

**Are All Taxes Equally Bad?
How Replacing Iowa's Sales Tax Could Save Iowans
More Than \$100 Million per Year**

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Abstract

Under current U.S. law, taxpayers can deduct up to 100 percent of their state income taxes from their adjusted gross income when calculating their federal income taxes. As a result, Iowans currently pay approximately \$251 million less to the federal government than they would otherwise pay. There is, however, no equivalent stipulation allowing for the deduction of state sales taxes. Consequently, by eliminating the sales tax and replacing the lost revenue with an income-based tax, Iowans could save a substantial amount of money on their federal tax returns without any change in revenue for the Iowa government. Alternatively, by replacing the sales tax with an income-based tax, the State of Iowa could increase its tax revenue without increasing the total tax burden on Iowans. This analysis discusses four specific scenarios, with net benefits to Iowans ranging from \$106 million to \$157 million per year.

Keywords: federal itemized deductions, income tax, sales tax, state budget, tax policy.

ARE ALL TAXES EQUALLY BAD? HOW REPLACING IOWA'S SALES TAX COULD SAVE IOWANS MORE THAN \$100 MILLION PER YEAR

Every tax ought to be so contrived as both to take out and to keep out of the pockets of the people as little as possible over and above what it brings into the public treasury of the state.

—Adam Smith, *The Wealth of Nations*, 1776

Introduction

Across the nation, state budgets are in disarray. In fiscal year 2002, state revenues were 5.6 percent lower than forecasted, and an even bleaker scenario seems likely for fiscal year 2003 (*The Economist* 2002). Iowa is no exception to this general situation, and we are all familiar with the recent budget woes that have brought painful adjustments to a number of critical state programs, especially education. Lawmaker and stakeholder attention so far has taken a short-run perspective and has focused mainly on identifying the size and nature of the cuts needed to balance the budget. There are reasons to believe, however, that the budget problems currently facing Iowa and other states may not be only a cyclical phenomenon related to the recent slowdown and recession in the general economy but also may reflect deeper structural problems that require a long-run reassessment of both spending and revenue options. In particular, in this paper we argue that state governments should pay more attention to their choice of tax revenue instruments, and that the State of Iowa could benefit substantially from the replacement of the sales tax with an income tax.

The problem of taxation, to secure financial resources needed for public expenditures, has long been of interest to economists (Musgrave 1985). Issues that typically are addressed relate to notions of “efficiency” and “equity.” Concerns about efficiency arise because most taxes create distortions in the allocation of resources, such that they leave taxpayers with a loss that is greater than the tax revenue collected by the government.¹ Considerations of equity, on the other hand, are germane because taxpayers are heterogeneous on many dimensions, and their welfare may be affected differently by a

given tax. Equity in taxation is often understood to mean that individuals should be taxed according to their ability to pay. But equity considerations are also at the root of the principle that taxes should be levied on individuals according to the benefits they receive (from the public expenditures financed by taxes). Unfortunately, equity and efficiency considerations in taxation often lead to conflicting prescriptions. Striking a balance between efficiency and equity leads to the problem of optimal taxation, which is widely studied in economics.²

Given the difficulties of devising and implementing outright an optimal tax structure in a real-world economy, the tax problem also has been formulated in terms of gradual changes or policy reform (Feldstein 1976). In the spirit of this approach, this paper articulates a specific tax policy reform that offers obvious advantages to the State of Iowa. Specifically, the policy change advocated is to replace the sales tax with an income-based tax. For a general economy, a prescription such as this need not have theoretical validity, and indeed it seems at odds with the general trend of most developed economies, as most nations have adopted a mix of tax instruments that involve both direct taxation (e.g., income taxes and property taxes) and indirect taxation (e.g., sales taxes and value-added taxes). But, in determining what is optimal for the State of Iowa, it is crucial to account properly for all the constraints set forth by the federal government, and it turns out that a feature of U.S. federal tax law provides a strong incentive for individual states to favor a tax system based on income and/or property taxes.

Under current U.S. law, taxpayers can deduct up to 100 percent of their state income (and property) taxes from their adjusted gross income when calculating their federal income taxes.³ There is, however, no equivalent stipulation allowing for the deduction of state sales taxes. Consequently, by eliminating or reducing the sales tax and replacing the lost revenue with an income tax increase, Iowans could save a substantial amount of money on their federal tax returns without any change in revenue for the Iowa government. Alternatively, the Iowa government could increase revenue without increasing the total tax burden on Iowans. As an illustration, we can point out that Iowans at present already derive sizeable benefits from the federal deductibility provision: Iowans currently pay approximately \$251.3 million less to the federal government than they would be required to pay if the deduction of state income taxes were not allowed.

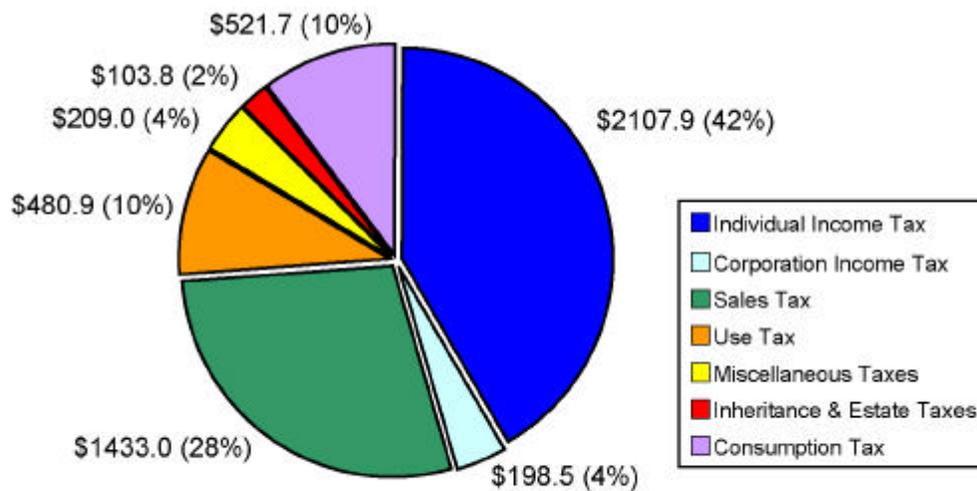
In what follows, we articulate and document our proposal to replace the current sales tax with an equivalent income tax. Whereas our proposal produces unambiguous and sizeable gains to Iowans, any practical implementation of the idea underlying our proposal will inevitably have some distributional consequences. Thus, we cannot escape the trade-off between efficiency and equity of taxation, discussed earlier. Indeed, there are many ways to implement the tax change discussed here, each with different impacts on the distribution of the tax burden. Here, we concentrate on illustrating the general principle, and we discuss perhaps the simplest implementation of the tax change, that is, one based on a supplemental ad hoc flat income tax replacing the sales tax (while leaving unchanged the current income tax structure of the State of Iowa). We estimate that such a change to the Iowa tax system would produce approximately \$157 million per year in benefits to Iowans. Furthermore, these gains would be possible without a significant shift in the distribution of the tax burden.

Background on the Iowa State Tax System

Iowa, like many states, relies on a variety of taxes and fees for its revenue, but the majority of state revenue is obtained through the individual income tax and the retail sales tax. The revenue generated from Iowa taxes and the relative importance of these taxes is shown in Figure 1.

Individual Income Tax

The individual income tax is based essentially on federal adjusted gross income (AGI) calculations. As taxable income increases through Iowa's nine statutory income brackets, the marginal tax rate increases from 0.36 percent to 8.98 percent as shown in Table 1. The income brackets are indexed for inflation and are adjusted annually in order to ensure that tax rates reflect real income. Figure 2 shows that, although Iowa's income tax schedule appears to be relatively progressive,⁴ the progressivity is lessened by the federal income tax deduction. Even though federal tax laws allow all state income taxes to be deductible, only Iowa, Louisiana, and Alabama allow all federal income taxes to be deductible on state tax returns. The deductibility of federal income taxes on Iowa tax returns has little impact on low-income taxpayers but it significantly reduces the tax burden, and effective tax rate, of higher income taxpayers. The result is that low-income



Source: Iowa Department of Revenue and Finance, November 2001.

