

The American Origin of the French Revolution^{*}

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France sent five thousand men to fight alongside George Washington's army in the American Revolutionary War. We show that the French combatants' exposure to the United States of America increased support for the French Revolution a decade later. French regions (départements) from which more American combatants originated had more revolutionary societies, volunteers for the revolutionary army, riots against feudal institutions, and emigrants from the Old Regime's elite. To establish causality, we exploit two historical coincidences: i) originally, a French army of seven and a half thousand was ready to board ships but one third did not sail to America because of logistical problems; ii) among the regiments who fought in America against the British, some regiments were stationed for one year in New England before the main battle, and in Virginia afterwards, while others were stationed in the Caribbean colonies. We find that only the combatants who were exposed to the United States affected the French Revolution after their return.

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“One may resist an invasion of armies; but one cannot resist an invasion of ideas”
— Victor Hugo

1. Introduction

Institutions, “the rules of the game in a society” (North, 1990, 3), are considered a fundamental cause of why some nations achieve economic prosperity while others fail to do so (Acemoglu, Johnson, and Robinson, 2005). National institutions—political ones such as democracy and economic ones such as feudalism—can be highly persistent with deep roots in the past (Acemoglu, Johnson, and Robinson, 2001). Yet, at critical junctures, these institutions can change very quickly (Roland, 2004). Popular discontent, political crisis, and economic shocks, such as draught and bad harvests, can increase the threat of revolution and trigger institutional change (Aidt and Franck, 2015). Since democracy has been shown to deliver economic growth (Acemoglu, Naidu, Restrepo, and Robinson, 2019), we typically take it for granted that people have a better institutional setting in mind when they revolt, drawing on their own and neighboring nations’ experience (Buera, Monge-Naranjo, and Primiceri, 2011). Recent empirical evidence supports the idea that these triggers may result in better institutions (Brückner and Ciccone, 2011). Yet, there is no iron law of history that institutions always change for the better. In fact, revolts frequently result in transitions to autocracy (Buchheim and Ulbricht, 2020). Thus, what determines popular support for institutional reforms towards more democratic institutions when revolutionary triggers arrive?

We consider the setting of the French Revolution to make progress on this question. The French Revolution led to the end of the monarchy and the feudal “Ancien Régime” in France and established the first full (though short-lived) democracy in 1792 (Furet, 1981; Israel, 2014). While descending after a series of coups into terror, military dictatorship, and restoration of monarchy, the reforms of the French Revolution in 1789–1792 reduced social and economic inequality lastingly and created the institutional bedrock that all subsequent regimes relied on for governance (Woloch, 1994). Moreover, it changed the institutional landscape across Europe and inspired institutional change for generations, reverberating into the twentieth century. As a result, is widely considered to be among the most significant institutional changes in history (e. g. Skocpol, 1979). Acemoglu and Robinson (2012, 130) describe it as the “critical juncture that led the institutions of Western Europe to converge with those of England,” since it “generated a series of interstate conflicts that spread institutional reform across much of Western Europe. The economic consequence of these reforms was the emergence of inclusive economic institutions in most of Western Europe, the Industrial Revolution, and economic

growth” (Acemoglu and Robinson, 2012, 327). But why was there in France in 1789 widespread support for reforms towards more inclusive institutions?

In this paper, we argue that individual exposure to better institutions matters. One disputed argument on the origin of the French Revolution in historiography highlights the importance of French veterans who fought in America less than a decade before the French Revolution (McDonald, 1951; Scott, 1998). During the American Revolutionary War, the United States established its independence from the British Empire and established democracy on its shores. The French regime, eager to support their enemy’s enemy, deployed several French infantry regiments under General Rochambeau to the United States.

We show that French veterans who fought in the American War for Independence under General Rochambeau (“American Combatants” henceforth) increased support for the abolition of the old feudal regime and institutional change for the better during the French Revolution. General Rochambeau and his regiments left the French port of Brest in 1780. They were stationed in Rhode Island for one year before marching to Virginia, joining forces with General Washington’s army. The American Combatants participated in the decisive battle of the War of Independence, the Siege of Yorktown, and marched back to New England, where they sailed back to France. During the two and a half years spent in America, the combatants had ample opportunities to experience a different society, which was characterized by more liberal political institutions—a democratic republic rather than an authoritarian monarchy—, a more equal land distribution, and the absence of what was perceived as arbitrary feudal privileges.

We collect individual-level data on the regional origins of the American Combatants from historical sources and show that American Combatants are a sizable and highly significant predictor of anti-feudal conflict across French regions (départements) throughout the Revolution. Weather shocks led to widespread unrest across France, ultimately culminating into Revolution. In some places, the anger of locals was directed against the old economic institutions, the feudal system, and the political elites associated with it. We show that regions where more American Combatants hailed from experienced significantly more anti-feudal protests during the French Revolution. This correlation is not only statistically highly significant but economically large as well. Controlling for several determinants of military recruitment—among those the number of all recruits from a region, its total population, urbanisation rate, and indicators for the presence of garrisons—we find that a one standard deviation in the logarithm of the number of Rochambeau combatants hailing from a particular region increases the logarithm of the anti-feudal protests there by 0.41 standard deviations. American Combatants explain about 8% of the residual variance in anti-feudal revolts. We find no such effect on other conflicts unrelated to the feudal system and no effect on conflict before 1789.

Similarly, we document sizable and significant conditional correlations of American Combatants with several further key proxies for local support of the French Revolution and the political and economic changes associated with it. First, we show that a one standard deviation in the logarithm of the number of Rochambeau combatants increases the logarithm of the number of local political societies founded in 1789 and 1790 by 0.31 standard deviations. The veterans' experience in America thus contributed to the establishment of political clubs in France, which were instrumental for political participation and for implementing the new policies at the local level. Second, we find that significantly more battalions of volunteers for the revolutionary army were formed during 1791–1792 (*before* mass conscription) in regions where more American Combatants hailed from (standardized β of 0.2). This indicates increased local support for defending the gains of the French Revolution against the counter-revolutionary backlash both from monarchists within France and by other monarchies across Europe. Lastly, we document that significantly more landowning elites left these regions after the Revolution (standardized β of 0.38), reflecting greater local agitation for the French Revolution.

There are two core concerns with a causal interpretation of these conditional correlations. First, democratically-minded individuals might have selectively signed up for Rochambeau's regiment. *A priori*, this concern is directly addressed by our historical setting. Regiments were staffed well before, and those regiments that sailed to the American continent under General Rochambeau were not initially assembled for this purpose. Instead, they were part of a larger force intended to invade England. This initial plan was abandoned as Spanish support for such an invasion fell short. The following plan of a special expedition to the United States was kept secret. Soldiers could have hardly self-selected into these regiments, anticipating participating in a conflict on American soil. Indeed, the future combatants did not know the final destination until *after* they set sail. A second concern is unobserved regional factors—such as economic hardship—which might have resulted in both more American Combatants from particular regions and higher support for the French Revolution a decade later in those regions.

To address this second concern, we draw on a natural experiment of history to argue that these conditional correlations reflect the causal effects of American Combatants. At the core of this are soldiers from the *Neustrie* regiment. This regiment was intended to participate in the special expedition to the United States. Thus, the soldiers and the regiment itself were arguably subject to similar selection concerns. However, due to an unforeseen shortage of ships, this regiment was left behind at the French port city of Brest. The plan was for this second division of soldiers to follow the American Combatants as soon as possible. Yet, due to logistical shortcomings and, later, a naval blockade, the king canceled the plan to send these

soldiers to American soil.

The would-be combatants of the Neustrie regiment, who were ready to serve in the United States but did not sail, serve as a placebo which enables us to mute any selection concerns associated with the American Combatants who actually set foot on American soil. We digitize individual-level data from primary sources to get information on the regional origins of the soldiers of the Neustrie regiment. We find no significant or sizable positive association of the number of soldiers from this placebo regiment with any of our proxies of support for the French Revolution across French regions. If anything, the regions with more such soldiers have fewer early political societies and landowning elites leaving them.

We also use this placebo regiment to assess whether our results based on American Combatants could result from (potentially) spurious correlations with several variables capturing regional features in geography, politics, and human capital. Suppose any of these features would constitute omitted variables causing both soldiers to leave particular regions and increasing support for the French Revolution later. In that case, these features must be systematically associated with only the number of American combatants and not those soldiers from the Neustrie regiment who are not associated with the French Revolution. Out of about 25 such variables, only one is significantly differently associated with the number of American Combatants but not the number of soldiers in the Neustrie regiment—the indicator for Paris which we already included in all baseline specifications. This exercise, combined with the historical context, assure us that the baseline correlations between American Combatants and the proxies for the French Revolution truly reflect the causal effects of soldiers' deployment to the United States and not the selection of soldiers into the American campaign or confounders at the region level.

Why did the French troops' deployment to the United States result in regional differences in support for French Revolution in France? Two interpretations of what they experienced while in the United States are conceivable. The first interpretation is that Rochambeau's soldiers were exposed to the existing economic and emerging political institutions in the United States. The American Combatants were in direct exchange with locals during the special expedition and directly experienced the absence of a feudal system in the American colonies, especially as they marched from New England to Virginia and back, spending two years on the American continent. An alternative interpretation is that the soldiers of Rochambeau's regiment might have gathered battle experience during the conflict, which they could draw on when the revolution broke out six years after their return.

We draw on another historical coincidence to show that prolonged exposure to the United States—rather than mere battle experience gained there—drives our result. While Rochambeau's soldiers participated in one major battle, the Siege of Yorktown (Virginia), they also

lived in the United States for two years. A second army, led by General de Grasse participated in the same battle but spent only two months in the United States. This army was stationed in the slave-holding Caribbean colonies and thus not exposed to the United States to the same degree. We collect information on these soldiers' origins to distinguish between the importance of exposure to the United States versus battle experience. We find no evidence, for any of our outcomes, that regions from which a higher number of soldiers of de Grasse's army hailed had more support for the revolution.

How did the American Combatants bring the Revolution "home?" We provide two pieces of suggestive evidence to answer this question. First, we distinguish between the officers and soldiers among the American Combatants and compare their effects on our outcomes indicating support for the French Revolution. We find that both groups drive our results. Each group contributed according to their abilities. Soldiers have a sizable bearing on anti-feudal revolts and the later emigration of landowning elites. This suggests that those ordinary soldiers, often hailing from rural areas, sparked revolts in their origins, ultimately leading to the emigration of the former landowning elites. Officers, in contrast, drive our results concerning the early foundation of political societies. This suggests that they likely employed their organizational talent locally to contribute to the comparatively earlier emergence of political societies. Both soldiers and officers affected local volunteering for the voluntary army.

Second, we inquire whether any pre-determined characteristics rendered regions more susceptible to American Combatants' effect on the French Revolution. We document relevant heterogeneity along several dimensions. First, the effects are significantly larger in regions where the local nobility was powerful and weaker in the regions that were traditional strongholds of the king. Second, regions with more pronounced temperature and precipitation shocks just before the French Revolution and more American Combatants experienced more anti-feudal conflict. Yet, we find no such heterogeneity for early political societies. Considering the different effects for officers and soldiers, this is consistent with the idea that those shocks activated peasant combatants but not the mostly literate officers. Thirdly, we show that our baseline effects are not varying with the local stock of upper-tail human capital (proxied for with the subscriber density to the *Encyclopedie*, Squicciarini and Vogtländer 2015). This suggests that what drives our results is not the access to abstract ideas about political and economic institutions by local elites but rather the communication of such ideas embedded in individuals' own experiences. Lastly, we show that American Combatants matter less in places with better access to such ideas in the first place, i.e. regions with more markets and fairs and those with more post houses. This is consistent with an interpretation that the transfer of ideas across the Atlantic mattered more where such ideas were less accessible

otherwise.

The paper proceeds as follows. In Section 2, we detail the paper’s contribution to the literature. Section 3 describes the historical background, and section 4 the data sources underlying our analysis. Section 5 presents our main results, documenting a strong conditional correlation between Rochambeau’s soldiers and support for the French Revolution. We provide evidence in section 6 that this conditional correlation reflects the causal effect, drawing on placebo regiment of soldiers that did not sail to the United States. Section 7 provides evidence that the mechanism behind this result is exposure to the United States and not battle experience per se, drawing on another placebo regiment that fought in the same battle but did not spend any time beyond this in the United States. We provide some suggestive evidence on how the experience in the United States was transmitted in section 8. Section 9 concludes.

2. Contribution to Literature

The paper contributes to several strands of literature. First, our findings speak to the literature in economics studying national institutional change. The effects of institutional change are well documented in various settings (Acemoglu et al., 2005), including the French Revolution’s impact on neighboring states’ institutions (Acemoglu, Cantoni, Johnson, and Robinson, 2011). Yet, while there is some agreement on the factors that can trigger unrest and drive demand for institutional change (Brückner and Ciccone, 2011), to the best of our knowledge, there is no casual evidence on what ensures that those triggers will result in more inclusive institutions. The French Revolution is a prime example of such a critical juncture (Roland, 2004), and the historical setting enables us to provide causal evidence on one determinant: exposure to more inclusive institutions elsewhere by even a small set of individuals. As we show, ideals and ideas embodied in people can be decisive agents of institutional change.¹ This might still be an essential factor in more recent examples of institutional change, but the omnipresence of information due to media hinders causal identification in those contexts. Our findings also relate to Aidt and Franck (2015), who document that local riots in England induced voters

¹An alternative interpretation emphasizes the role of veterans in organizing collective political action, rather than their exposure to different ideas in the United States. For instance, Jha and Wilkinson (2012) document that combat experience in WWII increased organizational skills among South Asian veterans, and Cagé, Dagorret, Grosjean, and Jha (2021) show that French veterans of the Battle of Verdun in WWI legitimized and diffused the autocratic rule of their former general during the Vichy regime. Note that our mechanism analysis does not support such an interpretation in our setting. Our results cannot be driven exclusively by the organizational skills of veterans, since we generally find no effect for de Grasse combatants, who fought the same battle of Yorktown but were not exposed to United States institutions. At most for the outcome of enlisting national volunteers, which we find to be positively although insignificantly associated with the number of de Grasse combatants, our results are consistent with an explanation that highlights the interaction of organizational skills from military experience and exposure to New England.

to elect pro-democratization politicians, thus instigating national institutional change. Our findings highlight how personal exposure to different institutions drives grassroots protest and popular support for institutional reforms. Such contagion of ideas has often been highlighted in historical accounts, such as when the Revolutions of 1848 spread over Europe or—closer to our context—when the revolutions in the US and France are jointly discussed as “Atlantic revolutions” by (Palmer, 1959, 1970; Godechot, 1965) and, more recently, by Israel (2017).² Naturally, personal exposure creating cross-country linkages may be one of the reasons why institutional change occurs in regional waves (e. g. Markoff, 1996b; Acemoglu et al., 2019).³

Our findings further inform nascent literature in economics studying the trans-Atlantic transfer of political ideas and ideals embodied in people.⁴ A seminal contribution, (Acemoglu et al., 2001) argue that European’s exported a particular set of inclusive institutions to the New World when settling there. The new settlements established local institutions in some places (New England, Pennsylvania) that surpassed the Old World’s ones in inclusiveness (Israel, 2017). As part of the Atlantic community of the eighteenth century, the settlement were also receptive to Enlightenment ideas about good governance spreading from Europe (May, 1976; Bailyn, 2005). Our paper shows how these institutions and ideas were “re-imported” into Europe through the experience of French officers and soldiers which were deployed for more than a year to New England, and for a shorter while to Pennsylvania (Philadelphia). Among more recent economics studies on the trans-Atlantic exchange of ideas and ideals embodied in people, Giuliano and Tabellini (2020) document how European immigration transplanted preferences for redistribution to the United States, Dippel and Heblich (2021) show how political leaders of the 1848 revolution in Germany who fled to the United States instigated local support for the Union during the Civil War, and Beach and Hanlon (2022) show how news coverage of a British trial about fertility restriction lead to declining fertility among culturally British households residing in the New World. Our findings highlight that the transatlantic transfer cuts both ways and influenced one of the major events in European history. Beyond our focus on national institutional change, a key difference between our finding and the

²However, note that Palmer (1959, 1970) and Godechot (1965) focus less on the contagion of ideas but instead emphasize commonalities in economic and social conditions.

³Within the political economy literature, our paper further contributes to the debate on the agents driving democratization. In particular, while Lizzeri and Persico (2004) argue that members of the elite can be agents of institutional change, Acemoglu and Robinson (2000) on the other hand, emphasize that outsiders may threaten to overthrow the elites, thus initiating institutional change. In our setting, both normal soldiers and officers are affected by exposure to new institutions, and we document that both drive institutional change back in their region of origin.

⁴A related literature studies the effect of migration and the corresponding exposure to new ideas on the diffusion of political ideas (e.g., Spilimbergo, 2009; Barsbai, Rapoport, Steinmayr, and Trebesch, 2017) and development (e.g., Sequeira, Nunn, and Qian, 2020; Salem and Seck, 2022). We complement this literature by focusing on a brief and non-permanent exposure and highlights its importance for major institutional change.

complementary one of [Dippel and Heblich \(2021\)](#), is that the agents of institutional change in our setting only become social leaders ([Acemoglu and Jackson, 2015](#)) after setting sail to the United States. In this sense, we study how those local leaders can emerge from (arguably random) exposure to more inclusive institutions.

Lastly, we speak to the historiography of the French Revolution. A voluminous literature has tried to identify the causes of the French Revolution ([de Tocqueville, 1856](#); [Lefebvre, 1939](#); [Furet, 1978](#); [Doyle, 1999](#); [Israel, 2014](#)).⁵ Prior empirical and plausibly causal evidence emphasizes economic shocks, in particular the severe drought in 1788, as a cause of social unrest and revolt ([Waldinger, 2021](#)).⁶ This paper focuses instead on the link between the American and French Revolutions, connecting the experience of American institutions by French soldiers to demand for institutional change back home. Closest to our finding, [McDonald \(1951\)](#) first documented a spatial correlation across départements between the number of American combatants and agricultural revolts in 1789, arguing that peasant soldiers were effected by their American experience. Subsequent historical studies failed to confirm the importance of American combatants for revolutionary outcomes (e. g. [Scott, 1998](#)). Beyond vindicating McDonald’s hypothesis by providing a causal interpretation for his correlations, we also provide novel evidence on other outcomes beyond revolts. Rather than relating to the demise of the old feudal order, outcomes like political societies and voluntary soldiers were critical for establishing—and defending—the new republic. Moreover, we show that not only soldiers who served in America but also the officer corps supported institutional change.

3. Historical Background

In this section, we provide the necessary background knowledge for the remainder of the paper. We trace the French campaign in the American Revolutionary War and discuss the French soldiers’ exposure to the United States and the economic and political institutions there. Then we provide a brief historical sketch of the French Revolution a decade later and discuss the role of the American combatants therein.

⁵A nascent literature in economics analyzes the consequences of the French Revolution ([Acemoglu et al., 2011](#); [Franck and Michalopoulos, 2017](#); [Finley, Franck, and Johnson, 2021](#); [Chambru, Henry, and Marx, 2021](#)).

⁶[Chambru \(2019\)](#) documents a causal link between temperature shocks and social conflict in France before the French Revolution. Note that our heterogeneity results weakly support the notion that anti-feudal riots were more common in departments experiencing economic shocks. However, we find no evidence that subsistence conflicts were systematically more common in 1789 in regions from which many American combatants hailed. This suggests that the combination of veterans’ exposure to new ideas and the presence of the economic shock can help explain why revolts turned against the feudal system in 1789 only, resulting in the French Revolution, but not during earlier episodes of economic shocks.

3.1. The French Involvement in the American Revolutionary War

The American Revolutionary War (1775–1783) guaranteed the British North American colonies—since 1776, the United States of America—their independence from Britain. One of the key political events of the period was the Declaration of Independence on July 4, 1776, which provided the legal and moral justification for the American colonies’ right to secede from the “tyrannical” British Empire. Among the most important military events of the Revolutionary War was the Siege of Yorktown (September 28, 1781, to October 19, 1781) where George Washington’s Continental Army decisively defeated the British army under General Cornwallis.⁷ Crucially, the Continental Army achieved this military victory at Yorktown only with substantial support from the French army.

The French involvement followed the logic that the enemy of your enemy is your friend. King Louis XVI harbored few democratic sentiments when supporting the rebelling American colonies against Britain. Instead, he chiefly sought revenge for losing colonies in North America and the Caribbean to Britain during the Seven Years’ War (1756–63). Starting in 1776, France covertly supported the cause of American independence with money and supplies, and by 1778 entered into an official Treaty of Alliance. Thereafter, France also entered openly into the military conflict, such as the battle of Newport (August 1778), when a French fleet supported American forces in retaking Newport, Rhode Island, and the Siege of Savannah (September–October 1779), where American forces together with a French army of 500 raised in the colony of Saint-Domingue (today Haiti) unsuccessfully attempted to retake Savannah, Georgia.

