The Political Costs of Taxation

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Abstract

We examine the political costs of taxation in early modern France. We focus on efforts to enforce the salt tax, the rate of which varied across regions. Using a spatial difference-in-discontinuities design, we compare municipalities just inside the high-tax region with those just outside, before and after a reform aimed at curbing illicit salt smuggling. We find that tax enforcement led to a tenfold increase in conflicts between taxpayers and the state in municipalities in the high-tax region. This effect persists until the French Revolution, consistent with the idea that salt tax enforcement had significant political costs. Finally, we document that the likelihood of conflict increases with tax differences between neighboring regions, which we use to derive an upper bound on the political costs of increased tax enforcement in this historical period.

KEYWORDS: Taxation, Protest, Conflict

JEL CODES: D74, H26, H39, K42, N43

1   Introduction

From the Boston Tea Party to the Yellow Vests, tax protests illustrate that increasing fiscal capacity often poses significant political challenges (Madestam et al., 2013; Keen et al., 2022; Boyer et al., 2024). Political acceptance of taxation is crucial as establishing an effective tax collection system is known to be "the hallmark of the state" and essential for economic performance and political stability (Besley et al., 2011; Dincecco and Katz, 2016). However, despite the recurrent and enduring nature of tax revolts (Burg, 2003), the evidence on the political consequences of increased tax enforcement remains incomplete.

The existing literature in political economy and economic history has focused mainly on the organizational aspects of building fiscal capacity (Besley et al., 2013; Dincecco, 2015; Cantoni et al., 2024), without providing a dedicated analysis of the associated political costs. Thus, while tax revenue maximization is known to be constrained by administrative costs, lack of technology or low compliance (Keen et al., 2017; Dzansi et al., 2022; Bergeron et al., 2024), the possibility of a political backlash against taxes imposing a similar ceiling on fiscal capacity has received less attention. Moreover, we know little about the persistence of these political consequences and their impact on government revenue.

Isolating the causal effect of tax enforcement on political attitudes is difficult for at least three reasons. First, tax enforcement efforts are usually nation-wide, making it difficult to find counterfactual or comparable sub-populations differently affected by a reform. Second, outside the realm of representative democracy with regular elections, support for the government is not easily measurable. Moreover, it is determined by a variety of factors: when support for the government varies, it is difficult to identify how much of the change can be attributed to a change in the tax environment, and even more so for a long time period. Third, since political backlash against taxes has no clear monetary value, quantifying its impact on government revenue is not straightforward.

This paper addresses this gap in the literature and these three identification challenges.

To overcome the first obstacle to causal inference, we focus on the salt tax and efforts to curb illicit salt smuggling in early modern France (Cochois, 1902; Pasquier, 1978; Sands et al., 1949; Hocquet, 1987). The salt tax rates sharply differed across French regions, creating geographic discontinuities in tax rates, differential smuggling incentives and exposure to enforcement effort.[1] To recover the exact position of internal fiscal borders, we rely on a novel, parish-level map of the salt tax regions in 1665 that we digitize in a companion paper (Davoine et al., 2024). These granular data allows us to assign each municipality to the high-tax region or to one of the low-tax regions. Yet, because the salt tax regions coincide with other jurisdictions, a simple spatial RD design would not allow us to disentangle the effect of the salt tax system on our outcomes. We thus introduce time-variation studying a reform that increased the enforcement of the salt tax around 1740. Using a difference-in-discontinuities design, we are thus able to compare municipalities on both sides of the border, before and after the tax enforcement reform. Two features are crucial to assert the validity of this design. First, the reform affected the high tax and

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[1]Giommoni and Loumeau (2022) use this discontinuity to study the long-run effect of taxation on economic development. Differently from them, we study short-term political outcomes, recovering the exact location of the salt tax border in 1665. Moreover, we exploit time variation to alleviate the concerns associated with cross-sectional RD designs.

low tax regions differently. It consisted in the creation of special courts in the high-tax region designed specifically to prosecute smugglers (Liander, 1981; Kwass, 2014; Legay, 2019; Evrard, 2024).[2] Although smugglers could be arrested anywhere and by definition operated across both sides of the fiscal border, enforcement efforts were concentrated in the high-tax region, close to the courts, where smuggling was profitable and easier to detect. Second, we are unaware of a contemporaneous policy that would have affected the high-tax region and low-tax regions differently.

To circumvent the challenges associated with state support measurement during this period, we rely on social conflict data (Chambru and Maneuvrier-Hervieu, 2024). Importantly, the database classifies each conflict by type, allowing us to focus the analysis on the conflicts related to salt smuggling. This selection ensures that the political action directed toward the state is a direct consequence of the tax enforcement reform we study. In particular, we focus on conflicts that show popular opposition to the state to proxy for political state support. In a non-democratic context without elections, this measure should reflect popular disagreement with a policy and capture the willingness to punish the government responsible for its implementation.[3] Thanks to the long time coverage of the conflict data, we are able to construct a panel dataset at the decade-municipality level from 1690 to 1850. For each municipality, we observe the salt tax region in which it lies, its distance to the salt tax border, and the occurrence of different types of conflict by decade. Additionally, to validate the analysis of these lasting effects, we use another measure of political support for the state on the eve of the Revolution: the content of popular grievances sent to the King Louis XVI in 1789 (Shapiro et al., 1998).

Lastly, to quantify the value of these political costs, we combine our empirical estimates with a methodology of the time developed by Jacques Necker (1784).[4] Necker, the finance minister of Louis XVI in the years preceding the French Revolution played a leading role in this turbulent period, which began as a fiscal crisis. In his treatise, he estimates how government revenue would be affected by a change in the salt tax rate of the high-tax region, and accordingly proposes a lower tax rate to reduce the cost of enforcement. Drawing on his methodology and our empirical results, we estimate the impact of a reform that would eliminate all political costs associated with the salt tax on government revenue. Based on revealed preferences, we infer from the fact that our proposed reform was not implemented that the government losses associated were higher than the political costs induced by the established tax system. This reasoning allows us to derive an upper bound of the political costs associated with the salt tax system based on considerations specific to this historical era.

The paper proceeds in four parts and yields four results.

First, using a spatial difference-in-discontinuities design, we investigate the impact of an enforcement reform on smuggling-related conflict by exploiting the discontinuous change in exposure to the reform at the salt tax border. We find causal evidence for political costs of taxation in the French early modern period. The reform aimed at curbing salt smuggling leads to a tenfold increase in conflicts between smugglers and the state, spilling over to the local population which take part of the conflicts. We

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[2] The *Commissions du Conseil.*

[3] In democratic contexts, political responses to tax policies have more commonly been assessed by the reelection rates of incumbents (Casaburi et al., 2016).

[4] *De l'Administration des finances de la France.*

emphasize the increase in the conflicts in which the local population participates, which represent a bigger threat for state legitimacy. We find no such effects when looking at conflicts not related to salt smuggling. Conversely, we find that the effect is larger in locations closer to the courts created by the reform.

Next, using a fully dynamic specification and grievances data, we document a persistent effect of these political costs, suggesting that unpopular tax enforcement measures may have contributed to popular resentment against the state up to the French Revolution. A descriptive analysis of the list of grievances sent to Louis XVI in 1789 shows that the salt tax was one of the most cited items. The population in the high-tax region was also more likely to express concern about the salt tax than the population in the low-tax region.

Then, we explore the heterogeneity of the effect by border segment, as price differences between adjacent regions varied along the salt tax border. We show that the effect is increasing in the price differences between adjacent regions. This result confirms that the enforcement reform was particularly politically damaging in places where the incentives for smuggling were highest, and hence where the local population suffered the most from the reform, triggering their resentment towards the state. Conversely, in areas that were not affected by the reform – the border segments where supposedly no smuggling was taking place because the differences in prices were minimal – no effect is observed. Additionally, this monotonic and convex relationship allows us to pinpoint the highest conflict-free price of the high-tax region, which is 32% lower than the status quo rate.

Lastly, following Necker's methodology, we study how government revenue would have been impacted if the high-tax region price was instead set to the highest conflict-free tax rate derived from our empirical analysis. We find that this conflict-free tax rate would have resulted in a decrease in the salt tax government revenue of 7%, which is less consequential than Necker's proposal. The French monarchy, instead of maintaining these high differences in prices leading to smuggling and conflicts, could have implemented the highest conflict-free price in the high-tax region and bear the associated loss in revenues. No change in the status quo over the period suggests that the political costs of the existing salt tax rate were less detrimental than the revenue loss from the conflict-free tax rate. For this reason, we interpret the loss in revenues associated with the conflict-free tax rate as an upper bound to the political cost of the tax enforcement reform.

Contribution to the literature   The main contribution of this paper is to empirically document the political costs of taxation. The idea of ceilings on taxation due to behavioral responses was popularized by the well-known Laffer curve (Laffer, 2004). The public finance literature has subsequently examined several factors limiting the government's ability to raise revenue (Besley et al., 2009; Keen et al., 2017; Dzansi et al., 2022; Bergeron et al., 2024). Yet, little is known about the political constraints impeding the development of fiscal capacity. In fact, the papers on the topic (Casaburi et al., 2016; Weigel, 2020; Chiovelli et al., 2024) highlight political benefits of increases in tax enforcement rather than costs. To our knowledge, Krause (2020) is the only other paper documenting increased political violence after an increase in tax enforcement. However, our approach differs in that we study a large-scale and long-lasting

policy rather than an RCT.

Second, we draw on the extensive literature on state capacity that has developed since the seminal work of (Besley et al., 2009). While external conflicts are known to accelerate state building, only a few theoretical works have included internal conflicts in the analysis of state expansion (Besley et al., 2010; Gennaioli et al., 2015). To our knowledge, Henn et al. (2024) is the only work that has taken this idea to the data, showing that state-building ambitions interfere with rebels taxation in the DR Congo. Focusing instead on the early modern state context, our paper similarly empirically documents that state capacity building entails domestic tensions. Thanks to a unique historical tax design, the scope and granularity of our data, we identify the immediate and persistent effects of an unstudied tax enforcement reform on popular conflicts against the state.

In addition, this paper contributes to French economic history. Recent applied research has mainly focused on the French Revolution and its consequences (Acemoglu et al., 2011; Chambru, Henry, et al., 2021; Gay, Paula Eugenia Gobbi, et al., 2023). A contemporary, close paper to ours is Giommoni, Loumeau, and Tabellini (2024), who examine how salt taxation shaped support for the Revolution, using discontinuities in the tax rates and economic shocks. Instead, we focus on the impact of a new legal institution that strengthened tax enforcement throughout the century before the Revolution, which is crucial to understand the pre-revolutionary French fiscal context. We also complement the history of French public finance (Guéry, 1978; Riley, 1987; Bonney, 1999; Touzery, 2024) and shed light on the neglected issue of salt smuggling. We empirically estimate a salt price in the high-tax region that would have prevented smuggling-related conflicts and derive the effect on government revenues through a methodology rooted in contemporaneous considerations (Necker, 1784).

Finally, we aim to contribute to current policy debates on tax competition. Although our setting is historical, it has much in common with contemporary tax systems. Even today, differences in tax rates between countries or regions create opportunities for tax evasion, tax avoidance or generate aggregate welfare losses (Zucman, 2013; Fajgelbaum et al., 2019; Jakobsen et al., 2024). Our setting suggests that they may also generate social unrest. We thus provide another piece of evidence in support of recent policy calls for tax harmonization at the global and local levels.

2 Historical background

The French Old Regime Before the Revolution of 1789, the French monarchy was a typical "Old Regime" state, lacking fiscal centralization and parliamentary oversight of spending (Dincecco, 2015). State expansion was constrained by class and territorial privileges, and the growing tax burden was unevenly distributed, falling mainly on the small peasantry (Goldstone, 2011). Status-based tax privileges are known to have fostered the popular resentment against the nobility and the clergy that exploded during the Revolution (Shapiro et al., 1998). From a public finance perspective, however, territorial privileges were even more problematic because they limited government revenue for a substantial portion of the country. Taxation differed across regions because each territory had become part of France at different points in time, and each annexation treaty implied different rights and obligations (Mousnier,

1974 - 1980). These rights were successfully defended by strong local elites, especially when they managed to retain their provincial parliaments (Gelabert, 1995).[5]

The salt tax A major driver of fiscal fragmentation was taxation on salt, which was a widespread tax among early modern states.[6] In France, the salt tax was established in the 14th century[7] and then gained importance to become the most important indirect tax (Beaulieu, 1903; Pasquier, 1978; Touzery, 2024). It represented hence a significant share of government revenue, peaking at about 20% of state revenues in the 17th century and stabilized at about 15% in the 18th century (Appendix Figure A.2.1). In fact, the salt tax constituted an efficient way to raise revenue. First, this tax was not distortionary. Demand for salt was highly inelastic since there were few alternative technologies for food preservation. Second, the state could easily monopolize salt production and distribution.[8] Salt can only be produced in specific locations and it is easy to transport and store. Back-of-the-envelope calculations indicate that the salt tax represented about 5% of regular peasants' household income per year (Davoine et al., 2024). This is analogous to the share of the budget Americans dedicate to gas today (3.2%). Just like aversion to the salt tax, resentment against gas taxes is widespread, and even led to the year-long Yellow Vests protests in France in 2018-2019.

The salt tax regions Different regional salt tax rates, levied on salt purchases, implied that the final price of salt varied substantially across regions. It varied from 1.5 livre tournois (£t) per *minot* in parts of Brittany, which was exempted from salt taxes, to more than 60 £t per *minot* around Paris in 1781 (Appendix Figure A.2.2).[9] The French territory was organized in six salt tax regions as shown in Figure1.[10] The large black central region, known as *Grandes Gabelles*, in which the salt tax was the highest, generated about 80% of the salt tax government revenue in 1784 (Necker, 1784). The other regions are colored in a grey scale: from the *Petites Gabelles* region that had the second-highest salt tax rate to the *Provinces Franches* exempted from the salt tax.

In the rest of the paper we refer to the *Grandes Gabelles* as the high-tax region, and to the other five regions as the low-tax regions. We focus the analysis on the border between this high-tax region and the low-tax regions highlighted in Figure 1. Different colors along the border reflect differences in prices across adjacent regions. The dark red segments indicate the parts of the border in which the price difference was the highest.

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[5]On the eve of the Revolution, there were six large provinces that had retained their provincial estates (*pays d'états*). They accounted for one-third of the population but only 20 percent of state revenues. (Enguehard, 2020)

[6]Historical polities that implemented a salt tax include the Republic of Venice, Spain, Poland, Russia, the Ottoman Empire, various states within the Holy Roman Empire, India under British rule, and China (Hocquet, 1987).

[7]King Louis IX first established a temporary salt tax in France in 1290. Yet, the salt tax was made permanent by King Philippe VI de Valois in 1341.

[8]In early modern France, the state had the monopoly over the production of the salt mines, while the production of sea salt was organized by private actors. However, the state also had the monopoly over salt sales in the high-tax region. In this region, inhabitants could only buy salt in specific salt shops, that were furnished directly by the state (Touzery, 2024). In Davoine et al. (2024), we provide a detailed account of the salt tax and its local variations.

[9]The minot was a French unit of dry volume approximately equal to 48kg of salt (Touzery, 2024). For most of the 18th century (1726-1785), the gold content of the livre tournois was stabilized at 0.312g (Wailly, 1857). With a price of pure gold of \$85/g in September 2024, this gives a range of salt prices going from \$0.83/kg in Southern Brittany – close to contemporary values – to \$33.54/kg in the Paris region (the maximum was \$34.23/kg in Burgundy).

[10]Although the roots of the tax salt system can be traced back to the Middle Ages, the regional organization was codified in 1680 by a royal decree (*Ordonnance des Gabelles* 1680).
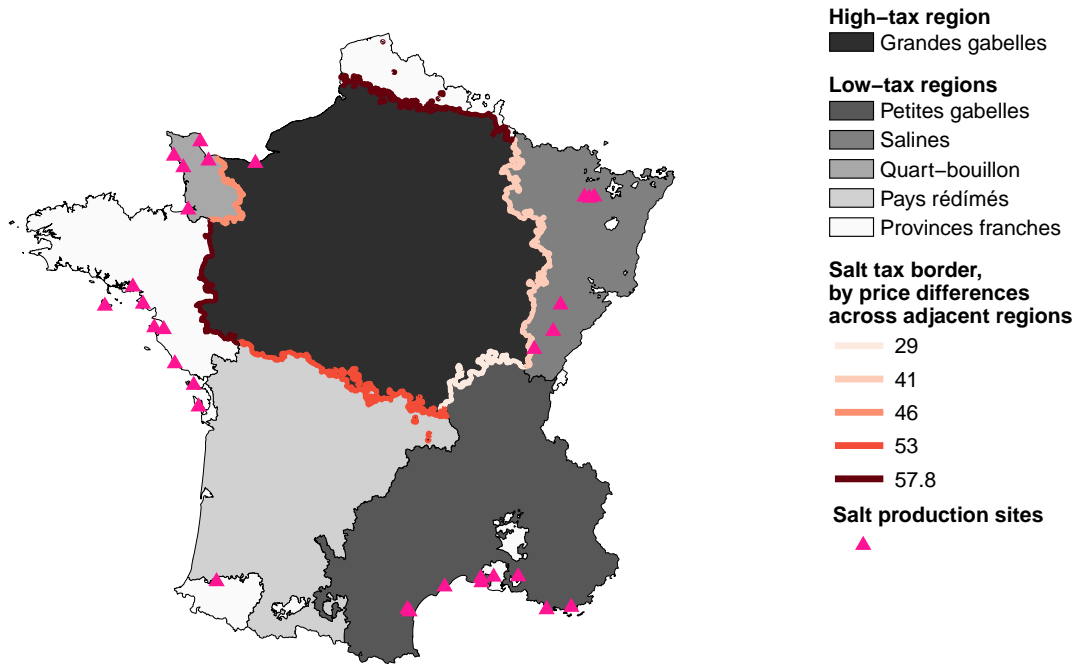
Figure 1: Salt tax regions

Notes. This map shows the main salt tax regions in France, as stabilized between 1680 (*Ordonnance des Gabelles* 1680) and 1789 (the French Revolution). The salt tax border we study is highlighted. Source: Davoine et al. (2024).

