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Fertility Choices and the Labor Market in France »**

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Rethinking Family Policies: Fertility Choices and the Labor Market in France

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Abstract

This paper examines the impact of the 2014 family policy reforms in France on fertility choices and labor supply for both women and men. Using a unique policy episode that consisted in conditioning the amount of basic allowances of early childhood benefits on household income, I employ a Regression-Discontinuity Design (RDD) to examine the impact of this sharp discontinuity in the provision of child benefits on fertility and the hours of work of women and men. The analysis relies on data from the Statistics on Resources and Living Conditions in France. The dataset has the unique feature of providing administrative information on both income and social benefits. Using a “sharp” RDD specification, the results suggest that not being eligible to any family allowances for children decreases the birth probability at the household level. The results also highlight that receiving half the amount of the family allowances for children or not receiving any allowances leads to an increase in the number of hours of work per week for both women and men, compared to individuals who are eligible to the total amount of child benefits. These results are in line with the literature showing that the elimination of welfare programs is associated with an increase in working hours.

Keywords: family policy, child allowances, fertility, labor supply.
JEL codes: H53, J21, J22.

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1. Introduction

Family policy in France has always been in the spotlight as one of the most generous schemes for family benefits in the OECD countries (OECD, 2018). The French family policy system follows a long established natalist and family centered tradition and is considered to be the main contributor to the healthy fertility rate in France.

The Ordinance of 4 October 1945 marks the beginning of the present social security system in France. In 1967, a series of reforms regarding the organization of the social security system were undertaken separating it into four branches: health insurance; pensions; family allowances; and insurance for work-related accidents and occupational illnesses. Initially, the provision of social security was primarily targeted for workers and their families. Only gradually did the social security coverage expand to the whole population. The family branch of the social security system in France provided households with a wide array of universal cash benefits, to alleviate the financial burden borne by families irrespective of their income. The coverage of family allowances, which represent the main cash benefit scheme, expanded in 1932 to include all salaried workers. In 1975, the provision of family allowances became no longer conditional on work, meaning that parents did not need to be working in order to benefit from these cash transfers (Fagnani, 2006).

From 1975 onwards, family allowances were universal and not income-related. In this paper, I focus on a recent and important family policy reform that came into force on April 1st, 2014. This reform consisted on conditioning the amount of the basic allowances of early childhood benefits (*Allocation de base des Prestations d'Accueil du Jeune Enfant*) on household income. Hence, instead of having a flat universal rate of family allowances for children, households are eligible to differential benefit rates depending on their disposable household income. The law was first discussed in the national assembly, the lower chamber of the French parliament in March 2013 and officially entered into force on April 1st, 2014.

The 2014 family policy reforms precisely defined two income thresholds: “half benefits” and “zero benefits”. Households who fall below the “half benefits” income threshold are eligible to the total amount of family allowances of early childhood benefits, while households who have an income higher than the “half benefits” threshold but lower than the “zero benefits” threshold are eligible to half the amount of basic allowances and finally, households whose income exceeds the “zero benefits” threshold do not receive the basic children allowances.²

² It is important to note that the income thresholds defined by the policy intervention take into account the number of children and the household structure. For example, a household composed of a single working parent with one child is subject to different income thresholds compared to a household consisting of a couple where the two spouses are working and who have three children.

The objective of this paper is to study the impact of the 2014 family policy reforms in France on fertility choices and labor supply for both women and men. Precisely, this paper focuses on the “sharp” discontinuity in the provision of the basic allowances of early childhood benefits and examine its impact on the birth probability at the household level after the reform and the number of hours of work per week for both women and men.

This paper is highly relevant to policymaking and offers an important contribution to the existing literature on family policy, fertility and labor supply. It is linked to a large body of academic literature on the labor market impact of transfer programs and on the impact cash transfers and welfare reforms on fertility choices (Hoem, 1993; Rosenzweig, 1999; Averett and Whittington, 2001; Joyce, Kaestner, Korenman and Henshaw, 2004; Milligan, 2005). For instance, Moffitt (2002) provides a survey on the empirical research examining the labor market incentive effects of transfer programs in the United States and concludes that the elimination of welfare programs would lead to an increase in the hours of work by 10 to 50 percent. Card and Lemieux (2000) also examine the effect of welfare on living arrangements in the United States and Canada. Piketty (2005) examine the impact of 1994 extension of the French Parental Education benefit (*Allocation Parentale d'Éducation*) on fertility behavior and female labor force participation. Lalive and Zweimüller (2009) examine the effect of changes in the duration of paid job-protected parental leave on mothers' fertility and post-birth labor market outcomes in Austria using a policy reform that extended the duration of parental leave from one to two years in 1990. This paper also relates to the literature examining the labor market effects of family leave (Ruhm, 1998; Albrecht et al., 1998; Baum, 2003; Berger and Waldfogel, 2004; Baker and Milligan, 2008, Dustmann and Schönberg, 2012). The closest to my work in terms of methodology is a paper by Lemieux and Milligan (2008). They use a unique policy episode in Quebec, whereby prior to 1989 social assistance recipients without children under the age of 30 received benefits that were 60 percent lower than those older than 30. The authors examine the incentive effects of social assistance on various labor market outcomes and on living arrangements in Quebec and find that more generous social assistance schemes have a negative effect on male employment and affect living arrangements and marital status.

Using French data from the Statistics on Resources and Living Conditions (*Statistiques sur les ressources et les conditions de vie*, SRCV), I employ a “sharp” Regression Discontinuity Design (RDD) to examine the impact of the 2014 family policy reforms in France on fertility choices and labor supply for both women and men. The policy reform provides a quasi-experimental setting as it consists of two discontinuity thresholds in the provision of child benefits, and is ideally suited to examine the impact of the policy on female fertility and labor supply for women who belong to households whose income is below or above the income thresholds defined by the policy reform. The results of this

paper suggest that not being eligible to the basic allowances of early childhood benefits reduce the birth probability at the household level by 2.5%, which corresponds to a 64% decrease when evaluated at the mean of the variable, compared to households who are eligible to either the full amount or half the amount of the basic allowances of early childhood benefits. In addition, receiving half the amount of basic allowances for children increases the number of hours of work per week by 2 to 4 hours, for both women and men compared to those who receive “full benefits”. Likewise, not being eligible to any basic allowances also increases the number of hours of work per week for women and men compared to individuals who are either eligible to full or half the allowances. These findings are robust to using a standard low-order polynomial specification of the RDD control function, non-parametric bandwidth estimation, a first to third order polynomial specification of the control function, to the inclusion of pre-determined individual and household covariates and to alternative definitions of household income and working/activity status.

The paper is organized as follows. Section 2 provides background information on family policy in France and a description of the data. Section 3 describes the empirical strategy. Section 4 presents the results and robustness checks. Section 5 concludes.

2. Background information and the data

2.1 Family policy in France

Family policy has a long history in France. Compared to other OECD countries, France has one of the most generous schemes for family benefits and spends relatively more in terms of public investment in families with children. In 2013, France spent about 2.9% of GDP on family benefits, well above the average investment level in OECD countries, which had an average spending level of 2.1% (OECD, 2018).

In 2014, the French government undertook a series of social and family policy reforms that aimed at changing the amounts of household-targeted public support. The 2014 family policy reforms proposed several measures that led to a reduction in the assistance paid to the wealthier families, while increasing transfers to the most vulnerable households. The proposed measures aiming at lowering the amount of transfers targeting wealthier households included lowering the family quotient (*Quotient Familial*), the modulation of family allowances (*Allocations Familiales*), and targeted reforms of early childhood benefits (*Prestations d’Accueil du Jeune Enfant*). The other measures that aimed at increasing transfers to the most vulnerable families included increased family income supplement (*Complément Familial*), the revalorization of the family support allowance (*Allocation de Soutien Familial*) and of the active solidarity income (*Revenu de Solidarité Active*).

According to National Family Allowances Fund (*Caisse nationale d'Allocations Familiales*), the implementation of these reforms was estimated to save of 860 million euros from public spending on households with children in Metropolitan France.³ About 3.2 million households, half of which belong to the three highest deciles of standard of living, would witness a cut in their income after taxes and social transfers by 67 euros per month. By contrast, nearly 2.1 million households would witness an increase in their income after taxes and social transfers by 67 euros per month. Of these, six out of ten belong to the two lowest deciles of standard of living (Domingo and Favrat, 2015).

In this paper, the focus is primarily on the 2014 family policy reforms regarding the basic allowances of the early childhood benefits (*Allocations de base des Prestations d'Accueil du Jeune Enfant*). The *Prestations d'Accueil du Jeune Enfant* (PAJE) include a package of benefits to compensate for the cost of children: birth or adoption premium (*Prime de naissance ou d'adoption*), basic allowances (*Allocations de base*); or to support the reconciliation between personal and professional life and compensate for childcare costs: free choice of care supplement (*complément de libre choix du mode de garde*) and free choice of activity supplement (*complément de libre choix d'activité*). According to National Family Allowances Fund, these benefits cover 2.16 million households in 2014 (Domingo and Favrat, 2015).

The basic allowances of the early childhood benefits aim at helping households to cover the cost of a child education and maintenance. These basic allowances are intended for parents of a child under 3 years old, and are paid on a monthly basis for 3 years; due from the first day of the month following the birth until the month the child turns 3 years old. In case of multiple births, households may accumulate several basic allowances for their children.

