Financial Education and Debt Repayment of Young Adults

Alexandra Brown\textsuperscript{1} J. Michael Collins\textsuperscript{2} Maximilian Schmeiser\textsuperscript{1} Carly Urban\textsuperscript{3}

\textsuperscript{1}Federal Reserve Board
\textsuperscript{2}University of Wisconsin-Madison
\textsuperscript{3}Department of Agricultural Economics and Economics Montana State University

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Financial literacy in the U.S. is generally low, but financial knowledge amongst young adults is particularly weak:

- Less than $\frac{1}{3}$ of Americans ages 23 to 28 possess basic knowledge of interest rates, inflation and risk diversification.

Low levels of financial literacy have been associated with:

- lower rate of asset accumulation
- lower stock market participation
- higher levels of debt
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Policymakers calls for increasing financial literacy in the U.S.

- One response: Expand K-12 personal finance and economic education requirements.

- Existing body of research on the effectiveness of personal finance education yields conflicting findings at best.

- This paper: examine the effect of state financial education mandates
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Financial Education

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- This paper: examine the effect of state financial education mandates
Mechanisms

- Borrowers can behave counter to their own long-run preferences
- Consumption in the current period that results in missing loan payments
- Could fail to fully appreciate future costs of this in the present
- Problem may be even worse for relatively naive young adults
- Education may focus limited cognitive attention to financial issues
This Paper

Question: What are the effects of personal finance education mandates in high school on credit behavior in early adulthood?

- Georgia and Texas implemented personal finance competency requirements in 2007
  - did not implement other curriculum changes at the same time
- Nearby state(s) had no comparable education policy shifts
- Using border-state, compare areas using difference-in-differences in loan repayment rates for students exposed to financial education competency mandates
- Across state; before and after implementation to the change
Approach

- Researched each mandate: standardized curricula, graduation requirements, testing requirements, teacher training, etc.
- Begin ‘treatment’ with first class affected by mandate, not following passage of mandate.
- Use panel from the Consumer Credit Panel (CCP) to determine if young adults (18-22) have better financial outcomes after exposure to financial education.
Adding mandate for financial education makes financial management more salient.

- Reminder to avoid missing payments (a common behavior for young people)
- Attention to importance of on-time payments results in fewer delinquencies/defaults.
Data Sources

Collect data on financial education mandates from 2000 to present from:

- Jump$tart Coalition for Personal Financial Literacy
- Council for Economic Education (CEE) Survey of the States
- Champlain College Center for Financial Literacy
  - In many cases, Jump$tart and CEE conflict.
  - Heterogeneity in actual implementation (vs. mandate) matters.
- Direct contact with states, graduation requirement documents, standardized curriculum
Consumer Credit Panel Data

Credit bureau data from the FRBNY/Equifax Consumer Credit Panel

- 5% household sample of Equifax records (includes all household members with credit files)
- Quarterly panel data—observe when first have data reported
- Assume age 18 = graduation year.
- Assume went to high school in current state in credit report address.
- Restrict the sample to those 18-22 (1stQ) years of age.

Dependent variables:

- Credit score (Equifax risk score)
- Delinquency: Any account 30, or 90+ days delinquent
Empirical Strategy: Difference-in-Differences

\[ Y_{ist} = \alpha_0 + \beta_1 (T_s \times P_{1it}) + \beta_2 (T_s \times P_{2it}) + \beta_3 (T_s \times P_{3it}) + \gamma_1 u_{it} + \delta_s + \kappa X_{it} + \eta_t + \epsilon_{ist} \]

- \( Y_{ist} \): credit score, any trade delinquency, and auto trade delinquency
- \( T_s \): 1 if state was treated
- \( T_s \times P_{1, 2, 3it} \): 1 if received education 2008, 2009, or 2010
- \( u_{it} \): unemployment rate in the county
- \( n_i \): number of quarters of individual’s credit file
- \( \delta_s \): state fixed effects
- \( X_{it} \): number of credit accounts for individual i
- \( \eta_t \): quarter by year fixed effects
<table>
<thead>
<tr>
<th></th>
<th>GA</th>
<th>Border (FL)</th>
<th>TX</th>
<th>Border (NM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Score</td>
<td>606.5</td>
<td>611.2</td>
<td>609.3</td>
<td>614.3</td>
</tr>
<tr>
<td></td>
<td>(89.40)</td>
<td>(88.10)</td>
<td>(88.50)</td>
<td>(87.20)</td>
</tr>
<tr>
<td>Number of Accounts</td>
<td>2.1</td>
<td>2.4</td>
<td>2.4</td>
<td>2.2</td>
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<tr>
<td></td>
<td>(2.20)</td>
<td>(2.60)</td>
<td>(2.50)</td>
<td>(2.20)</td>
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<tr>
<td>Account 30 Days Delinquent</td>
<td>0.158</td>
<td>0.158</td>
<td>0.149</td>
<td>0.138</td>
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<tr>
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<td>(0.36)</td>
<td>(0.36)</td>
<td>(0.36)</td>
<td>(0.34)</td>
</tr>
<tr>
<td>Account 90 + Days Delinquent</td>
<td>0.182</td>
<td>0.181</td>
<td>0.178</td>
<td>0.159</td>
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<tr>
<td></td>
<td>(0.39)</td>
<td>(0.38)</td>
<td>(0.38)</td>
<td>(0.37)</td>
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<tr>
<td>Auto 30 Days Delinquent</td>
<td>0.036</td>
<td>0.031</td>
<td>0.032</td>
<td>0.03</td>
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<tr>
<td></td>
<td>(0.19)</td>
<td>(0.17)</td>
<td>(0.18)</td>
<td>(0.17)</td>
</tr>
<tr>
<td>Auto 90 + Days Delinquent</td>
<td>0.013</td>
<td>0.01</td>
<td>0.008</td>
<td>0.011</td>
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<tr>
<td></td>
<td>(0.11)</td>
<td>(0.10)</td>
<td>(0.09)</td>
<td>(0.10)</td>
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<tr>
<td>County Unemployment Rate</td>
<td>5.1</td>
<td>4.9</td>
<td>5.6</td>
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<tr>
<td></td>
<td>(1.70)</td>
<td>(1.76)</td>
<td>(1.57)</td>
<td>(1.58)</td>
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<tr>
<td>State Level % Some College</td>
<td>25.9</td>
<td>28.9</td>
<td>27.7</td>
<td>28.8</td>
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<tr>
<td></td>
<td>(4.58)</td>
<td>(3.07)</td>
<td>(3.86)</td>
<td>(3.11)</td>
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<tr>
<td>Number of Individuals</td>
<td>55,081</td>
<td>112,735</td>
<td>153,807</td>
<td>12,625</td>
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Treatment Effect: Difference in Difference by Graduation Year: Georgia vs. Florida

