Intra-household Credit Spillovers

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MIT Sloan & NBER

AEA 2024

MIT MANAGEMENT SLOAN SCHOOL

This Paper

Data: novel dataset combining (for the first time):

Bankruptcy fillings + credit data + household links from financial connections

Event: credit outcomes before/after removal of ones' relative bankruptcy flag

Results:

- Relatives' credit scores and credit capacity ↗
- Credit card utilization ↘ & mortgages ↗

Fantastic project, important data innovation and addresses a first-order question (total household response)

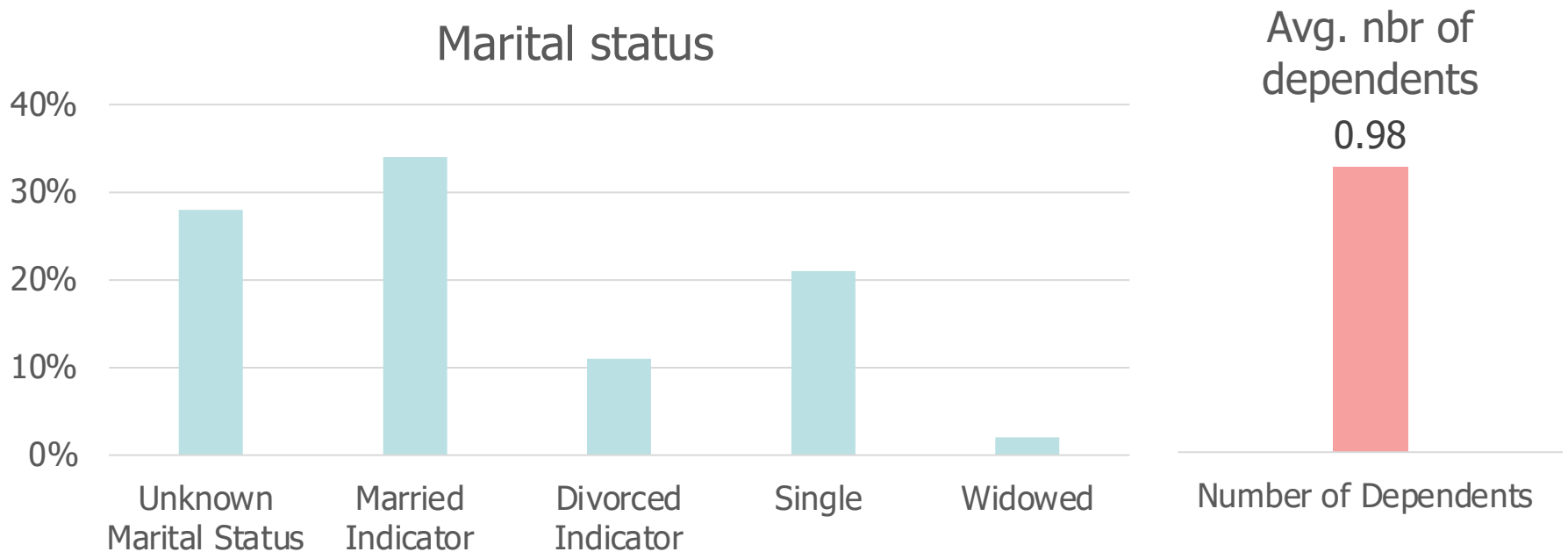
Part I

Measuring Household Linkages in Credit Bureau Data

Further validating the linkages

- Linking approach is very simple (i.e., gaps >18y vs <18y) & yet successful!

- Build confidence by validating linkages using information from the bankruptcy fillings? Useful to get a sense of error rate.



Argyle, Iverson, Nadauld and Palmer (2021)

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Pairs linked if there is a financial link at any point between 2001-2023

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=> Do parents add their child as an authorized user as a form of financial support?

Remove these linkages once filler is out of financial distress?

=> Heterogeneity by dynamic pattern of "likely-partner" linkage:

(i)- continuously-linked pre- and post-filing

(ii)- new linkage post-filling (i.e. 22% of fillers are linked with 2+ "likely partners")

Collective model w/ commitment would predict bankruptcy affects the bargaining weights in (ii) but not (i)

Part II

Measuring Credit Spillovers

Research Design

$$y_{i,t} = \gamma_t + \gamma_c + r_{i,t} + \sum_{\tau=-24}^{\tau=60} \delta_\tau \, . \, I\{r_{i,t} = \tau\}$$

Challenge: identify effect of flag removal δ_τ separately from

- γ_t **: calendar month** (i.e., economic conditions in June 2019 ≠ April 2020)
- γ_c **: cohort** (i.e., those who filed in 2006 ≠ 2009)
- $r_{i,t}$ **: time since bankruptcy** (i.e., financial health improves post-bankruptcy)

Problem: these three variables are collinear $r_{i,t} = \gamma_t - \gamma_c$

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Solution: assume $r_{i,t}$ grows linearly (i.e., violation of parallel trend grows linearly)

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Three key threats to identification:

