Preliminary and Incomplete

No Shopping in the U.S. Mortgage Market: Direct and Strategic Effects of Providing More Information

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The views expressed are those of the authors and do not necessarily reflect those of the Consumer Financial Protection Bureau or the United States.

Residential mortgages in the U.S

- The second largest (after the house) purchase a consumer would make
- About 45 million households have a 1st lien mortgage outstanding
- About 10 trillion dollars outstanding in 1-4 family mortgage loans
- Mortgages are complicated, but there are federally-mandated disclosures
- Consumers have plenty of incentives to shop

Competitive landscape

A 30 year fixed rate, conforming mortgage is a homogeneous product

10,000+ creditors, mostly <<1% market shares

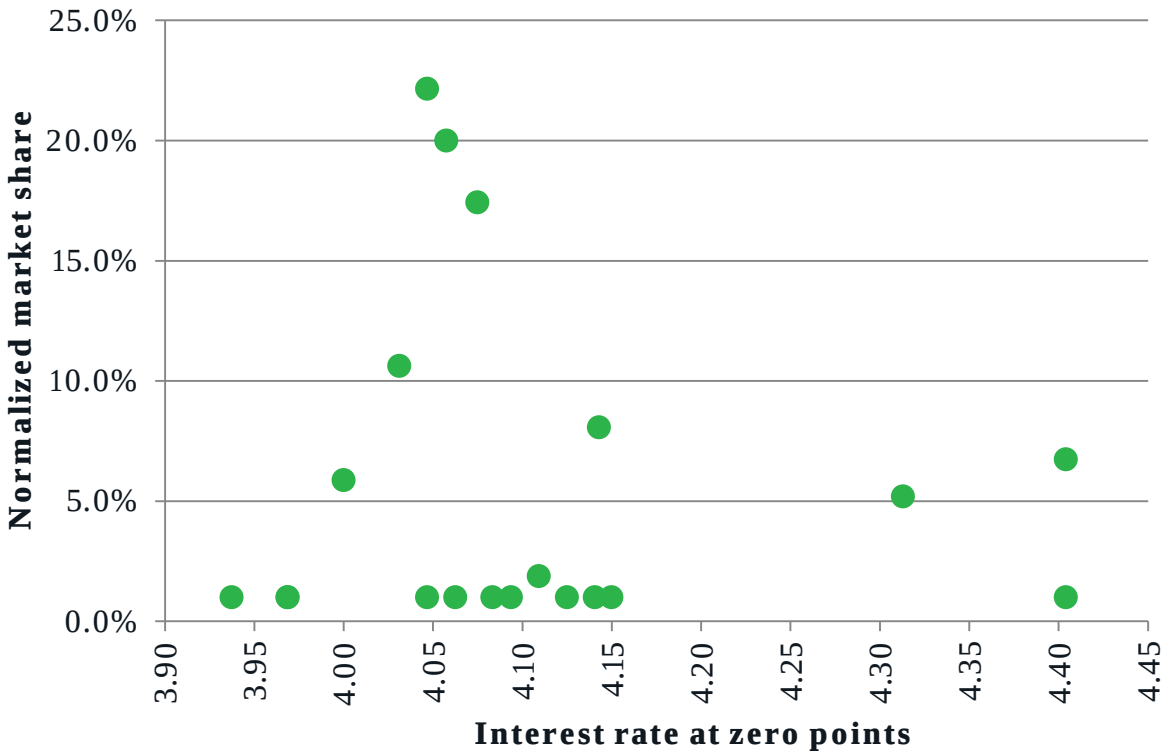
Equal access to the secondary market: most mortgages are insured by government and securitized at common rates

Consumers can easily access lenders: most lenders can be reached by phone or online

Conclusion: A pretty good candidate for perfect competition

Dispersion in posted prices is substantial

Conventional loan
State = MA
Loan size = $400K
FICO = 760,
LTV = 80%
October 31, 2014



Source: Informa retail ratesheets.

