Should Hawaii Tax Corporate Income?

A Cost-Benefit Analysis

Report Prepared for the 2015-2017 Hawaii Tax Review Commission

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Introduction and Summary

"It is better to be roughly right than precisely wrong."

— *John Maynard Keynes*

In this study, we examine the costs and benefits of eliminating Hawaii's corporate income tax. To avoid confusing the results with those of a general tax cut, we perform a proper public finance experiment and replace the lost corporate income tax revenue with an increase in Hawaii's general excise tax (GET) or with an increase in its individual income tax. We begin with an overview of Hawaii's corporate income tax, followed by a review of the literature. We then develop a framework for calculating the costs and benefits.

The bulk of Hawaii's corporate income tax liabilities are offset by tax credits. The tax liabilities before tax credits averaged $134 million annually in tax years 2013 to 2015, but they averaged only $40 million after tax credits. Of the $94 million in average annual tax credits claimed by the corporations, $84 million were refundable (meaning the corporation gets a check from the State if it owes less tax than the amount of its tax credits) and $10 million were nonrefundable. For our analysis, we assume that corporations would continue to claim the refundable tax credits if the corporate income tax were eliminated. The assumption is justified on the grounds that either the corporations would devise ways to continue to claim the refundable tax credits, or they would be explicitly allowed to claim the tax credits if the corporate income tax were eliminated. For example, in tax years 2013 through 2015, the film production tax credit was the biggest refundable tax credit claimed by corporations, but film producers were already exempt from Hawaii corporate income tax.

The assumption allows us to focus on the costs and benefits of the corporate income tax; without it, the calculations would need to include the costs and benefits of the main refundable

tax credits, namely the film production tax credit, the tax credit for renewable energy technologies and the tax credit that reimburses corporations for the general excise tax paid on depreciable assets.

According to our calculations, in the long run, the main benefit to residents from eliminating the corporate income tax would come from lower consumer prices. However, the calculations show that eliminating the tax would give a temporary windfall gain to nonresident shareholders (who own the great bulk of the corporate investment in Hawaii) that would come at the expense of residents. The calculations also show that more of the corporate income tax is permanently exported to nonresidents compared to the replacement taxes. An important part of the tax exporting occurs when the state tax is deducted from the federal taxable income, including the part that is exported to the federal government when the state tax is deducted from the federal taxable income. Together, the temporary income transfers to nonresident shareholders and the permanent loss in tax exporting swamp the long-run benefit to residents, so we conclude that residents would lose from eliminating Hawaii's corporate income tax.

The calculations assume that Hawaii's corporate income tax base does not contain so-called "supernormal" profits, such as windfall gains or monopoly profits. The burden of a tax on supernormal profits is borne entirely by shareholders, so eliminating the tax on them does not help attract investment to Hawaii, but just transfers income from residents to nonresident shareholders. If there are supernormal profits in Hawaii's corporate income tax base, the case for keeping Hawaii's corporate income tax is even stronger.

Allowing corporations to expense new investment (instead of requiring them to depreciate the investment over its useful life) effectively eliminates the corporate tax on normal profits from new investment, but keeps the tax on supernormal profits and on normal profits

from old investments. This means that allowing expensing encourages new investment the same as eliminating the corporate income tax, but it avoids the income transfers to nonresident shareholders, including any caused by supernormal profits. Also, with expensing, the loss in tax exporting plays a smaller role in the cost-benefit calculations. Thus, residents might benefit from allowing corporations to expense new investment.

If the federal government eliminates the deduction for state and local income taxes from federal taxable income, then tax exporting from Hawaii's corporate income tax would fall substantially and residents would definitely benefit from allowing corporations to expense new investment. The same is true if the federal corporate income tax rate is reduced substantially, say by one third or more. Whether residents would gain from eliminating the corporate income tax under these circumstances depends on how much supernormal profits are in Hawaii's corporate income tax base.

Overview of Hawaii's Corporate Income Tax

Hawaii's corporate income tax is administered under chapter 235 of the Hawaii Revised Statutes (HRS). The tax was imposed by Act I, Special Session Laws of the Territory of Hawaii, 1957.[1] Originally, the tax rate on ordinary income was set at 5 percent for income of $25,000 or less and at 5.5 percent for income over $25,000. Income eligible for capital gains under the Internal Revenue Code was taxed at 2.75 percent. Today, the tax rate on ordinary income is 4.4 percent for taxable income of $25,000 or less, 5.4 percent for taxable income greater than $25,000 but not over $100,000, and 6.4 percent for taxable income over $100,000.[2] The tax rate

[1] The proposed legislation was vetoed by the Governor on June 7, 1957, but the veto was overridden by the Legislature on the same day.

[2] The current rates of tax on ordinary income were set by Act 239, Session Laws of Hawaii, 1987. Some people might view tax equity as the reason for graduated corporate income tax rates, similar to the reason

for corporate net long-term capital gains is 4.0 percent.[3] The bulk of corporate taxable income in Hawaii is ordinary income subject to tax at the top rate (6.4 percent).[4]

Hawaii income tax law follows the federal definition of taxable corporate income fairly closely, including the federal provisions for the alternative corporation tax. To determine its share of the corporation's national taxable income, Hawaii uses the three-factor formula established by the Uniform Division of Income for Tax Purposes Act of 1957 ("UDITPA"). Under the formula, Hawaii's share of the corporation's national taxable income is measured as the average of its shares of the corporation's national property, payroll and sales, where each share has a weight of one third.

For tax year 2017, Hawaii's top statutory corporate income tax rate is lower than that in 26 states and higher than that in 18 states.[5] However, the statutory tax rate does not tell the whole story about how the corporate income tax affects investment. The effective tax rate on new investment is what matters for corporate investment decisions and this rate depends on other things besides the statutory tax rate. For example, although UDITPA's three-factor formula

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for graduated individual income tax rates, but the better argument is that the graduated corporate income tax rates promote economic efficiency. Most corporate investment comes from retained earnings and new corporate businesses usually start out small, so a lower tax rate on smaller corporations allows successful new ventures to grow faster in the early stages.

[3] The current tax rate on capital gains was established by Act 10, Session Laws of Hawaii, 1988 and applies to net capital gains taken after March 31, 1987. There is no special tax rate for capital gains in the federal corporate income tax.

[4] The average effective rate of Hawaii's corporate income tax (before tax credits) for tax years 2013 through 2015 was 6.1 percent, which includes long-term capital gains taxed at the rate of 4.0 percent (see Table 1 below). It is not clear to us why Hawaii has the special rate for corporate long-term capital gains: the federal corporate income tax has no such feature.

[5] See Federation of State Tax Administrators, "Range of State Corporate Income Tax Rates" (February 2016), available at https://www.taxadmin.org/assets/docs/Research/Rates/corp_inc.pdf.

started out as the norm among the states, it has become the minority practice as some states altered their formula to reduce the effective rate of their tax to attract corporate investment.[6] By 2012, only twelve states used equal weights for all three factors, eighteen states gave a double weight or more to sales, and thirteen states used a single factor to apportion income.[7] Currently, five states (Nevada, Ohio, South Dakota, Washington, and Wyoming) have no corporate income tax.[8]

Hawaii provides a number of generous tax credits that reduce the net corporate income tax payments. The bulk of the tax credits claimed by corporations are refundable. The biggest tax credits (by value) claimed by corporations in recent tax years are the motion picture, digital media and film production tax credit (provided by section 235-17, HRS), the renewable energy technologies tax credit (provided by section 235-12.5, HRS), and the capital goods general excise tax credit (provided by sections 235-110.7 and 241-4.5, HRS).[9] The tax credit for

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[6] An apportionment formula skewed towards sales typically will reduce the state tax for manufacturers who sell globally from a single plant, because the fraction of the corporation's total profit that is subject to the state's tax will be limited to the fraction of the total sales made within the state.

[7] See Judith Lohman, "Corporation Income Tax Apportionment Formulas," *OLR Research Report*, September 26, 2012, available at https://www.cga.ct.gov/2012/rpt/2012-R-0414.htm.

[8] See Federation of State Tax Administrators (2016) Op. cit.

[9] The film production tax credit was originally provided by Act 107, Session Laws of Hawaii 1997; later legislation increased the amount of the tax credit. The renewable energy technologies tax credit was originally provided by Act 207, Session Laws of Hawaii 2003, which was set to expire in 2008. Later legislation extended the tax credit and increased the amounts. The capital goods excise tax credit was provided by Act 239, Session Laws of Hawaii 1987. For tax years 2013 and 2014, corporate claims averaged $33 million for the film production tax credit, $28 million for the renewable energy technologies tax credit (both refundable and nonrefundable claims), and $21 million for the capital goods excise tax credit. See the Hawaii Department of Taxation's reports, "Tax Credits Claimed by Hawaii Taxpayers: Tax Year 2013" (December 2015) and "Tax Credits Claimed by Hawaii Taxpayers: Tax Year 2014" (December 2016). The reports are available at http://tax.hawaii.gov/stats/a5_4credits/. Claims by type of tax credit have not yet been published for tax year 2015.

renewable energy technologies provides an incentive to reduce consumption of non-renewable fossil fuels. The tax credit for film production is designed to attract investment in the film industry to Hawaii. The capital goods excise tax credit provides taxpayers an income tax credit in the amount of the general excise tax paid on depreciable capital assets. Besides being an efficient way to encourage investment, the capital goods excise tax credit also reduces tax pyramiding in Hawaii's general excise tax (GET). All three tax credits are refundable, although taking the renewable energy technologies tax credit in refundable form reduces the amount that can be claimed by 30 percent.

