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

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Argument

- **Book project**: "War, State Building, and Limited Government in the Era of International Finance."
  - "The Legacy of War on Fiscal Capacity." accepted at IO.

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- **Argument:** Globalization of finance deters 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

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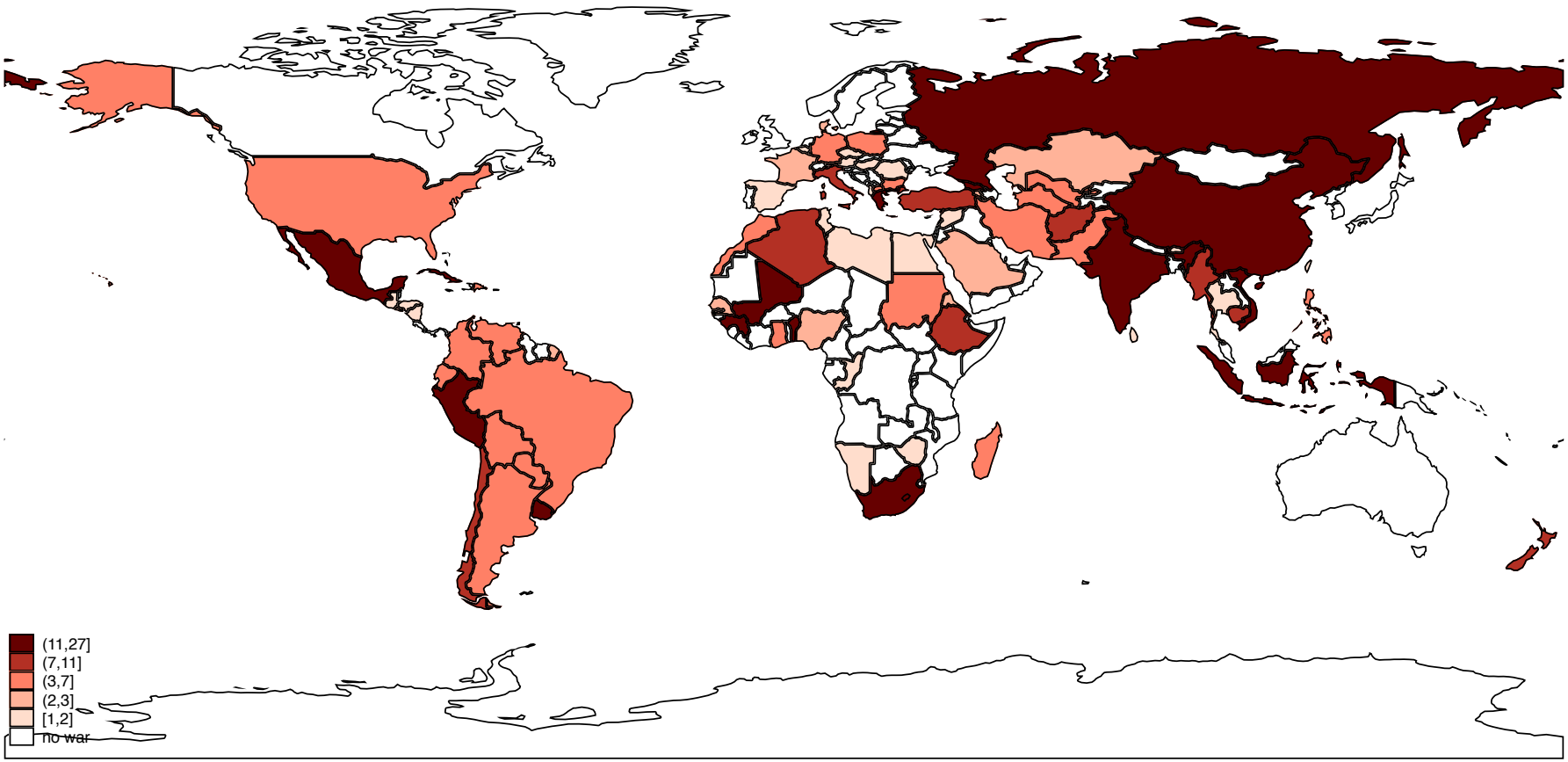
Figure: The Geography of Inter-State War in the Long-Nineteenth Century. Colors indicate the total number of years at war. Data source: Wimmer-Min 2009



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  2. Explanation for lack of Ricardian Equivalence
  3. Mechanism of transmission

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  1. Political costs of taxation vs. external loans
  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, Dincecco 2011]
  - Fiscal unification
  - New taxes, new rates
  - Bureaucratic efficiency

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- 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]*

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  - Commitment problem in repayment
  - Default settlements weaken incentives to enhance fiscal capacity
    - Debt relief
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  - Debt relief and exchange of war debt for nontax revenue preclude the 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