The smuggling of salt　The large differences in price across adjacent regions were generating significant smuggling activity (Durand, 1974; Huvet-Martinet, 1975; Moulis, 2013). A part of the population specialized in this illicit trade. The salt smugglers bought large salt quantities in low-tax regions to bring them back and sell them in the high-tax region at a cheaper price than the one administered locally.[11] Although the intensity of smuggling activities cannot be observed, data from historical archives document that the number of conflicts related to the smuggling of salt increased over the 18th century, and far exceeded the number of social conflicts and protests linked to the rest of indirect taxation (Appendix Figure A.2.9). Because of widespread smuggling, harmonization of the salt tax was a top priority for high-level administrators such as the Marquis of Vauban (Le Prestre de Vauban, 1707) and Jacques Necker (Necker, 1784). However, the experience of past revolts, established legal privileges and the bargaining power of local elites made such reform politically infeasible.[12] Thus, the regional differences in the salt tax rates remained in place until the tax itself was repealed during the French Revolution in 1790 (Touzery, 2024).

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[11]Historical estimates suggest that about 80% of the salt acquired in Brittany was smuggled into the neighboring highly taxed provinces – and only 10% of this traffic was intercepted by tax agents (Evrard, 2024).

[12]These include the revolt of the *pitauds* in 1542-1549, following which the southwestern provinces were able to definitively redeem their salt tax duty (pays rédimés), and the revolt of the *papier timbré* in Brittany in 1675, partly motivated by fear of the imposition of a salt tax (Bercé, 1991).

The special courts The royal decree codifying the administration of the salt tax in 1680 (*Ordonnance des Gabelles* 1680) already provided a legal framework to severely punish salt smuggling, including human branding, dispatch to the galleys, and sentences of death. However, until the mid-18th century, these penalties were not consistently applied by the magistrates of the competent courts.[13] Sentences were often successfully appealed by powerful local elites (Legay, 2019), which limited the *de facto* power of the central state in enforcing the salt tax.

To remedy the deficient enforcement power, the central State transferred the authority to prosecute salt smugglers to special courts, the *Commissions du Conseil*. Specifically, three of these courts were created: Valence in 1733, with jurisdiction over the salt tax border between two low-tax region; Reims in 1740, with jurisdiction over the salt tax border between the high-tax region and the northern low-tax region; and Saumur in 1742, with jurisdiction over the salt tax border between the high-tax region and the western low-tax region. These two latter courts are strategically located near the segment borders in which the price difference across adjacent borders was the highest, as shown on Appendix Figure A.2.10. In the rest of the paper, we focus on the creation of these two courts as data availability limits our ability to study the impact of the first one.[14] Rather than regularizing the enforcement of the salt tax, these courts quickly became notorious for their arbitrary methods and bias.[15]

The special courts were characterized by four main features. First, the courts replaced local judges with judges appointed by the central government. This was a key factor in increasing enforcement, as local judges, tied to local elites, were reluctant to apply the tough anti-smuggling law. Instead, judges appointed by the central state were removable, and well paid.[16] Second, the reform improved the efficiency of the judicial system. It expedited court proceedings and expanded the powers of salt tax officials. Smuggling trials could be completed within 24 hours, compared to the very lengthy trials that had previously taken place. Furthermore, salt tax collectors were given the right to arrest people directly in their homes (Nicolas, 2002). Historical evidence suggests that more than 30,000 smugglers were tried by these courts between their creation in 1733 and the French Revolution in 1789, making smuggling quantitatively the most important crime to be tried during this period. In fact, the courts tried more smugglers than any other criminals.[17][18] Third, these courts applied the law more strictly. After the reform, the rate of death or galley sentences handed down by the special courts was at least twice that of the ordinary courts (Kwass, 2014).[19] Fourth, the reform changed the incentives of field agents to engage against smuggling activities: they would receive bonuses if a smuggler they arrested was convicted. This was also an incentive to bias the testimonies against the suspects – one of the new features of the reform

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[13]Fraud and smuggling were prosecuted in specialized courts: issues related to salt were judged by the salt *greniers* in the first instance, and by the *cours des aides* in appeal (Evrard, 2024).

[14]The archives of the special court of Valence burned down in 1871 (Montenach et al., 2023). We are thus unable to study its impact on the border between the southwest and southeast low-tax regions.

[15]"The Commission of Valence [...] was the most fearsome court in all of France. Smugglers cursed its very name. Magistrates in venerable superior courts condemned it as an oppressive "tribunal of blood." Voltaire ranked it with the Black Death and the Inquisition as one of the worst plagues ever to strike humanity." (Kwass, 2014)

[16]See Lamoignon de Malesherbes (1779), p. 156, and Kwass (2014), p. 303.

[17]Kwass (ibid.) compares the "tens of thousands" of smugglers who passed through the judiciary system (including the lower courts) at the time with the 12,500 cases heard by the prevostials courts, which tried all kinds of crimes (ibid.).

[18]As a result, one third of the convicts in the kingdom's forced labor prisons (*bagnes*) were smugglers on the eve of the Revolution (Durand, 1971).

[19]Moreover, these death sentences included an unprecedented proportion of tortures on the wheel: 40 per cent, compared with a standard of 25 per cent in other courts (Kwass, 2014).
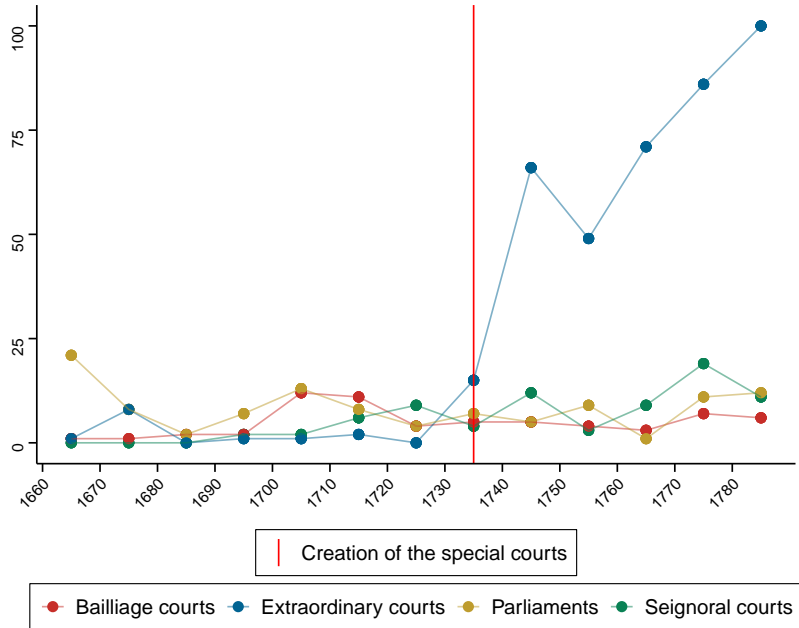
Figure 2: Trends in the number of smuggling trials

Notes. This figure shows the decennial number of trials following conflicts related to smuggling, by type of court, for the subsample of conflicts in our data that present such information ($N = 642$). The special courts are part of the "extraordinary courts" type. The red line marks the creation of the special courts, lasting from 1733 to 1742. Data source: Gay and Hamon (2024), originally Nicolas (2002).

was that two testimonies from officers were now sufficient to convict a smuggler. Finally, the new courts made it possible to prosecute tax enforcement agents who were themselves involved in smuggling - they contributed significantly to it - whereas previously they had only incurred disciplinary sanctions at best (Evrard, 2024).

The reform had therefore a significant impact on the number of trials and the distribution of sentences. Figure 2 shows that the number of smuggling trials in the broad category of non-ordinary courts increased significantly after its implementation in the decade 1730-1740, while there is no similar increase in the other courts. As we show in Appendix Figure A.2.11, this translated into a sharp increase in galley sentences and a smaller and later increase in death sentences and lighter penalties.

The creation of these courts aligns well with the "fiscal-military" tax paradigm. As shown on Appendix Figure A.2.12, special courts were created at the onset of wars, when state expenditures were expected to rise.[20] Unfortunately, the lack of counterfactuals and the complexity of the overall tax system make it difficult to assess the impact of special courts on tax revenue. In Appendix Section C, we propose a rationale for the tax revenue trends.

3 Data

We collect data from several historical sources.

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[20]The court of Valence was created in 1733, at the onset of the War of the Polish Succession. The courts of Reims and Saumur were respectively created in 1740 and 1742, at the onset of the War of the Austrian Succession.

Salt tax border   We rely on historical maps from 1665 to get the precise geographic location of the salt tax border between the high-tax and low-tax regions. In a companion paper by Davoine et al. (2024), we detail how we digitized the *Atlas des Gabelles* (Sanson, 1665), a collection of maps of the high-tax region, showing which parishes were on which side of the tax border.[21] The resulting polygon of the salt tax border is highlighted in Figure 1. Additionally, to draw borders separating the low-tax regions, we rely on a map from 1781 held at the Bibliothèque nationale de France (Appendix Figure A.2.2).[22]

Salt prices   Relying on this 1781 map (Appendix Figure A.2.2), we use the information on salt prices in French provinces to rank each region according to its average price of salt. Importantly, the differences in prices reflect mainly the differences in salt tax rates across regions.[23] Because of this, we use the notion of price and tax differences interchangeably in the rest of the paper.

Critically, this information on prices also allows us to classify segments by the price differences between adjacent regions. We can thus distinguish border segments in which the price differences are high (red parts of salt tax border in Figure 1), creating smuggling opportunities, from border segments in which the differences in prices are small, limiting the gain from engaging in smuggling (white parts of salt tax border in Figure 1). Although the information on prices we use is from 1781, there were no significant changes in relative prices across regions during the preceding period.[24]

Conflicts   We use data on conflicts, our main outcome variable, collected by historians (Nicolas, 2002) and gathered in the HiSCoD database (Chambru and Maneuvrier-Hervieu, 2024). This source provides a list and location of conflicts that occurred in France from the Middle Ages to the end of the 19th century. A conflict is defined as "any event involving a group of at least three individuals belonging to different families and which either perpetuates violence or threatens violence against one or more members of a different group or against representatives of political, religious, and economic power." A wide range of primary documents was collected to consolidate this database. Information on medieval and early modern social conflict is found in chronicles, annals, journals, judicial records, and diaries. Information from the 18th and 19th centuries is retrieved from administrative correspondence, judicial records, municipal council records, private papers, and/or local newspapers.

The information in the dataset includes a classification and a textual description of each conflict. This unique feature allows us to: (i) isolate conflicts related to smuggling,[25] ensuring that these events are directly related to the reform we study and (ii) distinguish conflicts involving only smugglers and

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[21]We update the Atlas with the minor administrative reorganizations introduced by the *Ordonnance des Gabelles* (1680). We can find no evidence of any subsequent modification to the border.

[22]There is little information on the origin of this map, but it was most likely part of a survey launched by the then finance minister, Jacques Necker (Touzery, 2024). The borders were digitized by Cédric Chambru using historical constituencies (subdélégations) – we thank him for sharing this shapefile.

[23]Salt is very close to being an homogeneous good. Its raw price was almost the same everywhere. In the high-tax region, only 3% of the final price of salt was reflecting production costs. Instead, the tax constituted 84% of the final price. The last 13% reflects transport costs from production sites (ibid.). Although transport costs were increasing with distance from production sites, they are constant across municipalities around the salt tax border.

[24]Prices were fixed in 1680 by a royal decree (*Ordonnance des Gabelles* 1680), and increased from 1760 to 1781 in particular (see Appendix Figure A.2.13). Yet, the ordering of regions by prices remained the same. For example, we know that the average price per minot in the high-tax region was around £t40 in 1665 (Sanson, 1665) and had increased to £t62 in 1784 (Necker, 1784). It thus remained by far the region with the highest price during the whole century.

[25]These conflicts are classified in the original data as "Type 204 : Affrontement lié à la contrebande du sel et du tabac." We discard conflicts related to tobacco smuggling by removing the conflicts mentioning the word "tobacco" in their description.

the state from those involving the local population. The conflicts between the smugglers and law enforcement are either triggered by the tax enforcement agents[26], attempting to arrest the smugglers who are resisting, or by smugglers, directly attacking salt warehouses or tax enforcement agents. The other conflict type involves the local population which either attempts to rescue smugglers or to retaliate against tax collectors after an arrest.[27] While we argue that both are consequences of the reform, we emphasize the political consequences of the latter type of conflict. Confrontations between smugglers and tax enforcement agents spill over to the local population, which also engages in conflicts against the state. Moreover, the primary sources reporting the conflicts we focus on are judicial records from different archival sources (see Appendix Table A.1.1 for more details).

Figure 3 shows the locations of these conflicts recorded from 1661 to 1789, yielding three facts. First, the conflicts related to smuggling are concentrated along the salt tax border, which is where we expect them to be. Second, smuggling-related conflict disproportionately take place on the side of the high-tax region. We show in this paper that this is mainly driven by an increase in tax enforcement affecting mostly the high-tax region from the mid-18th century. Yet, we still observe some conflicts in the low-tax regions as anti-smuggling brigades could act on both sides of the border to arrest smugglers, in the case of a warehouse attack for instance. Third, the concentration of conflicts is even higher in the border segments where the price difference between adjacent regions are the highest (red parts of the salt tax border), consistent with more profitable arbitrage opportunities for smugglers and larger gains from this illicit trade for taxpayers in the high tax region. Figure 4 decomposes the map between the pre- and post-reform period. Smuggling-related conflicts were rare and scattered through the territory before the reform. We observe that the three patterns detailed above emerged mainly in the post-reform period.

To provide an independent confirmation of the patterns we observe in the conflict data, we digitize an alternative dataset on criminal cases against salt smugglers from Huvet-Martinet (1975). Those records provide the number of prosecutions for salt smuggling by parish of arrest over the period 1764-1789, for one of the competent courts.[28] We find a very similar spatial distribution of events concentrated next to the fiscal border, and more in the high tax region (see Appendix Figure A.2.14).

Law enforcement We examine the presence of law enforcement with the *brigades*, the anti-fraud police units of the Ferme.[29] We take advantage of the only two available cross sections of their location, which are for the beginning and the end of our period of study, both at the municipality level. We collect the location of the brigades in 1665 from the historical maps of the high tax region in Sanson (1665) and rely on the lists by Touzery (2024) giving the location of the brigades in the whole of France around 1780.

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[26] As with most indirect taxes, the collection of the salt tax was outsourced through the system of tax farming (Johnson et al., 2014). Although the farm (*Ferme générale*) was a separate entity from the state, their interests in combating fraud were aligned. Fraud meant lower profits for the tax farmers, which reduced the value of the tax lease for the state. In this paper, we refer to tax enforcement agents as either the tax collectors of the farm, the farm's private tax enforcement police (*brigades*), or the law enforcement forces of the state (*Maréchaussée*).

[27] A typical example involving the local population supporting smugglers is given by Liander (1981): in 1753, Marie-Anne Heluin, a woman from Vignacourt next to the northern tax border, is caught with smuggled salt by employees of the Ferme Générale. Afterward, a crowd of 400 armed with pitchforks, among which 75 percent of women, assembles to throw stones at the employees, triggering rebellion in all neighboring villages.

[28] The *commission* de Saumur. See the Historical Background section.

