A RAND NOTE

ARE BUSINESS TAXES IN CLEVELAND OUT OF LINE?

Anthony H. Pascal

September 1982

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Prepared for

The Cleveland Foundation

Rand
SANTA MONICA, CA. 90406

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PREFACE AND ACKNOWLEDGMENTS

This analysis was performed as part of Rand's program of studies for The Cleveland Foundation. (See The Cleveland Metropolitan Economy, Aaron S. Gurwitz and G. Thomas Kingsley, R-2883-CF, March 1982, and The Cleveland Metropolitan Economy: An Initial Assessment, Aaron S. Gurwitz and G. Thomas Kingsley, R-2883/1-CF, March 1982.) It is intended to inform the debate over the taxation of business in Cleveland and in Ohio generally, and therefore should prove interesting to public officials, business leaders, and tax specialists.

Susan Lajoie of The Cleveland Foundation and G. Thomas Kingsley and Aaron Gurwitz of Rand made important contributions. Richard Levin of the Ohio Department of Taxation and Frederick Stocker of Ohio State University provided useful information. Rand colleague Dennis De Tray reviewed and commented on an earlier draft. The author extends his grateful appreciation to all and at the same time relieves them of any responsibility for errors or misinterpretations, which rests solely with him.

SUMMARY

Critics maintain that state and local taxes on Ohio businesses have a disadvantageous effect on the Cleveland area economy because they impose disproportionate burdens on new and cyclically sensitive firms in capital-intensive industrial sectors. Such firms are thought to be particularly important to the maintenance and future growth of the Cleveland economic base.

I utilized the "representative firm" approach to assess the burden of all state and local taxes on a typical durable goods manufacturing firm in Cleveland, Ohio, as compared to eight other states.

I found that taxes on the Ohio corporation ran about 10 percent higher than in the comparison states in a normal year. The Ohio disadvantage was no greater in a recession year and actually disappeared for new firms because of the special advantages the state grants to such enterprises.

A review of the literature revealed that tax levels are a rather negligible factor in industrial location decisions. Therefore, the modest tax disadvantages that characterize Ohio do not appear to call for major fiscal reforms in the interest of industrial development.

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INTRODUCTION

Many in the Cleveland business community believe that Ohio's tax structure has a particularly deleterious effect on the metropolitan Cleveland economy. This effect is alleged to stem from two factors in particular:

1. Unlike most other states, Ohio imposes taxes on corporate net worth and not merely on corporate income. The Ohio corporate franchise tax calls for the payment of (1) 5 mills on net worth or (2) 4 percent on the first $25,000 of net income plus 8 percent on net income in excess of $25,000, *whichever is larger*.
2. Local taxes on personal tangible property--mainly machinery, equipment, and inventories--are heavy in Ohio. They run about twice as high as in bordering states, and substantially higher than in most sunbelt states. (See Tables 1-3, below.)

Some feel that, as compared to alternative business locations, these two taxes combine to produce a disproportionate burden on capital-intensive firms in cyclically sensitive industries and on newly established firms with high capital investment requirements. Steel, autos, producers' equipment are Cleveland specialties that are quite sensitive to the business cycle. New manufacturing firms, thought to be the solution to Cleveland's economic troubles, need to bear heavy investment expenses before income begins to flow.

Because corporate net worth can be high in comparison to net income, for both new firms and those at the trough of the business

cycle, the peculiar Ohio tax structure is thought to have particularly pernicious effects in Cleveland.[1] Is that contention true? How important are relative tax levels in industrial location and expansion decisions? For what sorts of firms do Ohio taxes appear disadvantageously heavy? This Note attempts to deal with those questions.