At the end of 1779, the French king approved a military mission to deploy a French army to the United States in support of General Washington’s Continental Army. This *Special Expedition* had not been planned long beforehand. Instead, the French command developed it as an alternate plan only after the original plan, an invasion of England together with Spain was canceled. For the invasion, more than twenty thousand French troops had been concentrated in Normandy and Brittany during the summer and autumn of 1779 before the plans were called off due to insufficient progress of preparations on the Spanish side (Scott, 1998). For the alternate plan of the Special Expedition, General Comte de Rochambeau chose from the concentration of fighting-ready troops an army of 7,500 comprising six infantry regiments, two artillery battalions, and one cavalry battalion. Ready to sail to America from the port of Brest, a shortage of cargo ships in March 1780 frustrated the preparations and forced Rochambeau to leave one-third of his army behind. The left-behind troops were

⁷ As emphasized by historians (e. g. Ferling, 2021), the northern theater of the war up to the battles of Saratoga (September and October 1777) may be particularly salient due to local commemoration and “historical lore”, yet it was the military campaigns in the South after Saratoga that were central for deciding the revolutionary war.

intended to follow as soon as possible and finally sailed half a year later. However, plans were thwarted again when a British naval blockade forced this second convoy to return to Europe, at which point the French king canceled the left-behind troops' mission.⁸

Rochambeau's expeditionary army of five thousand men spent two and a half years in the United States of America. After arriving in Newport in July 1780, the troops were stationed in Rhode Island until June 1781, awaiting the arrival of the left-behind troops—which never arrived—and, after that, waiting out the winter instead of taking immediate military action. Starting June 1781, the army marched past New York, where they joined forces with Washington's army, and onto Virginia, where they fought and defeated General Cornwallis' British army at Yorktown. For this battle, the joint American–French army received a further reinforcement of 3000 French troops—three entire infantry regiments of the line. These additional troops were usually stationed in the French Caribbean colonies but were present in the area by coincidence (or providence). Admiral Comte de Grasse, who engaged the British navy at the battle of Chesapeake bay on September 5, 1781, took them as excess staffing for his fleet to North America. However, these additional troops disembarked just before the Siege of Yorktown began, participated in the siege works and fierce fighting against the British, and re-embarked shortly after the battle was won. Rochambeau's army, in contrast, stayed in Virginia over the winter, marched back triumphantly to New England over the spring and summer of 1782, visiting Washington, Baltimore, and Philadelphia on the way, and finally boarded ships home in December 1792 at Boston.

3.2. The American Experience of the French Army

What did the French combatants experience in America during the Special Expedition? Certainly, they gained combat experience during the Siege of Yorktown, which saw significant casualties on both sides. Yet, the siege was the combatants' only substantive battle experience during the Special Expedition. The majority of casualties, instead, resulted from disease, in particular scurvy and “fever” (most likely malaria).⁹ The great majority of French combatants—around 80% according to our estimates—returned home to France in 1783.¹⁰

Apart from the battle experience the combatants also experienced different political and

⁸Instead of sailing to America, the ships only reached the Spanish port of Cadiz. From there, the left-behind army—including two full-strength infantry regiments of the line—returned home to France.

⁹The incidence of scurvy was high when the troops arrived in Rhode Island, with one-seventh requiring hospitalization upon arrival and 270 men dying during the voyage and within the first six months after arrival (e. g. Scott, 1998, 109). “Fever” and malaria were particularly problematic when the troops were stationed in Virginia, Baltimore, and Philadelphia after Yorktown.

¹⁰The estimate refers to the three French infantry regiments which comprise our sample of “Rochambeau combatants,” see sections 4 and 5. Scott (1998) provides a very similar assessment including further data on the rest of Rochambeau's expeditionary army.

economic institutions. In particular, from the perspective of France, the United States of America embodied ideals of liberty, equality, and tolerance. We consider these differences in turn. First, liberty primarily refers to political rights which ensured, for example, the freedom of the press and opinion and the freedom of association. In contrast to the U.S., France was an authoritarian monarchy that censored the press, imprisoned people for moral and political views, and strictly regulated all forms of associations by requiring royal letters patent. Second, equality primarily refers to economic and social equality rooted in a more equal distribution of land and property in America. In stark contrast, feudal rights of lordship (*seigneurie*) restricted economic freedom in France. Lastly, tolerance primarily refers to the toleration of religious minorities, contrasting to the persecution of the Protestant Huguenot minority by the French monarchy.

These American ideals of liberty, equality, and tolerance were not entirely new to France—in fact, they had been embraced for years by the French enlightenment philosophers. What was certainly new to the French combatants, however, was the experience of a society where these ideals were acted out in practice (e. g. Scott, 1998, 122).¹¹ Rochambeau's combatants spent more than a full year in New England, a region where slavery and large-scale landholdings were more-or-less absent (in contrast to, for example, Southern Virginia) and thus the “American ideals” particularly salient.

How did the French combatants come into contact with these different U.S. institutions? And is there individual-level evidence that this experience instilled in the veterans a greater taste for liberty and equality? We distinguish between officers and soldiers in our discussion for two reasons. First, officers and soldiers were potentially exposed differently to U.S. institutions due to military hierarchy and social status. Second, officers created abundant historical sources by writing letters and diaries, whereas soldiers were often not literate and thus barely left accounts as sources for historians.

The officers in the French army were generally of noble status and came into contact with American citizens through many channels. For example, officers were regularly quartered in houses and thus lived under the same roof as American citizens.¹² Officers were also invited

Aside from mortality, the rate of desertion was remarkably low (below 5% in total), and few men chose to remain in America for various other reasons (below 2% in total) (Scott, 1998, 103). Importantly, the desertion and discharge rate is even lower for this paper's “Rochambeau combatants” because the deserters and discharges were primarily from the Deux-Pont infantry regiment, which was a German foreign legion in the French army, and from the Lazun's Legion cavalry battalion (cf. Scott, 1998).

¹¹“This court aristocrat [Comte de Ségur] claimed he and other officers brought back to France ‘a lively passion for freedom and for independence.’ Yet, what seems to have impressed most of Rochambeau's veterans, who had lived in the United States for about two and a half years, were not abstract political principles but more mundane practices, notably religious toleration and social equality rooted in widespread economic prosperity.” (Scott, 1998, 122)

¹²For example, see Stone (1884, 321–3) for a list of the quarters (incl. street and house owner) of French

to “endless balls” and receptions where they mingled with locals (Scott, 1998). In addition, officers were not required, as common soldiers were, to receive permission for going into town in the evening. Some officers even obtained permission to explore the countryside on their own. The intensity of the personal contact between French officers and American citizens can also be gauged from the amicable letters that were exchanged after the French departure (Jones, 2012).

The soldiers, lacking the social prestige and military status of officers, were less free to mingle with locals, yet they nevertheless had extended contact with locals. Originally, Rochambeau set up camp outside of the town of Newport, and military hierarchy required soldiers to obtain a written permit to leave the camp. However, all soldiers moved into town for the winter. While not staying under the same roof as Americans—the army especially rented (and repaired) houses for quartering soldiers—the French soldiers still lived next door to American citizens (Scott, 1998; Jones, 2012). In such a situation, the separation of the French army from the locals could not be upheld by rules—except for visits to pubs, which remained forbidden unless in the company of an officer. General Rochambeau’s remark that “not a man had been left behind ‘except ten love-sick soldiers of Soissonnais who returned to see their sweethearts’ ” in Newport (Scott, 1998, 55) provides indirect, albeit compelling, evidence for the close contacts that existed between French soldiers and American locals.

Moreover, the French military also printed a French-language newspaper in the United States to keep informed about military events and local affairs. The great majority of articles were translated from American newspapers—which contained heavy doses of revolutionary propaganda and agitation against the British monarchy.¹³ Many enlisted soldiers were probably illiterate, but at least some must have been literate (Wrong, 1976) and could thus read the army newspaper to others (often in groups). Thus, it does not seem unreasonable that the newspaper’s content reached beyond the ranks of noble officers and transpired to common soldiers.

The available individual-level historical evidence suggests that the American experience indeed changed some individuals’ attitudes toward liberty and equality. Most prominent and best studied among the American combatants is the Marquis de Lafayette—who was, it should be noted, *not* part of the Special Expeditionary force. Biographers of Lafayette

officers in Providence, Rhode Island, during the year 1780–81.

¹³Newspapers were not common in France on the eve of the revolution, but they were in North American colonies/United states (Hyslop, 1960). The “Gazette Française” was printed with a printing press that Rochambeau’s army brought on a ship. It has long been thought that only 7 volumes were printed between November 1780 and January 1781. However, a supplement to volume 93 was recently discovered in an archive, proving that it was printed at least until November 20, 1781, *after* Yorktown. The newspaper is the first service newspaper published abroad by an expeditionary force, and as such predecessor of the U.S. “Stars and Stripes” newspaper printed by U.S. Armed Forces in France during the two world wars (Desmarais, 2021).

argue that he signed up in Washington's army primarily seeking adventure and fame, rather than supporting the American cause, and was converted to a proponent of liberty through his experience in the United States (Gottschalk, 1950). After the war, Lafayette became the focus of an informal circle that intentionally propagated American ideals such as liberty and equality (Scott, 1998, 122). Some officers who had served under Rochambeau in America shared those views. For example, count de Ségur (who only spent three months on American soil) claimed he and other officers brought back to France "a lively passion for freedom and for independence" (Scott, 1998, 122).

3.3. The French Revolution

The historiography highlights at least two processes or events that lead up to the revolution of 1789. The following overview of the French revolution up to 1792 follows classical historical accounts (Lefebvre, 1939; Doyle, 1999; Tackett, 2015). One economic trigger that may have contributed was the bad grain harvest of 1788. Depending on the account, this was the result of either droughts or hailstorms. In any case, since threshing was a major source of seasonal employment, unemployment rose through autumn and winter while the price of grain rose steadily. "Vagabonds" started to move across town and country, asking for work or bread. It is unclear how hard famine hit the populace; at any rate, widespread food riots broke out between the spring and summer of 1789, compounded by waves of "fear" and unrest (Lefebvre, 1932; Waldinger, 2021).

A second, political, trigger that could have enabled the revolution was the fiscal crisis of 1787, caused by the de-facto default of the royal government on its debt.¹⁴ After the initial attempt failed to increase revenues by taxing the clergy and nobility, which previously were essentially tax-exempt, the *Estates General* were called—a legislative and consultative assembly composed of the three classes clergy, nobility, and third estate (it had not been convened since 1614). Despite much political maneuvering, the fiscal crisis could not be solved, creating a power vacuum that enabled the third estate to push for reforms. Deputies in the *Estates General*, joined by a small group of liberal nobles—among whom some had served as officers under Rochambeau and thus previously experienced U.S. institutions, see below—decreed the abolition of feudalism on August 4 and declared the rights of man and the citizen. At the same time, citizens revolted throughout the country, attacking feudal institutions and, most famously, storming the Bastille on July 14 (Lefebvre, 1939; Markoff, 1996a).

¹⁴It has been argued that the debts incurred to finance France's participation in the American Revolutionary War destroyed the government finances. An alternative view holds that the critical debt was incurred to finance the Seven Years' War twenty years earlier. Either way, the expenses for the *Special Expedition* were few compared to the expenses for the Royal navy during the American Revolutionary War.

The revolution of 1789 triggered three characteristic processes that we study as measures for support for revolutionary change across France. The first is the bottom-up establishment of political societies in cities and towns, among which the most famous was the Jacobin club of Paris. The second is the recruitment of voluntary soldiers for the revolutionary army, starting bottom-up after July 14 as the National Guards and later called for by the revolutionary government as the “National Volunteers.” The third is the emigration of the landowning elite. The elites’ flight to monarchical safe havens, located predominantly in the Austrian Netherlands, the German Rhineland, and Italy, accelerated after King Louis XVI unsuccessfully attempted to flee the country in August 1791, and signifies the local intensity of revolutionary agitation (and sometimes violence). All of these processes are rooted in the year 1789.¹⁵

3.4. The role of American combatants in the French Revolution

Historians have debated the hypothesis that the American combatants contributed to precipitating the French revolution. Yet, they mostly concluded that these soldiers played a minor role, if any at all. McDonald (1951) first pointed out a positive spatial correlation between the incidence of American combatants and anti-feudal revolts in 1789. He argued that peasants were particularly impressed by the absence of feudal institutions in the United States. Godechot (1956) criticized that McDonald did not account for the possibility that some unobserved region characteristic like general economic hardship may have increased both army enlistment and the incidence of revolts. (Our identification strategy addresses this and similar concerns.) Scott (1979) and Scott (1998, 138) studied the *Special Expedition* to America in detail but rejected McDonald’s argument—essentially, in our reading, based on the absence of evidence on the quantitative importance of the American combatants. This negative assessment has been accepted by many historians (e. g. Bertaud, Reichel, and Bertrand, 1989; Geggus, 2000).¹⁶ Yet, a few historians have recognized that the general question of the causal influence of the American Revolution on the French Revolution remains open. For example, Israel (2017) documents ample historical evidence that the American Revolution and the ideals propagated were very salient to French revolutionaries. Also, it has been recognized that, rather than being implausible, it is just very difficult to causally establish with the historical method through which channels the ideas diffused from America to France (Campbell, 2013). Regarding other measures of support for revolution and agitation against the Old Regime—such as the establishment of political society, the enlistment of

¹⁵We provide additional historical background on these processes, as well as the incidence and types of revolts, in the data section 4.2 and data appendix A.

¹⁶For early scepticism on this negative conclusion, see Godechot (1979).

volunteers for the army, and the incidence of emigration—, the present paper is (to the best of our knowledge) the first to propose a causal influence of American combatants on these outcomes.

Before moving on to the empirical argument, we briefly summarize individual-level anecdotal evidence on the direct involvement of American combatants in revolutionary events. Again, we discuss officers and soldiers separately because of (i) the different types of evidence available, and (ii) the different outcomes they appear to have contributed.

Studying the biographical information collected by Bodinier (1983), we find that officers elected deputy to the General Estates for the nobility were more likely to be affiliated with small group of noble liberals if they were stationed in the United States under Gen. Rochambeau compared to those officers who had fought in the Siege of Yorktown but were not otherwise stationed in the U.S. Admittedly, the sample is quite small: Only seven officers under Rochambeau and three officers under de Grasse were elected deputy (see Table A.5 for an overview). Nevertheless, the emerging pattern is striking: Among Rochambeau's officer-deputies, five were liberals and either voted for the abolition of feudalism in the night of August 4th or sat together with the third estate, breaking the traditional order; one was a moderate; and only one was a royalist. Among de Grasse's officer-deputies, none was liberal, one moderate, and two were royalists and opposed to institutional change. Astonishingly, one of Rochambeau's officer-deputies was among the most liberal: the Count de Noailles became famous in history as the first noble to voluntarily renounce his feudal rights on the Night of August 4. Among de Grasse's royalist officer-deputies, in contrast, the Vicomte de Mirabeau sat on the "extreme right" (Bodinier, 1983, 406), opposed to the liberals sitting on the left.

The participation in revolutionary activities of soldiers who had experienced the United States under Rochambeau is much harder to document because of the absence of biographies. However, for the few outcomes for which individual-level evidence can be obtained through "lists of participants," there exists clear evidence for the involvement of American combatants. For example, at least one veteran soldier "risked his life" in the Storming of the Bastille and helped the Parisian crowds capture the "fortress-prison-armory" in his capacity as cannoneer (Scott, 1998, 137).¹⁷ Also, several former soldiers under Rochambeau enlisted in the Parisian National Guards at a time when the decision represented a clear commitment to the cause of the Revolution (Scott, 1998, 137).

¹⁷The evidence exists because this was one of the key events of the Revolution, and lists of *Vainqueurs de la Bastille* were drawn up respectively. The finding is not completely to be expected since the modal conqueror of the Bastille was a carpenter living in the neighboring Paris faubourg. Notably, the non-Paris, non-carpenter conquerors also comprise two foreigners who had participated in the Geneva Revolution of 1782 (Godechot, 1970).

4. Data

We construct variables for the main treatment, alternative treatment, and control groups based on individual-level data on soldiers' origin (birth place) from military records. In the baseline, the unit of analysis will be the French *département* or department, administrative regions created during the Revolution, because we observe some outcome variables measuring support for the Revolution only at this level. Other outcomes we also observe at finer levels of aggregation like the level of towns. We use this variation in additional analyses to establish robustness. The remainder of this section provides an overview on data sources and variable construction; Appendix A provides more details, including a list describing all variables employed along with their source (Table A.1) and summary statistics of the main variables (Table A.2).

4.1. American Combatants and Would-be Combatants

We focus on French infantry regiments of American combatants, which we separate into treatment group and alternative treatment group, and of would-be combatants as control group. The main treatment group are General Rochambeau's combatants, who saw the United States before and after the Siege of Yorktown. In particular, we consider the French infantry regiments Bourbonnais, Saintogne, and Soissonnais.¹⁸ The alternative treatment group are Admiral de Grasse's combatants, who participated in the Siege of Yorktown but did not see the United States before and afterward. This group comprised the three French infantry regiments Agénois, Gâtinais (Royal-Auvergne), and Tourraine. The control group is French infantry regiment of Neustrie, which would have become American combatant if it was not for logistical problems that forced them to stay behind.¹⁹

The individual-level data on soldiers rely on the original military records, handwritten regimental books preserved in the archive of the French Ministry of War. For the American combatants, historians already transcribed the list from the regimental books of 1776–1786 (Ministère des Affaires Étrangères, 1903; Dawson, 1936). Moreover, the list has been digitized by hobby genealogists and is available online.²⁰ For the would-be American combatants

¹⁸We do not use individual-level data for the German infantry regiment of Deux-Pont, a foreign legion. Neither do we use data for the cavalry (Lazun's legion) or the artillery (Auxonne regiment, 2nd battalion), since we do not have a good control group of cavalry and artillery that was selected to participate but stayed behind.

¹⁹The second infantry regiment that stayed behind was the German infantry regiment of Salm-Salm, a foreign legion.

²⁰See www.francegenweb.org/lafayette, last accessed 06/30/2022. We prefer to use the crowd-sourced data for two reasons: First, this data already amends the basic list of combatants (Ministère des Affaires Étrangères, 1903) with the corrected list of casualties (Dawson, 1936). Second, in this data source most birth places are already geo-localized. We spot-check the quality of the crowd-sourced digitization and assess its accuracy as

from the Neustrie regiment, the control group that was ready to sail but stayed behind, we transcribe the regimental book of 1776–1786 manually.

The regimental books provide us with a wealth of data on combatants for most regiments. The basic data is the first and last name, the date and place of birth, the date of first enlistment and of re-enlistment, and the rank. If applicable, the data also records events during or after the campaign: Date and place of deaths, date and reason of discharge, desertion, and promotions.²¹ The data are complete except for a few gaps: For the Agénois regiment under De Grasse, we only have data on the officers but not on the soldiers; for the Bourbonnais regiment under Rochambeau, we do not have events after 1783; and for several regiments, the place of birth is missing for several sub-lieutenants with noble last names.

Figure 1 provides a map of the department-level residual variation in the number of Rochambeau’s combatants, conditional on a set of control variables described below. Appendix A.2.1 provides further details on the geo-localization rate of birth places, which is good but not perfect (there were no standardized spelling rules at the time for writing town names), and the ranks we use to classify combatants into officers and soldiers.

4.2. Support for the French Revolution

We collect data on four proxies measuring support for the French Revolution along different dimensions. The first measure is revolts contributing to the demise of institutions of the Old Regime. In particular, we study anti-feudal revolts during 1789–1792 attacking the feudal institution of lordship (*seigneurie*), including the lord’s person, property, rights, or symbols.²² Data on revolts comes from the *Historical Social Conflict Database* (Chambru and Maneuvrier-Hervieu, 2022). In total, we observe 530 anti-feudal revolts in this period, with the majority occurring in 1789 (see Figure A.1). Reported at the local level, we aggregate the data to the department-level. Figure 2 depicts the (residual) spatial variation of anti-feudal revolts across departments. In auxiliary analysis, we study conflicts by year, at a more disaggregated level, and also consider different types of conflicts as food riots or panics during the “great fear” of 1789.

The second measure is political societies that enabled local political participation and supported the local implementation of new policies. Initially, the political societies organized from the bottom up, the most famous being the Jacobin society of Paris. Only after the

entirely satisfactory.

²¹These events are recorded until 1786. After that date, a new regimental book was started. Neither *Ministère des Affaires Étrangères* (1903) nor we have matched soldiers to the next regimental books.

²²Such revolts are also called anti-seigneurial revolts because they *did not* target royal institutions, which also belonged to the feudal system (Markoff, 1996a).

establishment of democracy in 1792, the creation of political societies was bolstered by the government. We digitized data from [Boutier, Boutry, and Bonin \(1992\)](#) at the town level on the first year that a political society was founded and whether it was affiliated with the Jacobins of Paris. In the baseline analysis, we focus on the 300 early political societies founded between 1789 and 1790 to capture the bottom-up aspect and aggregate the data to the department level. In auxiliary analysis, we study the emergence of political societies over time and the variation in the affiliation of political societies with the Jacobins of Paris at the town level.

The third measure is volunteers for the revolutionary army, the so-called “National Volunteers”. The revolutionary army was created during 1791 when a military confrontation between revolutionaries and monarchists became likely. To defend the ideas of the French Revolution, more than 200 thousand individuals enlisted voluntarily during 1791 and 1792, before forced conscription (*levée en masse*) began in 1793. We digitized data on the number of battalions of “National Volunteers” raised in each département from [Bertaud et al. \(1989\)](#) by the end of 1792.

The fourth measure is emigration from the old elite who were threatened by the more violent aspects of revolutionary activity. The French Revolution led to a sizable exodus of people threatened by it, in particular the landowning elites from the clergy, the nobility, and the bourgeoisie. Out of about 130 thousand emigrants, more than half belonged to these three groups that make up the old elite. We digitized data on the number of emigrants by social status and département from [Greer \(1951\)](#).

Appendix [A.2.2](#) provides further details.

4.3. Control Variables

We employ a set of baseline controls to hold constant factors that likely correlate with military recruitment—and thereby could influence the number of American combatants—and potentially might also correlate with outcome measures of revolutionary activity. In particular, we control for (i) general military recruitment per department in terms of the total number of people enlisting in the military during the eighteenth century included in the [Komlos, Hau, and Bourguinat \(2003\)](#) sample; (ii) the number of infantry regiments and the number of cavalry battalions garrisoned in the department (affecting local recruitment, but also used as riot police); (iii) total population of the department (more population, more soldiers); (iv) urbanization rate of the department (peasants may have been more likely to become soldiers); and (v) an indicator for Paris which may have had different revolutionary dynamics.

