Assessment Persistence

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A few initial thoughts

• I enjoyed reading and thinking about this paper
  • As it is the 1st to consider this issue (persistence in assessments), it probably generates as many questions as it answers, a good thing
• As McMillen & Singh note there is an extensive literature focused on regressivity in assessments
• What has not been considered until M&S is how persistent are these assessments
• While they find evidence of persistence, it is limited
• And it varies by value of home – at least lowest value homes vs others
A few initial questions

• M&S are documenting lack of persistence

• But “why”?
• Why the lack of persistence in these Chicago assessments?
• What does this say about the assessment practices in Chicago?
• Why the pronounced difference in persistence between lowest-valued homes and the rest?
A few initial questions (2)

• Some questions about policy and welfare:

• Persistence: good or bad for homeowners?
• How might the lack of persistence affect the policies that we might consider to address regressivity in assessments?

• Is there a difference in the implications of persistence across sales (and owners) & persistence within assessment cycles for a single owner
  • If so, how might this influence policy choices
Variation in Assessment Ratios over time

- M & S 1st examine how much variation there is in assessment ratios
  - Variation (and ratio) have changed over time (Figure 3) – high in 1978 – 1986 & increase in 2011-2020
Variation in Assessment Ratios based on Value

- M & S 1st examine how much variation there is in assessment ratios across value:
  - Reduces as value increase
- I find this result somewhat surprising – heteroskedasticity alone would seem to have suggested otherwise
- Why?
Assessment Persistence Across Sales

• Examines this 1st using a contingency table
• Quantifies the extent of persistence & when assessment ratios change (relative to median) how they change (broadly)
• A few considerations:
  • Is there symmetry in changes in assessment
    • Is the probability of an under-assessed property being over-assessed same as an under-assessed being over-assessed?
• Revising, somewhat, the table we have:
## An Alternative Characterization of the Contingency Table

<table>
<thead>
<tr>
<th>1st Sale (A/S-1) (% of Sales)</th>
<th>2nd Sale (A/S-1) (% of Sales)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-80 to -15</td>
</tr>
<tr>
<td>-80 to -15</td>
<td>0.39</td>
</tr>
<tr>
<td>-15 to 5</td>
<td>0.23</td>
</tr>
<tr>
<td>-5 to 0</td>
<td>0.17</td>
</tr>
<tr>
<td>0 to 5</td>
<td>0.15</td>
</tr>
<tr>
<td>5 to 15</td>
<td>0.13</td>
</tr>
<tr>
<td>15 to 80</td>
<td>0.16</td>
</tr>
</tbody>
</table>

Notice the trends and patterns in the sales data across different categories.
A Less Refined Contingency: From Over-Assessed to Under-Assessed & Under-Assessed to Over-Assessed? Symmetry?

<table>
<thead>
<tr>
<th></th>
<th>-80 to -5</th>
<th>-5 to 5</th>
<th>5 to 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>-80 to -5</td>
<td>0.55</td>
<td>0.22</td>
<td>0.23</td>
</tr>
<tr>
<td></td>
<td>0.42</td>
<td>0.25</td>
<td>0.33</td>
</tr>
<tr>
<td>-5 to 5</td>
<td>0.38</td>
<td>0.29</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td>0.42</td>
<td>0.25</td>
<td>0.33</td>
</tr>
<tr>
<td>5 to 80</td>
<td>0.32</td>
<td>0.25</td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td>0.42</td>
<td>0.25</td>
<td>0.33</td>
</tr>
</tbody>
</table>
Overall, Figure 8 suggests that the rate of persistence of assessment ratios is not highly correlated with sale price: low-priced homes may be more likely to have high assessment ratios at a point in time, but they are not more likely than a comparably over-assessed high-priced home to have high assessment ratios in later years.

• Not sure I follow how this relates to persistence. Unlike Figure 7 that shows the relationship between assessment ratio for sales 1 and distribution of assessment ratio for sales 2 this does not say anything directly about whether property was under or over-assessed from sale 1
How does the persistence vary with value? (and why?)

• What we know so far:
  • Declines in assessment ratios over time
  • Low value houses are more likely to be over-assessed
  • Limited persistence in assessments

• What would we (that is, I) like to know:
  • Does persistence vary with the value of the home?

