How Deep in Debt?
How Levels of Unsecured Debt Affect Hardship Among Low- and Middle-Income Households

by Stephen Roll, Sam Bufe, Mat Despard and Michal Grinstein-Weiss
Background on Debt and Hardship

- Low- and Middle-Income (LMI) households tend to have lower levels of liquid assets.\(^1\)
- With lower asset levels, LMI households tend to smooth consumption by taking on debt,\(^2\) often at high interest.\(^3\)
- Researchers have found that households with higher levels of debt are more likely to experience poor mental health,\(^4\) poor physical health,\(^5\) and food insecurity.\(^6\)

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Secured Debt vs Unsecured Debt

- **Secured Debt** – Debt that is backed by an asset or collateral
  - Mortgage or car loan

- **Unsecured Debt** – Debt that is **NOT** backed by assets or collateral
  - Credit card debt, payday loan debt, or negative balances
Motivation: Why Unsecured Debt?

Probability of Food Insecurity
Motivation: Why Unsecured Debt?

Probability of Rent Hardship

Unsecured Debt

- Credit Card Debt
- Payday Loans
- Negative Balances

Secured Debt

- Car Loan
- Home Loan
Unsecured Debt’s Impact on Hardship Depends on the Level of Unsecured Debt

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Data Background

- Refund to Savings (R2S) applies the principles of behavioral economics in TurboTax Freedom Edition to improve the savings behaviors of LMI online tax filers.
- Immediately after filing, taxpayers are randomly invited to take the Household Financial Survey (HFS).
- Six months later, HFS respondents are invited to take the second wave of the survey.
Data Background (continued)

• Survey responses are merged with administrative tax data from TTFE.
• Sample includes the 18,893 respondents who completed both waves of the survey in one of the years from 2013 to 2016 and had unsecured debt during the first wave of the survey.
Methods

- **Goal**: identify the points at which unsecured debt begin to cause hardship in LMI households
- 1) Break unsecured debt into five quintiles.
- 2) Use **Coarsened Exact Matching** (CEM) to account for selection into debt quintile.
- 3) Regress debt quintiles on different measures of hardship to understand the **shape of the impact**.
## Description of Debt Quintiles

<table>
<thead>
<tr>
<th></th>
<th>Quintile 1</th>
<th>Quintile 2</th>
<th>Quintile 3</th>
<th>Quintile 4</th>
<th>Quintile 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsecured Debt ($)</td>
<td>202</td>
<td>724</td>
<td>1,648</td>
<td>3,948</td>
<td>14,029</td>
</tr>
<tr>
<td>AGI ($)</td>
<td>14,481</td>
<td>16,771</td>
<td>17,797</td>
<td>18,120</td>
<td>18,591</td>
</tr>
<tr>
<td>Liquid Assets ($)</td>
<td>931</td>
<td>968</td>
<td>1,042</td>
<td>991</td>
<td>867</td>
</tr>
<tr>
<td>Federal Refund ($)</td>
<td>1,469</td>
<td>1,790</td>
<td>1,964</td>
<td>2,081</td>
<td>2,169</td>
</tr>
<tr>
<td>Age</td>
<td>32</td>
<td>34</td>
<td>35</td>
<td>36</td>
<td>39</td>
</tr>
<tr>
<td>Owes on Home (%)</td>
<td>10.7</td>
<td>13.8</td>
<td>16.4</td>
<td>18.7</td>
<td>28.8</td>
</tr>
<tr>
<td>Full-Time Student (%)</td>
<td>28.7</td>
<td>23.7</td>
<td>20.9</td>
<td>17.9</td>
<td>13.8</td>
</tr>
</tbody>
</table>
Methods: Coarsened Exact Matching

- Adjusted Gross Income
- Liquid Asset Level
- Federal Refund Size
- Other non-mortgage debt
- Amount owed on home
- Number of financial shocks in the six months prior to tax-filing
- Number of hardships prior to tax-filing
- Employment Status
- Insurance Status
General Model for Analysis

