

The state does not live by warfare alone: State capacity and armed conflict in the long nineteenth century in Europe and the Americas

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Work in progress – very preliminary

Abstract

A great deal of literature has analyzed the relationship between warfare and state capacity in late-modern and contemporary times. While there is a consensus regarding the significant impact of mass warfare on fiscal expansion during the twentieth century, the interplay between international wars, civil conflicts, public revenues and state capacity in the nineteenth century remains unclear. This paper seeks to shed light on this issue by making use of novel datasets of international and civil wars and public finance from 1816 to 1913 in Europe and the Americas. Contrary to similar work that has focused on the twentieth century, we do not find evidence of average effects of nineteenth century wars on the evolution of public revenues. We make the case that a nuanced classification of wars that goes beyond the distinction between civil and international wars is necessary to understand the relationship between warfare and state formation during the long nineteenth century.

Keywords

State capacity, fiscal capacity, warfare, nineteenth century, America, Europe

1. Introduction

Research on the relationship between war and state formation has become a cottage industry that spans economic history, political sociology and the political economy of development. The initial “bellicist theory” that inspired this research agenda grew out of case studies and small-n comparisons that sought to explain the rise of territorial sovereign states in Early Modern Europe.¹ In recent years, several quantitative studies have revisited bellicist theory, and in many cases have extended its insights to study processes of state making in the twentieth century.² Most of this literature has consistently found a positive and significant effect of war and other forms of military pressures on state formation.³

Despite this renewed interest in bellicist theory, the scarcity of historical data on state capacity has limited cross-sectional time-series analyses on the topic for the long nineteenth century.⁴ We believe, however, that the study of this period remains essential to understand the dynamics of state-making and their interplay with warfare. Even though the intensity and destructiveness of nineteenth century wars dwarf in comparison to twentieth century military conflicts, they transformed the practice of modern warfare with the introduction of mass conscription and the development of new military technologies (Onorato, Scheve, and Stasavage 2014; Hoffman 2015).

Along with these changes in war-making, the long nineteenth century was also a time of intense state-making, as new states emerged out of wars of independence, forceful unification or increasing autonomy from foreign rule (Knöbl 2013, 61; Leonhard 2009; Osterhammel 2014, chap. XI). It was also a period of state transformation, as the Atlantic Revolutions remade the institutional configuration of modern states, introducing reforms that spanned from the professionalization of the military and the bureaucracy to the expansion of political representation of societal interests (Mann 1993, 444).

¹ E.g., Hintze (1975); Tilly (1975, 1985); Downing (1993); Ertman (1997).

² E.g., Karaman and Pamuk (2013); Gennaioli and Voth (2015); Dincecco, Federico, and Vindigni (2011); Dincecco (2015); and Saylor and Wheeler (2017) have explored bellicist theory during the Early Modern period. Most recently, Abramson (2017) shows that state survival in 1100-1790 is *negatively* correlated with (territorial) size, arguing that variation in economic resources rather than changes in the production of violence explains this pattern. Rasler and Thompson (1985); Besley and Persson (2008); Besley, Ilzetzki, and Persson (2013); Scheve and Stasavage (2010, 2012); Thies (2004, 2005, 2006, 2007, 2010); Lu and Thies (2013); Thies, Chyzh, and Nieman (2015); Sabaté (2016); and Goenaga and von Hagen-Jamar (2016), have extended bellicist theory to the study of the nineteenth and twentieth centuries.

³ There are important nuances in those arguments, however. Thies (2005, 2007) finds that rivalries not war tend to have a positive effect in twentieth century developing countries. Sabaté (2016) finds that the relationship between twentieth century wars and rivalries and tax ratios (taxes as a share of GDP) is conditional on the lethality of available military technology, while Goenaga and von Hagen-Jamar (2016) find that it is conditional on domestic political institutions and international military alliances.

⁴ Mark Dincecco has produced important insights on the topic (2009, 2011); Dincecco, Fenske, and Onorato (2016). However, those studies have relied on medium-n comparisons of only European countries.

Moreover, cross-regional differences in the nature of war and its effects on state formation became salient in the aftermath of the French Revolution. Whereas Europe experienced several decades of “armed peace” in the continent while launching imperial wars overseas, the Americas were torn apart by violent wars of independence, frequent civil conflicts and foreign invasions (Hoffman 2015, 179–81). A largely qualitative literature has argued that, in contrast with the European experience, nineteenth century wars generally had a negative effect on Latin American state formation.⁵ Those claims contrast with the findings of recent quantitative research that argues that nineteenth century wars had, on average and conditional on the presence of other factors, positive long-term effects on the development of state capacity across regional contexts.⁶

This paper draws on several novel datasets to examine the effects of different types of war⁷ on the development of European and American states from 1816 to 1913.⁸ We focus on Europe and the Americas for several reasons. By the early nineteenth century, both continents were predominantly composed of sovereign states, so a cross-regional comparison is less susceptible to problems of unit heterogeneity across different kinds of polities. Furthermore, comparisons between these two regions have inspired a fairly cohesive debate within the bellicist tradition about the effects of war on state making during the long nineteenth century.⁹ By relying on new panel data on military conflicts and public revenues, this paper seeks to contribute to that literature.

For this version of the paper, our analysis centers on the average treatment effects of international and civil wars on public revenue ratios (the level of public revenue raised by the central state as a share of GDP). Our preliminary results suggest that neither type of wars had a consistent effect on the public revenue ratios of European and American states during this period. We draw two tentative conclusions from these empirical results. First, the null results we consistently find for the nineteenth century run against the well-established findings in the literature concerning the positive effects of interstate wars and

⁵ E.g., Centeno 1997, 2003; Holden 2004; Kurtz 2013; Soifer 2015.

⁶ E.g., Besley and Persson 2008; Queralt 2016.

⁷ Even though there is a significant literature that has extended bellicist theory to the study of military rivalries rather than the actual occurrence of war, in this paper we focus exclusively on the latter for two main reasons. First, bellicist arguments that focus on military rivalries as their main independent variable have only analyzed their short-term effects on fiscal indicators and have remained within the confines of the twentieth century (e.g., Thies 2005, 2006, 2010). Second, in this paper we are mostly interested in the ways state actors respond to conflict rather than in the actions they take in anticipation of potential military threats. We plan to explore this prospective version of bellicist theory in future versions of the paper.

⁸ We plan to expand our temporal coverage to begin in 1789 in future versions of this paper.

⁹ Although see He (2013) for a comparison between European and Asian patterns of state making during the nineteenth century.

the negative effects of civil wars on the development of state capacity during the twentieth century. In other words, even though the distinction between civil and international wars disentangles the complex relationship between war-making and state-making in the twentieth century, it seems less relevant for the long nineteenth century. Second, even though we do not find evidence of an average effect, we do observe that certain wars coincided with important structural breaks in the evolution of public revenues. In some cases, those breaks led to long-term displacements in fiscal series (e.g., after the American Civil War), while in other cases public revenues peaked during the conflict but returned to pre-conflict levels shortly after (e.g., in the Colombian Thousand Days War).

These conclusions suggest that we need new theoretical tools to understand the effects of warfare on state building in the nineteenth century and to explain why this causal relationship has changed across different historical periods. In the last section of the paper, we outline two of the paths that we are currently exploring in this regard. On the one hand, international and civil wars during the nineteenth century might not have been as different from each other as in other historical periods—especially the twentieth century with the rise of industrial warfare and the consolidation of national armies in the hands of the state. Instead, we suggest that other characteristics could have played a more prominent role, such as asymmetries in the military capabilities of the actors involved, the type of cleavages (between elites or between classes) driving the confrontation, the issues at stake (over territory, autonomy, regime or policy), or the ways wars were financed, as suggested by Queralt (2018). On the other hand, even if we do not observe a consistent impact of nineteenth century wars on public revenues right away, they might have shaped long-term fiscal capacity by affecting other dimensions of state capacity (e.g., increasing control over the territory and population or carrying out administrative reforms) that in turn made possible more efficient forms of taxation in the future. Such an argument would be in line with other research that has focused on the impact of conflict on fiscal and institutional reforms rather than short-term changes in levels of public revenue (Aidt and Jensen 2009; Mares and Queralt 2016).

In what follows, we first summarize previous research on the effects of nineteenth century wars on state formation (section 2). Second, we discuss the transformations in warfare that make the nineteenth century different from other historical contexts (section 3). Third, we describe our analytical approach and provide some descriptive information of the data (section 4). We then present the results of some preliminary descriptive (section 5)

and statistical analyses (section 6). In the concluding discussion, we set out possible avenues for future research (section 7).

2. War and state formation in the long nineteenth century

Several recent studies have found a strong statistical association between nineteenth century interstate wars and contemporary levels of taxation. In their seminal work on the long-term determinants of prosperity, Tim Besley and Torsten Persson argued that international wars tend to foster the emergence of “common interest states”, that is, states that raise more taxes and invest in the provision of broad public goods such as external defense (Besley and Persson 2011). They show that countries that spent more years fighting international wars between 1816 and 1975 had on average higher tax ratios (taxes as a share of GDP) between 1976 and 2000 (Besley and Persson 2009, 1236). According to them, this result holds when looking only at the years at war from 1816 to 1900, suggesting that nineteenth century conflicts had an effect on the long-term development of fiscal capacity (Besley and Persson 2009, 1236).

