ductions from the federal tax base and all capital investment expenditures are treated as current outlays. The consequences of these provisions on comparative interjurisdictional tax burdens and on the distribution of these burdens by firm size and industry type are investigated here. The paper is an extension and supplement to the 1995 SBA report entitled The Differential Impact of State-Local Tax Incentives on Small versus Large Firms (SBA 8138-OA-94). The methodology, data set, and geographical boundaries of the analysis (SBA Region V) are the same in both projects.

Major Findings

The current overall average effective tax rate on a marginal capital investment for corporations in SBA Region V is 38.55 percent; that is, if all assets returned pretax profits of 20 percent, combined federal, state and local tax payments would amount to $38.55 in present value terms for every $100 of additional income from the new capital investment. A breakdown of the federal and subnational tax components of the overall EMTR indicates that the federal corporate income tax accounts for an estimated four-fifths of the total. Intraregional variations in EMTRs by firm size and industry type are relatively small, reflecting the leveling effects of the federal deduction for state and local taxes and competition-induced tax harmonization. Because federal tax liabilities vary inversely with the amount of state-local taxes paid, the federal tax offset reduces the absolute burden of state and local taxes and narrows the difference in burdens within and among the states; competition for capital investment keeps subnational business taxes in line.

The current system provides differential benefits to small business enterprises (firms with less than $25 million of capital assets) primarily from reduced federal corporate
tax rates on the first $100,000 of taxable income and expensing of the first $17,500 of equipment purchases.

The adoption of a replacement consumption-based tax (whether on retail sales, value added, or consumed income) means the elimination of the federal tax offset for state and local business taxes paid. Further, and more quantitatively important, full expensing of all capital investment outlays results in the imposition of a zero tax rate on the income from capital investment. Under the new tax regime (federal consumption tax plus status quo state and local taxation), the overall average EMTR falls to 7.90 percent, an 80 percent reduction. The reduced EMTR reflects only the burden of subnational business taxes on the return to new investment because the expanded expensing provision effectively annuls the federal tax.

The heterogeneity of subnational business tax structures and the elimination of the leveling effect of the tax offset provision and the federal tax on investment returns result in significant increases in interstate variations in EMTRs. In some instances, the differentials are increased fivefold. Given the present intensity of tax-induced competition for new investment in economic development strategies, the higher differentials would likely heat up the tax-bidding war between the states and drive subnational business taxation to its lowest common level. Allocating capital resources in response to tax-cost differentials instead of to real differences in profitability could generate general welfare losses.

Although firms of all sizes and industries list reductions in EMTRs under federal tax restructuring, small business enterprises gain less relatively (i.e., lose more) because they are differentially benefited under the current tax law. The competitive relationship between small and large firms would be altered.
The adoption of a comprehensive federal consumption-based tax would create strong incentives for states to re-examine and revise their personal and corporation income taxes to continue to take advantage of tax base coordination and harmonization. A comparative analysis of a value added tax (VAT) and a corporate net income tax as state business taxes indicates that, other things equal, small business enterprises would be disadvantaged under the VAT. Unincorporated and corporate business would both be subject to the same business tax. The VAT would bear more heavily on low profit and marginal operations, on businesses with comparatively low capital expenditures relative to gross receipts, on labor intensive enterprises, and on firms that rely on debt versus equity for raising capital. The economic incidence of a subnational VAT is sufficiently ambiguous to doubt whether it can simply be shifted forward to consumers, especially by local-oriented businesses and firms subject to national competition.

Under a dual federal-state consumption-based tax system, the degree of harmonization and coordination would depend on the willingness of the states to surrender some or all their fiscal independence. Full harmonization would entail federal collection and administration with a single set of tax rules, but two tax rate components: one federal and one state. A more realistic scenario for state-local business taxation under a federal consumption-based tax regime would be various degrees of harmonization by those states opting to adopt all or some modification of the federal consumption-based tax and other states remaining with their existing systems of corporate income taxation. Small and large business enterprises, and particularly those engaged in interstate business, would be confronted with a myriad of rates, regulations, and administrative procedures similar to what currently exists under the subnational income tax systems.
Policy Implications

The policy issues about how best to reform the federal tax system are many and complex. Comprehensive tax reform is a high-stakes economic gamble that must balance the expected positive and negative consequences. The message of this paper for tax policy can be summarized in the following maxims:

- *A free ride is likely to be worth no more than the price of admission.* The maxim underscores the importance of considering the opportunity or alternative costs involved with major tax restructuring. If capital income is freed of taxation some other source or use of income must be exploited to maintain revenue neutrality.

- *Natura non facit saltum* (Nature does not move in leaps or bounds). This maxim appears on the cover page of Alfred Marshall's classic *Principles of Economics*. It implies that most policy choices are made along a continuum and in incremental steps. The process is usually one of gradual refinement in a welfare-improving direction as more information becomes available. It also reinforces the notion that fundamental federal tax restructuring cannot take place in a vacuum; the starting point is the existing federal, state, and local tax system and the economic, political, and fiscal interrelationships and institutions that have developed over time. Subnational government's reaction must be taken into account in any realistic assessment of the current reform proposals.

- *An old tax is a good tax.* This public finance aphorism is also a reminder that the quintessential element in the assessment of alternative tax re-
form proposals is the historical perspective. Long-term commitments are made on the assumption that the present tax system will continue. Any change in tax rules will impose windfall gains and losses on different segments of the economy. It is the responsibility of policymakers to balance these gains and losses at the margin based on the best information available. The implications of federal tax restructuring for taxpayers at the state and local level warrant careful consideration in these deliberations.
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1 Introduction

Although a substantial volume of recent materials on federal consumption-based tax reform proposals is available, much of the discussion and analyses assume *de novo* ("blank slate") adoption with little or no acknowledgment of the interactive intergovernmental reactions in moving from a comprehensive income tax system to a national consumption-based tax regime. The success or failure of tax reform depends substantially on the historical context, on past and present economic and political interrelationships, and on the probable direction and magnitude of the key parameters of economic behavior. All tax reform is a gamble. The critical issue is whether the prospective value of the gamble is, on balance, positive or negative. To a great extent, this is an empirical question that has to be explored as part of the overall process of evaluating alternative tax reform proposals.

1.1 Purpose and Scope

This paper provides some empirical evidence on one by-product of the current debate over federal tax reform. It measures the impact of the consumption-based tax proposals on the present system of state-local business taxation. Specifically, it is a quantitative assessment of the effect of the elimination of the federal tax on the returns to new investment on the cross firm-size and industry distribution of state and local tax burdens as measured by the effective marginal tax rate (EMTR). The EMTR is the percentage by which taxes reduce the rate of return on an incremental investment.

Two features common to all the consumption-based reform proposals are the elimina-
tion of the deductibility of state/local business taxes in determining the federal consumption
tax base and the imposition of a single, uniform tax rate for both small and large firms. The
paper addresses the following questions: What happens to comparative state-local business
tax-cost differentials when subnational tax payments are no longer deductible for federal tax
purposes? What is the impact of the repeal of the federal income tax on the differential tax
burdens of small versus large firm investment? What are some of the implications of a
national-subnational dual system of consumption-based business taxation? The paper also
explores other selected issues relating to the differential treatment of small versus large
businesses under a consumption-based tax system. The paper is an extension of the study
*The Differential Impact of State-Local Tax Incentives on Small Versus Large Firms* (SBA

The primary objective of this study is to provide additional insights, not answers to
policymakers and businesses about the impact of current federal tax reform proposals. The
next section of this paper outlines the major provisions of the competing variants of con-
sumption-based tax reform proposals. Section 3 summarizes the data base, site selection, and
methodology employed to measure interfirm and interstate subnational tax-cost differentials
with and without the federal income tax. Section 4 provides the results of the microanalytic
simulations and considers their implications for small and large business enterprises. Section
5 contains a comparative description of the major features of the consumption-based tax and
a corporate net income tax as alternative forms of subnational business taxation. Section 6
explores some of the implications and consequences of a dual-level, consumption-based
business tax system. Section 7 reviews the major findings and conclusions and suggests
directions for further research.
2 Consumption-Based Federal Tax Reform Proposals: An Overview

This section contains a summary of the major provisions of the several proposals for federal consumption-based tax reform. No attempt is made to provide comprehensive coverage, nor to persuade that a particular tax is preferred. Emphasis here is on the tax treatment of the business sector. The individual level component of the proposals is not addressed specifically although the business/individual tax interface is critical in the design and implementation of consumption-based taxation. Because even the most prominent proposals for reform are still in their embryonic stage, the discussion is more conceptual than proposal specific.