1). Linear trend extrapolation

2). Heterogeneous dynamic effects across cohorts

3). Heterogeneous dynamic effects across periods

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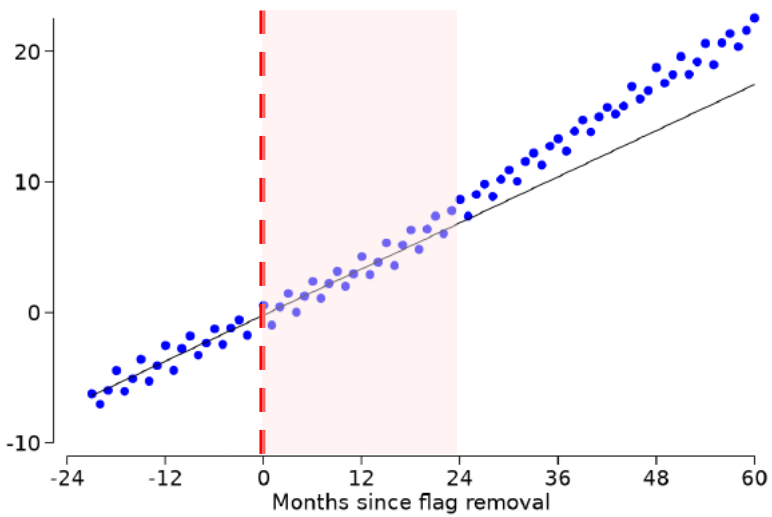
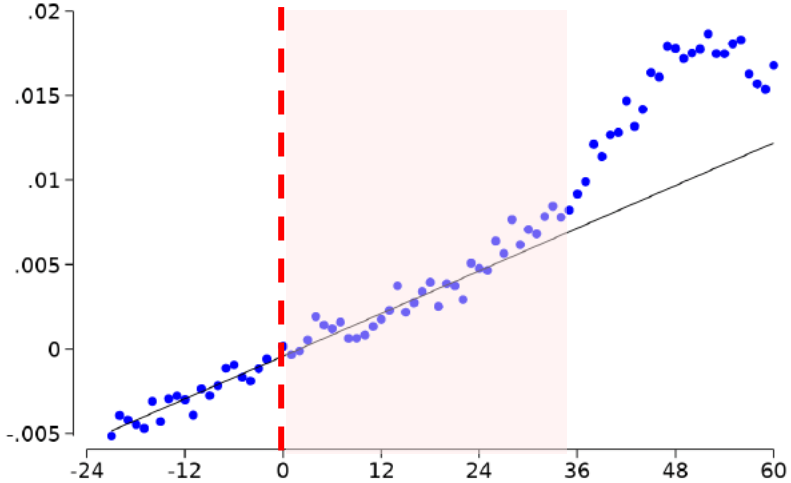
Issue 1: Linear Trend Extrapolation

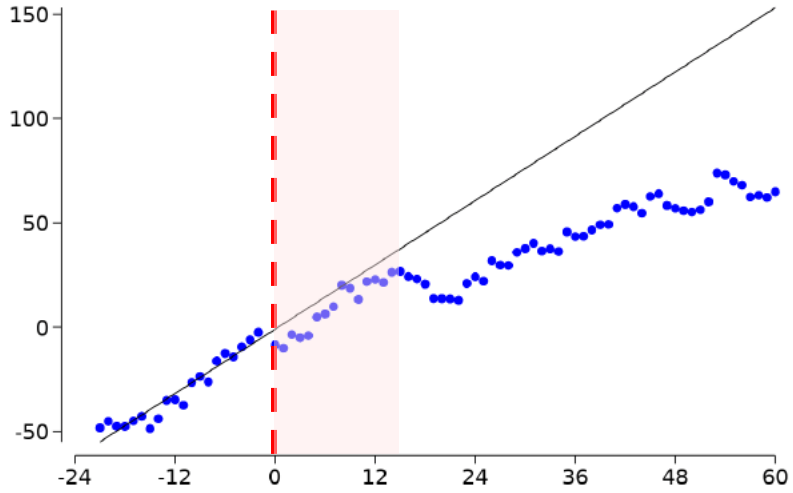
Credit score (all)



Credit card inquiries



Credit card balance



Delayed responses: deviation from linear trend ~12 to 36 months after flag removal!

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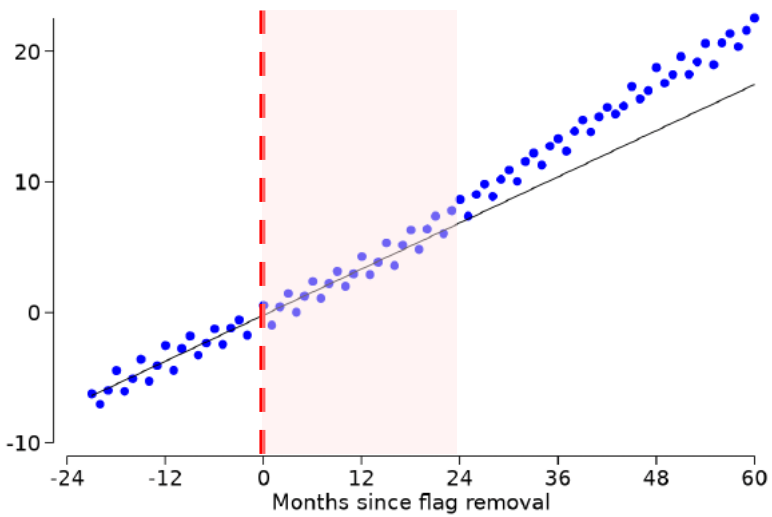

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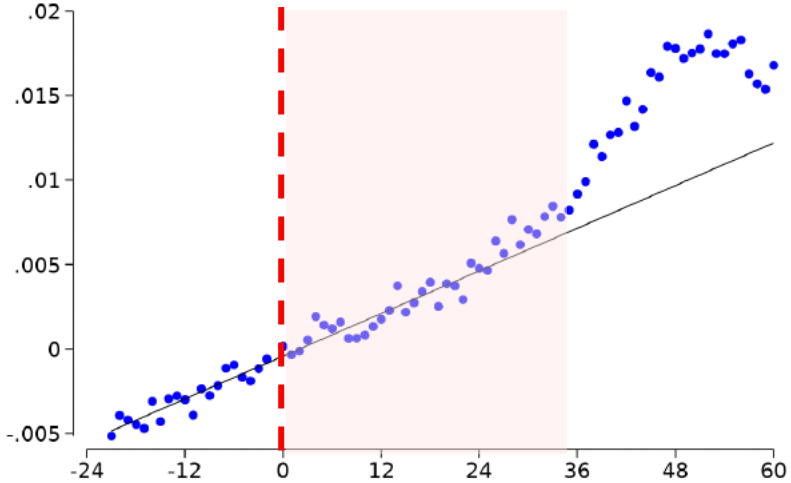

