

Are State and City Corporate Income Taxes Stifling Investment in New York?

In recent years, the intertwined economies of New York State and New York City have undergone a marked deterioration. Symptomatic of economic conditions, private nonfarm employment in New York peaked toward the end of the 1960's and has behaved feebly since then. Nobody has come up with an altogether convincing explanation for what specifically precipitated this debilitating turn of events, but most observers seem fairly confident that New York's lofty taxes must have been a key contributing factor. In this connection, the ones most criticized are New York's corporate income taxes, personal income taxes, and property taxes. While all of these taxes along with many other economic factors influence industrial-location choices, the focus of this study is on the corporate income taxes.

Corporate income is taxed at an exceptionally high rate in New York. Inasmuch as New York's tax rates are among the highest in the nation, it is often taken for granted that businesses find it unqualifiedly unprofitable to invest or to locate there. Some businesses may indeed shun New York because of its reputation for having such high taxes. Objectively, however, the matter turns out to be more complicated. Just as the state and local corporate tax rates vary between New York and elsewhere, so do the statutory provisions concerning taxable income and permissible deductions. In what ways and to what extent, then, do the New York State and New York City corporate income taxes distort the profit incentives for goods-producing companies to undertake investments in New York?

Answering these questions turns up some interesting, and sometimes surprising, conclusions about the profitability of investments in New York. The problem

with New York's corporate tax laws is really not just the high taxes overall but their severe bias against long-lived investments. Indeed, for such investments, New York's tax laws depress the rate of return far below what it is elsewhere. Much less onerous taxes, however, apply to shorter lived investments. For those with service lives of ten years or less, the corporate tax burden turns out to be no heavier in New York—and is sometimes actually lighter there—than it is elsewhere.

Business income taxes and the rate of return on investment

In principle, business firms will choose to locate their operations where they stand to earn the highest aftertax rate of return. In this regard, location decisions are no different from decisions about what price to charge, what combination of inputs to use, and how much output to produce. Accordingly, state and local business income taxes will affect investment-location decisions only to the extent that they impinge on the rate of return earned by businesses on their investments. It is vital, then, to understand how business income taxes affect this rate of return.

The aftertax rate of return

Just how do corporate income taxes affect the rate of return that businesses earn on their investments in fixed capital? In two ways, it turns out.¹ First, the tax

¹ There is a technical appendix in which the economic logic of this result, as well as of others, is spelled out in more detail. Copies of this appendix are available upon written request to the author.

siphons off a certain proportion of the income from the investment project and channels it to the government. Second, by allowing businesses to deduct depreciation expenses and to claim an investment tax credit, the government reduces its tax take and thereby lowers the effective cost to businesses of buying capital goods. In looking at the problem in this way, however, it is assumed that businesses earn profits large enough to enable them to take full advantage of all the depreciation deductions and investment tax credits for which they are eligible.² As a practical matter, this assumption is much more likely to hold for established companies than it is for new companies that are solely dependent on the profits from the newly undertaken project.

Businesses deduct depreciation expenses from receipts in figuring their taxable incomes. Under the Federal tax laws, for example, firms have some latitude in choosing the allowable service lives for different kinds of capital goods. These service lives do tend to vary considerably among asset categories—ranging, for example, from three years for automobiles to six years for trucks, eight years for office computing and accounting machinery, eighteen years for engines and turbines, and twenty-five years for structures. Firms may also choose which depreciation-accounting convention they will use—*i.e.*, straight-line, sum-of-years-digits, or double-declining-balance. Although all three methods amortize the nominal purchase price of capital goods over the statutory service life, each one does so according to its own unique time schedule for amortization.

For each dollar spent on capital goods, there will be a stream of tax-reducing depreciation deductions which cumulate to one dollar over the statutory lifetime of the capital goods. Arrayed in the upper half of Table 1 are the present values of a dollar's worth of depreciation expenses, given the Federal tax laws along with a number of alternative assumptions. Consider, for instance, the case where the statutory service life is ten years, the discount rate is 5 percent, and the straight-line method is used. Each dollar of investment outlay then affords a lump sum of 81 cents in tax-deductible depreciation expenses. If the tax rate were 50 percent, this 81 cents worth of depreciation deduction would represent a tax saving of 40.5 cents. Since this tax saving applies to each dollar of investment outlay, the aftertax cost of the capital goods turns out in this

case to be only 59.5 percent of the nominal purchase price of these goods. The above calculations illustrate the general rule that the tax saving derived from depreciation write-offs amounts in effect to a lump-sum offset against the nominal purchase price of capital goods.