Table 1 shows the average annual Hawaii corporate income tax liabilities in tax years 2013 through 2015 for major industries. The averages over three years are shown, because the corporate income tax liabilities are "noisy," often changing substantially from one year to the next. An average of three years gives a more reliable picture of the tax. As shown in the Table, the gross corporate tax liabilities before tax credits were more than three times as great as the net liabilities after tax credits: For tax years 2013 through 2015, the gross average annual tax liability was $134 million before tax credits, but the net tax liabilities were reduced to only $40 million, owing to $10 million in nonrefundable tax credits and $84 million in refundable tax credits.[10]

[10] Our figures for net income tax liabilities of the C-corporations are much lower than the figures for net collections in the tax in Hawaii Department of Taxation, "Monthly Collection Reports." For example, the average of the net corporate income taxes in the collections reports for calendar years 2013 through 2015 was $93 million. One source of discrepancy is that our data are liabilities reported by tax year, whereas the Monthly Collection Reports show the amount of the tax received by the State in the calendar year. Another source of discrepancy is that the figures for corporate income tax collections in the Monthly Collection Reports include things besides tax payments by C-corporations, such as the withholding payments on sales of real property and other payments made by S-corporations and by partnerships on behalf of their members. The Monthly Collection Reports are available at http://tax.hawaii.gov/stats/a5_3txcolrptarchive/.

Judging by taxable profits, Hawaii's corporate income tax is most important for the Retail Trade industry, followed by the Manufacturing, Real Estate Rentals, Management Services, and Accommodations and Food Services industries. The tax liabilities as a percent of taxable income varied from a low of 5.1 percent to a high of 6.4 percent among the industries, whereas the tax liabilities after tax credits varied from a low of -35.5 percent to a high of 5.9 percent. The lowest average tax rate after tax credits belonged to the Information industry (which contains the Motion Picture industry)[11] and the highest belonged to the Education Services industry, although the latter industry had little in the way of corporate taxable profits.[12] Economists generally regard uneven tax rates among industries as undesirable, because it causes resources to be allocated less efficiently.

Review of the Literature

Who bears the burden of the corporate income tax? The theory

"Taxes are paid in the sweat of every man who labors"

— Franklin D. Roosevelt

Only people can suffer the burden of a tax, and it is seldom easy to determine who truly bears the burden of any particular tax. Knowing who pays the tax to the government doesn't answer the question, because the distribution of the tax burden is determined by supply and demand curves, which are unobservable theoretical constructs. It comes as no surprise, then, that

[11] The Information industry also contains Newspaper Publishers, Book Publishers, Periodic Publishers, Software Publishers, Sound Recording, Radio Broadcasting, Television Broadcasting (including cable), Telecommunications, Data Processing, News Syndicates and Internet Publishing.

[12] Hawaii conforms to the federal corporate income tax provisions that allow a real estate investment trust (REIT) to subtract dividends paid to shareholders when determining its taxable income. As a result, REIT's operating in Hawaii pay little in Hawaii corporate income tax.

although economists have long been studying the question of who bears the burden of the corporate income tax, the question has not been settled beyond dispute, nor are the economists' answers widely accepted by the public.

Seminal work on the distribution of the corporate income tax burden was done by Arnold Harberger at the University of Chicago in the early 1960's.[13] Harberger studied the effects of the tax in a closed economy (one with little cross-border investment) and concluded that in the long run, the burden of the tax was borne mainly by shareholders. However, he later concluded that in an open economy (an economy with substantial cross-border investment) the burden of the tax is eventually shifted to workers and other local factors of production, or to local consumers.[14] The reason is that corporate investors care only about the after-tax profit on their investments and can choose from an array of global investment opportunities. So if a country or other taxing jurisdiction raises its tax on corporate income, then corporate investors will require just that much more in pretax profits to compensate for the tax increase. That is the mechanism by which corporate shareholders avoid the burden of the tax.

Indeed, Harberger showed that the total loss in wages to all workers in the economy can be a multiple of the corporate tax burden. He posited an open economy in which much of the total corporate investment was in manufacturing and in which cross-border competition prevented the corporations from passing any of the corporate income tax on to consumers. The manufacturing production used only capital and labor, so workers in the industry bore the full

[13] Arnold C. Harberger, "The Incidence of the Corporation Income Tax," *Journal of Political Economy*, Volume 70 (June 1962), at 215-240.

[14] Arnold C. Harberger, "Corporation Tax Incidence: Reflections on What Is Known, Unknown, and Unknowable," paper prepared for a conference, in John W. Diamond and Geroge R. Zodrow, eds., *Fundamental Tax Reform: Issues, Choices, and Implications* (Cambridge, Mass.: MIT Press, 2006).

burden of the corporate income tax in the form of reduced wages. The effect on wages in manufacturing was transmitted to workers in other industries through the labor market, so all workers suffered the same wage reduction. Because workers in manufacturing accounted for only a fraction of total wages in the hypothetical economy, the collective loss in wages was a multiple of the income tax paid by the manufacturing corporations.[15]

Roger Gordon showed that in an open economy, workers and other local production factors bear the full burden of the corporate income tax.[16] He concluded that it would be better to tax the local factor incomes directly, instead of indirectly with the corporate income tax, because then the economy would have more investment, and wages and other local factor incomes would be higher.[17] That is, the tax change would produce the same tax revenue but impose a smaller total tax burden on the economy.

Roger Gordon and Lans Bovenberg point out that exchange rate uncertainty, differences in law, and differences in language and culture can handicap foreign investors and inhibit the tendency for international investment flows to equalize the after-tax rates of return among

[15] Harberger (2006, Op. cit.) ignored the efficiency losses from the tax and assumed that its total burden was equal to the corporate income taxes paid, so any extra losses to labor had to be made up by gains for other factors of production..

[16] See Roger Gordon, "Taxation of Investment and Savings in a World Economy," *American Economic Review* (December 1986), at 1086-1102. If a country is not small relative to the rest of the world, its corporate income tax could depress the after-tax returns on investment world-wide, in which case corporate shareholders world-wide would bear a part of the burden of the tax. In Gordon's analysis, the price of corporate output is fixed by international competition, so none of the burden of the corporate income tax is passed forward to consumers in the form of higher prices.

[17] Harberger (1962 and 2006, Op. cit.) ignored the economic efficiency losses imposed by the corporate income tax, so the tax burdens borne by various economic actors add up to the amount of the tax in his calculations. Gordon (1986, Op. cit.) includes the economic efficiency losses, so the total tax burden is bigger than the amount of the tax in his calculations.

countries.[18] None of these things act to inhibit investment flows within the United States, though, so the economic model for the small open country seems apt for an individual state. However, as we shall see, some adjustments are needed before we can apply the analysis to Hawaii or to any other U.S. state.

More recently, researchers have taken into account so-called "supernormal" profits when distributing the burden of the corporate income tax. The notion is that a tax on the supernormal profits is borne by the investor, on the assumption that the returns must be made subject to the tax in order to be earned.[19] Supernormal profits have become a bigger part of total corporate earnings in a world where the importance of physical capital is waning and the importance of intangible property rights is growing, with companies like Apple and Google dominating equity values. There is some question, however, about how much supernormal profits are subject to corporate income tax, even on the national level, because income earned from intangible property rights is particularly susceptible to being located abroad in low-tax jurisdictions through transfer pricing.[20] Also, investors may be able to garner the supernormal profits in a state without putting much of the profits in the state's taxing jurisdiction.

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[18] See Roger Gordon and Lans Bovenberg, "Why Is Capital So Immobile Internationally? Possible Explanations and Implications for Capital Income Taxation," *American Economic Review* (December 1996), at 1057-1075.

[19] See Julie Anne Cronin, Emily Y. Lin, Laura Power, and Michael Cooper, "Distributing the Corporate Income Tax: Revised U.S. Treasury Methodology," *National Tax Journal*, March 2013, at 239-262.

[20] Corporations can do this by using transfer prices to source profits offshore in low-tax jurisdictions, where it escapes U.S. tax until it is repatriated, or by "inverting" so that the parent company is domiciled abroad. Profits from valuable intellectual property rights are especially subject to relocation. For early research on the topic, see Donald J. Rousslang, "International Income Shifting by U.S. Multinational Corporations," *Applied Economics* (March 1997), at 925-934. In 2011, the top 20 of the Fortune 500 companies reported almost $800 billion in non-repatriated foreign income. See, for example, Citizens for Tax Justice, "Which Fortune 500 Companies Are Sheltering Income in Overseas Tax Havens? Ten

Who bears the burden of the corporate income tax? The empirical evidence

A number of authors have tried to determine empirically who bears the burden of a corporate income tax. Kevin Hassett and Arpana Mathur used international comparisons to see how a corporate income tax affects wages in the local economy.[21] They found that an increase in a country's corporate income tax leads to a drop in wages of local workers of about the same percent as the increase in the tax rate. R. Alicia Felix used a similar method and came to a similar conclusion.[22] Jennifer Gravelle noted that in both studies the results implied a wage loss that is a multiple of the corporate income tax burden.[23] Harberger explained how this can happen,[24] but the international evidence on the effects of corporate investment on wages has been strongly criticized by Kimberly Clausing.[25] Clausing argues convincingly that after adjusting for various shortcomings in the previous studies, there is no robust evidence to support the view that international corporate investments influence wages in the host country.

Corporations Admit Paying Little Tax on Offshore Income; More Likely Do the Same," October 17, 2012, available at http://ctj.org/pdf/offshoreincome.pdf and Huffington Post, Business, "Apple is Paying Almost No Taxes on the $102 Billion It Has Stashed Offshore: Report," May 20, 2013, available at http://www.huffingtonpost.com/2013/05/20/apple-offshore-taxes_n_3307591.html.

[21] Kevin A. Hasset and Aparna Mathur, "Taxes and Wages," Working Paper 128, American Enterprise Institute (June 2006).

