# Traditional Views, Egalitarian Views, and the Child Penalty: Insights from Immigrant Populations in France

Online Appendix – Not for publication

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## A Construction and interpretation of gender-related attitudes

For each survey item included in the PCA step of our analysis, Figures A.1 to A.6 present the distribution of immigrant parents across the possible responses. These figures reveal clear differences in the views expressed by immigrant parents on gender inequality, women's bodily autonomy, religion, political orientation, and the gender of their friends. Specifically, they show that immigrant parents scoring above the median of the first component are more likely to prioritize male employment, disapprove of non-medical abortion and same-sex couples, report strong religious feelings, identify as right-leaning or politically neutral, and have friends of the same gender.

### A.1 Contribution of each survey item

### A.2 Gender-related attitudes and gender imbalance in household chores

Figures A.7 and A.8 show the distribution of immigrant parents currently living with a partner, based on their self-reported allocation of household chores, disaggregated by gender and gender-related attitudes. Both attitude groups display clear gender imbalances in the division of household tasks: women are much more likely to report being primarily responsible for daily meals and laundry, while men are more likely to state that these tasks are managed by their partners. This imbalance is, however, more pronounced among immigrant parents characterized as holding more traditional gender views. Specifically, the complete delegation of these tasks to women appears relatively more common in this group than among those with less traditional attitudes.

### A.3 Gender-related attitudes by countries

Tables A.1 to A.4 present the proportion of immigrant parents identified as holding more traditional gender views, disaggregated by gender and migration background. For this analysis, we limit ourselves to cells with at least 20 individuals in the sample, representing over 7,500 individuals in the population. The ranking of countries of origin by the share of immigrant parents with traditional attitudes is broadly consistent across genders and between first- and second-generation immigrants. The main finding is that

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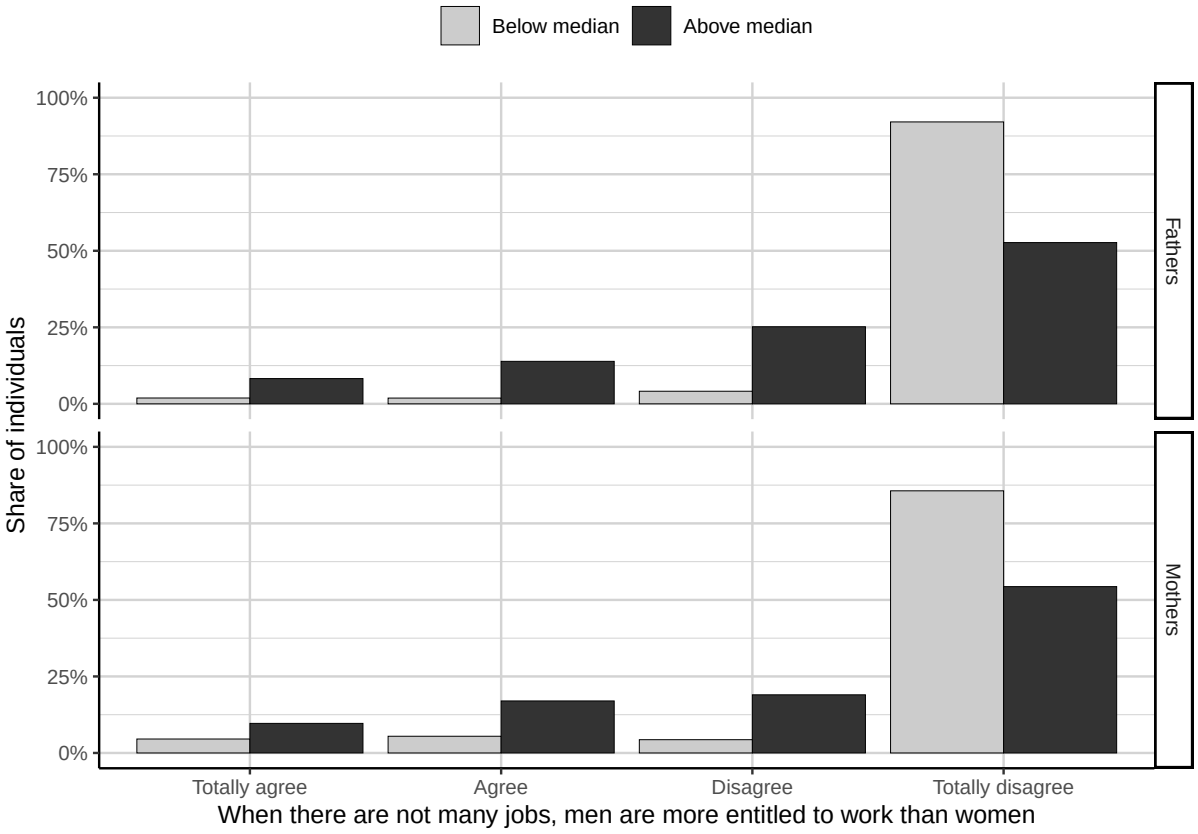
**Figure A.1.** Distribution of immigrant parents' views regarding male and female employment

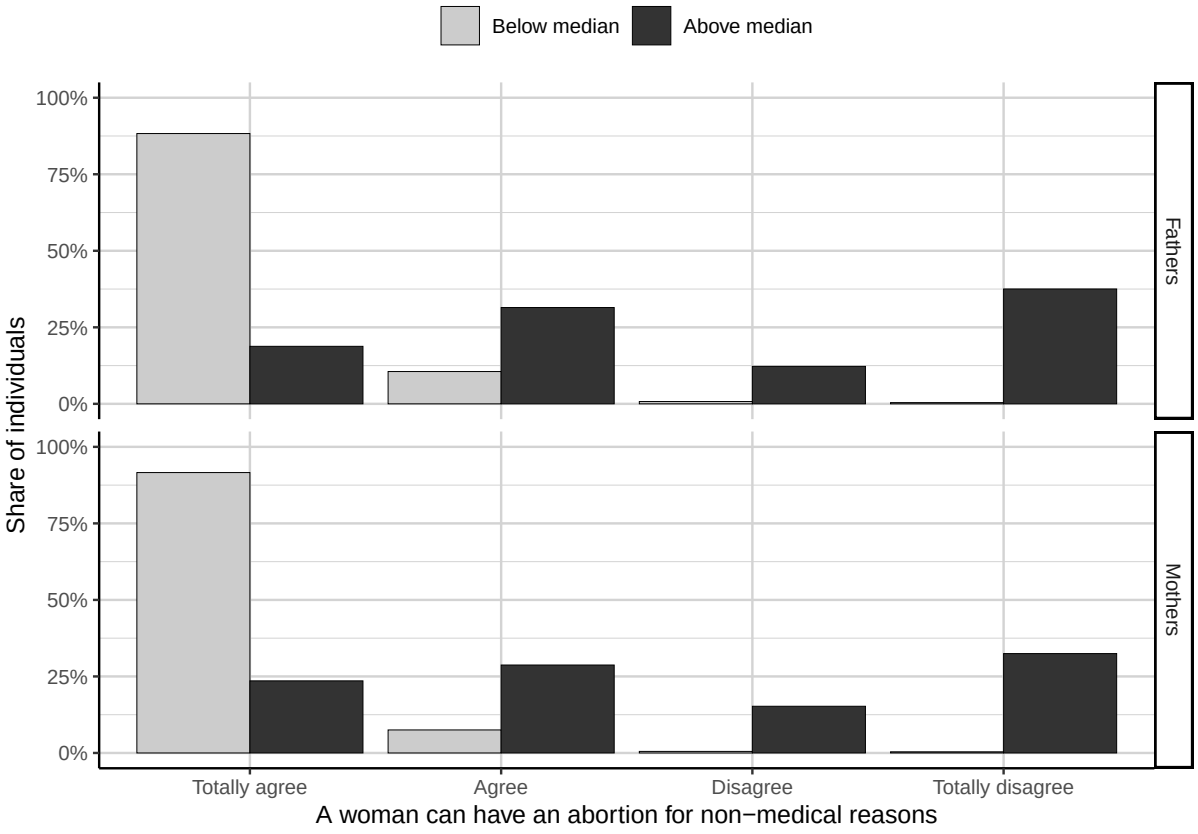



Immigrant parents' distribution along the different levels of survey item **I_GENRE**. The median is that of the first component of the PCA estimated over the six relevant survey items (see 2.2).

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure A.2.** Distribution of immigrant parents' views regarding non-medical abortion

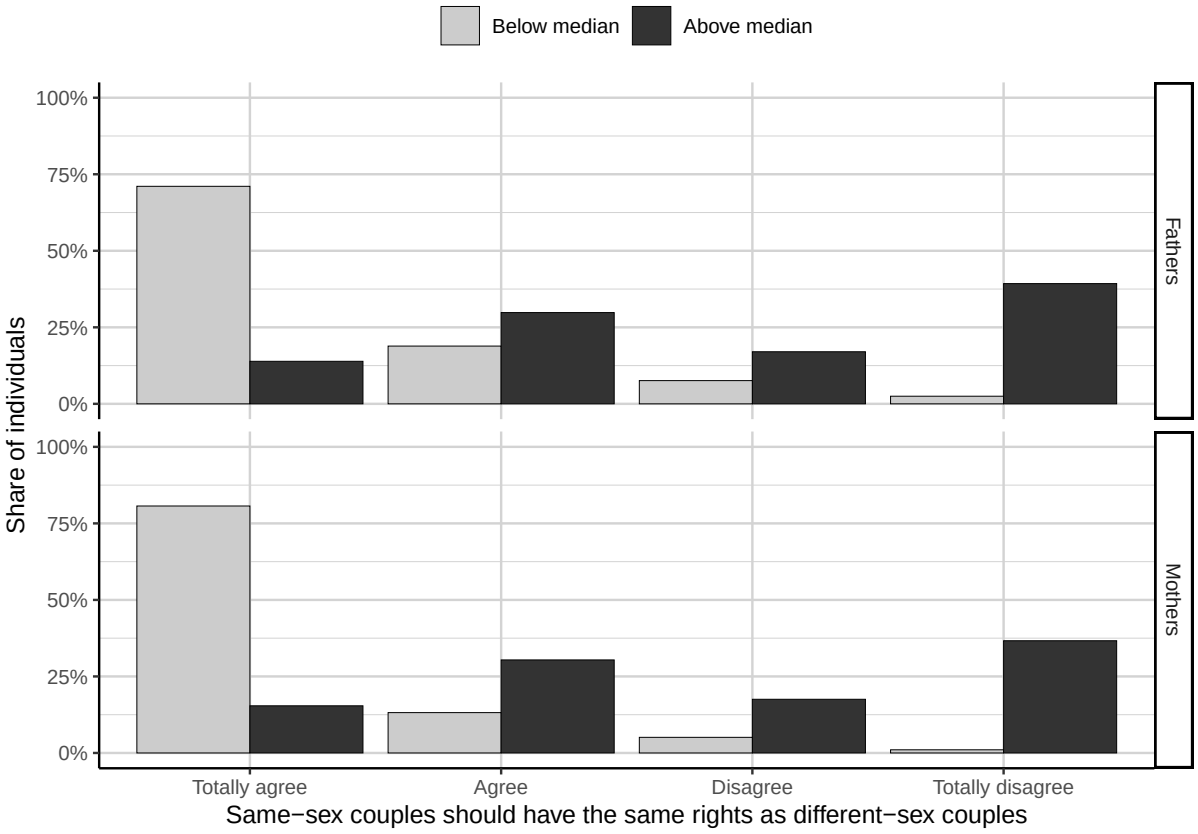



Immigrant parents' distribution along the different levels of survey item **I_AVORT**. The median is that of the first component of the PCA estimated over the six relevant survey items (see 2.2).

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure A.3.** Distribution of immigrant parents' views regarding equal rights for same-sex couples

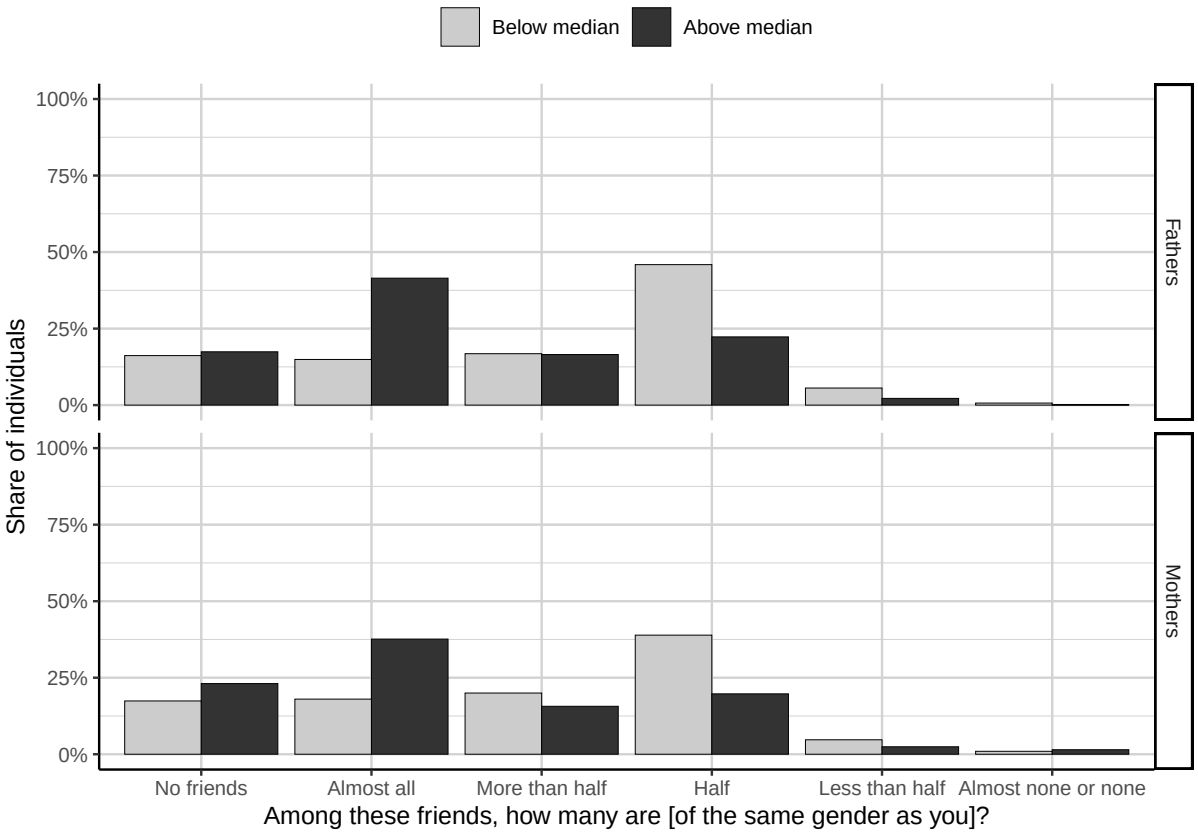



Immigrant parents' distribution along the different levels of survey item **I_HOMO**. The median is that of the first component of the PCA estimated over the six relevant survey items (see 2.2).

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure A.4.** Distribution of immigrant parents' depending on how many of their friend are of the same gender as them

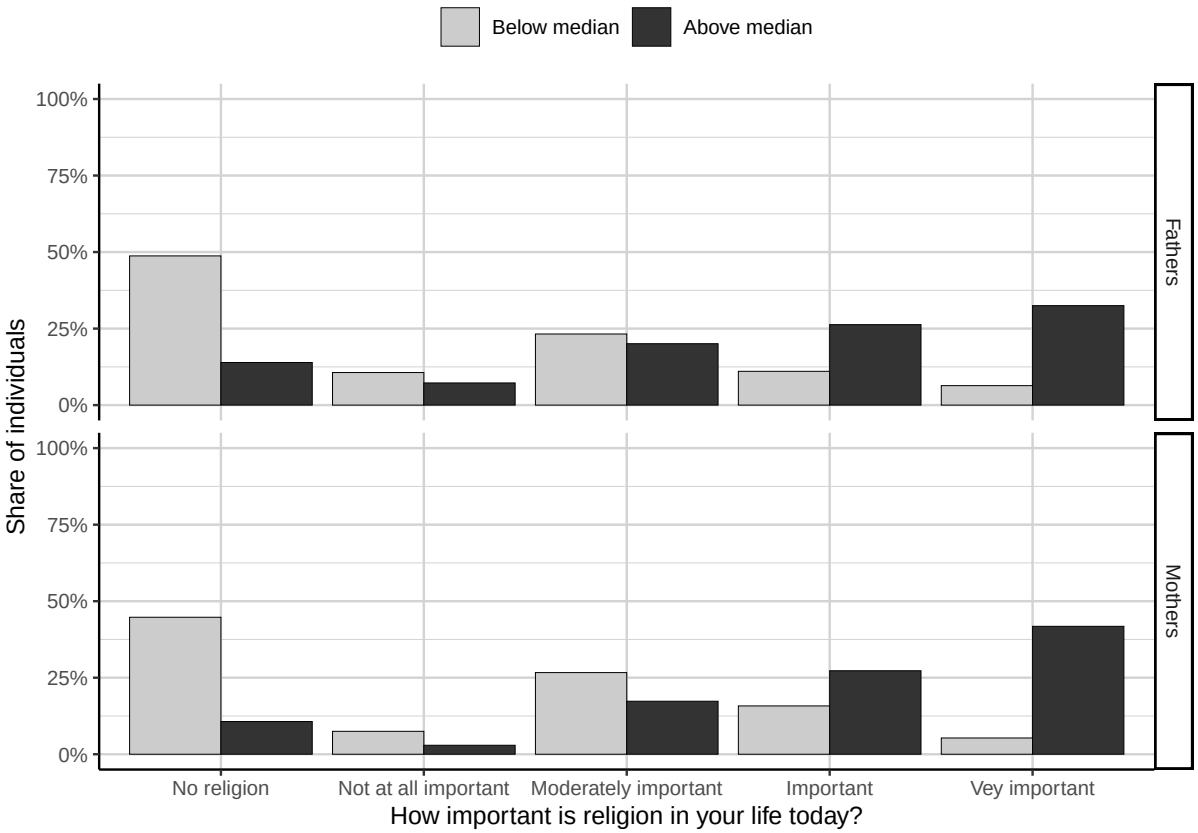



Immigrant parents' distribution along the different levels of survey item **A_RHOM** and **A_RFEM** (depending on their own gender). Immigrants who have not met with any friend over the last two weeks before the survey interrogation are included as a specific category. The median is that of the first component of the PCA estimated over the six relevant survey items (see 2.2).

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure A.5.** Distribution of immigrant parents' prominence given to religion

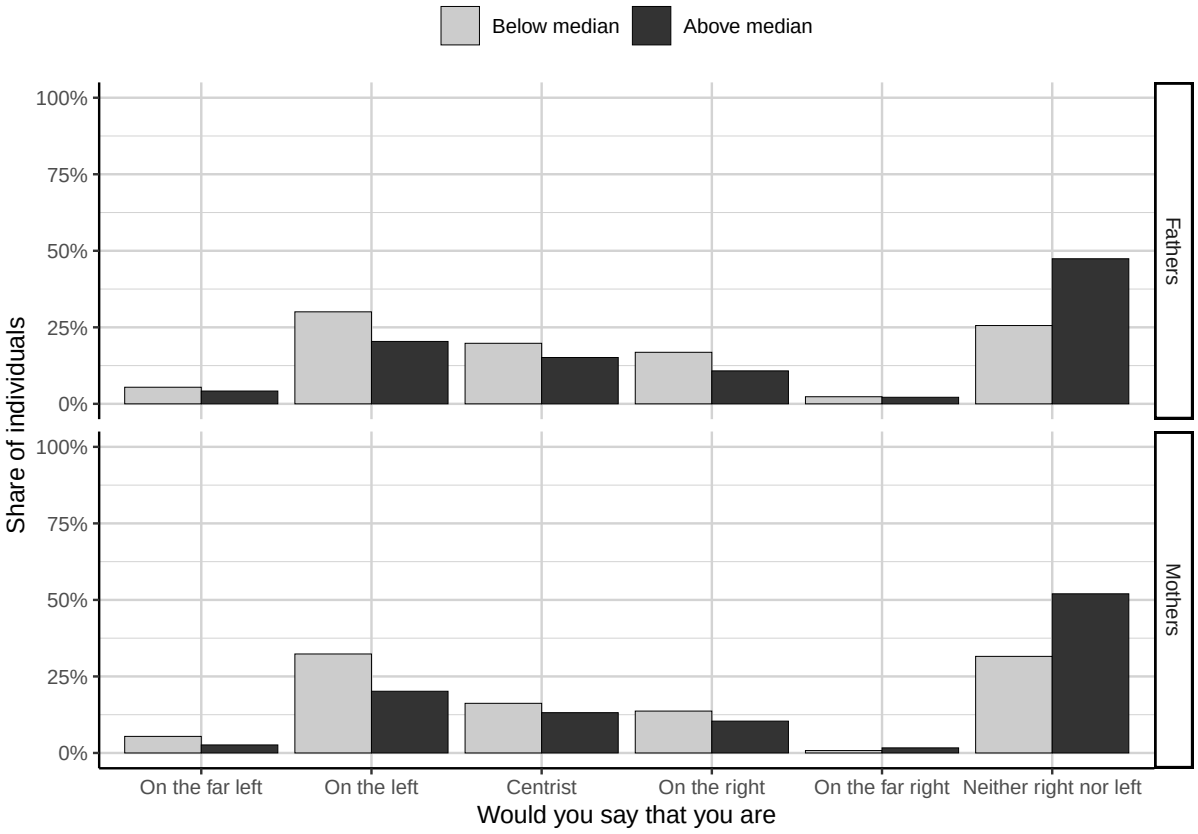



Immigrant parents' distribution along the different levels of survey item **R_IMPVIE**. Immigrants currently without a religion are included as a specific category. The median is that of the first component of the PCA estimated over the six relevant survey items (see 2.2).

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure A.6.** Distribution of immigrant parents' self-reported political orientation

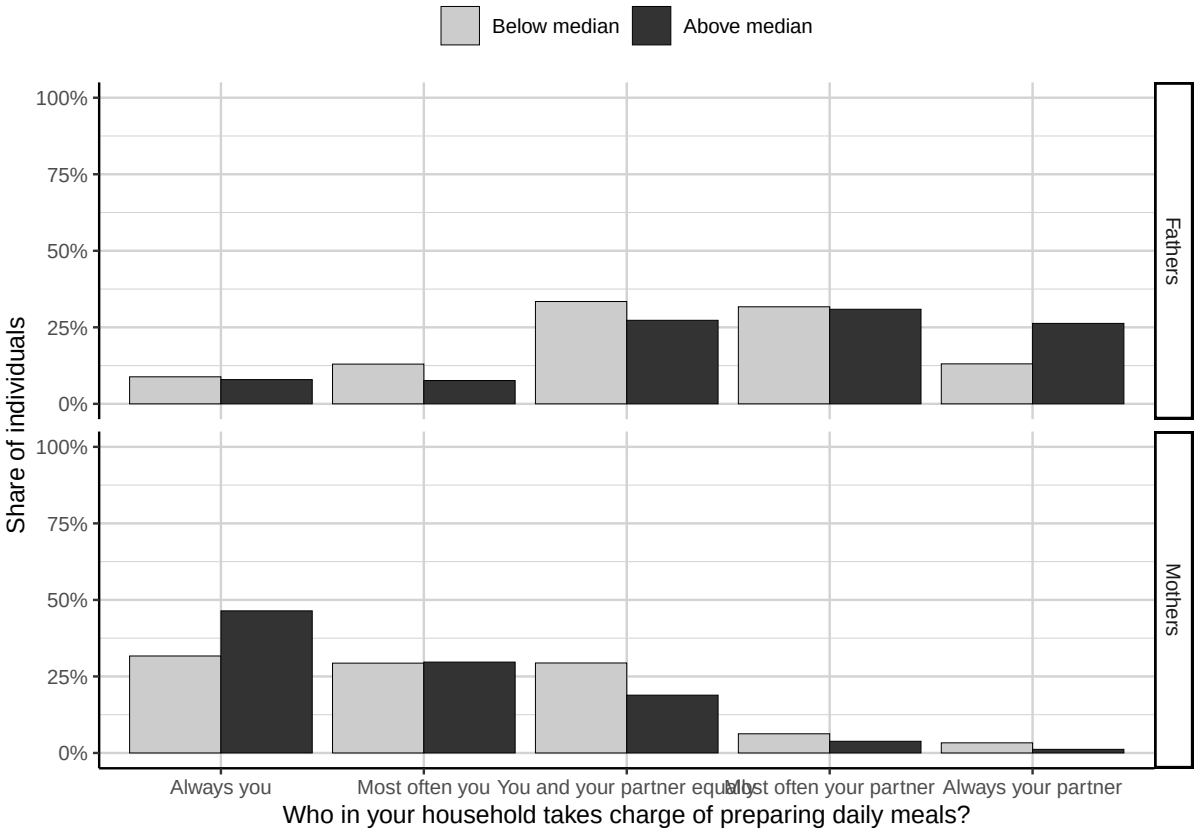



Immigrant parents' distribution along the different levels of survey item **I_OPIPOL**. The median is that of the first component of the PCA estimated over the six relevant survey items (see 2.2).

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure A.7.** Distribution of immigrant parents' self-reported allocation of household chores: daily meals

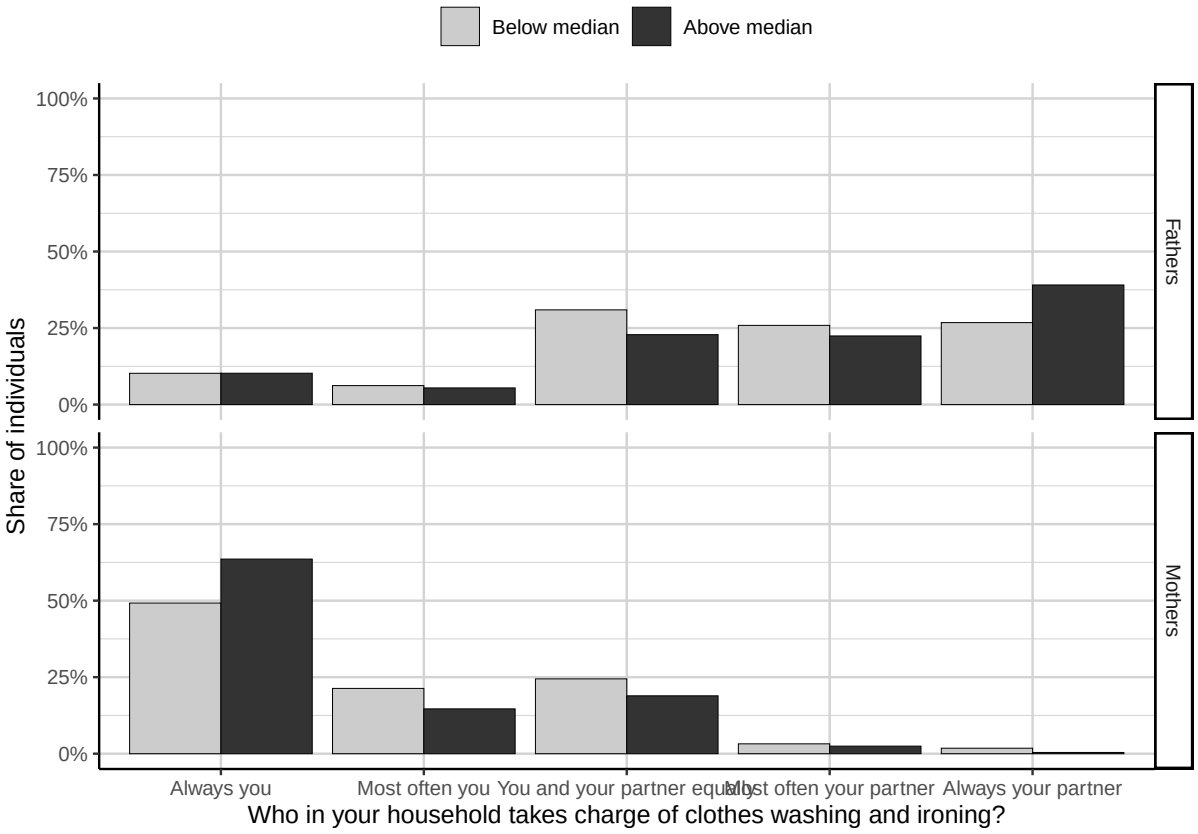



Immigrant parents' distribution along the different levels of survey item **C_REPAS**. The median is that of the first component of the PCA estimated over the six relevant survey items (see 2.2).

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure A.8.** Distribution of immigrant parents' self-reported allocation of household chores: clothes washing and ironing




Immigrant parents' distribution along the different levels of survey item **C_LINGE**. The median is that of the first component of the PCA estimated over the six relevant survey items (see 2.2).

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

immigrants from Western Europe are typically the least likely to hold traditional gender views, whereas these attitudes are more prevalent among immigrants from African countries, both North African and Sub-Saharan.

**Table A.1.** First-generation immigrant parents with traditional gender-related attitudes: by mothers' country of birth

| Country of birth | Sample size | Population size | Share with traditional attitudes |
|---|---|---|---|
| Spain | 48 | 17,600 | 0.14 |
| Germany | 35 | 14,100 | 0.17 |
| United Kingdom | 37 | 15,000 | 0.18 |
| Italy | 37 | 15,200 | 0.20 |
| Belgium | 31 | 14,800 | 0.27 |
| Poland | 31 | 13,800 | 0.42 |
| China | 117 | 14,000 | 0.44 |
| Vietnam | 88 | 7,900 | 0.47 |
| Romania | 43 | 25,300 | 0.49 |
| Portugal | 189 | 76,200 | 0.51 |
| Russia | 45 | 14,100 | 0.64 |
| Algeria | 218 | 94,000 | 0.68 |
| Tunisia | 33 | 30,100 | 0.69 |
| Morocco | 202 | 101,100 | 0.73 |
| Cameroon | 39 | 11,000 | 0.74 |
| Senegal | 58 | 15,400 | 0.77 |
| Turkey | 167 | 32,100 | 0.79 |
| Côte d'Ivoire | 40 | 12,900 | 0.80 |
| Congo - Brazzaville | 34 | 13,100 | 0.89 |
| Congo - Kinhasa | 42 | 15,400 | 0.90 |

Traditional gender-related attitudes are defined by scoring above median on the first component of the PCA of the relevant survey items. *Population.* First-generation immigrant mothers living in mainland France in 2019-2020 *Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020).

## A.4 Immigrants with missing data on attitudes

**Table A.2.** First-generation immigrant parents with traditional gender-related attitudes: by fathers' country of birth

| Country of birth | Sample size | Population size | Share with traditional attitudes |
|---|---|---|---|
| United Kingdom | 30 | 11,900 | 0.07 |
| Germany | 23 | 11,700 | 0.18 |
| Belgium | 29 | 10,700 | 0.19 |
| Spain | 44 | 19,100 | 0.43 |
| Mali | 31 | 7,900 | 0.49 |
| Italy | 33 | 15,000 | 0.51 |
| Portugal | 176 | 77,200 | 0.51 |
| Romania | 25 | 14,100 | 0.62 |
| Senegal | 74 | 21,500 | 0.64 |
| Cameroon | 25 | 7,700 | 0.66 |
| China | 61 | 8,300 | 0.67 |
| Congo - Kinhasa | 32 | 9,700 | 0.67 |
| Tunisia | 61 | 51,300 | 0.71 |
| Algeria | 247 | 114,900 | 0.72 |
| Congo - Brazzaville | 31 | 10,700 | 0.76 |
| Côte d'Ivoire | 45 | 11,700 | 0.76 |
| Turkey | 212 | 39,000 | 0.78 |
| Morocco | 254 | 121,800 | 0.78 |

Traditional gender-related attitudes are defined by scoring above median on the first component of the PCA of the relevant survey items. *Population.* First-generation immigrant fathers living in mainland France in 2019-2020 *Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020).

