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Revolutionary Transition: Inheritance Change and Fertility Decline*

Victor Gay[†] Paula E. Gobbi[‡] Marc Goni[§]

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Abstract

We test Le Play's (1875) hypothesis that the French Revolution contributed to France's early fertility decline by imposing equal partition of inheritance among all children, including women. We combine new data on local inheritance rules before the Revolution and individual-level demographic data from historical sources and crowdsourced genealogies. Difference-in-differences and regression-discontinuity estimates show that the inheritance reforms enacted during the Revolution reduced completed fertility by 0.5 children. A key mechanism was the desire to avoid land fragmentation across generations. These reforms closed the fertility gap between regions with different historical inheritance rules and crucially contributed to France's demographic transition.

JEL classification: D10, J10, K11, N33, O10.

Keywords: *Demographic transition, Fertility, French Revolution, Inheritance.*

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1 Introduction

The demographic transition is a critical stage in the development of any society. Historically, sustained economic growth began only after large segments of the population limited their fertility. Low fertility rates prevented gains in output from being largely offset by rapid population growth, paving the way for modern economic growth (Galor 2012).¹

Because of its importance for the economy and society, a large literature has studied the causes of historical and modern fertility transitions (Guinnane 2011). Most research by economists highlights changes in the economic incentives for having children based on the trade-off between the quantity and the quality of children (Becker and Lewis 1973). Under this framework, the fertility transition emerged as a result of technological progress and increased demand for education after the Industrial Revolution (Galor and Moav 2002; Delventhal et al. 2021). Alternatively, other changes concomitant to industrialization have been linked to the decline in fertility, such as health improvements (Cervellati and Sunde 2015), advances in contraception technology, or changes in social norms about their use (Beach and Hanlon 2022).

Although some of these factors played an important role in England, where the Industrial Revolution preceded the fertility transition, they cannot rationalize why the first large-scale fertility transition started in eighteenth-century France, more than 50 years before its industrialization, and subsequently spread to neighboring countries (Perrin 2022; Melki et al. 2024). Figure 1 illustrates France’s early fertility decline by showing the crude birth rate, the Princeton I_g index of marital fertility, and women’s completed fertility at age 40 from 1700 to 1850. These three measures indicate that fertility had been slowly declining throughout the eighteenth century, long before France’s industrialization in the 1850s. As a result, a recent literature has linked France’s early fertility decline to deep-rooted social norms, culture, or religiosity, rather than to sharp changes in economic incentives following the Industrial Revolution (Spolaore and Wacziarg 2022; Blanc 2024a). That said, some crucial features of the French fertility transition remain unexplained. Most notably, Figure 1 also shows that a sharp reduction in fertility began shortly after the French Revolution. The speed of this change is difficult to rationalize with deep-rooted, slowly-evolving cultural factors, while its timing seems to rule out economic factors linked to industrialization.

In this article, we offer a novel explanation for the sharp fertility decline in late eighteenth-century France illustrated in Figure 1. Instead of changes associated with the Industrial Revolution or cultural factors, we show that institutions affected the economic incentives for having children. Specifically, we revisit the longstanding hypothesis

¹In the twentieth century, all developing countries that reached medium income levels first experienced a drop in fertility (Chesnais 1992), with the exception of oil producing countries.

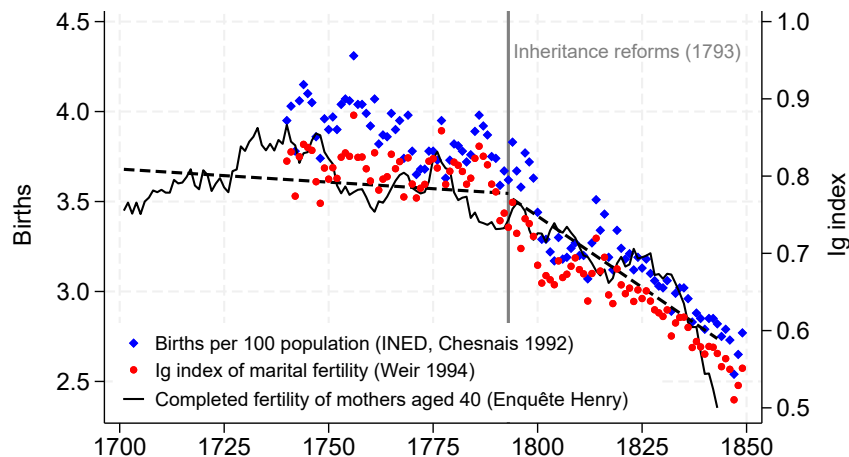


Figure 1: Fertility decline in France, 1700–1850.

Notes: I_g is the Princeton index of marital fertility, i.e., the number of legitimate births relative to the expected number of births in a Hutterite population with the same number and age structure of married women. *Completed fertility* is a 5-year moving average plotted in the year when mothers were aged 40. Dashed lines are fitted values relative to completed fertility before and after 1793.

of [Le Play \(1875\)](#), which links France’s early fertility decline to the new inheritance laws introduced during the French Revolution.² Motivated by the equality principle, a series of reforms passed in 1793 ruled that inheritance had to be partitioned equally among all children including women (henceforth, egalitarian inheritance). These reforms effectively harmonized inheritance systems across France which, before the Revolution, had been regulated by a myriad of local customary and written laws. In some areas, inheritance was already egalitarian before 1793. In others, the reforms meant that parents could no longer nominate a unique heir or exclude daughters from inheritance (henceforth, inegalitarian inheritance). [Le Play \(1875, pp. 26, 314\)](#) argued that these egalitarian inheritance reforms contributed to France’s early fertility decline, as households had to curtail family size to avoid the fragmentation of their land among multiple heirs.

We test Le Play’s hypothesis by examining whether these legal changes on inheritance affected fertility decisions. To do so, we create a new atlas mapping the 141 different customs and laws that regulated inheritance across France before the Revolution. This enables us to identify, at a highly-disaggregated level, which areas were treated by the 1793 inheritance reforms and which already had an inheritance system that complied with the new egalitarian rules. We then link this information to individual-level demographic data from the *Enquête Louis Henry* ([Séguy 2001](#)) and from online genealogies in [geni.com](#) (henceforth, Henry and Geni databases, respectively). These databases enable us to reconstruct the completed fertility, childlessness rate, and age at marriage of women born in the eighteenth and early nineteenth centuries. Our main identification strategy is

²Despite the many reforms introduced during the Revolution, only the reforms on inheritance have received attention in the literature as a potential drivers of fertility decline.

a difference-in-differences (DD) approach based on comparing cohorts of fertile age to cohorts too old to be fertile in 1793 between municipalities where the reforms altered and did not alter the existing inheritance system. We further augment our analysis with a regression-discontinuity difference-in-differences (RD-DD) design that compares women born very close to – but on opposite sides of – the border delimiting judicial districts with different inheritance rules, before and after the reforms that harmonized inheritance laws across this border.

Consistent with Le Play’s hypothesis, we find that the 1793 inheritance reforms substantially reduced fertility. Women exposed to the reform reduced their completed fertility by half a child, or by 17 percent relative to the average number of surviving children in treated areas before the reforms (2.92). This magnitude is similar to the pre-reform fertility gap between areas with egalitarian and inegalitarian inheritance. We obtain consistent estimates across our DD and RD-DD estimation strategies, which use data obtained from very different methodologies: the family reconstruction method (Henry database) and crowdsourced genealogies (Geni database). Results are also consistent along the extensive and intensive margins of fertility: before 1793, childlessness was lower and the fertility of mothers was higher in inegalitarian-inheritance areas; after 1793, the reforms contributed to close these fertility gaps. Taken together, our results imply that the 1793 inheritance reforms brought large areas of the country to the low-fertility regime that was predominant where egalitarian inheritance was already at place before the reforms. This crucially accelerated the decline in fertility in late eighteenth-century France. We present a counterfactual exercise suggesting that the 1793 inheritance reforms accounted up to 46 percent of the fertility decline during the first phase of the demographic transition (1760s–1850s) (van de Walle 1986) and to 36 percent over the entire fertility transition (1760s–1936) (Delventhal et al. 2021).³

Despite the numerous discussions around Le Play’s hypothesis among social scientists, data limitations have until now prevented a conclusive verdict (Chesnais 1992, p. 339). An important contribution of this article is to provide the first complete map of inheritance rules over France’s territory at the onset of the Revolution. Our map is at the highly-disaggregated judicial district level. Specifically, we georeference and vectorize the boundaries of the 435 judicial districts in which different customary rules applied based on Brette’s (1904a) *Atlas des Bailliages*. We then match these districts to their relevant customary law and classify inheritance customs into egalitarian and inegalitarian inheritance. To do so, we primarily use the *Nouveau Coutumier Général* (Bourdot de Richebourg 1724), which provides the original text of each custom.

The empirical setting we examine offers a number of advantages. The timing of the 1793 reforms was unexpected, as inheritance was not at the core of the popular grievances

³We do not claim that the French Revolution was the only cause of the fertility transition. There were forces limiting fertility before then, e.g., secularization (Murphy 2015; Blanc 2024a).

raised in the *cahiers de doléances* in 1789 (Goy 1988). Likewise, concerns about fertility were not instrumental for policy makers, who instead aimed at enforcing the equality principle (Shaffer 1982), unifying the legal system across France (Hyslop 1934), and consolidating the younger generations’ support for the Revolution (Lataste et al. 1901, pp. 681–3). Inheritance reforms were quickly upheld after 1793 by family tribunals (Desan 2006) and there was substantial regional variation in the set of laws and customs that were affected, which we exploit in our DD and RD-DD strategies. Furthermore, we present aggregate trends in fertility and individual-level event-study estimates to show that, prior to 1793, fertility followed common trends in areas with different inheritance systems. To deal with potential unobservable confounders, we extend our baseline DD design to control for differential fertility trends in municipalities that varied along a range of economic, religious, political, and economic-geography characteristics. These flexible-trend DD specifications account for the possibility that economic conditions – the primary determinant of fertility in Malthusian societies – might have evolved differently across areas with different inheritance systems. Finally, the validity of our augmented RD-DD estimates rests on the assumption that unobservable factors vary smoothly over space. We document that, by 1793, areas affected and not affected by the reforms were balanced on numerous individual- and local-level covariates. This finding is consistent with the historical origins of France’s heterogeneous inheritance systems. These different systems were rooted in the laws of the Germanic peoples that ruled different parts of the territory after the fall of the Roman Empire, and, therefore, are largely unrelated with environmental or structural factors.⁴

Next, we explore the mechanisms behind our results. The fertility decline following the 1793 inheritance reforms could be the result of two complementary forces. First, both by imposing equal partition and by extending the right to inherit to women, the reforms increased the number of heirs. This reduced economic incentives for having children to avoid the fragmentation of land into inefficiently small parcels. Second, by extending the right to inherit to women, the reforms potentially increased their bargaining power within the household, thereby reducing their fertility. The ideal experiment to disentangle these mechanisms would be to estimate the effect of granting inheritance rights to women where the reform did not change the number of heirs. Unfortunately, this is not possible, as extending the right to inherit to women roughly doubles the number of heirs by construction. In addition, inheritance systems that excluded women also tended to nominate a single heir. That said, we present evidence suggesting that the

⁴We show that our DD and RD-DD estimates are robust to a variety of validity checks and alternative specifications—including controlling for migration, changes in mortality associated with the demographic transition, or terrain characteristics; placebo and permutation tests; alternative definitions of the treatment group; alternative inference methods correcting for spatial correlation in the error term; and adjusting for under-reported children deaths using the first-name repetition technique (Cummins 2020).

French Revolution, despite granting women access to inheritance, did not empower wives (Desan 2006; Tudor 2021). This is mainly because the 1804 Civil Code gave husbands absolute control over jointly or independently owned property, including inheritances. Consistently, we find no effect of the reforms on spouses' relative age and education, two distribution factors typically associated with wives' bargaining power in the household (Browning et al. 2014).

Qualitative and quantitative evidence suggest that land fragmentation played a larger role. At the eve of the Revolution, France was populated by farmers with small landholdings living close to subsistence levels (de Brandt 1901). Such farming structure is characterized by indivisibility constraints, that is, further dividing landholdings can result in production falling below the subsistence level. Hence, the egalitarian inheritance reforms incentivized smaller family sizes to avoid land fragmentation among sons and daughters. We document that discussions of inheritance reform in the National Constituent Assembly, as well as contemporary observers and existing case-studies, frequently mention this hypothesis. We then evaluate this mechanism through two quantitative exercises. First, we digitize information on 36 thousand parcels listed in the Napoleonic cadastre for a subset of nine municipalities under different inheritance rules. We document three facts about land fragmentation, including its strong association with egalitarian inheritance practices. Second, we formalize this mechanism in a model and bring its testable implications to the data. We show that the effects of the 1793 inheritance reforms were circumscribed to areas where soil and terrain characteristics favored land fragmentation, while fertility remained unaffected in areas where these characteristics favored large farms.⁵

Relative to the existing literature, we make the following contributions. First, we study a novel and overlooked determinant of fertility choices: legal institutions regulating inheritance. Second, we are the first to provide empirical support for Le Play's hypothesis. Third, we provide a complete and highly disaggregated atlas of inheritance customs and laws in Ancien Régime France. And fourth, our study sheds new light to the economic consequences of inheritance systems.