[22] R. Allison Felix, "Passing the Burden, Corporate Tax Incidence in Open Economies, Working Paper 07-01, Federal Reserve Bank of Kansas City (October 2007).

[23] Jennifer C. Gravelle, "Corporate Tax Incidence: A Review of Empirical Estimates and Analysis," Working Paper 2011-01, Congressional Budget Office (June 2011).

[24] Harberger (2006), Op. cit.

[25] Kimberly Clausing, "Who Pays the Corporate Income Tax in a Global Economy?" *National Tax Journal* (March 2013) at 151-184.

Felix also examined the effect of a state corporate income tax and found that it reduced local wages by as much as 360 percent of the state's corporate income tax collections.[26] Using a similar method, Robert Carroll estimated that an increase in a state's corporate income tax would reduce local wages by 250 percent of the increase in the corporate income tax collections.[27] Gordon and Bovenberg provide reasons why international corporate investments might fail to bring the results predicted by the theory,[28] but as noted above, the reasons do not apply to investment flows among U.S. states. Therefore, the failure of empirical work to find an effect of corporate investment on wages among countries does not imply a similar failure in the research on the effect of corporate investment on wages among states.

Determining the Costs and Benefits of Hawaii's Corporate Income Tax: Some Things That Need to be Added to the Conventional Analysis

We adopt a parochial view in that all that matters to us is the economic welfare of Hawaii residents.[29] We assume that other states and the federal government ignore any actions taken by Hawaii's tax authorities. We consider experiments in which Hawaii's corporate income tax is replaced with an increase in its individual income tax or in the GET, with no change in tax revenues, in public spending, or in the government budget. We adopt the following assumptions

[26] R. Alicia Felix, "Do State Corporate Income Taxes Reduce Wages," *Economic Review*, Federal Reserve Bank of Kansas City, volume 94, number 2, 2009.

[27] Robert Carroll, "Corporate Taxes and Wages: Evidence from the 50 States," Working Paper No. 8, Tax Foundation (August 2009).

[28] Gordon and Bovenberg (1996), Op. cit.

[29] We define residents as those eligible to vote in the state's elections and their dependents.

to simplify and make feasible the task of evaluating the costs and benefits of Hawaii's corporate income tax:

1. Corporate income subject to Hawaii tax consists of the normal rate of return on the corporate investments and the supply of corporate investment to Hawaii is determined by the after-tax rate of return available to the corporate investors on a global array of investment opportunities.
2. The great bulk of corporate investment in Hawaii is owned by nonresident shareholders.
3. In Hawaii's traded goods industries (agriculture and manufacturing), the price of the corporate output is fixed by competition from cross-border trade.
4. For the non-traded goods industries and the services industries, Hawaii's corporate income tax burden (net of the federal tax offset) is fully passed forward to consumers in the form of higher prices.
5. Hawaii's refundable tax credits that are claimed by corporations will continue to be claimed if Hawaii eliminates its corporate income tax.
6. Other tax and non-tax distortions in Hawaii's economy (besides federal income taxes) can safely be ignored when assessing the costs and benefits of Hawaii's corporate income tax.

Assumption 1 says that corporate investment in Hawaii occurs under competitive conditions and the corporate investments are allocated to equalize the rates of return in their alternative occupations. The notion is a basic principle of economics, yet some assert that taxes have little effect on investment decisions and support their view with cites to business surveys that ask what matters most for investment decisions. Economists, though, are not surprised to learn that businesses use sophisticated software to take account of state income taxes when deciding where to locate a new facility or where to hire more workers.[30]

[30] See William F. Fox and LeAnn Luna, "State Corporate Tax Revenue Trends: Causes and Possible Solutions," *National Tax Journal* (September 2002), at 501. As an example of how taxes can affect investment, in 1701 Peter the Great gave owners of a Dutch ship the privilege of paying no Russian custom duties on its cargo for the rest of the ship's life. The ship was kept in service for almost a century, three or four times the normal span. (See Fernand Braudel *The Wheels of Commerce*. Berkeley: University of California Press, 1992, at 241.) Harberger (1962, Op. cit., at 217) argued that if an objection to the assumption that capital markets work to equalize rates of return among investment opportunities "is

The burden of a corporate income tax on supernormal profits is borne primarily by corporate shareholders,[31] but corporations with important intangible property, such as a valuable trade name or a patented product that provides supernormal profits might be able to organize their operations to avoid exposing much of the profits to Hawaii's taxing jurisdiction. In fact, as we have already noted, they are often able to escape the U.S. corporate tax on such profits.

We used assumption 1 for the calculations, because we have no reliable estimates of the amount of supernormal profits in Hawaii's corporate income tax base. Estimates of supernormal profits at the national level have ranged from 60 percent to 70 percent of the total corporate profits.[32] If a similar range applied for investment in Hawaii, then the bulk of the burden of the state's corporate income tax would be borne by shareholders. We are skeptical of this result. We reviewed the data on Hawaii's corporate income tax liabilities and found that companies paying the tax look pretty much like companies that were doing business in the 1960's, when Harberger first examined the question.

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based on the idea that the capital market might not be very adept at seeking the best available net return on their invested funds, I believe it must be rejected for the United States, for in the United States the capital market is obviously highly organized, and the bulk of the funds involved are commanded by able and knowledgeable people." Note that the investment returns that we assume are equalized are after allowances for risk premiums.

[31] See Joint Committee on Taxation, "Modeling the Distribution of Taxes on Business Income," JCX-14-13 (October 2013) available at http://www.actontaxreform.com/wp-content/uploads/2013/10/JCT-Report-10-16-13.pdf.

[32] See Cronin, et al. (2013, Op. cit.) and the references they cite. We note that corporate after tax profits are much more important for the national economy than for Hawaii. For example, in 2014, corporate profits after tax were about 10 percent of U.S. gross domestic product (GDP). (See https://ycharts.com/indicators/corporate_profits_usgdp). But pretax profits in Hawaii in 2014 were only about $2.2 billion (based on our data), so after-tax profits were about $1.5 billion. This is less than 2 percent of the state's GDP in 2014 ($76.8 billion) (see http://dbedt.hawaii.gov/economic/datawarehouse/).

For any state the great bulk of corporate shareholders will be nonresidents, so a tax borne primarily by shareholders would be an excellent opportunity to export the state's tax burden. Also, a tax on supernormal profits would not discourage local investment. That states have not been more aggressive in taxing corporate profits implies to us either that they have not found it easy to tax the supernormal profits, or that such profits are not a big part of the corporate income tax bases of the states.

Assumption 2 is an approximation. Corporate shares are traded on central exchanges and the bulk of the shares by value are in corporations with assets spread across the globe.[33] Typically only a small part of the total investment returns in a resident's portfolio would be subject to Hawaii's corporate income tax. A reasonable guess would be that resident shareholders receive one half of one percent of the income subject to Hawaii corporate income tax, which is Hawaii's share of the national economy. Some businesses that grew from local roots are likely to have greater resident ownership, but even if we use a figure of five percent for local ownership, it would be a small portion of the total.[34]

[33] The corporate income tax was once widely regarded as being a tax on the privilege of having limited liability for shareholders, who could never be held to account for more than the money they invested in the corporate shares. However, innovations in ways to achieve limited liability without incurring the corporate income tax grew to the point where now the tax applies almost exclusively to publicly traded companies.

[34] For example, Hawaii's Department of Business, Economic Development and Tourism (DBEDT) conducted an in-depth survey of REIT ownership in Hawaii. The survey results indicated that between 0.5 percent and 3.0 percent of residents had investments in REIT's that owned property in Hawaii. See DBEDT, Economic Research and Analysis Division, "Real Estate Investment Trusts in Hawaii: An Analysis and Survey of Results" (September 2016), available at http://files.hawaii.gov/dbedt/economic/data_reports/REIT_Final_9.19.16.pdf.

Assumptions 3 and 4 are also approximations. As noted earlier, Hawaii's corporate sector is a small part of the economy, so it is reasonable to presume that wages and other local factor returns are set by the rest of the economy.

Assumption 5 is justified on two main grounds. First, corporations could devise ways to continue claiming the refundable tax credits if Hawaii's corporate income tax were eliminated, for example by creating single-member entities to claim the tax credits. Secondly, there is good reason to believe that measures would be taken to allow corporations to claim most of the refundable tax credits if the corporate income tax were eliminated. For example, corporations engaged in film production that claim the refundable film production tax credit are already exempted from the corporate income tax by section 235-9, HRS. The capital goods excise tax credit is good tax policy, regardless of the income tax liability of the business, because it alleviates pyramiding in the GET. That the refundable tax credits require no tax liability to be claimed is itself an indication that the purpose of the tax credits goes beyond alleviating the income tax of the business.

To cover the case where the refundable tax credits are lost along with the corporate income tax, we would need to expand the scope of the study to examine the costs and benefits of the tax credits themselves. Even the analysis of the capital goods excise tax credit, which has an effect similar to a change in the corporate income tax rate, would need to be expanded to include the effects of anti-pyramiding relief in the GET.

With assumption 5, any consequences of the refundable tax credits would continue if the state's corporate income tax were gone, with the main difference being that the refundable tax credits would be taxed directly by the federal government, instead of indirectly through the

reduced deduction for the state's income tax. The assumption increases the net corporate income tax payments that would be lost and therefore the amount that needs to be raised from the replacement tax. Because the refundable tax credits are so big compared to the corporate income tax payments, without assumption 5 the effects of the refundable tax credits would dominate the cost-benefit calculations. Another way to look at our exercise is that it examines the costs and benefits of Hawaii's corporate income tax if the refundable tax credits were not present.