**Table A.3.** Second-generation immigrant parents with traditional gender-related attitudes: by mothers' parents' countries of birth

| Father | Mother | Sample size | Population size | Share with traditional attitudes |
|---|---|---|---|---|
| France | Italy | 29 | 15,000 | 0.13 |
| Italy | France | 64 | 43,700 | 0.21 |
| Italy | Italy | 30 | 19,200 | 0.23 |
| France | Spain | 32 | 18,300 | 0.25 |
| Portugal | France | 36 | 22,300 | 0.26 |
| Spain | France | 29 | 22,200 | 0.27 |
| Algeria | France | 65 | 31,100 | 0.27 |
| Spain | Spain | 40 | 29,500 | 0.32 |
| France | Germany | 25 | 10,000 | 0.35 |
| Portugal | Portugal | 95 | 58,400 | 0.39 |
| Tunisia | Tunisia | 56 | 27,600 | 0.41 |
| Algeria | Algeria | 204 | 90,500 | 0.50 |
| Morocco | Morocco | 104 | 53,200 | 0.57 |
| Turkey | Turkey | 64 | 9,400 | 0.80 |

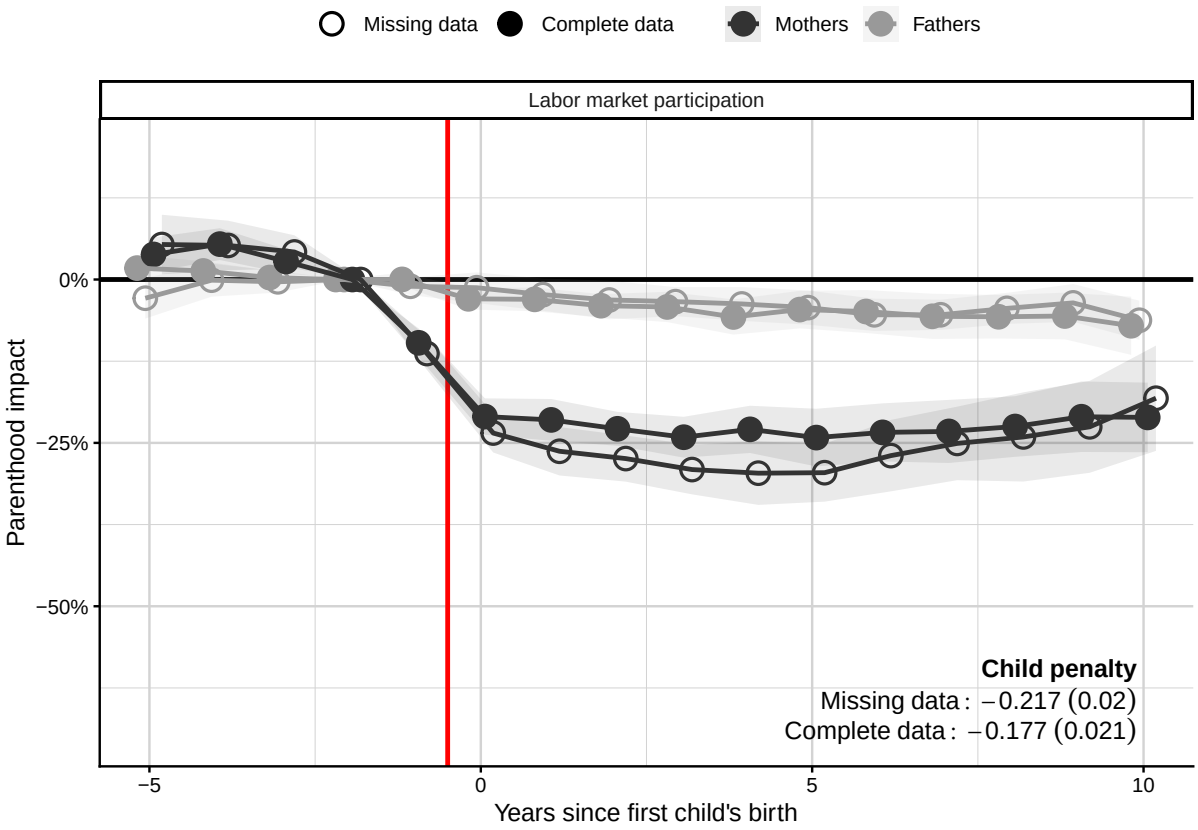
Traditional gender-related attitudes are defined by scoring above median on the first component of the PCA of the relevant survey items. *Population.* Second-generation immigrant mothers living in mainland France in 2019-2020 *Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020).

**Table A.4.** Second-generation immigrant parents with traditional gender-related attitudes: by fathers' parents' countries of birth

| Father | Mother | Sample size | Population size | Share with traditional attitudes |
|---|---|---|---|---|
| Spain | Spain | 33 | 27,700 | 0.15 |
| France | Spain | 35 | 23,100 | 0.22 |
| Spain | France | 33 | 22,600 | 0.24 |
| Portugal | Portugal | 101 | 61,700 | 0.26 |
| Italy | Italy | 43 | 34,800 | 0.32 |
| France | Italy | 36 | 24,100 | 0.33 |
| Italy | France | 55 | 45,400 | 0.33 |
| Algeria | France | 44 | 21,400 | 0.36 |
| Tunisia | Tunisia | 37 | 19,500 | 0.45 |
| Algeria | Algeria | 190 | 91,800 | 0.48 |
| Portugal | France | 35 | 23,100 | 0.48 |
| Morocco | Morocco | 69 | 36,000 | 0.63 |
| Turkey | Turkey | 68 | 9,000 | 0.80 |

Traditional gender-related attitudes are defined by scoring above median on the first component of the PCA of the relevant survey items. *Population.* Second-generation immigrant fathers living in mainland France in 2019-2020 *Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020).

**Figure A.9.** Child penalty in labor market participation for immigrant parents: by completeness of the data, balanced on pre-birth characteristics and fertility decisions




Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Table A.5.** Immigrant parents average outcomes: by availability of the values and attitudes data

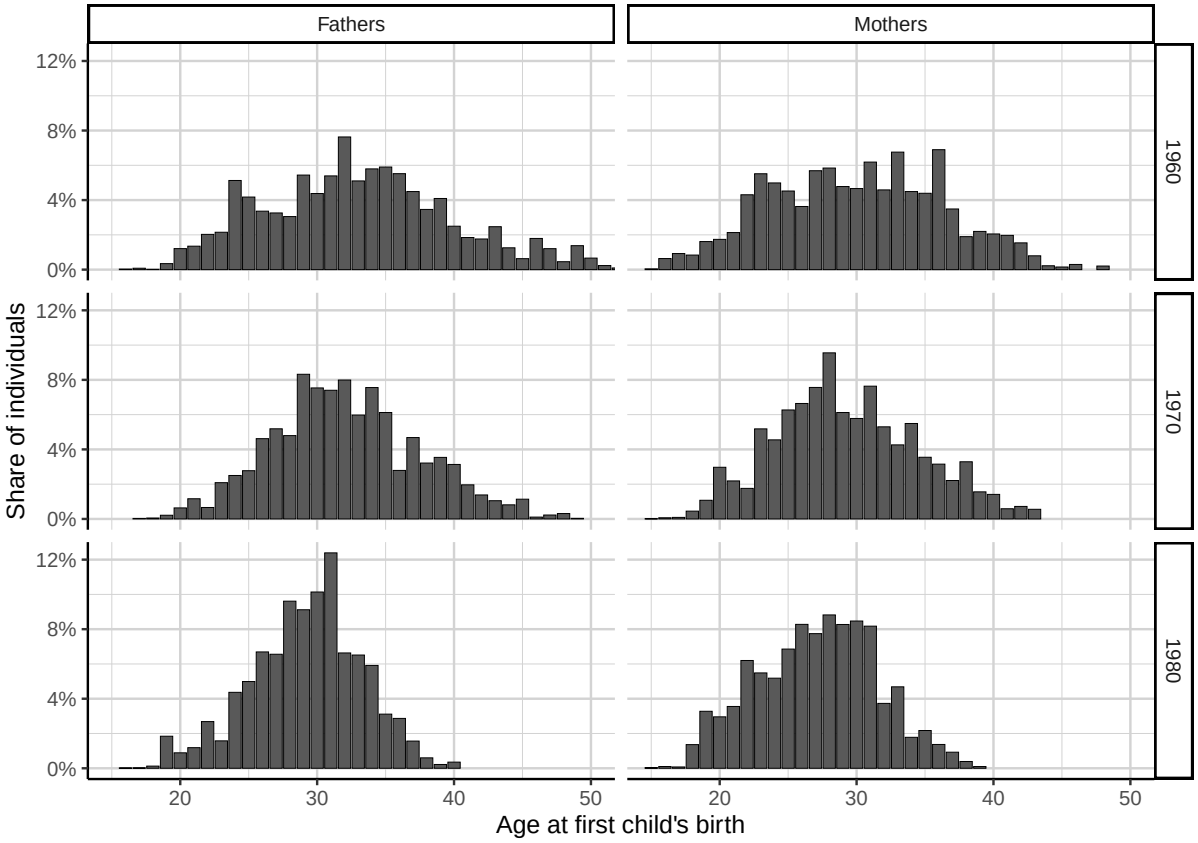
| | Fathers | | Mothers | |
|---|---|---|---|---|
| | Missing data | Complete data | Missing data | Complete data |
| Sample size | 2,119 | 3,284 | 2,915 | 3,572 |
| Population size | 805,000 | 1,410,000 | 1,056,000 | 1,453,000 |
| Year of birth | 1975 | 1974 | 1975 | 1975 |
| Age at first relationship | 24.4 | 24.3 | 22.2 | 22.0 |
| Age at first cohabitation | 26.8 | 26.4 | 24.1 | 24.1 |
| Age at first child's birth | 30.7 | 31.4 | 27.7 | 28.6 |
| Total number of children | 2.4 | 2.2 | 2.5 | 2.2 |
| Age at the end of education | 19.4 | 20.1 | 19.5 | 20.4 |
| Self-reported discrimination | 0.22 | 0.25 | 0.19 | 0.23 |
| First-generation immigrant | 0.68 | 0.55 | 0.69 | 0.55 |

Missing data occurs whenever an immigrant fails to answer one of the items used for the computation of the gender-related attitudes index, or a question related to her family environment when she was a child. *Population.* Immigrant parents living in mainland France in 2019-2020 *Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

# B Age at first child's birth

Figure B.1 shows the distribution of age at first childbirth in our sample, disaggregated by gender and generation. This demonstrates that, as long as we limit our focus to the consequences of parenthood within the first 10 years after becoming a parent, there is sufficient variation in age at first childbirth to identify relevant average treatment effects.

**Figure B.1.** Distribution of immigrant parents' age at first child's birth: by decennial generation




Immigrant parents' distribution along age at first child's birth, by decennial generation.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

# C Additional evidence from administrative data

## C.1 Data

### C.1.1 Identifying immigrants

By definition, the empirical analysis in this paper relies on our ability to distinguish between immigrants and natives within the French population. While the TeO2 survey focuses on immigrants' lived experiences and inherently incorporates this distinction, the same is not true for the EDP data. Specifically, our empirical strategy requires two key elements: (i) the ability to differentiate between immigrants and natives; and (ii) knowledge of immigrants' countries of origin. Since this paper examines both first- and second-generation immigrants, the challenge is twofold: collecting data on the place of birth of EDP individuals and their parents.

For EDP individuals, the data already include synthetic information on their place of birth, making it straightforward to distinguish first-generation immigrants from the rest of the French population. The situation is more complex, however, when considering the place of birth of EDP individuals' parents. Specifically, the most direct source of this information would be birth registers. Yet, birth registers are missing for a significant portion of the sample, and even when collected, a non-negligible share of the certificates lacks this information. To address this, we combine birth certificate data with additional information from exhaustive censuses. Ultimately, this procedure allows us to recover information on the parents' place of birth for over 90% of the sample, compared to a baseline recovery rate of 50% for the most affected cohorts born in the 1980s and 1990s.[1]

### C.1.2 Identifying migration outflows

As detailed in C.1.4, information on labor market outcomes is derived from payroll tax data, which cover the universe of salaried employees. Consequently, the absence of an EDP individual from the payroll tax records at a given point in time is interpreted as evidence of nonemployment. This approach, however, is subject to two main limitations. First, it does not account for non-salaried employment. Second, the fundamental design of the EDP data is not to assess the characteristics of EDP individuals annually but to track information for individuals who, at some point, were identified as part of the sample. In other words, the EDP data do not aim to assess employment status on a yearly basis for a fixed set of individuals known to reside in France but rather to search payroll tax data for individuals previously included in the sample, regardless of whether they remain part of the French population.

As a result, our approach may misclassify as nonemployed individuals who have actually left France. This issue is particularly relevant for this study, which focuses on immigrants, as they are more likely than natives to leave France later in life. To address this problem, we rely on recent methods that combine exhaustive census data with comprehensive income tax records to identify migration outflows (Caron and Reeve, 2018; Solignac and Dutreuilh, 2018). An additional benefit of this approach is that it allows us to estimate the approximate date when first-generation immigrants initially arrived in France.[2]

### C.1.3 Fertility measurement

By construction, the EDP data include birth certificates for the children of EDP individuals, which provides a straightforward way to track fertility events. However, many of these birth registers are missing for children born in the 1980s and 1990s. Additionally, the birth certificates only record children born in France, which poses a challenge for first-generation immigrants who may have had children prior to

[1] Further details on this issue, along with the solution, are available from the authors upon request as a separate note.

[2] Further details on this issue, along with the solution, are available from the authors upon request as a separate note.

their arrival in the country. To address this issue, we supplement the birth register data with information from: (i) children reported as part of families where EDP individuals were identified as parents in the 1990 and 1999 exhaustive censuses; and (ii) children reported as living in the same household as EDP individuals in income tax records between 2011 and 2018. For the latter, we focus on children living with first-generation immigrants, as the birth certificate data are complete for the youngest cohorts.[3]

#### C.1.4 Labor market outcomes

In the EDP data, labor market histories are derived from payroll tax registers known as *Déclarations Annuelles de Données Sociales* (DADS). By law,[4] French employers are required to complete a DADS form for every employee subject to payroll taxes. These forms contain detailed information on days paid, hours paid, occupation, industry, gross and net wages, other job characteristics (start, duration, and end of employment periods, as well as part-time employment), employer characteristics (size and location), and individual characteristics (age, gender, and municipality of residence).

In principle, the data are available from 1967 onwards, but their scope has not remained constant over time. Specifically, the data do not include public sector workers before 1988, agricultural workers or workers in overseas territories before 2002, or salaried employees paid directly by households before 2009. We have chosen to exclude data prior to 1988 and omit information on agricultural workers, overseas territories, and household employees, in order to rely on consistent measures of labor earnings and labor supply.

In the context of this paper, our main variables of interest are: (i) net real annual labor earnings, defined as the sum of all salaried earnings across all employers; (ii) time worked, measured as both the number of paid hours and the number of days worked; and (iii) hourly wages, defined as the ratio of annual earnings to time worked.[5]. The key points are that, with a few exceptions: (i) maternity leave allowances paid by social security are not included in our measure of earnings; (ii) the duration of maternity leave, in days, is counted as a positive number of days worked; (iii) the number of hours worked during maternity leave is zero; and (iv) the number of hours worked (hourly wages) is overestimated (underestimated) for workers not paid by the hour during years when they take maternity leave.

Information regarding working time is not fully available before 1995.[6]

#### C.1.5 Sample construction and summary statistics

Our sample is a subset of the EDP sample. Specifically, our empirical analysis requires that we focus on individuals of whom countries of birth and parents' countries of birth (for those born in France) are observed, as well as complete labor market histories. These requirements lead us to focus on individuals born on October, $1^{st}$ to $4^{th}$ on even-numbered years after 1967. The estimation of child penalties is based on differences among parents and requires sufficiently long labor market histories. For this reason, we restrict ourselves to individuals with at least one child and we drop all individuals born in 1990 or later. To be consistent with the scope of the survey data, we discard individuals who did not fill out an income tax form in 2019, so as to limit ourselves to immigrant parents living in France in 2019. This leaves us with 25,800 individuals who represent 4.7 million first and second-generation immigrant parents living in France.

[3] Further details on this issue, along with the solution, are available from the authors upon request as a separate note.

[4] Failure to submit DADS forms or providing incorrect or missing information is subject to fines.

[5] Further details on the measurement of earnings and time worked are available from the authors upon request as a separate note.

[6] Further details on this issue, along with the solution, and few other technicalities, are available from the authors upon request as a separate note.

**Table C.1.** Immigrant parents average outcomes: by gender

| | Fathers | Mothers |
|---|---|---|
| Sample size | 12,028 | 13,749 |
| Population size | 2,187,000 | 2,500,000 |
| Year of birth | 1977 | 1978 |
| Age at first child's birth | 30.0 | 27.6 |
| Total number of chidren | 2.3 | 2.4 |
| Age at first job | 23.0 | 19.3 |
| First-generation immigrant | 0.55 | 0.55 |
| Age when first arrived in France (for first-generation immigrants) | 29.5 | 29.2 |

Age at first job is only based on salaried jobs held in France. *Population.* Immigrant parents living in mainland France in 2019-2020 *Source.* CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

## C.2 Validating the child penalty estimated from survey data

### C.2.1 Parallel trends assumption

Although educational attainment is not directly observed in the administrative registers, it is still possible to assess the amount of bias resulting from omitting educational attainment in the grouping of individuals. Indeed, since entire labor market trajectories are collected in the data, we can group individuals by gender × year-of-birth × age at first job, which is feasible given the large sample size, and compare the results with those obtained using gender × decennial generation groupings, which are our baseline estimates.

Figures C.1 and C.2 display the results of these two analyses based on the administrative data. The main takeaway from this comparison is that, as long as we are interested in the aggregate child penalty — that is, the difference between mothers and fathers in the consequences of parenthood, averaged over time — not accounting for this potential threat to the credibility of the parallel trends assumption does not change the results.

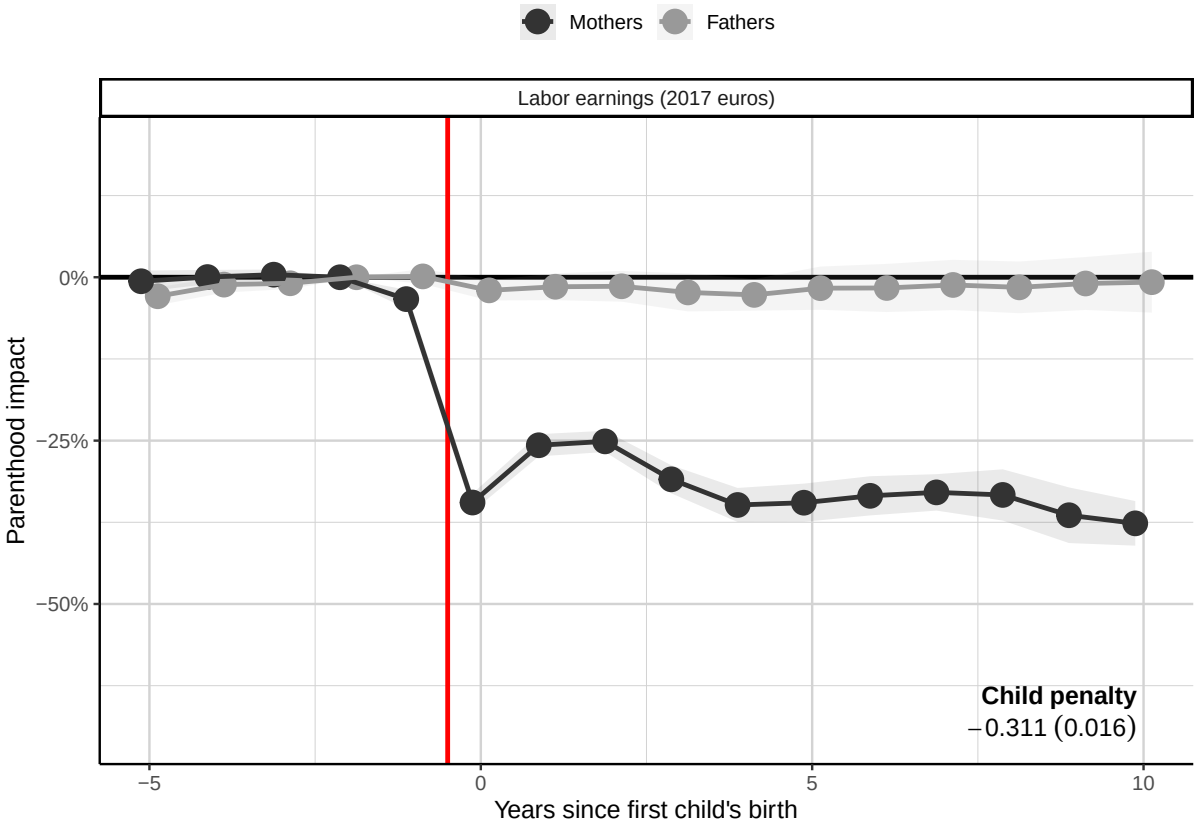
Based on this result, for the remainder of this paper, we will present estimates from administrative data based on the most restrictive grouping, in order to provide an accurate picture of the dynamics of the effects. When it comes to estimates from survey data, we will maintain our baseline grouping, emphasizing that what truly matters is the aggregate child penalty, rather than the year-to-year dynamics of the effects.

### C.2.2 Comparisons across datasets

To assess whether survey data provide reliable estimates of the child penalty, we focus on the only labor outcome common to both the TeO2 and EDP data, namely salaried employment. Figures C.3 and C.4 present the results of this analysis. These confirm that we obtain very similar results for our population of first- and second-generation immigrants from both datasets.

An additional validation exercise for our approach to the child penalty is to compare our results with those of the existing literature. Specifically, our closest match is the child penalty estimation exercise by Meurs and Pora (2019), which relies on the same administrative data and comparisons as we do, although they consider the entire French population, whereas we focus on first- and second-generation immigrants. We find that our estimates are remarkably similar to theirs, with a roughly 30% decline in earnings and a 15% decline in salaried employment due to motherhood.

**Figure C.1.** Child penalty in labor earnings for immigrant parents: baseline estimate

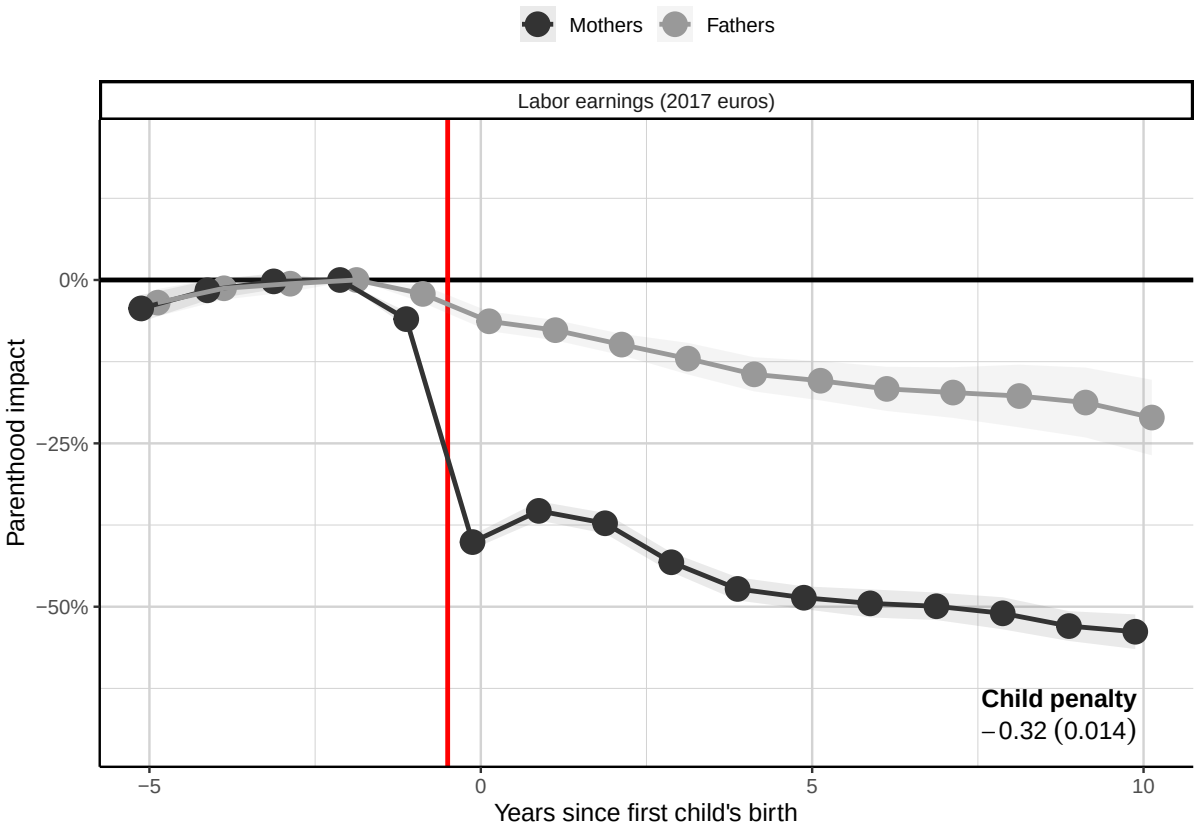



Parenthood impact is identified from comparisons between parents of the same cohort (year of birth) who got their first salaried job at the same time, but had their first child at different ages (at least two years after their first salaried job), and displayed relative to the counterfactual earnings level. The child penalty is the difference in relative parenthood impact between men and women, averaged over the first 10 years after their first child is born. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

**Figure C.2.** Child penalty in labor earnings for immigrant parents: comparisons *à la* Kleven, Landais, and Søgaard (2019)

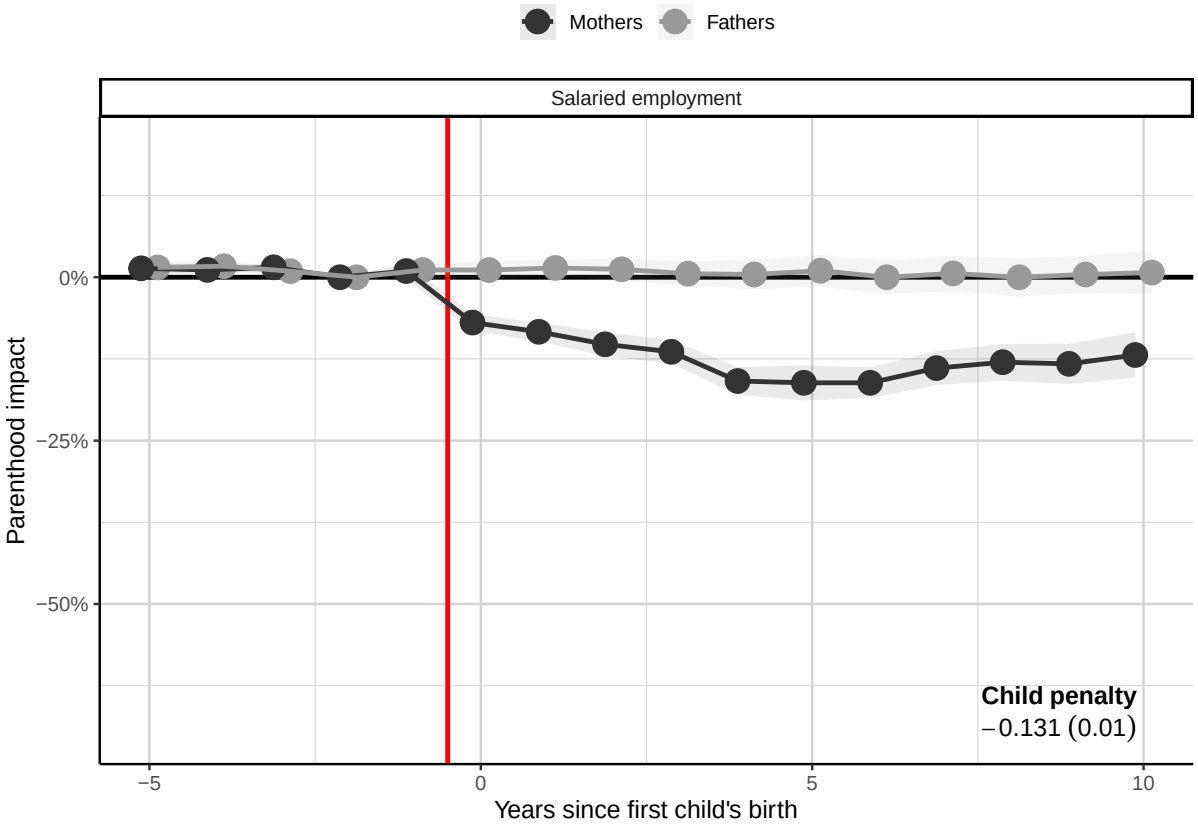



Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual earnings level. The child penalty is the difference in relative parenthood impact between men and women, averaged over the first 10 years after their first child is born. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

**Figure C.3.** Child penalty in salaried employment for immigrant parents: estimates from administrative registers

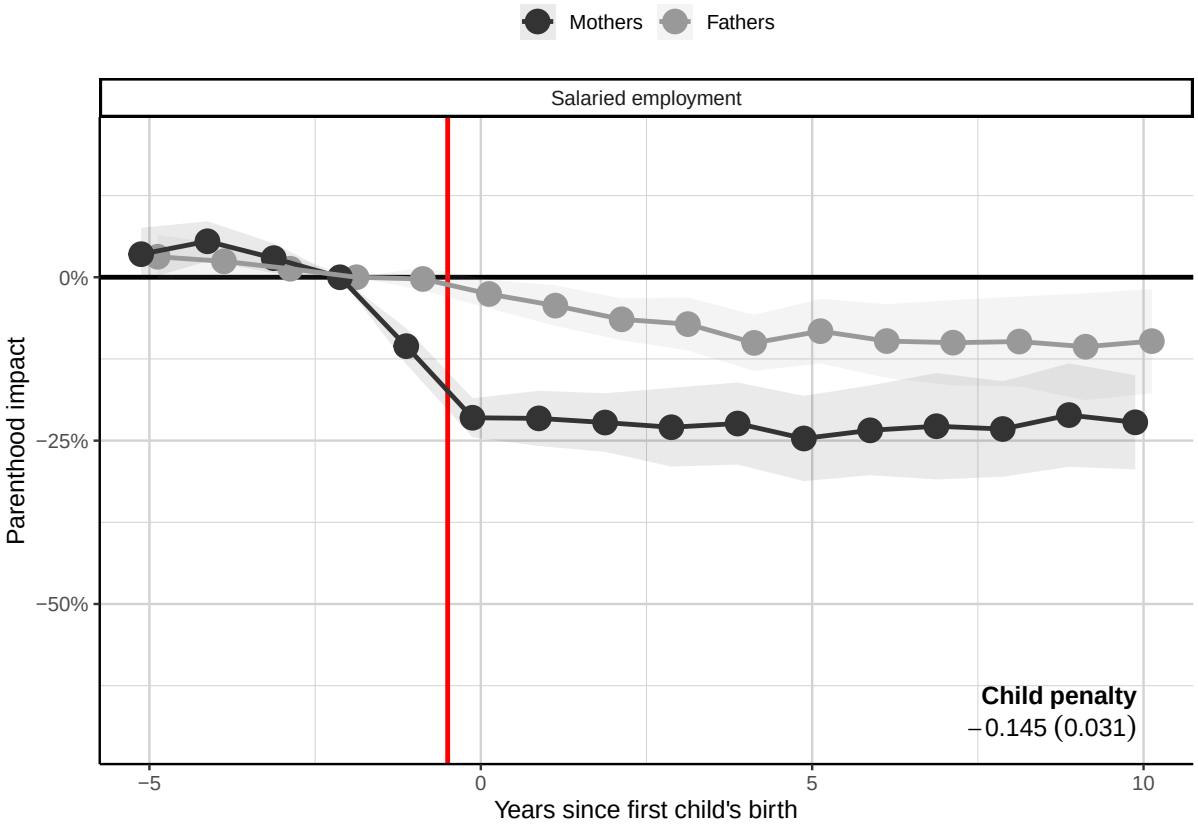



Parenthood impact is identified from comparisons between parents of the same cohort (year of birth) who got their first salaried job at the same time, but had their first child at different ages (at least two years after their first salaried job), and displayed relative to the counterfactual salaried employment rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

**Figure C.4.** Child penalty in salaried employment for immigrant parents: estimates from survey data




Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual salaried employment rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

# D Synthesizing the information from the EDP registers

## D.1 Countries of origin

A synthetic variable representing the country of birth is available for every EDP individual. This allows us to identify first-generation immigrants. Identifying second-generation immigrants is more challenging, as no synthetic variable is available for the entire sample regarding *ego*'s parents' countries of birth. A natural solution would be to rely on birth certificate data. However, this solution is not straightforward because (i) no birth certificate data are available for individuals born before 1967 (see Figure D.1); (ii) no birth certificate data are available for individuals born in January, April, or July before 2004 (see Figure D.2); (iii) a large portion of the birth certificate data is missing for those born in October during the 1980s and 1990s (see Figure D.3); and (iv) even when birth certificate data are available, the information regarding parents' country of birth is missing for many individuals born in the 1980s and 1990s (see panel a of Figure D.4).