Beyond the baseline controls, we collect a large number of additional variables for probing the balance of treatment and control as well as for heterogeneity analyses. In particular, we

construct variables at the département level on (i) geography and climatic shocks, including the départements' (centroid-geodesic) distance to the nearest ocean and international border, average ruggedness, length of roman roads, wheat suitability, and precipitation and temperature shocks in 1788 following [Waldinger \(2021\)](#); (ii) on Ancien Regime institutions, including the presence in departments of former administrative centers of different types (juridical, religious, taxation, public order); (iii) on human capital, including soldier's average height, literacy rates, secondary schooling, and enlightenment readership; and (iv) on economy, including the number of markets and fairs, and access to national means of communication (the letter post).

Appendix A.2.3 provides more details, documents the sources, and offers summary statistics.

5. Rochambeau's Veterans and the French Revolution

This section documents conditional correlations as baseline empirical results. We show that départements from which more of Rochambeau's combatants originated experienced more anti-feudal revolts in 1789–1793, had more early revolutionary societies in 1789 and 1790, more volunteer battalions for the revolutionary army in 1791–92, and saw more landowning elites emigrating to flee the Revolution.

5.1. Empirical Specification

We estimate several cross-sectional regressions at the département-level using the following empirical specification:

$$y_i = \beta \ln \text{Rochambeau}_i + \gamma X_i + \varepsilon_i \quad (1)$$

Our primary independent variable, Rochambeau_i , is the logarithm of the number of combatants serving in Rochambeau's army, which was stationed in America during the War of Independence, and hailing from département i in France. In the baseline analysis, we aim to estimate an intention-to-treat effect by considering the number of combatants that were sent to America rather than the number of combatants that returned to France.²³ While we cannot observe where the combatants returning to France went after their discharge from military service, it is quite plausible in our historical setting that many would return to their

²³Most soldiers in Rochambeau's special expedition returned to France, as there were scarcely desertions and few casualties during the campaign. The Siege of Yorktown saw casualties, but the majority of deaths can be attributed to disease, in particular the scurvy that approximately one in seven soldiers suffered after the voyage to America (though most recovered). Our results are almost identical if we only consider soldiers that survived the conflict and returned home.

region of origin (if not, this would bias our results towards zero).²⁴ The dependent variables are the four proxies of support for the French Revolution in each département: anti-feudal revolts, revolutionary societies, battalions of volunteers for the revolutionary army, and the number of landowning elites fleeing the Revolution. All variables are transformed by taking the logarithm of the underlying variables (plus one in presence of zeros).²⁵ Throughout, we include as a set of baseline controls the total number of military recruits during the eighteenth century (in logs), the number of infantry regiments and of cavalry regiments garrisoned, the total population of each département (in logs), the urbanization rate, and an indicator for Paris. We use heteroskedasticity robust standard errors and focus on the 79 départements of France proper in the borders of 1789.²⁶

5.2. Results

Table 2 presents results. Each column corresponds to a different proxy of support for the French Revolution and includes all baseline control variables described in section 4.3.²⁷ Column 1 shows the conditional correlation of Rochambeau’s soldiers with anti-feudal riots across French départements. Départements from which more of Rochambeau’s combatants hailed experienced significantly more anti-feudal revolts from 1789 to 1793. Figure 3 shows the underlying variation behind this estimate, confirming the linearity and highlighting that this association is not driven by a few départements only. This association is very sizable. A one percent increase in those combatants is associated with an increase in the number of feudal revolts by more than 0.5%, accounting for the total population, the urbanization rate, the total

²⁴In particular, we assume that veterans who retired or were otherwise discharged between 1783 and 1789 (about three fifth of the combatants as estimated by Scott 1998) were more likely to go home to their regions of origin than to randomly go anywhere. Indeed, this assumption is very plausible given the highly regional French culture with a wide variety of dialects, local customs, and cuisines before the French Revolution. As shown by Blanc and Kubo (2021), it was the nation-building program of the nineteenth century that homogenized regional cultures into what is today known as “French”.

²⁵Appendix A.3 documents that the distributions of both primary outcome and primary explanatory variables are highly skewed and are closer to normal distributions after the logarithmic transformation.

²⁶We start with the 88 départements of France in 1794, which is the first date for which we have consistent borders of départements. We then consider mainland France as of 1789: This excludes the départements Vaucluse (Avignon, Papal state), Mont Blanc (Savoy, Italy), Mont Terrible (Belfort), and Alpes-Maritimes (Nice), which were occupied after 1789, and the island Corsica. Finally, we exclude the “German” départements in Alsace–Lorraine (Meurthe, Moselle, Bas-Rhin, Haute-Rhin)—“German” because they were heavily populated by a German speaking minority—because we do not have data on the Rochambeau combatants from the Deux Pont regiment nor on the not-sailed would-be combatants from the Salm-Salm regiment. Both regiments were a “foreign legion” and recruited heavily from Alsace–Lorraine: Deux Pont is a city in Germany just across the border (Zweibrücken), Salm was an independent principality located within the French territory and future department Bas-Rhin (Grafschaft Ober-Salm).

²⁷The unconditional relationship between Rochambeau combatants and support for the Revolution is even stronger than what is documented here. Results are available upon request.

number of recruits from these départements, as well as indicators for garrisons, and Paris. As is evident from columns 2 to 4, the association between Rochambeau’s soldiers and the other proxies of support for the French Revolution are similarly sizable and highly statistically significant. Moreover, the standardized betas reported in the table and the incremental R^2 of our primary independent variable, Rochambeau_i , demonstrate the importance of this association. The variation of Rochambeau’s combatants across départements can explain between 7% (for political societies and elite emigrants) and up to 14% (for volunteer battalions) of the residual variation in the outcomes, and standardized effect size ranges from 0.34 to 0.46.

5.3. Additional Results on Timing and Spatial Disaggregation

Before we advance a causal interpretation in the next section, we perform auxiliary analyses to document the robustness of the conditional correlations. Based on the outcome *revolts* for which we have sufficient temporal and spatial variation, we show that the association of Rochambeau combatants and revolutionary activity emerges in 1789, holds at finer spatial units of analysis, and is specific to revolts targeting feudal property rights instead of reflecting generalized violence.

In Appendix B.2.1, we inquire into the timing of Rochambeau’s combatants’ effect. In particular, we estimate a dynamic difference-in-difference model using the outcome *revolts*, for which we have sufficiently detailed temporal variation. We find that départements from which more of Rochambeau’s combatants hailed saw a differential increase in anti-feudal revolts in 1789 only. There is no evidence for such a spike either before they left for the United States, nor in any of the years between their return and 1789, nor after 1789. Prima facie, this suggests that Rochambeau’s combatants neither hailed from départements with inherently more anti-feudal sentiments, nor that they brought a mere taste for violence from their military experience. Instead, only the co-occurrence of an exogenous shocks activated those soldiers—perhaps the dire economic situation following the bad harvest of 1788 (Waldinger, 2021), or the the political situation of spring and summer 1789 related to the General Estates (Markoff, 1996a).

The baseline analysis is conducted at the level of historical regions—the 79 départements—primarily for reasons of data availability. To understand whether these conditional correlations hold at more disaggregated levels, we draw on modern administrative boundaries and leverage that one of the outcomes employed—anti-feudal revolts—is available with detailed information on their exact location. In Appendix B.2.2, we first replicate the analysis presented in column 1 of Table 2 for modern départements. Then, we proceed to an analysis at the arrondissement level, of which there are more than three hundred. Our baseline association between

Rochambeau's soldiers and anti-feudal conflict is similarly robust at this more granular level of geographic units. Furthermore, it enables us to include (modern) département-level fixed effect. Even within (modern) départements, we uncover a highly significant and sizable association between Rochambeau's combatants and anti-feudal conflict.

6. Identification: The Regiment That Never Sailed

In this section, we argue that the previous section's conditional correlations, which indicate more support for the French Revolution in départements from where more combatants under General Rochambeau originated, can be interpreted as causal effects of the combatants' experience during the American War of Independence.

6.1. Concerns with a Causal Interpretation of the Correlations

Two concerns with an ad hoc interpretation of the conditional correlations as causal effects of American combatants are conceivable. The first concerns the *selection of individual soldiers* into Rochambeau's regiments. For example, soldiers eager to fight for democracy or to experience the lack of feudal institutions in the United States might have been more likely to sign up for Rochambeau's regiment. The historical setting, however, provides direct evidence against this concern. Regiments were staffed well before the French became militarily involved in the American Revolutionary War due to the regular enlistment period of eight years. Furthermore, switching regiments or signing up for selected ones was highly uncommon and difficult for ordinary soldiers. Most importantly, the future combatants of Rochambeau's regiments did neither know nor expect that they were going to the United States. As Scott (1998, 7) asserts, “[n]one had volunteered to fight for American independence; indeed, they were at sea for seven weeks before being informed of their destination. Although the troops greeted this announcement with loud cheering, the response was one of relief that they were *not* bound for the West Indies ... rather than of enthusiasm for the American cause” (emphasis in original).

A second concern is related to the *selection of entire regiments* for the French campaign in the United States. For instance, regiments could have been selected based on the soldier's underlying characteristics, such as the soldiers of particular regiments being inherently more brave, violent, egalitarian, or “democratic”. As we describe in the historical background, the regiments of Rochambeau's special expedition were chosen from a larger army that had been mobilized to the North-West of France during 1779 for an eventually aborted invasion of England. Thus, Rochambeau's regiments were undoubtedly among the more fighting-ready French regiments. However, it is not at all clear that they were chosen based on

underlying pro-revolutionary characteristics—an underlying pro-monarchical inclination seems equally possible. But suppose for a moment that the regions from which the soldiers in Rochambeau’s army predominantly originated were indeed more pro-revolutionary due to underlying, potentially unobserved characteristics. Then, the previously documented conditional correlations would be upward biased and could not be interpreted as causal effects.

6.2. Our Solution: A Placebo Regiment intended to sail

Our solution to address these (and similar) concerns relies on a historical coincidence related to the logistics of the French campaign. Specifically, two of six infantry regiments which were ready to sail to the United States could not board due to an unforeseen shortage of ships. These regiments—the French regiment Neustrie, and the German foreign legion regiment Salm-Salm—were to follow the first part of Rochambeau’s army as soon as possible. A naval blockade by the English, however, delayed the provision of ships and also diverted their deployment: When they ultimately sailed half a year later, the ships were diverted to Cadiz in Spain. At that point, the mission was canceled by the French king. Thus, the second part of Rochambeau’s army returned home to France instead of joining the other regiments in Rhode Island. Moreover, it appears highly improbable in light of the historical setting that the left behind regiments were significantly different: In fact, Rochambeau waited in Rhode Island for their arrival for more than half a year and declined to take any premature military action without the support of the second part of his army.

The would-be combatants of the French Neustrie regiment form an inherently suited placebo for the combatants in the three French infantry regiments sailed with General Rochambeau to Rhode Island. First, as just discussed, the historical setting strongly suggests that any selection concern should operate similarly for the regiments that were chosen by General Rochambeau to participate in the special expedition, whether they sailed to America or stayed behind. Furthermore, it is improbable given the historical setting that the treatment status changed after assignment: Soldiers could not change regiments after the decision was made which sailed and which had to stay behind. Finally, the regiments did not receive new recruits from France during their deployment.²⁸ In sum, we expect that *if* the conditional correlations documented earlier merely reflect selection on unobserved characteristics, we

²⁸There was a “shipment” of new officers from France after the siege of Yorktown but these officers do not show up systematically in the data, which can be easily verified by the date they joined the regiment or were promoted. Moreover, in the only instance where an envoy of new officers in October 1781 is explicitly remarked in our data—the Bourbonnais regiment received 7 student officers from the royal military academy—the birth place of these officers is not recorded in the data sources (Ministère des Affaires Étrangères, 1903).

should find similarly sizable and significant coefficient for would-be combatants from the Neustrie regiment.

Including in the cross-sectional regressions the number of would-be combatants by department of origin in the same manner as the number of Rochambeau’s combatants, we can directly address concerns of selection on unobservable characteristics. Nonetheless, it is possible that randomization went wrong, just like in any experiment. The only way to test for this is to study observable characteristics. Figure 4 documents the correlation of a wide array of observables with the number of not-sailed, would-be combatants and of sailed Rochambeau combatants across départements. Consider the first row of panel 4a. It documents that, as one would expect, the general level of military recruitment in a department is significantly positively associated with the number of combatants under Rochambeau that sailed to America. However, the general level of military recruitment is also significantly positively associated with the number of would-be combatants who were supposed to join Rochambeau in America but did not. Critically for our empirical strategy, it does not appear to be the case that the number of soldiers in either army is differentially predicted by the general level of military recruitment. In fact, only one of 24 observable département characteristics (the indicator for Paris, which is included as control in all regressions) is significantly differentially associated with the number of combatants and would-be combatants. Rather than source of concern, this finding is consistent with what one would expect when using 95% confidence intervals.

6.3. Empirical Specification and Results

We amend the empirical specification presented in equation (1) by including the log number of soldiers from the Neustrie regiment hailing from each département (plus one to account for zeros). We estimate several cross-sectional regressions at the département level using the following empirical specification:

$$y_i = \beta_1 \ln \text{Rochambeau}_i + \beta_2 \ln \text{Neustrie}_i + \gamma X + \varepsilon_i \quad (2)$$

Table 3 presents results, following the structure of table 2. Consider column 1, where the outcome is anti-feudal revolts. Coefficient, significance, incremental R^2 , and standardized beta coefficient of Rochambeau combatants is nearly identical to the baseline finding of a strong positive conditional correlation in table 2. Figure 5 provides visual evidence based on residualized scatter plots. In contrast, we find no significant or sizable association for the soldiers from the placebo regiment, Neustrie. In fact, its incremental R^2 is zero, the coefficient is negative, and the F-test documents that the coefficients differ significantly (p-value = 0.008). Columns 2 to 4 document that this is a general pattern, observable for all our proxies of

support for the French Revolution. Throughout, the coefficients of the soldiers from the Neustrie regiment are negative, and their incremental R^2 smaller than that of Rochambeau's regiments. In contrast, the coefficients on Rochambeau's soldiers remain remarkably stable and highly significant.

In sum, these results strongly suggest that the conditional correlations between Rochambeau's soldiers—who experienced the United States firsthand during the military expedition—and local support for the French Revolutions in their origins less than a decade later are causal effects. Before we provide some suggestive evidence on *how* these soldiers instigated local support in section 8, we first provide evidence of *why* their experience in the United States made them gather local support back in France in the next section.

7. Mechanism: Two Experiences in the Same Conflict

Why did the participation in the American War of Independence induce French veterans to bring the Revolution “home”? In this section, we provide evidence that what ultimately mattered was the veterans' prolonged firsthand exposure to the United States rather than their battle experience gained during the conflict.

7.1. Alternative Interpretations and another Placebo Regiment

One interpretation of the results presented thus far could be that the participation in the American War of Independence merely provided battle-hardened veterans. Once Revolution was imminent, the returned veterans might have merely drawn on their recent battle experience to give their regions an advantage in inciting anti-feudal riots (e. g. [Jha and Wilkinson, 2012](#)). Note that our results partially speak against such an interpretation already. First, all regressions presented thus far already include the total number of soldiers and indicators of the presence of garrisons in each département. Still, the possibility remains that certain features of actually participating in battles, particularly those in America, were crucial.

We again draw on a historical coincidence to provide a placebo set of soldiers. Specifically, while the battle experience of Rochambeau's combatants was limited to one particular, if decisive, battle—the Siege of Yorktown September–October 1791—they were not the only French combatants who participated in said battle. A second army of three infantry regiments fought in the same battle. This army was based in the French Caribbean colonies and provided additional staffing for the fleet of Admiral De Grasse that confronted the British navy successfully in the Battle of the Chesapeake—without said infantry regiments, however, which debarked before that navy battle to instead participate in the Siege of Yorktown under

the command of General Rochambeau. Crucially, these regiments stayed in the United States only for the month before and after the Siege and did not leave the close environs of Yorktown, Virginia. This contrasts strikingly with the veterans of Rochambeau who, instead of spending time in the colonies where extractive institutions (Acemoglu et al., 2001) like slave-holding and large-scale landholding was common, spent the great majority of their two-and-a-half year long deployment to the United States in New England. There, small-scale landholdings were the norm, farmers not subdued by feudal lordship, and grass-roots republican institutions the norm.

7.2. Empirical Specification and Results

We further amend the empirical specification presented in equation (2) by including the log number of combatants from De Grasse’s army hailing from each département. Figure 1 shows that by and large, these soldiers’ origins are similarly selected than both Rochambeau’s combatants and the would-be combatants of regiment that did not arrive. We estimate several cross-sectional regressions at the département level using the following empirical specification:

$$y_i = \beta_1 \text{Rochambeau}_i + \beta_2 \text{Neustrie}_i + \beta_3 \text{DeGrasse}_i + \gamma X + \varepsilon_i \quad (3)$$

Results are presented in table 4. The table follows the structure of the earlier tables 2 and 3 in that each column presents estimates of regressing one of our four proxies for support of the French Revolution on the number of combatants in the different armies hailing from each département. The main difference to the earlier tables is that we now include the number of combatants who served under Admiral De Grasse. For all four outcomes considered, we fail to document a significant or sizable association between combatants only gaining battle experience in the United States and support for the French revolution. In fact, in the coefficients are negative for anti-feudal revolts, flat zero for political societies and emigrants from the old elite, and the incremental R^2 is close to zero. Figure 6 shows residualized scatter plots for the first outcome variable. In striking contrast, the coefficients and corresponding incremental R^2 for Rochambeau’s combatants remain barely affected by the inclusion of De Grasse’s combatants. Except for one outcome (revolutionary societies, where coefficients are less precisely estimated), the F-tests of the coefficients’ equivalence strongly reject that De Grasse’s combatants had a comparable bearing as those under Rochambeau on support for the French Revolution.

This finding strongly suggests that what mattered in bringing the Revolution home was

not mere battle experience gained in this conflict. Instead, it was the soldiers' exposure to the United States, likely the particular and prolonged experience in New England, that affected Rochambeau's soldiers to instigate anti-feudal revolts, found local revolutionary societies, and induce others to volunteer for the Revolutionary Army to ensure that feudalism and monarchy were not to set foot again in France.

Note that the findings documented in this section provide further evidence against a selection of soldiers into regiments, or regiments into the American War of Independence. One might be tempted to assess that, potentially, the Neustrie regiment was left behind for reasons related to inherent characteristics of its leadership or of the soldiers it consisted of, which would render them less convinced and effective participants in this conflict. The same argument obviously does not hold for De Grasse's regiments, rendering such a concern immaterial beyond its historical implausibility.

8. Transmission

Thus far, we have established that French veterans of the American War of Independence who were exposed to the United States before and after combat fueled support for the French Revolution in their place of origin back in France less than a decade later. In this section, we provide suggestive evidence of how this happened. Ordinary soldiers and officers both drive our results but affect different proxies of support for the Revolution, each according to their ability. Further, we document heterogeneity of our baseline results, suggesting that the American Combatants mattered particularly in départements where the nobility was strong, access to information from abroad scarce, and climatic shocks in the year before the Revolution pronounced.

8.1. The Differential Effect of Ordinary Soldiers and Officers

The study of differential effects of ordinary soldiers compared to officers is guided by the historiography of the French Revolution. McDonald (1951) argued that peasants who had served as French soldiers in the American War were responsible for widespread agrarian revolts in 1789. Scott (1998) and Osman (2015), in contrast, focus on the ambiguous effects of the officers among the American Combatants. To test these hypotheses empirically, we distinguish between soldiers ("rankers") and officers (commissioned and non-commissioned). As in our baseline estimation of equation 1, we compute variables of the log number of soldiers and officers (plus one to account for zeros) by department origin and include our baseline

controls and use robust standard errors to estimate:²⁹

$$y_i = \delta_1 \ln \text{Rochambeau officers}_i + \delta_2 \ln \text{Rochambeau soldiers}_i + \beta_2 \text{Neustrie}_i + \beta_3 \text{DeGrasse}_i + \gamma X_i + \varepsilon_i \quad (4)$$

Table 5 presents the results of these estimations. By and large, we find that each group of soldiers drives different outcomes according to their abilities. Consider the ordinary soldiers first. While we do not observe the occupational background of the combatants, we estimate that more than 30 percent of soldiers had agricultural backgrounds.³⁰ As columns 1 and 4 indicate, soldiers essentially drive all of the effect of combatants on anti-feudal revolts and the emigration of the landowning elites. Officers, in contrast, which were mostly of noble origin, had no bearing on these outcomes. Instead, as evident from columns 2 and 3, officers drive most of the effect on the establishment of political societies in 1789 and 1790, and the greater share of the effect on the formation of National Volunteer battalions for the Revolutionary army (which was created in parallel to the regular army). These results suggest that the experience imprinted onto the American Combatants by their exposure to the United States led them to further the Revolution in France in line with their abilities and setting. Soldiers, hailing from agricultural backgrounds and regions, were crucial for the destruction of the Old Regime—whereas officers, hailing from urban and educated backgrounds, were crucial for creating the new republic and making it succeeded.

8.2. Heterogeneity

Here we provide heterogeneity along several characteristics of départements to understand which local determinants mediated the effect of Rochambeau’s soldiers on support for the French Revolution. We focus on two main outcomes: anti-feudal riots and early political societies. Compared to baseline equation (1), we now estimate an enriched model that includes indicators for whether département characteristic C_i is above the nation-wide median \tilde{C} and

²⁹The department level variation of log number of officers and log number of soldiers is sufficiently distinct to distinguish their effects empirically (bivariate $\rho = 0.65$).

³⁰The dataset by Komlos et al. (2003) provides the occupation of either father and soldier for about 8000 soldiers. After subtracting soldiers occupations that are in fact military ranks, we find that 2140 in 6880 occupations (31%) are agrarian (*laboureurs*—peasants who own some property—, gardeners, vintners, *manouvriers* and *journaliers*—agricultural workers). The estimate will be a lower bound if soldiers with military occupations were disproportionally from agricultural background in previous generations.

