min. \left(\max \left(0, \frac{RA_i - x_1.s}{x_2.s - x_1.s} \right), 1 \right). \gamma . MF_f \right)$$

With s, the level of gross hourly SMIC. The parameters x_1 and x_2 are the lower and upper limits for applying the bonus.

[96] Since it was created in 2016, the employment bonus has undergone considerable changes in adjusting its scale. In October 2018, the lump sum was heavily revalued from €20 (at the same time as a reduction in the "gradient" from 62% to 61%), then in January 2019, following in yellow vests movement in particular, the individual bonus was modified to shift the upper limit of the bonus application, as well as its maximum amount (revalued from €90 per month).

Appendix 5. Simulation of RSA and PA eligibility

The amount of earned income supplement (RSA) and employment bonus (PA) entitlement is dependent on the family composition and resources of all members of the social welfare household. It depends on a very broad range of resources assessed over the three months prior to the date on which the claim is filed (see Appendix 4). For RSA, a mechanism for offsetting certain resources applies in the event of job loss or the end of replacement income without substitute income. The simulation aims to apply all the legislative and regulatory provisions as best as possible according to the re-established situation of each household by following several steps:

1. composing social welfare households, as defined in RSA and PA (see Appendix 2);

2. assigning all income in the ERFS survey to each social welfare household (see Appendix 2), as well as individual income (earned income, retirement pensions, unemployment allowances, etc.) and income listed only for the aggregated household (primarily wealth income and social security benefits);

3. identifying income in the resource bases for RSA and PA;

4. distributing this income over the four quarters of the year ("quartering" resources), based in particular on the retrospective calendar of employment activity in the Emploi survey;

5. establishing resource bases for each reference quarter (taking into account the simulated set housing rate for the two benefits);

6. applying the statutory annual scales to simulate the entitlements to RSA and PA, as close as possible to the applicable rules, taking into account the family composition and the personal, professional and financial situation for each member of the household;

7. establishing the entitlements for a quarter (quarter in which the benefit is allocated) based on resources from the preceding quarter (reference quarter), after possibly offsetting certain resources. Due to this difference, simulation is possible only for the last three quarters of the year;

8. addressing the issue of young people who may, depending on their circumstances and personal choices, stay linked to their parent's household or establish their own household to receive the benefit on their own (especially PA).

This appendix gives a general description of some stages of this process.

Stage 3: identifying income in the resource bases

There is a very broad scope for income in the resource bases for RSA and PA. This income is outlined in more detail in Appendix 4. There are a few types of income that are not included in the ERFS: this includes non-taxable income and income that is not paid by social security bodies (CNAF, MSA or CNAV), nor imputed in the ERFS. This is the case in particular for the supplementary invalidity allowance (ASI), internship bonuses and certain one-off resources. Non-taxable wealth income (*Livret A* interest, for example) are imputed in the ERFS and may thus be integrated, as well as life insurance. In contrast, other invested capital and properties that do not generate income are unknown and therefore cannot be taken into account to identify the RSA entitlement.

Stage 4: quarterly division of income

One of the challenges of simulation is being able to identify quarterly income. The ERFS survey only provides annual income, which largely stems from tax declarations. This operation is carried out by using the INES socio-fiscal microsimulation model, which restructures consistent monthly employment for all individuals based on the retrospective employment calendar collected in the Emploi survey. This calendar is established using responses from people who are surveyed on their employment status each month before the survey according to the following forms:

1. in salaried employment;
2. self-employed;
3. studying;
4. unemployed (whether or not receiving benefits);
5. in retirement;
6. on parental leave;
7. stay-at-home spouse;
8. disability;
9. other circumstances.

The different types of income (salaries, unemployment benefit, retirement pensions, etc.) are thus assigned to the month corresponding to this type of activity. In addition, if a person works for two months in a quarter and three months in another, their salary will be divided as 2/5 in the first quarter and 3/5 in the next.

For other income that is included in the resource bases (wealth income, social benefits, other income), the quarterly division consists of dividing by four the sum observed or of using the monthly data given in the ERFS intermediary tables (for benefits paid), depending on the availability of information.

Stage 6: application of legislation

Appendix 4 gives a detailed description of the calculation rules that apply to RSA and PA. These rules are applied to the simulation insofar as this is possible with the available data.

Stage 7: taking into account the reference quarter and the quarter of entitlement

RSA or PA are paid over three months during the quarter of entitlement, depending on the income received in the preceding three months, during the reference quarter (outline A1).

Outline A1 "Simulated" quarters for RSA and PA

		Q1			Q2			Q3			Q4		
		J	F	M	A	M	J	J	A	S	O	N	D
"Simulated" quarter of entitlement		?	?	?									
Reference quarter													

The **calendar year** is used to follow this quarterly sequence:

- quarter 1 (Q1) corresponds to January, February, March;
- quarter 2 (Q2) corresponds to April, May, June;
- quarter 3 (Q3) corresponds to July, August, September;
- quarter 4 (Q4) corresponds to October, November, December.

This choice **immediately deviates from the reality of inclusion figures in these two measures**, as the quarterly division is carried out over the entire year in reality. As a result, the study of eligibility on a calendar basis and observation of the entitlement are not entirely synchronised. Achieveing better alignment with this reality is one of the goals of the in-depth studies implemented to understand the discrepancies between the simulated entitlement for a given month and that identified in social data.

Given that the ERFS survey only identifies income for the year *N*, it is not possible to define the reference quarter for the first quarter of year *N*, as this would require viewing the resources of the fourth quarter of year *N-1*. As a result, the eligibility study is limited to only the last three quarters of year *N*, based on the income from the first three quarters of year *N*. Similarly, the resources allocated in the fourth quarter are not used to assess eligibility in the first quarter of year *N+1*.

Stage 7 *bis*: simulation of offsetting resources for entitlement to RSA

Simulation takes into account the measure of offsetting earned and unemployment income for studying entitlement by applying an adapted version of the administrative rule[97]. This indicates that the earned or combined income (including the daily social security allowances or occupational accident and work-related illness) and the unemployment benefits received for the reference quarter, which are no longer received, assessed in the month of allocating entitlement and not compensated by substitute income (family benefits are not considered as substitute income), are not taken into account when studying entitlement. This measure can be applied individually to each member of the household.

In the simulation, unemployment income and earned income for the reference quarter are offset for every person with zero earned and replacement monthly income (salary, self-employed, unemployed, pensions and retirement) for two consecutive

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[97] For RSA, there is no allowance measure on earned income in the event of switching to unemployed and receiving benefits, as may be the case for other benefits, such as housing benefit.

months (in the second month and third month of the reference quarter, or the third month of the reference quarter and the first month of the quarter of allocating entitlement or the first two months of the quarter of allocating entitlement).

The calendar of employment activity in the Emploi survey is largely the source for identifying these losses in income (shifting from a situation of employment or unemployment to inactivity, or from employment to unemployment without receiving benefits). If the monthly income of individuals is not accurately determined, this offsetting is clearly flawed, especially for those who have already declared that they are unemployed, but lost their entitlements over the year.