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ABSTRACT

Extractive Taxation and the French Revolution*

We study the fiscal determinants of the French Revolution, exploiting plausibly exogenous variation in the salt tax - a large source of royal revenues and one of the most extractive forms of taxation of the *Ancien Régime*. Implementing a Regression Discontinuity design (RDD), we find that parts of France subject to a higher salt tax experienced more revolts against the monarchy between 1750 and 1789. These effects already appear in the 1760s, but become stronger over time and peak in the 1780s. Combining the RD model with variation in local weather conditions during the 1780s, we document that droughts amplify the effects of the salt tax on revolts by increasing wheat prices and activating latent discontent. Then, we connect the discontent generated by the salt tax to the French Revolution. First, we provide evidence that riots spread more quickly in high tax areas. Second, we show that areas burdened by a higher salt tax report more complaints against the salt tax in the list of grievances collected by the king in the spring of 1789. Third, we document that legislators representing areas with a higher salt tax are more likely to demand the end of the monarchy and to support the death penalty for the king.

JEL Classification: D74, H20, H31, O23

Keywords: extractive taxation, regime change, French Revolution, state capacity

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"The Old Regime [...] perished because its tax system struck only the inferior classes."

— Norberg (1994), p. 256

1 Introduction

The French Revolution dismantled the *Ancien Régime* and ushered in a new political order, redefining state power and institutional structures. Its transformations—from the abolition of feudal privileges to the creation of modern bureaucratic and legal frameworks—extended far beyond France, shaping institutions across the world. Although the causes of the French Revolution are complex and multifaceted, one widely recognized factor is extractive taxation (Norberg, 1994; Touzery, 2023). The fiscal system of the French *Ancien Régime* placed disproportionate burdens on the peasantry, while exempting the nobility and the clergy. Extractive taxation, together with the lack of public goods provision, deepened popular resentment and eroded the legitimacy of the monarchy. Mounting fiscal pressure and soaring grain prices fueled citizens' discontent. By the summer of 1789, widespread riots against the French monarchy had exploded. Despite its prominence, to the best of our knowledge, no systematic evidence exists on the view that extractive fiscal institutions were an important determinant of the French Revolution.

In this paper, we seek to fill this gap, exploiting geographic variation in the incidence of the *gabelle du sel* (or, the salt tax). First introduced as a temporary measure in the mid-13th century, and then made permanent one century later, in 1780 the salt tax accounted for 22% of the royal revenues (Touzery, 2023). The salt tax is considered one of the most "iniquitous institutions of the *Ancien Régime*," and has become a symbol of fiscal injustice under the French monarchy (Sands and Higby, 1949). Reflecting its unpopularity, the salt tax was abrogated soon after the onset of the French Revolution, in March 1790. The salt tax varied across regions, along multiple tax borders—creating large discontinuities in tax rates. Because public goods provision was minimal and centered around royal prerogatives, such as national defense and justice, a higher tax burden did not correspond to higher redistribution.

Leveraging the sharp discontinuities in tax borders, we test whether more revolts against the monarchy occurred in the years leading up to the French Revolution in municipalities subject to a higher salt tax.[1] We retrieved and geolocalized data on all historical salt tax borders from the Digital Archives of the National Library of France, which we cross-referenced with newly hand-collected information on the salt tax rate prevailing in each jurisdiction on the eve of

[1]Throughout the paper, we use the term "municipality" to refer to the parish, which was the smallest administrative unit in France until 1789. In January 1790, parishes were formally replaced by municipalities.

the French Revolution. We combine these data with a comprehensive dataset assembled by Chambru and Maneuvrier-Hervieu (2024) that provides a fine-grained localization of uprising events before, during, and after the French Revolution.

We deploy a non-parametric Regression Discontinuity (RD) approach with optimal bandwidth and polynomial order selection following Calonico et al. (2014) around the salt tax borders. We find that crossing the salt tax border leads to a discontinuous increase in the number of riots. The effects of the salt tax begin to appear in the 1760s, and grow over time, peaking in the 1780s. According to our estimates, crossing the border from a low to a high tax municipality increases riots over the 1780 to 1789 decade by 73% relative to the sample mean. These effects are due to both the intensive (more riots in a given location) and the extensive (more locations experiencing at least one riot) margin.

Decomposing riots into different categories using their description, we find that results are driven by tax-related riots. Instead, the salt tax does not lead to revolts related to other domains—such as food scarcity or labor conditions. Using event descriptions, we also examine whether results are driven by riots related to smuggling. In the 1730s, in order to curb illicit activity and raise tax revenues, the French government implemented a reform sought to crackdown on smuggling. This was followed by a surge in conflict, especially on the high side of the tax border (Davoine et al., 2024). Smuggling-related riots need not be in contrast with our findings, if these uprisings reflected citizens' discontent against an extractive taxation system. However, one may wonder whether our results merely reflect backlash against the smuggling crackdown as well as confrontations between smugglers and French officials that persisted since the 1730s. This interpretation seems unlikely, given that the effects of the salt tax emerge only after 1760 and peak in the 1780s. Moreover, we document that results are robust to excluding riots related to smuggling and to controlling for distance from the closest salt production site as well as for pre-1780 smuggling-related riots.

Our empirical strategy rests on the assumption that only the salt tax changes discontinuously at the border. We provide different pieces of evidence in support of this assumption. First, we show that municipal characteristics (such as altitude, presence of a river, presence of Roman roads or 18th century infrastructure, soil fertility and soil characteristics) vary smoothly around the salt tax borders. Second, we perform a placebo exercise to verify that there are no changes in riots when redrawing artificial borders, just a few kilometers away from the actual ones. Third, we present evidence that the salt tax borders do not systematically overlap either with other historical administrative borders or with features that might directly impact citizens' propensity to protest (such as Roman or religious borders, provincial boundaries, etc.). We describe the process that led to border placement and perform robustness tests by alternatively excluding borders with similar origins. Reassuringly, results are not driven by any specific border or any specific origin type. We also show that results are robust to focusing on larger riots, which are less subject to under-reporting, including different controls and degree polynomials, using alternative bandwidths and specifications, accounting for spatial correlation in the error term, and estimating regressions away from the borders.

Our results resonate with the longstanding hypothesis that extractive taxation reduced citizens' support for the monarchy, and eventually induced them to revolt. Abundant historical and anecdotal evidence suggests that uprisings against the salt tax were due to intrinsic motivations, as citizens perceived the taxation system as deeply unjust and unfair (Young, 1906; Sands and Higby, 1949; Touzery, 2023). However, material considerations likely played a role too: since the salt tax slowed down economic development (Giommoni and Loumeau, 2022), our results may also capture an income effect. Even though in the baseline specification we control for 1780 municipality population—the best, though admittedly imprecise, proxy for economic development at the time—we view our results as driven by both extrinsic and intrinsic motivations.

The salt tax had been in place for centuries. Then, why did its effects peak after 1780? Historians have pointed to several structural factors that heightened tensions during this period. Since the 1770s, Enlightenment ideas had begun to circulate throughout France, challenging the legitimacy of the monarchy and its taxation policies (Roche, 1998; Darnton and Darnton, 2009). At the same time, increasing indebtedness of the French government and attempts to raise additional tax revenues deepened public frustration with an already burdensome system (White, 1995; Schama, 2004). When a series of droughts hit France in the 1780s—destroying the harvest and increasing wheat prices—discontent and revolts erupted throughout the country (Lefebvre et al., 1947; Waldinger, 2024). We conjecture that the eruption of discontent was stronger in places historically burdened by a higher salt tax, where weather shocks activated and amplified citizens' frustration and opposition to the state.

To test this hypothesis, we combine the baseline RD model with spatial and temporal variation in the severity of droughts. We estimate a two-way fixed effects model that compares municipalities on either side of the border (using the optimal bandwidth from the RD analysis), and interacts the salt tax with local weather shocks. Besides shedding some light on why the effects of the salt tax became stronger in the 1780s, this approach allows us to control for municipality fixed effects, thereby absorbing any local time-invariant feature, including economic development.

We find that, when comparing a high tax to a bordering low tax municipality, a 10% (or, about 1.3°C) increase in the growing season temperature increases riots by 33% relative to the sample mean. Since market integration in France was far from complete, crop failures likely increased local food prices. After showing that weather shocks increase wheat prices, we replicate the analysis with 2SLS, instrumenting the change in wheat prices with temperature shocks. We document that a 10% increase in prices more than doubles the number of riots in a high tax municipality, as compared to a neighboring, low tax one. Between 1785 and 1789, wheat prices soared by more than 30%, and riots increased from an average of about 200 per year in 1785 to around 800 in 1789, when the French Revolution exploded. In line with the implied magnitudes from the 2SLS results, the increase in riots was more than twice as large in high tax municipalities, as compared to low tax ones. This suggests that the interplay between weather shocks, which increased wheat prices, and extractive taxation was an important driver of the French Revolution.

After establishing the link between extractive taxation and riots, in the second part of the paper we seek to connect the salt tax to the French Revolution and to the fall of the *Ancien Régime*. First, we test whether the salt tax favored the spread of revolts across space and over time. We focus on the wave of riots that swept through France shortly after the storming of the Bastille, also known as the *Grande Peure* (literally, the "Great Fear"). Between mid-July and early August 1789, rumors that the king sought to suppress the Third Estate triggered widespread violence that caused panic and led to the abolition of feudal privileges on August 4, 1789 (Lefebvre, 1973). Exploiting newly geo-referenced data, we document that high tax areas were more likely to host an initial revolt that was subsequently followed by many other riots. We also show that, during the Great Fear, revolts propagate more in high tax areas.

Second, we leverage historical information from the *cahiers de doléances* (literally the "lists of grievances"). Between January and April 1789, the king asked the nobility, the clergy, and the Third Estate to collect the list of grievances concerning any topic related to the public sphere broadly defined. These were aggregated to the *bailliage* level, and then transmitted to Paris during the *États Généraux* of May 1789.[2] Using data from Shapiro et al. (1998), we find that *bailliages* subject to a higher salt tax express more complaints against taxation, and the salt tax in particular.

Third, we collected data on newly elected members of the *Assemblée Législative* (the legislature of the Kingdom of France from October 1, 1791, to September 20, 1792) from the National Assembly's archives. We document that legislators representing areas subject to a higher salt tax are more likely to support the abolition of the monarchy. Using newly digitized data on the votes cast in January 1793 by members of the *Convention Nationale*, we also document that

[2]During the *Ancien Régime*, the *bailliage* (in the north of France) or *sénéchaussée* (in the south) referred to a local administrative, financial, and judicial district—just above the parish. In 1789, France had 435 *bailliages*.

legislators originating from high salt tax regions are more likely to vote for the death penalty for the king.[3] Comparing two legislators representing high and low tax areas respectively, the former is 50 percentage points (or, 79.5% relative to the mean) more likely than the latter to vote for the death penalty for the king.

The notion that extractive taxation was one of the main causes of the French Revolution is widely recognized in the historical literature (Marion, 1921; Sands and Higby, 1949; Touzery, 2023). However, to the best of our knowledge, our paper is the first to provide systematic evidence in support of this idea. In doing so, we also complement work within economics. Sargent and Velde (1995) and White (1995) have examined the relevance of growing government debt and budget deficit for the French Revolution. Chambru (2019) and Waldinger (2024) have studied the link between weather shocks and conflict in pre-industrial France and during the French Revolution. Jha and Wilkinson (2023) and Ottinger and Rosenberger (2023) have documented that exposure to the American Revolution increased support for the French Revolution a decade later through a process of ideological transmission.[4]

More broadly, our findings shed light on the relationship between taxes and revolutions, and resonate with the well-known maxim, "no taxation without representation." Angelucci et al. (2022) have documented how fiscal autonomy and local tax collection enabled medieval English towns to gain representation. The conceptual framework in Angelucci et al. (2024) rationalizes this process and emphasizes how local economic power can promote the incorporation of towns into national decision-making. In contrast, our paper emphasizes the risks of political exclusion: when taxation is imposed without representation, it can become a catalyst for popular unrest and regime change, especially following negative economic shocks. This mechanism is also consistent with theories of institutional change and democratization (Acemoglu and Robinson, 2000, 2006; Scheve and Stasavage, 2016; Stasavage, 2020).

Finally, our results complement the literature on state capacity. Several papers have documented the importance of mass warfare for the rise of modern nation states and their ability to collect tax revenues (Tilly, 1990; Gennaioli and Voth, 2015; Stasavage, 2016). Others have linked the development of efficient taxation systems and the implementation of inclusive policies to state capacity, showing that the latter promotes economic growth (Besley and Persson, 2010; Cantoni et al., 2019; Chambru et al., 2024). However, not all state-building experiences have been successful. Focusing on the salt tax border surrounding the region of Paris, Davoine et al. (2024)

[3] The *Convention Nationale*, established after the fall of the monarchy, was the revolutionary government of France from September 20, 1792, to October 26, 1795.

[4] For a detailed discussion of the causes of the French Revolution, see Lefebvre (1951); Ladurie (1971); Lefebvre (1973); Shapiro et al. (1998); Neely (2008) among others. Several papers in economics have also examined the economic consequences of the French Revolution (Acemoglu et al., 2011; Squicciarini and Voigtländer, 2016; Chambru et al., 2024; Giommoni and Loumeau, 2022; Loumeau, 2023).

have shown that when the French monarchy cracked down against illicit salt smuggling in the 1730s in an attempt to raise tax revenues, violent revolts erupted, hindering state capacity.

Unable to set up effective taxation systems, weak states may engage in rent-seeking behavior, levying extractive taxes—such as the salt tax (Besley and Persson, 2009). Extractive taxation may increase revenues initially, but over time erodes the legitimacy of the state, induces citizens to withdraw their support, and eventually leads to the fall of the regime. This idea goes back to the notion of the "social contract" proposed in moral and political psychology (Locke, 1690; Rousseau, 1762; Hobbes, 1651), and has been discussed in several important works in history and political science (Tilly, 1985; Levi, 1997). Our paper provides systematic evidence in support of this theory, focusing on the French *Ancien Régime*—the archetypical example of a weak and extractive state.

2 Historical background

2.1 *Fiscal institutions during the Ancien Régime*

Before the Revolution, the French monarchy raised approximately 80% of the royal revenues through taxes, while the remaining 20% came from the royal domain (about 7%) and tariffs (about 13%). Direct taxes included the *Taille*, the *capitation*, the *vingitème*, and the *dixième*; indirect taxes consisted of the *gabelle* (i.e., the salt tax), *taxes on goods* such as tobacco, a *stamp tax*, and the *octroi*. Representing 12% of revenues in its early years, the salt tax became more important over time, accounting for as much as 22% of total revenues during the 18th century (Table A1). The rising importance of the salt tax was due to two factors. First, the level of direct revenues from the royal domain remained stable over time. Hence, as the Kingdom expanded geographically and prospered economically, the relative share of the royal domain in the overall Kingdom budget diminished. Second, salt consumption increased between the 13th and the 18th centuries, as both the population and the economy grew.[5]

Representing about 2% of the population, the aristocrats and the clergy were often exempted or offered preferential treatment when facing taxes. These exemptions were a source of frustration for the Third Estate (i.e., the remaining 98% of the population). Figure A1 shows a popular caricature from 1789 representing the hard-working Third Estate carrying both the nobility and the clergy on its back. The first item mentioned in the pockets of the nobility is "sel et tabac" (salt and tobacco). The legend reads "A faut espérer q[u]'eu jeu là finira b[i]entôt" ("Hopefully, this game will be over soon"). This echoes Norberg (1994)'s idea that the extractive tax system in place was an important driver of the French Revolution.

[5]See Touzery (2023) for further details.

The administrative division of the *Ancien Régime*, largely inherited from Roman and medieval institutions, was complex. A key feature of the system was that different administrative entities with non-overlapping boundaries fulfilled state functions at the local level (e.g., raising royal or church taxes; administering justice; etc.). Public goods provision was minimal, and revenues raised by the Crown through taxes were used for traditional royal prerogatives—military, monetary, justice, infrastructure, and police—which were either uniform or varied smoothly across space. A complete description of *Ancien Régime*'s administrative functions is beyond the scope of this paper. In the interest of space, in the next two sections, we focus on the salt tax. For a more comprehensive description, see also Nordman et al. (1995).

2.2 The salt tax

Origin. The *gabelle du sel*, or the salt tax, was first introduced as a temporary tax in 1246 by Philip IV the Handsome to finance crusading ambitions in the Middle East. In 1318, aware of "the displeasure they [salt taxes] cause our people,"[6] King Philippe le Bel published an *ordonnance* (displayed in Figure A2) to reassure the public "that it was not our intention for the said gabelle [...] to last forever."[7] Despite such reassurances, though, the salt tax became permanent under Charles V a few decades later.[8] In 1680, King Louis XIV acknowledged that the "prosperity of my people" remained a priority, but also added that the salt tax was necessary to finance the "Great and Glorious War."[9] The sal tax was abolished in March 1790, during the early stages of the French Revolution. Its swift removal symbolizes the broader rejection of fiscal injustice under the *Ancien Régime* and reflects the depth of resentment it had generated over centuries. After the Revolution, Napoleon reinstated the salt tax in 1806, making it both spatially uniform and substantially lower than the one prevailing during the *Ancien Régime*. The salt tax was eventually abrogated in 1945.

The salt tax was highly unpopular and is considered "one of the iniquitous institutions of the *Ancien Régime*" (Sands and Higby, 1949). For one, as most other taxes, it burdened disproportionately the Third Estate, while the clergy and the aristocrats were exempted or given preferential treatment. Moreover, even though the salt tax was proportional to the quantity of salt purchased and was added to the final price, it varied substantially across space. Figure 1 plots the variation in salt tax rates across regions, reproducing the 1781 *Cartes des Gabelles*.

[6] Authors' own translation from: "pour la déplaisance qu'elles font à notre peuple" (*Source:* Ordonnances faites par le roi Philippe le Bel, le 25 fevrier, l'an 1318, touchant la gabelle, aides et impositions; see also Figure A2).

[7] Authors' own translation from: "[...] que notre intention n'etoit pas, que lesdites gabelles [...] durassent toujours" (*Source:* Ordonnances faites par le roi Philippe le Bel, le 25 fevrier, l'an 1318, touchant la gabelle, aides et impositions; see also Figure A2).

[8] Royal ordinances in 1366, 1372, and 1379 made the salt tax permanent (Sands and Higby, 1949).

[9] Authors' own translation from: "le soulagement de nos peuples" and from "La Grande et Glorieuse Guerre" *Source*: Ordonnances de Louis XIV. roy de France et de Navarre, sur le fait des gabelles & des aydes, 1680 (see also Figure A2).

According to the *Cartes des Gabelles*, on the eve of the French Revolution, there were as many as 22 salt tax borders. Most of the borders had been in place for centuries and had changed little over time.

Border placement. The exact location of the tax borders depended on various historical factors, each shaped by specific events and circumstances. One notable example is the border between the *Grandes Gabelles* (around Paris) and *Provinces Rédimées* (around Bordeaux). This border followed the military line that was set at the end of the Hundred Years' War in 1453. As discussed in Sands and Higby (1949), the region was granted exemption from the salt tax as a political concession in exchange for accepting royal control after long periods of English occupation. The boundary was not drawn based on a clear economic rationale, but rather reflected a peace-time improvisation by the Crown, aiming to secure loyalty in formerly contested regions.

Another well-known case is that of the border dividing the *Grandes Gabelles* from *Quart-Bouillon* (around Normandie). The *Quart-Bouillon* region was given preferential tax treatment well before the 17th century, owing to its importance for salt production, though the relevance of the border as a tax frontier emerged after the 1639 Revolt of the *Nu-Pieds* ("Barefooted") in Normandy—a violent uprising triggered by the Crown's attempt to revoke the tax privileges (Beik, 1985). Seeking to limit salt smuggling, the original border placement was based on the estimated distance a horseman could travel from Mont-Saint-Michel Bay (Sargent, 1938). By 1780, improvements in transportation technologies and infrastructure had significantly reduced travel times (Livet, 1967; Roche, 1998), making the original border placement no longer aligned with contemporary transportation capabilities. In Appendix B, we classify the salt tax borders according to their origin; in Section 4, we use this classification to show that results are not driven by any specific border or origin type.

Spatial variation in salt price. Since the French Kingdom had the monopoly over salt production and controlled selling points, it could set salt price. Given that transportation costs had a negligible effect on the after-tax price of salt, variation in the price paid by the consumers largely depended on differences in the salt tax rate. Note that, since public goods provision was minimal, a higher tax burden did not imply more redistribution.

In the *pays de grandes gabelles* area (literally, the "country of high salt tax"), as the region around Paris was referred to, the salt tax rate was so high that the sale price of salt was nine to ten times its net cost. According to Beaulieu (1903), in 1662, the wholesale price of a given quantity of salt in Paris was 4 livres and 10 sous, while the price to the consumer was 42 livres, 4 sous, and 7 deniers, implying a tax rate close to 1000%. In other parts of the Kingdom, the consumer price of the same quantity of salt was much lower—from 2.5 livres in Bretagne to 13 livres in

Normandie to 7 livres around Bordeaux. Morineau (1972) estimated that the average household in the high tax area paid about 13% of its annual income in salt tax, as compared to 2.5% in the low tax area. Back of the envelope calculations indicate that, in 2021, the incidence of the tax for the average French household would range from 805 (low tax) to 4,189 Euros (high tax). The cost incurred by households in the high salt tax areas was similar to the sum of healthcare and transport expenditures for the average household in 2018.[10]

Tax collection and enforcement. Besides its spatial inequality, a second feature made the salt tax particularly obnoxious to people. In high tax areas, people were forced to purchase a fixed quantity of salt: one minot per year for 14 people over eight years old (corresponding to 3.4 kg per person). This amount was close to the estimated yearly need for an adult (including usage for production and agriculture), implying that the salt tax was essentially a forced method of taxation. Since few alternatives to salt existed and because even in low tax areas the price of salt was high, historians estimate that individuals living in regions with a low salt tax rate consumed between 3.5 and 4 kg of salt per year on average (Anderson, 1980). For this reason, the effective consumption of salt did not differ much around the tax border.

To monitor the price and the purchase of salt, citizens were assigned to a royal salt storehouse based on their residence. Salt storehouses (*grenier à sel*) had monopoly on salt sales, and were evenly spread across the Kingdom at approximately 10 km to 15 km to guarantee that tax collectors (*gabelous*) could complete a round-trip within the same day.[11] To minimize the probability that households under-reported their size in high tax areas, public officials conducted yearly checks-in. Tax collection was centrally organized: from Paris, the king sent tax collectors to the different regions. We are not aware of evidence indicating that regions differed in the methods and tools used to collect the salt tax. The salt tax was opposed also because collection methods were vexatious, the monitoring system in place was stringent, and fraud was heavily penalized, with common sentences including the death penalty (Chanel et al., 2015). The rigor of the control methods was such that it inspired a well-known rhyme: "Ils sont partout, les Gabelous! [The tax collectors are everywhere!]" (Touzery, 2023).

Salt smuggling. Due to the spatial variation in tax rates, smuggling emerged as soon as the salt tax system was implemented. Smuggling gained prominence in the early- to mid-18th century with the influx of goods—primarily tobacco—from the United States and the French colonies. As with most illicit activities, it is challenging to determine the exact scale of smuggling. Hugo (1838) estimated that only around 2,000 families engaged in illegal trade—an estimate that

[10] Data on 2021 net household disposable income and 2018 households' budget come from the OECD and INSEE, household budget, 2018, respectively.

[11] Figure A3 illustrates the location of the salt storehouses along the Loire River between Tours and Orléans.

likely understates the true extent of smuggling, given anecdotal evidence and the significant presence of smuggling in French folklore. Concerned about the consequences that smuggling had for tax revenues, between 1733 and 1742, the French government created three special courts, also known as *Commissions du Conseil*. These courts replaced local judges with centrally appointed ones, expedited proceedings, and increased incentives for tax collectors to report and stop smuggling (Kwass, 2014). Focusing on the tax border around the region of Paris, Davoine et al. (2024) have shown that the crackdown against smuggling led to a sudden increase in conflict between tax collectors and both smugglers and the local population.

Since smugglers were often apprehended on the high side of the tax border, the riots generated by the 1730s crackdown are relevant to our study. Riots related to smuggling may be consistent with the mechanism tested in our work, since they may reflect grievances against taxation. Due to the extractive nature of the taxation system, smugglers were often regarded by the population as "Robin Hood" figures (Kwass, 2014). Louis Mandrin (1725–1755), a smuggler of salt, tobacco, and other controlled goods, is one of the most well-known examples. Highly popular during his lifetime, he was eventually captured and executed in 1755 (Kwass, 2014). In his 1755 *Testament politique*, Mandrin foresaw the political unrest to come: "What is this criminal that all of France is talking about? Whom everyone pities, whom the whole world regrets, for whom an infinite number of people would wish to ransom his life with their own blood? It is a mystery that the politics of Versailles can easily unravel. I die content if this event can serve to open the eyes of the ministry. The moment is decisive."[12] Mandrin remains a prominent figure in French folklore, and has inspired several films and television series, numerous popular songs, and museum exhibitions.[13] Beyond the historical act of smuggling, the enduring nature of his popularity as a symbol of resistance against extractive institutions reflects the deep frustrations experienced by the French people under the *Ancien Régime*.

Although smuggling-related riots may be initially motivated by discontent over extractive taxation, they can lead to sustained conflict for reasons beyond tax inequality. For instance, early confrontations may deepen hostility between the local population and tax collectors, exacerbating long-term tensions. Moreover, if smuggling-related riots primarily involve clashes between smugglers and field agents, they may not accurately reflect broader dissatisfaction

[12] Authors' own translation from: "Qu'est ce que c'est que ce criminal dont toute la France parle? Qu'un chacun plaint, que tout le monde regrette, à qui un infinite de gens voudroient racheter la vie de leur propre sang? C'est un mystère que la politique de Versailles peut aisément developer. Je meurs content si cet évènement peur server à faire ouvrir les yeux au ministère. Le moment est décisif." (Mandrin, 1755, p.1)

[13] Mandrin has been the subject of multiple films and television adaptations, reflecting his enduring presence in French popular culture. These include Mandrin (1924, silent film), Mandrin, 1st Period: The Liberator (1948), Mandrin, 2nd Period: Tragedy of a Century (1948), The Adventures of Mandrin (1952), Mandrin (1962, based on a book by Arthur Bernède), Mandrin, Gentleman Robber (1971, TV series, 6 episodes), and Les Chants de Mandrin (2011, The Ballads of Mandrin).

with the state. As explained in Section 4.1 below, our results are unlikely to be driven by smuggling-related riots. First, our effects appear only after 1760—more than 25 years after the creation of the special courts—and peak in the 1780s. Second, leveraging detailed riot descriptions, we verify that the estimates are unchanged when excluding smuggling-related events from the analysis. Third, we document that our results are robust to controlling for distance from salt production sites (a variable that influenced the profitability of smuggling at the local level) as well as for pre-1780 smuggling-related revolts.