Access to credit and incentives to tax: An example

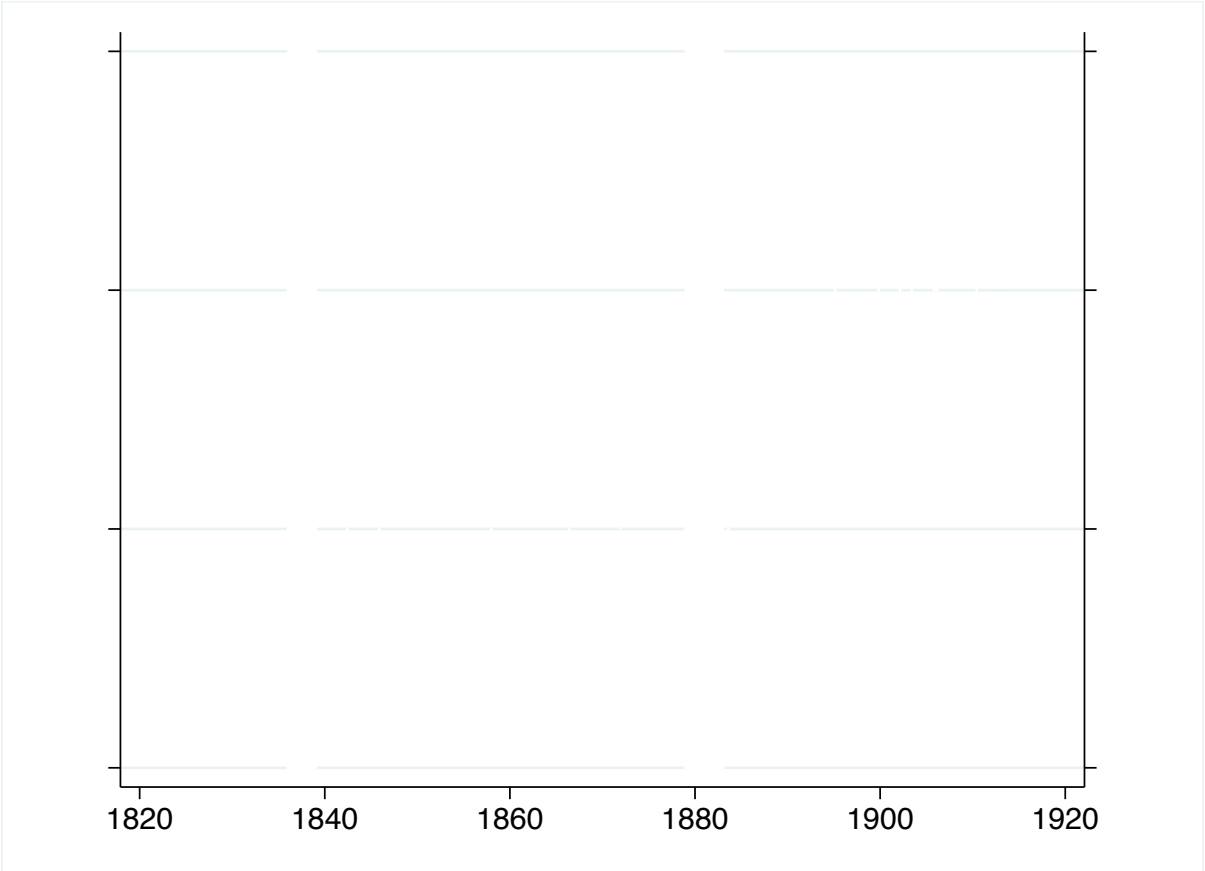

Figure: **War, external loans, and taxes in Chile** Area in gray: wars fought while being in default; Area in yellow: wars fought while having access to external lending

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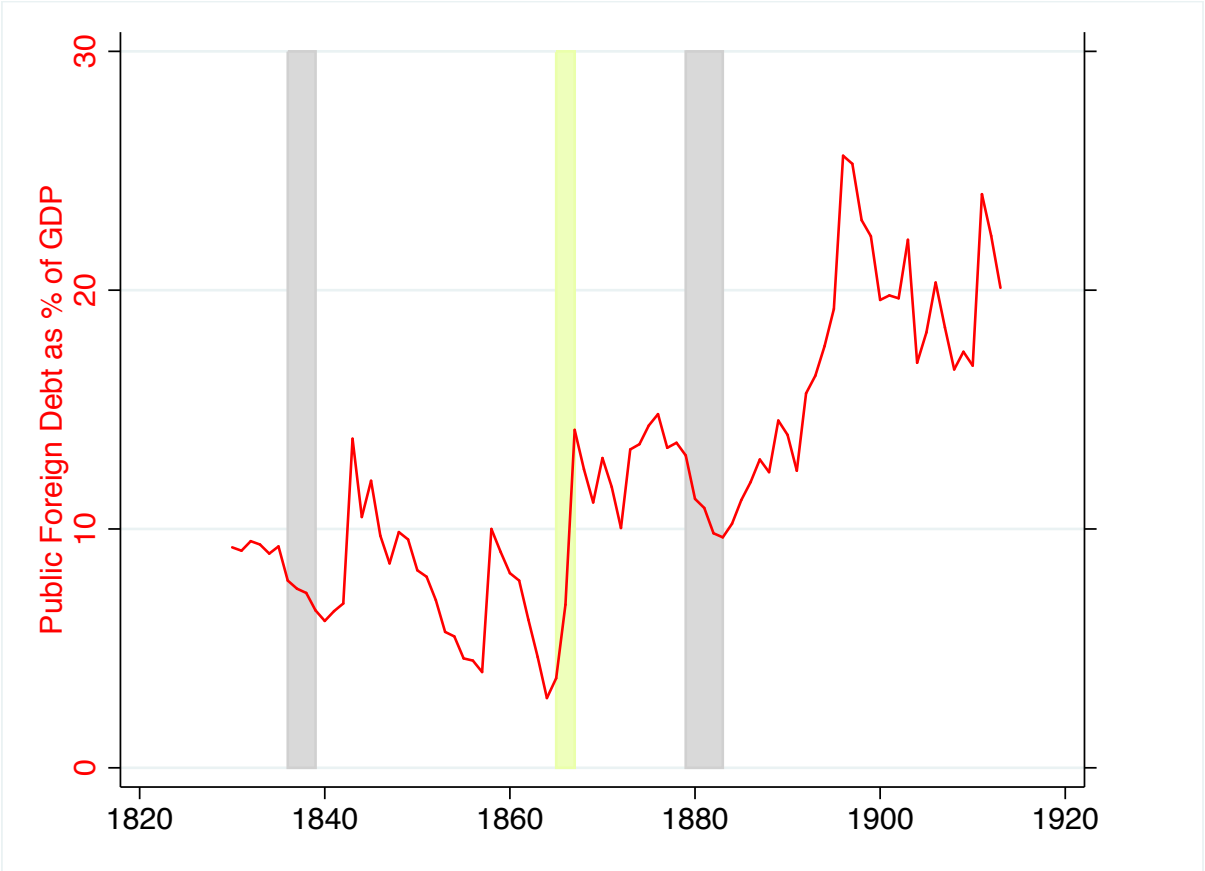