<table>
<thead>
<tr>
<th></th>
<th>(1) Credit Score 30 Days Del</th>
<th>(2) 90+ Days Del</th>
<th>(3) Auto 30 Days Del</th>
<th>(4) Auto 90+ Days Del</th>
</tr>
</thead>
<tbody>
<tr>
<td>08 Grad</td>
<td>-0.529</td>
<td>-0.002*</td>
<td>-0.005***</td>
<td>-0.003</td>
</tr>
<tr>
<td></td>
<td>(0.407)</td>
<td>(0.001)</td>
<td>(0.001)</td>
<td>(0.002)</td>
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<tr>
<td>09 Grad</td>
<td>6.293***</td>
<td>-0.002</td>
<td>-0.0136***</td>
<td>-0.005**</td>
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<td></td>
<td>(0.410)</td>
<td>(0.001)</td>
<td>(0.001)</td>
<td>(0.002)</td>
</tr>
<tr>
<td>10 Grad</td>
<td>10.89***</td>
<td>-0.007***</td>
<td>-0.018***</td>
<td>-0.013***</td>
</tr>
<tr>
<td></td>
<td>(0.486)</td>
<td>(0.001)</td>
<td>(0.002)</td>
<td>(0.002)</td>
</tr>
<tr>
<td>N</td>
<td>1,632,241</td>
<td>1,407,663</td>
<td>1,407,663</td>
<td>329,800</td>
</tr>
</tbody>
</table>

Notes: Robust standard errors clustered at the individual level in parentheses. * p < 0.10, ** p < 0.05, *** p < 0.01. 2008 was first graduating class affected by the requirement. Models include state-level and quarter by year fixed effects, unemployment rate in the state and year of graduation, and number of accounts.
## Treatment Effect: Difference in Difference by Graduation Year: Texas vs. New Mexico

<table>
<thead>
<tr>
<th></th>
<th>(1) Credit Score</th>
<th>(2) 30 Days Del</th>
<th>(3) 90+ Days Del</th>
<th>(4) Auto 30 Days Del</th>
<th>(5) Auto 90+ Days Del</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>5.182***</td>
<td>0.0009</td>
<td>-0.0150***</td>
<td>-0.0076***</td>
<td>-0.0013*</td>
</tr>
<tr>
<td></td>
<td>(0.299)</td>
<td>(0.0007)</td>
<td>(0.0009)</td>
<td>(0.0010)</td>
<td>(0.0008)</td>
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<tr>
<td>2009</td>
<td>16.30***</td>
<td>-0.0019**</td>
<td>-0.035***</td>
<td>-0.0105***</td>
<td>-0.00408***</td>
</tr>
<tr>
<td></td>
<td>(0.324)</td>
<td>(0.0007)</td>
<td>(0.001)</td>
<td>(0.001)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>2010</td>
<td>31.71***</td>
<td>-0.0057***</td>
<td>-0.0576***</td>
<td>-0.0130***</td>
<td>-0.00628***</td>
</tr>
<tr>
<td></td>
<td>(0.388)</td>
<td>(0.0009)</td>
<td>(0.0012)</td>
<td>(0.0019)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>N</td>
<td>1,585,593</td>
<td>1,669,260</td>
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<td>1,669,260</td>
</tr>
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Summary

- Georgia
  - grads after policy have credit scores 11 points higher
  - 30 day delinquency lower by 4.2 percent (marginal effect from mean)
  - 90 plus days delinquency about 10 percent

- Texas
  - grads credit scores are over 31.7 points larger
  - 90 plus days delinquent is much larger—almost 5.8 percentage points—translates into 1/3rd fewer severe delinquencies
Implications

- Younger people have lower credit scores—learning by experience
- Nearly a quarter are 30 or more behind on at least one account
- Payments have big effect on the credit score of someone with a brief credit history.

- However, many cautions...
  - Longer-run persistence into later adulthood unknown—may just jump start trial and error learning
  - Displacement of other curricula could have offsetting effects
  - Time period specific issues—2009-2012—during recession