Similarly, the tax saving from investment tax credits represents another partial offset. An investment tax credit allows businesses to deduct a specified proportion of the initial cost of newly purchased capital goods from their tax bill. Even when this credit is taken, businesses are still permitted to compute depreciation expenses based on the full initial cost of the capital goods—just as they normally would.

In the event that the tax offsets were to reduce the cost of investments by proportionally more than the tax bite from gross profits, the business income tax laws would then raise the rate of return on investment above what it was before taxes. This paradoxical result only occurs, however, under unusual but not impossible circumstances: The extra income taxes that businesses owe out of the gross income from an investment project have to add up to less, in terms of present values, than do the depreciation deductions and the investment tax credits derived from the project. Businesses can then use these "surplus" deductions to offset any other taxes they owe on the income from past investments. Insofar as companies are able to take advantage of these surplus deductions, the tax offsets actually amount to an investment subsidy. It is this tacit subsidy that raises the aftertax rate of return in relation to its before-tax counterpart.

Overlapping business income taxes

Many businesses face overlapping income taxes levied by the Federal, state, and even some local governments. How do these *multiple* business income taxes affect the rate of return on investment?

Since the tax bases are pretty much alike, the Federal, state, and local corporate income taxes all operate in essentially the same two ways: In each case the "take-home" profits of businesses are reduced, but so are the "out-of-pocket" costs involved in undertaking investments.

The tax bases do differ among state and local governments, however, according to whether the Federal income taxes are a deductible expense for the other income taxes. Under the Federal tax code, businesses are always allowed to deduct the amount of their state and local income taxes from their taxable incomes. In contrast, only in a few states are businesses allowed to deduct their Federal income taxes from their taxable income for purposes of computing state and local income taxes. The more common of the two tax rules

² The question arises then as to what happens when profits are so low that businesses cannot take full advantage of their tax offsets. Under the tax statutes, businesses have some latitude in carrying the unused portion of an investment tax credit either forward or backward in time. Depreciation allowances, however, must be used as they accrue or else be lost.

—by which businesses are not permitted to deduct their Federal corporate income tax payments in figuring their taxable state income—is the one that applies to New York State.

Income from corporate investments in New York City is taxed by the city as well as by the state and Federal governments. The following four tax rules govern the deductibility of Federal, New York State, and New York City corporate income taxes from one another: (1) New York State and New York City corporate income taxes are deductible expenses for Federal taxes. (2) Federal corporate income taxes are not deductible for the New York State or New York City corporate taxes. (3) The New York City corporate income tax is a deductible expense for the New York State tax. (4) The New York State corporate tax is not a deductible business expense for the New York City corporate tax.

These rules are, in effect, hierarchical. Businesses located in New York City are allowed to deduct the taxes they pay to a political body only in figuring their taxable income for higher governments. This situation, then, is really just an extension of the one that applies to those states in which Federal tax payments are treated as nondeductible.

State and local corporate income taxes

Before New York's corporate income taxes can be evaluated, they must be compared with those levied elsewhere. Such a comparison, of course, requires detailed rundowns of the corporate tax laws of other states. This information was collected for the ten states besides New York that are listed in Tab'e 2. In selecting them, the one systematic criterion was that there be two or three states from each of the four main regions of the country.

The corporate tax codes were examined for all eleven states, plus New York City. Four separate tax matters had to be reviewed to determine how the state or local corporate income tax impinges on the rate of return to investment:

- (1) At what rate is corporate income taxed by the state?
- (2) Are Federal income taxes deductible for the state's income taxes?
- (3) How are depreciation expenses computed for the state's income taxes?
- (4) Does the state have its own investment tax credit?

How the states handle each of these matters is summarized in Table 2.

One noteworthy feature is how high New York's corporate tax rates were in 1977.³ Indeed, New York State's stiff 12 percent corporate tax rate ranked then as the highest in the nation.⁴ In addition, there was New York City's 10 percent corporate tax. Businesses located within the city's boundaries had to pay a marginal state and local tax rate that exceeded 20 percent, although the *net* tax rate amounted to only about half as much since state and local corporate income taxes are deductible expenses for Federal taxes. In the other states, the gross marginal corporate tax rates were then clustered in the range of 4 to 6 percent. Since 1977, however, New York State has reduced its corporate tax rate to 10 percent while New York City has reduced its rate to 9 percent.