With the Social Security Financing Act for 2015, for all children born or adopted as of April 1st, 2014, the PAJE benefits for beneficiaries with the highest incomes become lower. In other words, the reform consisted on conditioning the basic allowances of the PAJE on household income.⁴ The reform defined several income thresholds depending on the number of children and household structure (whether the household consists of a single working parent, or the household consists of a couple where the two spouses are working, or the household is composed of a couple where only one spouse is working). The two income thresholds correspond to “half benefits” and “zero benefits”. Precisely, the first income threshold corresponding to “half benefits” means that households whose income is below the threshold are eligible to the total amount of basic allowances, while households whose income is greater than this threshold but lower than the “zero benefits”

³ The National Family Allowances Fund (*Caisse nationale d'Allocations Familiales*) forms the family branch of the French Social Security, which it manages through the network formed by more than a hundred family allowance funds (*Caisse d'Allocations Familiales*) spread throughout the country.

⁴ Households receive the basic allowances of the early childhood benefits in a specific year based on their income two years before.

threshold are eligible to half the amount of the basic allowances of PAJE. The second income threshold corresponding to “zero benefits” means that households whose income exceeds this threshold are not eligible to the basic allowances of PAJE. Hence, instead of having a universal amount of monthly basic allowances, depending on household income, the poorest households are eligible to the total amount of basic allowances (184,62 euros/month), other households are eligible to half the amount of basic allowances (92,31 euros/month), while the richest households whose income exceeds a certain threshold are not eligible to any basic allowances.

Figure 1 shows the discontinuity in family and children allowances at the threshold of “zero benefits”. This graph represents a binned scatterplot on the discontinuity between family and children allowances perceived by households in 2014 (Y-axis) and the household income in 2012 (X-axis), as the family/children allowances perceived by households in year_n is determined by the household income in year_{n-2}.⁵ The vertical plotted line corresponds to the income threshold beyond which households are not eligible to perceive the basic allowances of early childhood benefits. The left panel represents the case of couple with one income and two children. The right panel represents the case of a couple with two incomes and three children; or a working single parent with three children. The sample is restricted to households who report receiving children/family allowances. The plot shows a clear discontinuity between children/family allowances and the household income. Households whose yearly total disposable income exceeds the discontinuity threshold receive lower amounts of children allowances, as they are not eligible to the basic allowances of the PAJE.

Figure 2 also confirms the discontinuity in children/family allowances around the threshold of “half benefits”. Households on the left of the plotted vertical line are eligible to “full benefits”, while households on the right of the discontinuity threshold are only eligible to “half benefits”. The left panel represents the case of a couple with two incomes and one child, or a working single parent with one child. The right panel represents the case of a couple with two incomes and three children; or a working single parent with three children. This graph provides additional evidence on the discontinuity between children allowances and household income in the neighborhood of the “half benefits” threshold.

⁵ The graph plots the conditional expectation function of the relationship between family and children allowances, and household income, as well as the best linear approximation to the conditional expectation function. The household income variable is split into equally sized bins and the mean values of the household income, and family and children allowances within each bin are plotted.

2.2 Statistics on Resources and Living conditions

In this paper, I make use of the two most recent publicly available survey rounds of the Statistics on Resources and Living Conditions (*Statistiques sur les Ressources et les Conditions de Vie*, SRCV), for the years 2014 and 2015. The National Institute of Statistics and Economic Studies (*Institut National de la Statistique et des Études Économiques*, INSEE) conducts the SRCV surveys. The SRCV dataset corresponds to the French part of the Community Statistics on Income and Living Conditions (EU-SILC). The first round of the EU-SILC was conducted in France in 2004 and aimed at providing representative data on income and living conditions in both cross-sectional and longitudinal dimensions. The SRCV dataset has been conducted in France on a yearly-basis since the year 2004. Each year, approximately 12,000 households are surveyed including a refresher sample of nearly 3,000 households. As in a typical household survey, the SRCV dataset includes household as well as individual questionnaires and covers topics such as family composition, housing conditions, living conditions, household income, as well as taxes, social security costs incurred by households and social benefits. The individual level questionnaire provides information on educational background, economic activity, occupations, income and labor supply, among others.

A unique feature about the SRCV dataset is that since 2008, SRCV collects information on household income and social benefits from various administrative sources instead of collecting them by the survey respondents. The (taxable) income of a surveyed household is sought in its tax return. The social benefits that a household eventually receives are obtained from the governing body on which the household depends: National Family Allowance Fund (*Caisse Nationale d'Allocation familiale*, CNAF), the Agricultural Social Mutual Fund (*Mutualité Sociale Agricole*, MSA), or the National Pension Insurance Fund (*Caisse Nationale d'Assurance Vieillesse*, NAV). The inclusion of this administrative data improves the quality of the collected revenue data compared to a typical survey where respondents can misreport or manipulate their income information. Hence, one of the main advantages of using the SRCV dataset is the precision of the information on household income and family allowances received by households. In the SRCV dataset, households/individuals only report income information that is not included in the socio-fiscal data including inter-household transfers, tax-exempt property income, etc.

3. Empirical strategy and regression specification

The empirical analysis relies on a Regression Discontinuity Design (RDD) in order to examine the impact of the 2014 family policy reforms on fertility and labor supply for both women and men. Within the framework of a “sharp” Regression-Discontinuity, the

treatment status is a deterministic function of a continuous variable called the forcing variable or the assignment variable. In other words, individuals receive the treatment or do not receive the treatment according to the underlying value of the forcing variable as illustrated in equation (1).⁶

$$T_i = T(x_i) = 1[x_i \geq \hat{x}] \quad (1)$$

where $1[.]$ is an indicator function, x_i is the forcing variable and \hat{x} is the discontinuity threshold which is the value taken by the forcing variable separating the units into two mutually exclusive groups, i.e. those who receive the treatment versus those who do not receive the treatment.

A unique feature of the family allowances for children in the context of France is the differential benefit rate by income. Depending on household structure and the number of children, households are eligible to full benefits, half benefits or zero benefits based on their household income. If the household income is below a certain threshold \bar{R} , households are eligible to “full benefits”. While households whose income is between \bar{R} and $\bar{\bar{R}}$ are eligible to “half benefits”, and households whose income exceeds $\bar{\bar{R}}$ are not eligible to “zero benefits”.⁷ The income thresholds defined by the policy are a function of the number of children and the household structure (whether the household consists of a single working parent, or the household consists of a couple where the two spouses are working, or the household is composed of a couple where only one spouse is working). Thus, the analysis involves two discontinuity thresholds: the first threshold (\bar{R}) will be denoted as “half benefits” and the second threshold ($\bar{\bar{R}}$) will be denoted as “zero benefits”. In equation (2), the mutually exclusive groups are those who receive “full benefits” versus those who receive “half benefits”. While in equation (3), the analysis compares households/individuals who receive “zero benefits” to those who receive either “full benefits” or “half benefits”.

$$T_{\bar{R}_i} = T(R_i) = 1[R_i \geq \bar{R}] \times 1[R_i < \bar{\bar{R}}] \quad (2)$$

$$T_{\bar{\bar{R}}_i} = 1[R_i \geq \bar{\bar{R}}] \quad (3)$$

The RDD approach consists in comparing the outcomes of households/individuals who are “just below” and “just above” the threshold. The intuition behind the RDD approach is that households/individuals whose incomes are close to the discontinuity threshold are very comparable along observable and unobservable characteristics except for the treatment. In other words, in the neighborhood of the discontinuity threshold, households are very similar only that some are subject to treatment while the other households are not. Hence, the households/individuals slightly below the threshold provide the

⁶ See Lemieux and Milligan (2008) and Pettersson-Lidbom (2008) for a similar methodology.

⁷ It is important to note that $\bar{R} < \bar{\bar{R}}$.

counterfactual for those slightly above the threshold since the treatment (receiving half benefits or receiving zero benefits) is randomized in the neighborhood of the discontinuity thresholds.

There are several ways in which the RDD can be implemented. The simplest approach is a non-parametric technique that compares outcomes in a small neighborhood below and above the discontinuity threshold. However, this approach could lead to imprecise estimates of the treatment effect with the usual trade-offs in the choice of the bandwidth. When using a small bandwidth, the treatment effect is equal to the difference in the average outcomes of units who are “just below” and “just above” the threshold. This could lead to imprecise measures of the treatment effect unless very large samples are available in the immediate neighborhood around the discontinuity threshold. By contrast when using large bandwidths, this could lead to biased estimates of the treatment effect if units who are further away from the discontinuity threshold are systematically different from those around the discontinuity point. Hence, unless large sample sizes are available in the neighborhood of the discontinuity threshold, the non-parametric bandwidth RDD estimation is likely to be subject to a large degree of sampling variability.

