

War, International Finance, and State Capacity in the Long-Run

Didac Queralt

Yale University

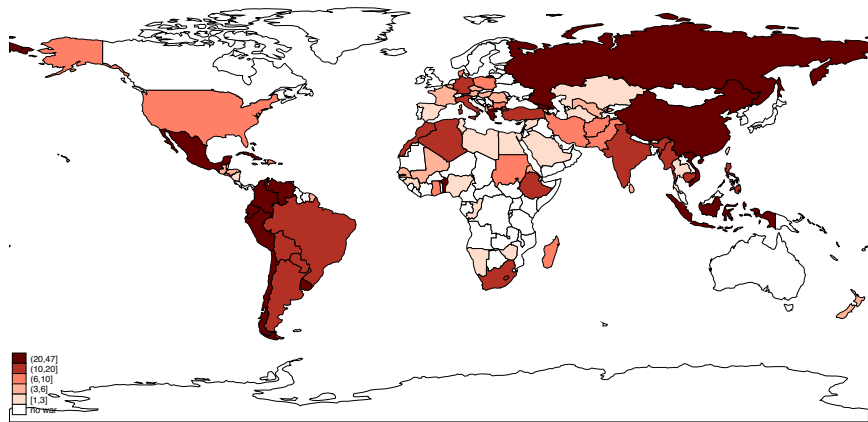
Nov 3, 2018

Argument

- ▶ “The Legacy of War on Fiscal Capacity” (paper circulated)
- ▶ “War, State Building, and Limited Government in the Era of International Finance ” (book project)
- ▶ **Argument:** Globalization of finance preempts state building and political reform.
- ▶ Focus on war
 - Bellicist hypothesis: “states make war, and war make states.”
 - Little traction in the “periphery.”

Absence of War?

Figure: The Geography of Inter-State War in the Long-Nineteenth Century.
Colors indicate the total number of years at war. Data source: Wimmer-Min 2009



External Finance

- ▶ War in the periphery was financed with external credit, and that distorted short- and long-term state capacity building.
- ▶ I advance a PE of war financing that articulates
 1. Political costs of external loans vs. taxation
 2. Explanation for lack of Ricardian equivalence
 3. Mechanism of transmission
- ▶ Test for it addressing limitations of observational studies.

The Political Economy of War Financing

Tax-Financed War

- ▶ Taxes change the *physiology* of the state [Ardant 1975]
 - Fiscal unification
 - New taxes, new rates
 - Bureaucratic efficiency
- ▶ But new taxes come at a **political cost** [Bates-Lien 1984, Gennaioli-Voth 2015, Ferejohn-Rosenbluth 2016, Levi 1988]

Power-sharing institutions were the price and outcome of bargaining with different members of subject population in overcoming resistance to financing with taxation the means of war. [Tilly, 1990: 64]

Loan-Financed War

- ▶ **Domestic loans** come with political concessions too [North-Weingast 1989]
- ▶ **External loans:** minimize political costs. Plus:
 - Certainty about yields
 - Smooth allocation decisions
- ▶ Effect on fiscal capacity is uncertain
 - Commitment problem in repayment
 - Default settlements weaken incentives to enhance fiscal capacity
 - Debt forgiveness
 - Debt for state monopolies and land
 - Exchange of war debt for nontax revenue unravels Ricardian Equivalence.

Empirical Implication

The more war is financed with taxes relative to loans, the stronger the effect of war on long-term fiscal capacity

Design

- ▶ Focus on 19th century: pervasive warfare + massive international lending:
 - ▶ 19th century witnesses **the first global financial market** [Neal 1990, Taylor 2006]
 - **“Lending frenzy”**: International capital flows 3X larger in 1880-1914 than 1980s, scaled by world economy [Bordo 2006]
 - High liquidity resulted in unprecedented **low spreads**, also for countries in the “periphery”
 - ▶ Contemporary equivalent: Ballard-Rosa, Mosley and Wellhausen 2018.
 - ▶ I document lending frenzy with an original dataset of 450+ sovereign loans, 1816-1913 [▶ Dataset](#)

Design

- ▶ Data: 106 countries and 174 inter-state wars, 1816-1913.
- ▶ Does war financed with taxes (loans) increase (decrease) long-term tax capacity? ▶ Empirical Model
- ▶ Threats to identification:
 1. I exploit repeated yet unanticipated global credit crunches as exogenous source of credit access.
 2. I address endogenous war participation threefold: ongoing war, noninitiators, reduced-form.