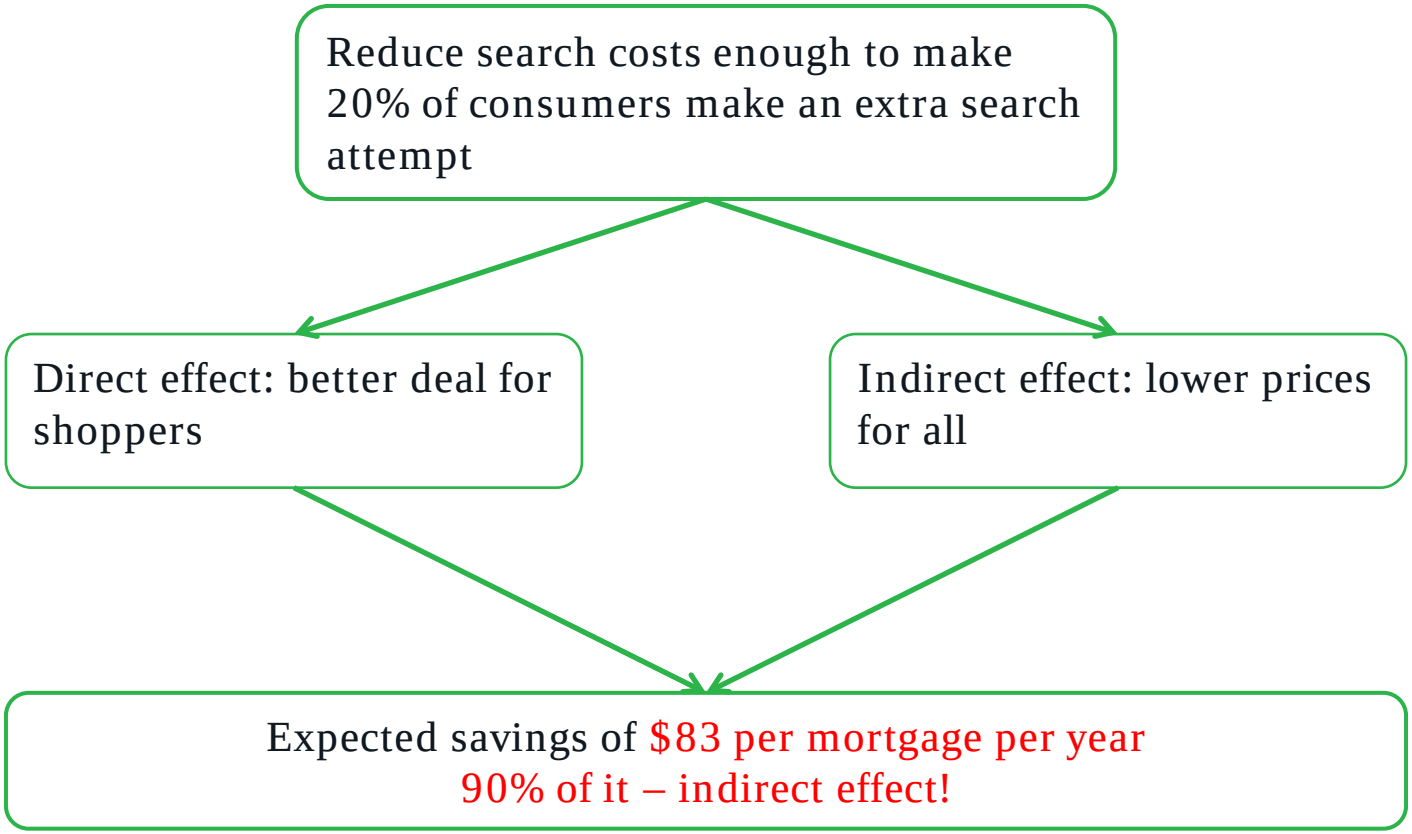
Findings from the raw data

Market for conventional 30 year fixed rate purchase loans

- A competitive market with a homogeneous product
- Up to 50bps price range even for prime borrowers.
- Savings from going actual to lowest price: $292 per mortgage per year
- Close to 50% of borrowers did not shop before taking out a mortgage

PRELIMINARY

Findings from the equilibrium search model



Related literature – some of it...

