Federal Reserve Bank of Philadelphia

Appraising Home Purchase Appraisals

Paul Calem

Lauren Lambie-Hanson

Leonard Nakamura

Federal Reserve Bank of Philadelphia*

CFPB Research Conference
December 16, 2016

*These remarks reflect my own views, not necessarily those of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.

Are appraisals truly objective?

FEDERAL RESERVE BANK OF PHILADELPHIA

- Home purchase appraisals are supposed to serve two main purposes:
  1) Inform the lender about the value of the house (collateral for loan)
  2) Help the buyer avoid overpaying for the property

- Increasingly, evidence has shown that many appraisals have been upwardly biased (inflated).

- According to the 2011 Financial Crisis Inquiry Commission Report (p.91):
  - "As the housing market expanded, [a] problem emerged in subprime and prime mortgage markets alike: inflated appraisals."
  - "One 2003 survey found that 55% of appraisers had felt pressured to inflate the value of homes; by 2006, this had climbed to 90%."

- Not just a thing of the past! Numerous policy and industry proposals and changes.

THE WALL STREET JOURNAL.

MARKETS

Dodgy Home Appraisals Make a Comeback

Industry Executives See Parallels With Pre-Crisis Valuations; Regulators Are Wary

- What value do appraisals provide, and to whom?

How do appraisals work?

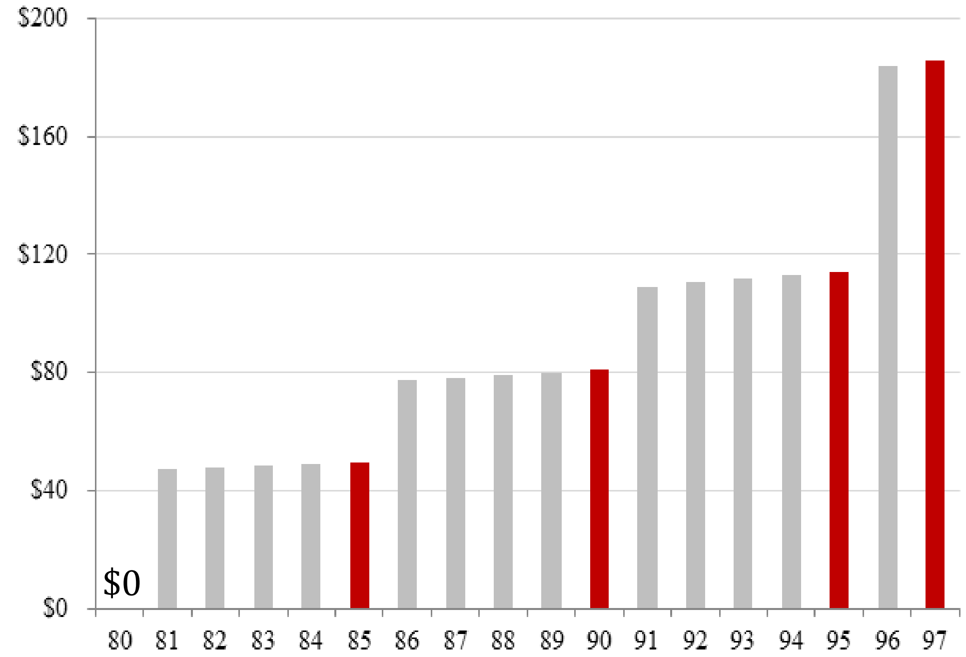
- You choose a house to buy, and you make an offer. You and the seller agree on a "contract price."
- If you need a mortgage, the lender will order an appraisal (for which you will pay $300-$600).
- Lender wants to ensure that the property (collateral) is valuable.
  - This affects your loan to value (LTV) ratio, since:

LTV = loan amount / min(appraisal amount, contract price)

Why is the loan to value (LTV) ratio so important?