Results

1. **The Long-Run (circa 2000s):**
 - ▶ A one-standard deviation in # years at war while **lacking access to external finance** in the nineteenth century increases long-run tax capacity (PIT/tax) by 11% points.
 - ▶ Nineteenth-century war waged while **having access** to external finance does not increase long-run tax capacity, and may be detrimental.
2. **The Short-Run (by 1913):** War finance effects on the eve of WWI are similar.
3. **Intermediate Effects:** Decennial models from 1945-1995 are similar.

▶ Long Run

▶ Short Run

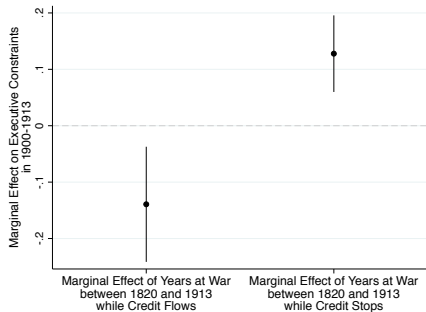
▶ Transmission

Mechanism of Transmission

- ▶ Raising taxes implies political concessions, namely power-sharing institutions.
- ▶ Power-sharing institutions transform taxation into a nonzero sum game [Levi 1988, Besley-Persson 2011], thus carrying on the effect of war in the long-run.
- ▶ Access to international finance precludes such a tax bargain.

Mechanism of Transmission

(a) Short-Run Effects



(b) Long-Run Effects

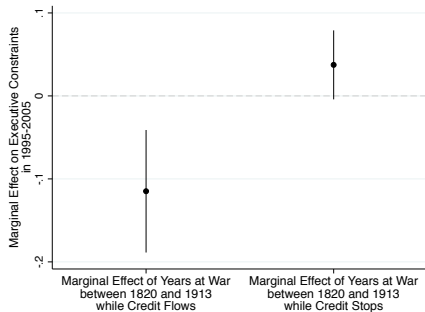


Figure: The Effect of War Finance from 1816 to 1913 on Executive Constraints in the Short (1913) and Long Run (2000s).

Conclusion: *War, State-Making, and Limited Government in the Era of International Finance*

- ▶ **State-making is endogenous to international credit markets**
 - Scope conditions of bellicist hypothesis are updated to a context of global credit

- ▶ **International credit undermines the association between war-finance and power-sharing institutions**
 - External loans preclude political compromises between rulers and domestic elites
 - Results elucidate a *cheap credit curse*, producing perverse effects similar to oil, foreign aid, and ore from colonies

Back Up Slides

PE of War Finance: Incumbent's Decision Rule

- ▶ Taxes

$$\kappa T - c_t + \delta [(\kappa + \eta) T - c_t]$$

- ▶ Loans

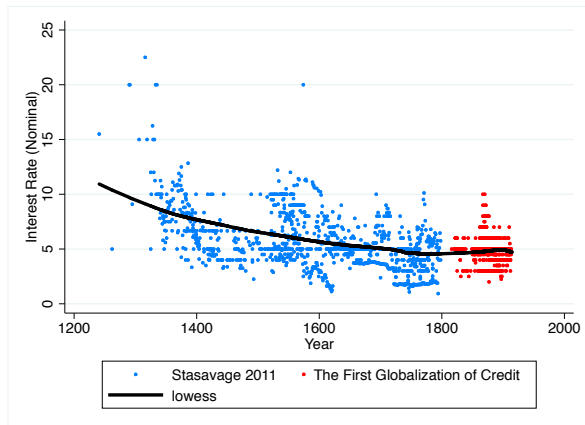
$$L - c_l + \delta [(1 - d)((1 - r)\kappa T - c_t) - d\beta]$$