Mortgages

- Woodward and Hall (AER 2012) – dispersion in broker fees;
- Allen, Clark, Houde (AER 2014) – search and bargaining for mortgages in Canada;
- Lacko, Pappalardo (AER 2010) – testing mortgage disclosures

Search literature generally (very incomplete list!)

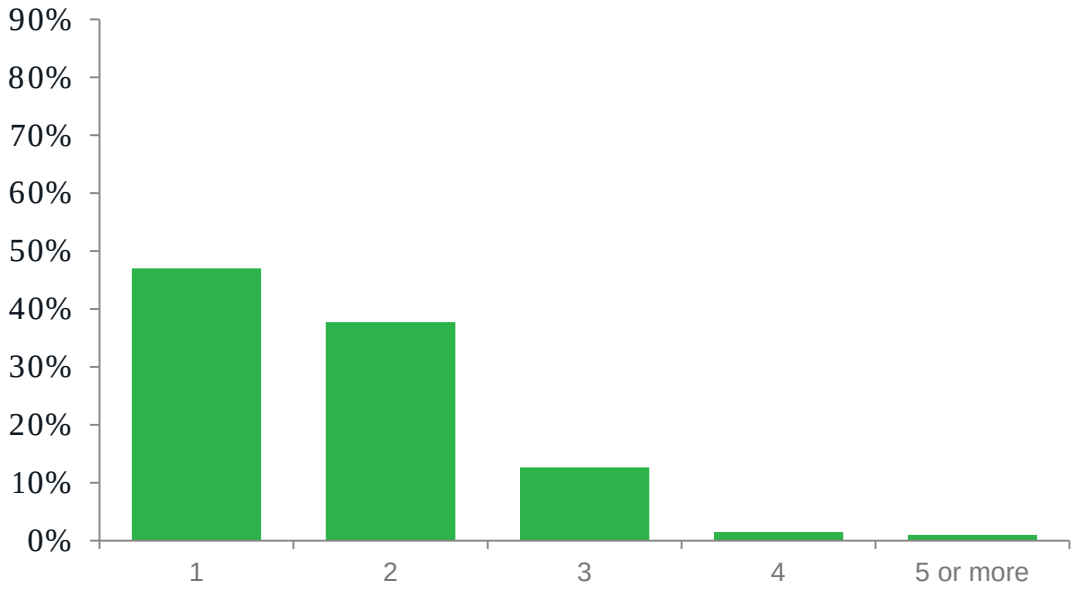
- Hortacsu and Syverson (QJE 2004) – search for S&P500 funds;
- Koulayev (RAND 2014) – identification of search costs with differentiated products;
- Moraga-Gonzalez, Sandor and Wildenbeest (2015) – search in the auto market;

Why don’t people shop for mortgages?

