
Should Credit Remarks be Forgotten? Evidence from Legally Mandated Removal

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Motivating Question

- **Question:** “Should negative information in credit registries/histories be removed?”
 - Credit registries exist in over 71 countries (Djankov, McLiesh, Shleifer (2007))
 - Deleting negative information after a fixed time is common
 - Riestra (2004): 5 years - Denmark, Netherlands, Spain..
 - Musto (2004): In US personal bankruptcies removed after 10 years
- **Simpler Question:** “What is the effect of removing negative information from a credit history?”
 - Musto 2004: Suggests it leads to more long term bankruptcies than would have occurred otherwise

The Data

- Panel from Swedish credit bureau:
 - 6 Years (bimonthly), Feb 2000 – Oct 2005
 - Data on loans with each bank (in aggregate)
 - application, credit limit, amount outstanding..
 - Annual data from tax authority (income, wealth..)
 - Credit remarks: missed payments of debts
 - Bank loans, tax liabilities and fines, abuse of accounts (?)

- Source of exogenous variation: mandated removal of credit remarks after 3 years

Questions about the Setting

- Not 100% sure what a remark is
 - What information is recorded?
 - Is it actually a text remark or a rating/dummy number?
- What discretion does a lender have in posting a remark?
 - Can a lender choose not to post a remark?
 - Can a lender decide to remove a remark early?
 - This would introduce selection into timing of remark removal!
 - Posting new remark resets the clock, more explanation needed
 - Do users of registry (or econometrician) know # of remarks?
- In the data we don't know who posted the remark, but is this known by the users of the credit bureau?
 - Can they differentiate remarks of different types (e.g. tax vs debt)

Empirical Approach

- **Question:** When a remark is removed after 3 year rule what is the effect on...
 - Credit score (is short term just backing out scoring formula?)
 - Application for a loan, number of loans, credit limit, lending outstanding, default
 - Are the effects different by credit score at time of removal (why?)
- Paper takes several attempts at same question
 - Short term effects specification, then different specification for short and long run effects, then re-run with matched group
 - 20 tables, 9 Figures (25 pages in total)
- **Suggestion 1:** Focus on one empirical strategy
- **Suggestion 2:** Relate empirics to theory/hypothesis

Main Empirical Specification

$$Y_{c,t+n} - Y_{c,t-1} = b_0 + b_1 \text{Score}_{c,t=-1} + b_2 S_{c,t} + b_3 Y_{c,t-1} + \varepsilon_c$$

- A cross-sectional regression of difference in Y for n periods after remark removed on
 - Credit score period before remark was removed
 - Dummy for if remark was removed
 - Level of Y prior to remark removal
- Identification comes from contrast group:
 - Use these as if Oct 2001 is removal date
 - Refinement: propensity score to set contrast group
- **Identifying assumption:** controlling for Score and Y (linearly), Y would have evolved in the same way for both groups were it not for remark removal

Suggestion 3: Use the Panel Variation

$$Y_{c,t} = \alpha_c + \tau_t + \sum_{n=1}^{12} \gamma_n \cdot I[n = \text{periods_after_removal}] + \varepsilon_{c,t}$$

- **Strategy:** exploit calendar time variation in timing of when remark is removed
 - Use other firms to remove time varying common shocks to credit demand/supply
 - no need for created removal date in contrast group
 - could even run without any contrast group
 - Improve counterfactual by interacting time dummies with groups (e.g. ratings bins, propensity score matched group)
 - Parameters of interest: $\{\gamma_n\}_{n=1}^{12}$
 - May need to group these into larger bins (e.g. 6 months)
 - Allows to remove borrower FEs (or do in 1st diffs)

Suggestion 4: Lead up to Removal

- Strategic behavior prior to removal?
 - Is there any evidence that borrowers apply for credit less leading up to remark removal?
 - Expand specification to..

$$Y_{c,t} = \alpha_c + \tau_t + \sum_{n=-3}^{12} \gamma_n \cdot I[n = \textit{periods_after_removal}] + \varepsilon_{c,t}$$

- Pre-trends for control and treatment groups?
 - Ideally these should be parallel
 - Placebo test: set t=0 one year before remark is removed

Conclusion

- Important and interesting question
- Great natural experiment and panel data set to answer these questions
- Focus on one empirical strategy that fully exploits the data
 - Convince us of plausibility of counterfactual

Additional Comments

- Short term specification:
 - Time trends in a diff in diff specification will generally pick up effect of policy not just pre-existing trend (Wolfers AER 2006)

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 - Can a lender decide to remove a remark early?
 - This would introduce selection into timing of remark removal!
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- Information for the econometrician:
 - Do we know who posted the remark? Date it was posted?
 - Do we have data at the borrower level by lender (so can I see the lending by the bank who posted versus non-posting banks?)
 - Can we separate/compare tax versus lending remarks?

Suggestion 3: Use Within 'c' Variation

$$Y_{c,j,t} = \alpha_{c,j} + \tau_{j,t} + \sum_{n=1}^{24} \gamma_n \cdot I[n = \text{periods_after_removal}] \\ + \sum_{n=1}^{24} \delta_n \cdot I[n = \text{periods_after_removal}] \times [j = \text{not_removal}] + \varepsilon_{c,j,t}$$

- **Strategy:** exploit variation in lending from different banks to same borrower
 - Use lending by bank who applied remark as control since presumably they never forget the information
 - Parameters of interest: $\{\delta_n\}_{n=1}^{24}$
 - Allows to remove borrower-bank fixed effect
 - Allows time effects to vary by lenders (control for shocks to bank credit supply and macro shocks)