

APPENDIX E

**STUDY ON THE QUESTION "SHOULD HAWAII
REPLACE ITS INCOME AND FRANCHISE TAXES WITH
AN INCREASE IN THE GENERAL EXCISE TAX?"**

Tax Research and Planning Office
Department of Taxation
State of Hawaii

20 November 2006

**STUDY ON THE QUESTION "SHOULD HAWAII REPLACE
ITS INCOME AND FRANCHISE TAXES WITH AN INCREASE IN THE GENERAL
EXCISE TAX?"**

Prepared by the Tax Research and Planning Office, Hawaii Department of Taxation

"The Income Tax has made more liars out of the American people than golf has. Even when you make a tax form out on the level, you don't know when it's through if you are a crook or a martyr."

- Will Rogers

"Income tax returns are the most imaginative fiction being written today."

- Herman Wouk

"The Hardest thing to understand in the world is the income tax."

- Albert Einstein

Executive Summary

This study examines the likely effects on Hawaii's economy and on the tax burdens of its residents for two changes in tax regimes (two scenarios). In the first scenario, the Individual Income Tax, the Corporation Income Tax, and the Tax on Insurance Premiums are eliminated and the Tax on Banks and Other Financial Corporations is substantially reduced. The revenue loss from these tax changes is replaced with in-tandem increases in the General Excise Tax (GET) and in the portion of the Public Service Company Tax (PSCT) that goes to the State. In the second scenario only the Individual Income Tax and the Corporation Income Tax are replaced with increases in the GET and PSCT. It is estimated that the statutory rate for the GET and for the State's portion of the PSCT must be raised to 6.9 percent (from the current level of 4 percent) in the first scenario and to 6.7 percent in the second scenario.

In either scenario, the new tax system would be slightly more stable than the current system. That is, compared to the current tax system, the new ones would generate revenues that would vary less, on a year-by-year basis, from the long-run average rate of growth of personal income. Under the new tax regimes, the automatic growth in revenue (that is, revenue growth as it would occur with no legislative action) would be slower and closer to the growth rate in personal income in Hawaii than under the current tax system.

It is hard to gauge the effect of either change in tax regimes on the macroeconomic variables in Hawaii's economy, such as wages, output, employment, or investment in the local economy. These effects could be positive or negative. The biggest effects on the pattern of production might be a reduction in tourism demand and an increase in demand by residents, though some of the increase in resident demand may be delayed to the future.

Relative to the current tax structure, the new tax regime would encourage residents to work more and to save more, though much of the increase in saving may be invested outside of the State. The effect on work effort arises, because the tax change would reduce the marginal effective rate of tax on earnings. The effect on saving arises, because the tax change would

eliminate the tendency for the State's taxes to discriminate against future consumption in favor of consumption in the present.

The tax change would also probably increase pressures to exempt certain expenditures from the GET, and whether there is a net gain or loss in economic efficiency will depend strongly on the response to such pressures. If the GET is altered to exempt substantial components of total expenditures, such as food and rent, the switch to the new tax regime might well reduce the overall efficiency of Hawaii's taxes.

In both scenarios, the change in tax regimes would reduce the overall tax burden on local residents, but it would cause the burden to be distributed more regressively. These taxes will become more regressive, because the income taxes are slightly progressive and the GET and PSCT are regressive. The tax change would reduce the overall burden of Hawaii's taxes on residents, because nonresidents bear a bigger part of the total burden of the GET and PSCT than they do of the State's income taxes.

The change in tax regimes would reduce the costs of complying with the State's taxes for taxpayers and it may also reduce the resources they devote to avoiding taxes and to taking advantage of special tax breaks. The tax change would also reduce the State's costs of administering taxes and of processing tax returns. It would eliminate about 60 percent of the forms and instructions now issued by the Department and it would relieve about 600,000 individuals and 160,000 entities of the requirement to file State income or franchise tax returns. The tax change would reduce the number of returns processed by the Department of Taxation by half, from about 2 million per year to about 1 million per year.

It is unclear, however, whether the change in tax regimes would increase or reduce tax evasion on the part of taxpayers and hence require more or less enforcement efforts on the part of the Department of Taxation. Enforcing compliance with the State's income taxes is greatly aided by federal enforcement efforts, because Hawaii adheres fairly closely to the federal definitions of taxable income. On the other hand, the increase in the rate of the GET may increase the incentive for taxpayers to evade the tax. Hence, the change might entail an increase or reduction in costs of monitoring and enforcing the State's taxes.

If only the Corporation Income Tax were eliminated, the revenue could be replaced with small increases in either the GET or in the Individual Income Tax. The Corporation Income Tax yields only 4 percent as much revenue as the GET and only 7 percent as much revenue as the Individual Income Tax.

Summary of Advantages and Disadvantages From the change in Tax Regimes

Main Advantages:

1. Reduces the overall burden of the State's taxes on residents by shifting more of the burden to nonresidents.
2. Simplifies the State's taxes and makes them more transparent.
 - a. Reduces the number of taxpayers and the number of tax forms and tax returns.
 - b. Reduces costs to taxpayers of complying with the State's taxes.
 - c. May reduce resources devoted to tax avoidance.
 - d. Reduces the Department of Taxation's costs of administering and processing taxes.
3. Improves stability of government revenue.

4. Eliminates distortions caused by the States income taxes.
 - a. Reduces the disincentives to work caused by taxes.
 - b. Reduces the disincentives to save caused by taxes.
 - c. Eliminates special income tax breaks and efforts to secure such tax breaks.
5. Reduces automatic tendency for growth in Hawaii's taxes to outstrip the growth in personal income.

Main Disadvantages:

1. Causes the State's taxes to become more regressive.
2. Exacerbates distortions caused by the GET.
 - a. Increases distortions caused by special exemptions and deductions from the GET.
 - b. Increases distortions caused by pyramiding of the GET and PSCT.
 - c. May increase efforts to secure special exemptions or deductions from the GET.
3. Reduces the tendency of the State's taxes to help smooth swings in the business cycle.

Effects That Are Ambiguous or Unknown:

1. Effects on the overall level of output, employment, wages and investment in the State.
2. Effects on the Department of Taxation's costs of monitoring and enforcing the State's taxes.

I. Introduction

Hawaii taxes net income of individuals with the Individual Income Tax, and it taxes net income of businesses with the Corporation Income Tax, the Tax on Banks and Other Financial Corporations, and the Tax on Insurance Premiums.¹ The purpose of this study is to evaluate the effects on Hawaii's economy and the well being of its residents if the net income taxes were eliminated or altered and the revenue were replaced with an across-the-board increase in the General Excise Tax (GET) and the part of the Public Service Company Tax (PSCT) that goes to the State.² More specifically, we examine the effects on economic efficiency, including the costs of tax administration, and on the distribution of the burden of the State's taxes among the various income classes. We also assess qualitatively the likely effects on macroeconomic variables such as total production and employment and on the average wage within the State. We examine two scenarios. In the first scenario, the Individual and Corporation Income Taxes and the Tax on Insurance Premiums are eliminated, and the Tax on Banks and Other Financial Corporations is adjusted to the present rate minus the rate applied to income of other corporations. In the second scenario, only the Individual and Corporation Income Taxes are eliminated.

The remainder of the study is organized as follows. The next section provides static calculations of the rate of the GET and PSCT that would be needed to preserve revenues after the changes in tax regimes. It also assesses the change in stability of tax revenues that might be expected to occur as a result of the tax changes. Section III discusses what is known about how moving from an income tax to a tax on consumption will affect macroeconomic variables, including the effects on saving, investment, employment, output and the allocation of resources, and points out some important differences between consequences of such a move by the national government and by an individual state. The section also contains an aside about the effects of eliminating the Corporation Income Tax. Section IV examines the effects of the changes in tax regimes on the distribution of tax burdens among various income classes. It also provides an estimate of the effect on the overall tax burden borne by Hawaii residents. The overall burden changes, because even though the tax change is revenue neutral, the portion of the burden borne by nonresidents differs among the various taxes. Section V contains an evaluation of the effects on costs of tax administration by the government and on costs of tax compliance by the taxpayers. Section VI contains the conclusions.

¹ The State also administers the Public Utilities Franchise Tax. However, this tax is imposed on gross income and is meant to replace the county real property taxes for the utilities and other public service companies. These businesses are still subject to the State's net income taxes, including the Corporation Income Tax.