FIGURE 1. Iowa state tax revenue by source, fiscal year 2001 (millions of dollars)

TABLE 1. Iowa's statutory income tax rates

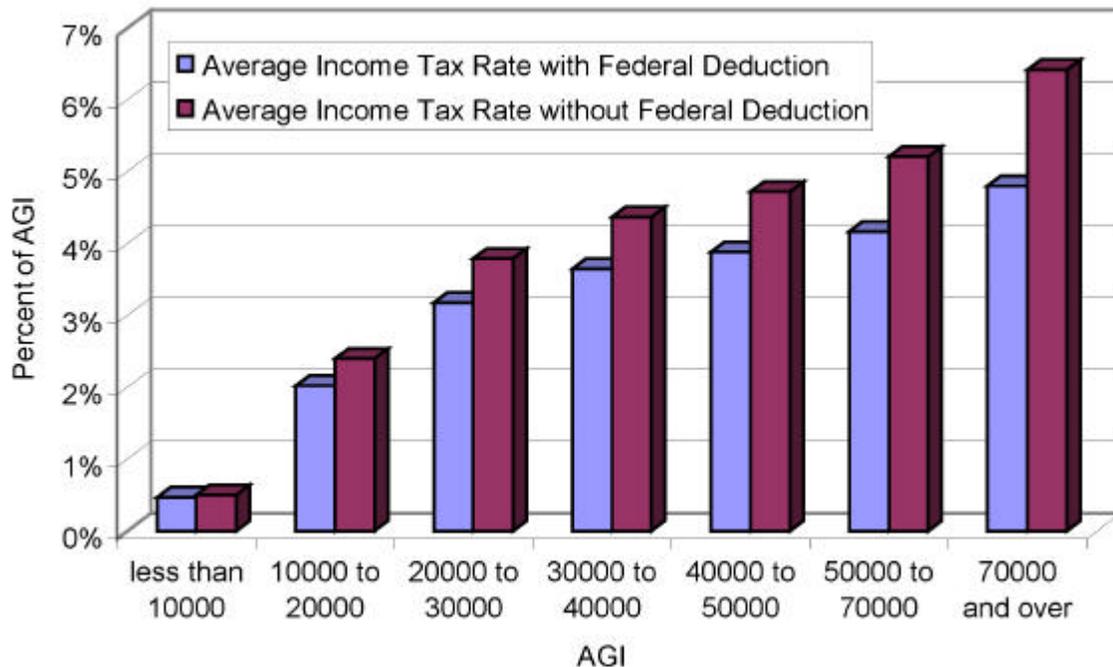
Taxable Income (\$)	Marginal Tax Rate (%)
0 to 1,162	0.36
1,162 to 2,324	0.72
2,324 to 4,648	2.43
4,648 to 10,458	4.50
10,458 to 17,430	6.12
17,430 to 23,240	6.48
23,240 to 34,860	6.80
34,860 to 52,290	7.92
52,290 and over	8.98

Source: Iowa Department of Revenue and Finance, November 2001.

tax liabilities remain essentially unchanged while high-income earners are able to reduce their taxable income.

Retail Sales Tax

The retail sales tax in Iowa is a tax of 5 percent on the sale of tangible goods and some specifically designated services.⁵ In order to lessen its regressivity, some items are exempted from the state sales tax (for example, food and medical expenses fall in this



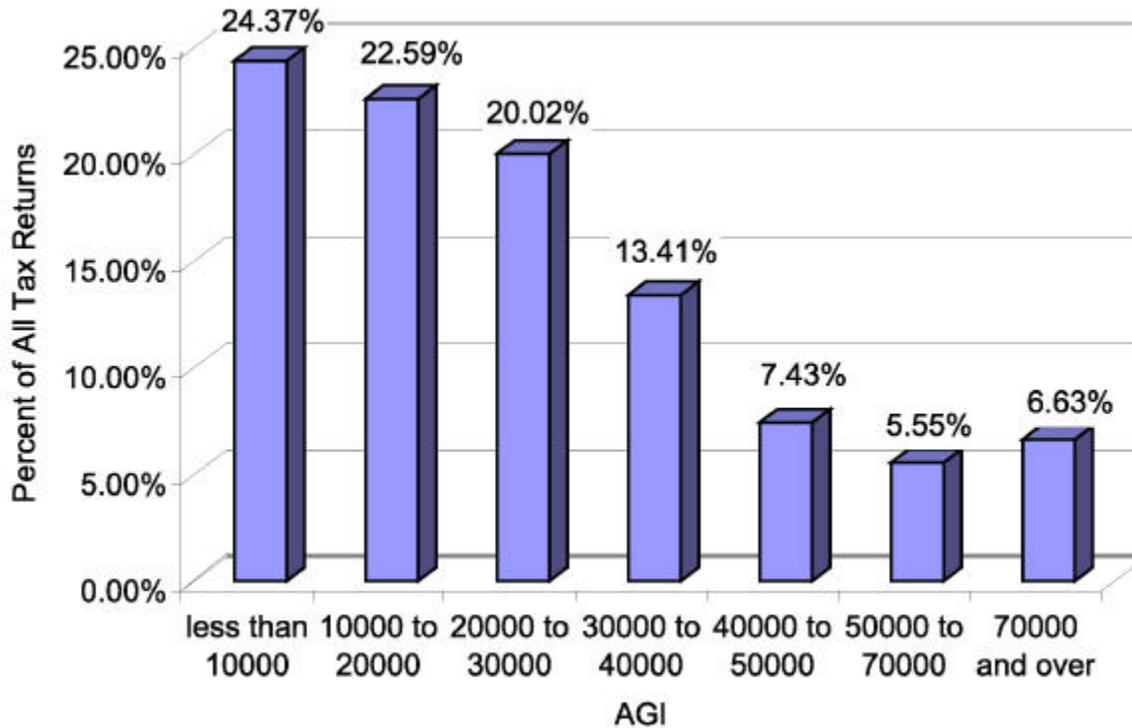
Source: Authors' calculations. See the Appendix for details.

FIGURE 2. Change in average state income tax rate due to federal income tax deduction

category). Iowa law also allows for a maximum of 2 percent in additional local option sales taxes. One percent of the local option sales tax is designated as the regular local option tax, while the other 1 percent is designated as the school infrastructure local option tax. The regular local option tax can be imposed in cities, rural areas, or countywide and requires passage by general election. The school infrastructure local option tax must be countywide and must be repealed within ten years after it is imposed.⁶ It also requires passage by general election.

Distribution of Income and the Tax Burden

Figure 3 shows the distribution of income for Iowa taxpayers.⁷ Each bar shows the percentage of taxpayers whose income falls in the range specified. The State of Iowa has less income inequality than do most other states. This is due largely to the relatively low number of very high-income people in the state, which decreases the dispersion of the income distribution. The vast majority of Iowa taxpayers have an AGI of less than \$70,000.



Source: Authors' calculations based on Iowa Department of Revenue and Finance, July 2001.

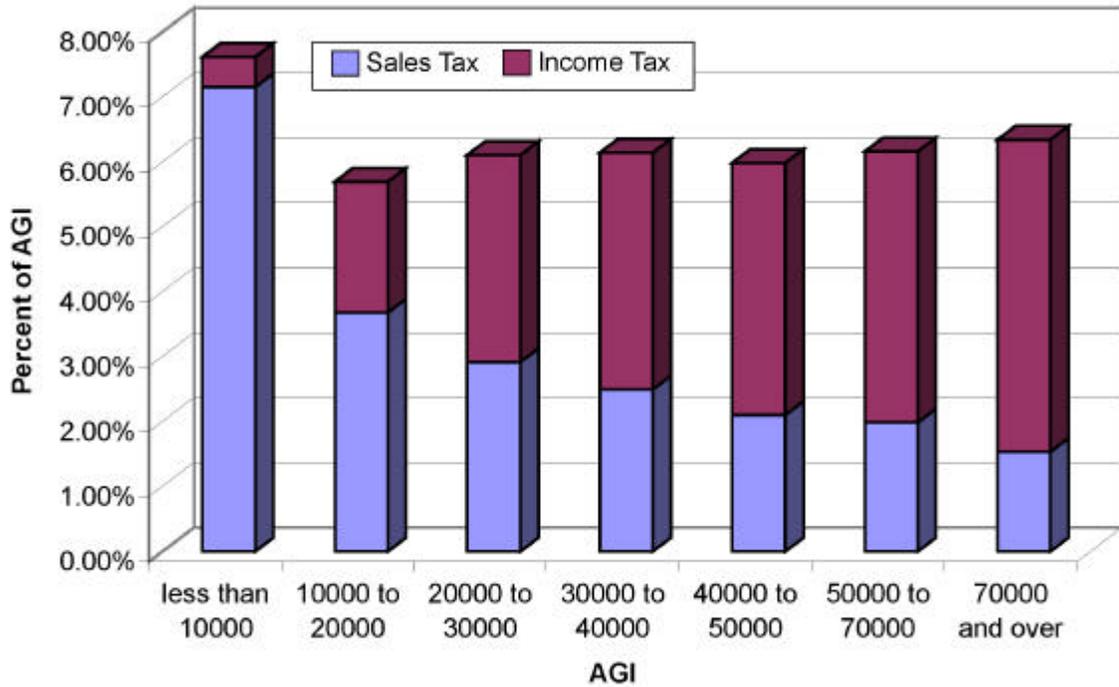
FIGURE 3. Income distribution in Iowa, tax year 1999

The incidences of the retail sales tax and the individual income tax, as a percentage of AGI, are shown in Figure 4. It is interesting to note that the combined sales and income taxes form a nearly proportional state tax system. Other state taxes, however, tend to make the overall net tax burden more regressive.⁸

Interstate and Historical Comparisons

Table 2 shows that Iowa and neighboring states rely on a mix of income and sales taxes to raise revenue. Iowa's income tax schedule may appear to be more progressive than the other states, but it is important to note that the higher tax rates for higher income taxpayers in Iowa are partly offset by the federal income tax deductibility.⁹

Over time, however, the sales tax and the income tax have undergone several changes. The Iowa state sales tax was first introduced in 1934 at a rate of 2 percent. The most recent sales tax increase occurred in 1992 and raised the rate from 4 percent to 5



Source: Authors' calculations. See the Appendix for details.