2.1 The Meaning of a Consumption Tax

A direct consumption tax is levied only on income spent on goods and services. The main distinction between income taxes and consumption taxes is the exclusion of savings and investment from the consumption tax base. Under a consumption-based tax, the EMTR on the income from capital investment is zero; in contrast, the EMTR on income from capital investment under an income tax is greater than zero reflecting business taxation and the taxation of dividends and capital gains at the individual level.

The term “consumption tax” describes many forms and types of taxation. In some cases, the tax is collected entirely from the business community; in others, individuals and households are subject to the tax; and, in some variants, tax payments are required from all
sectors of the economy, including the public sector. Consumption taxes can be imposed with progressive rate structures or with a proportional ("flat" tax) rate.

The current debate on federal tax reform centers on four types of consumption taxes:

- a retail sales tax (RST)
- a value added tax (VAT)
- an integrated personal/business consumption or "flat" tax associated with the names of Hall and Rabushka\(^2\) (HRT)
- a consumed income tax (CIT)

2.1.1 A Retail Sales Tax (RST)

A retail sales tax (RST) is imposed on the final sales by retail businesses of goods and services to consumers. In order to tax only final consumption, purchases by businesses of intermediate goods and services are excluded. The tax is currently imposed by 45 states and many local governments, but these levies typically include a large number of intermediate business purchases and exclude some final consumption items, most notably personal services. Senator Richard Lugar of Indiana has proposed a national RST to replace the present federal income tax, but he has provided little guidance on the details necessary for its adoption, imposition and implementation. He has, however, indicated that the states should collect the national RST for remission to the federal government and that the Internal Revenue Service be eliminated. In March 1996, H.R. 3039, the National Retail Sales Tax Act of 1996 was introduced by Republican Representatives Chrysler, Schaefer and Tauzin. The bill eliminates all income taxes on individuals and corporations as well as estate and gift taxes and substitutes for them a 15 percent retail sales tax.
2.1.2 A Value-Added Tax (VAT)

A VAT is a sales tax imposed on the difference between a business' (corporate and unincorporated) gross sales and its purchases of inputs (materials and supplies, energy, equipment, and other interfirm costs) from other firms. At each stage of the production-distribution process, value is added to the final product by the business enterprise. The final retail price of a product is equal to the sum of the values added at each link in the production-distribution chain. Thus, the VAT base equals final retail sales and is economically equivalent to the retail sales tax. Included in the deduction for interfirm "purchases" is the cost of capital investment. Instead of allowing a deduction for the cost of capital investment over the life of the asset, the VAT expenses (i.e., instantaneously depreciates) such expenditures.

2.1.3 An Integrated Personal/Business Consumption Tax

Under the current tax system, the calculation of taxable income for corporations and for individuals is separate. The personal/business consumption-based tax "integrates" business and individual taxes in the sense that income from each sector is taxed only once. It is popularized by Robert Hall and Alvin Rabushka in their book *The Flat Tax* and drafted into legislation by Representative Richard Armey of Texas. Instead of collecting the entire consumption tax at the firm level, as under the VAT, the Hall-Rabushka-Armey flat tax (HRT) employs a dual-collection format. The business component is a VAT as described above except that wages and deferred compensation (e.g., pensions) paid to employees are deducted from gross receipts by the business enterprise and taxed instead at the individual or household level. The same uniform rate applies to both the business and individual tax components, making the HRT equivalent to the VAT (i.e., the sum of the business and individual taxes equals the VAT). The flat tax is imposed on all corporate and noncorporate
businesses, including sole proprietorships, partnerships, and subchapter S corporations.

2.1.4 A Consumed-Income Tax (CIT)

The CIT retains the structure of the income tax but allows individuals to subtract that portion of their current earnings that is saved (i.e., invested in so-called “savings assets”). The Unlimited Savings Allowance (USA)\(^6\) tax proposal of Senators Nunn and Domenici embodies elements of the CIT for the individual taxpayer. It essentially works like the current individual retirement account (IRA) except that there are no limits on the amount of deductible savings, withdrawals can be made at any time without penalty, and savings need not be for retirement. Because all income must be saved or spent, the subtraction of savings from income yields individual consumption expenditures. The individual tax employs a graduated rate structure.

The business component of the USA tax is computed by deducting from gross receipts the cost of intermediate interfirm purchases, including capital investment outlays. The primary business expenses that are not deductible are employee compensation, interest payments, and taxes (other than taxes imposed on purchased products). At the business level, the tax rate is proportional and a credit is allowed for the full amount of the employer’s share of OASDHI payroll taxes.

2.2 Summary

The several federal tax reform proposals make no statutory distinctions among business enterprises by firm size. While the current federal income tax code does not contain a separate set of rules for small businesses, several provisions impact differentially to the benefit of these enterprises. They include the exemption of sole proprietorships, partnerships
and closely-held (subchapter S) corporations from the corporate income tax, the application of reduced corporate tax rates on the first $100,000 of taxable income, the expensing of the first $17,500 of equipment purchases in the year acquired, and the exclusion of 50 percent of capital gains on qualifying investments in start-up firms and small businesses held for 5 or more years. The substitution of any one of the proposed federal consumption-based taxes for the current income tax eliminates these firm-size differential benefits. The proposed taxes are applied to corporate and unincorporated businesses alike at a single flat rate, all capital equipment expenditures are expensed, and all capital gains are exempt. Proponents of the replacement consumption-based taxes argue that tax rate and base uniformity produces no losers, only winners. It is clear, however, that with the elimination of existing firm-size differential benefits, some “win” more than others.

The focus of the analysis here is on firm-size comparative levels of interstate tax-cost differentials. The treatment of small enterprises and subnational business tax payments under the current federal income tax serves to reduce tax-cost differentials across firm size and states and to promote economic efficiency in the geographic location of capital investment. From the perspective of state and local governments, the repeal of the federal income tax with its offset provision means subnational business tax burdens stand alone, completely independent of federal tax policy. Further, because the EMTR on the return to capital investment under replacement consumption-based taxation is zero, its imposition is functionally equivalent to forfeiture of present small firm differential income tax benefits. Assuming the states do not conform to the new federal business tax base, the returns on new investment will be taxed only at the state and local level.
3  Methodology, Data Base, and Site Selection

An extended discussion of the analytical foundations and data requirements for the comparative tax burden analysis presented in this paper is contained in the primary report. For those readers not familiar with the earlier study, this section provides an overview of the methodology, parameters, and scope of the analytical framework.

3.1 Measuring Interstate Tax-Cost Differentials

The standard for the comparison of interstate investment tax-cost differentials with and without the federal income tax is the effective marginal tax rate (EMTR) on an incremental investment at a site-specific location. At any location in the U.S., the federal, state, and local business tax system imposes a wedge between the rate of return on a capital investment before and after taxes. When expressed as the present value of expected taxes relative to the expected income from the incremental investment, the ratio measures tax-cost differentials in the context of the actual process that profit-maximizing businesses employ when selecting from among alternative investment locations. The view of taxes is prospective in the sense that it looks at the expected tax consequences of a marginal capital expenditure on the firm’s “bottom-line” or after-tax rate of return.

The EMTR calculation summarizes a detailed examination of the impact of the national and subnational business tax systems on the return to investment. Given a before-tax rate of return, an investment generates an income flow to which specific taxes apply,
yielding an after-tax flow and an after-tax rate of return that reflects the impact of the taxes on the income generated by the incremental investment. The EMTR is the difference between the before- and after-tax rates of return expressed as a percentage of the before-tax rate of return. It is calculated for investment projects in different locations, for different industries, and for different size firms. The EMTR is a widely accepted measure of comparative business tax burdens because it accounts for the time value of money over the life of the investment and is sensitive to specific components of the tax system such as tax rates, the treatment of depreciation, other deductible expenses, and tax credits. 8

3.2 The AFTAX Model

The computations of the intersite, interindustry, and interfirm EMTRs is performed by the AFTAX computerized microanalytic tax simulation model.9 The model employs representative firms drawn from profiles of the relevant characteristics of actual operating companies in each industry, grouped by asset size. The firm data are derived from the latest IRS Source Book Statistics of Income and the U.S. Department of Commerce Survey of Current Business and Census of Manufactures. The model runs off of an extensive parameter file which describes the representative firm and the tax structures examined in the simulations.