Although the literature on fertility determinants is vast, legal factors are overlooked (Doepke et al. 2022). Instead, since Becker and Lewis (1973)'s seminal quantity-quality trade-off theory, human capital is widely studied to understand fertility differences over time or across individuals.⁶ Under this framework, the rise of skilled labor and urbanization can reduce fertility (Ager et al. 2020; Baudin and Stelter 2022). In addition, the literature has considered other triggering factors for fertility reductions, such as health improvements and a decline in child mortality (Sah 1991; Bar and Leukhina 2010; Bhat-

⁵We use soil texture and terrain ruggedness, two (exogenous) environmental characteristics typically associated with different degrees of fragmentation in the landownership distribution.

⁶See, e.g., Galor and Weil (2000), Galor and Moav (2002), Murin (2013), Baudin et al. (2015), Murphy (2015), Vogl (2016), and de la Croix and Perrin (2018).

tacharya and Chakraborty 2012; Herzer et al. 2012; Cervellati and Sunde 2015), female empowerment (de la Croix and Vander Donckt 2010; Brée and de la Croix 2019; Hazan et al. 2022), old-age security (Boldrin et al. 2015; Rossi and Godart 2022), cultural transmission from migrants (Daudin et al. 2019), as well as information and usage of family planning methods (Cavalcanti et al. 2020; Beach and Hanlon 2022). However, France’s early fertility transition is at odds with most of these explanations, as human capital (Blanc and Wacziarg 2020), health improvements (Brée and de la Croix 2019; Perrin 2022), or advances in contraception are unlikely to have contributed to the initial phases of France’s fertility decline. In contrast, deep-rooted cultural factors and secularization have been highlighted (Spolaore and Wacziarg 2022; Blanc 2024a). Closer to our article, Cummins (2013) shows that the French fertility transition started in places where inequality was low, and Weir (1984) and Rosental (1991) argue that the French Revolution and the introduction of the Civil Code drove France’s fertility decline. Our article analyzes a novel factor – legal institutions on inheritance – hence bringing this new piece to the unresolved puzzle of France’s fertility transition.

In addition, this paper provides the first empirical test of Le Play’s hypothesis. Formulated in 1884, it was the first theory on France’s demographic transition. Social scientists have been skeptical about the possibility that the French Revolution and its inheritance reforms contributed to the fertility decline (Chesnais 1992, p. 338).⁷ However, as Chesnais (1992, p. 339) acknowledges, empirical evidence for or against Le Play’s hypothesis is lacking. The main reason is that there exists no complete, local-level atlas of inheritance customs and laws before the Revolution. One of our contributions is to construct such an atlas. Beyond this article, our novel atlas will enable scholars to delimit customary regions in Ancien Régime France and study the legacies of historical customs. We provide more details on our customary atlas and on the spatial distribution of judicial districts in Gay et al. (2024a, 2024b).

Finally, we contribute to the literature studying how inheritance systems affect economic outcomes. In the long run, inheritance systems can shape income and wealth inequality (Piketty 2011). Bartels et al. (2024) show that, in Germany, locations with equal inheritance later exhibited higher income, education, labor productivity, and entrepreneurship. Inheritance rules can also affect gender gaps and education (Bertocchi and Bozzano 2015) or pension systems (Galasso and Profeta 2018). However, despite

⁷Le Play’s hypothesis has been subject to two main critiques: first, fertility was relatively low in the southwest before the Revolution. The critique is based on the misconception that primogeniture predominated everywhere in the south. Our inheritance atlas shows that this region had heterogeneous inheritance laws (see Figure 3). Moreover, we use granular data from Geni – which includes the southwest – to corroborate Le Play’s hypothesis. Second, other countries adopted similar inheritance reforms without experiencing fertility drops (Chesnais 1992, p. 338). We believe that this critique lacks empirical support. That said, our findings can rationalize why similar reforms will reduce fertility where landownership is fragmented (e.g., France) but will not affect fertility where landownership is concentrated (e.g., England and Prussia).

Habakkuk (1955)’s work, the literature has mostly overlooked the effects of inheritance rules on family decisions and fertility.⁸ As for short-term effects, several studies have analyzed laws that extend inheritance rights to women or forbid dowries in developing countries.⁹ France was the first country to pass a national law on inheritance. Hence, we shed new light to the potential consequences of large-scale inheritance reforms.

2 Historical background

2.1 Inheritance in Ancien Régime France

At the eve of the Revolution, France was predominantly populated by small landholding farmers (de Brandt 1901; Bourdieu et al. 2013). Between 40 and 80 percent of households owned their land.¹⁰ Hence, inheritance laws on immovable property were relevant for much of the French population. Much as other aspects of daily life, inheritance practices in Ancien Régime France were regulated by a blend of written laws and customs. Written laws, derived from Roman Law (the Justinian Code), were prevalent mostly in the south. Customs represented a set of long-established local rules that emerged from traditional practices (Chénon 1926). Initially oral, customs were codified following Charles VII’s Ordinance of Montils-lès-Tours in 1454 (Grinberg 2006, p. 66).

While Roman law gave complete freedom to assign a unique heir through a testament, customary laws contained specific inheritance provisions. Despite their complexity, inheritance rules can be classified into four categories: partible and impartible rules, and rules where women had the right to inherit or not. Under partible rules, family wealth was divided among several offspring. This division could take the form of “strict equality,” where married offspring had to return any donation received before inheriting (e.g., a dowry) or “option,” which allowed them to keep such donations and opt-out from inheriting. Under impartible rules, inheritance could not be broken and parents could favor one child over other offspring. These rules included primogeniture, ultimogeniture, and unigeniture. Inheritance systems further varied in whether women could inherit or not. One of the justifications for excluding women, as well as for impartible rules, was to prevent the family wealth from breaking down and diluting among descendants (Yver 1966, p. 39). We refer to inheritance systems affected by the reform – those with impartible rules *and/or* that excluded women – as *inegalitarian inheritance* systems. Conversely, we refer to inheritance systems that already complied with the reform before 1793 – those with partible rules *and* that included women – as *egalitarian inheritance* systems.

The origins of these different inheritance systems are not well understood. The prevailing theory is that inegalitarian inheritance arises in farming economies where land is the

⁸Exceptions are Casari et al. (2019) and Gobbi and Goñi (2020).

⁹See Anderson and Genicot (2015), Roy (2015), and Bahrami-Rad (2021) for India, Aldashev et al. (2012) and La Ferrara and Milazzo (2017) for Ghana, and Harari (2019) for Kenya.

¹⁰See Appendix F for an overview of estimates on the share of landowners in France.

primary source of wealth and is subject to indivisibilities (Bertocchi 2017). Other explanations highlight concerns over mortality and the lineage’s survival (Chu 1991), economic uncertainty (Grieco and Ziebarth 2015), housing markets, and limited access to wood to build new houses (Zink 1993). Motivated by these theories, we show that areas with different inheritance rules were balanced across an extensive set of covariates—including the key hypothesized determinants of inegalitarian inheritance (see Table 1). This aligns with the dominant view on the origins of the different legal systems in Ancien Régime France. These origins were rooted in the laws of the peoples – namely the Burgundians, Visigoths, Salian Franks, and Ripuarian Franks – that moved across the territory upon the fall of the Western Roman Empire in 476 (Chénon 1926), and hence, are uncorrelated with any late eighteenth-century factors affecting the sharp fertility decline after 1793.

2.2 The 1793 inheritance reforms

Inheritance was not among the main popular grievances in the run-up to the French Revolution. For example, the *cahiers de doléances* written in preparation of the Estates General of 1789 seldom mentioned the issue: of the 571 cahiers analyzed by Goy (1988), only 8 mentioned inheritance rules.

Despite the lack of popular demand, a series of decrees enacted throughout 1793 and resulting in the Loi de Nivôse, an II (January 6, 1794), established egalitarian inheritance among all offspring – including women – throughout the territory. These inheritance reforms shattered regional differences in inheritance rules that had prevailed for centuries.¹¹ Three elements help explain why the revolutionaries reformed inheritance. First, equality concerns were central to the Revolution (Shaffer 1982). Second, the revolutionaries aimed at unifying France’s fragmented legal system and administrative geography (de Tocqueville 1856).¹² Third, there was mounting concerns that those who joined the Revolution would be disinherited by their parents (Lataste et al. 1901, pp. 681–3).¹³

The consensus in the historiography is that the population quickly abode by the new rules. Indeed, offspring felt they had the right to an equal share in the family patrimony and were soon eager to protect their new rights (Shaffer 1982, p. 95). Family tribunals ensured the enforcement of the new law. In the late 1790s, disputes over inheritances were the most common cases these tribunals had to resolve (Desan 2006, ch. 4).

¹¹The text of this law is available in the *Lois et Actes du Gouvernement*, Tome VIII (pp. 214–29) at <https://gallica.bnf.fr/ark:/12148/bpt6k56370f/f219>.

¹²Voltaire (1829, pp. 229–30) complained that “[a] man who travels in this country changes laws almost as many times as he changes horse post [9–12 kilometers].”

¹³Philippeaux, a representative at the National Convention, declared in 1793: “There are a hundred thousand younger sons waiting for this law to fly at the borders, but the fear of being reduced to poverty, by being disinherited from their parents, [...] prevents them from leaving” (*Archives Parlementaires de 1787 à 1860*, Tome LIX, p. 681, March 7, 1793).

3 Data

3.1 Inheritance rules in Ancien Régime France

To construct an atlas of inheritance rules in France at the eve of the Revolution, we start by creating a shapefile of the 435 judicial districts within which inheritance rules applied. This shapefile is based on Brette’s (1904a) atlas. Specifically, we georeference all 32 large-scale maps of this historical atlas and manually attribute a judicial district to each municipality.¹⁴ We then record the 141 customs or written laws that existed before the Revolution and assign them to their corresponding judicial district. Here, we rely on Brette (1904b, 1915) for about half of judicial districts, which we complement with Bourdot de Richebourg (1724), Joignon (1989) for the region of Lorraine, and Zink (1993) for the southwest. We display the resulting shapefiles of customary and written-law regions on the left-hand side of Figure 2.¹⁵

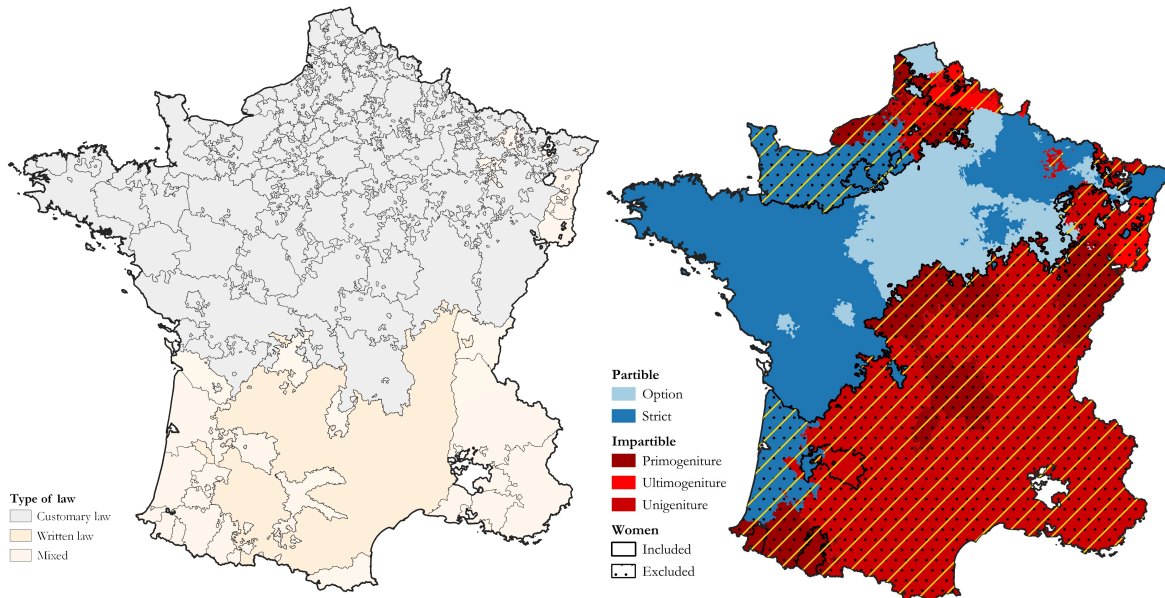


Figure 2: Customs and inheritance systems in Ancien Régime France.

Notes: The left panel displays the spatial distribution of customary-law and written-law areas in Ancien Régime France. The right panel displays the spatial distribution of inheritance systems across partibility and women inclusion. It also highlights (in yellow) areas treated by the 1793 inheritance reforms.

The figure shows that France was broadly divided into two legal regimes. In the north – the *pays de droit coutumier* – customary law prevailed, with substantial local variation in customs. In contrast, in the south – the *pays de droit écrit* – Roman law and

¹⁴We focus on France as of 1789, which corresponded to its current territory with the exceptions of the Duchy of Savoy, the County of Nice, the Comtat Venaissin, and Corsica.