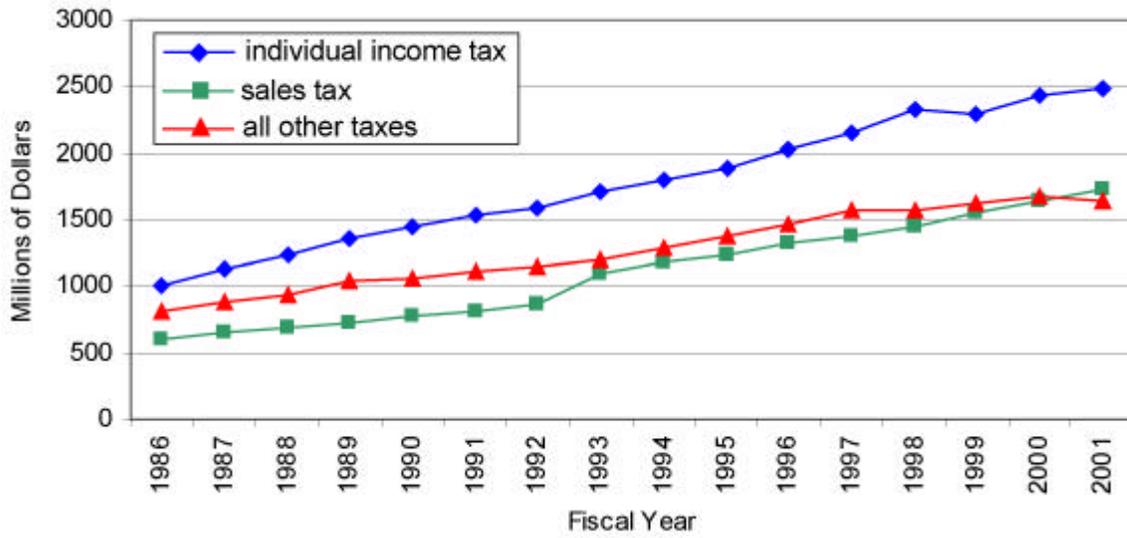
FIGURE 4. Sales and income tax incidences for Iowa, fiscal year 1999

TABLE 2. The income and sales tax rates of Iowa and its neighboring states

State	Income Tax Rate (lowest-highest)	Sales Tax Rate
Iowa	0.36% to 8.98%	5%
Illinois	Flat 3%	6.25%
Minnesota	5.35% to 7.85%	6.5%
Missouri	1.5% to 6.0%	4.225%
Nebraska	2.51% to 6.68%	5%
South Dakota	None	4%
Wisconsin	4.6% to 6.75%	5%

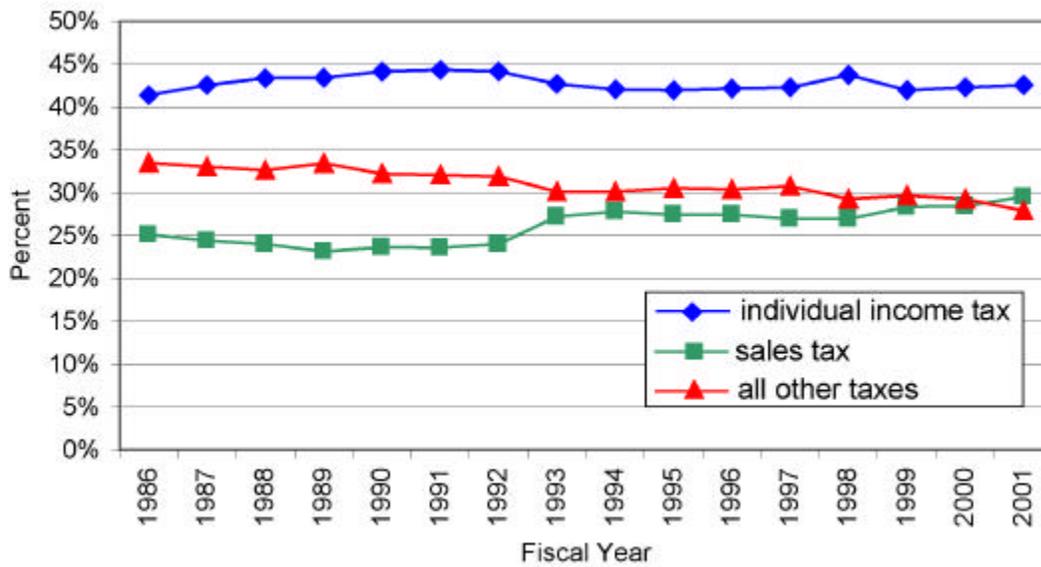
Source: Rates compiled by authors from data available on web pages of states' departments of revenue.

percent. The income tax was first introduced in 1934 and ranged from 1 percent to 5 percent. The most recent change occurred for the 1998 tax year when all marginal rates were cut by 10 percent of their value. The effect of this income tax cut on the trend of the state's revenue is evident in Figure 5, which shows Iowa's gross tax collections for the last 16 years. Figure 6 shows the percentage of all state taxes accounted for by each tax.¹⁰



Source: Compiled by the authors from Iowa Department of Revenue and Finance Annual Reports (2000; 2001a,b)

FIGURE 5. Gross tax collections in Iowa, fiscal years 1986-2001



Source: Compiled by the authors from Iowa Department of Revenue and Finance Annual Reports (2000; 2001a,b)

FIGURE 6. Selected Iowa taxes as a percentage of gross state tax revenue, fiscal years 1986-2001

The nationwide trend for states has been an increasing reliance on sales taxes and a decreasing reliance on income taxes.¹¹ Iowa's most recent sales tax increase and income tax decrease fit this trend.

The Value of Replacing the Sales Tax with an Income-Based Tax

At present, Iowans pay both sales taxes and state income taxes. The basic reason to consider the tax change analyzed in this paper has to do with the federal deductibility of state income taxes (a deductibility that does not extend to sales taxes).¹² To begin our analysis, we first look at the value of the federal deductibility of state income taxes. It turns out that Iowans currently pay approximately \$251.3 million less to the federal government annually because federal law allows taxpayers to deduct state income tax payments from their federal taxable income.¹³ The distribution of these savings is shown in Table 3.

On average, these savings translate to about \$138 per Iowa tax return per year, but high-income taxpayers realize the majority of the benefits. There are two reasons why these benefits accrue mainly to high-income taxpayers: (i) because these taxpayers pay high Iowa taxes and hence the deduction reduces their federal taxable income more; and (ii) because, since their income is taxed at a higher rate, a given deduction is worth more

TABLE 3. Current tax savings by Iowans per year, due to federal deductibility of state income tax (2002 dollars)

AGI Bracket	Total Savings (\$)	Savings per Return (\$)	Savings as a Percentage of AGI (%)
Less than 10,000	43,347	0	0.00
10,000 – 20,000	1,791,796	8	0.03
20,000 – 30,000	6,925,659	38	0.08
30,000 – 40,000	15,154,473	62	0.19
40,000 – 50,000	11,312,143	83	0.20
50,000 – 70,000	23,277,589	184	0.44
70,000 and over	192,837,014	1,994	1.28
All returns	251,342,020	138	0.49

Source: Authors' calculations. See the Appendix for details.

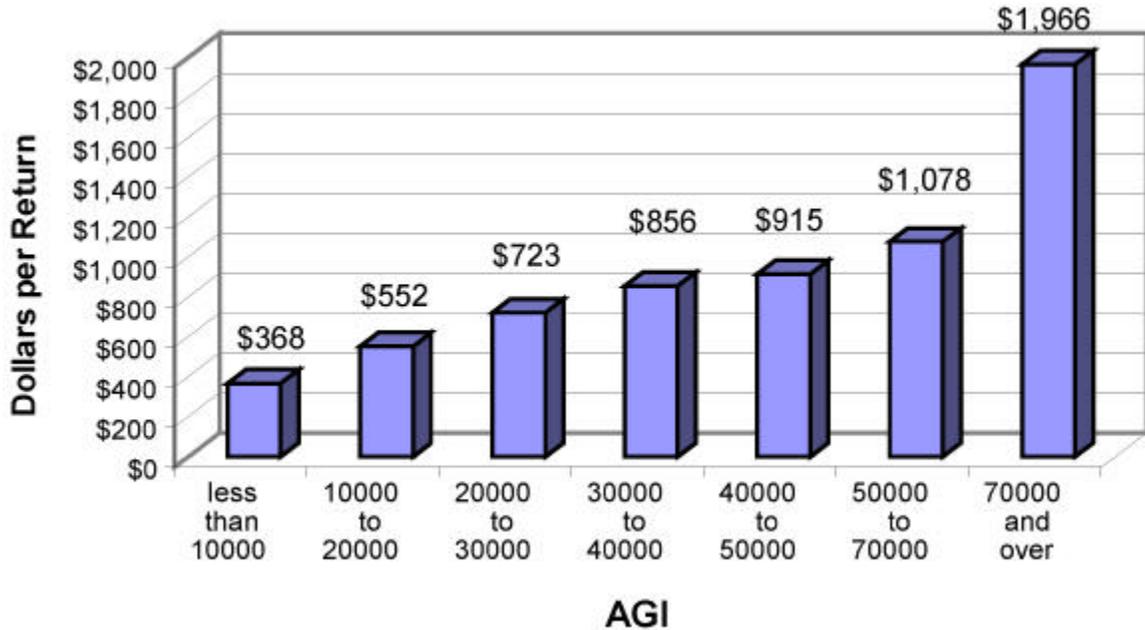
to them than it is to low-income taxpayers. Although taxpayers must itemize their federal tax returns in order to benefit from the deductibility of state income taxes, no taxpayer is hurt by the availability of this federal deduction provision.

The fact that the federal deductibility of state income (and property) taxes is quite valuable to Iowans suggests that perhaps Iowa is not optimally exploiting this federal deductibility provision. In fact, sizeable efficiency gains are possible by retooling Iowa's tax collection mechanisms, away from sales taxes and toward an income-based tax. What remains to be determined is the actual monetary value of this policy change.