3.2.1 Model Parameters

The financial parameters provide details on the firm income statement and balance sheet including:

- dollar value of physical assets by asset type: machinery, equipment building, land, inventory
financial assets
• sales/gross receipts
• before-tax rate of return

Each investment decision is characterized by a particular combination of firm size, industry, and asset composition so as to reflect the impact of business taxation on the various classes or types of business enterprise and on the level and pattern of assets.

Tax parameters detail the statutory tax provisions included in the comparative analysis. They include the relevant provisions from the following taxes:

- federal corporate income tax
- state corporate income and franchise taxes
- state and local property taxes
- state and local sales taxes on capital equipment purchases

The standard tax parameters allow for the interactive or noninteractive treatment of federal, state, and local taxation and for the effects of tax law changes. Variations in the EMTR determine the relative importance of different tax instruments and specific tax provisions.

The model's structural parameters designate the location of the representative firm and the location of its incremental investment project. The firm EMTR depends upon the industry, its location, and the particular investment undertaken. The parameters include:

- location(s) at which the firm conducts business
- percent of operations in each location
- amount and composition of the new investment
- location of the new investment
- location of sales
Modifications in these parameters determine the sensitivity of operational changes on the tax
liability of the firm.

3.2.2 Model Format and Procedure

The AFTAX model proceeds by first calculating a “baseline” EMTR for the repre-
sentative business enterprise. Given the pretax rate of return (20 percent in this analysis), the
firm’s stream of income generated by its investment over a specified time period (60 years in
the simulations performed here) is subject to a specific set of tax parameters. The result is an
after-tax income flow and an after-tax rate of return. The difference between the pretax and
after-tax return is the tax wedge. The EMTR is the tax wedge divided by the pretax rate of return.

A second set of simulations produces a different net profit stream from an expanded
(by 10 percent) investment portfolio and a different EMTR. A comparison of the two tax-
cost measures captures and describes the investment incentive effects of taxation. When
comparing tax costs at alternative investment locations, the site that generates the lowest
EMTR on the prospective capital investment is the desired location.

3.2.3 Model Assumptions and Limitations

All values in the AFTAX model are in current dollars, implying a zero or fixed rate of
inflation. The model also assumes that all investments are financed from internal sources.
This assumption avoids the necessity of determining site-specific interest rates. The model
employs a partial equilibrium approach to isolate and describe the impact of the different tax
regimes on the return from a marginal investment. The simulation results cannot be used
directly to estimate second-order macro-economic effects such as tax revenue gain (loss) or
employment-investment behavioral effects. They are useful, however, as inputs to economet-
ric studies of investment location decisions. Taxes imposed on investment are assumed not to be shifted to customers, employees, or suppliers, or capitalized in compensating changes in wage rates, land, or product prices. They are paid from the returns to investment. The measurement of EMTRs focuses on the tax burden imposed on corporate profits (i.e., the burden from the point of view of the firm). The analysis is limited to corporate investment and to the taxation of the corporation. It does not address the interaction between the taxation of individual investors and the taxation of the business enterprise. Finally, the AFTAX simulations depend upon government survey data, the interpretation and the administration of and compliance with tax statutes, and assumptions regarding functional economic relationships (e.g., firm profit maximization and the cost of capital function). An awareness and appreciation of the underlying assumptions and limitations of the AFTAX model are essential to an understanding of its outputs and applications.

3.3 Site Selection

The geographic boundaries of this research encompass the six states comprising SBA Region V: Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin. The selection criterion for the sites within each of these states is based on county employment growth rates over the ten-year period 1982-1992. For a detailed description of the site selection process, economic base profiles of the site selections, and the state and local tax parameters, the reader is referred to the original study. The sites included in the analysis here are the following:

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<td>Wisconsin</td>
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3.4 Representative Firms

Because the output of the AFTAX simulations is the EMTR on incremental capital investments, relative asset size is the criterion employed to distinguish between small and large business enterprises. A small business is defined here as one with capital assets of less than $25 million; a large firm has assets of $250 million or more.

The selection of industry representation from within the pool of industry types is intended to reflect a range of capital asset portfolios and to include industries with a relatively large representation of small business enterprises. The seven two-digit standard industrial classification (SIC) industries selected are the following:

- Manufacturing:
  - Furniture and Fixtures (SIC 25)
  - Fabricated Metal Products (SIC 34)
  - Electronics and Electrical Equipment (SIC 36)
  - Transportation Equipment (SIC 37)
  - Instruments and Related Products (SIC 38)
- Retail Trade (SIC 53)
- Business Services (SIC 73)

4 The Simulation Results

4.1 Introduction

This section contains the results of the AFTAX simulations showing the combined impact on the EMTR of the repeal of the federal income tax and the elimination of the provision for the deduction of state and local business taxes for federal tax purposes. The replace-
ment consumption-based federal tax contains no offset provision and permits expensing of new investment which effectively excludes the ordinary returns to capital income from all federal taxation. Recall, the EMTR summarizes the impact of multi-level taxation and complex interactive tax statutes on the return from an incremental investment. It provides the necessary metric to assess the evenness of the tax playing field between firms by size, industry, and location.

The AFTAX model is calibrated to reflect the tax provisions and tax rates as of 1 January 1996. For each of the six sites in SBA Region V and for each of the seven two-digit SIC industry types, the first set of simulations produce the incremental tax burdens arising from domestic investment expansion by the representative small and the large business enterprises. A second series of simulations recalculates the EMTRs on the same incremental investment absent the federal income tax (i.e., no offset and no federal tax on the return to the investment). Analysis and comparison of the two combinations of tax simulations provide insights into the following policy-related questions:

1. For small businesses, what is the impact on the EMTR on new investment of the repeal of the federal income tax?
2. How does the change in small-firm EMTR compare with the changes for large business enterprises in the same industry at the same location?
3. Do the cross firm-size comparative EMTRs differ by industry and firm size?
4. Are small and large businesses treated more or less equally with and without the federal tax on capital investment?
5. Given the current diversity and complexity of state-local business taxation among the states, what are the implications for the interstate competition for capital investment under the revised tax regime?

The small and large firm EMTRs are presented by site and industry. For each site, the EMTR is reported for the seven SIC industries together with the percentage differences in EMTR between the representative small and large enterprises.
4.2 Baseline Simulations Under the Current Tax System

Table 1 reports the results of the simulations for the small and large firms in seven SIC industries and six locations under the current (1996) interactive federal, state, and local tax systems.

Each entry in the first column of Table 1 under the industry description and SIC code designates the EMTR of small business enterprises. The second column gives the corresponding large firm marginal investment tax cost. The arithmetic mean of the distribution of EMTRs provides an estimate of the general tax burden on the return from the capital investment for a particular combination of firm size, industry, and location. For many purposes, however, the dispersion of the EMTRs from the mean is more useful information. The variance of the EMTR distribution reflects the distortion of the pattern of EMTRs created by the tax system. The most widely used measure of variance is the standard deviation (Stdv). The Stdv measures the variation of the individual calculations from their corresponding mean. For a normal distribution, about two-thirds of the computations will be within one Stdv of the mean, 97 percent within two Stdv, and 99.7 percent within three Stdv. Standard deviations are given for the EMTR in the last line and row column of Table 1 (across states by industries and across industries by state for the small and large enterprises).

In 1996, the intrastate investment tax costs for both small and large firms are close to even for the six states. All the intrastate, interindustry tax-cost differentials are one or less than one Stdv of the statewide mean; that is, little variation exists in the pattern of investment tax costs by industry and firm size within each state. The bottom row in Table 1 gives the variation in the interstate distribution of EMTRs by industry for the two firm sizes. These Stdv are only marginally larger than their intrastate counterparts, indicating a more or less level tax playing field for new capital investment even among the states in the Great Lakes region.