[29] At its peak in the years before the Revolution, the Ferme employed about 50,000 agents, half of them in this anti-fraud police (Touzery, 2024). The monarchy's police units (maréchaussée) intervened only as a last resort, in the event of widespread revolt.
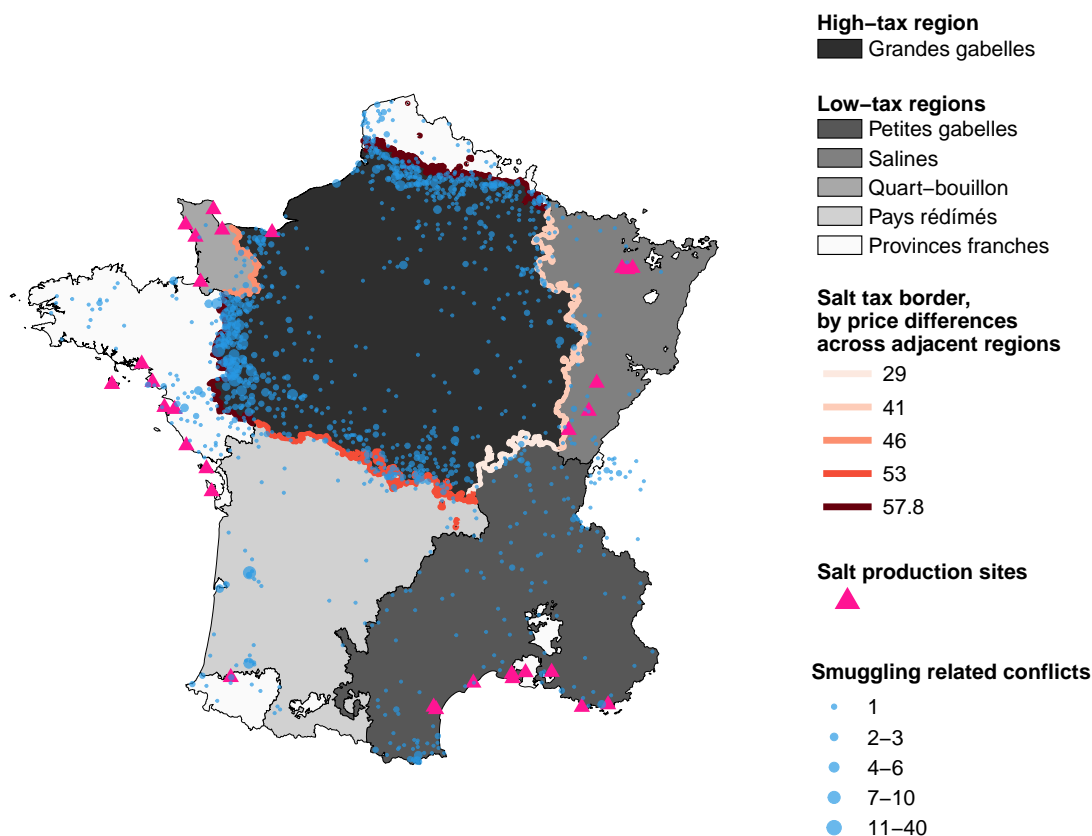
Figure 3: Conflicts related to smuggling

Notes. This map overlays in Figure 1 the number of conflicts related to salt smuggling between 1661 and 1789. Source: same as in Figure 1 and Chambru and Maneuvrier-Hervieu (2024) for conflicts.
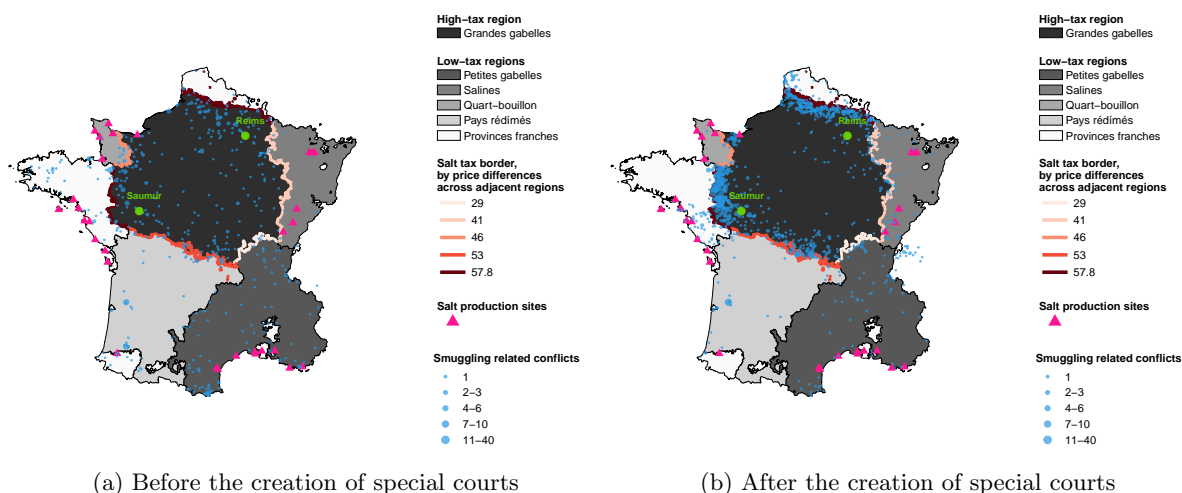

(a) Before the creation of special courts

(b) After the creation of special courts

Figure 4: Conflicts related to smuggling before and after the creation of special courts

Notes. These maps decompose Figure 3 into the pre and post reform period. It shows the number of conflicts related to salt smuggling between 1660 and 1740 and 1740 and 1789 respectively. Source: same as in Figure 1 and Chambru and Maneuvrier-Hervieu (2024) for conflicts.

As shown in Appendix Figure A.2.15, the brigades are strategically located next to the fiscal borders, external borders and coasts. In particular, the brigades close to the internal fiscal border are located within the high tax region, where illegal behavior was easier to detect (carrying an excessive amount of

salt outside of the designated days for legal purchase was enough).

Grievance lists   We use data on the list of grievances established at the request of Louis XVI in 1789 to document the persistent effect of the salt tax up to the Revolution. The content of the grievances of 687 representative parishes[30] has been classified by Shapiro et al. (1998) and made available by Degrave (2023).[31] Among different motives of complaint, we investigate the frequency of the mentions of the salt tax and compare it to other types of tax in place at the time. Appendix Table A.1.2 details the categories we investigate for each tax type. Moreover, we investigate whether tax grievances were more frequent in the high-tax region. Appendix Figure A.2.16 presents the spatial distribution of the grievances related to the salt tax.

4   Empirical strategy

To estimate the effect of increased tax enforcement on conflict, we use a spatial difference-in-discontinuities approach. We compare municipalities 50 km to the left and 50 km to the right of the salt tax border as defined by Sanson (1665), before and after the reform. The municipalities in the treatment group are comparable to the control municipalities in all observable basic characteristics before 1730 (see Appendix Table A.1.4), but differ greatly in the price at which salt can be purchased. These differences in prices have historical roots as discussed in Section 2, and are mainly driven by differences in tax rates. In the Middle Ages, some regions agreed to be annexed to the French Kingdom under the condition that they would be exempt from taxes or benefit from reduced tax rates. Thus, if we were to estimate the effect of higher tax enforcement using only a traditional regression discontinuity design, we would not be able to disentangle the effect of the salt tax border from other potential unobservable differences at the border. In fact, the salt tax border even overlaps with the borders of other contemporaneous jurisdictions in some segments. Therefore, we use longitudinal variation to disentangle these confounding borders.

Let m denote municipalities and t denote decades. We restrict our sample to municipalities within the interval $P_m \in [P_c - b, P_c + b]$, where P_c denotes the salt tax border and b denotes the chosen bandwidth. Our specification takes the following form:

$$Y_{m,t} = \alpha_m + \eta_t + \beta HighTax_1 0 - Necker_m * Post_t + \gamma Dist_m * Post_t + \delta Dist_m * HighTax_m * Post_t + \epsilon_{m,t} \quad (1)$$

where α_m denotes municipality fixed effects, η_t denotes decades fixed effects, $HighTax_m$ is a dummy variable capturing treatment status (i.e., municipalities just within the high salt tax region), $Post_t$ denotes a dummy taking value 1 after the creation of the special courts (all time periods between 1740 and 1890) and $Dist_m$ controls linearly for the distance from each municipality m to the salt tax border.[32]

The coefficient β is the diff-in-disc estimate that identifies the treatment effect of increased tax enforcement on conflict. We also run a fully dynamic specification, where we include a set of decade-

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[30]Parishes are a lower aggregation level than municipalities, but we are able to match each parish to a municipality.

[31]For more information on the sampling method, see Shapiro et al. (1998).

[32]α_m absorbs all the municipality-invariant equation terms: $\theta_0 + \beta_0 HighTax_m + \gamma_0 Dist_m + \delta_0 Dist_m * HighTax_m$ and η_t absorbs the time-invariant equation term $\theta_1 * Post_t$.

specific treatment dummies and estimate a coefficient β_t for each decade (which is equivalent to running the static equation repeatedly with treatment periods limited to one decade). The sign of β is ambiguous: it is not clear ex-ante whether tax enforcement increases or decreases political support for the state. On the one hand, it could decrease support if the state implementing the reform has low fiscal legitimacy. On the other hand, it may enhance support if taxpayers benefit from the resulting increase in government revenue. Given our context, we hypothesize the sign of β to be positive: increased tax enforcement would increase the occurrence of conflicts against the state, our proxy of decreasing support.

Our main outcome variable $Y_{m,t}$ is smuggling-related conflicts. Furthermore, we run this specification on the sub-sample of conflicts involving the local population to test for possible spillover effects. We also run a placebo test using all other conflicts in our database that are not related to smuggling. Finally, we rerun the specification in which the dependent variable is smuggling-related conflicts, controlling linearly for the log distance to the nearest court. This allows us to test for a heterogeneous effect on conflicts depending on the municipality's proximity to the court.

Lastly, we investigate the heterogeneous effects of different border segments since they imply varying price differences between adjacent regions. To do so, we run a slightly modified version of Equation 1, estimating a different treatment effect for each segment border, denoted with subscript s:

$$Y_{m,t,s} = \alpha_m + \eta_t + \beta_s HighTax_{m,s} * Post_t + \gamma Dist_{m,s} * Post_t + \zeta Dist_{m,s} * HighTax_{m,s} * Post_t + \epsilon_{m,t,s} \quad (2)$$

Our benchmark results use a 50 km bandwidth b on both sides of the border, but we show in Appendix A.1 that they are robust to multiple bandwidths b, i.e. ± 30 and ± 100. Appendix Figure A.2.17 shows a map of the treated and control municipalities included in our benchmark specification of 50 km bandwidth. Standard errors are clustered at the municipality level, following Bertrand et al. (2004) and Abadie et al. (2023).

5 Results

Immediate political costs   Table 1 reports our difference-in-discontinuities estimates of the effect of increased tax enforcement on smuggling-related conflicts from specification 1. Each column reports the estimated coefficient for different dependent variables.

The results indicate a strong and significant effect of increased tax enforcement on conflicts related to smuggling repression for high-tax municipalities, which increase by a factor of 10 after the enforcement reform. This result suggests that the increase in tax enforcement generated conflicts between smugglers and the state, mainly because smugglers resisted violently when arrested (column (1)), but also between local populations and the state as the former tried to rescue smugglers (column (2)). The effects for both these conflict types are of the same order of magnitude. This means that not only the smugglers, but also the local population actively try to hinder the state's tax enforcement. While the first result is a direct mechanical consequence of the reform, the second result captures the political consequences of the reform: beyond the smugglers response, it fueled popular resentment towards the state.

As a placebo check, we also report the result of the specification that includes all other conflicts not related to salt smuggling as the dependent variable. We find no difference in these other conflicts between

Table 1: Effect of increased tax enforcement on conflicts

	(1) Salt smuggling	(2) Local population	(3) Other conflicts	(4) Salt smuggling
HighTax * Post	0.039***	0.014***	0.002	0.262***
	(0.004)	(0.002)	(0.003)	(0.037)
HighTax * Post * Log Dist to Court				-0.019***
				(0.003)
N municipalities	12762	12762	12762	12762
Observations	127620	127620	127620	127620
Mean in 1730	0.002	0.001	0.011	0.002
R-Squared	0.20	0.14	0.60	0.20
Bandwidth	50km	50km	50km	50km
Decade-Municipality FE	✓	✓	✓	✓

Notes. The table reports difference-in-discontinuities estimates of the effect of the tax enforcement reform on conflicts. We report the estimated coefficient $\hat{\beta}$ from Equation 1. In column (1), the dependent variable is the count of smuggling-related conflicts in a given municipality in a given decade. Appendix Figure A.2.18 shows the corresponding before-after RD plots (Appendix Figure A.2.19 andA.2.20 show the same before-after RD plots for a 30km and 100km bandwidth). In column (2), the dependent variable is smuggling-related conflicts in which the local population gets involved. In column (3), the dependent variable is all other conflicts, hence not related to smuggling, included in the HiSCoD database. Lastly, column (4) is the same as column (1) controlling linearly for the log distance of the closest court. The table presents results from our benchmark specification with a 50km bandwidth. The specification includes decade-municipality fixed effects. Standard errors are clustered at the municipality level. * p < 0.10, ** p <0.05, *** p <0.01.

treated and control municipalities after the reform. This shows that, reassuringly, only smuggling-related conflicts are affected by the reform.

To more convincingly link the effect of the court reform to the observed effect on smuggling-related conflicts, column (4) reports the result from column (1), controlling linearly for the log distance to the nearest court. It strongly confirms our results: the estimated effect is one order of magnitude higher. Moreover, the coefficient associated with the interaction between the treatment effect and the log distance to the nearest court is negative, supporting the fact that our effect decreases with distance to the courts.

However, the creation of the special courts may increase the state ability to record conflicts, since most of the conflicts originate from judicial record.

Figure 5 reports the results from the fully dynamic version of the specification 1, with a selected bandwidth of 50km.[33]The vertical red line is set between 1730 and 1740, right before the court of Reims and Saumur are commissioned to crack down on salt smuggling in 1740 and 1742 respectively. All the coefficients are expressed relative to the 1730 decade.

After four decades of parallel trends without any measurable discontinuity at the salt tax border, municipalities in the high-tax region react immediately to the reform[34]: they are more likely to experience smuggling-related conflicts after the salt tax reform is implemented as shown in Panel 5a. Consistent with Table 1, we observe a similar effect for the subsample of smuggling-related conflicts involving the local population. Note that smuggling-related conflicts can only be observed until the Revolution: when the salt tax is abolished, the illicit salt trade disappears and so do the conflicts with the state. While

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[33]We check that the results hold using a bandwidth of 30km and 100km.

[34]Data for the court of Reims shows that it was active early on, with a volume of convictions per capita roughly constant over the whole period of activity of the court (see Appendix Figure A.2.23). This suggests that the treatment is of constant intensity over time.

regional differences in the salt tax were the cause of smuggling, they do not explain the rise in conflicts related to smuggling just after the reform, since the salt price differential remained stable for around 40 years (Appendix Figure A.2.13) – conversely, the increase in this differential from 1760 onwards is consistent with the increase in the effect on conflicts visible in Figure 5. Confirming the static results of Table 1, Panel 5b shows no difference in other conflicts between treated and control municipalities both before and after the reform. Finally, to visually present the results of our test for a heterogeneous response in conflicts depending on the distance to the nearest court, we decompose our sample into two groups: high-tax and low-tax municipalities above or below the median distance to the nearest court. Panel 5c, plots the coefficients for these two groups and shows how the effect differs by distance to the court. We consistently find that the treatment effect increases with the municipality's proximity to the court.
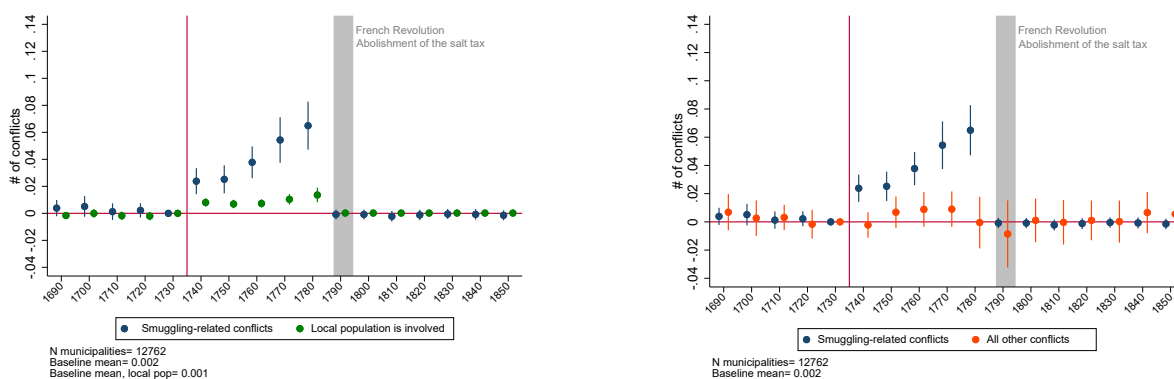
(a) Conflicts and spillovers on local population

(b) Other conflicts
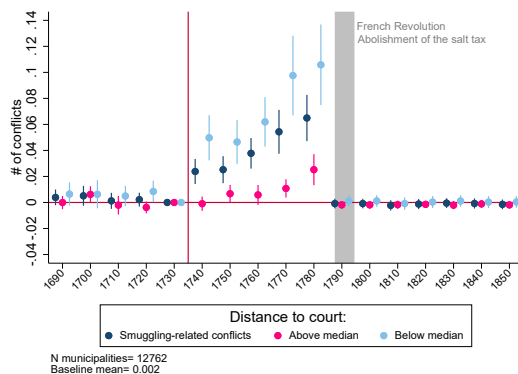
(c) Distance to court

Figure 5: Dynamic effect of increased tax enforcement on conflicts

Notes. The figure reports dynamic difference-in-discontinuities estimates of the effect of the tax enforcement reform on conflicts. We report the estimated coefficient $\hat{\beta}_t$ from Equation 1 in its fully dynamic form. Panel 5a of the figure displays the dynamic effect on all smuggling-related conflicts and the subset of those in which the local population gets involved. Panel 5b compares the effect on all smuggling-related conflicts to the effects on all other conflicts, hence not related to smuggling, included in our database. Lastly, panel 5c decomposes the effect into two groups: conflicts that are below and above the median distance to the closest court. The figure presents results from our benchmark specification with a 50km bandwidth. Appendix Figures A.2.21 and A.2.22 show that our results are robust to the use of a 30km or 100km. The specification includes decade-municipality fixed effects. Standard errors are clustered at the municipality level.

Robustness We investigate the possibility of potential reporting biases of these historical conflicts as they were recorded through different sources. In Appendix Table A.1.1, we distinguish primary archival sources representing 87 % of all smuggling-related conflicts and secondary archival sources (mainly from municipal archives) representing 8% (while the remaining 5% have missing sources). Primary archival sources can be decomposed further into two types: national archives representing 71% of all smuggling-related conflicts and departmental archives, representing 16% of all smuggling-related conflicts. These different sources could biased the analysis. Indeed, the resulting number of conflicts in some part of France could be higher than in some other parts simply because it relies on several sources. However, our empirical strategy mitigates this potential source of bias since we use municipality fixed effects. Moreover, our results are robust to a specification that only includes conflicts coming only from primary archives or even coming only from national archives as shown by Appendix Table A.1.7. These results suggest little reporting bias arising from the diversity of sources used by the Hiscod database.

Long-lasting political costs Figure 5 causally shows that the effects we observe are increasing over time and persist up to the eve of the Revolution. Figure 6 complements this result with some suggestive evidence that the salt tax was indeed extremely unpopular in 1789.