- ▶ Decision rule

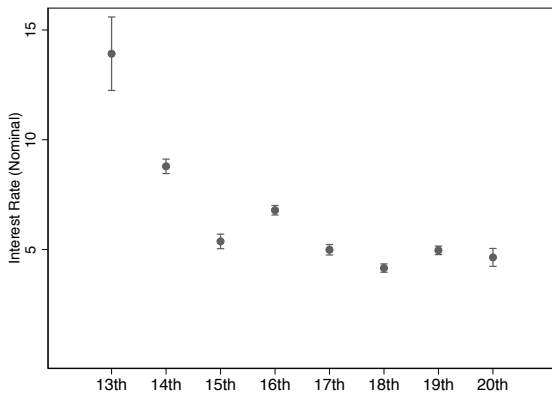
$$\frac{1 - \alpha_s}{1 + d} \geq \kappa T - \Delta c + \delta [T(\eta + \kappa(r^*(1 - d) + d)) - dc_t + d\beta]$$

with r^* , $\partial r / \partial d > 0$, endogenously set in the bond market.

Interest Rates Over Time



Interest Rates Over Time



Interest Rates in the 19th c. by Region

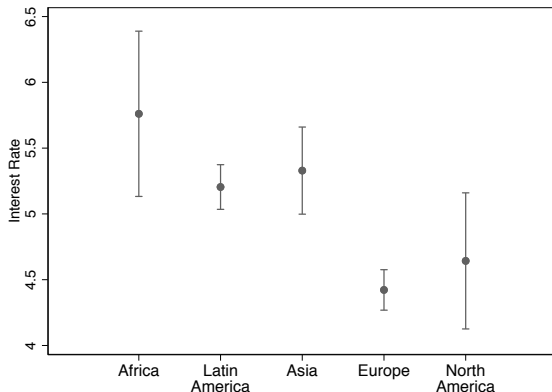


Figure: Premium < 2% (N=468 sovereign loans, 1816-1913)

Sudden-Stops of Credit: An Illustration

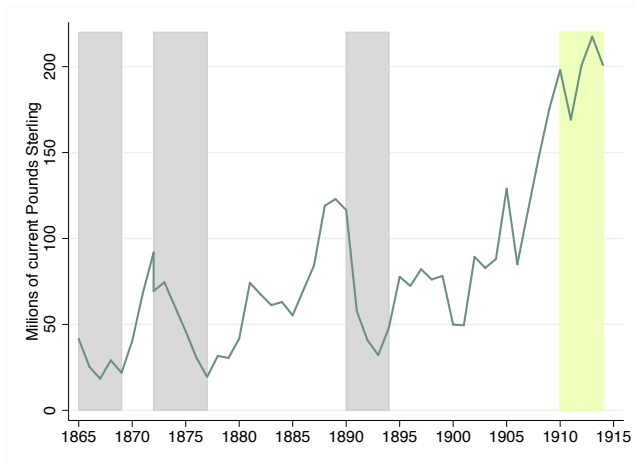


Figure: British Capital Exports from 1865 to 1914, the banking panics of 1865, 1873, and 1890 (in gray), and the stock crisis of 1910 (in yellow).

Modeling Long-Term Fiscal Capacity

- ▶ Cross-sectional variation

$$y_i = \alpha_i + \beta_1(\# \text{years at war in 1816-1913} \mid \text{credit stops}) \\ + \beta_2(\# \text{years at war in 1816-1913} \mid \text{credit flows}) \\ + \mathbf{X}_i \delta + \gamma + \rho + \epsilon_i$$

- ▶ where *access to credit* is uncorrelated to (un)observables,
- ▶ $y_i \in \{PIT, VAT, TaxStaff\}$ circa 2000,
- ▶ \mathbf{X}_i a vector of initial characteristics, and δ and γ , region and colonial origins FE, respectively,
- ▶ and expectations: $\beta_1 > 0, \beta_2 \leq 0$

Table: Personal Income Tax to GDP today as a function of War and Exogenous Access to Credit in the Long-Nineteenth Century