When birth certificate information is unavailable, we develop a solution based on census data. Specifically, we rely on data from the 1990 and 1999 comprehensive censuses. This data are only available for individuals born in October, so we discard data for those born in January, April, and July. A key limitation is that the census form did not collect information on parents' countries of birth. Instead, we rely on the family delineation performed by Insee after the census collection. This delineation is based on whether people live in the same dwelling, using information collected about family links between cohabitants. As a result, we determine *ego*'s parents' countries of birth based on the assumption that *ego* was observed living with her parents as a child. An additional limitation is that the census did not record all possible family links within a dwelling. Specifically, the family reconstruction assumes that when an adult self-reported as a parent of a child living with her, her partner was considered the other parent. Although this assumption is imperfect, we proceed with it. Ultimately, our approach relies on:

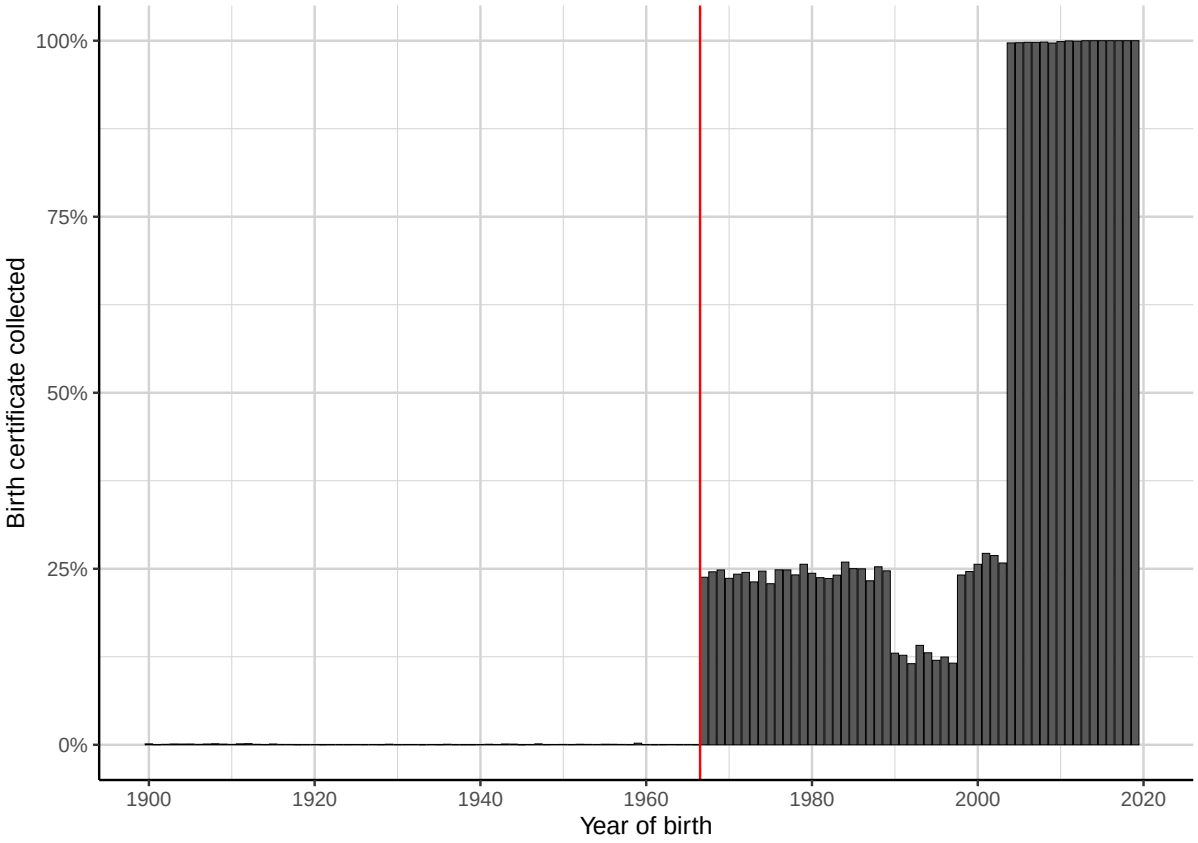
1. *ego*'s parents' countries of birth from the birth certificate data, when available;
2. self-reported countries of birth of adults identified as parents in the 1990 comprehensive census, based on *ego* being determined a child in the family;
3. self-reported countries of birth of adults identified as parents in the 1999 comprehensive census, based on *ego* being determined a child in the family;

The rationale for this choice is that the older the observation date in the census data, the higher the likelihood that the adults identified as *ego*'s parents are indeed her biological parents. This approach enables us to recover a large portion of the missing data: for the most affected cohorts, the missing data rate decreases from over 50% to approximately 10% (see Figure D.4). We further validate the quality of this information by cross-checking it with Insee's countries database, confirming that in the vast majority of cases, recovered information corresponds to an actual country (see Figure D.5).

## D.2 Migration outflows

Accurately computing the employment-to-population ratio to identify the child penalty requires an accurate denominator, namely knowing whether an individual currently resides in France. The reason for this is that in the labor market data, only employed individuals are observed. To address this issue, we rely on an approach proposed by Caron and Reeve (2018) and Solignac and Dutreuilh (2018), which combines two data sources that are independent of employment status and form part of the EDP data: census data and income tax returns data. Specifically, we compute for each individual in the sample the first and last times they were observed in either the census data or income tax returns. Because yearly

**Figure D.1.** Missing birth certificates in the EDP data: by year of birth

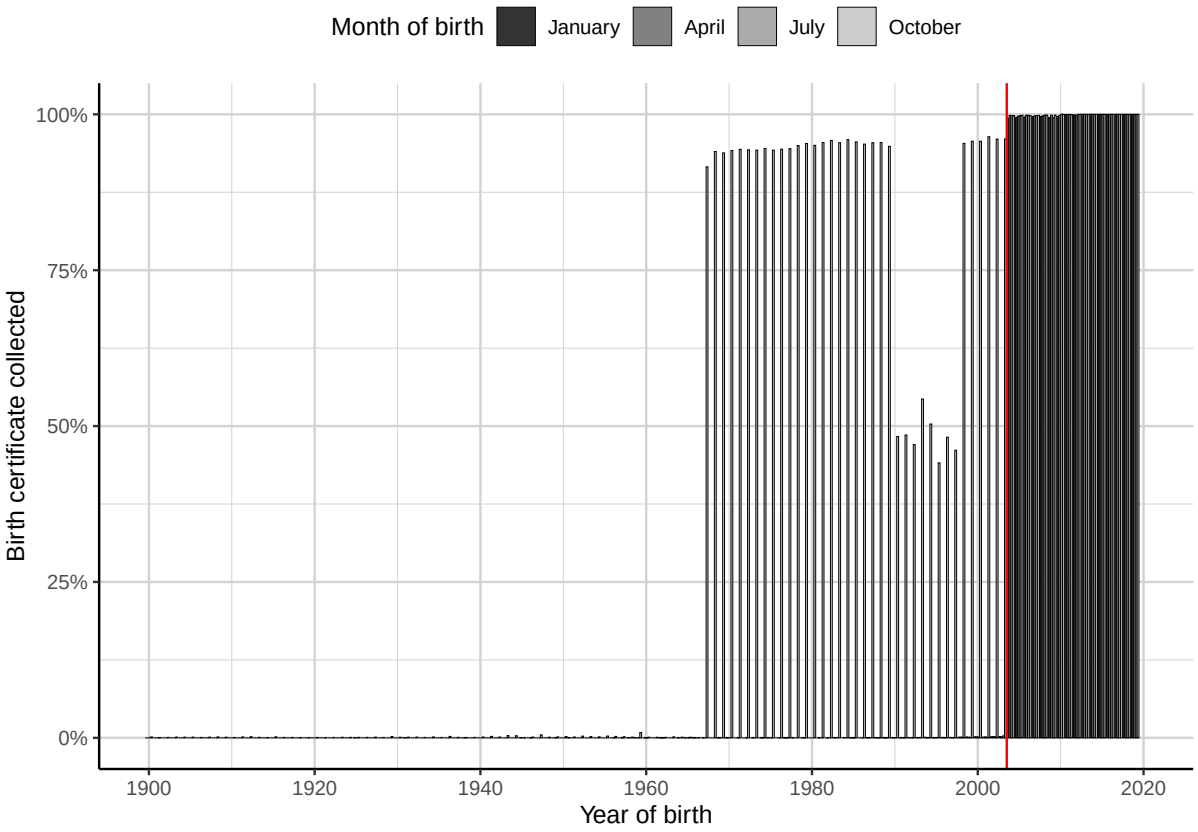



Share of EDP individuals who were born in France of whom the birth certificate is available in the data, by year of birth.

*Population.* Individuals who were born in France and sampled in the EDP data.

*Source.* CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

**Figure D.2.** Missing birth certificates in the EDP data: by month of birth

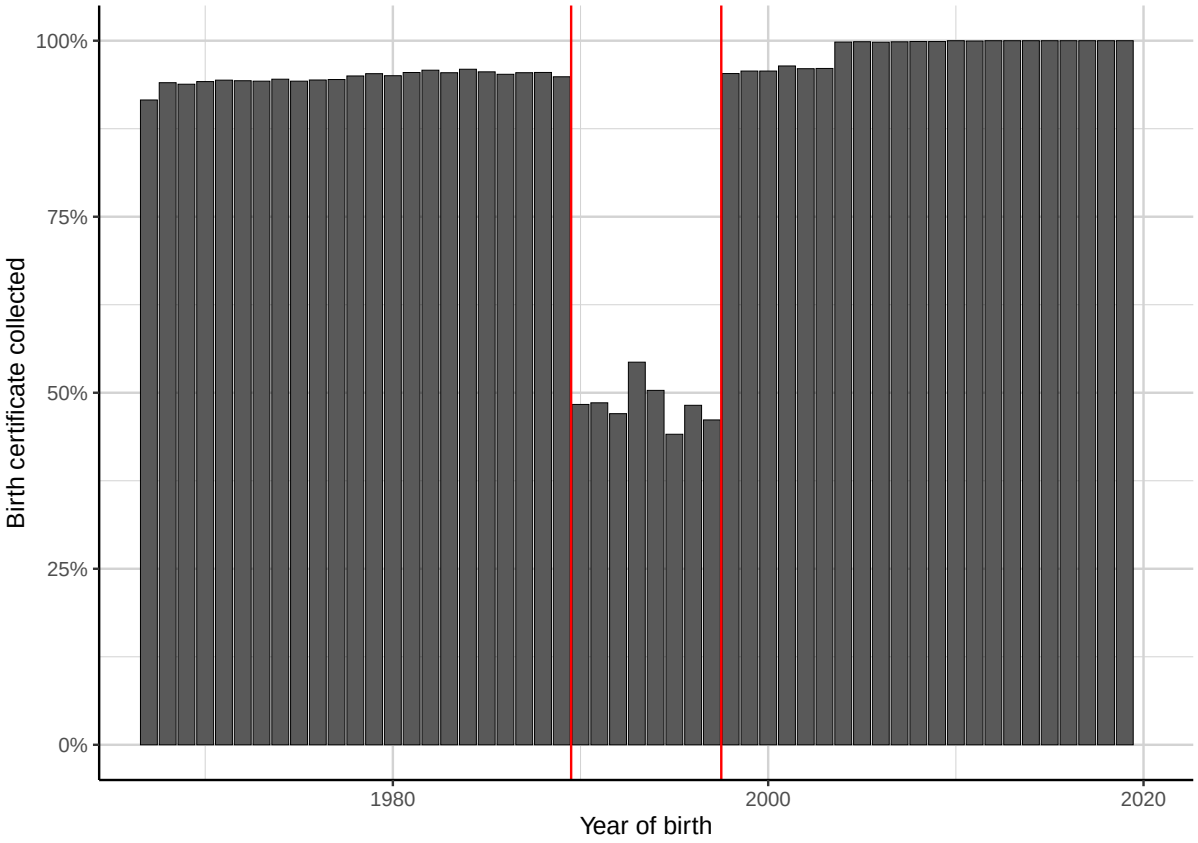



Share of EDP individuals who were born in France of whom the birth certificate is available in the data, by month of birth.

*Population.* Individuals sampled in the EDP data.

*Source.* CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

**Figure D.3.** Missing birth certificates in the EDP data: individuals born Oct, 1st to 4th



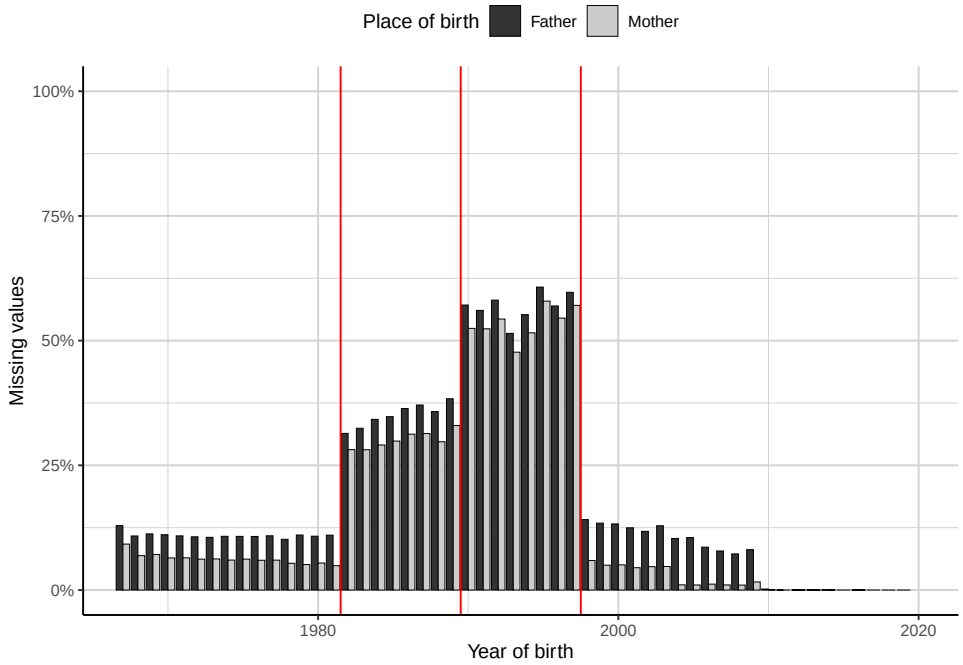

Share of EDP individuals who were born in France of whom the birth certificate is available in the data, by year of birth.

*Population.* Individuals born on October 1st to 4th and sampled in the EDP data.

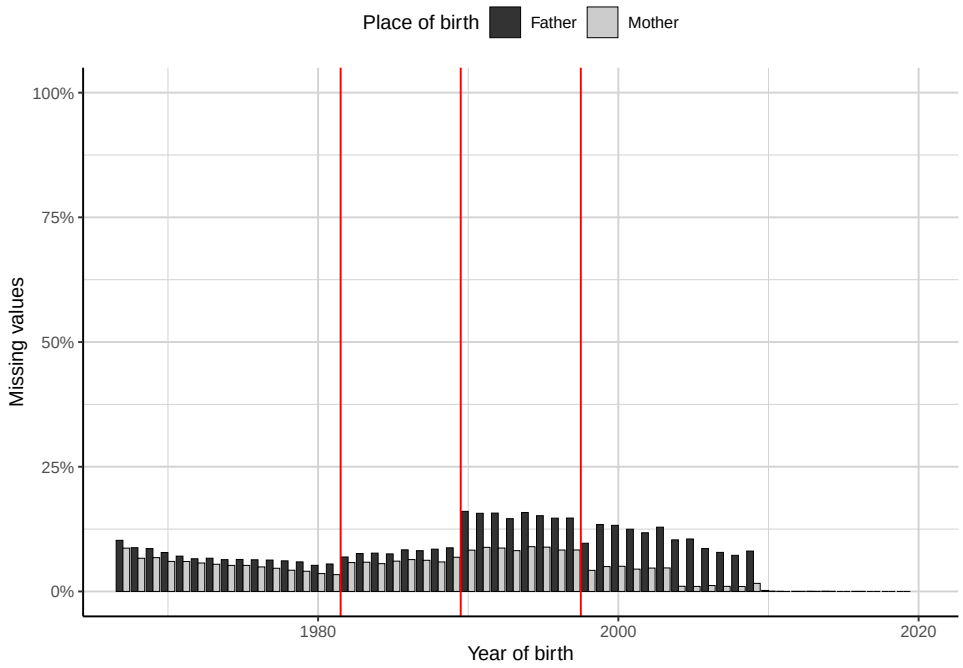
*Source.* CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

**Figure D.4.** Recollection of the information on parents' country of birth in the EDP data

**(a)** Before recollection




**(b)** After recollection

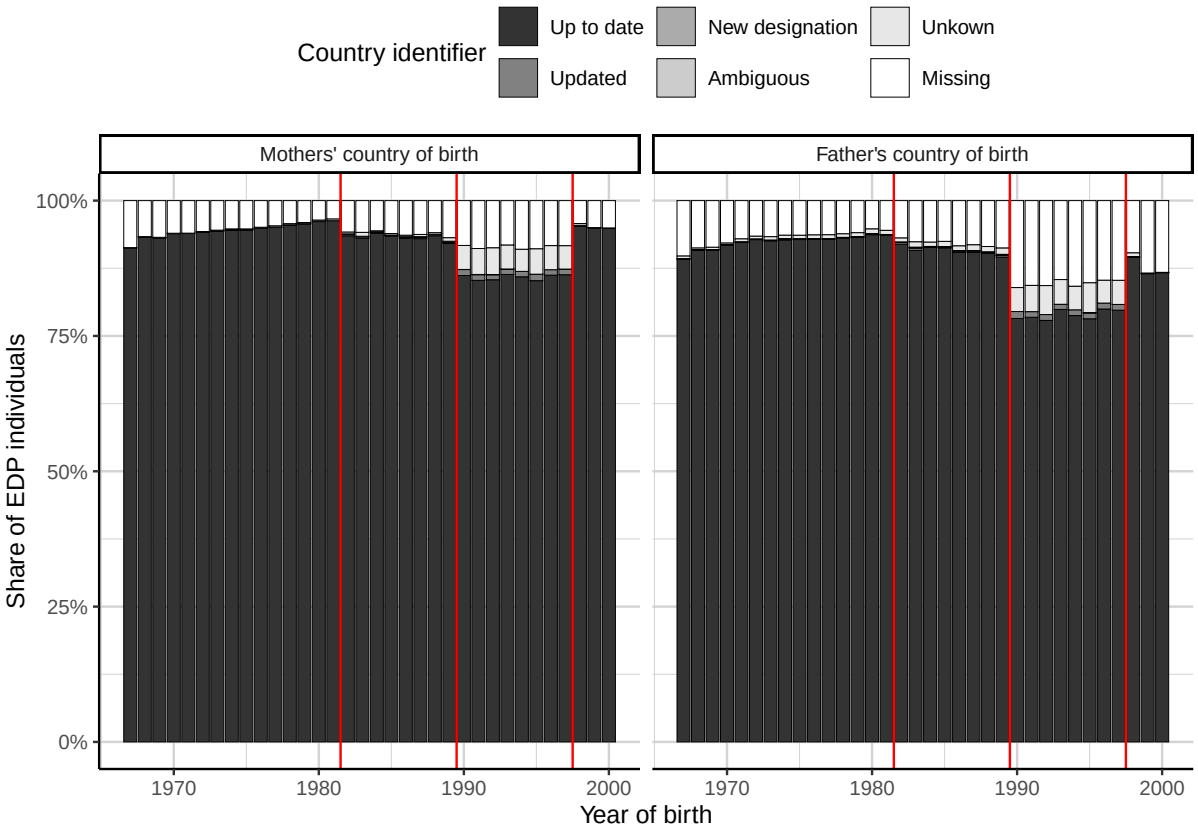



Share of EDP individuals who were born in France of whom parents' countries of birth is known, before and after recollection from comprehensive census data.

*Population.* Individuals born on October 1st to 4th and sampled in the EDP data.

*Source.* CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

**Figure D.5.** Quality of the recollected information on parents' country of birth in the EDP data




Assessment of the information regarding EDP individuals' parents' country of birth against Insee countries database.

*Population.* Individuals born on October 1st to 4th and sampled in the EDP data.

*Source.* CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

income tax data were not collected in the EDP before 2011, this method does not provide year-by-year indicators of French residence. For this reason, we exclude issues related to temporary emigration.

The share of individuals sampled in the EDP who were never observed in either the census data or income tax returns is small for those born in France: it is below 1% for individuals whose both parents were also born in France, and below 2% for those with at least one foreign-born parent. It is larger for individuals born outside France, amounting to 12.6%.

For individuals born in France, the first observation is usually the first census after their birth (see Figure D.6), given that we focus on people born between 1967 and 1990. For those born outside France, the first observation occurs later. The last observation is usually the last available year for income tax returns in the EDP data (2019). For individuals born outside France, this observation occurs earlier, in line with the literature, which has found that immigrants are more likely to leave France than natives.

## D.3 Fertility decisions

The most straightforward way to recover information about fertility events in the EDP data would be to use the birth certificate data. However, as the previous discussion highlights, this solution is not simple, as the birth certificate data are incomplete for part of the sample, particularly for children born in the 1980s and 1990s. Since we focus on potential parents born between 1967 and 1990, our analysis may underestimate the fertility of these individuals. Additionally, first-generation immigrants may have children born outside France, who are not covered by the birth certificate data.

We address this issue by relying on census data and income tax returns. Specifically, we add children already observed in the birth certificate data with:

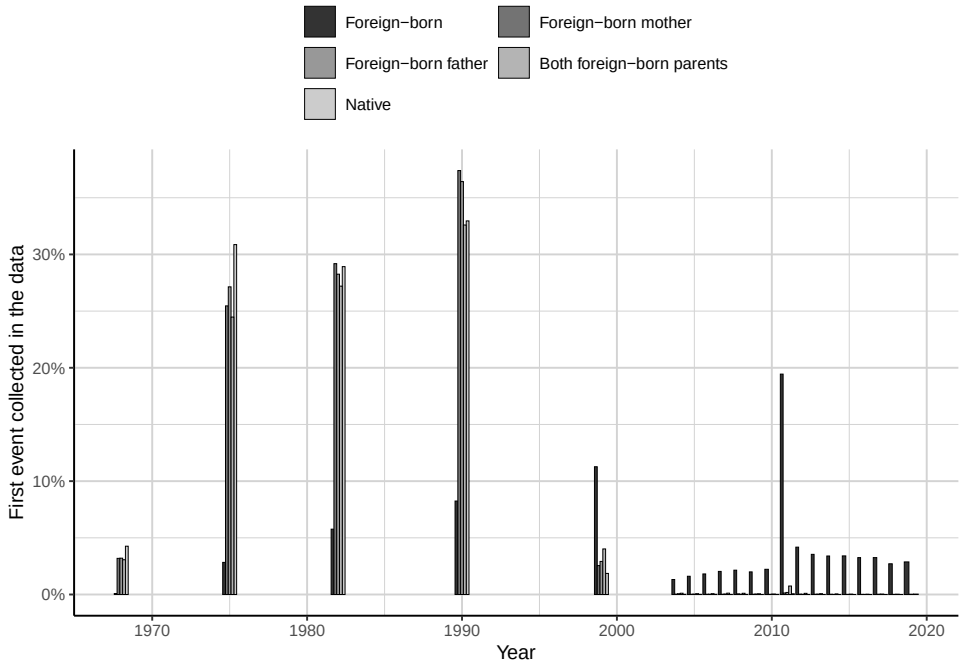
- children living in families (as defined in the census data, see D.1) where EDP individuals were identified as parents in the 1990 comprehensive census;
- children living in families (as defined in the census data, see D.1) where EDP individuals were identified as parents in the 1999 comprehensive census;
- dependent children listed in EDP individuals' income tax returns.

To ensure that we do not count the same children twice and to avoid categorizing as *ego*'s children those who are merely living with *ego*, we exclude from the count:

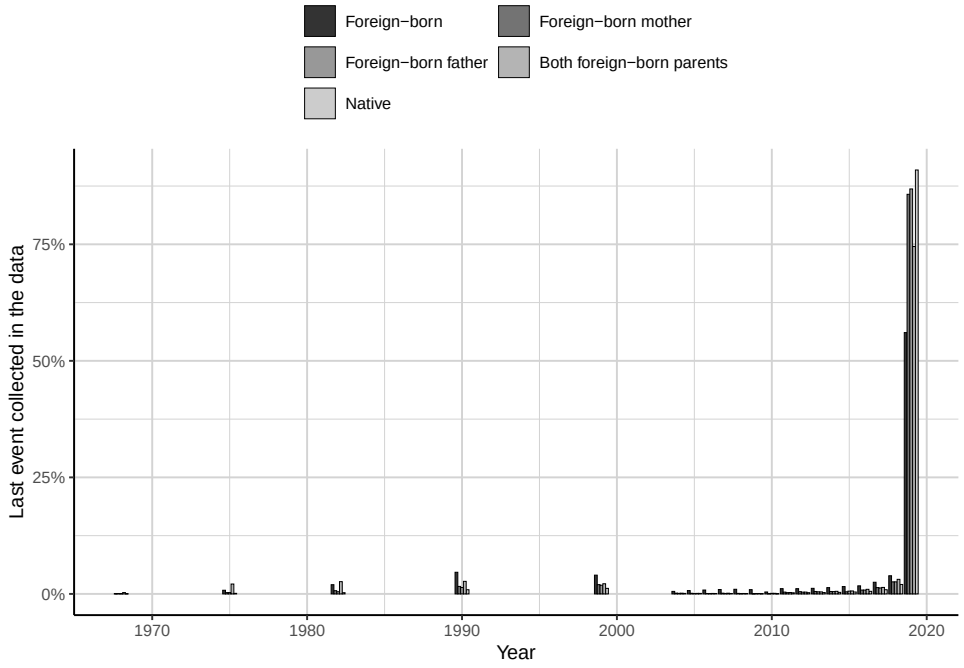
- children who only appear in the census data or income tax returns for individuals born on Oct $1^{st}$ or $4^{th}$ in France, since, assuming they did not leave France, the birth certificate data should be comprehensive for their children;
- children who only appear in the census data or income tax returns and were born either before 1982 or after 1997 for individuals born on Oct $2^{nd}$ or $3^{rd}$ in France, since, assuming they did not leave France, the birth certificate data should be comprehensive for these children;
- children who only appear in the census data or income tax returns and were born after their parents' arrival in France for individuals born on Oct $1^{st}$ or $4^{th}$ outside France, since, assuming they did not leave France, the birth certificate data should be comprehensive for these children;
- children who only appear in the census data or income tax returns and were born after their parents' arrival in France and outside the 1982-1997 time period for individuals born on Oct $1^{st}$ or $4^{th}$ outside France, since, assuming they did not leave France, the birth certificate data should be comprehensive for these children;
- children born less than 15 years after their potential parent.

**Figure D.6.** Inferring migration flows from the EDP data

**(a)** Inflows




**(b)** Outflows




Year of first and last appearance in EDP data, by migration status.

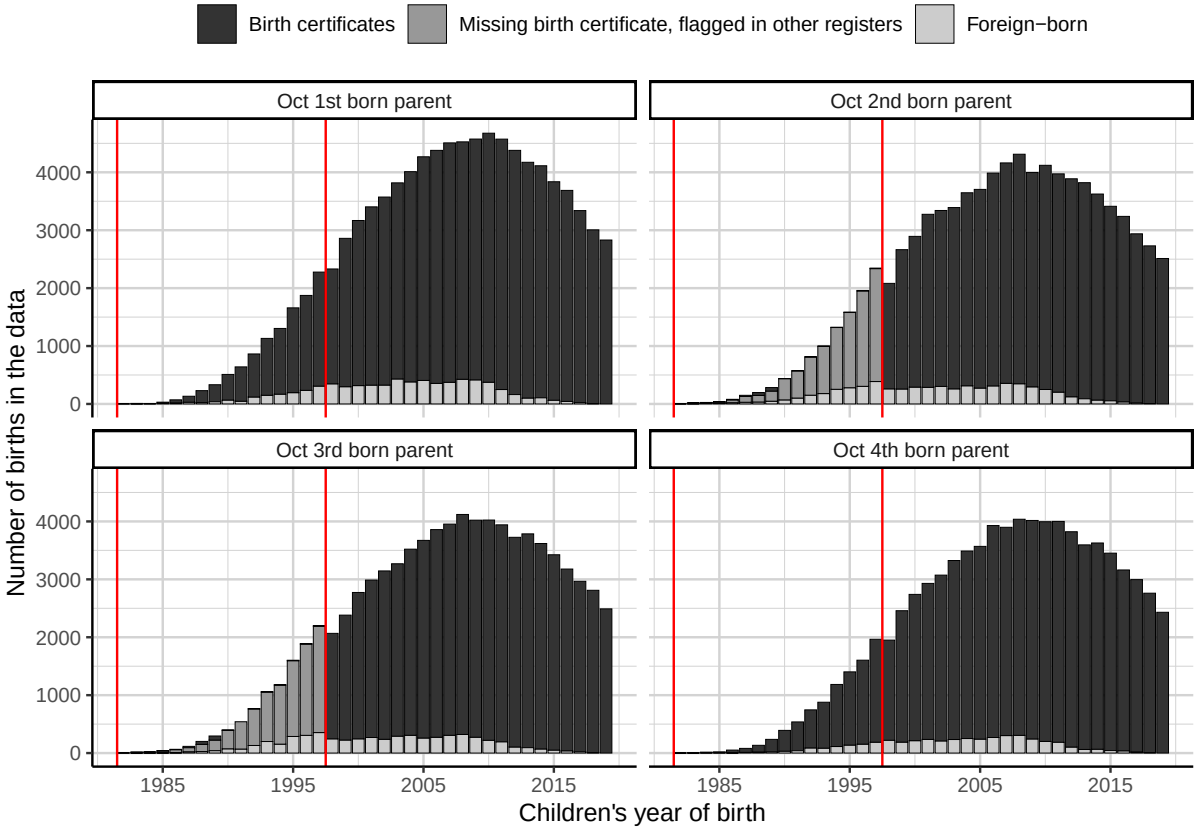
*Population.* Individuals born on October 1st to 4th between 1967 and 1990 and sampled in the EDP data.

*Source.* CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

To handle multiple births while avoiding double-counting the same child, we assume that two children born in the same year to the same EDP individual are the same child, unless both are observed in the same data source.

Ultimately, this approach enables us to fill the gap caused by the missing birth certificate data and allows us to identify the children of first-generation immigrants who were born before their arrival in France (see Figure D.7). When comparing individuals born on October 2$^{nd}$ or 3$^{rd}$, for whom the birth certificate data are not corrupted, with their counterparts born on October 1$^{st}$ to 4$^{th}$, for whom the birth certificate data are corrupted, we obtain very similar estimates regarding fertility decisions. There is a possibility that we slightly overestimate fertility before 1997 in the former group.

**Figure D.7.** Recollection of missing children in the EDP data




Number of childbirths in the EDP data, by year of birth of the child and day of birth of her EDP parent.

*Population.* Individuals born on October 1st to 4th between 1967 and 1990 and sampled in the EDP data.

*Source.* CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

## D.4 Labor market outcomes

### D.4.1 Earnings and working time measures

**Earnings** Our measure of labor earnings is based on net annual earnings. This measure aggregates all wages paid to an individual, including performance pay, bonuses, paid vacations, in-kind benefits, severance payments exceeding the legal minimum, and early retirement benefits (to the extent that these benefits exceed an amount approximately equal to the minimum wage), but excludes stock options. Social security contributions, public pension schemes, unemployment benefits, and other contributions, including two flat-rate taxes on earned income (CSG and CRDS), are subtracted from this amount to

compute our measure of net annual earnings. In this sense, we measure earnings before income taxes, but after some transfers.

Maternity leave allowances are paid by the Social Security administration and are therefore not part of our measure of earnings. However, they may be paid through the employer (*subrogation*): in this case, the employer pays the employee the equivalent of maternity leave allowances during her maternity leave and is later reimbursed by the Social Security administration. The employer then subtracts the maternity leave allowances that were advanced from the measure of earnings. Because the reimbursement occurs after the maternity leave, the decline in earnings may occur a few weeks later. Since we consider annual earnings, this issue only affects childbirths that occur at the end of the calendar year.

Lastly, in some firms the employer may be bound by collective agreement to complement earnings during maternity or sick leaves in addition to Social Security-provided allowances. This complement is part of labor earnings as measured by the DADS.

**Days** In the DADS dataset, days worked refer to the duration during which an employee is part of a firm's workforce within a given year. As a result, maternity and sick leaves, as well as paid vacations, are included in this measure of days, while periods of unemployment between two distinct employment spells are not. Additionally, this measure of days is capped at 360.

**Hours** In the DADS dataset, hours worked refers to the hours for which the worker is paid under their labor contract. The data on hours are reported by employers when they complete payroll tax forms. Before making the data available, Insee performs three checks:

- The total number of hours for a given individual × employer × year observation should not exceed an industry-specific threshold of 2,500 hours per year in a small subset of industries (mostly manufacturing, transportation, and hotels and restaurants), and 2,200 hours per year elsewhere;
- The implied hourly wages should exceed 80% of the minimum wage;
- The total number of hours should be positive, with the exception of a narrow subset of occupations (mostly journalists and salespersons) working on a fixed-price or commission basis.

If one of these conditions is not met, Insee assigns hours to the observation to make the hourly wage consistent within narrow cells defined by 4-digit occupation, full-time or part-time status, age, and gender.

For workers whose pay does not depend on the time worked but who do not belong to any of the above-mentioned occupations (i.e., typically highly qualified personnel working on a "day rate" (*"forfait-jour"*)), employers provide the number of days only. A number of hours is then ascribed to these observations based on the legal working hours of full-time workers, the number of workdays, and the implied hourly wages.

During maternity leave, since an employee is not paid for any hours by her employer but is instead paid by Social Security (and may receive a top-up payment from her employer), hours worked are equal to 0. Workers not paid by the hour are an exception to this rule because their hours are imputed based on days paid, which do not vary during maternity leave. As a result, the DADS dataset overestimates hours paid—and underestimates hourly wages—for such workers during years when they give birth to children. In general, these workers belong to the "Manager and Professionals" occupation group, so this is not a concern for this particular paper.

### D.4.2 Measurement issues

**Full-time units computation** Hours worked were not collected before 1993, and data quality is poor before 1995. Additionally, for central State civil servants, these data were not collected before 2009.

However, for these workers, a measure of working time expressed in full-time units (FTU) is available between 1995 and 2009. Furthermore, a qualitative variable (full-time vs. part-time worker) is available from the beginning of our time period of interest (1988).