A thorough analysis of the grievance data suggests that the salt tax was a main topic of discontent up to the French Revolution, and much more so within the high-tax region. Figure 6 shows the share of grievances related to each existing tax type.[35] The salt tax was more frequently cited than any other type of tax, appearing in 3% of all grievances. Moreover, it is likely that a part of the grievances associated with the consumption taxes and the customs were also related to the salt tax.[36] Conversely, mentions of the income tax appear in less than 1.5% of the grievances and mentions of the property tax, head tax and tobacco tax appear in less than 0.5%. Second, the salt tax mentions are almost twice as frequent in the high-tax municipalities as in the low-tax ones. The same pattern emerge for consumption taxes, potentially because a share of these grievances are directly related to the salt tax in the high-tax region. Instead, the custom grievances are more frequent in the low-tax regions, potentially because there, salt was also taxed at internal borders when it circulated. Grievances about the income tax exhibits the same differences across regions than the salt tax. The income tax was also higher in some parts of the high-salt tax region, and lower in sort parts of the low-salt tax regions as shown in Appendix Figure **??**. The differences in the income tax rates across regions were however much less pronounced that the the differences in the salt prices. It can potentially explained why we observe very few conflicts related to the income tax in our database.[37] Lastly, we find much less striking differences across regions for the property tax, head tax and tobacco tax. Note that the scarcity of these data (see the map in Appendix Figure A.2.16) does not allow us to use a regression discontinuity approach, which explains why the results are presented as differences in means across regions.

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[35]Appendix Figure A.2.24 reports the different taxes that existed at the time and their respective share in government revenue.

[36]The salt tax could either be considered as a consumption tax in the high-tax region and more as a custom duty in the low-tax regions: "The salt tax alone could constitute a fourth specific category, since depending on the way it operated, it could be described as part of consumption taxes in regions in which salt was taxed for consumption, as part of custom duties where salt was taxed for circulation [...]", Touzery (2024), p.678

[37]Precisely, only 33 events in the HiSCoD database relates to either the income, property or head tax. Touzery (ibid.)
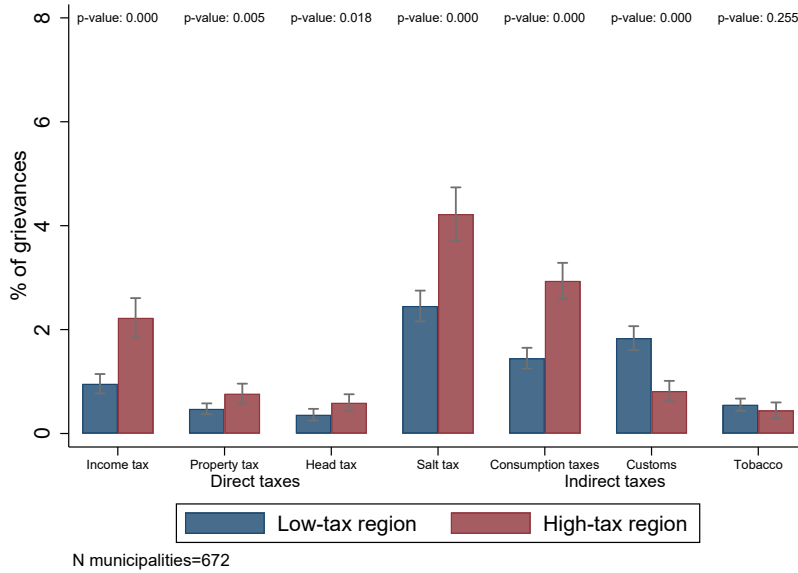
Figure 6: Frequency of grievance topics by region

Notes. This figure shows the difference in means of the share of grievances associated with all existing taxes between the high-tax and the low-tax regions. Income tax refers to the *taille*, property tax refers to the *vingtièmes*, head tax refers to the *capitation*, the salt tax refers to the *gabelle*, consumption taxed refer to the *aides*, customs refer to *traites* and the tobacco category refers to any types of taxes on the *tabac*.

Heterogeneity by border segment Figure 7 shows three results of Equation 2. First, conflicts increase with price differences between adjacent regions. In other words, at the border segments where the difference in price is the highest, the response to the reform is also the highest. This is consistent with the fact that the reform affects more the population living in the treated municipalities near these segments: they benefited most from smuggling. When the state tries to curb this illicit trade, these populations react and help the smugglers fight back against the state consistently with Table 1 and Figure 5a. Second, when the price differences between regions is small, no effect of the reform is perceived. This finding serves as a robustness check: when price differences are small, there are no smuggling opportunities, so the reform does not trigger conflicts. Third, the relationship between price differences across adjacent regions and the effect of the reform is convex. We attribute this functional form to the fact that under a certain price difference, engaging in smuggling is not profitable: the risks associated are higher than the expected benefits. Conversely, over this threshold, demand and hence gains from smuggled salt increase more than linearly to the price difference. For this reason, the reform generates conflicts only above this threshold, and increasingly so as smuggling opportunities are higher. This convexity is interesting from the perspective of the state, whose goal is potentially to minimize social unrest while maximizing revenue. It defines a maximum price difference that does not trigger conflict: here, around £t40 per minot. In Section 6, we investigate the loss in tax revenue this conflict-free price will induce. We find the same kink when similarly plotting the difference in means of salt tax grievances by border segment (Figure 8), although with a more noisy signal.

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also documents very few riots related to the income tax (p.501 and p.577).
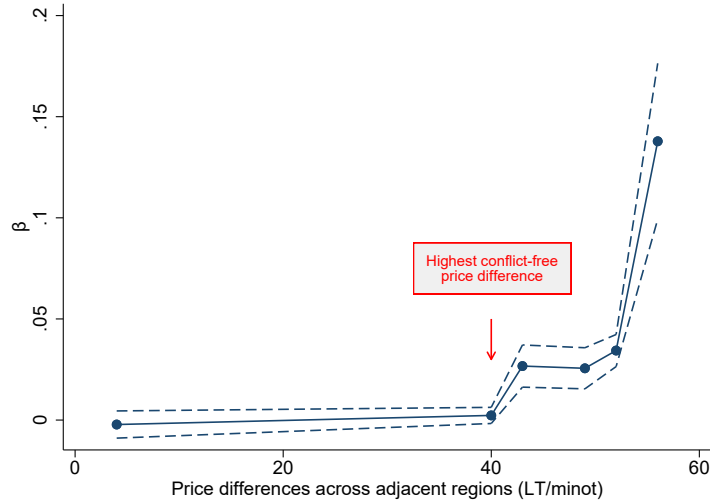
Figure 7: Effect of increased tax enforcement on conflicts by tax border segment

Notes. The figure reports difference-in-discontinuities estimates of the effect of the tax enforcement reform on conflicts by border segment. We report the estimated coefficient $\hat{\beta}_s$ from Equation 2 on the vertical axis and the price differences of each border segment on the horizontal axis. The figure presents results from our benchmark specification with a 50km bandwidth. The specification includes decade-municipality fixed effects. Standard errors are clustered at the municipality level.
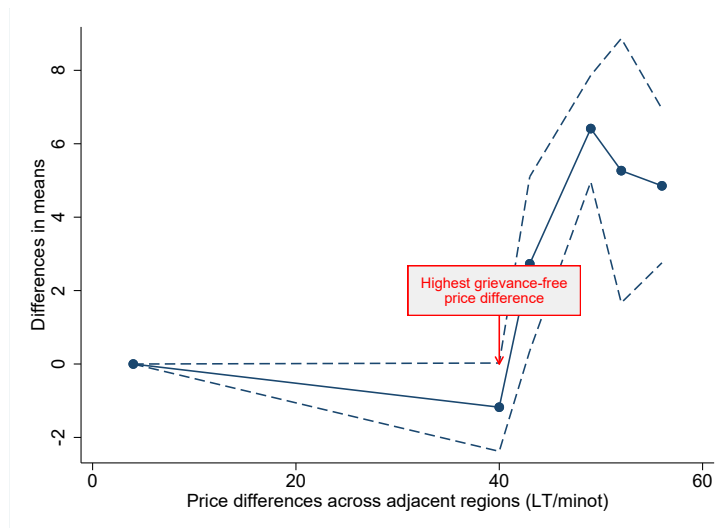
Figure 8: Discontinuity in grievances related to the salt tax by tax border segment

Notes. The figure reports the difference in means in the frequency of salt tax grievances by border segment. We report the difference in means on the vertical axis and the price difference of each border segment on the horizontal axis.

6   Fiscal Counterfactuals

Why did the state endure a high volume of conflicts while they could have been avoided with a lower price in the high-tax region?

A first explanation is that these conflicts were not deemed problematic for the state. Historical documents suggest that this is unlikely to be the case. In fact, top public finance officials repeatedly argued that conflicts smuggling-related conflicts were a major concern of the monarchy throughout the

18th century and up to the Revolution.[38] A second explanation is that the revenue losses induced by a lower price in the high-tax region were higher than the political costs[39] of maintaining the conflicts. Assuming that this second explanation is correct and taking a revealed preferences approach, we compute the government losses associated with the highest conflict-free price derived from Section 5[40] and consider it an upper bound of the political costs induced by the conflicts.

To estimate the revenue loss associated with a decrease in the price of salt, we refer to *De l'Admnistration des finances de la France* written by top finance official Jacques Necker in 1784.[41] This historical document presents a methodology, to estimate the government revenue losses if the price in the high-tax region was reduced to £t25 per minot instead of £t62, the average price in 1784. We follow the same methodology and instead derive a counterfactual government revenue associated with the highest conflict-free price. Necker's protocol consists of four steps, detailed in Appendix Section B and formalized in Equation 3. We thus estimates the total counterfactual government revenue from the salt tax, G, as follows:

$$G = \underbrace{[1 + (e * \overbrace{\frac{p_{reform} - p_{statusquo}}{p_{statusquo}}}^{\text{Adjusted consumption per head}})] * c_{statusquo} * Pop_{hightax} * p_{reform}}_{\text{Step 1}} - \underbrace{C(c_{reform})}_{\text{Step 2}} + \underbrace{s}_{\text{Step 3}} + \underbrace{G_{lowtax}}_{\text{Step 4}} \qquad (3)$$

The parameters we use to calibrate this equation are summarized in Table 2 and the results are presented in Table 3. There are two results. First, Necker's proposed price could have been higher. If the government's optimization problem was to minimize conflict while maximizing revenue, our results suggest that the highest conflict-free rate, £t42 per minot, would have led to 14 millions more in government revenue than Necker's proposed rate of £t25 per minot. Second, the highest conflict-free price would still have resulted in a 7% decrease in government revenue relative to the status quo. Taking a revealed preferences approach, we conclude that if this reform was not adopted at the time, it must have been that the loss associated with this reform was higher than the political costs induced by smuggling-related conflicts. We thus interpret this 7% decrease in revenue as an upper bound on the political costs of these conflicts.

Further, Necker's methodology allows us to pursue another exercise. If feasible, an alternative way to minimize social conflicts while maximizing revenue is tax harmonization. Smuggling-related conflicts

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[38]Vauban, *La Dîme royale*, 1707: "The cheapness of salt in one province and its excessive cost in another cause two considerable evils, one of which is salt smuggling, which sends a large number of people to the galleys, and the other is the forced taxation of salt, which forces individuals to take a certain quantity, usually beyond their strength, without being able to use what they have left over from one year for the next; This exposes them to a great deal of harassment from the Salt Guards, who search their homes even in the most remote corners, and sometimes carry fake salt themselves, to use as a pretext to harm those they wish to harm."

Necker (1784): "The troubles caused in the Kingdom by the varying price of salt, the distressing punishments that follow."

[39]Note that these conflicts had not only a political cost, but also human costs. They were known to be extremely violent. Table A.1.3 shows that numerous people were injured or died in these conflicts from 1661 to 1789. In particular, the number of wounded agents more than doubled following the creation of the courts. Because it is complicated to monetize these human costs, we will not consider them here.

[40]In Section 5, we find that the highest conflict-free price is about £t40 per minot. This means that the price of the high-tax region could be raised to £t42 per minot without generating conflicts. The lowest price at the border (in Brittany) was about £t2 per minot in 1781 (see Appendix Figure A.2.2), which would generate at most a price difference of £t40 per minot, the highest conflict-free rate.

[41]Necker was twice minister of finance, from 1777 to 1781, and then from 1788 to 1790. His attempts at reform during his first term earned him many enemies, and it was during his retirement that he devoted himself to writing the treaty of 1784, which was both a synthesis and a proposal for reform of the tax system. He was then recalled during the revolutionary crisis (Bayard et al., 2000).

Table 2: Parameters for fiscal calculations

Parameter	Value	Source
$p_{StatusQuo}$	£t62 per minot	Necker (1784)
p_{Reform}	£t25 or £t42 per minot	Necker (1784) or Section 5
$c_{StatusQuo}$	9.17/head per year	Necker (1784)
$Pop_{HighTax}$	8,300,000	Necker (1784)
$C(c_{Reform})$	£t1,500,000 /year	Necker (1784)
s	£t3,000,000 /year	Necker (1784)
G_{LowTax}	£t12,880,000 /year	Necker (1784)

Notes. This table shows the parameters used in Equation 3 resulting in the counterfactual government revenue shown in Table 3.

would have not arise in the first place if a unique price was set throughout the territory since this would have eliminated all opportunities for smuggling. Moreover, the optimization of this unique price would have ensured that the desired level of government revenue would have been maintained. In fact, this solution was discussed as early as 1707 by Vauban in *La Dîme royale* [42] and again by Necker in 1784.[43] However, at the time, the central state had salt price-setting power only in the high-tax region. As discussed in Section 2, the rates in the low-tax regions had been established by historical treaties that could not be revoked by the monarchy. In particular, one concern was that the local population in the low-tax regions would likely revolt violently against an increase in the price of salt. Unfortunately, our setup does not allow us to derive an elasticity of protest with respect to a change in salt prices. We are therefore unable to provide a quantitative assessment of the feasibility of tax harmonization.

However, using back-of-the-envelope calculations, we derive the hypothetical harmonized price that would have maintained the government revenue of the status quo in Table 3. We find that setting the price of salt at approximately £t17 per minot[44] throughout the territory would have maintained a government revenue of 60 million £t from the salt tax. As explained above, it is not possible to empirically assess the feasibility of this reform, but putting this figure in historical perspective gives some intuition.

Our estimate is close to and actually lower than the harmonized price proposed by Vauban in 1707. In *La Dîme royale* he actually proposes to set the salt price at £t18 per minot. Yet, it is higher than the harmonized price of £t8.9 per minot successfully introduced by Napoleon in 1806, 17 years after the French Revolution, when the latter reinstated the salt tax.[45] As anticipated by Necker, tax harmonization might thus not have been implementable, notably at a rate sustaining the government revenue of the status quo.

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[42] "I believe that the surest way to prevent salt smuggling would be to impose salt everywhere."

[43] "Thus it would be fair to extend the salt tax throughout the Kingdom indiscriminately, in order to balance, by this new revenue, the loss that the Sovereign would make by reducing the price of salt in the other parts of his Kingdom."

[44] We compute this estimate by retrieving the harmonized price that would lead to a 60 millions £t in revenue, adjusting for any consumption change.

[45] Sands et al. (1949) documents that Napoleon reestablished the salt tax at a rate of 2 decimes of franc germinal per kilogram. With a gold content of 0.29g, the franc germinal was worth about 0.93 livre tournois of 1780 (Wailly, 1857), and the pre-revolutionary minot was equivalent to about 48kg of salt (Touzery, 2024).

Table 3: Counterfactual tax rates and government revenue

Reducing regional price disparities	Price in high-tax region (p)	Government revenue (M£t) (G)
Status Quo	62	60
Necker's 1784 proposal	25	42
Highest conflict-free tax rate	42	56
Full harmonization	Harmonized price	Government revenue (M£t) (G)
Keeping 1784 revenue constant	17	60

Notes. The top part of this table shows the government revenue from the salt tax resulting from different prices of salt in the high-tax region. Government revenue is computed using Equation 3 plugging in parameters listed in Table 2. The bottom part of table shows the harmonized price needed to sustain the government revenue of the status quo.

7 Conclusion

Increased tax enforcement is often perceived as strengthening state capacity. However, the political feasibility of these reforms are unclear. States will advance or impede enforcement policies depending on whether it benefits or threatens political stability.

This paper provides evidence that increased tax enforcement can produce political backlash. Specifically, the creation of special courts to prosecute smugglers led to numerous conflicts between the state, smugglers, and local populations in pre-Revolutionary France. Evidence suggests that the discontent associated with the enforcement of the salt tax persisted until the French Revolution. We also show a positive nonlinear relationship between price differences across adjacent borders and the effect on conflicts we observe. Areas with the greatest smuggling opportunities experienced the most conflict, and interestingly this positive effect on conflict is only observed after a given price differences threshold. This convex relationship allows us to derive the highest conflict-free price. Counterfactual fiscal scenarios predict that lowering the price in the high-tax region to the highest conflict-free price would result in a 7% loss of tax revenue. We interpret this figure as an upper bound on the political costs in historical pre-modern France: eliminating smuggling-related conflicts would cost the state 7% of tax revenue. Since the status quo was maintained, we conclude that the political costs of these conflicts were lower than the costs of eliminating them.

We recognize that using an identification strategy based on an 18th-century natural experiment may come at the cost of reduced external validity for the present. Nevertheless, the evidence of political costs of stricter tax enforcement in early modern France resonates with concerns faced by low-income countries today. Moreover, the fragmented tax system we studied and the conflicts it generated echo current debates pushing for tax harmonization at the national and global levels.