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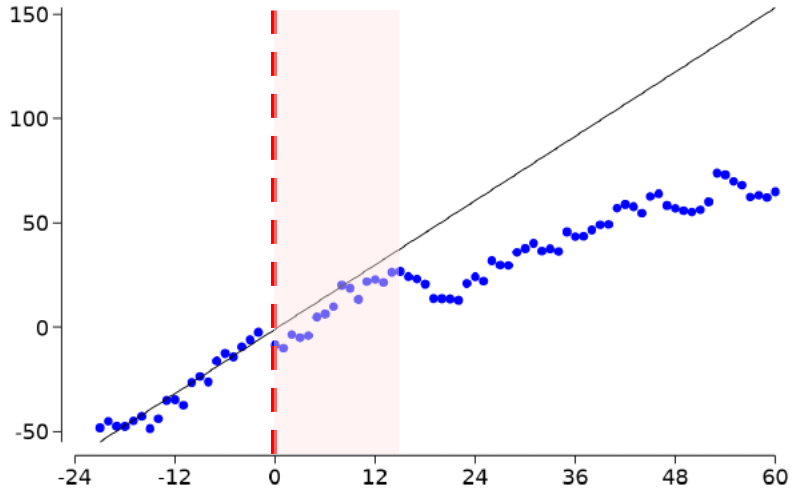
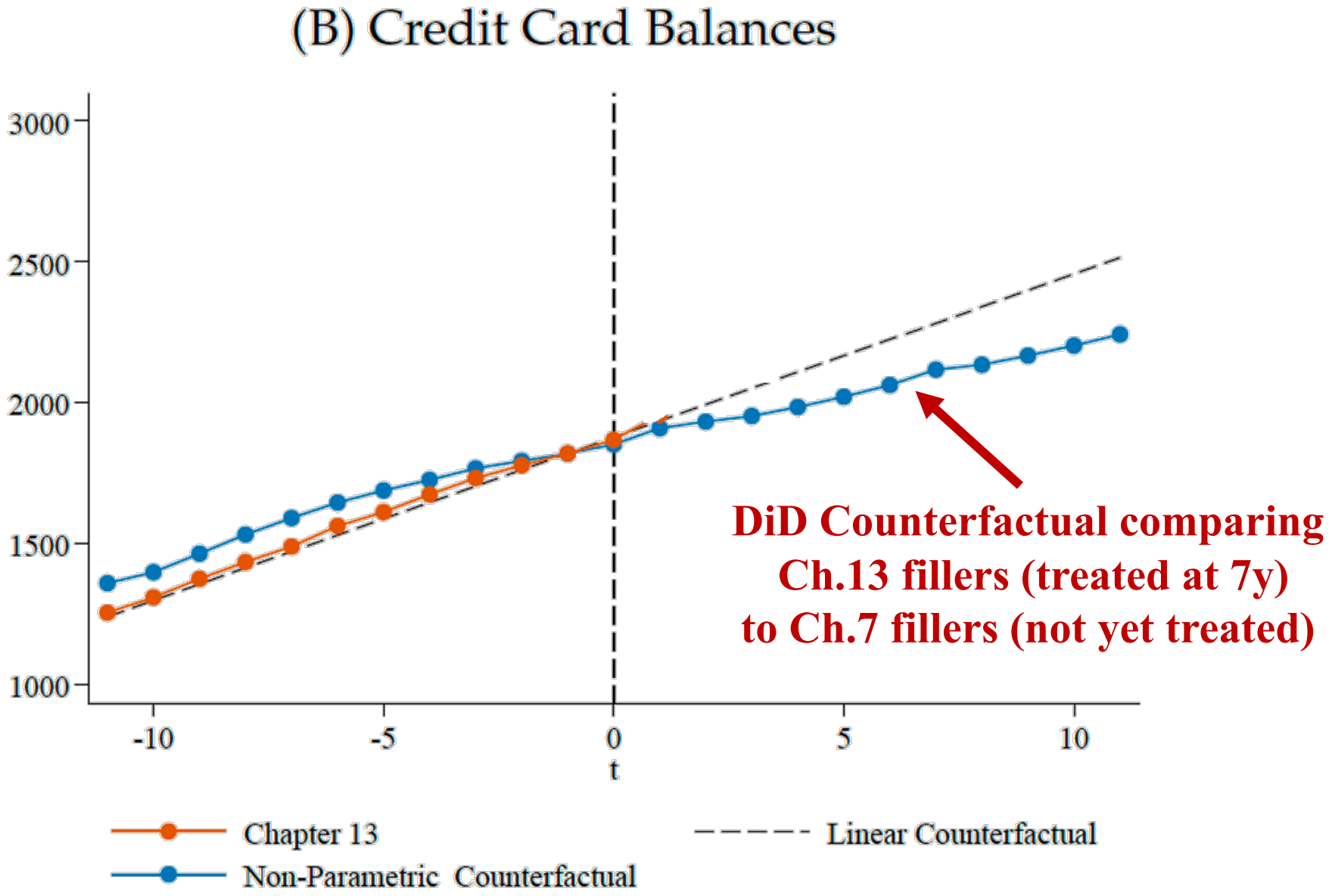


Delayed responses: deviation from linear trend ~12 to 36 months after flag removal!