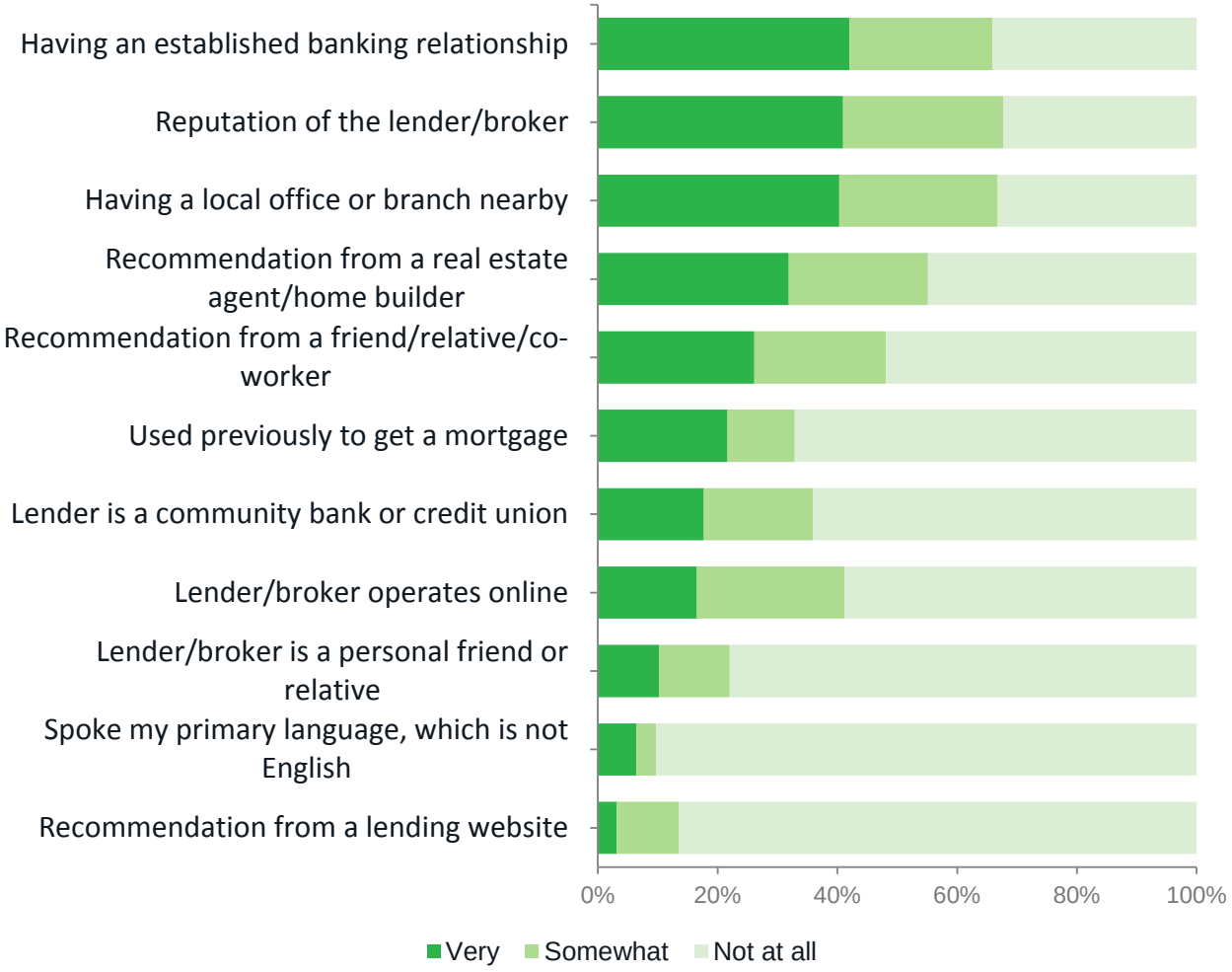
Evidence from the national survey of mortgage borrowers

National Survey of Mortgage Borrowers

How many different lenders/brokers did you seriously consider before choosing where to apply for your mortgage?