We reconcile all this information and address missing data through the computation of an FTU measure:

- This measure equals 1 for individuals working full-time full years;
- This measure equals the number of days worked divided by 360 for full-time part-year workers;
- For part-time workers:
  - As of 1995, this measure equals either their FTU working-time for central State employees or their total hours worked for other employers, divided by the median hours worked by full-time full-year workers the same year (2,028 hours before 1999, 1,820 after 2002, with an intermediary period corresponding to changes in the legal working time);
  - Before 1995, it is equal to days worked, divided by 360, multiplied by the median normalized hours-to-days ratio (between 0 and 1) for part-time workers in 1995;
  - We also use this imputation for rare observations with missing hours data after 1995.

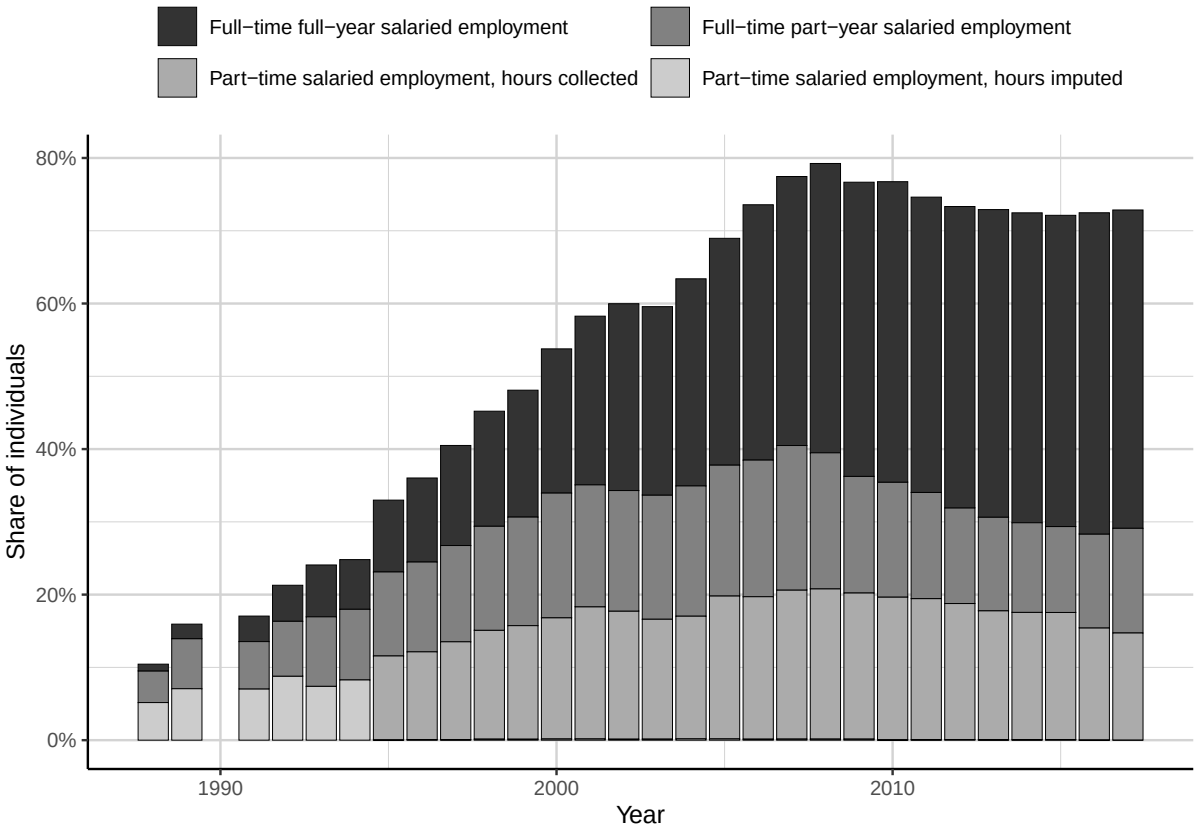
In practice, given that our sample consists of individuals born between 1967 and 1990, the imputation procedure used before 1995 is only relevant for a small portion of their labor market histories (see Figure D.8). Based on this measure, we now employ an accounting decomposition of labor earnings:

$$Y_{it} = D_{it} X_{it} H_{it} W_{it} \tag{1}$$

where $Y_{it}$ represents overall yearly labor earnings (including 0 for individuals not in salaried employment), $D_{it}$ is a dummy variable indicating whether the individual held salaried employment during year $t$, $X_{it}$ represents days worked divided by 360 (which approximates average weekly employment over the year), $H_{it}$ is the normalized hours-to-day ratio (relative to a full-time worker), and $W_{it}$ is the FTU wage. Our FTU measure is the product of the first three components. Figure D.9 shows the corresponding labor supply time series. Consistent with the fact that the oldest individuals in our sample were 21 in 1988, their labor supply increases over time, primarily because they are more likely to hold salaried jobs.

Equipped with this FTU measure, we can now consider FTU wages. Figure D.10 displays the corresponding time series. The raw time series is noisy, resulting from observations related to jobs with very low paid hours. Winsorizing the FTU wage at the 99th percentile level seems an appropriate way to address this issue. In the end, we use the winsorized hourly wages to compute labor earnings based on 1. This changes the corresponding time series profile only marginally (see Figure D.11). This is our final measure of individual earnings, upon which our estimates of the child penalty are based.

**Figure D.8.** Working time status in the EDP data

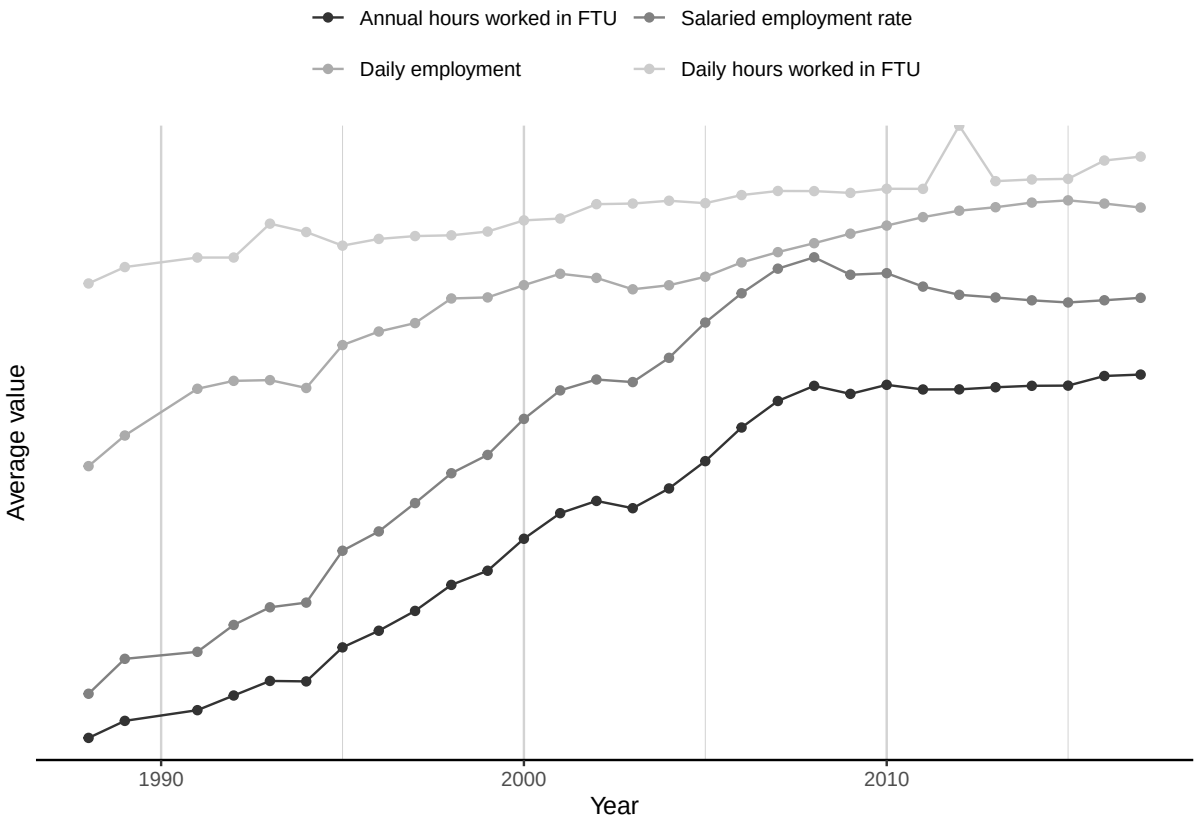



Working time status and imputation of FTU hours for EDP individuals, by year of salaried employment.

*Population.* Individuals born on October 1st to 4th between 1967 and 1990 and sampled in the EDP data.

*Source.* CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

**Figure D.9.** Labor supply measures in the EDP data

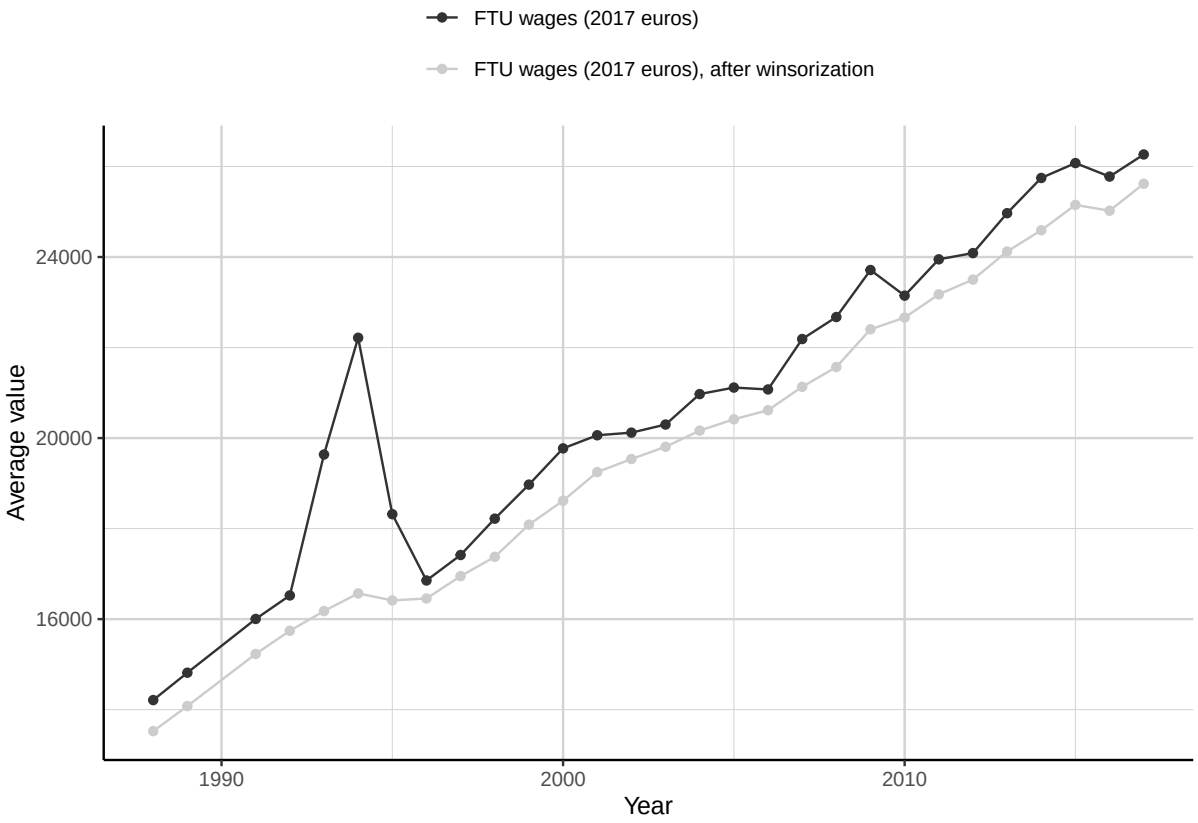



Decomposition of annual salaried FTU hours into three margins, by year.

*Population.* Individuals born on October 1st to 4th between 1967 and 1990 and sampled in the EDP data.

*Source.* CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

**Figure D.10.** Hourly wages in the EDP data

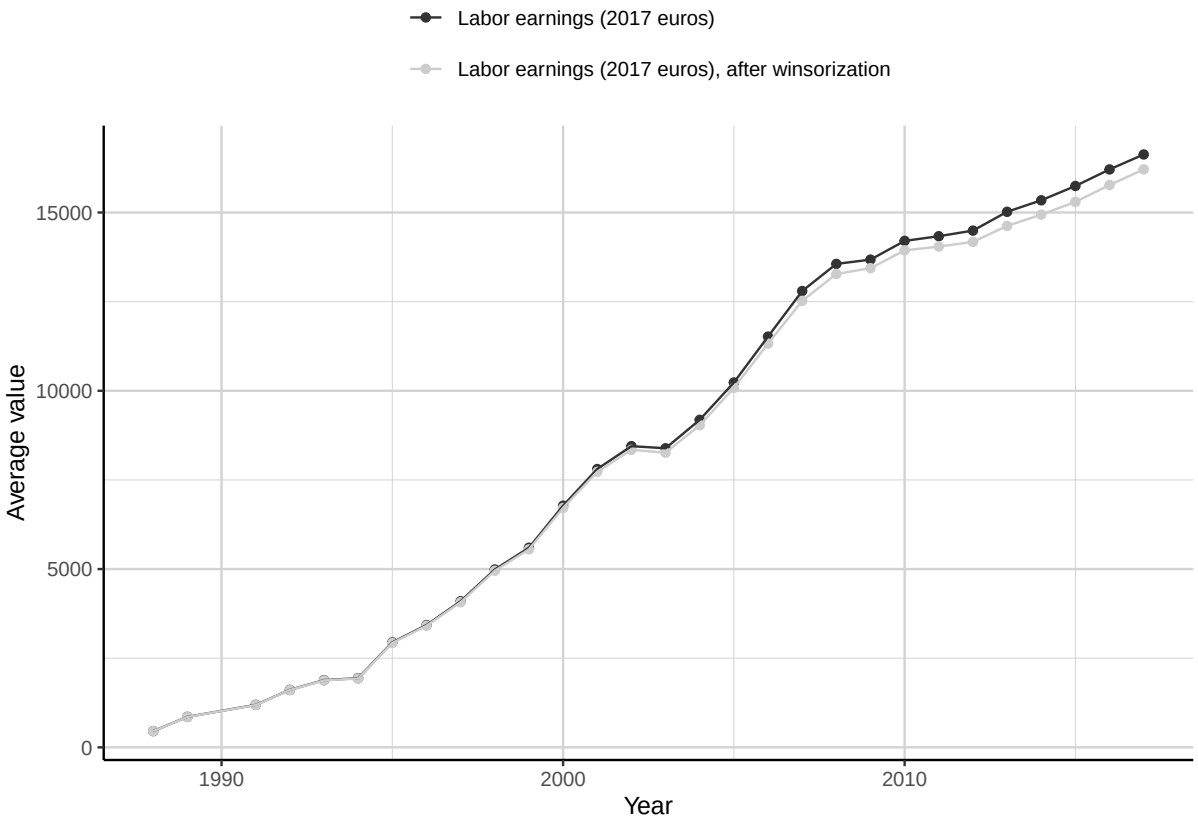



FTU wage before and after winsorization at the 99th centile, by year of salaried employment.

*Population.* Salaried individuals born on October 1st to 4th between 1967 and 1990 and sampled in the EDP data.

*Source.* CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

**Figure D.11.** Labor earnings in the EDP data




Labor earnings before and after winsorization of the FTU wage at the 99th centile, by year.

*Population.* Individuals born on October 1st to 4th between 1967 and 1990 and sampled in the EDP data.

*Source.* CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

# E Reweighting procedure

## E.1 Implementation

Our reweighting procedure is based on an inverse propensity score approach. The basic intuition behind this approach is that reweighting individuals using the inverse of the probability of belonging to their observed attitude groups makes the groups similar to the entire population in terms of the distribution of covariates. In more formal terms, if $X_i$ represents a vector of individual covariates and $D_i$ is a binary variable that equals 1 if individual $i$ holds more traditional views on gender and 0 if she holds less traditional views, then, under a common support assumption, for any $d \in \{0,1\}$ and any measurable function $f$:

$$\mathbb{E}\left[\frac{f(X_i)\mathbb{P}(D_i = d)}{\mathbb{P}(D_i = d \mid X_i)} \mid D_i = d\right] = \mathbb{E}\left[f(X_i)\right] \tag{2}$$

The main challenge is that the true propensity score function $p(x) := \mathbb{P}(D_i = 1 \mid X_i = x)$ is not known to the econometrician. Therefore, it must be estimated, which requires additional assumptions. In the context of this paper, we address this issue with a parametric model. Specifically, we use a linear probability model estimated by ordinary least squares, with the following covariates:

- migration status (first or second generation);
- decennial cohort interacted with diploma (7 levels);
- age at the beginning of the first stable relationship;
- age at the beginning of the first cohabiting relationship;
- experience of discrimination in the labor market;
- age at first child;
- total number of children.

The last two dimensions describe individuals during or after the birth of their first child, particularly in terms of their fertility (see 3.2.1). For this reason, we also consider alternate specifications where these variables are excluded from the selection model.

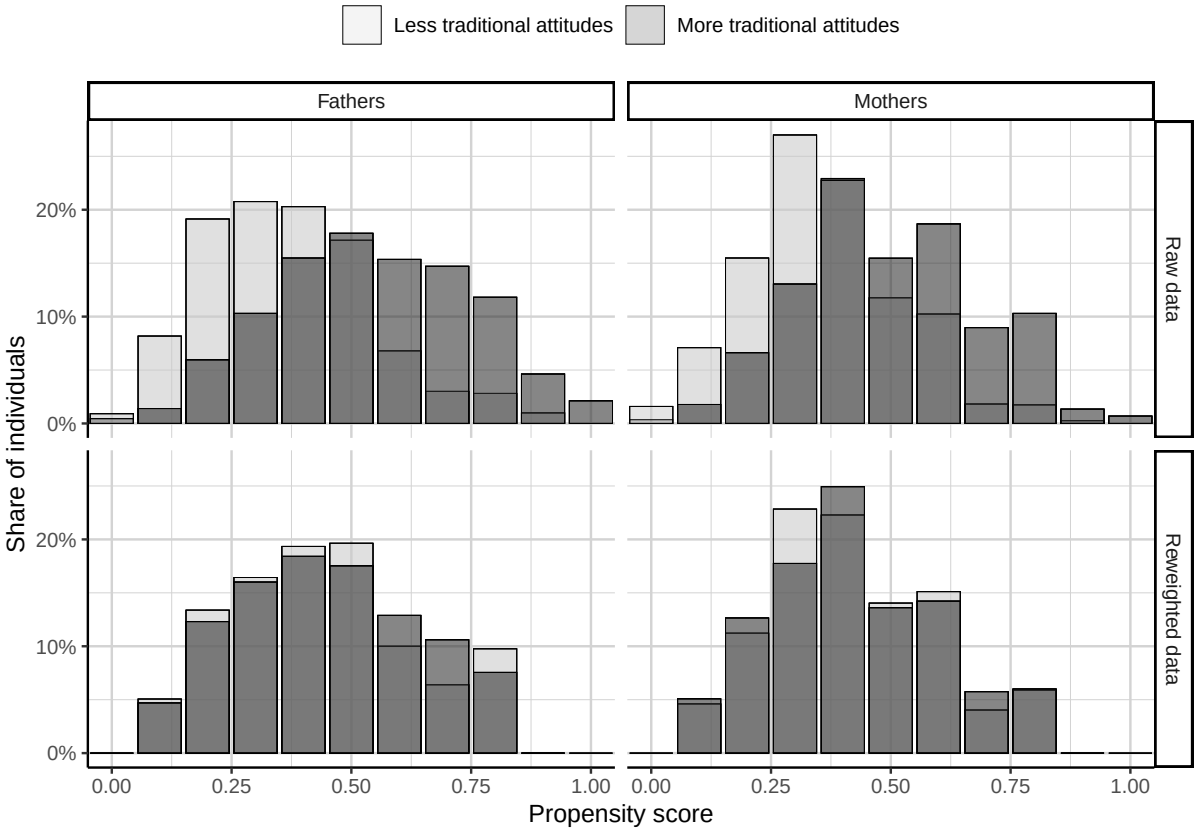
Finally, the estimated propensity score is simply the predicted probability of holding more traditional views according to the estimated model. Following Crump et al. (2009); Imbens (2015), we discard individuals whose estimated propensity score is less than 0.1 or greater than 0.9, in order to make the reweighted estimates more stable and ensure sufficient overlap in the sample.

## E.2 Common support assumption

As recommended by Imbens (2015), we validate this model using assessments that are not dependent on our outcome of interest (the child penalty). Specifically, we evaluate the credibility of the common support assumption by examining the distributions of the estimated propensity score and displaying balancing plots.

Figures E.1 and E.2 show the distributions of the estimated propensity score, before and after reweighting the data, for both the model in which fertility decisions are omitted from the selection equation and the model in which they are included. The key findings are that (i) there is reasonable overlap in the distributions across attitude groups, making our common support assumption plausible; and (ii) after trimming and reweighting the data, the distributions are very similar across groups, suggesting that the reweighting improves balance across groups in terms of the propensity score.

**Figure E.1.** Distribution of the propensity score: balancing on pre-birth characteristics

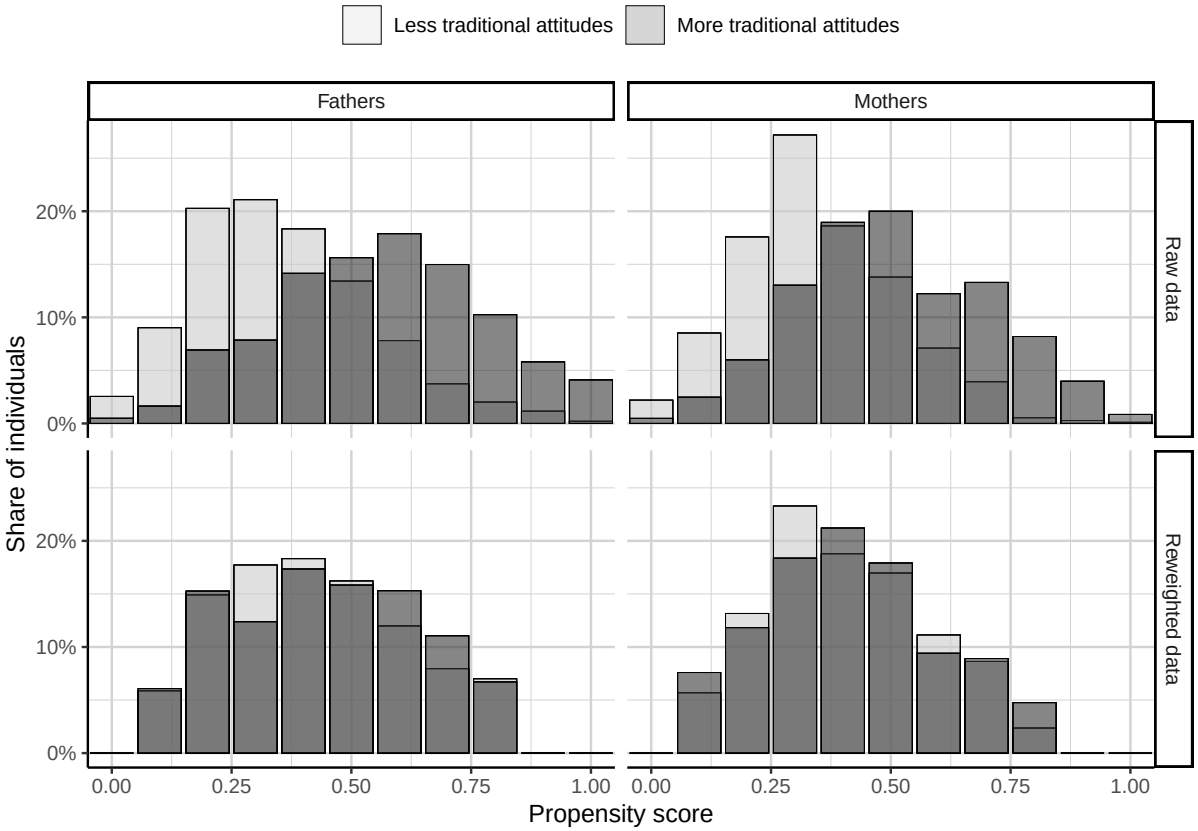



Distribution of the estimated propensity score, before and after reweighting. Reweighting variables include migration status (first or second generation), decennial cohort interacted with diploma (7 levels), experience with marital life and discrimination experience on the labor market.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure E.2.** Distribution of the propensity score: balancing on pre-birth characteristics and fertility decisions




Distribution of the estimated propensity score, before and after reweighting. Reweighting variables include migration status (first or second generation), decennial cohort interacted with diploma (7 levels), experience with marital life and discrimination experience on the labor market, as well as decennial cohort interacted with quinquennial age at first child, total number of children, and current life with a partner.

*Population.* Immigrant parents living in mainland France in 2019-2020.

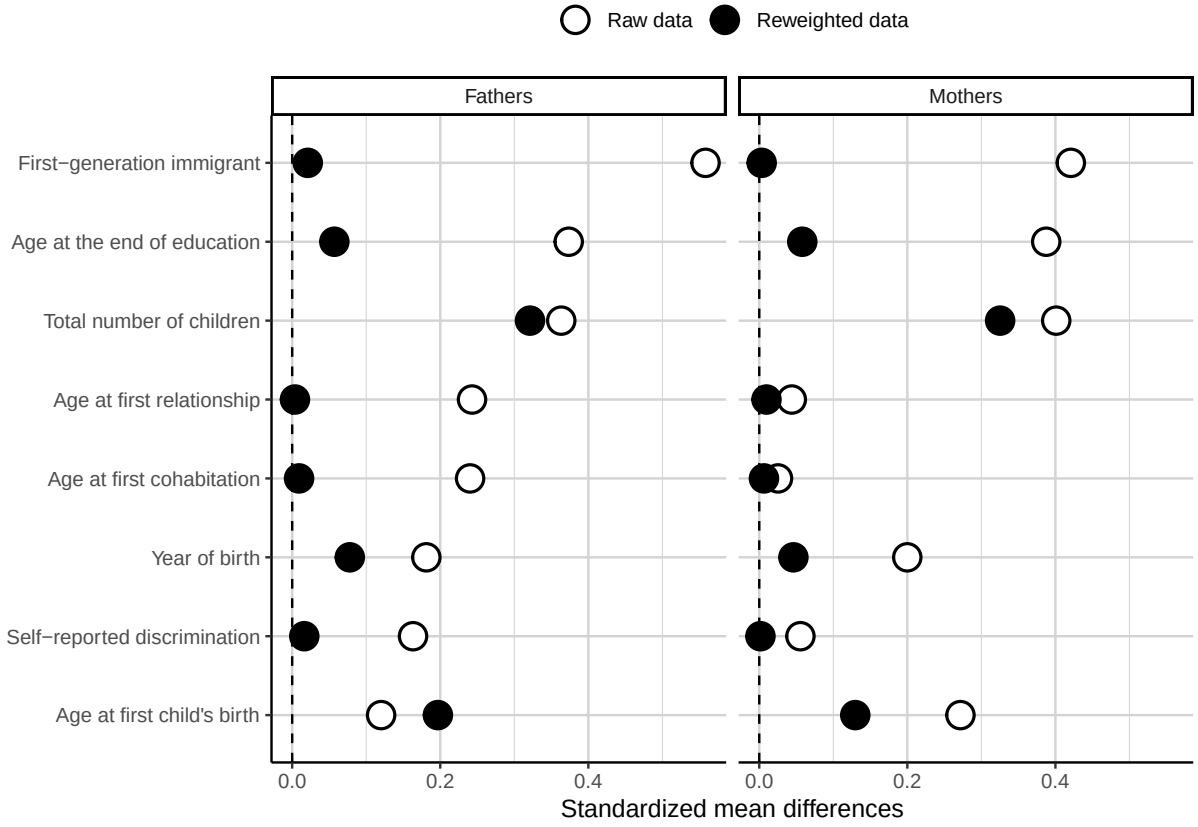
*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

## E.3 Balancing property

Figures E.3 and E.4 take the analysis a step further by verifying that, after reweighting, attitude groups are more balanced in terms of each covariate. Specifically, they show the standardized mean differences across groups for each covariate, both before and after reweighting the data. We include the fertility covariate in the assessment of both models, even when fertility variables are not part of the propensity score estimation, to provide a complete understanding of the differences across groups in each case.

The key finding is that after reweighting based on the inverse of the estimated propensity score, attitude groups are much more similar in terms of their observable characteristics than before. This is, of course, only true for characteristics included in the propensity score estimation, as shown by the fact that when fertility decisions are omitted from the model, groups remain imbalanced in terms of their fertility decisions.

**Figure E.3.** Balancing properties of the estimated propensity score: balancing on pre-birth characteristics

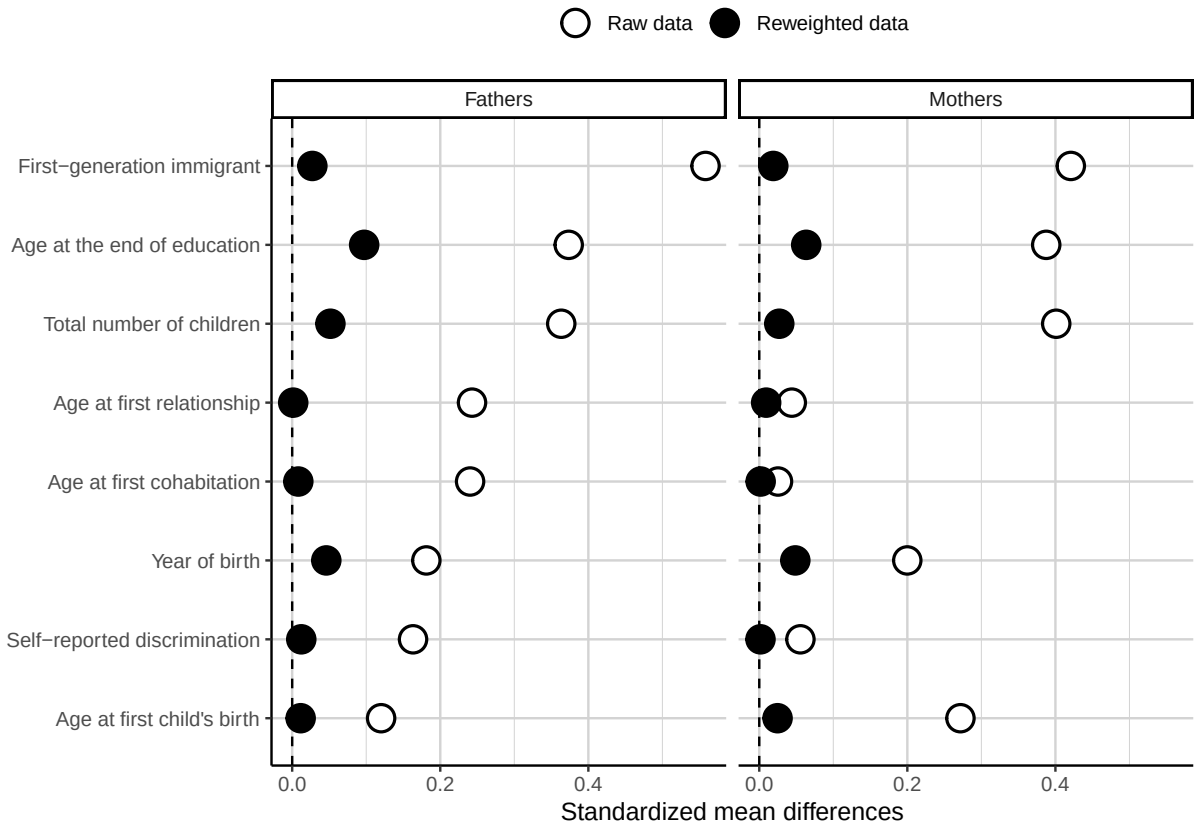



Standardized absolute mean differences along different variables, before and after reweighting. Reweighting variables include migration status (first or second generation), decennial cohort interacted with diploma (7 levels), experience with marital life and discrimination experience on the labor market.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure E.4.** Balancing properties of the estimated propensity score: balancing on pre-birth characteristics and fertility decisions




Standardized absolute mean differences along different variables, before and after reweighting. Reweighting variables include migration status (first or second generation), decennial cohort interacted with diploma (7 levels), experience with marital life and discrimination experience on the labor market, as well as decennial cohort interacted with quinquennial age at first child, total number of children, and current life with a partner.