² A portion of the PSCT goes to counties in lieu of real property taxes. The State receives 4 percent of the public service company's gross receipts from final sales, the same as the statutory rate of the GET on retail sales.

II. Effects on the Rate of the General Excise and Public Service Company Taxes and on the Variability of the State's Tax Revenues

Effects on Stability of Tax Collections

Table 1 shows the importance of the GET and PSCT compared to the income and franchise taxes in the State's overall tax collections in recent years. The GET accounts for the great bulk (about 95 percent) of the total revenue from the two taxes.³ It also shows the variance of the collections from fiscal year 1972 to fiscal year 2005. A table containing detailed tax collections for these years is provided in the appendix.

Table 1

**Tax Collections and
Variability of Tax Collections**
(Dollar amounts are in millions)

(A)	(B)	(C)	(D)	(E)
Tax	Collections in FY 2005	Mean Average of Collections FY 1972-2005	Standard Deviation of Collections FY 1972-2005	Ratio: (D)/(C)
(1) GET and PSCT.....	\$2,245	\$1,059	589	0.56
(2) Individual Income Tax.....	1,381	653	383	0.59
(3) Corporation Income Tax....	86	44	21	0.48
(4) Tax on Banks and Other Financial Corporations....	39	11	9	0.88
(5) Tax on Insurance Premiums.....	83	41	23	0.56
(6) Sum of (2) through (5).....	1,589	749	423	0.56
(7) Sum of (2) and (3).....	1,467	697	395	0.57
(8) Ratio: (6)/(1).....	0.71	0.71	0.72	1.01
(9) Ratio: (7)/(1).....	0.65	0.66	0.67	1.02

Source: Hawaii Department of Taxation data files and author's calculations.

According to the data in table 1, the income and franchise taxes yielded about 71 percent as much revenue as the GET and PSCT in fiscal year 2005, the same as the average over the period from fiscal year 1972 to fiscal year 2005. The percentage reached its highest in 1989 (82 percent) and it reached its lowest in 1982 (56 percent). The static stability of revenue flows, measured as the ratio of the standard deviation of the revenue divided by the mean revenue for the period beginning with fiscal year 1972 and ending with fiscal year 2005, varied considerably among the taxes. As might be expected, revenues from the Tax on Banks and Financial Corporations and the Individual Income Tax are less stable than those from the GET and PSCT combined. Surprisingly, however, the most stable source of revenue, in the static sense, turns out

³ In fiscal year 2005, revenue from the GET was \$2,137 million and revenue from the portion of the PSCT that went to the State was \$109 million.

to be the Corporation Income Tax. Overall, the combined revenue from the income and franchise taxes (shown in row (6) of table 1) exhibited about the same static stability as the GET and PSCT combined. This implies that the change in tax regimes for scenario 1 would have no appreciable effect on the static stability of tax collections. The same holds true for scenario 2 in which the Tax on Banks and Other financial Institutions and the Tax on Insurance Premiums are retained, because the static stability of the Individual Income Tax and the Corporation Income Tax combined is about the same as that for the GET and PSCT.

Static stability of collections implies that the collections do not vary with income. This is not a desirable trait in the longer run. For instance, perfect static stability means that the revenue provided by the tax does not grow over time with the economy. A better kind of stability, at least from the viewpoint of providing a stable revenue stream for government, would be if the tax revenue grew at the same rate as the demand for government services. Assuming this demand grows over the long run at the same average rate as personal income, taxes would demonstrate stability of the second type, which we shall call dynamic stability, if they grew at the same average rate as personal income and showed little change in growth from one year to another. Since 1972, Hawaii personal income has grown at an average compound rate of 6.85 percent. Therefore, the most desirable tax from the viewpoint of dynamic stability of government revenues would be one that grew at an average rate that is closest to 6.85 percent and that tended to deviate by the smallest amount from this rate. Table 2 compares the dynamic stability of the taxes.

As shown in table 2, receipts from all of the taxes except the Corporation Income Tax grew faster than personal income in Hawaii from 1972 to 2005.⁴ The revenues from the income and franchise taxes combined grew at about the same rate, on average, as did revenues from the GET and PSCT over this period. The revenue from the Individual Income Tax grew at a rate that is only slightly higher. This is somewhat surprising, because the income tax rates are graduated. However, legislative changes in the Individual Income Tax that took effect in 1987 and in 1998 slowed the growth of income tax collections, and legislative changes that were made in 2006 will slow it again.⁵ Among the taxes shown in the table, the Tax on Banks and Other Financial Corporations has grown at an average rate closest to the growth in personal income, but this tax also demonstrates the greatest annual deviations from the average. As shown in column (D), none of the income or franchise taxes are as dynamically stable as the GET and PSCT. Combined, the income and franchise taxes exhibit almost twice the deviation from their mean as the GET and PSCT. This is true, whether or not the Tax on Insurance Premiums and the Tax on Banks and other Financial Corporations is included in the total for the income and franchise taxes. This implies that the change in tax regimes under either scenario would produce a more stable flow of annual revenues.

⁴ See "Study on the Question "Is Hawaii's Tax Structure Adequate?" *Report to the 2005-2007 Tax Review Commission*, for a more detailed account comparing growth in revenue from Hawaii's taxes to the growth in personal income.

⁵ The 2006 legislative changes in the Individual Income Tax are discussed in greater detail below. Without legislative changes, the revenues from the Individual Income Tax tend to grow faster relative to personal income than does the GET. See *Ibid.*

Table 2

**Tax Collections and
Dynamic Stability of Tax Collections**
(Dollar amounts are in millions)

(A)	(B)	(C)	(D)
Tax	Collections In FY 2005	Average Growth Rate of Collections FY 1972-2005 <i>(In percent)</i>	Standard Deviation of Annual Growth in Collections FY 1972-2005
(1) GET and PSCT.....	\$2,245	7.30	0.047
(2) Individual Income Tax.....	1,381	7.40	0.087
(3) Corporation Income Tax....	86	6.06	0.870
(4) Tax on Banks and Other Financial Corporations... .	39	6.98	5.080
(5) Tax on Insurance Premiums.....	83	7.63	0.121
(6) Sum of (2) through (5).....	1,589	7.29	0.086
(7) Sum of (2) and (3).....	1,467	7.30	0.083
(8) Ratio: (6)/(1).....	0.71	99.86	1.840
(9) Ratio: (7)/(1).....	0.65	100.00	1.766

Source: Hawaii Department of Taxation data files and author's calculations.

Dynamic stability of taxes is desirable from the viewpoint of providing a steady source of funds for the operation of government, but it may be less desirable for the private sector than a tax regime that "leans against the wind," that is, one in which tax revenues rise faster than income during a cyclical expansion and slower than income during a cyclical contraction. Tax systems with this characteristic help automatically to stabilize business cycles. Tax systems that are dynamically stable according to our definition will tend to do the opposite, that is, they will tend to raise the overall rate of the tax burden during cyclical declines and lower it during cyclical expansions.⁶

The data in table 2 also imply that the new tax regime (again, under either scenario) would produce revenue that tends to grow at about the same rate relative to the growth in personal income as the current tax structure. However, the growth of revenue from the current tax structure has been slowed by legislative action. The new tax regime would produce a slower rate of automatic revenue growth than the current tax structure, because the automatic growth in the Individual Income Tax is substantially greater than that for the GET and PSCT.⁷

⁶ As Mark Twain famously remarked "When everybody has got money they cut taxes, when they're broke they raise 'em. That's statesmanship of the highest order."

⁷ *Ibid.*

The Increase in the Rate of GET and PSCT Needed to Replace the Revenue from the Income and Franchise Taxes

To produce a simple, static estimate of the increase in the rate of the GET and PSCT that would be needed to replace the revenue from the income and franchise taxes, we must make some assumptions about how the new GET and PSCT will be structured. Both taxes have more than one tier, with certain transactions being taxed at a rate lower than the statutory rate of 4 percent that applies to most gross receipts from final sales (retail sales).⁸ For purposes of this study, we have assumed that revenue from replacing the income and franchise taxes will be made up entirely by an increase in the rate of the GET and PSCT on final sales. From data compiled by the Department of Taxation for fiscal year 2002, we estimate that retail sales account for about 95 percent of the total revenue provided by the GET.

