Personal Bankruptcy, Moral Hazard, and Shadow Debt

by Bronson Argyle Benjamin Iverson Taylor Nadauld Christopher Palmer
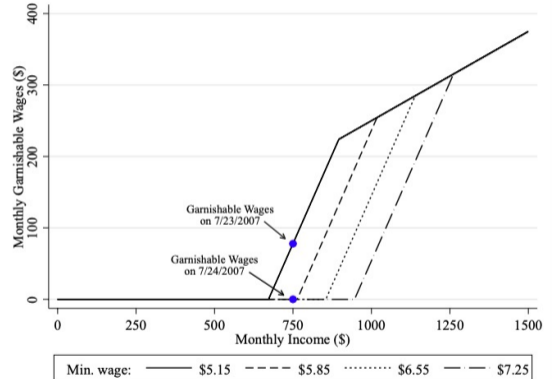
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Why Might Household Strategic Behavior be Important?

- Luck Santos (2019): secured-unsecured spread for corporate borrowing is on the order of 19 bp (bank, firm, origination date FE)

- Any reasonable calculation for households suggests an order of magnitude higher spread:
  - HELOC - credit card spread: $\sim$ 12%
  - Student loan, auto, mortgage debt far cheaper than any comparable unsecured borrowing rate

- Many explanations, but a plausible one is greater household strategic behavior, difficulty of committing to repayment stream

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1. Federal Minimum Wage Increases Lower Required Wage Garnishing

2. Lower Wage Garnishing Results in Bankruptcy Filing Delay

3. Results in Increase in Unsecured Debt

4. Particularly "Shadow Debt" not reported to credit bureaus, suggesting lenders are adversely affected by household choices

Figure 1: Monthly Garnishable Wages by Federal Minimum Wage Level

Garnishable Wages on 7/23/2007

Garnishable Wages on 7/24/2007

Min. wage: —— $5.15 - - - - $5.85 ·········· $6.55 — — $7.25

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Table 4: First-Stage: Effect of Wage Garnishing on Bankruptcy Filing Timing in Months

	(1)	(2)	(3)	(4)
Treatment × Garnishable Wages	-1.12***	-0.78**	-1.03**	-1.19***
	(0.37)	(0.38)	(0.45)	(0.38)
Filer Controls	✓	✓	✓	✓
Year Fixed Effects	✓		✓	✓
District Fixed Effects	✓		✓	✓
District × Year Fixed Effects		✓		
Income × Year Controls			✓	
Income Quartile Controls				✓
Partial F-Stat	9.00	4.31	5.20	9.68
R^2	0.60	0.61	0.60	0.60
Observations	47,960	47,960	47,960	47,960

Paper Argues for Strategic Behavior Before Bankruptcy Filing

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Table 7: Second Stage: Effect of Bankruptcy Filing Timing on Shadow Debt Share of Total Debt

Estimator	(1) OLS	(2) 2SLS	(3) 2SLS	(4) 2SLS	(5) 2SLS
Months to File	0.0009***	0.018**	0.024*	0.017*	0.016**
	(0.0001)	(0.008)	(0.013)	(0.009)	(0.007)
Filer Controls	✓	✓	✓	✓	✓
Year Fixed Effects	✓	✓		✓	✓
District Fixed Effects	✓	✓		✓	✓
District × Year Fixed Effects			✓		
Income × Year Controls				✓	
Income Quartile Controls					✓
R^2	0.51	0.40	0.35	0.41	0.42
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	(1) Credit Card/ Retail	(2) Student Loans	(3) Personal Loans	(4) Informal Debt
Months to File	0.0023 (0.0049)	-0.0018 (0.0032)	0.0007 (0.0028)	0.0171** (0.0081)
Filer Controls	✓	✓	✓	✓
Year Fixed Effects	✓	✓	✓	✓
District Fixed Effects	✓	✓	✓	✓
R^2	0.50	0.49	0.50	0.39
Observations	47,960	47,960	47,960	47,960

My Discussion:

1. Statistical Power of Exercise

2. Suggestion on Sample Construction

3. Confound from Direct Minimum Wage Effects

4. Is this "Strategic" Behavior?

1. Paper's First Stage Effect

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1. F-Stat from First Stage

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Table 7: Second Stage: Effect of Bankruptcy Filing Timing on Shadow Debt Share of Total Debt

|	(1)	(2)	(3)	(4)	(5)
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Months to File	0.0009***	0.018**	0.024*	0.017*	0.016**
	(0.0001)	(0.008)	(0.013)	(0.009)	(0.007)
Filer Controls	✓	✓	✓	✓	✓
Year Fixed Effects	✓	✓		✓	✓
District Fixed Effects	✓	✓		✓	✓
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Estimator					
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	(0.0001)	(0.008)	(0.013)	(0.009)	(0.007)
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Year Fixed Effects	✓	✓		✓	✓
District Fixed Effects	✓	✓		✓	✓
District × Year Fixed Effects			✓	✓	
Income × Year Controls				✓	
Income Quartile Controls					✓
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Observations	47,960	47,960	47,960	47,960	47,960

