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

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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


*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”
    - I document lending frenzy with an original dataset of 450+ sovereign loans, 1816-1913
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.
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

Marginal Effect on Executive Constraints in 1900-1913

Marginal Effect of Years at War between 1820 and 1913 while Credit Flows

Marginal Effect of Years at War between 1820 and 1913 while Credit Stops

(b) Long-Run Effects

Marginal Effect on Executive Constraints in 1995-2005

Marginal Effect of Years at War between 1820 and 1913 while Credit Flows

Marginal Effect of Years at War between 1820 and 1913 while Credit Stops

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**

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

- **Loans**

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

- **Decision rule**

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

with \( r^* , \partial r / \partial d > 0 \), endogenously set in the bond market.
Interest Rates Over Time

The First Globalization of Credit

lowess
Interest Rates Over Time

![Graph showing interest rates over time](image)
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

\[ y_i = \alpha_i + \beta_1(\#\text{years at war in 1816-1913} | \text{credit stops}) + \beta_2(\#\text{years at war in 1816-1913} | \text{credit flows}) + X_i\delta + \gamma + \rho + \epsilon_i \]

- where access to credit is uncorrelated to (un)observables,
- \( y_i \in \{\text{PIT, VAT, TaxStaff}\} \) circa 2000,
- \( X_i \) a vector of initial characteristics, and \( \delta \) and \( \gamma \), 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

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

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

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

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.
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

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