Table 1 also shows that under the current federal/state/local tax regime some differential benefits are provided to small business enterprises. Table 2 lists the percentage differ-
Table 1
Comparative Total Effective Marginal Tax Rates (EMTR) on New Domestic Investment, Small and Large Firms, Great Lakes States, 1996

<table>
<thead>
<tr>
<th>Homesite</th>
<th>Furniture and Fixtures</th>
<th>Fabricated and Other Metal Products</th>
<th>Electronic and Other Electrical Equipment</th>
<th>Transportation Equipment</th>
<th>Instruments and Related Products</th>
<th>Retail Trade</th>
<th>Business Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>38.66</td>
<td>39.48</td>
<td>37.82</td>
<td>39.68</td>
<td>37.77</td>
<td>38.47</td>
<td>37.93</td>
</tr>
<tr>
<td>Indiana</td>
<td>40.18</td>
<td>40.52</td>
<td>39.44</td>
<td>40.25</td>
<td>39.69</td>
<td>39.73</td>
<td>39.95</td>
</tr>
<tr>
<td>Michigan</td>
<td>37.42</td>
<td>38.49</td>
<td>37.65</td>
<td>38.23</td>
<td>36.88</td>
<td>37.74</td>
<td>37.15</td>
</tr>
<tr>
<td>Minnesota</td>
<td>37.90</td>
<td>39.18</td>
<td>36.58</td>
<td>38.25</td>
<td>35.41</td>
<td>36.07</td>
<td>36.46</td>
</tr>
<tr>
<td>Ohio</td>
<td>39.36</td>
<td>39.55</td>
<td>38.72</td>
<td>38.67</td>
<td>38.95</td>
<td>38.56</td>
<td>39.42</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>39.50</td>
<td>40.40</td>
<td>38.55</td>
<td>40.31</td>
<td>38.19</td>
<td>38.89</td>
<td>38.60</td>
</tr>
<tr>
<td>Mean</td>
<td>38.84</td>
<td>39.60</td>
<td>38.13</td>
<td>39.23</td>
<td>37.82</td>
<td>38.24</td>
<td>38.25</td>
</tr>
<tr>
<td>Stdv</td>
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<td>0.76</td>
<td>1.00</td>
<td>0.97</td>
<td>1.52</td>
<td>1.25</td>
<td>1.33</td>
</tr>
</tbody>
</table>

Source: 1996 AFTAX Files.
Note: The computations here include the federal corporate income tax and the provision for the deductibility of state and local business tax payments in computing federal taxable income. The representative small firm has $25 million or less in capital assets. The representative large firm has assets of $250 million or more.

Stdv: standard deviation. The mean and Stdv for all EMTRs combined is 38.55 percent and 1.28 respectively.
ences in the Table 1 EMTRs between small and large firms among the states and industries. Thirty-five of the 42 tax rate calculations favor the small business enterprise.

4.2.1 Summary and Interpretation

Although statutory tax rates play a role in the appearance of comparative tax burdens, the EMTR determines the effective marginal tax cost on new investment. Effective marginal tax rates can move real resources among competing firms, industries, locations, and asset types. Because of the facility with which some capital assets (e.g., inventories and financial assets) can relocate, the distortions introduced by differential tax costs can be exploited in

Table 2

Percentage Difference in Total Effective Marginal Tax Rates (EMTR)
on New Domestic Investment, Between Small and Large Firms,
Great Lakes States, 1996

<table>
<thead>
<tr>
<th>Homesite</th>
<th>SIC 25</th>
<th>SIC 34</th>
<th>SIC 36</th>
<th>SIC 37</th>
<th>SIC 38</th>
<th>SIC 53</th>
<th>SIC 73</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent Difference</td>
<td>Percent Difference</td>
<td>Percent Difference</td>
<td>Percent Difference</td>
<td>Percent Difference</td>
<td>Percent Difference</td>
<td>Percent Difference</td>
</tr>
<tr>
<td>Illinois</td>
<td>-2.12</td>
<td>-4.92</td>
<td>-1.85</td>
<td>-1.08</td>
<td>-2.31</td>
<td>-1.94</td>
<td>-4.27</td>
</tr>
<tr>
<td>Indiana</td>
<td>-0.85</td>
<td>-2.05</td>
<td>-0.10</td>
<td>0.25</td>
<td>-0.85</td>
<td>0.10</td>
<td>-2.85</td>
</tr>
<tr>
<td>Michigan</td>
<td>-2.86</td>
<td>-1.54</td>
<td>-2.33</td>
<td>-2.75</td>
<td>-2.57</td>
<td>-2.82</td>
<td>-1.57</td>
</tr>
<tr>
<td>Minnesota</td>
<td>-3.38</td>
<td>-4.57</td>
<td>-1.86</td>
<td>-1.97</td>
<td>-2.48</td>
<td>-2.65</td>
<td>-3.73</td>
</tr>
<tr>
<td>Ohio</td>
<td>-0.48</td>
<td>0.13</td>
<td>1.00</td>
<td>0.68</td>
<td>0.00</td>
<td>1.12</td>
<td>-1.63</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>-2.28</td>
<td>-4.57</td>
<td>-1.83</td>
<td>-1.22</td>
<td>-2.27</td>
<td>-2.01</td>
<td>-3.98</td>
</tr>
</tbody>
</table>

Source: Table 1.
Note: Negative number means small firm EMTR is less than large firm EMTR.
Positive number means the reverse.
the short run. In the long run, tax-induced capital mobility has implications for the composition and location of depreciable assets as well, and, correspondingly, employment and economic development consequences. Economic welfare losses are also generated if investment moves because of tax-cost differentials and not because of real differences in profitability. Three kinds of tax-induced distortions were explored here: distortions among firms by asset size, by industry type, and among firms across states.

Variations in EMTRs on new capital investment among the Great Lakes states are minimal, meaning the overall tax playing field for investment location is generally even. The explanation for this development is detailed elsewhere. Suffice to state here that the combination of competition for new capital investment and defensive strategies to retain investment imposes constraints on the magnitude of interstate tax-cost differentials. Supporting this competition-induced tax harmonization is the leveling effect of the deductibility of state and local tax payments for purposes of computing federal income tax. Under current policies federal tax liability varies inversely and proportionately with the amount of state-local business taxes paid. The federal tax offset reduces the absolute burden of state and local taxes and narrows the differences in burdens within and among the states.

4.3 Effective Marginal Tax Rates with No Federal Corporate Income Tax

All the replacement consumption-based federal tax proposals disallow the deduction of state and local business taxes levied on income, property, and net worth. In addition, instead of the current federal depreciation provisions for investment recovery, business enterprises are allowed to expense all capital purchases. As earlier indicated, the expensing of new investment is equivalent to the exclusion of all income generated by the incremental investment; that is, the business-level tax component of the comprehensive consumption-based taxes establishes a zero tax rate on the ordinary return to new investment.

To capture the incremental impact of these proposed federal tax changes on state-local business taxation and capital investment, the AFTAX simulations decompose the
current overall EMTRs into their federal and subnational components. The model recom-
putes the EMTRs with no federal corporate income tax so that the return to new capital
investment is now subject only to state and local business taxes. The restructured simulation
results show the comparative cross firm-size and interindustry distributional patterns of
subnational EMTRs alone; that is, with no federal offset and no federal income tax on the
return to capital investment. They are estimates of the EMTRs on new investment that would
prevail under the existing state and local system of business taxation with a consumption-
based federal tax. Table 3 contains the revised effective tax rates.

Elimination of the federal income tax on the return to new capital investment signifi-
cantly reduces the overall burden of the business tax system on the return to new investment.
The average of all the EMTRs on new capital investment in SBA Region V is 7.90 percent
compared to 38.55 percent under the current business taxation system. The interpretation is
that if all assets at all locations generated a gross or pretax return of 20 percent (the return
assumed in the AFTAX model), and if returns were increased by one hundred dollars, then
the present value of the prospective tax on the additional return would be $38.55 under the
present tax structure and $7.90 under the revised tax system.