Assumption 6 is needed, because without it we could make no progress in our inquiry. As an example, although Hawaii's GET is a model for other states, it pyramids on itself, because it applies to many business-to-business sales, sometimes at the retail rate. There are many distortions in the state's tax code and accounting for their effects is simply beyond the scope of our exercise. However, as far as we can determine, none of them would cause a serious misstatement in our calculations.

Who pays Hawaii's corporate income tax?

Hawaii's corporate income tax is deductible from the federal taxable income, so an important part of the burden of the tax is exported to the federal government in the form of reduced federal income tax payments. In essence, the federal government pays part of Hawaii's corporate income tax.

Workers bear part of the tax burden, because the tax reduces the incentive to invest in Hawaii, which in turn reduces the demand for workers and depresses wages, in both the corporate and non-corporate sectors. As pointed out earlier, the loss in wages can be a multiple of the corporate income tax burden. However, for Hawaii's economy the bulk of corporate investment is in non-traded goods industries and in services industries. In Harberger's model,

wages of workers in these industries would decline by the same amount as in the traded goods industries,[35] but we find the result improbable for Hawaii, because the traded goods industries account for such a small share (less than 4 percent) of private sector wages in Hawaii.[36] Instead, we assume that the entire burden of the corporate income tax in the non-traded goods industries and in the services industries is passed on to consumers in the form of higher prices.[37]

Hawaii has monopoly power in the markets for some of its output; a Hawaii vacation is a unique product and Hawaii's strategic location has attracted a big U.S. military presence. Thus, some of the burden of the corporate income tax in the non-traded goods industries and in the services industries is exported in the form of higher prices on sales to tourists, to nonresident military personnel, and to the federal government in its role as a consumer of goods and services in Hawaii.[38]

Under our assumptions, shareholders don't suffer any of the burden of Hawaii's corporate income tax in the long run, but in the short run, corporations won't raise wages or lower prices in

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[35] Harberger (2006), Op. cit.

[36] In 2014 (the midpoint of our data period) wages in manufacturing and agriculture in Hawaii were $790 million, whereas total wages in Hawaii (excluding government) were $21.5 billion. (Data on wages are from the Hawaii Department of Labor and Industrial Relations, at https://www.hiwi.org/gsipub/index.asp?docid=420. Wage data by industry for 2015 were not available at time of writing.)

[37] Part of the tax burden in these industries is probably borne by the shareholders and part is probably borne by workers and by owners of other local production factors, and this can happen even if the corporate income tax raises output prices by exactly the amount of the tax per unit of corporate output. (Harberger, 1962, Op. cit., provides a good explanation for why this is true.) The assumption is meant to provide a reasonable approximation.

[38] Technically, sales to nonresidents are exports, even when made within Hawaii. However, we use the terms "traded" and "non-traded" to distinguish between sales of outputs that are, and that are not, subject to price arbitrage by strong cross-border competition.

their Hawaii operations until forced to do so, either by new competitors attracted by the tax cut, or by expanded investments of existing competitors. The immediate effect of eliminating Hawaii's corporate income tax, then, is to transfer income from residents to the nonresident shareholders. In the long run, as corporate investment responds to the tax change, the income transfers to the shareholders decline and eventually disappear, leaving a permanent income gain to Hawaii's residents. So eliminating Hawaii's corporate income tax on the normal profits can be viewed as an investment in the local economy for the long-run gains. The question is whether it is a good investment, that is, if the long-run gains merit the short-run costs.[39]

The burden of the corporate income tax on any supernormal profits is borne entirely by the shareholders in the long run as well as in the short run. Eliminating the tax on supernormal profits does nothing to encourage investment in Hawaii and simply transfers income from residents to the nonresident shareholders.

The corporate income tax is considered by some people to be a progressive income tax, because wealthy individuals own a disproportionate share of the total value of corporate shares. However, our analysis implies that Hawaii's tax is probably regressive for its residents, because it is borne mainly by consumers in the form of higher prices, as is the burden of the GET. The income transfers to shareholders that would happen if the corporate income tax were eliminated would not have much effect on income distribution among Hawaii residents, because the shares are owned mainly by nonresidents.

Measuring the Costs and Benefits of Hawaii's Corporate Income Tax

[39] The temporary income transfer to shareholders is less important in the national debate over whether the United States should keep the federal corporate income tax, because the shareholders are mostly U.S. residents. There, the main issue is the effect on income distribution.

Calculating the distribution of Hawaii's corporate income tax burden

We begin by calculating the federal tax offset for Hawaii's corporate income tax, which is the amount of Hawaii's corporate income tax multiplied by the marginal effective rate of the federal corporate income tax, that is, the rate of federal income tax that applies to an additional dollar of corporate earnings in Hawaii. For various reasons, the marginal effective federal corporate income tax rate can be lower than the statutory tax rate of 35 percent: It has been estimated to lie somewhere between 23 percent and 35 percent.[40] For our calculations, we assume it is 29 percent, the average of the above range. The net loss in federal income tax deductions is calculated as the amount of Hawaii corporate income tax after subtracting the nonrefundable tax credits, but before subtracting the refundable tax credits.[41] According to the data in Table 1, this amount is $124 million, so the federal tax offset would be $36 million (= $124 million X 0.29).

To calculate the amount of Hawaii's corporate income tax that is exported to nonresidents in the form of higher prices, we first subtract the federal tax offset for Hawaii's corporate income tax and then allocate the remaining burden between resident and non-resident consumers. We measure the share exported to nonresidents in each industry as the share of the non-resident consumption in total final demand for the industry's output. We assume that a portion (one-third)

[40] See Laurence Kotlikoff, "Abolish the Corporate Income Tax," The New York Times, The Opinion Pages, January 5, 2014, available at https://www.nytimes.com/2014/01/06/opinion/abolsih-the-coporate - income-tax.html. The average rate of the federal corporate income tax is only about 13 percent.

[41] The calculation assumes that the nonrefundable tax credits reduce the burden of the corporate income tax dollar for dollar, which, as explained in the technical appendix, may overstate the effect on the output prices. Also, the renewable energy technologies income tax credit accounts for the bulk of the nonrefundable tax credits claimed by corporations and it is possible that some of the credits would continue to be claimed in refundable form if the corporate income tax were eliminated.

of the increase in prices paid by tourists was shifted back to domestic residents, because tourists can respond to a higher price of a Hawaii vacation by going elsewhere, and so are able to escape some of the tax burden.[42] None of the burden of the tax in the traded goods industries is shifted to consumers, because we assume that the output prices are fixed by cross-border competition.

Our results are shown in Table 2. We calculate that in the period from 2013 through 2015, about $10 million of Hawaii's corporate income tax was exported annually to nonresident consumers in the form of higher prices. Adding $36 million for the federal tax offset, we estimate that about $46 million of the tax was exported annually, which is about 37 percent of the tax (= $46 million/$124 million X 100).

More sophisticated calculations would account for the effect of the corporate income tax on the cost of capital in the industry and would include input-output effects to capture pyramiding of the price effects.[43] Such calculations might show a different pattern of tax incidence, but would not change the size of the overall tax burden, nor can we discover any clear reason why they should yield a higher or lower estimate for the share of Hawaii's corporate income tax that is exported to nonresidents.[44]

Other elements of the cost-benefit calculations

[42] The estimate for the amount of a tax that is shifted back to Hawaii residents is taken from a study by Edwin Fujii, Mohammed Khaled, and James Mak, "The Exportability of Hotel Occupancy and Other Tourist Taxes," *National Tax Journal* (June 1985), at 169-77.

[43] For an example of such calculations, see Donald J. Rousslang, "The Effects of Recent Corporate Tax Changes on U.S. International Trade," *National Tax Journal* (December 1987), at 603-615. Note, however, that it would be a mistake simply to apply input-output analysis to get a total effect on prices, including tax pyramiding, because this would allocate an amount that is a multiple of the total corporate income tax burden.

[44] For the purposes of the burden distribution calculations, we ignore the net welfare gains or losses from the tax, on grounds that such values generally are small.

We examine the costs and benefits of replacing Hawaii's corporate income tax with an increase in either its individual income tax or in the GET. An increase in the GET is probably the more appropriate alternative, because the burden of the corporate income tax, like that of the GET, probably is borne mostly by consumers in the form of higher prices for the corporate output. However, we consider both alternatives, because an increase in the GET seems harder to accomplish.[45] Either alternative would be at a disadvantage in the public debate, because much f the true burden of the corporate income tax is hidden, whether it is borne by workers in the form of lower wages or by consumers in the form of higher prices, whereas the burdens of the individual income tax and of the GET are highly visible.

Using the Hawaii individual income tax liabilities and federal tax paid be residents for tax year 2014, we estimate that the federal offset for the resident individual income taxes was about 28 percent and that an additional 6 percent of the tax was paid by nonresidents, so the total amount of the tax that was exported was about 32 percent (= 28 percent X 0.94 + .06). This implies that the tax exporting for $124 million in additional collections of the tax would be about $40 million (= 32 percent of $124 million), assuming the tax was increased in proportion to

[45] Since 1966, the rate of the GET has stayed at 4 percent, whereas the brackets or rates of Hawaii's individual income tax have been adjusted numerous times. Get collections at the retail rate averaged about $2.71 billion for fiscal years 2014 and 2015, so adding $124 million to the GET collections would require an increase in the retail rate from 4.00 percent to about 4.18 percent. There is no practical reason why the rate of the GET tax could not be increased by such a small percentage. As currently applied, merchants regularly pass along the tax to the consumer, which means the seller charges an odd tax amount, because the tax passed forward becomes part of the sellers taxable gross receipts. This requires solving an infinite series to calculate the tax, which merchants accomplish regularly with no apparent difficulty, charging 4.166 percent for purchases on the neighbor islands (where the statutory rate is 4 percent on retail sales) and charging 4.712 percent for purchases on Oahu (where the statutory rate on retail sales is 4.5 percent). Thus, the public already deals with a tax rate that, when expressed as a percent, has three places after the decimal point.

current rates.[46] Thus, we estimate that replacing the corporate income tax with an increase in the individual income tax would result in an annual loss in tax exporting of about $6 million (= $46 million - $40 million).