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A Appendix

A.1 Tables

Table A.1.1: Sources of smuggling-related events

	Type of sources	Smuggling-related conflicts	%
All		1,903	
Primary archival sources		1,665	87.49
Secondary archival sources		82	8.20
Missing		156	4.31
Among primary archival sources:			
National Archives		1,355	71.20
Series E	Minutes of government council	84	4.41
Series G 7	Controle General des finances	224	11.77
Series Z1A	Court of Aids, among which:	1,029	54.07
Reims Court		399	20.97
Saumur Court		623	32.74
Other or missing		7	0.37
Series Z1C	Connetablie et Marechaussee de France	3	0.16
Series Z1G	Election de Paris	2	0.11
Others		14	0.74
Departemental Archives		310	16.29
Series A	Actes du pouvoir souverain	6	0.32
Series B	Courts and justices	156	8.20
Series C	Provincial administration	143	7.51
Missing		4	0.21

Notes. This table reports the sources of the salt smuggling-related conflicts from Chambru and Maneuvrier-Hervieu (2024) that occurred between 1661 and 1859 on the territory of the kingdom of France.

Table A.1.2: *Cahiers de doléances*: coding of grievance types

Tax type	Original grievance objects	Original code
Direct taxes:		
Income tax (*Taille*)	Taille, Taille personnelle, Taille réelle, Taille tarifée, Collecteurs des tailles, Taille réelle &Taille personnelle Impôts accessoires à la taille, Receveurs des tailles	GTADITA, GTADITP, GTADITR GTADACO, GTADACO, GTADITT, GTADIAT, GTADART
Property tax (*Vingtièmes*)	Contrôleurs du vingtième, Directeurs du vingtième, Vingtième des biens-fonds, Vingtième de l'industrie Vingtièmes, Vingtième des charges et offices	GTADACV, GTADADV, GTADIVD, GTADIVB, GTADIVO, GTADIVI
Head tax (*Capitation*)	Capitation	GTADICA
Indirect taxes:		
Salt tax (*Gabelle*)	Sel, Gabellous, Greniers à sel, Gabelle, Sel d'impôt	EAGMASE, GTAIAGA, GTAIAGS, GTAINGA, GTAINSD
Consumption taxes (*Aides*)	Aides, Droits sur la fabrication, Droits d'entrée et de sortie, Huiles, Octrois des villes	GTAINAI, GTAINDF, GTAINES GTAINHU, GTAINOC
Customs (*Traites*)	Traites (internal), Traites (external), Traites, Tolls and customs - miscellaneous, Cinq grosses fermes	ECOTOTI, ECOTOTE, ECOTOTR, ECOTO0, ECOTOTO1
Tobacco (*Tabac*)	Tobacco	EAGMATO

Notes. This table shows the different categories based on the original coding by Shapiro et al. (1998) that we use to build the variables in Figure 6.

Table A.1.3: Casualties from smuggling-related conflicts

		1661-1700	1701-1750	1751-1789
Tax enforcement agents	Wounded	8,7	9,2	23
	Deaths	1,4	3,1	2,7
Smugglers & Local populations	Wounded	2,6	4,2	6,1
	Deaths	1,9	4,5	2,6

Notes. This table shows the average annual number of tax enforcement agents, taxpayers and smugglers killed or wounded in conflicts related to smuggling. Source: Nicolas (2002).

Table A.1.4: Balance Table

	(1) Mean	(2) Full	(3) 100km	(4) 50km	(5) 30km
Distance to closest road (km)	4.361	-0.918***	-0.659***	-0.418	-0.123
	(22.133)	(0.201)	(0.178)	(0.101)	(0.105)
Distance to généralité capital (km)	65.880	-10.716***	-4.692	-1.637	0.219
	(38.715)	(3.260)	(3.634)	(4.375)	(4.739)
Log population 1793	6.211	0.101***	-0.045	0.013	0.064
	(0.870)	(0.038)	(40.052)	(0.060)	(0.066)
Agriculture suitability (wheat)	4.788	0.646***	0.039	-0.154	-0.152
	(1.780)	(0.115)	(0.127)	(0.132)	(0.139)
Agriculture suitability (cereal)	4.893	0.461***	0.513	-0.174	-0.160
	(1.814)	(0.116)	(0.123)	(0.132)	(0.139)
Forest coverage	0.116	0.017*	-0.009	-0.023	-0.033**
	(0.159)	(0.008)	(0.011)	(0.014)	(0.016)
Observations	36,598	36,598	20,907	12,750	8,453

Notes. This table presents balance across high-tax and low-tax regions calculated for different bandwidth that are used throughout the paper. Data on the road network and the forest coverage for pre-revolutionary France was extracted from `https://www.geohistoricaldata.org`. Location of généralité capitals was generously provided by the authors of Chambru (2019). Data on population was obtained from Cristofoli et al. (2021). To measure agricultural suitability, we use normalized suitability index calculated for low level inputs from the third version of the GAEZ database (Fischer et al., 2021).

Table A.1.5: Effect of increased tax enforcement on conflicts - 30km bandwidth

	(1) Salt smuggling	(2) Local population	(3) Other conflicts	(4) Salt smuggling
HighTax * Post	0.036***	0.011***	0.009**	0.388***
	(0.006)	(0.002)	(0.004)	(0.059)
HighTax * Post * Log Dist to Court				-0.029***
				(0.005)
N municipalities	8781	8781	8781	8781
Observations	87810	87810	87810	87810
Mean in 1730	0.003	0.001	0.012	0.003
R-Squared	0.20	0.14	0.64	0.20
Bandwidth	30km	30km	30km	30km
Decade-Municipality FE	✓	✓	✓	✓

Notes. The table reports difference-in-discontinuities estimates of the effect of the tax enforcement reform on conflicts. We report the estimated coefficient $\hat{\beta}$ from Equation 1. In column (1), the dependent variable is smuggling-related conflicts. Appendix Figure A.2.19 shows the corresponding RD plots. In column (2), the dependent variable is smuggling-related conflicts in which the local population gets involved. In column (3), the dependent variable is all other conflicts, hence not related to smuggling, included in the HiSCoD database. Lastly, column (4) is the same as column (1) controlling linearly for the distance, in log, of the closest court. The table presents results from our benchmark specification with a bandwidth of 30km. The specification includes decade-municipality fixed effects. Standard errors are clustered at the municipality level. * p < 0.10, ** p <0.05, *** p <0.01.

Table A.1.6: Effect of increased tax enforcement on conflicts - 100km bandwidth

	(1) Salt smuggling	(2) Local population	(3) Other conflicts	(4) Salt smuggling
HighTax * Post	0.029***	0.012***	-0.001	0.130***
	(0.003)	(0.001)	(0.002)	(0.020)
HighTax * Post * Log Dist to Court				-0.009***
				(0.002)
N municipalities	21346	21346	21346	21346
Observations	213460	213460	213460	213460
Mean in 1730	0.002	0.001	0.010	0.002
R-Squared	0.19	0.14	0.53	0.19
Bandwidth	100km	100km	100km	100km
Decade-Municipality FE	✓	✓	✓	✓

Notes. The table reports difference-in-discontinuities estimates of the effect of the tax enforcement reform on conflicts. We report the estimated coefficient $\hat{\beta}$ from Equation 1. In column (1), the dependent variable is smuggling-related conflicts. Appendix Figure A.2.20 shows the corresponding RD plots. In column (2), the dependent variable is smuggling-related conflicts in which the local population gets involved. In column (3), the dependent variable is all other conflicts, hence not related to smuggling, included in the HiSCoD database. Lastly, column (4) is the same as column (1) controlling linearly for the distance, in log, of the closest court. The table presents results from our benchmark specification with a 100km bandwidth. The specification includes decade-municipality fixed effects. Standard errors are clustered at the municipality level. * p < 0.10, ** p <0.05, *** p <0.01.

Table A.1.7: Effect of increased tax enforcement on conflicts - by sources

	(1) Salt smuggling	(2) Salt smuggling	(3) Salt smuggling
HighTax * Post	0.031***	0.032***	0.031***
	(0.003)	(0.003)	(0.003)
Sources	All	Primary archives	National archives
N municipalities	12762	12762	12762
Observations	130181	129716	128980
Mean in 1730	0.002	0.002	0.002
R-Squared	0.14	0.14	0.15
Bandwidth	50km	50km	50km
Decade-Municipality FE	✓	✓	✓

Notes. The table reports difference-in-discontinuities estimates of the effect of the tax enforcement reform on conflicts by source type. We report the estimated coefficient $\hat{\beta}$ from Equation 1. In column (1), the dependent variable is smuggling-related conflicts using all available sources. Column (2), shows a similar result using only primary archival sources. Column (3), shows a similar result using only national archival sources (see Appendix Table A.1.1 for a definition of archival sources). The table presents results from our benchmark specification with a 50km bandwidth. The specification includes decade-municipality fixed effects. Standard errors are clustered at the municipality level. * p < 0.10, ** p <0.05, *** p <0.01.

A.2 Figures
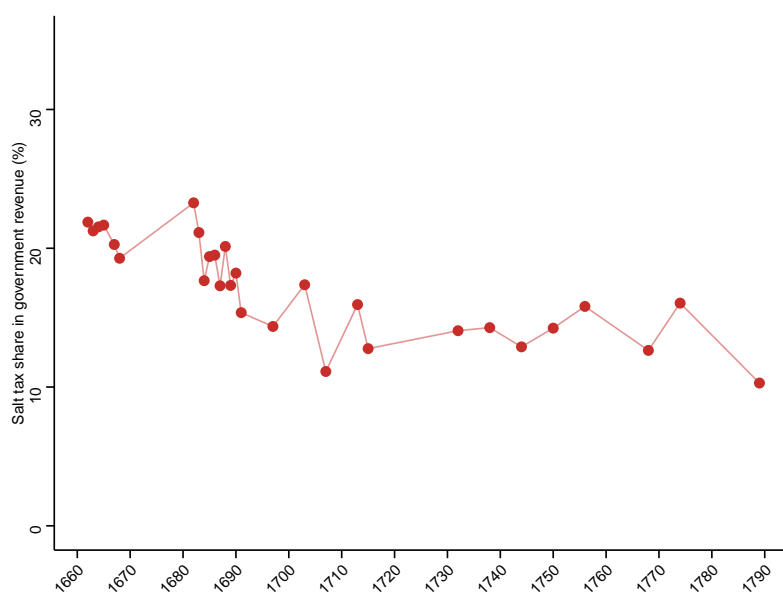
Figure A.2.1: Share of salt taxation in state revenue

Notes. Sources: Mallet (1789), Rochefoucauld d'Enville (1887), "Divers tableaux de recettes et de dépenses" (1701), Guéry (1978), Enguehard (2020), and Mathon de la Cour (1788).
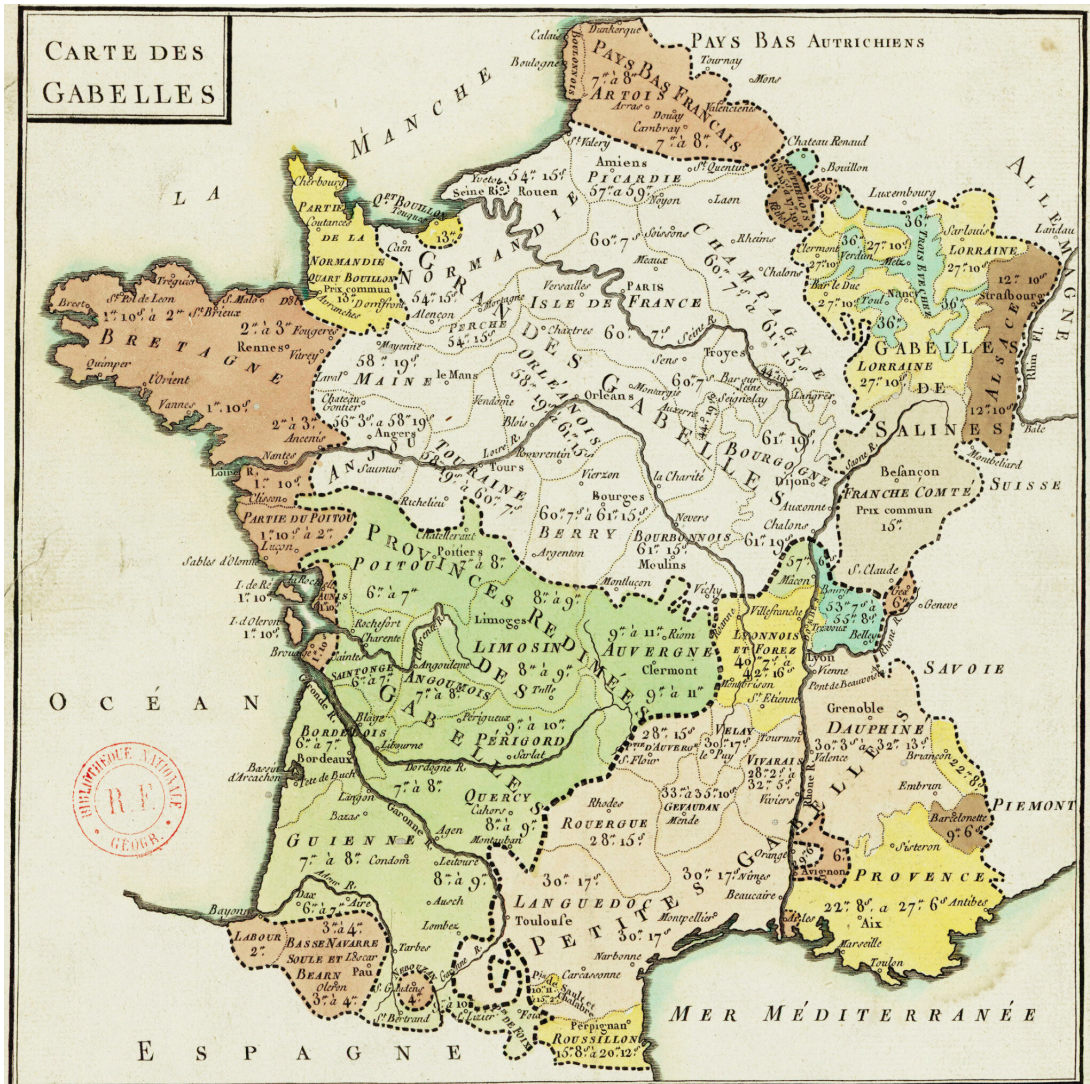
Figure A.2.2: Salt tax regions (1781)

Notes. This figure shows the salt tax regions in 1781 and their respective salt prices. This map is held at the Bibliothèque nationale de France.
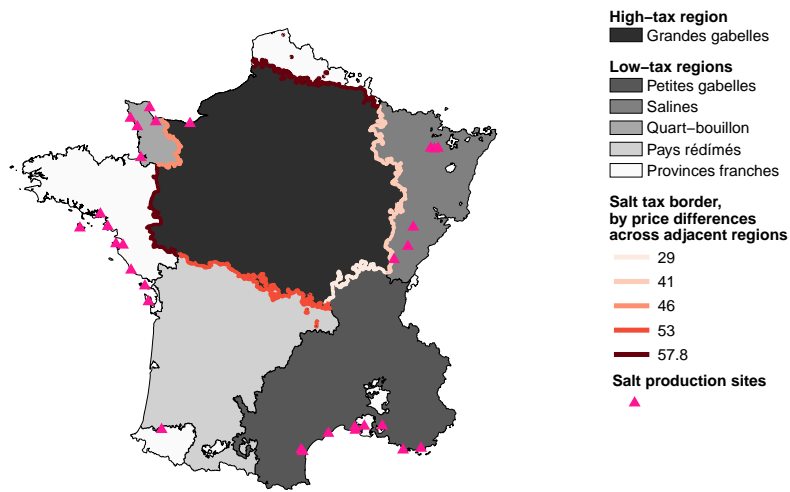
Figure A.2.3: Salt production sites

Notes. This figure shows pre-revolutionary salt works Source: locations are extracted from Touzery (2024)
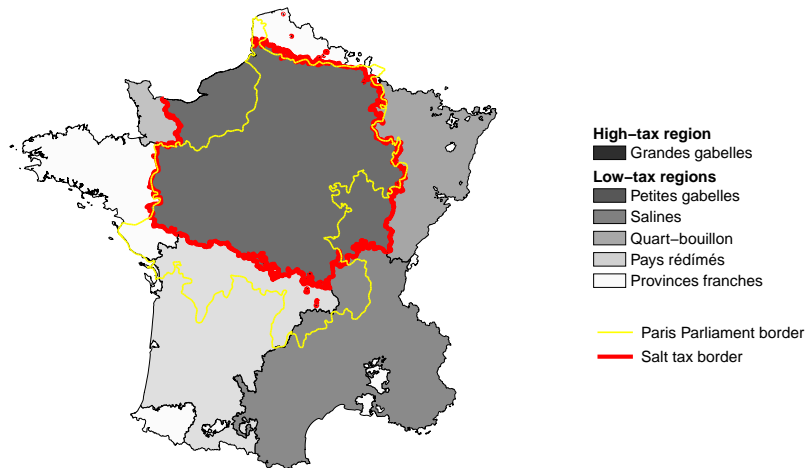
Figure A.2.4: Intersecting jurisdictions: The Parlement of Paris