In order to make the estimates more relevant for the current tax structure, we also adjusted the revenues from the Individual Income Tax to account for changes that will occur as a result of sections 2 and 3 of Act 110, Session Laws of Hawaii 2006. Section 2 of the Act increased the standard deduction and section 3 widened the tax brackets. The Act is estimated to reduce revenues from the Individual Income Tax by about 4 percent in each year.

Finally, the Tax Review Commission asked that in the new tax regime, the Tax on Banks and Other Financial Corporations should be adjusted to reflect the GET that other corporations must pay, rather than simply eliminate the tax. However, because they are so highly levered, a tax on gross income of banks is impractical, as it would place them at a severe competitive disadvantage. Therefore, to compute the rate for the replacement GET and PSCT, we assume that the banks will continue to pay franchise tax at the rate of 1.52 percent on net income, which is the difference between the top statutory tax rate of the State's Corporation Income Tax (6.4 percent) and the statutory rate of the tax on Banks and Other Financial Corporations (7.92 percent). This amounts to retaining about 19 percent in the Tax on Banks and Other Financial Corporations in scenario 1.

Because insurance premiums and financial services are not subject to the GET or to the Corporation Income Tax, it is unclear how to treat these entities in a way that prevents them from gaining or losing more than other corporations from the change in tax regimes. Therefore, in addition to the calculations for scenario 1, we considered an alternate case (scenario 2) in which we calculated the increase in GET and PSCT that would be needed to replace the income taxes if the Tax on Insurance Premiums and the Tax on Banks and Other Financial Corporations were maintained at their current levels.

For scenario 1, the new statutory rate for the GET and for the portion of the PSCT that goes to the State's general fund is calculated as follows. First, based on the estimate that after Act 6 the Individual Income Tax will provide only 96 percent as much revenue as it does now, and assuming 19 percent of the Tax on Banks and Other Financial Corporations will be retained, the new GET and PSCT would need to have raised \$1,528 million more in revenue at 2005 levels ($= (\$1,381 \times 0.96) + (\$39 \text{ million} \times 0.81) + 86 + 83$), for a total of \$3,772 million, instead of the \$2,245 million actually raised. Based on the mean averages from 1972 to 2005, the new GET and PSCT would need to raise \$1,780 million ($= (\$653 \text{ million} \times 0.96) + (\$11 \text{ million} \times 0.81) + \$44 \text{ million} + \$41 \text{ million}$) instead of \$1,059 million.

⁸ For example, under the GET sales at wholesales are taxed at a rate of 0.5 percent, and commissions earned on sales of insurance are taxed at 0.15 percent.

By assumption, the new statutory tax rate will apply only to items currently taxed at the 4 percent statutory rate. These items account for about 95 percent of total revenues from the taxes, so their tax base is equal to 95 percent of the revenue from the GET and PSCT on items taxed at 4 percent, divided by 0.04, or about \$53,319 million in 2005 ($= (0.95 \times \$2,245)/0.04$). Assuming that the tax base for the lower statutory rates remains the same, revenue from the GET and PSCT applied at the lower rates will also stay the same. If the rest of the tax base also stays the same, the GET and PSCT levied on sales taxed at the lower rates will continue to supply \$112 million of revenue ($= \$2,245 \text{ million} \times 0.05$), so the new statutory tax rates on retail sales applied to the tax base of \$53,319 must provide \$3,660 of revenue ($= \$3,772 \text{ million} - \112 million). This means that the new statutory tax rate must be 0.0686 ($= \$3660 \text{ million}/\$53,319 \text{ million}$). Using mean values for the period from 1972 to 2005, the revenue that must be replaced is \$721 million ($= (\$653 \text{ million} \times 0.96) + (\$11 \text{ million} \times 0.81) + \$44 \text{ million} + \$41 \text{ million}$), the total revenue to be provided by the new GET and PSCT is \$1,780 million ($= \$721 \text{ million} + \$1,059 \text{ million}$), and the amount provided by the GET and PSCT at the lower rate is \$53 million ($= \$1,059 \text{ million} \times 0.05$), so the amount to be collected from the new tax on retail sales is \$1,727 million ($= \$1,780 \text{ million} - \53 million). The retail sales tax base is \$25,151 million ($= (\$1,059 \text{ million} \times 0.95)/0.04$), so the new statutory tax rate must be 0.0687.

For scenario 2, in which the Tax on Insurance Premiums and the Tax on Banks and Other Financial Corporations are maintained, the new GET and PSCT must raise only \$3,657 million in revenue at 2005 levels ($= \$2,245 \text{ million} + (\$1,381 \text{ million} \times 0.96) + \86 million) or \$1,730 million at the mean averages for 1972 to 2005 ($= \$1,059 \text{ million} + (\$653 \text{ million} \times 0.96) + \44 million). The base for the new GET and PSCT on retail sales and the amount raised by the GET and PSCT on lower-taxed sales are the same as scenario 1, so the new statutory tax rates are 0.0665 for 2005 levels ($= (\$3,657 \text{ million} - \$112 \text{ million})/\$53,319 \text{ million}$) and 0.0667 for the mean average levels from 1972 to 2005 ($= (\$1,730 \text{ million} - \$53 \text{ million})/\$25,151 \text{ million}$).

The static estimates are based on the assumption that nominal spending on taxable items stays the same. The assumption could lead the estimates to overstate or understate the actual increase in the excise taxes needed to maintain revenue. For one thing, tax avoidance and tax evasion for the GET and PSCT will tend to increase as the tax rate rises.⁹ Tax avoidance measures include a shift in purchases from taxed to non-taxed items, such as greater purchases from exempt entities. Tax evasion measures include non-reporting of income by business and non-reporting of Use Tax on imports by consumers.

The static estimate also takes no account of the macroeconomic effects of the tax change, that is, the effects on aggregate demand and on total expenditures. As will be explained below, however, these effects are hard to determine and might be positive or negative. Finally, the static estimate makes no allowance for the possibility that the higher rate of GET will result in changes in the structure of the tax. For example, the higher rate may cause voters to force legislators to exempt certain necessities from the tax, such as food, rent and medical services.

It is estimated that, on average, pyramiding of the current GET raises the effective rate of on final sales in Hawaii by about 0.5 percent, that is, from the statutory rate of 4 percent to an

⁹ Note that the understatement occurs, regardless of any tax avoidance or tax evasion that occurs with the taxes being replaced, because we are comparing the revenue that is currently raised from those taxes (after the effects of tax avoidance and tax evasion) with the revenue that will be raised by the increase in the GET and PSCT.

effective rate of 4.5 percent.¹⁰ Of this amount, it is estimated that about 40 percent is caused by the tax on wholesale sales and the remaining 60 percent is caused by business-to-business sales taxed at the retail rate of 4 percent. The tax on wholesale sales is held constant, so this part of the pyramiding should not increase with the change in tax regimes. If the remaining part stays in proportion to the statutory tax rate, the new effective rate of the GET and PSCT under scenario 1 will rise by 3.1 percent, from 4.5 percent to 7.6 percent ($= (4.3/4) \times 6.9 \text{ percent} + 0.2 \text{ percent}$), and the new effective rate under scenario 2 is estimated to rise by 2.9 percent, from 4.5 percent to 7.4 percent ($= (4.3/4) \times 6.7 \text{ percent} + 0.2 \text{ percent}$). Thus, the implied pyramiding is about 0.8 percent for scenario 1 (the effective rate of 7.6 percent minus the statutory rate of 6.8 percent) and by 0.7 percent for scenario 2 (the effective rate of 7.4 percent minus the statutory rate of 6.7 percent).¹¹

III. Effects on the Economy

Effects on Economic Efficiency

Much has been written on how a move from an income tax to a tax on consumption would affect the national economy.¹² One reason given for why the change in tax regimes would improve economic efficiency is that the income tax discriminates against future consumption by taxing it more heavily than current consumption. The argument is based on the notion that all saving and investment take place for the purpose of providing future consumption and that taxes should not discriminate in favor of present consumption. A uniform tax on consumption taxes consumption as it occurs, whereas a tax on income taxes the income whether it is consumed currently or saved and invested to provide for future consumption. Savings produce a return and allow a greater amount of future consumption, as the saver is rewarded for postponing consumption with a return on the savings. Under an income tax, the returns to saving are also taxed. The income tax discriminates against future consumption financed from current saving, because the saver must prepay part of the tax on the future consumption, denying the taxpayer the time-value of money on the amount of the tax prepayment. Under the consumption tax, all consumption is taxed as it occurs and there is no prepayment of the tax on future consumption. This source of inefficiency can be avoided under an income tax by allowing savings to be subtracted from taxable income and exempting their return from current tax, such as under some retirement plans.