A study done for the 2005-2007 Tax Review Commission estimated that about 38 percent of the burden of the GET is exported to nonresidents in the form of higher prices and a study done for the 1989 Tax Review Commission estimated that about 32 percent of the GET is exported.[47] Using the midpoint of the estimates (35 percent) yields an estimated $43 million in tax exporting if the GET is the replacement tax (= 35 percent of $124 million). Thus, we estimate that replacing the corporate income tax with an increase in the GET would result in an annual loss in tax exporting of $3 million (= $46 million - $43 million).

The long-run gain to Hawaii's residents includes the increase in wages of workers, the increase in payments to other immobile production factors (mainly property rents), and the reduction in consumer prices caused by the extra corporate investment. As explained in the Technical Appendix, the annual amount of the long-run gain can be approximated as one half of the percent response of corporate investment to a change in the tax rate, times the square of the effective rate of Hawaii tax after the federal offset, and times the amount of the Hawaii corporate profits before tax. For the long-run percent increase in corporate investment, we rely on

[46] $124 million is about 6.6 percent as great as the average annual collections of the individual income tax over the period from 2013 to 2015. See Hawaii Department of Taxation, "Monthly Collection Reports," Op. cit.

[47] See Tax Research and Planning Office, "Study on the Progressive or Regressive Nature of Hawaii's Taxes," Report of the 2005-2007 Tax Review Commission, Appendix D, December 2006, available at http://files.hawaii.gov/tax/stats/trc/docs2007/Final_Report-Appendix_H.pdf., Op. cit., and Walter Miklius, James Moncur and PingSun Leung, "Distribution of State and Local Tax Burden By Income Class," Report of the 1989 Tax Review Commission: Working Papers and Consultant Studies, available at http://files.hawaii.gov/tax/stats/trc/docs1989/TRC_Work_Papers_and_Consultant_Studies_1989.PDF.

estimates that have been made for the response of investments at the national level. The estimates imply that the percent increase in investment will be half as great, or as great, as the effective rate of Hawaii's corporate income tax on new investments.[48]

We used an effective tax rate on new corporate investment of 4.5 percent, which is Hawaii's statutory corporate income tax rate of 6.4 percent reduced by a federal tax offset of 29 percent. This means that eliminating the tax would increase the expected after-tax returns by 4.5 percent, which we assume will cause the new equilibrium stock of corporate capital in Hawaii to grow by 2.3 percent to 4.5 percent. Using the midpoint of the range gives us a long-run annual welfare gain of about $2 million.[49]

The last element in the calculations is the short-run income transfers to the nonresident corporate shareholders. We consider two scenarios. In the first scenario, it takes corporate investment stocks six years to reach the new equilibrium. In the second scenario, it takes only four years to reach the new equilibrium. In both scenarios, we assume the movement between the two equilibriums takes place in equal steps, with the same increase in investment in each year.[50]

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[48] The investment response is taken from the survey by Kevin A. Hassett and R. Glenn Hubbard, "Tax Policy and Business Investment," in *Handbook of Public Economics*, Volume 3 (January 2002) edited by Alan J. Auerbach and Martin Feldstein, at 1325. The authors conclude that the "consensus" elasticity of capital with respect to the after-tax return is between -0.5 and 1.0. The national estimate seems appropriate for Hawaii, although it might understate the response in states where corporate outputs face strong competition from cross-border trade.

[49] See the calculation in the Technical Appendix. We get an almost identical result if we perform similar industry-by-industry calculations using the effective tax rates before tax credits and the gross corporate tax liabilities before tax credits.

[50] Although the incentive to invest is greater early on, before investment flows bring the returns closer to the new long run equilibrium, there are lags in implementing new investments.

Because the various costs and benefits come at different times, they must be discounted to the present so we can compare them. Because the projections are not subject to inflation, the real (inflation-adjusted) discount rate is appropriate. We chose 2 percent, which is at or above the consensus estimate.[51]

Our results are shown in Tables 3 and 4. Table 3 shows the results for scenario 1 (six-year adjustment) and Table 4 shows the results for scenario 2 (four-year adjustment). In both scenarios, the income transfers to nonresident shareholders decline and the income to residents rises as investment grows in response to the drop in corporate taxes.[52] The income transfers to nonresident shareholders go to zero when the new equilibrium is reached, but the annual income gains to residents continue at the level of the new equilibrium. The annual gain or loss from tax exporting continues at the same rate throughout the adjustment period and beyond.

The calculations imply that replacing the corporate income tax with an increase in the GET or in the individual income tax produces a net loss for residents in both scenarios, but the loss is smaller if the GET is the replacement tax. The difference between the results in Tables 3 and 4 shows that the speed of adjustment of corporate investments is important in determining the net cost or benefit to residents, but we are unable to offer much in the way of hard evidence on this variable. Clearly, the speed will vary by industry. For example, industries that use mobile equipment can accommodate an increase in desired output in Hawaii fairly quickly. Even output that requires investments in fixed assets can be adjusted at the margin, for example, by buying or

[51] See James D. Hamilton, Ethan S. Harris, Jan Hatzius, and Kenneth D. West, "The Equilibrium Real Funds Rate: Past, Present and Future," February 27, 2017, available at http://econweb.ucsd.edu/~jhamilto/USMPF_2015.pdf.

[52] See the analysis in the technical appendix.

renting existing buildings and converting them to new use, or by remodeling, or by spending more on maintenance. Only a small adjustment in the stock of corporate investments is contemplated (2.3 percent to 4.5 percent) to reach the new equilibrium, so a lengthy adjustment lag seems unlikely.

Overall, two factors dominate the calculations: the change in tax exporting and the size of the income transfers to nonresident shareholders. Neither factor can be measured with precision. The net gain from greater investment is small, but this result was expected, as the net welfare effects of taxes (the 'triangles' described in the technical appendix) are seldom big when compared to the tax revenues.[53] Of the variables used in the calculations, the most reliable estimates are probably those for the federal tax offsets for the individual and corporate income taxes, but the estimate for the individual income tax depends on the way that the tax rates are increased. For example, if the individual income tax is raised in such a way that taxpayers in the higher income tax brackets pay a greater share of the tax increase than the share they pay of the current tax, then tax exporting from the individual income tax will be higher than the estimate we used.

Our calculations give only rough estimates for the overall economy, but an attempt to refine them is probably not warranted by the current state of art. The estimates for the long-run income gains are especially subject to error, but they are not a dominant part of the calculations. Note that the estimates do not include a calculation of jobs created by the tax change. As explained in the Technical Appendix, such calculations are out of place in a cost-benefit analysis for secular changes in taxes, including tax credits that target selected industries. However, the

[53] For example, in his work on the distribution of the corporate income tax burden, Harberger (1962, Op. cit.) ignored the net welfare effects as being of only second order in importance.

calculations account for any wage gains for local workers, including both the gains from higher wages and from greater employment.

If corporate profits subject to Hawaii's corporate income tax contain a substantial amount of supernormal profits then, when combined with the federal offset, tax exporting from the state's corporate income would be huge. For example, if 60 percent of the taxable corporate profits were supernormal (as has been estimated at the national level), then 72 percent of the state's tax would be exported.[54] In this case, setting the state's corporate income tax rates to zero would produce large and permanent income transfers from residents to nonresident shareholders with little in the way of benefits to residents from greater corporate investments.

The calculations do not account for supernormal profits. However, even if supernormal profits are an important part of Hawaii's corporate tax base, the calculations can still be used to assess the costs and benefits of allowing new corporate investments to be expensed, instead of requiring the company to depreciate the investment over its useful life. Expensing of new corporate investments eliminates the tax on normal profits from new corporate investment, but leaves in place the tax on existing investments and on any supernormal profits received by the corporations.[55] It also avoids the income transfers to nonresident shareholders that would come

[54] Ignoring both resident shareholders and the amount of the remaining tax burden exported to nonresidents in the form of higher prices, the tax exporting is calculated as follows. We have used the figure of 29 percent as the federal offset of the corporate income tax, leaving 71 percent of the state's tax to be distributed between shareholders on the one hand, and local factors of production and local consumers. If supernormal profits were 60 percent of the total, then shareholders would bear 43 percent of the net tax burden after the federal offset (= 71 percent X 60 percent). Adding the federal offset of 29 percent yields 72 percent as the amount of the tax exported.

[55] For explanations of how expensing affects corporate investment, see Joseph J. Cordes, "Expensing" in *The Encyclopedia of Taxation and Tax Policy* (1999 Urban Institute Press), edited by Joseph J. Cordes, Robert D. Ebel and Jane Gravelle, available at http://webarchive.urban.org/publications/1000528.html, and Gavin Eakins, Full Expensing is the Federal Government's Best Investment in the U.S. Economy"

from eliminating the corporate income tax. The main adjustments needed to apply the calculations to the case where there are supernormal profits and where expensing is allowed are to reduce the amount of corporate investment that will respond to the tax cuts (because only the investment producing normal returns will respond) and to reduce the amount of corporate income tax revenue that must be replaced (because the tax is kept on supernormal profits and on the returns to old investments). The adjustments shrink the importance of tax exporting relative to the long run gains to residents from greater corporate investment, so they can cause the calculations to show a net gain to residents.[56]

Designing an Efficient Tax Structure for the Future

Investment decisions are based on the anticipated after-tax rate of return, so they depend on what investors believe the tax rates will be in the future. This means that announcing a cut in the corporate income tax beforehand could reduce the income transfers to nonresident shareholders. However, a better way to avoid the income transfers is to eliminate the corporate income tax only on new investments. A numbers of states tried to attract new investments using discretionary negotiated concession packages that include such things as investment tax credits,

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Tax Foundation, Janaury 9, 2017, available at https://taxfoundation.org/full-expensing-federal-government-s-best-investment-us-economy/.

