

# Advertising Expensive Mortgages

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# Advertising mortgages

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## Wise. Lending.

Specializing in the 1% Mortgage.

**\$200,000  
Mortgage  
= \$529.69  
per Month**

Available for Purchase  
or Refinance on  
1st, 2nd Homes  
and Investment  
Properties

**\$400,000  
Mortgage  
= \$1,059.38  
per Month**

**Lowest  
Payments  
Around**

**\$600,000  
Mortgage  
= \$1,589.07  
per Month**

No Income Verification  
No Asset Verification  
Credit Repair Services  
Interest Only Loans  
40 & 50 Year Loans!!!  
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Damaged Credit OK

**Lowest Fixed Rates Available!**

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**100% Financing Available**

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Call for a **FREE** Consultation

**Loan Officers Wanted, Call Ext. 109**



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## NEW LOWER MORTGAGE RATES AT CMC!

Option ARMs  
as low as

**1%**

= \$253 per \$100k loan amount

5 Year Fixed  
payment  
as low as

**4.25%**

= \$434 per \$100k loan amount

Purchase · Refinance · Cash-Out



**Continental Mortgage Corp**

HOME OF THE EXPRESS MORTGAGE

(703) 891-4200 · (301) 762-6200 · (540) 347-5363

Approvals by Phone or On-Line [www.cmcLoan.com](http://www.cmcLoan.com)

# Perception: advertising is hurting consumers

Response: litigation

- ARM resets not clear (marketed as fixed):
  - The Office of the Attorney General's Consumer Protection Section in Colorado sued or settled with 16 lenders
  - Arizona Office of Attorney General v Wells Fargo Bank
  - FED and DOJ v Wells Fargo (\$260 million fine)
- Targeting minorities
  - State of Illinois v Countrywide Financial Corporation/Bank of America
  - ACLU against Morgan Stanley

# Perception: advertising is hurting consumers

Response: advertising regulation

- FED: Regulation Z
- FTC: Mortgage Acts and Practices Advertising rule
  - Advertising confuses people about interest rates
  - ARM / FRM choice
- Congress: Dodd-Frank
  - Consumer Financial Protection Bureau (CFPB)

# Is advertising bad for consumers?

- We have anecdotes, examples...

# Is advertising bad for consumers?

- We have anecdotes, examples...
- How do you tell good (informative) advertising from bad (persuasive)?
  - How do you tell a “bad” choice?
- Example:
  - Advertising of apples increases apple consumption relative to oranges
  - Is eating apples worse for the consumer than eating oranges?

- Focus on ARM reset rates
  - Subject of litigation & regulation
- Framework to compare mortgage choices across borrowers
  - Finding dominated choices
- Advertising apples v oranges
  - Higher prices are bad for consumer all else equal
  - Find consumers who are overpaying for same product
- Relate relative mortgage expensiveness to mortgage advertising
- Additional support in advertising content

- Mortgage Data
  - Subprime, securitized, 90% of market
- Advertising Data
  - TNS Media Intelligence (TNSMI)
    - Use local media spending
    - Outlets: Network TV, cable, national newspapers, local newspapers
  - Intel
    - Advertising content
    - Outlets: print, direct mail
- Sample 2002 - 2007



# Measuring relative loan “expensiveness”

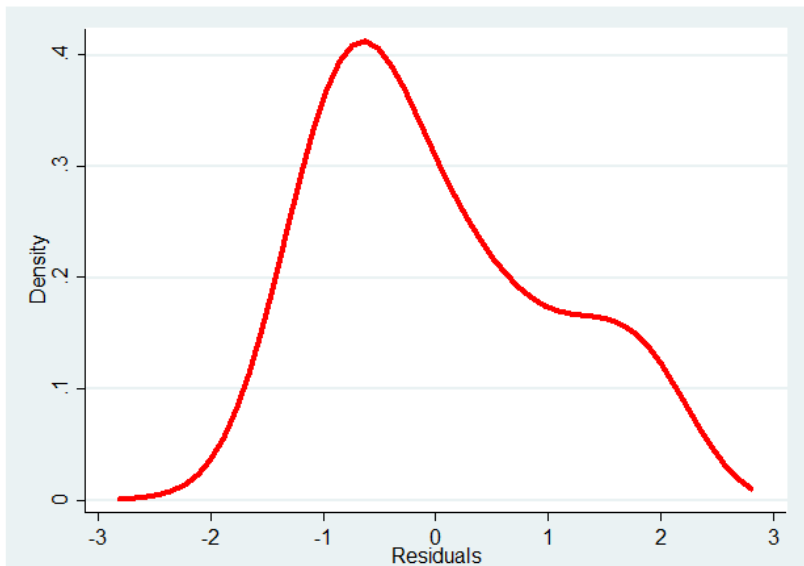
- A loan is “expensive” if the reset rate,  $y$ , is high relative to borrower observables  $X$

$$y_{ijtk} = \beta i_{ijlt} + \alpha_t + \alpha_l + \Gamma X_{ilt} + \varepsilon_{ijlt}$$