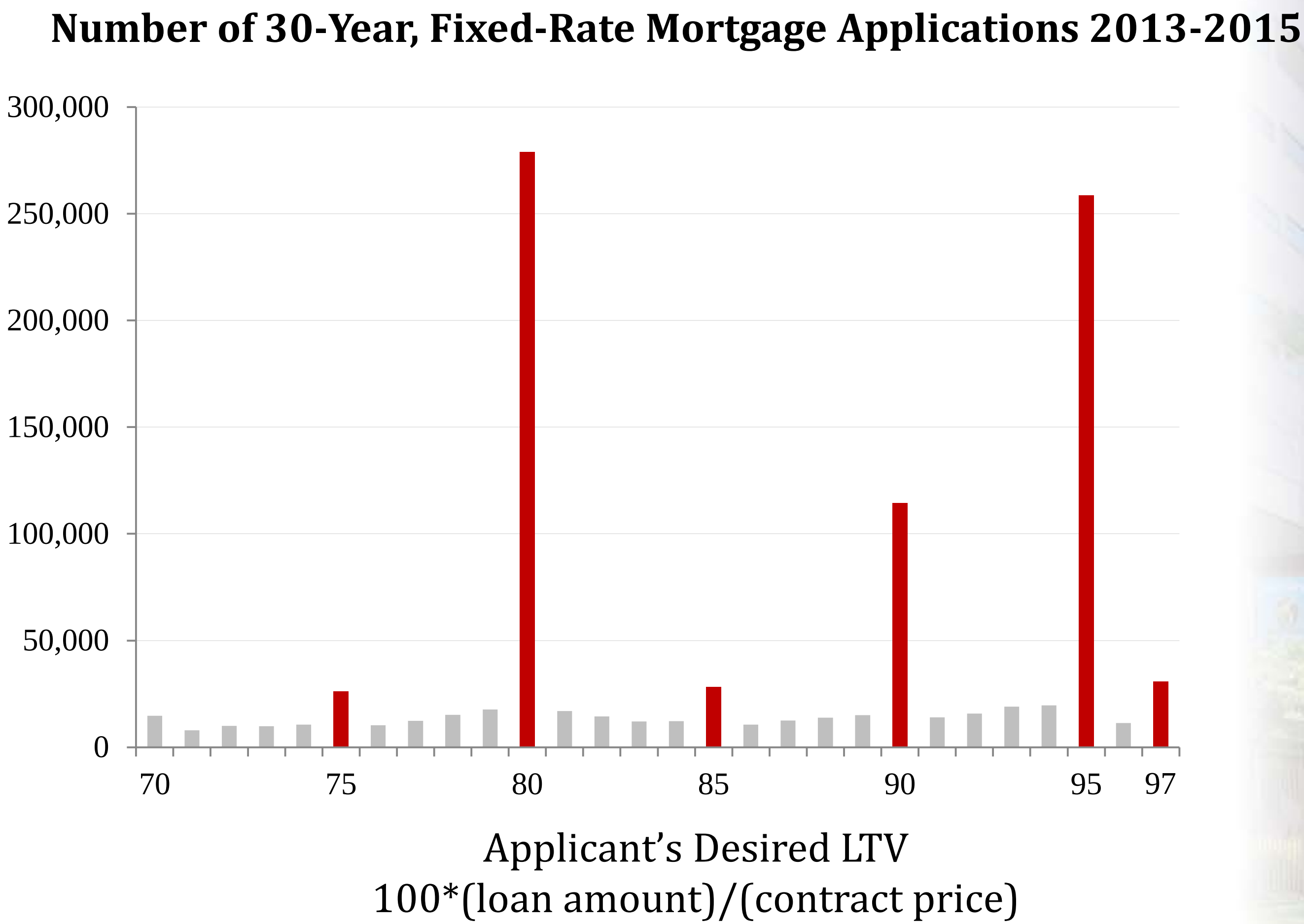
- Higher LTV (smaller down payment) means a borrower will pay more for the loan
  - Loan-level price adjustments (higher interest rates)
  - Mortgage insurance

Monthly Mortgage Insurance Premium Costs by LTV for a FICO 720+ Borrower Purchasing a Home for $200,000



Source: Authors' tabulations of data from goodmortgage.com's PMI Calculator

Borrowers try to locate at LTV "notches."