2.3 *Cracks in the system*

Over centuries, extractive taxation generated latent discontent among the French people. As noted by Alexis de Tocqueville, "from the day the French nation, let kings impose a general tax without its consent [...] from that day was sown the seed of practically all the vices and abuses which plagued the *Ancien Régime* for the rest of its days and finally brought about its violent death" (Tocqueville, 1856). Discontent mounted gradually during the late 18$^{\text{th}}$ century, and revolts against the monarchy became increasingly common. As shown in Figure 2, around 100 riots occurred across France in each year in the 1750s and 1760s. The yearly number of riots increased slightly in the following two decades, with peaks around 1768 and 1775, and then in 1788 and 1789, when more than 800 riots were recorded.[14]

The description of riots reported in Chambru and Maneuvrier-Hervieu (2024) illustrates well the frustration of the people against the salt tax in those years. In Bons-en-Chablais, on April 4, 1779, a "conflict between the population and salt tax guards on a fair day" took place. In Caen, on March 3, 1781, "During a house search, the salt tax officers were initially attacked by 4 to 5 individuals, who then rallied others, soon forming a group of 15 to 20 people from outside the house." The latter account highlights that small-scale confrontations could escalate, as the local population rallied together against tax officers, despite the high punishment risk. As Louis Mandrin put it in 1755, "Honest people [...] were only waiting for a favorable opportunity to declare themselves; the example of some would have inspired others, and the revolution would then have become widespread. [...] The most famous revolutions [...] have always begun with sparks."[15]

The prominence of the salt tax in the public discourse increased sharply after 1770. This can be seen in Figure A4, where we plot the number of mentions about the salt tax (*gabelle*) in the corpus of French-language books available in the Archives of the National Library of France

[14]The 1765-69 increase in riots was due to a series of shocks to the price of wheat, while that of 1775 reflects the "Flour wars"—namely a series of riots that followed rising bread prices and food shortages.

[15]Authors' own translation from: "Les honnêtes gens [...] n'attendoi[en]t qu'une occasion favorable de se déclarer, l'exemple des uns eût animè les autres, et la révolution alors devenoit génerale. [...] Les plus fameuses revolutions [...] ont toujours commencé par des étincelles." (Mandrin, 1755, p.2)

(Azoulay and de Courson, 2021). Consistent with the diffusion of the Enlightenment, this trend is particularly evident for political philosophy books. As noted by historian Robert Darnton, the Enlightenment literature helped "create a new public opinion, one that judged power by the yardstick of reason and justice rather than tradition and privilege" (Darnton, 1995). The ideas advanced by Enlightenment thinkers fueled popular discontent, recasting extractive taxation not merely as an economic issue, but as a fundamental moral and political failure of the *Ancien Régime*.

The debate around the French taxation system intensified in 1781, when King Louis XVI's finance minister Jaques Necker made public his *Compte rendu au Roi* (or, the "Report to the King"). The document represented the first general overview of the Kingdom's finances available to the public, and about 100,000 copies were sold in just a few weeks (Harris, 1972). The report publicly revealed both the spatial disparities in the tax burden and the lists of pensions to nobles, including the names and amounts paid by the state. It also painted an overly positive picture of the Kingdom's finances—most notably by omitting the loans contracted by the French state to finance its involvement in the American War of Independence.

As the Kingdom's fiscal position continued to deteriorate, in 1787, finance minister Charles Alexandre de Calonne convened the Assembly of Notables in an effort to introduce a comprehensive tax reform. During these deliberations the full extent of the Kingdom's indebtedness became evident, triggering a crisis of confidence in the state's solvency (White, 1995). The breakdown in the French state's fiscal credibility was accompanied by a surge in public engagement with questions of taxation. Analyzing data from Azoulay and de Courson (2021), Figure A5 (Panel A) documents that the relative frequency of mentions of the salt tax in Parisian newspapers increased tenfold between 1786 and 1790. As illustrated in Figure A5 (Panel B), the salt tax became increasingly linked with terms such as "justice" and "Revolution," suggesting a shift in the public discourse—from perceiving it merely as a fiscal burden to condemning it as emblematic of systemic injustice.

Historians and economists view the drought that hit France in 1788 as one of the main proximate causes of the French Revolution (Labrousse, 1944; Ladurie, 1971; Lefebvre, 1973; Neumann, 1977; Neumann and Dettwiller, 1990; Waldinger, 2024). The drought, followed by the exceptionally harsh winter of 1788–1789, led to poor grain harvests and a sharp rise in food prices. The increase in wheat prices is depicted in Figure 3, which also presents the number of riots compiled in Chambru and Maneuvrier-Hervieu (2024). The figure documents that riots increased following the surge in wheat prices—but that such increase was higher in high tax municipalities. This suggests that the drought and subsequent price increases may have acted as a spark on land already parched by salt taxation. In Section 4.2, we provide systematic evidence in support of this idea.

2.4 *The French Revolution*

Facing a dire financial situation, on January 24, 1789, the king summoned the *Etats Généraux*: "We need the support of our loyal subjects to help us overcome the various difficulties we are currently facing, particularly with regard to the state of our finances." The *Etats Généraux*, which had been last convened in 1614, brought together representatives from all the parts of the Kingdom, belonging to the three estates of society: the clergy, the nobility, and the Third Estate. Ahead of the *Etats Généraux*, the king asked each estate to survey the population and compile grievances on all matters of public concern. The lists of grievances—also known as the *cahiers de doléances*—were sent to Paris for discussion. Among the complaints expressed by the Third Estate, issues related to taxation were particularly prominent, accounting for up to 25% of all grievances (Shapiro et al., 1998).

The opening session of the *Etats Généraux* in Versailles on May 5, 1789, is often considered the beginning of the French Revolution (Lefebvre, 1962). The king's opening speech was criticized for lacking serious intentions to implement structural reforms and focused solely on raising taxes. Dissatisfied and aware of the country's mounting social and economic grievances, the deputies of the Third Estate declared themselves the *Assemblée Nationale* on June 17, asserting that they represented "at least ninety-six percent of the nation" (Doyle, 1989). In the weeks that followed, the clergy and some liberal nobles began to join the Assembly. On June 20, after being locked out of their usual meeting hall, the deputies gathered in a nearby indoor tennis court and swore the famous Tennis Court Oath, vowing not to disband until they had drafted a constitution. Tensions escalated in early July, as the king brought troops into Paris and dismissed the popular finance minister Jacques Necker on July 11, fueling widespread fear and unrest.

On July 14, 1789, mobs stormed the Bastille in Paris—a royal fortress and prison that had become a symbol of arbitrary royal authority. The attackers aimed to seize weapons and gunpowder stored inside to defend themselves against the king's troops. Though the Bastille held only seven prisoners at the time, its fall marked a decisive break with the monarchy (Schama, 2004). In the weeks that followed, rumors of aristocratic plots spread through the countryside, igniting *la Grande Peur* (literally, "the Great Fear"). Peasants attacked manor houses and destroyed feudal records in a wave of spontaneous uprisings aimed at abolishing seigneurial dues and privileges (Lefebvre, 1973). In response, the National Assembly enacted a series of transformative measures, such as abolishing feudal privileges and bringing the Church under state control through the Civil Constitution of the Clergy. On August 26, 1789, The National Assembly adopted the Declaration of the Rights of Man and of the Citizen, establishing liberty, equality before the law, and property rights as foundational principles of the new regime (Furet, 1981; McPhee, 2002).

The subsequent three years were marked by intense political conflict, foreign wars, and growing economic instability. After a brief experiment with constitutional monarchy, radicalization accelerated following the storming of the Tuileries Palace on August 10, 1792, and the suspension of the king. In September, the monarchy was officially abolished and the French First Republic was declared. A new constituent body, the *Convention Nationale*, was elected by universal male suffrage to draft a republican constitution and steer the country through crisis. The Convention tried King Louis XVI—now referred to as Louis Capet—on 33 charges, including treason and conspiracy against liberty. The king was found guilty and sentenced to death on January 17, 1793. He was executed by guillotine four days later, on January 21, 1793.

3 Data

Salt tax. Relying on historical records from the Archives of the National Library of France, we geo-referenced the map of all salt tax discontinuities in place on the eve of the French Revolution.[16] The primary source of information is the 1781 Necker's map (see also Figure 1). The map includes all salt tax zones with the corresponding tax rate. Yet, it is imprecise at high spatial resolutions, as those needed when implementing our analysis below. To overcome this limitation, we hand collected and digitized the list of the salt tax rates levied in all locations across the Kingdom available in the *Ordonnances de Louis XIV. roy de France et de Navarre, sur le fait des gabelles & des aydes* (1680, see also Figure A2).[17] We combined this dataset with geo-referenced maps of the *Ancien Régime* institutions made available by Gay et al. (2024). We compare the tax rates prevailing in 1680 and in 1781 to verify that the salt tax was highly persistent and changed little over time. In our analysis, we omit municipalities in the bottom quartile of the tax gap distribution. These are municipalities for which the discontinuity in the salt tax rate is minimal (less than 0.16 pounds per liter), and thus unlikely to be salient, or even visible, to local residents.[18] On average, the salt tax rate in the municipalities in our main regression sample was about 0.58 pounds per liter (Table A2, Panel A), but varied substantially across space (Figure A6).

[16]Online access to historical map archives can be found here: https://gallica.bnf.fr/html/und/cartes/cartes?mode=desktop.

[17]The full title of the original document is: *Ordonnances de Louis XIV. roy de France et de Navarre, sur le fait des gabelles & des aydes. Données à S. Germain en Laye aux mois de may & juin 1680. Registrées en la Cour des Aydes les 11. may & 21. juin 1680.* Publicly available online from the National Library of France, BnF.

[18]As shown below, however, results are robust to including all borders.

Local weather shocks. In Section 4.2, we combine information on the salt tax rate with local weather shocks occurring between 1780 and 1789. Local level data on yearly growing season temperature and precipitation for this historical period come from Luterbacher et al. (2004) and Pauling et al. (2006).[19] These are gridded datasets, with grids measuring approximately 50 by 50 km, reconstructed by paleoclimatologists based on several sources and often used in the economic literature (e.g., Bazzi and Blattman, 2014; Sequeira et al., 2020). Following Waldinger (2024), we calculate the ratio of growing-season temperature and precipitation in each year over their long-run (1750 to 1800) growing-season means.[20] For our analysis, we match each municipality to the corresponding grid and, since growing-season conditions influence the harvest with a lag, we assign to the riots occurring in a given year the deviations in temperature and precipitation prevailing in the previous year. Figure A7 displays temperature (Panel A) and precipitation (Panel B) deviations focusing on 1788—when a major drought hit France and caused pervasive crop failures (Lefebvre, 1973; Neumann and Dettwiller, 1990). Consistent with the literature (Waldinger, 2024), 1788 temperature and precipitation shocks were especially severe in Southern and Eastern France.

Riots. Data on the number of riots come from Chambru and Maneuvrier-Hervieu (2024). The original dataset covers more than 20,000 episodes of violence across countries from the year 1,000AD onwards. We focus on events occurring in contiguous France between 1750 and 1789, and classified by Chambru and Maneuvrier-Hervieu (2024) as economic and political riots. Economic riots refer to tax-, food- or labor-related events. Political riots are classified as protests against the authority, against the feudal institutions, or other unspecified political uprisings.[21] Granular information on event location allows us to calculate the number of riots recorded in a given municipality over a given time period. Figure A8 plots the distribution of riots across France between 1750 and 1789. Revolts were scattered around the entire country, but were more likely to occur around the salt tax borders, where tax inequality was more immediately visible to people. Panel A of Table A2 confirms that the number of riots, both over the entire 1750-1789 period and over the 1780-89 decade, was on average higher in municipalities close to salt tax borders, as compared to the entire France.[22]

In Section 5.1, we complement the data from Chambru and Maneuvrier-Hervieu (2024) by geo-referencing and digitizing the maps originally reported in Lefebvre (1973). These maps document the initial panic locations and the propagation paths of the Great Fear between mid-

[19] As in Waldinger (2024), we define the growing season as the spring and the summer (March to August).

[20] Results are robust to using alternative time windows to compute long-run means.

[21] We exclude events that lack any description or that, given their description, are unlikely to capture citizens' uprisings. Below, we show that results are robust to including also these events.

[22] For consistency, in Panel A of Table A2, we exclude the municipalities in the bottom quartile of the tax gap distribution.

July and early August 1789 (see Section 2.4). We digitized these maps to extract the coordinates of both the origin points and the main trajectories of diffusion.

Citizens' complaints. To measure complaints expressed by the population in the *cahiers de doléances* (see Section 2.4), we rely on data assembled by Shapiro et al. (1998). Complaints against the state—the most frequent category—accounted for about 35% of all grievances (Figure A9). Taxation represented the second largest source of anger, representing about 20% of all complaints in the list of grievances. On average, *bailliages* submitted 70 complaints against taxation—and 4% of these explicitly mentioned the salt tax (Table A2, Panel B).

Preferences and behavior of legislators. We collected novel data on the political leaning and department of origin of each member of the Legislative Assembly, i.e., the legislature of the Kingdom of France from October 1, 1791, to September 20, 1792, from the archives of the National Assembly. About 15% of legislators represented a group advocating for the change away from the monarchy (Table A2, Panel C).[23] From the archives of the National Assembly, we also extracted the votes cast by members of the *Convention Nationale* over the three questions that were asked in January 1793 (Figure A10). The first question asked whether the king was guilty; the second question asked if the people (as opposed to the *Convention Nationale*) should vote on the king's final sentence; the third question asked whether the king should be sentenced to death. While most legislators (98.8%) answered "*oui*" (yes) to the first question, there was more variation in how they answered to the second and the third questions (Table A2, Panel D). More than one third of legislators (38.8%) voted in favor of the public referendum, hoping to spare the king from the death penalty. Most legislators who answered "no" to the second question then voted to sentence the king to death: 64.6% *Convention Nationale* members answered "yes" when asked whether the king should be sentenced to death.

Additional variables. We complement the datasets described above with a series of local demographic and economic control variables. These come from The National Institute of Statistics and Economic Studies and Cagé and Piketty (2023) for demographic outcomes, as well as from the National Institute of Geographic and Forest Information for spatial data. Throughout the analysis, we also use additional variables, described when first introduced.

[23]We classify as "Pro-change" the following political groups: *Gauche*, *Constitutionnels*, *Montagne*, *Girondins*, *Constitutionnels modérés*, *Extréme gauche*.

4 The salt tax and riots

4.1 *Regression discontinuity analysis*

Empirical strategy. We estimate a RD model that compares similar and spatially close municipalities, which were subject to different salt tax rates. Let $i \in I$ be a municipality, defined by its centroid, $\boldsymbol{c}_i = (c_i^x, c_i^y)$. Consider $\overline{\boldsymbol{B}}$ as the infinite set of border points constituting the salt tax borders, and define the subset $\boldsymbol{B} \in \overline{\boldsymbol{B}}$ of border points $\boldsymbol{b}_i = (b_i^x, b_i^y)$ such that the euclidean distance to the salt tax border $d_i = ||\boldsymbol{c}_i - \boldsymbol{b}_i||$ is minimized. Let the two zones $\mathcal{A}^+$ and $\mathcal{A}^-$ be the treatment (i.e., the municipality with the higher tax rate, compared to the nearest tax border) and the control (i.e., the municipality with the lower tax rate, compared to the nearest tax border) areas, respectively. A location is assigned to one and only one tax border (the nearest).

Location, relative to the nearest salt tax border, acts as the forcing variable. Assignment into treatment is a function of a municipality's location relative to the border. Treatment status of municipality i is defined as $T_i = \mathbb{1}\big[\boldsymbol{c}_i \in \mathcal{A}^+\big]$. Denote the outcome vector by $\boldsymbol{Y}$. The discontinuity of the expected outcomes at the geographical border can be expressed as:

$$\tau(\boldsymbol{d}) \equiv \mathbb{E}[\boldsymbol{Y}_1 - \boldsymbol{Y}_0 | d_i = 0] = \lim_{\boldsymbol{d} \to 0} [\boldsymbol{Y} | \boldsymbol{c} \in \mathcal{A}^+] - \lim_{\boldsymbol{d} \to 0} [\boldsymbol{Y} | \boldsymbol{c} \in \mathcal{A}^-]. \quad (1)$$

We estimate the following empirical model:

$$Y_i = f(d_i) + \boldsymbol{\eta}_{b_i} + \beta_1 T_i + \boldsymbol{X_i'}\boldsymbol{\gamma} + \varepsilon_i, \qquad \text{if } -h \leq d_i \leq h. \quad (2)$$

The dependent variable, Y_i, is the number of riots that occurred in municipality i in different time windows. The main regressor of interest, T_i, is the border treatment variable defined above. The regression also includes different polynomial orders of the distance to the border, $f(d_i)$, salt tax border fixed effects, $\boldsymbol{\eta}_{b_i}$, and a vector of municipal controls (coordinates, soil fertility, and 1780 population), $\boldsymbol{X_i'}$.[24] Standard errors are clustered at the *bailliage* level. Because standard local polynomial estimators may be sensitive to the specific bandwidth (h) used, we employ mean squared error optimal bandwidths, which are valid given the robust approach in Calonico et al. (2014).

The main analysis below focuses on the 1780-89 decade, though we show results for other decades as well. For the 1780-89 decade, the optimal bandwidth is 33.49 km, and the sample

[24] In the baseline specification, we use second-order polynomials. When including covariates, we follow the approach in Calonico et al. (2019). Soil fertility is measured with three variables: an indicator of soil fertility obtained from the European Soil Database, the average silt content in the soil (at 100-200cm depth), and the average nitrogen content in the soil (at 30-60cm depth).

includes 13,113 of the 34,477 municipalities in contiguous France.[25] Note that our sample does not include Paris, which is more than 50 km away from the closest tax border, reducing concerns that results from the RD analysis may be driven by events happening there. Also and importantly, salt production sites are always at least 50 km away from the tax borders.

In Figure 4, we formally test whether the salt tax rate varies discontinuously at the tax border, estimating a regression similar to that in equation (2), where the dependent variable is the salt tax rate (rather than the number of riots). The RD plot shows that the salt tax rate jumps at the border, moving on average from 0.25 to 1 pound per liter.[26]

Validity. The main identifying assumption behind our empirical strategy is that only salt tax rates vary discontinuously at the borders. One specific concern is that salt tax borders may overlap with other administrative borders or with geographical features, such as rivers and soil suitability. Section 2.2 and Appendix B discuss the origin of salt tax borders, presenting historical and anecdotal evidence in support of the notion that the exact placement of salt tax borders was plausibly exogenous. In Appendix B, we also classify border segments according to their origin—distinguishing between geographic features, administrative boundaries, and medieval or Roman institutions (see Appendix B.2 and Figure B6 for more details).[27]

Using this classification, we plot the tax borders in Figure A12, where each border segment is color-coded according to its origin. The map reveals substantial heterogeneity in the origins of adjacent segments. Border types appear to alternate without forming continuous stretches associated with a single classification. This suggests that the placement of individual border segments did not systematically overlap with a specific origin. Below, we confirm this visual impression by documenting that results are robust to dropping segments for each origin type, one at the time.

To further corroborate the identification strategy, we examine whether the sample is balanced around the border. Since the salt tax had persistent effects on economic development well before 1780 (Giommoni and Loumeau, 2022), we focus on characteristics that are time-invariant or pre-determined relative to its introduction. Figure A13 presents balance tests on a range of

[25]In France, there are 34,477 municipalities. However, once we exclude those that span salt tax borders at the bottom quartile of the distribution, this number becomes 25,564.

[26]The figure is obtained by pooling together all the borders (and excluding the borders with tax gap in the bottom quartile of the distribution). We obtain similar results, not reported for brevity, when considering each border separately. Figure A11 shows that, as expected, the discontinuity in the salt tax rate is an order of magnitude smaller when considering municipalities in the bottom quartile of the tax gap distribution.

[27]Specifically, we divide salt tax borders in 27,156 segments, each measuring 1 km in length. For each segment, we assign an origin type by spatial overlap with a series of historical and 18th century natural (e.g., rivers) and administrative borders (e.g., Roman borders from AD400 or *Ancien Régime* borders such as the *Généralité*). As geo-referencing techniques may lead to small differences at very fine spatial resolution, we apply a 1 km margin of error for the spatial overlap. Intuitively, if a salt tax border segments "moves" similarly to a Roman border from AD400 but with a small (i.e., less than 1 km) shift, we consider that the two overlap.

historical and geographic variables. Panels A to C examine the presence of Roman roads, Roman cities, and roads from the Cassini map—proxies for connectivity to the transportation network, which might facilitate coordination and revolt. Panel D considers the presence of dioceses or archdioceses, which were often sites of clerical power, nobility, and symbolic privilege, and thus potential focal points of unrest. Panels E to I focus on municipal surface area, altitude, soil fertility, and river access, which could influence mobility, agricultural output, or other strategic considerations related to riots. Figure A14 adds finer soil characteristics—such as silt, clay, and sand content, as well as nitrogen levels and water retention—to capture differences in land productivity and agricultural potential. Reassuringly, the sample is balanced across all dimensions, reducing concerns that the tax border coincides with structural differences that might confound our estimates.

We report many more robustness checks after presenting the results.

Results. Figure 5 presents the RD plot from equation (2) for the period between 1750 and 1789. Results indicate that the number of riots jumps when moving from the low tax (coded with negative distance) to the high tax (coded with positive distance) side of the border. We report the corresponding point estimate and standard errors in Table 1, column 1. The coefficient is statistically significant, and indicates that moving from the low to the high tax side of the border increases the number of riots by 68% relative to the sample mean.

Subsequent columns of Table 1 replicate the baseline RD regression separately for the six decades between 1750 and 1809. The estimates, also displayed graphically in Figure 6, show that the effects of the salt tax grow over time, becoming statistically significant after 1760, and peaking in the 1780s—the decade leading up to the French Revolution. As expected, the relationship between the salt tax and riots disappears after 1790. According to the coefficient reported in column 5 of Table 1, for the 1780-89 decade, crossing the tax border increases riots by 73% relative to the mean. From now onwards, we focus on the 1780-89 decade, unless otherwise specified.

To identify the effects of the salt tax, the RD model in equation (2) compares municipalities on opposite sides of the tax border, regardless of the size of the tax differential. However, we expect the tax-riots relationship to increase with the size of the tax gap, for at least two reasons. First, a larger tax gap should be more visible—and thus, salient—to people. Second, a larger tax gap may fuel resentment if individuals value fairness. To test this conjecture, in columns 2 and 3 of Table A3, we replicate the baseline specification (reported in column 1 to ease comparisons) separately for municipalities with a tax border below and above the sample median. Consistent with our hypothesis, the effects are driven by municipalities that span borders with a higher tax gap. In column 4 of Table A3, we replicate the RD analysis with OLS, using as main regressor the gap between the own tax rate and the tax rate prevailing on the other side of the closest tax border.[28] The positive and statistically significant coefficient confirms that riots increase with the size of the tax gap.

The baseline RD model also prevented us from estimating the elasticity of riots with respect to taxation—a policy relevant parameter. In column 5 of Table A3, we thus replicate the OLS regression of column 4, replacing the tax gap with the tax rate prevailing in the municipality. The coefficient is positive, statistically significant, and quantitatively relevant. According to our estimates, a 0.4 pounds per liter increase in the salt tax rate (approximately one standard deviation in our border sample) increases the number of riots by 33% relative to the mean. Results are similar when taking the log of the tax rate (column 6).

Interpretation. Our preferred interpretation of the results is that extractive taxation reduced citizens' support for the state, and eventually induced them to revolt. This view resonates with the historical evidence discussed in Section 2 that the salt tax fueled discontent against the monarchy and led to the riots that culminated in the French Revolution. It is also consistent with the broader notion that, when taxes are not matched by corresponding benefits for the population, unrest and revolutions can occur, potentially leading to the fall of the regime (Levi, 1997; Acemoglu and Robinson, 2001; Goodwin and Rojas, 2015).[29] This may happen for two, complementary reasons. First, extractive taxation reduces the legitimacy of the state, and lowers citizens' intrinsic motivations to support it. Second, by extracting rents from the population and making local communities poorer, the salt tax may have triggered riots due to material (extrinsic) considerations.

Note that the extrinsic and the intrinsic motivation channels are complementary, and both are likely to mediate the impact of the salt tax on riots. In our baseline specification, we control for local population measured in 1780 to proxy for the effect of the salt tax on economic development at the onset of the French Revolution. We acknowledge that this variable is an imperfect proxy for economic development, and does not measure the individual conditions of people living in a given municipality. To further reduce concerns that municipalities on either side of the border differ along economic dimensions that we cannot measure, in Section 4.2 below, we augment

[28]To keep the analysis as comparable as possible to the RD model, we include only municipalities within 30 km away from the tax border (the closest integer value to the optimal bandwidth), and control for *bailliage* fixed effects, the municipality-level covariates included in the RD model (soil fertility, geographic coordinates, and 1780 population), distance from the border as well as the interaction between the latter and, respectively, the tax gap and each of municipality-level covariates. We cluster standard errors at the *bailliage* level.

[29]While the French Revolution is one of the most renowned examples, similar patterns have emerged throughout history—from the 1905 Russian Revolution to the 1905-1911 Persian Constitutional Revolution to the 1910 Mexican Revolution.

the RD specification with time and spatial variation in local weather conditions and wheat prices. This allows us to absorb any remaining time-invariant difference between municipalities, including economic development, through the inclusion of municipality fixed effects. However, we cannot—nor want to—rule out that our results reflect the effects of the salt tax through both intrinsic and extrinsic motivations.

Robustness checks. The anecdotal evidence discussed in Section 2 suggests that, at the fine-grained geographic level of the optimal bandwidth (around 30 km), the placement of the borders was quasi-random. The balance checks presented in Figures A13 and A14 support this notion. Figure A12 discussed above also suggests that salt tax borders do not systematically overlap with specific features—such as presence of rivers, Roman or medieval institutions, and other jurisdictions of the *Ancien Régime*—that may independently affect riots. In Figure A15, we provide more formal evidence consistent with this idea, showing that results are robust to excluding different border segments—one at the time. In Panel A, we define borders according to their geography, dividing the French territory in 2 x 2 degree blocks and creating 25 different border segments. In Panel B, we define border segments according to their origin—as explained in detail in Appendix B. Then, we replicate the baseline specification (reported in the first dot from the left) excluding each border segment at the time.