The Revenue-Neutral Lump-Sum Equivalent Tax

To see how we can put a dollar value on the tax policy change analyzed in this study, suppose that we can observe the sales taxes paid by each taxpayer over the course of the tax year. Let such an amount for the i th taxpayer be labeled as T_i . Now suppose that all sales taxes are eliminated, and that a taxpayer's state income liability is increased by a lump-sum amount equal to T_i (over and above the current income tax, as per the existing income tax structure). What would be the consequences of such a change? Clearly, the government would collect exactly the same revenue from this taxpayer. As for the welfare of the taxpayer, note that he or she can still afford the same consumption bundle chosen under the sales tax system, and so from that perspective the taxpayer is equally well off.¹⁴ But if the taxpayer is itemizing on his or her federal return, and if the lump sum tax T_i were now deductible from the income subject to federal taxes, this change would reduce the individual's federal tax liabilities and result in substantial savings to the taxpayer,¹⁵ say $S_i \geq 0$.

If we could compute the amount S_i saved by each taxpayer, then summing such nonnegative amounts over all taxpayers would provide us with a monetary estimate of the value of the policy change that replaces the sales tax by an individual-specific lump-sum tax (sometimes called a "poll tax."). Of course, we do not have enough information to actually compute this amount for each and every taxpayer. But the conceptual experiment carried out suggests a useful approximation based on a "representative taxpayer" for each of the income classes that we identify (see the Appendix for details). Figure 7 shows the sales tax paid per return, and Table 4 shows the amount saved by itemizing under this



Source: Authors' calculations. See the Appendix for details.

FIGURE 7. Estimated sales tax per return in Iowa (2002 dollars)

TABLE 4. Estimated distribution of savings, per year, from itemizing the revenue-neutral lump-sum tax (2002 dollars)

AGI Bracket	Total Savings (\$)	Savings Per Return (\$)	Savings as a Percentage of AGI (%)
Less than 10,000	604,748	1	0.03
10,000 to 20,000	3,350,695	8	0.05
20,000 to 30,000	6,588,183	18	0.07
30,000 to 40,000	10,718,909	44	0.12
40,000 to 50,000	6,361,156	47	0.10
50,000 to 70,000	11,489,229	113	0.20
70,000 and over	67,197,153	554	0.42
All Returns	106,310,073	58	0.19

Source: Authors' calculations. See the Appendix for details.

scenario. High-income taxpayers obtain the largest portion of the savings in this counterfactual simulation because they currently pay the greatest percentage of the sales taxes and have a higher marginal federal income tax rate. High-income taxpayers also are more likely to itemize their federal income taxes. Table 4 shows the net outcome of the lump-sum equivalent tax: Iowa taxpayers would gain \$106.3 million dollars annually, when measured in 2002 dollars.¹⁶ Table 4 also shows the calculated distribution of savings by income bracket. Although no taxpayers would lose money, the distributional impact of this scenario would be that of a regressive tax cut.

The Taxpayer-Neutral Lump-Sum Equivalent Tax

An alternative way of valuing the policy change is to suppose that the current sales tax is replaced by an individual-specific lump-sum tax, the level of which is set so that the State of Iowa collects the revenue gains arising from the policy change. Thus, instead of replacing the sales tax by a lump-sum tax T_i equal to the sales tax paid by the i th individual, the state replaces the sales tax by a lump-sum tax $\hat{T}_i \geq T_i$, which has the property of leaving the taxpayer with the same after-tax disposable income as the individual had under the sales tax system. In other words, the state government anticipates that taxpayers who itemize would get a net benefit from the policy change and the state adjusts the lump-sum tax accordingly. Summing the difference $(\hat{T}_i - T_i)$ over all taxpayers again gives us a monetary value for the policy change in terms of increased tax revenue while leaving each and every taxpayer as well off as under the sales tax system.

As earlier, we cannot compute the amounts $(\hat{T}_i - T_i)$ for each and every taxpayer, but we can get a useful approximation based on the data for the representative taxpayers for each income class. The net result for this scenario is that the Iowa government would raise an additional \$133.9 million annually (in 2002 dollars). Note that the estimated “value” of the tax change here is higher than in the preceding scenario. To understand why that is the case, suppose that \hat{T}_i is initially set such that the state captures the entire efficiency gain estimated in the preceding scenario (\$106.3 million, in the aggregate). But itemizing taxpayers still would have some gain, as explained in endnote 15. The state can

then internalize this further second-order gain, leading to the higher aggregate estimated value of \$133.9 million.

We need to re-emphasize that the calculations just discussed should be interpreted as providing a benchmark estimate of the net benefits that would flow from replacing the current sales tax with a lump-sum income tax. Of course, it is apparent that an individual-specific lump-sum tax is not a feasible alternative. But the idea of an individual-specific lump-sum tax is useful for getting an estimate that is “conservative,” and immune, as much as possible, from the ancillary distributional effects that pertain to the more realistic mechanism that we shall describe in what follows. What we find is that there are significant monetary gains that can be obtained by moving away from the sales tax, two estimates for which are \$106.3 million and \$133.9 million, per year.¹⁷

Implementing the Tax Policy Change: The “One Line” Solution

The case of an individual lump-sum tax where the government keeps all the benefits of the tax change, discussed in the previous section, is the only one where there are no distributional impacts. But such an individual lump-sum tax is not feasible, and feasible mechanisms for the proposed tax change are bound to have some distributional consequences. It should be noted, however, that this is not necessarily bad from a policy perspective. Because the potential tax savings that we have uncovered are the result of itemizing federal income tax returns, a more progressive income tax increase may allow for greater gains. (For a given income tax increase, a high-income earner will be more likely to itemize and will be able to save more from itemizing.)

Among the many feasible ways to replace the sales tax with an income-based tax, in this section we illustrate two alternative approaches. What these two approaches have in common is simplicity: they would require one additional line in the Iowa 1040 form, a “sales tax replacement” line with the amount of the additional (sales-tax replacement) tax proportional to taxable income. The first alternative is based on the analysis of the previous section, and would replace the current sales tax with an income-based replacement tax whose rate changes according to the income class of the taxpayer. We refer to this scenario as the “differentiated rates” solution. The second alternative is simpler, and would replace the current sales tax with an income-based tax whose rate is

the same for everyone. We refer to this scenario as the “flat tax” solution. For each of the two approaches, we report two sets of estimates: one where the state’s tax revenue remains the same before and after the tax policy change (the “revenue-neutral” scenario), and one where the average tax burden of the taxpayer remains the same (the “taxpayer-neutral” scenario). In the first of these two polar cases, the taxpayers get all the benefits because of the efficiency gains arising from the tax policy change, whereas in the second case it is the state that captures all the benefits.

The “Differentiated Rates” Solution

Previously, we computed the “value” of replacing the sales tax with an income-based tax by assuming that there is a representative taxpayer for each income class that we identified. The analysis of that section can be readily adapted to produce income tax rates that would correspond to the estimated lump-sum taxes. Consider first the “revenue-neutral” scenario. The task here is to ensure that the State of Iowa collects the same total tax revenue. Having determined the lump-sum tax (the tax for each taxpayer) within each income class, as in the previous section, and then dividing that amount by the average taxable income of that class produces the implicit tax rate for that class. The procedure for the “taxpayer-neutral” scenario is essentially the same (what is different is the estimated level of the lump-sum tax for each class, as discussed in the previous section). The results of this analysis are reported in Table 5.

For the revenue-neutral scenario, the tax rates required to replace the sales tax decline uniformly as the taxable income increases. This is because taxpayers with lower income levels spend a higher proportion of their income on goods and services that are subject to the sales tax. Indeed, that is the reason why the sales tax is commonly perceived to be “regressive.” The pattern is similar for the taxpayer-neutral scenario. But because here the task is to hold constant the total tax burden of the representative taxpayer for each class, the interplay of federal and state marginal income tax rates is important. It turns out that the tax rates required to replace the sales tax for this scenario decline as taxable income increases, up to the AGI level of \$40,000, after which the rate is essentially flat (and approximately equal to 3 percent).

TABLE 5. Estimated distribution of tax rates to replace the sales tax revenue-neutral and taxpayer-neutral scenarios

AGI Bracket (\$)	Revenue-Neutral Tax (%)	Taxpayer-Neutral Tax (%)
Less than 10,000	11.30	11.34
10,000 to 20,000	4.99	5.06
20,000 to 30,000	3.85	3.94
30,000 to 40,000	3.32	3.49
40,000 to 50,000	2.87	3.01
50,000 to 70,000	2.77	3.07
70,000 and over	2.26	3.07

Source: Authors' calculations. See the Appendix for details.

In some sense, the solution illustrated in Table 5 is the one with the most limited distributional consequences. By construction, the rates in Table 5 would ensure that no “representative taxpayer” is negatively affected by replacing the sales tax with an income-based tax. Of course, this procedure does not account for the heterogeneity of taxpayers within each AGI class. So, although taxpayers are not negatively affected on average, it is possible that some may lose while others experience a (larger) gain. Perhaps more important, the differentiated tax rates in Table 5 may not be very appealing to policymakers, as they may be perceived as being discriminatory toward lower income taxpayers (although, in fact, these rates essentially mimic the effects of the current sales tax). For that reason, in the next section we consider the single-rate (flat tax) alternative.

The “Flat Tax” Solution

With this alternative, the sales tax is replaced with an income tax calculated by applying a flat rate (a rate which is the same for all taxpayers) to taxable income. Consider first the “revenue-neutral” scenario. Our calculations (see the Appendix) show that, in order to maintain the same total tax revenue, the current 5 percent tax on sales would have to be replaced with a 3.50 percent tax on income. The new marginal income tax rates that would result are shown in Table 6.

