Empirical Evidence on the Revenue Effects of State Corporate Income Tax Policies

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Research Question

• What role do the various tax policies used by states to measure, allocate/apporition, and tax corporate income play in explaining state corporate income tax (SCIT) collections?
Why Interesting?

Figure 1: Trend in SCIT Revenues 1982 - 2002

(1) State corporate income tax revenues relative to total state tax collections
(2) State corporate income tax revenues relative to federal corporate taxable income
(3) State corporate income tax revenues relative to gross state product

Why Interesting? (cont.)

• SCIT collections decreased sharply over the two decades from 1982 to 2002 relative to economic activity and to other sources of state tax collections
  – This decline coincides with a relative increase in corporate profits and is not consistent with the trend in federal corporate tax revenues over the same period

• States increasingly use the SCIT as a means of attracting and retaining business
Background & Contributions

• Prior Literature
  – Specific state experiences [Schiller (2003); McCourt et al. (2003); St. George & McLynch (2003); Hassell & Sanders (2005)]
  – Effect on SCIT collections of heavier weighting of the sales factor [Mazerov (2001); Edmiston (2002); Omer & Shelley (2004); Fox & Luna (2005); Edmiston & Arze (2006)]
  – Effect on SCIT collections of tax incentives and other policies [Fisher (2002); Fox and Luna (2005); Cornia et al. (2005)]

• Contributions
  – This study explicitly addresses potential endogeneity between SCIT revenues and state tax policies (apportionment formula weights and statutory tax rates)
  – This study examines the impact of a broader array of state tax policies on SCIT revenues

Methodology

• Data
  – 903 state-year observations from 43 states over the period 1982 to 2002 (balanced panel)
    • Omitted states are NV, SD, WA, WY, MI, TX, AK
  – Data taken from various sources, most of which are publicly available (e.g., CCH, IRS, Bureau of Economic Analysis, Census Bureau)
Methodology
(Base Model)

- Base regression model
  - State and year (two-way) fixed effects
  - Two specifications:
    1) SCIT scaled by gross state product (GSP), and
    2) \log(SCIT)

\[
SCIT_{it} = \alpha_i + \lambda_t + \beta_1 SALES_{it} + \beta_2 TXRATE_{it} + \beta_3 FLOTHRU_{it} + \beta_4,6 \sum CONTROLS_{it} + \epsilon_{it}
\]

where:
- \(SCIT_{it}\) = SCIT revenue collections
- \(SALES_{it}\) = Sales factor weight in apportionment formula
- \(TXRATE_{it}\) = Statutory tax rate
- \(FLOTHRU_{it}\) = % of business returns from flow-through entities
- \(CONTROLS_{it}\) = Macroeconomic factors

Methodology
(Endogeneity of State Tax Policies)

- To address likely endogeneity in the tax policy variables \((SALES_{it} and TXRATE_{it})\), we estimate the base model using a two-stage least squares approach
  - The first stage uses the following instruments for the two tax policies:

\[
SALES_{it} and TXRATE_{it} = f(PMORFAV_{it}, NETEXP_{it}, GOVPTY_{it}, LEGPTY_{it}, CONTROL_{it}, PIGSP_{it}, NCORPGSP_{it}, CORPLICGSP_{it})
\]

where:
- \(PMORFAV_{it}\) = % of neighboring states w/ "more favorable" tax regimes
- \(NETEXP_{it}\) = Import / export status of state
- \(GOVPTY_{it}\) = -1/0/1 indicator of governor’s party
- \(LEGPTY_{it}\) = -1/0/1 indicator of party controlling state legislature
- \(CONTROL_{it}\) = -1/0/1 indicator of party controlling both branches
- \(PIGSP_{it}\) = State personal income / GSP
- \(NCORPGSP_{it}\) = Noncorporate income tax collections / GSP
- \(CORPLICGSP_{it}\) = Corporate license fee collections / GSP
Results
(Base Regression & Endogeneity)

Table 4: State and Year Fixed Effects Regression Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>SCIT/GSP</th>
<th>LN SCIT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Column 1</td>
<td>Column 2</td>
</tr>
<tr>
<td>SALES</td>
<td>0.00001*</td>
<td></td>
</tr>
<tr>
<td>P_SALES</td>
<td>-0.00005**</td>
<td></td>
</tr>
<tr>
<td>TXRATE</td>
<td>0.05006***</td>
<td></td>
</tr>
<tr>
<td>P_TXRATE</td>
<td>0.04275*</td>
<td></td>
</tr>
<tr>
<td>F-stat</td>
<td>16.34***</td>
<td>11.45***</td>
</tr>
<tr>
<td>R²</td>
<td>0.4122</td>
<td>0.1587</td>
</tr>
<tr>
<td>R² - SALES</td>
<td>N/A</td>
<td>0.3398</td>
</tr>
<tr>
<td>R² - TXRATE</td>
<td>N/A</td>
<td>0.1850</td>
</tr>
</tbody>
</table>