Notes. This figure shows administrative boundaries of the salt tax regions and the region administered by the Parliament of Paris. Source: Bibliothèque nationale de France.
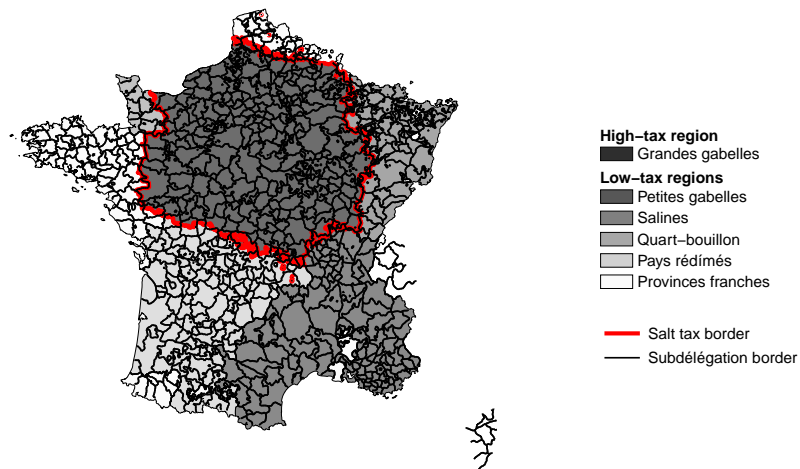
Figure A.2.5: Intersecting jurisdictions: Subdélégations

Notes. This figure shows administrative boundaries of the salt tax regions and the administrative boundaries of subdélégations in 1789. Source: Gay, Paula E Gobbi, et al. (2024)
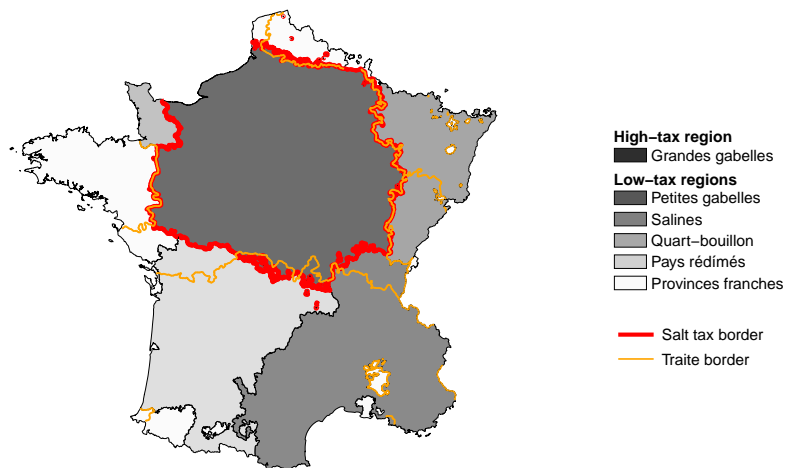
Figure A.2.6: Intersecting jurisdictions: the internal customs borders (Traite)

Notes. This figure shows administrative boundaries of the salt tax regions and the administrative boundaries of the internal customs borders in 1760. Source: Chambru (2023)
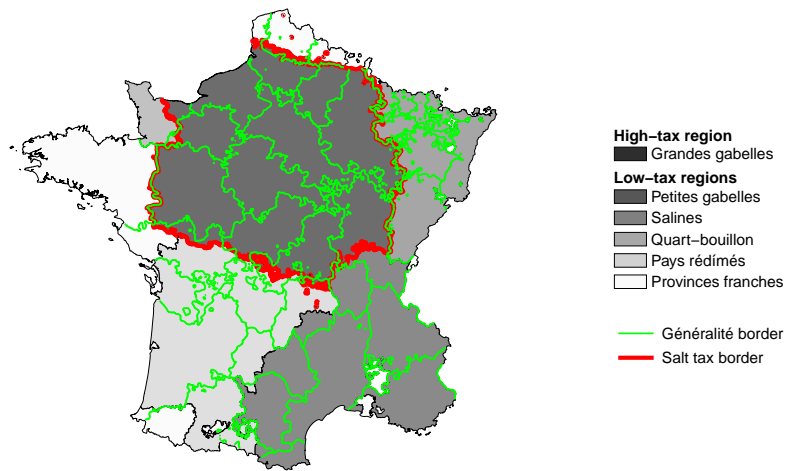
Figure A.2.7: Intersecting jurisdictions: the Généralités borders

Notes. This figure shows administrative boundaries of the salt tax regions and the administrative boundaries of the Généralités bordersin in 1789. Source: Gay, Paula E Gobbi, et al. (2024)
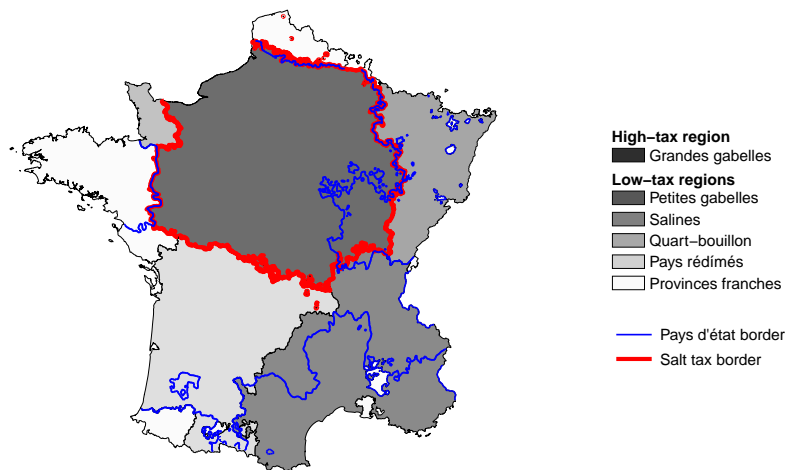
Figure A.2.8: Intersecting jurisdictions: the Pays d'élection borders

Notes. This figure shows administrative boundaries of the salt tax regions and the administrative boundaries of the Pays d'élection. Source: Gay, Paula E Gobbi, et al. (2024)
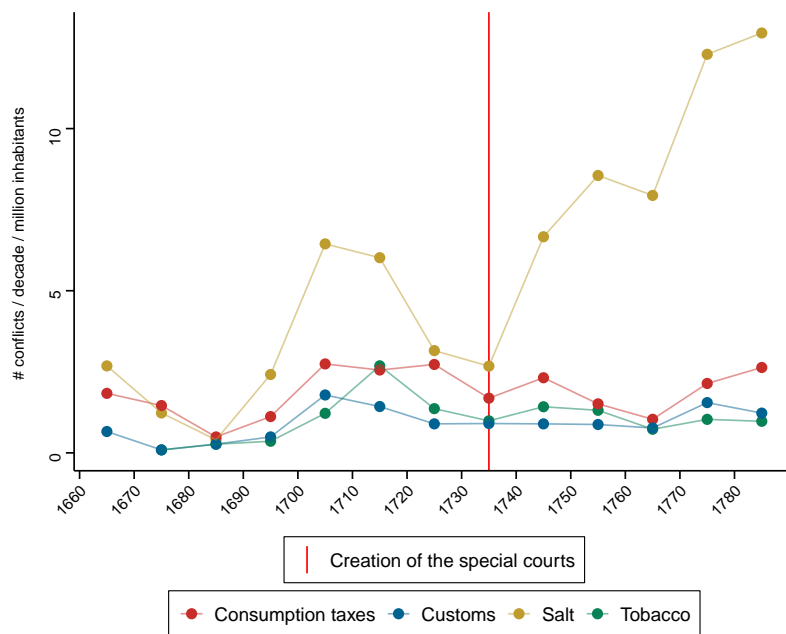
Figure A.2.9: Conflict related to different taxes, per capita

Notes. This figure shows an index of the number of conflicts per capita either related to the consumption taxes (*aides*, essentially concerning alcoholic beverages), salt and tobacco taxes, or internal and external customs (*traites*). The red line marks the creation of the special courts, lasting from 1733 to 1742. Source: conflict data from Chambru and Maneuvrier-Hervieu (2024), Chevet (1993) for population.
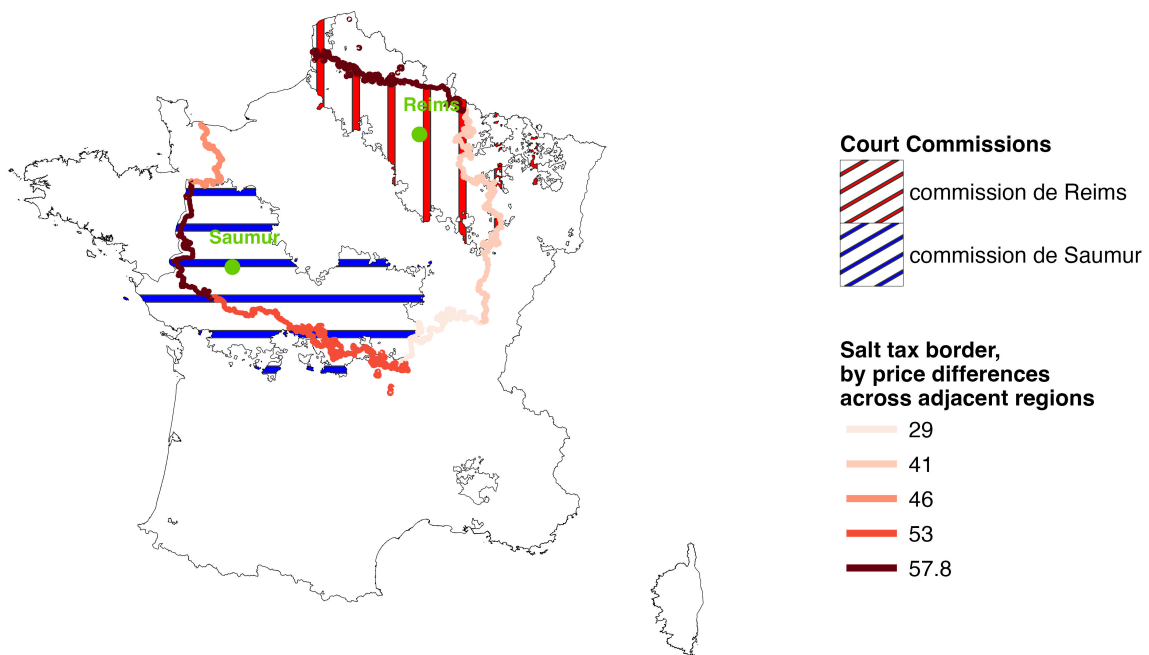
Figure A.2.10: Special courts of Reims and Saumur, with their theoretical jurisdictional area

Notes. This map shows the location of the special courts of Reims and Saumur, that prosecute smuggling occurring at the border of the high tax region. The jurisdictional areas are given by the administrative regions (*généralités*) on which the courts were supposed to have authority. The shapefile of *généralités* was shared by Cédric Chambru.
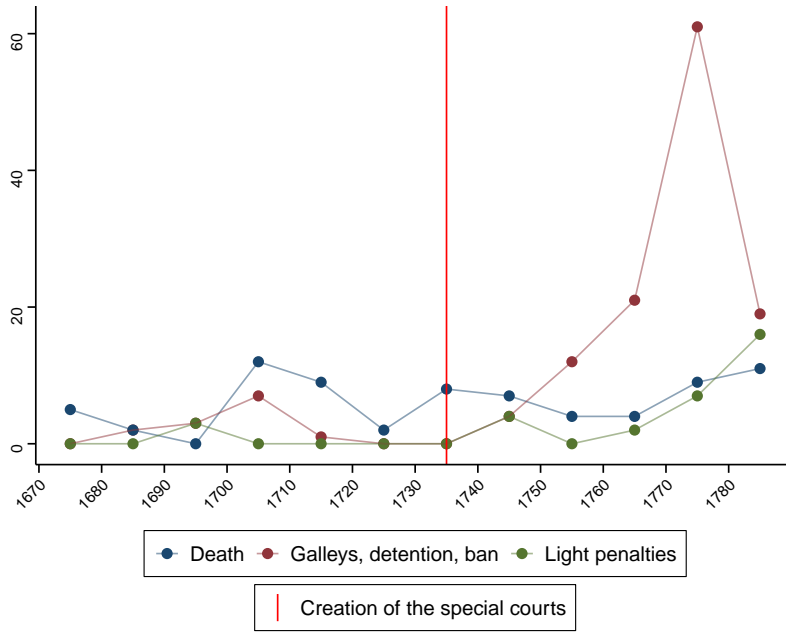
Figure A.2.11: Trends in the number of convictions for smuggling

Notes. This figure shows the decennial number of sentences pronounced in trials following conflicts related to smuggling, by type of sentence, for the subsample of conflicts in our data that present such information. Light penalties include fines, pillory and admonition ($N = 434$). The red line marks the creation of the special courts, lasting from 1733 to 1742. Data source: Gay and Hamon (2024), originally Nicolas (2002).

Figure A.2.12: Salt tax revenue per capita (grams of silver)

Notes. This figure shows the trends in revenue from the salt tax in the high tax region (Grandes Gabelles, denoted GG), ordinary state revenues and state expenditures, in grams of silver and per capita. Everything is normalized to 1 in 1733. Shaded pink areas indicate the periods of war, and red lines mark the timing of the creation of the special courts. Data source: Necker (1784), Mallet (1789), Guéry (1978), "Divers tableaux de recettes et de dépenses" (1701), Enguehard (2020), Mathon de la Cour (1788), *ESFDB* (n.d.), Chevet (1993) for population.

a) Smuggling conflicts

b) Salt price in the high tax region
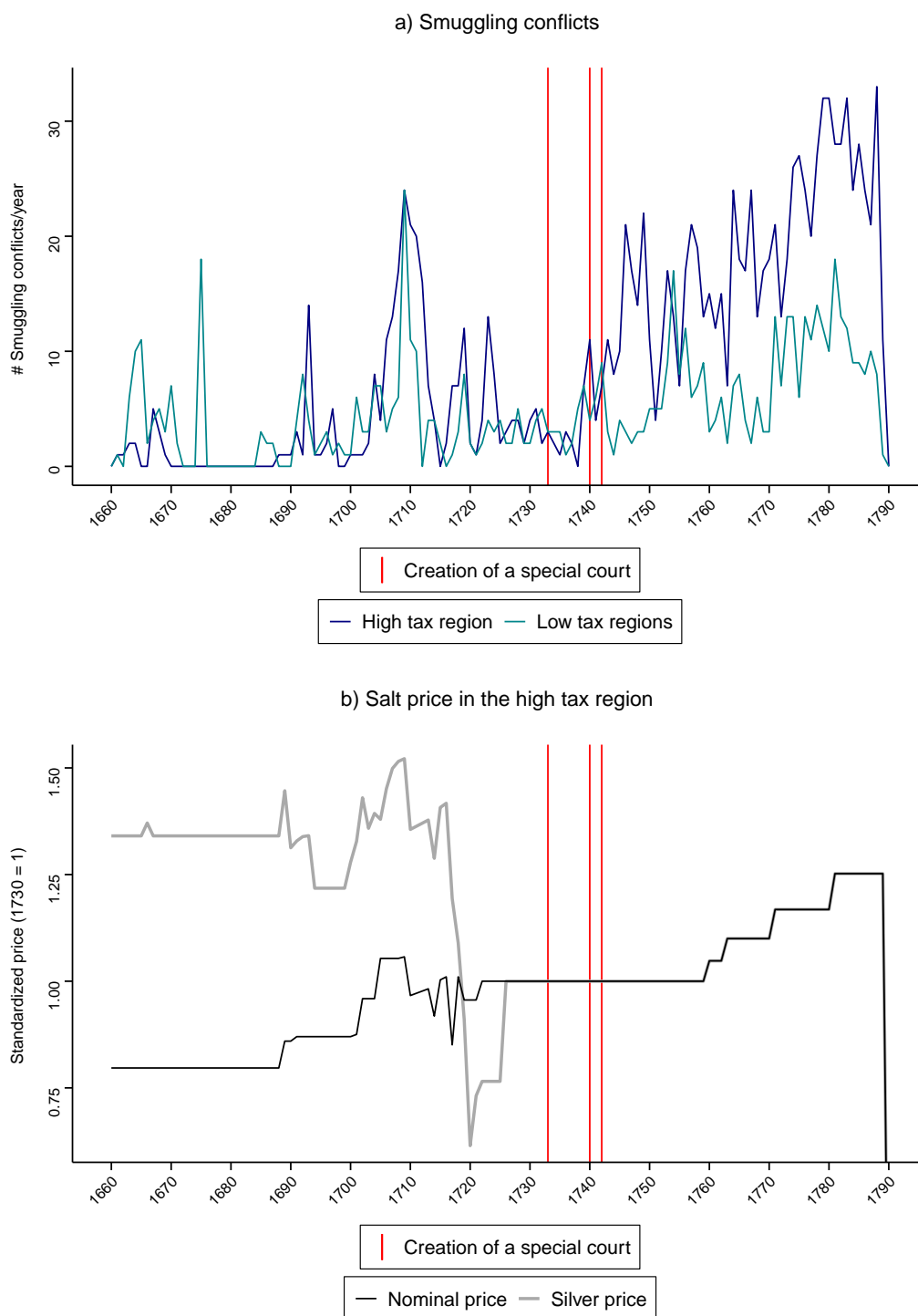
Figure A.2.13: Trends in smuggling conflicts and salt prices

Notes. The first panel shows the annual number of smuggling conflicts related to salt occurring either in the high tax region or in the low tax regions (see the Data section). The second panel shows the official price of salt in the high tax region, expressed in current livre tournois and in grams of silver, with values normalized at 1 in 1730. The high tax price is a valid proxy of the price gap between the high tax regions and the tax exempted regions (generating most of the smuggling), since 84 p.c. of this price was tax (Touzery, 2024). Red lines mark the timing of the creation of the special courts. Data sources for the salt prices: Pasquier (1978), Touzery (2024), various archival documents; Wailly (1857) for the silver content of the livre.
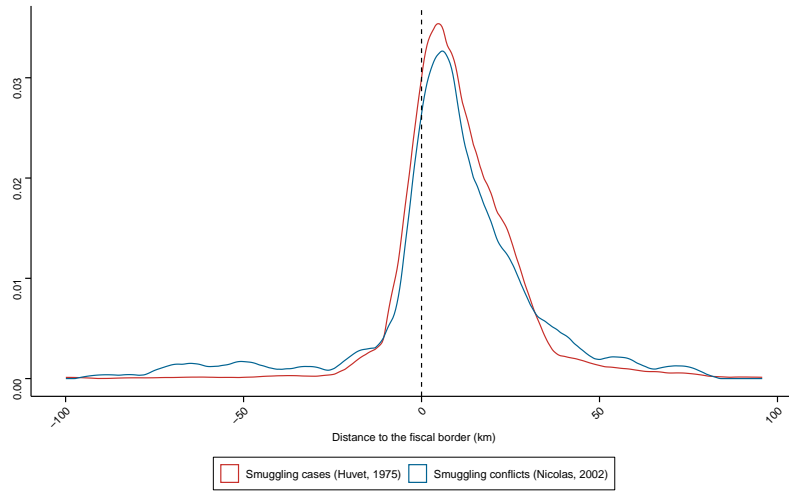
Figure A.2.14: Kernel density estimation of the spatial distribution of events related to salt smuggling

Notes. Salt smuggling conflicts from Nicolas (2002), digitized by Chambru and Maneuvrier-Hervieu (2024), correspond to the main dataset of the paper and are restricted here to the period 1764-1789 and to the Southwest border region (events with Brittany or Pays rédîmés as closest low tax region) in order to match the coverage of the data collected by Huvet-Martinet (1975) (see the Data section). Kernel density estimation using Epanechnikov kernel with a bandwidth of 4km, on the set of events occurring closer than 150km to the fiscal border ($N = 5330$).