[56] For example, if supernormal profits are half of the total, then the measure of corporate investment that will respond to the tax cut, and therefore the size of the long-run gain to residents from greater corporate investment, will be half as great as in our calculations. However, because expensing eliminates the corporate income tax only on new investment and keeps the tax on the returns to all old investments (including the one providing only normal returns), the amount of the replacement tax will be less than half as great as when the corporate income tax is eliminated. In the long run, however, expensing will eliminate the tax on all investments producing normal returns, so the corporate income tax advantage in tax exporting eventually will grow to have the same importance as in the original calculations.

property tax abatements, and employment tax credits,[57] but such measures produce uneven incentives among industries and so distort the allocation of resources in the economy. Also, they are susceptible to the waste that often accompanies attempts to "pick the winners" as a development strategy.

Our calculations imply that even if the income transfers to nonresident shareholders are avoided altogether, residents still would suffer a present-value loss of $66 million from replacing the corporate income tax with an increase in the GET or a present-value loss of $166 million from replacing the corporate income tax with an increase in the individual income tax.[58] However, the estimate for the loss from replacing the corporate income tax with an increase in the GET is within the margin of error of our calculations.

Effects of federal tax changes

National tax reforms are again being considered. Some of the proposals would eliminate the federal deduction for state and local income taxes.[59] If that is done for the corporate income tax, the gain to residents from replacing their corporate income tax with an increase in the GET would be substantial in our calculations, because the tax exporting from the GET would not be affected, whereas the loss of the federal tax offset would cause tax exporting from the corporate

[57] See, for example, Peter D. Enrich, "The Rise - and Perhaps Fall - of Business Tax Incentives," in The *Future of State Taxation*, edited by David Brunori, Washington D.C.: The Urban Institute Press, 1998, pp. 73-88.

[58] The margin of error in the estimate for tax exporting is greater for the GET than for the corporate or individual income taxes. This is true, because the bulk of the tax exporting for the income taxes comes from the federal offset, which can be measured with reasonable accuracy. In contrast, tax exporting for the GET depends mainly on the amount of monopoly power enjoyed by Hawaii's tourist industry.

[59] See, for example, Derek Thompson, "A Comprehensive Guide to Donald Trump's Tax Proposal," *The Atlantic*, April 26,2017, available at https://www.theatlantic.com/business/archive/2017/04/a-comprehensive-guide-to-donald-trumps-tax-proposal/524451/

income tax to fall from $46 million annually to only $14 million annually. In this case, replacing the corporate income tax with a GET increase yields annual gains of $31 million in tax exporting, so the calculations show that residents would benefit from the tax change immediately in both of our scenarios. According to the calculations, the net present-value gain would be from $1.5 billion to $1.7 billion, depending on whether the income transfers to shareholders can be avoided. With no federal tax offset for either tax, the annual tax exporting of the individual income tax falls from $41 million to $7 million, which is $7 million less than the tax exporting of the corporate income tax ($14 million), so the tax change still produces a net loss for residents.

Some of the national tax reform proposals would change the rates of the federal corporate and individual income taxes. If the deduction for state and local income taxes is kept, then a cut in the federal corporate income tax rate to 15 percent (as in one proposal) could reduce the federal tax offset for Hawaii's corporate income by 50 percent or more. In this case, even if the federal deduction for state and local income taxes is kept, our calculations would again show a substantial net gain to residents from replacing the corporate income tax with an increase in the GET. In this case, (unless the federal individual income taxes are also altered) the calculations also show a gain from replacing the corporate income tax with an increase in the individual income tax.

Recall that our calculations do not account for supernormal profits. If supernormal profits are a substantial share of total corporate profits in Hawaii, then the state's corporate income tax is its most efficient tax, because most of its burden is exported to nonresident shareholders. In this case, eliminating the tax would clearly be inadvisable, even if the federal offset is lost. However, the conclusions based on our calculations still apply if the corporate income tax is eliminated on new investments by allowing expensing for new corporate investments.

Concluding Remarks

We find that simply eliminating Hawaii's corporate income tax and replacing it with an increase in either the GET or the individual income tax would make residents worse off. The tax change would reduce the amount of Hawaii's overall tax burden that is exported to nonresidents and would transfer income from residents to nonresident corporate shareholders. The loss in tax exporting and the income transfers to nonresident shareholders would outweigh the long-run income gains that residents would get from greater corporate investment. This conclusion is even stronger if Hawaii's corporate income tax base includes supernormal profits.

The long-run gains to residents could be realized without the income transfers to nonresident shareholders if the corporate income tax is eliminated only for new investment. This might explain why many states use special incentives to attract new investment, but keep their corporate income tax. Unfortunately, the approach usually creates uneven incentives among industries that distort the allocation of resources. Allowing corporations to expense new investment avoids the income transfers to nonresident shareholders and also avoids the shortcomings of targeting selected investments.

If corporations are no longer allowed to deduct the state and local income taxes from the federal taxable income, then our calculations imply that residents would realize large gains from allowing corporations to expense new investments when calculating their Hawaii's corporate income tax. The reason is that either federal tax change would reduce the federal tax offset for Hawaii's corporate income tax. A similar conclusion applies if the federal corporate income tax rate is reduced substantially, because this would also reduce the federal offset.

Our results imply a strange divergence between policy prescriptions for the national and state corporate income taxes. Whereas increasing international capital mobility and a decline in the national share of global corporate investment seem to be strengthening the case for eliminating the U.S. corporate income tax, we find that an individual state would be unlikely to benefit from the same strategy, because it would transfer income from residents to nonresident shareholders and probably reduce the tax exporting from local taxes. If supernormal profits are an important part of the state's corporate income tax base, then eliminating the local corporate income tax is simply out of the question and the best way to attract corporate investment is to allow corporations to expense new investments. Also, if supernormal profits are an important part of the tax bases, the distribution of the corporate income tax will be very different for the state and federal taxes. For the federal tax, because wealthy residents own a disproportionate share of total corporate equity, and because the burden of the tax on supernormal profits is borne by the shareholders, the tax will be progressive. But a state's residents will own little of the income subject to its corporate income tax. Thus, although much of the burden of the state's tax will be exported, the distribution of the remaining burden among its residents will depend mostly on the effect on local wages and prices, so the tax may be regressive for them.

Table 1 - Hawaii's Corporate Income Tax Liabilities: Averages for Tax Years 2013 Through 2015

(Dollar amounts are in thousands)

Industry	Tax before tax credits	Tax credits		Tax after non-refundable tax credits	Tax after all tax credits	Positive taxable incomes	Number of returns	Ave. effective tax rate	
		Nonref.	Refund.					Before tax credits	After tax credits
Agriculture	$1,870	$668	$1,134	$1,202	$68	$29,736	242	6.3%	0.2%
Mining & Utilities	1,474	12	2,636	$1,462	-1,173	23,236	72	6.3%	-5.0%
Construction	6,168	1,188	1,236	$4,980	3,744	103,398	1,106	6.0%	3.6%
Manufacturing	16,687	407	1,302	$16,279	14,978	273,601	913	6.1%	5.5%
Wholesale Trade	6,877	607	7,727	$6,270	-1,457	112,363	996	6.1%	-1.3%
Retail Trade	29,392	1,037	2,004	$28,355	26,351	468,245	1,243	6.3%	5.6%
Transportation	6,441	549	1,159	$5,892	4,733	102,367	373	6.3%	4.6%
Information	4,677	331	30,652	$4,347	-26,305	74,126	464	6.3%	-35.5%
Finance & Insurance	4,141	228	208	$3,913	3,706	68,929	1,284	6.0%	5.4%
Real Estate Rentals	15,272	629	10,365	$14,644	4,279	259,917	3,753	5.9%	1.6%
Professional Services	6,300	157	9,531	$6,142	-3,388	103,146	2,090	6.1%	-3.3%
Mgmt. Services	14,343	1,492	13,294	$12,851	-443	229,708	674	6.2%	-0.2%
Admin. & Waste Serv.	3,987	248	273	$3,739	3,466	64,205	584	6.2%	5.4%
Education Services	274	0	4	$274	269	4,572	143	6.0%	5.9%
Health & Social Asst.	898	18	243	$880	637	15,682	797	5.7%	4.1%
Arts & Entertainment	609	94	74	$515	441	9,972	272	6.1%	4.4%
Accom. & Food Serv.	12,319	2,196	1,108	$10,122	9,015	205,530	766	6.0%	4.4%
Other Services	1,577	195	573	$1,381	808	27,069	1,157	5.8%	3.0%
Unclassified	909	0	630	$909	280	17,877	386	5.1%	1.6%
Sum or Wtd. Average	$134,214	$10,056	$84,151	$124,158	$40,007	$2,193,679	17,316	6.1%	1.8%

Source: Hawaii Forms N-30 filed by corporations for tax years 2013 through 2015 and authors' calculations.