Dincecco and Prado (2012) provide the most explicit argument about the effects of nineteenth century wars on European state building. They present evidence of a strong statistical relationship between pre-1913 war casualties and two contemporary fiscal indicators: direct taxes as a share of total taxes and tax ratios. The effect is not only statistically significant but theoretically substantive: countries in the top-decile of war casualties from 1816 to 1913 have today fiscal capacities that are 22% higher than countries that experienced no war casualties during that period. According to the authors, this variation in contemporary levels of fiscal extraction is related to fiscal reforms that states implemented in the face of war during the long nineteenth century:

“Warfare was a key driver of institutional reform. To finance its campaigns against France, for instance, Britain introduced a modern income tax in 1799. Although repealed in 1802, the tax was reintroduced the next year with the start of the Napoleonic Wars (1803-1815). France also experimented with new taxes during the 1789-1815 period, as did the Austrian Empire, Belgium, the Netherlands, and Nordic States like Denmark, Norway and Sweden. [...] Denmark introduced temporary income taxation to finance its wars against Prussia in 1848-1849 and 1864. During its successful war against Southern states (the Civil War, 1861-1865), the U.S. government not only implemented a temporary income tax to fund

military expenses, but also established the Internal Revenue Service for collection purposes. The Austrian Empire introduced a permanent income tax in 1849, at the time of the Austro-Sardinian War (1848-1849). Similarly, Italy implemented an income tax in 1864, just after it fought the Franco-Austrian War (1859), and just before it fought the Austro-Prussian War (1866). Finally, Japan established the income tax in 1876, the same year that the Meiji government defeated the ex-samurai in the large-scale Satsuma Rebellion” (Dincecco and Prado 2012, 175).

In ongoing work, Didac Queralt (2018) argues that participation in inter-state wars between 1816 and 1913 is associated with higher levels of fiscal capacity today (measured by the percentage of personal income tax to GDP, the size of the tax administration, value-added taxes, and modern census technologies). However, this association is conditional on having fought wars during periods when external sources of finance were foreclosed.

Queralt’s conditional argument is a response to a series of case-studies and small-n comparative historical analyses that assert that international wars had, if anything, a negative impact on the development of non-European states, particularly in Latin America, during the nineteenth century. Miguel Ángel Centeno was the first to point out that wars triggered cycles of blood and debt in Latin America, weakening rather than strengthening the state (Centeno 2003). According to him, access to foreign credit and the initial weakness and fragmentation of Latin American states pushed them to fight “limited” rather than “total” wars, which did not pose the same pressures for the centralization of resources and the expansion of state authority. Along these lines, Marcus Kurtz (2013) argued that the absence of prior pacts between Latin American states and economic elites interrupted the cycles of war and fiscal extraction that characterized European trajectories of state formation. More recently, Hillel Soifer (2015) evaluated these claims by looking at the relationship between interstate and civil wars and the size of the army of nineteenth century Latin American states, finding no short-term effect. Furthermore, Soifer finds that there is a *negative* cumulative effect of the years at war with other states on the share of the population enrolled in the army (Soifer 2015, 206). He argues that if war is not affecting army size, which is a key causal mechanism connecting military pressures to growth in state capacity in the bellicist thesis, it is even less likely that they were significant drivers of other aspects of the state such as tax revenues.

Related to the arguments made by Centeno, Kurtz and Soifer, is the claim that nineteenth century Latin America was ravaged by civil conflicts rather than international wars. The conventional wisdom in the literature is that whereas wars against external

enemies create incentives for state building, civil wars fragment domestic interests and weaken the state. Besley and Persson, for instance, argue that contrary to international wars, civil conflicts imply by definition divisions in society that hinder the development of common interests, the emergence of cohesive political institutions, and investments in fiscal and legal capacity (Besley and Persson 2011). These arguments about the negative impact that civil wars have on state capacity echo a large body of research on twentieth century civil wars, which has shown that weaker states tend to be more likely to fight civil wars and that civil wars in turn weaken the state even further (e.g., Fearon and Laitin 2003). Cameron Thies, for example, has found that civil wars had a negative and significant effect in the short-term on the tax ratios of Latin American countries from 1900 to 2000 (Thies 2005) and on a sample of 157 countries from 1960 to 1999 (Thies 2010).

However, many of the conflicts that Dincecco (2009) and Dincecco and Prado (2012) associated with moments of fiscal centralization—e.g., the Revolutions of 1848, the American Civil War and the Satsuma Rebellion in Japan—were also civil conflicts. Such views are also in line with the arguments that other authors have put forward about the impact of certain kinds of internal conflicts—namely, social revolutions driven by inter-class conflict—on the centralization of power by the state (Skocpol 1979; Becker and Goldstone 2005; Slater 2010; Levitsky and Way 2013).

Our new panel data opens the opportunity to examine these claims about the different effects of nineteenth century civil and international wars in different parts of the world in a systematic fashion. But before presenting our data and analyses, it is necessary to point out the particularities of war- and state-making during the long nineteenth century and why we would expect the relationship between these two processes to differ from other historical periods.

3. Why look at the long nineteenth century?

There are theoretically important reasons to focus our analysis on the nineteenth century. Contrary to the violent twentieth century, the years between the Concert of Vienna and World War I have generally been described as a period of relative peace between great powers combined with a large number of colonial wars outside of Europe. Even though the mobilization efforts and destructiveness of those wars did not reach the levels that the world would experience a few years later, the practice of warfare changed enormously during the long nineteenth century. First, armies experienced dramatic

transformations in terms of resources, organizational structure, and societal functions. Second, the types of conflict that plagued different parts of the world also acquired very different features. We would thus expect both of these patterns of change to make the relationship between war and state-building unfold differently in the nineteenth century relative to other historical periods.

Military organization, functions, and resources

Four major changes transformed armies during the long nineteenth century: (1) the introduction of mass conscription, (2) the professionalization of military organizations; (3) the separation of the functions of the military and police; and (4) the development of new technologies that multiplied firepower and revolutionized military logistics.

First, universal conscription was introduced for the first time in 1793 in the context of the Revolutionary Wars and was slowly adopted by other countries over the course of the century, particularly during the US Civil War (1861-65) and the War of the Triple Alliance in Paraguay (1864-70). This new practice transformed the scope and intensity of military conflicts, preparing the terrain for the kind of mass-mobilizing “people’s war” that reached its pinnacle with the two world wars of the twentieth century (Opello 2016, 105–8; Frevert 2009). The subsequent Napoleonic Wars geared the entire society towards contributing to the war efforts for the first time. Nationalism facilitated this task, as the ideal of the nation-at-arms eased the recruitment and discipline of the troops.¹⁰

Second, along with mass conscription, the French Revolution brought reforms to the organizational structure of the military. Even though by the eighteenth century military administration was “relatively centralized, routinized, disciplined, homogenous and bureaucratic”, its professionalization lagged behind in two respects: personnel policy and standards of competence (Mann 1993, 424). Prior to the nineteenth century, access to officer ranks was still determined by aristocratic background and family connections rather than formal qualifications or job performance, while troops were subject to arbitrary corporal punishment and received little training. The Revolutionary and Napoleonic Wars were a turning point in the professionalization of European armies, spreading the abolition of corporal punishment and the adoption of merit-based recruitment and promotion criteria to the states that Napoleon’s armies invaded. By midcentury, European armies grew around a cadre of career soldiers in charge of leading and training a growing number of conscripts that served for short terms and then passed to reserve formations (Mann

¹⁰ See, for example, Clausewitz 2008[1832]; Posen 1993; Snyder 2000.

1993, 428). These changes in military careers not only mattered for the discipline and quality of troops and officers, but also inspired a new esprit de corps among what Michael Mann labels “the military caste”(Mann 1993, 426).

The professionalization of the military was not as extensive in Latin America, with possibly the exception of Chile (Soifer 2015, 222–24). Latin American states were not only incapable of mobilizing troops effectively, but continued to struggle to centralize control over military forces for most of the century. In Mexico, for example, the troops that fought international wars against the United States (1845-1848) and France (1862-1867) were commanded by local and regional strongmen that often turned against each other after the end of those conflicts. Even under the centralizing regime of Porfirio Díaz (1877-1911), paramilitary forces under the command of regional elites doubled the size of the national army (Soifer 2015, 215). In Colombia, anti-statist elites opposed the creation of a strong standing army for most of the nineteenth century, and challengers of state authority were often able to mobilize forces as powerful as those of the national government (Soifer 2015, 212). This meant that civil conflicts often resembled wars between states insofar they were fought by armies that looked very similar in terms of their organization, discipline, tactics, and firepower.

Third, military functions also changed during the long nineteenth century. The professionalization of internal security forces gradually limited military involvement in domestic matters to extreme cases of full scale repression (i.e., civil wars), although this process did not culminate until well into the twentieth century for Europe and the United States, and dragged even longer for Latin American states (Mann 1993, 408). Therefore, we could expect civil and international conflicts to impose similar pressures to strengthen military capabilities prior to this functional differentiation.

Finally, technological innovations also led to an impressive growth in the lethality of firearms and field artillery (Hoffman 2015, 183). More importantly, the invention of the railroad greatly expanded the capabilities of nineteenth century armies. The use of railways to deliver troops and supplies to the battlefield made possible the development of mass armies capable of mobilizing over 10 percent of a country’s population by the end of the nineteenth century (Onorato, Scheve, and Stasavage 2014, 450; Hoffman 2015, 202). Troops were no longer limited by the capacity of the land they crossed to feed them, since now food, weapons and ammunition could be supplied from the rear. This meant not only that the average size of European armies during war-years almost tripled compared to the

eighteenth century¹¹, but also that now a substantive part of the productive capacity of the country needed to be geared towards the war efforts in order to supply those armies. Railways were first used for military purposes in the Crimean War, but were central in the Franco-Austrian/Austro-Sardinian War of 1859, and later during the American Civil War and the Franco-Prussian War. Indeed, the defeat of the French armies in the latter created a strong push for the expansion of the railroad network during the Third Republic (Onorato, Scheve, and Stasavage 2014, 476).

Historical sociologists usually attribute two major consequences on state formation to these institutional and technological innovations. First, they transformed the relationship between the state and society, as warfare was no longer an affair for the glory of monarchs and aristocrats but a force with the potential to touch everyone in the country (Opello 2016, 105–8). By the turn of the twentieth century, the idea of a nation-at-war meant that states would now sit at the steering wheel of a society that could be mobilized for mass warfare. The professionalization of the military also offered institutional blueprints for the professionalization of other branches of the state, while the differentiation of the functions of military and police forces changed popular attitudes towards state armies, which increasingly became seen as protectors of the nation rather than vehicles of domestic repression. All of these transformations that characterized twentieth century conflicts, were still very much in progress during the long nineteenth century.