Using a control function is an equivalent yet more efficient technique of estimating the treatment effect using RDD (see for instance, Lemieux and Milligan (2008) and Pettersson-Lidbom (2008)). This approach balances the trade-off between precision and bias by using all the available data around the discontinuity threshold and regressing the outcome of interest Y_{it} on the treatment indicator T_{it} , the control function $\delta(R_{i,t-2})$, which is a low-order polynomial of the treatment determining covariate R_i and the interaction term between the treatment indicator and the control function. The RDD specification is presented in the following equation:

$$Y_{it} = \pi T_{it} + \delta(R_{i,t-2}) + \mu T_{it} \times \delta(R_{i,t-2}) + \lambda_t + \varepsilon_{it} \quad (4)$$

The empirical analysis relies on pooled-cross sectional data from the 2014 and 2015 SRCV survey rounds and the analysis focuses on households with children who report receiving family/children allowances.⁸ The treatment status of a household with children is determined by their household income two years preceding the survey year. A household receives or does not receive the family allowances for children by the *Caisse d'Allocations Familiales* (CAF) depending on their household income two years before. The regression-discontinuity is “sharp” in outcomes since the outcome variables are measured at the time of the survey. The dependent variables Y_{it} correspond to the occurrence of a birth at the household level as well as the number of hours of work per week, at the time of the survey, for women or for men. The control function $\delta(R_{i,t-2})$ is

⁸ Equation (4) denotes the individual level estimation. However, household level regressions are also estimated when examining the impact of the 2014 family policy reforms on fertility choices.

a first-order polynomial of the forcing variable which is the household income, two years preceding the survey year and is equal to the difference between the total disposable household income net of contributions and the discontinuity threshold defined by the policy. The regression specification also includes a year fixed effect λ_t , while ε_{it} denotes the error term. In the robustness checks section, results are reported using second and third order polynomial specifications of the control function.

Two sets of regressions are estimated separately. The first one aims at comparing the outcomes of individuals/households who receive “half benefits” versus those who receive “full benefits” as illustrated in equation (2) by restricting the analysis to those whose income is strictly below \bar{R} . The second one compares the outcomes of individuals/households who do not receive any family allowances for children to those who either receive “half benefits” or “full benefits”. The main coefficient of interest π , which is reported in the regression tables, is the RDD treatment effect and it measures the difference in average outcomes between treated and untreated units. Precisely, it measures the difference in outcomes between those who receive “half benefits” versus those who receive “full benefits”; and the difference in outcomes between those who receive “zero benefits” versus those who receive “half benefits” or “full benefits”. The control function technique thus yields to unbiased estimates of the treatment effect unless the control function is not correctly specified since $R_{i,t-2}$ is the only systematic determinant of the treatment status, hence the inclusion of the control function $\delta(R_{i,t-2})$ will capture any correlation which may otherwise occur between $R_{i,t-2}$ and the error term ε_{it} .

The control function is my benchmark specification; nevertheless, I also report results using non-parametric bandwidth estimation as a specification check since the estimates from the control function and the non-parametric bandwidth estimation should be the same if the control function is correctly specified. In addition, I also estimate a second-order and third-order polynomial specifications of the control function to accommodate some non-linearities in income since the assumption that $\delta(R_{i,t-2})$ is continuous, which means that the differential family allowances are the only source of discontinuity in outcomes around the treatment threshold, is likely to be violated as some variables could exhibit income profiles.

While the household income is predetermined, it is conceivable that some individuals could misreport their income either by inflating or deflating it. This could lead to a spurious correlation between household income and the error term, which could in turn constitute a threat to the underlying assumption that the control function is continuous. However, this problem is unlikely to occur in this setting as the information on household income in the survey is not reported but actually comes from official government registers, as presented in Section 2.2. In addition, as discussed earlier, the amount of

family/children allowances perceived by a household in a particular year depends on their household income two years before. Hence, the eligibility of households in the survey years, 2014 and 2015, is determined by their income in the years 2012 and 2013, respectively. This leaves no room for manipulation of behalf of the reporting households or individuals since they precede the 2014 reforms.

I also report results including an additional vector of pre-determined individual and household control variables to check whether the treatment status can be considered as good as randomly assigned. The provision of family allowances for children should not be systematically correlated with any observed or unobserved variables once the forcing variable is controlled for. Hence, adding additional control variables should not affect the estimates from the control function approach but only reduce the standard errors.

4. Empirical findings

4.1 Did the 2014 family policy reforms affect fertility and labor supply?

I examine the impact of the 2014 family policy reforms on fertility and labor supply for both women and men. Figure 3 represents a binned scatterplot on the discontinuity between the birth probability (Y-axis) and the household income minus the income threshold defined by the 2014 policy reform (X-axis) for all types of households. The vertical plotted line corresponds to the income threshold beyond which households are not eligible to perceive children allowances. Positive values on the X-axis refer to households whose income is above the discontinuity threshold; and receive no benefits, while negative values on the X-axis refer to households whose income is below the discontinuity threshold and are eligible to full or half benefits.

As the family policy reforms were first discussed in the National Assembly, the lower chamber of the French parliament, in March 2013, I define the probability of birth at the household level as a dummy variable indicator for births reported in the years 2014 and 2015, 9 months after the law was first discussed. Figure 3 shows that the households whose income exceeds the discontinuity threshold of “zero benefits”, and not eligible to receive family allowances for children, have a consistently lower birth probability compared to households who are eligible to either the full amount or half the amount of basic allowances of early childhood benefits.

Figure 4 also confirms that households who are not eligible to family allowances for children have lower birth probability compared to households who receive full or half the amount of family allowances for children. While Figure 3 featured the discontinuity for all types of households (whether the household consists of a single working parent, or the household consists of a couple where the two spouses are working, or the household is composed of a couple where only one spouse is working), Figure 4 shows the

discontinuity in birth probability around the “zero benefits” threshold for specific cases. In the left panel, results are reported for households composed of a couple where the two spouses are working and who have two children or a single working parent with two children. In the right panel, results are reported for households composed of a couple where the two spouses are working with three children or a single working parent with three children. It is important to note that the discontinuity threshold varies between the two panels, as the income thresholds defined by the policy intervention are a function of the household structure and the number of children. Figure 4 provides additional evidence on the discontinuity in the birth probability at the household level around the “zero benefits” threshold. Hence, being eligible to “zero benefits” negatively affects the birth probability at the household level compared to households who are eligible to family allowances for children.

Turning to the impact of the family policy reform on labor supply of women and men, Figure 5 shows the discontinuity between the number of hours of work/week (Y-axis) and the household income minus the income threshold defined by the 2014 policy reform (X-axis) at the “zero benefits” threshold for all types of households. The left panel represents the number of hours of work per week for women, while the right panel represents the number of hours of work per week for men. This graph shows a clear discontinuity between the two groups, below and above the discontinuity threshold for both women and men. Receiving “zero benefits” is associated with a greater number of weekly working hours for both women and men compared to individuals who are eligible to family allowances for children.

The discontinuity in the number of hours of work/week around the “zero benefits” threshold is also confirmed in Figure 6, where I examine the impact of the policy reforms for specific cases. In the left panel, results are reported for women who belong to households consisting of a couple where the two spouses are working and who have two children, or the case of a single working mother with two children. In the right panel, results are reported for men who belong to households consisting of a couple with two incomes and one child, or a single working father. Figure 6 shows that women and men whose income exceeds the discontinuity threshold of “zero benefits” have a consistently higher number of hours of work/week.

On the impact of the 2014 family policy reforms on fertility, Table 1 presents formal RDD estimation results using household level data. In Panel A, equation (4) is estimated using a first-order polynomial specification of the control function, while in Panel B results are reported using a non-parametric bandwidth estimation for households within $\pm 10,000$ euros of yearly total household disposable income net of contributions from the discontinuity threshold defined by the 2014 policy reform. The RDD results suggest that being eligible “half benefits” does not seem to have any impact on the birth probability at the household level compared to being eligible to “full benefits”, whereas being eligible

to “zero benefits” decreases the probability of birth at the household level by 2.5% (Panel A) and by 2% (Panel B). The results are consistent when using a first-order polynomial of the control function and when using non-parametric bandwidth estimation. Evaluating these effects at the mean of the dependent variable of interest results in substantial effects, 64% and 54% decrease in the birth probability at the household level in Panel A and Panel B, respectively, for households who are not eligible to the basic allowances of early childhood benefits compared to households who are eligible to the allowances (full amount or half the amount).

Table 2 reports the impact of the family reforms on the number of hours of work/week for both women and men. Results are reported using a first-order polynomial specification of the control function in Panel A and using a non-parametric bandwidth estimation in Panel B for households within $\pm 10,000$ euros of yearly total household disposable income net of contributions from the discontinuity threshold defined by the 2014 policy reform. The results suggest that decreasing the amount of family allowances for children either by receiving “half benefits” or by receiving “zero benefits” is associated with higher labor supply for both women and men. Relying on the control function specification, the results suggest that receiving “half benefits” leads to an increase in the number of hours of work/week for women by about 4 hours compared to women who belong to households receiving “full benefits”, while being eligible to “zero benefits” additionally increases the number of women’s hours of work/ week by 2 hours compared to women who belong to households who are eligible to half or full the amount of family allowances for children. The increase relative to the average number of hours of work/week for women is of the order of 11% for those who receive “half benefits” and 4% for women who receive “zero benefits”. The results also suggest that men who either receive “half benefits” or “zero benefits” significantly increase their number of hours of work/week by 2 hours and 4 hours respectively. The magnitude of these increases are important when compared to the average number of hours of work per week for men and are of the order of 5% and 10%, respectively.