A study of occupations of 8000 sub-officers in the French army at the eve of the revolution has estimated that approximately 40% of infantry sub-officers were from the countryside (Bertaud et al., 1989, 75).

an interaction term of this indicator with the main independent variable, Rochambeau_i :

$$y_i = \eta_1 \ln \text{Rochambeau}_i + \eta_2 \ln \text{Rochambeau}_i \times \mathbb{1}(C_i > \tilde{C}) + \eta_3 \mathbb{1}(C_i > \tilde{C}) + \gamma X_i + \varepsilon_i \quad (5)$$

Table 6 presents results. We first consider differences in strength of local aristocracy and feudal institutions. Column 1 shows that the effect of Rochambeau’s soldiers is particularly pronounced in the 13 départements with *parlements* where the nobility’s power was particularly strong. Conversely, in départements with comparatively more royal tax offices—places where the royal administration had seized more power from the local nobility during the seventeenth-century (e. g. [de Tocqueville, 1856](#))—, the effect of Rochambeau’s soldiers tends to be weaker. The results on revolts particularly indicates that political action targeted the nobility who exercised feudal seigneurial rights (the lordship) rather than rioting indiscriminately against the feudal system, which includes also includes the monarchy. This is consistent with the account of historians who assessed that, in 1789, the people still held a favorable opinion of the king, whom they expected to be supportive of reform but constrained by opposition from the nobility ([Lefebvre, 1939](#); [Doyle, 1999](#); [Markoff, 1996a](#)).

We find no evidence that the prevalence of local enlightenment ideals mediates the effect of Rochambeau’s combatants. In column 3, we consider subscribers (readers) of the enlightenment *Encyclopédie* ([Squicciarini and Vogtländer, 2015](#)) as the département characteristics for heterogeneity. For both outcomes, we find that the effect of Rochambeau’s soldiers is not significantly different in départements below versus above the median of subscribers. While local access to enlightenment ideals as such appears to be positively associated with the foundation of early political society, enlightenment ideals did not strongly interact with the American experience of Rochambeau’s combatants.

Columns 3 and 4 show that the bad harvest in 1788 resulting from temperature and precipitation shocks may have contributed to activating Rochambeau’s soldiers for anti-feudal revolts but not the founding political societies. This is consistent with the results presented in the previous subsection, where we show that anti-feudal revolts are largely driven by ordinary soldiers who were often hailing from rural backgrounds. In contrast, the primarily urban elites from which the officers recruited were likely less directly affected by climatic shocks.

Finally, in columns 6 and 7, we document that the effects of Rochambeau’s soldiers tend to be more pronounced in remote départements. Direct personal exposure to the United States tends to matter less in places with better access to ideas, proxied for by those départements with above media markets and fairs and urbanization rates. This is consistent with our argument that ideas were transferred across the Atlantic and particularly decisive where such exposure was less common.

9. Conclusion

What ensures that popular unrest results in improved institutions? This paper focuses on the French Revolution, arguably one of the most important institutional changes in history. We show that individual exposure to different institutions can drive the nature of institutional change in their origins. French veterans who were deployed to the North American colonies during the American War of Independence are significantly and sizably associated with several proxies for local support for the French Revolution back in origin départements a mere decade later. We draw on two historical coincidences to argue that neither selection of combatants or regiments nor battle experience accounts for this. Instead, prolonged exposure to non-feudal economic institutions and political liberty likely turned the soldiers into supporters of institutional change back in their origin once the opportunity arose.

These findings speak to the importance of individuals in driving institutional change. Crucially, it shows that even individuals who have not entered the history books can drive institutional change—and thus the course of history. Individual-level contact and exposure might underlie the empirical pattern that institutional change proceeds in regional waves (Acemoglu et al., 2019), resulting in regional development clusters of good governance and economic development (Besley and Persson, 2014).

Despite being relevant to social science studies of revolutions more generally (e. g. Skocpol, 1979), the setting of the French Revolution of 1789 has several idiosyncratic features. For example, the events were hardly affected by the ubiquitous presence of media like newspapers and electronic communication technologies, in contrast to the great revolutions of the twentieth and twenty-first centuries. In pre-revolutionary France, newspapers were still in their infancy and did not reach beyond a small literate and urban elite. Moreover, the last years of the Old Regime saw a relatively strict censorship of printed matter (Darnton, 2021). As a result, individuals' prolonged exposure to foreign institutions and ideas likely had a greater impact in our setting than it may have had in more recent episodes of institutional changes when alternative means were available through which knowledge and ideas could spread. Nevertheless, rather than rendering personal experience superfluous, these alternative means may primarily complicate identifying the impact of individuals' prolonged exposure to different ideas in present-day settings.

References

ACEMOGLU, D., D. CANTONI, S. JOHNSON, AND J. A. ROBINSON (2011): "The Consequences of Radical Reform: The French Revolution," *American Economic Review*, 101, 3286–3307.

- ACEMOGLU, D. AND M. O. JACKSON (2015): “History, Expectations, and Leadership in the Evolution of Social Norms,” *The Review of Economic Studies*, 82, 423–456.
- ACEMOGLU, D., S. JOHNSON, AND J. A. ROBINSON (2001): “The Colonial Origins of Comparative Development: An Empirical Investigation,” *American Economic Review*, 91, 1369–1401.
- (2005): “The Rise of Europe: Atlantic Trade, Institutional Change, and Economic Growth,” *American Economic Review*, 95, 546–579.
- ACEMOGLU, D., S. NAIDU, P. RESTREPO, AND J. A. ROBINSON (2019): “Democracy Does Cause Growth,” *Journal of Political Economy*, 127, 47–100.
- ACEMOGLU, D. AND J. A. ROBINSON (2000): “Why Did the West Extend the Franchise? Democracy, Inequality and Growth in Historical Perspective,” *Quarterly Journal of Economics*, 115, 1167–1199.
- (2012): *Why Nations Fail*, Crown Publishing Group.
- ADO, A. (1996): *Paysans En Révolution: Terre, Pouvoir et Jacquerie (1789-1794)*, Transl. from the 2nd Russian Ed. of 1987, Paris: Société des études robespierristes.
- AIDT, T. S. AND R. FRANCK (2015): “Democratization under the Threat of Revolution: Evidence from the Great Reform Act of 1832,” *Econometrica*, 83, 505–547.
- ARBELLOT, G., B. LEPETIT, AND J. BERTRAND (1987): *Routes et Communications*, vol. 1 of *Atlas de La Révolution Française*, Ed. by S. Bonin and C. Langlois, Paris: Éditions de l’EHESS.
- BAILYN, B. (2005): *Atlantic History: Concept and Contours*, Cambridge, Mass: Harvard University Press.
- BARSBAI, T., H. RAPOPORT, A. STEINMAYR, AND C. TREBESCH (2017): “The Effect of Labor Migration on the Diffusion of Democracy: Evidence from a Former Soviet Republic,” *American Economic Journal: Applied Economics*, 9, 36–69.
- BEACH, B. AND W. W. HANLON (2022): “Culture and the Historical Fertility Transition,” *Review of Economic Studies*, forthcoming.
- BERTAUD, J.-P., D. REICHEL, AND J. BERTRAND (1989): *L’armée et La Guerre*, vol. 3 of *Atlas de La Révolution Française*, Ed. by S. Bonin and C. Langlois, Paris: Éditions de l’EHESS.
- BESLEY, T. AND T. PERSSON (2014): “The Causes and Consequences of Development Clusters: State Capacity, Peace, and Income,” *Annual Review of Economics*, Vol 3, 6, 927–949.
- BLANC, G. (2022): “The Cultural Origins of the Demographic Transition in France,” .
- BLANC, G. AND M. KUBO (2021): “French,” .
- BODINIER, G. (1983): *Dictionnaire des officiers de l’Armée royale qui ont combattu aux Etats-Unis pendant la guerre d’Indépendance, 1776-1783*, Vincennes: Ministère de la defense, Etat-Major de l’Armée de terre, Service historique.
- BOFFA, M. (1989): “Emigrés,” in *A Critical Dictionary of the French Revolution*, Cambridge, MA and London: Belknap Press of Harvard Univ. Press, Ed. by F. Furet and M. Ouzuf, 324–336.

- BOUTIER, J., P. BOUTRY, AND S. BONIN (1992): *Les Sociétés Politiques*, vol. Atlas de la révolution française, ed. by S. Bonin and C. Langlois of *Atlas de La Révolution Française*, Ed. by S. Bonin and C. Langlois, Paris: Éditions de l'EHESS.
- BRÜCKNER, M. AND A. CICCONE (2011): "Rain and the Democratic Window of Opportunity," *Econometrica*, 79, 923–947.
- BUCHHEIM, L. AND R. ULBRICHT (2020): "A Quantitative Theory of Political Transitions," *The Review of Economic Studies*, 87, 1726–1756.
- BUERA, F. J., A. MONGE-NARANJO, AND G. E. PRIMICERI (2011): "Learning the Wealth of Nations," *Econometrica*, 79, 1–45.
- CAGÉ, J., A. DAGORRET, P. GROSJEAN, AND S. JHA (2021): "Heroes and Villains: The Effects of Combat Heroism on Autocratic Values and Nazi Collaboration in France," Working Paper, Stanford Institute for Economic Policy Research.
- CAMPBELL, P. (2013): "Rethinking the Origins of the French Revolution," in *A Companion to the French Revolution*, Malden, MA; Oxford; Chichester: Wiley-Blackwell, Ed. by P. McPhee, 3–23.
- CHAMBRU, C. (2019): "Do the Right Thing! Leaders, Weather Shocks and Social Conflicts in Pre-Industrial France," EHES Working Paper.
- (2020): "Department Boundaries in France, c. 1794," Havard Dataverse.
- CHAMBRU, C., E. HENRY, AND B. MARX (2021): "The Dynamic Consequences of State-Building: Evidence from the French Revolution," Discussion Paper DP16815, CEPR.
- CHAMBRU, C. AND P. MANEUVRIER-HERVIEU (2022): "Introducing HiSCoD: A New Gateway for the Study of Historical Social Conflict," Working Paper 407, University of Zurich.
- DARNTON, R. (2021): *Pirating and Publishing: The Book Trade in the Age of Enlightenment*, New York: Oxford University Press.
- DAWSON, W. (1936): "Les 2112 Français Morts Aux États-Unis de 1777 a 1783 En Combattant Pour l'indépendance Américaine," *Journal de la Société des américanistes*, 28, 1–154.
- DE TOCQUEVILLE, A. (1856): *The Ancien Régime and the French Revolution*, Transl. by G. Bevan, London: Penguin, two thousand, eighth ed.
- DESMARAIS, N. (2021): "'Gazette Française,' the French Gazette in Newport, Rhode Island," *Journal of the American Revolution*, publ. online, June 26.
- DIPPEL, C. AND S. HEBLICH (2021): "Leadership and Social Movements: The Forty-Eighters in the Civil War," *American Economic Review*, 111, 1–35.
- DOYLE, W. (1999): *Origins of the French Revolution*, Oxford; New York: Oxford University Press, third ed.
- FERLING, J. (2021): *Winning Independence: The Decisive Years of the Revolutionary War, 1778–1781*, New York: Bloomsbury Publishing.

- FINLEY, T., R. FRANCK, AND N. D. JOHNSON (2021): "The Effects of Land Redistribution: Evidence from the French Revolution," *The Journal of Law and Economics*, 64, 233–267.
- FRANCK, R. AND S. MICHALOPOULOS (2017): "Emigration during the French Revolution: Consequences in the Short and Longue Durée," Working Paper w23936, NBER.
- FURET, F. (1978): "De l'homme Sauvage à l'homme Historique: L'expérience Américaine Dans La Culture Française," in *Annales. Histoire, Sciences Sociales*, Cambridge University Press, vol. 33, 729–739.
- (1981): *Interpreting the French Revolution*, Transl. by E. Forster, Cambridge: Cambridge University Press.
- GALOR, O. AND Ö. ÖZAK (2015): "Land Productivity and Economic Development: Caloric Suitability vs. Agricultural Suitability," *Agricultural Suitability* (July 12, 2015).
- (2016): "The Agricultural Origins of Time Preference," *American Economic Review*, 106, 3064–3103.
- GEGGUS, D. P. (2000): "The Effects of the American Revolution on France and Its Empire," in *A Companion to the American Revolution*, Malden, MA, and Oxford: Blackwell, Ed. by J. P. Greene and J. R. Pole, 523–530.
- GIULIANO, P. AND M. TABELLINI (2020): "The Seeds of Ideology: Historical Immigration and Political Preferences in the United States," Working Paper w27238, NBER.
- GODECHOT, J. (1956): "Les Combattants de la guerre d'indépendance aux États-Unis et les troubles agraires en France, de 1789 à 1792," *Annales historiques de la Révolution française*, 28, 292–294.
- (1965): *France and the Atlantic Revolution of the Eighteenth Century, 1770-1799*, Transl. by H. H. Rowen, New York: The Free Press.
- (1979): "Comment on Scott, 'The Soldiers of Rochambeau's Expeditionary Corps: From the American Revolution to the French Revolution'," in *La Révolution Américaine et l'Europe*, Paris: Centre National de la Recherche Scientifique.
- GODECHOT, J. L. (1970): *The Taking of the Bastille, July 14th 1789*, London: Faber.
- GOTTSCHALK, L. R. (1950): *Lafayette between the American and the French Revolution (1783-1789)*, Chicago: University of Chicago Press.
- GREER, D. (1951): *The Incidence of the Emigration During the French Revolution*, Cambridge, MA: Harvard University Press.
- HYSLOP, B. F. (1960): "The American Press and the French Revolution of 1789," *Proceedings of the American Philosophical Society*, 104, 54–85.
- ISRAEL, J. (2014): *Revolutionary Ideas: An Intellectual History of the French Revolution from The Rights of Man to Robespierre*, Oxford & Princeton: Princeton University Press.
- (2017): *The Expanding Blaze: How the American Revolution Ignited the World, 1775-1848*, Princeton, NJ: Princeton University Press.

- JHA, S. AND S. WILKINSON (2012): "Does Combat Experience Foster Organizational Skill? Evidence from Ethnic Cleansing during the Partition of South Asia," *American Political Science Review*, 106, 883–907.
- JONES, T. C. (2012): "‘Displaying the Ensigns of Harmony’: The French Army in Newport, Rhode Island, 1780–1781," *The New England Quarterly*, 85, 430–467.
- KOMLOS, J., M. HAU, AND N. BOURGUINAT (2003): "An Anthropometric History of Early-Modern France," *European Review of Economic History*, 7, 159–189.
- LEFEBVRE, G. (1932): *The Great Fear of 1789: Rural Panic in Revolutionary France*, Transl. by J. White, Princeton, NJ: Princeton University Press, one thousand, nine hundred seventy-third ed.
- (1939): *The Coming of the French Revolution*, Transl. by R. R. Palmer, Princeton, NJ: Princeton University Press, one thousand, nine hundred forty-seventh ed.
- LIZZERI, A. AND N. PERSICO (2004): "Why Did the Elite Extend the Suffrage? Democracy and the Scope of Government with an Application to Britain’s "Age of Reform"," *Quarterly Journal of Economics*, 119, 707–765.
- LUTERBACHER, J., D. DIETRICH, E. XOPLAKI, M. GROSJEAN, AND H. WANNER (2004): "European Seasonal and Annual Temperature Variability, Trends, and Extremes since 1500," *Science (New York, N.Y.)*, 303, 1499–1503.
- MARGAIRAZ, D. (1988): *Foires et Marchés Dans La France Préindustrielle*, Paris: Editions de l’Ecole des Hautes Etudes en Sciences Sociales.
- MARKOFF, J. (1996a): *The Abolition of Feudalism : Peasants, Lords, and Legislators in the French Revolution*, University Park, PA: Pennsylvania State University Press.
- (1996b): *Waves of Democracy: Social Movements and Political Change*, Sage Publications, California: Pine Forge Press.
- MAY, H. F. (1976): *The Enlightenment in America*, Oxford University Press.
- MCCORMICK, M., G. HUANG, G. ZAMBOTTI, AND J. LAVASH (2013): "Roman Road Network (Version 2008)," .
- MCDONALD, F. (1951): "The Relation of the French Peasant Veterans of the American Revolution to the Fall of Feudalism in France, 1789-1792," *Agricultural History*, 25, 151–161.
- MINISTÈRE DES AFFAIRES ÉTRANGÈRES (1903): *Les Combattants Français de La Guerre Américaine*, Paris: Ancienne Maison Quantin.
- NORDMAN, D., M.-V. OZOUF-MARIGNIER, R. GIMENO, AND A. LACLAU (1989): *Le Territoire (1): Réalités et Représentations*, vol. 4 of *Atlas de La Révolution Française*, Ed. by S. Bonin and C. Langlois, Paris: Éditions de l’EHESS.
- NORTH, D. C. (1990): *Institutions, Institutional Change and Economic Performance*, Cambridge, UK: Cambridge University Press.

- NUNN, N. AND D. PUGA (2012): “Ruggedness: The Blessing of Bad Geography in Africa,” *Review of Economics and Statistics*, 94, 20–36.
- OSMAN, J. (2015): *Citizen Soldiers and the Key to the Bastille*, New York, NY: Palgrave Macmillan.
- OUZUF, M. (1989): “Varennes,” in *A Critical Dictionary of the French Revolution*, Cambridge, MA and London: Belknap Press of Harvard Univ. Press, Ed. by F. Furet and M. Ouzuf, 155–164.
- PALMER, R. R. (1959): *Age of the Democratic Revolution: A Political History of Europe and America, 1760-1800*, vol. 1: The Challenge, Princeton, NJ: Princeton University Press.
- (1970): *Age of the Democratic Revolution: A Political History of Europe and America, 1760-1800*, vol. 2: The Struggle, Princeton, NJ: Princeton University Press.
- PAULING, A., J. LUTERBACHER, C. CASTY, AND H. WANNER (2006): “Five Hundred Years of Gridded High-Resolution Precipitation Reconstructions over Europe and the Connection to Large-Scale Circulation,” *Climate Dynamics*, 26, 387–405.
- ROLAND, G. (2004): “Understanding Institutional Change: Fast-Moving and Slow-Moving Institutions,” *Studies in Comparative International Development*, 38, 109–131.
- ROSENBERGER, L. (2023): “Enlightenment, Industrial Revolution, and the Knowledge Economy,” Ph.D. thesis, University of Munich.
- SALEM, A. AND A. A. SECK (2022): “En Route: The French Colonial Army, Emigration, and Development in Morocco,” Working Paper, Harvard University.
- SCOTT, S. F. (1979): “The Soldiers of Rochambeau’s Expeditionary Corps: From the American Revolution to the French Revolution,” in *La Révolution Américaine et l’Europe*, Paris: Centre National de la Recherche Scientifique.
- (1998): *From Yorktown to Valmy: The Transformation of the French Army in an Age of Revolution*, Niwot, CO: University Press of Colorado.
- SEQUEIRA, S., N. NUNN, AND N. QIAN (2020): “Immigrants and the Making of America,” *The Review of Economic Studies*, 87, 382–419.
- SKOCPOL, T. (1979): *States and Social Revolutions: A Comparative Analysis of France, Russia and China*, Cambridge University Press.
- SPIILIMBERGO, A. (2009): “Democracy and Foreign Education,” *American Economic Review*, 99, 528–43.
- SQUICCIARINI, M. P. (2020): “Devotion and Development: Religiosity, Education, and Economic Progress in Nineteenth-Century France,” *American Economic Review*, 110, 3454–91.
- SQUICCIARINI, M. P. AND N. VOGTLÄNDER (2015): “Human Capital and Industrialization: Evidence from the Age of Enlightenment,” *Quarterly Journal of Economics*, 130, 1825–1883.
- STONE, E. M. (1884): *Our French Allies: Rochambeau and His Army, Lafayette and His Devotion, D’Estaing, DeTernay, Barras, De Grasse, and Their Fleets, in the Great War of the American Revolution, from 1778 to 1782*, Providence, RI: Providence Press Company.

- TACKETT, T. (1986): *Religion, Revolution, and Regional Culture in Eighteenth-Century France: The Ecclesiastical Oath of 1791*, Princeton, NJ: Princeton University Press.
- (1996): *Becoming a Revolutionary: The Deputies of the French National Assembly and the Emergence of a Revolutionary Culture (1789 - 1790)*, Princeton, NJ: Princeton University Press.
- (2015): “Introduction,” in *The Coming of the French Revolution by Georges Lefebvre*, Princeton, NJ: Princeton University Press, Princeton Classics.
- WALDINGER, M. (2021): “Let Them Eat Cake: Drought in 1788 Andpolitical Outcomes in the French Revolution,” .
- WOLOCH, I. (1994): *The New Regime: Transformations of the French Civic Order, 1789-1820s*, New York: Norton.
- WRONG, C. J. (1976): “The Officiers de Fortune in the French Infantry,” *French Historical Studies*, 9, 400–431.

