Discussion of

Credit Growth and the Financial Crisis: A New Narrative

by S. Albanesi, G. De Giorgi, and J. Nosal

Ambrogio Cesa-Bianchi (BoE and CfM)

Housing, Housing Credit, and the Macroeconomy Conference

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*The views expressed in this paper do not necessarily reflect the position of the Bank of England.

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- Will focus on the **role of age and how to control for it**

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  (1) Low credit score individuals are disproportionately young
  (2) When they grow older, their income, credit score and debt all increase
  (3) Initial credit score sorting mechanically magnifies debt growth for low credit score individuals
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- I will focus on (4), which is ultimately a quantitative matter

Relation to previous literature

- To be fair, some of these point have been made by Mian and Sufi in previous work
  - "Household Debt and Defaults from 2000 to 2010: Facts from Credit Bureau Data" (2015, NBER WP)
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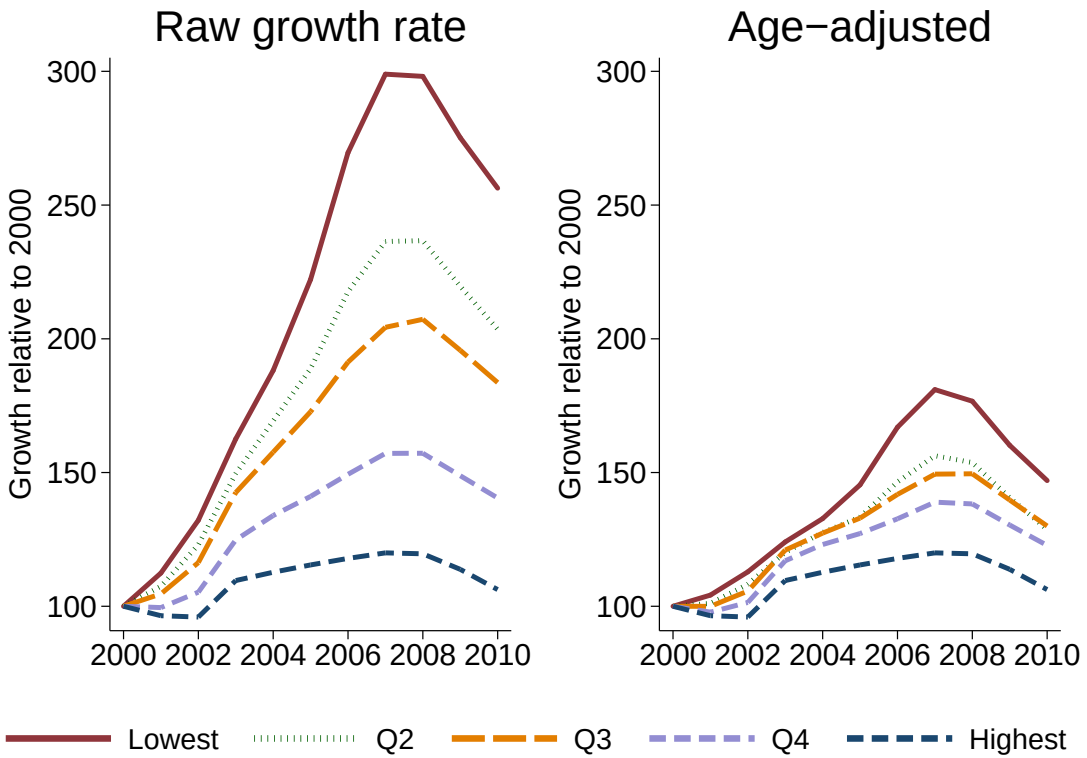
- Mian and Sufi (2015, 2017) show that
  - Low credit score individuals are young individuals
  - Young individuals experience stronger credit growth than older individuals
  - When controlling for age, results are attenuated but still hold $\Rightarrow$ **Different from Albanesi et al**!

Debt growth by quartile controlling for age in Mian and Sufi (2017)