¹⁵See Gay et al. (2024a) and (2024b) for details on the construction of these shapefiles, which are openly available on the Harvard Dataverse. The spatial distribution of underlying judicial districts is provided in Appendix Figure B1.

the *corpus iuris civilis* of Justinian prevailed.¹⁶ In some areas, customary and written laws coexisted. There, written law was often supplementary and applied only when a relevant customary rule was absent (Chénon 1926, pp. 331–4).¹⁷ That said, regarding inheritance, these regions followed customary law (Poumarède 1972).¹⁸

Finally, we code and classify the specific rules on inheritance in each custom or written law. To do so, we resort to the *Nouveau Coutumier Général* (Bourdote de Richebourg 1724), a compendia of the customs and written laws prevalent in Ancien Régime France. For customs not listed in this source, we use original documents that codified customs (see Table A1 in Gay et al. 2024b). We classify inheritance rules along the four dimensions described in Section 2.1: partible versus impartible rules, and rules that included versus excluded women from inheritance. Our map of inheritance systems is the first to cover the entire territory of France, as other work has focused on specific areas: Yver (1966) for the north, Joignon (1989) for Lorraine, and Zink (1993) for the southwest. Moreover, while previous work has focused exclusively on the partibility dimension, we provide the first map that also displays inheritance systems that included versus excluded women. This enables us to distinguish, at a fine-grain level, between areas that complied with egalitarian-inheritance rules imposed by the 1793 reforms – those with partibility including women – from areas with inegalitarian-inheritance rules that were treated by the reforms – those with impartibility and/or excluding women.

The right panel of Figure 2 displays our map of inheritance, highlighting partible rules (light and dark blue), impartible rules (light and dark red), areas excluding women from inheritance (dots), as well as areas treated by the 1793 inheritance reforms (yellow lines). Consistent with previous work on partial areas of France (Yver 1966; Joignon 1989; Zink 1993), our map shows that the southeast followed impartible rules whereas the north and the southwest had areas under either partible or impartible rules. Moreover, by codifying women’s inheritance rights, our novel map uncovers a strong spatial correlation between impartible rules and rules excluding women. In other words, in most areas in the treatment group, the 1793 inheritance reforms simultaneously abolished impartible rules and extended the right to inherit to women. This spatial correlation is intuitive as the historical rationale behind impartibility and the exclusion of women was similar: to prevent the family wealth from diluting among many descendants (Yver 1966, p. 39). That said, the overlap is not perfect in the southwest and in Normandy, where women were excluded under partible rules. This geography of inheritance was stable from the codification of the customs in the fifteenth century up to the Revolution (Gilissen 1979, p. 250), when impartible rules and rules excluding women were abolished, affecting the

¹⁶Le Bris (2019) studies the consequences of these two regimes in the long run. He finds that Roman law led to higher economic development than customary law.

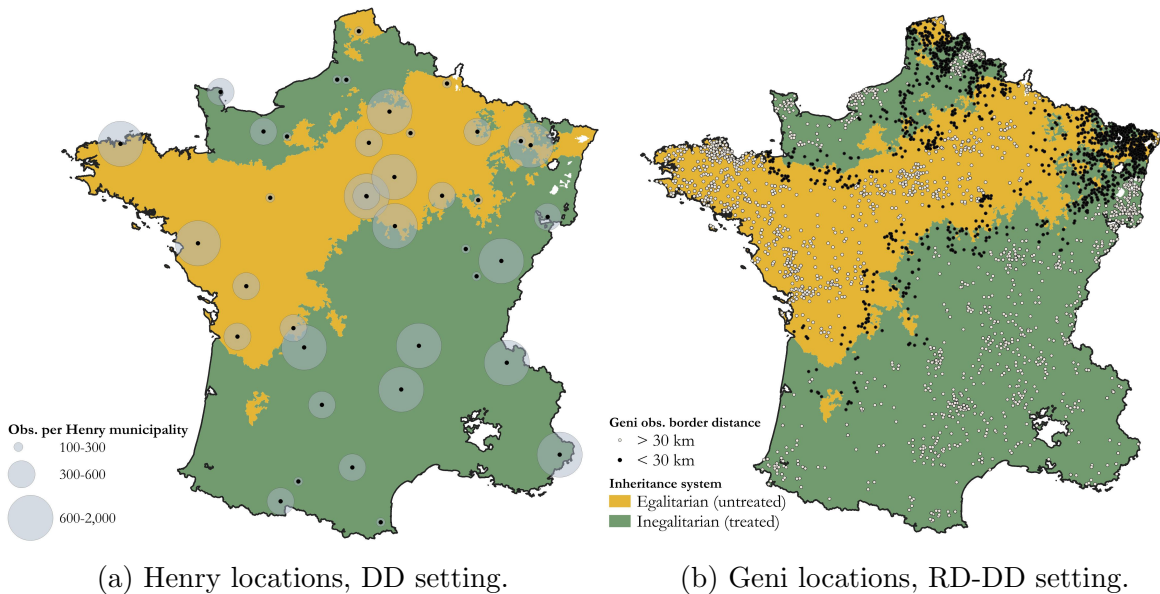
¹⁷“Mixed” areas include the Basque country, Provence, the Dauphiné (Poumarède 1972; Zink 1993), and parts of Lorraine and Alsace (Ganghofer and Levresse 1977; Joignon 1989).

¹⁸See Appendix Figures B2 and B3 for a comparison to previous work.

areas highlighted in yellow.

3.2 Fertility from the *Enquête Louis Henry*

Our main individual-level fertility data are from the *Enquête Louis Henry* (Fleury and Henry 1958; Séguy 2001). This database was generated through the method of reconstitution of families, i.e., linking birth, marriage, and death records within and between individuals. It relies on parish and hospital records before 1792 and civil registers afterwards.¹⁹ We use the nominative part of the Henry database, which contains individual-level information on the fertility of 34,812 women born between 1604 and 1803 in 39 rural municipalities.²⁰ The left panel of Figure 3 displays the locations of these municipalities. Our baseline sample consists of 20,332 women born between 1700 and 1803. We consider women born in the eighteenth century as this provides a balanced sample of cohorts exposed and not exposed to the 1793 inheritance reforms: 52.9 percent of women in our sample were fertile after 1793 (aged below 40) and 47.1 percent had completed their biological reproductive span before 1793 (aged over 40).



(a) Henry locations, DD setting.

(b) Geni locations, RD-DD setting.

Figure 3: Observations across Egalitarian and Inegalitarian Inheritance.

Notes: Yellow areas denote egalitarian inheritance systems before the Revolution, and green areas, inegalitarian inheritance systems. The left panel displays the distribution of observations in the Henry database used in the DD setting. The right panel displays the distribution of observations in the Geni database used in the RD-DD setting.

The Henry database lists the total number of births over a woman’s lifetime and the

¹⁹The high quality of the Henry database is well known among historical demographers, as reflected by the more than 300 studies using this database (Renard 1997).

²⁰Starting from the 41 randomly drawn municipalities of the nominative part of the Henry database, we exclude two municipalities: Massongy, which was in the Duchy of Savoy in 1789, and Suze-sur-Sarthe, which only contains a few observations.

year of death of her children who died young (see Appendix Figure B4 for an example of record). We use this information to construct three fertility variables: completed fertility, completed fertility of mothers, and a childlessness indicator. These variables focus on net fertility, that is, they are restricted to children who reached age 6. Child mortality was high until the 1800s, with 1–1.5 children per mother dying before age 6. Nevertheless, both crude and net fertility declined sharply for mothers born in the 1750s, i.e., for those who were fertile after the 1793 inheritance reforms (see Appendix Figure B5). In addition, the Henry database includes years of birth, marriage, and death, literacy indicators based on whether marriage certificates were signed, information on whether different relatives were alive at the time of marriage, and the accuracy of each entry.²¹

Appendix Table A1 provides summary statistics for our baseline sample. Net completed fertility has a sample average of 2.35 children, the completed fertility of mothers is 3.19, while one in four women are childless. Mean age at marriage is about 26 for women; their husbands are 3.44 years older. On average, women had children from age 26 (first birth) to 35 (last birth). The sample is balanced in terms of the treatment: 47.7 percent of women were born in inegalitarian-inheritance areas which were affected by the reform. Roughly half of parents-in-law were alive at their children’s marriage, suggesting that family wealth was passed down around this time.

3.3 Fertility from online genealogies in `geni.com`

We complement our fertility data with information from crowdsourced genealogies available in `geni.com`, a MyHeritage company. The main advantage of this crowdsourced data relies in its sheer size—the underlying database contains over 153 million observations. This data provides information on the timing and locations of birth, baptism, marriage, death, and burial, as well as family links between parents, spouses, and children (Alburez-Gutierrez et al. 2023).

To construct our sample, we keep profiles of individuals born in France between 1700 and 1810.²² Next, we assign latitudes and longitudes to birth locations using the GeoNames database, and verify each match.²³ Based on the municipality of birth, we assign a pre-reform inheritance rule and a treatment status.

We measure individual fertility using the family links of each Geni profile to reconstruct their family trees. Genealogical data often suffer from substantial bias as most users provide information on their direct ancestors (parents, grandparents, . . .) but not

²¹Accuracy measures comprise ten categories based on the availability of birth and marriage dates (see Appendix Table A2).

²²To do so, we search for words that can refer to France in the variables containing the birth and baptism location information, e.g., “francia” or “frankrijk.”

²³To verify matches, we project the georeferenced points onto the contemporary shapefile of France’s municipalities. We then attribute the corresponding municipality information and compare it to the information from GeoNames. The automatic georeferencing has an accuracy rate close to 70 percent. We correct the remaining inaccuracies manually.

on their collateral ancestors (uncles, granduncles, . . .). As a result, families with single children are over-represented. To overcome this issue, we follow the horizontal restriction proposed by [Blanc \(2024b\)](#) and keep an observation if at least one of the four preceding generations has more than one recorded offspring. Applying this restriction, our Geni sample contains 11,649 women born in France between 1700 and 1810 spread over 2,966 different locations (see the right panel of [Figure 3](#)). Hence, despite its lower quality relative to the Henry database, the Geni database provides a broader coverage of the territory. The average mother in the Geni database had 3.55 children who reached age 6. Moreover, fertility trends for mothers born in 1700–1810 are consistent across the Henry and Geni databases, and Familinx—the sub-sample of the Geni database used by [Blanc \(2024b\)](#) (see [Appendix Figure B6](#)).

4 Empirical strategy

4.1 Difference-in-differences specification

Our aim is to assess the effect of the 1793 inheritance reforms on women’s fertility. Our identification strategy consists in a difference-in-differences approach based on comparing cohorts of women who were fertile in 1793 to cohorts of women who were too old to be fertile in 1793, between municipalities where the reforms altered versus did not alter the inheritance system. Our main specification is:

$$Y_{icm} = \alpha + \beta I_m \times F_c + \mu_c + \delta_m + \mathbf{X}_i' \theta + \epsilon_{icm} , \quad (1)$$

where Y_{icm} is the completed fertility recorded at the end of the reproductive span of women i born in municipality m in cohort c ; μ_c and δ_m are fixed effects for cohorts and municipalities; and $I_m \times F_c$ is an interaction between a reform treatment indicator equal to one for women from municipalities with an inheritance system affected by the 1793 reforms (I_m), and an exposure indicator equal to one for cohorts of fertile age, i.e., below 40, after 1793 (F_c). We consider a woman’s biological reproductive span to be in ages 15–40. We also evaluate the robustness to using spans over ages 15–45 and 15–30, and to allowing for non-linear effects at different ages.²⁴ The treatment group ($I_m = 1$) comprises women born in municipalities with unequalitarian inheritance, i.e., where assets were impartible and/or where women were excluded from inheritance before 1793. The control group ($I_m = 0$) comprises women born in municipalities with equalitarian inheritance among all children, including women, before the 1793 reforms. Hence, the parameter β captures the effect of the 1793 equalitarian inheritance reforms on fertility, which is the combined effect of abolishing impartible rules and extending

²⁴The 15–40 reproductive spans fits our data, where the average woman had her last child at age 35 with a 6-years standard deviation (see [Table A1](#)). Additionally, evidence from pre-1800 European populations shows a sharp decline in marital fertility rates after age 40 ([Clark 2007](#)).

inheritance rights to women. It captures both the reduced economic incentives for having children to avoid land fragmentation among sons and daughters, as well as the potential effect of increased women’s bargaining power.

In extended specifications, vector \mathbf{X}_i includes individual-level controls that are potentially correlated with fertility: an indicator for women’s literacy, fixed effects for the different accuracies of the Henry form, and indicators for whether parents were alive at the time of marriage. We cluster standard errors at the municipality level. In Section 5.2, we use Conley (1999) standard errors to show that results are robust to allowing for various degrees of spatial correlation in the error term.

4.2 Identifying assumptions

Parallel trends. The identifying assumption in our difference-in-difference strategy is that, in the absence of the inheritance reforms, average fertility would have followed the same trend in municipalities under different inheritance systems.