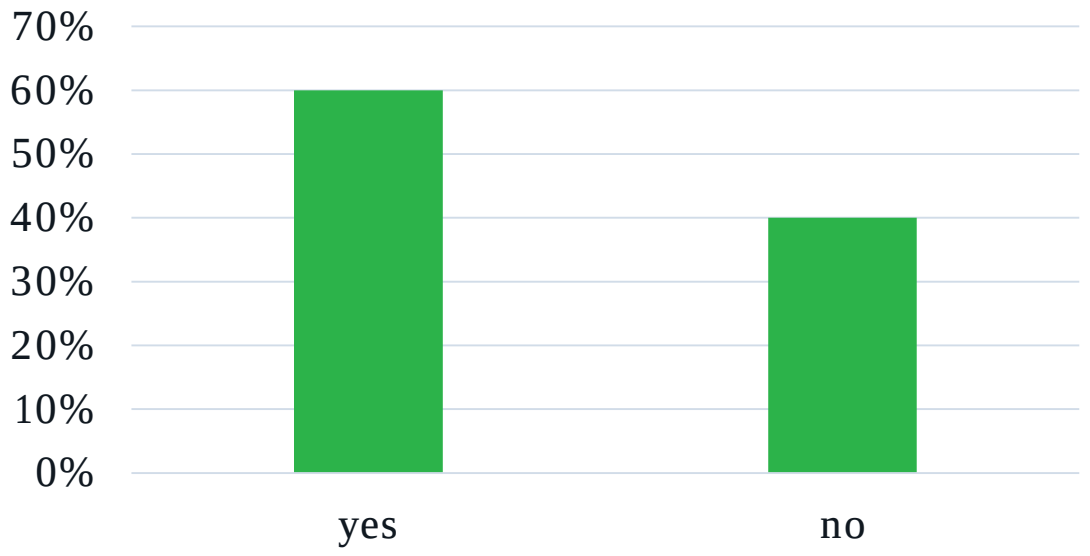


National Survey of Mortgage Borrowers



National Survey of Mortgage Borrowers

Do you agree or disagree with the following statement:
"Mortgage lenders would offer me roughly the same rates and fees"



An equilibrium search model of the mortgage market

Searching for a mortgage: primitives

- Borrower type: Application Date x FICO x LTV x Loan Size x State
- Loan type: 30 year conforming loan, no option of not getting a loan
- Utility by consumer i from lender j

$$u_{ij} = -\alpha P(r_{ij}, L_i) + \delta_{ij} + \epsilon_{ij}$$

- The search set = "competition set"
- Search cost:

$$c_i \sim F(c)$$

Searching for a mortgage: search protocol

How would you like to search?

Non-directed search: a random draw of lenders from the "hat"

Directed search: contact a known lender, from the awareness set

Learn u_{ij} of the lender drawn

Know δ_{ij}, but learn p_{ij}, ϵ_{ij}

Optimal search behavior: Rank search alternatives by declining reservation value and continue until the next reservation value falls below status quo