(a) ca. 1665 (high tax region only)

(b) ca. 1780
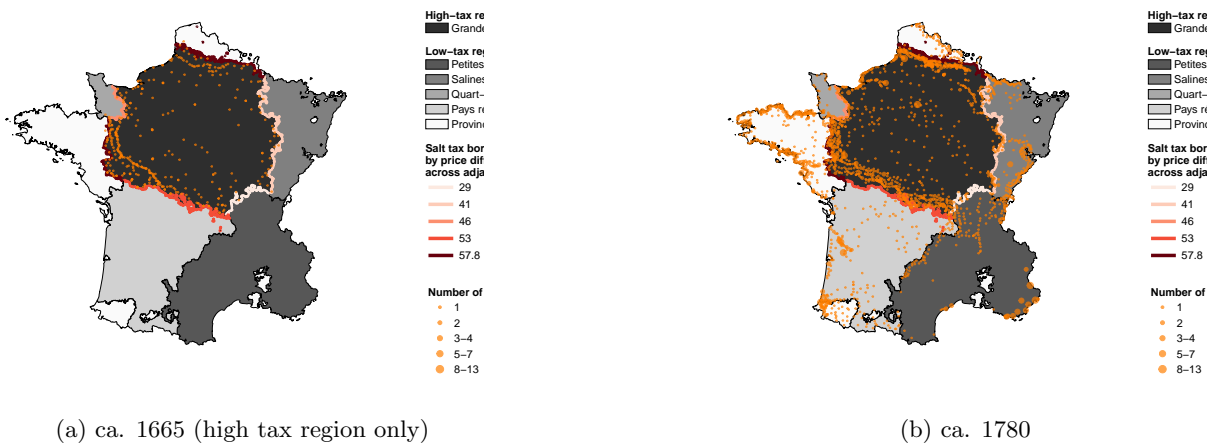
Figure A.2.15: Location of anti-smuggling brigades

Notes. This map shows the location of anti-smuggling police units (*brigades*). Data source: Sanson (1665) for Panel A.2.15a and Touzery (2024) for Panel A.2.15b. Note that the source for Panel A.2.15a is limited to the high tax region (see the Data section).
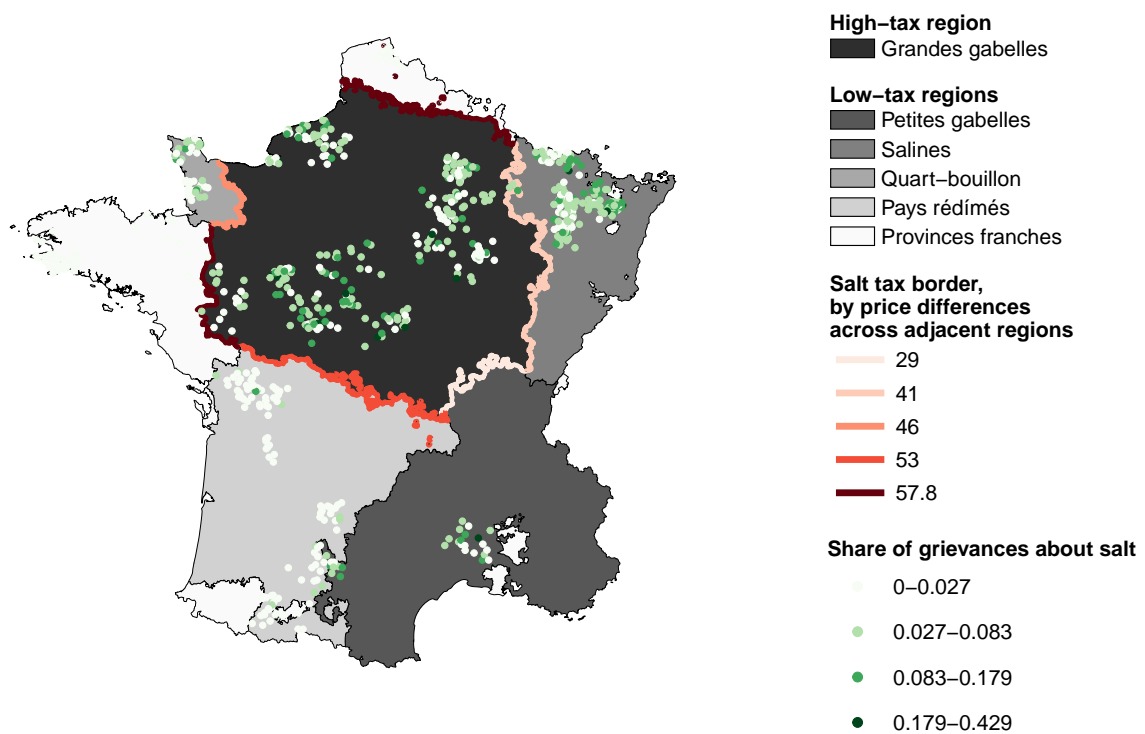
Figure A.2.16: Sample of parishes with grievance lists, related or not to the salt tax

Notes. This map shows the location of parishes sampled in the database of Shapiro et al. (1998) in the different salt tax regions, and the proportion of grievances (*Cahiers de doléances*) related to the salt tax for each of them. Data source: Shapiro et al. (1998) for the grievances, see the Data section for the salt tax regions.
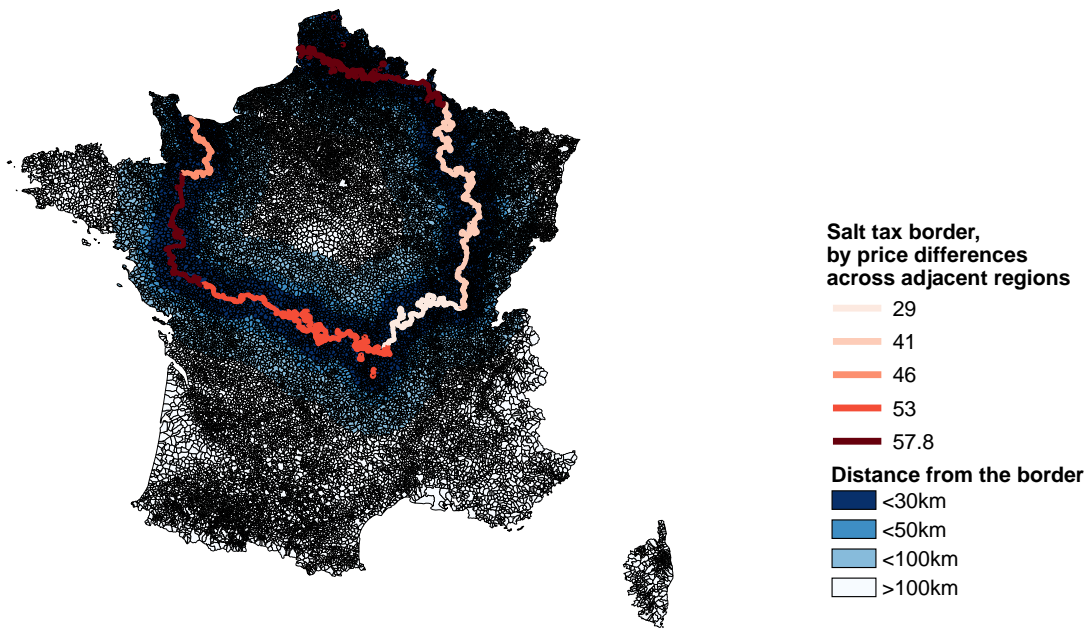
Figure A.2.17: Location of the bandwidth

Notes. This map shows the border of the high tax region, with the different bandwidths: 30km, 50km which is the bandwidth used for the main results and 100km.
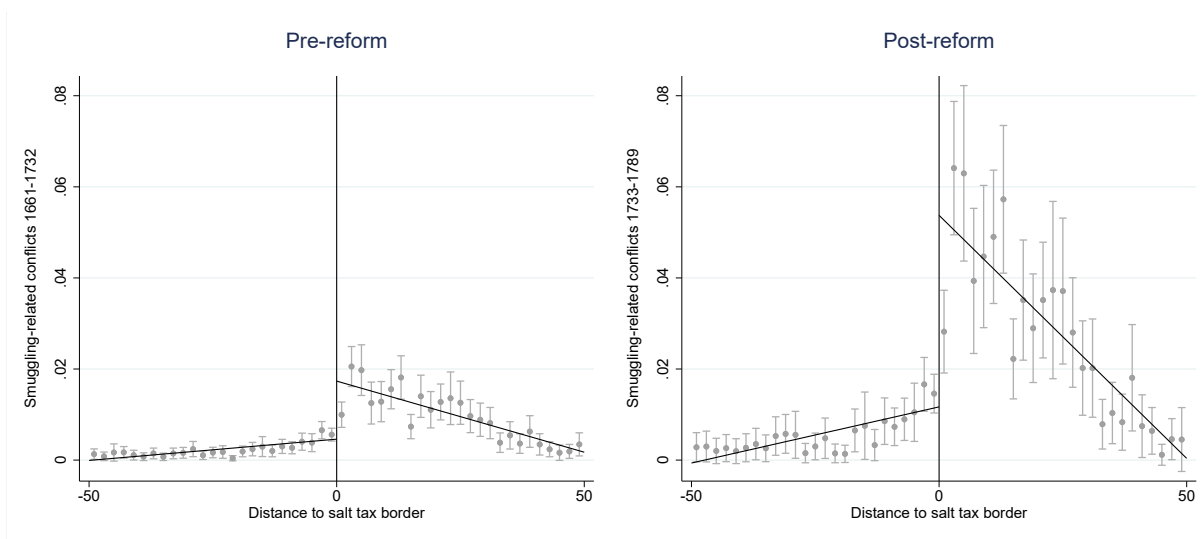
Figure A.2.18: RDD on conflicts, pre and post-creation of the courts, 50km bandwidth

Notes. This figure shows the relationship between smuggling-related conflicts before the enforcement reform (left graph) and after (right graph) against the distance to the salt tax border (on the horizontal axis). Bins represent averages over equally-spaced intervals of size 2 km, and confidence intervals (at the 95% significance level) are also shown by vertical lines. The predicted relationships between smuggling-related conflicts and distance to the high tax border are estimated using a linear regression.
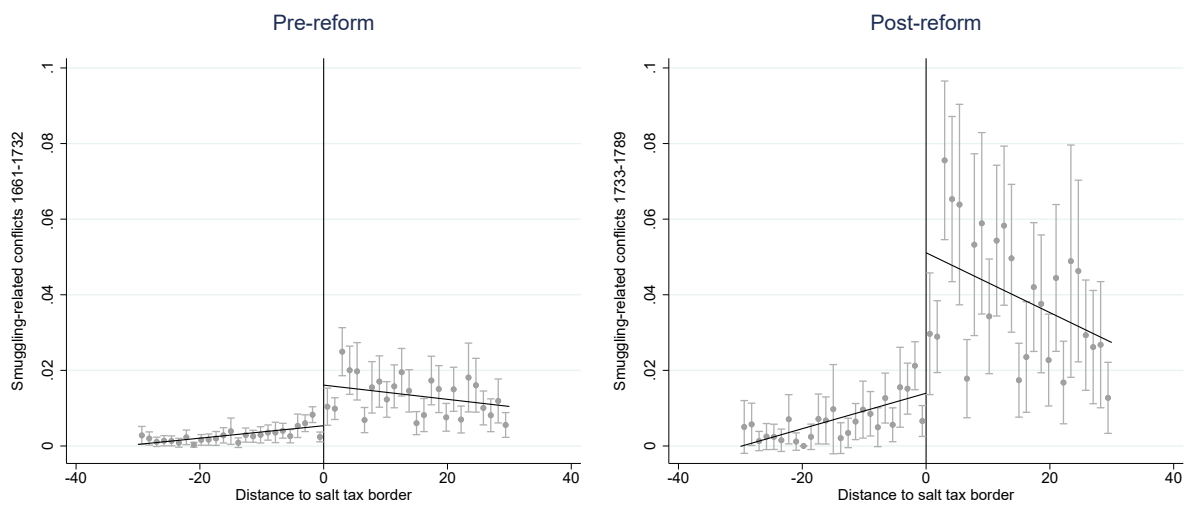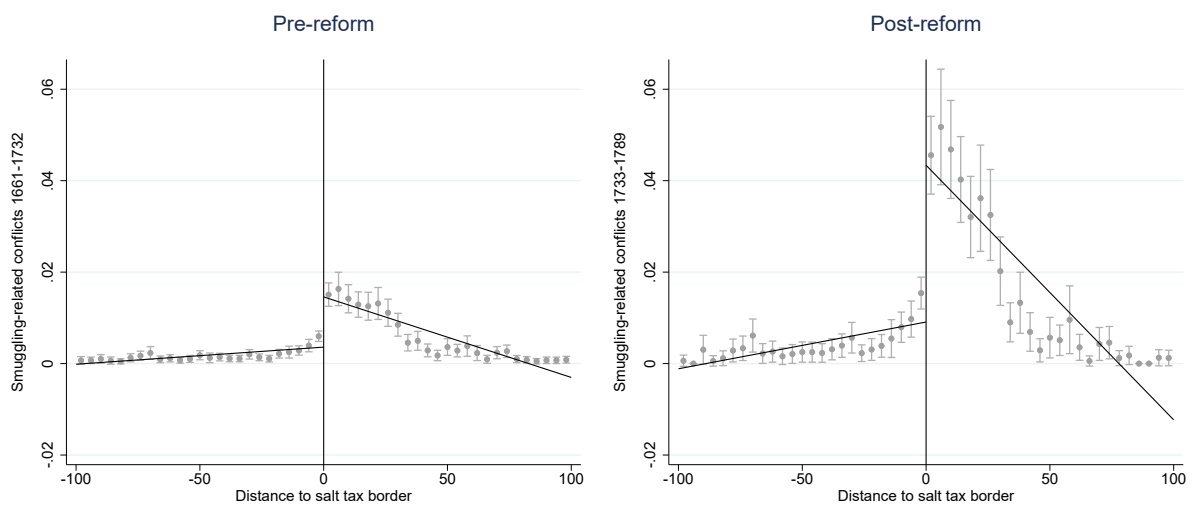
Figure A.2.19: RDD on conflicts, pre and post-creation of the courts, 30km bandwidth

Notes. This figure shows the relationship between smuggling-related conflicts before the enforcement reform (left graph) and after (right graph) against the distance to the salt tax border (on the horizontal axis). Bins represent averages over equally-spaced intervals of size 1.2 km, and confidence intervals (at the 95% significance level) are also shown by vertical lines. The predicted relationships between smuggling-related conflicts and distance to the high tax border are estimated using a linear regression.