Source: Authors' tabulations of proprietary GSE data

Outcomes of Appraisals

FEDERAL RESERVE BANK OF PHILADELPHIA

- Buyer's Options
  - If appraisal < contract price ("negative appraisal"):
    - You put up a higher down payment (to keep LTV same)
    - You accept higher LTV loan (higher cost)
    - You renegotiate the price with the seller
    - You decide not to buy the house
      - Most buyers have an "appraisal contingency" in the contract (keep earnest money)
  - If the appraisal ≥ contract price, transaction goes through
    - But if appraisal was biased, you've overpaid!

- Lender's Tradeoff
  - Negative appraisal → transaction might fall through
  - Biased appraisal → downward bias in measured risk of default
  - *Appraiser wants to retain the lender's business, so he acts to help balance these competing costs.*

What information does the appraiser receive?

FEDERAL RESERVE BANK OF PHILADELPHIA

- Purchase (“contract”) price
- Loan amount
  - Therefore, LTV
- Appraisals are undertaken to provide independent assessments of property values.
- How often do you think appraisal < contract price?

APPRAISAL ORDER FORM

Date:________________

Lender:____

Lender Phone # and email address:______________________________________

Full:_____ Drive By:_____ Final/Draw:_____ Other:_______

Circle choice: Single Family / Multi Family Conventional / FHA Purchase / Refinance

Please fill out the order form completely and send proper documentation.

Borrower:____

Property Address:____

City:______________________________ Zip Code: _____________

Contact:_________________________ Home#______________ Work#_____________

Estimated Value:__________ Loan Amount:_________ Purchase Price:___________

Appraiser’s Fee:$____________ Bill Lender: _______ / Collect at Door: _______

Methods of Payment Accepted: Cash Money Order Certified Check Visa/MC

For a purchase: Please attach a copy of the purchase contract.

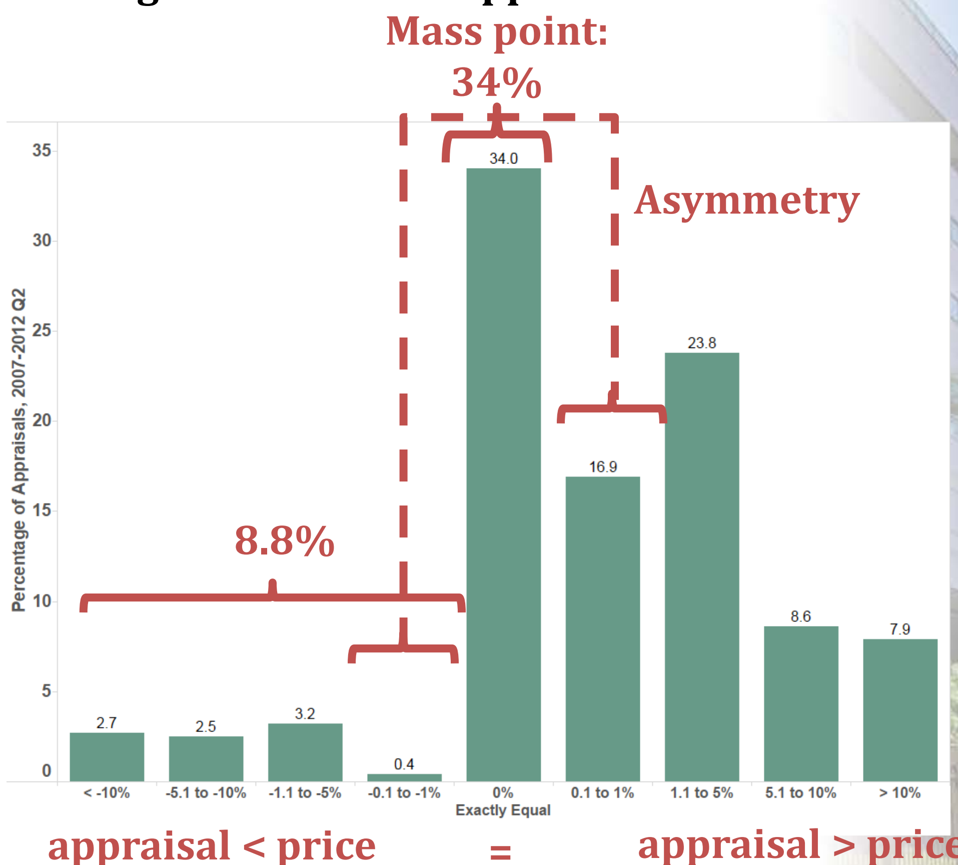
Special Instructions / Comments:

Appraisals are rarely < contract price, often identical to it!