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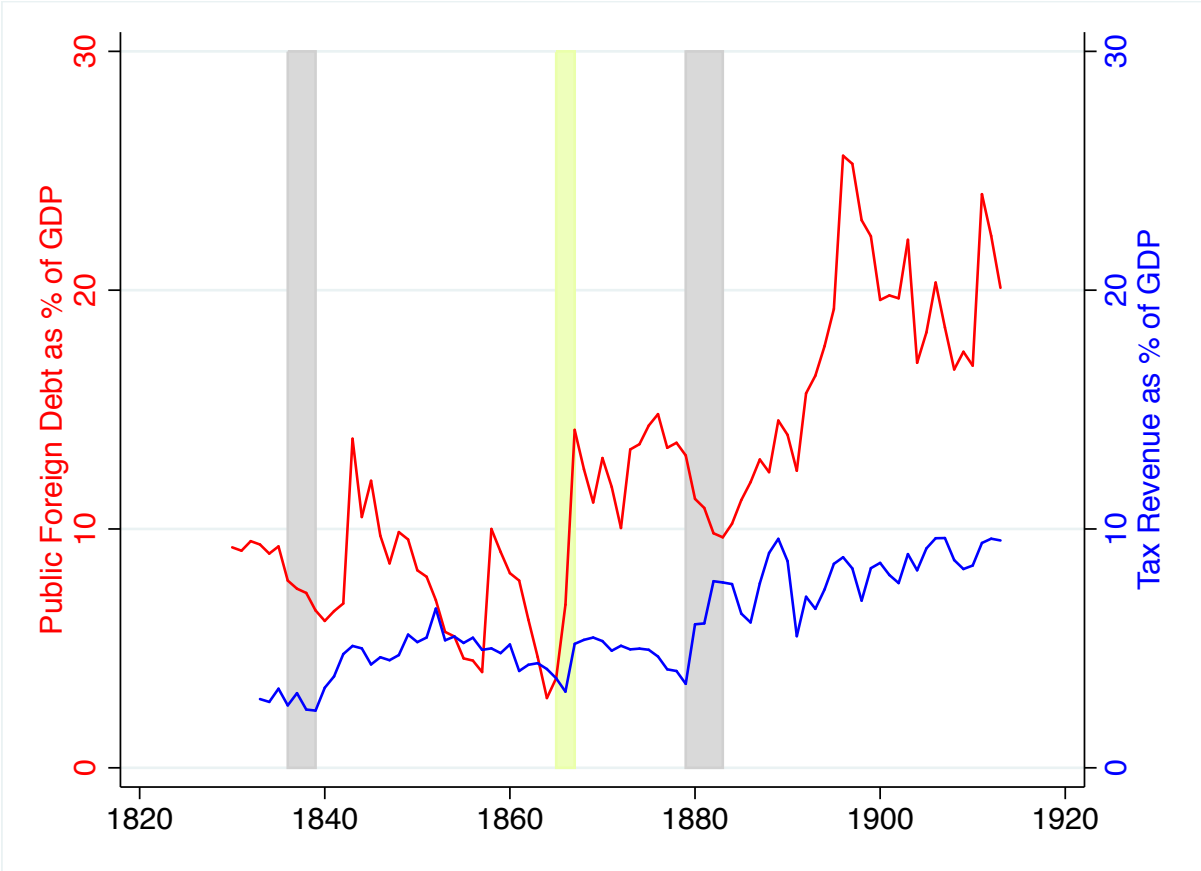

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Design

- 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]

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  - "**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"
    - I document lending frenzy with an original dataset of 450+ sovereign loans, 1816-1913 ▸ Interest Rates

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- Does war financed with taxes (loans) increase (decrease) long-term tax capacity?
- Threats to inference:
  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.

▸ Empirical Model

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/GDP) by 11% points.
   - Nineteenth-century war waged while **having access** to external finance does not increase long-run tax capacity, and may be detrimental.

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3. Intermediate Effects: Decennial models from 1945-1995 are similar.

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Mechanism of Transmission

- Raising taxes implies **political concessions**, namely power-sharing institutions.
- Power-sharing institutions transform taxation into a **nonzero sume game** [Levi 1988, Besley-Persson 2011], thus carrying on the effect of war in the long-run.

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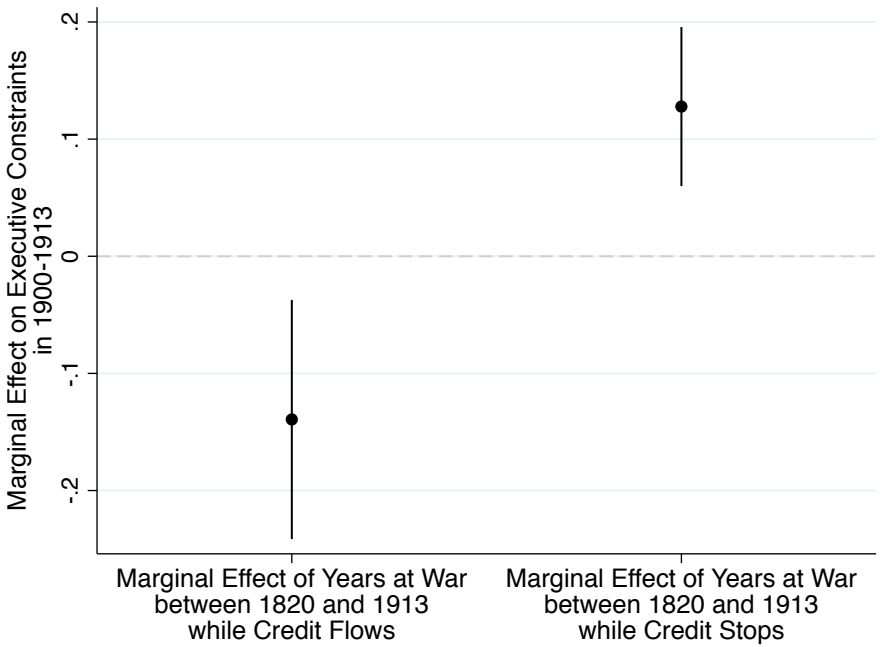
- Access to international finance precludes such a tax bargain/fiscal contract