Another reason income taxes are inefficient is that they are levied at graduated rates that increase with the taxpayer's income. Graduated income taxes are an inefficient way to raise revenue, because the efficiency cost of the tax depends only on the tax rate at the margin, that is, the tax rate that applies to the last unit of income earned. For example, a graduated tax that hits

¹⁰ See "Study on the Progressive or Regressive Nature of Hawaii's Taxes." *Report to the 2005-2007 Tax review Commission*. The sales at wholesale account for only about 5 percent of GET receipts, which implies that they account for about 40 percent of the pyramiding.

¹¹ These calculations tend to understate pyramiding under the new regime, because they ignore the effect of the capital goods excise tax credit. This credit, which reduces pyramiding of the present GET, would disappear with elimination of the net income taxes. The effect is small, however, because the credit is only about one percent as great as the combined collections of the GET and PSCT.

¹² Although the GET is not technically a consumption tax, in substance its economic effects are much the same. Gregg A. Esenwein and Jane G. Gravelle provide an excellent and accessible review of the evidence on this topic. See their recent paper "The Flat Tax, Value-Added Tax, and National Retail Sales Tax: Overview of the Issues." *CRS Report for Congress*, Congressional Research Service, Library of Congress, September 24, 2004.

28 percent for the last unit of income earned by a worker has the same adverse effect on the desire to work as a flat tax of 28 percent on all of the worker's income, but the flat tax provides more revenue. Therefore, replacing a graduated income tax with a flat consumption tax would improve the economic efficiency of the tax system, even if the income tax were structured to avoid the discrimination against future consumption. However, the change in tax regimes would surely increase pressures to exempt certain expenditures from the tax, and the net effects on economic efficiency will depend strongly on the response to these pressures. If the GET is altered to exempt substantial components of total expenditures, such as food, rent and medical services, the switch to the new tax regime might well reduce the overall economic efficiency of Hawaii's taxes.

The main reason for having graduated income taxes is to promote what is called vertical equity of taxes. The idea, simply put, is that wealthier individuals are more able to pay taxes, so they should be taxed at a higher rate. A flat tax does not provide vertical equity. One way to offset the adverse effects of the change in tax regimes on vertical equity would be to use tax collections to support a more extensive system of transfer payments to less affluent taxpayers. This would sacrifice some of the efficiency gains from the tax change, however, because it would require an increase in the GET and PSCT and an increase in the tax rate increases the efficiency cost of the tax.

Effects on Saving and the Supply of Investment

It is sometimes argued that the discrimination against saving and future consumption under the income tax is partly responsible for the low rate of saving by Americans, but the effect is hard to demonstrate empirically. Many analysts make the further claim, which is even less supported by the empirical evidence, that by discouraging saving the income tax also discourages investment in the national economy, thereby reducing the capital available for American workers and adversely affecting their productivity.¹³ An important question that must be addressed before this further claim can be made is "What is the effect of local saving on local investment?" If foreign investors are able to take advantage of profitable investment opportunities, they can make up for any shortfall in domestic saving. In a world with integrated financial markets and low barriers to international investment, the effect of an increase in U.S. saving on investment within the United States is greatly diluted, since the saving can go anywhere in the world, or it can displace foreign investment that otherwise would have come to the United States. Today, net inward investment flows to the United States are very large, approximately 6 percent as big as the U.S. gross national product. This establishes the fact that global capital markets are integrated and that the U.S. economy need not rely exclusively on local saving to fund local investments.

An increase in local saving is even less likely to have an effect on investment in an individual U.S. state. The U.S. states are tied together with a common currency and efficient capital markets, so saving within a state will go wherever investment returns are greatest. Very little of any increase in local saving will find its way to the local economy. Eliminating the

¹³ See, for example, the article by Laurence J. Kotlikoff, "The Economic Impact of Replacing Federal Income Taxes With a Sales Tax," *Policy Analysis No. 193*, Cato Institute, April 15, 1993. Kotlikoff finds a large effect of an increase in U.S. saving on investment within the United States, but the finding is an artifact of his assumption that investment and saving within the U.S. economy must be equal. (His model does not allow for any net international investments.)

corporation Income Tax will reduce the cost of capital for new investment in Hawaii, and this will increase the supply of capital to the local economy. What happens to total investment will also depend on what happens to local investment demand, however, and the effects of the change in tax regimes on investment demand (discussed below) are uncertain.

Effects on Work Incentives and the Supply of Labor

Eliminating the income and franchise taxes increases the net after-tax pay, so it increases the incentive to work. On the other hand, the increase in the GET and PSCT will reduce the real purchasing power of earnings, which will reduce the incentive to work. On net, however, the change in tax regimes should increase the incentive to work, because it will reduce the *marginal* rate of tax on new earnings for the great majority of workers. This effect is demonstrated by the following calculations.

For scenario 1, we have estimated that the increase in the effective rate of GET and PSCT needed to replace the income and franchise taxes is about 3.0 percent (from 4.5 percent to 7.5 percent). The GET and PSCT are levied at a flat rate on gross receipts and they do not cover all expenditures. Therefore, the effect of their increase on work effort would be offset by a reduction in the marginal rate of the Individual Income Tax on earnings that is somewhat less than 3.0 percent.¹⁴ After the 2006 legislation takes effect, the marginal rate of the Individual Income Tax will be 5.5 percent or higher for individuals with taxable income of at least \$4,000, or for a couple with joint taxable income of at least \$8,000. The marginal income tax rate will be 8.25 percent for an individual with income of at least \$40,000 or for a couple with joint taxable income of at least \$80,000. Thus, the net effect on work effort of the change in tax regimes will be positive for the great majority of taxpayers, and it will be substantial for some. The conclusion holds *a fortiori* if the effects of the reductions in the Tax on Banks and Other Financial Corporations and the Tax on Insurance Premiums are accounted for in the calculations. The conclusion also holds for scenario 2, because the increase in the GET and PSCT is smaller, whereas the reduction in the Individual Income Tax on earnings is the same.

Effects on Overall Competitiveness of Local Producers and on Local Production

What would the tax shift do to profitability of (and hence demand for) local investment? There is little evidence on which to base an answer to this question. What follows is a qualitative assessment, with a list of possible positive and negative effects. An increase in the GET and PSCT will raise the costs of a Hawaii vacation to tourists, adversely affecting the State's primary export industry. The effect on cost will be ameliorated slightly by reductions in the cost of capital caused by eliminating the Corporation Income Tax for those investing in the tourism industry.

The Use Tax raises the price of imports into the State, which helps maintain competitiveness of local producers who must pay the GET on their local sales. There is no such protection to allow local producers to raise the price of their output to compensate for the State's Corporation Income Tax. However, the protection afforded by the Use Tax is incomplete, because it raises the price of imports by only the statutory tax rate whereas the GET and PSCT

¹⁴ Ordinarily, an increase in a tax rate brings about a disproportionately greater increase in the excess burden of the tax. For example, doubling a tax will usually quadruple its excess burden. In the current instance, however, the burdens of the Individual Income Tax and the GET augment each other, that is, they pile on top of each other to discourage work effort. Therefore, when evaluating the efficiency effects of these taxes, their combined effects must be considered.

pyramid on themselves and on each other, and because many imports are never reported and Use Tax is not paid.¹⁵

In fiscal year 2000 the Corporation Income Tax amounted to less than 0.2 percent of Hawaii gross receipts for all corporations and to less than 0.4 percent of Hawaii gross receipts for corporations in the entertainment and hospitality industries.¹⁶ The pyramiding of the GET and PSCT under the new tax regime is estimated to be only about 0.2 percent more than the current pyramiding for both scenarios 1 and 2 (= 0.7 – 0.5). Comparing this increase with the possible price effect of the Corporation Income Tax, it is not clear whether the change in tax regimes will increase or reduce the tax-induced disadvantage of local corporations that must compete against imports into the State, even on average.

An important effect on competitiveness of the local producers would come simply from the increase in the rate of the GET and the fact that consumers usually fail to pay the Use Tax on their imports from out-of-state sellers. The increase in the GET would make shopping on-line and buying from out-of-state mail-order sellers more attractive to consumers and would increase tax evasion.