Reassuringly, coefficients are positive and, in almost all cases, statistically significant at the 5% level. The coefficients become somewhat smaller and less precisely estimated only in two instances (with p-values of 0.096 and 0.093, respectively). First, when excluding the borders in one north-western block (Panel A).[30] Second, when excluding the border segments whose origin coincides with the overlap between jurisdictions as defined in Gay et al. (2024) and *généralités* (Panel B). This latter test is particularly demanding, because excludes 26% of the municipalities in our sample. Overall, Figure A15 suggests that no single border (defined either in terms of its geography or in terms of its origin) is driving our results.

A separate concern is that riots may be selectively under-reported on the low side of the tax border, biasing our estimates upwards. We address this potential issue in Table A4. First, we exclude events that lack description (column 2) and events without information on the number of participants (column 3). These are likely to be smaller events that may be under-reported more often. In both cases, results remain statistically significant and close to the baseline (reported in column 1 to ease comparisons). Results are also robust to: restricting attention to riots with both event description and information on the number of participants (column 4); excluding events with less than 5 and 10 participants (columns 5 and 6); and, considering also

[30] The municipalities of this block are located in the following modern French regions: Normandie, Pays de la Loire, Centre val de Loire, and Nouvelle Acquitanie.

riots other than those that Chambru and Maneuvrier-Hervieu (2024) define as "economic" and "political" (column 7).[31]

In Table A5, we present an additional battery of robustness checks. First, we show that results are unchanged when including borders at the bottom quartile of the tax gap distribution (column 2). The point estimate remains positive and statistically significant, but is about one third smaller than that in the baseline specification (reported in column 1). This is consistent with our interpretation: the tax gap in these additional borders was substantially smaller, and thus less noticeable and salient to people. Second, we verify that results are unchanged when using the Sanson (1665)'s *Atlas des Gabelles* to delineate the *Grandes Gabelles* area (column 3).[32] Third, we show that results are robust to excluding cities with a population above the 95th percentile (column 4), using Pseudo Poisson Maximum Likelihood (column 5), defining the dependent variable in logs (column 6) or as a dummy for having at least one riot (column 7), and estimating the model away from the tax borders (column 8).[33]

In Table A6, we show that results are robust to including quadratic polynomials (column 2) and to using different kernel and bandwidth selection methods (columns 3 to 5). To address potential concerns about spatial correlations, we also replicate the analysis by clustering standard errors at the *généeralité* level (column 6) and using Conley (1999)'s adjusted standard errors (columns 7 and 8).[34]

In Figure A16 (Panel A), we document that results are unchanged when arbitrarily modifying the bandwidth between 0.5 and 1.5 of the optimal bandwidth. Figure A16 (Panel B) performs a placebo exercise permuting the border 10, 20, 30, and 40 km away from the actual one. Reassuringly, only when crossing the "real" tax border, the coefficient is positive and statistically significant.

Heterogeneity by type of riot. In the baseline specification, we consider all the riots that Chambru and Maneuvrier-Hervieu (2024) classify as political or economic. Using the description of the event, Chambru and Maneuvrier-Hervieu (2024) further decompose political and economic riots into more granular categories. In Figure A17, we replicate the analysis presented in Figure 6, examining separately different categories of riots, as defined in Chambru and

[31]When focusing on events with information on the number of participants, the 25th percentile of the distribution is 8.

[32]See Appendix B.1 for more details.

[33]Results are robust to selecting the large cities using alternative thresholds. When taking the log of the number of riots, we add 0.01, given the large number of zeros in our sample.

[34]In column 8, where we use a 100 km distance threshold when applying Conley (1999)'s procedure, the point estimate is statistically significant at the 10% and the p-value is 0.081. The point estimate in columns 7 and 8 of Table A6 differs from that in column 1 because Conley (1999) adjusted standard errors apply spatial weighing based on distance. Hence, in columns 7 and 8, we use a uniform kernel (as in column 3); instead, our baseline specification uses a triangular kernel.

Maneuvrier-Hervieu (2024).[35] Panel A documents that the salt tax increases economic—but not political—riots. Focusing on economic riots, Panel B shows that results are driven by tax revolts, while crossing the salt tax border has no effect on food and labor riots.[36] These patterns are consistent with our preferred interpretation that results reflect discontent against an extractive taxation system. The fact that we observe no jump in food-related riots at the border also weighs against the idea that our results fully reflect the negative effect of the salt tax on economic development.

As discussed in Section 2.2, differences in the price of salt across tax borders encouraged the diffusion of illicit smuggling. When a crackdown against salt smuggling was implemented in the 1730s, violent riots erupted (Davoine et al., 2024). Some of these events were the result of direct confrontations between field agents and smugglers. Others, instead, arose as the local population defended the smugglers, who, like Louis Mandrin, were viewed as local heroes fighting for the poor against an extractive and unjust state (see Section 2). To the extent that smuggling-related riots reflect citizens' grievances against taxation, they are consistent with our proposed interpretation. Moreover, since the crackdown against salt smuggling was implemented in the 1730s and given that our estimates become strongest in the 1780-89 decade, it seems unlikely that our results capture backlash against the reform.

However, to rule out the possibility that our findings are entirely driven by riots caused by the smuggling crackdown, we explore the sensitivity of our estimates to excluding smuggling-related riots. To identify smuggling-related riots, we read through all riots reported in Chambru and Maneuvrier-Hervieu (2024), and selected those that contained any mention of salt smuggling. We report results in Table A8, focusing on all economic and political riots in Panel A and only on tax riots in Panel B. In column 2, we replicate the baseline specification (reported in column 1 to ease comparisons) excluding smuggling-related riots. While coefficients become smaller, they remain positive, statistically significant, and quantitatively relevant.

As discussed earlier, some riots that started with the apprehension of smugglers escalated, as the local population sided with the smugglers. Since these events may reflect latent local discontent against the state, it would be incorrect to remove them from the analysis. We thus create two additional versions of smuggling-related riots, excluding from the set of events used in column 2 those that: i) involved external parties distinct from both smugglers and state officers; and ii) either had external parties or included at least 50 people (or both).[37] Results,

[35]The corresponding results in tabular form are reported in Table A7.

[36]Tax, food, and labor riots account for, respectively, 44.8%, 46.9%, and 8.3% of all economic riots occurring in the 1780-89 decade.

[37]We chose the threshold value of 50 to be conservative. Results are unchanged (if anything stronger) when selecting lower thresholds (e.g., 15, 20, 30, etc.).

reported in columns 3 and 4 of Table A8, remain close to those in column 2. To more directly tackle the concern that our results during the 1780s may partly capture the persistence of conflict that first arose because of the smuggling crackdown, in column 5 of Table A8, we augment the baseline specification by controlling for the number of smuggling-related riots that were recorded between 1750 and 1779. In addition, because smuggling was more frequent along borders that were closer to salt production, in column 6 of Table A8, we augment the baseline specification controlling for the distance between a given municipality and the closest salt production area. Reassuringly, coefficients remain in line with those in column 1.[38]

4.2 *Activating latent discontent: the role of weather shocks*

A number of historical contingencies help explain why, even if the salt tax had been in place for centuries, its impact peaked in the 1780s. First, France's mounting fiscal crisis and reform attempts brought renewed scrutiny to an inefficient and regressive taxation system (White, 1995). Second, the diffusion of the ideas about equality promoted by the Enlightenment and by the American War of Independence began to circulate among the French population, fueling demand for political change (Kaiser and Van Kley, 2010; Jha and Wilkinson, 2023). Third, severe droughts caused crop failure, increased wheat prices, and fueled widespread discontent (Lefebvre, 1973; Neumann and Dettwiller, 1990; Chambru, 2019; Waldinger, 2024). We conjecture that weather shocks led to more riots in high tax municipalities, by activating latent discontent caused by centuries of extractive taxation. Figure 3 provides suggestive evidence in support of this hypothesis, showing that, after the surge in wheat prices, riots increased more in municipalities with a higher salt tax. In what follows, we formally test this idea.

Empirical strategy. We focus on the 1780-89 decade, and augment the RD model from equation (2) with yearly variation in weather conditions across French municipalities. We estimate:

$$Y_{it} = \gamma_i + \delta_t + \beta_0 Z_{i,t} + \beta_1 Tax_i \cdot Z_{i,t} + \boldsymbol{X'_{i,t}}\gamma + \epsilon_{it} \qquad (3)$$

where Y_{it} is the number of riots in municipality i in year t, Tax_i is the prevailing salt tax rate, $Z_{i,t}$ is the weather shock defined in Section 3, and γ_i and δ_t are municipality and year fixed effects. The vector of controls $\boldsymbol{X_{i,t}}$ includes the interaction between year dummies and municipal-level covariates (soil fertility and 1780 population), the double interaction between distance to the closest tax border and weather shocks as well as the triple interaction between distance, weather

[38] Results are robust to using different time windows to define smuggling-related riots occurring before 1780. As shown in column 7 of Table A8, they are also robust to controlling simultaneously for both pre-1780 smuggling-related riots and distance from salt production.

shocks, and the tax rate.[39] To mirror the local analysis conducted in the RD model (2), we restrict attention to municipalities within 30 km from the tax border (the optimal bandwidth), and cluster standard errors at the *bailliage* level.

Results. We present the baseline results from equation (3) in Table 2. In column 1, we only consider temperature shocks, and estimate a parsimonious specification that does not interact year dummies with municipality controls. The positive and statistically significant coefficient indicates that the effect of the salt tax on riots becomes larger following years in which the municipality records higher than average temperatures during the growing season. In column 2, we present our preferred specification, which also includes the interaction between year dummies and municipality covariates. The coefficient remains positive and statistically significant. According to the coefficient in column 2, a 10% increase in the growing season temperature (about 1.3°C) increases riots by 48% more in a high tax, as compared to a low tax, municipality.[40]

Our findings echo those in Chaney (2013), who has shown that the economic shocks caused by Nile floods in Islamic Egypt increased the political power of religious leaders by intensifying pre-existing tensions among the population and shifting the balance of political power. Our results also build on and expand those of Waldinger (2024) and Chambru (2019) by demonstrating that the effects of weather shocks are amplified by extractive taxation. Different, complementary channels can explain this pattern. First, higher taxes may generate latent discontent that erupts as soon as a negative shock occurs. Second, extractive taxation may lead to a persistently higher level of conflict, fostering greater organizational capacity. This, in turn, may enhance collective coordination when large shocks hit, increasing the likelihood of revolt. Third, if residents in high tax municipalities revolt more frequently, they may develop a cultural predisposition toward conflict, which makes them more likely to respond to adverse shocks with riots.

Robustness checks. The remainder of Table 2 explores the robustness of results reported in column 2. First, we augment the baseline specification by controlling for deviations from average precipitation (column 3). The coefficient on the interaction between the salt tax and temperature is unchanged, while that on the interaction between precipitation and the tax rate is close to zero and imprecisely estimated. This suggests that only temperature—and not precipitation—shocks lead to more riots where the salt tax is higher. Second, we perform a placebo check, replacing the temperature shock measured during the growing season with that measured over the rest of the year (column 4). The coefficient becomes three times smaller

[39] The main effects of the tax rate, the effect of the distance to the border and the interaction between the tax rate and distance are absorbed by the municipality fixed effects.

[40] This number is obtained as follows. First, we multiply the coefficient in column 2 by 1.1 (a 10% increase in growing season temperature); then, we multiply this by the gap between the high and the low tax areas (0.71 pounds per liter); finally, we divide it by the 1780-89 average number of riots in our sample (0.051).

and is no longer statistically significant, supporting our interpretation that temperature shocks amplified the impact of the salt tax on riots through poor harvest and crop failure. Third, we show that results are robust to defining the shock using separately spring (column 5) and summer (column 6) temperature, and considering all municipalities, regardless of their distance from the border (column 7).

In Figure A18, we replicate the baseline specification from Table 2, column 2, by including leads and lags of the temperature shock (all fully interacted, as the main temperature shock). Reassuringly, the coefficient on the one year lag of temperature deviations remains positive, statistically significant (though only at the 10% level), and becomes somewhat larger than that in the baseline. Instead, the coefficients on the contemporaneous and on the one year lead temperature shock are not statistically significant, and are either negative or quantitatively small.

Weather shocks and wheat prices. Given the lack of domestic market integration at the time (Labrousse, 1931; Chambru, 2019), one likely channel for the results in Table 2 is that higher than average temperatures led to crop failure and increased food prices. To test this hypothesis, we use *généralité* level data on wheat prices from Chambru (2019).[41] In a first step, we estimate *généralité* level regressions that correlate wheat prices with the (one year lagged) temperature shock.[42] Results, reported in column 1 of Table 3, indicate that higher than average temperatures lead to higher wheat prices. In column 2, we also add precipitation shocks. The coefficient on temperature remains positive and statistically significant. The coefficient on precipitation shocks has the expected (negative) sign, but is not statistically significant. This may explain why the coefficient on the interaction term between precipitation shocks and the tax rate is not statistically significant in Table 2. Results are similar when estimating regressions at the municipality level—both for those within 30 km from the border (column 3), and for the full sample (column 4).[43]

In column 5, we replicate the reduced form regression of column 3 with 2SLS, instrumenting wheat prices (and all their interactions) with temperature shocks.[44] The positive and statistically significant coefficient confirms our findings in Table 2. It indicates that, by increasing wheat prices, temperature shocks amplified the effects of the salt tax and induced citizens to revolt

[41] The data were collected and prepared by Chambru (2019), who used original records from Labrousse (1933). We thank Cedric Chambru for sharing the data with us.

[42] We include the 260 (out of the 280) *généralités* whose area is at least partly contained in the 30 km bandwidth around the closest tax border. Regressions also control for year and *généralité* fixed effects. We cluster standard errors at the *généralité* level.

[43] When estimating municipality-level regressions, we include the baseline controls interacted with year dummies, as in Table 2.

[44] The values of the partial F-statistics for each separate first stage, reported at the bottom of Table 3, indicate that the instruments are strong.

more. According to the 2SLS estimate, a 10% increase in prices more than doubles the number of riots in a high tax municipality, as compared to a neighboring, low tax one. For context, note that wheat prices increased by over 30% between 1785 and 1789. During the same period, riots rose from an average of about 200 per year in 1785 to around 800 in 1789—with the increase being an order of magnitude larger in high-tax municipalities (see also Figure 3). Our results thus suggest that the interplay between higher wheat prices and extractive taxation was likely an important trigger of the French Revolution.

5 The salt tax and the French Revolution

5.1 Spread of riots: Evidence from the 1789 Great Fear

The French Revolution did not happen overnight. Rather, it resulted from the gradual accumulation of discontent that grew over time and culminated in widespread upheaval (Lefebvre et al., 1947; Touzery, 2023). In this section, we examine whether the salt tax favored the spread of revolts across space and over time. In Figure A19, we plot the cumulative share of municipalities with at least one riot since 1780, by month, from January 1, 1787, to December 31, 1789. In line with our main findings, the share of municipalities that experienced at least one riot is consistently higher in high tax (black, dashed line) than in low tax (grey, solid line) municipalities. Until the early 1789, the cumulative incidence of rioting rises gradually. This steady trend gives way to a sharp acceleration in the spring and summer of 1789—around the convocation of the *États Généraux*—and peaks during the Great Fear in July and August (see also Section 2.4). By the end of 1789, over 2.5% of high tax municipalities had rioted, compared to less than 2% of low tax ones.

These descriptive patterns suggest that the French Revolution spread more quickly in parts of France where the salt tax was higher. To more formally test this idea, we examine whether panic and revolts traveled faster during the Great Fear in parts of France subject to a higher salt tax. We digitized and geo-referenced data originally reported in Lefebvre (1973) with information on the original panic locations and on the contagion process (see also Figure A20). Then, we estimate regressions that control for border-segment fixed effects, distance from the tax border, and the main covariates included in the baseline specification (soil fertility and 1780 population).

In column 1 of Table 4, the dependent variable is a dummy equal to one if a municipality was a "super-spreader"—that is, if it experienced at least one event that subsequently triggered panic contagion during the Great Fear. The positive and statistically significant coefficient indicates that the salt tax increases the probability that a municipality acted as a super-spreader.

In column 2, the dependent variable is a dummy for being reached by the Great Fear. Also in this case, the coefficient is positive and statistically significant, suggesting that the Great Fear was more likely to spread to high tax municipalities. According to the coefficient in column 2, a high tax municipality is 25 percentage points (or, 35.9% relative to the mean) more likely than a low one to be reached by the Great Fear. To examine the spread of revolts throughout France, columns 1 and 2 of Table 4 do not restrict the sample to municipalities close to the border. In Figure 7, we zoom in on the immediate vicinity of the tax border, and present the RD plot from model (2) to replicate column 2 of Table 4. The figure reveals a sharp discontinuity at the tax border, with a strong increase in the probability of being reached by the Great Fear when crossing from a low to a high tax municipality.[45]

5.2 Citizens' complaints at the onset of the Revolution

In this section, we use the content of the list of grievances sent to Paris ahead of the *États Généraux* (see Section 2.4) to measure people's attitudes towards taxation. Using the data from Shapiro et al. (1998) described in Section 3, we estimate OLS regressions that correlate the number of complaints against the salt tax with the tax rate prevailing in a given *bailliage*. We also control for soil characteristics, 1780 population, distance from the tax border, and a dummy equal to one for whether complaints come from the Third Estate.[46]

We present results in column 3 of Table 4. The coefficient is positive and statistically significant, and indicates that, when comparing a high tax *bailliage* to a low tax one, the former reports 2.89 more grievances against the salt tax (or, 95% of the mean) relative to the latter. In column 4 of Table 4, we define the dependent variable as a dummy equal to one if at least one grievance against the salt tax was reported. The coefficient is again positive and statistically significant, and implies that the probability of reporting at least one complaint against the salt tax is 28.8 percentage points higher (39.5% relative to the mean) in a high tax, as compared to a low tax, *bailliage*.

Table A9 shows that results are robust to expressing the number of complaints relative to tax (column 3) or all (column 4) complaints, scaling the number of complaints by population (column 5), taking the dependent variable in logs (column 6), presenting population weighed regressions (column 7), and estimating the model using Poisson (column 8).

[45]The point estimate and the standard errors for the RD plot of Figure 7 are 0.049 and 0.019, respectively. Due to the very small number of super-spreader events, we do not estimate equation (2) for this outcome, since the resulting optimal bandwidth would be extremely large (more than 150 km).

[46]We use robust standard errors. Soil characteristics include average fertility as well as silth and nitrogen soil content. We control for Third Estate dummies because the list of grievances from a given *bailliage* could be either "generic" or specific to the Third Estate. Note that the data are missing for 225 *bailliages*. Reassuringly, whether or not a *bailliage* has information on the *cahiers de doléances* is uncorrelated with the prevailing salt tax rate (Figure A21).

5.3 *Preferences and behavior of new legislators in Paris*

On June 17, 1789, the representatives of the Third Estate established the National Assembly, marking a decisive break from the traditional *Etats Généraux*. Tasked with drafting a new constitution, the Assembly sought to redefine France's political structure and implemented sweeping legislative reforms, such as the abolition of feudal privileges and the Declaration of the Rights of Man and of the Citizen. Among its most consequential challenges, the Assembly faced the question of whether to preserve or dismantle the monarchy, a debate that would ultimately reshape the course of the French Revolution.

Leveraging newly collected data on the characteristics of the members of the National Assembly (see also Section 3), we define a dummy equal to one if a legislator was part of a pro-change political group.[47] In column 5 of Table 4, we regress this against the salt tax rate prevailing in the legislator's department of origin.[48] The positive and statistically significant coefficient indicates that legislators representing districts with a higher salt tax are more likely to join political groups supporting the end of the monarchy. According to our estimates, legislators representing high salt tax areas are 21.5 percentage points more likely to be part of a pro-change group.

In August 1792, the monarchy was overthrown, and the Legislative Assembly called for elections to create a new body: the *Convention Nationale*. In January 1793, members of the *Convention Nationale* were asked to decide over the fate of the king. As explained in Section 3, we retrieved data on the voting behavior of legislators on the three main questions they were asked in January 1793. Almost all legislators answered "yes" when asked the first question, namely whether they considered the king guilty (the 98.8% – see also Table A2, Panel D). However, members of the *Convention Nationale* were more divided on the second and third questions, i.e., whether the people should decide over the king's final sentence and whether the king should be sentenced to death.

In column 6 of Table 4, the dependent variable is a dummy equal to one for voting to let the people decide whether the king should be sentenced to death—something that more moderate legislators hoped would have saved the king.[49] The negative and statistically significant coefficient suggests that legislators representing areas historically burdened by a higher salt

[47]We classify as pro-change the following political groups: *Gauche*, *Constitutionnels*, *Montagne*, *Girondins*, *Constitutionnels modérés*, *Extréme gauche*.

[48]After the Revolution, departments were established as the new electoral constituencies. In this analysis, we thus calculate the average salt tax rate at the department level. Regressions also include coordinates fixed effects, number of mandates fixed effects, department level controls consistent with those from the baseline specification (soil fertility, 1780 population, and distance to the closest salt tax border). Standard errors are clustered at the department level.

[49]We control for the same set of variables included in column 5, except for the number of mandates fixed effects, which cannot be included in columns 6 and 7, since the *Convention Nationale* had just been formed.

tax were less inclined to support a popular vote, anticipating that this would have resulted in a more lenient sentence. In column 7, the dependent variable is a dummy equal to one if the legislator voted to sentence the king to death. The coefficient is positive and statistically significant, indicating that legislators coming from areas with a higher salt tax rate were more likely to support the death penalty for the king. According to our estimates, comparing two legislators representing, respectively, a high and a low tax area, the former is 50.3 percentage points (79.5% relative to the mean) more likely than the latter to vote in favor of the death penalty for the king.

6 Conclusion

The French Revolution was a watershed moment in history, marking the collapse of the *Ancien Régime* and the emergence of modern political and economic institutions (Acemoglu et al., 2011; Chambru and Maneuvrier-Hervieu, 2024). While its causes were complex and multifaceted, a longstanding idea in the literature is that extractive taxation played a crucial role in fueling discontent and accelerating the collapse of the monarchy (Norberg, 1994; Touzery, 2023). To the best of our knowledge, ours is the first paper to provide systematic empirical evidence in support of this hypothesis.

We exploit plausibly exogenous variation in the borders of one of the most extractive taxes of the *Ancien Régime*: the *gabelle du sel*, or salt tax. Using a Regression Discontinuity (RD) approach, we document that, on the eve of the French Revolution, more riots occurred in municipalities where the salt tax was higher. Augmenting the RD model with spatial and time variation in growing season temperature, we find that negative weather shocks, which destroyed the harvest and increased wheat prices, amplified the effects of the salt tax by re-activating latent discontent.

In the second part of the paper, we link the salt tax and the revolts it generated to the French Revolution. First, we show that riots spread faster in parts of France where the salt tax was higher. Second, we provide evidence that areas burdened by a higher salt tax reported more complaints against taxation in the list of grievances collected by the king in the spring of 1789. Third, we document that legislators representing areas with a higher salt tax were more likely to demand the end of the monarchy and to vote in favor of the death penalty for the king in 1793.

