“Are Lemons Sold First? Dynamic Signaling in the Mortgage Market”
by Adelino, Gerardi, and Hartman-Glaser

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AFA Meetings
Motivation

• Decades of observational evidence that economic agents do make costly signals.
• Recent (theoretical) lit in asymmetric info argues that delaying sale can be one such costly signaling mechanism to get separating eq.
  – Prominent examples: IPOs, dividend-paying assets
• But hard to test!
  1. Asymmetric info never easy empirically
  2. How to rule out other reasons for delay
Aiello (2016 WP)

• Quick concrete example of unobservable information the servicer could collect after mortgage origination
• Borrowers who pay their mortgage 1+ days earlier than due date are 15% less likely to become delinquent over the life of the loan
• Unobserved by prospective buyers of that mortgage
Research Design

• Document several reduced-form facts using cross-sectional regressions of loan-level outcomes on age of loan at time of sale

• For example,

\[ \text{Spread}_i = a + b \times \text{Age at Sale}_i + X_i g + e_i \]
Identification Challenge

• Not enough to show that the reason the spread was higher was because of loan age and not some other correlated variable.
• Need to rule out other reasons for firms to delay sale besides signaling quality
• i.e. need to have positive evidence that firms did this with the intent to signal unobservable quality
• Intent is unobservable. Instead try to isolate whether market made inference about unobserved quality from delay of sale
  – As distinct from loan seasoning!
## Reduced-form Facts

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Main Alternative Hypothesis

• What’s to say this isn’t just a seasoning effect? Lemons default faster, the fact that a given loan still exists later is evidence it’s not a juvenile delinquency

• If I know that a loan started out with payment status CCCCCC, that makes it more valuable because I Bayesian update about its (future) riskiness. Market would reward this.

• Reason for delay of sale could be random and not costly signaling
Starting CCCCCC is a strong signal

Source: Discussant’s calculations using LPS
Non-prime Securitized Loans

Subprime PLS Cumulative Default Probability (90-day Delinq.)

Source: Discussant’s calculations using LPS
Hard to sell delinquent loans

• Some defaulted loans sell, but most don’t
• US v. Barclays 12/2016 accuses Barclays of misrepresenting:

...the loans they securitized were not contractually delinquent, had not going into “first pay” or other “early pay” default, and would not otherwise be considered “scratch and dent”;
“Scratch and Dent” Market is small
Most Predictions Fit Random Delay, too

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Conditioning on $C^9$

- In $C^9$ sample, the fact that a loan $C^5$ at time of sale shouldn’t matter for future performance
- ...*unless* delayed-sale loans had better unobservables
- Authors find that among loans that were still current after 9 months, loans that were sold later *still* outperform (default less subsequently)
- In my mind, whole paper hinges on this fact.
Intuition of $C^9$ Test

- Obviously, Loan B should be more valuable at sale than Loan A
- But after 9 months, why should Loan B outperform Loan A?
  - n.b. can’t be due to originator because of their FEs
Bolstering Ruling Out Random Delay

- Obviously price at time of sale isn’t informative.
- But subsequent trading price should incorporate this.
  - Most PL MBS doesn’t trade after issuance, but perhaps enough of a sample to show this cross-sectional point.
- Resale test: loans that were sold immediately, last 5 months, then are on market at the same time as loans that also lasted five months but were held by issuer
Context in Literature

• Curious sentence in first paragraph: “There is, however, remarkably little empirical evidence that agents actually engage in costly signaling to overcome informational asymmetries.”

• Do people actually engage in costly signaling? Yes.
  – Professional certifications, occupational licensing, diplomas, Carfax, advertising, skin-in-the-game, Rolex watches, ...

• Does costly signaling overcome informational asymmetries? Yes.
  – It provides information! Empirical work showing it increases trade.

• Is one reason for costly signaling desire to overcome info asymmetries?
  – This doesn’t need causal analysis, just people stating that the *reason* they engage in costly signaling is to overcome informational asymmetries. ✔

• Maybe these people that *think* they’re engaging in costly signaling to overcome informational asymmetries are wrong?

• In some sense, asymmetric costs of sending a signal make the signal effectual whether or not it was intended as a signal or not.
Conclusion

• Example of where mortgage literature is going:
  • Use as a laboratory to document reduced-form facts that make more positive points

• This paper: delay of trade as a costly signal

• I am convinced because of $C^9$ sample results
  – (and really, only because of $C^9$ sample results)

• Can’t think of an alternative story, but would love additional tests along the lines of $C^9$ sample.