It is important to emphasize again that, in the proposal of this study, the current income tax structure is taken as given. Thus, the final rates comprise both the old marginal tax rates and sales tax replacement. Because the sales tax would be replaced

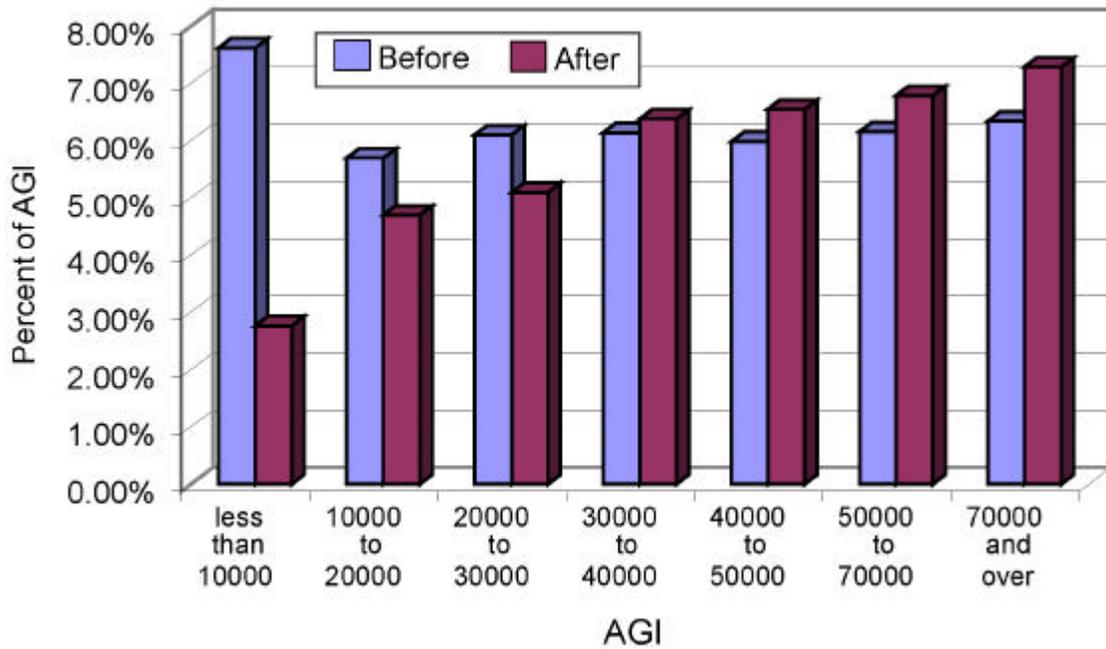
TABLE 6. The effect of the sales-tax-replacement equivalent flat tax on the statutory marginal tax rates

Taxable Income (\$)	Current Marginal Tax Rate (%)	Flat Tax Equivalent to Sales Tax (%)	Total Marginal Tax Rate (%)
0 to 1,162	0.36	3.50	3.86
1,162 to 2,324	0.72	3.50	4.22
2,324 to 4,648	2.43	3.50	5.93
4,648 to 10,458	4.50	3.50	8.00
10,458 to 17,430	6.12	3.50	9.62
17,430 to 23,240	6.48	3.50	9.98
23,240 to 34,860	6.80	3.50	10.30
34,860 to 52,290	7.92	3.50	11.42
52,290 and over	8.98	3.50	12.48

Source: The first column is from the Iowa Department of Revenue and Finance (November 2001), whereas the last two columns arise from the authors' calculations (see the Appendix for details).

with an income tax, this change would tend to benefit people who spend a larger portion of their income. Consequently, an added distributional effect occurs in this scenario because low-income taxpayers tend to spend a larger percentage of their income than do high-income taxpayers. Figure 8 shows the average tax burden (from income and sales tax only) before and after the sales tax replacement. Although the net benefit to Iowa taxpayers is \$141.4 million dollars annually (in 2002 dollars), Figure 8 shows that replacing the sales tax with a flat tax also has a progressive distributional impact in which low-income taxpayers have a lower average tax rate, whereas high-income taxpayers actually have a higher average tax rate.

Although the high-income taxpayers obtain the greatest benefit from itemizing the deductions on their federal returns, this does not fully counteract the increased average tax rate. Conversely, the low-income taxpayers obtain the least benefit from itemizing the deductions on their federal returns, but the gains from the sales tax elimination more than counteract the losses from the income tax increase. The result is that the average member of the lowest income group gains \$274 on his or her tax return whereas the average member of the highest income group loses \$380. Table 7 shows the calculated distribution of savings by income bracket.



Source: Authors' calculations. See the Appendix for details.

FIGURE 8. Average tax rates before and after sales tax replacement by flat tax equivalent

TABLE 7. Distribution of savings due to itemizing the revenue-neutral flat tax

AGI Bracket (\$)	Total Savings (\$)	Savings Per Return (\$)	Savings as a Percentage of AGI (%)
Less than 10,000	121,832,006	274	5.12
10,000 to 20,000	75,198,360	182	1.17
20,000 to 30,000	31,099,388	85	0.33
30,000 to 40,000	-1,312,961	-5	-0.02
40,000 to 50,000	-22,275,043	-164	-0.36
50,000 to 70,000	-17,050,760	-168	-0.30
70,000 and over	-46,052,774	-380	-0.28
All returns	141,438,217	77	0.26

Source: Authors' calculations. See the Appendix for details.

The flat tax equivalent replacement of the sales tax can also be set such that the state captures the efficiency gains made possible by the federal deduction provision. Thus, in this scenario, the total tax burden on Iowans remains the same and the state receives the additional revenue that is generated. For this case, we estimate that the 5 percent sales tax would have to be replaced with a 3.89 percent income tax (see the Appendix for detail).

As in the previous scenario, replacing the sales tax (which tends to be regressive) with a proportional income-based tax creates a distributional effect in which the poor benefit more than do wealthier taxpayers. Overall, the total tax bill for Iowans will be unchanged, but taxpayers will be paying more money to the state government and less money to the federal government. The net benefit to the Iowa state government is estimated to be \$157 million annually (in 2002 dollars). Table 8 shows the calculated distribution of savings by income bracket. Again, when the state captures the efficiency gains of the tax reform, the estimated value of the policy change is greater than the corresponding value that applies when the taxpayers capture the efficiency gains.¹⁸

Ancillary Reasons to Favor the Proposed Tax Change

Despite the obvious benefits of replacing the sales tax with an income tax, any changes in Iowa tax law are likely to encounter some opposition from Iowa's citizens and legislators. Novelties are seldom welcome in this arena, as illustrated by the maxim "an old tax is a good tax." But the question naturally arises: whom or what is the old tax good

TABLE 8. Distribution of savings due to itemizing the taxpayer neutral flat tax

AGI Bracket (\$)	Total Savings (\$)	Savings Per Return (\$)	Savings as a Percentage of AGI (%)
Less than 10,000	115,913,619	260	4.87
10,000 to 20,000	56,718,327	137	0.88
20,000 to 30,000	3,529,411	10	0.04
30,000 to 40,000	-26,002,574	-106	-0.30
40,000 to 50,000	-39,232,454	-289	-0.64
50,000 to 70,000	-31,720,380	-313	-0.56
70,000 and over	-79,205,949	-654	-0.49
Total	0	0.00	0.00

Source: Authors' calculations. See the Appendix for details.

for? In this study we have endeavored to show that the “old” sales tax may, in fact, not be a good tax, not for Iowans at least. In support of the proposed tax change we have provided estimates of substantial statewide efficiency gains. But there are other ancillary advantages that should be noted when assessing the proposal put forth in this study.

First, elimination of sales taxes may have some positive impact on local retailing and have a general pro-business effect, as the reduction in retail prices would make locally sold goods and services more attractive to Iowans and out-of-state residents.

Second, the sales tax is becoming a less and less effective instrument for state tax collection, because of the rise of Internet commerce and because of an additional trend toward an eroded sales tax base.¹⁹ Bruce and Fox (2001) estimate the total loss in U.S. states and local tax revenue due to e-commerce in year 2001 to be \$ 13.3 billion, and, perhaps more important, they forecast that this loss will increase fourfold by 2011. But regardless of Internet commerce, there has been a trend that is eroding the sales tax base nationwide, namely that whereas sales taxes predominantly target goods, a larger and increasing portion of consumer expenditures is allocated to services.

Third, eliminating the sales tax would reduce the cost of collecting tax revenue (for both businesses and the state government) and the cost of monitoring tax compliance. And, because the sales tax would be replaced with an income-based tax within an already existing income-tax collection system, essentially no new burden would be required at the collection and monitoring stage.

One potential shortcoming of the income-based tax that we are proposing is that income taxes are known to distort the labor market. Specifically, an increased income tax may adversely affect people’s willingness to work, resulting in a lower supply of labor and an increased consumption of “leisure,” the quintessential untaxed good. The empirical extent of this distortion, and its applicability to the case studied here, is unclear.

Finally, a recognized useful feature of the current sales tax system is that it provides for “local options” to raise tax revenue. Whereas this flexibility is definitely desirable, it is clear that such local options could also be easily implemented within an income-based equivalent tax. Indeed, a similar option is already present in the current Iowa income tax: the school district surtax is calculated as a percentage of the taxpayer’s Iowa income tax liability.