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Tables

TABLE 1 – RIOTS AROUND THE SALT TAX BORDER

	Dependent variable: Economic and political riots						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Period: 1750-1789	Specific decade					
		1750	1760	1770	1780	1790	1800
High tax area	0.104**	0.010	0.020**	0.027*	0.047**	-0.019	-0.006
	(0.045)	(0.009)	(0.010)	(0.015)	(0.021)	(0.019)	(0.008)
N	12,652	12,402	12,910	11,990	13,113	10,205	13,935
Bandwidth (in km)	31.67	30.69	32.69	29.20	33.49	23.02	37.013
Dep. var. mean	0.149	0.024	0.025	0.037	0.064	0.044	0.018
Dep. var. sd	0.993	0.212	0.210	0.386	0.467	0.447	0.147

Notes: The table presents non-parametric RD estimates following Calonico et al. (2014) under optimal bandwidth and polynomial order selection, according to model (2). The dependent variable is the number of economic and political riots from Chambru and Maneuvrier-Hervieu (2024), over the time period specified at the top of each column (1750-1789 in column 1; each decade from 1750-1759 to 1800-1809, in columns 2 to 7). The treatment equals one for the municipalities in the area with a higher tax rate. The specification includes border fixed effects as well as a set of municipal controls (population in 1780, coordinates, and soil fertility). The sample includes all municipalities in contiguous France, except those spanning the border at the bottom quartile of the tax gap distribution. Standard errors are clustered at the *bailliage* level. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

TABLE 2 – WEATHER SHOCKS, SALT TAX, AND RIOTS (1780-1789)

	Dependent variable: Economic and political riots						
	(1) Baseline No controls	(2) Baseline	(3) Controlling for precipitation shock	(4) Placebo shock: Autumn+Winter	(5) Shock: only Spring	(6) Shock: only Summer	(7) Global analysis
Temperature shock*Salt tax rate	0.032**	0.033**	0.036*				0.028**
	(0.015)	(0.015)	(0.019)				(0.012)
Precipitation shock*Salt tax rate			0.005				
			(0.010)				
Temperature shock (placebo)*Salt tax rate				0.014			
				(0.011)			
Temperature shock (Spring)*Salt tax rate					0.015*		
					(0.008)		
Temperature shock (Summer)*Salt tax rate						0.045*	
						(0.024)	
N	113,320	112,990	112,990	112,990	113,320	113,320	234,450
Bandwidth (in km)	30	30	30	30	30	30	global
Dep. var. mean	0.007	0.007	0.007	0.007	0.007	0.007	0.005
Dep. var. sd	0.109	0.109	0.109	0.109	0.109	0.109	0.096
Municipality FE	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓
Municipal controls × Year FE		✓	✓	✓	✓	✓	✓

Notes: The table presents the results from equation (3). The dependent variable is the number of economic and political riots from Chambru and Maneuvrier-Hervieu (2024) that occurred in each year between 1780 and 1789. "Temperature shock" is defined, following Waldinger (2024), as the one year lag of the deviation from growing season (spring and summer) temperature relative to the long run mean (1750 to 1800). See Section 3 for more details. All specifications include municipality and year fixed effects, the main effect of the temperature shock, the interaction between the temperature shock and the salt tax rate, the interaction between the temperature shock and distance to the tax border, and the triple interaction of the temperature shock with the salt tax rate and distance to the tax border. Columns 2 to 7 also control for the interaction between baseline controls (population in 1780 and soil fertility) and year fixed effects. Column 3 replicates column 2 by adding the precipitation shock (constructed in the same way as the temperature shock) as well as its interaction with the salt tax rate, its interaction with distance to the salt tax border, and the triple interaction with the salt tax rate and the distance to the salt tax border. Columns 4 to 6 measure the temperature shock in different seasons: autumn and winter (column 4), spring (column 5), and summer (column 6). Columns 1 to 6 restrict the sample to municipalities within 30 km from the tax border (approximately the optimal bandwidth). Column 7 replicates column 2 focusing on all municipalities in contiguous France, except those spanning the border at the bottom quartile of the tax gap distribution. Standard errors are clustered at the bailliage level. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

TABLE 3 – IMPACT OF TEMPERATURE SHOCK ON WHEAT PRICE & IV ANALYSIS

Dependent variable:	Wheat price				Economic and political riots
	(1)	(2)	(3)	(4)	(5)
	Aggregation: Généralité		Aggregation: Municipality		
Temperature shock	21.098**	17.218**	21.626***	23.646***	
	(7.982)	(7.600)	(4.221)	(3.403)	
Precipitation shock		-3.673			
		(2.305)			
Wheat price*Salt tax rate					0.002*
					(0.001)
N	260	260	112,990	234,450	112,990
Bandwidth (in km)	30	30	30	global	30
Dep. var. mean	23.662	23.662	22.909	23.011	0.007
Dep. var. sd	4.968	5.205	4.969	4.990	0.109
SW F-stat (comp. 1)					111.994
SW F-stat (comp. 2)					29.866
SW F-stat (comp. 3)					90.182
SW F-stat (comp. 4)					44.492
Généralité FE	✓	✓			
Year FE	✓	✓	✓	✓	✓
Municipality FE			✓	✓	✓
Municipal controls × Year FE			✓	✓	✓

Notes: In columns 1 to 4, the dependent variable is the wheat price, expressed in grams of silver per liter. In column 5, the dependent variable is the number of economic and political riots from Chambru and Maneuvrier-Hervieu (2024) in each year from 1780 to 1789. Columns 1 and 2 (resp., columns 3 to 5) are estimated at the *généralité* (resp., municipality) level, and include *généralité* (resp., municipality) and year fixed effects. "Temperature shock" (resp., "precipitation shock") is defined, following Waldinger (2024), as the one year lag of the deviation from growing season (spring and summer) temperature (resp., precipitation) relative to the long run mean (1750 to 1800). See Section 3 for more details. Columns 3 to 5 also include interactions between baseline controls (population in 1780 and soil fertility) and year fixed effects. The sample in columns 3 and 5 is restricted to municipalities within 30 km from the salt tax border, while column 4 also includes all other municipalities in contiguous France in contiguous France, except those spanning the border at the bottom quartile of the tax gap distribution. Column 5 estimates 2SLS regressions, instrumenting wheat prices (and all its interactions) with the temperature shock. The four SW F-stat values reported in column 5 refer to the SW F-stats for joint significance of the instruments in the separate first-stage regressions. Standard errors are clustered at the *généralité* level in columns 1 and 2, at the *bailliage* level in columns 3 to 5. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

TABLE 4 – THE SALT TAX AND THE FRENCH REVOLUTION

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:	Great Fear		Complaints against salt tax		Political leaning	1[Vote ”yes”]	
	1[Super spreader]	1[Reached by Great Fear]	No. complaints	1[at least 1]	1[Pro-change]	Popular vote decision	Death of the king
Salt tax	0.004***	0.195***	4.039***	0.406***	0.303***	-0.604***	0.708***
	(0.001)	(0.058)	(0.654)	(0.066)	(0.061)	(0.158)	(0.157)
N	33,351	32,832	225	225	706	623	617
R-squared	0.002	0.336	0.610	0.232	0.217	0.265	0.189
Dep. var. mean	0.007	0.700	3.036	0.729	0.147	0.401	0.632
Dep. var. sd	0.085	0.458	4.839	0.446	0.354	0.490	0.482

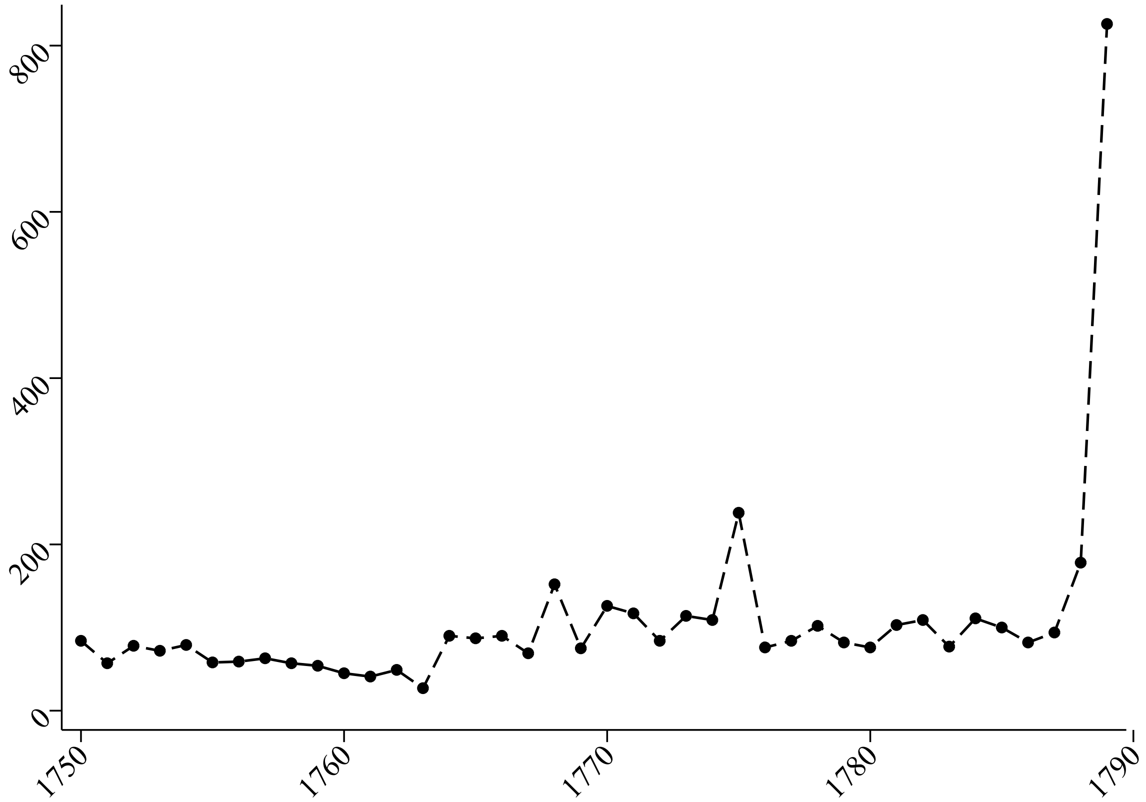
Notes: Columns 1 and 2 estimate municipality-level regressions, focusing on all municipalities in contiguous France. The dependent variable is a dummy for: experiencing at least one event that subsequently triggered panic contagion during the Great Fear (column 1); being reached by the Great Fear (column 2). Regressions include geographic fixed effects based on rounded coordinates (at 2 degrees), baseline municipality controls (1780 population and soil fertility), and distance from the tax border. Columns 3 and 4 estimate *bailliage* level regressions for the 225 *bailliages* for which data on the lists of grievances from Shapiro et al. (1998) are available. The dependent variable is: the number of complaints against the salt tax (column 3); and, a dummy equal to one for having at least one complaint against the salt tax. Regressions include soil fertility, population in 1780, a dummy equal to one if the complaint comes from the Third Estate, and distance from the closest salt tax border. Columns 5 to 7 estimate individual level regressions for members of the National Assembly in 1791 (column 5) and the *Convention Nationale* in 1793 (columns 6 and 7). In column 5, the dependent variable is a dummy for belonging to a "Pro-change" political group, which includes: *Gauche*, *Constitutionnels*, *Montagne*, *Girondins*, *Constitutionnels modérés*, *Extréme gauche* . In columns 6 and 7, the dependent variable is a dummy for voting yes to the question reported at the top of the column (see also Section 3 for more details). Regressions include rounded coordinates (at 2 degrees) fixed effects and a set of department level controls (soil fertility, 1780 population, and distance from the closest salt tax border). Column 5 also includes fixed effects for the number of mandates. Standard errors are clustered at the *bailliage* level in columns 1 to 4, and at the department level in columns 5 to 7. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Figures

FIGURE 1 – SALT TAX MAP (NECKER, 1781)

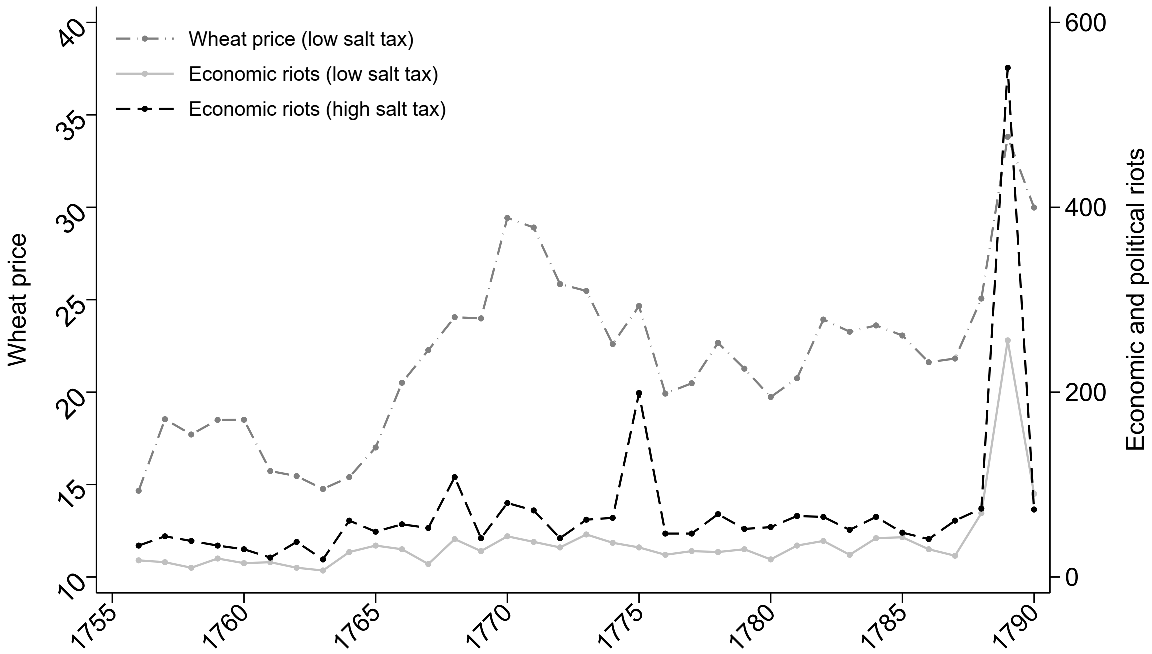
Notes: The figure shows the map of the salt tax in 1788. Source: National Library of France, BnF.

FIGURE 2 – NO. ECONOMIC AND POLITICAL RIOTS (1750-1789)



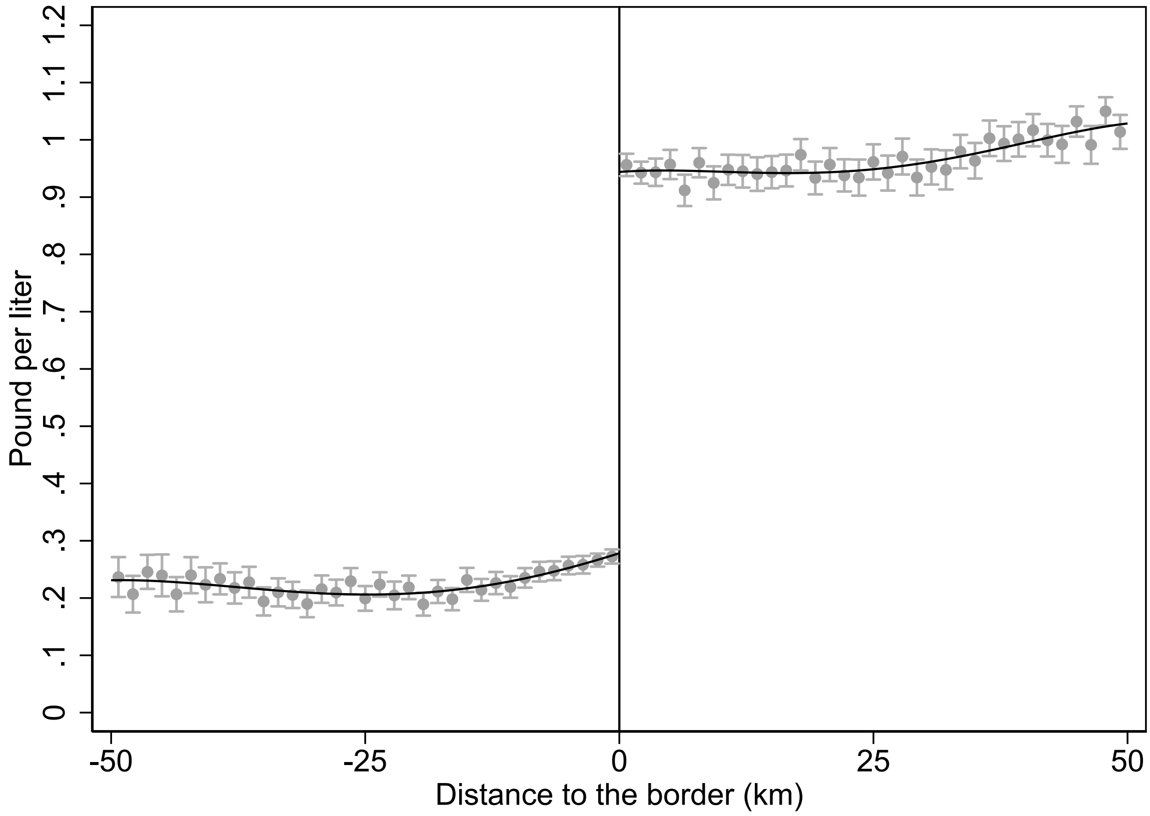
Notes: The figure shows the number of riots classified by Chambru and Maneuvrier-Hervieu (2024) as "economic and political" in contiguous France, between 1750 and 1789.

FIGURE 3 – WHEAT PRICE SHOCK AND RIOTS



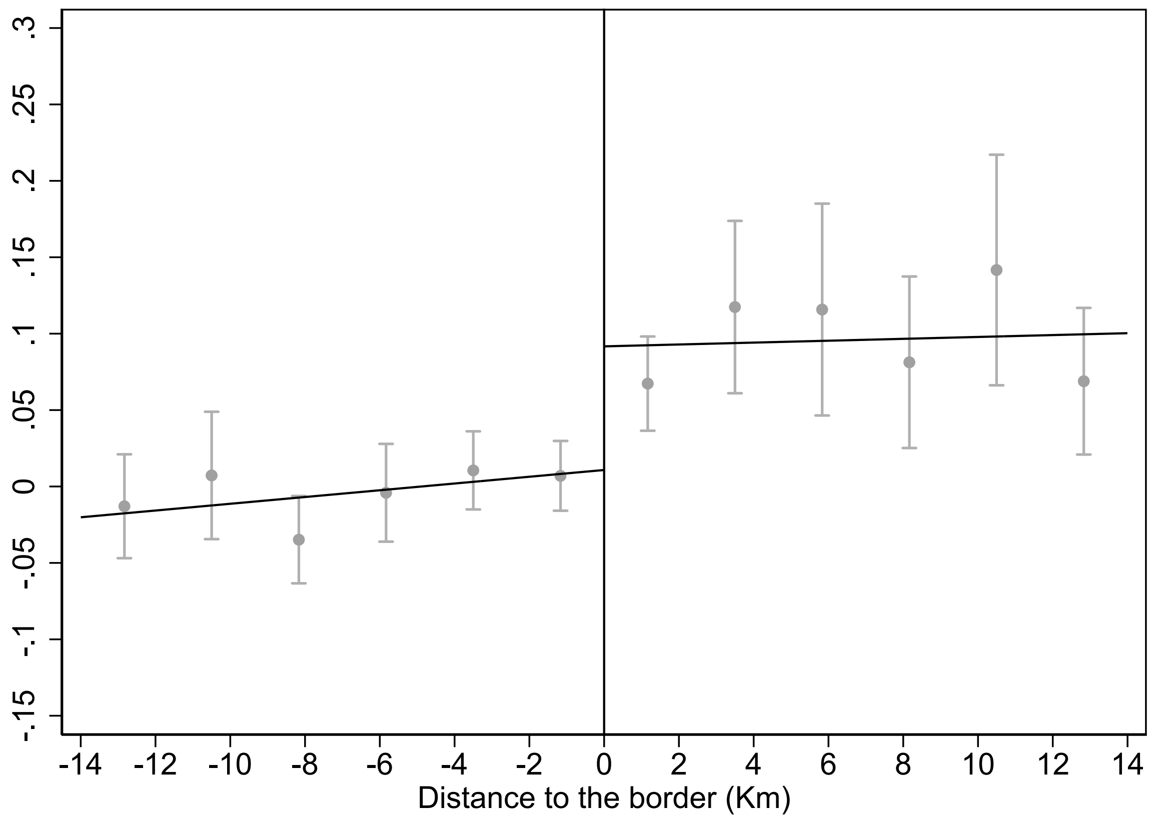
Notes: The figure shows the evolution of wheat prices, expressed in grams of silver per litre, and economic and political riots in France from 1756 to 1789. Wheat prices were first collected by Labrousse (1933) and digitized by Chambru (2019) "Riots - High salt tax" (resp., "Riots - Low salt tax") indicates the number of riots recorded in municipalities where the salt tax rate is above (resp., below) the sample median. Data on riots are from Chambru and Maneuvrier-Hervieu (2024).

FIGURE 4 – FIRST STAGE: SALT TAX AROUND THE BORDER



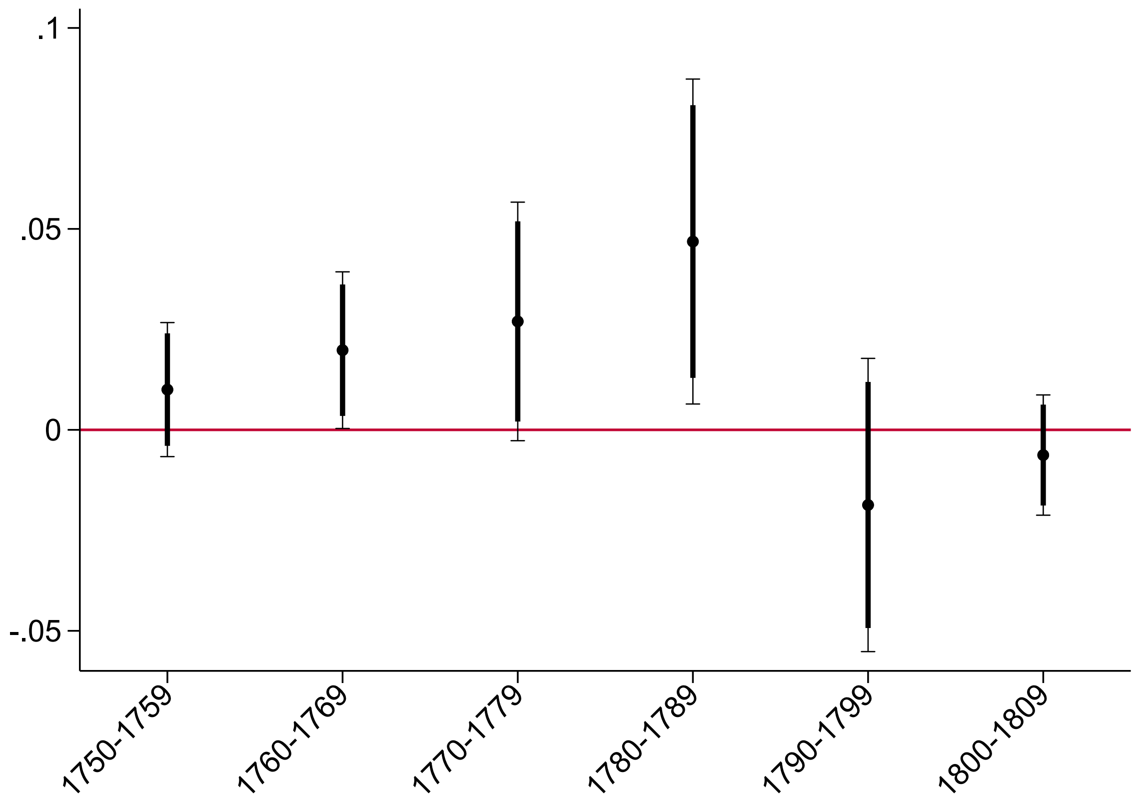
Notes: The plot shows non-parametric RD estimates from equation (2) following Calonico et al. (2014). The dependent variable is the salt tax rate (expressed in pound per liter). The sample excludes the French municipalities in the bottom quartile of the tax gap distribution. The treatment area (i.e., the area with a higher tax rate, compared to the nearest tax border) is coded positively.

FIGURE 5 – RIOTS AROUND THE SALT TAX BORDERS (1750-1789)



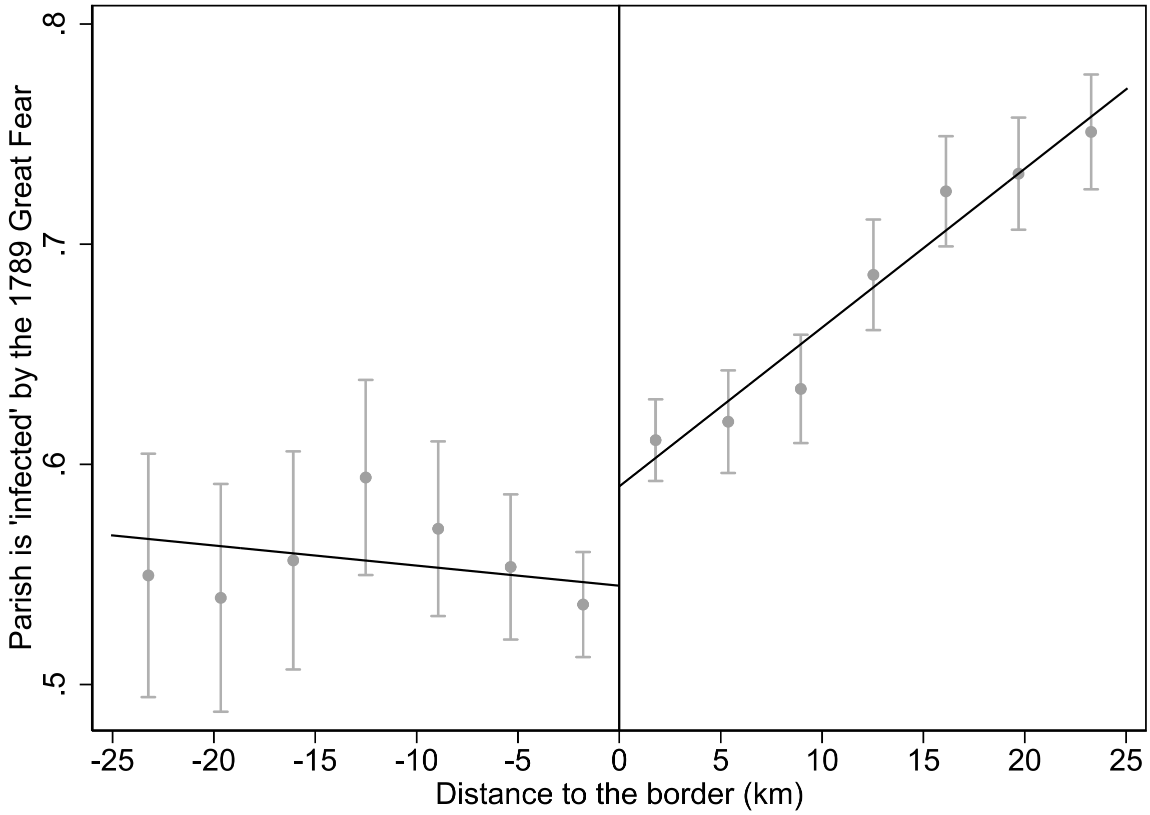
Notes: The plot shows non-parametric RD estimates from equation (2) following Calonico et al. (2014) under optimal bandwidth and polynomial order selection. The dependent variable is the number of economic and political riots, between 1750 and 1789. The treatment equals one for municipalities in the area with a higher rate. The specification includes border fixed effects as well as a set of municipal controls (population in 1780, coordinates, and soil fertility). The sample includes all municipalities in contiguous France, except those in the bottom quartile of the tax gap distribution. The coefficient is 0.104, and standard errors, clustered at the *bailliage* level, are 0.045.

FIGURE 6 – RIOTS AROUND THE SALT TAX BORDERS



Notes: The plot shows non-parametric RD estimates from equation (2) following Calonico et al. (2014) under optimal bandwidth and polynomial order selection. The dependent variable is the number of economic and political riots, for different periods of time (bins of 10 years). The treatment equals one for municipalities in the area with a higher rate. The specification includes border fixed effects as well as a set of municipal controls (population in 1780, coordinates, and soil fertility). The sample includes all municipalities in contiguous France, except those in the bottom quartile of the tax gap distribution. Standard errors are clustered at the *bailliage* level.

FIGURE 7 – CONTAGION OF THE 1789 GREAT FEAR



Notes: The plot shows non-parametric RD estimates from equation (2) following Calonico et al. (2014) under optimal bandwidth and polynomial order selection. The dependent variable is a dummy equal to one if the municipality was reached by the 1789 Great Fear. The treatment equals one for municipalities in the area with a higher rate. The specification includes border fixed effects as well as a set of municipal controls (population in 1780, coordinates, and soil fertility). The sample includes all municipalities in contiguous France. The coefficient is 0.049, and the standard errors, clustered at the *bailliage*, are 0.020.