***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Methodology
(Broader Set of State Tax Policies)

- Regression model examining a wider array of tax policies
- Additional policies inserted into base regression model (both specifications)
- Year fixed effects only

\[
SCIT_{it} = \alpha + \lambda_t + \beta_1SALES_{it} + \beta_2TXRATE_{it} + \beta_3THRWBK_{it} + \beta_4UNITARY_{it} + \beta_5NOL_{it} + \beta_6BUSINC_{it} + \beta_7FDTXDED_{it} + \beta_8AMT_{it} + \beta_9PIC_{it} + \beta_{10}TXINCEN_{it} + \beta_{11}FLOTHRU_{it} + \beta_{12-14}\sum\text{CONTROLS}_{it} + \epsilon_{it}
\]

where:
- THRWBK = 0/1 Indicator of whether state has a throwback rule
- UNITARY = 0/1 indicator of whether state requires unitary/combined reporting
- NOL = 0/1 indicator of whether state disallows NOL carrybacks
- BUSINC = 0/1 indicator of whether state includes “irregular” transactions in definition of business income
- FDTXDED = 0/1 indicator of whether state allows deduction for federal income tax
- AMT = 0/1 indicator of whether state has an alternative minimum tax
- PIC = 0/1 indicator of whether state restricts the use of passive investment companies for tax avoidance
- TXINCEN = Number of business tax incentives offered by the state
Results
(Broader Set of State Tax Policies)

Table 5: Year Fixed Effects Regression Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>SCIT/GSP</th>
<th>LN SCIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>P_SALES</td>
<td>-0.00004***</td>
<td>-0.01024***</td>
</tr>
<tr>
<td>P_TXRATE</td>
<td>0.03938***</td>
<td>11.03656***</td>
</tr>
<tr>
<td>THRWBK</td>
<td>0.00061***</td>
<td>0.14549***</td>
</tr>
<tr>
<td>UNITARY</td>
<td>0.00019*</td>
<td>0.05519</td>
</tr>
<tr>
<td>NOL</td>
<td>0.00020**</td>
<td>0.04630*</td>
</tr>
<tr>
<td>BUSINC</td>
<td>0.00058***</td>
<td>0.19529***</td>
</tr>
<tr>
<td>FDTXDED</td>
<td>-0.00037**</td>
<td>-0.11615***</td>
</tr>
<tr>
<td>AMT</td>
<td>0.00001</td>
<td>-0.00507</td>
</tr>
<tr>
<td>PIC</td>
<td>-0.00042*</td>
<td>-0.14065*</td>
</tr>
<tr>
<td>TXINCEN</td>
<td>0.00001</td>
<td>0.00411</td>
</tr>
</tbody>
</table>

F-stat 18.39***  513.43***
R² 0.3892  0.9252
R² - SALES 0.4391  0.4144
R² - TXRATE 0.3670  0.3627

***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Results
(Economic Significance)

• The regression results suggest that multiple of the policies examined have economically significant effects on SCIT revenues.

<table>
<thead>
<tr>
<th>Policy</th>
<th>Comparison</th>
<th>Revenue Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALES</td>
<td>Double v. single weight</td>
<td>16% lower</td>
</tr>
<tr>
<td>TXRATE</td>
<td>One % point higher</td>
<td>10-12% higher</td>
</tr>
<tr>
<td>THRWBK</td>
<td>Yes v. no</td>
<td>16% higher</td>
</tr>
<tr>
<td>NOL</td>
<td>Yes v. no</td>
<td>5% higher</td>
</tr>
<tr>
<td>BUSINC</td>
<td>Yes v. no</td>
<td>15-22% higher</td>
</tr>
<tr>
<td>FDTXDED</td>
<td>Yes v. no</td>
<td>10-11% lower</td>
</tr>
</tbody>
</table>
Conclusions & Limitations

• Controlling for potential endogeneity in state tax policies is important when estimating their effects on SCIT collections

• Several of the state tax policies examined have a significant impact on SCIT revenues
  – SCIT collections are increasing in the statutory tax rate, adoption of a throwback rule, disallowance of NOL carrybacks, and using a broader definition of business income
  – SCIT collections are decreasing in the sales factor weight, allowance of a deduction for federal income taxes, and (surprisingly) the enactment of laws to nullify the use of passive investment companies for tax avoidance

• Limitations
  – Endogeneity addressed only for SALES and TXRATE
  – Analysis of broad policy set does not control for state fixed effects
  – Analyses do not examine longer-term associations
  – Analyses do not examine interrelationships among tax policies

Thank You!!!!