To illustrate from the perspective of the representative firm, the small Illinois furni-
ture manufacturer currently records a combined federal, state, and local EMTR on a new
domestic investment of 38.66 percent (Table 1, column 1). With no federal tax on the return
from that investment, the EMTR falls to 8.51 percent (Table 3, column 1), a 78 percent
reduction. The pairwise comparison indicates that taxes imposed by the State of Illinois and
its local subdivisions account for 22 percent or just over one-fifth of the firm's overall total
investment tax costs. The federal corporate income tax accounts for the other 78 percent.
Given these relative magnitudes, it is not surprising that proponents of federal consumption-
based taxation envision a substantial positive impact on investment, capital formation, and
economic growth.16

All the simulations reported here indicate significant reductions in the EMTR on new
Table 3
Comparative Effective Marginal Tax Rates (EMTR) on New Domestic Investment Under Consumption-Based Federal Taxation, Small and Large Firms, Great Lakes States, 1996

<table>
<thead>
<tr>
<th>Homesite</th>
<th>SIC 25</th>
<th>SIC 34</th>
<th>SIC 36</th>
<th>SIC 37</th>
<th>SIC 38</th>
<th>SIC 53</th>
<th>SIC 73</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Furniture and Fixtures</td>
<td>Fabricated Metal Products</td>
<td>Electronic and Other Electrical Equipment</td>
<td>Transportation Equipment</td>
<td>Instruments and Related Products</td>
<td>Retail Trade</td>
<td>Business Services</td>
</tr>
<tr>
<td>Small Firm</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
</tr>
<tr>
<td>Illinois</td>
<td>8.51</td>
<td>8.80</td>
<td>7.95</td>
<td>8.18</td>
<td>7.32</td>
<td>7.17</td>
<td>7.83</td>
</tr>
<tr>
<td>Indiana</td>
<td>10.73</td>
<td>10.31</td>
<td>10.29</td>
<td>9.02</td>
<td>10.12</td>
<td>8.99</td>
<td>10.78</td>
</tr>
<tr>
<td>Michigan</td>
<td>6.61</td>
<td>7.23</td>
<td>7.68</td>
<td>5.94</td>
<td>6.06</td>
<td>6.12</td>
<td>6.66</td>
</tr>
<tr>
<td>Ohio</td>
<td>9.48</td>
<td>8.83</td>
<td>9.26</td>
<td>6.56</td>
<td>9.05</td>
<td>7.26</td>
<td>10.01</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>9.79</td>
<td>10.24</td>
<td>9.05</td>
<td>1.17</td>
<td>7.95</td>
<td>7.80</td>
<td>8.85</td>
</tr>
<tr>
<td>Mean</td>
<td>8.84</td>
<td>9.05</td>
<td>8.48</td>
<td>7.56</td>
<td>7.46</td>
<td>6.89</td>
<td>8.38</td>
</tr>
<tr>
<td>Stdv</td>
<td>1.47</td>
<td>1.14</td>
<td>1.31</td>
<td>1.41</td>
<td>2.10</td>
<td>1.70</td>
<td>1.84</td>
</tr>
</tbody>
</table>

Source: 1996 AFTAX Files.
Note: The computations exclude the federal corporate income tax. The representative small firm has $25 million or less in capital assets. The representative large firm has assets of $250 million or more.
Stdv: standard deviation. The mean and Stdv for all EMTRs combined is 7.90 percent and 1.73, respectively.
capital investment under consumption-based federal taxation. But because the statutory provisions of subnational business taxation differ widely among the states, the reductions in EMTRs are not uniform across states, industries, or firms. For example, under the State of Michigan Single Business Tax (SBT), purchases of depreciable real and personal property are expensed (i.e., treated as under the proposed federal tax reform plans) and special provisions are designed to reduce the tax burdens on small businesses. Further, the present federal corporate income tax graduated rate schedule provides larger tax savings from the offset.

Table 4

Percentage Difference in Effective Marginal Tax Rates (EMTR) on New Domestic Investment Between Small and Large Firms Under Consumption-Based Federal Taxation, Great Lakes States, 1996

<table>
<thead>
<tr>
<th>Homesite</th>
<th>SIC 25</th>
<th>SIC 34</th>
<th>SIC 36</th>
<th>SIC 37</th>
<th>SIC 38</th>
<th>SIC 53</th>
<th>SIC 73</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent Difference</td>
<td>Percent Difference</td>
<td>Percent Difference</td>
<td>Percent Difference</td>
<td>Percent Difference</td>
<td>Percent Difference</td>
<td>Percent Difference</td>
</tr>
<tr>
<td>Illinois</td>
<td>-3.41</td>
<td>-2.89</td>
<td>2.05</td>
<td>-0.64</td>
<td>0.12</td>
<td>-1.35</td>
<td>-0.54</td>
</tr>
<tr>
<td>Indiana</td>
<td>3.91</td>
<td>12.34</td>
<td>11.17</td>
<td>6.77</td>
<td>7.92</td>
<td>9.36</td>
<td>7.24</td>
</tr>
<tr>
<td>Michigan</td>
<td>-9.38</td>
<td>22.66</td>
<td>-0.99</td>
<td>-14.11</td>
<td>-0.38</td>
<td>-10.79</td>
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</tr>
<tr>
<td>Minnesota</td>
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<td>1.96</td>
<td>6.35</td>
<td>-8.48</td>
<td>-0.31</td>
<td>-7.18</td>
<td>9.79</td>
</tr>
<tr>
<td>Ohio</td>
<td>6.86</td>
<td>29.16</td>
<td>19.78</td>
<td>9.39</td>
<td>15.39</td>
<td>16.08</td>
<td>20.30</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>-4.60</td>
<td>-1.33</td>
<td>1.89</td>
<td>-1.69</td>
<td>0.00</td>
<td>-2.07</td>
<td>0.98</td>
</tr>
</tbody>
</table>

Source: Table 3.
Note: Negative number means small firm EMTR is less than large firm EMTR. Positive number means the reverse.
provision to firms subject to the highest federal marginal tax rates. Consequently, the subnational impact of the elimination of the federal corporate income tax differs also by firm size. The combined differential impact of these varied provisions is reflected in the across-the-board increases in the Stdv.

Table 4 displays the percentage differences in the EMTR between small and large business enterprises by state and industry computed without the federal income tax. In 18 of the 42 simulations, the small firm posts lower tax burdens than its large firm cohort. Recall from Table 2, with the current federal corporate income tax, 35 of the 42 calculations of EMTRs favor the small business enterprise. Thus, the beneficiaries of income tax provisions made redundant by the enactment of federal consumption-based taxation are disfavored in relative terms even though the capital income provisions of the new tax apply uniformly. For example, under the current Code, the Section 179 expensing deduction for depreciable personal property differentially benefits to small business enterprises. Expansion of the expensing provision to all capital purchases and to all firms eliminates the differential benefits and whatever relative competitive investment assistance it provides to small enterprises.

Table 5 combines the two sets of percentage differences in EMTRs between small and large firms presented in Tables 2 and 4. It facilitates a comparison of the relative differences in the EMTR under the two tax regimes. Table 6 lists the corresponding small-firm winners and losers under the reform scenario by state and industry. As indicated, in four of the seven SIC industries, the small business enterprise loses (i.e., gains less) under federal consumption-based taxation. These industries are manufacturers of fabricated metal products (SIC 34), electronic and electrical equipment (SIC 36), instruments and related products (SIC 38), and providers of business services (SIC 73). In SBA Region V, the small business sector loses in 32 of the 42 industries/locations. Indiana and Ohio small businesses are losers across the industrial spectrum. Illinois has only one small business winner and the remaining three states lose in four of the seven SIC industry classifications.
Table 5

Percentage Differences in Effective Marginal Tax Rates (EMTR) on New Domestic Investment Under Current Taxes and Under Consumption-Based Federal Taxation Between Small and Large Firms, Great Lakes States, 1996

<table>
<thead>
<tr>
<th></th>
<th>Furniture and Fixtures</th>
<th>Fabricated Metal Products</th>
<th>Electronic and Other Electrical Equipment</th>
<th>Transportation Equipment</th>
<th>Instruments and Related Products</th>
<th>Retail Trade</th>
<th>Business Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homesite</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
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<td>SIC 34</td>
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<td>Current</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
</tr>
<tr>
<td>Illinois</td>
<td>-2.12</td>
<td>-3.41</td>
<td>-4.92</td>
<td>-2.89</td>
<td>-1.85</td>
<td>2.05</td>
<td>-0.64</td>
</tr>
<tr>
<td>Indiana</td>
<td>0.85</td>
<td>3.91</td>
<td>-2.05</td>
<td>12.34</td>
<td>-0.10</td>
<td>11.17</td>
<td>0.25</td>
</tr>
<tr>
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<td>-9.38</td>
<td>-1.54</td>
<td>22.66</td>
<td>-2.33</td>
<td>-0.99</td>
<td>-2.75</td>
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<td>Minnesota</td>
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<td>-12.97</td>
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<td>1.96</td>
<td>-1.86</td>
<td>6.35</td>
<td>-1.97</td>
</tr>
<tr>
<td>Ohio</td>
<td>0.48</td>
<td>6.86</td>
<td>0.13</td>
<td>29.16</td>
<td>1.00</td>
<td>19.78</td>
<td>0.68</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>-2.28</td>
<td>-6.60</td>
<td>-4.57</td>
<td>-1.33</td>
<td>-1.83</td>
<td>1.89</td>
<td>-1.22</td>
</tr>
</tbody>
</table>

Source: Table 2 and Table 4.