Online appendix for
"Extractive Taxation and the French Revolution"

T. Giommoni, G. Loumeau, and M. Tabellini

A Appendix: Supporting material

A.1 Tables

TABLE A1 – IMPORTANCE OF SALT TAX FOR ROYAL REVENUES INCREASES OVER TIME

Period	Salt tax	Royal domain	Tariffs	Other taxes	Total
13^{th}-15^{th} century	12%	39%	12%	37%	100%
16^{th} century	10%	40%	14%	36%	100%
17^{th} century	18%	34%	10%	38%	100%
18^{th} century	22%	24%	9%	45%	100%

Notes: The table reports the share of royal revenues by source over time. Data come from Touzery (2023) and the official royal public finance records from the National Library of France, BnF

TABLE A2 – DESCRIPTIVE STATISTICS

	Entire France			Optimal bandwidth (30 km)		
	Mean	SD	No. obs.	Mean	SD	No. obs.
Panel A: Municipality level sample						
Salt tax rate	0.68	0.45	25,564	0.58	0.43	12,559
Tax rate diff (abs. value)	0.71	0.26	25,564	0.68	0.26	12,559
Economic and political riots (1750-1789)	0.125	0.830	25,564	0.150	1.005	12,559
Economic and political riots	0.051	0.391	25,564	0.064	0.475	12,559
Economic riots	0.033	0.345	25,564	0.041	0.423	12,559
Political riots	0.017	0.145	25,564	0.022	0.164	12,559
Tax riots	0.014	0.177	25,564	0.026	0.243	12,559
Food riots	0.016	0.235	25,564	0.013	0.242	12,559
Labor riots	0.001	0.075	25,564	0.002	0.099	12,559
Mun. population 1780	19,615	117,725	25,561	4,291	18,822	12,557
Panel B: Cahiers Analysis						
Salt tax rate	0.57	0.43	225			
No. Complaints: Taxes	70.621	78.824	225			
No. Complaints: Salt Tax	3.503	5.485	225			
Salt tax complaints, rel. to all	0.804	0.946	225			
Salt tax complaints, rel. to tax comp.	4.138	3.901	225			
Salt tax complaints, per 100,000 people	4.670	13.335	225			
Panel C: Political group analysis (1791)						
Pro-change political group	0.152	0.359	775			
Salt tax rate (origin dept.)	0.58	0.42	707			
Moderate political group	0.187	0.390	775			
Aristocrat	0.158	0.365	775			
No. mandates in Assembly	1.59	1.01	775			
Panel D: Death penalty of the king (1793)						
Vote "yes": The king is guilty	0.988	0.107	690			
Vote "yes": Decision popular vote	0.388	0.487	689			
Vote "yes": Death of the king	0.636	0.481	682			
Salt tax rate (origin dept.)	0.59	0.41	627			

Notes: The table reports descriptive statistics for the main variables used in the analysis, presenting mean, standard deviation, and number of observations. Panel A considers all municipalities in contiguous France except those spanning borders in the bottom quartile of the tax gap distribution (resp., municipalities within 30 km to the closest salt tax border) in the first three columns from the left (resp., in the last three columns from the left). The salt tax rate is expressed in pound per liter. Unless otherwise specified, all riots statistics refer to 1780-1789. Panel B considers the 225 *bailliages* for which data from Shapiro et al. (1998) are available. The tax rate is calculated as the (1780 population) weighed average across all municipalities in the *bailliage*. Panels C and D consider individual members of the National Assembly in 1791 and of the *Convention Nationale* in 1793, respectively. The tax rate is calculated as the (1780 population) weighed average across all municipalities in the department of origin of the legislator. The variable *Pro-change political group* is a dummy equal to one if the legislators is part of any of the following political groups: *Gauche*, *Constitutionnels*, *Montagne*, *Girondins*, *Constitutionnels modérés*, *Extréme gauche*.

Table A3 – Riots around the salt tax border (1780-1789): Additional results

	Dependent variable: Economic and political riots					
	(1) Baseline	(2) Tax gap below median	(3) Tax gap above median	(4) OLS	(5) OLS	(6) OLS log(tax rate)
High tax area	0.047**	0.012	0.103**			
	(0.021)	(0.022)	(0.048)			
Salt tax diff.				0.046***		
				(0.016)		
Salt tax					0.092***	0.037***
					(0.032)	(0.013)
N	13,113	7,602	3,297	12,217	12,217	12,217
Bandwidth (in km)	33.49	28.44	21.08	30	30	30
Dep. var. mean	0.064	0.041	0.122	0.066	0.066	0.066
Dep. var. sd	0.467	0.266	0.735	0.481	0.481	0.481

Notes: The table presents non-parametric RD estimates following Calonico et al. (2014) under optimal bandwidth and polynomial order selection from equation (2) in columns 1 to 3, and from OLS regressions on the sample of municipalities within 30 km from the closest salt tax border in columns 4 to 6. The dependent variable is the number of economic and political riots from Chambru and Maneuvrier-Hervieu (2024) between 1780 and 1789. The analysis reported in column 2 (resp., column 3) includes only municipalities with absolute tax gap value below (resp., above) the sample median. In columns 1 to 3, the treatment equals one for municipalities in the area with a higher rate. In column 4, *salt tax diff.* refers to the absolute value of the border tax gap. In columns 5 and 6, *salt tax* is the tax rate and the log of the tax rate in the municipality. All specifications include border fixed effects as well as a set of municipal controls (population in 1780, coordinates, and soil fertility). The sample includes all French municipalities in contiguous France except those spanning borders in the bottom quartile of the tax gap distribution. Standard errors are clustered at the *bailliage* level. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

TABLE A4 – RIOTS AROUND THE SALT TAX BORDER (1780-1789): ADDRESSING SELECTIVE MIS-REPORTING

	Dependent variable: Economic and political riots						
	(1) Baseline	(2) Missing description	(3) Missing no. participants	(4) Missing description and no. participants	(5) More than 5 participants	(6) More than 10 participants	(7) All riots
High tax area	0.047**	0.044**	0.034**	0.035**	0.032**	0.025**	0.046**
	(0.021)	(0.018)	(0.015)	(0.015)	(0.015)	(0.010)	(0.021)
N	13,113	13,217	13,556	13,465	13,614	13,544	13,188
Bandwidth (in km)	33.49	33.89	35.31	34.98	35.59	35.24	33.78
Dep. var. mean	0.064	0.064	0.063	0.063	0.063	0.063	0.070
Dep. var. sd	0.467	0.466	0.461	0.462	0.461	0.462	0.483

Notes: The table shows non-parametric RD estimates following Calonico et al. (2014) under optimal bandwidth and polynomial order selection from equation (2). The dependent variable is the number of economic and political riots in the period 1780-1789. Column 1 reports the baseline specification (Table 1, column 5). In column 2 (resp., column 3), the number of riots assigned to each municipality excludes events lacking description (resp., the number of participants). Column 4 includes only riots with both description and number of participants. Column 5 (resp., column 6) includes only municipalities with riots with more than 5 (resp., 10) participants. Column 7 includes all riots recorded in Chambru and Maneuvrier-Hervieu (2024). The treatment equals one for the municipalities in the area with a higher tax rate. All specifications include border fixed effects as well as a set of municipal controls (population in 1780, coordinates, and soil fertility). The sample includes all municipalities in contiguous France, except those spanning borders in the bottom quartile of the tax gap distribution. Standard errors are clustered at the *bailliage* level. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Table A5 – Riots around the salt tax border (1780-1789): Robustness checks/1

	Dependent variable: Economic and political riots							
	(1) Baseline	(2) All border	(3) Sanson (1665) Atlas	(4) Poisson	(5) Excluding big cities (top 5%)	(6) log(0.01+x)	(7) 1[at least one riot]	(8) Global analysis
High tax area	0.047**	0.028**	0.041*	0.574***	0.029**	0.143**	0.029**	0.033**
	(0.021)	(0.014)	(0.023)	(0.216)	(0.021)	(0.021)	(0.013)	(0.016)
N	13,113	14,995	14,289	13,096	12,832	13,454	13,403	24,733
Bandwidth (in km)	33.49	22.72	38.66	33.4	33.80	34.49	34.70	250
Dep. var. mean	0.064	0.056	0.064	0.065	0.059	-4.398	0.043	0.051
Dep. var. sd	0.467	0.417	0.467	0.473	0.343	0.983	0.203	0.392

Notes: The table shows non-parametric RD estimates following Calonico et al. (2014) under optimal bandwidth and polynomial order selection from equation (2). The dependent variable is the number of economic and political riots in the period 1780-1789. Column 1 reports the baseline specification (Table 1, column 5). Column 2 considers all municipalities in contiguous France, including those spanning borders in the bottom quartile of the tax gap distribution. Columns 3 to 5 replicate column 1 by: using data on the salt tax from Sanson (1665) (column 3); estimating Poisson regressions (column 4); excluding from the sample municipalities in the top 5% of the 1780 population distribution (column 5). In columns 6 and 7, we the dependent variable is the log of 0.01 plus the number of riots and a dummy equal to one for having at least one riot, respectively. Column 8 conducts a global analysis removing any restriction on distance from the border. The treatment equals one for the municipalities in the area with a higher tax rate. The specification includes border fixed effects as well as a set of municipal controls (population in 1780, coordinates, and soil fertility). Unless otherwise noted (in column 2), the sample includes all municipalities in contiguous France, except those spanning borders in the bottom quartile of the tax gap distribution. Standard errors are clustered at the *bailliage* level. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

TABLE A6 – RIOTS AROUND THE SALT TAX BORDER(1780-1789): ROBUSTNESS CHECKS/2

	Dependent variable: Economic and political riots							
	(1) Baseline	(2) Quadratic Polynomial	(3) Uniform Kernel	(4) Epanechnikov Kernel	(5) Bandwidth Select 'msetwo'	(6) Cluster 'generalite'	(7) Conley SE 50 km	(8) Conley SE 100 km
High tax area	0.047**	0.041*	0.050**	0.049**	0.054**	0.047**	0.050**	0.050*
	(0.021)	(0.023)	(0.021)	(0.022)	(0.021)	(0.020)	(0.024)	(0.029)
N	13,113	14,003	11,632	12,193	12,520	12,179	11,632	11,632
Bandwidth (in km)	33.49	37.37	27.86	29.92	22.96	29.87	27.86	27.86
Dep. var. mean	0.064	0.064	0.064	0.064	0.064	0.064	0.001	0.001
Dep. var. sd	0.467	0.467	0.467	0.467	0.467	0.467	0.473	0.473

Notes: The table shows non-parametric RD estimates following Calonico et al. (2014) under optimal bandwidth and polynomial order selection from equation (2). The dependent variable is the number of economic and political riots in the period 1780-1789. Column 1 reports the baseline specification (Table 1, column 5), which uses the default kernel, optimal bandwidth, and polynomial order selected by the procedure. Column 2 selects a quadratic polynomial order. Columns 3 and 4 use the Uniform and Epanechnikov kernels, respectively. Column 5 applies the bandwidth selection method 'msetwo,' which allows for different bandwidths for the left and right sides, with bandwidths of 22.96 km and 39.67 km for the left and right sides, respectively. Column 6 clusters standard errors at the *généralité* level. Column 7 (resp., 8) replicates column 3 using Conley standard errors, which account for spatial correlation for observations within a 50 km (resp., 100 km) radius. All specifications include border fixed effects as well as a set of municipal controls (population in 1780, coordinates, and soil fertility). The sample includes all municipalities in contiguous France except those spanning borders in the bottom quartile of the tax gap distribution. Standard errors are clustered at the *bailliage* level, except for column 6. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

TABLE A7 – RIOTS AROUND THE SALT TAX BORDER (1780-1789): TYPE OF RIOTS

	Dependent variable: Number of riots					
	(1)	(2)	(3)	(4)	(5)	(6)
	Economic and political	Economic	Political	Tax	Food	Labor
High tax area	0.047**	0.039**	0.010	0.043**	-0.004	-0.002
	(0.021)	(0.018)	(0.011)	(0.017)	(0.005)	(0.002)
N	13,113	12,790	11,688	13,439	11,300	11,261
Bandwidth (in km)	33.49	32.21	28.03	34.83	26.73	26.58
Dep. var. mean	0.064	0.042	0.023	0.024	0.014	0.002
Dep. var. sd	0.467	0.419	0.165	0.234	0.252	0.060

Notes: The table shows non-parametric RD estimates following Calonico et al. (2014) under optimal bandwidth and polynomial order selection from equation (2). The dependent variable is the number of riots, defined at the top of each column, between 1780 and 1789. The treatment equals one for the municipalities in the area with a higher tax rate. The specification includes border fixed effects as well as a set of municipal controls (population in 1780, coordinates, and soil fertility). The sample includes all municipalities in contiguous France, except those spanning borders in the bottom quartile of the tax gap distribution. Standard errors are clustered at the *bailliage* level.

TABLE A8 – RIOTS AROUND THE SALT TAX BORDER (1780-1789): ADDRESSING SALT SMUGGLING

	Dependent variable: Number of riots						
		Excluding salt smuggling riots			Controlling for		
	(1) Baseline	(2) All	(3) Keep events with external actors	(4) Keep large events with external actors	(5) Salt smuggling riots (1750-1779)	(6) Distance to salt sources	(7) Salt smugl. riots (1750-1779) and dist. to salt sources
Panel A: Economic and political riots							
High tax area	0.047**	0.036**	0.038**	0.039**	0.041**	0.046**	0.041**
	(0.021)	(0.018)	(0.018)	(0.018)	(0.019)	(0.021)	(0.019)
N	13,113	12,481	12,552	12,444	12,962	13,091	12,917
Bandwidth (in km)	33.49	30.97	31.26	30.86	32.88	33.39	32.72
Dep. var. mean	0.064	0.061	0.061	0.062	0.064	0.064	0.064
Dep. var. sd	0.467	0.446	0.446	0.454	0.467	0.467	0.467
Panel B: Tax riots							
High tax area	0.043**	0.033**	0.034**	0.036***	0.039***	0.043**	0.039***
	(0.017)	(0.013)	(0.013)	(0.014)	(0.015)	(0.017)	(0.015)
N	13,439	13,878	13,840	13,910	13,483	13,299	13,336
Bandwidth (in km)	34.83	36.79	36.62	36.92	35.06	34.25	34.44
Dep. var. mean	0.024	0.021	0.021	0.022	0.024	0.024	0.024
Dep. var. sd	0.234	0.201	0.203	0.209	0.234	0.234	0.234

Notes: The table shows non-parametric RD estimates following Calonico et al. (2014) under optimal bandwidth and polynomial order selection from equation (2). The dependent variable is the number of economic and political riots (resp., tax riots) in the period 1780-1789 in Panel A (resp., Panel B). Column 1 reports the baseline specification (Table 1, column 5). Column 2 excludes all riots classified as smuggling-related. Columns 3 and 4 replicate column 2 by excluding those that: i) involved external parties distinct from both smugglers and state officers; and ii) either had external parties or included at least 50 people (or both). Columns 5 to 7 replicate column 1 by controlling for: the number of salt smuggling riots in the period 1750-1779 (column 5); the distance to the closest salt source (column 6); and, both additional controls (column 7). The treatment equals one for municipalities in the area with a higher salt tax rate. The specification includes border fixed effects as well as a set of municipal controls (population in 1780, coordinates, and soil fertility). The sample includes all municipalities in contiguous France, except those spanning borders in the bottom quartile of the tax gap distribution. Standard errors are clustered at the *bailliage* level. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

TABLE A9 – SALT TAX AND CITIZENS' GRIEVANCES

	Dependent variable: No. of grievances against salt tax							
	(1) Baseline	(2) 1[at least 1]	(3) Relative to tax complaints	(4) Relative to all complaints	(5) Salt complaints (per 10,000 people)	(6) log(0.01+x)	(7) Weighed by pop	(8) Poisson
Salt tax	4.039***	0.406***	4.198***	0.940***	0.483**	2.601***	1.986***	1.269***
	(0.654)	(0.066)	(0.869)	(0.136)	(0.240)	(0.340)	(0.757)	(0.142)
N	225	225	225	225	225	225	225	225
R-squared	0.610	0.232	0.142	0.415	0.262	0.400	0.673	
Pseudo R-squared								0.501
Dep. var. mean	3.036	0.729	4.368	0.814	0.405	-0.590	2.576	3.036
Dep. var. sd	4.839	0.446	4.836	0.956	1.165	2.583	3.782	4.839
Salt tax mean	1.543	1.543	1.543	1.543	1.543	1.543	1.574	1.543

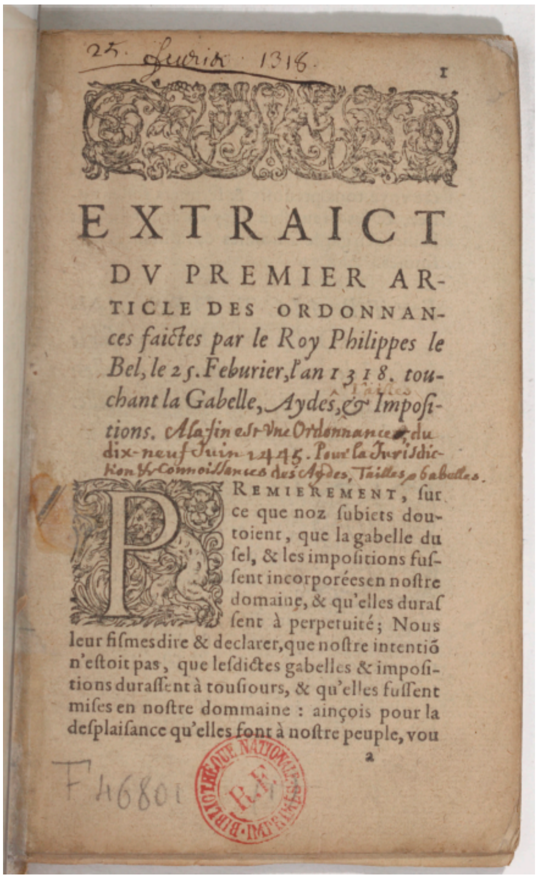
Notes: The table presents OLS (columns 1 to 7) and Poisson (column 8) regressions at the *bailliage* level for the 225 *bailliages* for which data on the lists of grievances from Shapiro et al. (1998) are available. The dependent variable is: the number of complaints against the salt tax (columns 1, 7, and 8); a dummy equal to one for having at least one complaint against the salt tax (column 2); the number of complaints against the salt tax relative to tax (column 3) and any (column 4) complaints; the number of complaints against the salt tax per 100,000 people (column 5); the log of 0.01 plus the number of complaints against the salt tax (column 6). Columns 7 and 8 replicate column 1 by: weighing by 1780 population and estimating Poisson regressions, respectively. Salt tax is the (population weighed) average salt tax prevailing in the *bailliage*. Regressions also include soil fertility, population in 1780, a dummy equal to one if the complaint comes from the Third Estate, and distance from the closest salt tax border. Robust standard errors in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.1

A.2 Figures

FIGURE A1 – SATIRE OF THE THIRD ESTATE CARRYING THE NOBILITY AND THE CLERGY (1789)

Notes: Popular caricature representing the hard-working Third Estate carrying the nobility and clergy. The legend reads "A faut espérer q[u]'eu jeu là finira b[i]entôt" ("Hopefully, this game will be over soon"). Out of the nobility's "full" pocket, the first item listed is "sel" ("salt").

FIGURE A2 – ROYAL *ordonnances* ON SALT TAX, 1318 AND 1680


25. feurier 1318.

1

EXTRAICT

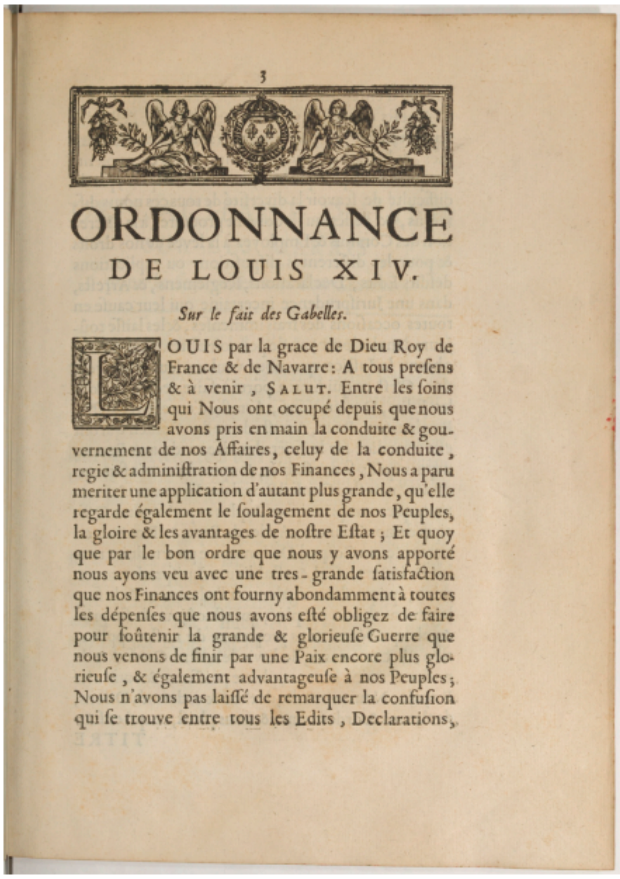
DV PREMIER ARTICLE DES ORDONNANCES faictes par le Roy Philippes le Bel, le 25. Feburier, l'an 1318. touchant la Gabelle, Aydes, & Impositions. A la fin est vne Ordonnance du dix-neuf Juin 1445. Pour la Jurisdiction & Connoissances des Aydes, Tailles, & Gabelles.

PREMIEREMENT, sur ce que noz subiets doutoient, que la gabelle du sel, & les impositions fussent incorporées en nostre domaine, & qu'elles durassent à perpetuité; Nous leur fismes dire & declarer, que nostre intentiõ n'estoit pas, que lesdictes gabelles & impositions durassent à tousiours, & qu'elles fussent mises en nostre dommaine : ainçois pour la desplaisance qu'elles font à nostre peuple, vou

a 2

(A) ROYAL *ordonnances* ON SALT TAX, 1318

Source: Extraict du premier article des ordonnances faites par le roi Philippes le Bel, le 25 février, l'an 1318, touchant la gabelle, aides et impositions. National Library of France, BnF.


3

ORDONNANCE

DE LOUIS XIV.

Sur le fait des Gabelles.

LOUIS par la grace de Dieu Roy de France & de Navarre: A tous presens & à venir, SALUT. Entre les soins qui Nous ont occupé depuis que nous avons pris en main la conduite & gouvernement de nos Affaires, celuy de la conduite, regie & administration de nos Finances, Nous a paru meriter une application d'autant plus grande, qu'elle regarde également le soulagement de nos Peuples, la gloire & les avantages de nostre Estat; Et quoy que par le bon ordre que nous y avons apporté nous ayons veu avec une tres-grande satisfaction que nos Finances ont fourny abondamment à toutes les dépenses que nous avons esté obligez de faire pour soûtenir la grande & glorieuse Guerre que nous venons de finir par une Paix encore plus glorieuse, & également advantageuse à nos Peuples; Nous n'avons pas laissé de remarquer la confusion qui se trouve entre tous les Edits, Declarations,

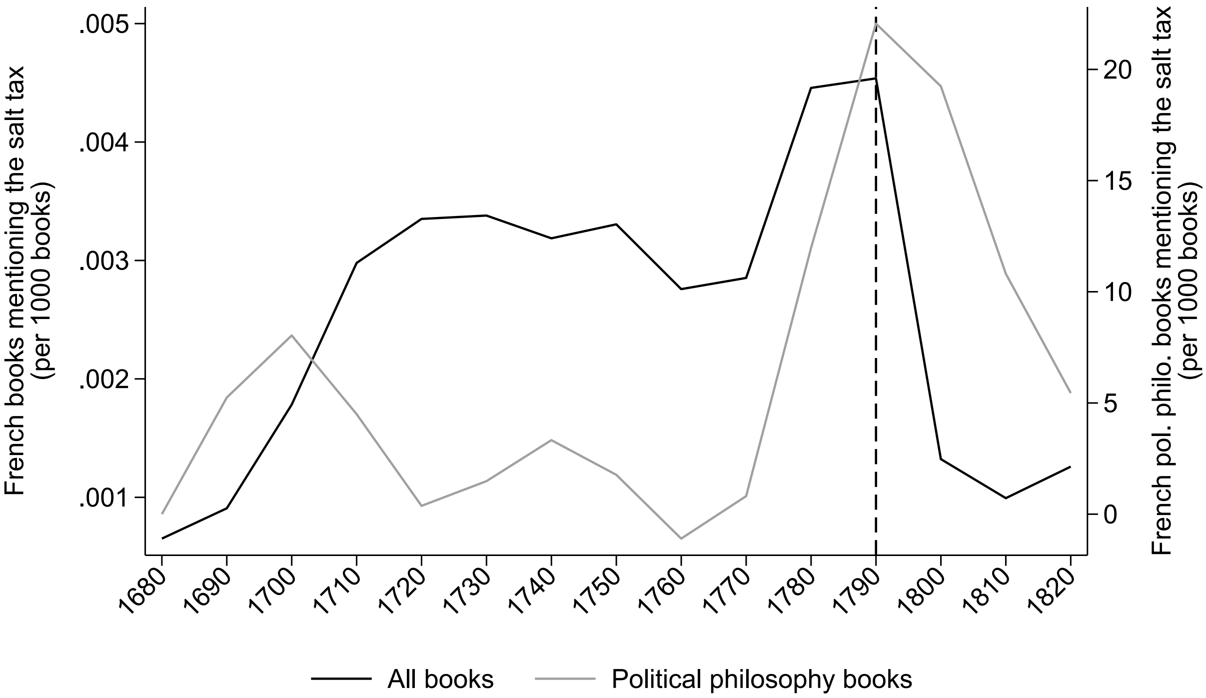
(B) ROYAL *ordonnances* ON SALT TAX, 1680

Source: Ordonnances de Louis XIV. roy de France et de Navarre, sur le fait des gabelles & des aydes. Données à S. Germain en Laye aux mois de mai & juin 1680. Registrées en la Cour des Aydes les 11. mai & 21. juin 1680. National Library of France, BnF.

FIGURE A3 – THE ROYAL SALT STOREHOUSES (1709)

Notes: Squared shields indicate the location of a salt storehouses. Tours and Orléans are approximately 100km apart. *Source:* National Library of France, BnF.