- **Possibility 1:** it takes time for effect to spillover to relatives
- **Possibility 2:** linear trend extrapolation is less and less reliable over time

Alternative approach: Dobbie et al, JF‘20



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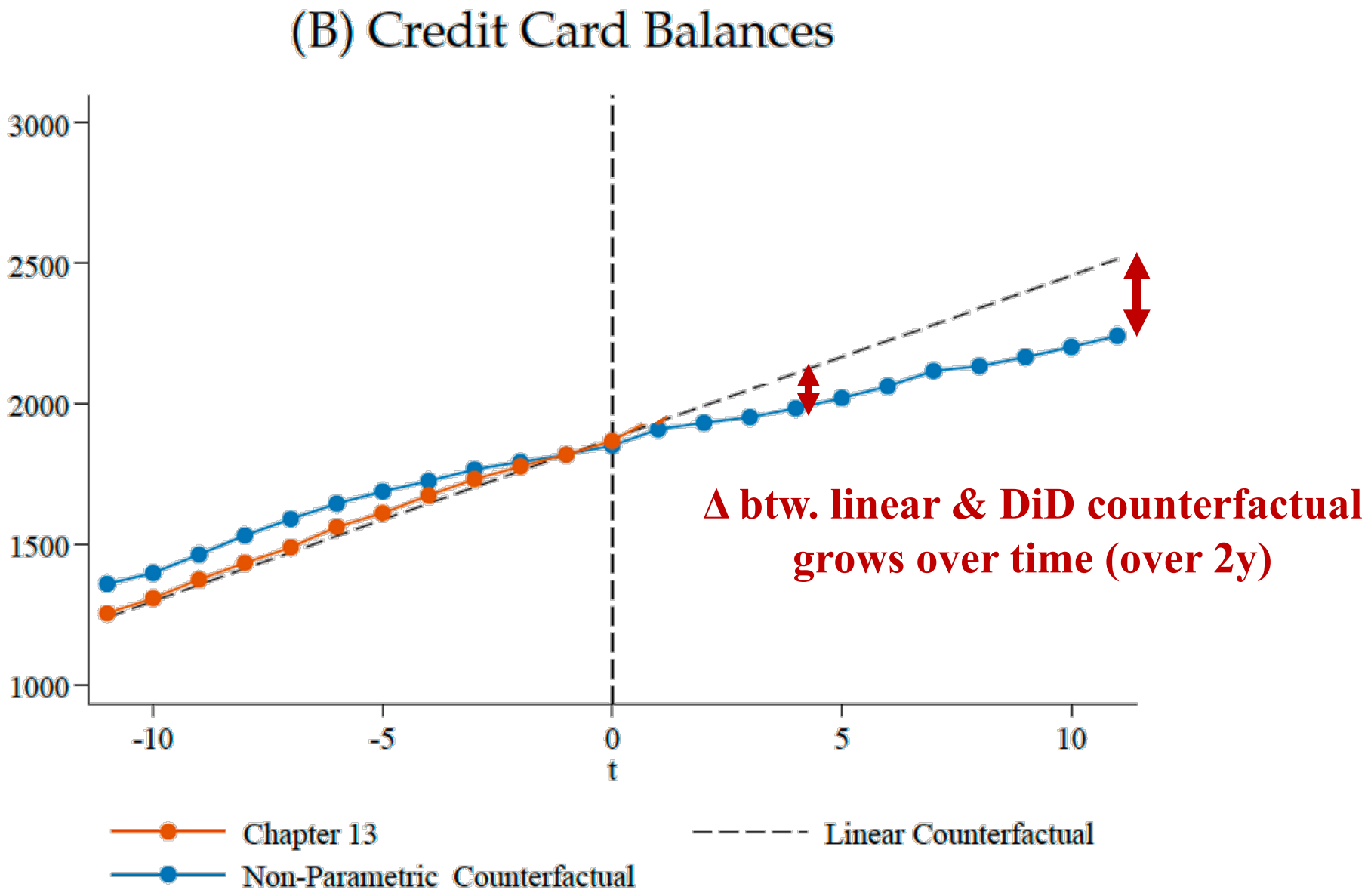

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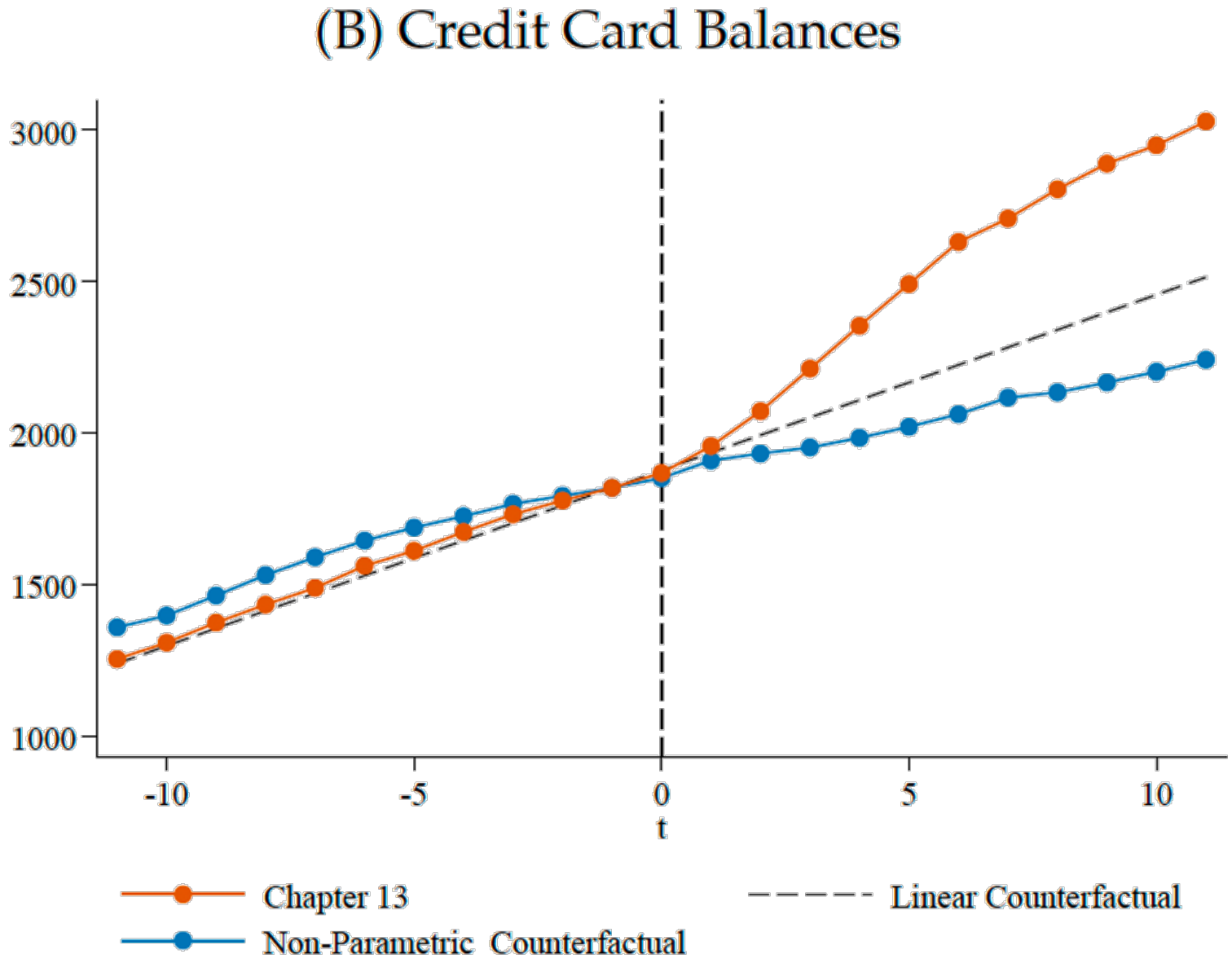