HOW TAXES AFFECT INDUSTRIAL LOCATION DECISIONS

The most authoritative recent empirical study on this issue (Carlton, 1979) found that taxes were not a major deterrent to new business locations.[2] Morgan and Brownlee (1974) also found that differences in corporate income taxation across the Great Lakes States resulted in only trivial differences in returns on capital. Fox (1981), on the other hand, demonstrated in a somewhat less rigorous study that *within* a metropolitan area (Cleveland, in fact) the amount of land devoted to industrial use is positively related to the jurisdiction's real estate tax level.[3] In general, economists agree that interarea

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[1] The passage of Senate Bill 530 in June 1982 made virtually no change in direct taxes on business firms in Ohio. Its chief features were to raise the personal income tax and to extend previously adopted surtaxes and public utility taxes.

[2] But Carlton recognized that the explanation for his findings may lie in the capitalization of taxes, the simultaneity of high tax and high service levels, and the effect of special tax deals, which are not recorded in the data. *Dun's Review* (1979, p. 16) comments on the ubiquity of state and local exceptions, abatements, and repeals.

[3] It has been alleged that taxation is really a signal of the local business climate and that this latter factor is the important determinant of business location. But when Carlton (1979) attempted to directly estimate the influence of business climate (as indicated by incentive plans offered to business by means of financing aids, bonds, guarantees, tax exemptions, depreciation breaks, R&D and wage subsidies, and permissive employment codes), he found the effect to be statistically insignificant.

differences in taxes, particularly those on real estate and capital, tend to be capitalized into land values. This is to argue that the forces of the market will ultimately bring about lower land prices in high tax jurisdictions. Such phenomena will work to even out relative advantages across areas and form part of the explanation for the weak relationship between tax levels and location choices.[4] (See De Tray et al. (1981); Aaron (1975); and Mieszkowski (1972).) The working of capital markets will also operate to diminish the effects of any peculiarities in the Ohio tax structure. Intermediaries will act to smooth financial flows over the growth process and over the course of a recession.

Since no authoritative study finds interstate tax levels to be a major determinant of location and expansion, we would need to posit quite large tax discrepancies between Ohio and other states before that factor came into play in a decisive fashion. Do substantial differences exist? To answer that question we must first decide how tax liabilities will be compared.

THE REPRESENTATIVE FIRM APPROACH

The standard practice in interarea tax differential analyses is to simulate hypothetical corporations against which different state taxes are levied. A number of studies use that approach: Arthur Anderson & Co. (1976); Hansen and Touhsaent (1978); Ohio Department of Taxation (1974); Price Waterhouse and Co. (1978); Pennsylvania Department of Commerce (1980); Ware (1977); and Wisconsin Department of Revenue (1975)

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[4] Of course, at the time a local tax is raised (lowered), existing owners of land and capital will experience windfall losses (gains) on the value of their properties.

and (1979). This method has become the standard approach for several reasons. First, it eliminates the vexing problem of allocating sales, property, and payroll values among states for real firms. Second, it makes unnecessary the collection of sensitive data from existing enterprises, particularly with respect to the holdings of lands and buildings.

But the hypothetical firm approach also has its weaknesses: (1) analysis of a representative firm is not the same as analysis of a real firm; (2) variation in some corporate characteristics can have appreciable effects on tax liabilities;[5] and (3) the structure of the representative firm can be adjusted to lessen its potential tax liabilities in a particular state. In the list of comparison studies cited above, for example, it was inevitably the case that the liability for the "representative corporation" in state A was lower in those studies performed by the tax agency of state A or commissioned by groups in state A than was the tax liability when state A appeared as a comparison in studies performed or commissioned by states B, C, or D.