Conclusion

In this study we have proposed a tax policy change that holds the potential of considerable benefits to Iowa taxpayers. The reason is that Internal Revenue Service rules allow state income taxes to be deducted when computing taxable income from the federal perspective, and an equivalent deductibility is not present for sales taxes. Because of that, sales taxes constitute an “inferior” technology for raising state tax revenue. Thus, replacing the sales tax with an income-based tax could improve the efficiency of Iowa tax revenue collection in a sizeable way. For example, if the state were to adopt the taxpayer-neutral flat tax, which is equivalent to the existing sales tax, we estimated that the State of Iowa would increase its revenue by \$157 million per year, without increasing the overall tax burden on Iowans.

The magnitudes of the benefits of the policy change presented here are, of course estimates. The methodology employed to compute such estimates could be refined, and a more complete database could be developed in an attempt to get more accurate estimates. Alternative experiments with different computational procedures have shown that the estimated gains do not change significantly. Overall, our assumptions and procedure actually provide somewhat conservative estimates, and a more complete methodology is likely to yield slightly larger benefits for the scenarios analyzed here.

The recent recession and revenue shortfall have forced the governor and the state legislators to cut or limit a variety of worthwhile services and programs. Replacing the sales tax with an income-based tax, as proposed in this paper, could contribute positively to mitigating the current financial problems confronting the State of Iowa. To illustrate further the magnitude of our estimated efficiency gains, we note that \$157 million dollars in additional revenue could translate to annual salaries for more than 5,600 new teachers; or, it could translate to more than 1.7 times the state funding of the University of Northern Iowa; or, it could provide approximately 1.4 times the state’s current spending on substance abuse programs.²⁰ The federal government assumes the only major loss under the proposed policy change. Replacing the state sales tax with an income-based tax would seem to be unquestionably a positive change for Iowans.

Appendix

Methodology and Sources of Data

The analyses that we carried out relied primarily on tax data from the Iowa Department of Revenue and Finance and from the Internal Revenue Service. We also made use of the Consumer Expenditure Survey and the Consumer Price Index, both of which are published by the Bureau of Labor Statistics.

Table 9 shows information about federal income tax returns that were filed by Iowans. The data were used for the purpose of calculating the average marginal tax rate for each income group and for calculating the percentage of taxpayers in each group that itemizes their federal deductions. In order to calculate the average marginal tax rate, the average taxable income per return was computed for each income bracket. After this was completed, the portion of tax returns that were joint returns, single returns, and head of household returns were calculated. For each type of return, the average taxable income in each bracket was matched with the statutory marginal tax rate that applies. The average marginal tax rate was then calculated by averaging the statutory marginal tax rates of the three types of returns. The percentage of taxpayers that itemized their deductions was found by dividing the number of itemized returns by the total returns count.

Tables 10 and 11 show state income tax data for 1999, which is the most recent state data that is currently available. Table 10 shows a breakdown of state income taxes paid by residents versus state income taxes paid by nonresidents. Table 11 shows only information on all taxpayers but in more detail. The information in Table 10 was necessary because nonresidents must report all income to the State of Iowa even though they are required to pay taxes only on Iowa income. If this discrepancy is not considered, the calculated average and marginal tax rates will be incorrect. In order to find the portion of reported AGI and taxable income for which nonresidents must pay taxes, a series of calculations were required. Definitions used are listed below.

AGI = adjusted gross income (as defined by the Internal Revenue Service)

TI = taxable income

AGI per return = all taxpayer AGI/number of returns

Nonres AGI = all AGI – resident AGI

Resident TI = resident AGI * all taxpayer TI/all taxpayer AGI

Nonres TI = nonres AGI * all taxpayer TI/all taxpayer AGI

Nonres taxes paid = all taxpayer taxes paid – resident taxes paid

Number of nonres returns²¹ = AGI per return * nonres AGI

Number of resident returns = all taxpayer returns – number of nonres returns

Ave. resident TI = resident TI/number of resident returns

Ave. resident tax bill = resident tax paid/number of resident returns

Ave. marginal resident tax rate = statutory marginal rate for the calculated average TI

Ave. marginal nonres tax rate = ave. marginal resident tax rate

Ave. nonres tax bill = nonres tax paid/number of nonres returns

Ave. effective nonres TI = ave. nonres tax bill * ave. resident TI/ave. resident tax bill

Effective nonres TI = ave. effective nonres TI * number of nonres returns

Effective nonres AGI = effective nonres TI/nonres TI * nonres AGI

All taxpayer effective AGI = effective nonres AGI + resident AGI

All taxpayer effective TI = effective nonres TI + resident TI

Ave. tax rate = all taxpayer tax paid/all taxpayer effective TI

After income tax values had been calculated it became necessary to calculate the amount of money each income group spent on the sales tax. Since sales tax returns are not reported to the state in terms of individual payments, the consumer expenditure survey was used to estimate individual payments.²² The survey gives information about the spending habits of people by income groups. By examining each expense, and adding the amount spent on each taxable item, it is possible to find the amount of money each income group spends on taxable items, as illustrated in Table 12.²³ It is then possible to find the amount paid as sales taxes by the representative consumer in each group facing a 5 percent sales tax rate (as applies in Iowa), and these estimates are reported in the last row of Table 12. Because Iowans are not exactly like the individuals represented in the national survey, this figure must be modified to reflect the fact that

adjusted gross income within each group in Iowa differs slightly from its national counterpart and also the fact that spending patterns here differ slightly. Specifically, for FY 1999, income before taxes for midwesterners was 95.5 percent of average nationwide income before taxes, but average expenditures for midwesterners was 98.1 percent of average nationwide expenditures, indicating that midwesterners spend a greater percentage of their income.²⁴ Thus, taxable spending for each income cohort within Iowa was estimated by (i) multiplying the figure obtained in Table 12 by 1.027 to reflect the greater average spending propensity of Iowans, and (ii) multiplying this figure by the ratio of average Iowa income to average national income within each group. Finally, the Iowa sales tax rate of 5 percent was applied to this spending figure to estimate sales tax paid by each group. The total sales taxes imputed to Iowa by this method differed from the total actual Iowa sales tax revenue by (only) 3.46 percent, so each group's estimated sales tax was scaled upward to reflect total sales tax revenue.²⁵

For the lump-sum equivalent tax scenario, the sales tax expenditures for each group were treated as though they were income tax payments. In order to find how much money would be saved by itemizing, those payments were multiplied by the portion of taxpayers that itemized their federal tax returns and the federal marginal tax rate that those people paid. With the decrease in federal income taxes, Iowans were no longer able to deduct as much from their state income taxes. It was then necessary to multiply the federal tax savings by the state marginal tax rates in order to find the requisite increase in state taxes. This tax increase in turn was multiplied by the federal marginal tax rates in order to find the decrease in federal taxes caused by the second increase in state taxes. This process was iterated fifteen times in order to find a reasonable approximation of the net savings to each income group.²⁶ The result was the total savings to Iowa taxpayers for 1999 if the entire sales tax was converted. This, however, resulted in the state government revenue increasing by almost \$8 million. In order to make the revenue effects neutral, a small portion of the sales tax was eliminated but not converted to an income-based tax. The revenue-neutral lump-sum equivalent tax scenario calculations were then repeated taking this change into account. The calculations are shown in Table 13.

For the taxpayer-neutral lump-sum equivalent tax scenario, the entire sales tax was converted to an income-based tax. Then, after all effects due to itemizing were calculated, the state income tax was increased by the amount of the net savings from itemizing for each group. Next, savings from itemizing were calculated for that tax increase. This process was completed

fifteen times, so that the total savings from itemizing was totally counteracted by the income tax increases. The sum of all savings from itemizing and incidental revenue increases is the total revenue increase for the state government for 1999. The taxpayer-neutral lump-sum equivalent tax scenario calculations are shown in Table 14. In order to adjust the dollar values from these scenarios to 2002 dollars, the Consumer Price Index (CPI) was used. The average CPI for 2002 was divided by the average CPI for 1999 in order to obtain the inflation rate for the three-year period. That inflation rate was multiplied by each of the 1999 savings in order to find the 2002 savings.²⁷ The CPI data is shown in Table 15. For the flat tax equivalent scenarios, the first step was to increase the average marginal tax rates and average tax rates in order to reflect the income tax increase. After that was completed, the immediate increase in state income taxes was calculated by multiplying the tax increase by the total effective taxable income for each group. Finding the total money saved then required an iterative process similar to the one used in the lump sum equivalent tax scenario. Table 16 shows the iterations for the scenario in which the government breaks even. The results were then adjusted to 2002 values using the CPI data from Table 15.