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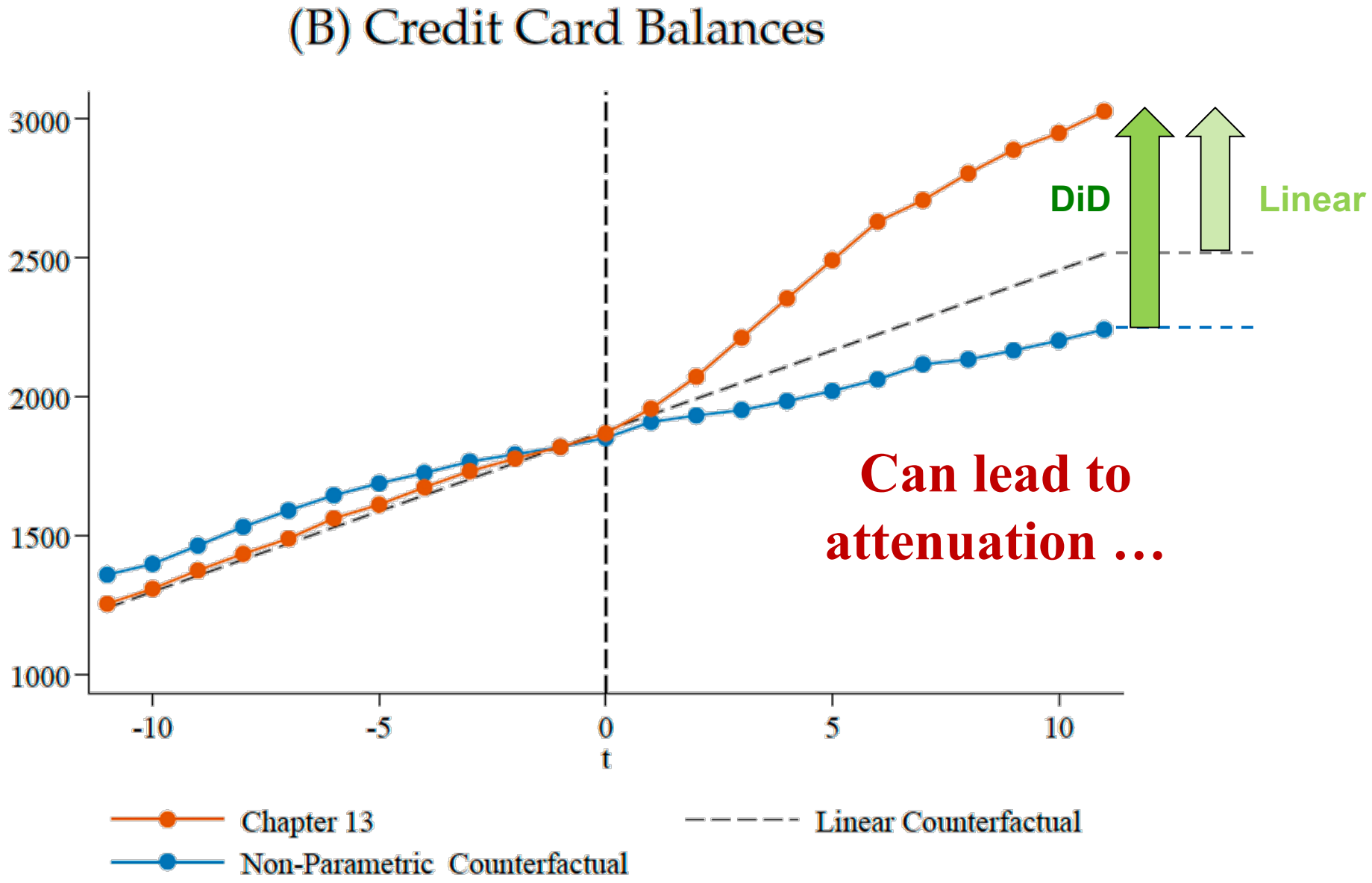