Mechanism of Transmission

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

Mechanism of Transmission

(a) Short-Run Effects



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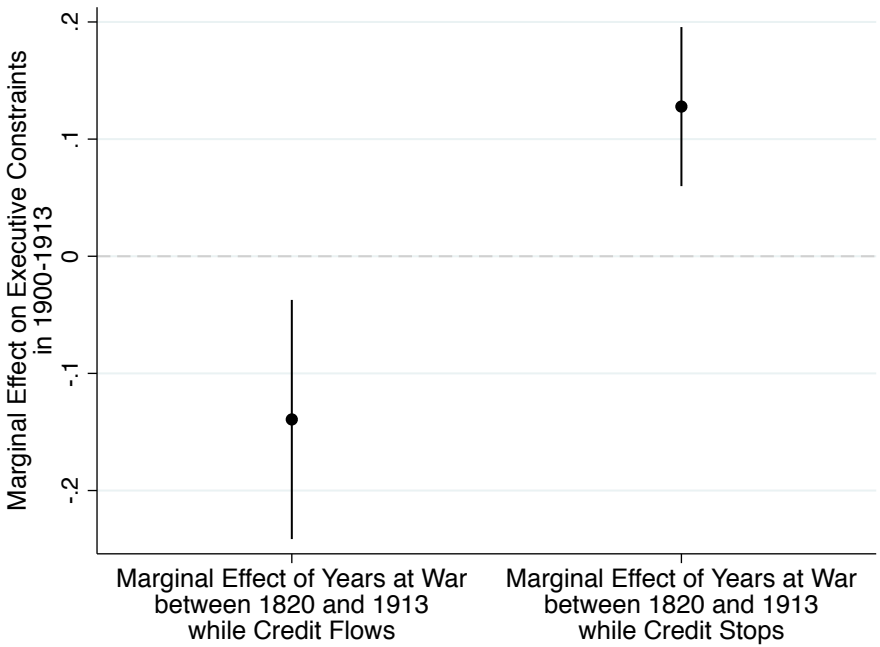
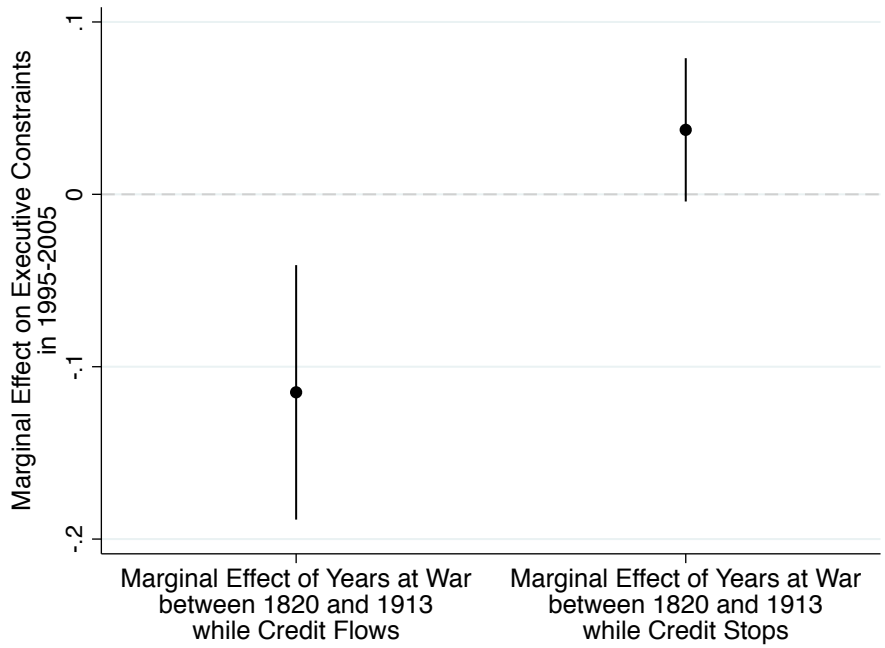


(b) Long-Run Effects



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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 compromise 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

- Ruler's present discounted value of taxing:

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

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- Ruler's present discounted value of taxing:

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

- Ruler's present discounted value of borrowing:

$$L - W - c_l + \delta\left[(1-d)\left(\kappa T - (1+i)L - c_t\right) - d\beta\right]$$

... with $i = r + p$:

  - r is the interest rate of a risk-free sovereign bond (e.g. the British Consol), and
  - $p = \frac{(1+r)d}{1-d}$, $\partial p/\partial d > 0$ (Tomz 2007)