In Panel (a) of Figure 4, we consider whether trends in women’s fertility varied systematically across areas with different pre-reform inheritance rules. We plot average fertility by birth cohort in areas with impartible rules excluding women (red) and in areas with partible inheritance rules including women (blue).²⁵ For cohorts that completed their reproductive span before 1793, trends are declining in a parallel fashion. In detail, note that average fertility was lower by about 0.3 children for women born in the mid-eighteenth century relative to women born in the early 1700s – a pattern consistent with previous evidence on the early decline in birth rates in France (van de Walle 1986; Guinnane 2011; Blanc 2024b). That said, we observe no systematic difference in this early fertility decline between areas with different inheritance rules. The fertility gap between areas with different inheritance rules is constant around 0.7 children for both women born in the early 1700s (3 children versus 2.3) and women born in the early 1750s (2.7 children versus 2)—the latter being the last cohorts to complete their reproductive span before the 1793 reforms. Among cohorts that were fertile after 1793, the figure shows a steeper fertility decline in areas affected by the reforms: the fertility gap closes from 0.7 children to 0 for women born after 1790—the cohorts whose entire reproductive span occurred after the reforms.

In Panel (b) of Figure 4, we use an event-study design to test for differential pre-trends across areas treated by the reforms versus areas in the control group. Specifically, we plot the interaction coefficients β_t for 16 birth-cohort bins with our treatment indicator for municipalities where the inheritance system was affected by the 1793 reforms:

$$Y_{icm} = \alpha + \sum_{t \neq 40-44} \beta_t a(t) \times I_m + \mu_c + \delta_m + \mathbf{X}_i' \theta + \epsilon_{icm} , \quad (2)$$

²⁵Appendix Figure B5 shows the aggregate trends for the fertility of mothers.

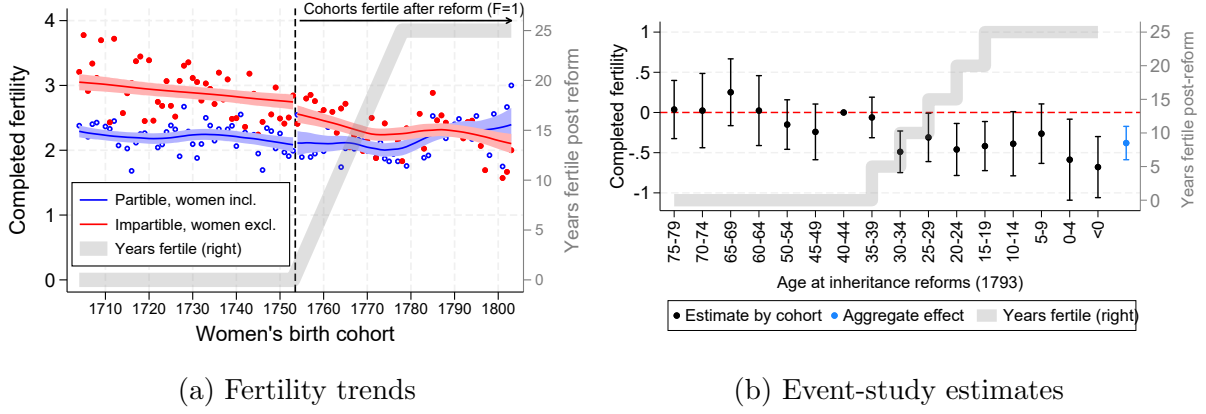


Figure 4: Completed fertility by cohort across inheritance systems.

Notes: Panel (a) shows average completed fertility (dots), trends (lines), and 95-percent confidence intervals (shaded areas) from a local polynomial regression on each side of the 1753 birth cohort. Panel (b) shows β_t coefficients and 95-percent confidence intervals from Equation (2) on a sample of all women aged 0–79 at the time of the reforms or born after them (1794–1803). Individual-level controls are as in Table 2, Column (5). Gray lines show the remaining fertile years after 1793 for each cohort (right axis).

where Y is completed fertility, $a(t)$ are indicators for age t in 1793 (in 4-year groups), and the omitted group is women aged 40–44, i.e., those who completed their biological reproductive span in 1793. The treatment indicator, I_m , is defined as in Equation (1). We also include cohort and municipality fixed effects, μ_c and δ_m , and the individual-level controls described above, \mathbf{X}_i .

The results provide no evidence of a differential fertility trend between treated and control municipalities before the 1793 inheritance reforms. Most pre-reform estimates on cohorts older than 40 in 1793 are close to zero and none is statistically significant, so trends in fertility before 1793 are unlikely to confound our results. In contrast, for most cohorts younger than 35 at the time of the reforms, completed fertility drops by around 0.5 children and estimates are statistically significant. This provides preliminary evidence that the 1793 inheritance reforms contributed to France’s fertility decline.

In addition, the event study supports our specification in Equation (1) instead of a design where a woman’s exposure to the reforms is an increasing function of her number of remaining fertile years after 1793. Except for the cohort aged 35–39 in 1793, estimates for all post-treatment cohorts are statistically indistinguishable from each other, independently of the number of remaining fertile years, and are very similar to the aggregate effect obtained by pooling all age groups into a post-reform dummy as in Equation (1). This pattern is biologically plausible and consistent with the demography literature showing that, at the start of the demographic transition, women limited their fertility by not having their “last child” (Knodel 1987; Cinnirella et al. 2017).

Specifications with flexible trends. Our identification strategy also requires that there exists no omitted time-varying and municipality-specific characteristics correlated

with both pre-reform inheritance systems and fertility. The most serious threat to this assumption is that, before industrialization, good economic conditions were associated with high fertility, and these economic conditions might have evolved differently across areas with different initial inheritance systems. To address this concern, we report extended specifications that control for trends in economic conditions using wheat prices and population density:

$$Y_{icm} = \alpha + \beta I_m \times F_c + \mu_c + \delta_m + \mathbf{X}'_i \theta + \gamma p_{md(c)} + \sum_t \mathbf{1}[c = t] \times \mathbf{Z}'_m \Gamma_t + \epsilon_{icm} , \quad (3)$$

where $p_{md(c)}$ is the average wheat price in municipality m in decade $d(c)$, and \mathbf{Z}_m includes the pre-reform wheat price (in the 1780s) and population density (in 1793) in municipality m , interacted with birth-cohort fixed effects, $\mathbf{1}[c = t]$, so as to account for flexible trends in fertility along these two pre-reform characteristics.²⁶

We further account for the possibility that fertility followed differential trends in areas that varied along religious, political, and economic-geography characteristics. Specifically, \mathbf{Z}_m also includes two variables that capture religiosity at the local level, a strong predictor of fertility in pre-industrial France (Murphy 2015). One is proximity to Church authorities (*évêchés*); the other is the proportion of marriages during lent and advent between 1792 and 1815. This variable exploits the fact that the Catholic Church did not perform marriages during lent and advent, while civil marriages – introduced in 1792 – could take place year-round. Therefore, the prevalence of marriages during lent and advent reflects how secularized a municipality was. We also include proxies for the support to the Revolution, the adhesion to the equality principle that inspired inheritance reforms, and information about the reforms and other revolutionary events. To do so, we use distances to the closest political society and rebellion against state authorities in the decade preceding the Revolution. Finally, we consider institutional and economic-geography factors by including distances to judicial district seats (*bailliages*), which resolved inheritance legal cases, to territorial administrative centers (*subdélégations*), which provided better access to public infrastructures, markets, innovation, and economic development, to tax collection centers (*recettes des finances*), and to paved roads and horse-post relays, which capture economic and information networks. All distances are included as $\log(1 + \text{km})$.²⁷

Balancedness. We show in Table 1 that before the 1793 inheritance reforms, a wide range of individual- and municipality-level characteristics were balanced across areas with egalitarian- and inegalitarian-inheritance systems. The only characteristic that differed systematically was fertility (Panel A): before the harmonization of inheritance rules, there

²⁶High wheat prices can proxy bad economic conditions, as demand was inelastic, markets, poorly integrated, and price variations, primarily driven by weather conditions (see Appendix H for more details).

²⁷We construct our religiosity measure from marriage dates in the Henry database. For more information on the sources of our other control variables, see Appendix H.

Table 1: Balancedness of pre-reform characteristics.

	Pre-reform Inheritance					
	Egalitarian		Inegalitarian		Difference	
	Mean	S.d.	Mean	S.d.	Mean	S.e.
<i>Panel A. Pre-reform individual-level characteristics</i>						
Completed fertility	2.22	(2.28)	2.84	(2.72)	0.62	[0.16]***
Wife's age at death	56.96	(17.08)	58.51	(17.57)	1.55	[1.56]
Husband's age at death	59.72	(15.53)	61.59	(15.80)	1.87	[1.27]
Wife died before age 40	0.14	(0.34)	0.12	(0.32)	-0.02	[0.02]
Wife's mother alive at marriage	0.51	(0.50)	0.47	(0.50)	-0.04	[0.06]
Husband's mother alive at marriage	0.45	(0.50)	0.41	(0.49)	-0.04	[0.05]
Wife's father alive at marriage	0.42	(0.49)	0.41	(0.49)	-0.01	[0.05]
Husband's father alive at marriage	0.38	(0.48)	0.36	(0.48)	-0.01	[0.04]
Known birth year or in GPC	0.63	(0.48)	0.63	(0.48)	-0.00	[0.05]
Known union end date	0.73	(0.44)	0.67	(0.47)	-0.06	[0.03]
Wife's literacy	0.16	(0.36)	0.09	(0.29)	-0.06	[0.06]
Husband's literacy	0.37	(0.48)	0.29	(0.45)	-0.08	[0.10]
Observations	5,870		4,882		10,752	
<i>Panel B. Pre-reform municipality-level characteristics</i>						
Wheat price (log)	1.98	(0.09)	2.07	(0.23)	0.09	[0.06]
Population density (log)	3.97	(0.54)	3.87	(0.59)	-0.10	[0.18]
Religiosity index	0.56	(0.30)	0.53	(0.28)	-0.03	[0.09]
Distance to religious centre	3.18	(0.61)	3.15	(0.83)	-0.04	[0.23]
Distance to judicial district seat	2.37	(0.78)	2.66	(0.65)	0.29	[0.23]
Distance to territorial administration	2.55	(0.69)	2.47	(0.55)	-0.07	[0.20]
Distance to tax center	2.69	(0.74)	2.83	(0.70)	0.14	[0.23]
Distance to political society	1.74	(0.64)	1.67	(0.66)	-0.07	[0.21]
Distance to rebellion in 1780-89	2.97	(1.05)	2.71	(0.77)	-0.26	[0.29]
Distance to paved road	0.81	(0.62)	0.90	(0.67)	0.09	[0.21]
Distance to horse-post relay	2.16	(0.60)	2.63	(0.68)	0.46	[0.21]**
Average caloric suitability of land	1902	(305)	1868	(396)	-34	[114]
Terrain ruggedness (in 100s of meters)	0.51	(0.31)	0.76	(0.52)	0.25	(0.15)
Share sandy soils	0.17	(0.32)	0.13	(0.25)	-0.04	(0.09)
Observations	20		19		39	

Notes: In Panel A, the sample are the 10,752 women in the Henry database who completed their reproductive span before the 1793 inheritance reforms. In Panel B, the sample are the 39 municipalities in the Henry database. Age at death is missing for about 30 percent of wives and 40 percent of husbands. *Known birth year* is recovered from parish records or from age in the general population census (GPC). Distances are in $\log(1 + \text{km})$ units. For terrain ruggedness, the sample excludes three villages in the Alps and Pyrenees with extreme values (twice as large as the 90th percentile value). Standard deviations are in parenthesis. Standard errors are in brackets. They are clustered by municipality in Panel A and are robust-standard errors in Panel B. * $p < .10$; ** $p < .05$; *** $p < .01$.

was a large fertility gap of 0.6 children between egalitarian- and inegalitarian-inheritance areas. In contrast, we find no significant differences for 23 of the 24 individual- and municipality-level characteristics. Before the reforms, the age at death of wives and husbands and the proportion of women who died before completing their reproductive span

were not significantly different across areas with different inheritance systems. So was the probability of receiving an inheritance before or after marriage, i.e., the probability that a woman’s parents or in-laws were alive when she married. This suggests that the reform treatment was orthogonal to mortality and to economic uncertainty over the timing of inheritances—two hypothesized historical determinants of inegalitarian inheritance (Chu 1991; Grieco and Ziebarth 2015). Moreover, using a sample of 48,308 eighteenth-century children, we find that child mortality did not evolve differently after 1793 in areas with different inheritance rules (see Appendix Table A4). This alleviates the concern that, because mortality and fertility often go hand-in-hand in demographic transitions, the fertility decline after 1793 may simply reflect differences in mortality across inheritance areas. In addition, the accuracy of the data – which we capture by whether birth and marriage dates are known – is similar across areas with different inheritance rules. Finally, women in egalitarian-inheritance areas were more likely to be literate and to marry a literate man, but these differences are not statistically significant.