4.2 Robustness checks

In this section, results are reported using a number of robustness checks. The first check is a specification check where I use alternative specifications of the control function. Table 3 reports results on the impact of the 2014 family policy reforms on the birth probability at the household level using a first-order polynomial specification and including a vector of pre-determined household control variables in columns (1) and (2), using a second-order polynomial specification in columns (3) and (4) and a third order polynomial specification in columns (5) and (6). Household level controls include: dummy variable indicators for the different household types (mono-parental household

with children, bi-parental household with one child, bi-parental household with two children, bi-parental household with three children or more, other types of households with children), a dummy variable indicator for poverty (it is equal one for households whose standard of living is lower than the poverty threshold) and a dummy variable indicator for the nationality of the household head (French by birth; French by naturalization or marriage or filing after the age of 18; EU citizen from the countries who entered the EU post 2004; EU citizen from the other European countries; Algerian, Moroccan or Tunisian; African national except from the Maghreb; and other nationalities or stateless). Results are robust to the different specification checks and are also very stable in terms of magnitude. In line with the previous findings in Table 1, receiving “zero benefits” compared to receiving “half benefits” or “full benefits” is associated with a significant decrease in the birth probability at the household level by 2.1% to 2.3%. Relative to the mean value of the dependent variable, the magnitude of the decrease in the probability of birth at the household level is of 54% to 59%.

In Table 4 and Table 5, results are reported for the number of hours of work per week for women and men respectively using individual level data. In addition to the inclusion of a vector of pre-determined household level covariates, columns (1) and (2) also include a vector of pre-determined individual level control variables. The individual level controls include: the individual age, dummy variable indicators for the individual’s highest level of educational attainment (pre-primary education, primary education or first cycle of basic education, first cycle of secondary education or second cycle of basic education, second cycle of general secondary education, second cycle of vocational secondary education, post-secondary non-university education, short cycle university education, Bachelor level, Masters level, Ph.D. level), and dummy variable indicators for the nationality of the individual. The results in Table 4 are robust to the different specification checks although imprecisely estimated when examining the impact of receiving “zero benefits” and using a second-order or third-order specifications of the control function. Receiving “half benefits” compared to receiving “full benefits” is associated with an increase in the number of hours of work per week for women by 2 hours to 3 hours. Results are reported for men in Table 5 and are consistently robust to the alternative specification checks. In line with the benchmark specification in Table 2, men increase their number of hours of work per week when they are not eligible to the basic allowances or when they are only eligible to half the amount of the basic allowances of early childhood benefits. Indeed, receiving “half benefits” is associated with an increase in the number of hours of work per week for men by 2 to 3 hours, while receiving “zero benefits” is associated by an increase in their weekly working hours by 2 to 4 hours.

Table 6 and Table 7 report results on an additional robustness check for the occurrence of birth and labor supply, respectively. I use an alternative definition of working/active

status and an alternative income definition, which determine the treatment status. The household income now refers to total household disposable income before social benefits including old age allowance or survivor's pension instead of the total household disposable income net of contributions. In addition, instead of using the standard definition of the active/working individuals employed in the survey, I follow the CAF definition of working individuals. Working individuals are thus defined as those who are engaged in income-generating work and/or receive daily allowances for accidents at work or occupational diseases, and that each of these incomes is at least equal to 5,252 euros, two years before the survey. Overall, our results in Table 6 and Table 7 are consistent and robust to these additional checks and point out to a reduction in the birth probability associated with not being eligible to any family allowances for children and to an increase in the number of hours of work per week for both women and men. Receiving “half benefits” or “zero benefits” is consistently associated with an increase in women’s and men’s labor supply although the estimated coefficient for men in column (3) is imprecisely estimated.

5. Concluding remarks

This paper examines the impact of the 2014 family policy reforms in France on fertility choices and labor supply for both women and men. This policy reform provides a quasi-experimental setting as it consisted in defining income thresholds beyond which households are either eligible to half the amount of basic allowances or to no allowances of the early childhood benefits. I use this “sharp” discontinuity in the provision of the family allowances for children to examine its impact on birth probability at the household level and the number of hours of work per week for both women and men.

The analysis relies on the two most recent survey rounds of the Statistics on Resources and Living Conditions in France for the years 2014 and 2015. Using a “sharp” RDD, the results of this paper suggest that not being eligible to any basic allowances of the early childhood benefits decreases the birth probability at the household level. In terms of labor supply, I find consistent results in line with the literature on the elimination of welfare programs. Being eligible to half the amount of family allowances for children or not being eligible to any children allowances is associated with an increase in the number of hours of work per week for both women and men, compared to individuals who are eligible to the total amount of family allowances.

References

- Albrecht, J. W., Edin, P. A., Sundström, M., & Vroman, S. B. (1999). Career interruptions and subsequent earnings: A reexamination using Swedish data. *Journal of human Resources*, 294-311.
- Averett, S. L., & Whittington, L. A. (2001). Does maternity leave induce births?. *Southern Economic Journal*, 403-417.
- Baum II, C. L. (2003). The effect of state maternity leave legislation and the 1993 Family and Medical Leave Act on employment and wages. *Labour Economics*, 10(5), 573-596.
- Baker, M., & Milligan, K. (2008). Maternal employment, breastfeeding, and health: Evidence from maternity leave mandates. *Journal of health economics*, 27(4), 871-887.
- Berger, L. M., Hill, J., & Waldfogel, J. (2005). Maternity leave, early maternal employment and child health and development in the US. *The Economic Journal*, 115(501).
- Card, D., & Lemieux, T. (2000). Adapting to circumstances: the evolution of work, school, and living arrangements among North American youth. *Youth Employment and Joblessness in Advanced Countries*, David Blanchflower and Richard Freeman (eds.). Chicago: University of Chicago Press.
- Domingo, P., & Favrat, A. (2015). Les effets redistributifs des réformes récentes des politiques sociales et familiales. *L'e-ssentiel*, Publication de la Caisse nationale des Allocations familiales, n° 155.
- Dustmann, C., & Schönberg, U. (2012). Expansions in maternity leave coverage and children's long-term outcomes. *American Economic Journal: Applied Economics*, 4(3), 190-224.
- Fagnani, J. (2006). Family policy in France. *International encyclopedia of social policy*, Routledge, 3, 501–506.
- Hoem, J. M. (1993). Public policy as the fuel of fertility: effects of a policy reform on the pace of childbearing in Sweden in the 1980s. *Acta Sociologica*, 36(1), 19-31.
- Joyce, T., Kaestner, R., Korenman, S., & Henshaw, S. (2004). Family cap provisions and changes in births and abortions. *Population Research and Policy Review*, 23(5-6), 475-511.

- Lalive, R., & Zweimüller, J. (2009). How does parental leave affect fertility and return to work? Evidence from two natural experiments. *The Quarterly Journal of Economics*, 124(3), 1363-1402.
- Lemieux, T., & Milligan, K. (2008). Incentive effects of social assistance: A regression discontinuity approach. *Journal of Econometrics*, 142(2), 807-828.
- Milligan, K. (2005). Subsidizing the stork: New evidence on tax incentives and fertility. *Review of Economics and Statistics*, 87(3), 539-555.
- Moffitt, R. A. (2002). Welfare programs and labor supply. *Handbook of public economics*, 4, 2393-2430.
- OECD (2018). Family benefits public spending (indicator). doi: 10.1787/8e8b3273-en (Accessed on 04 June 2018).
- Pettersson-Lidbom, P. (2008). Do parties matter for economic outcomes? A regression-discontinuity approach. *Journal of the European Economic Association*, 6(5), 1037-1056.
- Piketty, T. (2005). Impact de l'allocation parentale d'éducation sur l'activité féminine et la fécondité en France. *Histoires de familles, histoires familiales*, 156, 79-109.
- Rosenzweig, M. R. (1999). Welfare, marital prospects, and nonmarital childbearing. *Journal of Political Economy*, 107(S6), S3-S32.
- Ruhm, C. J. (1998). The economic consequences of parental leave mandates: Lessons from Europe. *The quarterly journal of economics*, 113(1), 285-317.

The discontinuity in children allowances

Zero benefits

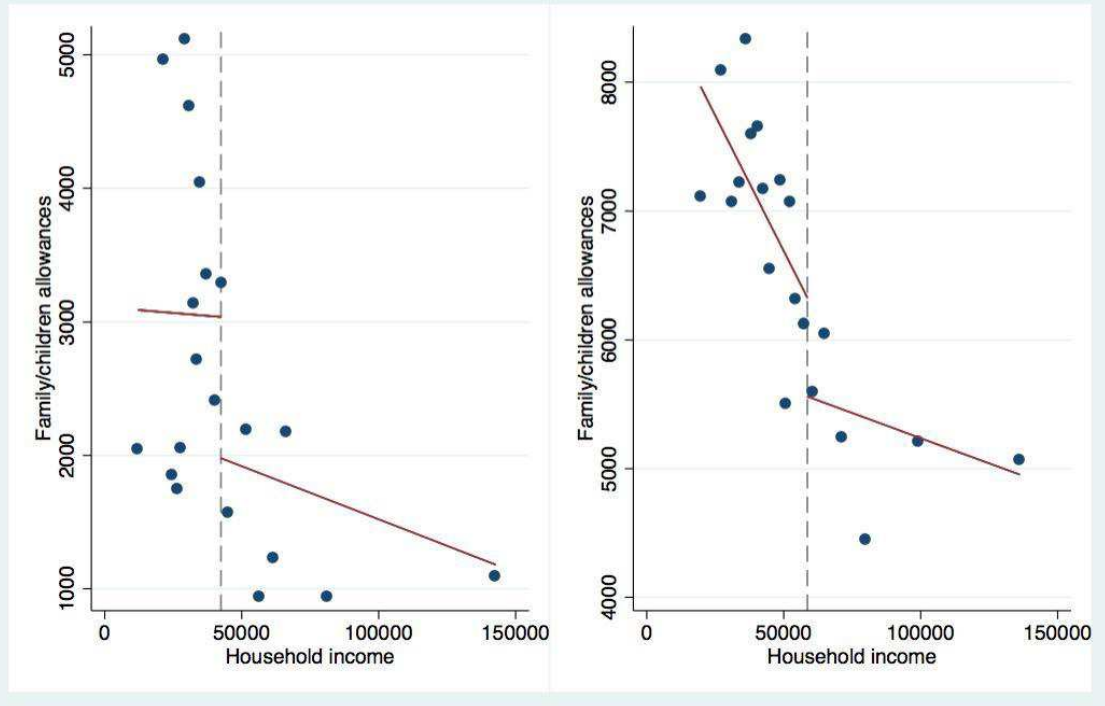


Figure 1. The discontinuity in family and children allowances at the threshold of “zero benefits”