Originally, I sought to design a hypothetical firm in each of the industries important to Cleveland currently (e.g., nonelectrical machinery, fabricated metals, transportation equipment) and to Cleveland's future economic development (e.g., scientific instruments, machine tools). I soon discovered that the variation in characteristics among the firms _within_ such industries was far wider than the variation _across_ industries. Even more important, one special feature of Ohio business taxation--the potential tax on corporate wealth--makes for

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[5] Vasquez and de Seve (1977), for example, show how the geographical pattern of a firm's operations differentially affects its tax obligations from state to state, depending on particular tax provisions applying in the respective states.

relatively high liabilities only in the case of firms with an extraordinarily high asset/income ratio--about 15 to 1. This ratio is in fact higher than appears in the characteristics of any manufacturing industry in a normal period.[6] The typical manufacturing corporation shows a net worth of about 3 to 5 times net income in a normal year as reported, for example, in U.S. Bureau of the Census (1981). The only kinds of firms that register such high ratios are those just starting out, i.e., before the income stream evolves, or those at the low point of the business cycle. Such factors and not the industry in which the firm operates bring forth the peculiarities of the Ohio tax system. Therefore, instead of basing the analysis on firms representing different industries I base it on an undifferentiated durable manufacturing firm in (1) normal, (2) low cycle, and (3) just-born situations.

High local taxes on personal tangible property--assets held in the form of machinery, equipment, and inventories--are the other distinctive feature of the Ohio business tax system. Only Indiana, of our comparison states (see below), imposes such high rates. (Pennsylvania and New York impose no tax on this form of property but very high taxes on business real estate and improvements.) The Ohio system in fact derives about a third of its total corporate levy from the personal tangible tax (as do Tennessee and Texas). However, the proportion of assets held in this form differs only slightly across the various industrial categories of possible interest, so that studying

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[6]For the 1980 tax year, 88 percent of the total corporate franchise tax liability in Ohio came from taxes on net income. For durable manufacturing corporations, over 90 percent of the liability came from net income, not net worth, taxes. (See Ohio Department of Taxation, 1981(b).)

representative firms in many manufacturing categories would have been redundant.

I therefore worked with a representative durable manufacturing[7] firm that was structured financially as follows:

Item	As a Percent of Total Assets
Total assets	100
Land	5
Structures and buildings	15
Machinery and equipment	29
Inventories	26
Intangibles (and other short-term assets)	27
Total liabilities	40
Short term	21
Long term	19
Net worth	60
Gross receipts	150
Net income before taxes	15

These percentages were derived from Internal Revenue Service (1980) and U.S. Bureau of the Census (1981).

To keep the comparison simple and for ease of exposition, other assumptions included the following:

- Total assets stand at $10 million.
- The firm has 100 employees, each with wages above the unemployment insurance/workmen's compensation base amount.

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[7] Durable manufacturing accounts for 25 percent of Cleveland's employment and 49 percent of its exports (see Aaron S. Gurwitz and G. Thomas Kingsley, _The Cleveland Metropolitan Economy_, The Rand Corporation, R-2883-CF, March 1982).

- Each state has the same rules for in-state and out-of-state apportionment of income and capital (see below). I assume that 30 percent of the firm's income or capital is taxable (as based on its in-state/out-of-state ratios for sales, payroll, and property). For the City of Cleveland's corporation income tax, I assumed an apportionment of 20 percent.
- Once the firm is established, the only purchases subject to sales tax are for electricity and for the replacement of machinery, equipment, and supplies (for those states levying sales taxes on such purchases by business firms).
- For the group of comparison states I chose, it was reasonable to posit that state-to-state differentials in tax carryforwards and carrybacks are not substantial enough to affect the outcomes and differences between states in liability for federal corporate income taxes do not appreciably affect the state-by-state tax liabilities.

COMPARISON STATES

I selected eight states to compare with Ohio. They fell into three categories:

Adjacent states: Indiana, Kentucky, Michigan, and Pennsylvania.

Other highly industrialized states: California and New York.

Rapidly industrializing states: Texas and Tennessee.

Other considerations add to the appeal of these choices: Michigan and

Pennsylvania are also highly industrialied, Kentucky is also rapidly industrializing, Texas and California are situated in the so-called sunbelt. I assumed that the Ohio firm was located in the City of Cleveland.