	(1)
# years at war 1816-1913 while credit stops	0.273*** (0.056)
# years at war 1816-1913 while credit flows	-0.200*** (0.057)
Baseline Controls	Yes
Colonial Origins FE	Yes
Region FE	Yes
Average PIT/GDP	2.99
Observations	106
R-squared	0.551

Britain excluded. Baseline Controls are: Population density as of 1820, oil production, access to sea, and dessert territory. Robust standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Selection into War

- ▶ Focus on wars that are **initiated** while the market is lending and, eventually, dries as a result of a sudden-stop
 1. These wars that are initiated *without* the expectation of a credit-dry
 2. This strategy addresses the “what type of war to fight” concern

Table: Ongoing Wars. Models of PIT as % of GDP in the Long Run, with Special Attention to Anticipation Issues

	(1)	(2)
# Years at War while Credit Stops	0.130** (0.054)	0.124** (0.053)
# Years at War while Credit Flows	-0.082 (0.080)	-0.079 (0.079)
Initial State Capacity	Census	Antiquity
Great Power FE	Yes	Yes
Baseline Controls	Yes	Yes
Colonial Origins FE	Yes	Yes
Region FE	Yes	Yes
Observations	106	103
R-squared	0.583	0.617

Baseline Controls are: Population density as of 1820, oil production, access to sea, and desert territory. Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Short-term Effects

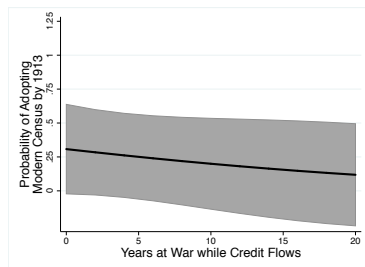
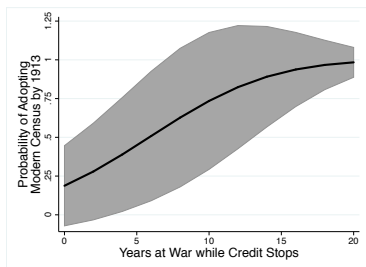
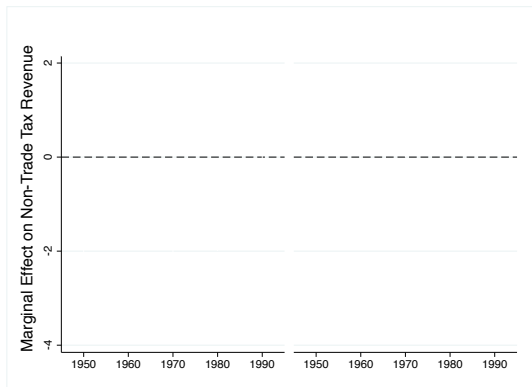


Figure: Probability of Having Conducted a Modern Census by 1913 as a function of Warfare and Access to Credit.

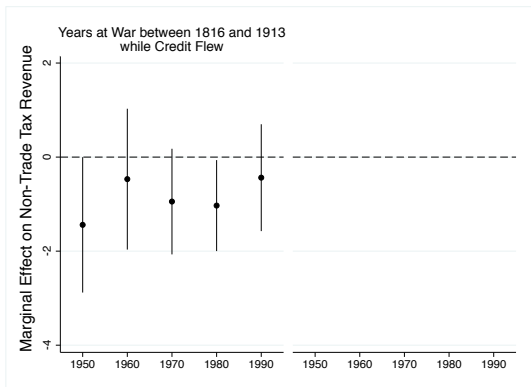
Transmission

Figure: Marginal effect of # Years at War with and without access to External Credit between 1820 and 1913 on Non-Trade Tax Revenue from 1945 to 1995 (decennial averages).



Transmission

Figure: Marginal effect of # Years at War with and without access to External Credit between 1820 and 1913 on Non-Trade Tax Revenue from 1945 to 1995 (decennial averages).



Transmission

Figure: Marginal effect of # Years at War with and without access to External Credit between 1820 and 1913 on Non-Trade Tax Revenue from 1945 to 1995 (decennial averages).

