Piggyback Historic Tax Credits: Are States Getting Their Money's Worth?

Presentation to the 2014 FTA Revenue Estimation & Tax Research Conference
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Aim to provide:

• New information on fiscal and economic value of piggyback historic credits
• Analytical foundation for others to build upon
• Helpful evaluation framework for similar credits
• Brief overview of federal and state historic rehabilitation credits
• Existing data and prior research
  – Quick refresher on panel data methods
• OSBM & NC Commerce analysis
• Proposed revisions to credit
• Concluding thoughts & questions
Historic Tax Credits

• Federal historic credit
  – Income tax credit equal to 20% of rehabilitation expenditures
  – Only income-producing properties eligible

• State historic credits
  – Majority of states offer own credits
  – Most piggyback on federal credit
  – Substantial variation in characteristics of state credits
NC Historic Tax Credits

• Adopted a 5% piggyback credit in 1994
• Expanded the credit dramatically in 1997
  – 20% credit for federal-eligible properties
  – 30% credit for non-income-producing properties
  – Five-year installments for both credits
• Second major expansion in 2006: historic mills
  – 30% credit for mills in high-income counties
  – 40% credit for mills in middle- and low-income counties
  – No installments; not limited to income tax
• All credits sunset at end of 2014
Evaluating NC Historic Credits

- NC Commerce & OSBM separately tasked with evaluating credit
  - Opted to collaborate on evaluation
- Key objectives of analysis:
  - Estimate scale of credit’s impact on rehabilitation
  - Quantify net fiscal & economic impacts
  - Describe and assess less-quantifiable impacts
- Existing research
  - Large body of advocacy-driven analysis
  - Little independent analysis
• Previous research by DC Office of CFO economists – Jeffrey Oakman & Marvin Ward
  – Paper* on state historic credits presented to NTA in November 2012
  – Analysis based panel dataset compiled by authors
  – 18 years of federal credit-eligible historic rehabilitation spending in 49 states

• Key research questions:
  – The \textit{but for} question, and how much
  – Credit design: what matters?

• Key variables in Oakman-Ward paper:
  – Annual state-level “qualified rehabilitation expenditures” (QREs)
  – State credit characteristics:
    • credit percentage
    • per project & statewide caps
    • refundable/transferable credits
  – State-level demographic and economic data
Q: What is panel data?
A: Panel datasets include observations of multiple entities over multiple periods of time.

Ex:

<table>
<thead>
<tr>
<th>State</th>
<th>Year</th>
<th>Historic Rehab $</th>
<th>State Historic Credit?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC</td>
<td>2000</td>
<td>$47,107,584</td>
<td>Y</td>
</tr>
<tr>
<td>NC</td>
<td>2001</td>
<td>$18,449,772</td>
<td>Y</td>
</tr>
<tr>
<td>NC</td>
<td>2002</td>
<td>$95,113,992</td>
<td>Y</td>
</tr>
<tr>
<td>SC</td>
<td>2000</td>
<td>$5,962,654</td>
<td>N</td>
</tr>
<tr>
<td>SC</td>
<td>2001</td>
<td>$9,066,849</td>
<td>N</td>
</tr>
<tr>
<td>SC</td>
<td>2002</td>
<td>$31,842,145</td>
<td>Y</td>
</tr>
<tr>
<td>TN</td>
<td>2000</td>
<td>$24,907,182</td>
<td>N</td>
</tr>
<tr>
<td>TN</td>
<td>2001</td>
<td>$11,425,704</td>
<td>N</td>
</tr>
<tr>
<td>TN</td>
<td>2002</td>
<td>$42,975,609</td>
<td>N</td>
</tr>
</tbody>
</table>
Q: What’s special about panel data?
A: Allows for superior estimation of relationships between variables by controlling for unobserved heterogeneity across entities (or across time periods).
Ex:

```
regress y x1

. regress y x1

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>3.7039e+18</td>
<td>1</td>
<td>3.7039e+18</td>
</tr>
<tr>
<td>Residual</td>
<td>6.2359e+20</td>
<td>68</td>
<td>9.1705e+18</td>
</tr>
<tr>
<td>Total</td>
<td>6.2729e+20</td>
<td>69</td>
<td>9.0912e+18</td>
</tr>
</tbody>
</table>

Number of obs = 70
F(1, 68) = 0.40
Prob > F = 0.5272
R-squared = 0.0059
Adj R-squared = -0.0087
Root MSE = 3.0e+09

| y     | Coef. | Std. Err. | t     | P>|t| [95% Conf. Interval] |
|-------|-------|-----------|-------|----------------------|
| x1    | 4.95e+08 | 7.79e+08 | 0.64  | 0.527 -1.06e+09 2.05e+09 |
| _cons | 1.52e+09 | 6.21e+08 | 2.45  | 0.017 2.85e+08 2.76e+09 |
```

twoway scatter y x1, mlabel(country) ///
if y x1, cistyle(p2)
Ex:

• Summary of key results:
  – State credit associated with ~$25 million increase in QREs
  – Some credit features strongly associated with state QRE levels:
    • Credit percentage ↑
    • Transferability ↑
    • Geographic targeting ↓
  – Substantial unexplained variation
• Several outstanding questions/concerns:
  – Inconsistent results between models
  – Impact of re-scaling QREs to state size
  – Presence of underlying trends in data
  – Potential explanatory power of omitted variables
  – Robustness of results to alternative specifications
• Oakman & Ward shared their data
• Modified and supplemented data:
  – Validated data
  – Added three recent years of data
  – Adjusted values for inflation
  – Log-transformed inflation-adjusted QREs & other variables
  – Shifted time period of dependent variable
  – Added more demographic & economic variables
• Initial focus on presence-of-credit effect
• Tested a multitude of regression models
• Several variables consistently significant:
  – Presence of a state credit
  – Housing: current new home prices & number of pre-1939 homes
  – Population and/or real state GDP
• Preliminary results for presence-of-credit
  – Range of 30% to 80% higher QREs
  – *If causal*, 25% to 45% of QREs attributable to credit

• Attempted to analyze credit features
  – Results highly unstable
  – Insufficient number of observations
  – High potential for upward bias
Next stage: incorporate results into input-output model

Key inputs and parameters:

– Preliminary results
– Best estimate of QREs representing *net new* in-state spending
– Economic and fiscal return of rehabilitation versus displaced spending
### Annual Gross Tax Revenue Impact, Based on Average QRE

<table>
<thead>
<tr>
<th>Model</th>
<th>Lower Bound</th>
<th>Point Estimate</th>
<th>Upper Bound</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Generous Model</td>
<td></td>
<td>$3.9 m</td>
<td></td>
<td>100% Attribution</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100% Net New</td>
</tr>
<tr>
<td>Step # 1: Attribution</td>
<td>$1.2 m</td>
<td>$1.7 m</td>
<td>$2.5 m</td>
<td>Lower Bound = 20%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Point Estimate = 37%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Upper Bound = 60%</td>
</tr>
<tr>
<td>Step # 2: Share Net New</td>
<td>$0.6 m</td>
<td><strong>$0.7 m</strong></td>
<td>$1.7 m</td>
<td>Lower Bound = 20%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Point Estimate = 30%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Upper Bound = 100%</td>
</tr>
</tbody>
</table>

#### Other Fiscal Information
- Average Credits Taken (estimate): $8.2 m
- Best Estimate of Net Tax Revenue Impact: -$7.5 m
- Gross Revenue per Dollar of Credit Taken: $0.09

*Annual average QREs for Article 3D income-producing projects 2006-2011 = $62m
OSBM Analysis

- Rising interest in redesigning credits
- Extension of preliminary analysis
  - New year of federal data: FFY 2013
  - Grouping of credits by generosity

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit %</td>
<td>10% or less</td>
<td>11% to 20%</td>
<td>21% or more</td>
</tr>
<tr>
<td>Per Project Cap</td>
<td>$100k or less</td>
<td>$100k to $1m</td>
<td>$1m or more</td>
</tr>
<tr>
<td>Statewide Cap</td>
<td>$1 per capita or less</td>
<td>$1 to $3.50 per capita</td>
<td>&gt;$3.50 per capita</td>
</tr>
<tr>
<td>Transferability</td>
<td>Not transferable</td>
<td>Disproportionate allocation</td>
<td>Directly transferable or refundable</td>
</tr>
</tbody>
</table>
• Models’ results changed significantly with credit grouping
  – Improved explanatory power
  – Low-generosity credits no significant effect
• Substantial impact on results for NC credits
  – Initial results: 25% to 45% attribution for any credit
  – Final results: 55% to 70% attribution for middle-level credit*

*Note: NC credits fit into middle group
• Robustness checks
  – Visual analysis of residuals plots
  – Drop high and low outliers
  – Drop earliest years
  – Compare multiple model specifications
  – Analyze over- and under-performing credits
• Final results relatively stable
- Robustness checks – visual analysis examples
  Time fixed-effects model

All states and years

Excluding highest & lowest states
OSBM Analysis

- Robustness checks – visual analysis examples
  Time fixed-effects model

All states and years

Excluding highest & lowest states
OSBM Analysis

- Robustness checks – visual analysis examples
  State fixed-effects model

All states and years

Excluding highest & lowest states
Robustness checks – visual analysis examples
State fixed-effects model

All states and years

Excluding highest & lowest states

Outlier and Leverage Diagnostics for Nxt2_LogCertExp

Outlier and Leverage Diagnostics for Nxt2_LogCertExp
OSBM-Commerce Analysis

• Second round of fiscal & economic analysis
  – Improved net fiscal and economic impact
  – Construction-related net fiscal return still strongly negative
  – Insufficient data to quantify other impacts
• Results helped inform redesign of NC credits
Credit Redesign Proposal

