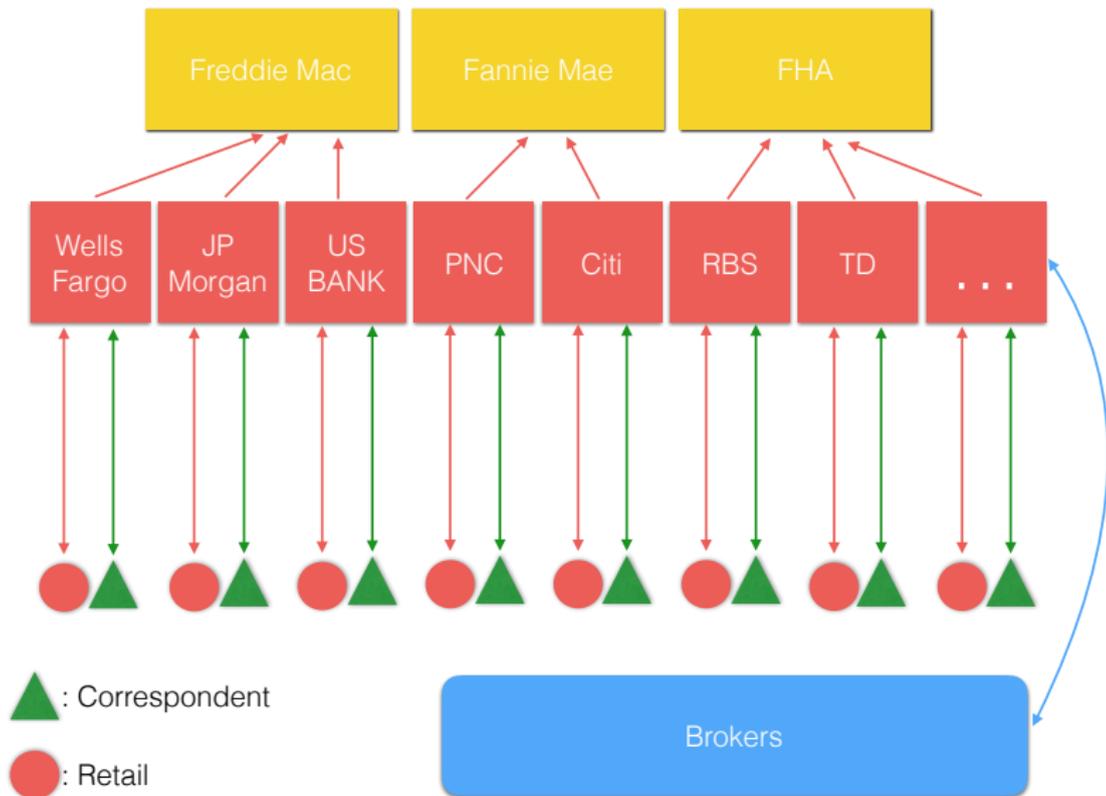


Discussion of: *No Shopping in the U.S. Mortgage Market: Direct and Strategic Effects of Providing Information*

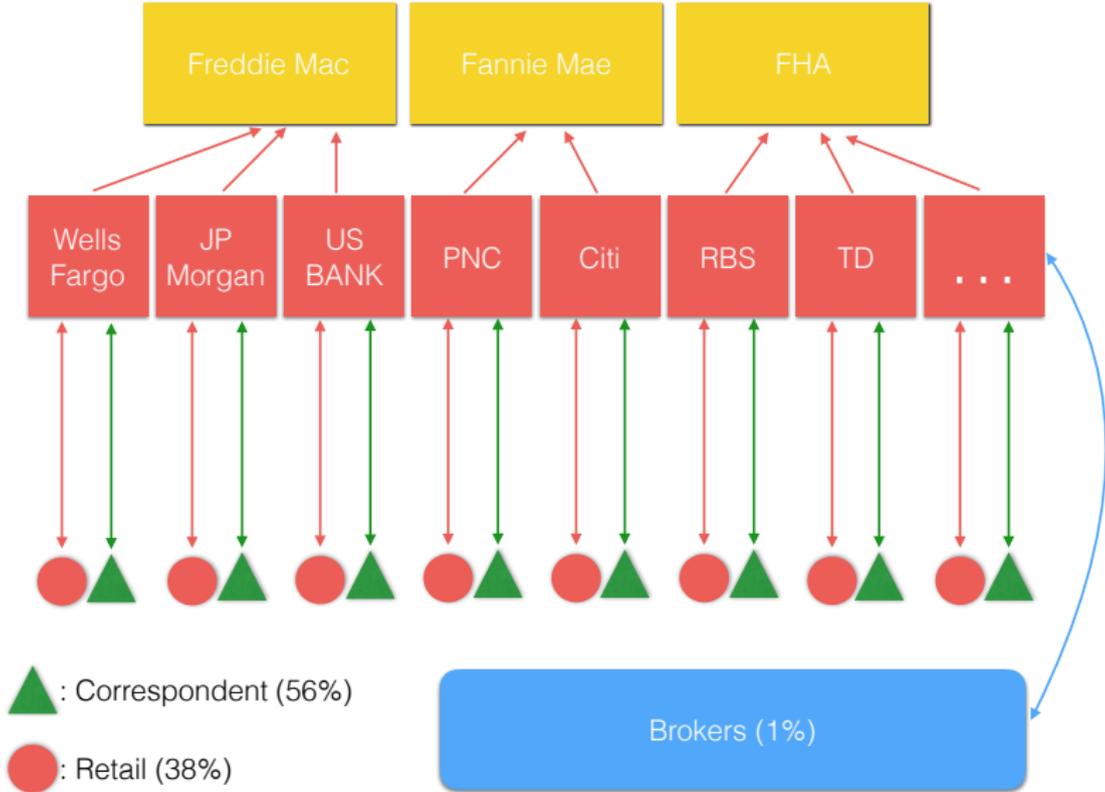
Jean-François Houde  
Cornell University & NBER

