Knowledge Elites and Modernization: Evidence from Revolutionary France

Mara P. Squicciarini (Bocconi)  Nico Voigtländer (UCLA)

Sixth CEPR Economic History Symposium
23 June 2018
Motivation

Drivers of economic development

- (Formal) institutions vs. modernization hypotheses
  - Evidence in favor of both (largely country-level studies)

- Democratization: allowed by ruling elites at the central level
  - Commitment to redistribution under threat of Revolution (Acemoglu and Robinson, 2000)
  - Incentive for public goods provision benefiting elite: public health (Lizzeri and Persico, 2004) mass education (Galor and Moav, 2006)

- Common features of previous work:
  - Typically focus on aggregate level
  - Assume (latent) demand for democratization/education
  - Elites: usually considered conservative and against modernization
Motivation

Drivers of economic development

- (Formal) institutions vs. modernization hypotheses
  - Evidence in favor of both (largely country-level studies)

- Democratization: allowed by ruling elites at the central level
  - Commitment to redistribution under threat of Revolution (Acemoglu and Robinson, 2000)
  - Incentive for public goods provision benefiting elite: public health (Lizzeri and Persico, 2004) mass education (Galor and Moav, 2006)

- Common features of previous work:
  - Typically focus on aggregate level
  - Assume (latent) demand for democratization/education
  - Elites: usually considered conservative and against modernization
This Paper

Focus on Revolutionary France (1789) – "critical juncture of history"

1. Emphasize regional differences within a country

2. Demand for modernization (in autocratic regime) – pre-Revolution:
   - Cahiers de Doléance (1788-89)
   - For each of the three estates (clergy, nobility, 3rd estate)

3. Role of "knowledge elites" (as opposed to land-holding elites)
   - Proxy for "knowledge elites": subscriber density to the Encyclopédie
     - Unrelated to literacy pre-1800
   - Pre-Revolution: knowledge elites and demand for modernization
   - Post-Revolution (1833-1850): knowledge elites and expansion of mass education and modernization
This Paper

Focus on Revolutionary France (1789) – "critical juncture of history"

1. Emphasize regional differences within a country

2. Demand for modernization (in autocratic regime) – pre-Revolution:
   - Cahiers de Doléance (1788-89)
   - For each of the three estates (clergy, nobility, 3rd estate)

3. Role of "knowledge elites" (as opposed to land-holding elites)
   - Proxy for "knowledge elites": subscriber density to the Encyclopédie
     - Unrelated to literacy pre-1800
   - Pre-Revolution: knowledge elites and demand for modernization
   - Post-Revolution (1833-1850): knowledge elites and expansion of mass education and modernization
This Paper

Focus on Revolutionary France (1789) – "critical juncture of history"

1 Emphasize regional differences *within* a country

2 *Demand* for modernization (in autocratic regime) – pre-Revolution:
   - Cahiers de Doléance (1788-89)
   - For each of the three estates (clergy, nobility, 3rd estate)

3 Role of "knowledge elites" (as opposed to land-holding elites)
   - Proxy for "knowledge elites": subscriber density to the *Encyclopédie*
     - *Unrelated* to literacy pre-1800
     - Pre-Revolution: knowledge elites and demand for modernization
     - Post-Revolution (1833-1850): knowledge elites and expansion of mass education and modernization
Main Findings

Pre-Revolution:
- Relatively low demand for education / democratization among 3rd estate
  - 24% of counties demand national education, 42% state support in education, 38% "same law all classes"
  - Likely upper bound, since 3rd estate includes bourgeoisie
  - Even lower demand among first and second estate
- But: strong relationship with local knowledge elites

Post-Revolution:
- Local knowledge elites associated with
  - Increase in primary education
  - Modernization (assoc. membership, Republican votes, French-speaking)

⇒ Interaction between nation-wide institutional change and local knowledge elites (culture of Enlightenment)
Main Findings

Pre-Revolution:
- Relatively low demand for education / democratization among 3rd estate
  - 24% of counties demand national education, 42% state support in education, 38% "same law all classes"
  - Likely upper bound, since 3rd estate includes bourgeoisie
  - Even lower demand among first and second estate
- But: strong relationship with local knowledge elites