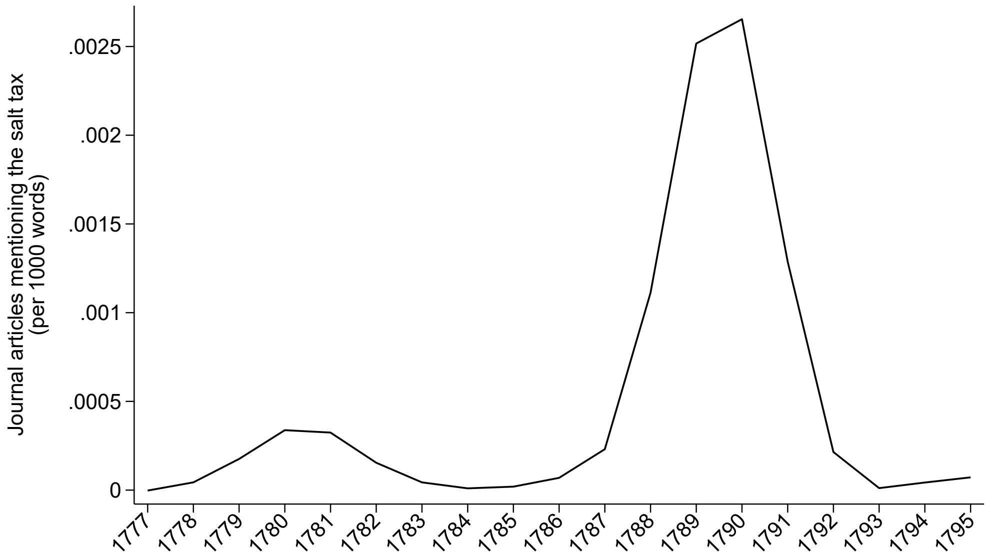
FIGURE A4 – MENTIONS OF THE SALT TAX IN FRENCH BOOKS (1680-1820)



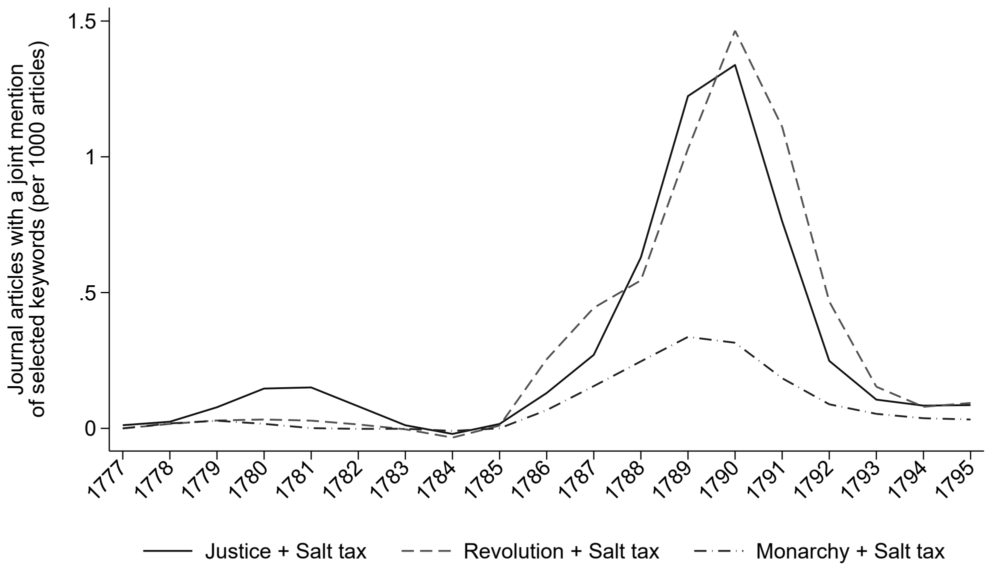
Notes: The figure displays the number of French books (black line) and French philosophy (grey line) as a share of all French books, in each year from 1680 to 1820. Data come from Azoulay and de Courson (2021), relying on the Archives of the National Library of France, BnF.

FIGURE A5 – MENTIONS OF THE SALT TAX IN PARISIAN PRESS ARTICLES, 1777–1795

(A) SALT TAX IN THE PARISIAN PRESS (1777–1795)

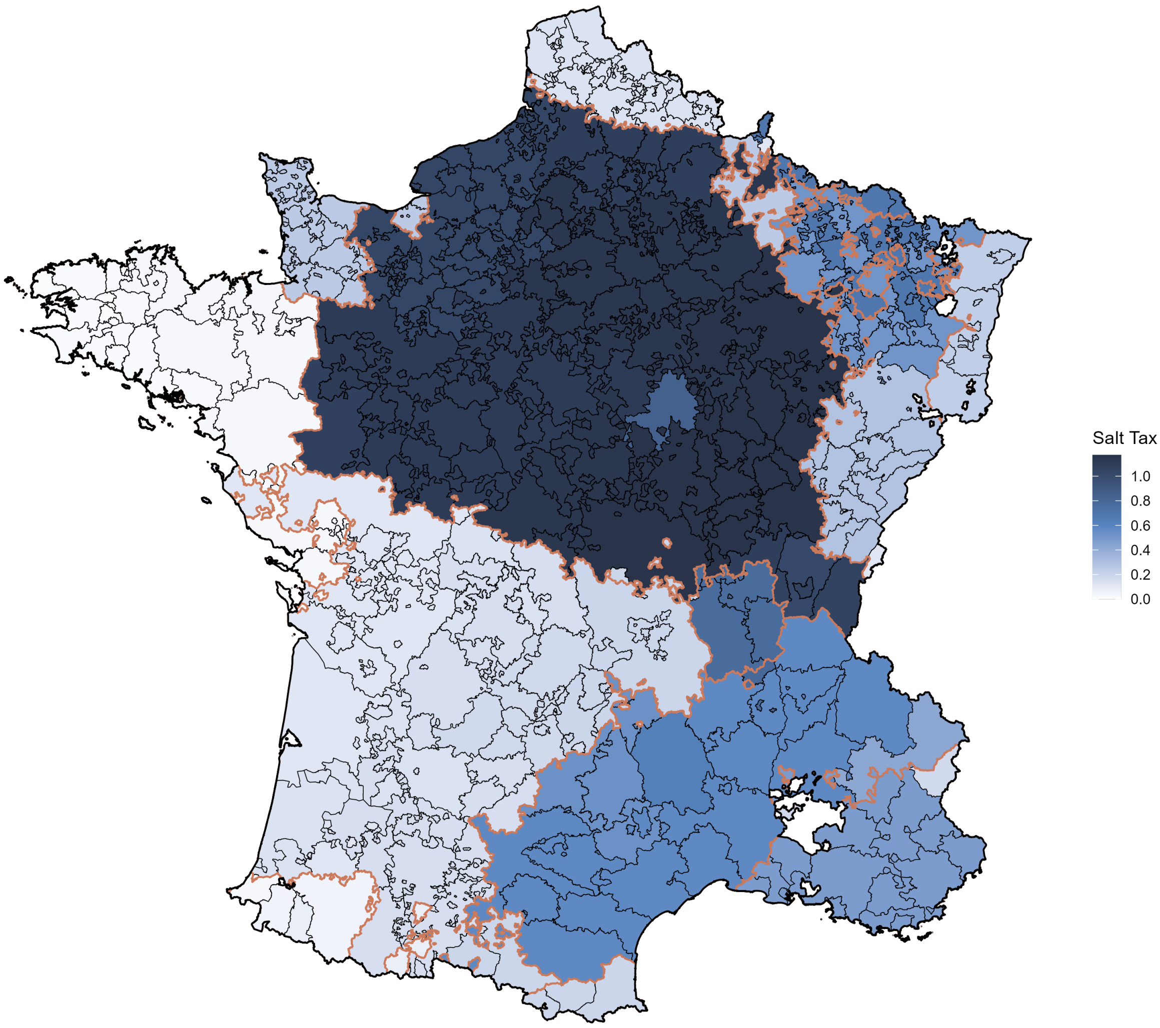


(B) SALT TAX AND SELECTED TERMS IN THE PARISIAN PRESS (1777–1795)



Notes: Panels A and B plot the number of articles from the *Journal de Paris*: $i)$ with at least one mention to the salt tax; and, $ii)$ with at least one joint occurrence of the salt tax and each selected term. Data come from Azoulay and de Courson (2021), based on the Archives of the National Library of France (BnF).

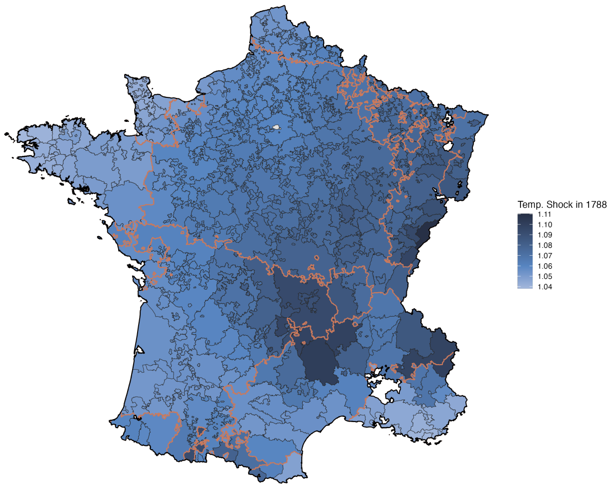
Figure A6 – Salt tax at *bailliage* level



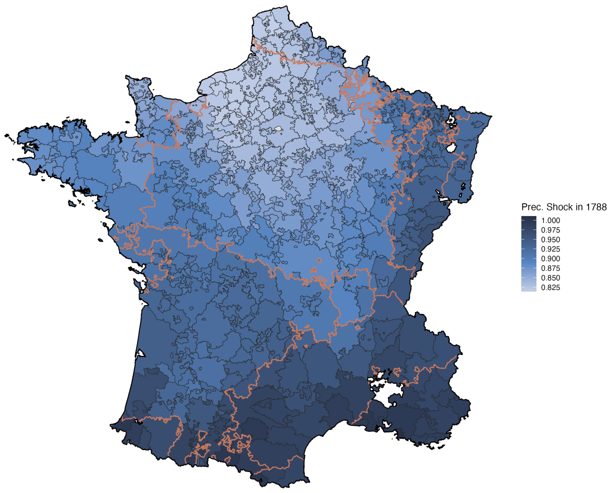
Notes: The figure plots the salt tax, expressed in pounds per liter, at the *bailliage* level, together with the salt tax border highlighted in orange.

FIGURE A7 – WEATHER SHOCK AT *bailliage* LEVEL AND SALT TAX BORDER, 1788

(A) TEMPERATURE

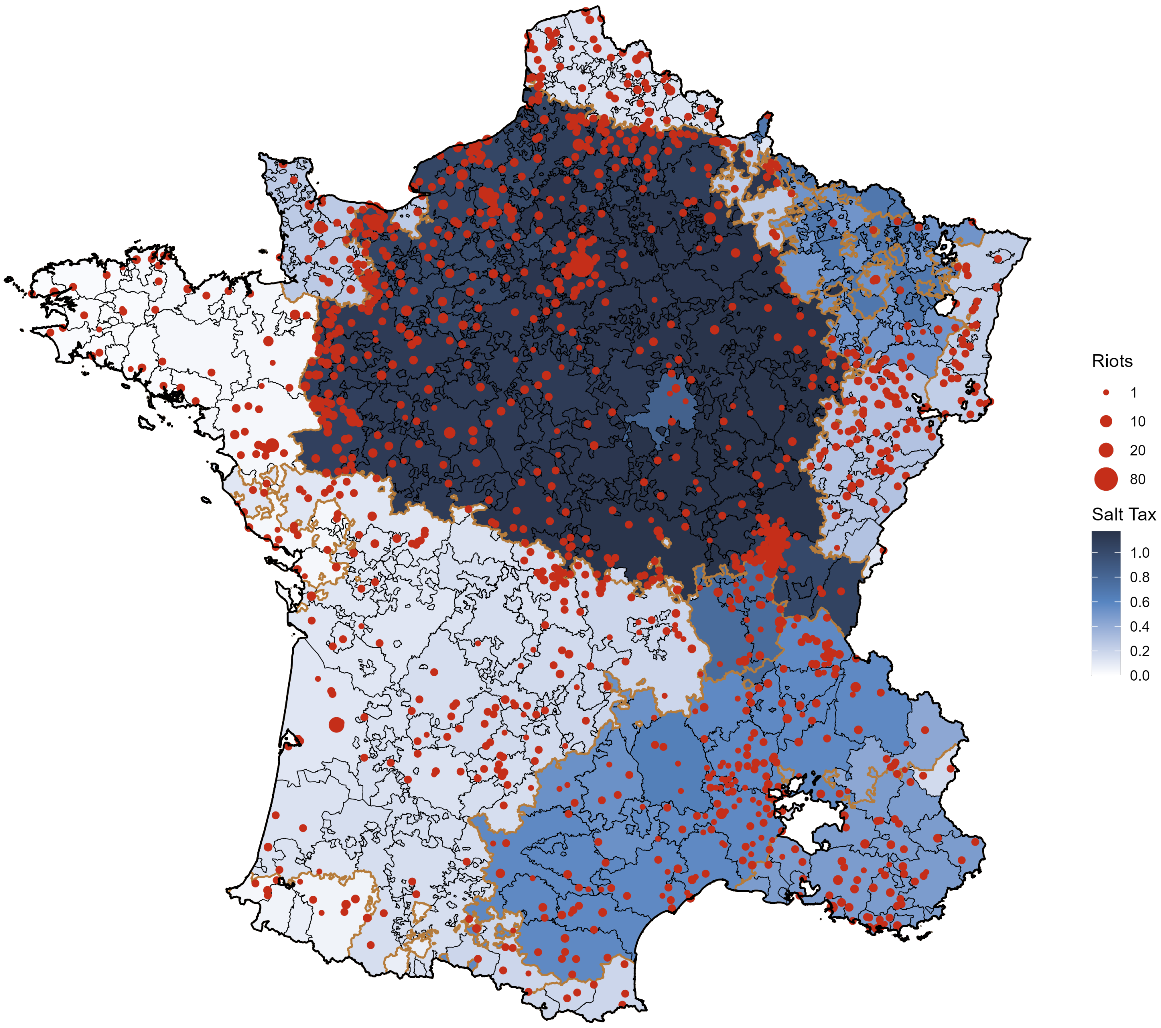


(B) PRECIPITATION



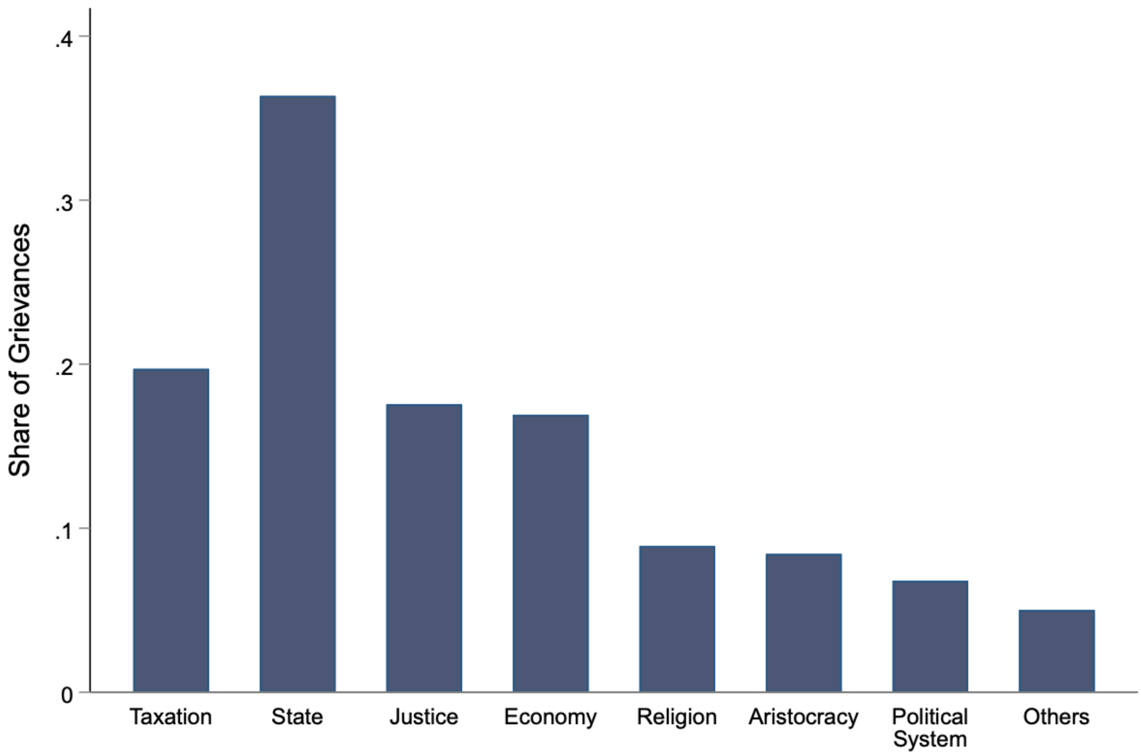
Notes: The figure plots the 1788 temperature (Panel A) and precipitation (Panel B) shocks across *bailliages*. Temperature and precipitation shocks are defined, following Waldinger (2024), as the ratio of growing-season temperature and precipitation in each year over their long-run (1750 to 1800) growing-season means. The map also plots salt tax border, highlighted in orange.

FIGURE A8 – SALT TAX AT *bailliage* LEVEL AND RIOTS



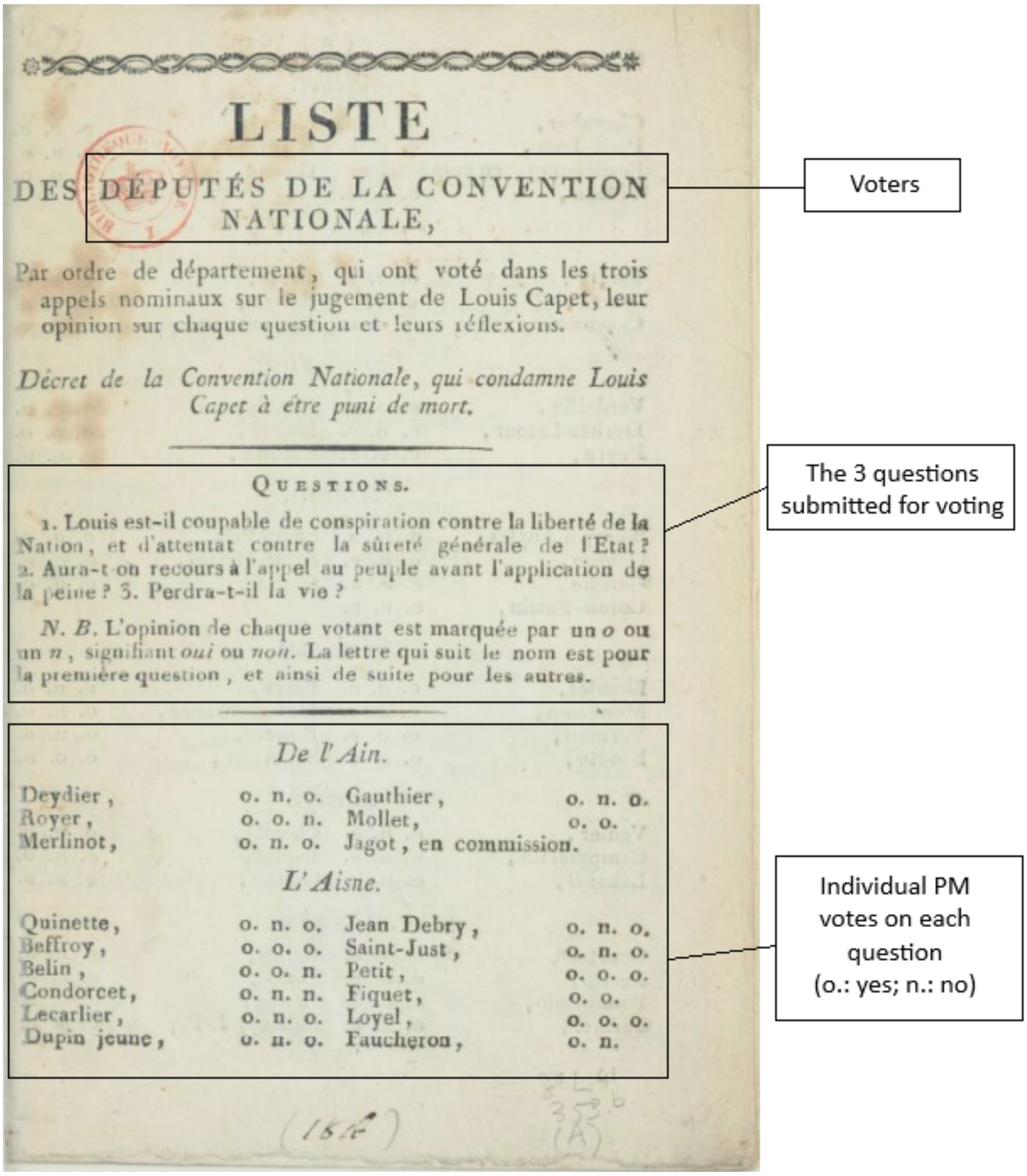
Notes: The figure plots the salt tax (expressed in pounds per liter) at the *bailliage* level, together with the salt tax border highlighted in orange and the location of economic and political riots (1780-1789) in red. Larger dots indicate a higher number of riots in a given location.

FIGURE A9 – FREQUENCY OF COMPLAINTS IN THE LIST OF GRIEVANCES



Notes: The figure plots the number of complaints in each category, relative to all complaints reported in the list of grievances from Shapiro et al. (1998).

FIGURE A10 – DECREE DEATH PENALTY KING



LISTE

DES DÉPUTÉS DE LA CONVENTION NATIONALE,

Par ordre de département, qui ont voté dans les trois appels nominaux sur le jugement de Louis Capet, leur opinion sur chaque question et leurs réflexions.

Décret de la Convention Nationale, qui condamne Louis Capet à être puni de mort.

QUESTIONS.

1. Louis est-il coupable de conspiration contre la liberté de la Nation, et d'attentat contre la sûreté générale de l'Etat? 2. Aura-t-on recours à l'appel au peuple avant l'application de la peine? 3. Perdra-t-il la vie?

N. B. L'opinion de chaque votant est marquée par un *o* ou un *n*, signifiant *oui* ou *non*. La lettre qui suit le nom est pour la première question, et ainsi de suite pour les autres.

De l'Ain.

Deydier,	o. n. o.	Gauthier,	o. n. o.
Royer,	o. o. n.	Mollet,	o. o.
Merlinot,	o. n. o.	Jagot, en commission.	

L'Aisne.

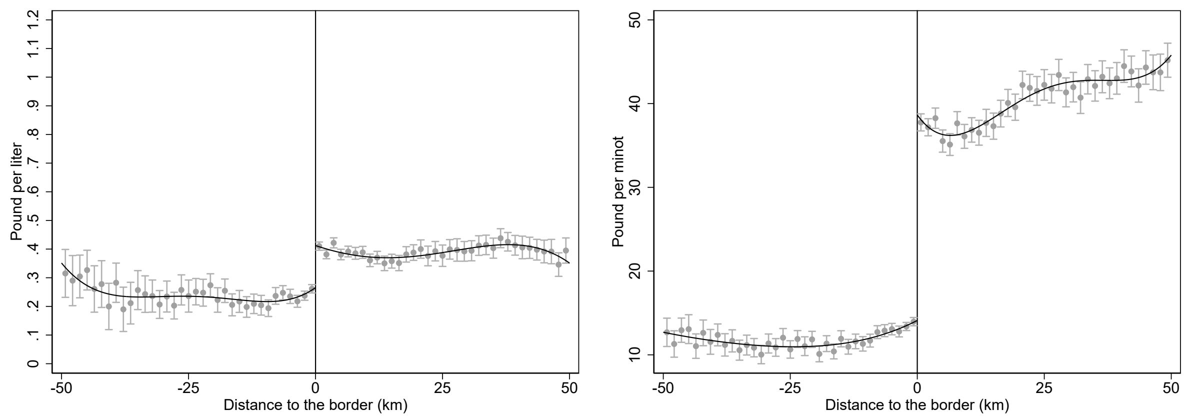
Quinette,	o. n. o.	Jean Debry,	o. n. o.
Beffroy,	o. o. o.	Saint-Just,	o. n. o.
Belin,	o. o. n.	Petit,	o. o. o.
Condorcet,	o. n. n.	Fiquet,	o. o.
Lecarlier,	o. n. o.	Loyel,	o. o. o.
Dupin jeune,	o. n. o.	Faucheron,	o. n.

Notes: Source: National Library of France, BnF.