PE of War Finance: Incumbent's Decision Rule

- Decision rule

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

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

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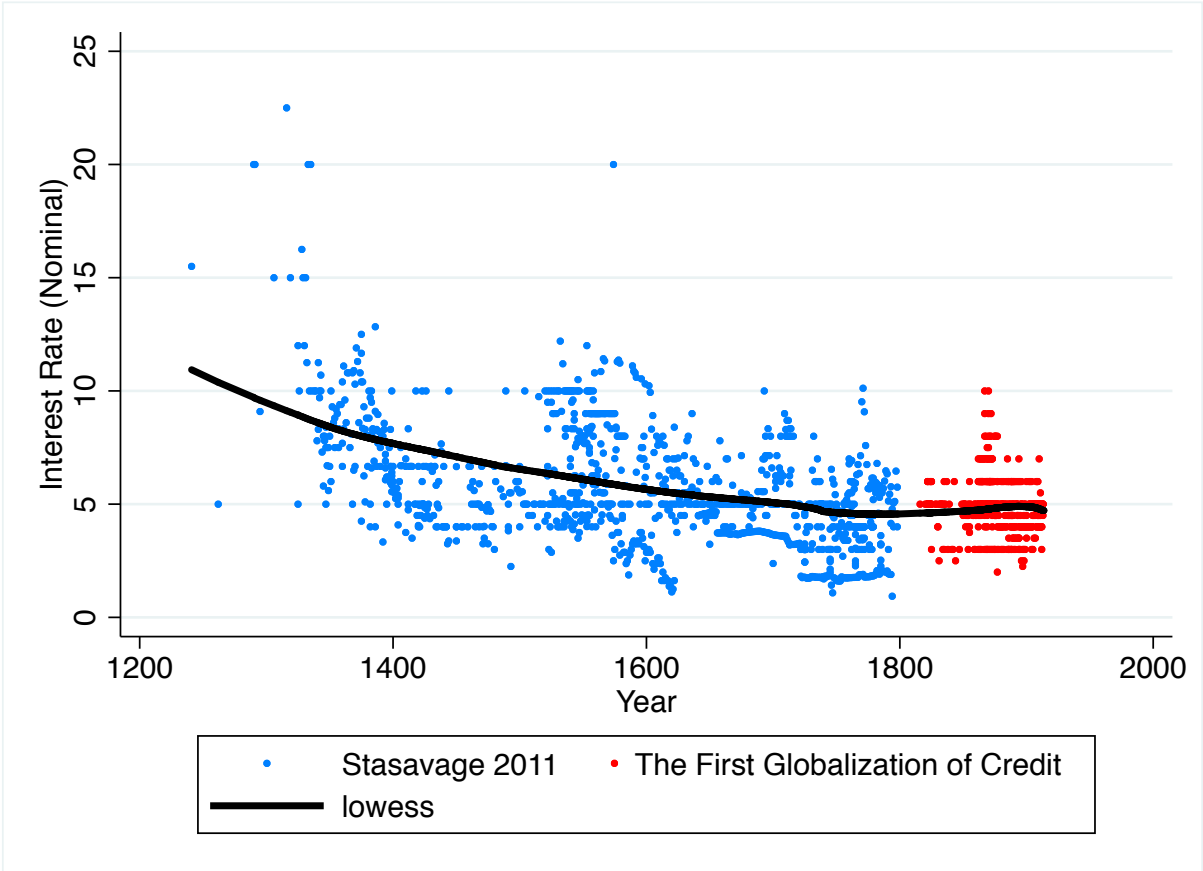
1. κ: The lower initial capacity
2. Δc: The weaker initial power-sharing institutions
3. δ: Short time horizons
4. r^*: High liquidity in international markets
5. β: Mild default sanctions

Interest Rates Over Time



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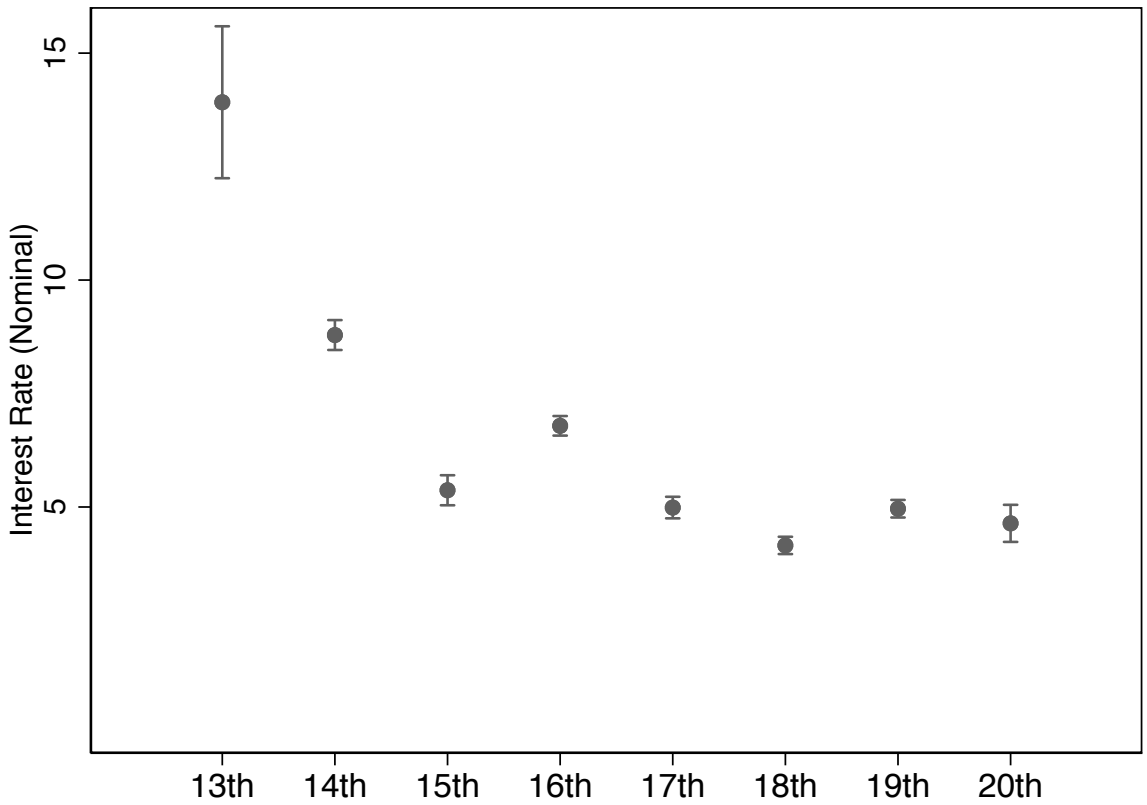