TAX BURDENS ANALYZED

I calculated liabilities for the following taxes in each state, net of important exclusions and exemptions that are regularly granted:

Income taxes (state and local)

State taxes on capital, net worth, or franchise

Sales and use taxes (state and local)

Local property taxes[8], separately on:

- Real estate (land and improvements)
- Tangibles (including machinery, equipment, and inventories)
- Intangibles

Payroll taxes, separately for:

- Unemployment insurance
- Workmen's compensation

The aggregate tax liabilities--the sum of the above--are compared for each state. I did not calculate a rate of return to capital or on net worth for the following reasons:

- The capital value or net worth would have been the same wherever the firm was situated.
- As stated earlier, tax obligations are only disproportionately high in Ohio in years when the firm's net income is close to

[8] Calculated directly for Cleveland and as averages of local property taxes in the comparison states.

zero, i.e., when the firm is new or in a recession. In such years there is no return on capital.[9]

CLEVELAND AND THE COMPARISON STATES' TAXES ON THE REPRESENTATIVE CORPORATION

Taxes in a Normal Year

Table 1 shows the tax liabilities for the representative durable manufacturing firm if it were located in Cleveland and, alternatively, if located in the eight other comparison states during a normal year of operations, i.e., when net income runs about 25 percent of net worth. In three of the states, the firm would pay more taxes than it would in Cleveland, whereas in the five other states it would pay less. On the theory that sales and payroll taxes do not burden the stockholders of corporations but are instead shifted forward to consumers or backward to workers (and other factors of production) by competitive forces in the economy, I have also shown the liabilities exclusive of those taxes.[10] (See Table 4 and the discussion below for a comparison of relative liabilities in Ohio and other states.)

Taxes in a Recession Year

Table 2 indicates tax liabilities for the same corporation in a recession year. In this case I assume net income to be zero. In Ohio, unlike the other states, the firm must now pay $9,000 on the portion of

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[9] I was not able to assemble information on the time profile of net income for a typical firm during startup or over the course of the business cycle. Thus, there was no way of knowing for how many years the representative firm would have received net income low enough to have brought the Ohio system's special features into play. Any calculation of multiyear rates of return would therefore have been arbitrary.

[10] It is possible that other taxes initially imposed on business firms are also shifted to others, but including these in the analyses would have been beyond the scope of this effort.

Table 1

STATE AND LOCAL TAXES ON A HYPOTHETICAL DURABLE MANUFACTURING CORPORATION IN A NORMAL YEAR: OHIO AND EIGHT COMPARISON STATES, 1980

(In $ thousands)

STATE	TYPE OF TAX										
	INCOME		CAPITAL OR FRANCHISE	SALES AND USE	PROPERTY			PAYROLL		TOTAL	TOTAL EX-CLUDING SALES AND PAYROLL
	STATE	LOCAL			REAL EST.	TANG. PERS.	INTANG. PERS.	UNEMPL.	W.C.		
OH	35	6	0	0	13	49	4	17	26	150	107
IN	28	0	0	0	26	75	2	10	10	151	131
KY	27	0	3	6	16	18	5	13	18	106	69
MI	25	0	0	0	8	10	0	25	46	114	43
PA	47	0	15	0	68	0	0	19	19	168	130
CA	42	0	0	5	8	16	0	21	28	120	66
NY	35	0	0	0	79	0	0	21	33	168	113
TN	27	0	5	3	18	36	0	11	23	123	86
TX	0	0	18	4	13	40	10	4	41	130	56

Table 2

STATE AND LOCAL TAXES ON A HYPOTHETICAL DURABLE MANUFACTURING CORPORATION IN A RECESSION YEAR: OHIO AND EIGHT COMPARISON STATES, 1980

(In $ thousands)