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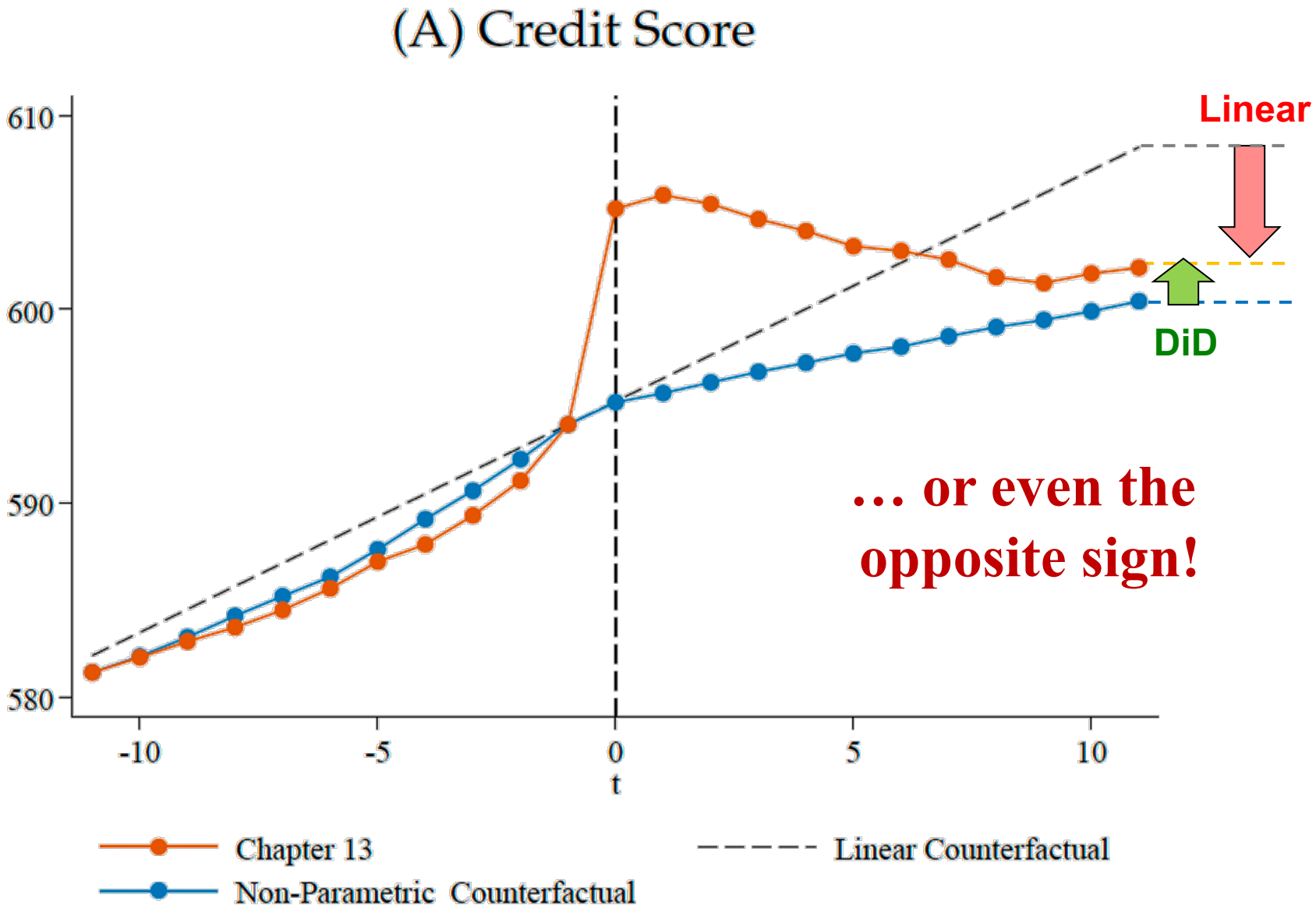

What to do?

Because post-event path of the confound cannot be learned from the data, it's ***important to motivate extrapolation assumption on economic grounds.***

"I urge researchers to use context-specific economic knowledge to inform the discussion and analysis of possible violations of parallel trends" Roth AER:i '20

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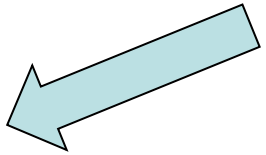
Source of pre-trend

(i.e., confound)



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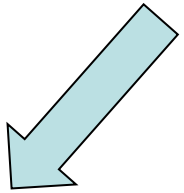

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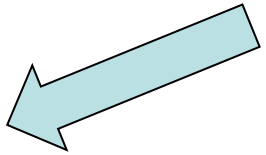

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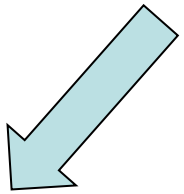

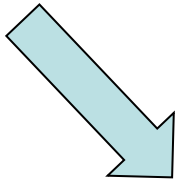

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2SLS for noisy proxy affected by confound but not by treatment
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Assess the amount of bias
Construct confidence sets based on plausible violation of the linear trend
Rambachan & Roth, Restud ‘23

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Issue 2: Heterogeneous Treatment by Cohort

What if the dynamic treatment effect is heterogeneous across **cohorts**?

Then, because:

- adoption (flag removal) is staggered
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=> Estimator is not a properly weighted average of cohort-specific policy effects (can be > or < than all individual cohort effects!)