According to the tax codes of most states, businesses are allowed to claim the same depreciation deductions that they take for their Federal taxes. There are exceptions, however. The New York City tax laws permit businesses to take up to twice the Federal depreciation deduction, so long as the cumulative depreciation deduction does not exceed the initial cost of the capital good being amortized. This double-depreciation provision has been in force since the inception of New York City's corporate income tax in 1966; it applies to all kinds of production and manufacturing facilities but not to headquarters structures. Listed in the bottom half of Table 1 are the present values of a dollar's worth of depreciation allowances under the New York City tax laws. These present values turn out to be much higher than the corresponding ones for the Federal tax laws, inasmuch as New York City's double-depreciation provision reduces the effective service lives of capital goods by more than half in the case of accelerated depreciation.

Michigan's tax treatment of depreciation is also very unusual.⁵ There, businesses are allowed to deduct the full amount of their expenditures on capital goods in the same period that the purchases are made. (In Tab'e 2, this is referred to as the 100 percent write-off policy.) Under this plan, businesses are allowed to take

³ For New York State and New York City, the corporate tax laws specify four alternative tax bases, and a business must choose the one that entails the highest tax obligation. The tax base that is most commonly used, and the one that is described in the text, is the so-called entire net income. The other three tax bases are the business and investment capital basis, the entire net income plus compensation basis, and the minimum flat fee (\$250) basis.

⁴ Minnesota's corporate tax rate was also 12 percent.

⁵ Actually, Michigan's entire approach to taxing businesses is unusual. A uniform value-added tax is applied there to all businesses. (For details, see the recent report published by the Advisory Commission on Intergovernmental Relations, *The Michigan Single Business Tax: A Different Approach to State Business Taxation*, M-114, dated March 1978.)

Table 1

**Present Values of Business Depreciation Allowances
Per Dollar of Investment Outlays**

Discount rate*	Straight-line method			Sum-of-years-digits method			Double-declining-balance method		
	5 years	Service lives of 10 years 20 years		5 years	Service lives of 10 years 20 years		5 years	Service lives of 10 years 20 years	
Federal tax laws									
0.05	0.91	0.81	0.65	0.94	0.87	0.75	0.94	0.86	0.72
0.10	0.83	0.68	0.47	0.89	0.77	0.60	0.89	0.75	0.57
New York City tax laws									
0.05	0.96	0.91	0.81	0.98	0.95	0.90	0.99	0.96	0.89
0.10	0.93	0.83	0.68	0.97	0.92	0.81	0.98	0.92	0.81

* The rate of return used to capitalize the stream of depreciation allowances.

Table 2

**Corporate Tax Laws in Selected States and
New York City, 1977**

Location	State or local tax rate on corporate income (percent)	Tax-deductible depreciation expense	Federal income tax deductible	State investment tax credit (percent)
New York State	12	Federal depreciation rules apply	No	2
New York City	10	Twice the Federal deduction	No	....
New Jersey*	7.5	Federal depreciation rules apply	No	....
Connecticut	10	Federal depreciation rules apply	No	....
Alabama	5	Federal depreciation rules acceptable	Yes	....
Georgia	6	Federal depreciation rules apply	No	....
North Carolina	6	Federal depreciation rules apply	No	....
Oklahoma	4	Federal depreciation rules apply	No	....
Michigan	2.35†	100 percent write-off policy	No	....
Illinois	4	Federal depreciation rules apply	No	....
Arizona	10.5‡	Federal depreciation rules apply	Yes	....
Colorado	5	Federal depreciation rules apply	No	....

* In addition, corporations must pay a tax on their net worth.

† This is a value-added tax which is applied uniformly to all businesses within the state.

‡ This is the top rate of a graduated tax scale, and it applies for taxable income in excess of \$6,000.

Sources: *Facts and Figures on Government Finance, 1977* (Tax Foundation, Inc.); selected issues of the Commerce Clearing House tax reporters for state taxes.

their depreciation deductions all at once, instead of having to stretch them out over the allowable service lifetime, and the present value of these deductions is accordingly equal to one.