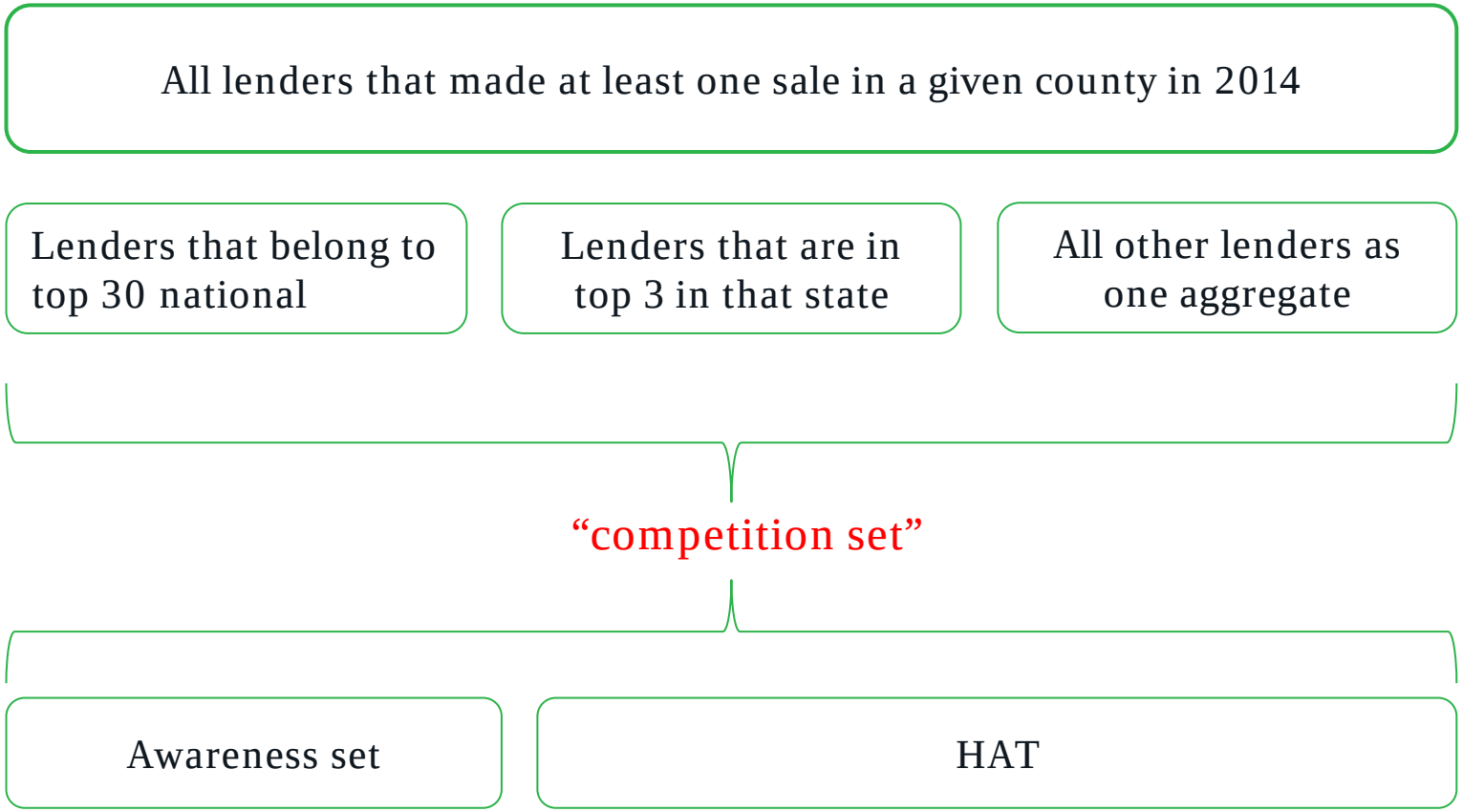
Two types of consumers

- Unobserved consumer type:

1. (40%) Informed consumers know the price distribution
2. (60%) Uninformed consumers think prices are the same, but they might be searching for non-price characteristics

- All consumers can compare two price quotes, once they see them.

Competition and awareness sets



Data combination

- Rate sheets for 30+ lenders NEW
- National Survey of Mortgage Borrowers NEW
- HMDA
- Strategic Business Insight marketing survey NEW
- CoreLogic (source of FICO, LTV values)

Awareness sets

Lender	Awareness frequency	National rank in sales	National 2014 sales
WELLS	38%	1	9973
JPM	14%	2	4644
BOFA	12%	4	4372
QUICKEN	11%	5	5401
USBANK	8%	8	3780
PNC	6%	13	2626
53RD	5%	16	1959
CITI	5%	20	2682
REGIONS	5%	22	1827
HUNTINGTON	3%	37	1021
COMPASS	2%	50	838
RBS	2%	59	958
FIRSTNIAGARA	2%	64	576
SANTANDER	2%	79	538
TDBANK	2%	81	805
HARRIS	1%	91	611
STATEFARM	1%	103	1236

Price dispersion in this market is substantial

Among 221,000 purchase, 30 year fixed conforming loans made by Informa lenders...

1. Median consumer who bought from an Informa lender has picked a lender ranked #10
2. Only 4% picked the lowest priced Informa lender
3. Average range between lowest priced and highest priced lender is 50 basis points

Estimation

Likelihood of individual loans + Likelihood of observed search intensities

1,123 parameters: lenders, lender-state fixed effects, interactions between consumer types and lenders

Brand fixed effects are identified from market shares

Search costs are identified by matching to known aggregate search intensities

Counterfactual: 20% of consumers search one more time

Direct effect: savings from searching more: 9 dollars per year

Indirect effect: savings from lower prices: 75 dollars per year

Total effect: savings of 83 dollars per year, for each loan

Times 45 million loans outstanding...

Conclusions

Significant price dispersion and substantial dollar gains from search

Search costs and non-price preferences prevent consumers from shopping more

Making it easier to shop even for a minority of consumers is likely to have a significant externality for the whole market

A novel model of search and choice that is suited for markets with large number of sellers