Discussion of A Quantitative Theory of Information and Unsecured Credit by K. Athreya, X. Tam and E. Young

Makoto Nakajima

FRB Philadelphia

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Plan

1. Summary.

2. Comments:
   - Timing of events.
   - Can the model replicate
     - Who are borrowing and defaulting.
     - Who are borrowing and defaulting more.

Summary

- Nice combination of data, theory, and methodology.
- Observed changes between 1980s and 2000s.
  - $\uparrow$ Availability of credit (credit limit, credit card).
  - $\uparrow$ Debt.
  - $\uparrow$ Bankruptcy filings.
  - $\uparrow$ Discharge rate.
  - $\uparrow$ Dispersion of interest rates (New!)
  - $\uparrow$ Sensitivity of interest rates to credit history (New!)
- Show that all are quantitatively consistent with improvement of financial institutions' ability to observe and use more information on borrowers.

Model

- Model is based on Livshits et al. (2007b):
  - General equilibrium incomplete-market life-cycle model.
  - Labor income shock.
  - Option to default on debt.
  - Equilibrium borrowing interest rates reflect probability of default.
- Unique features:
  - Individual information that financial institutions can use to price loans are exogenously restricted.
  - Stigma shock instead of expenditure shock.
- Experiment:
  - 1980s: Partial information.
  - 2000s: Full information.
  - Steady state comparison.

Intuition

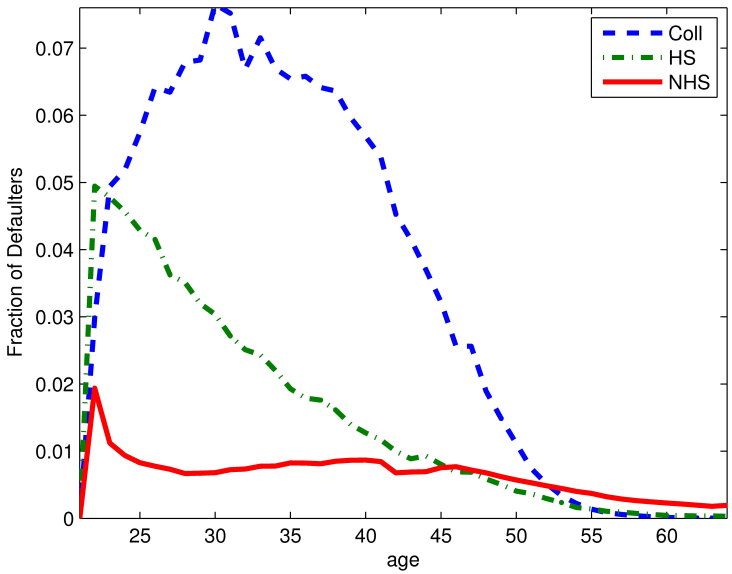
- In 1980s... (Adverse selection)
  - Bad types mimic good types to avoid high borrowing interest rates.
  - Financial institutions charge the same interest rates to both types.
  - Cross-subsidization between good types and bad types.
  - Good types borrow less.
  - Bad types follow.
  - At the end: low debt, low default, low dispersion of interest rates.
- In 2000s...
  - Financial institutions can fully observe types.
  - Financial institutions charge lower interest rates to good types and higher interest rates to bad types.
  - Bad types borrow less, default less (?).
  - Good types borrow more, default more (?).
  - At the end: high debt, high default, high dispersion of interest rates.
- Similar story as Narajabad (2006) (Banks have better information)
- Complementary to Livshits et al. (2007a)? ($\downarrow$stigma + $\downarrow$cost of loans)