Second, the growth of European armies led to major asymmetries between warring parties. As Hoffman puts it, “The huge armies and navies made it even harder for leaders outside Europe to join the ranks of the great powers at the beginning of the twentieth century: the hurdle [...] would simply be too high, for they too would have to build a giant navy and man a huge army” (Hoffman 2015, 202). Indeed, whereas the average size of great power armies during the nineteenth century was around 500,000 and could reach up to 2 million men at arms (Onorato, Scheve, and Stasavage 2014, 459), the size of Latin American armies counted, at their maximum, less than 50,000 officers and troops (Soifer 2015, 206–20). These asymmetries in military power created significant heterogeneity in the types of warfare that different states fought and thus in their potential impact on state formation.

¹¹ According to Onorato, Scheve, and Stasavage's calculations (2014, 459).

Types of warfare

All these major transformations made the experience of warfare during the nineteenth century different from other historical periods. The end of the Napoleonic Wars and the Concert of Vienna established a period of relative peace among European states that would last for most of the nineteenth century. According to Hoffman, 11 Western European states¹² spent a total of 115 years at war (not including naval campaigns and colonial wars) per century between 1650 and 1815, with an average of 41,000 deaths per year. Between 1816 and 1913, this same group of European states spent 26 years at war, with 9000 battle deaths per year (Hoffman 2015, 188). The European balance of power was as much the result of the armed *détente* as of an effort by the old aristocracy to revert the revolutionary tendencies that the French republican armies brought with them as they marched through Europe.

This continental peace did not mean, however, that European armies remained in their barracks, but rather that they were mobilized to fight other kinds of conflicts during the subsequent decades. Nineteenth century European rulers were more likely than in the past to be deposed in the case of a defeat in war. Hence, they were also more likely to negotiate peaceful settlements and to only enter conflicts that they knew in advance they could win (Hoffman 2015).¹³ As a result, powerful countries rarely fought each other but did not shy away from conflicts with weaker states and non-state actors. In other words, the “armed peace” that prevailed in Europe was accompanied by a large number of imperial wars abroad, which were now possible due to the organizational, institutional and technological transformations described above (Hoffman 2015, 202).

¹² Austro-Hungary, Belgium, Britain, Denmark, France, Italy, the Netherlands, Portugal, Prussia, Spain, and Sweden.

¹³ This point is also made in the literature on democratic peace theory, which suggests that democracies tend to fight less wars but are more likely to win those they enter, partly because democratic leaders are more risk-averse in the face of military conflicts since they are likely to lose power in the case of a defeat (Mesquita et al. 2004, 226; Reiter and Stam 2002; Goldsmith 2007).

Table 1. Wars in Europe and the Americas, c1816-c1913

	Obs.	Years in war (%)	Mean Bd ^a	St.Dev. Bd ^a	Min. Bd ^a	Max. Bd ^a
International wars	185	12,2	18.721	38.048	2	200.000
Civil wars	141	7,1	28.148	65.762	5	360.000
Total	326	18,1	22.280	48.330	2	360.000
<i>Europe</i>						
International wars	162	14,8	17.493	31.691	2	165.000
Civil wars	61	5,6	18.682	19.432	400	65.000
Total	223	18,7	18.949	30.665	2	165.000
<i>America</i>						
International wars	31	8,8	22.070	51.579	5	200.000
Civil wars	80	9,1	44.803	104.706	50	360.000
Total	111	17,4	29.959	74.113	5	360.000
<i>America (without the US)</i>						
International wars	26	8,7	23.751	53.729	100	200.000
Civil wars	78	9,2	12.897	26.687	50	90.000
Total	104	17,5	20.436	47.162	50	200.000

Notes: All data from 1816 to 1913 (depending on data availability and year of independence). a) “Bd” stands for “battle deaths”. Source: own elaboration based on Wimmer and Min (2009); Sarkees and Wayman (2010); Gleditsch and Ward (1999); Dixon and Sarkees (2016).

Table 1 provides additional evidence for this claim, comparing international and civil wars in Europe and the Americas during the same period. International wars are conflicts between at least two states or between a state and a non-state actor that occur beyond the state boundaries. Civil wars are conflicts between a state and a non-state actor within the state’s own borders. The data comes from a new database of nineteenth century military conflicts in Europe and the Americas that expands and updates the Correlates of War data (Sarkees and Wayman 2010) with three additional sources: Wimmer and Min (2009), (Gleditsch and Ward (1999 and subsequent updates), and Dixon and Sarkees (2016). Since for the Correlates of War Project states must be recognized by both France and England to be included in the dataset, it leaves aside important wars that were likely to shape the development of already independent states in the early nineteenth century (e.g., Uruguay only appears in the COW dataset in 1882). We address this issue by including all states since 1816 or the year in which they gained independence, following Wimmer and

Min (2009) and Gleditsch and Ward (1999). We also update the COW's list of civil wars by including new military conflicts recently included in Dixon and Sarkees (2016).¹⁴

On average, European countries spent more years fighting international wars than countries in the Americas, with the United Kingdom and France as extreme outliers. Most of those conflicts generated relatively low numbers of battle deaths for European states. Conversely, states in the Americas were less likely to be involved in international wars, but they tended to be more costly in terms of human lives when they occurred. This poses some challenges to Centeno's claim about the more "limited" nature of nineteenth century wars in Latin America than in Europe. Wars may have been more limited in terms of the size of the mobilized forces but they were more lethal to national armies.

These figures echo the general impression that the nineteenth century was characterized by, on the one hand, a large number of asymmetrical conflicts in which European states tended to fight weaker states and non-state actors overseas and, on the other hand, a small number of symmetrical wars between great powers within Europe. Even though they were not the norm during this period, several authors have offered qualitative evidence that conflicts between evenly-matched European states triggered in some cases state building efforts. For example, Weber (1976) and Rothstein and Teorell (2015) find that French and Swedish political elites implemented far-reaching state building reforms after experiencing major losses during the Franco-Prussian War (1870-1871) and the Swedish war against Russia (1808-1809), respectively.

In relation to civil wars, nineteenth century internal conflicts were often very different from the low-intensity insurgencies based on guerrilla tactics that became characteristic in the twentieth century (Kalyvas and Balcells 2010, 418). As the consolidation of national armies was still in progress in many parts of Europe and the Americas during the nineteenth century, rebels could still organize military forces that were often comparable in organization, discipline, resources and technology to state armies. Table 1 shows that civil wars were more frequent in the Americas than in Europe, representing the vast majority of armed conflicts in the region between 1816 and 1913. With the exception of the US Civil War, these conflicts tended to produce fewer battle-

¹⁴ In addition to enlarging the Correlates of War dataset, we have also gathered new data regarding the *asymmetries* in the use of military force between combatants in civil wars, the *incompatibilities* or type of claims driving the conflict, whether the civil war is the result of a *cleavage* between elites or between classes, and whether one or both sides received *foreign support* from other states. We plan to use these variables in future versions of the paper to explore in more detail to examine the large variation in the effects of wars on state capacity during this period.

relate deaths than in Europe. In that regard, European civil wars might have resembled the kinds of international wars associated with expansions in state capacity.

4. Public revenue data and sources

In addition to our data on nineteenth century wars, we have gathered a new longitudinal dataset of public finances in the long nineteenth century (still under construction). In line with the previous literature, which has long considered the ability to implement and enforce innovative fiscal structures an inherent feature of state capacity (see, for instance, Besley and Persson, 2009), our main outcome variable comes from an original dataset of total public revenues as a share of GDP for a set of 30 American and European countries from c.1800 to 1913. It includes all kinds of public revenues (taxes, duties, monopolies, interests on assets, etc.) except for state borrowing. The dataset has been compiled from several secondary sources and statistical yearbooks, giving priority to reliable long-term homogeneous series.¹⁵

Table 2. Countries and time periods included in our public revenues/GDP dataset

Country	First year	Last year	Country	First year	Last year
Argentina	1820	1913	Italy	1862	1913
Austria	1870	1913	Mexico	1895	1910
Austria-Hungary	1870	1913	Netherlands	1807	1913
Belgium	1835	1912	Norway	1850	1913
Bolivia	1882	1913	Peru	1820	1913
Brazil	1823	1913	Portugal	1837	1913
Bulgaria	1887	1913	Romania	1882	1913
Canada	1870	1913	Russia	1885	1913
Chile	1817	1913	Spain	1850	1913
Colombia	1820	1913	Sweden	1800	1913
Denmark	1841	1913	Switzerland	1851	1913
Finland	1882	1913	United Kingdom	1801	1913
France	1815	1913	United States	1800	1913
Germany	1872	1913	Venezuela	1831	1913
Hungary	1870	1913			

Notes: Time periods depend on data availability and year of independence (or unification).

¹⁵ Future iterations of this paper will provide an appendix with all the sources used to compile the public revenues/GDP dataset.

Table 2 presents all the countries and time periods covered by the dataset, which include most countries in Europe, South America and North America. To the best of our knowledge, this is the most complete longitudinal dataset of actual resources mobilized by central governments in the nineteenth century, which allows us to explore the influence exerted by warfare on the evolution of public revenues using contemporaneous quality data.

Even if we consider our variable a reliable indicator of the state's access to public resources, it is important to note that most of the previous quantitative literature has relied on other indicators of fiscal capacity that are not available for the nineteenth century, such as the so-called tax ratio (tax revenues/GDP) or the share of direct taxes in total tax revenues (Besley and Persson 2009; Dincecco and Prado 2012; Queralt 2018). The differences between these indicators and our variable of interest (total public revenues, which includes both tax revenues and non-tax revenues) are indeed relevant. Above all, the domestic political costs of raising non-tax revenues dwarf compared to the costs associated with the implementation of new taxes. Whereas the latter compels the rulers to negotiate with its subjects, the former does not necessarily entail any similar bargaining process. As a consequence, non-tax revenues can be considered a low-hanging fruit that rulers can go after when they find themselves in need of additional resources, which “both contained and circumvented political resistance to demands for higher taxation” (O'Brien 2011, 417). Hence, we cannot expect warfare to exert the same impact on tax and non-tax revenues; on the contrary, non-tax revenues will be presumably affected by low-intensity conflicts that do not suffice to trigger significant changes in the tax systems.