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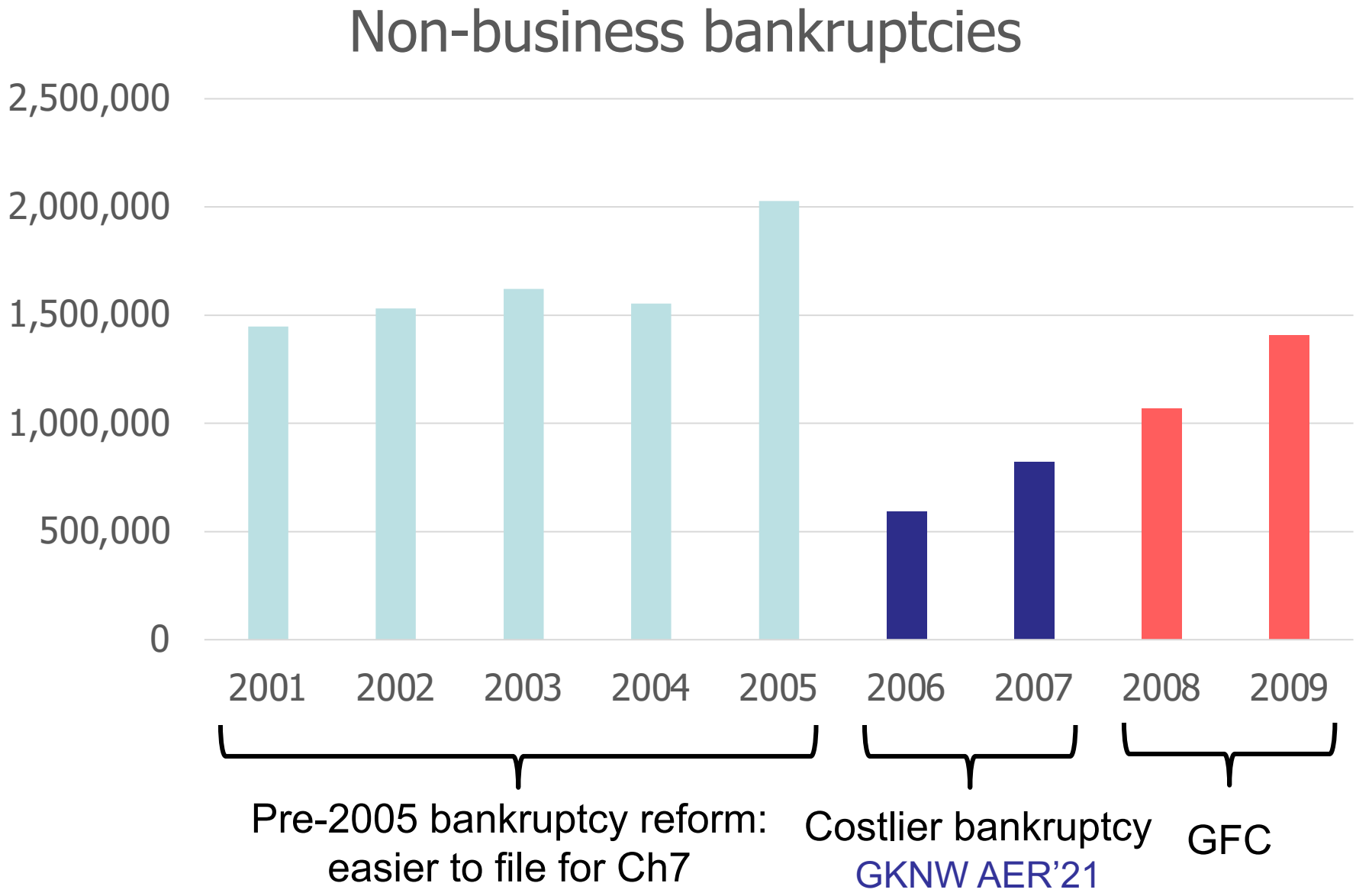
Is there reason to think dynamic effects could be heterogeneous across cohorts?

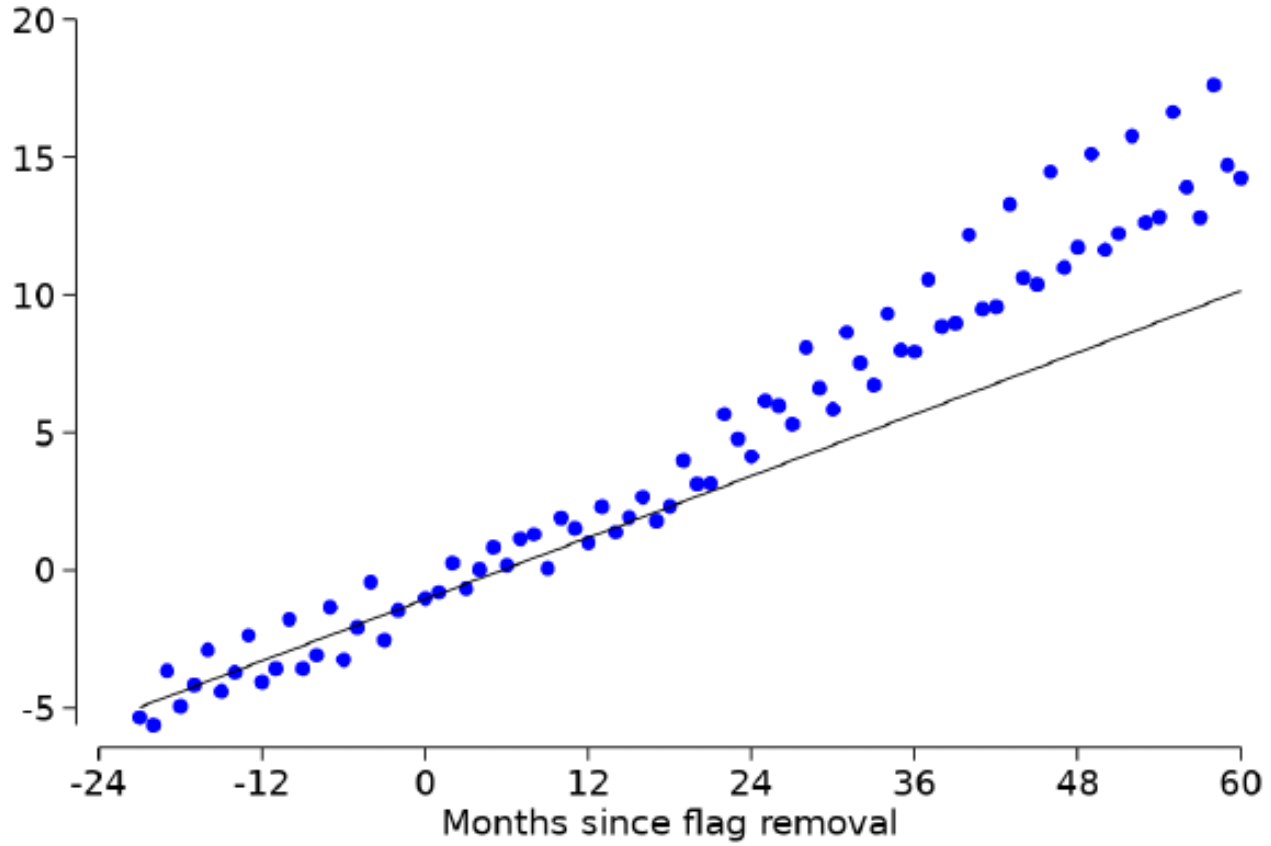
I. Selection likely to varies across cohorts