• Proposed redesign of credit informed by:
  – Panel data results and economic modeling
  – Cash-flow analysis of hypothetical projects
  – Constitutional constraints
  – Feedback from developers and preservationists

• Goal to narrow gap in present value between State and developers
# Credit Redesign Proposal

## Current Credits and Redesign Proposal

<table>
<thead>
<tr>
<th></th>
<th>Commercial Credit</th>
<th>Mill Credit</th>
<th>Redesigned Combined Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rates</strong></td>
<td>20% in all counties</td>
<td>30% in high-income counties</td>
<td>15% base credit rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40% in low- &amp; moderate-income counties</td>
<td>+5% for mills</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+5% in low- &amp; moderate-income counties</td>
</tr>
<tr>
<td><strong>Caps/Steps</strong></td>
<td>None</td>
<td>None</td>
<td>$0 to $10M base rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$10M to $20M base rate reduced by 5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hard cap at $20M</td>
</tr>
<tr>
<td><strong>Installments</strong></td>
<td>Five annual installments</td>
<td>No installments</td>
<td>No installments</td>
</tr>
<tr>
<td><strong>Applicable Taxes</strong></td>
<td>Income taxes only</td>
<td>Income taxes, gross premium taxes, and franchise taxes</td>
<td>Income taxes, gross premium taxes, and franchise taxes</td>
</tr>
</tbody>
</table>
Examples from Valuation Models – Commercial Credits

Estimated Range of Present Values for Art. 3D Comm. Credits & Property Tax Abatements to Private Developers & to State & Local Governments for a Hypothetical $20 million Project

<table>
<thead>
<tr>
<th></th>
<th>$0</th>
<th>$2</th>
<th>$4</th>
<th>$6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value to Developer</td>
<td>Existing w/ Landmark</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost to Government</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value to Developer</td>
<td>Existing w/o Landmark</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost to Government</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value to Developer</td>
<td>Alternative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost to Government</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Millions (Present Value)
Examples from Valuation Models – Mill Credits

Estimated Range of Present Values for Art. 3H Mill Credits & Property Tax Abatements to Private Developers & to State & Local Governments for a Hypothetical $20 million Project

<table>
<thead>
<tr>
<th>Value to Developer</th>
<th>Cost to Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing w/ Landmark</td>
<td></td>
</tr>
<tr>
<td>Value to Developer</td>
<td>Cost to Government</td>
</tr>
<tr>
<td>Existing w/o Landmark</td>
<td></td>
</tr>
<tr>
<td>Value to Developer</td>
<td>Cost to Government</td>
</tr>
<tr>
<td>Alternative</td>
<td></td>
</tr>
</tbody>
</table>

Donations

$SFEJU3FEFTJHO1SPQPTBM

31
## Estimated/Projected Revenue per Dollar of Incentive Cost (ROI)

<table>
<thead>
<tr>
<th></th>
<th>Lower Bound</th>
<th>Point Estimate</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Credit</td>
<td>$.07</td>
<td>$.09</td>
<td>$.26</td>
</tr>
<tr>
<td>Mill Credit</td>
<td>$.05</td>
<td>$.12</td>
<td>$.16</td>
</tr>
<tr>
<td>Combined Credits</td>
<td>$.06</td>
<td>$.11</td>
<td>$.20</td>
</tr>
<tr>
<td>Redesigned Credit</td>
<td>$.07</td>
<td>$.15</td>
<td>$.28</td>
</tr>
</tbody>
</table>

## Estimated/Projected Total Net Annual Budget Cost

<table>
<thead>
<tr>
<th></th>
<th>Lower Bound</th>
<th>Point Estimate</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Credit</td>
<td>-$6.6 m</td>
<td>-$6.5 m</td>
<td>-$5.3 m</td>
</tr>
<tr>
<td>Mill Credit</td>
<td>-$13.0 m</td>
<td>-$12.0 m</td>
<td>-$11.4 m</td>
</tr>
<tr>
<td>Combined Credits</td>
<td>-$19.6 m</td>
<td>-$18.5 m</td>
<td>-$16.7 m</td>
</tr>
<tr>
<td>Redesigned Credit</td>
<td>-$12.2 m</td>
<td>-$11.2 m</td>
<td>-$9.5 m</td>
</tr>
</tbody>
</table>
Credit Redesign Proposal

• Variant of redesigned credit included in proposed budget
• Support in one chamber of legislature
• Not included in final budget
• Discussion likely to resume next year
Concluding Thoughts

• Analysis imperfect but valuable
  – Association not necessarily 100% causal
  – Potential confounding variables
  – Limited data underlying some key assumptions
  – Unable to quantify non-construction impacts
  – Analysis integral to credit redesign

• Potential to extend to other piggyback credits
  – Low-income housing credits
  – New Markets Tax Credit
Questions? Comments?