FIGURE A11 – FIRST STAGE: SALT TAX AROUND THE BORDER

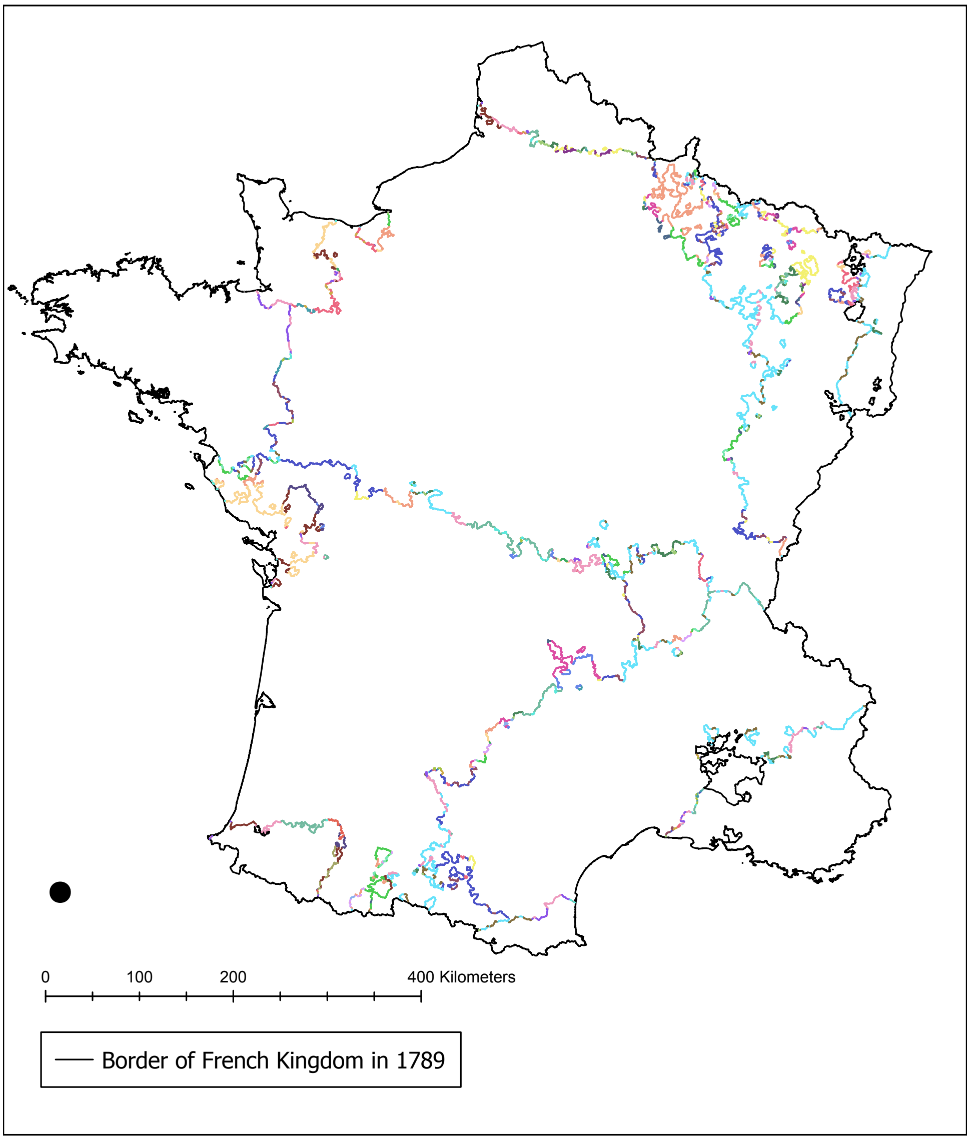
(A) ONLY FIRST QUARTILE TAX GAP

(B) ALL TAX BORDERS



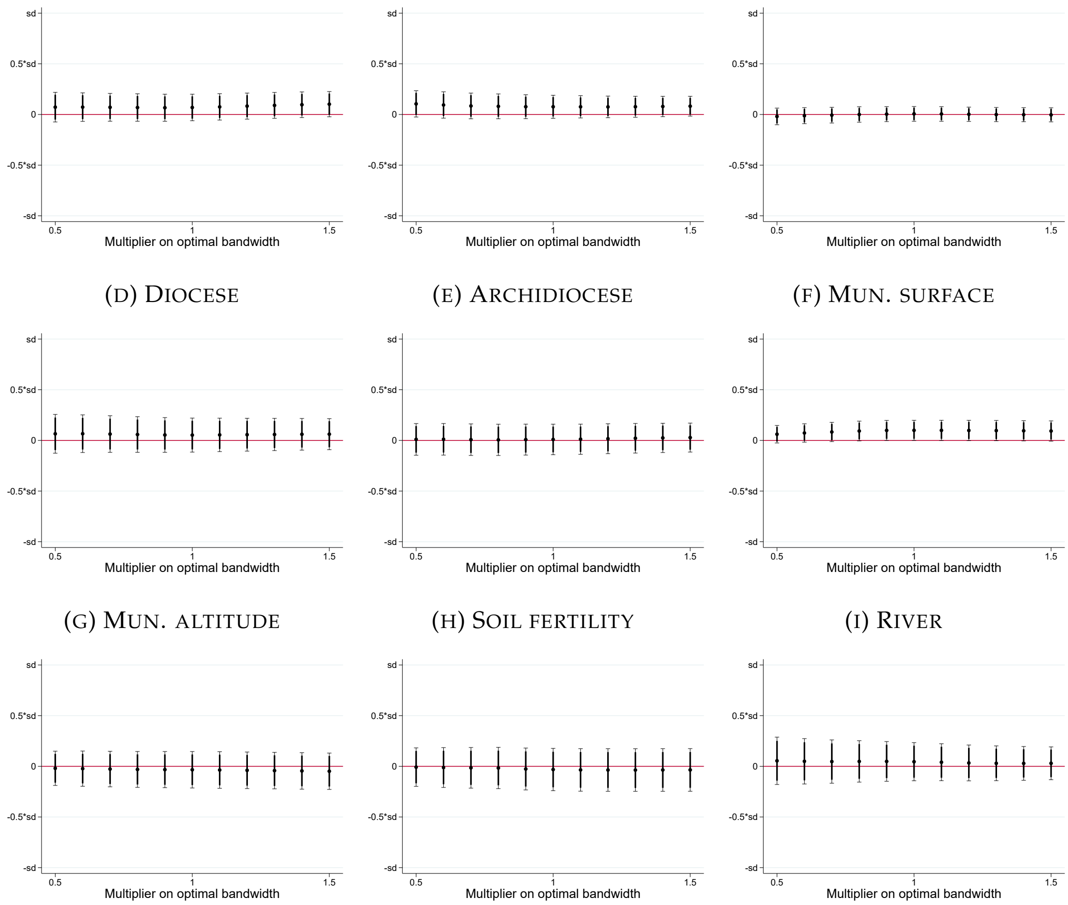
Notes: The plot shows non-parametric RD estimates from equation (2) following Calonico et al. (2014). The dependent variable is the salt tax rate (expressed in pound per liter). The sample includes all municipalities in contiguous France in Panel A, and all municipalities in contiguous France except those in the bottom quartile of the tax gap distribution in Panel B. The treatment area (i.e., the area with a higher tax rate, compared to the nearest tax border) is coded positively.

FIGURE A12 – ORIGIN OF THE SALT TAX BORDERS



Notes: To study the origin of border segments, we divide the salt tax border into 27,156 segments of 1 km each. For each segment, we attribute an origin type based on spatial overlap. We consider a salt tax border segment overlapping with a segment from one of the origin source if the segment of that origin source follows the border within a 1 km bandwidth. This 1 km bandwidth acts as a margin of error in case of differences in the geo-referencing technique adopted across the different sources. The list of possible origin types is: rivers, diocese borders (around AD1000), roman borders (around AD400), jurisdictions as defined in Gay et al. (2024), *généralité* (*Ancien Régime*'s key fiscal administrative border), as well as all existing cross products of these types. A cross product can occur when a salt tax border coincides with multiple origin types at the same time (e.g., a river and a diocese border in AD1000). Each color represent 1 of the 15 possible origin types.

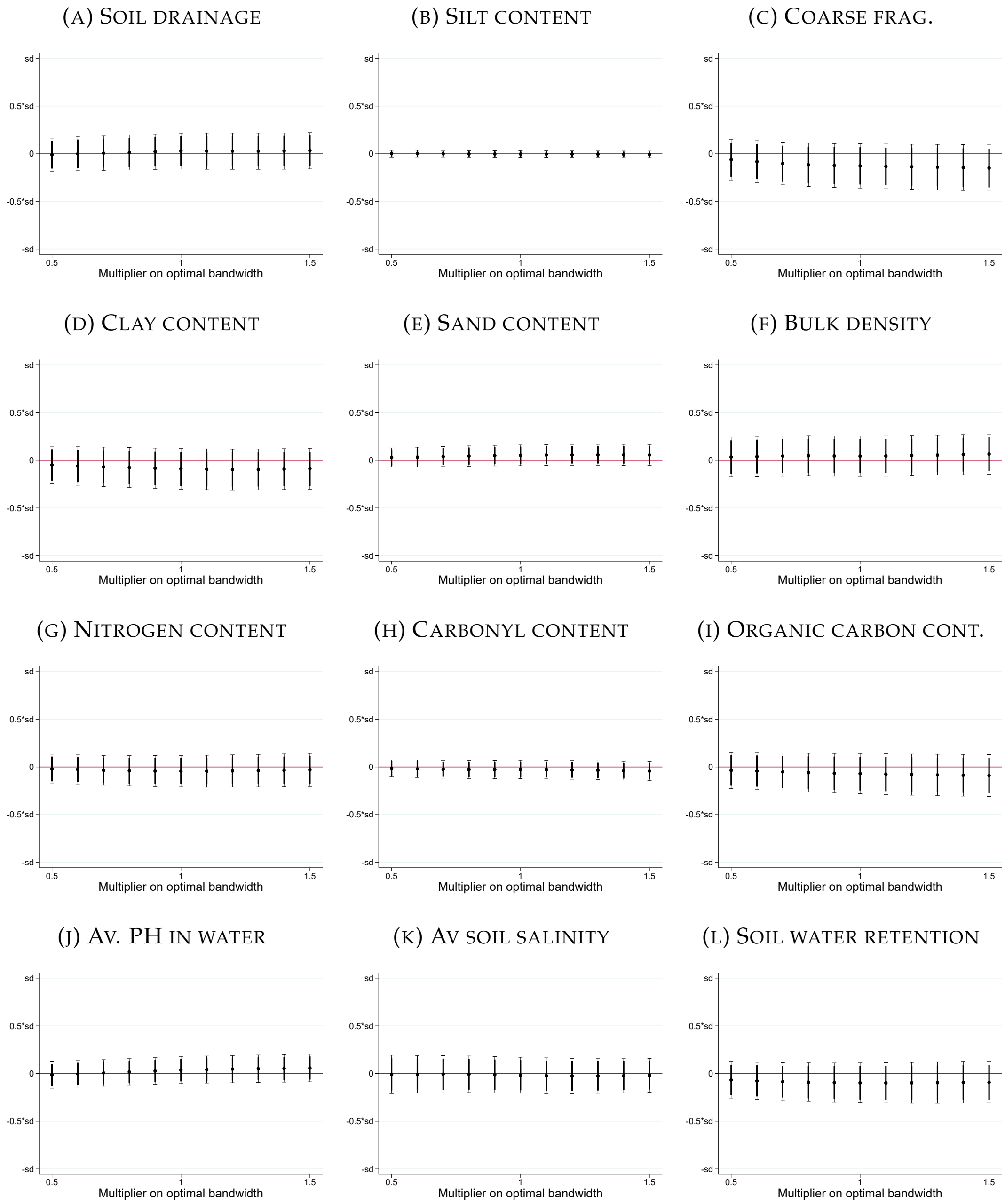
FIGURE A13 – BALANCE CHECKS: MUNICIPAL CHARACTERISTICS



(A) ROMAN ROAD (B) CASSINI ROAD (C) CASSINI CITY (D) DIOCESE (E) ARCHIDIOCESE (F) MUN. SURFACE (G) MUN. ALTITUDE (H) SOIL FERTILITY (I) RIVER

Notes: The plot shows non-parametric RD estimates from equation (2) following Calonico et al. (2014). The dependent variable is each of the outcomes reported at the top of the corresponding panel. For each outcome the coefficient estimated on several bandwidth is reported. The treatment equals one for municipalities in the area with a higher rate. The specification includes border fixed effects as well as a set of municipal controls (population in 1780, coordinates, and soil fertility). Soil fertility is excluded from the controls in Panel H. The sample includes all municipalities in contiguous France, except those spanning borders in the bottom quartile of the tax gap distribution. Standard errors are clustered at the *bailliage* level.

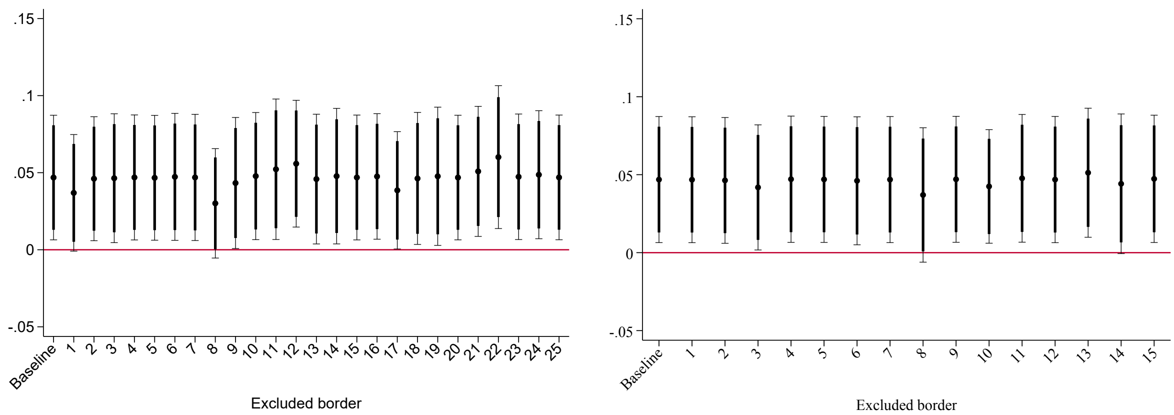
FIGURE A14 – BALANCE CHECKS: SOIL CHARACTERISTICS



Notes: The plot shows non-parametric RD estimates from equation (2) following Calonico et al. (2014). The dependent variable is each of the outcomes reported at the top of the corresponding panel. For each outcome the coefficient estimated on several bandwidth is reported. The treatment equals one for municipalities in the area with a higher rate. The specification includes border fixed effects as well as a set of municipal controls (population in 1780, coordinates, and soil fertility). Soil fertility is excluded from the controls in Panels B and G. The sample includes all municipalities in contiguous France, except those spanning borders in the bottom quartile of the tax gap distribution. Standard errors are clustered at the *bailliage* level.

FIGURE A15 – RIOTS AROUND THE BORDER: EXCLUDING SINGLE BORDERS

(A) CLASSIFICATION BASED ON GEOGRAPHY (B) CLASSIFICATION BASED ON ORIGIN

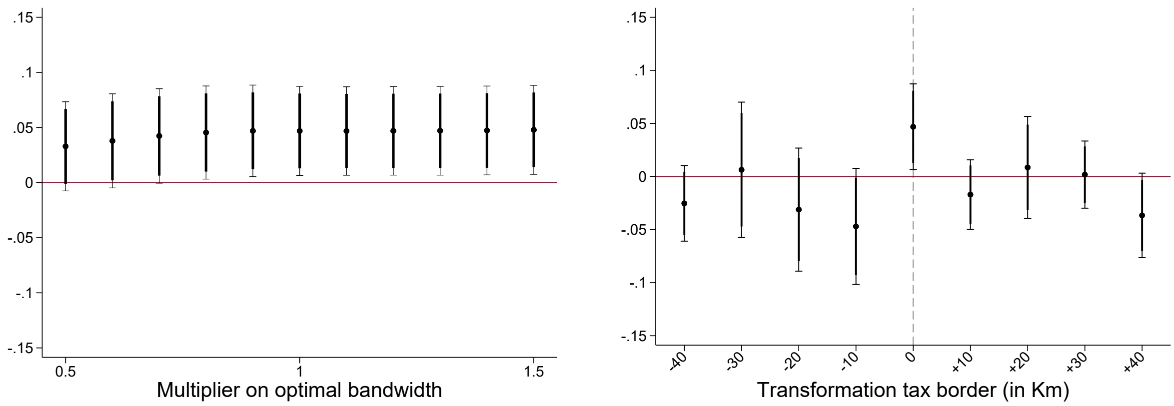


Notes: The figure replicates the baseline specification (Table 1, column 5) dropping one border at the time. The baseline specification is reported as first dot from the left. In Panel A, borders are dropped based on geography, after dividing the French territory in blocks with sides of two degree. In Panel B, borders are dropped based on origin (as classified in Appendix B and Figure A12). Each dot plots non-parametric RD estimates from equation (2) following Calonico et al. (2014) under optimal bandwidth and polynomial order selection. The dependent variable is the number of economic and political riots, between 1780 and 1789. The treatment equals one for municipalities in the area with a higher rate. The specification includes border fixed effects as well as a set of municipal controls (population in 1780, coordinates, and soil fertility). The sample includes all municipalities in contiguous France, except those in the bottom quartile of the tax gap distribution. Standard errors are clustered at the *bailliage* level.

FIGURE A16 – ROBUSTNESS CHECKS AROUND THE SALT TAX BORDER

(A): BANDWIDTH SENSITIVITY

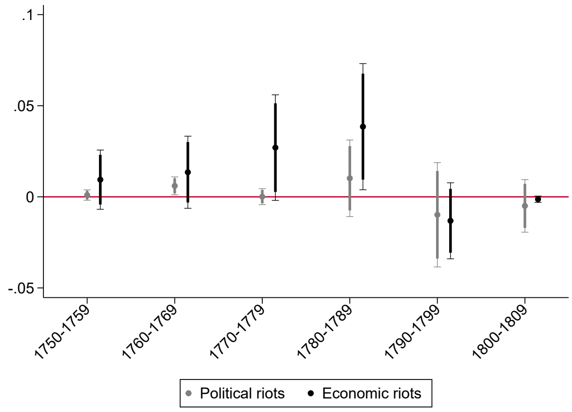
(B): PERMUTING THE SALT TAX BORDER



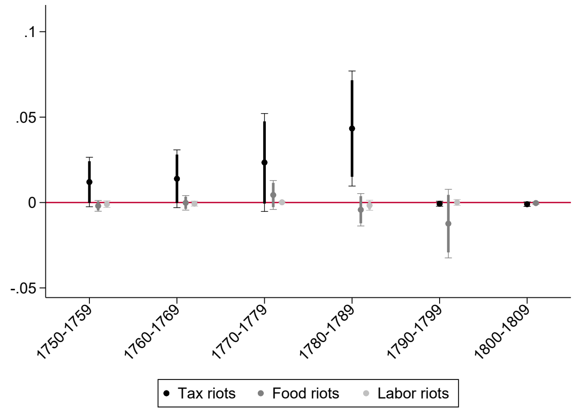
Notes: The figure replicates the baseline specification (Table 1, column 5). Panel A explores the sensitivity of results to the choice of the bandwidth—from 0.5 to 1.5 times the optimal bandwidth. Panel B presents placebo tests where the salt tax border is permuted by ±0/10/20/30/40 km. Each dot plots non-parametric RD estimates from equation (2) following Calonico et al. (2014) under optimal bandwidth and polynomial order selection. The dependent variable is the number of economic and political riots, between 1780 and 1789. The treatment equals one for municipalities in the area with a higher rate. The specification includes border fixed effects as well as a set of municipal controls (population in 1780, coordinates, and soil fertility). The sample includes all municipalities in contiguous France, except those in the bottom quartile of the tax gap distribution. Standard errors are clustered at the *bailliage* level.

FIGURE A17 – RIOTS AROUND THE SALT TAX BORDERS: TYPE OF RIOT

(A) ECONOMIC AND NON-ECONOMIC

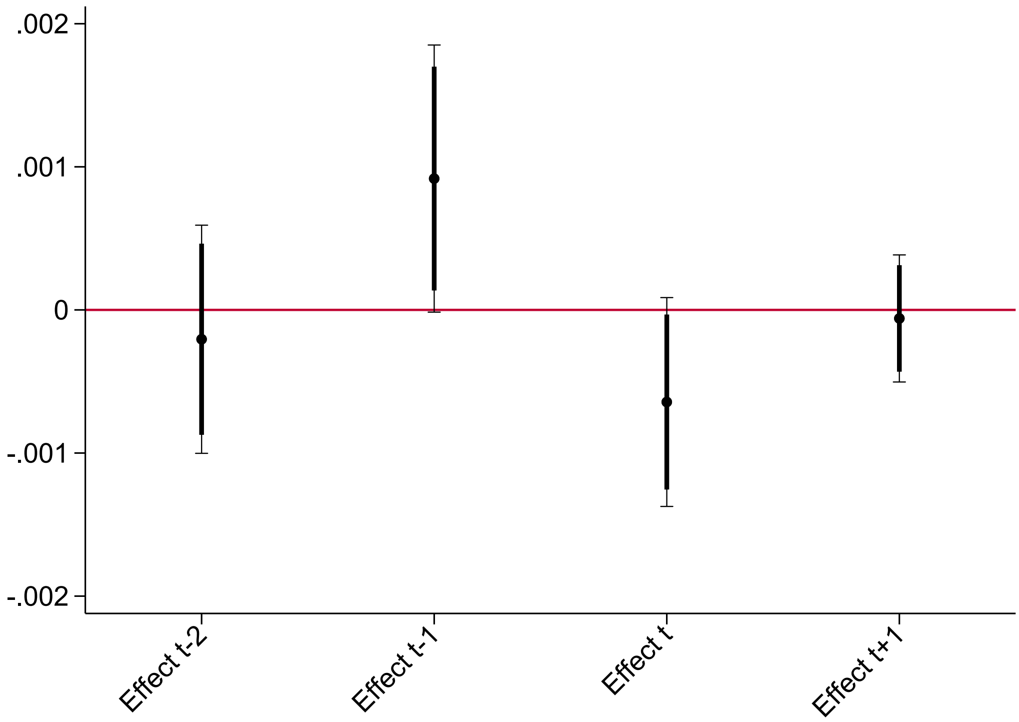


(B) TYPES OF ECONOMIC RIOTS



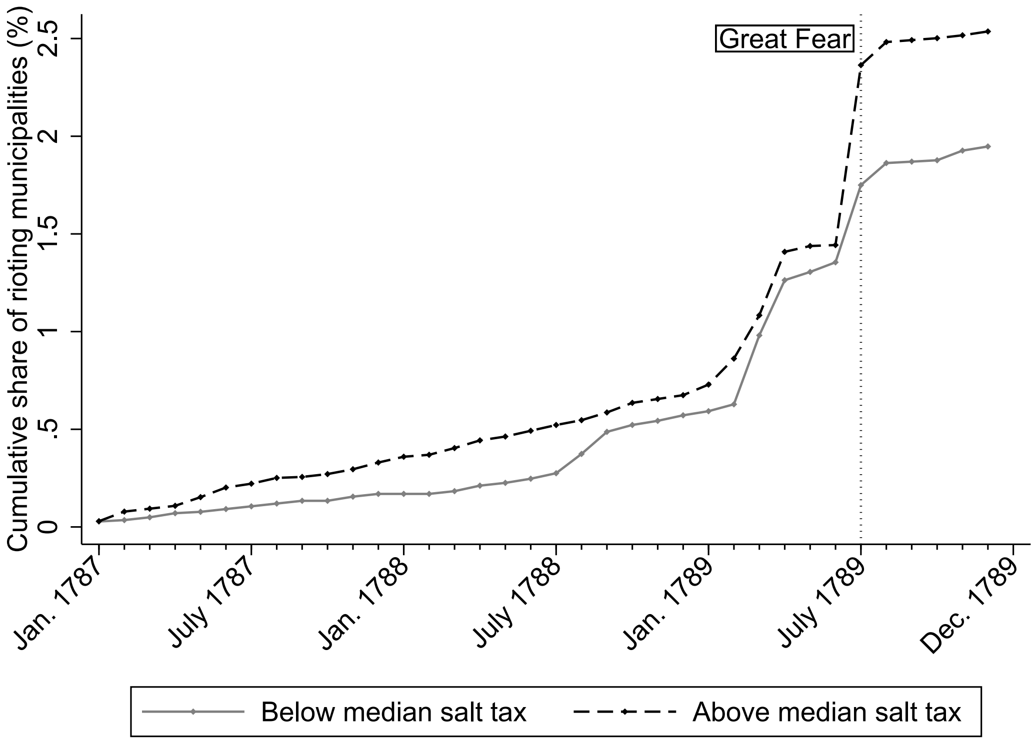
Notes: The plot shows non-parametric RD estimates from equation (2) following Calonico et al. (2014) under optimal bandwidth and polynomial order selection. The dependent variable is the number of riots, for different periods of time (bins of 10 years). Panel A considers separately the number of political (grey) and economic (black) riots. Panel B decomposes economic riots into: tax riots, food riots, labor riots. The treatment equals one for municipalities in the area with a higher rate. The specification includes border fixed effects as well as a set of municipal controls (population in 1780, coordinates, and soil fertility). The sample includes all municipalities in contiguous France, except those in the bottom quartile of the tax gap distribution. Standard errors are clustered at the *bailliage* level.

FIGURE A18 – IMPACT OF TEMPERATURE SHOCK ON RIOTS (1780-1789)



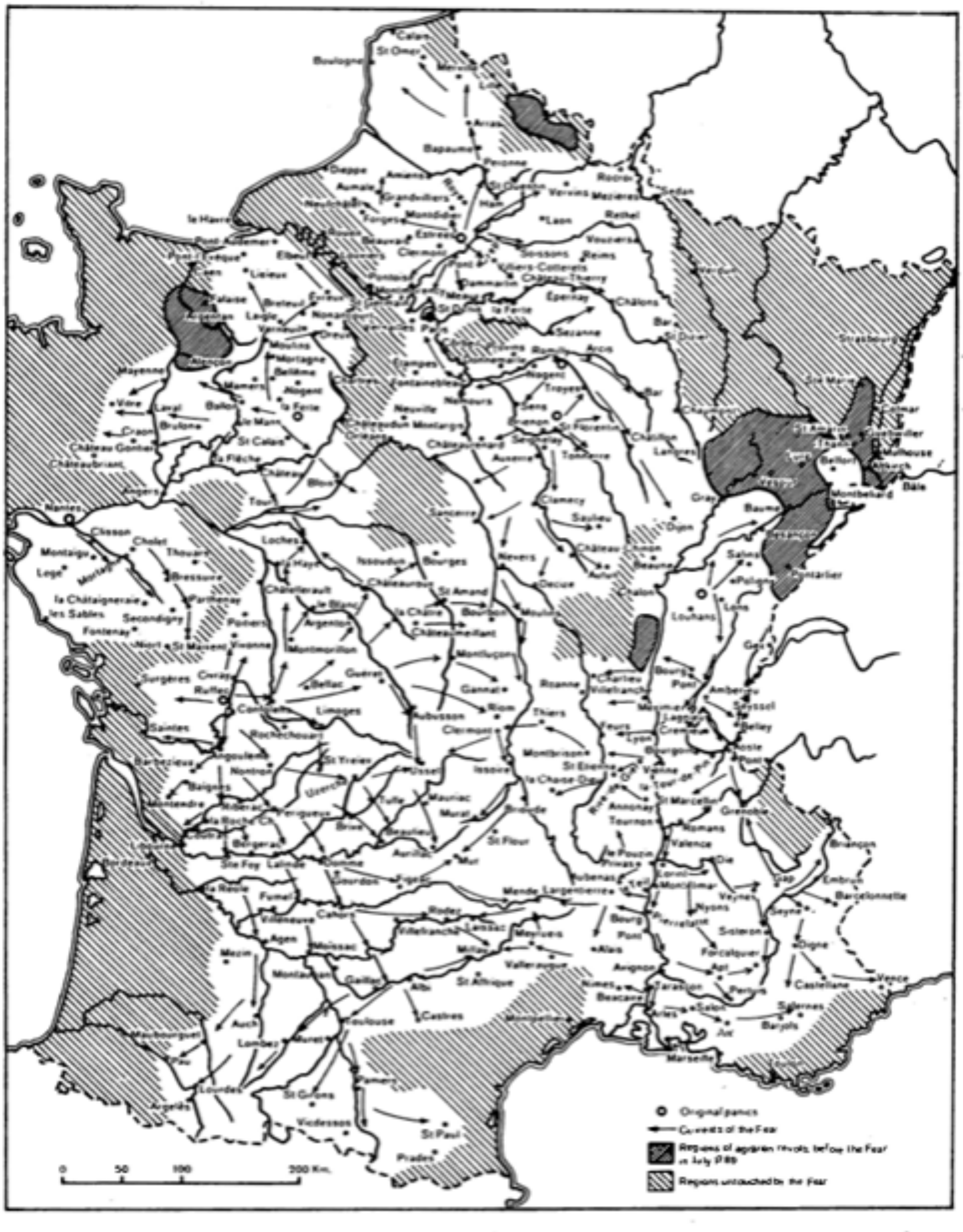
Notes: The plot shows results of the reduced form estimates from equation (3), augmented with leads and lags of the temperature shock. In the baseline model, the temperature shock is defined, following Waldinger (2024), as the one year lag of the deviation from growing season (spring and summer) temperature relative to the long run mean (1750 to 1800). See Section 3 for more details. All specifications include municipality and year fixed effects, the interaction between year fixed effects and baseline controls (population in 1780 and soil fertility), the main effect of the temperature shock, the interaction between the temperature shock and the salt tax rate, the interaction between the temperature shock and distance to the tax border, and the triple interaction of the temperature shock with the salt tax rate and distance to the tax border. Regressions further include all double and triple interactions for the leads and lags. The sample includes all municipalities in contiguous France, except those spanning the border at the bottom quartile of the tax gap distribution. Standard errors are clustered at the *bailliage* level.