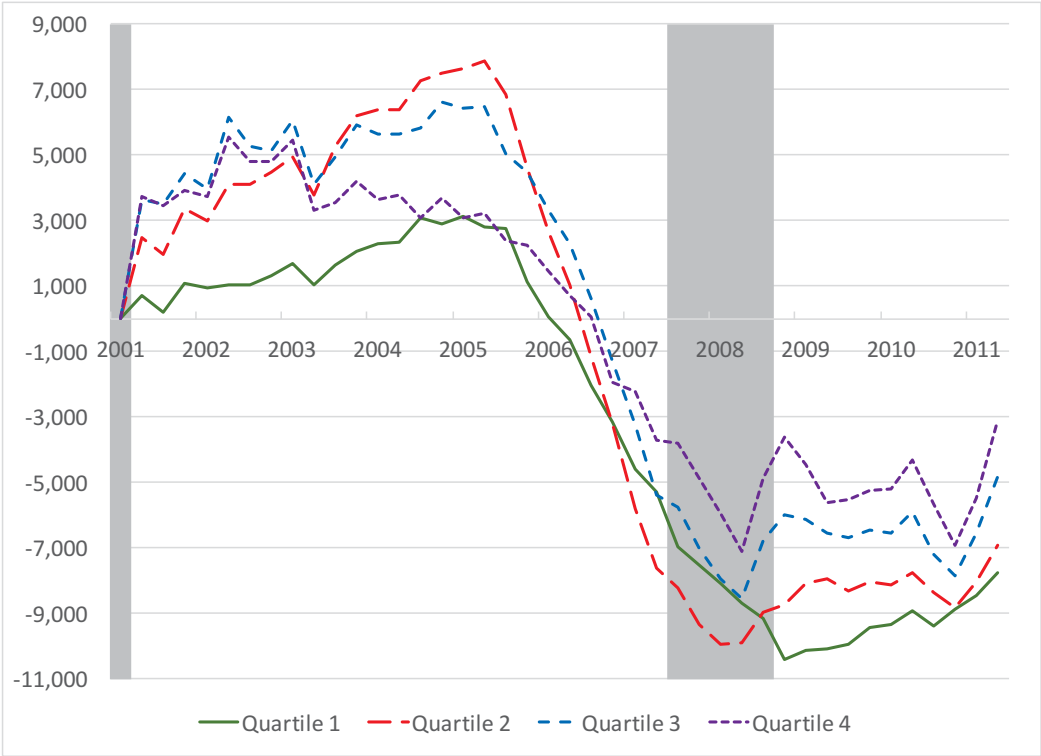
- Mian and Sufi find that "*even with these detailed controls for age, low credit score individuals saw the largest growth in debt*"



NOTE. Figure 7 from Mian and Sufi (2017): "Household Debt and Defaults from 2000 to 2010: The Credit Supply View, Chapter" in Evidence and Innovation in Housing Law and Policy, edited by Lee Anne Fennell & Benjamin J. Keys, eds., 2017

Estimated time effects by quartile in Albanesi, De Giorgi, and Nosal (2017)

- Albanesi *et al.* find that "...*credit growth during boom is concentrated in the middle and the top of the credit score distribution*"



NOTE. Figure 14 from Albanesi, De Giorgi, and Nosal (2017), "Credit Growth and the Financial Crisis: A New Narrative," NBER Working Papers 23740, National Bureau of Economic Research, Inc.

How to properly control for age?

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3. This paper new approach: balance sheet regression by recent credit score

Balance sheet regression by recent credit score

- Baseline specification:

$$\Delta B^i_{t,t+h} = \sum_{j=1}^{4} \alpha(j_{t-1}) + \eta \Delta CS^i_{t-1,t-1-k} + \alpha_{time} + \alpha_{time} \times \sum_{j=1}^{4} \alpha(j_{t-1}) + \alpha_{age} + \varepsilon^i_t$$

- Recent credit score $\alpha(j_{t-1})$: fixed effect for 1-quarter lagged quartile of credit score distribution
  - Still endogenous?

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- Authors deal with endogeneity concerns with term $\Delta CS^i_{t-1,t-1-k}$
  - Change in credit score between $t-1-k$ and $t-1$
  - Robust to $k=1$ and $k=6$
  - Is that enough?

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- Why not $\alpha(j_{t-k})$? Robustness to k might be insightful
- For large k you should get results in line with initial credit score sorting, controlling for age (as in Mian and Sufi, 2017)
- There must be a threshold level of k where your results stop holding
  - What is that value? Is it close $k = 2$ or to $k = t - 1$?

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  - This relation has to be seriously taken into account, results can change dramatically (both at individual and ZIP code level)

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  - Authors use a "recent credit score approach" (parametric and non-parametric)
  - Trade-off between exogeneity of the credit score and controlling for life-cycle effects