Notes. This graph represents a binned scatterplot on the discontinuity between family and children allowances perceived by households in 2014 (Y-axis) and the household income in 2012 (X-axis). The family/children allowances perceived by households in year_n is determined by the household income in year_{n-2}. Household income refers to the total household disposable income net of contributions. The left panel represents the case of couple with one income and two children. The right panel represents the case of a couple with two incomes and three children; or a working single parent with three children. The vertical plotted line corresponds to the income threshold beyond which households are not eligible to perceive children allowances (the income threshold depends on the household structure and the number of children). The graph plots the conditional expectation function of the relationship between family and children allowances, and household income, as well as the best linear approximation to the conditional expectation function. The household income variable is split into equally sized bins and the mean values of the household income, and family and children allowances within each bin are plotted. Data comes from the 2015 wave of the *Statistiques sur les Ressources et les Conditions de Vie* (SRCV).

The discontinuity in children allowances

Half benefits

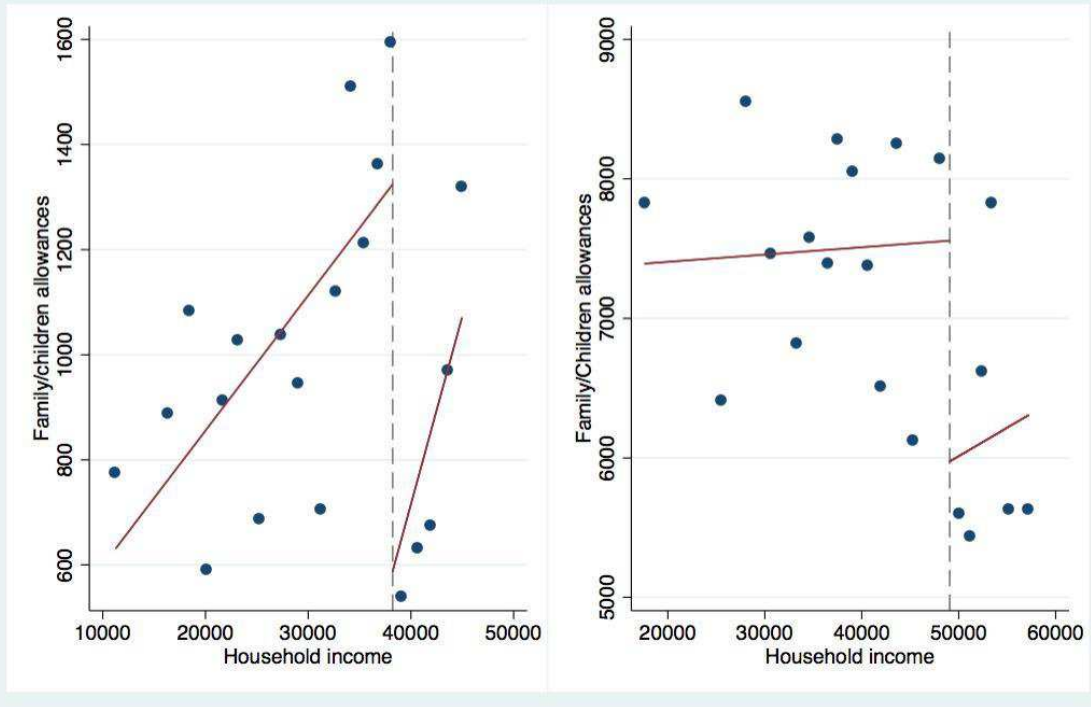


Figure 2. The discontinuity in family and children allowances at the threshold of “half benefits”

Notes. This graph represents a binned scatterplot on the discontinuity between family and children allowances perceived by households in 2014 (Y-axis) and the household income in 2012 (X-axis). The family/children allowances perceived by households in year_t is determined by the household income in year_{t-2}. Household income refers to the total household disposable income net of contributions. The left panel represents the case of a couple with two incomes and one child, or a working single parent with one child. The right panel represents the case of a couple with two incomes and three children; or a working single parent with three children. The vertical plotted line corresponds to the income threshold beyond which households are eligible to perceive half the amount of children allowances (the income threshold depends on the household structure and the number of children). The graph plots the conditional expectation function of the relationship between family and children allowances, and household income, as well as the best linear approximation to the conditional expectation function. The household income variable is split into equally sized bins and the mean values of the household income, and family and children allowances within each bin are plotted. Data comes from the 2015 wave of the *Statistiques sur les Ressources et les Conditions de Vie* (SRCV).

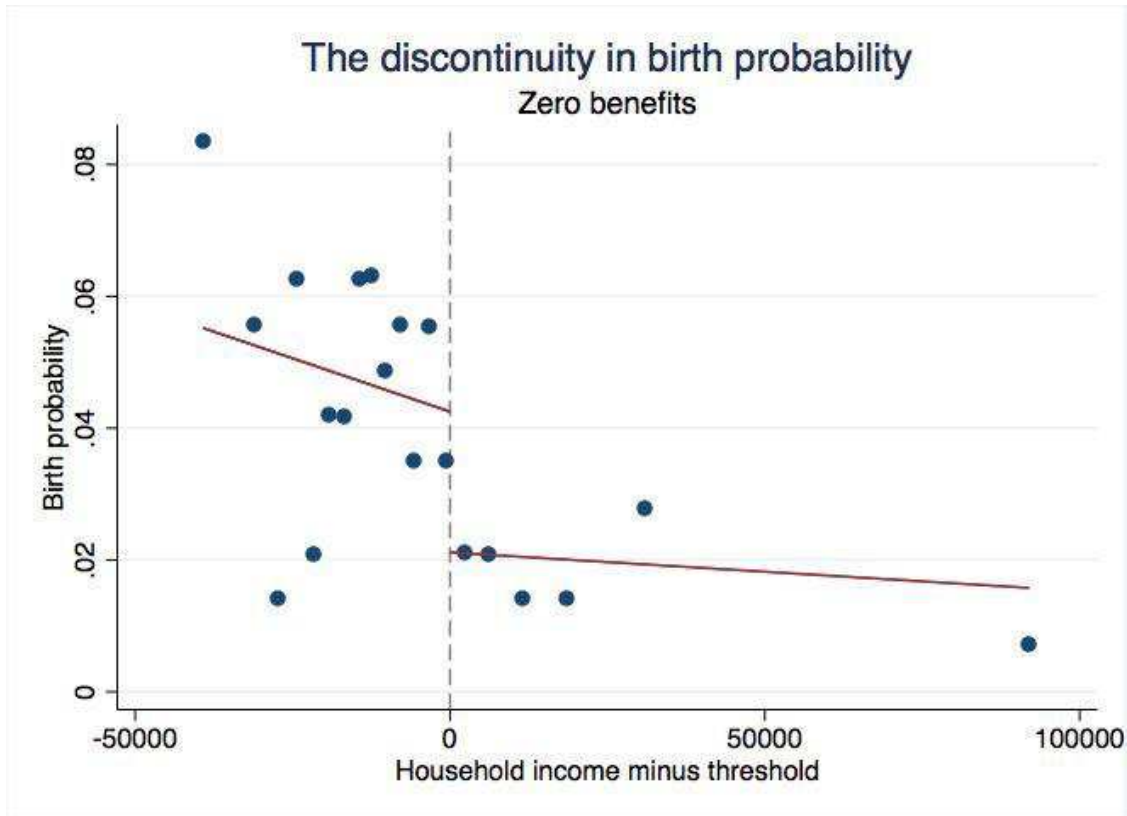


Figure 3. The discontinuity in the birth probability at the threshold of “zero benefits”

Notes. This graph represents a binned scatterplot on the discontinuity between the birth probability (Y-axis) and the household income minus the income threshold defined by the 2014 policy reform (X-axis). The vertical plotted line corresponds to the income threshold beyond which households are not eligible to perceive children allowances (the income threshold depends on the household structure and the number of children). Positive values on the X-axis refer to households above the income threshold; eligible to zero benefits. Negative values on the X-axis refer to households below the income threshold, eligible to full or half benefits. Household income refers to the total household disposable income net of contributions. The sample consists of pooled cross sectional household observations from the 2014 and 2015 waves of the *Statistiques sur les Ressources et les Conditions de Vie* (SRCV). The family/children allowances perceived by households in year_n is determined by the household income in year_{n-2}. Household income minus threshold (X-axis) refers to the income perceived by the household two years preceding the survey minus the income threshold defined by the 2014 policy reform. The family policy reforms were first discussed in the National Assembly, the lower chamber of the French parliament in March 2013. The probability of birth at the household level (Y-axis) is a dummy variable indicator for births reported in the years 2014 and 2015, 9 months after the law was first discussed. The graph plots the conditional expectation function of the relationship between the birth probability at the household level, and household income, as well as the best linear approximation to the conditional expectation function. The household income variable is spilt into equally sized bins and the mean values of the household income, and the birth probability within each bin are plotted.