STATE	TYPE OF TAX									
	INCOME		CAPITAL OR FRANCHISE	SALES AND USE	PROPERTY			PAYROLL		TOTAL
	STATE	LOCAL			REAL EST.	TANG. PERS.	INTANG PERS.	UNEMPL	W.C.	
OH	0		9	0	13	49	4	17		118
IN	0	0	0	0	26	75	2	10	10	123
KY	0	0	3	6	16	18	5	13	18	79
MI	0	0	0	0	8	10	0	25	46	89
PA	0	0	15	0	68	0	0	19	19	121
CA	0	0	0	5	8	16	0	21	28	78
NY	0	0	0	0	79	0	0	21	33	133
TN	0	0	5	3	18	36	0	11	23	96
TX	0	0	18	4	13	40	10	4	41	130

its net worth allocated to Ohio under the Corporation Franchise Tax (.005 x 6,000,000 x .3). In Kentucky, Pennsylvania, Tennessee, and Texas, on the other hand, the capital or franchise taxes on corporations are levied even in years when there is taxable net income so that they levy no new burden in recession years. The net result, however, is that during a recession, the tax liability of the hypothetical corporation in Ohio would give the state a rank of 5, Ohio now being surpassed by Indiana, Pennsylvania, New York, and Texas.

Taxes on a Newly Established Firm

Table 3 shows tax liabilities for a new firm on the assumption that its net income is zero but that it must pay sales taxes on the purchase of plant, machinery, equipment, and supplies needed for the establishment of the new facility. Ohio, however, gives a credit on the Corporate Franchise Tax for a part of the personal tangible property tax levied on machinery and equipment purchased after 1978. (See Ohio Department of Taxation (1980(c)), pp. 6, 69.)[11] The effect on this hypothetical firm is to eliminate its franchise tax liability for 1980. The result, again, is that Ohio is ranked in the middle of the nine states in terms of tax liabilities.

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[11] The credit is the difference between the tax actually paid and the tax that would have been paid if the assessment ratio were 20 percent. Since the ratio in that year was actually 42 percent and the millage in Cleveland was 52, the credit was ($2,900,000 x .42 x .052) - ($2,900,000 x .20 x .052) = $33,176, which would have been larger than the franchise tax liability on net worth of $9,000. Thus no Corporate Franchise Tax would be owed.

Table 3

STATE AND LOCAL TAXES ON A HYPOTHETICAL DURABLE MANUFACTURING CORPORATION IN ITS FIRST YEAR: OHIO AND EIGHT COMPARISON STATES, 1980

(In $ thousands)

STATE	TYPE OF TAX									
	INCOME		CAPITAL OR FRANCHISE	SALES AND USE	PROPERTY			PAYROLL		TOTAL
	STATE	LOCAL			REAL EST.	TANG. PERS.	INTANG PERS.	UNEMPL.	W.C.	
OH	0	0	0	31	13	49	4	17	26	140
IN	0	0	0	32	26	75	2	10	10	155
KY	0	0	3	46	16	18	5	13	18	119
MI	0	0	0	3	8	10	0	25	46	92
PA	0	0	15	46	68	0	0	19	19	167
CA	0	0	0	60	8	16	0	21	28	133
NY	0	0	0	36	79	0	0	21	33	169
TN	0	0	5	39	18	36	0	11	23	132
TX	0	0	18	47	13	40	10	4	41	173

Comparison of Tax Liabilities

Relative tax liabilities are arguably more important than rankings in judging the competitive position of a particular state. Table 4 shows the tax liabilities for the hypothetical corporation in various situations and on the basis of some possible alterations in the Ohio tax system. I compare the liabilities for the states normalized on Ohio, i.e., expressed as indexes with the value for Ohio set at 100. The unweighted average of the indexes at the foot of the columns provides a convenient summary measure.

In normal years, Ohio taxes on the corporation run about 10 percent higher than in the average of the comparison states (col. 1).[12] On the assumption that corporations bear only the income, capital, and property taxes (col. 2), Ohio fares somewhat worse, primarily because it has relatively low unemployment and workmen's compensation taxes in comparison to the other states.