Interest Rates in the 19th c. by Region

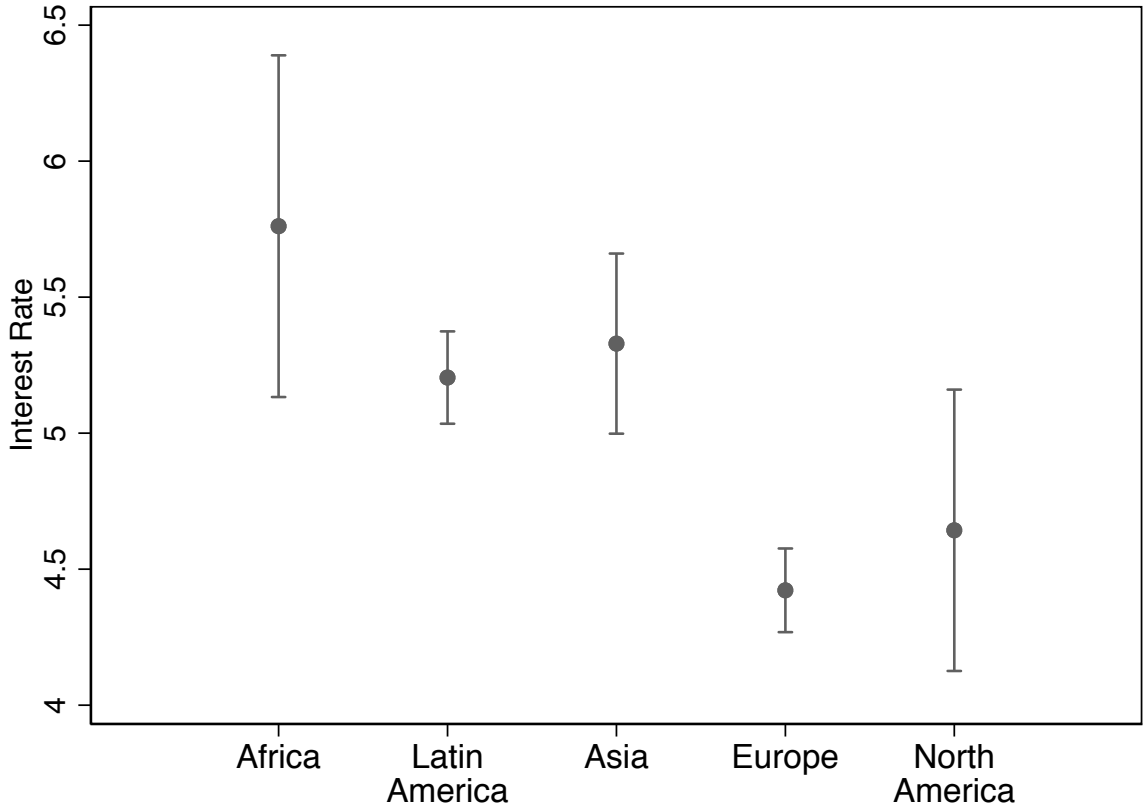

Figure: Premia $< 1.5\%$ (N=468 sovereign loans, 1816-1913)