Having said that, we believe that if we interpret the public revenue ratios not as an indicator of a latent capacity to design and implement efficient fiscal policies but as an indicator of financial resources available to the state, these data tells us something important about the evolution of state capacity. Indeed, detailed historical studies have emphasized the important role of patrimonial domains and other sources of non-tax revenue in the public budgets of modern states (O'Brien 2011; Nilsson 2017). Additionally, war-related displacement effects can be driven by both tax revenues and non-tax revenues, which makes the analysis of total public revenues a necessary complement to those studies that focus their attention exclusively on taxation.

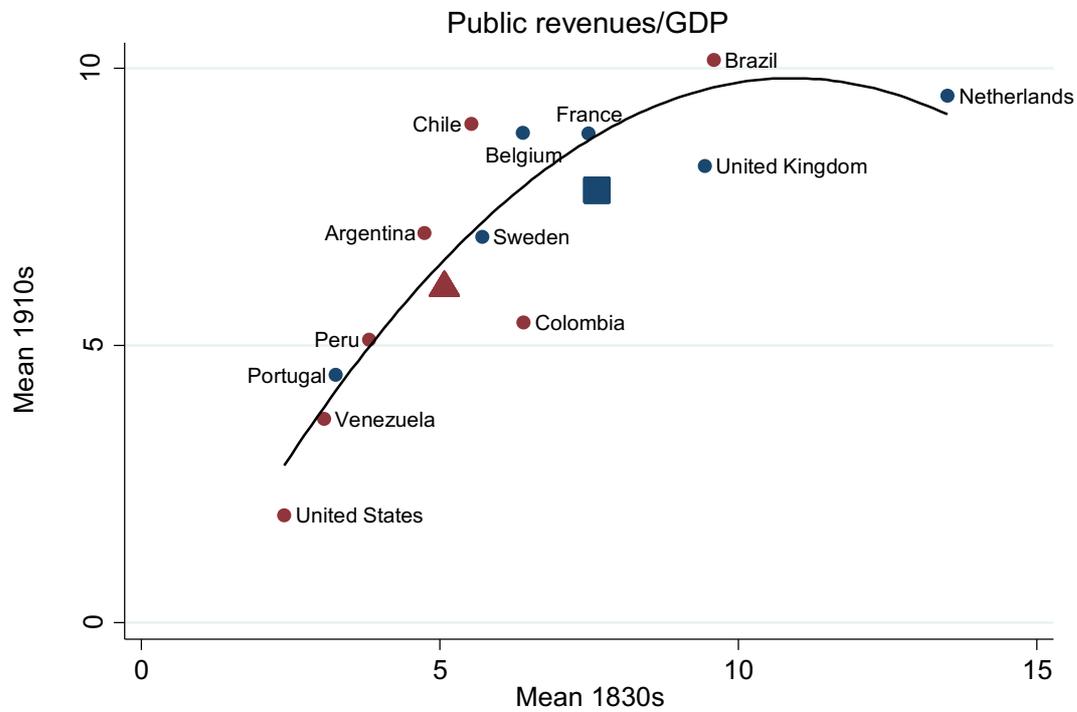
Table 3. Descriptive statistics of public revenue ratios

Variables	Obs.	Mean	Std. Dev.	Min.	Max.
<i>Total</i>					
Public revenues/GDP	2.060	7,5	4,2	0,5	36,9
<i>Europe</i>					
Public revenues/GDP	1.172	8,5	4,7	0,5	36,9
<i>America</i>					
Public revenues/GDP	888	6.1	3.0	1,0	15,8
<i>America (without the US)</i>					
Public revenues/GDP	774	6,6	2,8	1,3	15,8

Notes: Public revenues/GDP data from 1800 to 1913. In all cases, the starting date depends on data availability and year of independence (or unification).

Table 3 presents the descriptive statistics of public revenue ratios in our sample. It shows that Europe had, on average, higher ratios but also more intra-regional variation. Figures 1 to 3 complement this information. Figure 1 compares the average level of public revenues as a share of GDP in 1830-1939 and in 1910-1913. In general, we observe very little change in most cases, which confirms the fact that the major fiscal transformations that fundamentally transformed public finances came later in the twentieth century. Regional differences also remained constant during those years. Most countries in the Americas (as well as the regional average) continued to lag behind European states by 1913. Chile and Argentina seem to be exceptions, since both countries experienced substantial increases in public revenues (see figure 2), most likely related to the export booms of the second half of the nineteenth century (Saylor 2014). The United Kingdom, the United States, Denmark, and the Netherlands show instead a decline in their public revenue ratios (figure 2). However, those trends should be interpreted with caution, since they are driven by increases in GDP rather than indicative of a decline in revenue collection.

Figure 1. Persistence during the nineteenth century, public revenues/GDP



Notes: Public revenues/GDP, averages 1830-1839 and 1910-1913. Red dots represent American countries, whereas blue dots represent European countries. Similarly, the red triangle represents the average of all American countries, while the blue square represents the average of all European countries. The dark line represents the quadratic regression of y on x.

Figure 2. Public revenues/GDP (America)

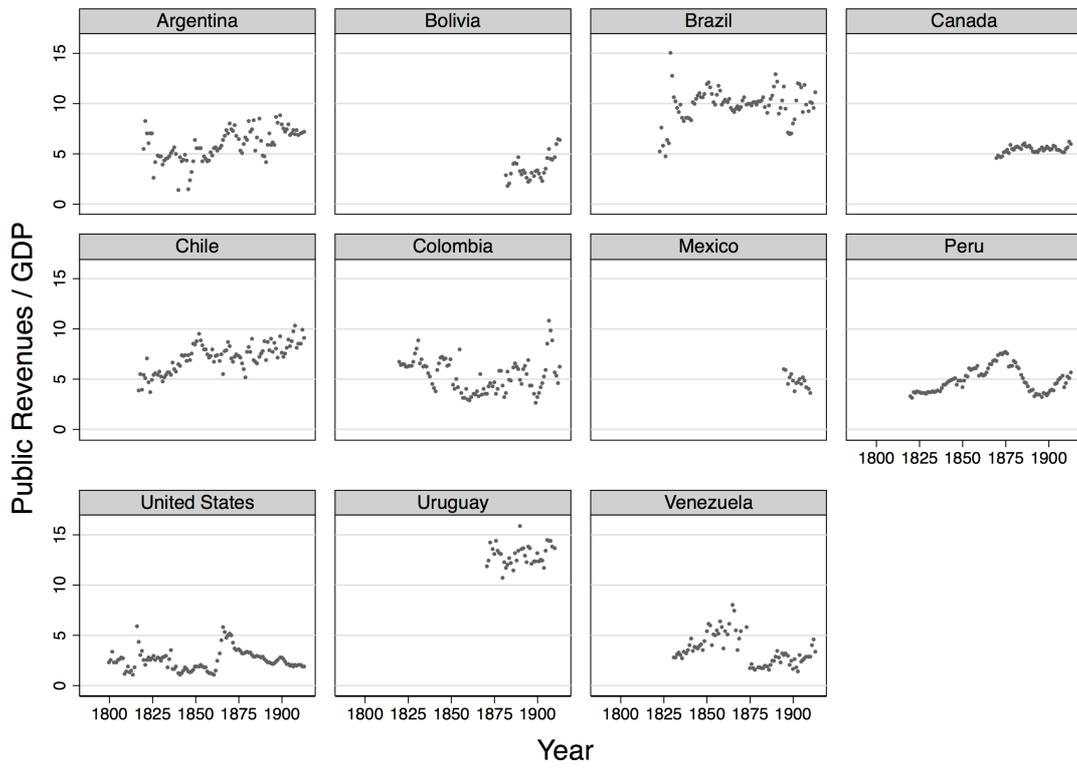
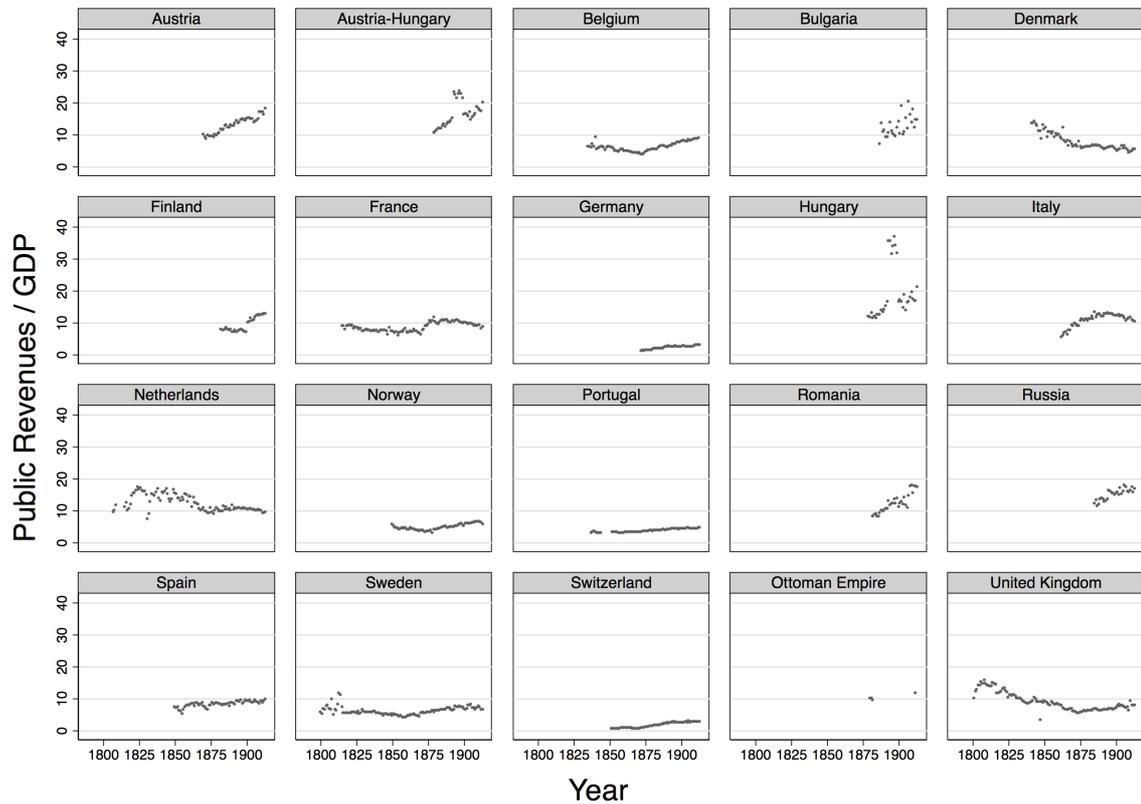