Panel B of Table 1 shows that municipalities with different inheritance systems were also comparable in terms of wheat prices, population density, religiosity, and in their distance to religious, judicial, fiscal, and territorial centers, political societies, rebellions, and paved roads. The only exception is that horse-post relays were about 500 meters further away in inegalitarian-inheritance areas. Finally, terrain ruggedness, average caloric suitability for post-1500 crops, and soil texture (the share of sandy soils) are balanced. This is important because climatic and soil characteristics have been linked to the origins of inegalitarian inheritance (Bertocchi 2017).²⁸

The 1793 inheritance reforms. Our identification strategy relies on a relatively rapid take-up of the reforms and on their exogeneity to fertility decisions. As discussed in Section 2.2, the historiography supports this, as the new inheritance rules were quickly upheld by family tribunals, inheritance was not a major popular grievance in the 1789 *cahiers de doléances*, and the reforms aimed at enforcing the equality principle, unifying the legal system, and consolidating support for the Revolution rather than affecting fertility. Finally, identification relies on the regional variation in the laws and customs regulating inheritance before 1793. Although inegalitarian inheritance was more prevalent in the south, there was significant local variation.²⁹ The spatial heterogeneity in pre-reform inheritance rules is reflected in the sample covered by the Henry database (Figure 3). Indeed, 47.7 percent of the 20,332 women in our sample were born in municipalities in inegalitarian-inheritance areas, which were affected by the reforms (Appendix Table A1).

²⁸We also show balance in these characteristics along the border between egalitarian and inegalitarian inheritance areas (see Appendix Table E1).

²⁹For instance, the southern administrative centers of Marmande, Meilhan, Villandraut, and Langon, despite being within a 20-kilometer radius, each had a different inheritance system: impartible rules that included (Marmande) or excluded women (Meilhan) and partible rules that included (Langon) or excluded women (Villandraut) (see Appendix Figure B7).

5 Empirical results

5.1 Difference-in-differences estimates

In this section, we analyze the effects on fertility decisions of the 1793 egalitarian inheritance reforms, which imposed equal division of assets and extended the right to inherit to women. According to Le Play’s hypothesis, we expect women who were fertile after 1793 in affected areas to limit their fertility in order to avoid fragmenting land among many heirs. In addition, the reform also potentially reduced fertility through increased women’s bargaining power in the household.

Table 2 reports estimates from Equation (1). In Panel A, the dependent variable is completed fertility, i.e., the number of children who reached age 6 ever born to a woman. We find a large negative and significant effect of the 1793 inheritance reforms on completed fertility. The coefficient on *Reformed inheritance* \times *Fertile post-reform* implies that cohorts exposed to the reforms – i.e., cohorts of fertile age after 1793 in areas where inheritance was reformed – reduced their fertility by 0.5 children over their entire reproductive span. Given a sample average of 2.35, this corresponds to a 20-percent drop in fertility. The magnitude of the effect is similar to the pre-reform fertility gap of 0.6 children between egalitarian- and inegalitarian-inheritance areas (see Table 1). This suggests that the 1793 egalitarian inheritance reforms brought large areas of the country toward the low-fertility regime that had already prevailed in egalitarian-inheritance areas before the Revolution.

Coefficients are similar across all specifications. Column (1) considers a parsimonious two-way fixed-effects model with cohort and municipality fixed effects, which controls for unobservable factors affecting average differences in fertility across birth cohorts and municipalities. In Column (2), we include literacy, i.e., whether women signed their marriage certificate, which was a strong predictor of fertility (Becker et al. 2010). In Column (3), we control for the accuracy of the data through fixed effects for each of the ten form types available in the Henry database, which are based on the availability of birth and marriage dates (see Appendix Table A2). In Column (4), we further include two indicator variables for whether a woman’s father or mother were alive upon her marriage. These capture family-specific health conditions and genetic endowments transmitted from both the maternal and paternal lines. In addition, whether parents were alive at the time of marriage captures potential inheritance transfers, which could trigger income effects.

Panels B and C of Table 2 report estimates for the effect of the 1793 inheritance reforms on the intensive and extensive margins of fertility. The dependent variable is the completed fertility of mothers in Panel B and an indicator variable equal to one if a woman was childless in Panel C. As before, both variables exclude children who did not reach age 6. Our estimates suggest that the 1793 inheritance reforms reduced the

Table 2: Difference-in-differences estimates, Henry database.

	(1)	(2)	(3)	(4)
<i>Panel A. Dep. Variable is completed fertility</i>				
Reformed inheritance × Fertile post-reform	−0.492*** (0.117)	−0.493*** (0.118)	−0.475*** (0.113)	−0.520*** (0.127)
Observations	20,332	20,332	20,331	20,322
Adjusted R-squared	0.044	0.044	0.152	0.175
<i>Panel B. Dep. Variable is completed fertility of mothers</i>				
Reformed inheritance × Fertile post-reform	−0.354** (0.142)	−0.356** (0.148)	−0.371** (0.151)	−0.392** (0.160)
Observations	14,066	14,066	14,065	14,057
Adjusted R-squared	0.057	0.058	0.083	0.091
<i>Panel C. Dep. Variable is =1 if childless</i>				
Reformed inheritance × Fertile post-reform	0.067*** (0.017)	0.067*** (0.017)	0.062*** (0.013)	0.076*** (0.017)
Observations	20,332	20,332	20,331	20,322
Adjusted R-squared	0.023	0.024	0.160	0.186
Cohort FE	Y	Y	Y	Y
Municipality FE	Y	Y	Y	Y
Literacy (0/1)	.	Y	Y	Y
Accuracy of Henry form FE	.	.	Y	Y
Father alive at marriage (0/1)	.	.	.	Y
Mother — ” —	.	.	.	Y
N clusters	39	39	39	39

Notes: The sample is women born in 1700–1803 in the Henry database. The dependent variable is the number of children ever born to all women (Panel A), to mothers (Panel B), and the probability to be childless (Panel C). All variables consider “net” fertility, i.e., they are based on the number of children who reached age 6. *Literacy* is an indicator variable equal to one if the woman signed the marriage certificate. *Accuracy of Henry form* includes fixed effects for each category listed in Appendix Table A2. Standard errors in parentheses are clustered by municipality. * $p < .10$; ** $p < .05$; *** $p < .01$.

completed fertility of mothers by 0.35–0.39 children and increased women’s likelihood of being childless within marriage by 6.2–7.6 percentage points.³⁰

³⁰In historical and developing contexts such as eighteenth-century France, childlessness within marriage is mostly the result of high child mortality and infecundity due to poverty. It rarely reflects a preference to forego motherhood or increased female empowerment (Baudin et al. 2020). Hence, the reforms’ impact on childlessness was primarily mechanical, resulting from a sudden drop in desired fertility in a context of high and unchanged child mortality (see Appendix Figure B5 and Table A4). Appendix Table A5 provides further evidence for this by showing that the effect of the 1793 inheritance reforms on childlessness remains if we restrict the sample to women who gave birth to at least one child—regardless of whether that child survived infancy or not.

Next, we show that these effects are driven by the 1793 inheritance reforms and not by heterogeneous trends in fertility across different areas. Table 3 reports the results from estimating Equation (3). This extended specification allows fertility to follow different trends in each municipality, depending on their local economic, religious, political, and economic-geography characteristics. In Column (1), we include municipality-level wheat prices by decade to account for the fertility effects of time-varying and municipality-specific economic conditions. We also include two measures of pre-reform economic conditions – wheat price (in the 1780s) and population density (in 1793) – interacted with birth-cohort fixed effects to account flexibly for trends in fertility along initial economic conditions. In Column (2), we consider the distance to Church administrative centers and the proportion of marriages during lent and advent after the introduction of civil marriage in 1792. The interaction of these variables with cohort fixed effects captures the possibility that cohorts in more religious or secular municipalities could have been on a different trajectory relative to the demographic transition. Likewise, in Column (3) we include the interaction between cohort fixed effects and the distance to political societies (in 1789–93) and to rebellion against state authorities (in the 1780s), two proxies for access to information about revolutionary reforms and local support to the Revolution before 1793. We also add distances to legal, fiscal, and territorial administrative centers prior to the Revolution, and to paved roads and horse-post relays, interacted with birth-cohort fixed effects. This accounts flexibly for institutional and economic-geography factors, as well as transport and information networks, that could affect women’s fertility over time.

Our estimates are stable across specifications. Estimates in Columns (1)–(4) imply that cohorts exposed to the 1793 egalitarian inheritance reforms reduced completed fertility by 0.43–0.52 children. This effect is very similar to that found in our baseline specification and to the estimates for the pre-reform fertility gap between areas with egalitarian and inegalitarian inheritance. Likewise, the estimated effects of the reform on the completed fertility of mothers and on childlessness also point toward a drop in fertility. Overall, our main conclusions are robust to allowing fertility to follow different trends in municipalities that differed in economic conditions, religiosity, political factors, and economic geography. This suggests that our estimates effectively reflect local changes in fertility resulting from the 1793 inheritance reforms.

Finally, Column (7) of Table 3 shows that these reductions in fertility were partly achieved by delaying age at marriage, an important preventive check in pre-industrial societies (Cinnirella et al. 2017). Specifically, the 1793 inheritance reforms are associated with an increase in age at marriage by 1.9 years. Other fertility-control strategies involved increasing the span between marriage and first birth, and reducing the span between first and last birth (see Appendix Table A3). This is consistent with previous work showing that women started limiting their fertility by not having their “last child” (Knodel 1987;

Table 3: Flexible-trend difference-in-differences estimates, Henry database.

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Dep. Variable:</i>	Completed fertility	Completed fertility	Completed fertility	Completed fertility of mothers	= 1 if childless	Age at marriage
Reformed inheritance × Fertile post-reform	−0.478*** (0.174)	−0.504*** (0.159)	−0.434*** (0.154)	−0.432** (0.201)	0.046** (0.021)	1.938*** (0.572)
Observations	20,322	20,322	20,322	14,057	20,322	20,321
N clusters	39	39	39	39	39	39
Adjusted R-squared	0.178	0.179	0.182	0.103	0.190	0.255
Cohort & municipality FE	Y	Y	Y	Y	Y	Y
Individual-level controls	Y	Y	Y	Y	Y	Y
Wheat price series	Y	Y	Y	Y	Y	Y
Cohort FE						
× Wheat price 1780s	Y	Y	Y	Y	Y	Y
× Population density 1793	Y	Y	Y	Y	Y	Y
× Religiosity index	.	Y	Y	Y	Y	Y
× Distance religious center	.	Y	Y	Y	Y	Y
× Distance political society	.	.	Y	Y	Y	Y
× Distance rebellion	.	.	Y	Y	Y	Y
× Eco. geography variables	.	.	Y	Y	Y	Y
× Network variables	.	.	Y	Y	Y	Y

Notes: The sample is women born in 1700–1803 in the Henry database. The dependent variable is the number of children ever born to all women in Columns (1)–(4), to mothers in Column (5), the probability to be childless in Column (6), and age at marriage in Column (7). All variables consider “net” fertility, i.e., they are based on the number of children who reached age 6. All specifications include cohort fixed effects and the full-set of individual-level controls in Table 2. The remaining covariates capture flexible trends in fertility by municipality-level characteristics. *Economic geography variables* include the distance to legal centers, tax centers, and territorial administrative centers. *Network variables* include the distance to paved roads and horse-post relays. Wheat prices are in log and distances are in log(1 + km). Standard errors in parentheses are clustered by municipality. *p<.10; **p<.05; ***p<.01.

Cinnirella et al. 2017).³¹ In addition, we find that the fertility decline in areas affected by the reforms was not the result of increased child mortality rates (see Appendix Table A4).

Implications for the demographic transition. Taken together, our results suggest that the 1793 inheritance reforms contributed to the large fertility decline in late-eighteenth century France. The effect of the reforms on women’s completed fertility (0.43–0.52 children) is similar to the pre-reform fertility gap between areas with egalitarian and inegalitarian inheritance (0.62). This shows that the harmonization of inheritance systems during the Revolution accelerated France’s fertility transition by driving high-fertility, inegalitarian-inheritance regions (covering roughly half of the country) toward the low-fertility regime already prevailing in egalitarian-inheritance areas.

To what extent did the inheritance reforms contribute to the demographic transition? France’s fertility transition is characterized by a first phase – primarily rural – that

³¹In contrast, the reform is positively but not significantly associated with the minimum spacing between consecutive births.

spanned the eighteenth and the mid-nineteenth centuries (van de Walle 1986) and a second phase that ended by 1939 (Delventhal et al. 2021).³² We use the Henry database together with later sources – vital statistics (*Mouvement de la population*) for 1855 and the 1954 *Enquête famille* – to reconstruct how completed fertility evolved through these two phases (see Appendix C). In the first quarter of the eighteenth century (1700–25), completed fertility was 2.59 for women at the end of their reproductive span. Fertility declined to 2.13 by the end of the first phase and to 2.01 children by the end of the transition. For women who completed their reproductive span in 1793–1818, the first quarter century after the inheritance reforms, fertility was 2.16 (see Appendix Figure C1).

We then run a counterfactual exercise where we use estimates of Equation (3) with the full set of controls (Table 3, Column 3) to predict each individual’s fertility in the absence of the reforms, i.e., setting $F_c = 0$. Based on these predicted individual fertilities, we calculate the counterfactual average fertility across France. The counterfactual fertility of cohorts who completed their reproductive span in 1793–1818 would have been 2.37 children, substantially larger than the observed 2.16.³³ Altogether, these numbers imply that the 1793 inheritance reforms contributed to 46 percent of the fertility decline during the first phase of the transition and to 36 percent of the decline over the entire demographic transition.