As shown in section IV, it is estimated that a greater portion of the burdens of the GET and PSCT are borne by nonresidents than of the income and franchise taxes. Therefore, the change in tax regimes should increase the disposable income of residents and increase their demand for goods and services, even after taking account of the increase in prices caused by the increase in the rate of the GET and PSCT. However, the tax change will also encourage residents to save more, so the net effect on current aggregate demand of residents is ambiguous. (Their total real disposable income rises, but a larger share of their income will be saved for future consumption.) If current demand of residents increases, part of the increase will be satisfied by imports. The net effect on current demand of the increase in disposable income of residents, the increased tendency to save, and of the decline in tourism (caused by the increase in costs imposed by the GET and PSCT) could be positive or negative.

Effects on Different Industries in the Local Economy

To assess the effects on different industries on the supply side, it is probably simplest to begin with the fact that the change in tax regimes will replace the tax on net income with an increase in the tax on gross income. Therefore, companies with a higher ratio of net income to gross income would tend to be encouraged, or less discouraged by the change in tax regimes than companies with a lower ratio of net income to gross income. The tax shift would eliminate the deduction for depreciation of assets, so companies with large investments in depreciable assets will tend to suffer more or to benefit less than companies with few depreciable assets.

On the demand side, eliminating the State's Individual Income Tax would increase disposable income of consumers and therefore increase their demand for goods and services, whereas the increase in the rates of the GET and PSCT would increase prices of goods and services, thus discouraging demand both by residents and tourists and other nonresidents living in Hawaii. Because the GET is applied fairly universally, its effects on relative prices are kept to a minimum, so the increase in the GET would have about the same effects on demand as the equivalent reduction in income. Eliminating the Individual Income Tax would amount to about a

¹⁵ See William F. Fox, *Implications of the Streamlined Sales Tax Agreement for General Excise Tax Revenue*, report prepared for the State of Hawaii Office of Auditor, April 2006.

¹⁶ See the report *Hawaii Income Patterns: Businesses 2000*, Department of Taxation of the State of Hawaii, July 2002.

3 percent increase in disposable income for Hawaii's residents (estimated by dividing revenue from the tax by Hawaii personal income in 2005). The estimated increase in the GET and PSCT will amount to a price increase of about 2.8 percent to 3.0 percent on taxable items, which is the increase in the effective rate of these taxes. Perhaps the most important effect on the pattern of current demand would be a shift away from goods and services sold to tourists in favor of goods and services sold to local residents.

The change described in the first scenario would favor the insurance industry and banks and other financial corporations, because these entities would be relieved of a tax obligation with no offsetting tax increase. Either scenario would favor non-profit entities exempt from the GET. These entities are exempt from the income and excise taxes, so the change in tax regimes has no direct bearing on their taxes (which remain zero), but it would increase demand for their output, because the increase in the GET would increase the price of other things people spend their money on.¹⁷

Other Effects on the Local Economy

Replacing the local income tax with an increase in the GET would make Hawaii a more desirable place to live for people with high income and a high saving rate, and whose income does not require them to locate anywhere in particular. It would make Hawaii a less desirable place to live for retirees living on pension income that is currently exempt from Hawaii's Individual Income Tax. The cost of living would rise for people with low income who save little.

It should be noted that the change in tax regimes may cause temporary disruptions to business in the very short term, because consumers are likely to respond to the announcement of the tax change by moving forward some of their purchases to avoid the increase in the GET. This would cause a spurt in sales prior to the tax change and an attendant lull in sales after the tax change.

An Aside on the Effects of Eliminating the Corporation Income Tax

In the short run, if Hawaii eliminated the Corporation Income Tax, current shareholders would benefit most, but in the long run, the shareholders bear little if any of burden of the tax. Instead, the tax raises prices to consumers, reduces local land rents, reduces earnings of local workers, and increases the rate of pretax corporate profit. The conventional economic wisdom holds that in the long run a small taxing jurisdiction, such as a state, cannot export any part of a tax on corporate income to external shareholders. The reason is that the tax causes the investors to demand a higher pretax profit on local investment to compensate for the tax.¹⁸ Even the local shareholders escape the burden of the tax. The conclusions are based on the simple logic that investors look to get the highest after-tax return they can on their investments and that a single jurisdiction contains only a small part of the available investment opportunities. If something happens to reduce the after-tax rate of return in the local jurisdiction, investors will go away and

¹⁷ The taxable entities gain from the reduction in taxes on business income but, as explained above, even if the full gain is passed forward to consumers in the form of a lower price, it usually will not offset the effect of the increase in the GET.

¹⁸ In the argot of economists, the supply of capital is perfectly elastic at the externally set rate of return, so local factors of production must bear the entire burden of the tax. For a rigorous academic treatment of this notion, see Roger Gordon "Taxation of Investment and Savings in a World Economy," *American Economic Review*, vol. 76(5), December 1986, pages 1086-1102. For empirical research verifying the notion, see Aparna Mathur and Kevin Hassett, "Taxes and Wages," AEI Working Paper #128, American Enterprise Institute, June 2006.

local investment will suffer until scarcity brings the local after-tax rate of return to new investment back up to the level investors can get elsewhere.

Part of the burden of Hawaii's Corporation Income Tax is exported indirectly, because the tax raises prices for tourists as well as local residents. However, if the corporation's output competes with imports, little of the burden can be passed on to consumers as higher prices. Instead, the burden of the tax is passed back to landowners and local labor. These conclusions are valid, whether or not other jurisdictions tax corporate income. We are looking only at the effect of Hawaii's Corporation Income Tax, holding constant things that would not change automatically with a change in the tax. Unless other jurisdictions respond to a change in Hawaii's taxes, their taxes are irrelevant for the exercise. For the same reason, it does not matter for the exercise if local producers have a strong price advantage owing to transportation costs.

If the Corporation Income Tax were eliminated, the revenue could be made up with a small increase in the GET and PSCT, or in the Individual Income Tax. Based on the mean averages presented in table 1, the Corporation Income Tax provides only about 4 percent as much revenue as the GET and PSCT and less than 7 percent as much as the Individual Income Tax. Although the conventional economic wisdom holds that exchanging a tax on corporate income for an increase in the tax on income of individuals will improve economic efficiency, the efficiency gains may fail to materialize if the corporate income tax rate is flat (or virtually flat) and the tax rates on income of individuals are graduated.¹⁹

Exchanging the Corporation Income Tax for an increase in the GET may have different effects on producers in different industries. For one thing, some corporations that compete with imports may not be able to pass the net income tax forward to customers, whereas they may be able to pass most of the increase in the GET forward to customers, because the Use Tax will increase in tandem with the GET. However, if both the taxes on net and gross income are passed forward to customers, differences in the effects of the tax change on output can still arise, owing to differences in the rate of profit on sales. Exchanging a tax on profits for a tax on gross receipts will tend to cause the price of output in industries with a high rate of profit on sales to decline relative to the price of output in industries with a low rate of profit on sales.

IV. Effects on the Overall Level and on the Distribution of the Burden of Hawaii's Taxes

Effects on the Overall Tax Burden of Residents

The tax change will probably benefit Hawaii residents as a whole, because it will probably result in a greater portion of the total burden of Hawaii's taxes being borne by nonresidents. Table 3 shows how the aggregate burden of Hawaii's taxes is distributed among residents, the federal government, and nonresidents under current law, adjusted for the changes in the Individual Income Tax provided by Act 110, SLH 2006, and under scenarios 1 and 2.²⁰ According to the estimates in the table, over 37 percent of the burdens of the GET and PSCT are shifted out of the State, as opposed to only 22 percent for the income and franchise taxes. It is estimated that the change in tax regimes under either scenario would reduce the overall tax

¹⁹ One reason a corporate income tax is needed is to support the individual income tax. If the corporate tax were eliminated, business owners could gain deferral of the tax on their income by incorporating. However, the national corporate and individual income taxes may be sufficient to discourage such behavior if the State's Corporation Income Tax were eliminated. The national corporate income tax has evolved from a tax on offering limited liability ownership to a tax on offering shares that are publicly traded.