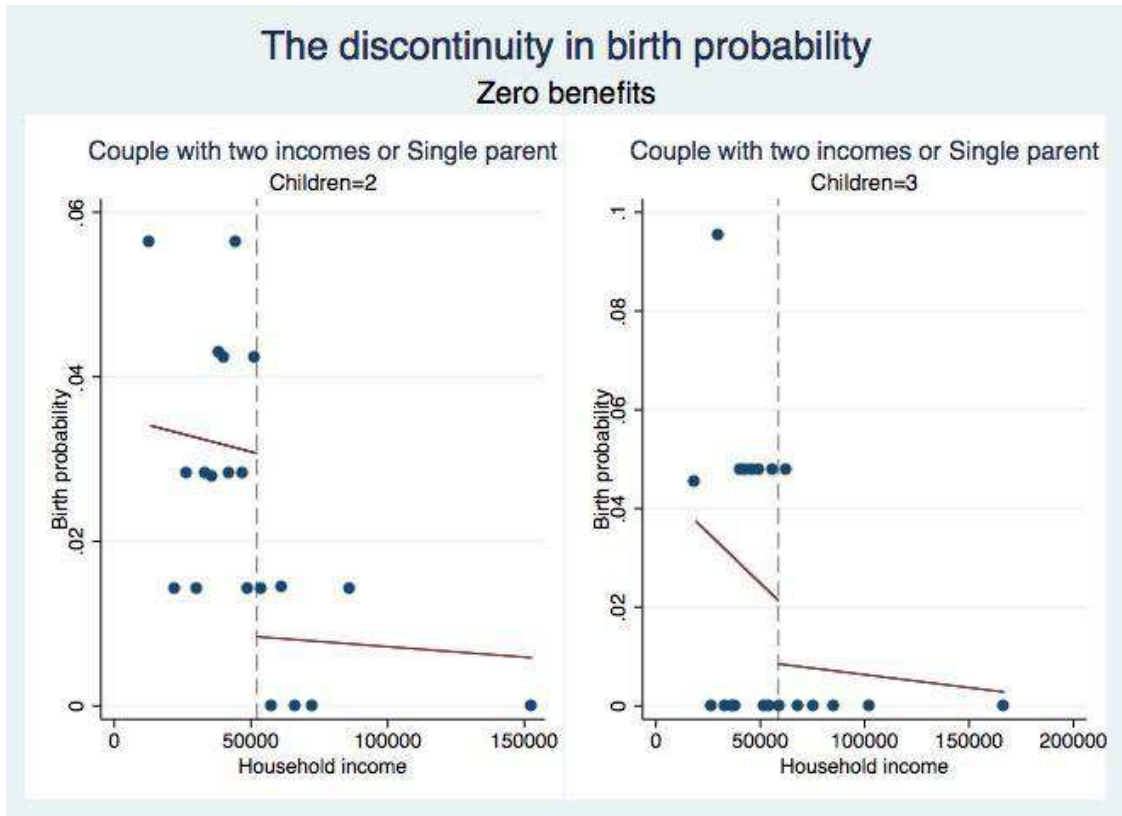


Figure 4. The discontinuity in the birth probability for specific cases at the threshold of “zero benefits”

Notes. This graph represents a binned scatterplot on the discontinuity between the birth probability (Y-axis) and the household income (X-axis). The sample consists of pooled cross sectional household observations from the 2014 and 2015 waves of the *Statistiques sur les Ressources et les Conditions de Vie* (SRCV). The family/children allowances perceived by households in year_t is determined by the household income in year_{t-2}. Household income (X-axis) refers to the total household disposable income net of contributions perceived by the household two years preceding the survey. The family policy reforms were first discussed in the National Assembly, the lower chamber of the French parliament in March 2013. The probability of birth at the household level (Y-axis) is a dummy variable indicator for births reported in the years 2014 and 2015, 9 months after the law was first discussed. The left panel represents the case of a couple with two incomes and two children, or a working single parent with two children. The right panel represents the case of a couple with two incomes and three children; or a working single parent with three children. The vertical plotted line corresponds to the income threshold beyond which households are not eligible to perceive children allowances (the income threshold depends on the household structure and the number of children). The graph plots the conditional expectation function of the relationship between the birth probability at the household level, and household income, as well as the best linear approximation to the conditional expectation function. The household income variable is split into equally sized bins and the mean values of the household income, and the birth probability within each bin are plotted.

The discontinuity in hours of work/week

Zero benefits

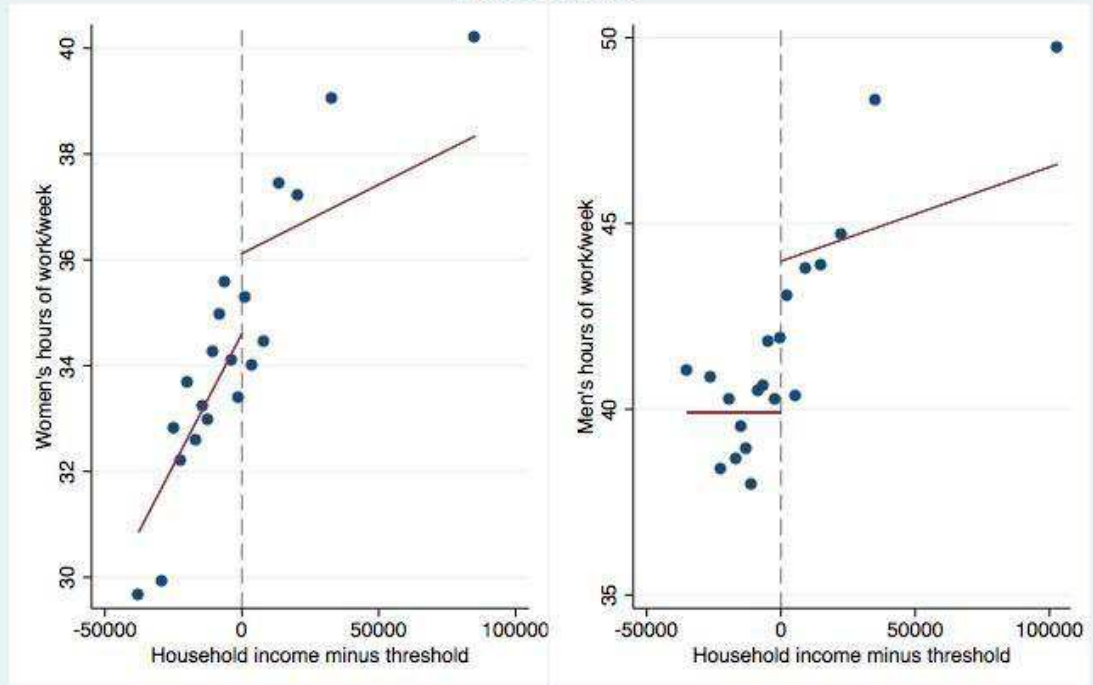


Figure 5. The discontinuity in the number of hours of work/week at the threshold of “zero benefits”

Notes. This graph represents a binned scatterplot on the discontinuity between the number of hours of work/week (Y-axis) and the household income minus the income threshold defined by the 2014 policy reform (X-axis). The vertical plotted line corresponds to the income threshold beyond which households are not eligible to perceive children allowances (the income threshold depends on the household structure and the number of children). Positive values on the X-axis refer to households above the income threshold; eligible to zero benefits. Negative values on the X-axis refer to households below the income threshold, eligible to full or half benefits. Household income refers to the total household disposable income net of contributions. The left panel represents the number of hours of work per week for women, while the right panel represents the number of hours of work per week for men. The sample consists of pooled cross sectional household observations from the 2014 and 2015 waves of the *Statistiques sur les Ressources et les Conditions de Vie* (SRCV). The family/children allowances perceived by households in year_t is determined by the household income in year_{t-2}. Household income minus threshold (X-axis) refers to the income perceived by the household two years preceding the survey minus the income threshold defined by the 2014 policy reform. The graph plots the conditional expectation function of the relationship between the birth probability at the household level, and household income, as well as the best linear approximation to the conditional expectation function. The household income variable is split into equally sized bins and the mean values of the household income, and the birth probability within each bin are plotted.