Moreover, data from the vital statistics for 1855 and the 1954 *Enquête famille* shows that the large fertility gap that had existed before 1793 between egalitarian and inegalitarian inheritance areas had disappeared by the end of the first and second phase of the demographic transition. Indeed, the completed fertility of women in areas with different pre-reform rules was not anymore significantly different after the 1850s (see Appendix Table C1). This further suggests that the harmonization of inheritance rules in 1793 accelerated the demographic transition and fostered fertility convergence across regions of France.

5.2 Difference-in-differences robustness

We perform several robustness checks and extensions of the analysis. This section briefly describes them. Detailed results are available in Appendix D.

Permutation tests. Appendix Figure D1 reports 10,000 estimates of β in Equations (1) and (3), where we reshuffle the pre-reform inheritance system among municipalities and interact it with the “true” exposure indicator for cohorts of fertile age after 1793. In addition, we report results that, together with the pre-reform inheritance system, also reshuffle the set of municipality-level flexible trends. Estimated coefficients

³²The exact beginning of the transition within the eighteenth century is debated (Blanc 2024a). Hence, the starting point for this exercise are the earliest eighteenth-century cohorts.

³³Note that this counterfactual estimate captures the average treatment effect across France, while our DD estimates are larger, as they capture average treatment effects on the treated.

in these placebo regressions have a distribution centered around zero, and our baseline estimate is larger in magnitude than all but 0.07–0.82 percent of the estimates resulting from the permutations. This suggests that our main results are not due to random chance or to general trends in fertility, but that they effectively reflect the impact of the 1793 inheritance reforms.

Sensitivity to outliers. We perform a jackknife test to show that our results are not driven by outliers. Estimates obtained by sequentially omitting one of the 39 municipalities in the Henry database are indistinguishable from our baseline DD estimates (see Appendix Figure D2).

Placebo test. We conduct a placebo test on the cohorts that had all their children before the 1793 inheritance reforms. Estimates for the effect of the placebo reform are close to and not significantly different from zero (see Appendix Table D1). This further suggests that our baseline estimation captures the effect of the 1793 inheritance reforms and not that of pre-trends in completed fertility.

Alternative sample, treatment, and control group. Appendix Table D2 examines the robustness of our results to modifying sample and treatment definitions. In detail, our results are robust to restricting the sample to women born between 1720 and 1780. Estimates are also almost identical when we define the cohorts exposed to the reforms as those aged below 30, below 40 (baseline), or below 45 at the time of the reforms. In addition, because the 1793 inheritance reforms simultaneously abolished impartible rules and extended the right to inherit to women, we consider three alternative definitions of the treatment group based on these two aspects of the reform. First, we remove the few areas that followed partible rules excluding women, and hence, that were only partially affected by the reform. Second, we compare areas with pre-reform impartible versus partible inheritance, regardless of women’s inheritance rights (see Appendix Table D3). Third, we compare areas that excluded versus included women from inheriting, regardless of the impartibility of inheritance (see Appendix Table D4). Results are consistent, suggesting that the fertility decline in eighteenth-century France was driven by cohorts exposed to the reforms in areas where the inheritance system was altered. Finally, we account for the possibility that the treatment effect may be heterogeneous across post-reform cohorts through the event-study presented above, which shows that estimates are similar and not statistically different from each other for all cohorts with five or more reproductive years remaining after the reforms (Panel b of Figure 4).

Migration and mortality. Because the Henry database was constructed through the family reconstitution method, our estimates are potentially biased by migration patterns. Similarly, diverging mortality trends across pre-reform inheritance systems could bias our estimates. We address these concerns by showing that our results are robust to restricting the sample to women who were alive at age 40, i.e., whose records were not

missed because of emigration, and to including municipality-specific trends in mortality (see Appendix Table D5).

First-name repetition technique. We account for the possibility that children deaths are under-reported in the Henry database (Houdaille 1984) by applying the first-name repetition technique of Cummins (2020). This technique is based on the fact that parents often used the name of a deceased child to name a newborn. Our results are robust to using adjusted fertility measures (see Appendix Table D6).

Soil, climate, and terrain characteristics. Climate and the soil suitability for different crops affect land values – a hypothesized historical determinant of inequalitarian inheritance (Bertocchi 2017) – as well as average farm sizes (Bhalla 1988). In Table 1, we examine the balance of the average caloric suitability of the soil for post-1500 crops, terrain ruggedness, and the share of sandy soils. Our estimates are also robust to adding the interaction between these factors and cohort fixed effects, allowing for flexible trends in fertility along soil characteristics (see Appendix Table D7). Moreover, results are unaffected by excluding three villages in the Alps and Pyrenees with extreme ruggedness values – twice as large as the 90th percentile (see Appendix Tables D7 and D8).

Spatially-adjusted errors. Appendix Figure D5 reports spatially-adjusted z -statistics estimated from Equations (1) and (3). We account for various degrees of spatial dependence in the error term using Conley (1999) standard errors with different distance cutoffs, from 50 to 200 kilometers, in 50-kilometer increments. That is, we allow for observations as far as 200 kilometers away to be spatially dependent. All spatially-adjusted errors are close to our baseline errors. This is consistent with the corrections proposed by Kelly (2020), who finds that spatially-adjusted standard errors tend to fall for applications which, like ours, use longitudinal data with time and space fixed effects.

5.3 Spatial RD-DD with crowdsourced genealogies

In this section, we extend our analysis by using crowdsourced genealogies from geni.com. The substantial spatial coverage in this database enables us to implement a spatial regression discontinuity design to account for unobservable factors that vary smoothly across space—e.g., soil characteristics, land values, historical experiences, the north-south divide in Roman law, or how much the rule of law prevailed in remote areas. Using this data is also appealing because it covers the southwest of France, an area often used to question Le Play’s hypothesis. Finally, it is also helpful to validate our results with data obtained from crowdsourced genealogies, a different methodology from Henry’s family reconstruction method.

Empirical strategy. We use a regression discontinuity difference-in-differences (RD-DD) design to study the effect of the 1793 inheritance reforms on fertility. We restrict our Geni sample of mothers (1700–1810) to those born close to a border between judicial

districts, where one district had egalitarian and the other inegalitarian inheritance prior to the reforms. Panel (b) of Figure 3 illustrates this setup, displaying the 1,291 birth locations of 5,640 mothers within 30 kilometers of the inheritance borders. The RD-DD strategy exploits the fact that women living close to – but on opposite sides of these borders – were subject to different inheritance rules before 1793, and to the same egalitarian rule after 1793. Specifically, we compare the fertility gap at the border for cohorts who were fertile before versus after the 1793 inheritance reforms. This strategy accounts for unobservable factors that vary smoothly across space, and differences-out time-invariant unobservables and general trends.

The basic regression-discontinuity (RD) estimating equation in our setup is:

$$Y_{icm} = \alpha + \beta \mathbf{1}[d_m \geq 0] + \mu_c + \phi_b + \mathbf{1}[d_m \geq 0] \times f_I(d_m, \gamma_I) + \mathbf{1}[d_m < 0] \times f_E(-d_m, \gamma_E) + \epsilon_{icm}, \quad (4)$$

where Y_{icm} is the completed fertility of mother i , born in cohort c , in municipality m , and d_m is the distance to the border, with positive values for inegalitarian- and negative values for egalitarian-inheritance areas. Hence, $\mathbf{1}[d_m \geq 0]$ is equal to one for the treatment group. f_I and f_E are unknown polynomial functions with parameter vectors γ_I and γ_E . They capture location-specific factors on both sides of the inheritance border that can affect fertility. We also include fixed effects for cohorts, μ_c , and for 50-kilometer border segments, $\phi_{b(m)}$. We use triangular kernel functions and polynomial fits of orders 1 (linear) and 2 (quadratic). We avoid higher-order polynomials to limit the overfitting bias (Gelman and Imbens 2019). The sample includes mothers whose Geni record satisfies the horizontal restriction explained in Section 3.3 and who were born within a bandwidth of the inheritance border. We follow Calonico et al. (2014) and use mean squared error (MSE) optimal bandwidths. We provide estimates of β , the discontinuity in completed fertility at the border, for two sub-samples. First, for cohorts who completed their reproductive span before the reforms, i.e., over 40 in 1793, we expect higher fertility in inegalitarian areas ($\beta > 0$). Second, for cohorts who were fertile after the reforms harmonized inheritance systems, i.e., below 40 in 1793, we expect fertility differences at the border to disappear ($\beta \approx 0$).

We augment this RD setup with a difference-in-differences model. Specifically, we pool the two sub-samples described above and extend Equation (4) by interacting each RD variable with our reform exposure indicator, F_c :

$$Y_{icm} = \alpha + \beta \mathbf{1}[d_m \geq 0] + \beta_1 \mathbf{1}[d_m \geq 0] \times F_c + \mu_c + \phi_{b(j)} + \mathbf{Z}'_{mc} \delta_c + \sum_{s=1}^2 \mathbf{1}[F_c=s] \times \left\{ \mathbf{1}[d_m \geq 0] \times f_I(d_m, \gamma_{Is}) + \mathbf{1}[d_m < 0] \times f_E(-d_m, \gamma_{Es}) \right\} + \epsilon_{icm}. \quad (5)$$

Equation (5) is essentially a fully interacted version of Equation (4) with separate effects for cohorts above ($F_c=0$) versus below ($F_c=1$) age 40 in 1793. In extended specifications, we add fixed effects for judicial districts, $\delta_{j(m)}$ – the level at which inheritance rules varied

prior to the reforms – and an analogous set of flexible trends as before, \mathbf{Z}_{mc} .³⁴ These allow fertility to follow different trajectories by local economic, religious, political, and economic-geography characteristics.³⁵

Our RD-DD approach requires two identifying assumptions. The first is that unobservables vary smoothly across borders. We evaluate this assumption by conducting a balancing test for the full set of covariates in the flexible-trends vector \mathbf{Z}_{mc} . In detail, Appendix Table E1 reports estimates of Equation (4) using as dependent variables wheat prices by municipality and decade, the municipality population density in 1793, the district-level share of refractory clergy in 1791, and indicator variables equal to one if the municipality was within 15 kilometers of, respectively, a political society, a rebellion against state authorities in the 1780s, a religious, legal, fiscal, and territorial administrative center, or a horse-post relay, and within 7.5 kilometers of a paved road.³⁶ For each of these 11 variables, the RD estimate is small and, for 10 of them, the discontinuity at the border is not statistically different from zero (see Appendix Figure E1 for the corresponding RD plots). The second assumption is the standard no pre-trends assumption. Using the full Geni database in France, as well as a sample of Geni observations around the inheritance border, we show that prior to the reforms, fertility evolved in a parallel fashion across areas under egalitarian and inegalitarian inheritance rules (see Appendix Figure E2).³⁷

Results. As a first step, we present graphical evidence on the relationship between inheritance rules and fertility. Figure 5 plots the completed fertility of mothers, excluding child deaths before age 6, around the egalitarian-inegalitarian inheritance border. Each dot represents average fertility within a bin, partialled out of cohort and border-segment fixed effects, for 24 bins based on the IMSE-optimal evenly-spaced selector.³⁸ Lines show a linear local-polynomial fit within a MSE-optimal bandwidth. A discontinuity at the border is apparent only for the pre-reform sub-sample (Panel a). For the post-reform sub-sample who were fertile after the harmonization of inheritance rules, we find no evidence of a discontinuity at the border (Panel b). This provides some initial evidence that the 1793 inheritance reforms led to a convergence in fertility across pre-reform egalitarian- and inegalitarian-inheritance areas in France.

³⁴When included, $\delta_{j(m)s}$ absorb the direct effect of the treatment group indicator, $\mathbf{1}[d_m \geq 0]$.

³⁵Differently from before, we proxy for religiosity with the *district*-level share of refractory clergy who refused the oath of loyalty to the state in 1791, interacted with cohort fixed effects. In addition, because the RD-DD specification already accounts for running variables in distance, we now consider dichotomous rather than distance-based location variables.

³⁶We use 15 kilometers as it is close to the MSE optimal bandwidth on each side of the border. We use a smaller cutoff for paved roads because no observation in our border sample is further than 15 kilometers from them.

³⁷Appendix Figure E1 also suggests that fertility converged after the 1793 inheritance reforms, although the visual evidence is less obvious than in Figure 4. The main reason is that the smaller sample size in the Geni data is less suited for such a granular breakdown of fertility over time and space.

³⁸We follow the recommendations of Korting et al. (2023) to use a large number of small bins.