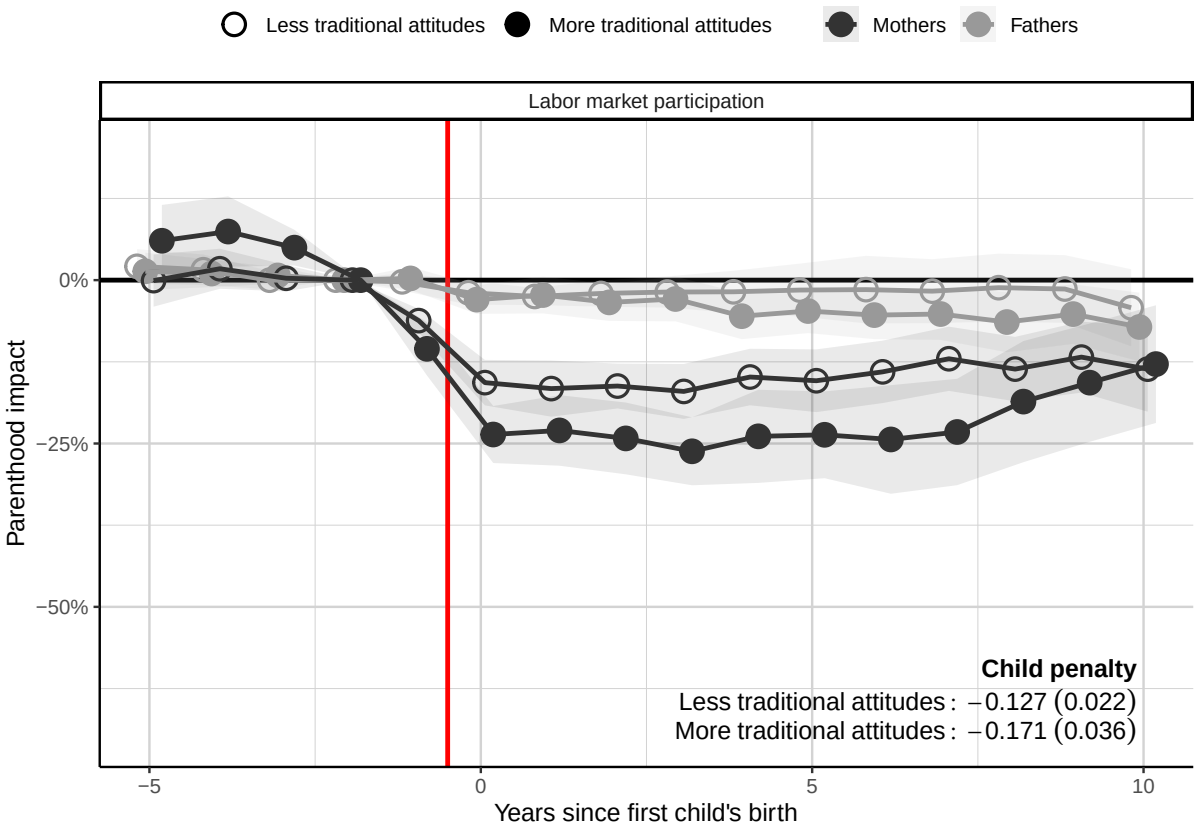
*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

## E.4 Influence of the reweighting procedure on the results regarding individual gender-related attitudes

Figures E.5 and E.6 display the child penalty for each attitude group: the first without any reweighting of the data, and the second reweighting only on pre-birth characteristics. In both cases, the difference between the two attitude groups is not significantly different from 0. It is possible that, without reweighting for fertility, the child penalty is stronger for those with more traditional views, although the difference is not large. This is consistent with fertility having a negative impact on mothers' labor force participation and more traditional women having more children.

**Figure E.5.** Child penalty in labor market participation for immigrant parents: by self-reported attitudes

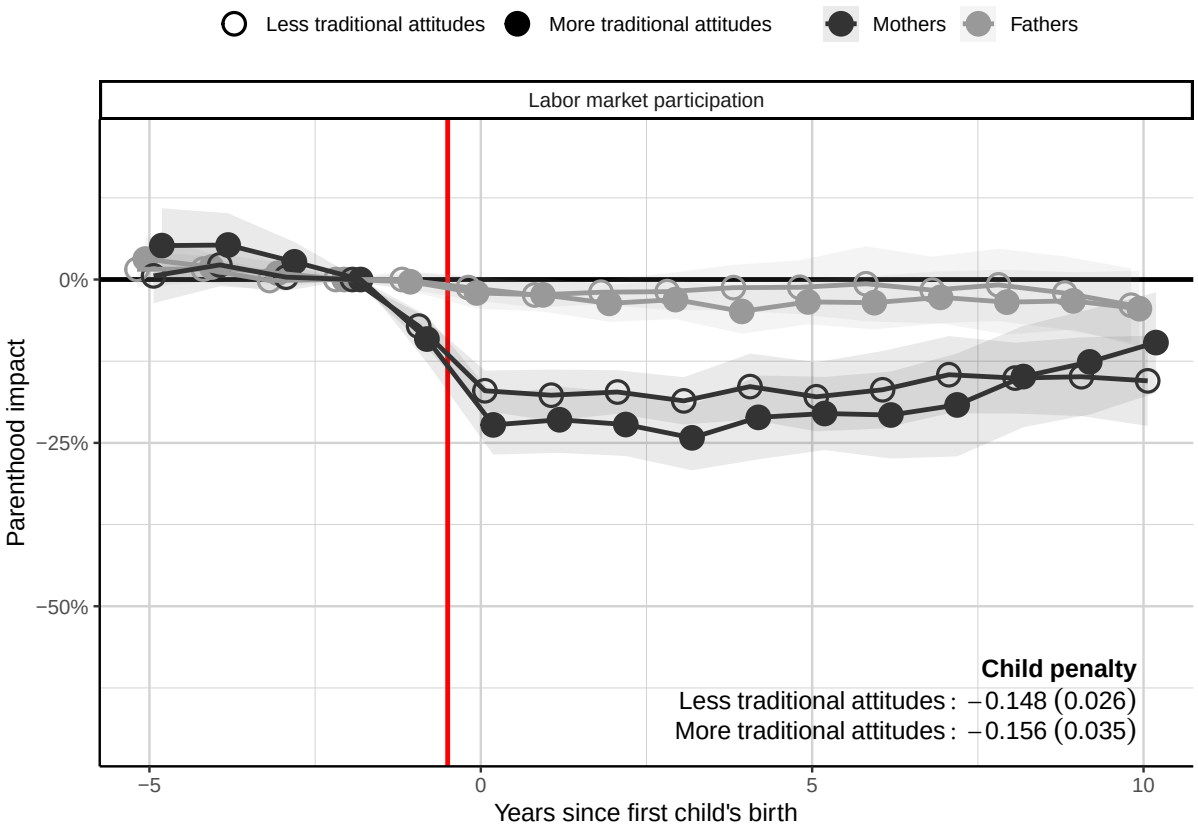



Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure E.6.** Child penalty in labor market participation for immigrant parents: by self-reported attitudes, balanced on pre-birth characteristics




Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make attitudes groups similar in terms of pre-birth observables characteristics. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

# F Relative and absolute child penalties

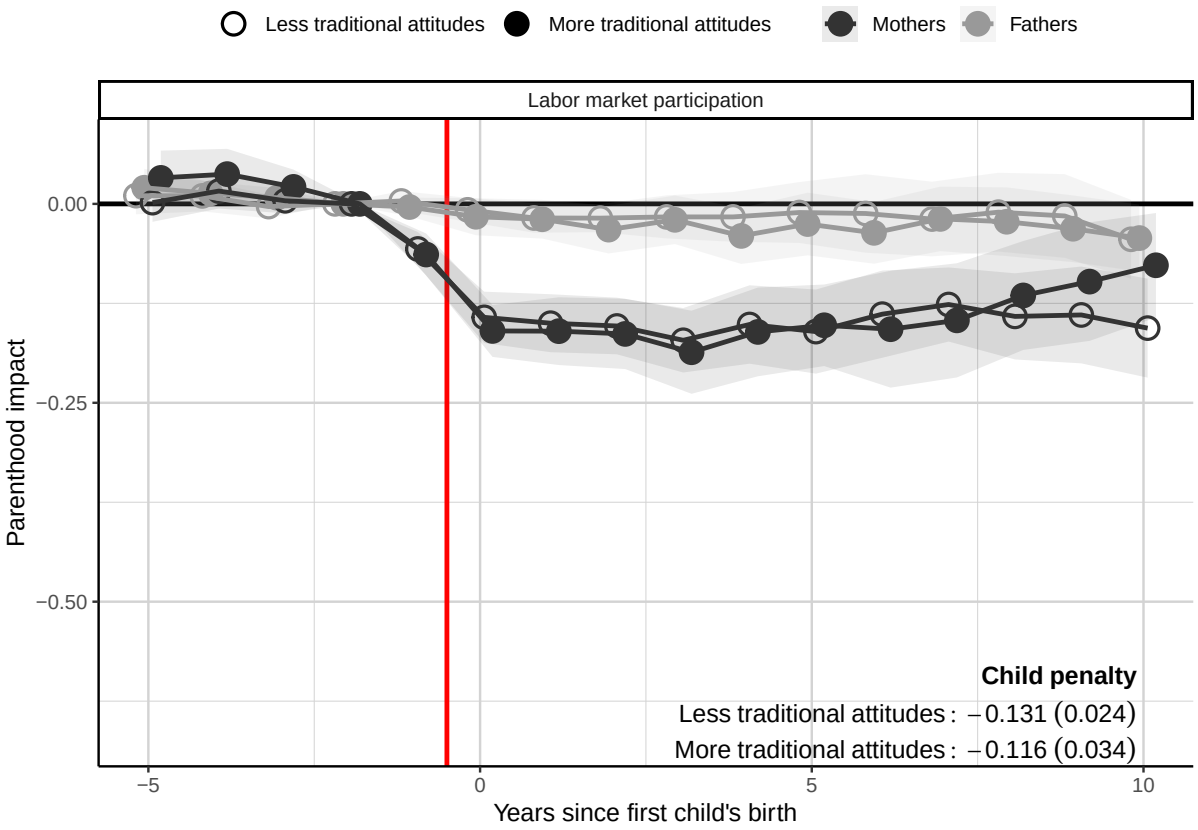
Consistent with the now-standard approach to the child penalty developed by Kleven, Landais, and Søgaard (2019), we display our results in terms of the relative effect of parenthood on labor outcomes, i.e., the change in average labor outcomes between the realized situation and the counterfactual where parents remain childless. When comparing child penalties across groups, this choice may raise the concern that differences could arise from either differences in the absolute effect of parenthood or from differences in baseline labor outcomes. In the particular context of this paper, this is a legitimate concern, given that differences in raw labor market participation rates across groups are not negligible (see Figure 1).

To further investigate this issue, we replicate Figures 3, 5 and 6 considering absolute effects instead of relative ones. Figures F.1 to F.3 display the corresponding estimates. In absolute terms, the child penalty is generally slightly smaller in the more traditional groups, but the difference between more and less traditional groups is not estimated with sufficient precision to draw a firm conclusion. Overall, the data do not suggest substantial differences in the child penalty across attitude-related groups, whether in absolute or relative terms.

To delve deeper into this issue, we examine differences in counterfactual labor market participation rates across attitude groups. Figure F.4 presents our estimates. These help reconcile the fact that the child penalty does not differ across attitude groups with the observation that female labor force participation is much lower across the lifecycle for women with more traditional attitudes. Indeed, we find that, in the absence of children, sizable differences in labor market participation would still exist among women, depending on their gender-related attitudes. Over the first 10 years after their first child is born, women with more traditional attitudes would have an average labor market participation rate of 0.80 (0.03), compared to 0.89 (0.02) for those with less traditional attitudes. The realized rates are 0.66 (0.02) and 0.73 (0.01). By contrast, for men, attitudes do not seem to be related to labor market participation, as the estimated counterfactual rates without children are 0.92 (0.02) and 0.93 (0.02), compared to realized rates of 0.89 (0.01) and 0.91 (0.01).

Finally, to discuss the causal interpretation of these differences in counterfactual labor market participation rates across attitude groups, we turn to differences in counterfactual and realized labor market participation rates across groups defined by their upbringing environment before age 18. Figure F.5 displays our estimates. Differences in counterfactual rates appear to be significant, with rates of 0.82 (0.03) for women who received a more traditional upbringing, compared to 0.88 (0.03) for those with a less traditional upbringing. The realized rates are 0.68 (0.02) and 0.71 (0.02). For men, the corresponding values are 0.91 (0.03) and 0.92 (0.03) for counterfactual rates, and 0.88 (0.02) and 0.89 (0.02) for realized rates. Since comparisons across upbringing groups are less likely to be affected by reverse causality than those relying on current attitudes at the time of the survey, these estimates support the idea that gender-related attitudes impact women's labor supply but not men's. This implies that such attitudes contribute to gender differences in labor market participation, even though they do not affect the child penalty.

**Figure F.1.** Child penalty in labor market participation for immigrant parents: by self-reported attitudes, balanced on pre-birth characteristics and fertility decisions

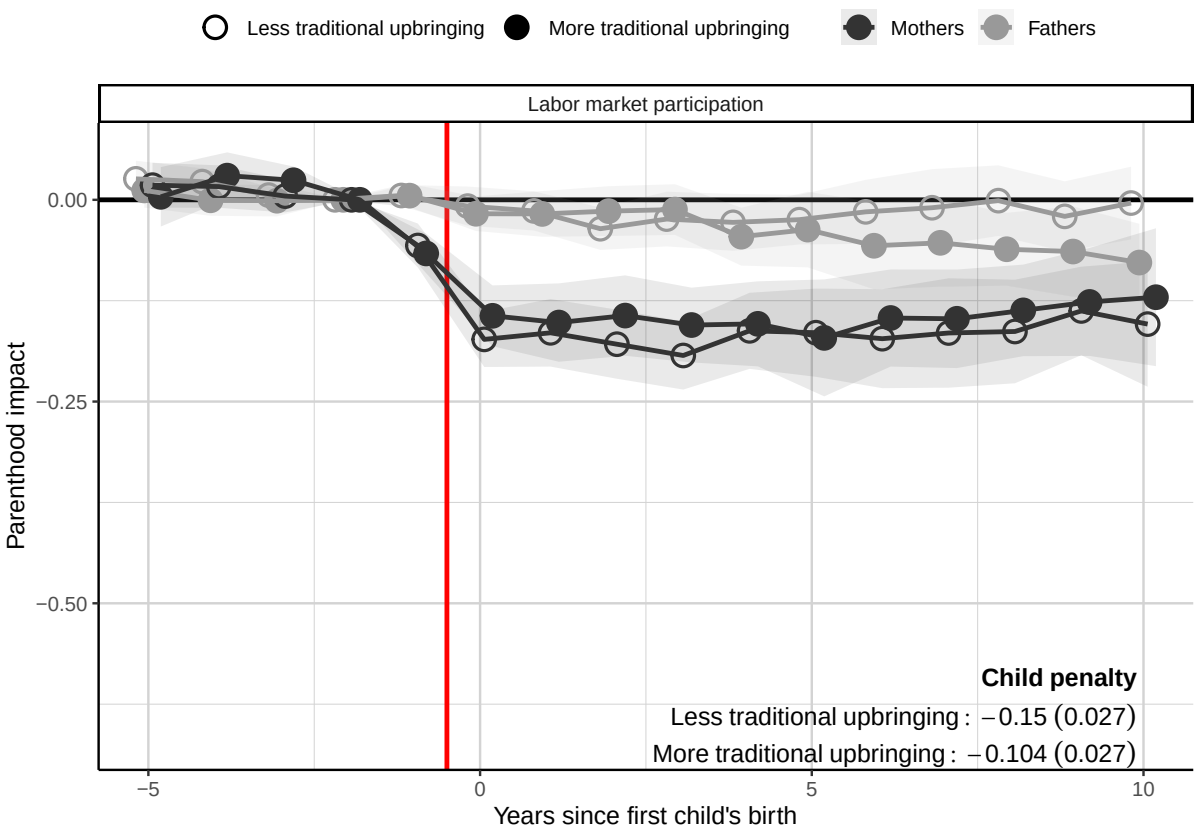



Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed in its absolute value. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make attitudes groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure F.2.** Child penalty in labor market participation for immigrant parents: by upbringing environments, balanced on pre-birth characteristics and fertility decisions

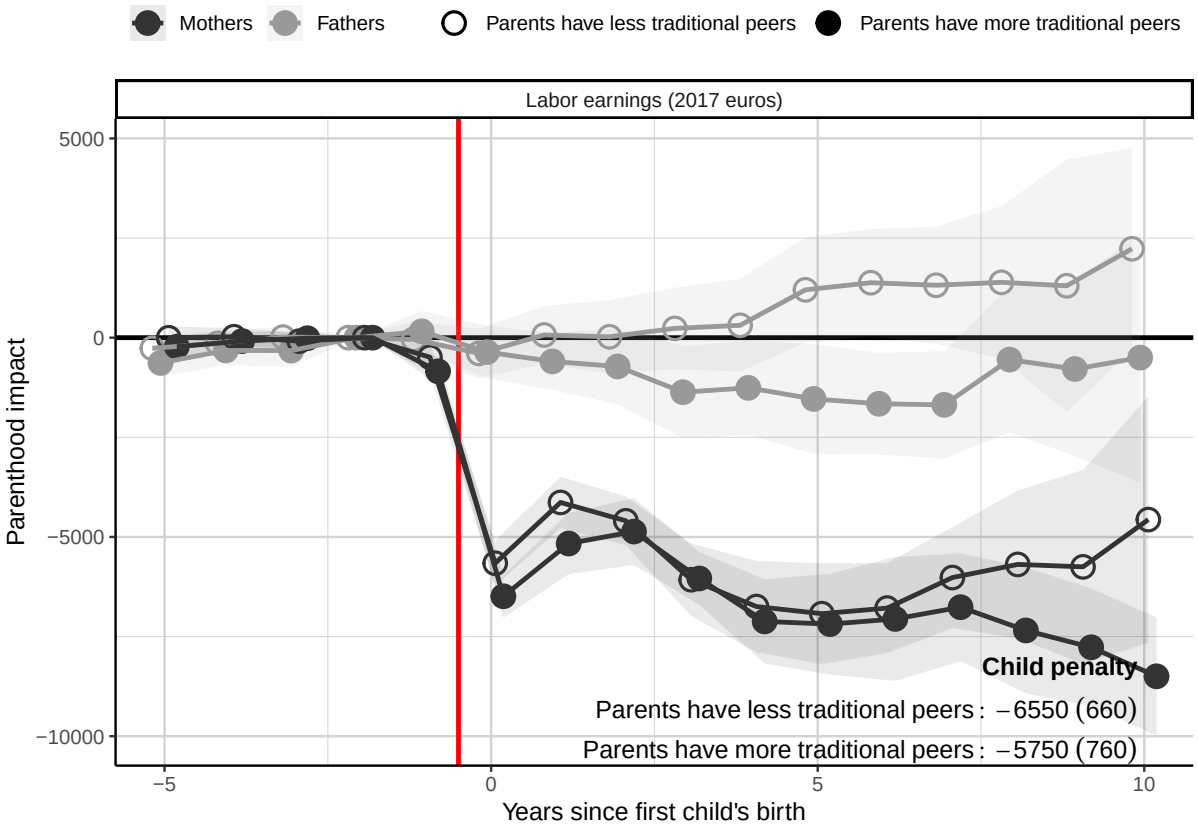



Upbringing environment is measured by *ego*'s father's and mother's having a religion, prominence given to religion in *ego*'s education before the age of 18, gender imbalance between *ego*'s parents' allocation of household chores (daily meals, grocery shopping and clothes washing) before the age of 18 and the number of children born to *ego*'s mother. Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed in its absolute value. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make upbringing environments groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure F.3.** Child penalty in labor earnings for second-generation immigrant parents: by second-generation immigrant parents' parents' peers' attitudes, balanced on pre-birth characteristics and fertility decisions

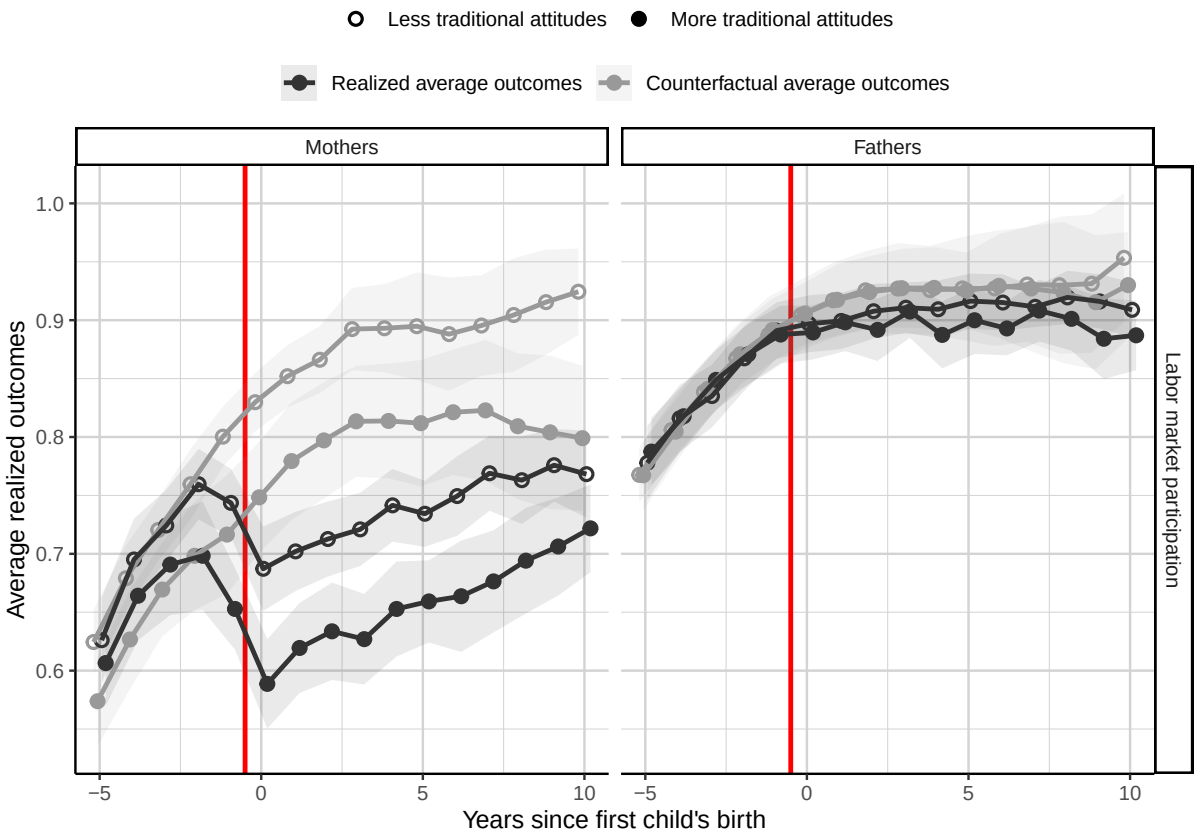



Parents' peers' attitudes are measured as the share of first-generation female (resp. male) immigrants from *ego*'s mother's (resp. fathers') country of birth with above-median traditional gender-related attitudes. Parenthood impact is identified from comparisons between parents of the same cohort (year of birth) who got their first salaried job at the same time, but had their first child at different ages (at least two years after their first salaried job), and displayed in its absolute value in 2017€. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make origin groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level.

*Population.* Second-generation immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

**Figure F.4.** Realized and counterfactual labor market participation for immigrant parents: by self-reported attitudes, balanced on pre-birth characteristics and fertility decisions

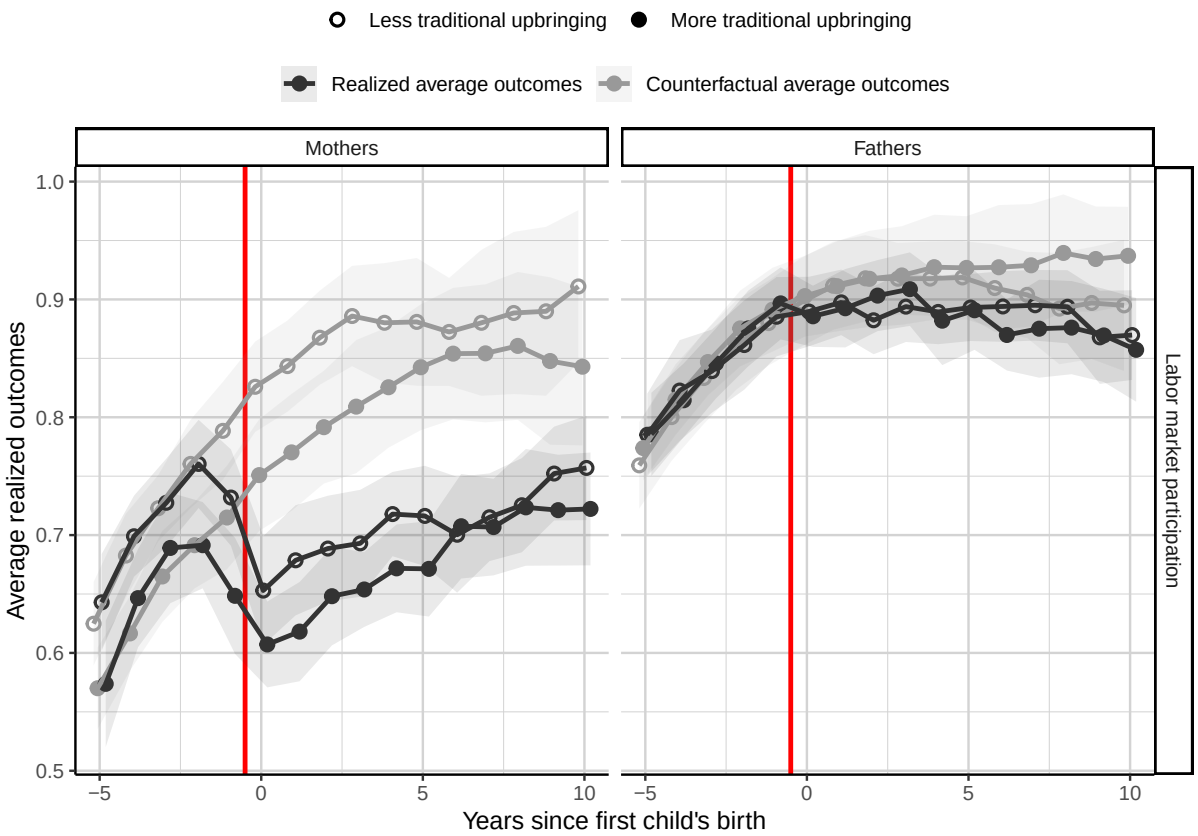



Counterfactual rates are identified from comparisons between parents of the same decennial cohort who had their first child at different ages. The data are reweighted based on an inverse propensity score approach so as to make attitudes groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure F.5.** Realized and counterfactual labor market participation for immigrant parents: by upbringing environments, balanced on pre-birth characteristics and fertility decisions




Upbringing environment is measured by *ego*'s father's and mother's having a religion, prominence given to religion in *ego*'s education before the age of 18, gender imbalance between *ego*'s parents' allocation of household chores (daily meals, grocery shopping and clothes washing) before the age of 18 and the number of children born to *ego*'s mother. Counterfactual rates are identified from comparisons between parents of the same decennial cohort who had their first child at different ages. The data are reweighted based on an inverse propensity score approach so as to make upbringing environments groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

# G Robustness checks

## G.1 Robustness with respect to a different definition of gender-related attitudes

We consider here a different delineation of groups based on self-reported attitudes. Specifically, we split immigrants into two groups based on whether they totally disagreed with the statement "When there are not many jobs, men are more entitled to work than women." Since most respondents totally disagreed with this statement, these alternative attitude groups are less balanced in terms of sample size compared to our baseline specification. Figures G.1 to G.3 display our results. Consistent with the rest of the evidence, we find that the child penalty is very similar across attitude groups.

## G.2 Robustness with respect to the inclusion of a particular survey item in the definition of gender-related attitudes

### G.2.1 Sensitivity to the inclusion of a particular item

Figure G.4 shows the share of immigrant parents who change attitude groups when one of the six relevant survey items is omitted from the PCA. This share is overall quite low: it reaches a maximum of about 14% for views on non-medical abortion and is typically lower than 10%. The key takeaway from this exercise is that our specification of attitude groups is not driven by any single survey item. This suggests that our approach to gender-related attitudes captures a latent factor that explains opinions on gender inequality and bodily autonomy.

### G.2.2 Robustness of the child penalties comparisons

Figures G.5 to G.10 show our estimates of the child penalties in labor market participation, when attitude groups are defined using a PCA that excludes one specific survey item. The results align with our previous finding that immigrant parents with more traditional views do not experience larger child penalties than their less traditional counterparts. This result is unsurprising, as the relevant survey items are strongly correlated, meaning that omitting one item has minimal impact on the attitude groups (see G.2.1).

## G.3 Robustness with respect to the threshold choice

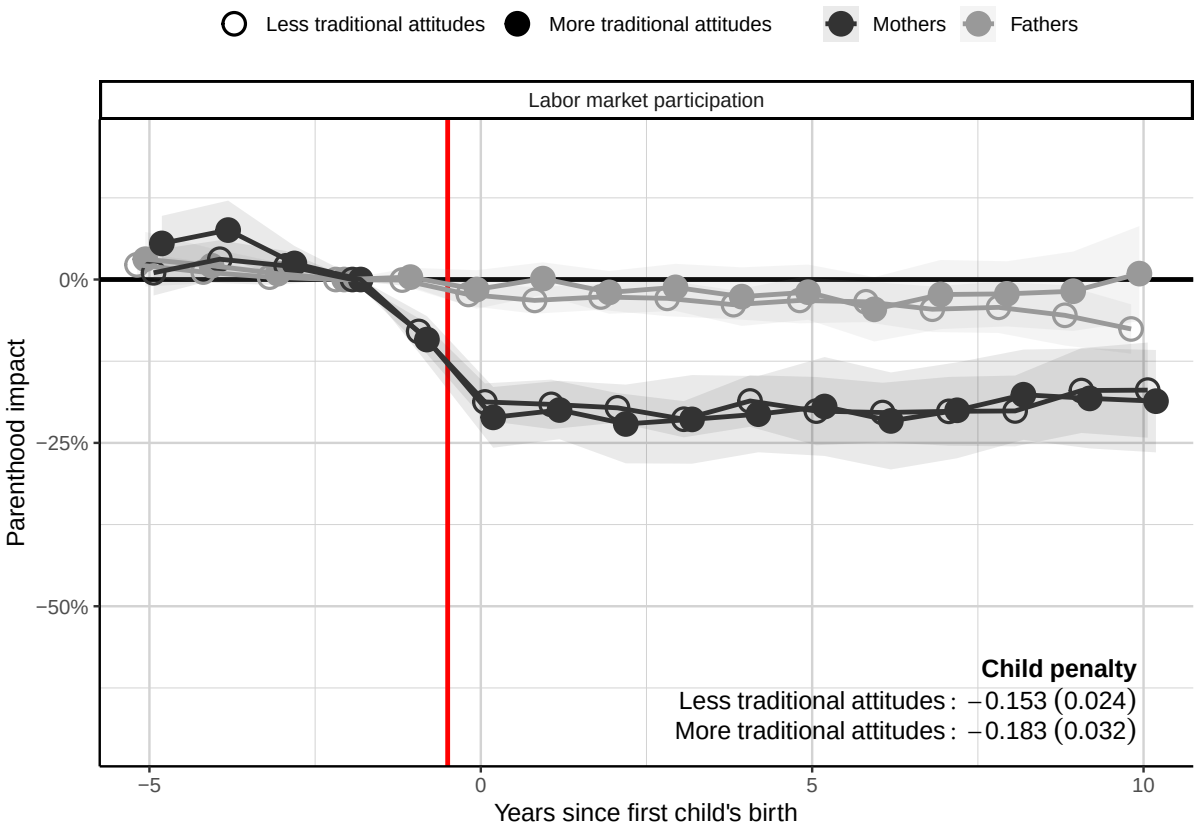
To ensure that our results are not driven by the specific choice to split attitude groups at the median level, we perform an alternative estimation in which we compare groups defined by being below the first tertile or above the last tertile, thereby excluding data from immigrant parents with intermediate views on gender. Figure G.11 presents our estimates. Due to the reduced sample size, the estimated child penalties are less precise than in our baseline estimates. However, consistent with our previous findings, they do not suggest that immigrant parents with more traditional attitudes face a larger child penalty.

## G.4 Robustness with respect to the child penalty identification strategy

Our baseline results are based on an approach that improves the event-study approach developed by Kleven, Landais, and Søgaard (2019) in order to identify the child penalty by incorporating insights from the recent difference-in-differences literature. To make the difference between our approach and that of Kleven, Landais, and Søgaard (2019) more explicit, we replicate our estimation, this time following closely their approach when it comes to the estimation of the child penalty.