Post-Revolution:
- Local knowledge elites associated with
  - Increase in primary education
  - Modernization (assoc. membership, Republican votes, French-speaking)

⇒ Interaction between nation-wide institutional change and local knowledge elites (culture of Enlightenment)
Main Findings

Pre-Revolution:
- Relatively low demand for education / democratization among 3rd estate
  - 24% of counties demand national education, 42% state support in education, 38% "same law all classes"
  - Likely upper bound, since 3rd estate includes bourgeoisie
  - Even lower demand among first and second estate
- But: strong relationship with local knowledge elites

Post-Revolution:
- Local knowledge elites associated with
  - Increase in primary education
  - Modernization (assoc. membership, Republican votes, French-speaking)
- Interaction between nation-wide institutional change and local knowledge elites (culture of Enlightenment)
Contribution to the Literature

- **Drivers of economic development**
  - *This paper: modernization with a ‘twist’*

- **Elites, education, and political participation**
  - Bourguignon and Verdier (2000); Glaeser et al. (2007)
  - *This paper: measuring demand for change*

- **Role of elites for expansion of education and democratization**
  - Sokoloff and Engerman (2000), Galor et al. (2009), Cinnirella and Hornung (2016)
  - *This paper: Importance of distinguishing between enlightened elites and land-holding elites.*
Structure of the Talk

- Historical background
  - Cahiers de Doléance
  - Primary education in France

- Data

- Empirical results
  - Pre-Revolution: *local* demand for education and modernization
  - Post-Revolution changes in education
  - Post-Revolution modernization

- Conclusions
Outline

1 Historical Background
   - Cahiers de Doléance
   - Primary education in France

2 Data

3 Empirical results
   - Pre-Revolution: local demand for education and modernization
   - Post-Revolution changes in education
   - Post-Revolution modernization

4 Conclusions
Cahiers de Doléances, 1788

- Tension French society ⇒ Louis XVI calls the Estates-General
- In every electoral district (bailliage), each estate (clergy, nobility, third estate) organized an assembly and endorsed a cahier
  - Record of grievances, complaints, suggestions, and demands
  - "The cahiers embodied the will of the community that endorsed it" (Shapiro and Markoff 1998, p.105)
- Elected representatives carried the cahiers to Versailles
- Overall, cahiers representative, thus comparable across districts.

The election of 1789 allowed a very wide suffrage, unprecedented for France if not for Europe and far more inclusive than the British parliamentary model of the time (Shapiro and Markoff 1998: 108)
Cahiers de Doléances, 1788

- Tension French society ⇒ Louis XVI calls the Estates-General
- In every electoral district (bailliage), each estate (clergy, nobility, third estate) organized an assembly and endorsed a cahier
  - Record of grievances, complaints, suggestions, and demands
  - "The cahiers embodied the will of the community that endorsed it" (Shapiro and Markoff 1998, p.105)
- Elected representatives carried the cahiers to Versaille
- Overall, cahiers representative, thus comparable across districts.

The election of 1789 allowed a very wide suffrage, unprecedented for France if not for Europe and far more inclusive than the British parliamentary model of the time (Shapiro and Markoff 1998: 108)
The French Revolution

*Critical juncture of history*

- Drastic institutional change in France (consequences in Europe as well)
  - Abolition of feudal system, simplification of legal system, etc...

- Objective: free population from tyranny

- Enlightened elites were at the forefront
  - They represented a progressive group in society, identifying themselves more with the Nation than with the king, and even promoting the renunciation of some of their most substantial real privileges (Chaussinand-Nogaret, 1985)
Popular Education in France

- **Before the Revolution in 1789**: mostly religious
- **Revolutionary Government**: failed attempt to reform primary schooling
- **Napoleon and Restoration (until 1830)**: attempt to repair chaos after revolution, return to reliance on Church for primary education
- **July Monarchy (1830-1848)**: Crucial period. Successful and comprehensive schooling reform; knowledge elites affect local implementation
- **Second Republic and Second Empire (1848-1870)**: completion of universal primary education system; central role for Catholic schools
Elites and Popular Education