November 3, 2016

# Supply Chain of the US Mortgage Industry



# Supply Chain of the US Mortgage Industry



# Summary of the Data

- **Ps and Qs:** Merge three data-sets
  - ▶ *HMDA*: Market shares (all lenders)
  - ▶ *CoreLogic*: Financial characteristics of borrowers (17 servicers)
  - ▶ *Informa*: Retail mortgage price sheets (31 lenders)

# Summary of the Data

- **Ps and Qs:** Merge three data-sets

  - HMDA*: Market shares (all lenders)

  - CoreLogic*: Financial characteristics of borrowers (17 servicers)

  - Informa*: Retail mortgage price sheets (31 lenders)

- **Search and awareness:**

  - NSMO*: National survey of mortgage borrowers shopping process **and** beliefs about price dispersion

  - SBI*: Financial institution “awareness”

# Summary of the Data

- **Ps and Qs:** Merge three data-sets

*HMDA*: Market shares (all lenders)

*CoreLogic*: Financial characteristics of borrowers (17 servicers)

*Informa*: Retail mortgage price sheets (31 lenders)

- **Search and awareness:**

*NSMO*: National survey of mortgage borrowers shopping process **and** beliefs about price dispersion

*SBI*: Financial institution “awareness”

- This is a lot of work!

# Key Takeaways

- **Price dispersion:**

Only 4% pay the lowest price (cond. of choosing an Informa lender?)

Average potential savings = \$300 /year

Large?

# Key Takeaways

- **Price dispersion:**

Only 4% pay the lowest price (cond. of choosing an Informa lender?)

Average potential savings = \$300 /year

Large? *They are LARGE. Everyone in DC is quite surprised to see this!*

# Key Takeaways

- **Price dispersion:**

Only 4% pay the lowest price (cond. of choosing an Informa lender?)

Average potential savings = \$300 /year

Large? *They are LARGE. Everyone in DC is quite surprised to see this!*

Questions:

- ★ Need more descriptive work...
- ★ How much of the dispersion is due to the fact that some lenders are using *national* prices, while other target specific markets?
- ★ What about heterogeneous pricing rules across lenders (e.g. different base prices, FICO cutoffs, etc)?
- ★ Do we see more dispersion among low risk or large LTV borrowers?
- ★ Are “correspondents” using comparable price sheets?
- ★ Is it consistent with the CoreLogic “transaction price” measure?

# Key Takeaways

- **Price dispersion:**

Only 4% pay the lowest price (cond. of choosing an Informa lender?)

Average potential savings = \$300 /year

Large? *They are LARGE. Everyone in DC is quite surprised to see this!*

Questions:

- ★ Need more descriptive work...
- ★ How much of the dispersion is due to the fact that some lenders are using *national* prices, while other target specific markets?
- ★ What about heterogeneous pricing rules across lenders (e.g. different base prices, FICO cutoffs, etc)?
- ★ Do we see more dispersion among low risk or large LTV borrowers?
- ★ Are “correspondents” using comparable price sheets?
- ★ Is it consistent with the CoreLogic “transaction price” measure?

- **Search and beliefs:**

50% of borrowers only consider one lender...

# Key Takeaways

- **Price dispersion:**

Only 4% pay the lowest price (cond. of choosing an Informa lender?)