1. Statistical Literature on Power

- Staiger and Stock (1997): Use F-test at least 10

- Stock and Yogo (2005): critical value for F-test with one instrument 16.38

- Lee, McCrary, Moreira, Porter (2020): Following Anderson and Rubin (1949) inference, IV F-test should be 104.7 (or use F = 10, t = 3.43)

Figure 1: Distribution of First-stage F-statistics
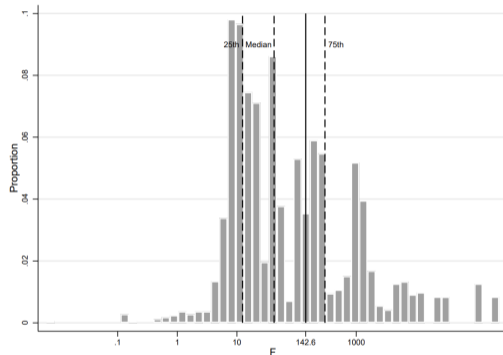
N=859 specifications. Scale is logarithmic. All specifications use the derived F statistic, and when not possible, the reported F statistic. Proportions are weighted; see notes to Table 1. Dashed lines correspond to the 25th (12.41), 50th (41.99), and 75th (299.48) percentiles of the distribution.

2. Defining Sample:

1. People who have (or have hdd) mortgage serviced by one of top 20 mortgage servicers. (56% own real estate)

2. FL, MN, UT (no FL bankruptcy data)

3. Merge to credit report using 3, 5 digit zip; month of bankruptcy filing;

4. To settle ties, take first mortgage amounts within 10% (53% are within 1 percent)
   - $N = 55,357$

5. 30 days between first 90 dpd and bankruptcy filing, and "filter on income similar to broader sample."
   - $N = 47,960$

2. Power Suggestions:

- Increase sample size (do you need all the restrictions? Sample comparability isn't that helpful given it's a selected sample anyway).

- You can use the broader sample without credit bureau data for many tests.

- Can try to find other sources of delay in bankruptcy filings? ie seasonal (delay filing around Christmas); do those also result in similar effects?

- IV "for free" by Chen, Chen, Lewis (2020) using some ML methods

- Do some formal specification variation, show how effect size/significance change across permutations of all specifications

- Robustness on the 1% identical balance matching sample (check match even if unique within date)

- Minimum wage changes may potentially affect borrowers directly—job losses (if they happen), increases in cash in hand which may affect household debt

- Natural test – do min wage changes lead to changes in debt repayment among full sample?

- Can you isolate borrowers further from federal minimum wage levels, and so less affected by direct minimum wage changes?

Table 6: Reduced Form: Effect of Wage Garnishing on Unsecured Debt Share of Total Debt

	(1)	(2)	(3)	(4)
Treatment $\times$ Garnishable Wages	-0.0027*	-0.0033**	-0.0067***	-0.0046***
	(0.0014)	(0.0013)	(0.0018)	(0.0014)
Filer Controls	✓	✓	✓	✓
Year Fixed Effects	✓		✓	✓
District Fixed Effects	✓		✓	✓
District $\times$ Year Fixed Effects		✓		
Income $\times$ Year Controls			✓	
Income Quartile Controls				✓
R^2	0.75	0.75	0.75	0.75
Observations	554,942	554,942	554,942	554,942

4. Is this "Strategic" Behavior?

- Definition of strategic default in this context is either: 1) more consumption during that late stage, OR delay of bankruptcy filing past the socially optimal point.
    - Paper argues that both are hidden actions and distinction doesn't matter.

- What is shadow debt? including bounced checks, unpaid medical, utility, or telecommunications bills, and fines and fees.

- Is really strategic? Don't see it in personal loan / credit card category. This would be a natural story—right before you file, you get more debt on dischargeable accounts. Instead, it's all "informal."

- Concern: could reflect fees/expenses passively accrued by individuals, rather than active choices, and social "optimality" hard to determine

4. Is this "Strategic" Behavior?

- Plausible alternate story—people are averse to filing for bankruptcy, do not "rack up" additional debts, but still incur fees and expenses associated with distress
  - Because you condition on bankruptcy, you don't see benefit to creditors of delay in helping borrowers get back on their feet

- Subsetting tests (ie based on bankruptcy motive) not fully conclusive, as they don't establish borrower hidden actions during the delay stage

- From lender's perspective, maybe less important (delay still bad). But for household behavior, really important to distinguish whether "strategic behavior" consists of, ie, higher consumption; or borrowers simply caught in debt traps and hidden fees they find it hard to escape from absent bankruptcy filing

- Suggestion: tone down language, or dig deeper into bankruptcy files to establish that "strategic" is a good way to frame household behavior in this context

Smaller Points

1. balance test in IA.1 – would really like to see "strategic" dummy as outcome as well

Conclusion

Key Contributions of Paper:

1. Measuring shadow debt in bankruptcy. Really nice contribution to literature.

2. Arguing for strategic decisions in bankruptcy filing. Am ex ante sympathetic to this notion, and have some suggestions on how to refine this further.