²⁰ Table 3 is constructed from the estimates in "Study on the Progressive or Regressive Nature of Hawaii's Taxes." *Report to the 2005-2007 Tax Review Commission*, October, 2006, page 25.

burden on residents by about 4 percent.²¹ These estimates, especially those for the GET and PSCT, are subject to substantial error, however, and they may also change from time to time. For example, if the current accommodations for tourists hit capacity constraints (as is implied by the recent increases in hotel rental rates that greatly exceed overall inflation accompanied by little growth in visitor arrivals), then the burden of Hawaii's taxes on the accommodations will be borne largely by local businesses and not by the tourists.²²

For purposes of the estimates, the term "resident" is defined according to the State's tax code, not according to the definition used by the U.S. Commerce Department. The biggest difference is that most military personnel stationed in Hawaii are not residents according to the State's tax code, but they are included as residents in the Commerce Department's statistics. The estimates may overstate portion of the Individual Income Tax borne by nonresidents, because they include income taxes paid by part-year residents. The GET and PSCT burdens borne by military personnel are treated as being shifted to nonresidents.

Note that little of the Corporation Income Tax is shifted to the federal government or to nonresidents. This is because the analysis assumes that none of the tax is borne by shareholders and that the local rate of return to corporate investment must be higher by the amount of the tax to attract such investments, so federal corporate income tax receipts do not decline as a result of the deduction for the State's tax.²³

Effects on the Distribution of the Burdens of Hawaii's Taxes

An important distributional effect of the tax shift will be on people of different ages. To the extent that older people have paid income tax on savings set aside to fund future consumption, they will be taxed twice on the consumption if the State replaces its income tax with an increase in the GET and PSCT. However, this double taxation will not occur for savings contributed tax-free to retirement accounts. For such savings, the tax shift will merely remove the tax advantage originally afforded to the savings. Also, residents living on pension income that is exempt from the State's Individual Income Tax would face the higher GET with little or no compensating reduction in their State income tax liability. This is an important source of income for the elderly. According to data compiled by the Department of Taxation for 2003, pension and annuities accounted for more than one third (36 percent) of the total income of resident taxpayers aged 65 and older.

The change in tax regimes is often thought to benefit those who save a large part of their income (mostly higher-income individuals and families) and to disadvantage those who save little, but this view is oversimplified. Most people follow a lifetime pattern in which consumption is less than income during their working years and exceeds income after they retire. Lifetime income and consumption are about the same. Therefore, comparing GET and PSCT burdens relative to the current annual income is misleading, because the comparison combines the effects of differences in income with the effects of differences in the stage of life of the taxpayers.²⁴ That is, the comparison does not tell us if the lifetime burden as a proportion of lifetime income is higher for some people than for others. A better procedure is to compare the

²¹ The reduction is estimated to be 4.4 percent for scenario 1 and 3.7 percent for scenario 2.

²² The same would hold true for the Transient Accommodations Tax. This issue is discussed in greater detail in *Ibid*, page 19.

²³ See the explanation in *Ibid*, page 9.

²⁴ A more complete explanation of the issue is presented in *Ibid*. Implicit in this reasoning is the assumption that consumption, rather than income, is the proper denominator to be used when comparing burdens of a consumption tax.

total burden of the tax as a proportion of income over the taxpayers' lifetimes. The data needed to make such comparisons are not available, but the appropriate comparisons can be approximated by assuming that all current income is consumed. Calculations based on this assumption still show differences in the GET and PSCT burdens as a proportion of income, but the differences arise from differences in the pattern of expenditures, not from differences in the rate of saving. Wealthy people tend to spend a bigger part of their income on things that are exempt from the GET, such as private education or mortgage payments, whereas much of the income of less affluent people must be spent on things that are subject to the GET, such as food and rent.²⁵

Tables 4 and 5 present estimates for the effects on taxpayers with different incomes of the changes in tax regimes for scenarios 1 and 2. The burdens of the Individual Income Tax are measured after the recent changes in the tax code scheduled to take effect on January 1, 2007.²⁶ The burden of the new GET and PSCT that replace the income and franchise taxes is estimated by multiplying the burden of the current GET and PSCT times the ratio of the statutory tax rate of the new GET and PSCT to the current statutory tax rate (= 7.3/4.0 for scenario 1 and 7.1/4.0 for scenario 2).²⁷ The estimates are presented for a typical single individual and a typical family of four, although we are unable to distinguish between the GET burdens for the two family types.²⁸ The income tax liabilities for the typical individual and the typical family are created using averages from actual returns filed by Hawaii taxpayers at each income level.

According to the estimates, both tax changes increase the regressive tendency of Hawaii's taxes. As a percent of current income (measured as federal adjusted gross income), the burden declines more steeply after the tax change as income rises. This is true, whether or not the burden of GET is adjusted to account for the burden on savings. The result is expected, because the dominant effects of the change in tax regimes come from replacing the Individual Income Tax, which is slightly progressive, with the GET, which is regressive.

The estimates show that the absolute size of the burden declines for single taxpayers at all income levels except the lowest (those with federal adjusted gross income (AGI) of \$25,000) and for the family of four it declines for those with federal AGI of \$75,000 or more. This means that the tax change would reduce the overall tax burden for a substantial number of taxpayers. According to the estimates shown in table 3, a bigger part of the burden of the GET is borne by nonresidents, so the change in tax regimes reduces the overall tax burden on Hawaii residents. Several caveats must accompany the result. The estimates of income tax burdens are fairly accurate, but the estimates for the GET and PSCT burdens are more tenuous. Sources of error are in the calculations for the effective tax rates for the new GET and PSCT, the estimates for the part of the burdens of the GET and PSCT that are shifted to nonresidents, the calculations used to scale the GET and PSCT burdens to AGI, and the estimates of how the GET and PSCT burdens are distributed by income class.²⁹

²⁵ This statement oversimplifies somewhat. Although mortgage payments received by financial corporations are not subject to the GET, the net income of the corporations is subject to the Tax on Banks and Other Financial Corporations. Also, part of the mortgage payment is for the purchase of the property and this purchase bears the burden of the GET on the value of the structure. Rental income is subject to the GET, but the GET on the portion of the rent that compensates the owner for the use of the land is probably borne by the landowner and not by the renter.

²⁶ Details of the methodology used to construct the estimates are provided in *Ibid.*

²⁷ The burdens for the current GET and PSCT were obtained from worksheets prepared for *Ibid.*

²⁸ For a discussion of the reasons why, see *Ibid.*, page 17.

²⁹ The calculations for the GET and PSCT burdens for the various income classes are described in *Ibid.* Note also that the tax burden increases for all taxpayers when the burdens on savings are taken into account. This seems

V. Effects on the Costs of Tax Administration and Tax Compliance

Effects on Costs to Taxpayers of Tax Compliance

The number of taxpayers that must file a State tax return would be reduced dramatically by the change in tax regimes. The greatest reduction would come from the elimination of the Individual Income Tax. About 600,000 Individual Income Tax returns are filed annually. In addition, more than 160,000 entities file income or franchise tax returns. Income taxes are notoriously complex, cumbersome and costly to comply with. The Internal revenue Service has estimated that it takes taxpayers an average of 13 hours and 29 minutes to prepare an individual income tax return (Form 1040).³⁰ It has also been estimated that completing federal income taxes cost 5.4 million man-hours in 1992, more than the total man-hours worked by the residents of the state of Indiana that year.³¹ The cost to the taxpayer should be substantially less for Hawaii's income taxes, however, because the State's tax base follows the federal definitions fairly closely, with a few notable exceptions, such as the exemption of certain pension income from the State's Individual Income Tax. Therefore, completing the federal income taxes gives most taxpayers a good head start in completing the State's income taxes. Nevertheless, the State's income taxes still impose substantial compliance costs on residents, especially those who must file a State income tax return but who are not required to file a federal income tax return. Record-keeping requirements for taxpayers would also be reduced, although these savings are also limited, because many taxpayers need to maintain the same or similar records for their federal income taxes.

The effects on the State's Costs of Tax Administration

Economies of scale are important in determining whether the tax is an efficient source of revenue from the standpoint of costs of tax administration: It is relatively costly for a small taxing jurisdiction to construct and implement its own income tax. It is instructive to note that although 43 of the fifty states impose an income tax, of the eight states with populations smaller than Hawaii, only two impose an independent state income tax (Montana and Delaware), whereas three impose no state income tax (Alaska, South Dakota, and Wyoming) and three piggyback on the federal income tax (North Dakota, Rhode Island and Vermont).³²

The change in tax regimes would clearly reduce costs of processing tax returns for the State, because there would be a substantial reduction in the number of tax returns that must be filed. By informal count, eliminating the income and franchise taxes would eliminate about 60 percent of the roughly 230 forms and instructions now issued by the Department of Taxation. More than 760,000 individuals and businesses would be relieved of the need to file income or

inconsistent with the notion that change in tax regimes should lower overall tax burdens, but it occurs because the calculations for these burdens include some tax liabilities that properly belong to other time periods.