FIGURES

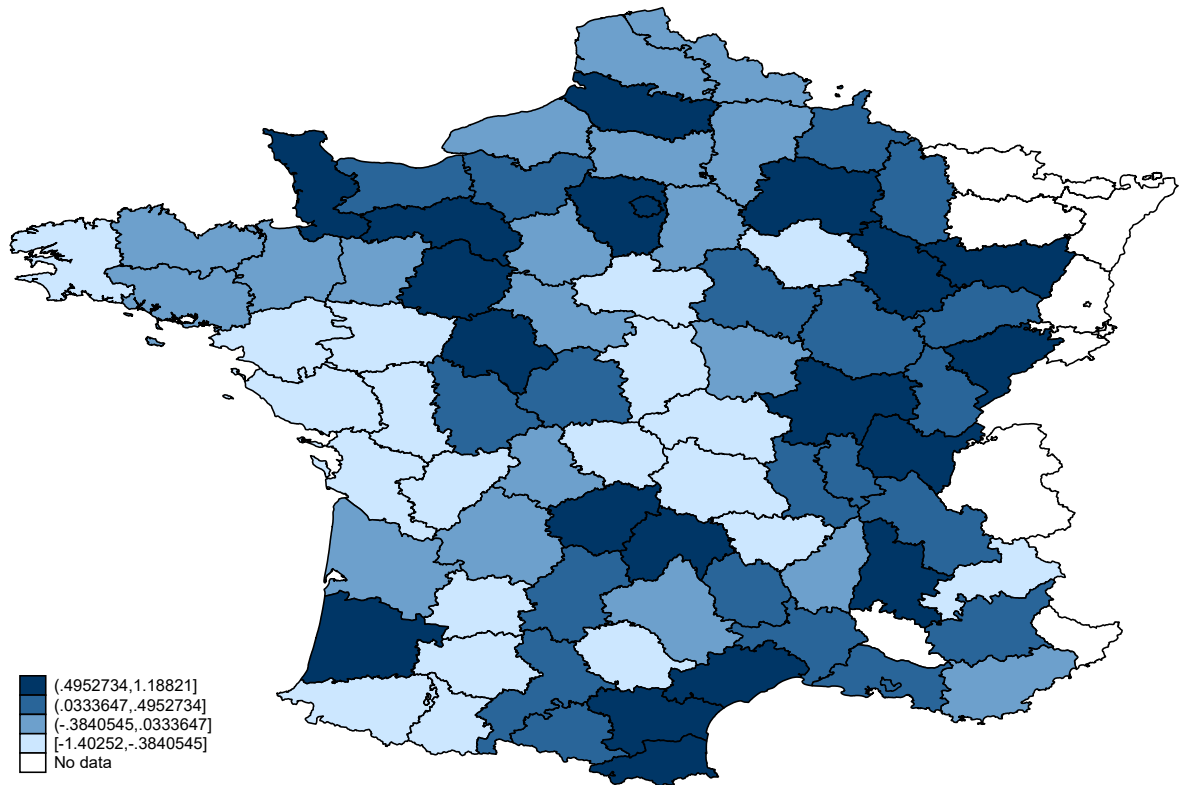


Figure 1: French Origins of Rochambeau's combatants

Note: The map illustrates the spatial variation in the origin of Rochambeau's combatants across French départements, with darker blue colours indicating a higher number of Rochambeau's combatants hailing from a département. It reports residuals obtained from regressing the log number of combatants on the set of baseline controls (log other soldiers, log infantry regiment garrisoned, log cavalry battalion garrisoned, log population in 1793, urbanization rate in 1793, and an indicator for Paris).

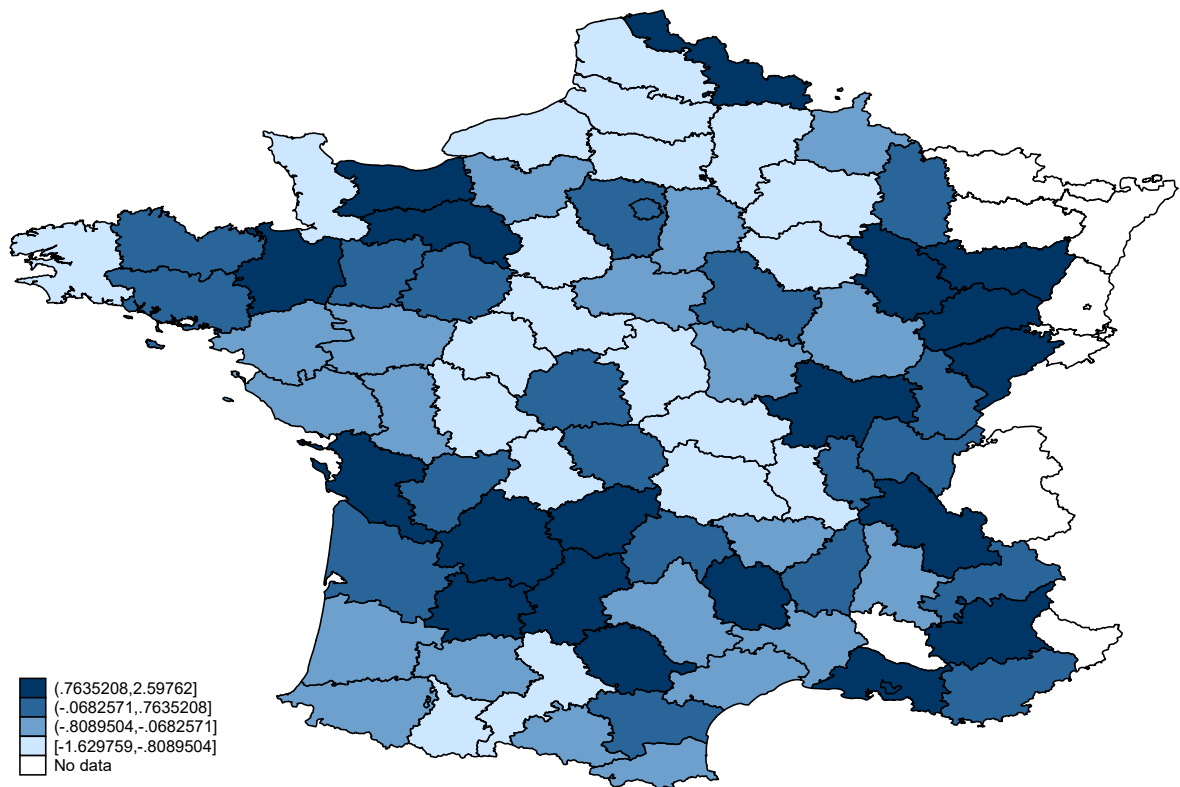


Figure 2: Anti-Feudal Revolts Across French Départements

Note: The map illustrates the spatial variation in anti-seigneurial revolts during 1789–1792, with darker blue colours indicating a higher incidents of anti-seigneurial revolts in the département. It reports residuals obtained from regressing the log number of revolts on the set of baseline controls (log other soldiers, log infantry regiment garrisoned, log cavalry battalion garrisoned, log population in 1793, urbanization rate in 1793, and an indicator for Paris).

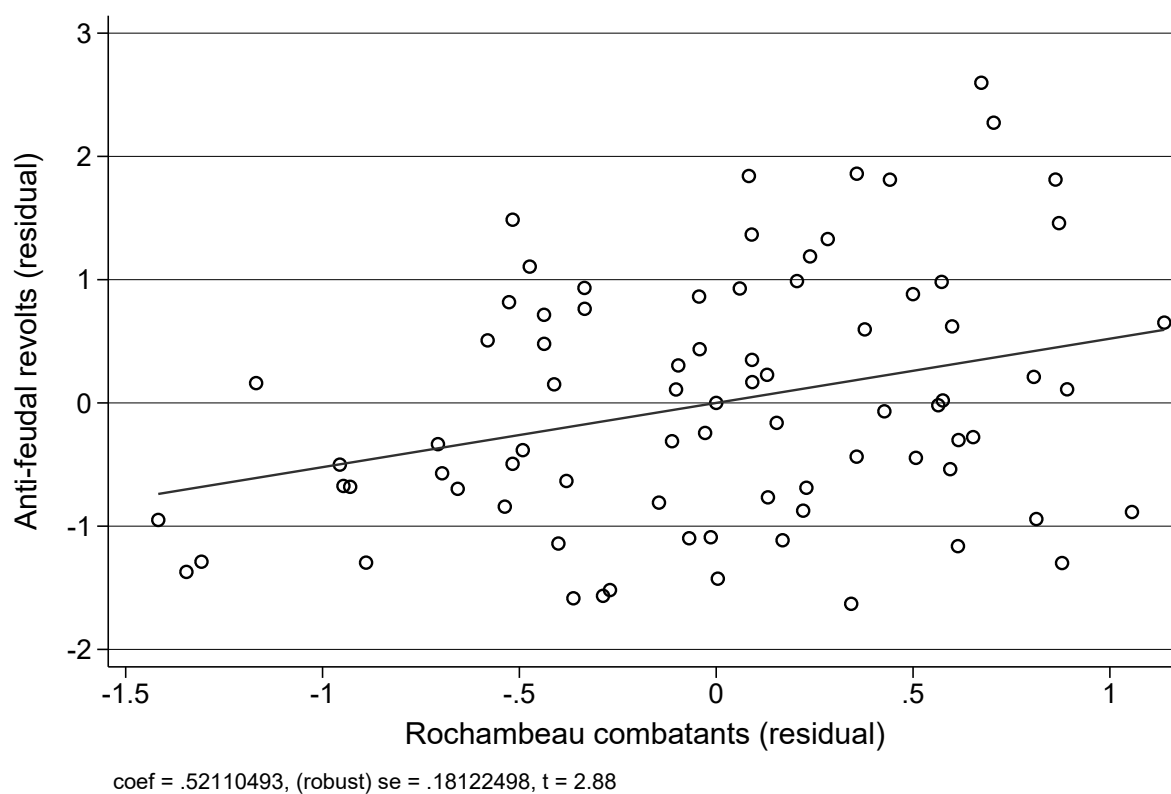


Figure 3: Rochambeau Soldiers and Revolutionary Revolts

Note: This figure documents a significant and sizeable conditional correlation between the number of Rochambeau's soldiers from each département and anti-feudal riots there during the French Revolution (Std. $\beta = .41$). We condition on the set of baseline controls (log other soldiers, log infantry regiment garrisoned, log cavalry battalion garrisoned, log population in 1793, urbanization rate in 1793, and an indicator for Paris).

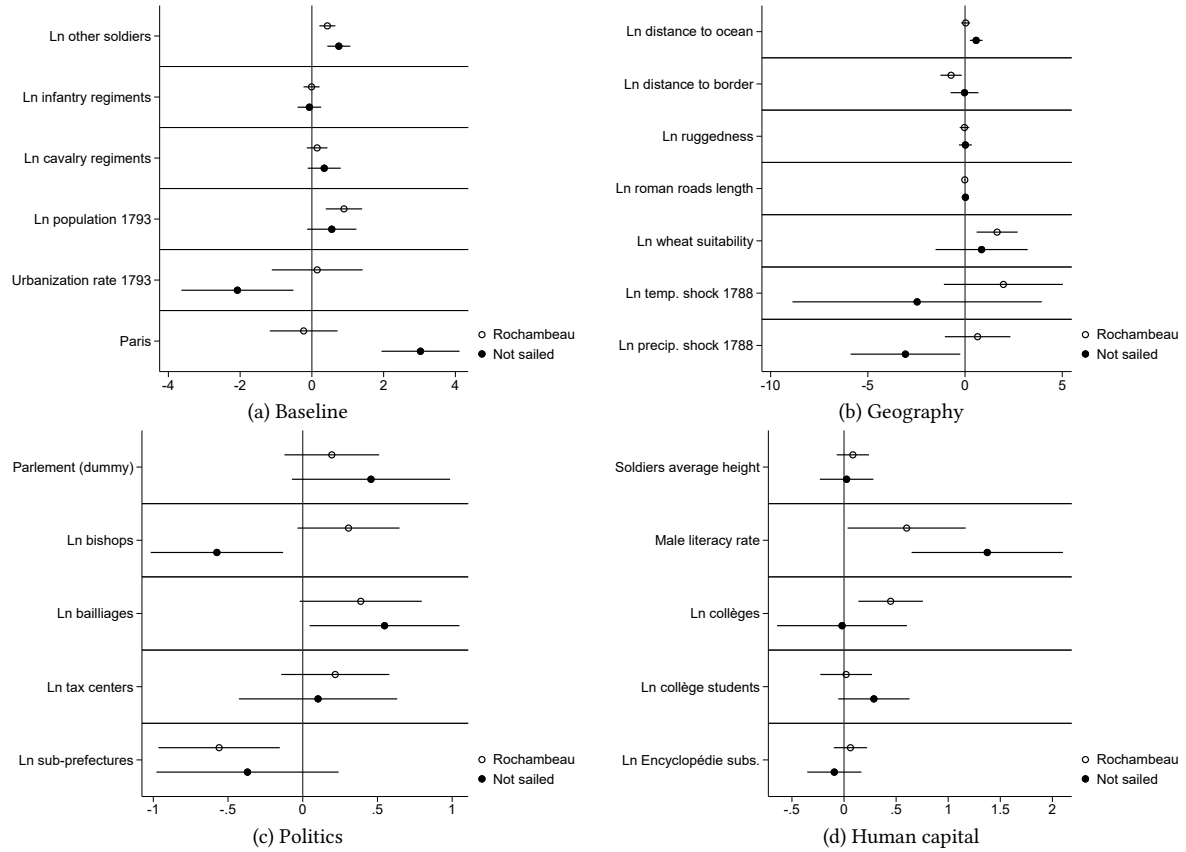


Figure 4: Balance of Treatment and Control

Note: This figure shows that Rochambeau's soldiers (treatment) are similarly correlated with département-level characteristics as the soldiers of the Neustrie regiment (control) that did not sail to America. We show coefficients of regressing the number of each of these soldiers hailing from a département on several observable characteristics of these départements. Panels (a) to (d) document this for our baseline controls, geographic, political, and human capital characteristics. Only two out of 22 département-level characteristics are significantly differentially correlated with these two types of soldiers.

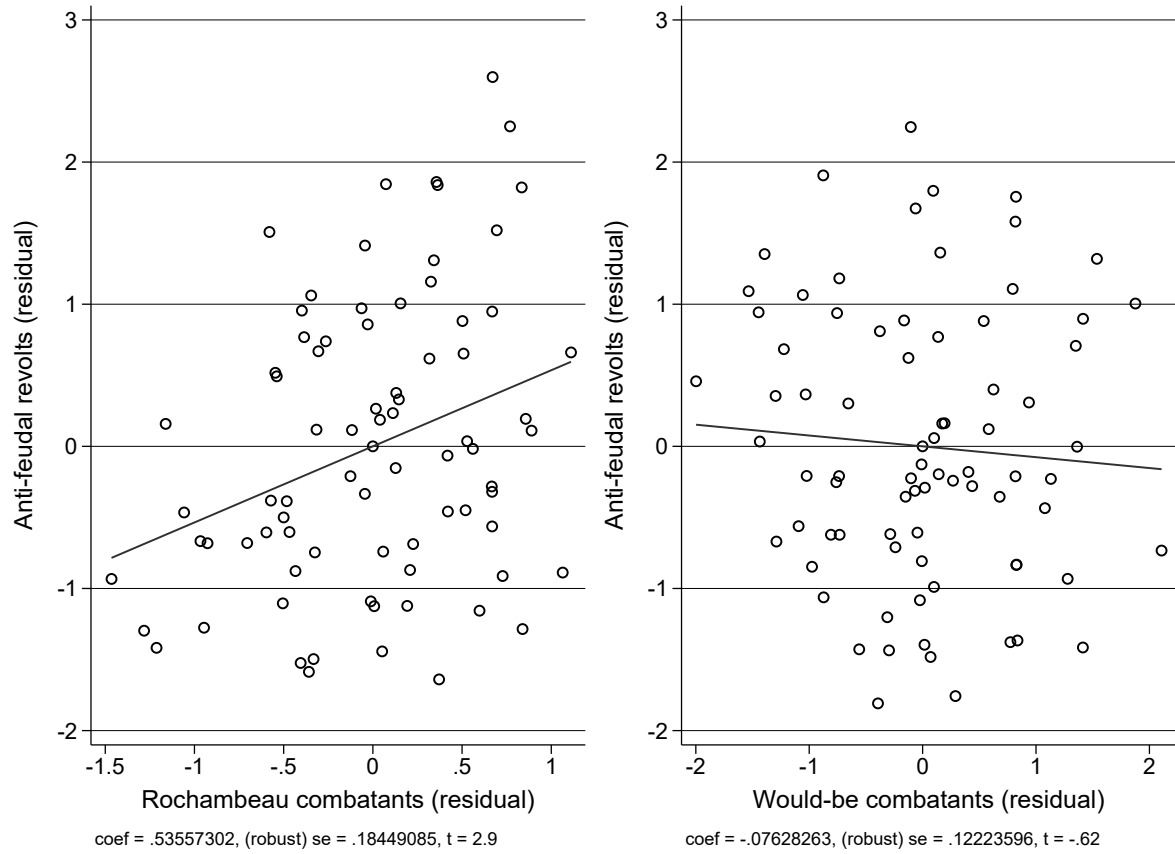


Figure 5: The Ships That Did Not Sail—Anti-Feudal Revolts

Note: This figure shows that only French soldiers that sailed to America, Rochambeau's regiments, are positively associated with anti-feudal riots in their French origin départements (left panel). Those French soldiers intended to sail to America, but did not, on the other hand, are not associated with anti-feudal riots in their French origin départements (right panel). Each of the scatter plots shows correlations across French départements, conditional on our baseline controls and the of number of soldiers from the respective other regiments.

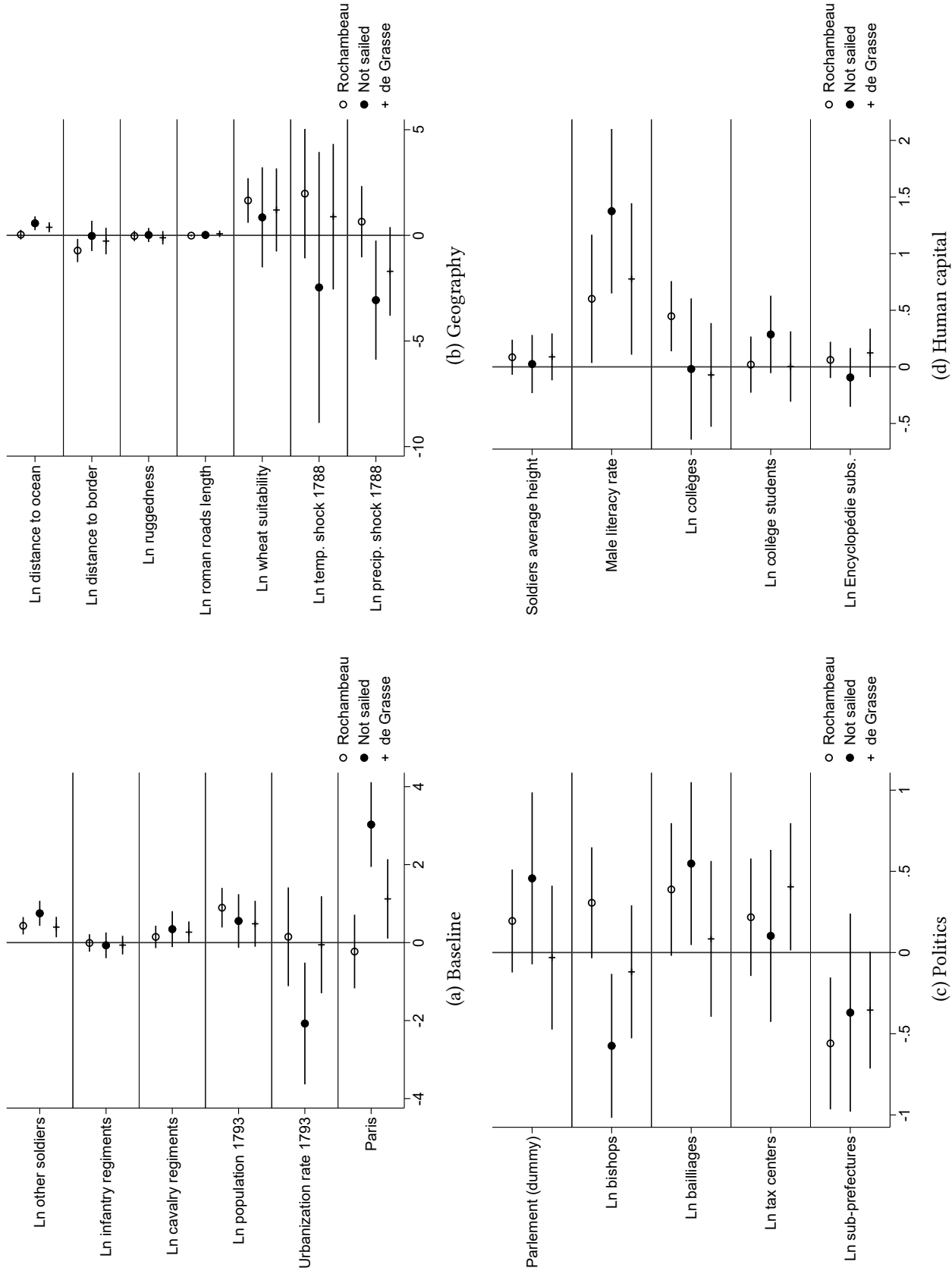


Table 1: Balance of Treatment, Control, and Alternative Treatment

Note: This figure shows that the number of Rochambeau's combatants (treatment) are similarly correlated with département-level characteristics as the would-be combatants from the Neustrie regiment (control) that did not sail to America, as well as the number of combatants under Admiral De Grasse, who fought in the same battle as Rochambeau's soldiers in America, but did not have similar exposure to America. We show coefficients of regressing the number of each of these soldiers hailing from a département on several observable characteristics of these départements. Panels (a) to (d) document this for our baseline controls, geographic, political, and human capital characteristics.