- Observables of borrower  $X_{ilt}$  : FICO, size, ltv, low documentation,
- Observables of applicant county: race, median income, percentage poor, education etc.
- Other: quarter,  $t$ , DMA,  $l$
- Initial interest rate  $i_{ijlt}$
  
- Residual measures “excessive” reset rate  $y - \hat{y}$

# Loan expensiveness

Figure 3.a



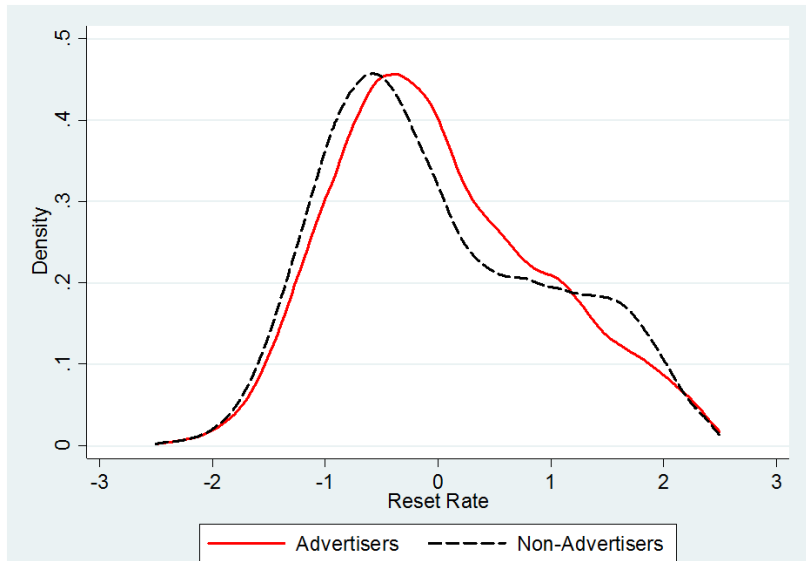
# Evaluate the size of dispersion

Back of the envelope

- Mean mortgage  $\approx$  \$200k
- Mean 95-5 percentile interest rate difference  $\approx$  3%
- \$6000 per year

# Do advertisers charge more?

Figure 5



# Advertising and lender expensiveness

Table 3, Panel A

<i>Panel A. ARM Loan Sample</i>			
	Y = Lender Expensiveness		
	(1)	(2)	(3)
Advertising (all) (x100)	0.0314** (0.0115)		
Advertising (others) (x100)		0.111 (0.0816)	
Advertising (newspapers)(x100)			0.0368*** (0.0122)
Quarter Fixed Effects	Yes	Yes	Yes
Lender Fixed Effects	Yes	Yes	Yes
Region Fixed Effects	Yes	Yes	Yes
Observations	51,895	51,895	51,895
R-squared	0.139	0.139	0.139

# Advertising and Demographics:

Table 4

*Panel A. Advertising and Expensiveness*

	Y = Lender Expensiveness					
	Minority %	Minority %	Educated %	Educated %	Poor %	Poor %
	Low (1.00)	High (2.00)	Low (3.00)	High (4.00)	Low (5.00)	High (6.00)
Advertising (all) (x100)	-0.0461 (0.06)	0.0338*** (0.01)	0.0708*** (0.02)	0.00616 (0.01)	0.00246 (0.02)	0.0369** (0.01)
Quarter Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Lender Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	25,922	25,973	26,008	25,887	26,093	25,802
R-squared	0.15	0.158	0.151	0.16	0.157	0.148

# Alternative:

- Condition on a ton of “observables”
  - initial rate
  - FICO, LTV, loan amount
  - lender,
  - time,
  - location.
- Is this sufficient?
- Alternative:
  - Advertisers attract borrowers with *unobservably* low ability to repay / high catering costs
  - Charge higher interest rates

- Low unobservable ability to repay  $\Rightarrow$  ex post low repayment
  - Observe *lower* delinquency for advertiser's borrowers
  
- Observe catering costs for large lender
  - No differences b/w borrowers which are susceptible to ads
  - No difference b/w high/low advertising periods



# IV for mortgage advertising

## Craigslist

- Idea:

- Craigslist  $\uparrow \Rightarrow$  Advertising (advertisers v. non-advertisers)  $\downarrow$
- Advertising  $\downarrow \Rightarrow$  Expensiveness (advertisers v. non-advertisers)  $\downarrow\downarrow$

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- Validity:

- Forum for free mortgage advertising in its financial services section
- Could Craigslist entry plausibly affect mortgage advertising
  - 4.8% in Dallas, TX - 12.3% in Pittsburgh, PA
  - Survey responses
  - Job advertising in newspapers (Kroft and Pope 2012)