Specifically, we restrict the sample to immigrant parents who can be observed in the data from five years before to ten years after the birth of their first child. Separately for each gender and each attitude

**Figure G.1.** Child penalty in labor market participation for immigrant parents: by self-reported attitudes, using only views on gender inequality in the labor market, balanced on pre-birth characteristics and fertility decisions

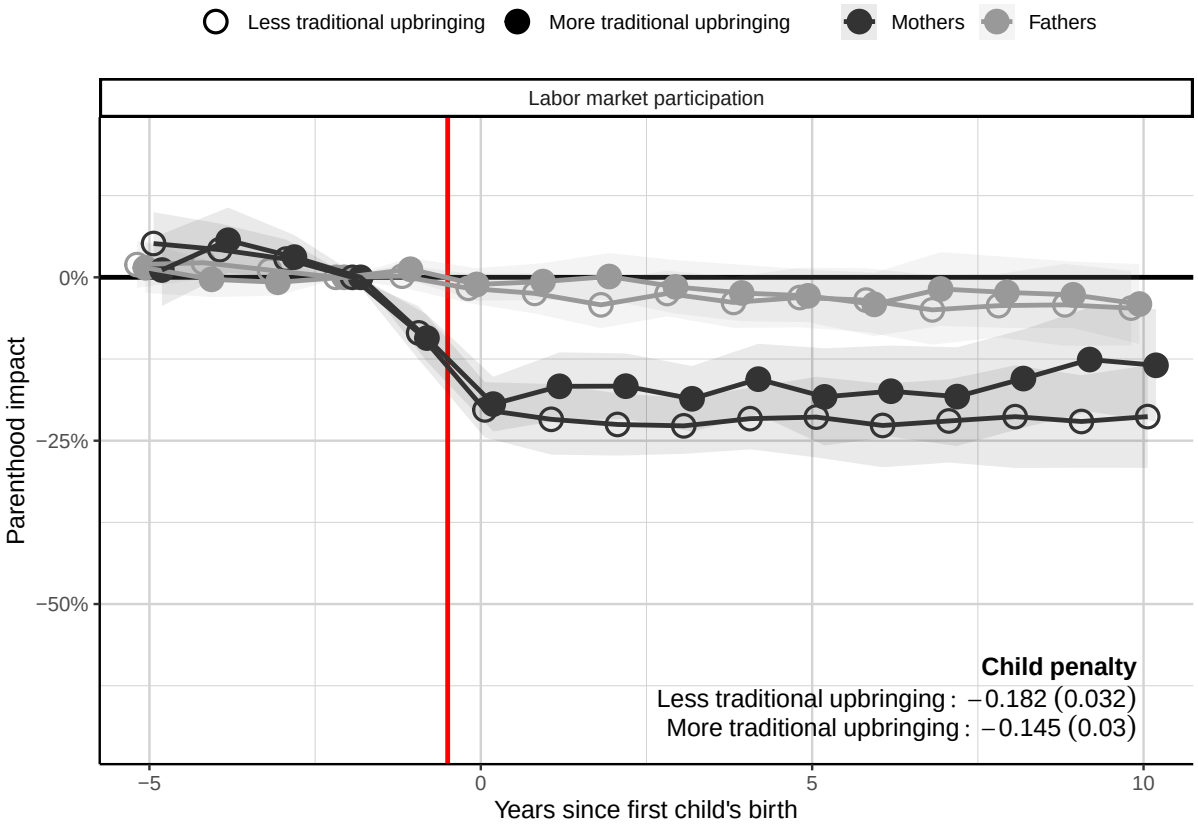



The delineation of attitudes is only based on views regarding gender inequality in the labor market (survey item **I_GENRE**). Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make attitudes groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure G.2.** Child penalty in labor market participation for immigrant parents: by upbringing environments, balanced on pre-birth characteristics and fertility decisions, attitudes based only on views on gender inequality in the labor market

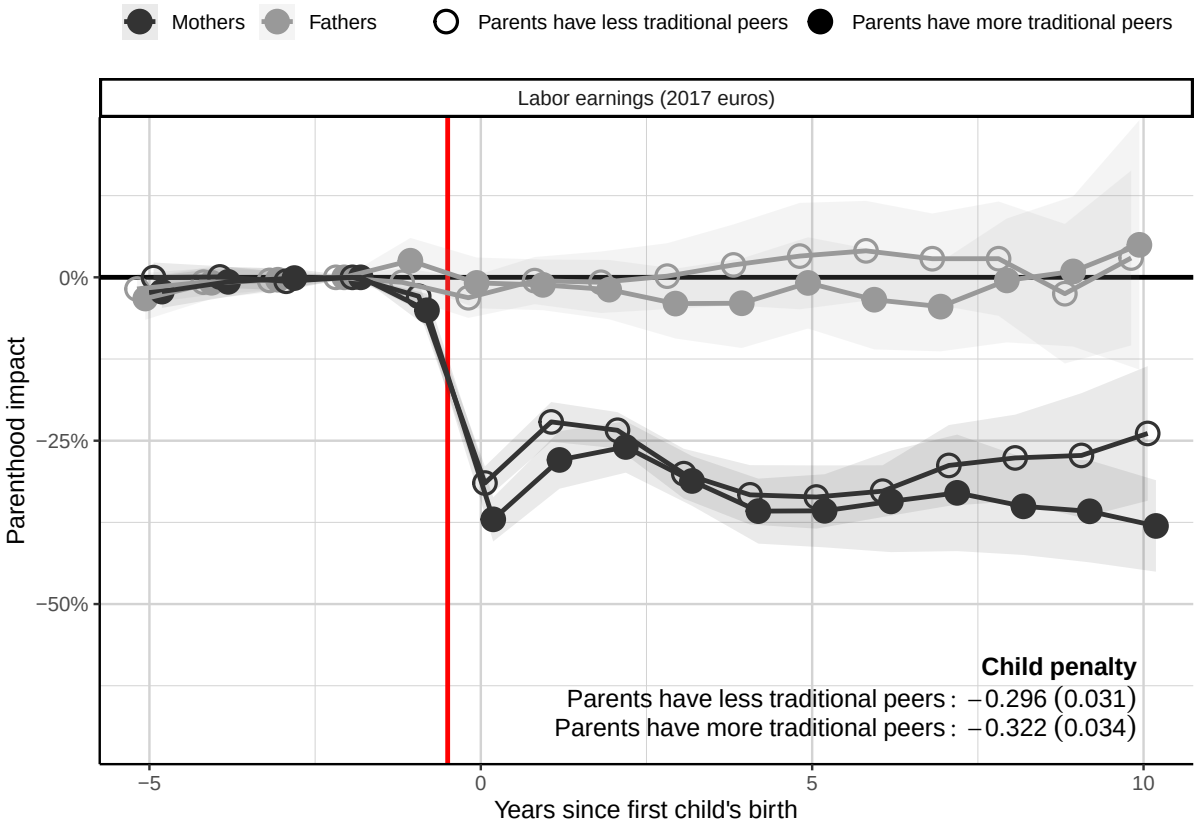



The delineation of attitudes is only based on views regarding gender inequality in the labor market (survey item **I_GENRE**). Upbringing environment is measured by *ego*'s father's and mother's having a religion, prominence given to religion in *ego*'s education before the age of 18, gender imbalance between *ego*'s parents' allocation of household chores (daily meals, grocery shopping and clothes washing) before the age of 18 and the number of children born to *ego*'s mother. Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make upbringing environments groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure G.3.** Child penalty in labor earnings for second-generation immigrant parents: by second-generation immigrant parents' parents' peers' attitudes, balanced on pre-birth characteristics and fertility decisions, attitudes based only on views on gender inequality in the labor market

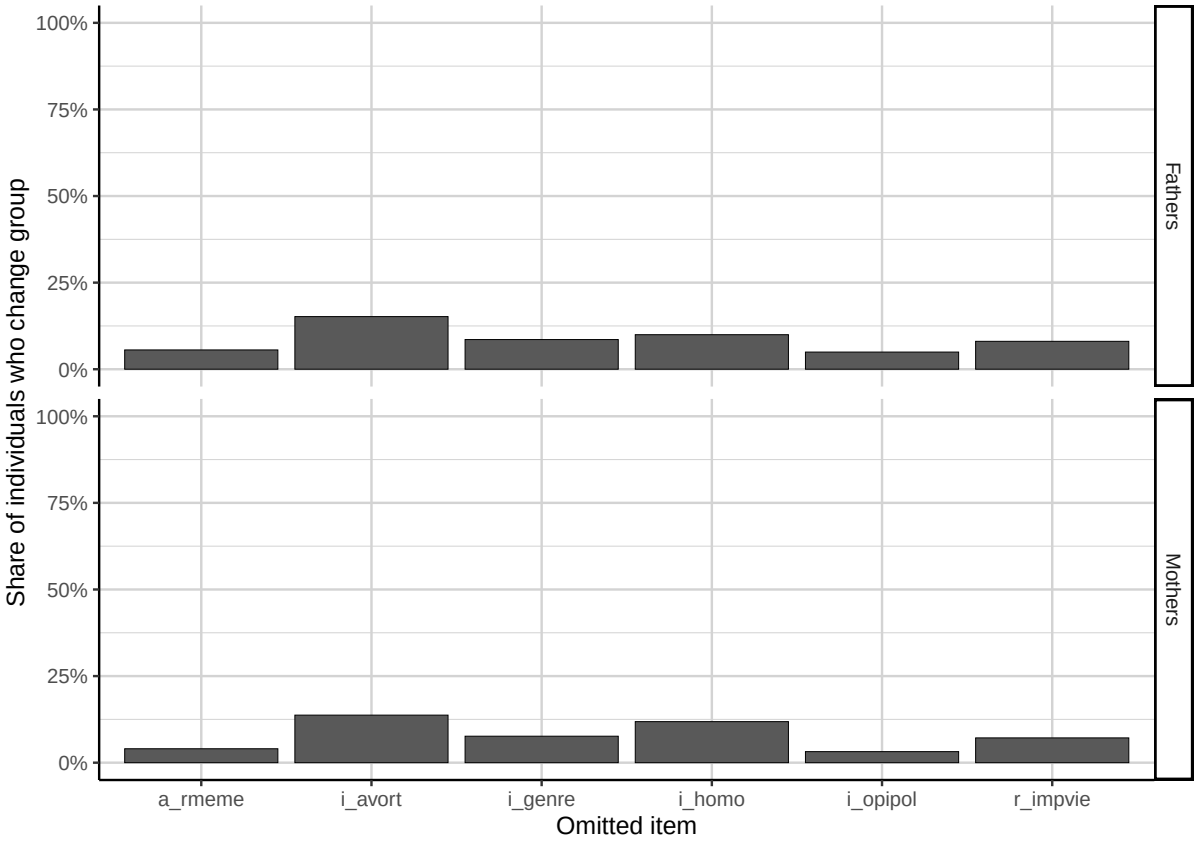



The delineation of attitudes is only based on views regarding gender inequality in the labor market (survey item **I_GENRE**). Parents' peers' attitudes are measured as the share of first-generation female (resp. male) immigrants from *ego*'s mother's (resp. fathers') country of birth with above-median traditional gender-related attitudes. Parenthood impact is identified from comparisons between parents of the same cohort (year of birth) who got their first salaried job at the same time, but had their first child at different ages (at least two years after their first salaried job), and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make origin groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level.

*Population.* Second-generation immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

**Figure G.4.** Share of immigrant parents whose attitudes group changes when one survey item is omitted from the PCA: by gender

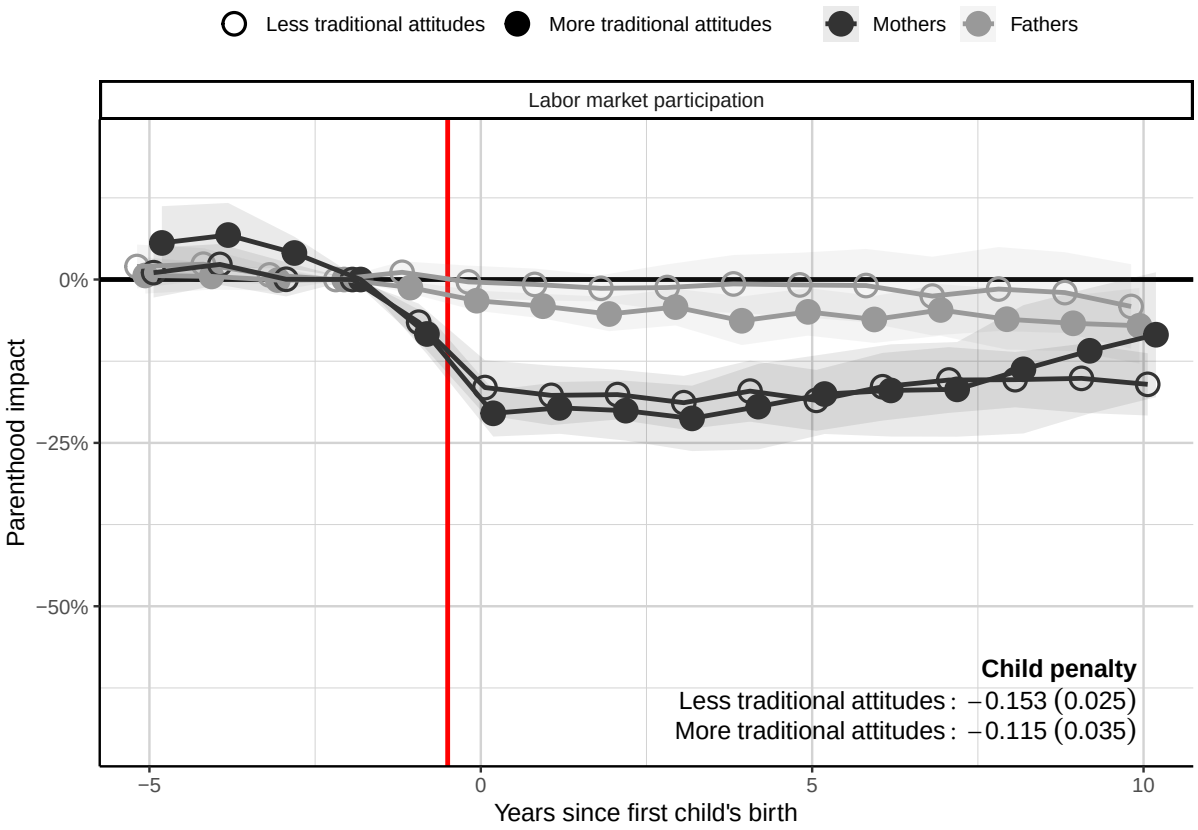



Share of immigrant parents whose attitudes group changes when one of the survey items is omitted from the PCA. The median is that of the first component of the PCA estimated over the five (six minus one) relevant survey items (see 2.2).

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure G.5.** Child penalty in labor market participation for immigrant parents: by self-reported attitudes, excluding views on gender inequality in the labor market, balanced on pre-birth characteristics and fertility decisions

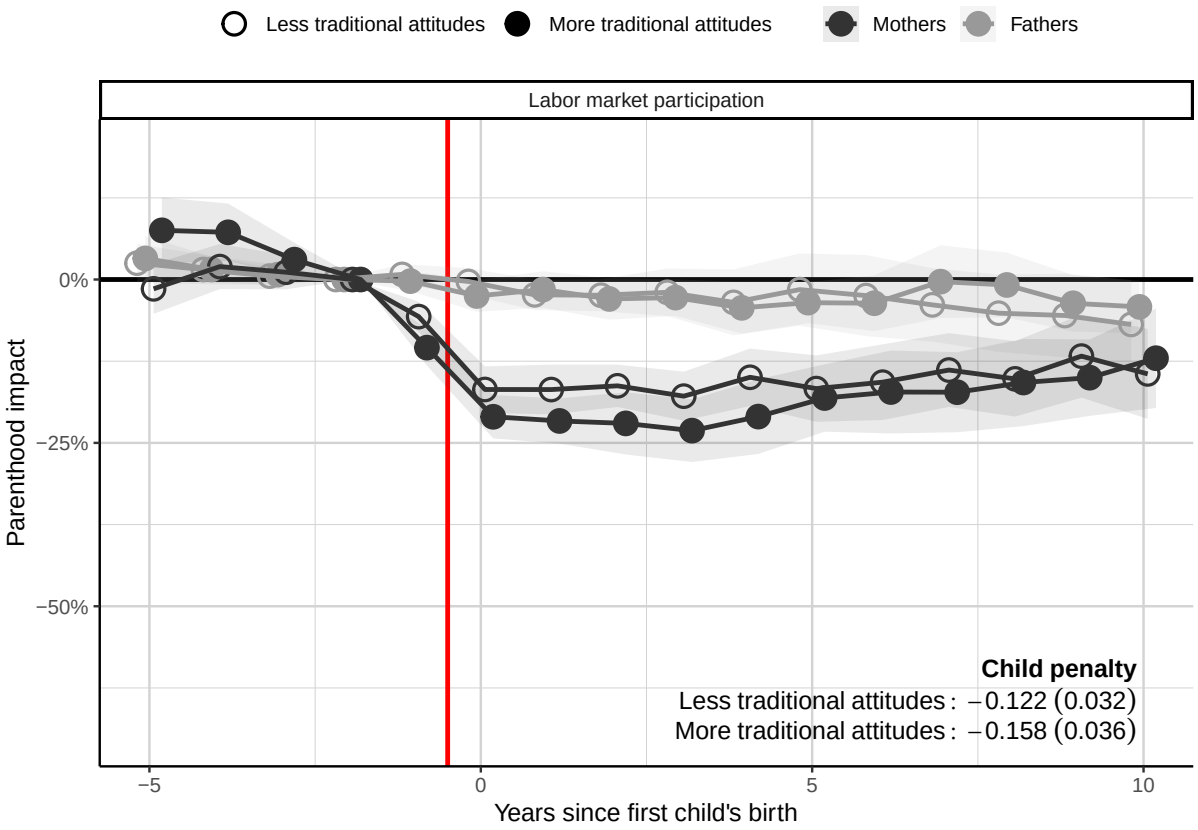



Views regarding gender inequality in the labor market (survey item **I_GENRE**) are not included in the delineation of attitudes. Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make attitudes groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure G.6.** Child penalty in labor market participation for immigrant parents: by self-reported attitudes, excluding views on non-medical abortion, balanced on pre-birth characteristics and fertility decisions

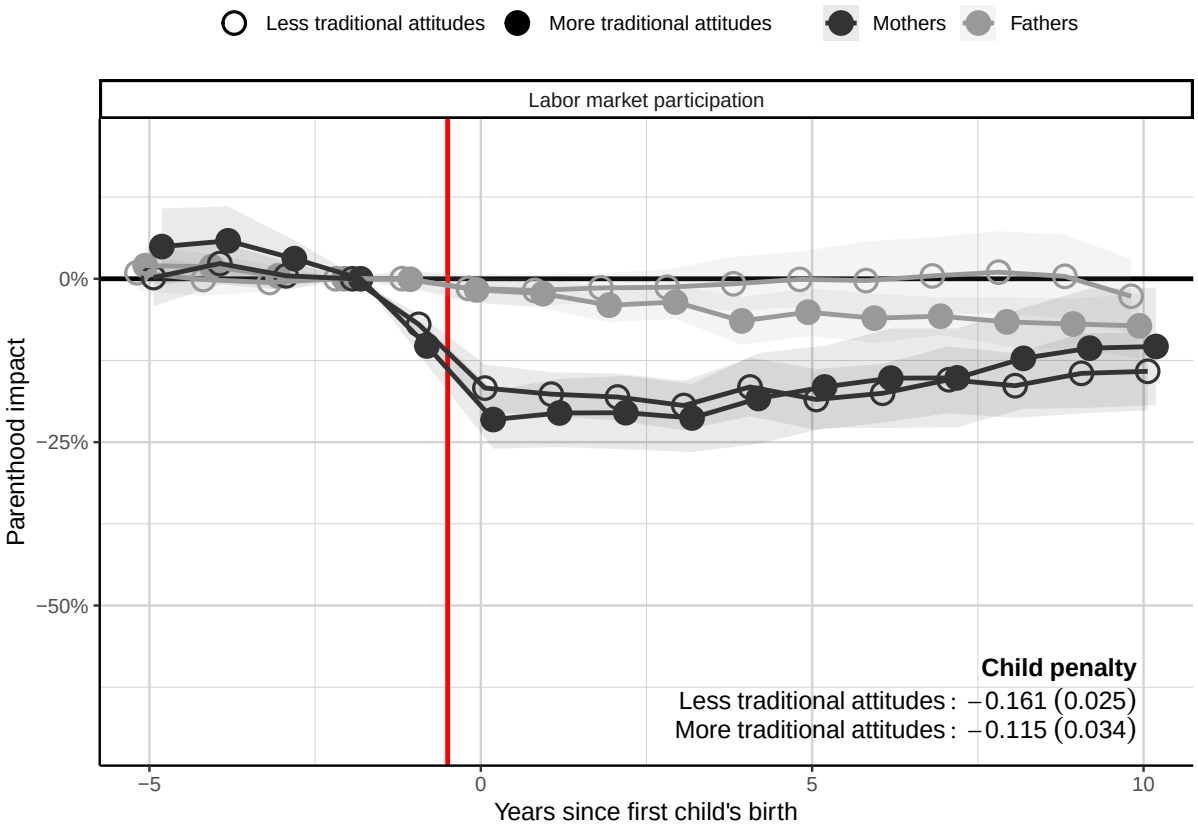



Views regarding non-medical abortion (survey item **I_AVORT**) are not included in the delineation of attitudes. Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make attitudes groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure G.7.** Child penalty in labor market participation for immigrant parents: by self-reported attitudes, excluding views on same-sex couples, balanced on pre-birth characteristics and fertility decisions

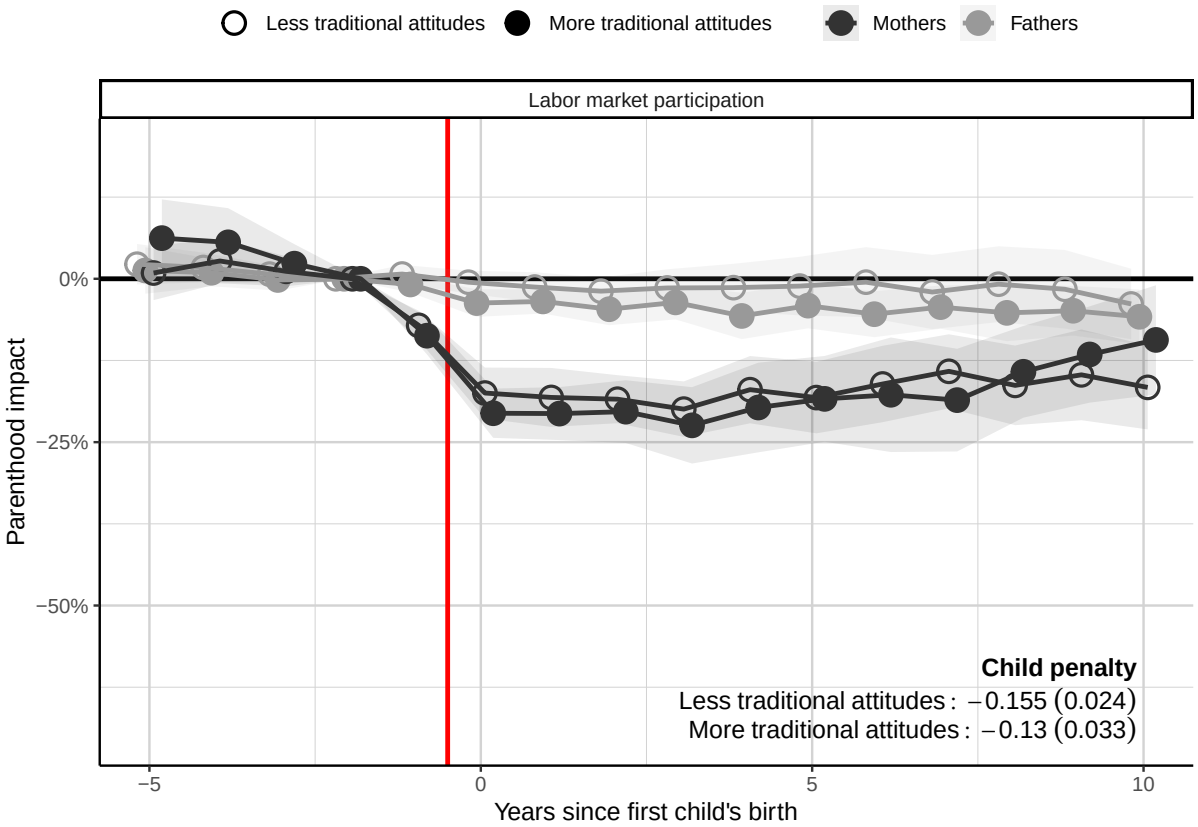



Views regarding equal rights for same-sex couples (survey item **I_HOMO**) are not included in the delineation of attitudes. Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make attitudes groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure G.8.** Child penalty in labor market participation for immigrant parents: by self-reported attitudes, excluding friends's gender, balanced on pre-birth characteristics and fertility decisions

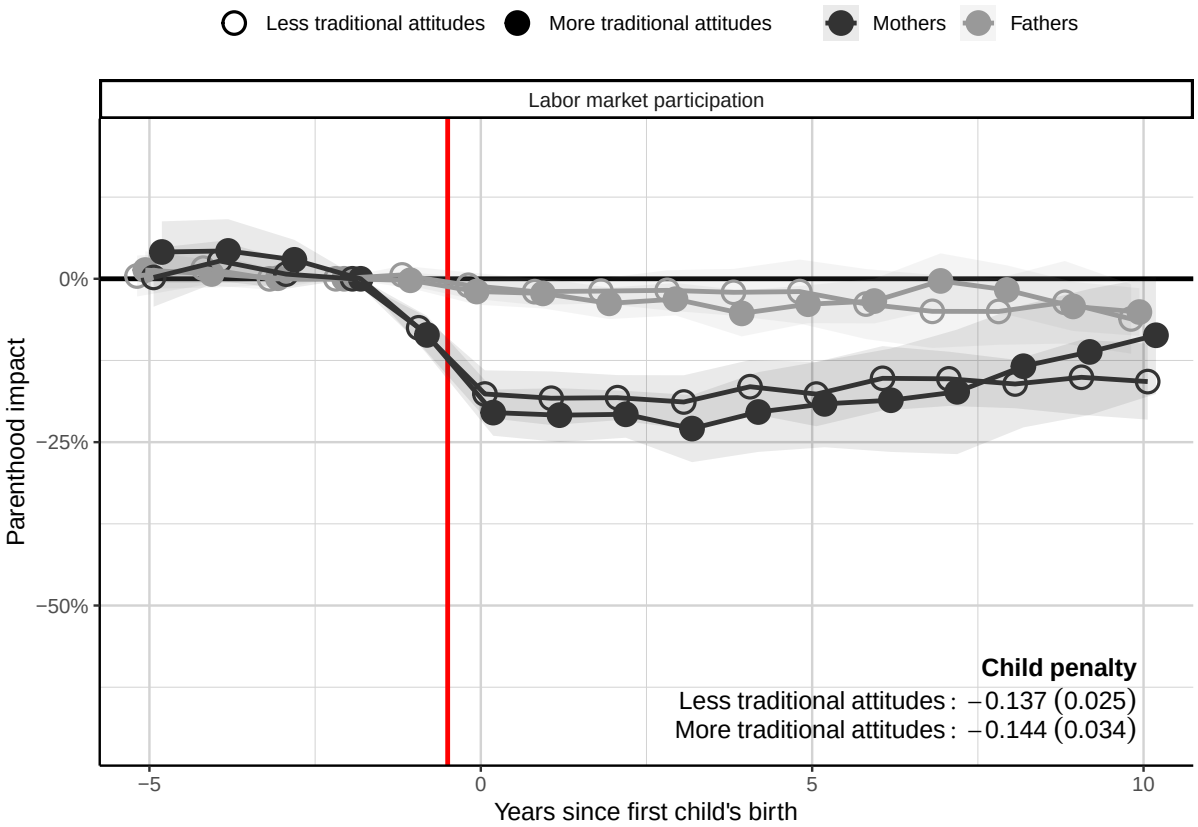



The distribution of immigrants' friends' gender (survey item **A_RMEME**) is not included in the delineation of attitudes. Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make attitudes groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure G.9.** Child penalty in labor market participation for immigrant parents: by self-reported attitudes, excluding prominence given to religion, balanced on pre-birth characteristics and fertility decisions

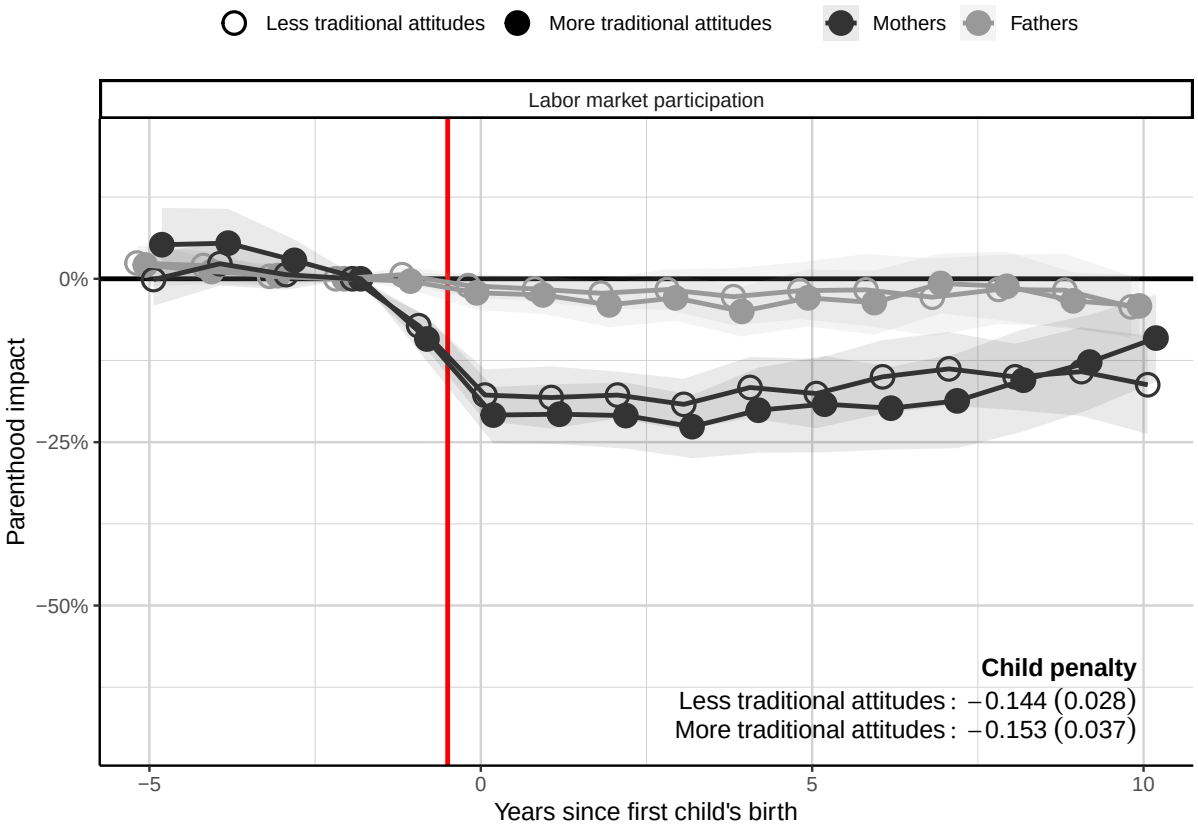



Self-reported prominence given to religion (survey item **R_IMPVIE**) is not included in the delineation of attitudes. Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make attitudes groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure G.10.** Child penalty in labor market participation for immigrant parents: by self-reported attitudes, excluding political orientation, balanced on pre-birth characteristics and fertility decisions

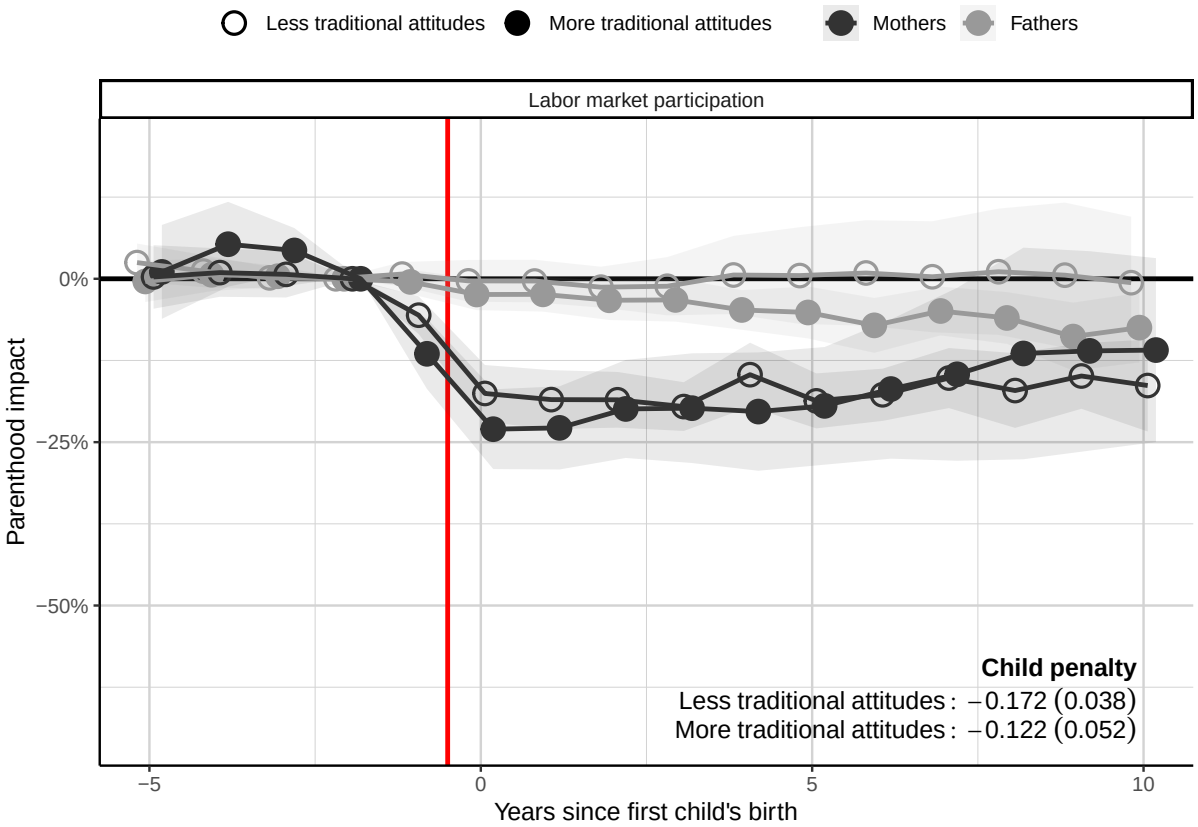



Self-reported political orientation (survey item **I_OPIPOL**) is not included in the delineation of attitudes. Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make attitudes groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure G.11.** Child penalty in labor market participation for immigrant parents: by self-reported attitudes, cut at tertiles, balanced on pre-birth characteristics and fertility decisions




Attitudes groups are defined based on tertiles instead of median of the first component of the PCA. Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make attitudes groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

group in this subsample, we estimate:

$$Y_{i,t} = \alpha_t + \sum_{s \neq -2} \beta_s \mathbb{1}\{t = C_i + s\} + \sum_b \gamma_b \mathbb{1}\{B_i + t = b\} + \epsilon_{it} \tag{3}$$

where $Y_{it}$ represents labor force participation for individual $i$ at age $t$, $C_i$ denotes the age at which she had her first child, and $B_i$ represents the year of her birth. As a result, the $\beta_s$ coefficients correspond to the child penalty in levels, while the other terms capture non-parametric trends in age and calendar time common to all individuals within a specific gender and attitude group.