Note: The higher the negative number within the same industry group, the greater the small firms gain relative to large firms. The higher the positive number within the same industry group, the greater the large firms gain relative to small firms.
Table 6
Small Firm Winners and Losers Under Consumption-Based Federal Taxation Relative to Current Taxation, By State and Industry, 1996

<table>
<thead>
<tr>
<th>Homestate</th>
<th>Furniture and Fixtures</th>
<th>Fabricated Metal Products</th>
<th>Electronic and Other Electrical Equipment</th>
<th>Transportation Equipment</th>
<th>Instruments and Related Products</th>
<th>Retail Trade</th>
<th>Business Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>Winner</td>
<td>Loser</td>
<td>Loser</td>
<td>Winner</td>
<td>Loser</td>
<td>Loser</td>
<td>Loser</td>
</tr>
<tr>
<td>Indiana</td>
<td>Loser</td>
<td>Loser</td>
<td>Loser</td>
<td>Loser</td>
<td>Loser</td>
<td>Loser</td>
<td>Loser</td>
</tr>
<tr>
<td>Michigan</td>
<td>Winner</td>
<td>Loser</td>
<td>Loser</td>
<td>Winner</td>
<td>Loser</td>
<td>Winner</td>
<td>Loser</td>
</tr>
<tr>
<td>Minnesota</td>
<td>Winner</td>
<td>Loser</td>
<td>Winner</td>
<td>Loser</td>
<td>Winner</td>
<td>Loser</td>
<td>Loser</td>
</tr>
<tr>
<td>Ohio</td>
<td>Loser</td>
<td>Loser</td>
<td>Loser</td>
<td>Loser</td>
<td>Loser</td>
<td>Loser</td>
<td>Loser</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>Winner</td>
<td>Loser</td>
<td>Winner</td>
<td>Loser</td>
<td>Winner</td>
<td>Loser</td>
<td>Loser</td>
</tr>
</tbody>
</table>

Source: Table 5.
Note: Winner - the percentage difference in EMTR between the small firm and the large firm is larger under the federal tax reform proposals.
Loser - the percentage difference in EMTR between the small firm and the large firm is smaller under the federal tax reform proposals.

4.4 Summary and Implications

This section examined the impact on the EMTR (i.e., the percentage reduction in the rate of return on incremental investment from taxation) of replacing the current federal corporate income tax with a consumption-based tax and retaining the present system of state and local business taxation. It showed that the overall level of taxation on new capital investment is significantly reduced under the consumption-based federal tax because it imposes a zero rate on the return to investment. It also showed that the distribution of the reduction varies by state, by industry, and by firm size. The findings here indicate that federal tax restructuring will tend to favor states with relatively low business taxes and those industries
and firms with relatively large capital investment outlays. Further, firms currently benefiting from selected federal income tax provisions will lose because these provisions are disallowed under consumption-based taxation. The analysis here discloses that the small business sector will be disadvantaged relative to the large business community. Elimination of the federal corporation income tax with its several provisions differentially benefiting small firms will change the comparative competitive relationship between small and large firms.

An additional by-product of federal consumption-based taxation is the impact on interjurisdictional and cross firm-size tax-cost differentials. Absent the leveling effect from the deduction of state-local business taxes for purposes of computing the federal income tax, differences in the subnational EMTRs on capital investments increase significantly. In some cases, the differential interstate tax costs increase fivefold. It should be recalled that only tax-cost differentials are important from an investment location standpoint and that these differentials enter the location-choice equation only to the extent they impact profits or net income. The likely reaction to widening the differentials in interstate comparative EMTRs is the redirection of investment flows to locations with the lowest EMTRs, that is, toward a "lowest common denominator." Tax-induced competition will drive the EMTRs to the lowest level.

Advocates of subnational business tax competition argue that by forcing reductions in the EMTR the tax system will become less distortionary and thus more efficient. Considerable competition-induced tax harmonization is already taking place. More frequently, however, selected tax concessions are being provided to locationally mobile firms with adverse consequences on the less mobile and less influential members of the business community. The result is an uneven playing field among firms of different size, type, and life cycles, and an inferior outcome in the geographic allocation of capital investment.

What, then, is the major conclusion of this analysis? To return to the proposition stated at the beginning, the consequences of tax reform depend on the historical context and on the fiscal institutions and relationships that have evolved over time. The restructuring
embodied in the several proposals for consumption-based federal taxation is desirable only if
the probability of the expected gains of increased economic efficiency and improved distribu-
tion outweigh the potential losses imposed by the gamble. It is impossible to provide defini-
tive evidence to support or reject the tax reform proposals. While the present federal income
tax system is not perfect, its imperfections have over time been accommodated and adapted
into the calculus of economic behavioral parameters. Tax rules interact in significant ways to
ameliorate their adverse impacts. Modifying the existing tax system to incorporate changes
consistent with the new global economy could offer smaller risks than radical change. Based
on the findings of this study, admittedly limited in its scope, the aphorism "An old tax is a
good tax" is worthy of thoughtful consideration.

In a strict sense, the findings contained in this section are applicable only for the
small and large businesses and locations calibrated in the AFTAX simulation model. The
range of industries and firm-operating characteristics, however, gives some assurance that
they have wider application. Nevertheless, the effects of federal tax restructuring on small
versus large businesses will ultimately depend on how each firm's particular circumstances fit
the provisions of the new tax system.

The foregoing analysis assumed that state and local governments would continue their
present systems and practices of business taxation under the consumption-based federal tax
system. Adoption of a new federal tax system would have far-reaching consequences for the
tax structures of state and local governments and necessitate a reexamination of subnational
tax regimes. For example, could the states preserve existing corporate income taxes if there is
no federal infrastructure on which to "couple"? States currently rely on federal reporting of
income and expenses, and for withholding, information statements, and audits as key inputs to
their tax enforcement and compliance procedures. Nonconformity would increase taxpayer
compliance costs and the complexity of state-local tax administration. Pressures would likely
build to have state governments adopt some form of related consumption-based business tax
system. The implications of that possibility are addressed in the next two sections.
5 Comparative Analysis of a Value-Added Tax and a Corporation Net Income Tax as State Business Taxes

Many of the issues raised with respect to the replacement of the federal income tax system with a system based on consumption apply to state and local governments. Others are relevant only for national and international considerations. Several issues bearing on the comparative effects of consumption versus business net income taxes, however, have special relevance and interest at the subnational level. These are explored briefly here. Again, the discussion focuses on major conceptual issues, not the particulars of a specific federal consumption-based tax reform proposal. For purposes of general comparison, the assumed state consumption-based business tax is levied on value added as described earlier. It is measured by the value that a business adds to property and services and is calculated generally as the difference between a firm's gross sales and its purchases of inputs (including capital investment) from other firms.

5.1 The Profitable Versus the Unprofitable Firm

The VAT reduces the relative tax burden for the highly profitable firm as compared to the net income or profits tax. In contrast, the VAT bears more heavily on the unsuccessful enterprise which escapes taxation under the net profit base. Under the income tax, the non-profit firm may even qualify for a refund, immediate or deferred, if loss carry back or carry forward provisions apply. The so-called *de facto* tax holiday conferred on the struggling new enterprise, small and large, in its formative years is absent under the VAT formula. Start-up
firms generate tax liabilities right from the beginning under the VAT.

From the standpoint of efficient resource allocation, the VAT, conceptually, has the advantage. The comparatively lighter tax burden on the profitable expanding firm guides the normal operations of the market mechanism in its task of directing the allocation of capital funds. But the imposition of an essentially unchanging VAT liability on start-up, distressed, or declining firms reinforces their adjustment problems, particularly if the possibility exists that the operating difficulties may be transient and the long-run needs of the state's economy argue for support and survival.

5.2 The Treatment of Capital and Labor

The consumption-based VAT tends to encourage the substitution of capital for labor in the firm's production process as compared with net income taxation. The impact of the net income tax is on the return to equity capital whereas a VAT is imposed on all factor inputs in the production process. To the extent production inputs require financing by equity capital, the net income approach favors the use of other factors of production. The VAT, with its apparent neutrality among alternative inputs, is more favorable than a net income tax for capital intensive projects and industries. The VAT gives the appearance of a tax on employment (compensation of employees accounts for over 60 percent of the tax base in many industries), encouraging the displacement of workers. This appearance is deceptive, however, because the expensing of capital investment purchases eliminates the taxation of items which have already been taxed at an earlier stage of the production process (i.e., the capital producing firm). The return on the production of the capital asset is taxed like wages and any other factor costs creating value.
5.3 Business Tax Burdens and Economic Fluctuations

Business tax burdens under the VAT are more likely to be countercyclical or less sensitive to business activity fluctuations. Under the current widespread system of taxing net incomes, subnational business tax liabilities are moderately procyclical—they increase when the firms prosper and expand and decrease when they contract. Thus, subnational business tax systems function as an "automatic stabilizer" to the state's business community and economy.