Source: Fay '23. debt.org

II. Within-year, heterogeneous trends across month of filing ?

Credit score: Parent- Child



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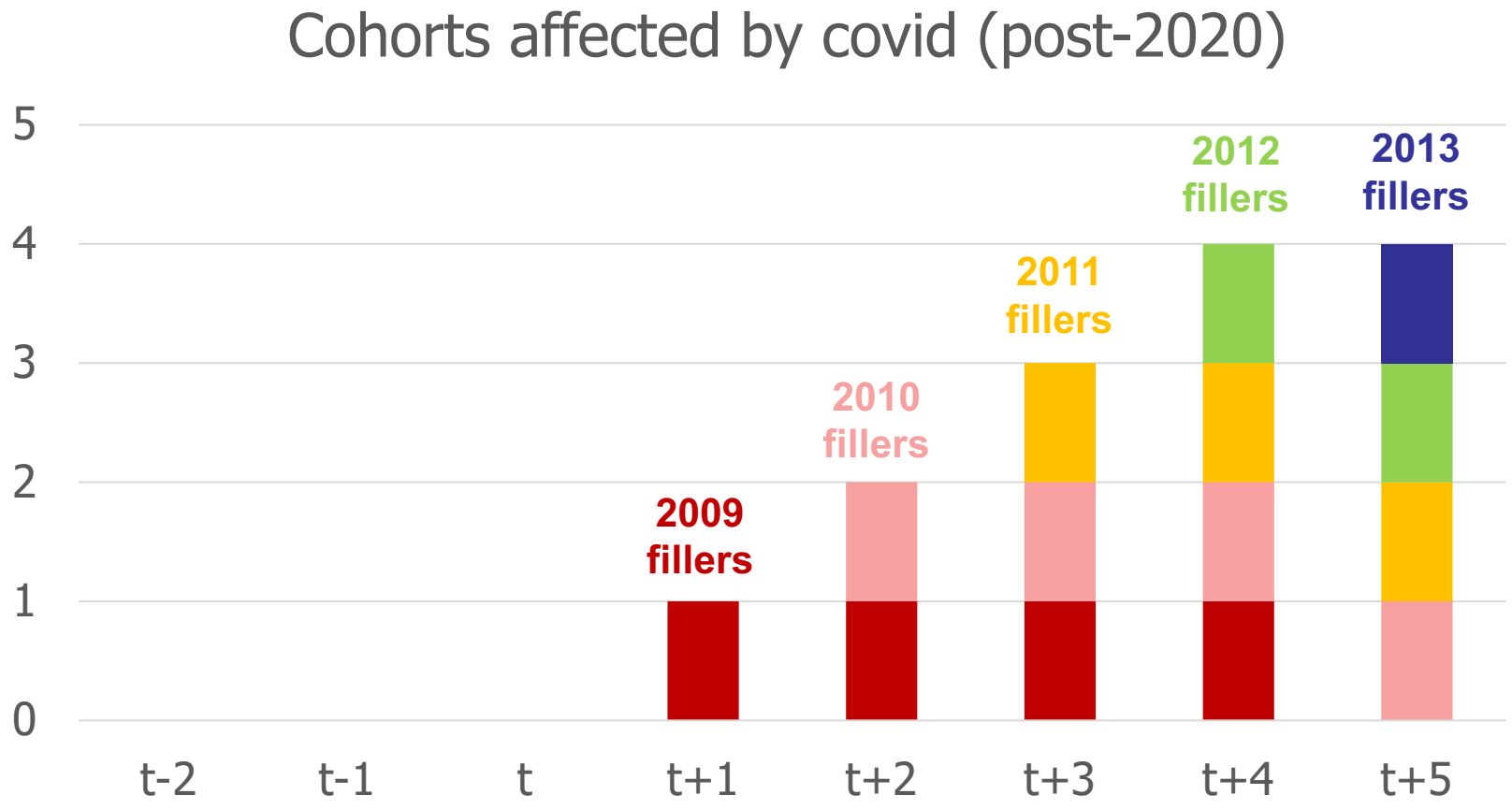
Exposure to Covid Period

Covid policies (student loan suspension, mortgage forbearance, UI, stimulus checks, etc.) may change the dynamic effect of flag removal



What to do?

Include a group of untreated or not yet treated

+

Use heterogeneity-robust estimators

Conclusion

Really ambitious and exciting project!

- Identification in panel event-studies is challenging, but area of rapid progress: many fixes now available!
- New linkages are a major contribution to Household Finance.
- Opens lots of new opportunities for study of informal insurance, intra-household decision-making, policy evaluations, etc.