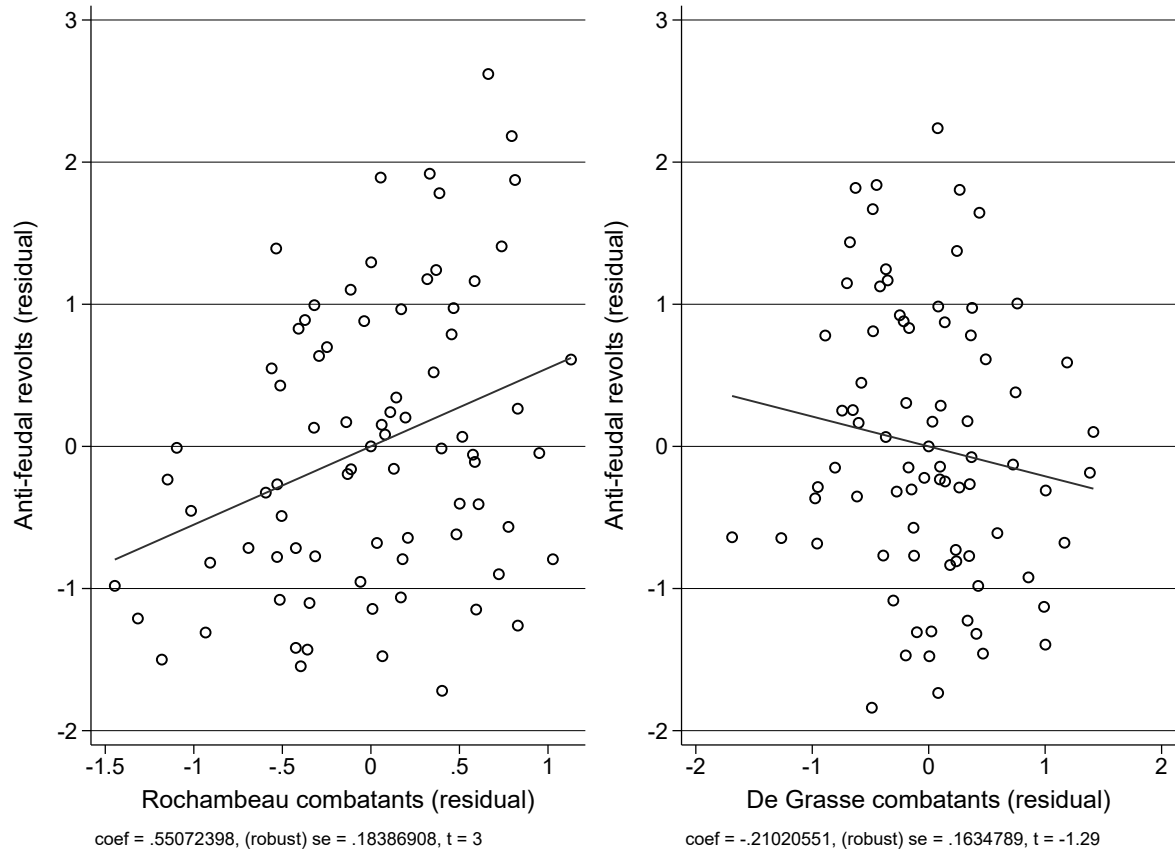


Figure 6: Two Experiences in the American War

Note: This figure shows that only French veterans that sailed to America and spend significant amounts of time there, Rochambeau's regiments, are positively associated with anti-feudal riots in their French origin départements (left panel). French veterans who fought in the same decisive battle on American soil but did not spend significant amounts of time there are if anything negatively associated with anti-feudal riots in their French origin départements (right panel). Each of the scatter plots shows correlations across French départements, conditional on our baseline controls and the of number of soldiers from the respective other two regiments.

TABLES

Table 2: Baseline regression results

	Dep. variable: ln [support for revolution]			
	(1) Anti-feudal revolts	(2) Political societies	(3) Volunteer battalions	(4) Elite emigrants
Ln Rochambeau combatants	0.536*** (0.175)	0.265** (0.120)	0.313*** (0.094)	0.269** (0.112)
Baseline controls	✓	✓	✓	✓
<i>N</i> (Obs = département)	79	79	78	63
R^2	0.22	0.31	0.46	0.33
Partial R^2 (Rochambeau)	0.10	0.07	0.14	0.07
Std. β (Rochambeau)	0.451	0.339	0.462	0.380

The table shows that support for the French Revolution was statistically and economically significantly larger in departments where more Rochambeau's combatants originated. All regressions are run at the département level and include the baseline controls (log other soldiers, log infantry regiment garrisoned, log cavalry battalion garrisoned, log population in 1793, urbanization rate in 1793, and an indicator for Paris). Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: The Soldiers That Never Sailed

	Dep. variable: ln [support for revolution]			
	(1) Anti-feudal revolts	(2) Political societies	(3) Volunteer battalions	(4) Elite emigrants
Ln Rochambeau combatants	0.550*** (0.179)	0.278** (0.123)	0.302*** (0.093)	0.296** (0.116)
Ln not sailed combatants	-0.079 (0.122)	-0.073 (0.089)	0.067 (0.050)	-0.121 (0.073)
Baseline controls	✓	✓	✓	✓
<i>N</i> (Obs = département)	79	79	78	63
R^2	0.22	0.31	0.46	0.35
Partial R^2 (Rochambeau)	0.10	0.07	0.14	0.09
Partial R^2 (Notsailed)	0.01	0.01	0.02	0.03
Std. β (Rochambeau)	0.463	0.356	0.444	0.418
Std. β (Notsailed)	-0.092	-0.129	0.137	-0.229
p Rochambeau = Notsailed	0.008	0.027	0.034	0.005

The table shows that support for the French Revolution was statistically and economically significantly larger only in departments where more Rochambeau's combatants originated, who were deployed to the U.S., but not in departments where more would-be combatants originated, who were intended to sail to the U.S. but never arrived. This indicates that deployment to the U.S. had a causal effect on support for the French Revolution. All regressions are run at the département level and include the baseline controls (log other soldiers, log infantry regiment garrisoned, log cavalry battalion garrisoned, log population in 1793, urbanization rate in 1793, and an indicator for Paris). Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Exposure to North America matters, *not* battle experience

	Dep. variable: ln [support for revolution]			
	(1) Anti-feudal revolts	(2) Political societies	(3) Volunteer battalions	(4) Elite emigrants
Ln Rochambeau combatants	0.567*** (0.179)	0.278** (0.123)	0.295*** (0.090)	0.297** (0.113)
Ln not sailed combatants	-0.040 (0.125)	-0.072 (0.095)	0.051 (0.057)	-0.105 (0.079)
Ln de Grasse combatants	-0.203 (0.160)	-0.004 (0.111)	0.087 (0.081)	-0.078 (0.111)
Baseline controls	✓	✓	✓	✓
<i>N</i> (Obs = département)	79	79	78	63
R ²	0.23	0.31	0.47	0.36
Partial R ² (Rochambeau)	0.11	0.07	0.13	0.09
Partial R ² (Notsailed)	0.00	0.01	0.01	0.02
Partial R ² (de Grasse)	0.02	0.00	0.01	0.01
Std. β (Rochambeau)	0.478	0.356	0.434	0.421
Std. β (Notsailed)	-0.047	-0.128	0.103	-0.199
Std. β (de Grasse)	-0.162	-0.004	0.121	-0.104
<i>p</i> Rochambeau = Notsailed	0.010	0.030	0.031	0.007
<i>p</i> Rochambeau = de Grasse	0.002	0.097	0.066	0.015

The table shows that support for the French Revolution was only statistically and economically significantly larger in departments where more Rochambeau's combatants originated, but neither in departments where more would-be combatants originated nor in departments where more American combatants originated that participated in the Siege of Yorktown but were not stationed in the U.S. for a longer period. This indicates that the experience of the U.S. per se, rather than battle experience acquired during the military campaigns, caused the greater support for the French Revolution. All regressions are run at the département level and include the baseline controls (log other soldiers, log infantry regiment garrisoned, log cavalry battalion garrisoned, log population in 1793, urbanization rate in 1793, and an indicator for Paris). Robust standard errors in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Both officers and soldiers contributed, but each to their abilities

	Dep. variable: ln [support for revolution]			
	(1) Anti-feudal revolts	(2) Political societies	(3) Volunteer battalions	(4) Elite emigrants
Ln Rochambeau officers	0.087 (0.227)	0.312** (0.150)	0.261*** (0.095)	-0.147 (0.130)
Ln Rochambeau soldiers	0.501** (0.232)	0.099 (0.160)	0.149 (0.090)	0.362*** (0.123)
Ln not sailed combatants	-0.041 (0.127)	-0.059 (0.092)	0.061 (0.054)	-0.119 (0.079)
Ln de Grasse combatants	-0.210 (0.163)	0.008 (0.115)	0.095 (0.080)	-0.095 (0.108)
Baseline controls	✓	✓	✓	✓
<i>N</i> (Obs = département)	79	79	78	63
R^2	0.23	0.35	0.50	0.37
Partial R^2 (Officers)	0.00	0.07	0.07	0.01
Partial R^2 (Soldiers)	0.07	0.01	0.05	0.09
Std. β (Officers)	0.057	0.308	0.297	-0.162
Std. β (Soldiers)	0.425	0.128	0.221	0.517
p Officers = Soldiers	0.323	0.459	0.454	0.025

The table shows that both ordinary soldiers and officers of Rochambeau's regiments increased support for French Revolution in their origins. Soldiers drive most of the effect for anti-feudal revolts and the subsequent emigration of land-owning elites, while officers contribute to the founding of revolutionary societies and in enlisting volunteers for the Revolutionary Army back in their origins. All regressions are run at the département level and include our baseline controls (log other soldiers, log infantry regiment garrisoned, log cavalry battalion garrisoned, log population in 1793, urbanization rate in 1793, and an indicator for Paris). Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Heterogeneity results

	Aristocracy		Enlightenment		Famine		Idea access	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
X = Parlement	Royal tax	Subscribers	Temp. shock	Prec. shock	Markets/fairs	Post houses		
Panel A								
Dep var: ln anti-feudal revolts								
Ln Roch. combatants	0.521*** (0.178)	0.791*** (0.181)	0.609*** (0.206)	0.352 (0.229)	0.304 (0.216)	0.573*** (0.209)	0.632*** (0.217)	
Ln Roch. combatants × (X > median)	0.595* (0.343)	-0.432 (0.284)	-0.066 (0.284)	0.371 (0.285)	0.269 (0.264)	0.022 (0.271)	-0.118 (0.365)	
Indicator (X > median)	-2.091* (1.226)	0.991 (0.878)	-0.181 (0.850)	-1.016 (0.836)	-0.297 (0.773)	0.268 (0.786)	-0.059 (1.128)	
Baseline controls	✓	✓	✓	✓	✓	✓	✓	
N (Obs = département)	79	79	79	79	79	79	79	
R ²	0.23	0.27	0.24	0.24	0.28	0.23	0.25	
Panel B								
Dep var: ln early political societies								
Ln Roch. combatants	0.253** (0.122)	0.280** (0.132)	0.237* (0.141)	0.313** (0.148)	0.152 (0.134)	0.469*** (0.149)	0.384*** (0.115)	
Ln Roch. combatants × (X > median)	0.370** (0.163)	-0.055 (0.164)	-0.016 (0.163)	-0.109 (0.189)	0.062 (0.169)	-0.284* (0.166)	-0.188 (0.176)	
Indicator (X > median)	-1.251** (0.572)	0.223 (0.537)	0.328 (0.521)	-0.051 (0.611)	0.253 (0.551)	1.169** (0.518)	0.175 (0.593)	
Baseline controls	✓	✓	✓	✓	✓	✓	✓	
N (Obs = département)	79	79	79	79	79	79	79	
R ²	0.32	0.31	0.34	0.37	0.39	0.35	0.38	

The table documents heterogeneity of Rochambeau's soldiers with characteristics of their origin départements. Their effect is stronger where the aristocracy was strong (in places with parlements, and where the King was weak as measured by fewer royal tax centers) and where access to ideas was scarce. All regressions are run at the département level and include our baseline controls (log other soldiers, log infantry regiment garrisoned, log cavalry battalion garrisoned, log population in 1793, urbanization rate in 1793, and an indicator for Paris). Robust standard errors in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.01.

Online Appendix

The American Origin of the French Revolution

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We provide additional detail and results in three appendices. Appendix A provides summary statistics and historical background information about the variables employed in the paper. In Appendix B, we provide additional empirical results supporting our analysis in the paper. Finally, Appendix C provides individual-level evidence on the role of officers who participated in American Revolutionary War during the French Revolution.

A. Data Appendix

A.1. Overview and Summary Statistics

Table A.1 provides an overview on the variables employed in this paper. Besides a short definition, it also lists the sources if the variable is taken from the literature. Table A.2 presents summary statistics. The construction of variables from newly digitized data is documented in the next subsection.

Table A.1: Variable definitions

Variable	Definition	Source
<i>Primary outcomes</i>		
Anti-feudal revolts	Attacks on the feudal institution of lordship (<i>seigneurie</i>), including the lord's person, property, and rights	Chambru and Maneuvrier-Hervieu (2022)
Political societies	Voluntary associations of citizens formed during 1789–90 for political participation	see text
Elite emigrants	Emigrants from clergy, nobility, and upper-middle class	see text
National Volunteers	Battalions of voluntary soldiers formed 1791–92	see text
<i>Alternative outcomes</i>		
Subsistence revolts	Revolts over the availability or the price of food	Chambru and Maneuvrier-Hervieu (2022)

Panics	Riots oriented to an imaginary enemy	see text
Jacobin clubs	Political societies affiliated with Jacobin club of Paris	see text
Peasant emigration	Emigrants with rural occupations	see text
<i>Independent variables</i>		
Rochambeau combatants	Infantry officers & soldiers participating in <i>special expedition</i> under General Rochambeau: Stationed in U.S. during 1780–82, fighting in Siege of Yorktown	see text
Never sailed combatants	Officers & soldiers chosen for <i>special expedition</i> by General Rochambeau but staying behind due to logistics	see text
de Grasse combatants	Infantry officers & soldiers under Admiral de Grasse: Fighting in Siege of Yorktown, stationed in French Caribbean colonies	see text
Rochambeau officers	Officers (commissioned and non-commissioned) of infantry regiments participating in <i>special expedition</i> under General Rochambeau	see text
Rochambeau soldiers	Soldiers (rankers and corporals) of infantry regiments participating in <i>special expedition</i> under General Rochambeau	see text
<i>Baseline controls</i>		
Other soldiers	Soldiers enlisting for infantry during 1700–1789	Komlos, Hau, and Bourguinat (2003)
Population 1793	Total inhabitants in 1793	see text
Urbanization rate	Share of population living in towns ≥ 5000 in 1793	see text
Infantry garrison	Indicator for infantry regiment garrison	see text
Cavalry garrison	Indicator for cavalry battalion garrison	see text
Paris	Indicator for Paris/département Seine	see text
<i>Geography</i>		
Distance to ocean	Distance (in km) of department centroid to nearest ocean	see text
Distance to border	Distance (in km) of department centroid to nearest foreign country (Belgium, Germany, Switzerland, Italy, Spain)	see text
Ruggedness	Terrain Ruggedness Index within department	see text
Roman roads length	Total length of roman roads	see text
Wheat suitability	Caloric yield of low-input, rain-fed wheat agriculture	see text
Temperature shock 1788	Temperature deviation in 1788 from mean 1700–1800	Waldinger (2021)
Precipitation shock 1788	Precipitation deviation in 1788 from mean 1700–1800	Waldinger (2021)
<i>Political economy</i>		
<i>Parlement</i>	Seat of a provincial appellate court	see text
Bishops	Seats of bishops and dioceses: church jurisdictions	see text
Bailliages	Seats of bailliages: feudal jurisdictions and election districts	see text
Tax centers	Seats of (royal) tax collectors (<i>recettes des finances</i>)	see text

Sub-delegates	Seats of administrators below the <i>intendant</i> : (mainly) public order jurisdictions	see text
<i>Human capital</i>		
Average height of soldiers	Average height in cm of enlisted soldiers 1700–89	Komlos et al. (2003)
Male literacy rate	Share of men signing marriage certificates in 1786	Squicciarini and Vogtländer (2015)
Collèges	Public, endowed secondary schools	Rosenberger (2023)
Collège students	Students at public, endowed secondary schools	?
Encyclopédie subs.	Subscribers to <i>Encyclopédie</i> by Diderot and d’Alembert	Squicciarini and Vogtländer (2015)
<i>Economy</i>		
Markets and fairs	Number of markets and fairs per department	see text
Post houses	Number of post houses per department	see text

A.2. Documentation and sources

A.2.1. Independent variables

American combatants Among American combatants, we distinguish two treatment groups. The main treatment group *Rochambeau’s combatants* were exposed to U.S. institutions for an extended period. We collect individual-level data for the infantry regiments Bourbonnais, Saintogne, and Soissonnais from the sources described in the main text. We obtain 3641 individuals in total and identify the origin (birth place) in a comprehensive dataset of all French communes and towns in 1793.¹ This data set includes approximately 35k communes, reports population data starting in 1793, and also includes latitude and longitude. We then aggregate numbers to the department level, using department boundaries circa 1794 from Chambru (2020). In total, we can link 3109 (85%) combatants to the department of birth.

The alternative treatment group *De Grasse’s combatants* also participated in the Siege of Yorktown but were not stationed in the U.S. Here, we collect individual-level data for the infantry regiments Agenois (data on officers only), Gâtinais (Royal-Auvergne), and Touraine from the same sources. We obtain 2406 individuals in total and, using the same procedure, link 2104 (87%) combatants to the department of birth. Based on information on date of death, desertation, and discharge, we find that among Rochambeau’s combatants, 3084 (84%)

¹The data is part of the Cassini project, *Des villages de Cassini aux communes d’aujourd’hui*, available online <http://cassini.ehess.fr/fr/html/index.htm>.

Table A.2: Summary statistics

	Obs	Mean	S.D.	Min	Max
Anti-feudal revolts	79	5.14	9.96	0.0	66.0
Early political societies	79	3.67	3.28	0.0	14.0
Volunteer battalions	78	5.50	4.46	1.0	34.0
Elite emigration	63	673.00	488.91	91.0	2889.0
Rochambeau combatants	79	35.75	31.21	3.0	161.0
Not sailed combatants	79	15.95	39.66	0.0	310.0
De Grasse combatants	79	24.81	25.32	1.0	195.0
Rochambeau officers	79	3.10	2.74	0.0	13.0
Rochambeau combatants	79	32.65	29.69	3.0	158.0
Soldiers in Komlos sample	79	274.24	340.17	8.0	1978.0
Infantry regiments	79	1.06	2.21	0.0	16.0
Cavalry regiments	79	0.53	1.06	0.0	6.0
Population 1793 (thousand)	79	316.83	122.94	101.7	721.6
Urbanization rate 1793	79	0.15	0.14	0.0	0.9
1: Paris	79	0.01	0.11	0.0	1.0
Distance to ocean (km)	79	159.27	106.78	10.4	411.5
Distance to intern. border (km)	79	181.44	100.69	24.4	403.9
Terrain Ruggedness Index	79	0.79	0.90	0.1	5.4
Roman roads length (thousand km)	79	321.47	135.20	0.0	783.6
Wheat suitability (caloric yield)	79	8422.62	715.37	4493.9	9459.7
Temperature shock 1788	79	1.06	0.05	1.0	1.3
Precipitation shock 1788	79	0.89	0.08	0.8	1.0
1: Parlement	79	0.14	0.35	0.0	1.0
Bishoprics	79	1.58	1.22	0.0	5.0
Bailliages	79	4.87	3.07	0.0	14.0
Tax centers	79	3.92	2.88	0.0	20.0
Sub-prefectures	79	8.08	4.46	0.0	24.0
Soldiers average height	79	169.16	0.92	166.3	172.6
Male literacy rate	76	0.39	0.25	0.0	0.9
Collèges	79	6.61	3.73	2.0	21.0
Collège students	79	854.91	753.56	15.0	5000.0
Subscriber density	79	2.17	3.08	0.0	15.2
Fairs	79	201.10	143.59	6.0	731.0
Markets	79	36.76	14.71	2.0	80.0
Post houses	79	16.24	10.59	0.0	49.0

Observations: Départements. Sample as in baseline results: France proper of 1789 (mainland, non-German speaking).

returned home to France. Among de Grasse's combatants, 1300 (54%) returned home.²

Never sailed combatants As control group, we collect individual-level data from the infantry regiment *Neustrie* from the military archive.³ In particular, we transcribe the handwritten entries for all the soldiers, their origin, and rank from the relevant pages 4 to 265, in total 2343 soldiers from the regiment book 1776 to 1786. We proceed similarly to before to assign the soldiers to their department of origin but use, in addition to the birth place, information on the military district (36 in total) for geo-localization. In total, we identify the department of origin for 1317 (56%) individuals and the exact town of origin for 1086 (46%) individuals. Note that the spelling of birth places is not standardized in the original sources. Even if the transcriptions was perfect, we would not expect to be able to identify all birth places perfectly because of homonym town names and towns with many homonyms. For example, the town Meaux, Seine-et-Marne, is homonym to "mots", in English "word," and is written in this homonym form by some (but not all) military clerks.

Officers vs soldiers We also collect and digitize data on ranks, which allows us to distinguish between officers and soldiers. In the baseline, we do not distinguish between commissioned officers and non-commissioned officers since officers of groups must have been literate, distinguishing them from the average soldier who did not need to be literate (Wrong, 1976). In total, we observe 120 commissioned officers and 160 non-commissioned officers among Rochambeau's combatants. Positions as commissioned officer were generally reserved for the nobility and were available for purchase (ranks colonel, mayor, captain, lieutenant, sub-lieutenant), except for few so-called *officers of fortune* which were selected from rankers based on merit (ranks quarter-master treasurer, standard bearer, lieutenants of the grenadier company). Positions as non-commissioned officer (primarily sergeants and corporals) were open to both commoners and nobility. Since there were many families of lower nobles who could not afford to buy into officer positions, we also observe a good number of nobles among the non-commissioned officers. Only the group of soldiers comprised essentially only commoners. In the baseline, we count as officers also those veterans who were promoted after the Special Expedition.

²The difference is largely driven by a naval battle at Cap Français with about 400 deaths on the way back to the Caribbean garrison and by tropical fever.

³The regimental books are digitally accessible online at www.memoiredeshommes.sga.defense.gouv.fr

A.2.2. Outcomes

Revolts Following Markoff (1996), we distinguish between three types of revolts—anti-feudal, subsistence, and panics—which were the three most widespread forms of revolts during the period 1788–92. Anti-feudal revolts were attacks on the feudal institution of lordship (*seigneurie*), including the lord’s person, property, rights, or symbols. Importantly, these revolts *did not* target royal institutions, which also belonged to the feudal system. Subsistence revolts were revolts over the availability or the price of food. Food was scarce primarily because of the bad harvest of 1788 (see also Waldinger, 2021). Panics were riots during the so-called “great fear” in which collective action was oriented to an imaginary enemy. Imaginary enemies included vagabonds who would steal the harvest from the fields; an invading force of foreigners as Savoyards, Germans, or English; and aristocrats who were conspiring to violently crush the third estate (see also Lefebvre, 1932).