Figure 3. Public revenues/GDP (Europe)

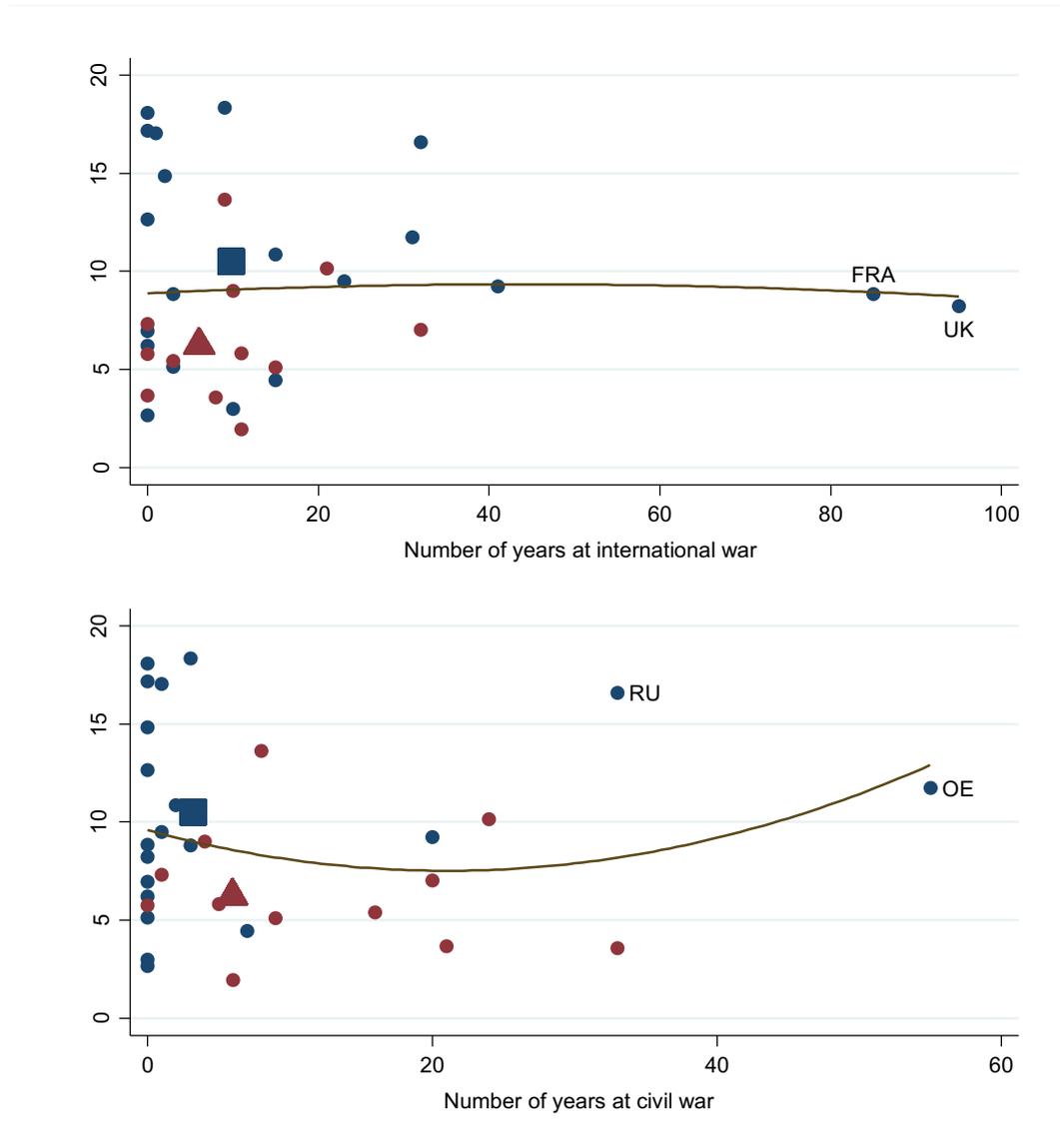


5. Preliminary descriptive analysis

5.1. Long-term relationships

The nineteenth century brought about significant changes that fundamentally transformed the state. Following a tradition that goes back to Schumpeter (1913), we examine in this section the long-term effects of civil and international conflicts on public revenue ratios. Figure 2 displays the average level of public revenues for each country in 1910-1913 against the number of years at war between 1816 and 1913. According to the crudest version of the bellicist theory, we should expect higher public revenue ratios to be correlated with more years fighting international wars. Similarly, according to some of the claims in the literature, we would expect lower public revenue ratios in countries that spent more years fighting civil wars. Figure 4 does not provide conclusive results. The almost flat line for the quadratic regression in the upper panel is strongly pulled downwards by two major outliers—France and the United Kingdom, but even without those two cases the long-term relationship between international wars and public revenues is quite weak. Instead, against our initial expectations, we observe some indication that high numbers of years involved in civil wars are *positively* correlated with public revenue ratios by the end of the period, although two cases are again extreme outliers: Russia and the Ottoman Empire.

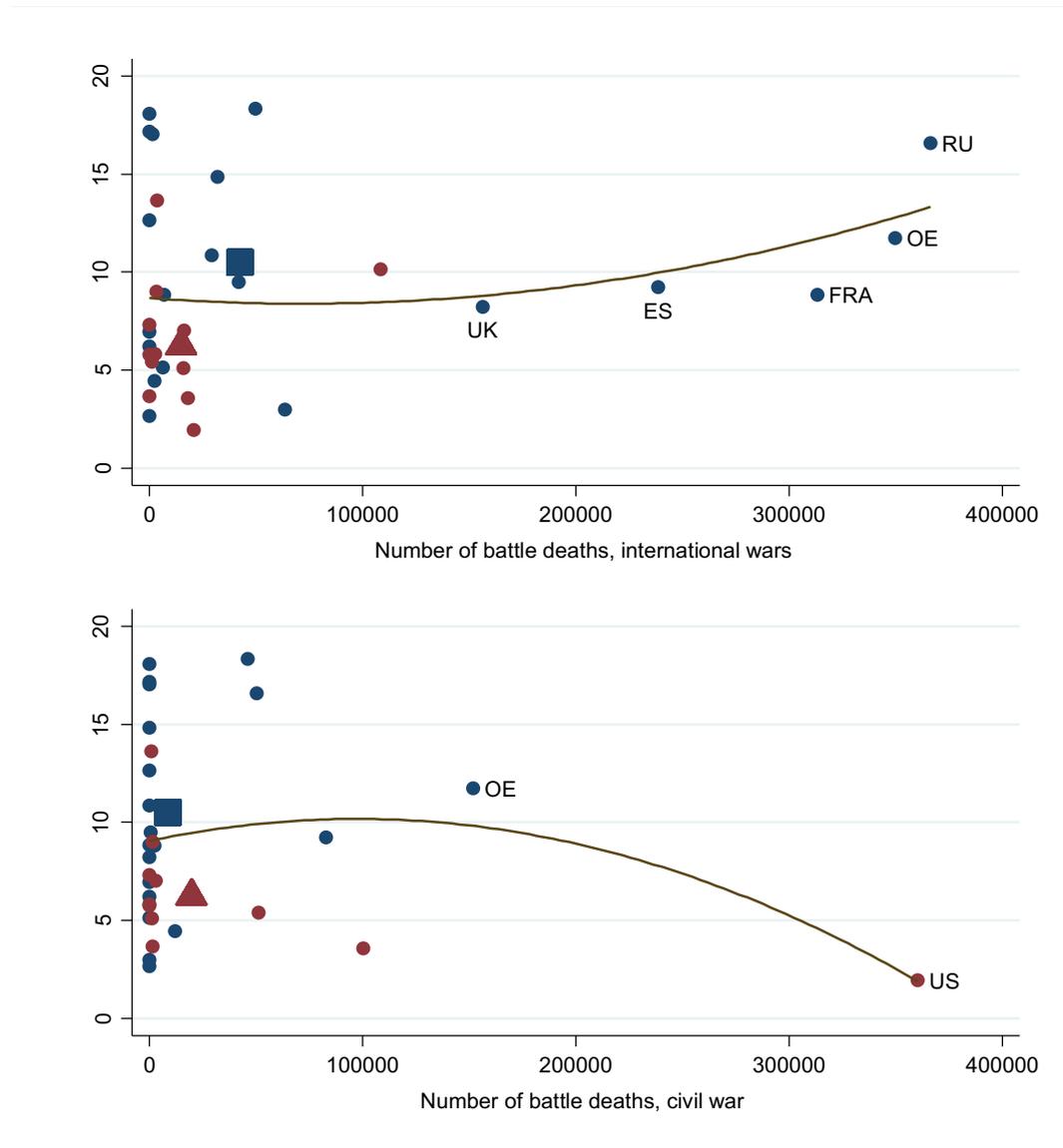
Figure 4. Long-term relationships, years at war 1816-1913



Notes: Public revenues/GDP, average values in the 1910s (from 1910 to 1913). Red dots represent American countries, whereas blue dots represent European countries. Similarly, the red triangle represents the average of all American countries, while the blue square represents the average of all European countries. The green line represents the quadratic regression of y on x . Labels only for those countries with extreme values.

Figure 5 explores the long-term relationship between the *intensity* of wars—measured by the total number of battle-related deaths in the century—and public revenues. We observe a weak relationship for international conflicts, again driven by extreme observations with very large numbers of battle deaths. An opposite pattern appears for civil wars, but it goes away if we exclude the United States from the sample.