Two other features stand out in Table 2. First, among the states listed there, only Arizona and Alabama allow businesses to deduct their Federal income taxes in computing their taxable state income. Second, New York State is the sole state giving an investment tax credit to businesses. New York State's investment tax credit had initially been pegged at 1 percent in 1968, but it was increased to 2 percent in 1974, to 3 percent in 1978, and to 4 percent in 1979. While the Federal tax credit applies only to purchases of equipment and specifies a \$100,000 per year ceiling on the amount of used equipment eligible for the tax credit, the New York State tax credit applies to both structures and equipment which have been constructed or acquired on or after January 1, 1974.

New York corporate income taxes: an economic appraisal

The above analysis can be used to assay the strengths and weaknesses of New York's corporate tax laws: In view of New York State's generous investment tax credit and New York City's liberal amortization schedules, is the rate of return on investment higher or lower in New York than it is elsewhere?

The aftertax rates of return in New York

Consider a corporation which is planning to undertake a new investment project and must decide where to situate it. Other things being equal, the choicest location will be the one where the highest aftertax rate of return can be earned.

To keep the analysis concrete, the following assumptions are invoked. Economic depreciation is assumed to occur at a constant, geometric rate. The discount rate used in capitalizing the stream of depreciation deductions is assumed to be given. Since, according to the results for Federal taxes listed in Table 1, the present value of the depreciation deductions is always largest for the sum-of-years-digits method, it is assumed that firms use this method in amortizing their investments in fixed capital.⁶ The locations being con-

sidered are taken to be alike in all respects but one—*viz.*, the applicable state and local corporate income taxes. Necessarily, then, the rate of return would be the same no matter where the investment were located, were it not for the state and local taxes. In addition, the Federal corporate tax rate is taken to be 48 percent, and the Federal investment tax credit is assumed to be 10 percent for capital goods with service lives of ten years or less but equal to zero for capital goods with service lives of twenty years. (In fact, the Federal investment tax credit amounts to 10 percent for equipment and to zero for structures.)

The choice of where to start the analysis is to some extent arbitrary. It was decided, therefore, to begin with the assumption that the project's rate of return *after* Federal taxes but *before* state and local corporate income taxes—designated the "before-tax" rate of return—is 1 percentage point higher than the discount rate. With given values assigned to the before-tax rate of return and the discount rate, it is then possible to calculate the corresponding hypothetical aftertax (*i.e.*, net of *all* income taxes) rate of return. The difference between the aftertax and the before-tax rates of return is the result of state or local corporate income taxes.

Listed in the upper portion of Table 3 are the hypothetical aftertax rates of return for New York State and New York City. Each one has been obtained by invoking specific assumptions about the discount rate, the before-tax rate of return, the rate of economic depreciation, and the tax-allowable service life. Two alternative values have been used to represent the discount rate—5 percent and 10 percent. Since the discount rate is in principle a nominal aftertax yield, this range probably encompasses the actual values applicable to most companies. At the current high rate of inflation, the discount rate for some firms might well be above 10 percent, but there are probably very few others for which the discount rate is below 5 percent.

One noteworthy feature of Table 3 is the variability of the effective corporate tax burden in New York, evident in the widely ranging differences between the aftertax and before-tax rates of return. Upon undertaking fixed investments, businesses earn state and local tax offsets equal to the present values of the depreciation deductions and of the investment tax credit. The amount of these tax offsets tends to vary from one fixed investment to another. In general, the higher the tax offsets, the lower the *effective* tax burden, and the higher the aftertax rate of return in relation to its before-tax counterpart.

If the service life were short enough or if the discount rate were low enough, the rate of return on fixed investments could end up higher after taxes than it was beforehand. For this to happen, however, the tax off-

⁶ For all industries across the nation, only 18.3 percent of the purchases of machinery and equipment made in 1971 was depreciated by the straight-line method, according to data compiled by the Office of Tax Analysis (OTA) in the United States Department of the Treasury. (See Thomas Vasquez, "The Effects of the Asset Depreciation Range System on Depreciation Practices", OTA Paper 1, May 1974, page 37.) Since the marginal tax rate is higher in New York than elsewhere, it is likely that businesses located there use the straight-line method even less often than the national average.