Comment [1]: Timing

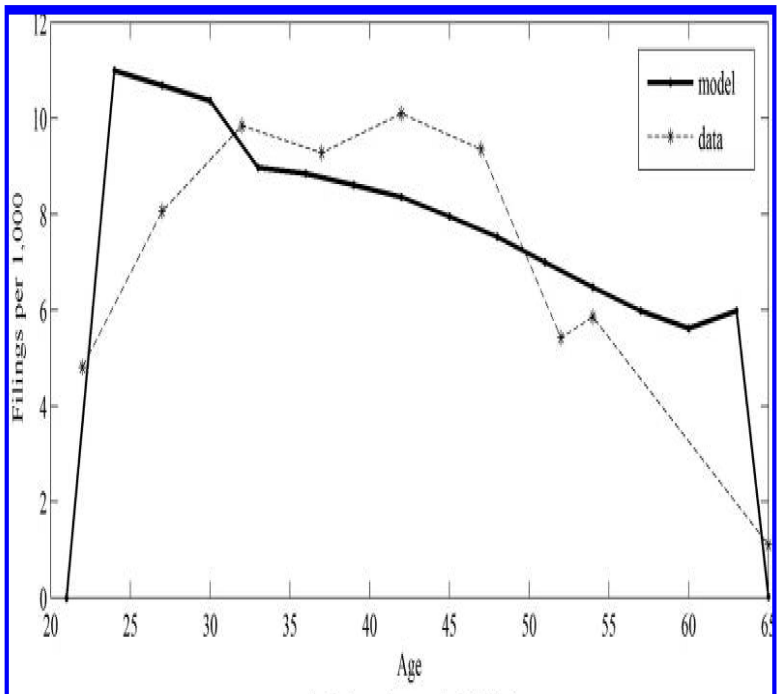
Statistic	1980s	1990s
Credit card holders	?	↑
Credit limit	?	↑
Defaults	↑	↑
Debt	↑	↑
Discharge rate	↑	↑
Interest rate dispersion	No change (?)	↑

- The paper offers a quite reasonable story.
- But interest dispersion started in 1990s, while defaults and debt started increasing since 1980s.

Comment [2]: Who are Defaulting?: Model vs Data



(a) Model: Full information

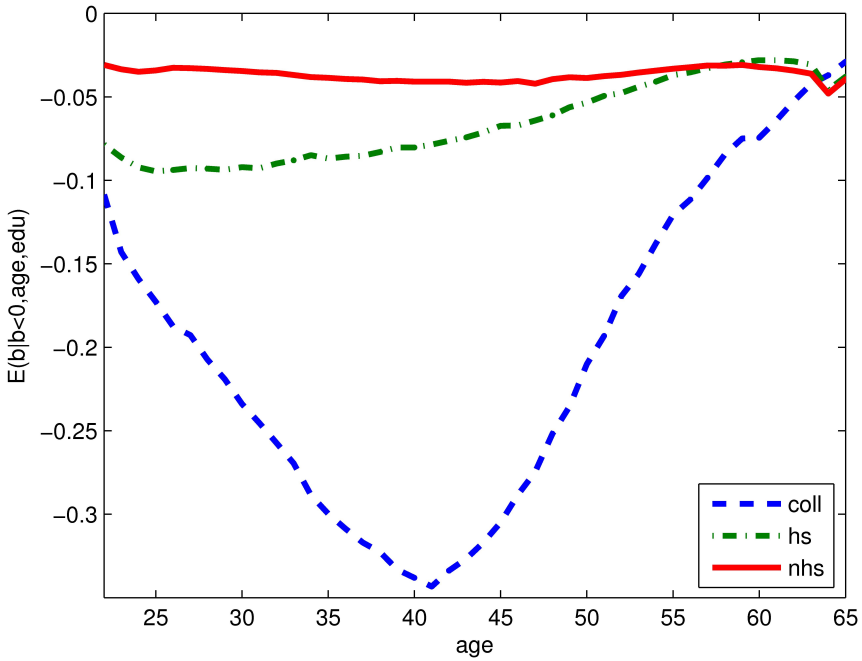


(b) Data: Livshits et al. (2007b)

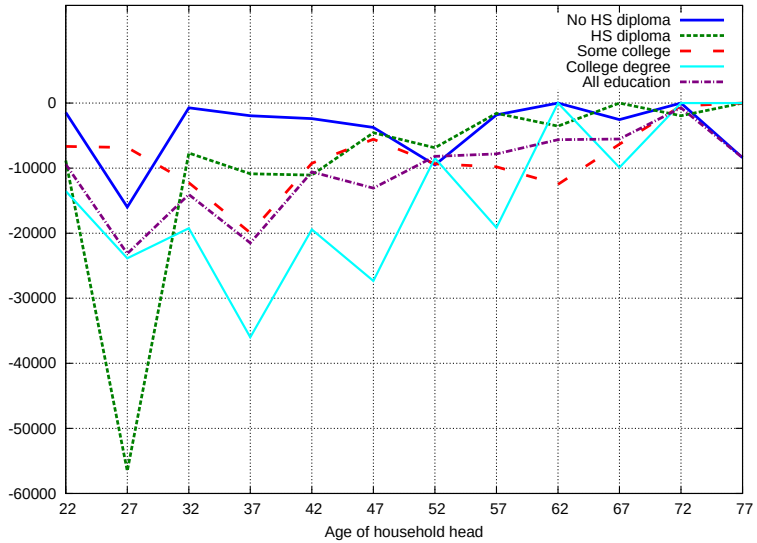
Comment [2]: Who are Defaulting?: Model vs Data