- Important role of elites in the school reform of 1833
  - The 1833 law "relied on the voluntary effort of local notables to organize and develop education, both in the communes and through committees set up to supervise schools over a wider area." (Anderson, 1975: 31)

- Without local support, communes averse to centrally-imposed education:
  - School inspector greeted by mayor of a commune: "You would have done a great deal better, Sir, if you had brought us money to mend our roads; as for schools, we don’t want them"

- Elites attempted to instil Enlightenment values into the masses:
  - "children of all classes were...to develop in them republican manners, patriotism, and the love of labour...to elevate the soul and to render men worthy of liberty and equality." (Arnold 1861, p.25)
Elites and Popular Education

- Important role of elites in the school reform of 1833
  - The 1833 law "relied on the voluntary effort of local notables to organize and develop education, both in the communes and through committees set up to supervise schools over a wider area." (Anderson, 1975: 31)

- Without local support, communes averse to centrally-imposed education:
  - School inspector greeted by mayor of a commune: "You would have done a great deal better, Sir, if you had brought us money to mend our roads; as for schools, we don’t want them"

- Elites attempted to instil Enlightenment values into the masses:
  - "children of all classes were...to develop in them republican manners, patriotism, and the love of labour...to elevate the soul and to render men worthy of liberty and equality." (Arnold 1861, p.25)
Outline

1 Historical Background
   - Cahiers de Doléance
   - Primary education in France

2 Data

3 Empirical results
   - Pre-Revolution: local demand for education and modernization
   - Post-Revolution changes in education
   - Post-Revolution modernization

4 Conclusions
Data: Cahiers de Doléance

- Source: Hyslop (1934)
  - contents grouped in 49 categories
  - dummy on whether the *cahier* of each of the three estates in a given *bailliage* discussed the respective category.

- Identify those demanding national education and democratization.
- Principal component for education and democratization

---

**Cahier topics on Education**
- E1. Proposing some measure of national education
- E2. Etatisme in education

**Cahier topics on Democratization**
- D1. Approving vote by head
- D2. Demanding the same law for all classes
- D3. Most strongly democratic
- D4. Asking for publicity of governmental action
- D5. Asking for freedom of the press
Data

Proxy for knowledge elites

- List of more than 7,000 subscriptions to the *Great Encyclopédie* in 193 French cities in mid-18C France
- Subscriber density (*Subs.Density*): proxy for local scientific elites

Outcomes

- Education: School rate, literacy, number of school per capita
- Modernization: mutual aid societies, share of people/children speaking French, votes for progressive parties.
Outline

1 Historical Background
   - Cahiers de Doléance
   - Primary education in France

2 Data

3 Empirical results
   - Pre-Revolution: local demand for education and modernization
   - Post-Revolution changes in education
   - Post-Revolution modernization

4 Conclusions
Structure of the Talk

1. Historical Background
   - Cahiers de Doléance
   - Primary education in France

2. Data

3. Empirical results
   - Pre-Revolution: *local* demand for education and modernization
   - Post-Revolution changes in education
   - Post-Revolution modernization

4. Conclusions
Knowledge Elites and Demand for Education in 1789

\[ D_c = \beta \cdot S_c + \gamma X_c + \varepsilon_c , \]  

(1)

- \( D_c \): demands in *cahiers* in city \( c \)
- \( S_c \): density of knowledge elites
- \( X_i \): control variables (density of the nobility, land inequality, literacy, urban population, ports, presence of universities, printing presses, a dummy for Paris)
## Knowledge Elites and Demand for Education in 1789