Despite original expectations, Ohio does not present any greater relative tax disadvantage to firms in a recession (col. 3). The average of the comparison states is the same distance below Ohio in zero income years as it is in normal income years. This effect is due to the low (if not zero) income tax to property tax ratios in such comparison states as Indiana, New York, and Texas. If Ohio were to eliminate its tax on net worth, it would achieve virtual parity with the average comparison state (col. 4). The cost to the state treasury in 1980 would have been less than $40 million out of a total state and local tax collection of about $5.5 billion, or less than 1 percent.[13] If Ohio

[12] Remember, however, that the difference between taxes in Ohio and the other states is only $15,000 or 15 hundredths of one percent of total assets.

[13] See Ohio Department of Taxation, 1981(a) and 1981(b). In

Table 4

RELATIVE TAXES OF COMPARISON STATES INDEXED ON OHIO: VARIOUS CASES, 1980

		(2)	(3)		(5)	(6)
STATE	BUSINESS SITUATION					
	NORMAL		RECESSION[b]			
	NO SHIFTING	SHIFTING[a]	CURRENT TAX LAWS	ELIM OF OHIO TAX ON CORP. N.W.	ELIM OF OHIO TAX ON N.W. AND IMPOS.[c] OF AVG PTP	FIRST YEAR[b]
IN	101	122	104	113	140	110
KY	71	64	67	73	88	85
MI	76	40	75	82	99	66
PA	112	121	103	111	134	119
CA	80	61	66	72	87	95
NY	112	105	113	122	148	120
TN	82	80	81	88	107	94
TX	87	76	110	119	144	124
UNWEIGHTED AVG	90	84	90	98	118	102

[a] That is, excludes sales and payroll taxes.

[b] Assumes no shifting.

[c] In the average U.S. state the personal tangible property (PTP) tax on the corporation described would have been $28,000 (Commerce Clearing House, 1980).

were to also reduce the tangible personal property tax collected by local government to the figure of $28,000 levied in the average American state (Commerce Clearing House, 1980), it could achieve an 18 percent advantage over the average comparison state in a recession year (col. 5). The cost to local government in Ohio would have been about $325 million or about 6 percent of total state and local tax collections (Ohio Department of Taxation, 1981(a)).

Ohio's taxes on new corporations place it at about the average of the comparison states (col. 6), which is again counter to our original expectations. The reason for this outcome is the relatively high level of sales tax exclusions for business firms in Ohio and the credit for personal tangible property taxes on new equipment that can be applied against the Corporate Franchise Tax.

CONCLUSIONS

Compared to jurisdictions with which it must compete for industry--either because they are close by or because they have similar kinds of economies--Cleveland appears to be a high tax locale. But not inordinately high. And Cleveland is not relatively worse for firms during recession years, because many of the comparison states also have low ratios of taxes on income to taxes on wealth. Ohio, and therefore Cleveland, actually is in a better competitive position in the case of new firms because of the state's relatively favorable treatment of sales taxes on business purchases and investments and because of the tax credits it began offering in 1978.

1980, $40 million of the Corporate Franchise Tax was collected on the net worth base. Some of those corporations had positive net income that would have yielded taxes so the net loss to the state treasury would have been less than $40 million.

Cleveland might improve its competitive position if it were to adopt "national" standards with respect to the taxation of tangible personal property and if the State of Ohio were to do likewise with respect to corporate net worth. (Recall, however, the compensatory effects that would likely occur in land prices.) But the improvement would be mainly enjoyed by firms that are significantly affected by the business cycle; it would have little impact on newly establishing firms who already enjoy comparatively favorable treatment. The cost would be on the order of 7 percent of the value of tax collections at the state and local levels combined. Given the weak relationship between tax levels and business location decisions, tax cuts do not appear advisable if the objective is the expansion and preservation of Cleveland's economic base.

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