³⁰ See the instructions for Form 1040 (2003), p. 77. The aggregate costs are staggering. It has been estimated that preparing federal income taxes cost taxpayers 5.4 million man-hours in 1992, more than the total man-hours worked by the residents of the state of Indiana that year. (See James L. Payne, "Costly Returns: The Burden of the U.S. Tax System," Institute for Contemporary Studies, 1991, p. 21.)

³¹ James L. Payne, "Costly Returns: The Burden of the U.S. Tax System," Institute for Contemporary Studies, 1991, p. 21.

³² The efficiency gains are compromised in each of these cases, however, because none imposes a pure piggyback scheme. State tax structures are compared in the report "Tax Rates and Tax Burdens in the District of Columbia – A Nationwide Comparison, 2004." Government of the District of Columbia, August, 2005.

franchise tax returns. The size of the State's tax code would also decline, which would reduce the need for expertise within the Department of Taxation as well as within the taxpaying community.

The only area where ambiguity arises as to the net change in costs of tax administration is the question of what would happen to the costs of enforcing tax compliance. There are about 220,000 GET taxpayers, as opposed to more than 760,000 individuals and businesses that pay the income and franchise taxes, so the change in tax regimes would allow the Department of Taxation to concentrate its enforcement efforts on fewer taxpayers, but the lack of a comparable federal tax makes monitoring the GET more difficult than monitoring the income taxes. Enforcement costs for the GET will rise, because a tax of 7 percent or 8 percent will encourage more tax evasion than a tax of 4 percent. It is not clear whether, overall, the problem of tax evasion will increase or fall as a result of the change in tax regimes, so it is not clear whether tax officials will need to spend more resources monitoring taxpayers.

VII. Conclusions

Replacing the revenue from Hawaii's Individual Income Tax, the Corporation Income Tax, the Tax on Banks and Other Financial Corporations and the Tax on Insurance Premiums would require an increase in the statutory rate of the GET and PSCT from 4 percent to about 6.9 percent. If only the Individual Income Tax and the Corporation Income Tax are eliminated, the new statutory rate of GET and PSCT would need to rise only to 6.7 percent. The overall effective rate of the GET and PSCT on final sales, including the effect of pyramiding of the tax, would increase from about 4.5 percent to about 7.6 percent in the first case and to about 7.4 percent in the second case. The new tax system would exhibit slightly improved stability in revenues. That is, it would produce revenue flows that tend to vary less from year-to-year when measured against the long-run trend rate of growth in personal income.

The net effect of either change in tax regimes on Hawaii's economy overall is hard to determine. The biggest effects might be a shift in demand away from tourism-related activities and towards goods and services supplied to residents. The change in tax regimes would increase local saving and the local supply of labor, but the effects on local investment demand are ambiguous. The overall efficiency of the tax system probably would improve, because the new tax system probably would have a smaller adverse effect on work effort and would eliminate the discrimination in the State's current tax structure against future consumption in favor of consumption in the present. However, the change in tax regimes would also increase pressures to exempt certain expenditures from the tax, and the net effects on economic efficiency will depend strongly on the response to these pressures. If the GET is altered to exempt substantial components of total expenditures, such as food, rent, or medical services, the switch to the new tax regime might well reduce the overall economic efficiency of Hawaii's taxes.

The burden of the State's taxes would be distributed more regressively among residents but, overall, residents would experience a decline in the level of the burden. It is estimated that overall the burden of the State's taxes on residents would fall by about 4 percent, but it is emphasized that this estimate is subject to substantial error. These results occur, because the change in tax regimes replaces income taxes, which are slightly progressive, mostly by increasing the GET, which is regressive, and because residents bear a smaller part of the total burden of the GET than they do of the State's income taxes and franchise taxes.

Costs of complying with the State's taxes will decline for taxpayers, and the costs of processing tax returns will decline for the State. It is unclear, however, whether the change in tax regimes will tend to result in greater or less tax evasion on the part of taxpayers, and hence whether the change would entail an increase or decline in costs of monitoring and enforcing the State's taxes.

Table 3
Aggregate
Distribution of Tax Burdens
(In \$millions)

<u>Tax</u>	<u>Total Burden</u>	<u>Amount Borne By Residents</u>	<u>Amount Shifted to Nonresidents</u>		
<i>Current Law in Fiscal Year 2005, Adjusted for Act 110, SLH 2006</i>					
<i>Hawaii State Taxes</i>	<i>Total Revenue</i>	<i>Higher Prices</i>	<i>Reduced Incomes</i>	<i>Federal Government</i>	<i>Other</i>
1. GET and PSCT.....	2,245.4	1,157.4	240.8	138.2	682.1
2. Individual Income Tax.....	1,326.2		1,024.4	227.9	73.9
3. Corporation Income Tax.....	85.6	45.2	24.3	4.3	11.8
4. Tax on Insurance Premiums.....	83.1	43.9	23.5	4.2	11.5
5. Tax on Banks and Other Financial Corporations...	38.5	20.4	10.9	1.9	5.3
<i>Total, State Taxes.....</i>	<i>4,350.5</i>	<i>1,533.6</i>	<i>1,418.7</i>	<i>407.6</i>	<i>989.9</i>
<i>Total, State and County Taxes.....</i>	<i>5,603.3</i>	<i>1,815.1</i>	<i>2,015.7</i>	<i>533.8</i>	<i>1,238.1</i>
Scenario 1					
1. GET and PSCT.....	3,771.4	1,967.6	408.9	235.0	1,159.9
2. Tax on Banks and Other Financial Corporations...	7.3	3.9	2.1	0.4	1.0
<i>Total, State Taxes.....</i>	<i>4,350.5</i>	<i>2,224.1</i>	<i>503.2</i>	<i>264.7</i>	<i>1,357.8</i>
<i>Total, State and County Taxes.....</i>	<i>5,603.3</i>	<i>2,505.6</i>	<i>1,100.2</i>	<i>390.9</i>	<i>1,606.0</i>
Scenario 2					
1. GET and PSCT.....	3,657.1	1,908.0	396.6	227.9	1,124.7
2. Tax on Insurance Premiums.....	83.1	43.9	23.5	4.2	11.5
3. Tax on Banks and Other Financial Corporations...	38.5	20.4	10.9	1.9	5.3
<i>Total, State Taxes.....</i>	<i>4,350.5</i>	<i>2,210.6</i>	<i>520.2</i>	<i>261.7</i>	<i>1,329.9</i>
<i>Total, State and County Taxes.....</i>	<i>5,603.3</i>	<i>2,492.2</i>	<i>1,117.2</i>	<i>387.9</i>	<i>1,578.1</i>

Note: Burdens of the Individual Income Tax are calculated as if the provisions of Act 110, SLH 2006, were in effect.

Source: Authors' calculations.

Table 4
Calculations for the
Distribution of Tax Burdens by Income
Scenario 1

Income and Expenditures

	\$25,000	\$50,000	\$75,000	\$100,000	\$150,000
Income (Federal AGI).....	\$25,000	\$50,000	\$75,000	\$100,000	\$150,000
Expenditures.....	28,000	41,380	55,010	70,330	93,730
Expenditures subject to GET	18,490	25,820	31,320	39,290	50,990

Tax Burdens for a Single Individual

GET & PSCT Burden (1)...	\$1,680	\$2,345	\$2,846	\$3,569	\$4,632
GET & PSCT Burden (2)...	1,515	2,956	4,172	5,395	7,991
Ind. Income Tax Burden.....	901	2,047	3,200	3,872	6,316
Overall Burden (1).....	3,680	6,093	8,409	10,161	14,761
Overall Burden (2).....	3,523	6,675	9,671	11,899	17,959
New Burden (1).....	3,880	5,553	6,994	8,538	11,324
New Burden (2).....	3,601	6,585	9,233	11,622	16,998
Burden Ratio (1).....	14.7%	12.2%	11.2%	10.2%	9.8%
Burden Ratio (2).....	14.1%	13.4%	12.9%	11.9%	12.0%
Burden Ratio (3).....	15.5%	11.1%	9.3%	8.5%	7.5%
Burden Ratio (4).....	14.4%	13.2%	12.3%	11.6%	11.3%