Average potential savings = \$300 /year

Large? *They are LARGE. Everyone in DC is quite surprised to see this!*

Questions:

- ★ Need more descriptive work...
- ★ How much of the dispersion is due to the fact that some lenders are using *national* prices, while other target specific markets?
- ★ What about heterogeneous pricing rules across lenders (e.g. different base prices, FICO cutoffs, etc)?
- ★ Do we see more dispersion among low risk or large LTV borrowers?
- ★ Are “correspondents” using comparable price sheets?
- ★ Is it consistent with the CoreLogic “transaction price” measure?

- **Search and beliefs:**

50% of borrowers only consider one lender...

60% report believing that *prices are roughly the same across lenders...*

# Key Takeaways

## ● Price dispersion:

Only 4% pay the lowest price (cond. of choosing an Informa lender?)

Average potential savings = \$300 /year

Large? *They are LARGE. Everyone in DC is quite surprised to see this!*

Questions:

- ★ Need more descriptive work...
- ★ How much of the dispersion is due to the fact that some lenders are using *national* prices, while other target specific markets?
- ★ What about heterogeneous pricing rules across lenders (e.g. different base prices, FICO cutoffs, etc)?
- ★ Do we see more dispersion among low risk or large LTV borrowers?
- ★ Are “correspondents” using comparable price sheets?
- ★ Is it consistent with the CoreLogic “transaction price” measure?

## ● Search and beliefs:

50% of borrowers only consider one lender...

60% report believing that *prices are roughly the same across lenders...*

Questions:

- ★ Need more descriptive work...
- ★ What factors predict search? Awareness?
- ★ Do searchers pay less?

# Summary of the Model

- **Ingredients:** Differentiation + Search cost + Awareness

- Expected utility:

$$\text{Aware options } (\approx 30): u_{ij} = E_{p,\epsilon} [\delta_j - \alpha p_j + \epsilon_{it}]$$

$$\text{Unaware options } (\approx 10K): u_{i0} = \sum_h \rho_h E_{p,\epsilon} [\delta_h - \alpha p_j + \epsilon_{it}]$$

- Two consumer types:

*Rational:* Use the empirical price distribution of prices (Informa lenders)

*LOP:* Assume that  $p_{ij} = \bar{p}_i$  for all  $j$

- Search protocol:

Reservation utility:  $E_{p,\epsilon} [\max\{\delta_j - \alpha p_j + \epsilon_{it} - r_j, 0\}] = c$

Rank options (incl. 0):  $r_i^{(1)} > r_i^{(2)} > \dots > r_i^{(J)}$

Stopping rule: Continue searching if  $u^* < r_i^{(k)}$ .

## Comments and Suggestions

- This is not a simple model...

*Thus our model has 1123 parameters. With this parsimonious model we aim to capture elasticity of demand for each Informa lender, as it likely varies across locations and consumer types.*

## Comments and Suggestions

- This is not a simple model...

*Thus our model has 1123 parameters. With this parsimonious model we aim to capture elasticity of demand for each Informa lender, as it likely varies across locations and consumer types.*

- **Question:** Can the model rationalize the large market share of “unaware options”?

Correspondent originates 56% of mortgages

But, consumers are allowed to sample only one “unaware” lender

## Comments and Suggestions

- This is not a simple model...

*Thus our model has 1123 parameters. With this parsimonious model we aim to capture elasticity of demand for each Informa lender, as it likely varies across locations and consumer types.*

- **Question:** Can the model rationalize the large market share of “unaware options”?

Correspondent originates 56% of mortgages

But, consumers are allowed to sample only one “unaware” lender

- **Question:** Is it a good model for LOP consumers (60%)?

The search protocol for **LOP** consumers imply that they should pay significantly more than **rational** consumers. Is it the case?

An alternative interpretation is that LOP consumers rely on their (informed and caring) real-estate agent to search on their behalf.

## Comments and Suggestions

- This is not a simple model...

*Thus our model has 1123 parameters. With this parsimonious model we aim to capture elasticity of demand for each Informa lender, as it likely varies across locations and consumer types.*

- **Question:** Can the model rationalize the large market share of “unaware options”?

Correspondent originates 56% of mortgages

But, consumers are allowed to sample only one “unaware” lender

- **Question:** Is it a good model for LOP consumers (60%)?

The search protocol for **LOP** consumers imply that they should pay significantly more than **rational** consumers. Is it the case?

An alternative interpretation is that LOP consumers rely on their (informed and caring) real-estate agent to search on their behalf.

- **Suggested change:**

*Initial quote:* Pre-qualifying lender (e.g. home bank or realtor’ “personal” broker)

*Choice-set:* Realtor suggest  $J$  additional lenders (e.g. max  $EU$ )

*Search:* Consumer decide to investigate  $J$  or not.