The data on anti-feudal revolts and subsistence revolts comes from the Historical Social Conflict Database (Chambru and Maneuvrier-Hervieu 2022, database categories 5 and 1, respectively). For revolts of this type during the revolution 1789–1794, this database primarily relies on Ado (1996). Panics during great fear we digitized ourselves from the map provided by Lefebvre (1932). Figure A.1 documents the time pattern of revolts by type. Anti-feudal revolts were mostly concentrated in the revolution years 1789 (the “first revolution”) to 1792 (the “second revolution”). Subsistence revolts started in 1788 and extended into 1793. Panics were occurred almost exclusively in 1789.

Political Societies Political Societies enabled local political participation and supported the local implementation of new policies. Initially, the political societies organized from the bottom up, the most famous being the Jacobin club of Paris created under the name *Society of the Friends of the Constitution*. After the establishment of democracy in 1792, the creation of political societies was bolstered by the government—effectively, the committee of public safety headed by Robespierre—because it became the main means by which it ruled. During the Thermidorian reaction, the period between the ousting of Robespierre in July 1794 and the Directorate government of 1795, the political societies were suppressed.

The data on political societies was compiled by a large group of historians from department and national archives and secondary sources for the Atlas of the French Revolution (Boutier, Boutry, and Bonin, 1992). We digitized town level data on the year in which the first political society was founded or its existence attested. Furthermore, we digitized an indicator whether a town’s political society was ever affiliated with the Jacobin society of Paris. Towns could have more than one society but we do not observe the number of political societies by town by

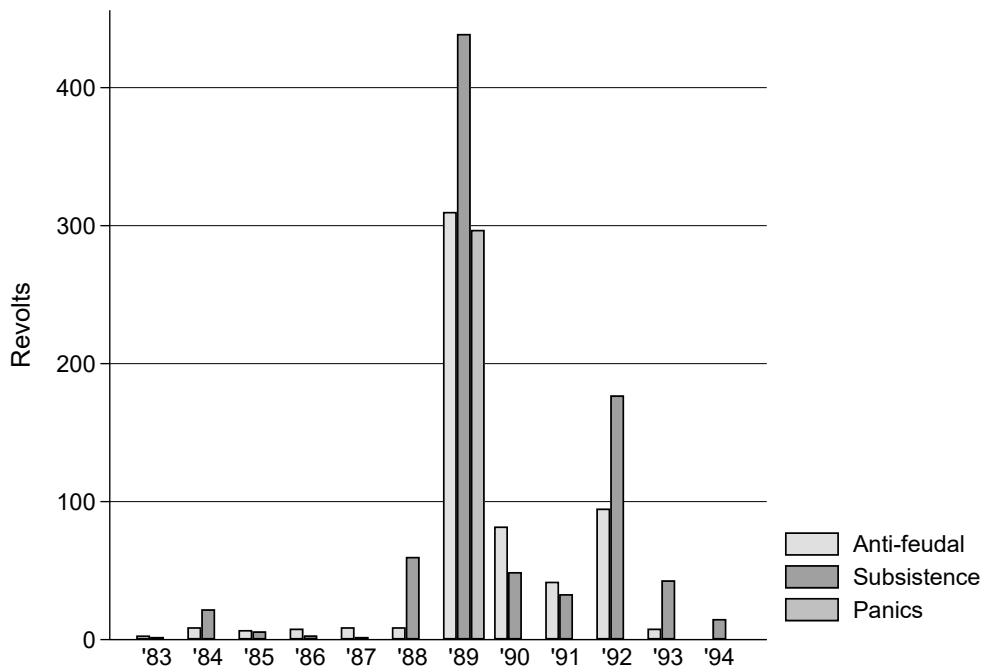


Figure A.1: Incidence of revolts 1783–1794 by type

year.⁴ Data at the department level on the total number of political societies over 1789–1794 shows that there were 6027 societies in total in 5510 towns and communes. Figure A.2 documents time pattern how political societies first emerged bottom-up in towns in the early period and diffused top-down to towns and communes in the later period. In the first long year of the revolution 1789–90, citizens established in 307 towns at least one political society due to local initiative. Until September 1793, citizens established in further 1771 towns at least one society. In the period of republican year II–III (September 21, 1793–1794), another 3432 towns and communes established a society under the direction of the Paris government and Jacobin society.

National Volunteers The battalions of “National Volunteers” were first raised in 1791 with the goal of mobilizing soldiers from the National Guards, which had formed bottom-up during the early stages of the revolution. (The first National Guards formed in Paris on July 13th/14th 1789 in connection to the storm of the Bastille.) The formation of battalions of National Volunteers was stipulated and regulated by a series of laws in 1791 and 1792. For

⁴Boutier and Boutry, the lead authors for the political societies project, never published as book the data documentation that was announced or promised in the Atlas of the French Revolution as *Les sociétés populaires. Sources. Bibliographie* (Boutier et al., 1992, 114). The book would also have provided a catalog of society registers and membership lists, which may have made it feasible for us to collect systematic data on the intensive margin—how many societies, how many members, per town and by year, etc.

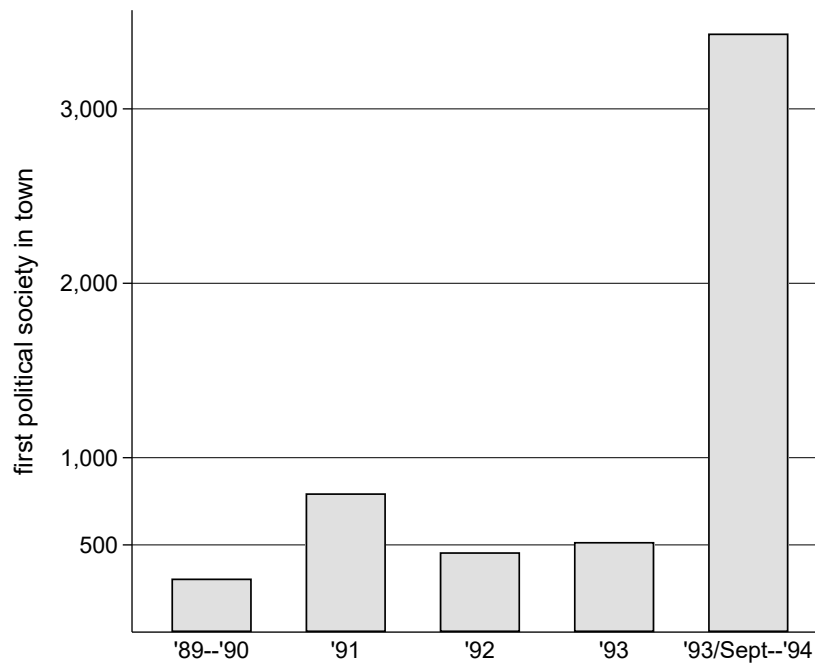


Figure A.2: First establishment of political societies in towns over time

example, a law of 1791 demanded that every département formed at least one battalion. The battalions were organized very similar to the regular army, with the key difference that the higher officer ranks were open to commoners and not reserved for nobles. Importantly, the National Volunteer soldiers of 1791 and 1792 were not conscripted but enlisted voluntarily. Conscription into National Volunteer battalions only started in February 24 1793 when the National Convention decreed on to conscript three hundred thousand men from all of France. This call to arms of French citizens for defending the homeland and the Revolution against its enemies—chiefly foreign powers and the aristocracy—became known in history as the mass levy (*levée en masse*).

We digitize department level data from Bertaud, Reichel, and Bertrand (1989) on the number of battalions in January 1793, just before conscription began with the mass levy.⁵ This variable measures the degree to which French citizens were ready to voluntarily take up arms for defending the Revolution. By January 1793, there existed 457 battalions of national volunteers. At a size of about 600 men per battalion, it is estimated that approximately 100,000 men enlisted in 1791 and another 180,000 in 1792 (Bertaud et al., 1989, 16-7).

⁵The data is based on a table from the *Archives parlementaires*, 24 February 1793, p.145-6, that has been reprinted by Bertaud et al. (1989, 73-4).

Emigrants Emigrants were essentially composed of two groups of people: Members of the old regime’s elite who were opposed to the republic, and citizen who were fleeing from the war zone in border regions and in regions of civil war (Greer, 1951). In this paper, we are primarily interested in emigration from the old regime’s elite. Members of the old elite started to leave the country as early as July 1789 after the storm of the Bastille (Boffa, 1989). The emigration of the old elite accelerated in summer 1791 after the failed flight of King Louis XVI, an episode known as “Varennes” because Louis was stopped in Varennes, shortly before the Belgian border, and brought back to Paris where he was subsequently placed under house arrest (Ouzuf, 1989). The elite emigration peaked in 1792 as result of the increasing revolutionary violence and due to the exiling of the non-constituitial clergy.⁶ Independent of why they emigrated—seeking asylum or being refugees, in modern terms—, emigrants became known as *émigrés* and were politically persecuted during the terror (1793-4) and their (landed) property was expropriated.

We digitize department level data from Greer (1951) on the total number of emigrants (79 departments in our sample) and the number of emigrants by socio-economic status (63 departments in our sample). We classify as “elite emigrants” those who belonged to the clergy, the nobility, and the upper-middle class (bourgeoisie and professions). Accordingly, non-elite emigrants are from the lower-middle class, working class, and peasantry. Greer (1951) estimates that in total 130000 people fled the country during 1789–1794. Of this, approximately 27% belonged to the clergy, 18% to the nobility, 12% to the upper-middle class, 7% to the lower-middle class, 15% to the working class, and 21% to the peasantry.

A.2.3. Baseline controls

The set of baseline controls captures factors that potentially affect both military recruitment in general as well as revolutionary outcomes.

Total recruits The measure of general military recruitment in the French army is based on data transcribed from the regiment books by Komlos et al. (2003). The sample comprises about 38700 soldiers registered in regiment books between 1716–1784, with a bias to the earlier period—three quarter of soldiers are from the period before 1750. We identify for about 22000 soldiers the town of birth (57%) and for about 23100 soldiers the department of birth (60%). Note that (Komlos et al., 2003) have not corrected transcription errors or standardized the spelling, which also affected the geo-localization rate of our transcriptions.

⁶The clergy was required in 1791 to take an oath on the new secular constitution. Those who refused to take the oath became known as *refractory clergy* (Tackett, 1986; Squicciarini, 2020; Blanc, 2022).

Garrisons We control for the (log) number of infantry and cavalry regiments garrisoned in a department. The variables likely affected military recruitment since many regiments recruited soldiers locally. Moreover, the army was sometimes used internally as “riot police”. From about 1740–50 to 1788, regiments were rotated across garrisons every three years. We collected data on 107 garrisons for infantry regiments and 59 garrisons for cavalry regiments. Source: [Bertaud et al. \(1989, 12\)](#).

Population, urbanization Data on population in 1793 was obtained from the Cassini project.⁷ This data set covers the universe French communes, over 35k in total. We calculate urbanization rates as a department’s share of population living in towns larger than five thousand inhabitants.

A.2.4. Geography

Distance to the ocean, distance to the border are calculated as the the distance (in degree) of each departement centroid to the nearest international border or ocean.

Ruggedness is calculated as the median of the Terrain Ruggedness Index in each department based on data from [Nunn and Puga \(2012\)](#).

Roman roads length is the total length (in meters) of roman roads within department borders and based on data from [McCormick, Huang, Zambotti, and Lavash \(2013\)](#).

Wheat suitability is computed as the median within the department borders based on data on caloric yield of low-input, rain-fed wheat agriculture. Source: [Galor and Özak \(2015, 2016\)](#).

Shock in 1788 [Waldinger \(2021\)](#) argues that a weather shock caused drought in summer 1788 which led to widespread harvest failures, increase in food prices and local famine, and an increase in unemployment among agricultural workers. Note that other historians have stated that the harvest of summer 1788 was also negatively affected by hailstorms. This weather shock would have contributed to demands for political change as well as revolutionary violence. We follow [Waldinger \(2021\)](#) in measuring the regional impact of the harvest shock in 1788 using the temperature and precipitation shock. The shocks are the deviation of temperature and precipitation, respectively, in the growing season (spring and summer) of 1788 from their long-run mean during 1750–1800. The variables are computed based on

⁷*Des villages de Cassini aux communes d’aujourd’hui*, available online <http://cassini.ehess.fr/fr/html/index.htm>.

data from Pauling, Luterbacher, Casty, and Wanner (2006) for precipitation and Luterbacher, Dietrich, Xoplaki, Grosjean, and Wanner (2004) for temperature.

A.2.5. Political economy

We digitize all data on political economy variables at the department level from Nordman, Ozouf-Marignier, Gimeno, and Laclau (1989, 81). The variable descriptions are also based on this source.

Parlement *Parlements* were provincial appellate courts that played an important political role in the Kingdom of France.⁸ All judges of the *parlements* were members of the nobility. Besides their role as courts, they also had to sign all royal laws before they could go into effect, including laws concerning taxation. By refusing to sign, they could substantially slow down and obfuscate the king's ability to govern without consent. While they did not have veto power over royal laws—the king could summon them and then overturn their decision—, ignoring the *parlements* came at the risk of precipitating a larger political crisis. In total, there were 13 *parlements* across the country, but the Parlement of Paris was by far the most influential.

Bishops Bishops were the local heads of church and mostly recruited from the nobility. Bishop's seats were also administrative and fiscal centers, as the church received income from the tithe. It is estimated that, at the eve of Revolution, the church received more income from the tithe than the state raised through all taxes combined. Moreover, the church was completely exempt from royal taxation and only gave voluntary contributions to the secular government. Besides the spiritual services, the church was also supposed to provide poor relief and education. In total, we observe 136 old bishop's seats.

Bailliages Bailliages were old feudal jurisdictions (corresponding to the English *bailiwick*) and concerned with all matters seigneurial. In some parts of the country, they were as *sénechaussée*. Besides their importance for seigneurial matters, bailliages were also election districts for the *Estates General* and thus directly important for the early stages of the French Revolution: In the towns with seat of a bailliage, the *cahiers de doléance* were drawn up and the deputies elected that were subsequently sent to Versailles. In total, we observe 432 bailliages.

⁸The modern term *parliament*, which usually signifies a body of elected legislators, derives its name from the older French institution of *parlement*.

Tax centers The French kingdom regularly used sub-contractors to collect its taxes by auctioning off the right to collect a certain tax in a certain region to so-called “general tax-farmers”. They, in turn, subcontracted local tax collectors, which could be individuals or institutions. Our measure “tax centers”—*recettes des finances* in French—is the total number of these royal tax sub-contractors per department. In total, we observe 344 tax centers.

Sub-delegates The main royal administrative divisions were the *généralités*. Created in 1625 and given full authority by Louis XIV (36 in total), they were headed by so-called *intendants* who exercised royal authority to uphold public order, working with sub-delegates. In total, we observe 702 seats of sub-delegates.

A.2.6. Economy

Markets and fairs We digitize data at the department level on the number of markets and fairs about 1789 (intensive margin) and on the number of towns with a fair or market about 1789 (extensive margin). The data was compiled as department level aggregates by [Margairaz \(1988\)](#) from archival records of an official census. This census was conducted by the ministry of commerce in year II (1793–4) and “reflects in density and structure the [trade] network at the end of the Ancien Régime” ([Margairaz, 1988, 46](#)). Markets usually took place once a week, whereas fairs usually took place once a year—thus, bi-yearly spring and autumn fairs, for example, would count as two fairs. Larger towns would host several markets and fairs and could have, for example, have fairs every month and markets every day. In total, there were about 2,100 towns with in total over 16,000 fairs and about 340 towns with in total about 3,000 markets.

Communication We digitize data at the department level on the number of post houses in 1792 from [Arbellot, Lepetit, and Bertrand \(1987\)](#). The national system of post houses, each run by a post master and equipped with horses, was originally developed by the state to quickly handle royal dispatches. By 1776, the system provided not only the regular service of letter post but also travel with the postal stagecoach. In total, we observe 1400 post houses in 1792, a number hardly different from that in 1789 at the end of the Ancien Regime [Arbellot et al. \(1987, 16\)](#).

A.3. Logarithmic specification

Our main analysis uses on logarithms of variables (adding one for variables with zeros). Figures A.3 and A.4 compare the distributions of primary outcome and treatment variables in

levels and logarithms, respectively. As distributions of both primary outcome and treatment variables are approximately log-normal, the correct empirical specification is the logarithmic.

The log-transform has the additional benefit of placing less weight on the tails and reducing the influence of a few outliers that are visible in Figures [A.3](#) and [A.4](#). The results for the levels specifications reflects the influence of outliers: Standardized coefficients on Rochambeau combatants tend to increase but turn marginally insignificant for some outcomes (revolts, battalions) because of larger standard errors. Whereas censoring outliers e. g. by dropping or winsorizing achieves qualitatively very similar results of the levels specification compared to the log-linear specification, we prefer to not censor any variables in the baseline.

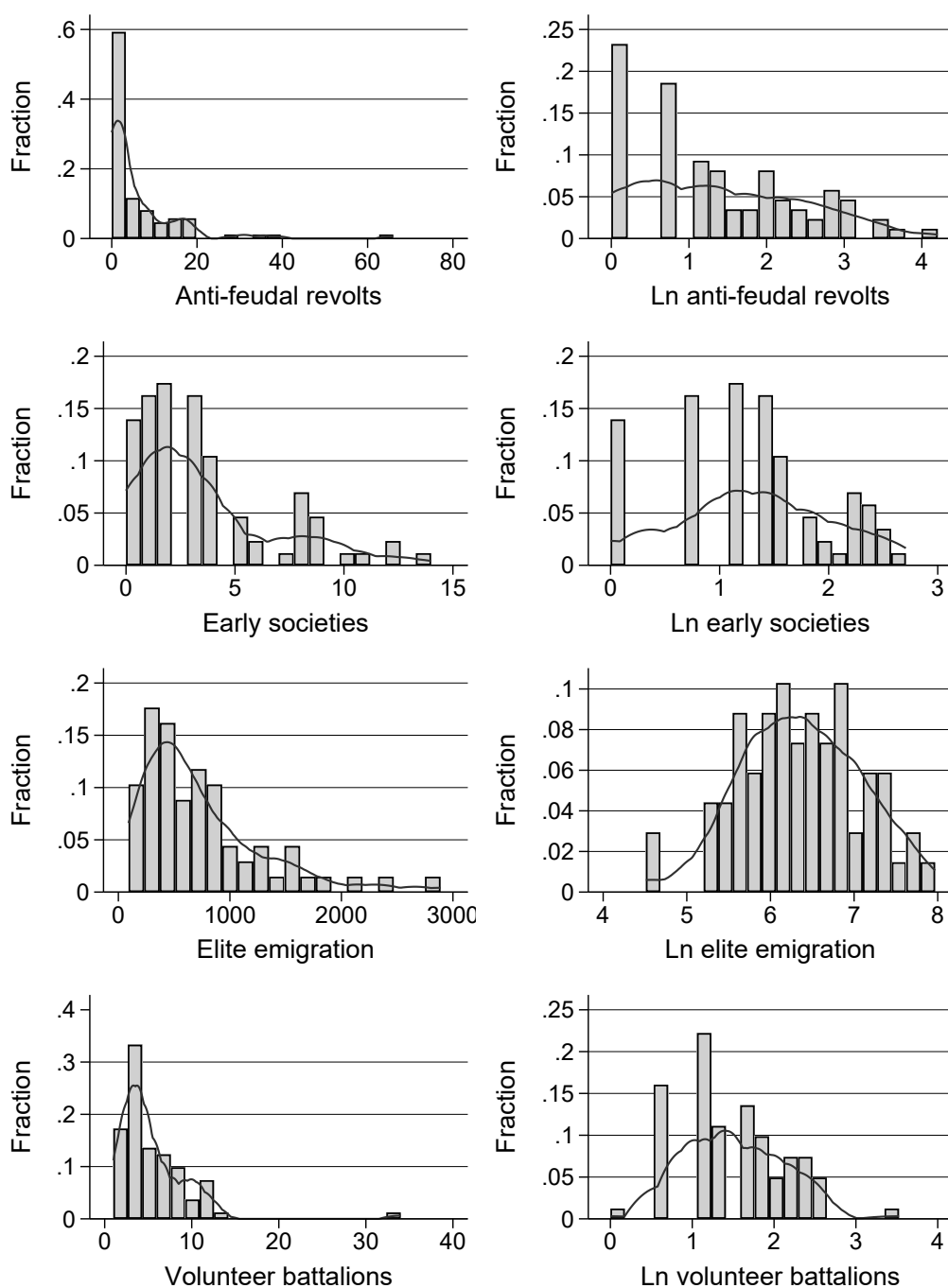


Figure A.3: Log-normal distribution of primary outcome variables

Note: Histograms with overlaid kernel density estimate (Epanechnikov kernel). The left column shows that distributions in levels are heavily skewed towards zero. The right column shows that the corresponding distributions in logarithms (levels plus one for variables with zeros) are approximately normal and place less weight on outliers.