TABLE 9. Tax Year 1999, United States selected income and tax items for individual income tax returns: Forms 1040, 1040A & 1040EZ, (amounts are in thousands of dollars): State of Iowa, by Size of Adjusted Gross Income, Filing/ Processing Period: Jan 1, 2000 to Dec 31, 2000

Iowa	Size of Adjusted Gross Income									
	Total Returns	Breakeven and Loss	\$0.01 Under \$10,000	\$10,000 Under \$20,000	\$20,000 Under \$30,000	\$30,000 Under \$50,000	\$50,000 Under \$75,000	\$75,000 Under \$100,000	\$75,000 and Over	
Returns count	1,345,040	11,793	287,300	243,545	200,760	266,485	194,818	73,774	140,339	
Joint return count	605,488	5,782	19,697	56,187	67,113	161,696	168,011	67,226	127,002	
Single return count	612,820	5,433	243,672	146,409	102,029	82,266	21,734	5,517	11,277	
Head of household	111,366	348	21,356	36,581	27,613	19,499	4,334	834	1,635	
AGI amount	52,170,593	-572,703	1,433,422	3,648,359	4,961,037	10,469,311	11,853,694	6,291,737	20,377,473	
Total Itemized Deductions:										
No. of returns	381,460	1,791	6,742	22,363	30,902	84,302	114,155	60,171	121,205	
Amount	5,846,823	29,463	149,755	328,228	311,350	911,388	1,379,130	895,586	2,737,510	
Taxable Income:										
No. of returns	1,118,131	0	118,509	202,602	196,739	265,372	194,643	73,745	140,266	
Amount	35,642,254	0	212,284	1,299,702	2,679,566	6,656,447	8,354,099	4,686,788	16,440,154	
Income Tax:										
No. of returns	1,071,533	41	114,859	181,394	181,319	259,319	194,341	73,732	140,260	
Amount	6,670,191	360	30,412	174,342	357,411	917,544	1,248,007	853,652	3,942,116	
Average TI	\$26,499.03	\$0.00	\$738.89	\$5,336.60	\$13,347.11	\$24,978.69	\$42,881.56	\$63,528.99	\$117,146.01	
Average tax bill	\$4,959.10	\$30.53	\$105.85	\$715.85	\$1,780.29	\$3,443.14	\$6,406.01	\$11,571.18	\$28,089.95	
Ave tax rate	18.71%	-	14.33%	13.41%	13.34%	13.78%	14.94%	18.21%	23.98%	
% joint returns	45.54%	50.00%	6.92%	23.49%	34.11%	61.37%	86.57%	91.37%	90.77%	

TABLE 9. Continued

Iowa	Total Returns	Breakeven and Loss	\$0.01 Under \$10,000	\$10,000 Under \$20,000	\$20,000 Under \$30,000	\$30,000 Under \$50,000	\$50,000 Under \$75,000	\$75,000 Under \$100,000	75,000 and Over
Joint return marg rate(*)	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	27.50%	30.50%
Single returns	46.09%	46.99%	85.58%	61.21%	51.86%	31.23%	11.20%	7.50%	8.06%
Single return marg rate(*)	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	27.50%	27.50%	30.50%
% head of household	8.38%	3.01%	7.50%	15.29%	14.03%	7.40%	2.23%	1.13%	1.17%
Head of household marg rate(*)	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	27.50%	27.50%	30.50%
Avg marg tax rate	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	16.68%	27.50%	30.50%

Source: U.S. Internal Revenue Service, July 2001.

Note: (*) These rates are from the 2001 tax rate schedule.

TABLE 10. Tax Year 1999, Iowa income tax incidence for residents

Adjusted Income Gross (\$) Class (\$)	All Taxpayers		Resident Taxpayers	
	AGI (\$)	Tax Paid (\$)	AGI (\$)	Tax Paid (\$)
No AGI	0	209,763	0	0
0 5,000	554,583,737	250,496	527,100,000	240,000
5,000 10,000	1,705,408,510	9,834,509	1,607,100,000	9,500,000
10,000 14,000	1,979,064,973	28,593,061	1,842,200,000	27,500,000
14,000 20,000	4,210,714,233	92,286,464	3,924,400,000	89,000,000
20,000 25,000	4,387,618,379	126,600,055	4,101,600,000	122,500,000
25,000 30,000	4,674,985,430	152,118,999	4,378,400,000	147,500,000
30,000 40,000	8,471,729,375	296,749,962	7,895,000,000	288,200,000
40,000 50,000	6,037,607,185	221,510,700	5,528,400,000	214,700,000
50,000 75,000	7,561,276,275	288,169,672	6,636,600,000	276,800,000
75,000 And over	29,295,367,654	655,423,752	12,345,300,000	603,100,000
Total	68,878,355,751	1,871,747,433	48,786,100,000	1,779,000,000

Source: Iowa Department of Revenue and Finance, July 2001.

TABLE 11. Tax year 1999, Iowa selected income and tax items for individual income tax returns by size of adjusted gross income

Adjusted Gross Income Brackets (\$)		No. of Returns	Adjusted Gross Income (\$)	Nt Taxable Income (\$)	Tax Paid (\$)
NO	AGI	23768	0	2209332	209,763
1	5,000	192,255	554,583,737	287,322,127	250,496
5,000	10,000	229,367	1,705,408,510	1,192,660,066	9,834,509
10,000	14,000	165,042	1,979,064,973	1,475,893,017	28,593,061
14,000	20,000	247,840	4,210,714,233	3,248,976,370	92,286,464
20,000	25,000	195,396	4,387,618,379	3,444,705,849	126,600,055
25,000	30,000	170,462	4,674,985,430	3,669,118,128	152,118,999
30,000	40,000	244,998	8,471,729,375	6,555,529,016	296,749,962
40,000	50,000	135,770	6,037,607,185	4,573,329,652	221,510,700
50,000	75,000	126,665	7,561,276,275	5,578,209,735	288,169,672
	And				
75,000	Over	95,868	29,295,367,654	19,938,983,448	655,423,752
Total		1,827,431	68,878,355,751	49,966,936,740	1,871,747,433
Non-Resident					
Total		145,156	20,092,269,436	13,789,722,464	89,565,625

Source: Iowa Department of Revenue and Finance, July 2001.

TABLE 12. Consumer expenditure survey data (U.S. national data, year 1999)

Item	Less Than \$10,000	\$10,000 to \$20,000	\$20,000 to \$30,000	\$30,000 to \$40,000	\$40,000 to \$50,000	\$50,000 to \$70,000	\$70,000 and Over
Number of consumer units (in thousands)	11,497	15,634	11,560	9,453	7,381	10,999	15,168
Income before taxes (\$)	5,592	14,563	24,467	34,353	44,321	58,473	113,441
Income after taxes (\$)	5,420	14,295	23,487	32,458	41,405	54,073	102,616
Average annual expenditures (\$)	15,962	21,794	28,916	35,048	40,826	49,606	76,742
Food away from home (\$)	864	1,092	1,625	2,142	2,365	2,803	4,398
Alcoholic beverages (\$)	158	191	267	292	345	443	696
Maint, repairs, ins, other (\$)	358	584	768	748	766	1,002	1,869
Utilities, fuels, and public services (\$)	1,440	1,878	2,159	2,298	2,491	2,795	3,412
Other household expenses (\$)	130	190	213	207	271	359	965
Housekeeping supplies (\$)	251	313	451	515	575	784	945
Household furnishings and equipment (\$)	560	821	1,127	1,343	1,549	2,188	3,431
Apparel and services (\$)	799	1,100	1,553	1,904	1,677	2,139	3,625
Other vehicles (\$)	0	6	14	86	43	33	75
Other vehicle expenses (\$)	790	1,280	1,781	2,296	2,610	3,145	4,322
Vehicle finance charges (\$)	84	128	237	360	414	533	585
Maintenance and repairs (\$)	285	494	576	705	811	870	1,200
Vehicle insurance (\$)	279	473	677	798	870	1,050	1,308
Entertainment (\$)	733	989	1,323	1,681	1,882	2,754	4,121
Personal care products and services (\$)	224	247	385	452	500	525	794
Reading (\$)	68	104	132	147	166	209	330
Education (\$)	527	262	309	347	425	602	1,430
Tobacco products and smoking supplies (\$)	235	274	305	336	376	391	328
Estimated taxable spending (\$)	7,785.28	10,425.48	13,902.00	16,657.00	18,136.00	22,625.00	33,834.00

Source: U.S. Bureau of Labor Statistics, May 2001.

TABLE 13. Net savings due to itemizing the revenue-neutral lump-sum equivalent tax

AGI Bracket	Less than \$10,000	\$10,000 to \$20,000	\$20,000 to \$30,000	\$30,000 to \$40,000	\$40,000 to \$50,000	\$50,000 to \$70,000	\$70,000 and Over	1999 Total	Total Adjusted to 2002
Money to sales Tax (\$)	163,848,718	227,950,218	264,650,679	209,715,959	124,177,986	109,247,104	238,332,453	1,337,923,119	1,429,402,113
Part of sales tax not replaced by income tax (\$)	3,691	126,526	349,510	617,156	379,270	784,364	4,820,571	7,081,088	7,620,681
Decrease in federal taxes 1 (\$)	576,737	3,137,914	6,102,387	9,922,199	5,874,522	10,600,230	61,510,744	97,724,732	105,171,550
Increase in state taxes 1 (\$)	21,641	176,145	384,796	674,710	399,467	839,538	5,448,909	7,945,206	8,550,647
Decrease in federal taxes 2 (\$)	3,246	26,422	57,719	101,206	59,920	140,026	1,661,917	2,050,457	2,206,706
Increase in state taxes 2 (\$)	122	1,483	3,640	6,882	4,075	11,090	147,220	174,512	187,810
Decrease in federal taxes 3 (\$)	18	222	546	1,032	611	1,850	44,902	49,182	52,930
Net savings to taxpayers (\$)	561,928	3,113,444	6,121,698	9,959,942	5,910,745	10,675,718	62,439,165	98,782,640	106,310,073

TABLE 14. Total tax increase by income group for taxpayer-neutral lump-sum equivalent tax

AGI Bracket	Less than \$10,000	\$10,000 to \$20,000	\$20,000 to \$30,000	\$30,000 to \$40,000	\$40,000 to \$50,000	\$50,000 to \$70,000	\$70,000 and Over	1999 TOTAL	2002 Adjusted Total
Savings from itemizing initial (\$)	558,250	2,988,578	5,779,821	9,370,361	5,548,421	9,962,884	58,808,060	93,016,375	100,104,407
Incidental Increase in tax revenue 1 (\$)	21,764	177,740	388,984	683,674	404,820	856,929	5,715,827	8,249,739	8,878,385
Savings from itemizing 1 (\$)	1,902	39,182	126,228	418,679	247,910	908,574	14,510,772	16,253,247	17,491,777
Incidental Increase in tax revenue 2 (\$)	74	2,330	8,495	30,547	18,088	78,148	1,410,369	1,548,052	1,666,017
Savings from itemizing 2 (\$)	6	514	2,757	18,707	11,077	82,858	3,580,504	3,696,423	3,978,098
Total (\$)	581,997	3,208,381	6,306,535	10,524,272	6,231,681	11,905,551	85,660,427	124,418,845	133,899,808

TABLE 15. Consumer Price Index (Midwest urban)

Year	CPI
1999	162.7
2000	168.3
2001	172.8
2002	175.1*

Source: U.S. Bureau of Labor Statistics, June 2002.