**Dep. Var.: Demand for national education system in the *Cahiers the Doléance***

<table>
<thead>
<tr>
<th>Estates included:</th>
<th>Nobles and 3rd Estate</th>
<th>Nobles</th>
<th>3rd Estate</th>
<th>Clergy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td><em>lnSubDens</em></td>
<td>0.606**</td>
<td>0.685***</td>
<td>0.350*</td>
<td>0.562***</td>
</tr>
<tr>
<td></td>
<td>(0.274)</td>
<td>(0.244)</td>
<td>(0.185)</td>
<td>(0.201)</td>
</tr>
<tr>
<td>Land Inequality</td>
<td>-0.697</td>
<td>-1.773</td>
<td>0.072</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.432)</td>
<td>(1.267)</td>
<td>(1.169)</td>
<td></td>
</tr>
<tr>
<td><em>lnNoblesDens</em></td>
<td>2.073</td>
<td>0.803</td>
<td>1.906*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.939)</td>
<td>(1.566)</td>
<td>(1.092)</td>
<td></td>
</tr>
<tr>
<td>Literacy 1786</td>
<td>-0.420</td>
<td>0.344</td>
<td>-1.195*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.781)</td>
<td>(0.695)</td>
<td>(0.623)</td>
<td></td>
</tr>
<tr>
<td>Additional Controls</td>
<td>✓✓✓✓✓✓</td>
<td>✓✓✓✓✓✓</td>
<td>✓✓✓✓✓✓</td>
<td></td>
</tr>
<tr>
<td><em>R²</em></td>
<td>0.13</td>
<td>0.31</td>
<td>0.30</td>
<td>0.26</td>
</tr>
<tr>
<td>Observations</td>
<td>149</td>
<td>135</td>
<td>142</td>
<td>148</td>
</tr>
</tbody>
</table>

**Magnitude: subscriber density**

| beta coeff. *lnSubDensity* | 0.350 | 0.395 | 0.235 | 0.392 | 0.092 | 0.136 |
| beta coeff. Literacy 1786  | -0.057| 0.055 | -0.199|       | 0.360|       |

**Notes:** Standard errors (clustered at the department level) in parentheses. * p<0.1, ** p<0.05, *** p<0.01. All regressions are run at the city level and are weighted by population in 1750. Columns 1 and 2 use *cahiers* "proposing some measure of national education" and *cahiers* on "etatisme (government involvement) in education" for the nobility and the third estate. Column 3 uses the same *cahiers*, but only for the nobility, and column 4 only for the third estate. Columns 5 and 6 perform a placebo exercise and use the same *cahiers* for the clergy. The dependent variable is the principal component of the indicated categories, based on dummies for whether the *cahiers* of the *bailliage* (county) corresponding to a city raised the issue in question, as coded by Hyslop (1968). ‡ Controls include department level urban population in 1750, dummies for cities with ports on the Atlantic Ocean or located on a navigable river, a dummy for cities that hosted a University before 1750, a dummy for cities where a printing press was established before 1500, the (log) number of noble families per capita in each French department, and a dummy for Paris.

‡ Controls include department level urban population in 1750, dummies for cities with ports on the Atlantic Ocean or located on a navigable river, a dummy for cities that hosted a University before 1750, a dummy for cities where a printing press was established before 1500, the (log) number of noble families per capita in each French department, and a dummy for Paris.
Knowledge Elites and Demand for Democracy in 1789

<table>
<thead>
<tr>
<th>Dependent var.</th>
<th>Nobles and 3rd Estate</th>
<th>Nobles</th>
<th>3rd Estate</th>
<th>Clergy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>lnSubDens</td>
<td>0.392*</td>
<td>0.384**</td>
<td>0.460**</td>
<td>0.145</td>
</tr>
<tr>
<td></td>
<td>(0.226)</td>
<td>(0.185)</td>
<td>(0.191)</td>
<td>(0.177)</td>
</tr>
<tr>
<td>Land Inequality</td>
<td>-0.092</td>
<td>0.688</td>
<td>-1.016</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.426)</td>
<td>(1.261)</td>
<td>(1.150)</td>
<td></td>
</tr>
<tr>
<td>lnNoblesDens</td>
<td>1.817</td>
<td>1.265</td>
<td>1.840</td>
<td>1.455</td>
</tr>
<tr>
<td></td>
<td>(1.839)</td>
<td>(1.520)</td>
<td>(1.118)</td>
<td></td>
</tr>
<tr>
<td>Literacy 1786</td>
<td>1.372</td>
<td>0.198</td>
<td>0.859</td>
<td>0.256</td>
</tr>
<tr>
<td></td>
<td>(0.866)</td>
<td>(0.792)</td>
<td>(0.548)</td>
<td></td>
</tr>
<tr>
<td>Additional Controls</td>
<td>✓✓✓✓✓✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.26</td>
<td>0.36</td>
<td>0.26</td>
<td>0.45</td>
</tr>
<tr>
<td>Observations</td>
<td>149</td>
<td>135</td>
<td>142</td>
<td>148</td>
</tr>
</tbody>
</table>