The VAT operates as an automatic de-stabilizer. Recall, the tax base is sales minus investment minus other interfirm purchases. It is primarily the treatment of investment that contributes to the procyclical feature of the VAT. Investment spending is highly sensitive to the course of the business cycle. In a downturn, investment falls relative to sales. Under the current income tax regimes, the deduction of depreciation is less volatile than total investment outlays. Under the VAT, new investment is depreciated completely in the year of acquisition (i.e., expensed) so that the deduction equals investment and is as volatile as investment outlays.

5.4 The Impact of the Nondeductibility of Interest

Unlike the income tax, a VAT does not provide for the deduction of interest expenses. In 1992, corporations reported federal taxable income of $570.7 billion and interest expenses of $597.4 billion; the interest deduction amounted to 105 percent of the tax base. In 1993, the comparable ratio was 83 percent. In 1992, the last year for which detailed corporate tax data by asset size are available, corporations with assets of less than $25 million reported interest expenses as a percentage of taxable income of 66 percent; the corresponding percent-
age for companies with assets over $250 million was only 12 percent. 22

A business enterprise has basically two options to raise money: borrow (i.e., issue debt) or, if a corporation, sell shares of stock (i.e., issue equity). Access to financial markets and capital, however, differs by firm size and life cycles. Small firms and start-up firms generally have limited access to the market for equity funds. They rely disproportionately on borrowing to finance operations and expansion. Consequently, a shift to a VAT from a state net income tax places a large and important segment of the business community at a competitive disadvantage in the market for financial capital. Although in theory the VAT treats the cost of debt and equity financing equally (i.e., nondeductible), in actual practice it imposes unequal consequences. As in other instances, taxpayers do not view the world in the same way as economists. To a small retailer that finances its inventory with loans and operates on a narrow margin, the tax that disallows interest as a business expense can spell the difference between profit and losses. This is another example of the difference between tax design ("tax policy in the Garden of Eden") 23 and tax reform (starting from the existing tax system).

5.5 Filing Requirements

Under current income tax practices, individuals include in taxable income all incomes derived from the ownership of noncorporate businesses and from S-corporations (i.e., income from sole proprietorships, partnerships, S-corporations, rental properties, farms, and any other non-C corporation business). Almost without exception, states do not require the filing of separate noncorporate business tax returns. Under the VAT, all businesses are separately taxed no matter how they are organized. Thus, unincorporated business enterprises, the majority of which are small, are required to file separate business tax returns.
5.6 Capital Flows in Open Economies

Although definitive answers to the complex questions surrounding the shifting and incidence of subnational business taxes are theoretically ambiguous, the policymaker, in search of the preferred tax structure, must consider who actually pays the taxes levied. In this context, it is useful to distinguish between taxes on profits and taxes on costs. The traditional assumption regarding the corporate income tax is that at least in the short run it is not shifted and therefore falls on profits. An unshifted corporate income tax reduces the net rate of return on investment. Taxes on production costs, on the other hand, are either shifted to consumers or wage earners, or they reduce profits. If they are borne by profits, capital flows are affected just as under the income tax.

At the national level (abstracted from international considerations), the VAT is equivalent to the retail sales tax. In a comparatively open economy, if all states levied an identical VAT, the incidence of the system of uniform state taxes would generally mirror that at the national level. This analogy is not, however, applicable to the subnational VAT because the tax would not likely be levied on identical bases and at uniform rates, nor would they apply to total sales. In practice, the fraction of sales subject to taxation would be determined by an apportionment formula involving the location of sales (and other origin-based or destination-based business activity indicators) in and out of the taxing jurisdiction. Apportionment alters the incidence of the subnational VAT in accordance with the apportionment factors in the same manner as it does under the state corporate net income tax. A state corporate net income tax apportioned on the basis of sales, property, and payroll can be demonstrated to be borne by residents of the taxing state, in their capacities as owners of land and immobile capital, consumers, and providers of labor.24 If capital is mobile between states in
response to differences in after-tax rates of return, the economic incidence of both taxes is likely to be borne by economic activity specific to the taxing state.

A second consideration, and perhaps more relevant to the discussion here is the distinction between taxes which are paid (in the first instance) by firms selling multistate and dominating their respective national markets and purely local firms or multistate firms not dominating the national market. Firms whose sales are local and which are not subject to out-state competition can presumably shift their taxes completely to the consumer, the wage earner, and/or to landowners. To the extent that out-of-state products can be purchased, the taxes paid by intrastate firms cannot be shifted forward. A firm subject to national competition can shift taxes forward only to the extent that product price differentials are not narrow to the point where more outside competition is attracted.

In practice, small business enterprises fall generally into the purely local category subject to out-of-state competition or into the classification of firms selling multistate, but not dominating the national market. In the former case, such as a provider of business services, the VAT tax is shifted forward, profits are not affected, and capital flows are not altered. In the latter case, only part of the tax is shifted forward. To the extent the tax falls on profits, the return on investment is reduced.

The point of this discussion is that unlike a federal consumption-based tax, the incidence of the subnational VAT is not obvious. In an open economy with factor mobility, it is not "just another sales tax" paid by consumers. Shifting of the tax to consumers is not by any means automatic. Its incidence and economic effects are subject to many of the same considerations that are involved in the determination of who pays the state corporate net income tax. The ultimate burden of the tax will depend upon the particular operating circum-
stances of each individual business enterprise, what statutory apportionment formula is employed, whether the sales factor is based on origin or destination, the definition of tax nexus, and the relative mobility of capital and labor in the taxing jurisdiction.

5.7 Relative Tax Impact by Industry and Firm Size

The impact of a subnational VAT on industrial sectors varies with the economic base of the jurisdiction. Each industry in the base produces different amounts of value added. Approximations of the industry impact of a subnational VAT can be made by estimating the relative importance of the components of the tax base by major industry type.

Recall, value added can be computed as the sum of employee compensation, profits, interest, and rents. For the U.S. private sector as a whole, employee compensation accounted for some 61 percent of value added. It follows that employee compensation is the dominant input determining the VAT liability. Although employee compensation is the most important component for almost all industries (agriculture, utilities, and real estate excepted), it is relatively more important for those industries traditionally represented by small business enterprises. For example, 75 percent of the value added in the service industry is employee compensation. The comparable ratio for the retail trades is 63 percent, for the wholesale sector, 64 percent, and for construction, 72 percent. In a word, small businesses are relatively labor intensive and contribute a disproportionate share of the VAT base.

At the same time that employee compensation dominates the VAT base, the immediate expensing of capital equipment purchases gives relative tax relief to industries with large capital investment outlays. The larger the capital investment per dollar of gross receipts, the greater the tax benefit. Relative to large business enterprises, small firms have comparatively
small investment outlays. It should be noted here that the comparative advantage from expensing applies only to tangible assets. Intangible assets are already expensed under the corporate income taxes.

In sum, the economic characteristics and traditional operating parameters of small businesses combine to disadvantage the small business sector relative to the large business community in a replacement of the net income tax with a VAT for state business taxation. A similar conclusion has also been suggested for the national VAT. 27

6 Administrative Considerations

The United States is alone among the G-7 countries in not having a consumption-based tax as part of its national revenue structure. Only the State of Michigan currently has an operational VAT, so the mechanisms for the states to follow if a consumption-based federal tax is enacted is subject to speculation. Individual states may opt to "piggyback" on the federal tax, some states may conform partially, and others may stay with their current business tax systems. This section briefly examines the general implications of a subnational VAT regime under two administrative arrangements: a federal VAT with state revenue sharing and a dual federal-state VAT system.

6.1 Federal VAT with State Revenue Sharing

The comparative administrative and compliance advantages of a federal VAT with state revenue sharing (i.e., grants) are evident. It would have a single rate and base structure
nationwide, thereby avoiding the complexities that arise from differential rates and rules. Businesses would have only one set of provisions and procedures to follow. The VATs of Argentina, Austria, Germany, and Mexico are examples of national imposition with subnational revenue sharing. 28

A single VAT would, however, significantly reduce the fiscal autonomy and independence of the states and run counter to the recent trend of fiscal devolution and decentralization. The states would lose their freedom to establish the tax base and set and vary tax rates. The revenue-sharing arrangement could insure full replacement of lost revenues, but the allocation of revenues among the states could not be on the basis of VAT collections alone. All things considered, it is unlikely a federal VAT with state revenue sharing is feasible at this time or in the near future.