Table 2 - Hawaii Corporate Income Taxes Exported to Nonresidents

Industry	Data from DBEDT's input/output tables for 2012 (Dollars are in millions)					Average annual corporate income tax liabilities: 2013-2015 (Dollars are in thousands)			Tax exported to nonresidents (Dollars are in thousands)	
	Visitor expenditures	Federal government	Total output	Visitor expenditures/ total output	Total federal government/ total output	Before tax credits	After non-refundable tax credits	After all tax credits	Federal tax offset	As higher prices
Agriculture	$22	$1	$942	2.3%	0.1%	$1,870	$1,202	$68	$349	$0
Mining & Construction	0	538	7,655	0.0%	7.0%	6,556	5,368	4,127	1,557	264
Utilities	0	19	3,606	0.0%	0.5%	1,088	1,076	-1,556	312	4
Manufacturing	108	588	10,125	1.1%	5.8%	16,687	16,279	14,978	4,721	0
Wholesale Trade	106	12	4,959	2.1%	0.2%	6,877	6,270	-1,457	1,818	73
Retail Trade	2,023	6	7,702	26.3%	0.1%	29,392	28,355	26,351	8,223	3,491
Transportation	2,900	21	5,692	50.9%	0.4%	6,441	5,892	4,733	1,709	1,416
Information	18	25	2,511	0.7%	1.0%	4,677	4,347	-26,305	1,261	45
Finance & Insurance	0	1	5,246	0.0%	0.0%	4,142	3,913	3,706	1,135	1
Real Estate & Rentals	1,409	13	17,163	8.2%	0.1%	15,272	14,644	4,279	4,247	569
Business & Prof. Serv.	435	344	9,297	4.7%	3.7%	24,629	22,732	-366	6,592	1,084
Educational Services	137	44	1,137	12.1%	3.8%	274	274	269	79	23
Health Services	145	32	8,186	1.8%	0.4%	898	880	637	255	10
Arts & Entertainment	511	2	1,026	49.8%	0.2%	609	515	441	149	120
Accom. & Food Serv.	7,021	18	11,015	63.7%	0.2%	12,319	10,122	9,015	2,935	3,022
Other Services	128	8	3,419	3.8%	0.2%	1,577	1,381	808	400	26
Unclassified	na	na	na	na	na	909	909	280	264	na
Total (Private Sector)	$14,962	$1,670	$99,681	15.0%	1.7%	$134,216	$124,158	$40,007	$36,006	$10,148

Source: Data on expenditures are from the Hawaii state input output study done by the Research and Economic Analysis Division of the Department of Business, Economic Development and Tourism for 2012, available at dbedt.hawaii.gov/economic/reports_studies/2012-io/. Data on Hawaii corporate income taxes are from Hawaii Forms N-30 filed by corporations for tax years 2013 through 2015. Remaining entries are the authors' calculations.

Table 3 - The Net Costs and Benefits of Eliminating Hawaii's Corporate Income Tax With a Six Year Investment Response
(In millions of dollars)

				Replaced with General Excise Tax Increase		Replaced with Individual Income Tax Increase	
Period	Transfers to nonresident shareholders	Discounted transfers to nonresidents*	Income gain from greater investment	Gain or loss in tax exporting**	Net gain or loss from eliminating the corporate income tax	Gain or loss in tax exporting**	Net gain or loss from eliminating the corporate income tax
1	78	78	0	-3	-81	-6	-84
2	65	64	0	-3	-68	-6	-71
3	52	50	1	-3	-54	-6	-57
4	39	37	1	-3	-41	-6	-44
5	26	24	1	-3	-28	-6	-31
6	13	12	2	-3	-14	-6	-17
Total	273	264	5	-18	-286	-36	-304
Annual, 7 and after	0	0	2	-3	-1	-6	-4
Discounted total*		264	100	-150	-314	-300	-464

* Based on a discount rate of 2 percent.

** The tax exporting of the replacement tax less the tax exporting for the corporate income tax.

Source: Authors' calculations.

Table 4 - The Net Costs and Benefits of Eliminating Hawaii's Corporate Income Tax With a Four Year Investment Reponse

(In millions of dollars)

				Replaced with General Excise Tax Increase		Replaced with Individual Income Tax Increase	
Period	Transfers to nonresident shareholders	Discounted transfers to nonresidents*	Income gain from greater investment	Gain or loss in tax exporting**	Net gain or loss from eliminating the corporate income tax	Gain or loss in tax exporting**	Net gain or loss from eliminating the corporate income tax
1	78	78	0	-3	-81	-6	-84
2	59	57	1	-3	-61	-6	-64
3	39	37	1	-3	-41	-6	-44
4	20	18	2	-3	-21	-6	-24
Total	195	191	3	-12	-204	-24	-216
Annual, 5 and after	0	0	2	-3	-1	-6	-4
Discounted total*		191	100	-150	-241	-300	-391

* Based on a discount rate of 2 percent.

** The tax exporting of the replacement tax less the tax exporting for the corporate income tax.

Source: Authors' calculations.

Technical Appendix

Calculating the cost and benefits to residents from eliminating the corporate income tax

The basic analysis is patterned after the one that G.D.A. McDougal developed to examine the costs and benefits of inward foreign investment.[1] It is illustrated in Figure 1. The vertical axis shows the rate of return available to foreign investors on investment opportunities in the host country. The horizontal axis measures the amount of the foreign investment. The line labeled "*D*" is a schedule of foreign investment opportunities in the host country, ranked from left to right in order of declining profitability. The schedule can also be called the demand curve for inward foreign investment. Investment will be allocated to the most profitable opportunities first, and to successively less profitable opportunities as more foreign investment enters the host country. The supply curve of foreign investment is shown as the line labeled "*S*." It is a horizontal line, indicating that the host country is small relative to the supply of foreign investment. With competition, in the long-run equilibrium all the investments receive the same after-tax rate of return.

With a tax levied on investment income at rate *t*, the equilibrium stock of foreign investment in the economy is "*Q*," the rate of return before tax is "*R*" and the rate of return after tax is (1- *t*)*R*. If the income tax is eliminated, after foreign investment fully adjusts to the tax change, the new equilibrium stock of foreign investment is "*Qn*" and the before-tax rate of return converges to "*Rn*." We compare the economy with and without the tax on investment income in the same time period, so inflation plays no role in the comparison.

[1] G.D.A. MacDougall, "The Benefits and Costs of Private Investment From Abroad: A Theoretical Approach," *The Economic Record*, 1960, Vol. 36, Issue 73, at 13-35.

With the tax on investment income, the area under the demand curve *D* and to the left of *Q* is the total value of output produced by the foreign investment. The area of Triangle **A** represents the income to the other production factors in the host country that is generated by the foreign investment, including the wages of workers and the rents paid to landowners. The area of Rectangle **B** represents the local tax paid by the foreign investors and the area of Rectangle **D** represents their returns after the local tax.

If the tax on foreign investment income is removed, the long-run equilibrium stock of foreign investment in the host country grows to *Qn* and the income of local production factors is given by the area of Triangle **A** plus the area of Rectangle **B** plus the area of Triangle **C**. There is no income tax paid by foreign investors and the after-tax return to the foreign investment is given by the area of Rectangle **D** plus the area of Rectangle **E**. Thus the area of Rectangle **B**, which was tax collections before, becomes income of production factors in the host country and the total amount of income going to residents increases by the area of Triangle **C** when compared with the economy with the tax on foreign investment income. The area of Rectangle **B** also represents the annual amount of income transferred to foreign investors in the short run, before foreign investment responds to the tax cut. The income transfers continue, although in waning amounts, until the new long-run equilibrium level of foreign investment is reached.

We can derive an estimate for the Area of Triangle **C** based on the rate of the tax on foreign investment income and the amount of foreign investment income. Notice that the height of Triangle **C** is the effective rate of host-country tax on the foreign investment income (= *tR*) and the length of Triangle **C** is the increase in the equilibrium stock of foreign investment (= *Qn* – *Q*). In the paper, we cite estimates that the percent increase in the investment stock that comes from a change in the after-tax rate of return is half as great, or as great, as the percent change in

the after-tax rate of return. We use the midpoint of the range, so we calculate the percent change in the stock of foreign investment to be 0.75 as great as the percent increase in the after-tax rate of return. The percent increase in the after-tax rate of return is *t*, so the change in the stock of foreign investment is (0.75)(*t*)(*Q*). Profits on the foreign investment before tax are given as (*R*)(*Q*), so the change in the stock of foreign investment can be expressed as 0.75*t*(pretax profits on foreign investment/*R*). Multiplying by the height of Triangle **C** (*tR*) gives its area as (0.5)(0.75)(*t*)(*t*)(pretax profits on foreign investment).

The analysis depicted in Figure 1 was developed to examine the costs and benefits of foreign investment to the host country, but it is apt for corporate investment in an individual U.S. state, because the great bulk of corporate investment in any state is owned by nonresident shareholders. However, it misses a factor that is important for analyzing the costs and benefits of a state's corporate income tax, namely the federal offset for the state's income tax. The federal offset occurs, because the state tax can be deducted from the federal taxable income. Figure 2 shows how the federal tax offset alters the analysis. There, as before, *Rn* is the required after-tax rate of return on corporate investment and *R* is the before-tax rate of return required by the corporations in the presence of the local corporate income tax. However, in this case, the tax rate *t* is not merely the tax imposed by the state. Instead, it is the marginal effective rate of the state tax faced by the corporate investors after accounting for the deduction of the state income tax from the federal income tax. If the deduction from the federal income tax were not allowed, the corporations would require that the pretax rate of return on local investment rise above the required after-tax rate of return by the full amount of the state tax. The resultant pretax rate of return is shown as "*Rg*" in Figure 2.