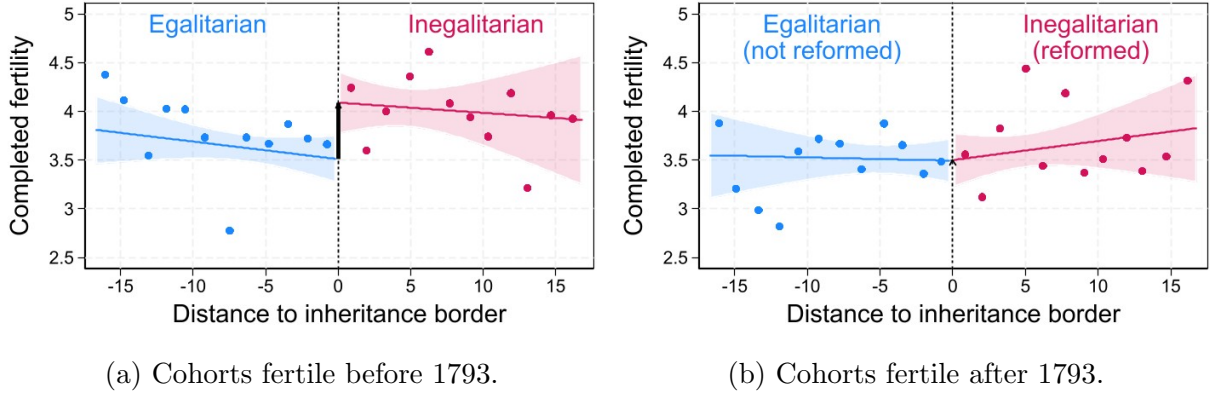


Figure 5: Fertility and distance to the inheritance border.

Notes: This figure displays RD plots. The sample is mothers whose Geni record satisfies the horizontal restriction, born in France (1700–1810) within about 17 kilometers of the inheritance border. Completed fertility is the number of births to mothers, excluding child deaths before age 6. The border is normalized at 0 with positive values for treated areas. Points show average fertility within bins, where fertility is partialled out of cohort and border-segment fixed effects, and where the 24 bins are based on the IMSE-optimal evenly-spaced selector. Lines show a polynomial fit of order 1 and shaded areas are 95-percent confidence intervals. The bandwidth is based on the MSE optimal selector (Table 4, Column 1).

Table 4 presents RD estimates of β and RD-DD estimates of β_1 . Columns (1) and (2) show the result from estimating the basic RD setup from Equation (4) on mothers who completed their reproductive span before and after the reforms, respectively. Column (3) reports estimates from the RD-DD model from Equation (5) pooling these two samples, and Columns (4) and (5) add judicial district fixed effects, flexible trends, and quadratic polynomial fits. The dependent variable is the completed fertility of mothers, excluding children who did not reach age 6. All bandwidths are based on the MSE-optimal selector.

Estimates suggest a sharp discontinuity in fertility at the inheritance border of about one child, which vanishes almost entirely after the reforms harmonized inheritance rules. In detail, the RD estimate for mothers who completed their reproductive span before the 1793 inheritance reforms is 1.04, suggesting that inegalitarian inheritance is associated with a higher fertility (Column 1). In contrast, the RD estimate for mothers who were fertile after the reforms is 0.19, close to zero and not statistically significant, suggesting that fertility differences at the border disappeared after the inheritance reforms (Column 2). Pooling these two discontinuities together, the RD-DD estimate shows that the 1793 inheritance reforms reduced fertility by 0.85 children for exposed cohorts (Column 3). Compared to the difference-in-difference estimates of Section 5.1, the RD-DD estimates are larger in magnitude. One reason is that, because women with no children are underreported in the Geni database, the dependent variable is by construction the completed fertility of mothers, which has a higher sample mean. In fact, compared to the sample mean, the RD-DD estimate implies a 23-percent reduction in fertility, similar to the 20-percent reduction estimated when using the Henry database. Finally, RD-DD estimates are similar across specifications including judicial district fixed effects

Table 4: Spatial regression-discontinuity estimates, Geni database.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	RD	RD	RD-DD	RD-DD	RD-DD	RD-DD	RD-DD
	pre-reform	post-reform	all	all	all	all	all
Estimate	1.044*** (0.368)	0.186 (0.354)	-0.848** (0.365)	-0.958** (0.382)	-1.187** (0.537)	-1.197*** (0.445)	-1.118** (0.541)
Observations	2,385	1,848	4,325	3,797	3,527	5,410	5,090
N clusters	585	624	959	862	778	1,214	1,070
Mean dep. variable	3.81	3.58	3.69	3.77	3.85	3.63	3.72
Cohort FE	Y	Y	Y	Y	Y	Y	Y
Border segment FE	Y	Y	Y	Y	Y	Y	Y
Judicial district FE	.	.	.	Y	Y	Y	Y
Flexible trends	Y	.	Y
Order polynomial	Linear	Linear	Linear	Linear	Linear	Quadratic	Quadratic
MSE-bandwidth (km)	19.47	19.47	19.47	16.91	17.49	29.29	30.53

Notes: This table reports estimates of β and β_1 in Equations (4) and (5). The sample is mothers whose Geni record satisfies the horizontal restriction, born in France (1700–1810) within a MSE-optimal bandwidth on each side of the inheritance border. We use local-polynomial fits of orders 1 and 2, and triangular kernel functions for local-polynomial estimation. The dependent variable is the number of children ever born to mothers, excluding child deaths before age 6. Flexible trends include municipality-level wheat prices by decade, and cohort fixed effects interacted with a vector of initial municipality-level variables: wheat price in 1780, population density in 1793, the share of refractory clergy in 1791, indicator variables if, within 15 kilometers, there was a political society, rebellions against state authorities in the 1780s, religious, legal, fiscal, territorial administrative centers, horse-post relay, or paved roads (within 7.5 kilometers). Standard errors in parentheses are clustered by municipality. * $p < .10$; ** $p < .05$; *** $p < .01$.

(Columns 4–7), using linear (Columns 4–5) or quadratic polynomial fits (Columns 6–7), and allowing fertility to follow different trends by local economic, religious, political, and economic-geography factors (Columns 5 and 7).

Robustness checks. We examine the sensitivity of our RD-DD estimates to alternative specifications of Equation (5) in Appendix Table E2. In Panel A, we use two-dimensional running variables in latitude, longitude, and their interaction. In Panel B, we use as running variables the distance to the border interacted with 26 indicator variables for cohorts with 0–25 remaining fertile years after the reforms. In Panel C, we use a uniform kernel. In Panels D–F, the sample is analogous to that in the Henry database: respectively, eighteenth-century cohorts, rural municipalities, and excluding *arrondissement* centers. In Panel G, we use 100-kilometer border-segment fixed effects. The estimated effect of the reforms remains negative, similar in magnitude, and is precisely estimated in almost all specifications. In addition, we expand and narrow the MSE optimal bandwidths by 1, 2, . . . , 5 kilometers in our linear-polynomial specifications, and by 2, 4, . . . , 10 kilometers in our quadratic-polynomial specifications. Results are robust to the choice of bandwidth (see Appendix Figure E3). We also show that RD-DD results are robust to correcting for spatial correlation in the error term (see Appendix Figure E4). As before, we do so by computing Conley (1999) standard errors and account for various degrees of spatial dependence by using distance cutoffs from 50 to 200 kilometers.

6 Mechanisms

6.1 Land fragmentation

The prevailing explanation for the fertility decline following the 1793 inheritance reforms is that families had fewer children to avoid the progressive fragmentation of their landholdings (Le Play 1875). In detail, when land is a key asset for production but parcels are small and fragmented – as was the case in eighteenth-century France (Bourdieu et al. 2013) – subdividing land plots among multiple heirs can reduce their capacity to sustain livelihoods (Habakkuk 1955).³⁹ The 1793 inheritance reforms, both by abolishing impartibility and by extending the right to inherit to women, increased the number of heirs.⁴⁰ Hence, it intensified the incentives to have fewer children to avoid dividing the land among sons and daughters to the point where production would fall below subsistence levels. This section provides qualitative and quantitative evidence suggesting that this mechanism played an important role.

Qualitative evidence. Several contemporaries of the reforms highlighted the close relationship between inheritance rules and land fragmentation at the core of this mechanism (Beckerts 2008, pp. 29–32). For instance, de Cazalès, a representative in the National Constituent Assembly (1798–91), opposed inheritance reforms arguing that “through the effect of necessarily equal partitions from generation to generation, property becomes so divided [...] that it can no longer feed its owner.”⁴¹ This echoes the claims of Normandy’s representative Lambert de Frondeville that the reforms, both by imposing equal inheritance and extending inheritance rights to women, could exacerbate land fragmentation, as “[t]he inequality of inheritance [...] and the exclusion of daughters from land division aim at the success of agriculture.”⁴² Some case-study analysis suggests that the egalitarian inheritance reforms increased the fragmentation of landholdings, with many farmers owning several scattered parcels, each just a few hectares (Sagnac 1903, p. 465; Moriceau 2002, pp. 139–41). For instance, de Serviez (1801, pp. 125–6), describing the département of Basses-Pyrénées, noted that the division of land was “disastrous in this mountainous and barren region” and that “the children sharing the inheritance would be unable to make their lots productive, and the subdivision in the second generation would plunge all their descendants into indigence.”⁴³

³⁹Habakkuk (1955) argued that “the regions of [inheritance] division were regions of [...] small peasants, anxious to add acre to acre [whose] savings [...] were not used to improving their properties but to extending them” (p. 11).

⁴⁰In fact, with an average net completed fertility of about 3 children in treated areas before the reform – 1.5 of each gender – including daughters in inheritances increased the number of heirs by as much as abolishing impartible inheritance.

⁴¹*Archives Parlementaires de 1787 à 1860*, Tome XXIV, pp. 572–4 (April 5, 1791).

⁴²*Archives Parlementaires de 1787 à 1860*, Tome XXIV, pp. 48–50 (March 12, 1791).

⁴³Case studies on the effect of the reforms for land fragmentation exist for Basses-Pyrénées, Orne, the Nivernais, and Franche-Comté—see the sources in Appendix Table A6 and Green (2024) for a

Notwithstanding these local case studies, no study to date has quantified the implications of the 1793 inheritance reforms for the aggregate distribution of landholdings in France. The reason is that data on landownership before the Revolution only exists for a very limited sample of towns (see Appendix F.2). That said, aggregate agricultural productivity remained low but stable throughout the Napoleonic era (Newell 1973), suggesting that the inheritance reforms did not deteriorate agricultural production as dramatically as anticipated. One possibility is that, despite the egalitarian laws of 1793, the subsequent fertility decline slowed down the dilution of landholdings below subsistence levels. Indeed, the opponent of the reform de Cazalès argued that fertility would be reduced to avert land fragmentation: "[t]his equal share that one would be obliged to give to their younger siblings might even prevent them from being born."⁴⁴

De Cazalès' statement foreshadowed Le Play's hypothesis linking inheritance reforms, land fragmentation, and fertility decline. Specifically, Le Play argued that the "forced division" of inheritance among sons and daughters had three social consequences: it reduced fertility, hindered economic development by fragmenting land, and weakened paternal authority. The 1793 inheritance reforms turned extended families into nuclear units, which had to "seek in the sterility of marriage a way to avoid the fragmentation of small properties and the unfortunate consequences that result from it" (Le Play 1875, p. 314). Since larger estates are less subject to such indivisibility constraints, equal division disproportionately harmed small landowners (Le Play 1875, pp. 331, 355).

Altogether, the historical evidence suggests that the 1793 inheritance reforms, both by imposing equal partition and by extending the right to inherit to women, created strong incentives to limit fertility so as to prevent land fragmentation and production from falling below subsistence levels.

Quantitative evidence from cadastre data. We provide further support for this narrative through two quantitative exercises. First, we digitize part of the Napoleonic cadastre (1807–47), a source that, to the extent of our knowledge, remains unexplored by economists. This is the first available source that allows to measure land fragmentation systematically. Because the cadastre was collected only a few decades after 1793, the land distribution documented therein still (partly) reflects the incidence of pre-reform inheritance rules. Specifically, we collect information for 36 thousand parcels of land in a subset of nine municipalities in the Henry database for which cadastral data is available: four with pre-reform egalitarian inheritance and five with pre-reform inegalitarian inheritance.

Armed with this data, we document three important facts (see Appendix F.2 for de-
broader discussion. More generally, Finley et al. (2021) and Deseau (2023) highlight the role of land indivisibilities by showing that the redistribution of monastic lands increased agricultural productivity, in part by reducing land fragmentation.

⁴⁴*Archives Parlementaires de 1787 à 1860*, Tome XXIV, pp. 572–4 (April 5, 1791).

tails). The first fact is that productive land was very fractionalized in early nineteenth-century France. Across municipalities, the median parcel was below 0.1 hectare. This is consistent with the narrative that land fragmentation was a serious concern for most farmers in France. The second fact is a strong association between inheritance rules and land fragmentation: under pre-reform egalitarian (inegalitarian) inheritance, the average parcel size was 0.16 hectares (2.33), the Gini index, 0.65 (0.91), and the share of very small parcels – less than 0.1 hectare – in a municipality, 61 (36) percent. A Kolmogorov-Smirnov test confirms that the parcel-size distribution under inegalitarian inheritance first-order stochastically dominated that under egalitarian inheritance. The third fact is that, a few decades after the 1793 inheritance reforms, the parcel-size distribution had not fully converged, which is consistent with the idea that fertility adjustments effectively slowed down land fragmentation in treated areas.