It is worth mentioning that in Canada the practice of business tax harmonization and national government collection of both national and provincial taxes has been followed since the end of World War II. The provinces agreed to adhere to the national definition of the corporate income tax base, but retained authority to impose differential tax rates and credits. In 1987, the Canadian national government proposed the adoption of a fully harmonized, dual national-provincial VAT in which both levels of government would employ a single administrative mechanism and a uniform base; the provinces would have been allowed to choose their own rates. The proposal was not adopted and the national government enacted its own VAT in 1989. Subsequently, only Quebec has enacted the VAT and harmonization is minimal. 29

6.2 A Dual System of Federal-State VAT

A more likely scenario to emerge from the adoption of a federal consumption-based tax
would be a dual federal-state system with some states harmonizing with the new federal levy and others retaining their traditional business tax systems. In all cases, states would retain the revenue raised within their borders. The spectrum of coordination possibilities extends from total harmonization to complete independence and to all types of intermediate arrangements. For example, a state might opt to piggyback on the federal VAT only at the retail level, thereby minimizing the number of taxpaying firms. A state might also adopt the federal VAT but disallow the expensing of capital equipment purchases in favor of depreciation in order to stabilize revenues. Given differing revenue requirements, tax rates would also likely differ among the states and, possibly, by different stages of production (e.g., manufacturing versus retailing) depending upon the state strategies in economic development and/or distribution objectives. The range of statutory differences under the dual VAT system is extensive, and the administrative and compliance complexities are legion. Current multistate compliance problems under existing state corporate net income taxes would pale by comparison. Indeed, the Multistate Tax Commission has had some success over the years in promoting corporate income tax base harmonization, but it has taken almost 30 years to get where it is today.

A harmonized dual, federal-state consumption-based tax system would represent an improvement over a system of independent state VATs. But harmonization to any degree requires a reduction in state fiscal autonomy. The independent authority of each state to devise its own fiscal system, subject to constitutional restraints, remains an important attribute of the federal system. It is unlikely to be surrendered in the interest of ease of tax administration and compliance. The more realistic outcome is a partially harmonized business tax system where some states adopt variations of the federal VAT and others retain their present income-based tax systems. The consequences of this development on small and large business enterprises
7 Summary and Conclusions and Directions for Research Extensions

The debate over federal tax reform involves much speculation on its possible consequences. Policy signals from the U.S. Congress indicate that major initiatives will continue to focus on consumption-based taxation. This section contains a summary and the conclusions from the analysis presented here on the comparative cross-firm-size distribution of subnational business tax burdens under federal consumption-based direct taxation. Under the several variants of consumption-based tax proposals, state and local business tax liabilities would not be deductible for federal tax purposes, nor would any federal tax be imposed on the return to new investment. The implications of these changes for small business enterprises are examined. The section concludes with a discussion of the direction future research might take to enhance and clarify the current tax reform debate.

7.1 Summary and Conclusions

Section 2 of this paper described the major characteristics of the alternative consumption-based taxes proposed as replacement for the U.S. federal income tax. These included the retail sales tax, a value added tax, the so-called flat tax, and a consumed income tax. An important finding of the review was that, though differing in details, all the reform proposals were conceptually equivalent from the perspective of the business sector: they tax the value added to the product or service by the business entity and exclude the returns to savings and
investment. With capital income taxed at an effective marginal tax rate of zero, the rate-of-
return on investment increases and new capital formation and economic growth follow, or so
the proponents argue. Section 3 briefly described the simulation model and data base em-
ployed to develop the measure of comparative interstate, interfirm, and interindustry business
tax burdens—the effective marginal tax rate (EMTR) on new investment. The EMTR is the
percentage by which taxes reduce the rate of return on an investment. Its estimation and
application are dependent upon the methodology, parameter assumptions, quality of the input
data, and the scope of the analysis.

The remainder of the paper focused on the changes in the distribution of
interjurisdictional EMTRs by firm size and industry before and after the elimination of the
federal income tax. The key finding is that repeal of the current federal income tax and
replacement with a consumption-based tax eliminate the differential benefits presently
available to small business enterprises under the income tax. The repeal-replacement policy
also impacts the competitive ordering of the states. The current federal offset provision
serves to level interstate differences in EMTRs, to neutralize tax-induced competition and
foster effective tax harmonization. Absent the federal income tax and offset provision,
subnational business taxation will be forced to its lowest common levels by the tendency of
capital to flow to the areas with the lowest tax rates.

The insights that are obtained from the comparative empirical analysis are supple-
mented in section 6 with a consideration of the practical and operational differences between
income and consumption-based business taxes imposed at the subnational level. It seems
clear that a change in the federal taxation of business from a tax based on income and profits
to one based on the value that a business adds to its products and/or services will pressure the
states to conform to some degree to the federal practice. The realities of subnational business taxation in an open economy suggest that administration, compliance, and economic problems will not be significantly reduced under the new tax regime.

7.2 Research Extensions

The information in this paper can increase policymakers' awareness and understanding of several issues relating to the adoption of a federal consumption-based direct tax, but many other areas require further inquiry. Specifically, questions for research that could build upon the analysis presented in this paper would include:

- What is the comparative impact of the federal consumption-based tax on small versus large firms in other SIC industries and geographic regions? Do California and New York have the same winners and losers?
- What is the differential effect of treating corporate and unincorporated businesses alike?
- What statutory provisions could be incorporated in consumption-based business taxes to relieve the economic and compliance burdens imposed differentially on small business enterprises?
- Are there special transitional rules that would ease the conversion of the taxation of small business from an income to a consumption base?
- Is the rationale for consumption-based business taxation the same for national and subnational governments?

A change in the federal tax base from income to consumption will force the states to reexamine and probably modify the base of their business taxes. Currently, only the State of
Michigan imposes a consumption-based business tax. It is called the Single Business Tax (SBT) and is levied on value added. A comprehensive analysis of the Michigan experience in switching from a corporate income tax to a VAT in 1976 would be valuable for the design of a process of federal/state business tax restructuring. Michigan continued to tax retail sales and personal income after the imposition of the VAT. The reaction and accommodation of the state taxing authority to the special concerns of the small business community would be of particular importance. For example, in response to small business' complaints of excessive differential tax burden, the SBT incorporated statutory tax base exemptions and a small business tax credit. Would similar provisions accomplish the same objectives under the federal VAT? The Michigan statute also provides relief for businesses that are only marginally profitable or labor intensive. How would these provisions alter the cross firm distribution of the federal VAT? According to reports, large businesses and particularly multi-state firms generally support the Michigan SBT. Their tax base is computed on a national basis and then apportioned to Michigan using a three-factor formula. The three-factor formula will convert to a single factor—sales—in 1998. The formula is especially favorable to firms selling a large proportion of their output out of state. Finally, if consumption-based business taxation is an attractive alternative to income taxation, why has no other state copied the Michigan practice? Answers to these and other questions (relating to the relationship of tax reform policy to the structure of government and political institutions) would enhance the quality of the current debate.
Notes

1. Introduction


3. The VAT can be computed in several ways, depending on whether an additive, subtraction, or credit invoice method is employed. For a description of these alternative computational schemes, see Moroney and Bravenec (1996).


8. See, for example, Gravelle (1981), King and Fullerton (1984), and Papke (1991).


10. See, for example, Gravelle (1981), Papke (1991), and Jorgenson (1993).

11. For a more detailed explanation of the uses and limitations of the model, see Papke (1995).


13. For investment projects that generate returns higher than the risk-adjusted normal returns (so-called inframarginal returns or economic profits), the consumption-based tax imposes a positive net burden.


15. The transition problem of the appropriate tax treatment of "old" and "new" capital assets under consumption-based taxes is not germane to the discussion here because the EMTRs are related to incremental or new investment projects.

16. Skeptics of consumption-based taxation question both the magnitude and the direction of these effects. See Gale (1995, 1996) and the references cited therein.


19. This observation does not apply to the property tax component which represents a fixed-cost element in the firm's production function.


23. For a comprehensive discussion of the theoretical and practical differences between tax design and tax reform, see Feldstein (1976).


25. For a discussion of this issue, see Carlson and Gordon (1988).

26. See Note 18.


29. See Note 28.
References