• This is addressed in Table 2:
  • Regression of Sale 2 Difference in Assessment Ratios and Sale 1 Ratios
• Weak link positive relationship between assessment differences for across property values.
• But a significant difference between the coefficient for <85K (.0816) and the rest > .17. Why
• Anything to do with <85K is where significant over-assessment occurs?
An Alternative View of Table 2

Persistence by Home Value

- 85K to 115K
- 115K to 165K
- 165K to 235K
- 235K to 350K
- >350K

% Difference from Median Assessment Ratio, Sale 1
Panel Data, 1998 - 2020

- Data includes triennial assessment for class 2 sales
  - Can be used to compare changes in assessed values for properties that do not sell as well as repeated sales

- Questions:
  - Are changes in assessed value higher for properties that previously had high assessment ratios?
    - Clarification: By this do you mean greater in absolute value or more positive?
  - How does a recent sale or, alternatively, long tenure affect assessment?
  - And, importantly, what do we learn about persistence in the absence of sale vs. when a sale occurs
How do recent sales affect assessments?

• Answer: Not much
• But why or why not?
  • No binding assessment limits
  • Strict use of regression-determined assessment?
Regressivity in Assessments

• From text: (p. 25): Very low-priced homes are much more likely to have decreases in their real assessed values than other properties.

• Is this surprising? Are these properties that “fell into” the lowest decile – didn’t appreciate as much as other sales?
Sales & Assessment

- Dependent Variable: log (real assessed value)
- Omitted category: No sale
- Question: Why the small (1%) difference in assessment for recent sales if based on hedonic?
  - Given magnitude perhaps the real answer is there isn’t much difference.
- Back to the question of persistence during a period of ownership vs. between sales
  - Does this suggest sales don’t have much impact on persistence
  - Is the variation in assessment ratios we saw in the earlier analysis, what is applied to variation under a single owner?

<table>
<thead>
<tr>
<th>Table 3: Regression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sale 1-3 Years Before Assessment</td>
</tr>
<tr>
<td>Sale 4-6 Years Before Assessment</td>
</tr>
<tr>
<td>Sale More than 6 Years Before Assessment</td>
</tr>
<tr>
<td>% Difference of Ratio from Median, Difference &lt; 0</td>
</tr>
<tr>
<td>% Difference of Ratio from Median, Difference &gt; 0</td>
</tr>
<tr>
<td>Real Sale Price in Lowest Decile</td>
</tr>
<tr>
<td>Real Sale Price in Highest Decile</td>
</tr>
<tr>
<td>$R^2$</td>
</tr>
</tbody>
</table>

Notes. Standard errors are in parentheses. The regressions also include controls for the census tract.
How might persistence (or the lack of it) suggest for policy?

• The analysis suggests limited persistence – over-assessed property one cycle might well be under-assessed the next cycle
  • This seems to be true across the distribution of housing values and perhaps more so at the lower end

• But for the lowest valued properties we have, on average, over-assessment (relative to median)

• Does limited persistence and high variation in assessment ratios reduce concerns over higher (on average) assessment ratios?

• Most of the focus has seemed to be on vertical equity but what of horizontal equity – perhaps limited persistence reduces these concerns.
Persistence (Certainty) vs. Over-Assessment

• In the introduction (and similar language in conclusion):
  • “Although regressivity in any assessment cycle causes undue financial burdens for owners of low-priced homes, the problem is more serious if assessment rates are persistent over time.”

• While the possibility of lower future assessments are good for the owner of the current over-assessed home, the opposite is true for the owner of the current under-assessed home

• With risk-averse homeowners, we expect value in persistence – given an expected (average) assessment ratio, the more persistence the better

• Limited persistence would seem to spread costs of over-assessment across the population (increase horizontal equity) but also increase risk
What might be next?

- McMillen & Singh document the extent of persistence assessment ratios, suggesting it is limited
  - Done with Chicago data and institutions

- Next steps? Other considerations
  - Understanding more about why the lack of persistence and why is it lower with the lowest valued homes?
  - As authors note, with binding assessment limits the results might be quite different,
    - But how might the results differ with how assessments are determined? (In Lexington comparable sales are the base)
  - How might the lack of persistence (predictability) in assessments affect market values – is it capitalized into property values as uncertainty about schools might be (Cheshire and Sheppard (2004))