Tax Burdens for a Family of four

GET & PSCT Burden (1).....	\$1,680	\$2,345	\$2,846	\$3,569	\$4,632
GET & PSCT Burden (2)...	1,515	2,956	4,172	5,395	7,991
Ind. Income Tax Burden	358	1,400	2,511	3,308	5,575
Overall Burden (1).....	3,444	5,985	8,297	10,374	14,683
Overall Burden (2).....	3,287	6,567	9,559	12,112	17,881
New Burden (1).....	4,183	6,084	7,568	9,303	11,987
New Burden (2).....	3,916	7,140	9,841	12,429	17,724
Burden Ratio (1).....	13.8%	12.0%	11.1%	10.4%	9.8%
Burden Ratio (2).....	13.2%	13.1%	12.8%	12.1%	11.9%
Burden Ratio (3).....	11.4%	7.9%	6.4%	6.0%	5.2%
Burden Ratio (4).....	15.7%	14.3%	13.1%	12.4%	11.8%

Notes: The rows labeled "Burden (1)" show the burdens of the GET and PSCT on current expenditures. The rows labeled "Burden (2)" show the burdens of the GET and PSCT after adjusting for the burdens on saving. "Burden Ratio (1)" is the total burden of Hawaii's State and local taxes, divided by income, with no adjustment for the tax burdens on saving. "Burden Ratio (2)" is the ratio after adjusting for the tax burdens on saving. "Burden Ratio (3)" is the ratio after eliminating the income and franchise taxes and increasing the GET and PSCT, with no adjustment for the tax burdens on savings. "Burden Ratio (4)" is the ratio after eliminating the income taxes and increasing the GET and PSCT, after adjusting for the tax burdens on savings. The burden of the Individual Income tax is measured after the recent legislative changes in the tax rules that are scheduled to take effect on January 1, 2007.

Source: Author's calculations.

Table 5

**Calculations for the
Distribution of Tax Burdens by Income
Scenario 2**

Income and Expenditures

	\$25,000	\$50,000	\$75,000	\$100,000	\$150,000
Income (Federal AGI).....	\$25,000	\$50,000	\$75,000	\$100,000	\$150,000
Expenditures.....	28,000	41,380	55,010	70,330	93,730
Expenditures subject to GET	18,490	25,820	31,320	39,290	50,990

Tax Burdens for a Single Individual

GET & PSCT Burden (1)...	\$1,680	\$2,345	\$2,846	\$3,569	\$4,632
GET & PSCT Burden (2)...	1,515	2,956	4,172	5,395	7,991
Ind. Income Tax Burden.....	901	2,047	3,200	3,872	6,316
Overall Burden (1).....	3,680	6,093	8,409	10,161	14,761
Overall Burden (2).....	3,523	6,675	9,671	11,899	17,959
New Burden (1).....	4,134	5,935	7,495	9,157	12,161
New Burden (2).....	3,841	7,021	9,848	12,398	18,124
Burden Ratio (1).....	14.7%	12.2%	11.2%	10.2%	9.8%
Burden Ratio (2).....	14.1%	13.4%	12.9%	11.9%	12.0%
Burden Ratio (3).....	16.5%	11.9%	10.0%	9.1%	8.1%
Burden Ratio (4).....	15.4%	14.0%	13.1%	12.4%	12.1%

Tax Burdens for a Family of four

GET & PSCT Burden (1).....	\$1,680	\$2,345	\$2,846	\$3,569	\$4,632
GET & PSCT Burden (2)...	1,515	2,956	4,172	5,395	7,991
Ind. Income Tax Burden	358	1,400	2,511	3,308	5,575
Overall Burden (1).....	3,444	5,985	8,297	10,374	14,683
Overall Burden (2).....	3,287	6,567	9,559	12,112	17,881
New Burden (1).....	4,221	6,166	7,697	9,463	12,214
New Burden (2).....	3,950	7,171	9,878	12,465	17,739
Burden Ratio (1).....	13.8%	12.0%	11.1%	10.4%	9.8%
Burden Ratio (2).....	13.2%	13.1%	12.8%	12.1%	11.9%
Burden Ratio (3).....	16.9%	12.3%	10.3%	9.5%	8.1%
Burden Ratio (4).....	15.8%	14.3%	13.2%	12.5%	11.8%

Notes: The rows labeled "Burden (1)" show the burdens of the GET and PSCT on current expenditures. The rows labeled "Burden (2)" show the burdens of the GET and PSCT after adjusting for the burdens on saving. "Burden Ratio (1)" is the ratio of the total burden of Hawaii's State and local taxes to income with no adjustment for the burdens on saving. "Burden Ratio (2)" is the ratio after adjusting for the burdens on saving. "Burden Ratio (3)" is the ratio after eliminating the income taxes and increasing the GET and PSCT, with no adjustment for savings. "Burden Ratio (4)" is the ratio after eliminating the income taxes and increasing the GET and PSCT, after adjusting for the burdens on savings. The burden of the Individual Income tax is measured after the recent legislative changes in the tax rules that are scheduled to take effect on January 1, 2007.

Source: Author's calculations.

Appendix

Table 1A

General Excise and Use Taxes and Income and Franchise Taxes From Fiscal Year 1972 Through Fiscal Year 2005

(In Millions of Dollars)

Fiscal Year	(A) GET and PSCT	(B) Corporation Income Taxes	(C) Individual Income Taxes	(D) Tax on Insurance Premiums	(E) Tax on Banks & Other Financial Corporations	(F) Sum: (B) Through (F)	(G) Ratio: (F)/(A)
1972	202	11.8	120	8.3	3.1	143.2	0.71
1973	229	12.9	135	9.2	3.7	160.8	0.70
1974	265	18.2	152	9.5	3.6	183.3	0.69
1975	312	31.5	169	9.9	3.3	213.7	0.69
1976	339	32.9	185	16.1	2.5	236.5	0.70
1977	372	22.7	203	13.3	4.9	243.9	0.66
1978	400	23.8	227	15.7	5.2	271.7	0.68
1979	465	32.3	265	18.5	7.6	323.4	0.70
1980	531	42.4	312	22.2	7.8	384.4	0.72
1981	599	47.0	335	24	5.8	411.8	0.69
1982	634	39.3	283	27.8	3.9	354.0	0.56
1983	667	24.5	347	26.4	-2.4	395.5	0.59
1984	699	36.4	403	26.6	0.6	466.6	0.67
1985	746	44.8	429	28.7	3.9	506.4	0.68
1986	817	39.6	467	34.6	4.9	546.1	0.67
1987	880	61.5	543	36	15.3	655.8	0.75
1988	983	66.0	626	38	12.0	742.0	0.75
1989	1,090	72.3	768	33.4	15.8	889.5	0.82
1990	1,246	74.9	695	36.9	19.9	826.7	0.66
1991	1,354	95.9	873	45.1	20.4	1,034.4	0.76
1992	1,377	43.8	907	60.4	24	1,035.2	0.75
1993	1,389	29.3	923	66.9	23.8	1,043.0	0.75
1994	1,424	39.0	963	63.7	29.4	1,095.1	0.77
1995	1,464	30.2	926	62.3	17.0	1,035.5	0.71
1996	1,536	48.4	1,000	59.2	17.1	1,124.7	0.73
1997	1,571	57.8	976	55.8	9.7	1,099.3	0.70
1998	1,545	46.2	1,084	59.4	15.5	1,205.1	0.78
1999	1,568	42.6	1,069	52.5	9.8	1,173.9	0.75
2000	1,656	68.2	1,065	68.7	7.1	1,209.0	0.73
2001	1,775	60.8	1,105	72.1	-0.3	1,237.6	0.70
2002	1,705	45.5	1,072	67.9	7.2	1,192.6	0.70
2003	1,907	8.3	1,038	73.2	22.3	1,141.8	0.60
2004	2,000	56.7	1,169	78.1	1.5	1,305.3	0.65
2005	2,245	85.6	1,381	83.1	38.5	1,588.2	0.71
Mean	1,059	44.0	653	41.0	11	749	0.71
Sum	35,994	1,493.1	22,215	1,403.5	364.4	25,476	
Variance	347,033	435	146,919	540	90	179,012	
Standard Deviation	589	21	383	23	9	423	
Ratio: St.Dev./Mean	0.56	0.48	0.59	0.56	0.88	0.56	

Source: Hawaii Department of Taxation data files and author's calculations.