Lastly, to ensure consistency with our framework, we consider the relative impact of childbirth in this context, that is:

$$p_s = \frac{\beta_s}{\mathbb{E}[\alpha_t + \sum_b \gamma_b \mathbb{1}\{B_i + t = b\} \mid s = C_i + t]} \tag{4}$$

Figure G.12 presents the corresponding results. The dynamics of labor force participation differ from our baseline estimates: they suggest less negative effects of motherhood on labor supply and a positive effect of fatherhood on labor force participation. They also exhibit a less convincing pre-trend, which may indicate that the additional comparisons upon which this strategy relies are not fully consistent with the additional treatment effects homogeneity assumption upon which this strategy relies. However, we cannot reject the hypothesis that the child penalty is the same in both attitude groups, which is consistent with our conclusion based on a more sophisticated approach.

## G.5 Robustness with respect to the inclusion of a particular variable describing the environment in which immigrants were brought up

Our depiction of the upbringing environment encompasses three dimensions: the religiosity of *ego*'s family during her childhood, the imbalance in household chores between her parents, and the number of siblings she had. In this Appendix, we consider less composite representations, distinguishing between these three dimensions.

### G.5.1 Changes in the composition of upbringing groups

Figures G.13 to G.15 display the share of immigrant parents characterized as holding more traditional views regarding gender, according to their upbringing environment, each time along one of the aforementioned dimensions. The main takeaway from this exercise is that (i) each of these dimensions makes immigrant parents more likely to hold traditional views; and (ii) this effect is stronger for religiosity and the number of siblings than for gender imbalance in household chores among *ego*'s parents.

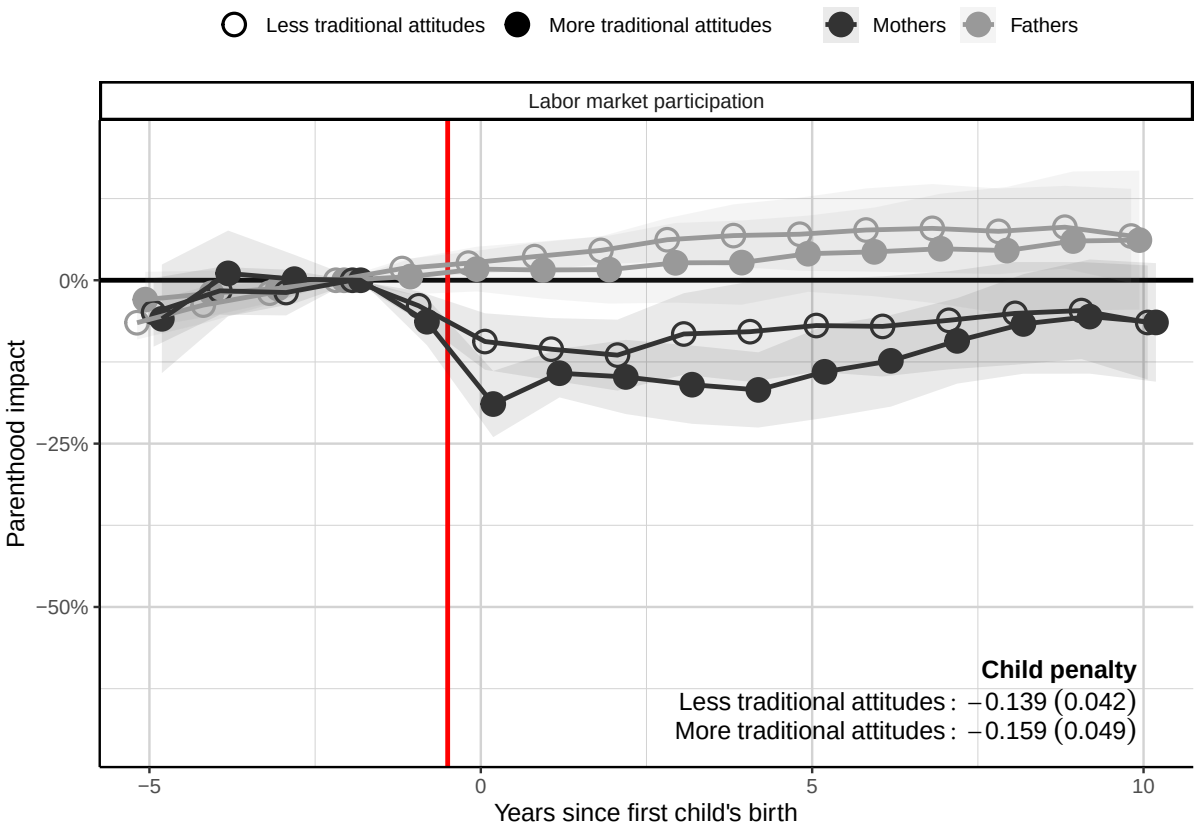
### G.5.2 Robustness of the child penalties comparisons

Figures G.16 to G.18 display our estimates of the child penalty for each group defined by our characterizations of the environment in which immigrant parents grew up. Regardless of the dimension we focus on, the child penalties are strikingly similar across groups. This corroborates our finding that growing up in a family where more traditional views were likely to flourish is not correlated with the child penalty in later life.

## G.6 Influence of the reweighting procedure on the results regarding different upbringing environments

Figures G.19 and G.20 display our estimates of the child penalties by environment groups, both without any reweighting of the data and after reweighting based on pre-childbirth characteristics, but not on fertility decisions. The key takeaway from this exercise is that our finding—that the child penalty is

**Figure G.12.** Child penalty in labor market participation for immigrant parents: by self-reported attitudes, balanced on pre-birth characteristics and fertility decisions, child penalty estimation similar to Kleven, Landais, and Søgaard (2019)

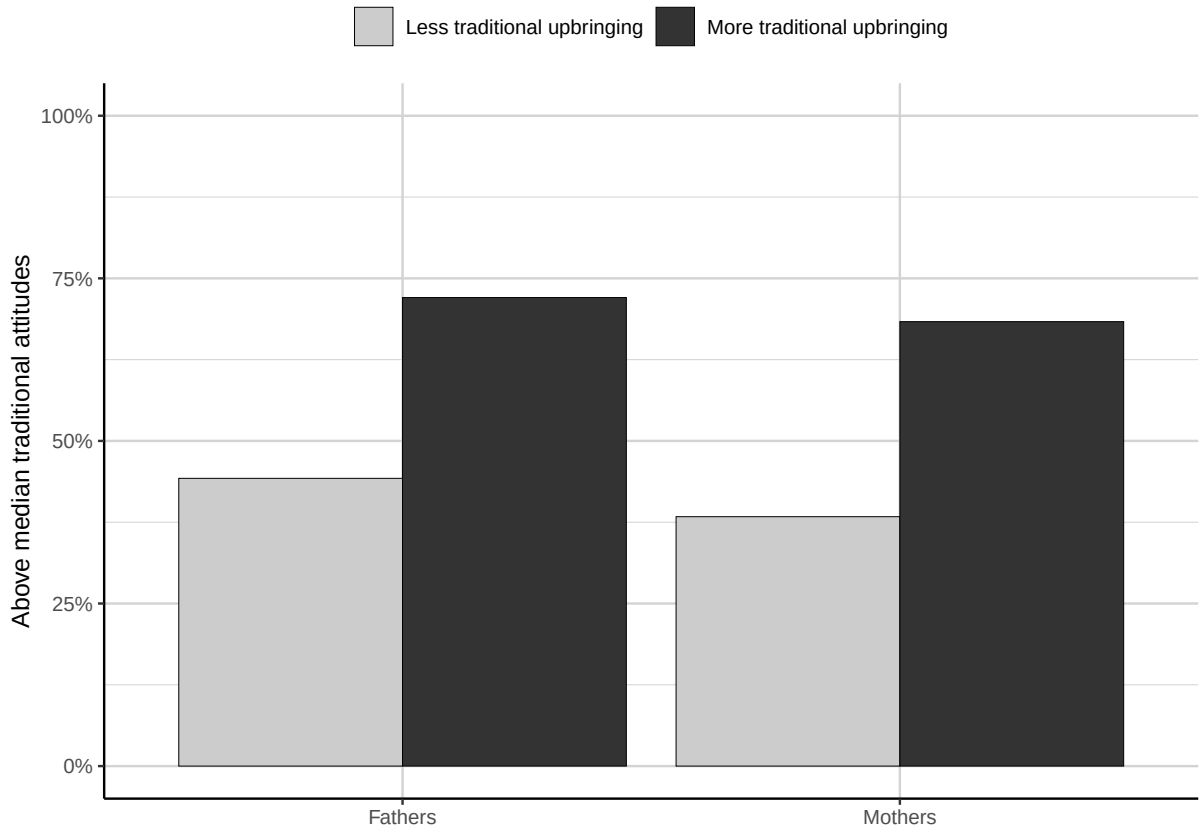



Parenthood impact is identified thanks to Kleven, Landais, and Søgaard (2019)'s approach (see Equation 4), and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make attitudes groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure G.13.** Gender-related attitudes by environment in which immigrant parents grew up: by religiosity of the upbringing environment

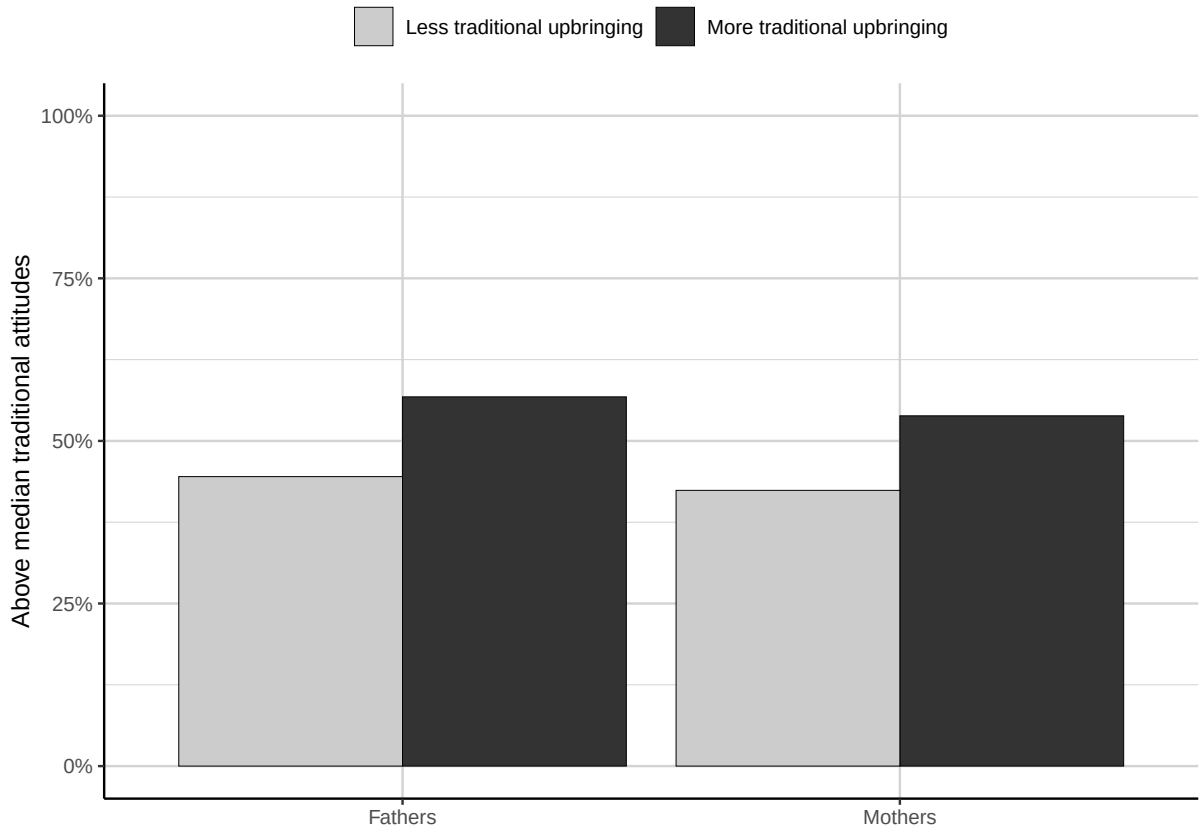



Upbringing environment is measured by *ego*'s father's and mother's having a religion and prominence given to religion in *ego*'s education before the age of 18. Environment groups are defined by immigrants with above or below median predicted gender-related attitudes in the OLS regression of gender-related attitudes on the aforementioned variables. The data are reweighted based on an inverse propensity score approach so as to make upbringing environments groups similar in terms of pre-birth observables characteristics and fertility decisions. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure G.14.** Gender-related attitudes by environment in which immigrant parents grew up: : by gender imbalance in household chores

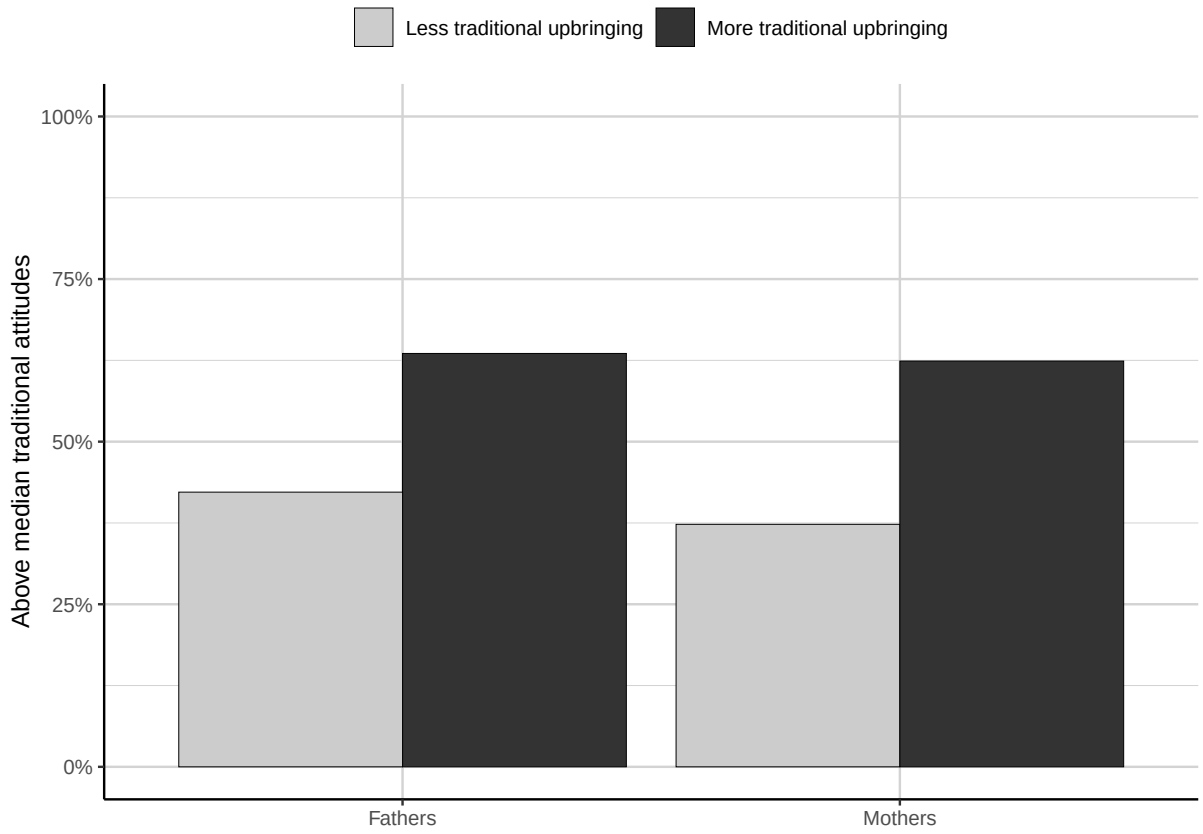



Upbringing environment is measured by gender imbalance between *ego*'s parents' allocation of household chores (daily meals, grocery shopping and clothes washing) before the age of 18. Environment groups are defined by immigrants with above or below median predicted gender-related attitudes in the OLS regression of gender-related attitudes on the aforementioned variables. The data are reweighted based on an inverse propensity score approach so as to make upbringing environments groups similar in terms of pre-birth observables characteristics and fertility decisions. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure G.15.** Gender-related attitudes by environment in which immigrant parents grew up: : by number of siblings

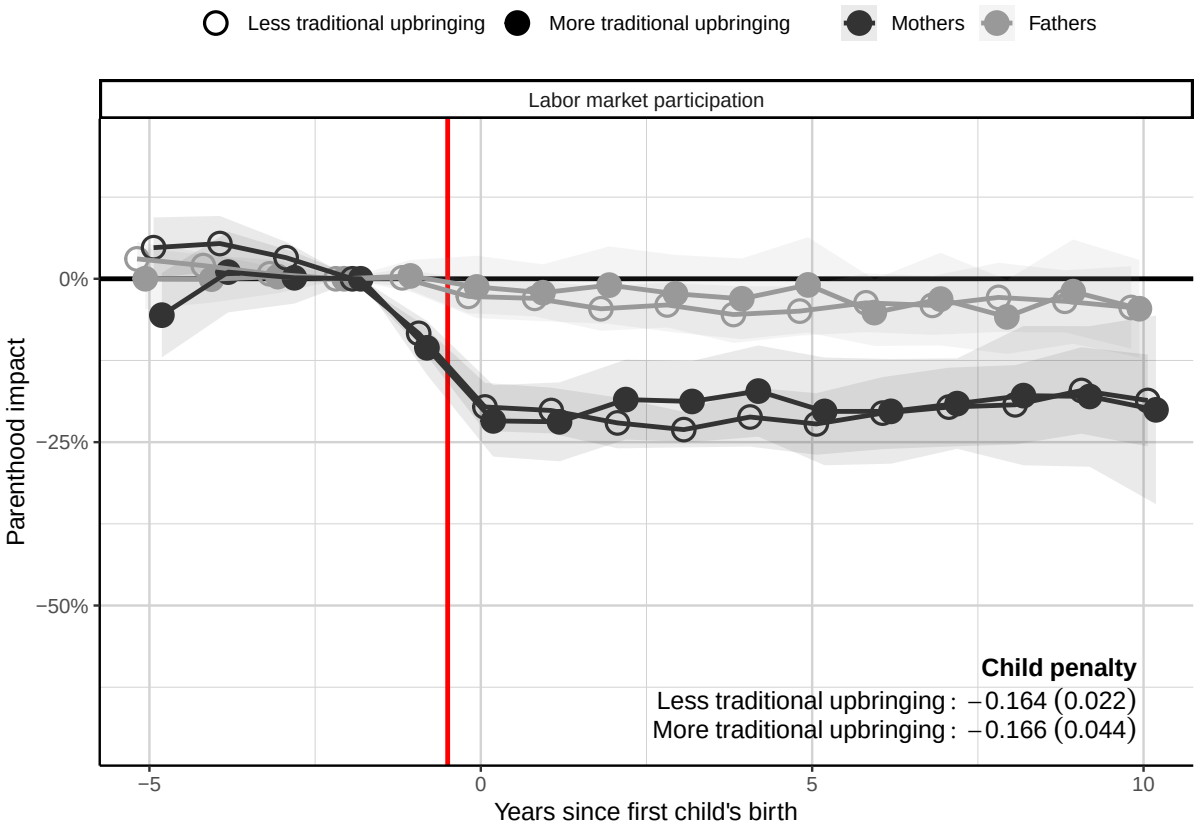



Upbringing environment is measured by the number of children born to *ego*'s mother. Environment groups are defined by immigrants with above or below median predicted gender-related attitudes in the OLS regression of gender-related attitudes on the aforementioned variables. The data are reweighted based on an inverse propensity score approach so as to make upbringing environments groups similar in terms of pre-birth observables characteristics and fertility decisions. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure G.16.** Child penalty in labor market participation for immigrant parents: by religiosity of the upbringing environment, balanced on pre-birth characteristics and fertility decisions

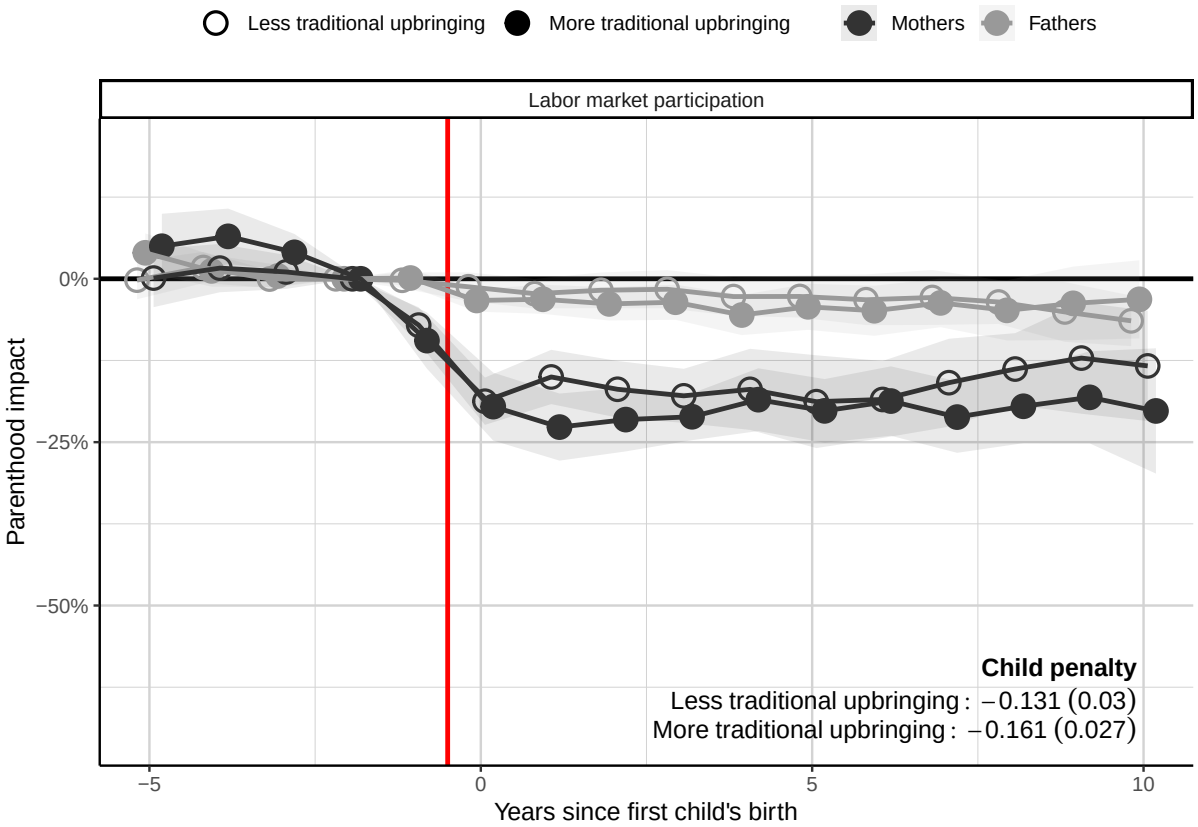



Upbringing environment is measured by *ego*'s father's and mother's having a religion, and prominence given to religion in *ego*'s education before the age of 18. Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make upbringing environments groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure G.17.** Child penalty in labor market participation for immigrant parents: by gender imbalance in household chores, balanced on pre-birth characteristics and fertility decisions

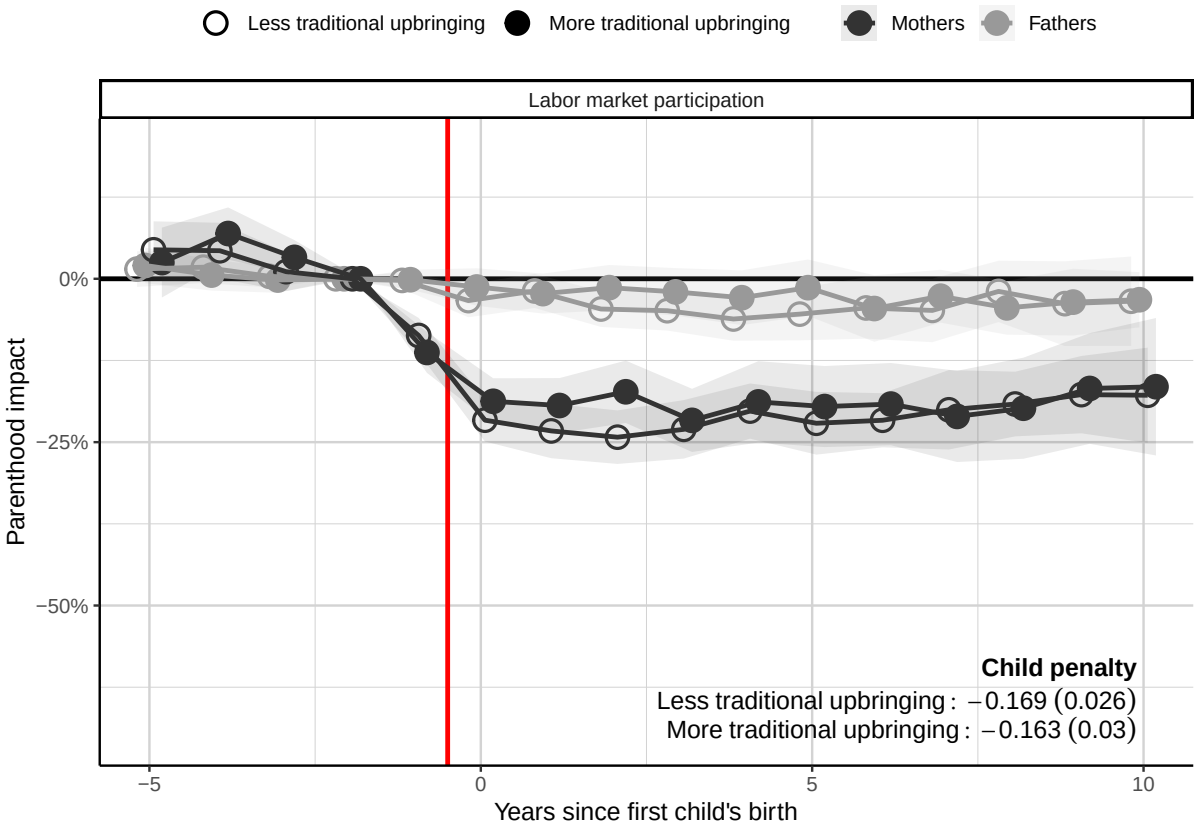



Upbringing environment is measured by gender imbalance between *ego*'s parents' allocation of household chores (daily meals, grocery shopping and clothes washing) before the age of 18. Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make upbringing environments groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

**Figure G.18.** Child penalty in labor market participation for immigrant parents: by number of siblings, balanced on pre-birth characteristics and fertility decisions



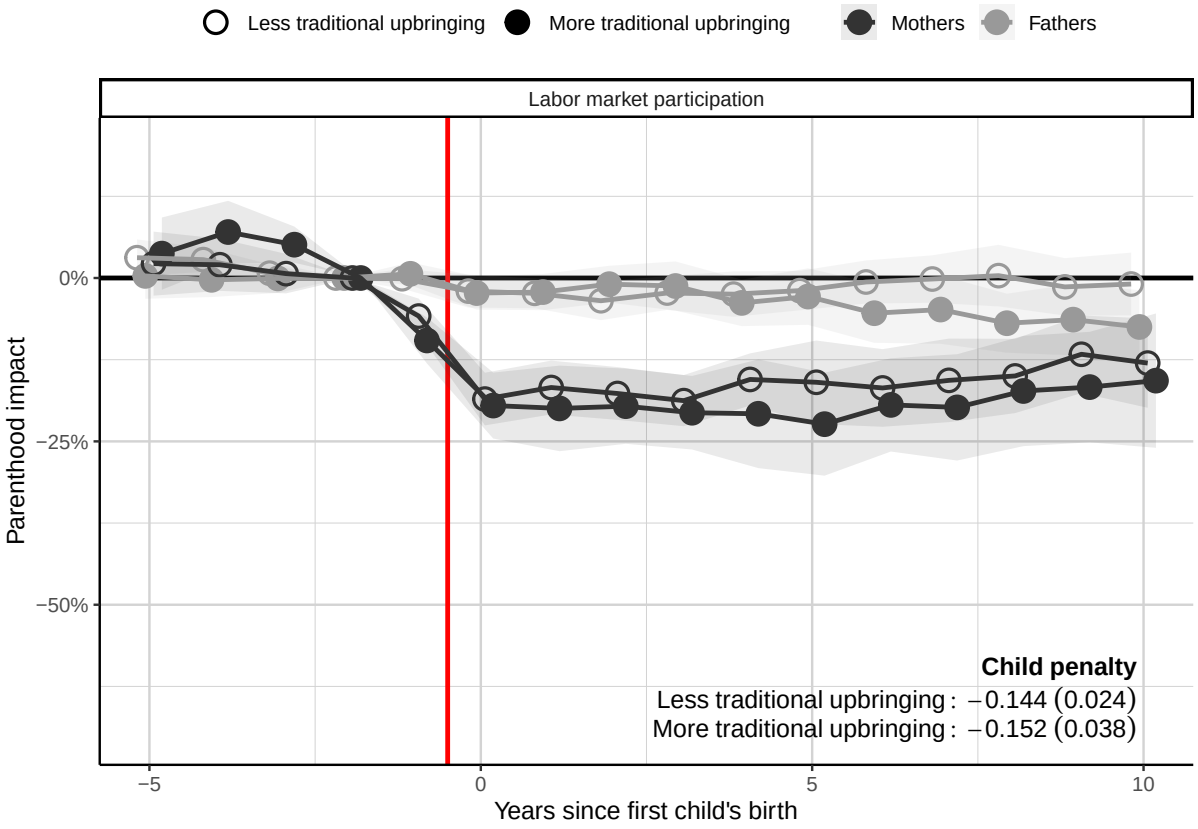

Upbringing environment is measured by the number of children born to *ego*'s mother. Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make upbringing environments groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

not related to the environment in which immigrant parents grew up—does not depend on our choice to reweight the data to make the groups more similar.

**Figure G.19.** Child penalty in labor market participation for immigrant parents: by upbringing environments, without balancing on observable characteristics




Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

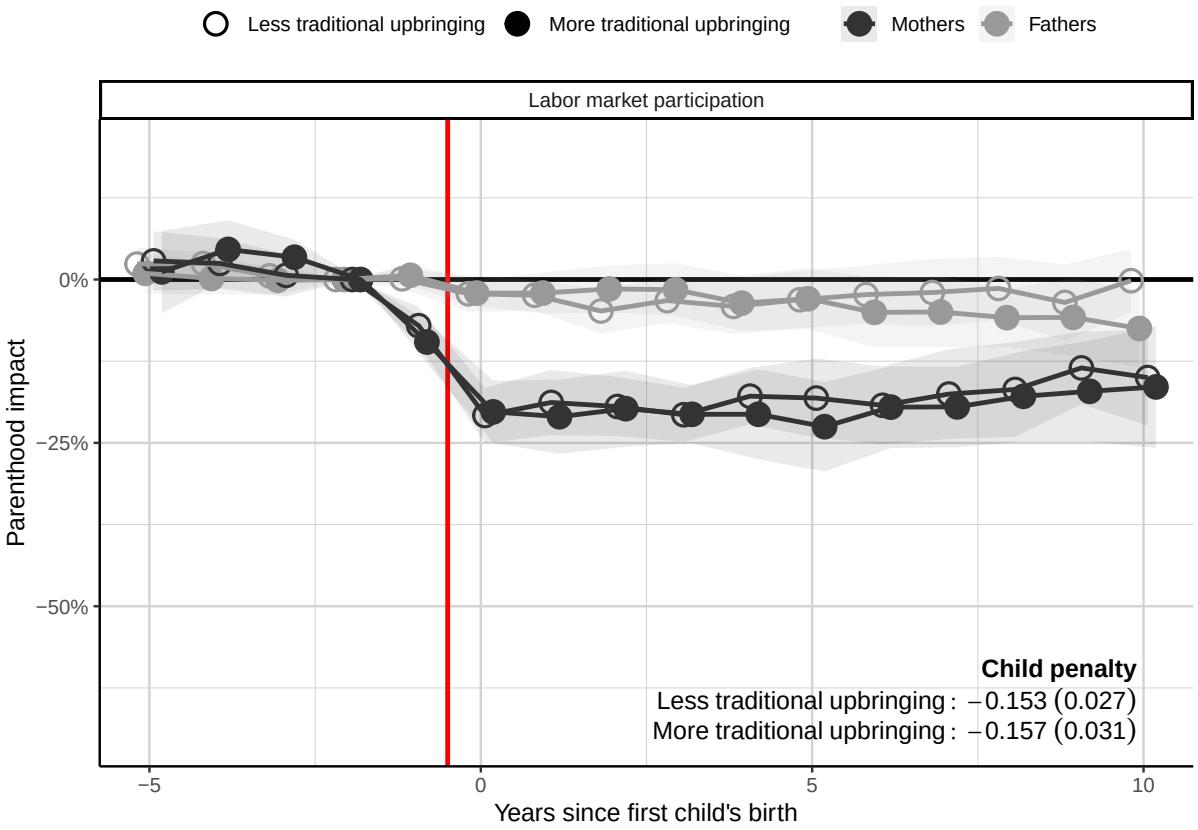
## G.7 Robustness with respect to the measurement of parents' peers' attitudes

We focus here on second-generation immigrant parents, defined by the prevalence of traditional views among first-generation immigrants from the same countries as their parents. The purpose of this appendix is to distinguish between transmission through mothers and transmission through fathers.