FIGURE A19 – CUMULATIVE RIOTING ACTIVITY AND THE SALT TAX



Notes: The figure plots the cumulative share of municipalities with at least one economic and political riot in each month from January 1787 to December 1789. The grey solid (resp., black dashed) line refers to municipalities with a salt tax below (resp., above) the sample median.

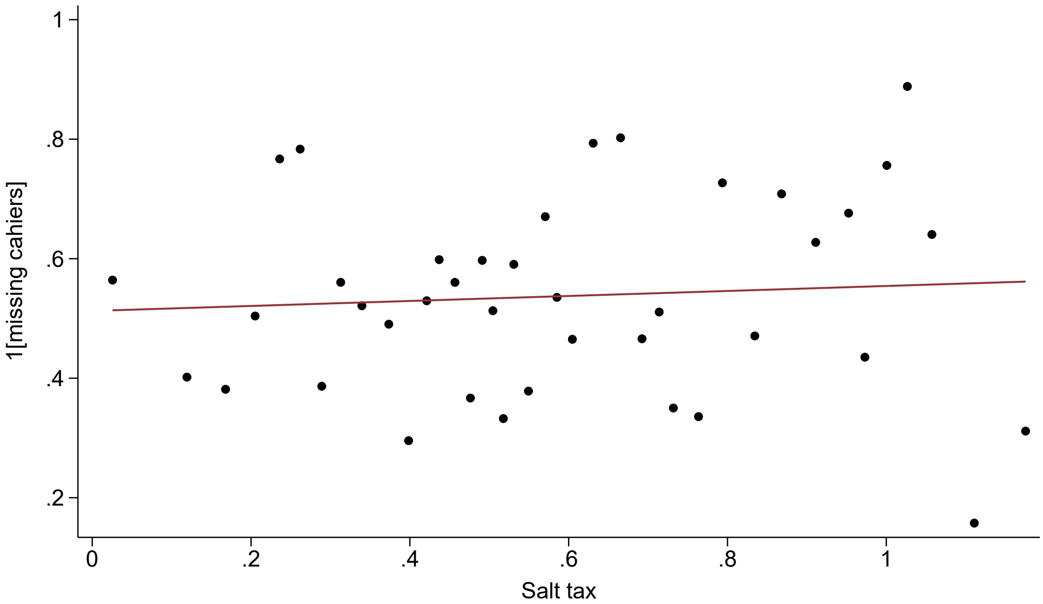
FIGURE A20 – THE 1789 GREAT FEAR



1. The Currents of the Great Fear

Notes: The figure replicates the map of the Great Fear produced and published in Lefebvre (1973).

FIGURE A21 – MISSING DATA ON LISTS ON GRIEVANCES AND SALT TAX



Notes: The figure displays the binscatter plot for the relationship between an indicator equal to one if the *bailliage* does not have data on the *cahiers de doléances* from Shapiro et al. (1998) and the salt tax rate. The regression also controls for soil fertility, 1780 population, and distance to the closest tax border. The estimated coefficient and the corresponding robust standard errors are 0.041 and 0.083, respectively.

B Appendix: Salt taxation in the Kingdom of France in 1789

In this section, we document in greater depth the origin of the salt tax borders. After describing the procedure through which we geo-referenced the salt tax borders (Appendix B.1), we discuss the origin of the salt tax borders using all 27,156 segments of 1km length constituting the borders (Appendix B.2).

Disclaimer: To ensure clarity and a self-contained discussion, some of the discussions and outputs in the next section replicate content from the main text and Appendix A.

B.1 Geo-referencing of the salt tax borders

Geo-referencing historical borders poses several challenges. The most important ones are:

1. Lack of modern coordinates systems, such that maps are typically inaccurate.
2. Lack of borders in a modern sense such that the exact placement of the border is sometimes unclear.
3. Jurisdictions referred to in the source may differ and be non-overlapping.
4. Sources, such as maps, have heterogeneous quality over space and time.
5. Historical sources may be conflicting.

To minimize potential errors arising from these challenges, we adopt a three-step approach. First, we integrated the most reliable historical sources on salt tax borders and salt tax rates covering the entire Kingdom, with state-of-the-art geo-referenced administrative divisions of the *Ancien Régime* from Gay et al. (2024). We prioritized sources that are temporally proximate to the Revolution, so as to reduce the risk of missing unobserved changes in the salt tax system. As a base map, we used the 1781 Necker salt tax map (Figure B1). To address the spatial imprecision of this map at finer resolutions, we leveraged the Royal *ordonnances* on the salt tax from 1680, which specify locations and corresponding tax rates (Figure B2), as well as the *bailliage* layer from Gay et al. (2024) (Figure B3). The resulting map is presented in Figure B4.

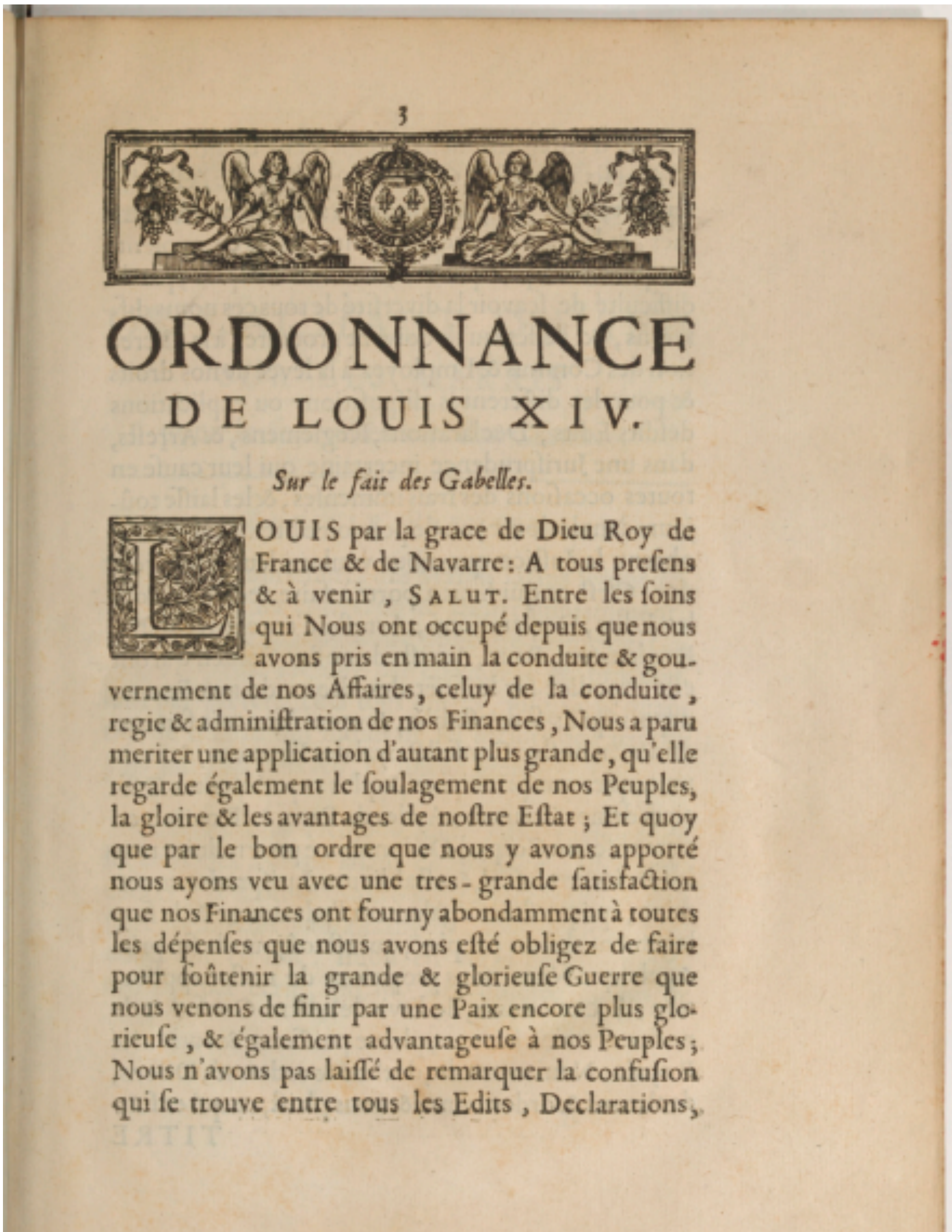
Second, we relied on Sanson (1665)'s *Atlas des Gabelles*, whose main illustration is presented in Figure B5. The manuscript map, produced by the Sanson family, royal cartographers to the French crown, details the historical boundaries of France's salt tax regions (*gabelles*), and provides one of the most comprehensive contemporary depictions of fiscal geography under the *Ancien Régime*. For our purposes, the Atlas suffers from two main disadvantages. First, it only covers the *Grandes Gabelles* area. Second, it was drafted nearly 125 years before the Revolution. Already by 1680, minor differences in the salt tax system appears (e.g., *Quart-Bouillon* area).

Despite the general stability of the salt tax system, this fact argues in favor of relying on sources temporally closer to the Revolution. However, we verify that results are robust to using the Sanson (1665)'s *Atlas des Gabelles* to delineate the *Grandes Gabelles* area and re-estimate our main specification using this approach (Table A5, column 4).

FIGURE B1 – SALT TAX MAP (NECKER, 1781)

Notes: The figure shows the map of the salt tax in 1788. Source: National Library of France, BnF.

FIGURE B2 – ROYAL *ordonnances* ON SALT TAX, 1680



3

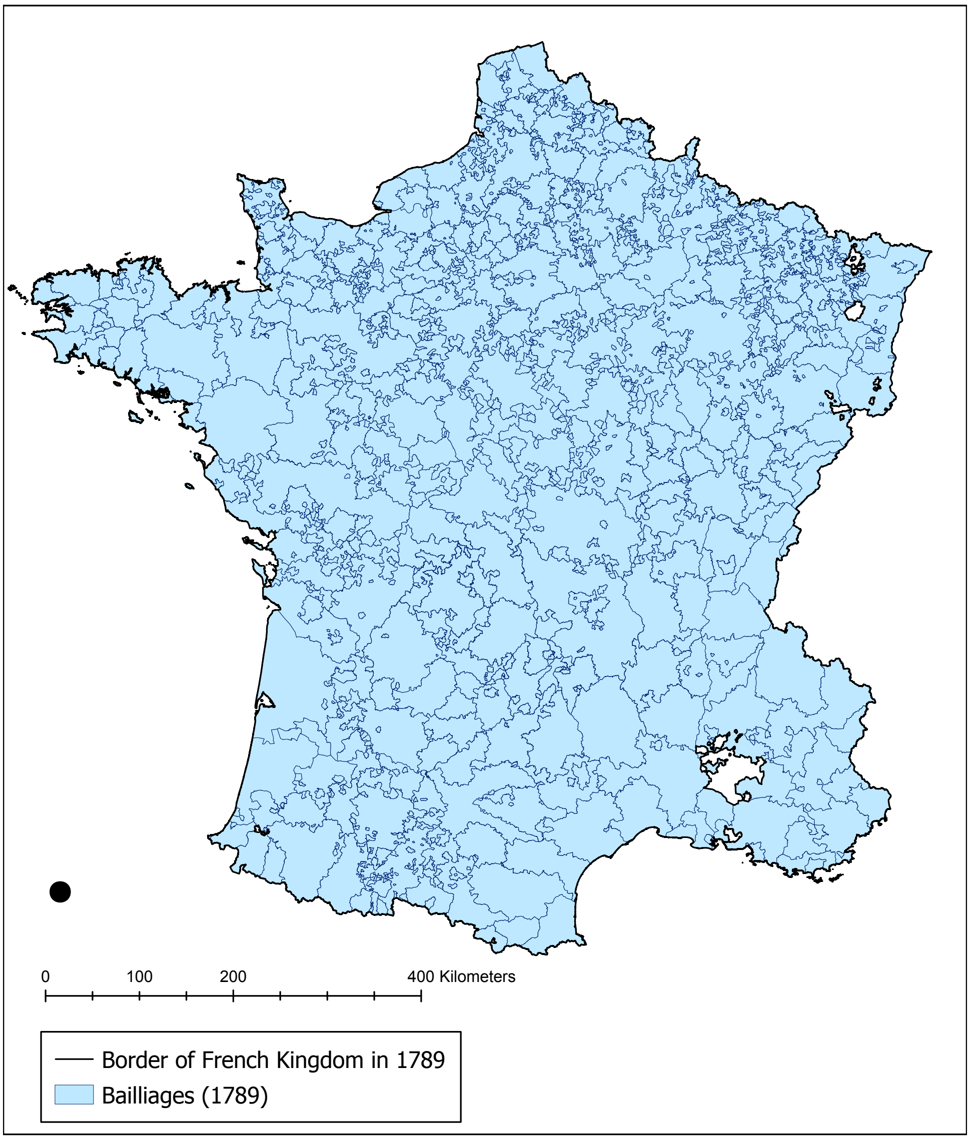
ORDONNANCE
DE LOUIS XIV.

Sur le fait des Gabelles.

LOUIS par la grace de Dieu Roy de France & de Navarre : A tous preſens & à venir, SALUT. Entre les ſoins qui Nous ont occupé depuis que nous avons pris en main la conduite & gouvernement de nos Affaires, celuy de la conduite, regie & adminiſtration de nos Finances, Nous a paru meriter une application d'autant plus grande, qu'elle regarde également le ſoulagement de nos Peuples, la gloire & les avantages de noſtre Eſtat ; Et quoy que par le bon ordre que nous y avons apporté nous ayons veu avec une tres-grande ſatisfaction que nos Finances ont fourny abondamment à toutes les dépenſes que nous avons eſté obligez de faire pour ſoûtenir la grande & glorieuſe Guerre que nous venons de finir par une Paix encore plus glorieuſe, & également advantageuſe à nos Peuples ; Nous n'avons pas laiſſé de remarquer la confuſion qui ſe trouve entre tous les Edits, Declarations,

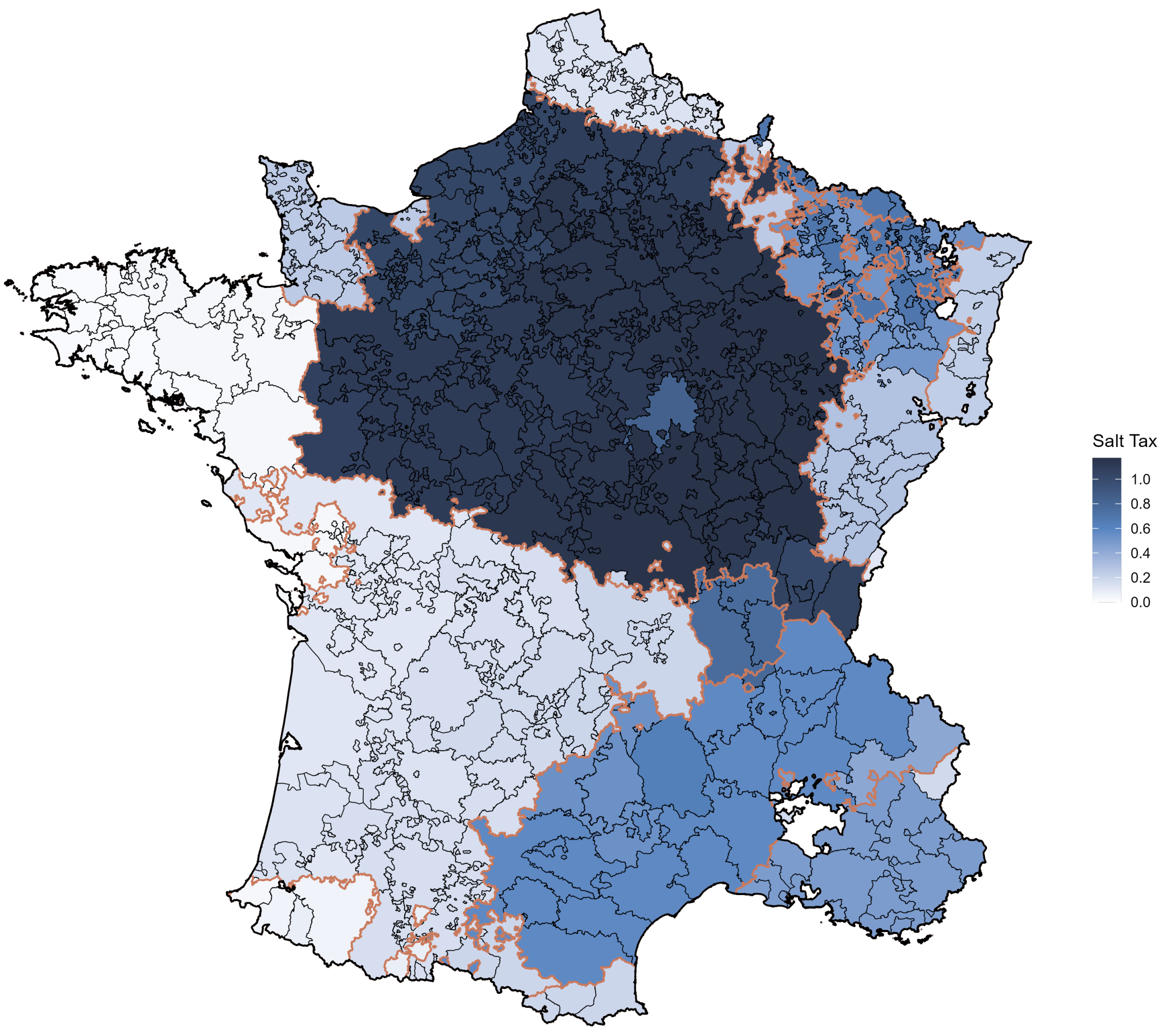
Source: Ordonnances de Louis XIV. roy de France et de Navarre, sur le fait des gabelles & des aydes. Données à S. Germain en Laye aux mois de mai & juin 1680. Registrées en la Cour des Aydes les 11. mai & 21. juin 1680. National Library of France, BnF.

FIGURE B3 – MAP BAILLIAGES



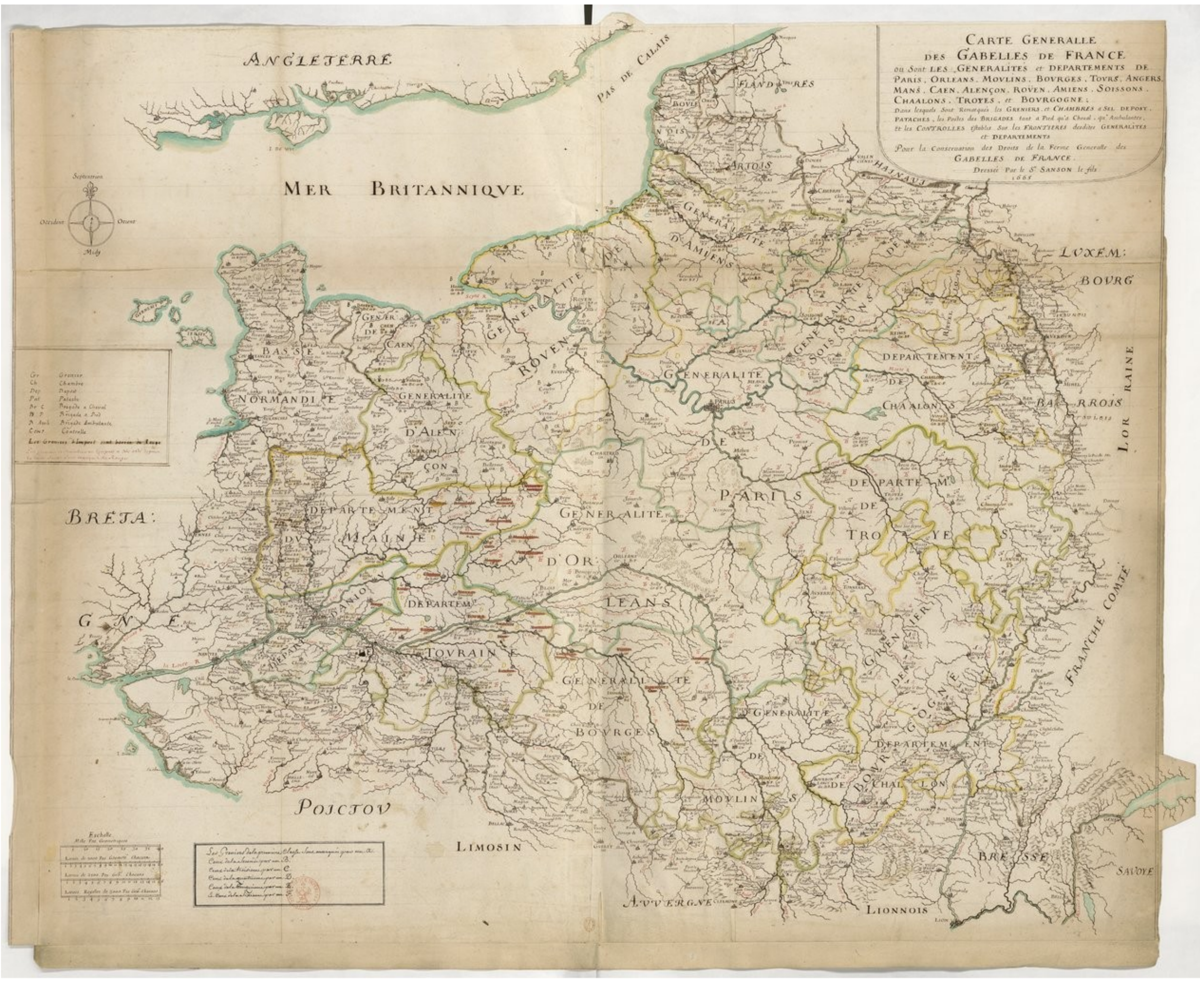
Source: Gay et al. (2024).

FIGURE B4 – SALT TAX AT *bailliage* LEVEL



Notes: The figure plots the salt tax, expressed in pounds per liter, at the *bailliage* level, together with the salt tax border highlighted in orange.

FIGURE B5 – SANSON'S (1665) *Atlas des Gabelles*



Source: National Library of France, BnF.

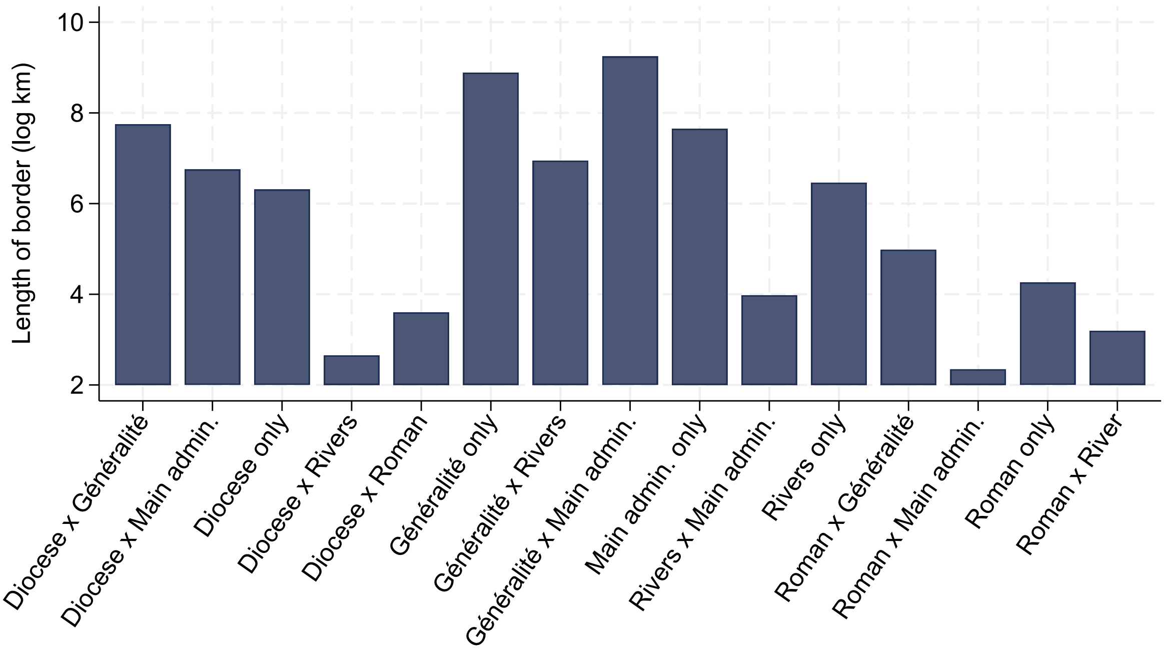
B.2 Origin of borders

Border segment classification and origin attribution. To analyze the origins of the salt tax border, we divide it into 27,156 segments, each measuring 1 km in length. For each segment, we determine an origin type based on spatial overlap with predefined historical and geographical boundaries. Specifically, we classify a salt tax border segment as originating from a given source if it follows the boundary of that source (with a 1km margin of error). The margin of error accounts for potential discrepancies arising from variations in geo-referencing techniques across different sources.

The possible origin types include: (i) rivers, (ii) diocese borders (circa AD 1000), (iii) Roman borders (circa AD 400), (iv) jurisdictions as defined in Gay et al. (2024), and (v) généralité boundaries, which were key fiscal administrative borders under the Ancien Régime. Additionally, we consider all possible intersections of these types. A cross-product classification is assigned when a salt tax border segment simultaneously aligns with multiple historical boundaries, e.g., a case where it coincides with both a river and a diocese border in AD 1000.

Descriptive statistics on border origins. Figure A12 presents a map displaying all 27,156 border segments, with distinct colors assigned to each of the 15 possible origin types. Figure B6 reports the (log) sum of the total number of kilometers attributed to each origin type. The results indicate substantial heterogeneity in the origins of the salt tax border, suggesting that no single historical factor overwhelmingly determines the border placement. To further assess the robustness of our findings, Figure A15 replicates our main analysis while systematically excluding, in turn, all border segments associated with a particular origin type. The consistency of our results across these specifications reinforces the conclusion that our main findings are not driven by any specific border origin.

FIGURE B6 – DECOMPOSITION BORDER SEGMENTS BY ORIGIN



Notes: The figure presents the (log) sum of the total number of kilometers for each origin type. The initial unit of observation is each of the 27,156 border segments of 1 km length constituting the salt tax borders.