Figure 5. Long-term relationships, intensity of wars 1816-1913



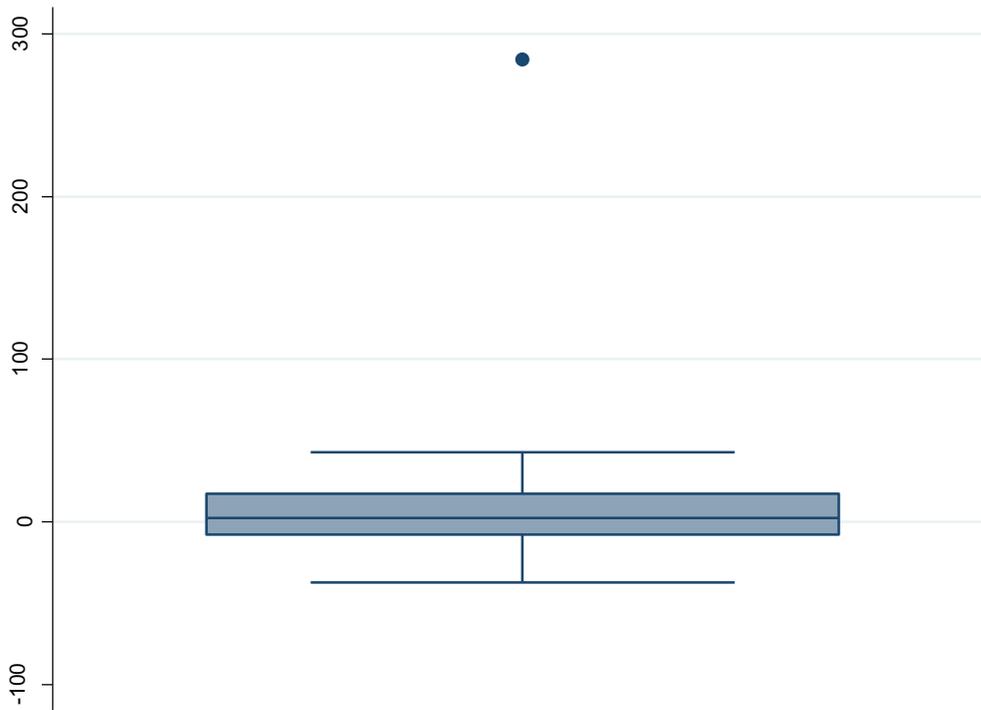
Notes: Public revenues/GDP, average values in the 1910s (from 1910 to 1913). Red dots represent American countries, whereas blue dots represent European countries. Similarly, the red triangle represents the average of all American countries, while the blue square represents the average of all European countries. The green line reflects the quadratic regression of y on x . Those wars with an unknown number of battle deaths have been excluded. Labels only for those countries with extreme values.

5.2. Short-term changes

The mixed results found in the previous section call for a better understanding of the short-term changes occurring around wars in the nineteenth century. Fortunately, our data allow us to explore the direct impacts of each military conflict at the moment in which it occurred. To do so, we begin by plotting the differences between the average public revenue ratios five years before and after each military conflict between 1816 and 1913

(Figure 6). Wars that caused less than 200 battle deaths in a given country are excluded in order to focus the attention on the most intense military conflicts.

Figure 6. Short-term changes before/after nineteenth century wars, 1816-1913



Notes: Differences in percentages between five years before and five years after each war per country (the dots represent country-wars observations). Public revenues/GDP, data between 1816 and 1913. Only wars with more than 200 battle deaths (or with an unknown number of battle deaths) have been included. When several wars coincide in time for a given country, only one of them is included.

Even if we are not controlling for any other factors that could have been at play at the time (such as time trends), Figure 4 provides some interesting insights. First, the box plot indicates that most wars were associated with relatively small positive and negative changes (or no change at all). Nevertheless, a small number of wars were related to major transformations in public revenues. The most glaring case is the US Civil War, which has been considered one of the few ‘total wars’ of late-modern times (Black 2006). The war efforts forced the US government to impose new unprecedented taxes (such as a Federal income tax, repealed several years later) and to increase public revenues almost fivefold in less than a decade (as shown in Figure 7, also see Mehrotra 2013). Similarly, the Thousand Day’s War in Colombia (1899-1902) was also exceptional in its intensity (the state suffered almost 50,000 battle deaths) and it produced a large—albeit short-lived—jump in public

revenues in the years following the end of the conflict. These results, paradoxically, might help us explain the very weak correlations found in the previous sub-section: even if several wars were indeed associated with positive changes in public revenues, an almost equivalent number of wars were related to negative shifts (leaving the overall effect close to null).

Figure 7. Public revenue ratios and battle-deaths for the US and Colombia

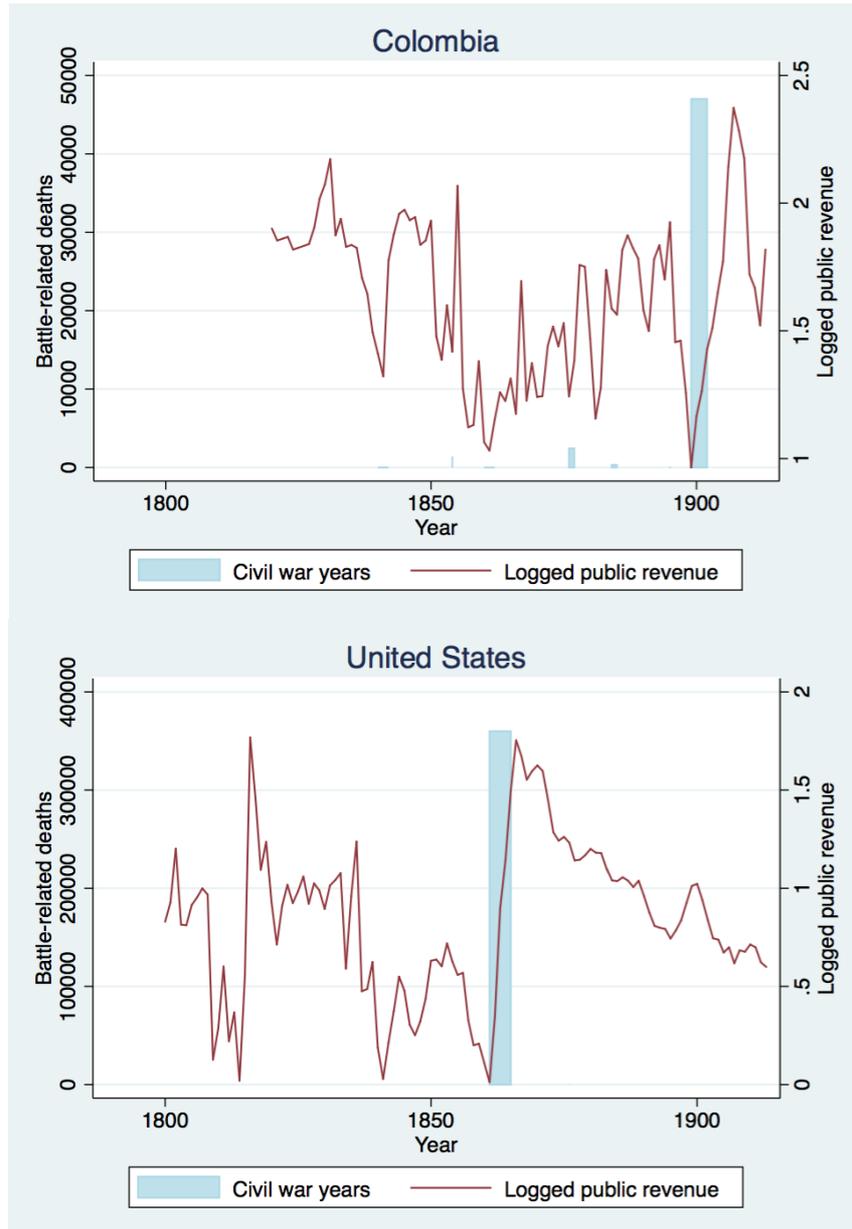
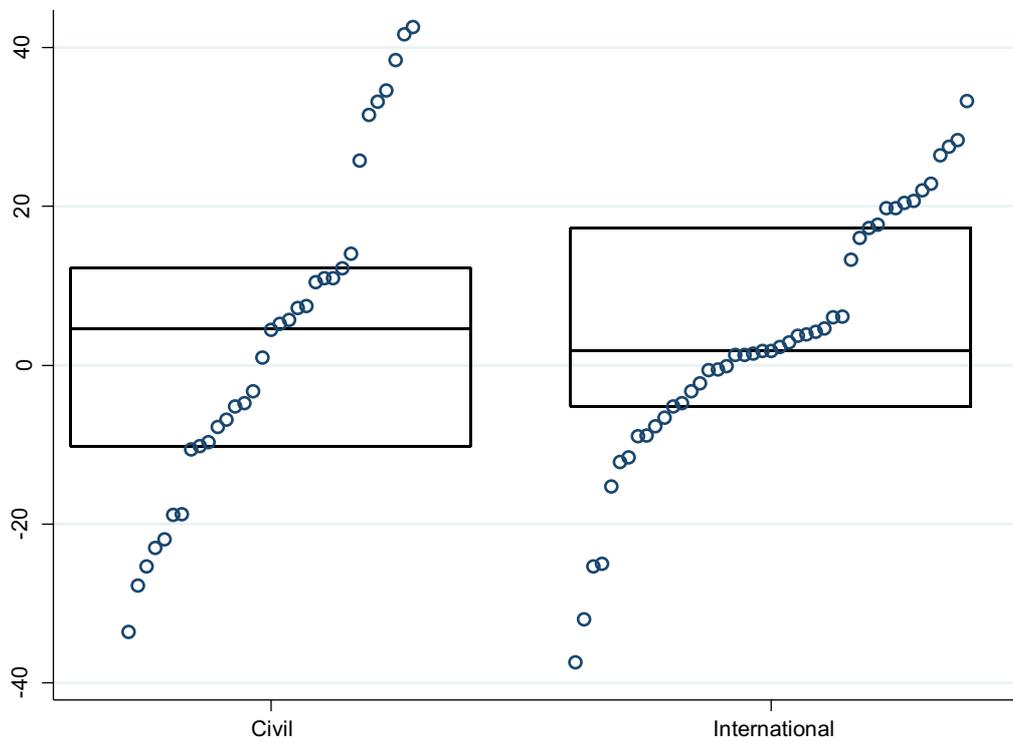