◂ Return

Sudden-Stops of Credit: An Illustration

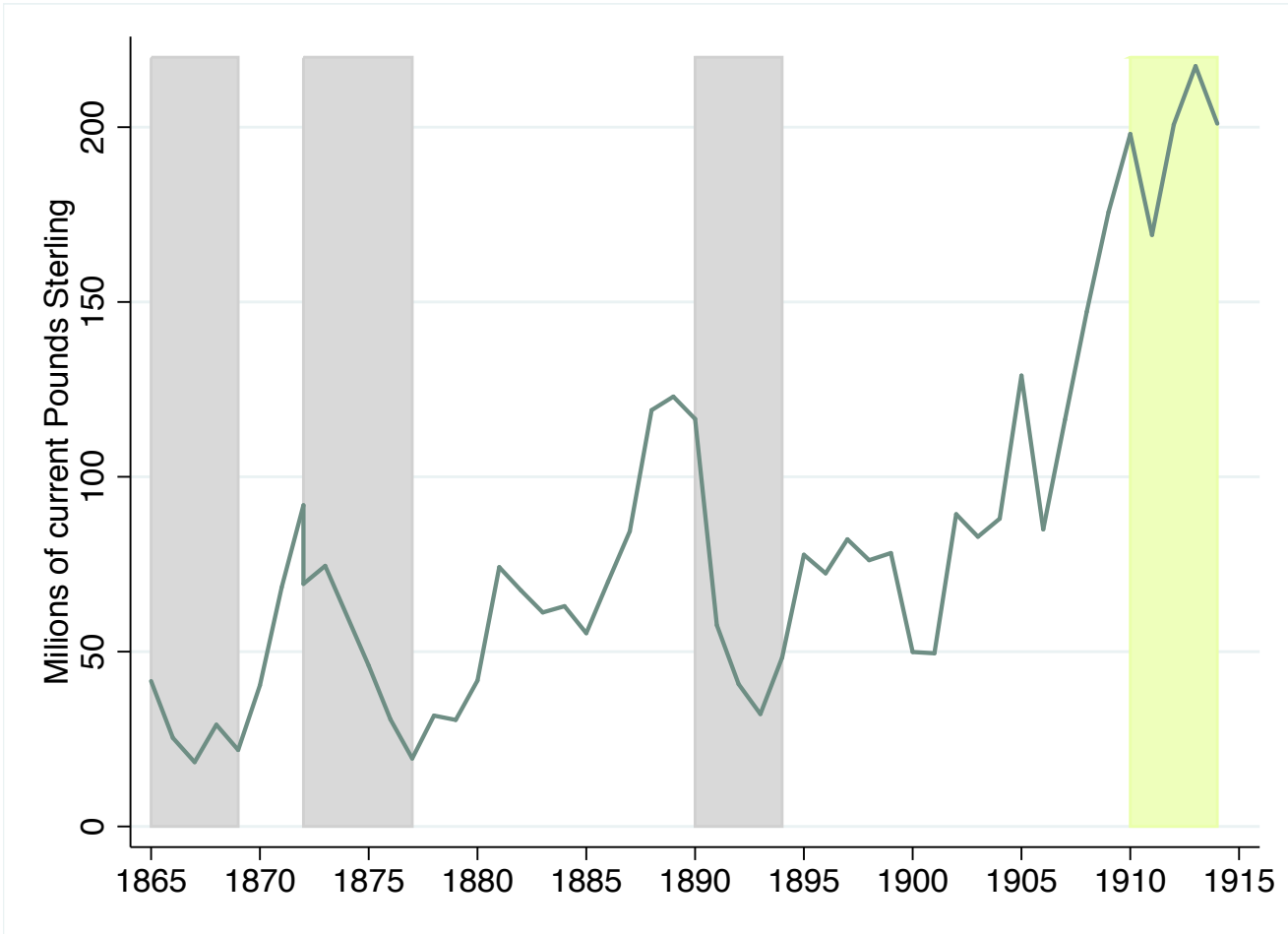

Figure: British Capital Exports from 1865 to 1914, the banking panics of 1865, 1873, and 1890 (in gray), and the stock crisis of 1910 (in yellow).

Modeling Long-Term Fiscal Capacity

- Cross-sectional variation

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

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

Return

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.

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Selection into War

- Focus on wars that are **initiated** while the market is lending and, eventually, dries as a result of a sudden-stop

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- 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**	0.124**
	(0.054)	(0.053)
# Years at War while Credit Flows	-0.082	-0.079
	(0.080)	(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 dessert 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.

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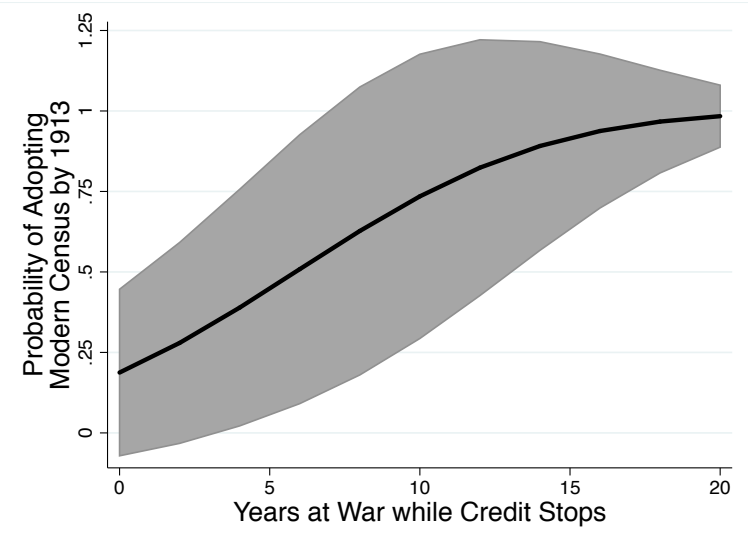

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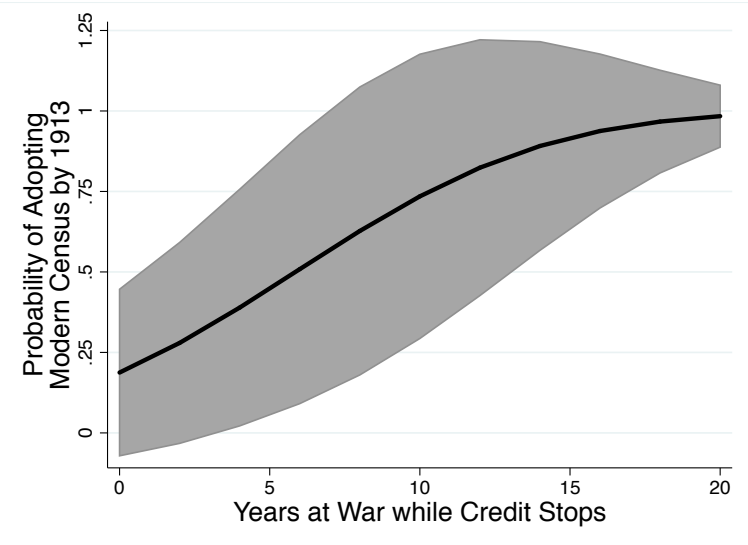