Heterogeneity analysis. For our second quantitative exercise, we construct a simple model that rationalizes the link between inheritance, land fragmentation, and fertility choices. We then use this model to derive testable predictions, which we bring to the data. Specifically, we show that the effects of the 1793 inheritance reforms were confined to areas where soil characteristics favored small farms, that is, where land fragmentation could have direr consequences.

We present the details of our model in Appendix G. In short, our model holds that households make fertility decisions under “warm glow” altruism whereby they care about their own consumption and their children’s endowments (de la Croix and Doepke 2003). Production is determined by land and labor under a Stone-Geary technology with a minimum land input threshold for subsistence (Beattie and Aradhyula 2015). Because land markets are incomplete (Finley et al. 2021), access to land is determined by inheritance: under inegalitarian inheritance, a single heir receives all the land and his siblings are employed as laborers in an extended family household. Under egalitarian inheritance, land is divided equally among siblings and each household operates as a nuclear unit. The model shows that households limit their fertility under egalitarian inheritance to avoid it falling below the subsistence threshold and that the egalitarian-inegalitarian fertility gap is larger under more fragmented landownership. Hence, a testable prediction of the model is that the 1793 inheritance reforms reduced fertility relatively more where households were endowed with small farms.

We test this prediction of the model by leveraging two soil characteristics which arguably provide exogenous variation in farm size: the geological composition of the soil (soil texture) and terrain ruggedness. Soil texture is based on the relative proportions of sand, silt, and clay particles. Sandy soils do not retain well storm water (Leeper and Uren 1993). Therefore, historically these soils were settled relatively late and were sub-

ject to a lower demand for land, which resulted in larger farm sizes.⁴⁵ In addition, terrain ruggedness is associated with small farms in mid nineteenth-century France (Montalbo 2023). The reason is that rugged terrains are harder to exploit and historically “deterred local elites from cornering large proportions of land” (Montalbo 2023, p. 220).

We corroborate these relationships using data from the 1852 agricultural census. Consistent with previous studies in agricultural economics, we find that sandier soils and flatter terrains are associated with larger farms (see Appendix F.3). Moreover, using soil characteristics is appealing for two reasons. First, while data on farm size is not available before the Revolution, soil texture and terrain ruggedness provide a proxy that is largely exogenous and time-invariant, as these soil characteristics cannot be altered by human intervention.⁴⁶ Second, these soil characteristics also affect land productivity. That said, they do so in opposite directions: flat terrains are generally of better quality than sandy soils, even if both are associated with large farms. Hence, by using these two distinct proxies for farm size, we address concerns that the differential effects of the reform may be driven by variation in land quality.⁴⁷

Next, we investigate how the effects of the 1793 inheritance reforms differed along farm size. Based on our theory, the reforms should have stronger effects where soil characteristics favor small farms (non-sandy soils and rugged terrains) than where they favor large farms (sandy soils and flat terrains). To test this, we extend Equation (3) to allow for heterogeneous effects along these characteristics. Specifically, we estimate a cell-means model where we omit the constant and interact our main variable of interest, $I_m \times F_c$, with indicator variables for soil conditions favoring large versus small farms in each municipality.⁴⁸

Table 5 reports estimates obtained using the Henry database. In Column (1), we compare the effects across municipalities with sandy and non-sandy soils based on the classification from the soil geographical database of France (see Appendix F.3).⁴⁹ In Column (2), we compare municipalities above and below median ruggedness (Nunn and Puga 2012). Estimates suggest that the 1793 inheritance reforms reduced completed fertility in areas where soil characteristics favored small farms. In these areas, the reform is associated with a drop in completed fertility by 0.51–0.58 children for exposed cohorts. In contrast, the reforms had negligible effects where soil characteristics favored larger farms, and hence, where the threat of excessive land fragmentation was weaker. There, the

⁴⁵Indeed, the association between sandy soils and larger farms is an empirical regularity in agricultural economics across space and time; e.g., in nineteenth-century Prussia (Cinnirella and Hornung 2016) and England (Clark and Gray 2014; Goñi 2023), 1945 Italy (Martinelli and Pellegrino 2024), and modern-day India (Bhalla 1988).

⁴⁶Importantly, these characteristics are balanced across pre-reform inheritance areas (see Table 1).

⁴⁷Moreover, Montalbo (2023) shows that ruggedness was not associated with literacy, urbanization, industrial production, or agriculture mechanization in mid nineteenth-century France.

⁴⁸The municipality fixed effects absorb the direct effect of these indicator variables.

⁴⁹One in four municipalities in the Henry database falls under the sandy soil category.

Table 5: Heterogeneous effects by soil conditions for small versus large farms.

<i>Dep. Variable: Completed fertility</i>	(1)	(2)
	Soil conditions based on:	
	Texture	Ruggedness
Reform \times Fertile (soil conditions for large farms)	−0.015 (0.220)	−0.133 (0.218)
Reform \times Fertile (soil conditions for small farms)	−0.505*** (0.144)	−0.575*** (0.204)
p-value difference	0.031	0.097
Cohort and municipality FE	Y	Y
Individual-level controls	Y	Y
Flexible trends	Y	Y
Observations / clusters	20,322 / 39	20,322 / 39

Notes: In Column (1), soil conditions are based on texture, where sandy soils favor large farms and non-sandy soils favor small farms. In Column (2), soil conditions are based on ruggedness, where flat terrains favor large farms and rugged terrains favor small farms. The sample is women born in 1700–1803 in the Henry database. Individual-level controls and flexible trends are defined as in Table 3. Constants are omitted. Standard errors in parentheses are clustered by municipality. * $p < .10$; ** $p < .05$; *** $p < .01$.

estimates are negative, but close to zero and statistically insignificant. For comparison, relative to the sample mean, the reforms reduced fertility by 22–24 percent in areas with soil conditions favoring small farms, and by 0.6–6 percent in areas with soil conditions favoring large farms. A test for the equality of both coefficients can be rejected with a p -value of 0.037–0.097.⁵⁰

In Appendix Table A7, we expand this analysis by looking at heterogeneous effects by four major soil texture categories: coarse (sandy), medium, medium-fine, and fine soils.⁵¹ For all soil types, we find a strong, negative effect of the 1793 inheritance reforms, with the sole exception of sandy soils—the only texture associated with large farms in the literature. We also show that the completed fertility of mothers and childlessness were affected more strongly by the 1793 inheritance reforms where soil conditions favored small farms (see Appendix Table A8). Finally, we find consistent results when conducting an analogous heterogeneity analysis using our RD-DD design with the Geni database (see Appendix Table A9).

Taken together, the empirical evidence is consistent with the idea that, after the 1793 inheritance reforms, families faced a powerful incentive to curbe their fertility to avoid land fragmentation, especially where small farms were prevalent.

⁵⁰The sample includes three villages in the Alps and Pyrenees with extreme ruggedness. When dropping these, we obtain coefficients of -0.56 and -0.00 for rugged and flat terrains along with a p -value on the difference of 0.07.

⁵¹See Appendix Figure F6 for definitions of these categories.

6.2 Women’s bargaining power

So far, we have shown evidence suggesting that the 1793 inheritance reforms, both by abolishing impartible rules and by extending the right to inherit to women, created strong incentives to limit fertility so as to prevent land fragmentation among sons and daughters. A second, complementary mechanism is women’s empowerment ([Hazan et al. 2022](#)). By extending inheritance rights to women, the reforms may have improved their outside option in the marriage market and their bargaining position within the household, which in turn could have reduced their fertility ([Baudin et al. 2015](#)). The ideal experiment to disentangle these two mechanisms – women’s bargaining power and land fragmentation – would be to estimate the effect of extending inheritance rights to women where the reform did not change the number of heirs. Unfortunately, this is not possible, as areas where the reform extended inheritance to women also increased the number of heirs. Instead, we provide qualitative and quantitative evidence to assess whether women’s bargaining power increased after 1793.

Qualitative evidence. Historical evidence suggests that the French Revolution, despite granting women access to inheritance in 1793, did not empower wives. This is mainly because the 1804 Civil Code reformed marital property law, granting husbands absolute control over jointly or independently owned property, including assets inherited by women ([Desan 2006](#), pp. 300–1). Indeed, the Civil Code effectively declared women to be civilly incapable, stating that “the wife owes obedience to her husband” (art. 213). This is in line with opinions expressed by the Revolutionaries in 1793 or by Napoleon in 1801, who declared that “[husbands] must have absolute power over the conduct of their wives” (quoted in [Tudor 2021](#), p. 333). It was not until 1985 that French women gained equal control over marital property. Hence, without control over their assets, it is unlikely that women – despite gaining the right to inherit in 1793 – also gained bargaining power in the couple’s decisions on, for instance, fertility. Similarly, the impact of the 1793 inheritance reforms on women’s outside options in the marriage market was limited by the nature of divorce law. Although equal divorce rights were first granted in 1792, women’s right to remarry was restricted in 1793, and the Civil Code further hindered women’s ability to file for divorce ([Desan 2006](#), pp. 326–8). This was part of a broader policy aimed at creating a new society in which the so-called “republican mother” had no rights in public life and limited power in the household. According to the majority of revolutionary legislators, a woman’s role in society was to bear and raise children. From 1793, the newly established public schools educated women in these values throughout France ([Fayolle 2022](#), pp. 31, 37–40). Similarly, women’s political rights were also limited. From 1789, they were ineligible to vote, and from 1793, they were prohibited from participating in political associations ([Tudor 2021](#), pp. 191, 231).

Taken together, husbands’ control over inherited assets, the civil incapability of married

women, education policies, and political exclusion all contributed to diminishing women’s status, limiting the bargaining power that the new inheritance laws could have given them.

Quantitative evidence. To further evaluate this conjecture, we estimate the relationship between the inheritance reforms and spouses’ relative age and education—two common distribution factors which determine women’s bargaining power within the household (Browning et al. 2014, Table 5.1, p. 204). If the 1793 egalitarian inheritance reforms empowered women and improved their bargaining position, we expect exposed cohorts to marry more similar spouses in terms of age and education. Instead, we expect null effects if the concomitant reforms on marital property law, divorce, or education prevented women from gaining bargaining power despite their newly-acquired inheritance rights. Estimates based on Equation (3) for the effect of the reforms on spouses’ relative age and education are close to and not significantly different from zero (see Appendix Table A10). Compared to the 20-percent reduction in fertility, effect sizes relative to the mean are substantially smaller (2 and 6.6 percent, respectively).

In summary, the historical and quantitative evidence suggest that women did not gain bargaining power within the household after the French Revolution. That said, extending the right to inherit to women likely reduced fertility by roughly doubling the number of heirs, and hence, by creating strong incentives to limit fertility so as to prevent land fragmentation among sons and daughters.

7 Conclusion

The revolutionary change in inheritance laws in 1793 was one of the causes of the French demographic transition. France was the first country to experience a demographic transition, at least a century before any other European country. We show that legal institutions crucially reduced the economic incentives for having children. Egalitarian inheritance rules imposed during the French Revolution had a strong causal effect on the fertility of affected regions. This effect remains even after controlling for other potential determinants of the fertility decline, such as human capital, secularization, changes in economic conditions, distance to administrative centers or information networks, exposure to political pressure or rebellions linked to the Revolution. Results are also robust to using data obtained from very different methodologies: the family reconstruction method and crowdsourced genealogies.

France’s demographic transition was not only the first but was also among the longest in the world. Hence, multiple factors beyond inheritance contributed to the decline in fertility, either at the beginning, or at later stages of the transition. Yet, traditional explanations for the demographic transition in the literature cannot be reconciled with key features of the French case: its early timing is at odds with theories based on industrialization, human capital, and the quantity-quality trade-off, while the sharp fertility

decline observed in the late eighteenth century cannot be rationalized with slowly evolving cultural norms. Changes in inheritance rules had been seen as a plausible driver of fertility decline since [Le Play \(1875\)](#) first put forward his theory, but empirical support to prove it was lacking. Our findings suggest that the 1793 inheritance reforms played a significant role in the French demographic transition, accounting for 36 percent of the aggregate fertility decline. By providing the first empirical evidence to support this long-standing hypothesis, we place legal institutions at the forefront of the puzzle, offering an explanation that aligns with both the early timing and the abrupt nature of the fertility decline in late eighteenth-century France.

Our results may also have important implications for the diffusion of the demographic transition from France to the rest of Europe. The Napoleonic invasions contributed to the propagation of egalitarian inheritance laws devised by the French revolutionaries to neighboring countries. In fact, by the 1850s, most European countries had introduced egalitarian inheritance laws. Whether this was also responsible for their demographic transitions remains an open question.

Beyond providing support for Le Play’s theory of fertility decline, this article unveils a potentially important contributor to modern fertility transitions: legal institutions. Legal factors have been overlooked as potential determinants of fertility decline ([Doepke et al. 2022](#)). Our finding that legal institutions regulating inheritance can have substantial effects on fertility may be relevant for boosting fertility transitions in developing countries, in particular for those experiencing stalls. The extent to which inheritance reforms toward more equality can help grasping the benefits of a demographic dividend in developing countries is an intriguing question for future research.

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