Comments on "Collateral Valuation…"

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Overview

- The problem/issue
- What they did
- What they found
- Some suggestions
- Conclusion

The problem/issue (1)

- Almost all residential real estate lending is collateral-based (as are some other types of loans)
  - Collateral reduces risk to lender in the event of borrower default
- Valuation of the collateral is important to borrower and to lender
  - Borrower generally wants a higher reported value
    - Allows a larger loan and/or lower interest rate
  - Lender generally wants an accurate reported value
    - But loan officers may want to "get the deal done"; or
    - Initial lender may sell the loan for securitization and "wants to get the deal done"
    - Both may create agent-principal problems

The problem/issue (2)

- What is the basis for the valuation of the collateral?
  - In principle: mark-to-market
    - But what if markets are thin?
  - In practice: real estate markets are thin; need an "appraiser"
    - The appraiser looks at "comparable" transactions and makes appropriate adjustments: a mixture of "market" and "model"
- Potential for "capture" of the appraiser
  - The borrower may want a higher value
  - The loan officer (or the lender) may want a higher value
  - Long-run reputation may not be sufficient to deal with the agent-principal problems

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The problem/issue (3)

- Did appraisers during the housing boom/bubble systematically over-value some collateral?
  - More likely to happen for loans that are securitized and/or are for refinancing transactions (where there is no underlying home sale transaction)
    - Refis could be for cash-out for borrower or for lower rates for borrower

What they did (1)

- Diff-in-diff regression analysis
- Sample of 1,011,749 initial residential mortgage loans (Fannie Mae? only MSAs?), 1990-2011
    - Some for house purchase; some for refinance
    - All for securitization
- Subsequent sale transaction for all initial mortgages
- Test for upward valuation bias: <u>Difference</u> between subsequent sale price and initial appraisal should be <u>different</u> for initial refinance transactions than for initial house purchases (controlling for other things…)
    - Smaller if the "true" price difference is positive
    - Larger if the "true" price difference is negative

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What they did (2)

- OLS regressions
    - LHS: Standardized price (valuation) differentials between subsequent sale value and initial appraised value
    - RHS:
        - Type of initial transaction (cash-out refi vs. rate-reduction refi vs. house purchase)
        - Characteristics of initial loan (especially LTV); of borrowers; of lenders (esp. portfolio lender vs. mortgage banker)
        - Characteristics of subsequent transaction
        - MSA location of property
        - Dates of initial and subsequent transactions

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What they did (3)

- Probit default regressions
  - LHS: 1,0 for default within first 12 months
  - RHS:
    - Characteristics of loan (especially LTV); of borrower
    - MSA location of property
    - Date of initial loan
- OLS mortgage contract interest rate regressions
  - LHS: contract interest rate
  - RHS:
    - Same

What they found (1)

- Upward valuation of 3-4% for initial refis (compared to initial home purchases)

- Robust across alternative specifications

- No appreciable differences between cash-out refis and rate-reduction refis

- Upward valuation was modest for loans originated during 1990-2000, grew successively larger as the housing boom progressed after 2000

What they found (2)

- The recalculated LTVs (removing the upward bias) may help predict subsequent defaults
  - But the analysis needs to be redone
- The recalculated LTVs may help predict contract interest rates
  - Lenders may be aware of the upward bias
  - But the analysis needs to be redone

Suggestions (1)

- Provide some discussion of appraisal methodology
- Provide more complete description of the data
  - Also explain why different numbers of observations appear in different regressions
- For the price differential variable:
  - Reverse the order of the transactions: Subtract the subsequent sales price from the earlier appraisal valuation
  - This will give a more intuitive interpretation to the story and to the sign on the important variable: <u>over</u>-valuation of the earlier transaction for refis leads to an expected <u>positive</u> coefficient for this dummy variable

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Suggestions (2)

- For OLS price differential regressions
  - LHS variable: try simple log ratio of initial valuation/subsequent sale price
  - On RHS:
    - Include elapsed time between the 2 transactions
    - Include log ratios of average MSA prices and log ratios of standard deviations of prices
- For probit default and OLS interest rate regressions
  - Include recalculated LTVs on RHS of basic regressions
    - This is the standard method for multivariate regressions
    - Don't extract residuals from the basic regressions and use them as a LHS variable in subsequent regressions
  - Include type of lender on RHS

Suggestions (3)

- Look more closely at the Case-Shiller 20 MSAs
    - The upward valuation is much smaller than for the overall sample, even for the rapid price-increase group
    - Is there something special about these MSAs?
    - Or is it the absence of 2007-2011 from this sample?
- Look more closely at years 2007-2011
    - Why is upward valuation much larger for these years?
    - Do appraiser valuations lag the (downward) market?
    - Should there be smaller upward valuations in an "up" market?
        - But that's not what the Case-Shiller 20 MSAs show

Conclusion

- Collateral is important for lending
- The valuation of collateral is important
  - Valuation is easy when markets are thick
- Valuation is difficult when markets are thin
  - This is a more general problem
    - It applies to accounting, as well as to appraisals
  - The right answer has to be a mixture of "market" and "model"
- Moral hazard problems in valuation are real
- A lot more thought needs to be given to addressing these moral hazard problems