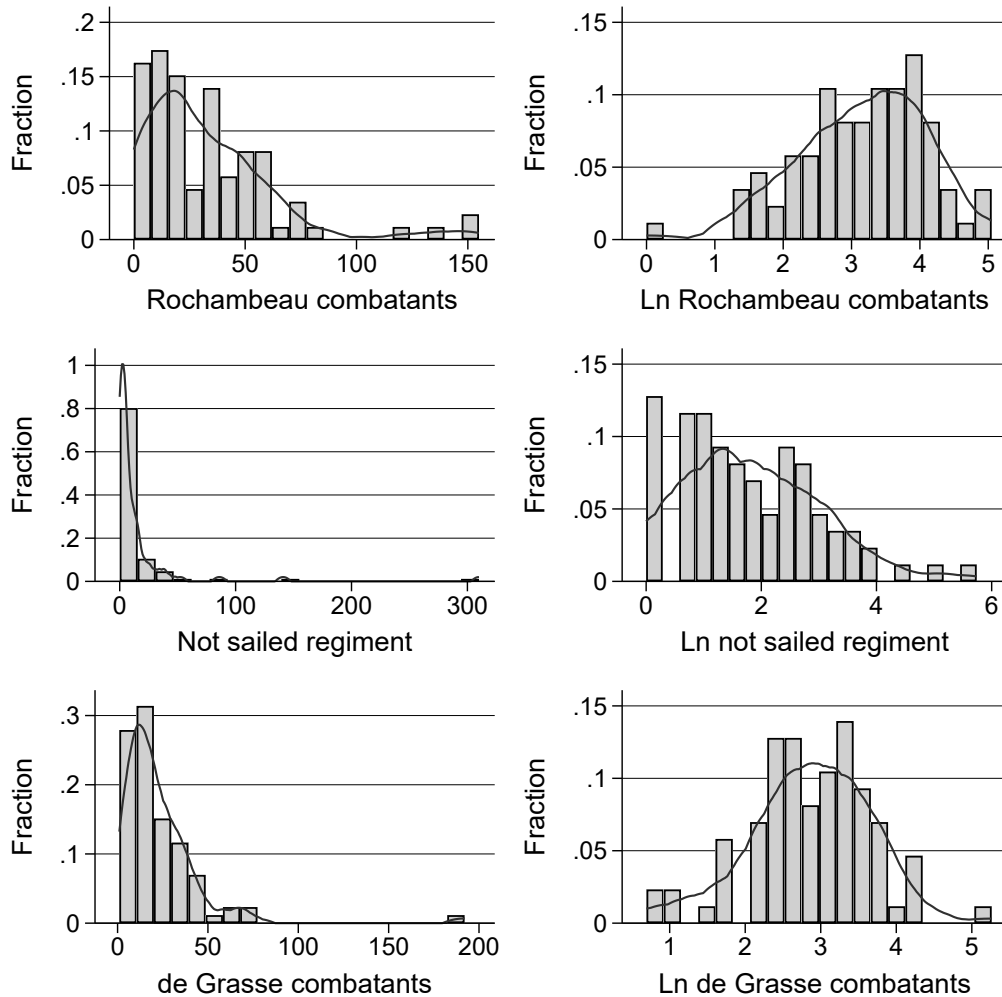


Figure A.4: Log-normal distribution of treatment and control variables

Note: Histograms with overlaid kernel density estimate (Epanechnikov kernel). The left column shows that distributions in levels are heavily skewed towards zero. The right column shows that the corresponding distributions in logarithms (levels plus one for variables with zeros) are approximately normal and place less weight on outliers.

B. Additional Results

B.1. Coefficients on controls in baseline regression

[Short description of results. Link to equation 1, table 2]

Table A.3: Full results for baseline regression

	Dep. variable: ln [support for revolution]			
	(1) Anti-feudal revolts	(2) Political societies	(3) Volunteer battalions	(4) Elite emigrants
Ln Rochambeau combatants	0.536*** (0.175)	0.265** (0.120)	0.313*** (0.094)	0.269** (0.112)
Ln other soldiers	0.195 (0.172)	-0.106 (0.098)	0.151* (0.079)	-0.075 (0.119)
Ln infantry regiments	-0.193 (0.200)	0.178 (0.107)	0.100 (0.106)	0.103 (0.136)
Ln cavalry regiments	-0.390 (0.277)	-0.153 (0.153)	-0.093 (0.115)	0.248* (0.145)
Ln population 1793	-0.203 (0.381)	0.468* (0.238)	-0.198 (0.217)	-0.071 (0.324)
Urbanization rate 1793	-0.283 (0.976)	0.835 (0.583)	0.134 (0.660)	1.463* (0.832)
1: Paris	-1.629** (0.693)	-1.828*** (0.420)	1.255** (0.500)	-0.152 (0.658)
Constant	1.208 (4.502)	-5.028* (2.740)	2.135 (2.587)	6.364* (3.750)
<i>N</i> (Obs = département)	79	79	78	63
R ²	0.22	0.31	0.46	0.33
Partial R ² (Rochambeau)	0.10	0.07	0.14	0.07
Std. β (Rochambeau)	0.451	0.339	0.462	0.380

Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

B.2. Additional Analysis of Conflicts

In this section we discuss and present results from two additional analysis of conflict across French departments.

B.2.1. Dynamic Difference-in-difference Analysis and Other Types of Conflict

Here we present evidence on the timing of anti-feudal riots and other types of conflict. We show that (i) anti-feudal riots only increased in 1789 in départements from which more of Rochambeau's hailed, (ii) find no such effect for subsistence riots in any of the years, and (iii) that only Rochambeau's soldiers and neither of the placebo soldiers have such an effect on conflicts in 1789.

We first document that the effect underlying our cross-sectional estimate in Table 1 is entirely driven by a spike in anti-feudal protests in the year of 1789, when the French Revolution started. We use the time-variation in anti feudal protests, and estimate regressions of the following type:

$$y_{i,t} = \sum_{\tau=1780}^{1795} \beta_{\tau} \ln \text{Rochambeau}_i \times 1(t = \tau) + \gamma \sum_{\tau=1780}^{1795} X_i \times 1(t = \tau) + \mu_t + \mu_i + \varepsilon_i \quad (\text{A.1})$$

In these regressions, we now interact our main independent variable of interest, $\ln \text{Rochambeau}_i$ with year dummies for each of the years under consideration (1780 to 1795).⁹ We similarly interact our baseline controls with year dummies, and further include year (μ_t) and département (μ_i) fixed effects, and employ robust standard errors.

Figure A.5 presents estimates of the β_t 's for two outcome variables $y_{i,t}$: anti-feudal riots and subsistence riots. We find that anti-feudal riots only spike in the year of 1789, and find no evidence for a comparable spike in subsistence riots in the same or any other year. This strongly suggests that Rochambeau's soldiers were not just (i) hailing from départements inherently prone to more violence per se, (ii) instigating conflict before the the national political environment and bad harvests in 1788 made political change a possibility, and, lastly, (iii) Rochambeau's soldiers did not – even in the year of Revolution 1789 – increase all types of conflict, but only those anti-feudal riots directed against the economic system of feudalism.

Next, we document that only Rochambeau's soldiers are responsible for the spike in anti-feudal riots in 1789. We find no such effect for those soldiers from our two placebo regiments who did not spend considerable time in the Northeastern United States. To this end, we run regressions of the following type, where the outcome is – with the usual slight abuse of notation – the logarithm of one plus the number of anti-feudal riots in a département i and

⁹For all of the remainder we focus on those years, but in unreported results we find no evidence of any spike in the earlier or later years (the conflict data is available until 1800).

year t :

$$\ln \text{anti-feudal riots}_{i,t} = \sum_{\tau=1780}^{1795} \beta_{\tau} \ln \text{Regiment}_i \times 1(t = \tau) + \gamma \sum_{\tau=1780}^{1795} X_i \times 1(t = \tau) + \mu_t + \mu_i + \varepsilon_i \quad (\text{A.2})$$

We run this regression for each of the three types of soldiers separately, i.e. one for the number of soldiers of Rochambeau hailing from a département, and one each for the two placebo regiments of soldiers – those who did not sail, and those under De Grasse, who only participated in the Siege of Yorktown, but were not exposed to the US for longer and particularly not to New England.

Figure A.6 presents estimates of the β_t 's for each of the three independent variables. The spike for Rochambeau's soldiers in 1789 (already documented above) is clearly visible. Notably, we do not find evidence for a sizable or statistically significant increase in anti-feudal riots due to either of the other two sets of soldiers.

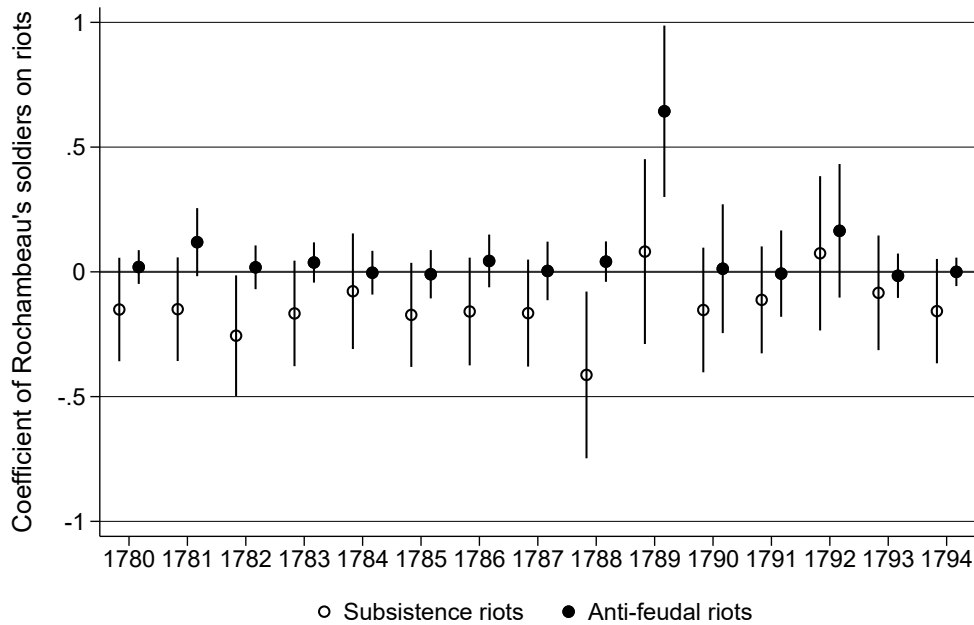


Figure A.5: Dynamic difference-in-difference estimates of Rochambeau's soldier on riots

Note: This figure shows that Rochambeau's soldiers only increased anti-feudal revolts in their origin departments, and only in 1789. We show estimates of the β_{τ} coefficients from equation A.1 for two outcome variables, anti-feudal and subsistence revolts.

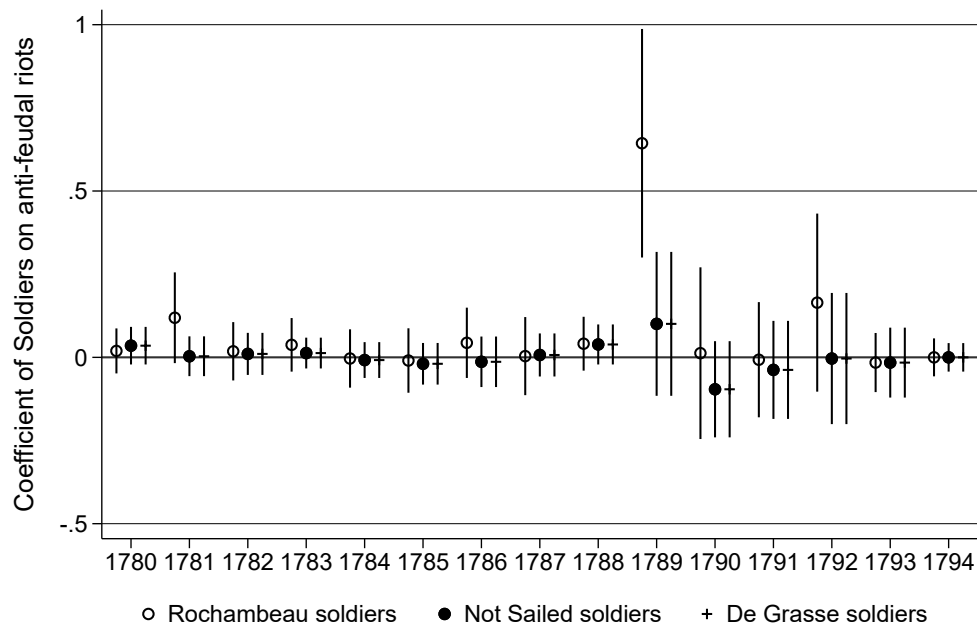


Figure A.6: Dynamic difference-in-difference estimates of soldiers on anti-feudal riots

Note: This figure shows that only Rochambeau's soldiers increased anti-feudal revolts in their origin departments in 1789, and that no such spike is visible either the soldiers that never sailed or only participated in the Siege of Yorktown. We show estimates of the β_τ coefficients from equation A.2 for three independent variables estimated separately.

B.2.2. Analysis of Conflict at Disaggregated (modern) Boundaries

Our baseline results for conflict also holds at modern départements, and even within those. We show this drawing on the fact we know the exact location of conflicts from our source, and also know the exact locations of villages to which we matched soldiers to. For the purpose of this section, we aggregate these to the level of two *current day* administrative divisions of France – départements and arrondissements.¹⁰

We first re-run our main specification at the level of modern départements. Column 1 of table A.4 presents results. Note that the coefficients are very similar to the corresponding ones in column 1 of table 4, although here we do not control for the presence of infantry or cavalry garrisons.

Columns 2 to 4 are at the arrondissement level instead. Arrondissements are the administrative level below, and on average each département consists of about three arrondissements. As is evident from column 2, Rochambeau's soldiers are sizably associated with anti-feudal protest even across the about 300 arrondissements of France – the standardized effect size is 0.35. Column 3 – which includes département fixed effects – shows that majority of this effect operates within départements. Lastly, column 4, employing standard errors at the département shows that allowing for arbitrary correlations among other unobservables within département does not affect our inference by much.

¹⁰The data on modern administrative borders of France comes from the GADM database, and is available under www.gadm.org.

Table A.4: Baseline analysis across and within modern départements

	Dep. variable: ln anti-feudal revolts			
	(1)	(2)	(3)	(4)
Ln Rochambeau combatants	0.519*** (0.194)	0.272*** (0.070)	0.195*** (0.072)	0.195** (0.095)
Ln De Grasse combatants	-0.238 (0.197)	-0.107* (0.060)	-0.077 (0.068)	-0.077 (0.078)
Ln not sailed combatants	-0.114 (0.133)	-0.046 (0.071)	-0.017 (0.057)	-0.017 (0.060)
Dep FE			✓	✓
Std. β (Rochambeau)	0.44	0.35	0.25	0.25
R ²	0.17	0.15	0.62	0.62
N	89	302	302	302

The table shows that the effect of Rochambeau's combatants on anti-seigneurial revolts holds not only at the level of modern départements (column 1) but also at the more disaggregated level of arrondissements (columns 2 through 4), with or without département fixed effects. All regressions include our baseline controls (log other soldiers, log infantry regiment garrisoned, log cavalry battalion garrisoned, log population in 1793, urbanization rate in 1793, and an indicator for Paris). Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

C. Individual-level evidence on Rochambeau's officers during the French Revolution

Several officers later became involved in politics and were elected as deputy for the nobility to the Estates General. Table A.5 documents the officers' experience in America and their political affiliation.

Table A.5: American combatant officers as deputies in the General Estates 1789

Name	Regiment	Newport	Yorktown	Liberal	Royalist
<i>Rochambeau's special expedition</i>					
Duc de Biron	Lazun (cavallery)	✓	✓	✓	
Duc de Castries	Saintogne	✓	✓		✓
Comte de Custine	Saintonge	✓	✓	✓	
Comte de Lameth	General staff	✓	✓	✓	
Thibault de Menonville	General staff	✓	✓	✓	
Comte de Montmorency	Bourbonnais	✓	✓		
Vicomte de Noailles	Soissonais	✓	✓	✓	
<i>De Grasse's army</i>					
Vicomte de Mirabeau	Touraine		✓		✓
Marquis de Rostaing	Gatinais		✓		
Marquis de Saint-Simon	Touraine		✓		✓
<i>Others</i>					
Marquis de Lafayette	Washington		✓	✓	

Sample: Officers who fought the Siege of Yorktown and were elected deputy to the General Estates in 1789. All officers belonged to the nobility and thus represented the second estate.

Political affiliation: Liberal deputies voted for the abolition of feudalism in the night of August 4th or sat together with the third estate. Royalists were expressly in favor of monarchical institutions. Deputies classified as neither liberal nor royalist belonged to the group of moderates.

Sources: Bodinier (1983); Tackett (1996)

References

- ADO, A. (1996): *Paysans En Révolution: Terre, Pouvoir et Jacquerie (1789-1794)*, Transl. from the 2nd Russian Ed. of 1987, Paris: Société des études robespierristes.
- ARBELLOT, G., B. LEPETIT, AND J. BERTRAND (1987): *Routes et Communications*, vol. 1 of *Atlas de La Révolution Française*, Ed. by S. Bonin and C. Langlois, Paris: Éditions de l'EHESS.

- BERTAUD, J.-P., D. REICHEL, AND J. BERTRAND (1989): *L'armée et La Guerre*, vol. 3 of *Atlas de La Révolution Française*, Ed. by S. Bonin and C. Langlois, Paris: Éditions de l'EHESS.
- BLANC, G. (2022): "The Cultural Origins of the Demographic Transition in France," .
- BODINIER, G. (1983): *Dictionnaire des officiers de l'Armée royale qui ont combattu aux Etats-Unis pendant la guerre d'Indépendance, 1776-1783*, Vincennes: Ministère de la defense, Etat-Major de l'Armée de terre, Service historique.
- BOFFA, M. (1989): "Emigrés," in *A Critical Dictionary of the French Revolution*, Cambridge, MA and London: Belknap Press of Harvard Univ. Press, Ed. by F. Furet and M. Ouzuf, 324–336.
- BOUTIER, J., P. BOUTRY, AND S. BONIN (1992): *Les Sociétés Politiques*, vol. Atlas de la révolution française, ed. by S. Bonin and C. Langlois of *Atlas de La Révolution Française*, Ed. by S. Bonin and C. Langlois, Paris: Éditions de l'EHESS.
- CHAMBRU, C. (2020): "Department Boundaries in France, c. 1794," Havard Dataverse.
- CHAMBRU, C. AND P. MANEUVRIER-HERVIEU (2022): "Introducing HiSCoD: A New Gateway for the Study of Historical Social Conflict," Working Paper 407, University of Zurich.
- GALOR, O. AND Ö. ÖZAK (2015): "Land Productivity and Economic Development: Caloric Suitability vs. Agricultural Suitability," *Agricultural Suitability* (July 12, 2015).
- (2016): "The Agricultural Origins of Time Preference," *American Economic Review*, 106, 3064–3103.
- GREER, D. (1951): *The Incidence of the Emigration During the French Revolution*, Cambridge, MA: Harvard University Press.
- KOMLOS, J., M. HAU, AND N. BOURGUINAT (2003): "An Anthropometric History of Early-Modern France," *European Review of Economic History*, 7, 159–189.
- LEFEBVRE, G. (1932): *The Great Fear of 1789: Rural Panic in Revolutionary France*, Transl. by J. White, Princeton, NJ: Princeton University Press, one thousand, nine hundred seventy-third ed.
- LUTERBACHER, J., D. DIETRICH, E. XOPLAKI, M. GROSJEAN, AND H. WANNER (2004): "European Seasonal and Annual Temperature Variability, Trends, and Extremes since 1500," *Science (New York, N.Y.)*, 303, 1499–1503.
- MARGAIRAZ, D. (1988): *Foires et Marchés Dans La France Préindustrielle*, Paris: Editions de l'Ecole des Hautes Etudes en Sciences Sociales.
- MARKOFF, J. (1996): *The Abolition of Feudalism : Peasants, Lords, and Legislators in the French Revolution*, University Park, PA: Pennsylvania State University Press.
- MCCORMICK, M., G. HUANG, G. ZAMBOTTI, AND J. LAVASH (2013): "Roman Road Network (Version 2008)," .
- NORDMAN, D., M.-V. OZOUF-MARIGNIER, R. GIMENO, AND A. LACLAU (1989): *Le Territoire (1): Réalités et Représentations*, vol. 4 of *Atlas de La Révolution Française*, Ed. by S. Bonin and C. Langlois, Paris: Éditions de l'EHESS.

- NUNN, N. AND D. PUGA (2012): “Ruggedness: The Blessing of Bad Geography in Africa,” *Review of Economics and Statistics*, 94, 20–36.
- OZUF, M. (1989): “Varennnes,” in *A Critical Dictionary of the French Revolution*, Cambridge, MA and London: Belknap Press of Harvard Univ. Press, Ed. by F. Furet and M. Ozuf, 155–164.
- PAULING, A., J. LUTERBACHER, C. CASTY, AND H. WANNER (2006): “Five Hundred Years of Gridded High-Resolution Precipitation Reconstructions over Europe and the Connection to Large-Scale Circulation,” *Climate Dynamics*, 26, 387–405.
- ROSENBERGER, L. (2023): “Enlightenment, Industrial Revolution, and the Knowledge Economy,” Ph.D. thesis, University of Munich.
- SQUICCIARINI, M. P. (2020): “Devotion and Development: Religiosity, Education, and Economic Progress in Nineteenth-Century France,” *American Economic Review*, 110, 3454–91.
- SQUICCIARINI, M. P. AND N. VOGTLÄNDER (2015): “Human Capital and Industrialization: Evidence from the Age of Enlightenment,” *Quarterly Journal of Economics*, 130, 1825–1883.
- TACKETT, T. (1986): *Religion, Revolution, and Regional Culture in Eighteenth-Century France: The Ecclesiastical Oath of 1791*, Princeton, NJ: Princeton University Press.
- (1996): *Becoming a Revolutionary: The Deputies of the French National Assembly and the Emergence of a Revolutionary Culture (1789 - 1790)*, Princeton, NJ: Princeton University Press.
- WALDINGER, M. (2021): “Let Them Eat Cake: Drought in 1788 Andpolitical Outcomes in the French Revolution,” .
- WRONG, C. J. (1976): “The Officiers de Fortune in the French Infantry,” *French Historical Studies*, 9, 400–431.