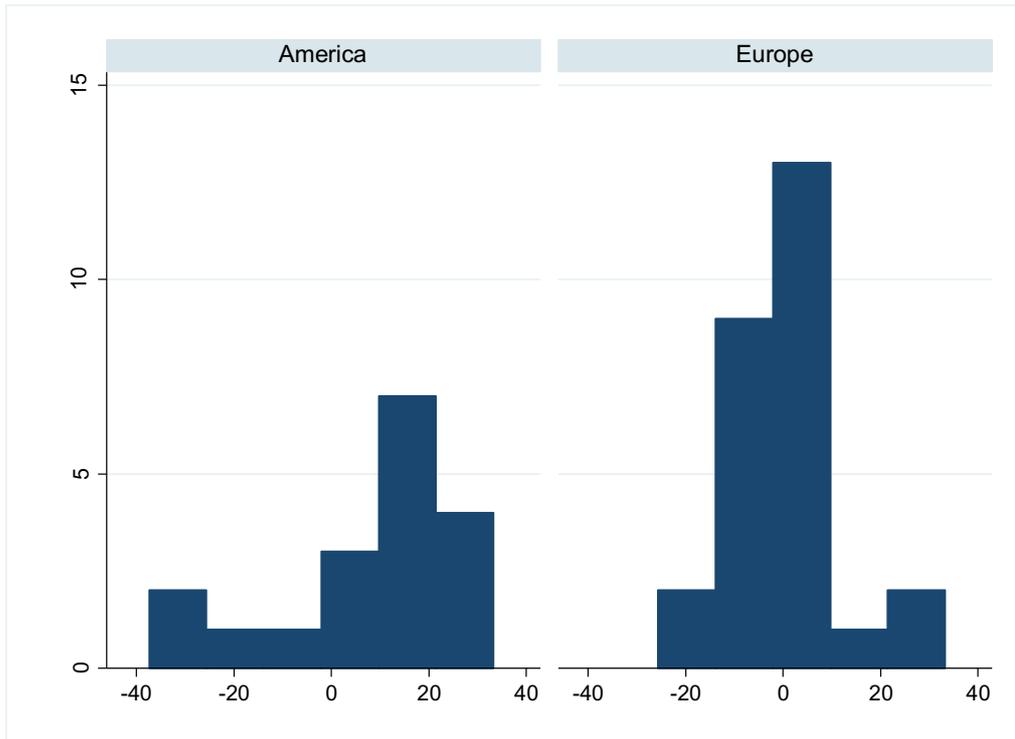
Figure 8. Short-term changes before/after different types of war, 1816-1913



Notes: Differences in percentages between five years before and five years after each war per country (the dots represent country-wars observations). Public revenues/GDP, data between 1816 and 1913. Only wars with more than 200 battle deaths have been included. When several wars coincide in time for a given country, only one of them is included. Two outliers have been excluded from the sample to allow a better visualization of lower values.

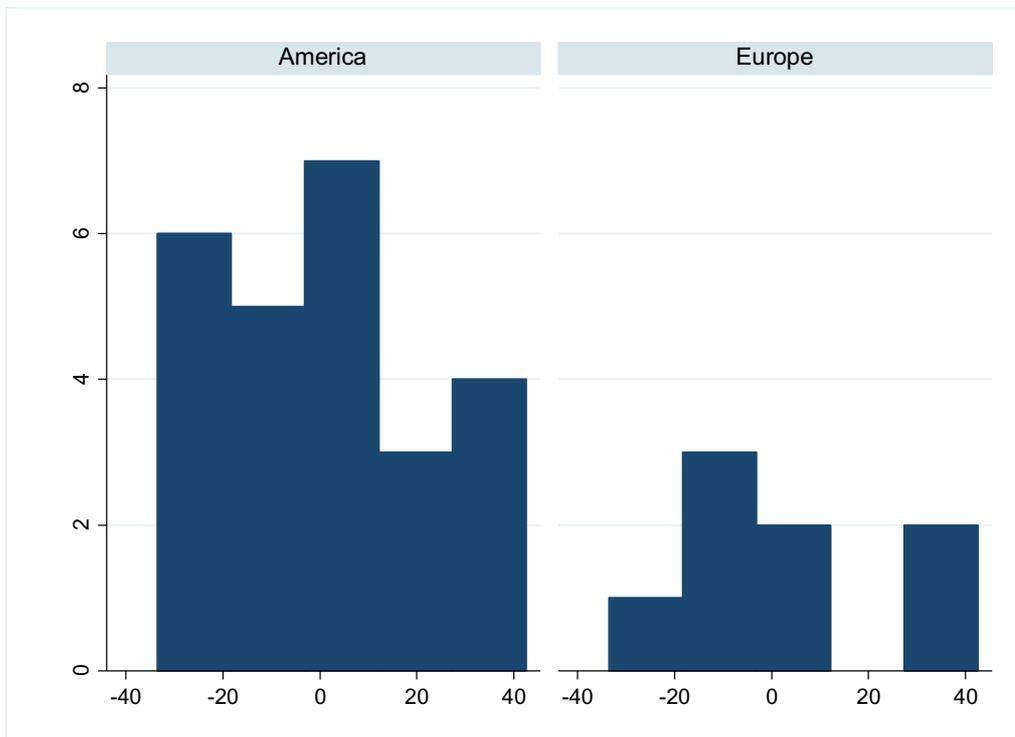
In order to go one step further, Figure 8 looks separately at the impact of civil and international wars. We do not find strong evidence of an average effect in either direction, although the median observation for both types of wars is slightly positive. We find that large positive and negative short-term changes in public revenue ratios coincide with instances of both types of war. The evidence presented so far suggests that the relationship between wars and public revenues was contingent on some specific wars rather than on the total number of wars (or their intensity) fought by each country. Although these results are only based on simple visual exercises, they cast reasonable doubts on the existence of a sustained and positive role played by international wars and a consistent negative effect of civil conflicts on nineteenth century public revenues.

Figure 9. Short-term changes before/after international wars by region, 1816-1913



Notes: Differences in percentages between five years before and five years after each war per country. Public revenues/GDP, data between 1816 and 1913. Only wars with more than 200 battle deaths have been included. When several wars coincide in time for a given country, only one of them is included.

Figure 10. Short-term changes before/after civil wars by region, 1816-1913



Notes: Differences in percentages between five years before and five years after each war per country. Public revenues/GDP, data between 1816 and 1913. Only wars with more than 200 battle deaths have been included. When several wars coincide in time for a given country, only one of them is included.

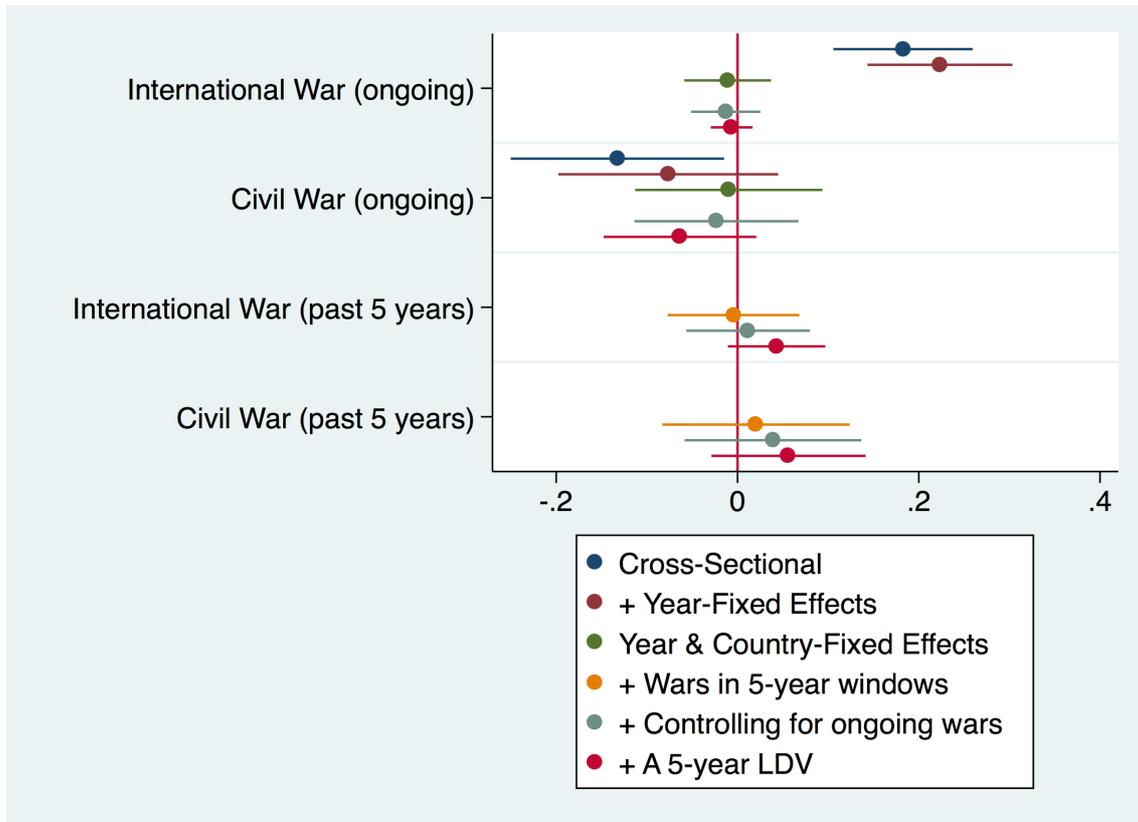
Finally, Figures 9 and 10 explore the main regional differences between America and Europe when taking all wars with more than 200 battle-deaths into account. We find interesting regional disparities; unlike the normal-type distribution found in Europe, American international wars are more frequently associated with positive changes in public revenues. This regional difference might be partially due to the large number of highly asymmetrical colonial wars fought by European states, which imposed less pressures on the state. Conversely, the bulk of civil wars in the Americas are associated with no or negative changes in public revenues, while the pattern is less clear for Europe. However, we do observe a small number of civil conflicts that had a positive impact on public revenues in both regions. In sum, we do not find indication of an average positive or negative effect of either type of war on public revenues.