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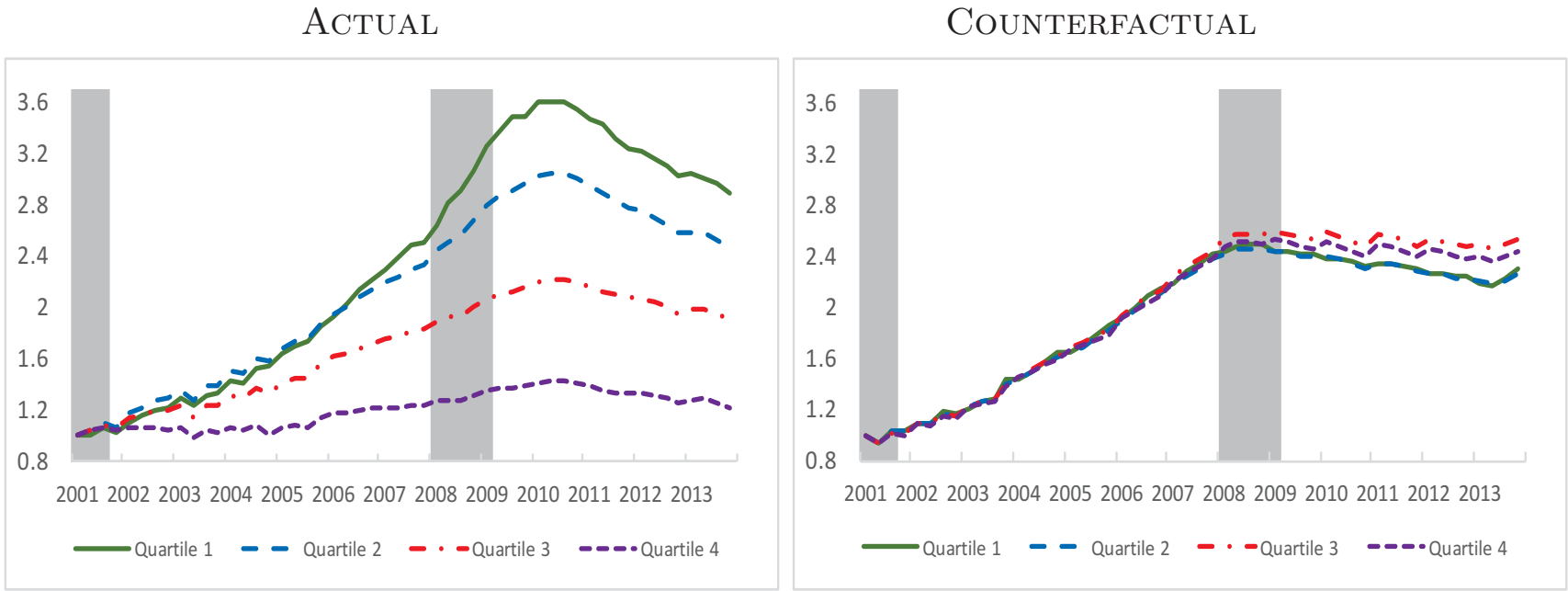
- Open issue: How to control for life-cycle dynamics?
  - Authors use a "recent credit score approach" (parametric and non-parametric)
  - Trade-off between exogeneity of the credit score and controlling for life-cycle effects
- Exciting, important piece of work. Still some work to be done to make results bulletproof

Appendix

Counterfactual from Albanesi et al.

- Albanesi *et al.* find "...*virtually no difference across quartiles in the counterfactual debt growth*"



Note. Figure 8 from Albanesi, De Giorgi, and Nosal (2017), "Credit Growth and the Financial Crisis: A New Narrative," NBER Working Papers 23740, National Bureau of Economic Research, Inc.

Debt growth by credit score and age in 1997 (Mian and Sufi, 2017)

- Lower credit score individuals are younger

Table 2: Averages by 1997 Credit Score Quintile

This table presents averages by 1997 credit score quintile. Each quintile contains 20% of the sample. Housing debt to home value is measured only for individuals with some housing-related debt outstanding as of 2000.

	Means by credit score quintile				
	1	2	3	4	5
Credit score (Vantage), 1997	581.0	678.8	756.7	830.5	894.5
Total debt, 1997, thousands	25.44	42.02	54.04	51.23	76.60
Housing debt, 1997, thousands	14.49	28.77	43.23	44.22	71.76
Has housing debt, 1997	0.164	0.299	0.401	0.392	0.544
Age, 1997	37.23	40.53	44.05	50.23	55.35

NOTE. Table 1 from Mian and Sufi (2015): "Household Debt and Defaults from 2000 to 2010: Facts from Credit Bureau Data", NBER Working Paper No. 21203.

Debt growth by credit score and age in 1997 (Mian and Sufi, 2017)

- Stronger debt growth among lower credit score individuals is robust across every age cohort (with the exception of >60)

Table 3: Growth in Debt, by Credit Score and Age Cohort

This table shows the growth in debt from 2000 to 2007 by credit score quintile and age in 1997.

	Debt growth, 2000 to 2007 (%)				
Credit Score	Age in 1997				
Quintile	lt 30	30-40	40-50	50-60	gt 60
1	366.6	171.4	114.9	71.0	5.6
2	277.5	126.1	88.5	51.8	6.0
3	258.1	107.1	71.3	44.3	8.0
4	197.4	90.3	63.3	39.9	4.1
5	135.8	58.2	40.6	22.2	-11.1

NOTE. Table 3 from Mian and Sufi (2015): "Household Debt and Defaults from 2000 to 2010: Facts from Credit Bureau Data", NBER Working Paper No. 21203.