Table 3

Hypothetical Marginal Aftertax Rates of Return: A Comparison of New York State, New York City, and Alternative Locations, 1977

In percent

Locations	Discount rate (5 percent)*			Discount rate (10 percent)*		
	5 years	10 years	Service lives of 20 years	5 years	10 years	Service lives of 20 years
<i>After Federal taxes, but before state and local corporate income taxes</i>	6.0	6.0	6.0	11.0	11.0	11.0
New York State outside New York City	7.24	6.34	5.53	11.81	10.71	9.92
New York City	7.90	6.44	5.10	12.19	10.41	9.08
New Jersey	6.23	5.89	5.57	10.94	10.49	10.17
Connecticut	6.31	5.86	5.42	10.92	10.31	9.88
Alabama	5.89	5.85	5.85	10.77	10.70	10.71
Georgia	6.18	5.92	5.66	10.95	10.60	10.34
North Carolina	6.18	5.92	5.66	10.95	10.60	10.34
Oklahoma	6.12	5.95	5.78	10.97	10.74	10.57
Michigan	6.12	6.04	5.94	11.09	10.99	10.88
Illinois	6.12	5.95	5.78	10.97	10.74	10.57
Arizona	5.75	5.66	5.67	10.50	10.33	10.37
Colorado	6.15	5.93	5.72	10.96	10.67	10.45

These aftertax rates of return were calculated in accordance with formulas which are derived in the technical appendix. In doing so, it has been assumed that there is an exact correspondence between the rates of economic depreciation and the tax-allowable service lives—*i.e.*, that the rate of depreciation is 25, 15, or 8 percent as the service life is five, ten, or twenty years. The results listed in this table were obtained by substituting the actual values of the tax parameters and alternative hypothesized values for certain other parameters into these formulas. See the technical appendix for a step-by-step example.

* The rate of return used to capitalize the stream of depreciation allowances.

sets have to exceed the amount owed in taxes on the incremental gross income. Since the excess can be used by businesses to reduce their other income tax liabilities, it amounts in effect to a subsidy. Consider, for instance, the case in Table 3 where the discount rate is 5 percent and the service life is ten years. As can be seen, while the before-tax rate of return is 6 percent, the aftertax rate of return is 6.34 percent for New York State and is 6.44 percent for New York City. Businesses are evidently getting tacit subsidies on these investments. (Of course, for these subsidies to be effective, businesses must have other income tax liabilities against which to apply the "surplus" offsets.) In these two examples, the subsidy can be traced to two special tax provisions: New York State's generous investment tax credit and, to a lesser extent, New York City's liberal amortization schedules.

Another interesting finding in Table 3 is that the

aftertax rate of return in New York tends to fall as the service life of the capital goods is lengthened, especially in New York City. Essentially, then, short-lived investments wind up being subsidized by the stiff income taxes levied on long-lived investments. Consequently, the corporate tax systems of New York State and New York City embody pronounced biases against long-lived investments.⁷

What accounts for this bias? Under the current New York State and New York City tax laws, the present value of depreciation allowances falls off sharply as the service life of the capital goods being amortized is lengthened (*cf.* Table 1). Here is the problem. These

⁷ A similar bias is embodied in the Federal corporate income tax laws. Since, however, the bias in the Federal laws applies uniformly across the nation, it does not influence the location choices of businesses. Nor, then, is it necessary to take this bias into account in the current analysis.

allowances make up the bulk of the tax offsets against the nominal purchase price of the capital goods. Insofar as the present value of depreciation allowances falls as the service life of the goods is lengthened, businesses wind up paying for a larger share of the cost of the investment—even though the fraction of the income from this investment that goes to taxes is unchanged. Thus, the aftertax rate of return declines.⁸

The relative standings

As a general rule, businesses will locate their investments wherever they stand to earn the highest aftertax rate of return. Accordingly, in assessing how New York's corporate income taxes distort investment-location decisions, what matters is how onerous these taxes are in relation to those levied elsewhere.

Aftertax rates of return were calculated for alternative locations (Table 3). In looking at the results, it is evident that the bias of the tax laws against investments in long-lived capital goods is by no means unique to New York—though it does appear to be especially pronounced there. No less interesting, however, is the fact that this bias is absent in Alabama and Arizona.