* Estimate for 2002 is based on a linear regression using monthly data for the period 1987-2002.

TABLE 16. Change in income tax revenue and money saved itemizing for the revenue-neutral flat tax equivalent scenario

Adjusted Gross Income Class	Immediate Increase in Income Taxes (\$)	Money Saved Itemizing Federal Taxes 1 (\$)	Change in Income Tax Revenue After Itemizing 1 (\$)	Money Saved Itemizing Federal Taxes 2 (\$)	Change in Income Tax Revenue After Itemizing 2 (\$)	Money Saved Itemizing Federal Taxes 15 (\$)	Money Saved Itemizing Federal Taxes Adjusted to 2002 (\$)
No AGI	77,432	1,764	77,500	1,774	77,500	1,774	1,909.42
\$0 to \$5,000	9,957,551	35,051	9,959,032	35,273	9,959,041	35,274	37,962.22
\$5,000 to \$10,000	40,777,356	143,537	40,788,846	145,260	40,788,984	145,281	156,352.00
\$10,000 to \$14,000	50,063,176	689,542	50,118,372	697,821	50,119,035	697,922	751,104.71
\$14,000 to \$20,000	110,045,145	1,515,699	110,191,027	1,537,581	110,193,133	1,537,902	1,655,093.20
\$20,000 to \$25,000	116,636,167	2,692,985	116,895,361	2,731,864	116,899,103	2,732,433	2,940,650.18
\$25,000 to \$30,000	124,207,306	2,867,793	124,493,648	2,910,744	124,497,937	2,911,397	3,133,251.70
\$30,000 to \$40,000	220,466,869	10,461,638	221,544,917	10,623,345	221,561,580	10,625,884	11,435,597.71
\$40,000 to \$50,000	151,421,872	7,185,301	152,162,301	7,296,365	152,173,746	7,298,109	7,854,239.60
\$50,000 to \$75,000	178,643,162	17,459,070	180,637,819	17,791,758	180,675,828	17,798,221	19,154,480.36
\$75,000 and over	320,034,937	84,302,293	330,559,879	87,512,401	330,960,654	87,639,476	94,317,777.85
Total	1,322,330,973	127,354,673	1,337,428,702	131,284,188	1,337,906,541	131,423,674	141,438,418.96

Endnotes

1. For example, if a sales tax brings the total price of a good above a consumer's willingness to pay, the consumer will choose not to consume the taxed product. In that case, the government does not collect anything while the consumer is worse off because he or she is forced to allocate income to a less desirable consumption bundle. The only tax believed to be nondistortionary is a lump-sum tax (i.e., a fixed amount levied on an individual irrespective of any economic decision he or she makes), but differential lump-sum taxes also are widely considered infeasible on grounds of equity.
2. Contributions in this area include Ramsey 1927, Mirrlees 1971, Diamond and Mirrlees 1971, and Atkinson and Stiglitz 1976. For a textbook presentation of alternative models and results, see Myles 1995.
3. The logic for this deduction, it seems, is that taxes paid to the state government are not discretionary and therefore are not available as income to the taxpayer.
4. In general, a tax schedule is said to be "progressive" or "regressive" according to whether the tax burden is borne relatively more by the wealthy or by the poor. More specifically, a tax schedule is said to be "progressive" if the average tax rate increases as taxable income rises and regressive otherwise.
5. For a full list of services that are subject to the Iowa sales tax go to <http://www.state.ia.us/tax/educate/78539.html>.
6. For a complete list of cities in Iowa and their respective local option sales taxes, go to <http://www.state.ia.us/tax/business/lostcit.pdf>.
7. This figure represents tax return data for consistency with the rest of the analysis, although it is recognized that a distribution of households' income may be somewhat more informative here.
8. For more information regarding the distribution of state tax burdens, see Ettliger et al. 1996.
9. Missouri also allows a federal income tax deduction, but unlike Iowa's, it is not unlimited. Missouri law allows for a maximum federal income tax deduction of \$5,000 for single returns and \$10,000 for joint returns.
10. The sales tax data for Figures 5 and 6 include local option sales tax revenue that is collected by the state and then redistributed to the local municipality. The local option sales taxes are not, however, included in later analyses because they constitute a local

tax instead of a state tax. Local option sales taxes generally account for approximately 10 percent of gross sales tax collections.

11. For a more thorough discussion on trends in state taxes, see the Center for Budget and Policy Priorities 2002. For more information on the distributional effects of Iowa's sales tax increase and income tax decrease, see Fisher and Bruner 2002.
12. The state sales tax deduction was eliminated from federal law in 1986 as part of an effort to simplify federal income taxes. Lawmakers eliminated a variety of deductions and replaced them with greater personal exemptions and a larger standard deduction. In April 2002, Congressman Bryant of Tennessee introduced a bill to allow taxpayers the option to deduct either sales or income taxes from their federal tax returns. For more information on the bill, see Bryant 2002.
13. This value is based on the authors' calculations using state and federal income tax data. A similar result can be found in Slocum et al. 1998.
14. There is actually an additional economic reason suggesting that the taxpayer could in fact benefit from a lump-sum tax replacing the sales tax, even without the considerations related to the federal deduction. Because currently some goods and services are not taxed, eliminating the sales taxes would in fact affect relative prices, and the taxpayer/consumer could actually benefit by changing their purchasing decisions. Although this argument does strengthen our point here, in this study we ignore such second-order effects because they are likely to be small relative to the main impact that we are interested in quantifying.
15. As the individual's federal tax liabilities are reduced, the individual's income that is taxable from the State of Iowa's perspective increases, which would, *ceteris paribus*, actually result in higher revenues than Iowa's current income tax structure provides. In all calculations subsequently presented, we account for such induced effects.
16. The most recent available data was for tax year 1999. These data were used to calculate a net benefit of \$98.8 million for this scenario. The value was then adjusted to 2002 dollars using the consumer price index. This inflation adjustment will tend to underestimate the actual value because it does not account for real growth in the state of Iowa.
17. The fact that such gains would constitute a flow that Iowa taxpayers would enjoy indefinitely should also be stressed. Because of that, the present-value concept (i.e., the discounted accumulation of all future gains in this flow) would perhaps be a more appropriate criterion for assessing the value of the policy change being advocated. For example, with a 5 percent discount rate, the present value of all future net benefits arising from replacing the sales tax is in excess of \$2 billion!
18. The logic for this was discussed earlier, and here it works as follows. Were the government to set the sales replacement tax rate at 3.85 percent, it would raise exactly the amount captured by taxpayers in the preceding scenario (\$141.4 million

- annually). But in such a case, the increase in state income tax would allow itemizing taxpayers to decrease their federal tax burdens. Accordingly, for the Iowa government to leave the total tax burden unchanged, the Iowa tax rate can be increased further, specifically to 3.89 percent, such that the total additional revenue obtained by the state is estimated to be \$157 million annually.
19. A list of Iowa sales tax exemptions, and the dates that they were enacted, can be found at <http://www.state.ia.us/tax/educate/79120.html>.
 20. Iowa government spending information can be found at http://staffweb.legis.state.ia.us/lfb/factbook/Iowa_Factbook_2001.pdf or http://staffweb.legis.state.ia.us/lfb/miscpubs/ladar_fy2003.pdf
 21. The given equation was not adequate for the lowest income bracket or the highest income bracket. Those brackets were calculated separately. For the lowest income bracket, the equation was number of nonres returns = all taxpayer returns * total nonres returns/total all taxpayer returns. For the highest income bracket, the equation was number of nonres returns = total nonres returns – sum of other brackets' nonres returns.
 22. A similar procedure was used by Swenson (1999).
 23. The information in Table 12 can be found at <ftp://ftp.bls.gov/pub/special.requests/ce/standard/1999/income.txt>.
 24. Because midwesterners spend 98.1 percent of the national average, while their income is only 95.5 percent of the national average, the average midwesterner spends about 2.7 percent more of their income ($98.1/95.5=1.027$). Information on regional income and expenditures can be found at <ftp://ftp.bls.gov/pub/special.requests/ce/standard/1999/region.txt>.
 25. The calculated sales tax revenue was \$1.29 billion whereas the actual revenue was \$1.34 billion. There could be a variety of reasons for this discrepancy, including differences in spending patterns between the Midwest and Iowa, unreported income, or spending by out-of-state visitors.
 26. The iterations could be continued indefinitely, but changes in the final result would be less than \$0.01.
 27. Although this procedure takes inflation into account, it does not include any estimate of real growth. Consequently, these adjustments should tend to underestimate the difference between 1999 values and 2002 values.

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