- Life-cycle profile:
  - Data: Hump-shape with relatively flat profile between 30 and 50.
  - Model: Peak between 20 and 30 and decline quickly.
- According to Budría et al. (2002), the proportion of defaulters (all chapters) in 1998 SCF is:
  - 0.9% for HHs with no high-school diploma
  - 2.3% for HHs with HS diploma
  - 1.3% for HHS with some college
- Too much borrowing and defaults from young and high types?

Comment [2]: Who are Borrowing?: Model vs Data

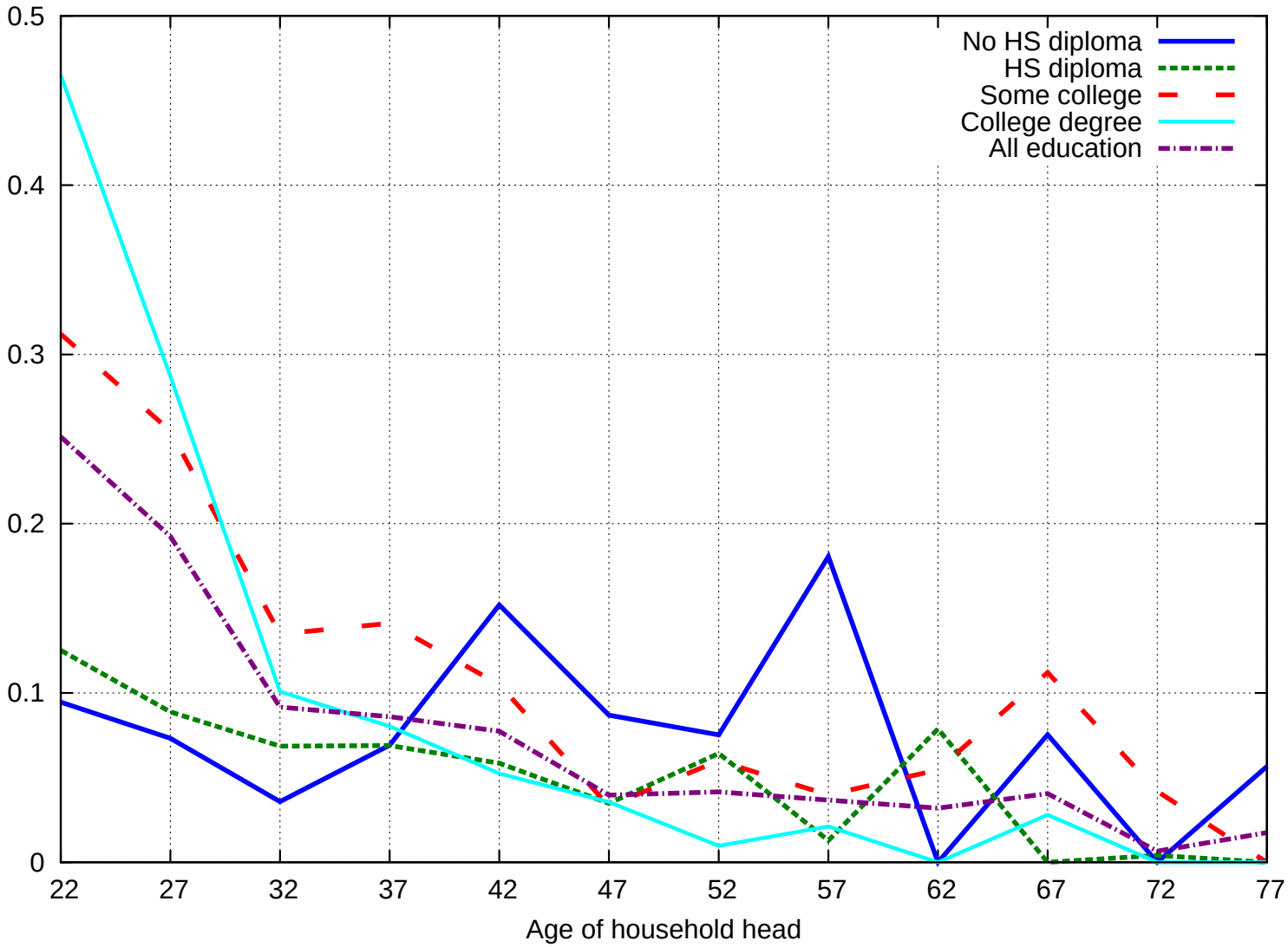


(c) Model: Full information



(d) Data: SCF2004

Comment [2]: Who are Borrowing?: Data: Extensive Margin



Source: Negative net worth in 2004 SCF Public Data.

