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

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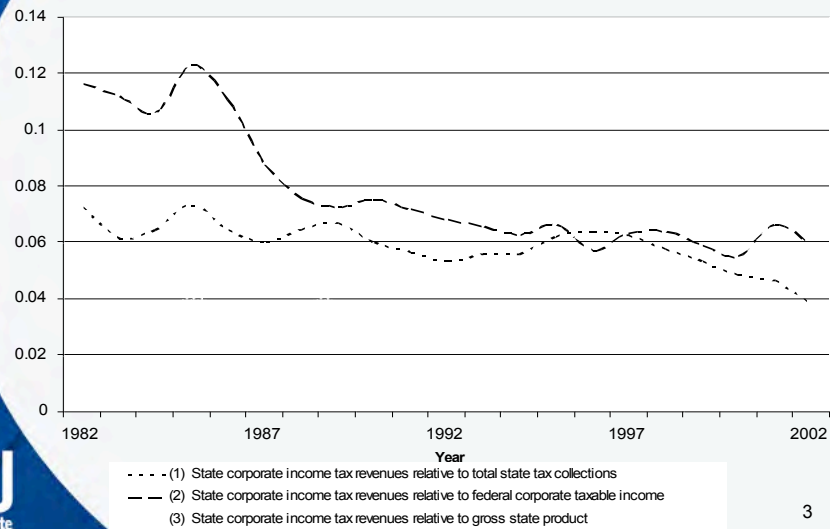Oregon State University
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Research Question

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

Figure 1: Trend in SCIT Revenues 1982 - 2002

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

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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

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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)

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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)

$$SCIT_{it} = \alpha_i + \lambda_t + \beta_1 SALES_{it} + \beta_2 TXRATE_{it} + \beta_3 FLOTHRU_{it} + \beta_{4-6}\Sigma CONTROLS_{it} + \varepsilon_{it}$$

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

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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:

$$SALES_{it} \text{ and } TXRATE_{it} = f\{PMORFAV_{it,} NETEXP_{it,} GOVPTY_{it,} LEGPTY_{it,} CONTROL_{it,} PIGSP_{it,} NCORPGSP_{it,} CORPLICGSP_{it}\}$$

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

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Results
(Base Regression & Endogeneity)

Table 4: State and Year Fixed Effects Regression Results

Variables	SCIT/GSP		LN_SCIT	
	Column 1	Column 2	Column 1	Column 2
SALES	0.00001*		0.0021	
P_SALES		-0.00005**		-0.0165**
TXRATE	0.05006***		12.0004***	
P_TXRATE		0.04275*		8.0968
F-stat	16.34***	11.45***	94.08***	68.13***
R^2	0.4122	0.1587	0.7514	0.6230
R^2 - SALES	N/A	0.3398	N/A	0.3349
R^2 - TXRATE	N/A	0.1850	N/A	0.1715

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

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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

$$SCIT_{it} = \alpha + \lambda_t + \beta_1 SALES_{it} + \beta_2 TXRATE_{it} + \beta_3 THRWBK_{it} + \beta_4 UNITARY_{it} + \beta_5 NOL_{it} + \beta_6 BUSINC_{it} + \beta_7 FDTXDED_{it} + \beta_8 AMT_{it} + \beta_9 PIC_{it} + \beta_{10} TXINCEN_{it} + \beta_{11} FLOTHRU_{it} + \beta_{12-14} \Sigma CONTROLS_{it} + \varepsilon_{it}$$

where:

$THRWBK_{it}$	= 0/1 Indicator of whether state has a throwback rule
$UNITARY_{it}$	= 0/1 indicator of whether state requires unitary/combined reporting
NOL_{it}	= 0/1 indicator of whether state disallows NOL carrybacks
$BUSINC_{it}$	= 0/1 indicator of whether state includes "irregular" transactions in definition of business income
$FDTXDED_{it}$	= 0/1 indicator of whether state allows deduction for federal income tax
AMT_{it}	= 0/1 indicator of whether state has an alternative minimum tax
PIC_{it}	= 0/1 indicator of whether state restricts the use of passive investment companies for tax avoidance
$TXINCEN_{it}$	= Number of business tax incentives offered by the state

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Results
(Broader Set of State Tax Policies)

Table 5: Year Fixed Effects Regression Results

Variables	SCIT/GSP	LN_SCIT
P_SALES	-0.00004***	-0.01024***
P_TXRATE	0.03938***	11.03656***
THRWBK	0.00061***	0.14549***
UNITARY	0.00019*	0.05519
NOL	0.00020**	0.04630*
BUSINC	0.00058***	0.19529***
FDTXDED	-0.00037**	-0.11615***
AMT	0.00001	-0.00507
PIC	-0.00042*	-0.14065*
TXINCEN	0.00001	0.00411

	SCIT/GSP	LN_SCIT
F-stat	18.39***	513.43***
R^2	0.3892	0.9252
R^2 - SALES	0.4391	0.4144
R^2 - TXRATE	0.3670	0.3627

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

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Results
(Economic Significance)

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

Policy	Comparison	Revenue Impact
SALES	Double v. single weight	16% lower
TXRATE	One % point higher	10-12% higher
THRWBK	Yes v. no	16% higher
NOL	Yes v. no	5% higher
BUSINC	Yes v. no	15-22% higher
FDTXDED	Yes v. no	10-11% lower

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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

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Thank You!!!!

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