FEDERAL RESERVE BANK OF PHILADELPHIA

- If truly independent, expect distribution to be symmetric.
  - But it isn't. Results similar to Cho and Megbolugbe (1996), Agarwal, Ben-David, and Yao. (2013)

Percentage Difference in Appraisal and Transaction Price

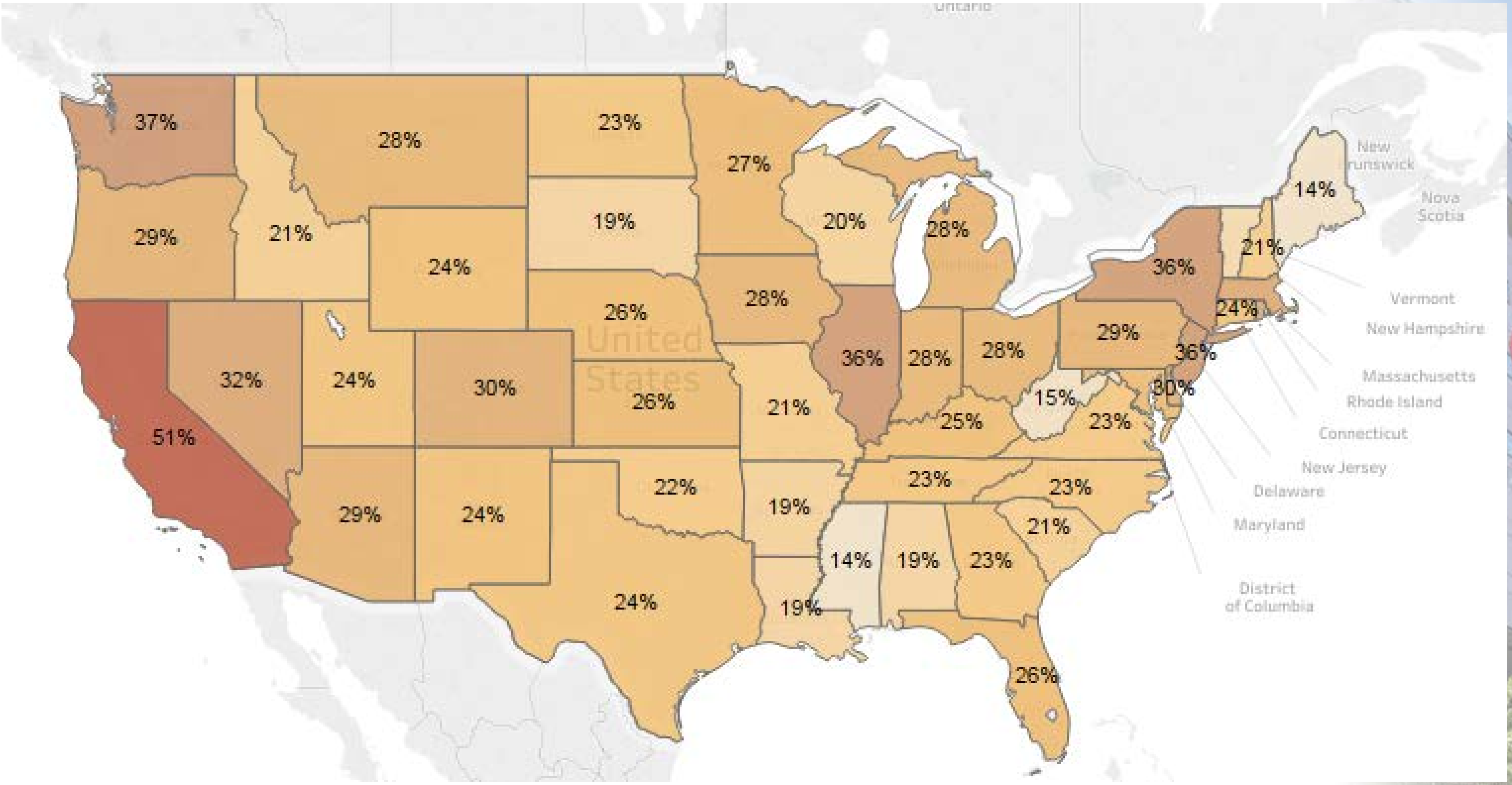


Source: FNC data tabulated by Calem, Lambie-Hanson, and Nakamura (2015)

- We argue that information is lost when appraisers set the appraisal equal to the transaction price instead of reporting a lower value.