Magnitude: subscriber density

| beta coeff. lnSubDensity | 0.189 | 0.212 | 0.303 | 0.083 | 0.021 | -0.041 |

Notes: Standard errors (clustered at the department level) in parentheses. * p<0.1, ** p<0.05, *** p<0.01. All regressions are run at the city level and are weighted by population in 1750. Columns 1 and 2 use cahiers "approving vote by head", cahiers "that were most strongly democratic", cahiers "demanding the same law for all classes", cahiers "asking for publicity of governmental action", and cahiers "asking for freedom of the press". Column 3 uses the same cahiers, but only for the nobility, and column 4 only for the third estate. Columns 5 and 6 use the same cahiers for the clergy. The dependent variable is the principal component of the indicated categories, based on dummies for whether the cahiers of the bailliage (county) corresponding to a city raised the issue in question, as coded by Hyslop (1968).

‡ Controls include department level urban population in 1750, dummies for cities with ports on the Atlantic Ocean or located on a navigable river, a dummy for cities that hosted a University before 1750, a dummy for cities where a printing press was established before 1500, the (log) number of noble families per capita in each French department, and a dummy for Paris.
## Knowledge Elites and Economic Demands

<table>
<thead>
<tr>
<th>Dependent var.</th>
<th>Demand for Liberalism</th>
<th>Demand for Mercantilism</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>lnSubDens</td>
<td>0.074</td>
<td>0.076</td>
</tr>
<tr>
<td></td>
<td>(0.246)</td>
<td>(0.143)</td>
</tr>
<tr>
<td>Land Inequality</td>
<td>-1.913</td>
<td>0.992</td>
</tr>
<tr>
<td></td>
<td>(1.298)</td>
<td>(0.672)</td>
</tr>
<tr>
<td>lnNoblesDens</td>
<td>0.355</td>
<td>-0.707</td>
</tr>
<tr>
<td></td>
<td>(0.700)</td>
<td>(0.575)</td>
</tr>
<tr>
<td>Literacy 1786</td>
<td>-1.250*</td>
<td>1.934</td>
</tr>
<tr>
<td></td>
<td>(0.703)</td>
<td>(1.241)</td>
</tr>
<tr>
<td>Additional Controls</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>R²</td>
<td>0.28</td>
<td>0.46</td>
</tr>
<tr>
<td>Observations</td>
<td>149</td>
<td>135</td>
</tr>
</tbody>
</table>

### Notes:
- Standard errors (clustered at the department level) in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.01. All regressions are run at the city level and are weighted by population in 1750. Column 1 and 2 use cahiers proposing "the suppression of the guilds" and cahiers "showing only liberal economic demand" for the nobility and the third estate. Columns 3 and 4 use cahiers proposing "the maintenance of the guilds" and cahiers "showing only mercantilist demand" for the nobility and the third estate. The dependent variable is the principal component of the indicated categories, based on dummies for whether the cahiers of the bailliage (county) corresponding to a city raised the issue in question, as coded by Hyslop (1968).  
- Controls include department level urban population in 1750, dummies for cities with ports on the Atlantic Ocean or located on a navigable river, a dummy for cities that hosted a University before 1750, a dummy for cities where a printing press was established before 1500, the (log) number of noble families per capita in each French department, and a dummy for Paris.
Structure of the Talk

1. Historical Background
   - Cahiers de Doléance
   - Primary education in France

2. Data

3. Empirical results
   - Pre-Revolution: local demand for education and modernization
   - Post-Revolution changes in education
   - Post-Revolution modernization