Comment [2]: Who are Borrowing?: Model vs Data

- Model does a good job in replicating:
  - Relatively flat profiles except for "college" group.
  - Average debt is larger for HHs with more education.
- The inverse-hump in the model for "college" group is too pronounced.
- Proportion of borrowers among high education groups is not necessarily high (except for 20s).

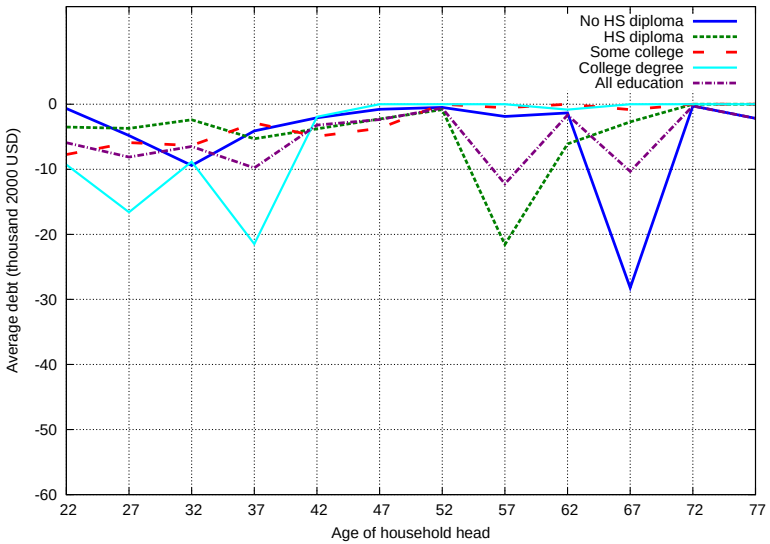
Comment [2]: Who are Defaulting More?: Data

Age	1991	2001
$<$25	3.4	3.8
25-34	6.8	8.9
35-44	6.5	9.8
45-54	5.2	8.1
55-64	2.7	4.1
$\geq$ 65	0.6	2.0

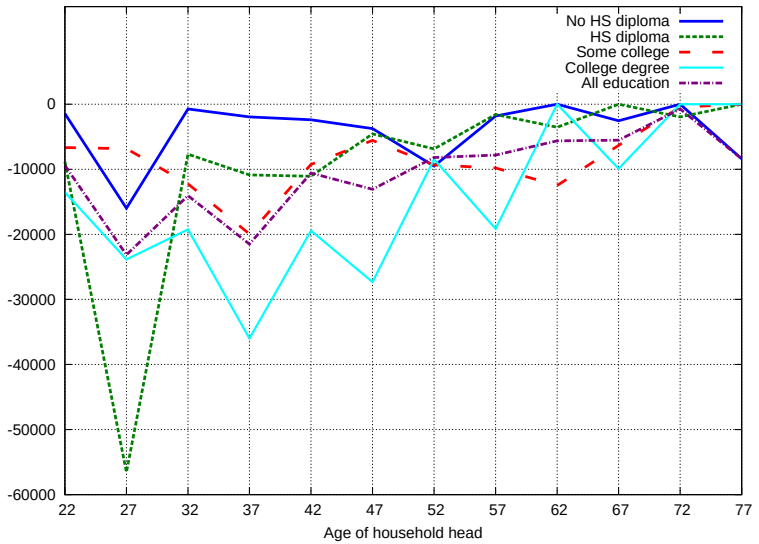
Source: Replicated from Livshits et al. (2007a)

- Increase in defaults across all age groups.

Comment [2]: Who are Borrowing More?: Data



(e) Data: SCF1989



(f) Data: SCF2004

- Increase in debt across all age and education groups.

References

Budría, S., Javier Díaz-Gimenez, Vincenzo Quadrini, and J.-V. Ríos-Rull, "Updated Facts on the U.S. Distributions of Earnings, Income and Wealth," *Federal Reserve Bank of Minneapolis Quarterly Review*, 2002, *26* (3), 2–35.

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