Figure A.2.20: RDD on conflicts, pre and post-creation of the courts, 100km bandwidth

Notes. This figure shows the relationship between smuggling-related conflicts before the enforcement reform (left graph) and after (right graph) against the distance to the salt tax border (on the horizontal axis). Bins represent averages over equally-spaced intervals of size 4 km, and confidence intervals (at the 95% significance level) are also shown by vertical lines. The predicted relationships between smuggling-related conflicts and distance to the high tax border are estimated using a linear regression.
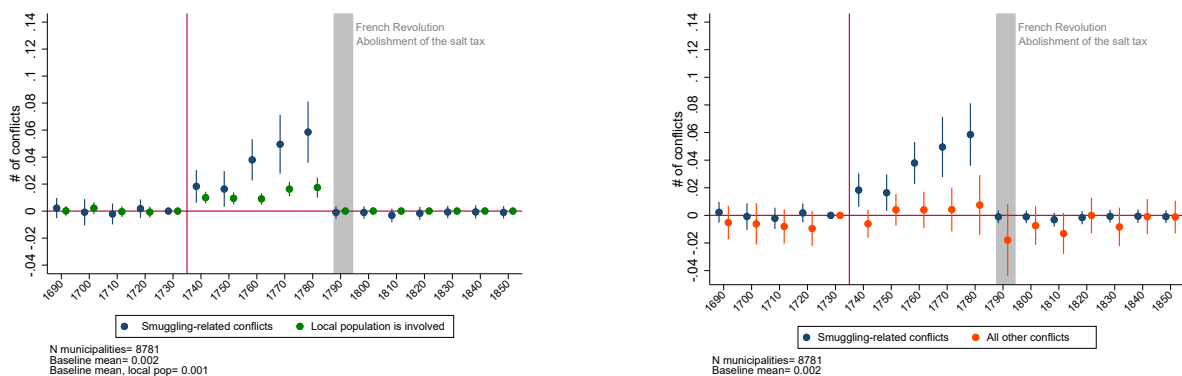
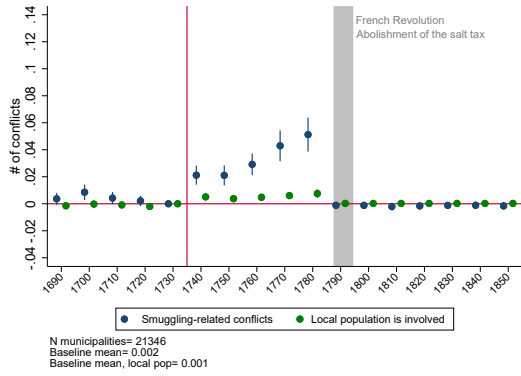(a) Conflicts and spillovers on local population
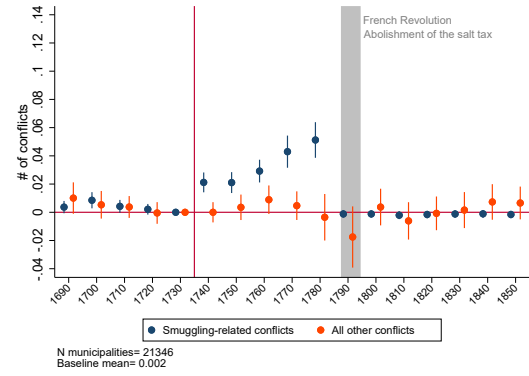
(b) Other conflicts
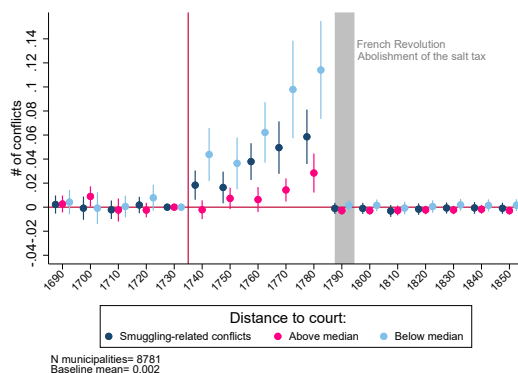
(c) Distance to court

Figure A.2.21: Dynamic effect of increased tax enforcement on conflicts - 30km bandwidth
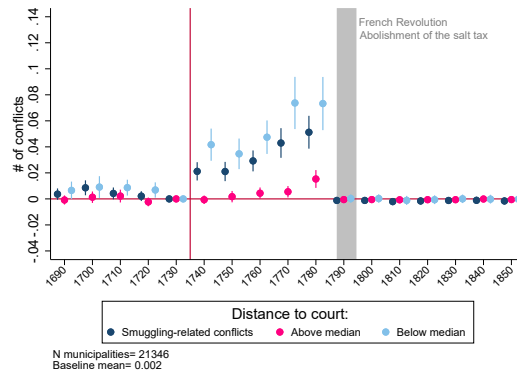
Notes. The figure reports dynamic difference-in-discontinuities estimates of the effect of the tax enforcement reform on conflicts. We report the estimated coefficient $\hat{\beta}_t$ from Equation 1 in its fully dynamic form. Panel A.2.21a of the figure displays the dynamic effect on all smuggling-related conflicts and the subset of those in which the local population gets involved. Panel A.2.21b compares the effect on all smuggling-related conflicts to the effects on all other conflicts, hence not related to smuggling, included in our database. Lastly, panel A.2.21c decomposes the effect into two groups: conflicts that are below and above the median distance to the closest court. The figure presents results for a 30 km bandwidth. The specification includes decade-municipality fixed effects. Standard errors are clustered at the municipality level.

(a) Conflicts and spillovers on local population

(b) Other conflicts

(c) Distance to court

Figure A.2.22: Dynamic effect of increased tax enforcement on conflicts - 100km bandwidth

Notes. The figure reports dynamic difference-in-discontinuities estimates of the effect of the tax enforcement reform on conflicts. We report the estimated coefficient $\hat{\beta}_t$ from Equation 1 in its fully dynamic form. Panel A.2.22a of the figure displays the dynamic effect on all smuggling-related conflicts and the subset of those in which the local population gets involved. Panel A.2.22b compares the effect on all smuggling-related conflicts to the effects on all other conflicts, hence not related to smuggling, included in our database. Lastly, panel A.2.22c decomposes the effect into two groups: conflicts that are below and above the median distance to the closest court. The figure presents results with a 100km bandwidth. The specification includes decade-municipality fixed effects. Standard errors are clustered at the municipality level.
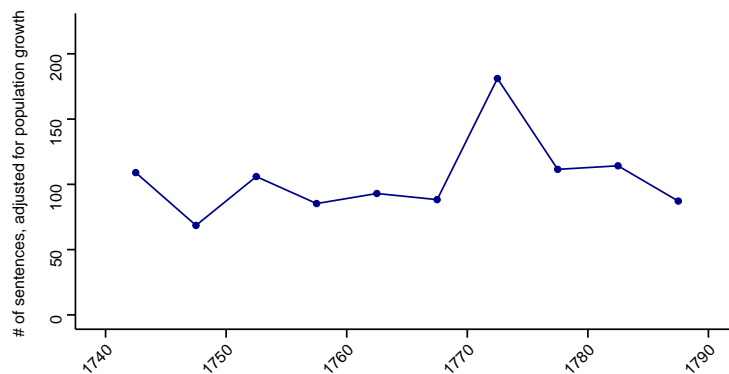

Figure A.2.23: Number of convictions handed down by the special court of Reims, per capita

Notes. This figure shows the number of convictions handed down by the *Commission de Reims* by five-year periods over the time of its existence (1740-1789), standardized by the size of the French population (set to 1 in 1740). Evrard (2024) observes that the peak in the 1770s is due to the Commission exceptionally recovering cases from other courts. Data on convictions from Liander (1981), population from Chevet (1993).
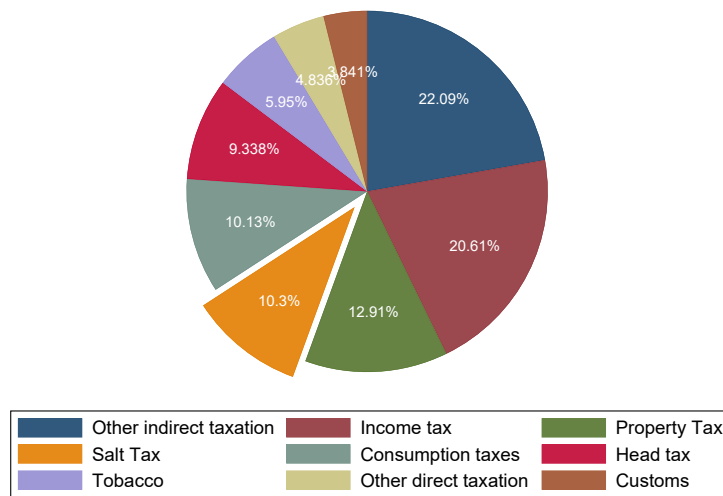
Figure A.2.24: Breakdown of government tax revenue by type of tax (1789)

Notes. This figure reports the shares of the different taxes in the revenue of the French state in 1789, the last year of operation of the "Old regime" tax system. Data source: Rochefoucauld d'Enville (1887).
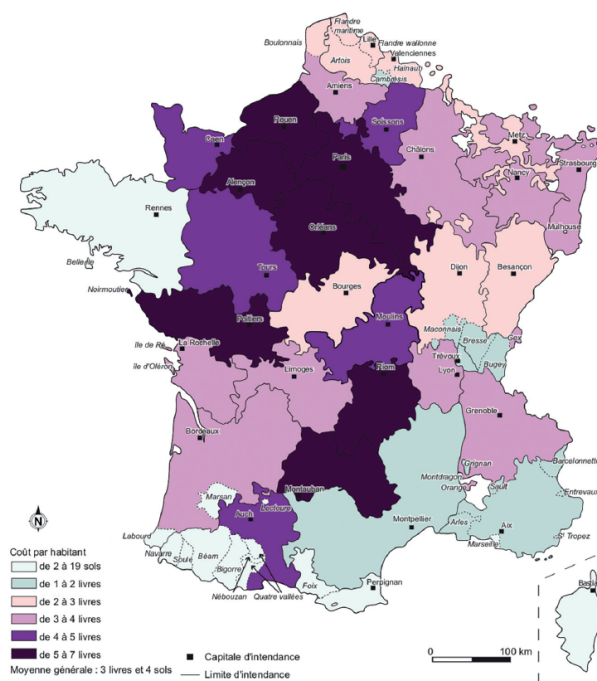

Figure A.2.25: The income tax per region

Notes. This map shows the income tax (*tailles*) contribution per capita in each administrative region (*généralité*) in 1778. Map from Touzery (2024).

B   Necker's methodology

To estimate the revenue loss associated with a decrease in the price of salt, we refer to top finance official Jacques Necker's protocol published in *De l'Admnistration des finances de la France* in 1784. We detail below the reasoning behind the four steps of Equation 3:

1. Because naively multiplying the counterfactual price of the high-tax region by total consumption in 1784 would ignore equilibrium effects resulting from the change in the price of salt, his method accounts for substitution effects. We define the elasticity resulting from the substitution of consumption of other goods (including smuggled salt) for consumption of legal salt c after a change in the price p in the high-tax region as follows:

$$e = \frac{p_{statusquo}}{c_{statusquo}} * \frac{c_{statusquo} - c_{reform}}{p_{statusquo} - p_{reform}} \tag{4}$$

   where e is the percent change in formal salt consumption when the price of salt increases by 1 percent.[46]

   The only unknown variable to estimate e in Equation 4 is c_{Reform}, the average level of salt consumption per capita if p_{Reform} was implemented. Necker suggests approximating this parameter by using the average per capita consumption in parts of France where the price of salt was already at a level similar than his proposal. We proceed in a similar way.

   He then multiplies this average per capita consumption by the total population of the high-tax region and by the reformed price to obtain a first estimate of the counterfactual revenue from the salt tax in the high-tax region, adjusted for any change in salt consumption induced by the change in price.

2. Second, Necker deducts the cost, C, associated with the increased consumption of salt triggered by the fall in price.[47]

3. Third, he adds back the saved resources s that were previously spent on smuggling prevention, since the new price should generate no smuggling opportunities.

4. Fourth, he adds the salt revenue from the low-tax regions G_{LowTax}.

C   Did the special courts increase government revenue?

The anti-smuggling special courts were set up at the start of wars, in anticipation of major financial needs, as can be seen in Figure A.2.12. Did they reach their goal of increasing government revenue?

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[46]Note that this elasticity can be decomposed into two parts. First, there is a substitution effect from other goods to salt as salt becomes relatively cheaper. Second, there is a substitution effect from smuggled salt to formal salt, as the benefits of the illicit trade decrease when formal salt becomes more affordable. One way to estimate this second elasticity in isolation is to look at the difference in salt consumption between cities exposed to salt smuggling (close to the border with exempted region) to those not exposed (located in the central part of the high-tax region).

[47]Because the state had the salt sales monopoly in the high-tax region, an increased in salt consumption would generate extra logistical costs for the state, mainly to supply salt shops with more salt.
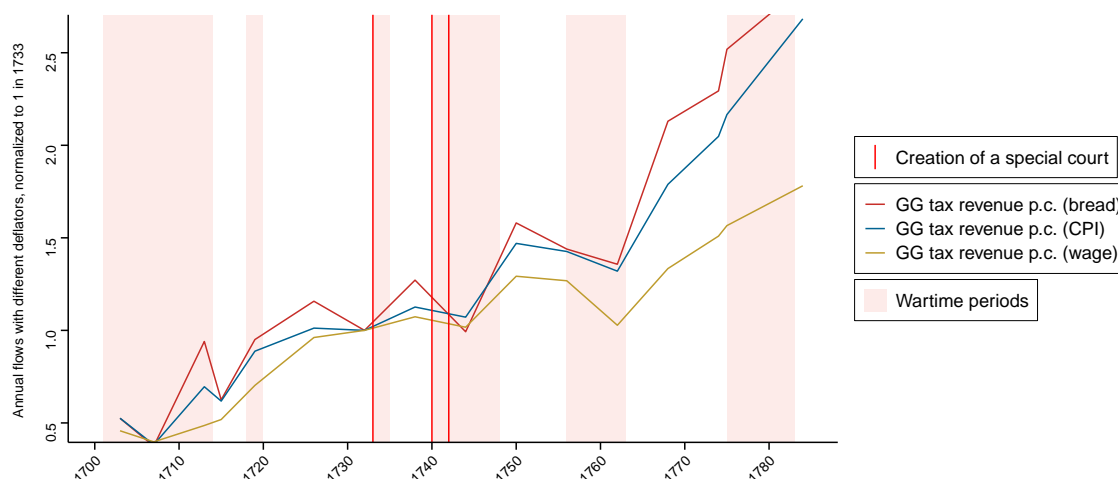
Figure C.0.1: Salt tax revenues per capita (various deflators)

Notes. This figure shows the trends in revenue from the salt tax in the high tax region (Grandes Gabelles, denoted GG), per capita, respectively deflated by the price of bread, a CPI, and wage of an agricultural laborer. Everything is normalized to 1 in 1733. Shaded pink areas indicate the periods of war, and red lines mark the timing of the creation of the special courts. Data source: same as in Figure A.2.12, and Ridolfi (2019) for the deflators.

Figure A.2.12 shows that the increase in tax revenue was moderate and delayed. In fact, revenues from the salt tax were constrained in the short run by the tax farming system, under which tax revenues were a fixed lease. When the state needed exceptional revenues, it mostly levied additional direct taxes (capitation, vingtième) in addition to borrowing. As the loans involved were substantial and would have to be repaid later, it made sense from a dynamic accounting perspective to also seek to strengthen the enforcement of indirect taxation, in order to support the value of the next indirect tax farming lease. Furthermore, the indirect taxes subject to smuggling, primarily the salt and tobacco monopolies, were those subject to the greatest fraud. As a result, an increase in direct taxation may have encouraged greater evasion of indirect taxation, and thus a need for stricter enforcement of the latter.

In addition, we need to consider how these taxes weighed on taxpayers. If we turn to how the salt tax weighed on household budgets by considering various deflators relevant for ordinary taxpayers (agricultural wage, the price of bread), we find a much stronger increase than for tax revenue (Appendix Figure C.0.1). This means that accounting the deterioration of economic conditions, the state was able to extract more from taxpayers following the creation of the new courts.

Finally, we can look at how this increase splits between the direct and the indirect part of the salt tax. The direct part (mandatory salt consumption) applied only in certain border districts and was intended as a tool against smuggling. As shown in Appendix Figure C.0.2, the amount of mandatory consumption steadily decreased over the century, contrarily to the amount of voluntary consumption. This implies that the state increasingly relied on revenues for which it was in competition with smugglers. This is consistent with a reduction in smuggling in the long run: the state was able to increase the tax burden only by increasing voluntary consumption per capita, implying that taxpayers recoursed less to smuggling. In this sense, the special courts achieved their goal.
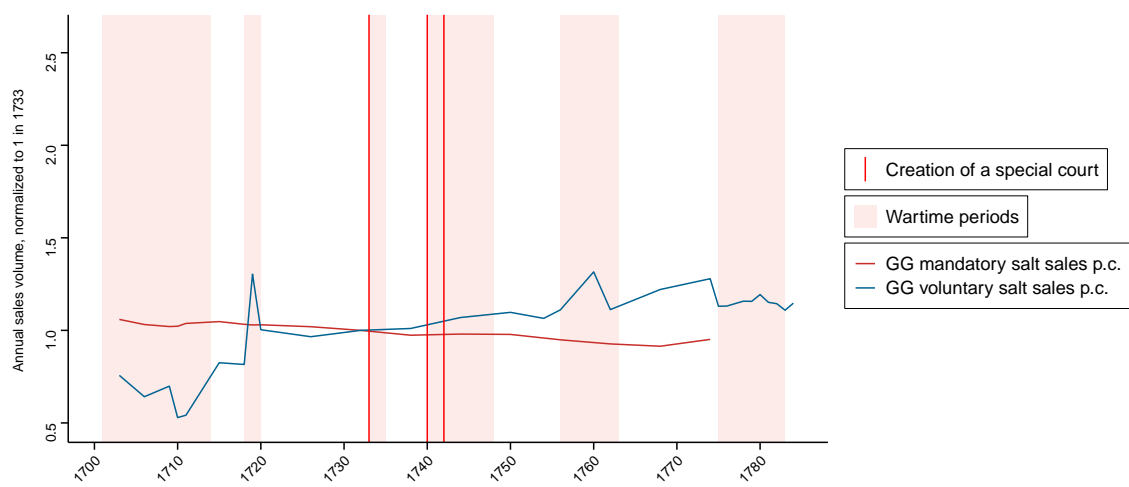
Figure C.0.2: Legal sales of salt tax revenues

Notes. This figure shows the trends in the volumes of salt sold by the state as part of the salt tax system in the high tax region (Grandes Gabelles, denoted GG), per capita, either from the direct tax system (mandatory consumption) or the from the indirect tax system (voluntary consumption), plus the total revenue from the tax expressed in grams of silver per capita. Everything is normalized to 1 in 1733. Shaded pink areas indicate the periods of war, and red lines mark the timing of the creation of the special courts. See text. Data source: same as in Figure A.2.12.