### G.7.1 Changes in the composition of origins groups

Figures G.21 and G.22 display the probability of holding more traditional views regarding gender across groups defined by the attitudes of first-generation immigrant mothers from *ego*'s mother's country of birth, or by those of first-generation immigrant fathers from *ego*'s father's country of birth. The main lesson from this exercise is that, in both cases, the effect of *ego*'s parents' peers' attitudes on *ego*'s

**Figure G.20.** Child penalty in labor market participation for immigrant parents: by upbringing environments, balanced on pre-birth characteristics



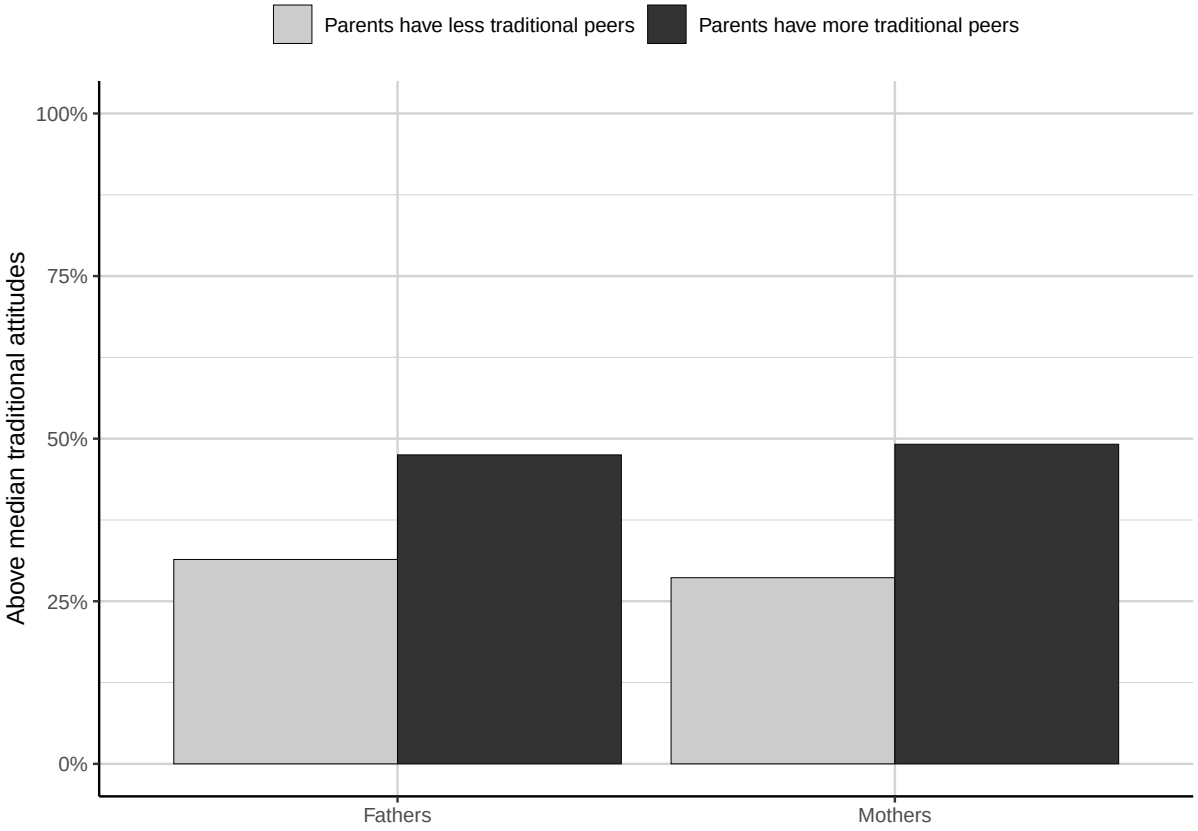

Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual labor market participation rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make upbringing environments groups similar in terms of pre-birth observables characteristics. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

attitudes is positive and strong. This effect is possibly slightly stronger when considering *ego*'s mother, especially when *ego* is a mother herself.

**Figure G.21.** Gender-related attitudes by second-generation immigrant parents' mothers' peers' attitudes




Parents' peers' attitudes are measured as the share of first-generation female immigrants from *ego*'s mother's country of birth with above-median traditional gender-related attitudes. Parents' peers' attitudes groups defined by second-generation immigrants with above or below median predicted gender-related attitudes in the OLS regression of gender-related attitudes on the aforementioned variables. The data are reweighted based on an inverse propensity score approach so as to make origins groups similar in terms of pre-birth observables characteristics and fertility decisions.

*Population.* Second-generation immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

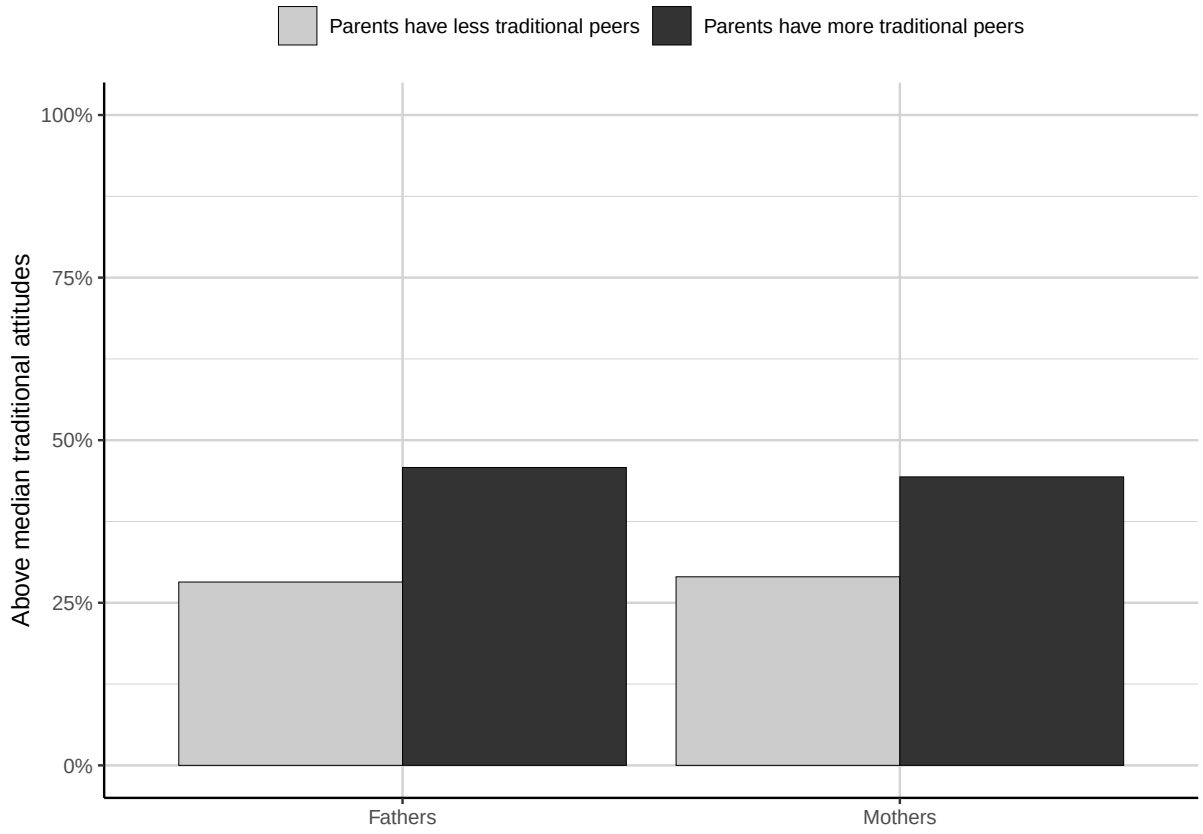
### G.7.2 Robustness of the child penalties comparisons

Figures G.23 and G.24 display our estimates of the child penalty across groups defined by *ego*'s parents' peers' attitudes. The main lesson is that the child penalties are very similar across groups, regardless of whether we consider *ego*'s father or *ego*'s mother.

## G.8 Influence of the reweighting procedure on the results regarding different countries of origin

Figures G.25 and G.26 display our estimates of the child penalties across groups defined by *ego*'s parents' peers' attitudes regarding gender, depending on whether we reweight the data to make groups more

**Figure G.22.** Gender-related attitudes by second-generation immigrant parents' fathers' peers' attitudes

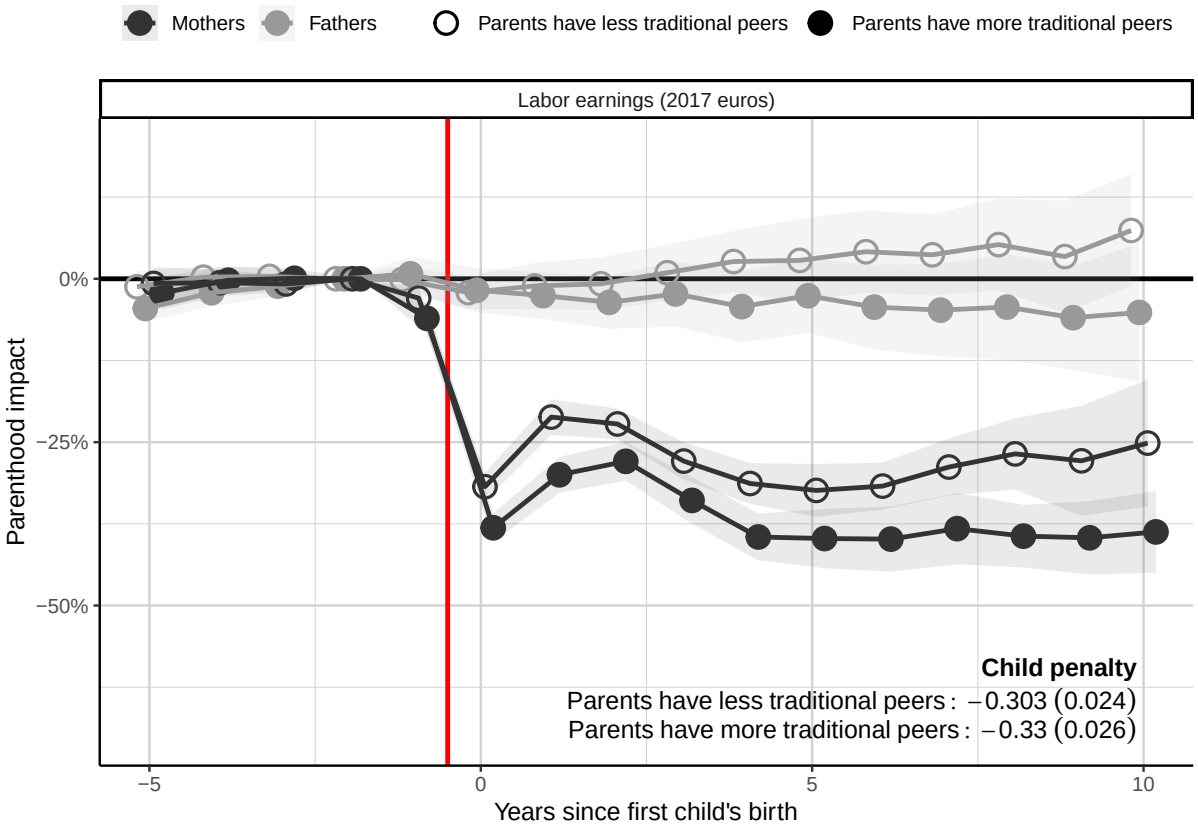



Parents' peers' attitudes are measured as the share of first-generation male immigrants from *ego*'s fathers' country of birth with above-median traditional gender-related attitudes. Parents' peers' attitudes groups defined by second-generation immigrants with above or below median predicted gender-related attitudes in the OLS regression of gender-related attitudes on the aforementioned variables. The data are reweighted based on an inverse propensity score approach so as to make origins groups similar in terms of pre-birth observables characteristics and fertility decisions.

*Population.* Second-generation immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

**Figure G.23.** Child penalty in labor earnings for second-generation immigrant parents: by second-generation immigrant parents' mothers' peers' attitudes, balanced on pre-birth characteristics and fertility decisions

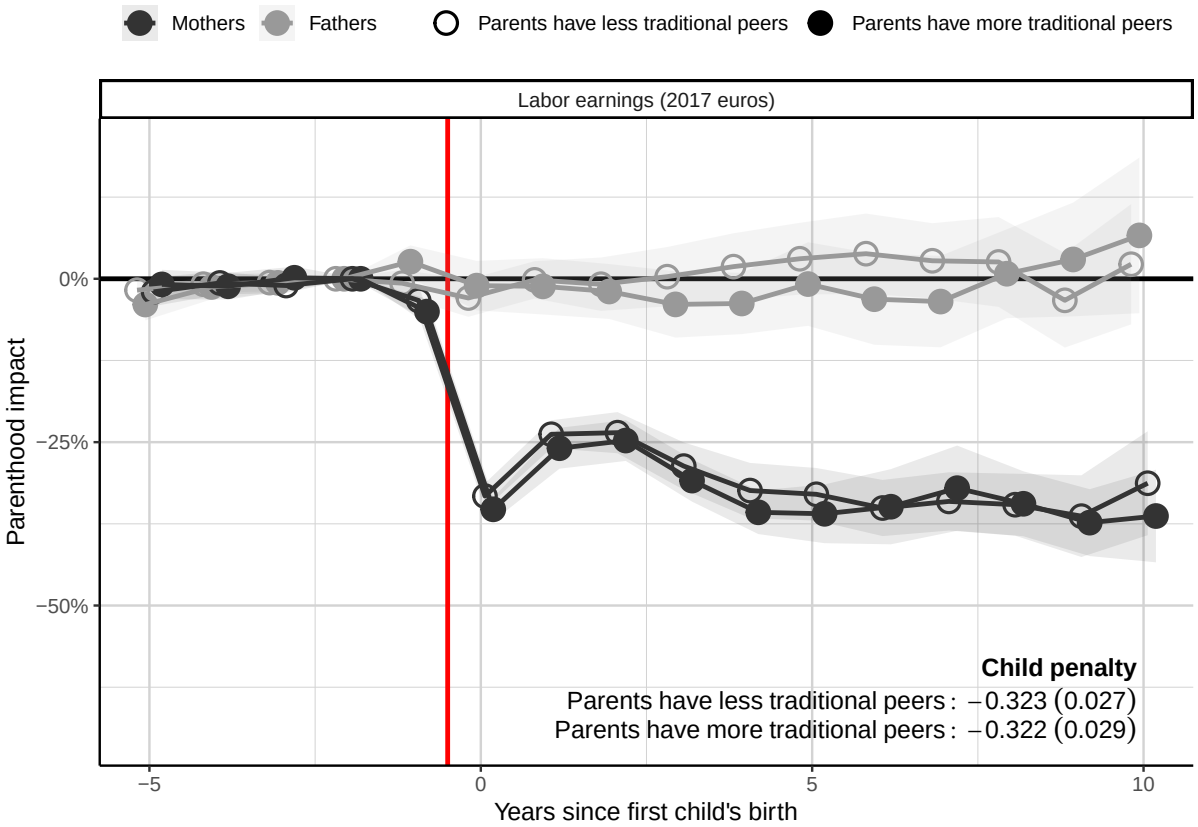



Parents' peers' attitudes are measured as the share of first-generation female immigrants from *ego*'s mother's country of birth with above-median traditional gender-related attitudes. Parenthood impact is identified from comparisons between parents of the same cohort (year of birth) who got their first salaried job at the same time, but had their first child at different ages (at least two years after their first salaried job), and displayed relative to the counterfactual earnings level. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make origin groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level.

*Population.* Second-generation immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

**Figure G.24.** Child penalty in labor earnings for second-generation immigrant parents: by second-generation immigrants' fathers' peers' attitudes, balanced on pre-birth characteristics and fertility decisions



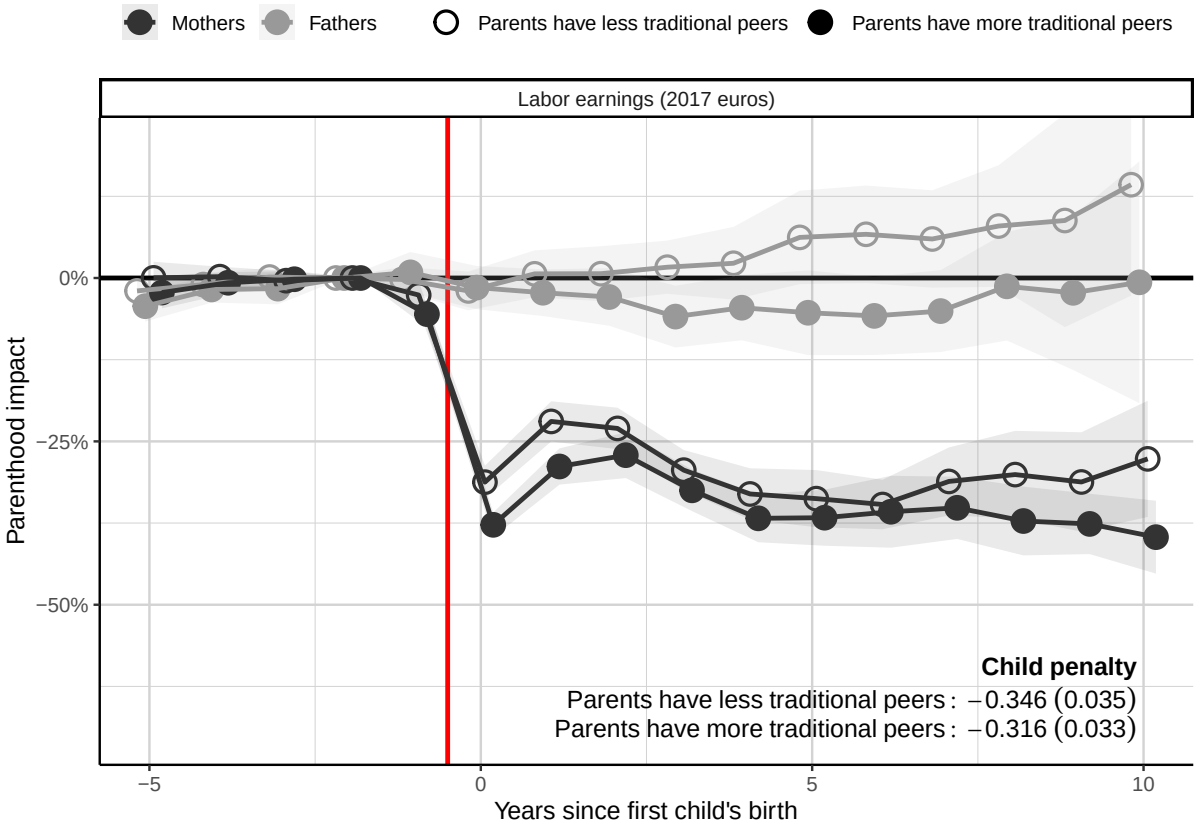

Parents' peers' attitudes are measured as the share of first-generation male immigrants from *ego*'s fathers' country of birth with above-median traditional gender-related attitudes. Parenthood impact is identified from comparisons between parents of the same cohort (year of birth) who got their first salaried job at the same time, but had their first child at different ages (at least two years after their first salaried job), and displayed relative to the counterfactual earnings level. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make origin groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level.

*Population.* Second-generation immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

similar in terms of observable characteristics, and which characteristics we include. The main lesson is that such choices have little effect on our finding.

**Figure G.25.** Child penalty in labor earnings for second-generation immigrant parents: by second-generation immigrant parents' parents' peers' attitudes, without balancing on observable characteristics




Parenthood impact is identified from comparisons between parents of the same cohort (year of birth) who got their first salaried job at the same time, but had their first child at different ages (at least two years after their first salaried job), and displayed relative to the counterfactual earnings level. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level.

*Population.* Second-generation immigrant parents living in mainland France in 2019-2020.

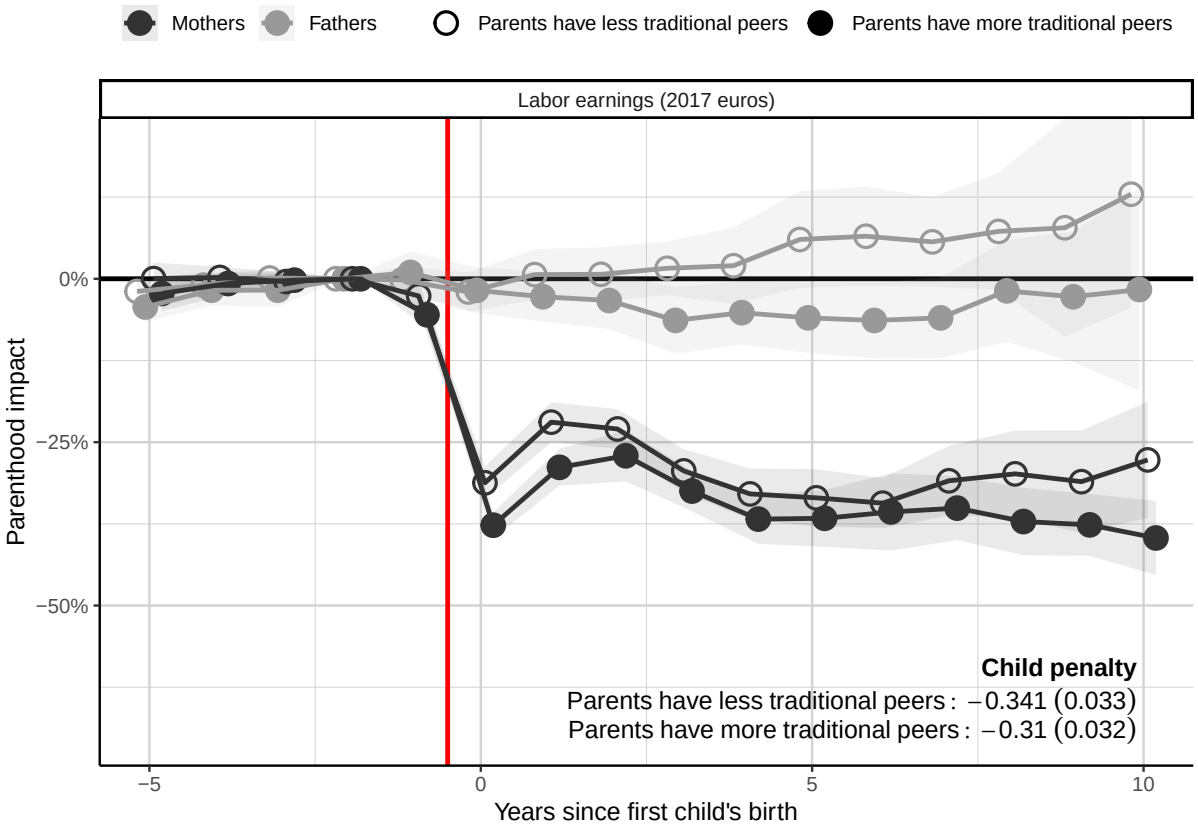
*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

## G.9 Robustness with respect to the parallel trends assumption

In this appendix, we compare our estimates of the difference in child penalties across groups defined by *ego*'s parents' peers' attitudes, depending on whether the impact of parenthood is identified from comparisons across parents of the same decennial generation, regardless of other characteristics, or across parents born in the same year who started their first salaried job at the same time.

Figure G.27 displays our estimates in the first case, with the latter being our baseline strategy. The lesson from this exercise is that this choice does change the trend in the impact, but the likely bias remains the same across groups and genders, so it does not affect our finding that the aggregated child penalty is the same across groups.

**Figure G.26.** Child penalty in labor earnings for second-generation immigrant parents: by second-generation immigrant parents' parents' peers' attitudes, balanced on pre-birth characteristics

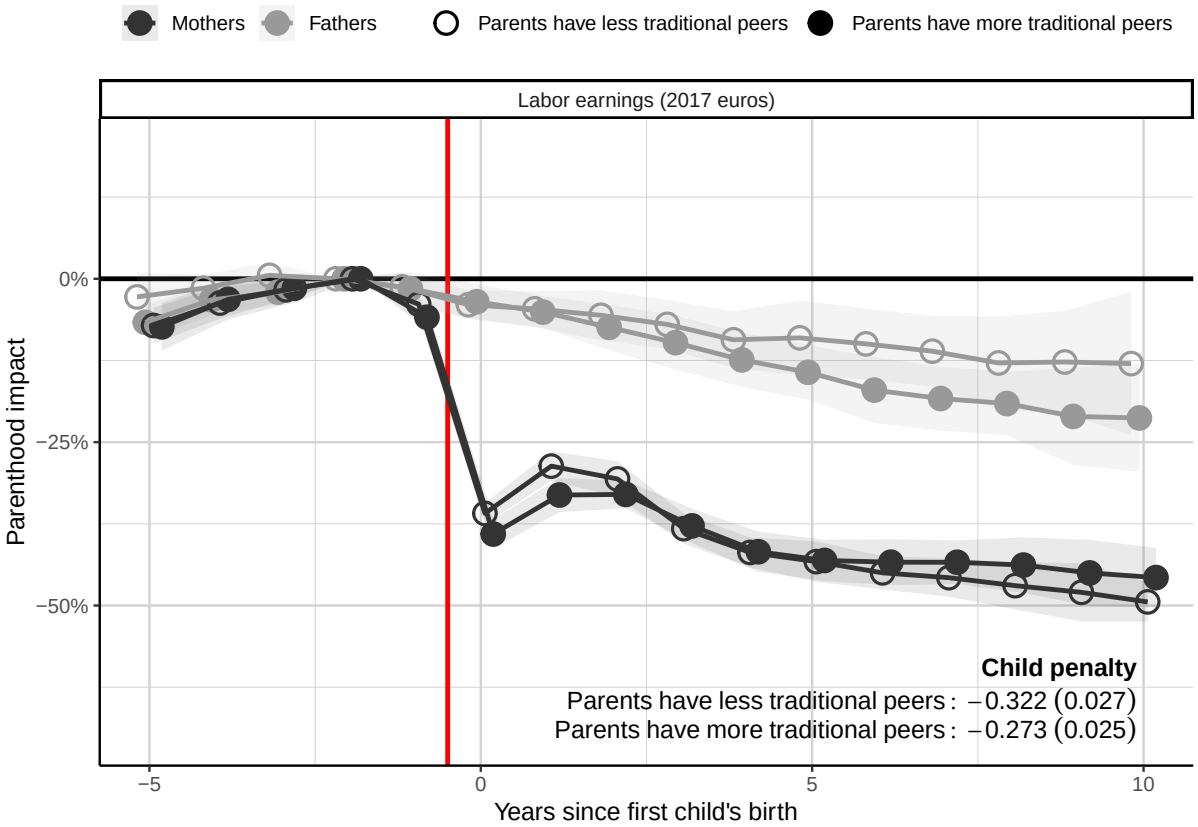



Parenthood impact is identified from comparisons between parents of the same cohort (year of birth) who got their first salaried job at the same time, but had their first child at different ages (at least two years after their first salaried job), and displayed relative to the counterfactual earnings level. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make upbringing environments groups similar in terms of pre-birth observables characteristics. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level.

*Population.* Second-generation immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

**Figure G.27.** Child penalty in labor earnings for second-generation immigrant parents: by second-generation immigrants' parents' peers' attitudes, balanced on pre-birth characteristics and fertility decisions




Parents' peers' attitudes are measured as the share of first-generation female (resp. male) immigrants from *ego*'s mother's (resp. fathers') country of birth with above-median traditional gender-related attitudes. Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual earnings level. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make origin groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level.

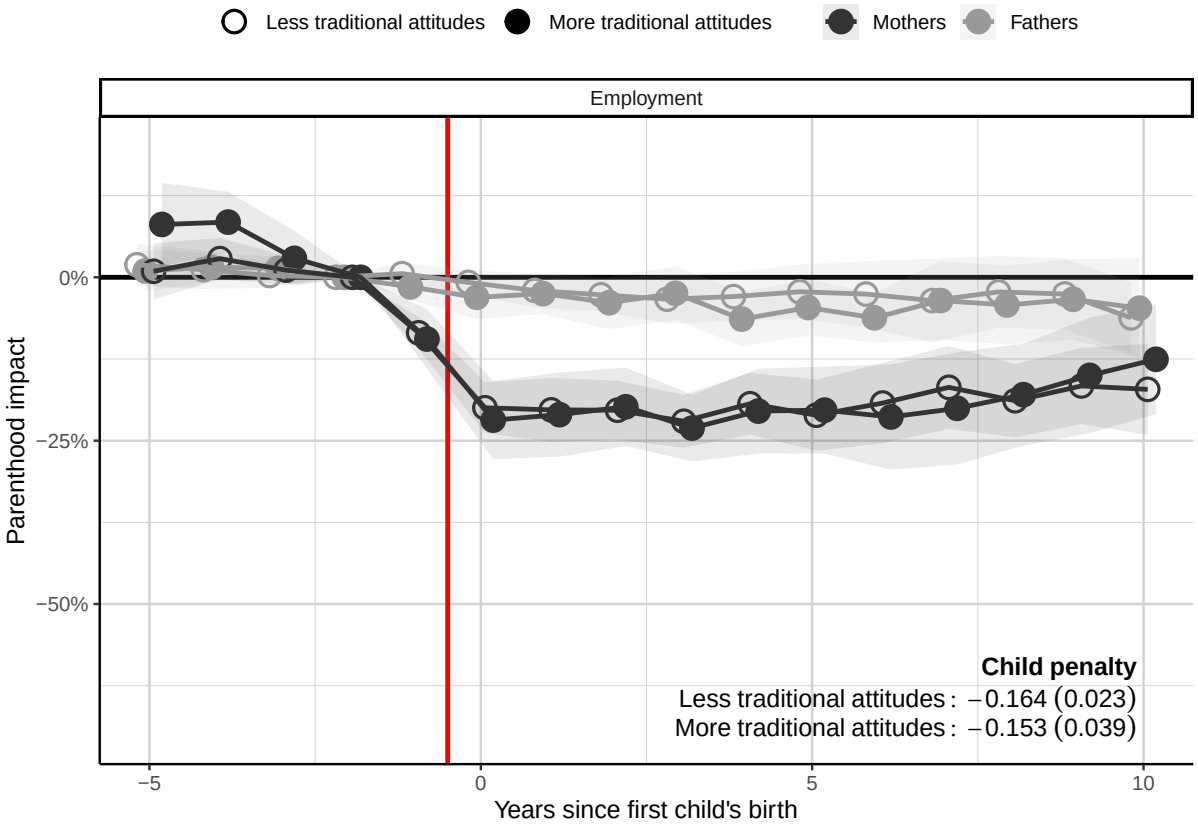
*Population.* Second-generation immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), CCMSA, Cnaf, Cnav, DGFiP and Insee, permanent demographic sample (EDP), authors' calculation.

## G.10 Robustness with respect to the choice of labor outcome

Figure G.28 displays our estimates of the child penalties across attitude groups when the outcome of interest is no longer labor market participation, but actual employment. Our result remains the same: the child penalties are very similar across groups. Since they also closely match those obtained when considering labor market participation, this suggests that unemployment is not a common response to motherhood among immigrants living in France.

**Figure G.28.** Child penalty in employment for immigrant parents: by self-reported attitudes, balanced on pre-birth characteristics and fertility decisions




Parenthood impact is identified from comparisons between parents of the same decennial cohort who had their first child at different ages, and displayed relative to the counterfactual employment to population rate. The child penalty is the difference in parenthood impact between men and women, averaged over the first 10 years after their first child is born. The data are reweighted based on an inverse propensity score approach so as to make attitudes groups similar in terms of pre-birth observables characteristics and fertility decisions. Shaded areas correspond to 95% confidence intervals; they are based on a reweighted bootstrap approach, clustered at the individual level. First-generation immigrants are only included in the computation after they first arrived in France.

*Population.* Immigrant parents living in mainland France in 2019-2020.

*Source.* Ined and Insee, Trajectoires et Origines 2 survey (2019-2020), authors' calculation.

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