4. Conclusions
Knowledge Elites and Schooling after 1789

\[ y_c = \beta \cdot S_c + \gamma X_c + \varepsilon_c , \]  

- \( y_c \): several outcomes for schooling expansion
- \( S_c \): density of knowledge elites
- \( X_i \): control variables (density of the nobility, land inequality, literacy, urban population, ports, presence of universities, printing presses, a dummy for Paris)
### Schooling after the French Revolution

<table>
<thead>
<tr>
<th>Dependent var.</th>
<th>School Rate</th>
<th>Literacy</th>
<th>Schools per 10,000 inhabitants</th>
<th>Schools Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1837 1876</td>
<td>1876</td>
<td>1829 1850 1876</td>
<td>1829-50 1850-76</td>
</tr>
<tr>
<td>lnSubDens</td>
<td>(0.018) 0.039** (0.014) 0.045*** (0.015) 0.032**</td>
<td>(0.063) 0.091 (0.032) 0.084** (0.025) 0.078***</td>
<td>(0.025) 0.057** (0.018) 0.017</td>
<td></td>
</tr>
<tr>
<td>Land Inequality</td>
<td>0.043 (0.142) -0.097 (0.077)</td>
<td>0.316 (0.658) -0.141 (0.257) -0.050 (0.167)</td>
<td>-0.184 (0.209) -0.027 (0.150)</td>
<td></td>
</tr>
<tr>
<td>lnNoblesDens</td>
<td>0.671 (0.624) 1.026** (0.396) (0.463)</td>
<td>4.486** (2.237) 0.433 (1.179) -0.291 (1.038)</td>
<td>-1.124 (0.868) -0.660 (0.776)</td>
<td></td>
</tr>
<tr>
<td>Literacy 1786</td>
<td>0.885*** (0.111) 0.348*** (0.059) 0.577*** (0.059)</td>
<td>2.316*** (0.344) 1.085*** (0.148) 0.762*** (0.127)</td>
<td>0.329** (0.139) 0.071 (0.095)</td>
<td></td>
</tr>
<tr>
<td>Additional Controls</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.65 0.49 0.62</td>
<td>0.53 0.64 0.81</td>
<td>0.82 0.58</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>74 74 74</td>
<td>74 74 74</td>
<td>74 74</td>
<td></td>
</tr>
</tbody>
</table>

Magnitude of subscriber density and initial literacy

| beta coeff. lnSubDensity | 0.143 0.295 0.151 | 0.114 0.156 0.135 | 0.087 0.072 |
| beta coeff. Literacy 1786 | 0.808 0.580 0.725 | 0.694 0.550 0.355 | 0.168 0.086 |

**Notes:** All regressions are run at the department level and are weighted by population in 1831. Controls include department level population in 1831, the density of the nobility in 1790, and a dummy for Paris. Robust standard errors in parentheses. * p<0.1, ** p<0.05, *** p<0.01.
Notes: The y-axis shows the coefficient on Encyclopédie subscriber density in a regression where the dependent variable is departement-level expenditure for primary schools. Control variables are literacy in 1786-90, the density of noble families in 1790, log population in the respective decade, and a dummy for Paris.
Is expansion of schooling driven by skill demand?