Percentage of Appraisals **Identical** to Contract Prices

FEDERAL RESERVE BANK OF PHILADELPHIA



- In California in 2013-2015, over half of appraisals were **exactly** identical to the contract price.

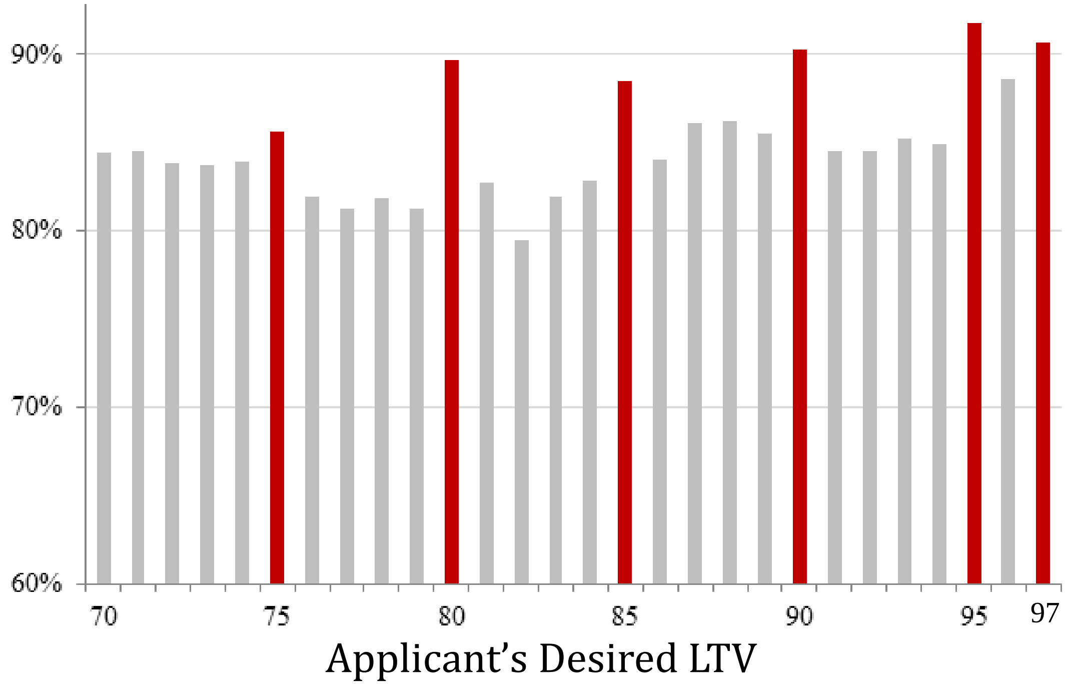
Data

- Source: proprietary data from a government-sponsored enterprise
  1. 2013-2015 mortgage applications approved and denied
     - n = 1.3 million
     - Contract price, final sale price, appraisal, applied-for and final LTV
     - Borrower characteristics (credit score, debt-to-income ratio, etc.)
     - Do loans at LTV “notches” experience more information loss?
  2. 2003-2009 mortgages originated, tracked for 5 years
     - n = 1 million
     - Is information loss in appraisals correlated with increased probability of default (becoming 180+ days past due) in initial 5 years?

- County-level house price trends from Zillow, demographic data from Census, and area foreclosure rates from McDash Analytics

Information Loss More Common at LTV "Notches"

Percentage of Appraisals = Contract Price, Given ≤ Contract Price



- Linear probability models confirm info loss more common at notches
  - Appraisal = contract price about 8 percentage points more often at notches
  - Controls for year, state, house price trends, area foreclosure rates, etc.
  - Results are robust:
    - Controlling for appraiser, lender
    - Across different regions (sand states, West Coast, Rust Belt)

Negative appraisals help borrowers renegotiate.