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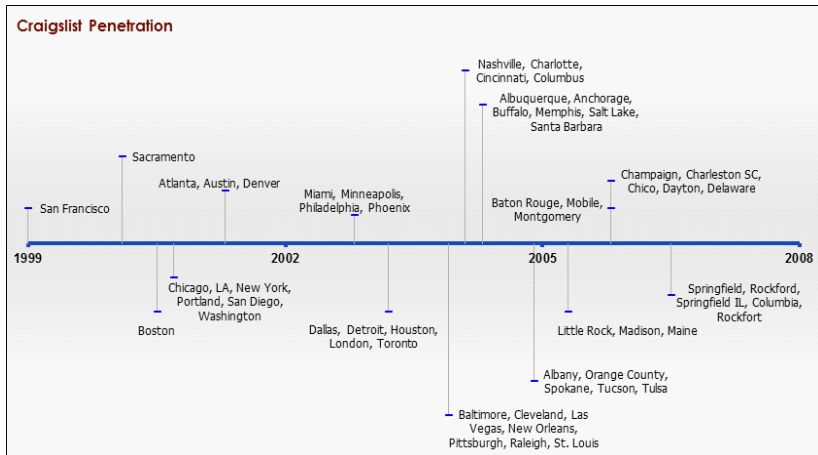
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- Exclusion restriction

- Entry staggered across markets
- CL does not select on borrowers' unobservable quality

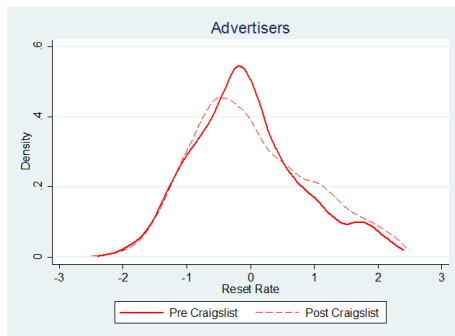
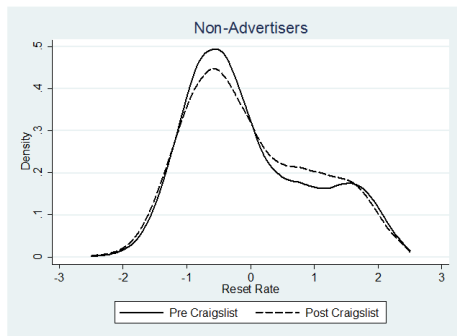
# Craigslist entry

Staggered introduction (Figure 6)



# Craigslist effect

Figure 7



# Good IV?

- Largest drop in newspaper advertising
- Pre-trends / post trends on observables
  - Advertising - YES
  - FICO, LTV, pre pay penalty, low doc- NO
- Substitution of paid advertising into Craigslist
  - Scrape who advertises on CL and merge
    - Little overlap
    - Drop overlap

- IV coefficient = 0.0711
  - \$1,000  $\Rightarrow$  reset rate increase 7.1bp
- Assumptions:
  - Average spending  $\sim$  \$25,000
  - Average mortgage  $\sim$  \$200,000
  - 15 year ARM, reset after 2 years
  - Discount at 10%
- Upper bound  $\sim$  \$21,000
- Pay reset for 3 years  $\sim$  \$7,500

- Evidence so far supports persuasive view of advertising
  - *Positive* correlation between advertising intensity and pricing *within* market
- Can we say more? Advertising content analysis:
  - Shrouds resets and increases salience of initial rates
  - Low (negative) correlation between advertised and actual rates
  - Advertising generic characteristics—not about product differentiation



# In search of reset rates

Table 9

- Reset rates almost never explicitly advertised

*Panel A. ARM Mortgage Related Advertising Campaigns*

Search Term	No. Campaigns
ARM	4,238
Reset	13
Adjust	1,885
Explicit interest rate	4,234
Total	6,136

*Panel B. Advertisement Displays Two Interest Rates*

Search Term	No. Campaigns
Second rate is APR	11,387
Multiple products	1,676
Other	128
Total	13,191

# Salience of initial rates in ads

Table 10

*Panel C. Phrases on Low Rates*

Search Term	No. Campaigns
As low as	3,632
Intro	769
Initial	346
Starting	608
Total	4,747

# APR and Expensiveness

Table 10

- Not necessary to advertise reset rates?
- APR a sufficient statistic?
- Low APR → Cheap lender?

	<i>Y = Lender Expensiveness</i>			
	(1)	(2)	(3)	(4)
APR	-0.0205** (0.009)	-0.0258** (0.013)	-0.0105 (0.009)	-0.0093 (0.015)
Controls	No	Yes	Yes	Yes
Quarter Fixed Effects	Yes	Yes	Yes	Yes
Lender Fixed Effects	No	No	No	Yes
Region Fixed Effects	No	No	Yes	Yes
Observations	807	807	807	807
R-squared	0.222	0.230	0.421	0.598

# What is advertised

- Generic mortgage characteristics
- Advertising:
  - Horizon
  - Amount
  - Name, address...
- What is *not* advertised
  - Detailed product descriptions
  - Servicing, renegotiation...

# Conclusion

What are the facts:

- Dispersion in prices paid by similar borrowers
- Generic models of informative advertising have a difficult time explaining facts:
  - Within market correlation b/w pricing & advertising
  - Negative correlation between advertised prices and transacted prices
  - Generic information advertised
- Persuasive advertising:
  - Some customers not sophisticated
    - Salience / obfuscation
    - Reset versus initial
  - Heterogeneity (minority, low education and poor)