Unlikely: presence of knowledge elites is associated with lower skill premium

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>lnSubDens</strong></td>
<td>0.057***</td>
<td>0.092***</td>
<td>0.085***</td>
<td>0.051**</td>
<td>0.147***</td>
<td>0.048</td>
</tr>
<tr>
<td></td>
<td>(0.011)</td>
<td>(0.025)</td>
<td>(0.026)</td>
<td>(0.025)</td>
<td>(0.035)</td>
<td>(0.029)</td>
</tr>
<tr>
<td>School Rate 1837</td>
<td>0.213***</td>
<td>0.241***</td>
<td>0.267***</td>
<td>0.320***</td>
<td>0.278***</td>
<td>0.051***</td>
</tr>
<tr>
<td></td>
<td>(0.062)</td>
<td>(0.066)</td>
<td>(0.068)</td>
<td>(0.085)</td>
<td>(0.082)</td>
<td></td>
</tr>
<tr>
<td>lnSubDens x School Rate</td>
<td>-0.075</td>
<td>-0.083</td>
<td>-0.043</td>
<td>-0.159**</td>
<td>-0.051</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.056)</td>
<td>(0.053)</td>
<td>(0.058)</td>
<td>(0.067)</td>
<td>(0.060)</td>
<td></td>
</tr>
<tr>
<td>Establishment size</td>
<td>0.021***</td>
<td>0.020***</td>
<td>0.020***</td>
<td>0.022***</td>
<td>-0.019*</td>
<td>0.051***</td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.006)</td>
<td>(0.007)</td>
<td>(0.008)</td>
<td>(0.010)</td>
<td>(0.009)</td>
</tr>
<tr>
<td>Urbanization Rate</td>
<td>0.673***</td>
<td>0.671***</td>
<td>0.753***</td>
<td>0.000</td>
<td>0.791***</td>
<td>0.777***</td>
</tr>
<tr>
<td></td>
<td>(0.077)</td>
<td>(0.078)</td>
<td>(0.077)</td>
<td>(.)</td>
<td>(0.098)</td>
<td>(0.073)</td>
</tr>
</tbody>
</table>

**Notes:** All regressions are run at the arrondissement level. Controls include department level population in 1831, dummies for arrondissements with ports on the Atlantic Ocean or located on a navigable river, a dummy for arrondissements that hosted a University before 1750, a dummy for cities where a printing press was established before 1500, and a dummy for Paris. Standard errors (clustered at the department level) in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.01.
Structure of the Talk

1. Historical Background
   - Cahiers de Doléance
   - Primary education in France

2. Data

3. Empirical results
   - Pre-Revolution: *local* demand for education and modernization
   - Post-Revolution changes in education
   - Post-Revolution modernization

4. Conclusions
‘Civic-mindedness’

- Social capital crucial pillar of democracy (Putnam)
- Associations in France suppressed prior to 1848
- Then some relaxation, but repression until 1901 for most of them
- Among the few allowed: mutual aid societies
  - Locally-rooted; emerged from confraternities (cheritable religious associations) and trade guilds
  - Tolerated and encouraged by the state after 1848 "as promoters of social order, as potentially effective intermediaries between the individual and the State." (Baker 2004)
  - Main purpose: protect members against consequences of not being able to work
Other measures of modernization

- Proxy for state building
  - Share of French speaking population 1863
  - Share of French speaking children 1863

- Share of votes to the Republican parties
  - the Modérés et Libéraux, the Radicaux socialistes, the Radicaux, the Socialistes, and the Ralliés – opposed to the reactionary coalition (Monarchistes and Revisionistes).
  - extent to which the spirit of modernization was anchored in the population.
## Knowledge elites and modernization post-1789

<table>
<thead>
<tr>
<th>Dependent var.</th>
<th>Mutual aid societies 1878</th>
<th>French speaking 1863</th>
<th>Share rep. votes 1876</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Members per disp. income</td>
<td>Nr. of societies per disp. income</td>
<td>Share population</td>
</tr>
<tr>
<td>InSubDens</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>lnSubDensity</td>
<td>0.226**</td>
<td>0.215**</td>
<td>0.263**</td>
</tr>
<tr>
<td>(0.093)</td>
<td>(0.082)</td>
<td>(0.115)</td>
<td>(0.112)</td>
</tr>
<tr>
<td>Literacy 1786</td>
<td>-0.409</td>
<td>-0.678</td>
<td>-0.998**</td>
</tr>
<tr>
<td>(0.380)</td>
<td>(0.440)</td>
<td>(0.454)</td>
<td>(0.556)</td>
</tr>
<tr>
<td>Non-French Dept</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Controls</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>5th order polyn. in income pc and urb. rate</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.25</td>
<td>0.43</td>
<td>0.19</td>
</tr>
<tr>
<td>Observations</td>
<td>73</td>
<td>73</td>
<td>73</td>
</tr>
</tbody>
</table>