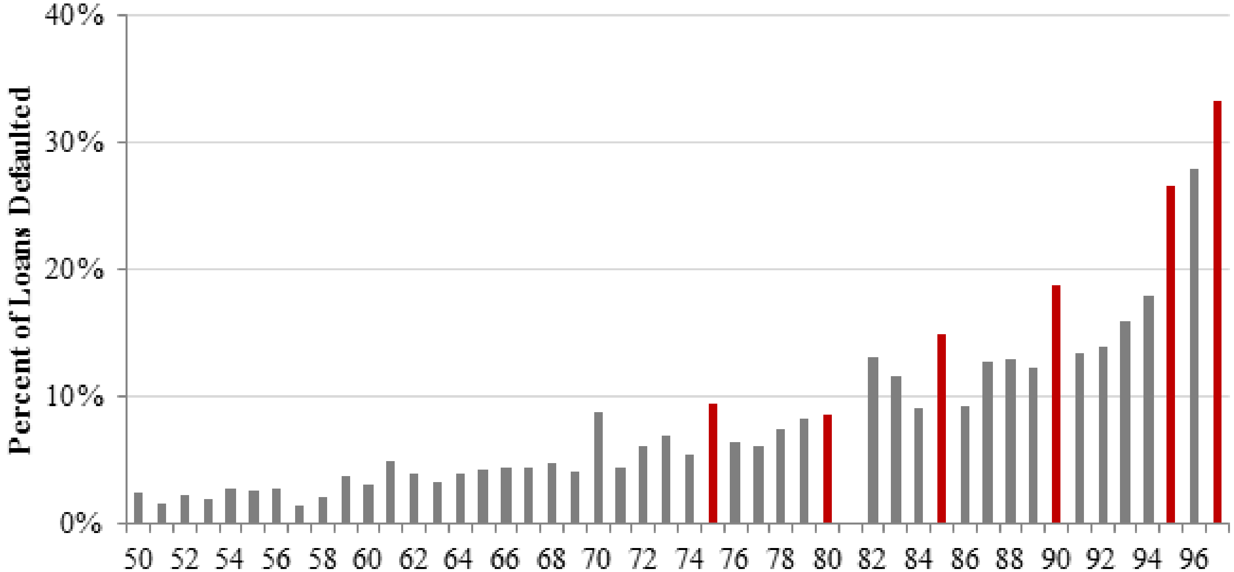
- 57% of sales in our dataset with a negative appraisal were renegotiated, vs. 2% with an appraisal ≥ the contract price
  - For negative appraisals that would bump a borrower to a higher LTV class, 71% were renegotiated

- Median savings at renegotiation = $6,000, or 2.5% of sales price

Mortgage defaults are more common at LTV “notches.”

FEDERAL RESERVE BANK
OF PHILADELPHIA

Default Rate by Applied-for LTV, 2003-2009 Originations



Note: Data not displayed for 81% LTV, because only 43 mortgages in our dataset were at this LTV. The next smallest group was 82% LTV, which had 146 observations.

- **Linear probability models controlling for borrower- and loan-level characteristics:** loans at notch LTVs were at about 1-2 percentage points higher default risk.
  - Increase in default risk is driven by loans with appraisal = price (those with information loss)

Recap of Findings

- Bias and information loss in appraisals are very common.
  - Less than 1/10th of appraisals are below the transaction price.
  - More than 1/3rd of appraisals are identical to transaction price.
    - Much more common at LTV notches
- Negative appraisals help borrowers renegotiate.
- Where appraisal information loss is more common (at LTV notches), there are economically and statistically significant increases in default risk.

What could be done?

FEDERAL RESERVE BANK OF PHILADELPHIA

- Experiment with property valuation
  - Set property value equal to transaction price, with appraisal reported as additional characteristic of property


The Washington Post

Real Estate

Freddie Mac would like to make traditional appraisals history

Thank you!

Feedback and suggestions are welcome.

Lauren.Lambie-Hanson@phil.frb.org.