- $hardship_{t+1} = \alpha + \beta_1 Q2_t + \beta_2 Q3_t + \beta_3 Q4_t + \beta_4 Q5_t + hardship_t + Controls + Error$

  - Hardships: Food insecurity, skipping regular bills, skipping medical care, and skipping rent / mortgage payment.
  - Q: Quintile of Unsecured Debt

- Controlling for household demographics, types of unsecured debt, and financial characteristics.
\[ hardship_{t+1} = \alpha + \beta_1 Q2_t + \beta_2 Q3_t + \beta_3 Q4_t + \beta_4 Q5_t + hardship_t + Controls + Error \]

**Tipping Point –**
Any quintile which as a coefficient that is statistically different from the quintile before it.
## Results: Debt Quintile and Hardship

<table>
<thead>
<tr>
<th>Quintile #</th>
<th>Food Insecurity</th>
<th>Skip Regular Bills</th>
<th>Skip Medical Care</th>
<th>Skip Rent or Housing Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>#2</td>
<td>0.011</td>
<td>0.021**</td>
<td>0.018*</td>
<td>0.014*</td>
</tr>
<tr>
<td>#3</td>
<td>0.001</td>
<td>0.024**</td>
<td>-0.002</td>
<td>0.014*</td>
</tr>
<tr>
<td>#4</td>
<td>0.019*</td>
<td>0.019*</td>
<td>0.013</td>
<td>0.018**</td>
</tr>
<tr>
<td>#5</td>
<td>0.043***</td>
<td>0.036***</td>
<td>0.024**</td>
<td>0.019**</td>
</tr>
<tr>
<td>CEM Weights</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Tipping Point</td>
<td>Q4 &amp; Q5</td>
<td>Q2</td>
<td>Q2</td>
<td>Q2</td>
</tr>
</tbody>
</table>
# Results: Debt Quintile and Hardship

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</tr>
</thead>
<tbody>
<tr>
<td>#2</td>
<td>0.020</td>
<td>0.025*</td>
<td>0.021</td>
<td>0.013</td>
</tr>
<tr>
<td>#3</td>
<td>0.021</td>
<td>0.018</td>
<td>-0.029</td>
<td>0.014</td>
</tr>
<tr>
<td>#4</td>
<td><strong>0.060</strong>*</td>
<td><strong>0.037</strong></td>
<td>0.025</td>
<td>0.011</td>
</tr>
<tr>
<td>#5</td>
<td><strong>0.053</strong>*</td>
<td><strong>0.060</strong>*</td>
<td>0.002</td>
<td>0.018</td>
</tr>
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<td>CEM Weights</td>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Tipping Point</td>
<td>Q4</td>
<td>Q2</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

- * indicates significance at the 0.1 level.
- ** indicates significance at the 0.05 level.
- *** indicates significance at the 0.01 level.
Coefficients of Unsecured Debt

**Food Insecurity**

- $401 - $1,000
- $1,001 - $2,200
- $2,221 - $6,000
- $6,000 +

**Skip Regular Bills**

- $401 - $1,000
- $1,001 - $2,200
- $2,221 - $6,000
- $6,000 +

**Skip Medical Care**

- $401 - $1,000
- $1,001 - $2,200
- $2,221 - $6,000
- $6,000 +

**Skip Rent / Housing Payment**

- $401 - $1,000
- $1,001 - $2,200
- $2,221 - $6,000
- $6,000 +

* Indicates difference from first quintile, *p<.01, **p<.05, ***p<.01
Conclusion

- Unsecured debt is a better predictor of future hardship than secured debt.
- Unsecured debt has a non-linear impact on hardship.
- Tipping Points of Unsecured Debt
  - Skipped Regular Bills: Q2 ($400)
  - Food Insecurity: Q4 ($2,200)
Implications

- Financial coaches should encourage clients to keep unsecured debt levels below the tipping points to avoid additional hardship.
- Resources that would allow LMI households to better monitor their levels of unsecured debt.
- Policies that would help households reduce unsecured debt and build assets.
- Expansion of access to safer and more affordable small-dollar loans.