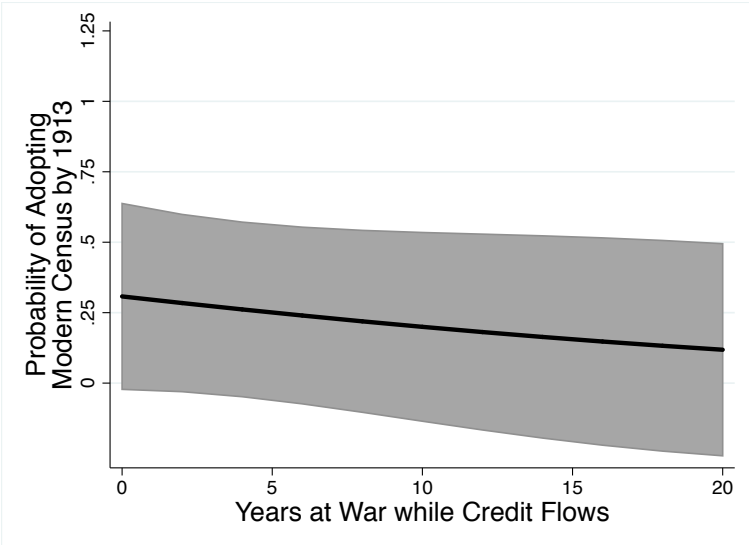

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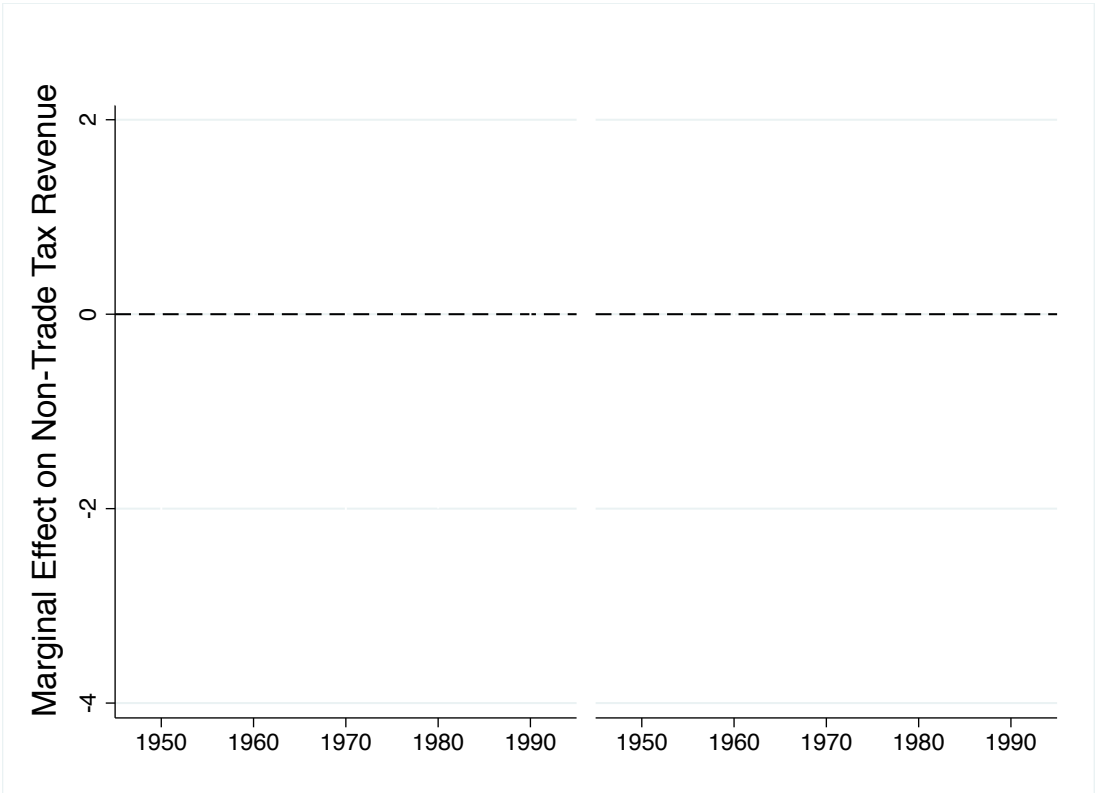

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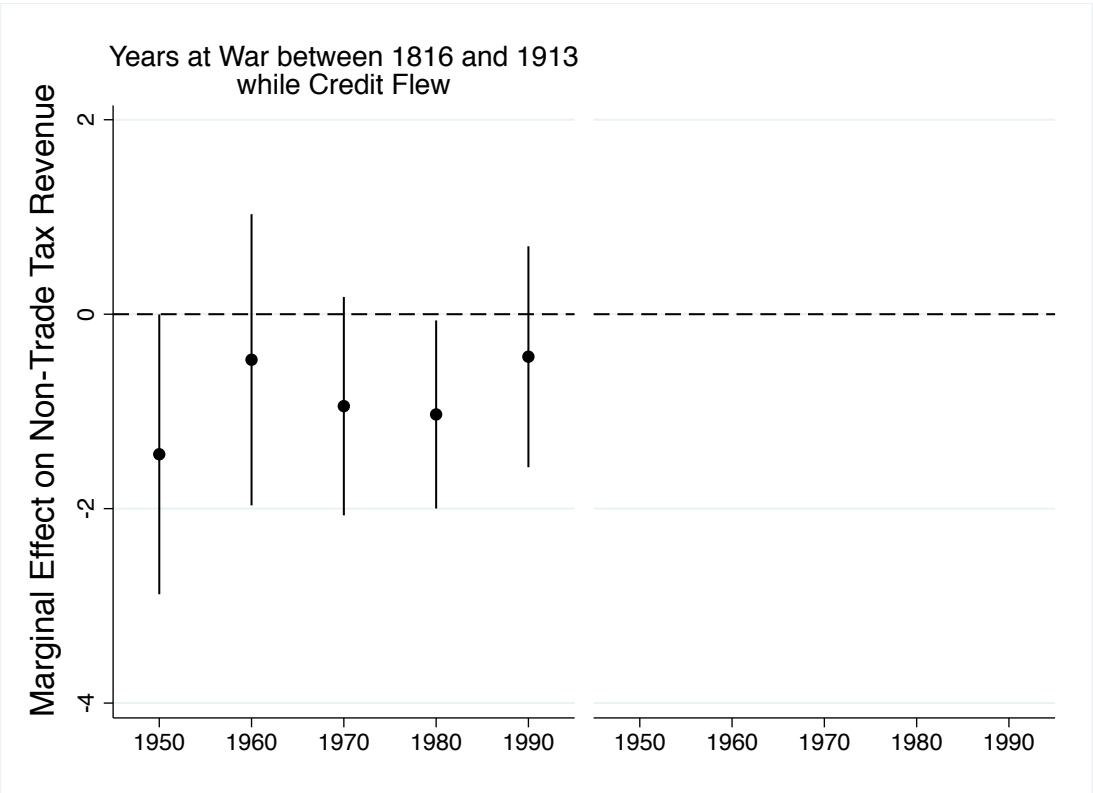

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