### Magnitude of subscriber density and initial literacy

| beta coeff. InSubDensity | 0.265 | 0.253 | 0.254 | 0.248 | 0.182 | 0.171 | 0.254 |
| beta coeff. Literacy 1786 | -0.123 | -0.204 | -0.247 | -0.332 | 0.415 | 0.461 | 0.191 |

**Notes:** Robust standard errors in parentheses. * *p < 0.1, ** p < 0.05, *** p < 0.01. All regressions are run at the department level and are weighted by population in 1871. Additional controls include literacy in 1786-90, the density of noble families in 1790, land inequality, log population in the respective decade, and a dummy for Paris. Col. 7 controls also for election turnout in 1876.
## ‘Modernization’ Index

Index: First Principal Component of Mutual aid societies (per income), share French-speaking, and share of Republican votes

<table>
<thead>
<tr>
<th>Dependent var.: Modernization index</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\ln \text{SubDens}$</td>
<td>0.356***</td>
<td>0.285**</td>
<td>0.147</td>
</tr>
<tr>
<td></td>
<td>(0.133)</td>
<td>(0.119)</td>
<td>(0.139)</td>
</tr>
<tr>
<td>Land Inequality</td>
<td>0.161</td>
<td>0.412</td>
<td>1.199</td>
</tr>
<tr>
<td></td>
<td>(1.071)</td>
<td>(1.063)</td>
<td>(1.086)</td>
</tr>
<tr>
<td>$\ln \text{NoblesDens}$</td>
<td>-0.619</td>
<td>-0.076</td>
<td>-3.266</td>
</tr>
<tr>
<td></td>
<td>(5.090)</td>
<td>(4.407)</td>
<td>(5.178)</td>
</tr>
<tr>
<td>Literacy 1786</td>
<td>1.202*</td>
<td>1.175*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.635)</td>
<td>(0.601)</td>
<td></td>
</tr>
<tr>
<td>School Rate 1876</td>
<td></td>
<td></td>
<td>2.774**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1.190)</td>
</tr>
<tr>
<td>Additional Controls</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Income pc and urb. rate</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>5th order polyn. in income pc and urb. rate</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.43</td>
<td>0.57</td>
<td>0.55</td>
</tr>
<tr>
<td>Observations</td>
<td>74</td>
<td>74</td>
<td>77</td>
</tr>
</tbody>
</table>

Notes: Robust standard errors in parentheses. * $p<0.1$, ** $p<0.05$, *** $p<0.01$. All regressions are run at the department level and are weighted by population in 1876. Control variables are literacy in 1786-90, the density of noble families in 1790, log population in the respective decade, and a dummy for Paris.
Outline

1 Historical Background
   - Cahiers de Doléance
   - Primary education in France

2 Data

3 Empirical results
   - Pre-Revolution: local demand for education and modernization
   - Post-Revolution changes in education
   - Post-Revolution modernization

4 Conclusions
Conclusions

This paper

- Measure demand for change (associated with knowledge elites)
- Role of knowledge elites for expansion of education / modernization

Key interaction between local "culture" and nation-wide institutions

- Change in central institutions opens a window of opportunity for local elites to push modernization (in the spirit of critical junctures)

Modernization with a ‘twist’

- Upper-tail enlightenment precedes mass education
- Purely economic motives unlikely for expansion of schooling. More likely: enlightenment culture of elites
Conclusions

This paper
- Measure demand for change (associated with knowledge elites)
- Role of knowledge elites for expansion of education / modernization

Key interaction between local "culture" and nation-wide institutions
- Change in central institutions opens a window of opportunity for local elites to push modernization (in the spirit of critical junctures)

Modernization with a ‘twist’
- Upper-tail enlightenment precedes mass education
- Purely economic motives unlikely for expansion of schooling. More likely: enlightenment culture of elites
No Relationship between Encyclopedia Subscriptions and Literacy before the French Revolution

Notes: Binscatter plot, grouping the x-axis into 20 equal-sized bins. Departement-level analysis.
Evidence from the *Cahiers de Doléance* (1788): Knowledge Elites and Demand for National Education

*Notes*: Binscatter plot, grouping the x-axis into 20 equal-sized bins. City/bailliage-level analysis.