The discontinuity in hours of work/week

Zero benefits

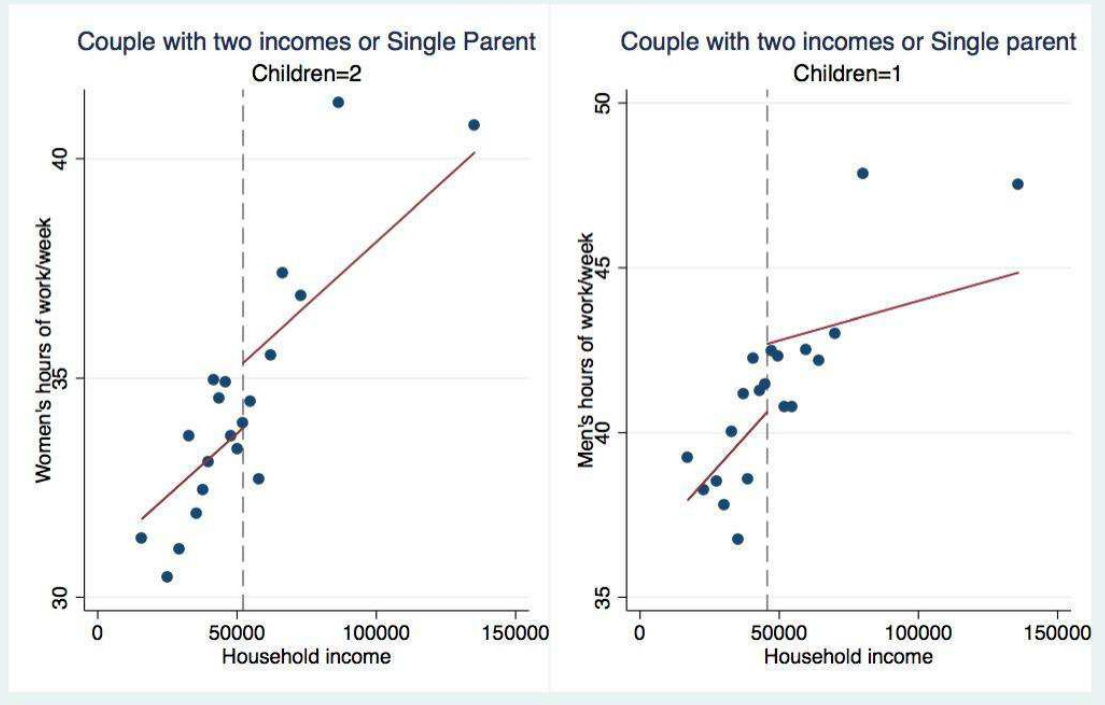


Figure 6. The discontinuity in the number of hours of work/week for specific cases at the threshold of “zero benefits”

Notes. This graph represents a binned scatterplot on the discontinuity between the number of hours of work/week (Y-axis) and the household income (X-axis). The left panel represents the number of hours of work per week for women, while the right panel represents the number of hours of work per week for men. The sample consists of pooled cross sectional household observations from the 2014 and 2015 waves of the *Statistiques sur les Ressources et les Conditions de Vie* (SRCV). The family/children allowances perceived by households in year_t is determined by the household income in year_{t-2}. Household income (X-axis) refers to the total household disposable income net of contributions perceived by the household two years preceding the survey. The number of hours of work per week (Y-axis) refers to the survey year. The left panel represents the case of a couple with two incomes and two children, or a working single parent with two children. The right panel represents the case of a couple with two incomes and one child; or a working single parent with one child. The vertical plotted line corresponds to the income threshold beyond which households are not eligible to perceive children allowances (the income threshold depends on the household structure and the number of children). The graph plots the conditional expectation function of the relationship between the birth probability at the household level, and household income, as well as the best linear approximation to the conditional expectation function. The household income variable is split into equally sized bins and the mean values of the household income, and the birth probability within each bin are plotted.

Table 1: Impact of the 2014 family policy reforms on fertility

Panel A: Regression discontinuity using a control function		
VARIABLES	(1) Birth probability	(2) Birth probability
Half benefits	-0.008 [0.020]	
Zero benefits		-0.025** [0.010]
Observations	1,957	2,873
R-squared	0.036	0.028
Year FE	YES	YES
Dependent variable mean	0.048	0.039
Panel B: Regression discontinuity using non-parametric bandwidth estimation		
Half benefits	-0.015 [0.012]	
Zero benefits		-0.020* [0.012]
Observations	1,146	1,001
R-squared	0.033	0.016
Dependent variable mean	0.048	0.037

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are reported in brackets.

Notes. Each cell represents a Regression Discontinuity (RD) estimator using household level data. The sample is restricted to households with dependent children who report receiving family/children allowances. In Panel A, results are reported on the full sample of households using a first-order polynomial control function. In Panel B, results are reported using non-parametric bandwidth estimation for households within $\pm 10,000$ euros of yearly household income from the income threshold defined by the 2014 policy reform. The family policy reforms were first discussed in the National Assembly, the lower chamber of the French parliament in March 2013. The dependent variables in columns (1) and (2) are dummy variable indicators for the probability of birth at the household level, for birth reported in the years 2014 and 2015, 9 months after the law was first discussed. The variable “Half benefits” is a dummy variable indicator that is equal to 1 for households who receive half the amount of children allowances given the household structure and the number of children, and is equal to 0 for households who receive the full benefits. The variable “Zero benefits” is a dummy variable indicator that is equal to 1 for households who receive zero benefits given the household structure and the number of children and is equal to 0 for households who are eligible to full or half benefits. Regressions also include a linear control function, the interaction term between the control function and the RD estimator as well as a year fixed effect. The mean of the dependent variable is reported in the last row of the table.

Table 2: Impact of the 2014 family policy reform on labor supply for women and men

Panel A: Regression discontinuity using a control function				
VARIABLES	(1) Hours of work/week for women	(2) Hours of work/week for women	(3) Hours of work/week for men	(4) Hours of work/week for men
Half benefits	3.509*** [1.133]		2.105** [0.959]	
Zero benefits		1.529* [0.851]		4.188*** [0.676]
Observations	1,464	2,267	1,447	2,339
R-squared	0.019	0.042	0.006	0.055
Year FE	YES	YES	YES	YES
Dependent variable mean	33.030	34.340	39.910	41.710
Panel B: Regression discontinuity using non-parametric bandwidth estimation				
Half benefits	1.735*** [0.556]		1.824*** [0.576]	
Zero benefits		0.007 [0.635]		1.525** [0.666]
Observations	929	833	1,010	927
R-squared	0.010	0.000	0.010	0.006
Dependent variable mean	33.850	34.640	39.750	41.180

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are reported in brackets.

Notes. Each cell represents a Regression Discontinuity (RD) estimator using individual level data. The sample is restricted to households with dependent children who report receiving family/children allowances. In Panel A, results are reported on the full sample of households using a first-order polynomial control function. In Panel B, results are reported using non-parametric bandwidth estimation for households within $\pm 10,000$ euros of yearly household income from the income threshold defined by the 2014 policy reform. The dependent variables correspond to the number of hours of work per week at the time of the survey. In columns (1) and (2), results are reported for women. In columns (3) and (4), results are reported for men. The variable “Half benefits” is a dummy variable indicator that is equal to 1 for households who receive half the amount of children allowances given the household structure and the number of children, and is equal to 0 for households who receive the full benefits. The variable “Zero benefits” is a dummy variable indicator that is equal to 1 for households who receive zero benefits given the household structure and the number of children and is equal to 0 for households who are eligible to full or half benefits. Regressions also include a linear control function, the interaction term between the control function and the RD estimator as well as a year fixed effect. The mean of the dependent variable is reported in the last row of the table.

Table 3: Robustness checks on control function specification, Impact of the 2014 family policy reforms on fertility

VARIABLES	(1) Birth probability	(2) Birth probability	(3) Birth probability	(4) Birth probability	(5) Birth probability	(6) Birth probability
Half benefits	-0.012 [0.020]		-0.010 [0.021]		-0.023 [0.023]	
Zero benefits		-0.023** [0.010]		-0.022** [0.010]		-0.021* [0.011]
Observations	1,955	2,871	1,957	2,873	1,957	2,873
R-squared	0.066	0.051	0.036	0.028	0.037	0.029
Year FE	YES	YES	YES	YES	YES	YES
Household controls	YES	YES	NO	NO	NO	NO
Polynomial order	First	First	Second	Second	Third	Third
Dependent variable mean	0.048	0.039	0.048	0.039	0.048	0.039

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are reported in brackets.

Notes. Each cell represents a Regression Discontinuity (RD) estimator using household level data. The sample is restricted to households with dependent children who report receiving family/children allowances. In columns (1) and (2), results are reported using a first-order polynomial specification for the Regression discontinuity control function and including household level covariates. In columns (3) and (4), results are reported using a second-order polynomial specification for the Regression discontinuity control function. In columns (5) and (6), results are reported using a third-order polynomial specification for the Regression discontinuity control function. The family policy reforms were first discussed in the National Assembly, the lower chamber of the French parliament in March 2013. The dependent variables in columns (1) and (2) are dummy variable indicators for the probability of birth at the household level, for birth reported in the years 2014 and 2015, 9 months after the law was first discussed. The variable “Half benefits” is a dummy variable indicator that is equal to 1 for households who receive half the amount of children allowances given the household structure and the number of children, and is equal to 0 for households who receive the full benefits. The variable “Zero benefits” is a dummy variable indicator that is equal to 1 for households who receive zero benefits given the household structure and the number of children and is equal to 0 for households who are eligible to full or half benefits. Household level controls include: dummy variable indicators for the different household types (mono-parental household with children, bi-parental household with one child, bi-parental household with two children, bi-parental household with three children or more, other types of households with children), a dummy variable indicator for poverty (it is equal one for households whose standard of living is lower than the poverty threshold) and a dummy variable indicator for the nationality of the household head (French by birth; French by naturalization or marriage or filing after the age of 18; EU citizen from the countries who entered the EU post 2004; EU citizen from the other European countries; Algerian, Moroccan or Tunisian; African national (except the Maghreb); and other nationalities or stateless). Regressions also include a year fixed effect. The mean of the dependent variable is reported in the last row of the table.