In Alabama and Arizona, businesses are allowed to deduct their Federal income taxes in computing their taxable state income. This indeed is the tax provision that neutralizes the state corporate tax system's bias against long-lived capital goods. To understand why this is so, recall that the bias occurs insofar as the amount of the state income taxes owed by businesses tends to rise as the service life of the investment lengthens, other things being the same. When, however, state and Federal taxes are mutually deductible, the two separate taxes are interdependent. Consequently, as the amount of the state income taxes owed by businesses increases, as it does when the service life is lengthened, businesses wind up owing less Federal income taxes—and vice versa. It is this interdependence that accounts for the tendency of the aftertax rate of return in Alabama and Arizona to remain invariable for different lengths of service lives of capital goods.

How did the aftertax rates of return for New York stack up in 1977 against those for other places? Contrary to conventional wisdom, New York's corporate

income taxes were not invariably more onerous than those levied elsewhere. This is evident from the results in Table 3. For those fixed investments with service lives of ten years, the corporate tax burden in New York is comparable to that elsewhere. Moreover, for service lives of five years, the aftertax rate of return is higher in New York than in the other states examined. At the same time, however, New York was a much less profitable location for long-lived capital goods with service lives of twenty years. For these goods, New York City ranks in last place, with the rest of the state being not too far ahead.

To some extent, then, New York's reputation as a high-tax location has been exaggerated—at least in regard to corporate income taxes. Never does the differential between the rates of return for New York and elsewhere exceed 20 percent of the discount rate. True, the largest differentials work to the competitive disadvantage of New York. But they apply only to longer lived investments and are offset to some extent by the differentials for short-term investments which work in New York's favor. Furthermore, New York has lately undertaken to improve its business tax climate. Last year, for example, New York City cut its corporate tax rate to 9 percent. Similarly, New York State cut its corporate tax rate to 10 percent and doubled its investment tax credit to 4 percent. New York is intent on making itself a more hospitable industrial location.

Conclusions

Out of this study comes an appreciation for how and to what extent the New York State and New York City corporate income taxes have distorted the profit incentives by which goods-producing companies choose where to locate their new investments. Nowhere were state and local corporate tax rates higher in 1977 than in New York. Their stifling impact on fixed investment was mitigated, however, by New York State's generous investment tax credit and New York City's liberal double-depreciation provision. The problem with these New York tax laws, it turns out, is not so much the high taxes overall as it is their severe bias against long-lived investments.

As a result of the bias, the aftertax rate of return tends to vary with the length of the service life of the capital goods. For long-lived investments, New York's tax laws drive the aftertax rate of return far below what it is in other places. However, for shorter lived investments with service lives of about ten years, the corporate tax burden happens to be no heavier in New York than it is elsewhere. For service lives as low as five years, the corporate tax burden is actually lighter in New York than elsewhere.

In view of how differently New York's corporate in-

⁸ Inflation tends, moreover, to exacerbate this bias. In response to a higher rate of inflation which is expected to persist, there will be a similarly higher nominal required rate of return. Consequently, the present value of depreciation allowances will decline, and the decrease will be larger (*i.e.*, in absolute value), the longer the service life of the capital goods. As a result of this decline, according to the argument in the text, the corporate tax laws end up shrinking the aftertax purchase price of capital goods by less than they would have if the rate of inflation were smaller—thereby lowering the aftertax rate of return earned by businesses.

come tax laws have affected the rates of return on short-lived and long-lived investments, it appears to be a fairly safe bet that these laws have distorted the composition of investment spending. New York's corporate tax laws favor capital goods with short service lives over those with long service lives. By the same token, however, it is unclear to what extent these laws have affected the level of total investment spending in New York. Nor is it clear to what extent New York's corporate income taxes have contributed to the region's recent economic distress.

One thing is sure, however. Inasmuch as the corporate tax rates have been reduced and the investment

tax credit has been doubled over the past year, New York's corporate income taxes are less burdensome today than they were in 1977. Now, in fact, New York's corporate tax system in effect subsidizes fixed investments with service lives of ten years or less even when the discount rate is as high as 10 percent. Moreover, for longer lived investments with service lives of twenty years, the corporate tax burden has been reduced to the point where the aftertax rate of return is now 40 to 60 basis points higher than it would have been had the tax laws not been changed. Indeed, New York City and the rest of the state are making progress in improving their business tax climates.

Leonard Sahling