6. Regression analyses

In this final section, we expand our analysis with some econometric tests of the interplay between wars and public revenues in the 19th century. To account for potential variation in “startup” versus later “fine-tuning” of state development, which could reveal itself in a decreasing marginal effect of wars at higher levels of state capacity, we model the logged values of public revenue ratios. Preliminary analyses indicate that results are largely the same when looking at absolute values of the outcome variables.

Figure 11 presents the results from a series of regression models designed to gradually hone in on estimates that can be considered reasonable approximations of average treatment effects. In this figure we use dummies for the incidence of the two types of war, international and civil, regardless of intensity. We start with a naïve specification that only looks at a pooled time series cross-section model without any lags or controls. The results from such a model provide artificial evidence for the “classical” bellicist expectations, indicating a positive and significant effect of international wars, but a negative (and significant) effect of civil wars. This model however ignores dynamics, so the results are primarily driven by cross-regional differences with European countries such as France, UK and the Netherlands waging multiple international wars and also collecting higher revenues, while Latin American countries face more civil wars and collecting less revenue.

Figure 11. Logged public revenue and war incidence, 1816-1913

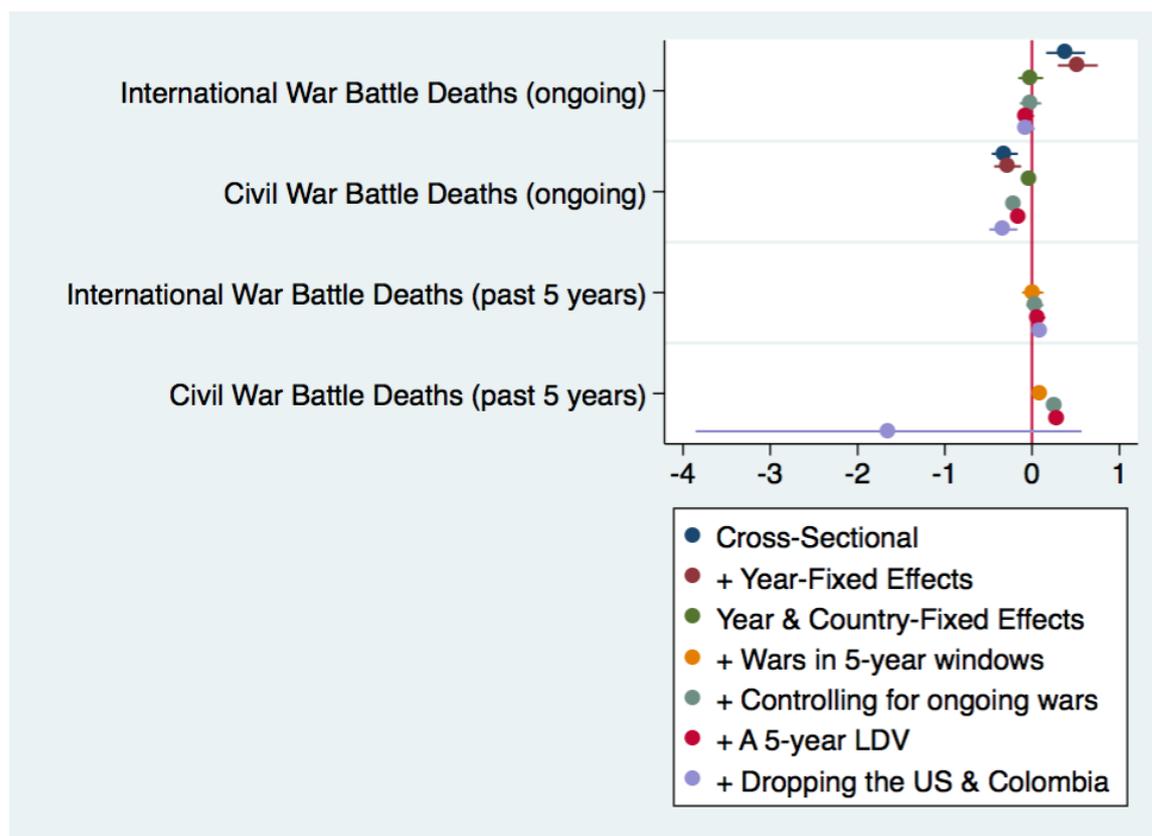


Notes: Entries are OLS regression coefficients with 95 % confidence intervals; in all models including country-fixed effects, standard errors are clustered on country.

The second model makes a first correction by controlling for year dummies, thus purging the regression estimates from the influence of common trends in both the incidence of war and public revenue collection. This renders the coefficient for civil wars insignificant, the reason being that most civil wars in Latin America were waged in the early or mid-parts of the 19th century, when levels of revenue collection were also at their lowest. Even with this control in effect, however, international wars appear to have a positive and significant impact on fiscal capacity. But this effect is washed away once we concentrate on within-country variation by controlling for country-specific effects. Once unobserved heterogeneity across countries is taken into account, neither international nor civil wars seem to exert any general effect on public revenues. We then further elaborate on this null finding by (a) allowing for a more flexible time-window, in effect looking at whether wars occurred over the past 5-year period; (b) controlling for the potentially different effects of ongoing and past wars; and (c) looking at changes rather than levels of the dependent variable. This final model mimics the setup of the descriptive graphs in the previous section and looks at whether wars of the two types occurred over the past 5-year period

(from time $t-5$ to $t-1$), controlling for whether wars are ongoing (at time t), the dependent variable lagged 5 years,¹⁶ as well as country- and year-fixed effects. As can be seen, the coefficients for both international and civil wars are now both positive but still insignificant.

Figure 12. Logged public revenue and war intensity, 1816-1913



Notes: Entries are OLS regression coefficients with 95 % confidence intervals; in all models including country-fixed effects, standard errors are clustered on country.

In figure 12, we run the same set of models but focus on the number of reported battle deaths (expressed in 100,000s) instead of the war dummies as our main independent variable. In effect, these models weigh each war dummy by its intensity (as proxied by battle deaths). When wars endure for more than a year, the total number of battle-related deaths for that war is repeated for all years the war lasted, and the 5-year windows then repeat these values for 5 years after the war ended. For international wars this alternative

¹⁶ We have also explored 10-year lags of the dependent variable to mimic the “5 years before to 5 years after” setup in the descriptive graphs, but with no substantive changes in results.

measure makes no difference for the result; more intense international wars appear to have a positive effect on public revenues but, again, only when countries are compared to countries, not when concentrating on within-country variation over time. For civil wars, however, there is a glaring difference: in models including country- and year-fixed effects, there seem to be a negative and significant effect of ongoing wars, but a *positive* and significant effect of having experience a civil war within the past 5 years.

This however turns out to be an artifact of two extremely influential outliers – the two deadliest civil wars that we discussed in the previous section: the US civil war in 1861-65 and the Colombian Thousand Days War in 1899-1902. Once these cases have been omitted, as shown by the final model, the coefficient for civil war turns negative but extremely imprecisely estimated and insignificant.

7. Discussion

In this paper we have explored the impact of civil and international wars on public revenues as a share of GDP for a sample of American and European countries during the long nineteenth century. We do not find evidence of any average treatment effect of either type of war on public finances during this period. This runs against the conventional wisdom of bellicist theories of state formation and the literature on civil conflict that have repeatedly found a positive association between international wars and various indicators of fiscal and state capacity during the 20th century, as well as a negative and statistically significant relationship between civil wars and state capacity.

At this stage, we draw two conclusions from these findings. First, the relationship between war-making and state-making has changed over time depending on the historical context. The experience of American and European countries indicates that this relationship was less straightforward during the nineteenth century than for the Early Modern period and for the twentieth century, the two historical eras that have inspired much of bellicist theorizing. This suggests that rather than different regional experiences with warfare, as discussed by Centeno (2003) or Herbst (2000), for example, it may be differences in the timing of exposure to military conflicts that shaped different patterns of state-making.

Second, even though we do not find evidence of average treatment effects for international or civil wars, we do observe that specific instances of both kinds of wars were associated with positive and negative shifts in public revenue ratios. Moreover, even for

those particularly intense wars that were followed by very large increases in public revenue ratios, those changes had a long-lasting effect in some cases (e.g., the US Civil War) but a very short-term impact in others (e.g., the Colombian Thousand Days War). These findings indicate that the distinction between civil and international wars is not helping us discriminate between state-building and state-eroding conflicts in the nineteenth century.

Based on these thoughts, we have started to explore alternative ways to theorize the relationship between wars and states during this period. The first step has been to disaggregate the independent variable. In this regard, we are currently exploring the effects of civil wars depending on four characteristics:

- (1) the *asymmetry* of military capabilities of combatants, where we hypothesize that symmetrical conflicts foster ratchet effects in investments on state capacity but not asymmetrical conflicts;
- (2) the *cleavage* driving internal conflicts, where conflicts between elites would tend to fragment the state while conflicts between the popular classes and elites would foster “security pacts” that strengthened the state;
- (3) the *incompatibilities* driving the conflict, in which wars about territory and regime change are more likely to trigger investments in state capacity rather than wars around demands for local autonomy or policy changes; and
- (4) the *international involvement* of other states in a country’s civil war, which could substitute for investments in state capacity (when supporting the state) or make the civil war a proxy for an international conflict (when supporting the rebels).

The second step is to explore in more detail the mechanisms whereby wars affect the development of state capacity. It may be the case that wars affect state-making processes through several different causal mechanisms, for example, by putting pressure on public finances, by fostering administrative reforms, or by expanding the coercive resources that the state has to control its territory and population. Each of these causal paths may be “turned on” or “turned off” under different historical circumstances but in the long run they could all contribute to the construction of stronger states. This could explain why we do not observe consistent effects of wars on public revenues in the panel models for the 19th century, but others have found an association between 19th century wars and 21st century levels of taxation. In order to explore this possibility, we also plan to extend our analysis beyond public revenue ratios, to look at the effects of wars on the control of the state over its territory and population and on administrative reforms. Those analyses are, alas, still work in progress.

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