Table 4: Robustness checks on control function specification, Impact of the 2014 family policy reforms on women's labor supply

VARIABLES	(1) Hours of work/week for women	(2) Hours of work/week for women	(3) Hours of work/week for women	(4) Hours of work/week for women	(5) Hours of work/week for women	(6) Hours of work/week for women
Half benefits	2.998*** [1.109]		2.317** [0.943]		2.476** [1.063]	
Zero benefits		1.660** [0.796]		0.804 [0.931]		0.743 [1.112]
Observations	1,100	1,684	1,464	2,267	1,464	2,267
R-squared	0.069	0.081	0.032	0.047	0.031	0.047
Year FE	YES	YES	YES	YES	YES	YES
Individual and household controls	YES	YES	NO	NO	NO	NO
Polynomial order	First	First	Second	Second	Third	Third
Dependent variable mean	33.140	34.380	33.030	34.340	33.030	34.340

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are reported in brackets.

Notes. Each cell represents a Regression Discontinuity (RD) estimator using individual level data. The sample is restricted to households with dependent children who report receiving family/children allowances. In columns (1) and (2), results are reported using a first-order polynomial specification for the Regression discontinuity control function and including household level covariates. In columns (3) and (4), results are reported using a second-order polynomial specification for the Regression discontinuity control function. In columns (5) and (6), results are reported using a third-order polynomial specification for the Regression discontinuity control function. The dependent variables correspond to the number of hours of work per week for women at the time of the survey. The variable “Half benefits” is a dummy variable indicator that is equal to 1 for households who receive half the amount of children allowances given the household structure and the number of children, and is equal to 0 for households who receive the full benefits. The variable “Zero benefits” is a dummy variable indicator that is equal to 1 for households who receive zero benefits given the household structure and the number of children and is equal to 0 for households who are eligible to full or half benefits. Individual level controls include: individual age, dummy variable indicators for the individual’s highest level of educational attainment (pre-primary education, primary education or first cycle of basic education, first cycle of secondary education or second cycle of basic education, second cycle of general secondary education, second cycle of vocational secondary education, post-secondary non-university education, short cycle university education, Bachelor level, Masters level, Ph.D. level), and dummy variable indicators for the nationality of the individual (French by birth; French by naturalization or marriage or filing after the age of 18; EU citizen from the countries who entered the EU post 2004; EU citizen from the other European countries; Algerian, Moroccan or Tunisian; African national (except the Maghreb); and other nationalities or stateless). Household level controls include: dummy variable indicators for the different household types (mono-parental household with children, bi-parental household with one child, bi-parental household with two children, bi-parental household with three children or more, other types of households with children) and a dummy variable indicator for poverty (it is equal one for households whose standard of living is lower than the poverty threshold). Regressions also include a year fixed effect. The mean of the dependent variable is reported in the last row of the table.

Table 5: Robustness checks on control function specification, Impact of the 2014 family policy reforms on men's labor supply

VARIABLES	(1) Hours of work/week for men	(2) Hours of work/week for men	(3) Hours of work/week for men	(4) Hours of work/week for men	(5) Hours of work/week for men	(6) Hours of work/week for men
Half benefits	2.703** [1.177]		2.238** [1.021]		1.873* [1.049]	
Zero benefits		4.462*** [0.738]		2.824*** [0.644]		1.710** [0.702]
Observations	1,105	1,747	1,447	2,339	1,447	2,339
R-squared	0.048	0.096	0.007	0.073	0.007	0.069
Year FE	YES	YES	YES	YES	YES	YES
Individual and household controls	YES	YES	NO	NO	NO	NO
Polynomial order	First	First	Second	Second	Third	Third
Dependent variable mean	40.140	42.070	39.910	41.710	39.910	41.710

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are reported in brackets.

Notes. Each cell represents a Regression Discontinuity (RD) estimator using individual level data. The sample is restricted to households with dependent children who report receiving family/children allowances. In columns (1) and (2), results are reported using a first-order polynomial specification for the Regression discontinuity control function and including household level covariates. In columns (3) and (4), results are reported using a second-order polynomial specification for the Regression discontinuity control function. In columns (5) and (6), results are reported using a third-order polynomial specification for the Regression discontinuity control function. The dependent variables correspond to the number of hours of work per week for men at the time of the survey. The variable “Half benefits” is a dummy variable indicator that is equal to 1 for households who receive half the amount of children allowances given the household structure and the number of children, and is equal to 0 for households who receive the full benefits. The variable “Zero benefits” is a dummy variable indicator that is equal to 1 for households who receive zero benefits given the household structure and the number of children and is equal to 0 for households who are eligible to full or half benefits. Individual level controls include: individual age, dummy variable indicators for the individual’s highest level of educational attainment (pre-primary education, primary education or first cycle of basic education, first cycle of secondary education or second cycle of basic education, second cycle of general secondary education, second cycle of vocational secondary education, post-secondary non-university education, short cycle university education, Bachelor level, Masters level, Ph.D. level), and dummy variable indicators for the nationality of the individual (French by birth; French by naturalization or marriage or filing after the age of 18; EU citizen from the countries who entered the EU post 2004; EU citizen from the other European countries; Algerian, Moroccan or Tunisian; African national (except the Maghreb); and other nationalities or stateless). Household level controls include: dummy variable indicators for the different household types (mono-parental household with children, bi-parental household with one child, bi-parental household with two children, bi-parental household with three children or more, other types of households with children) and a dummy variable indicator for poverty (it is equal one for households whose standard of living is lower than the poverty threshold). Regressions also include a year fixed effect. The mean of the dependent variable is reported in the last row of the table.

Table 6: Additional robustness checks, Impact of the 2014 family policy reforms on fertility

VARIABLES	(1) Birth probability	(2) Birth probability
Half benefits	-0.008 [0.020]	
Zero benefits		-0.025** [0.010]
Observations	1,957	2,873
R-squared	0.036	0.028
Year FE	YES	YES
Dependent variable mean	0.048	0.039

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are reported in brackets.

Notes. Each cell represents a Regression Discontinuity (RD) estimator using household level data. The sample is restricted to households with dependent children who report receiving family/children allowances. Results are reported on the full sample of households using a first-order polynomial control function. As robustness checks, the household income refers to total household disposable income before social benefits including old age allowance or survivor's pension instead of the total household disposable income net of contributions. Working individuals are also defined as those who are engaged in income-generating work and/or receive daily allowances for accidents at work or occupational diseases, and that each of these incomes is at least equal to 5,252 euros, two years before the survey. The family policy reforms were first discussed in the National Assembly, the lower chamber of the French parliament in March 2013. The dependent variables in columns (1) and (2) are dummy variable indicators for the probability of birth at the household level, for birth reported in the years 2014 and 2015, 9 months after the law was first discussed. The variable "Half benefits" is a dummy variable indicator that is equal to 1 for households who receive half the amount of children allowances given the household structure and the number of children, and is equal to 0 for households who receive the full benefits. The variable "Zero benefits" is a dummy variable indicator that is equal to 1 for households who receive zero benefits given the household structure and the number of children and is equal to 0 for households who are eligible to full or half benefits. Regressions also include a linear control function, the interaction term between the control function and the RD estimator as well as a year fixed effect. The mean of the dependent variable is reported in the last row of the table.

Table 7: Additional robustness checks, Impact of the 2014 family policy reforms on labor supply for women and men

VARIABLES	(1) Hours of work/week for women	(2) Hours of work/week for women	(3) Hours of work/week for men	(4) Hours of work/week for men
Half benefits	1.863* [1.019]		1.377 [0.957]	
Zero benefits		1.431** [0.672]		3.592*** [0.745]
Observations	1,503	2,155	1,540	2,245
R-squared	0.026	0.064	0.012	0.078
Year FE	YES	YES	YES	YES
Dependent variable mean	33.020	34.370	39.610	41.340

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are reported in brackets.

Notes. Each cell represents a Regression Discontinuity (RD) estimator using individual level data. The sample is restricted to households with dependent children who report receiving family/children allowances. Results are reported on the full sample of households using a first-order polynomial control function. As robustness checks, the household income refers to total household disposable income before social benefits including old age allowance or survivor's pension instead of the total household disposable income net of contributions. Working individuals are also defined as those who are engaged in income-generating work and/or receive daily allowances for accidents at work or occupational diseases, and that each of these incomes is at least equal to 5,252 euros, two years before the survey. The dependent variables correspond to the number of hours of work per week at the time of the survey. In columns (1) and (2), results are reported for women. In columns (3) and (4), results are reported for men. The variable "Half benefits" is a dummy variable indicator that is equal to 1 for households who receive half the amount of children allowances given the household structure and the number of children, and is equal to 0 for households who receive the full benefits. The variable "Zero benefits" is a dummy variable indicator that is equal to 1 for households who receive zero benefits given the household structure and the number of children and is equal to 0 for households who are eligible to full or half benefits. Regressions also include a linear control function, the interaction term between the control function and the RD estimator as well as a year fixed effect. The mean of the dependent variable is reported in the last row of the table.