In Figure 2, the area of Triangle **A** plus the area of Trapezoid **B** is the private benefit to residents of the state (a combination of incomes of local factors and consumers' surplus) created by the corporate investment. Tax revenue to the state is given by the area of Rectangle **D** plus the area of Trapezoid **B** plus the area of Triangle **C**. The total benefit to residents from the corporate investment is the private benefit plus the tax revenue (the area of Rectangle **D** plus the area of Trapezoid **B** plus the area of Triangle **C**). Note that the area of Trapezoid **B** appears twice in the benefit to residents of the state, once as a private benefit and again as tax revenue. This happens, because the federal offset acts to increase local corporate investment at the same time that it provides a wealth transfer from the federal government to the state. It is as if the federal government paid part of the state's corporate income tax.

If the state eliminated its corporate income tax, in the new long-run equilibrium, the tax revenue and the federal offset both disappear and the total benefit to residents from corporate investment becomes the area of Triangle **A** plus the area of Trapezoid **B** plus the area of Rectangle **D** plus the area of Triangle **E**. Thus, compared to the case with the corporate income tax, residents of the state gain an amount given by the area of Triangle **E**, but lose an amount given by the area of Trapezoid **B** plus the area of Triangle **C**. In the long-run equilibrium the area of Rectangle **D** is converted from tax revenue to private benefit of local production factors and of consumers. However, if the corporate income tax is eliminated abruptly, the area of Rectangle **D** represents the annual income transfer to nonresident shareholders, which declines over time until the new equilibrium level of corporate investment is achieved. The calculation for the area of Triangle **E** in figure 2 is similar to the calculation for the area of Triangle **C** in Figure 1, except that the height of Triangle **E** is the effective rate of the state tax after the federal offset.

In Hawaii, nonresident consumers bear part of the burden of Hawaii's corporate income tax, along with resident consumers. This is true, because part of the burden of Hawaii's corporate income tax is exported to tourists and to the federal government in the form of higher prices of the corporate output. If Hawaii eliminated its corporate income tax, nonresidents would share in the gain to consumers from the resultant decline in prices of the corporate output. Thus, the benefit to residents of any corporate income tax that was exported to nonresidents in the form of higher prices is permanently lost and the loss does not abate over time. Also, the nonresident consumers claim part of the permanent gain represented by the area of Triangle **E** in Figure 2.

In Figure 2, when the corporate income tax is eliminated, both the net gain from greater corporate investment (the area of Triangle **E**) and the loss of the federal offset (the area of Trapezoid **B** plus the area of Triangle **C**) continue indefinitely. The federal offset can be estimated with reasonable reliability to be between a quarter and a third of Hawaii's corporate income tax revenue. The estimate for the net gain from greater corporate investment in Hawaii is likely to be smaller than the corporate offset and is subject to much more uncertainty. From this, it would seem to be a bad idea for Hawaii to eliminate its corporate income tax. However, Hawaii's general excise tax (GET) also offers an opportunity to export a substantial amount of tax to nonresidents. Hawaii's individual income tax also has a federal tax offset, since it is deductible from the resident's federal income tax, but except for individuals in the highest tax bracket, the federal offset for the individual income tax is smaller than that for the corporate income tax.

The standard analysis is based on the assumption that the prices of corporate outputs are set by cross-border trade competition and that the full burden of the corporate income tax is borne by other local production factors. However, the curves in Figures 2 can also be interpreted

as showing the supply and demand curves for corporate output in industries where output prices are not set by trade competition and where it is assumed that the corporate income tax raises the price of corporate output by the amount of tax paid per unit of output. In that case, the area below the demand curve and above the supply curve represents consumer surplus, rather than returns to production factors.

Calculating the price increases caused by the corporate income tax

For the basic analysis, we assume the supply of corporate capital to Hawaii is perfectly elastic at the global norm for after-tax returns, so the full burden of the tax is passed forward to domestic residents, either as reduced factor payments or as higher consumer prices. Because corporations operating in Hawaii engage in relatively little production of traded goods that are subject to global price arbitrage, we have assumed that the burden of the tax for corporate output of non-traded goods and for services is passed forward to consumers in the form of higher prices. We calculated the corporate income tax burden as the corporate tax payments before subtracting the refundable tax credits, because we assumed that the refundable tax credits would continue to be claimed after the corporate income tax is eliminated, so any effect that they might have on prices would continue.

The effect of Hawaii's corporate income tax credits on the price of corporate output

It is not clear how much Hawaii's tax credits affect the price of corporate output. Harberger (1962) opined that in the long run, the corporate income tax would be included in the price of the product, and would raise the price by the amount of corporate income tax paid per unit of product. However, some of Hawaii's tax credits may not reduce the product price in line with their effect on the corporate income tax payments. Presumably, corporations will engage in

the activity required to secure the tax credits until an additional dollar spent on the activity yields an additional dollar of tax credits. If the average cost of pursuing the tax credits is close to the marginal cost, then the cost of the activity (for example, converting to renewable energy), will absorb most of the tax credits. In some cases, however, the tax credits reduce directly the cost of new investment required for the corporate output. This is true for the refundable capital goods excise tax credit, which reduces the cost of investment in depreciable machinery and equipment. It is also true for the refundable film production tax credit, which reduces the cost of film production and, in many cases, exceeds the corporation's Hawaii taxable income.[2]

It has been argued convincingly that Hawaii's GET is an efficient consumption tax,[3]so it is the natural replacement tax for Hawaii's corporate income tax, which we have found to be largely passed forward to consumers in the form of higher prices. In addition to avoiding the adverse effect on corporate investment in Hawaii, replacing the corporate income tax with an increase in the GET would reduce distortions in relative prices of consumption. The tax change might be hard to sell politically, however, because the GET burden is visible to the public, whereas the price effects of the corporate income tax are invisible. Our calculations indicate that the change in tax exporting that would accompany the tax change is small, unless federal tax reform eliminates the deduction for state and local income taxes or substantially reduces the federal corporate income tax rate.

Employment effects of tax changes

[2] Film production is included in the Information industry in Table 1. Corporations claimed $34 million in film production tax credit sin tax year 2014. (See Tax Credits Claimed by Hawaii Taxpayers: Tax Year 2014, Department of Taxation, State of Hawaii, available at http://tax.hawaii.gov/stats/a5_4credits/.

[3] Donald J. Rousslang and Jonathan W. White, "Is Hawaii's GET a Good Solution to State Budget Shortfalls*?" State Tax Notes*, March 27, 2017, at 1127-1145.

Legislative requests for studies on the effects of various tax changes often ask for the number of jobs "created" in the targeted industries and in the overall economy.[4] We find such calculations to be fraught with peril and likely to mislead, especially in the long run. Our cost benefit analysis does not include any estimates of the jobs that might be created by eliminating the corporate income tax. Instead, we have contented ourselves with presenting estimates for the costs and benefits to residents, measured in dollars. The benefits consist of greater wages (including wages to workers currently employed and wages from any net increase in total employment), greater payments to other local production factors (mainly property rents) and higher consumers' surplus (from lower prices of corporate outputs).

If the GET is the replacement tax, then the net effect on the overall level of consumer prices will be quite small, since it will consist only of the difference between the effect of the corporate income tax and the increase in the GET on prices. If the individual income tax is the replacement tax, then individuals will have lower after-tax wages, but also lower consumer prices. In either case, the effect on real after-tax wages will be small, so any movement along the labor supply curve would be small.

The labor market always has a pool of unemployed workers, even when the economy is straining its capacity and most employers are having trouble finding qualified applicants to fill vacant positions. A certain level of unemployment (sometimes referred to as the natural rate of unemployment) occurs as resources move from waning economic activities to growing ones or as people move (for a variety of reasons) from one employer to another. Whether the economy is in a cyclical expansion and adding jobs, or in a cyclical contraction and shedding jobs, the net

[4] See, for example, Act 206, Session Laws of Hawaii (SLH) 2007 and Act 270, SLH 2013.

change in jobs is always small when compared with the total number of vacancies filled during the period. Large numbers of hires and separations occur every month throughout the business cycle. For example, for the year ending April of 2017, for the United States as a whole, new hires totaled 62.9 million and separations totaled 60.7 million,[5] so the net increase in jobs was only about 3.5 percent of the number of new hires during the year. Thus, at any time in the business cycle, and especially when unemployment is low in Hawaii, it is more likely that new jobs in a targeted industry will be filled by people who would have taken jobs elsewhere in the economy than that they will reduce unemployment. That is, the new jobs in the targeted industry would come mostly at the expense of other activities in the economy.

The economy regularly goes through cycles of expansion and contraction, so in the long run, targeting selected industries will mostly move jobs around within the economy, with little effect on the overall level of unemployment. Even if enlightened tax policy were to expand the size of the overall economy (policy officials were successful in "picking the winners"), the effect on unemployment would be minor in the long run. The net economic expansion would mainly change net migration to the State.

The main problem with calculating the net short-run employment effects is that whereas new jobs in targeted industries are readily apparent, the jobs lost (the job opportunities that go unfilled) are mostly invisible. It is especially inappropriate to use simple input-output calculations to determine the effects of an expansion in the targeted industry on the overall economy. The input-output calculations assume that industries use inputs, including factors of

[5] See U.S. Bureau of Labor Statistics, "Job Openings and Labor Turnover – April 2017," June 6, 2017, available at https://www.bls.gov/news.release/pdf/jolts.pdf.

production, in fixed proportions and that the supply of all inputs, including worker and other factors of production, are perfectly elastic. The input-output calculations ignore completely the effect on industries that compete with the targeted industry for inputs and factors of production.

In sum, even if tax policy can be used successfully to create jobs in a time of high unemployment, if the policies are kept when unemployment is low, they will displace other activities. That is why a secular tax change is a poor tool for meeting short-run employment goals.

Another view is that tax policy should be used to grow new industries to diversify the economy, because Hawaii depends overly much on just a couple of economic sectors (tourism and government spending). The first question policy makers should consider before trying to grow a particular activity is why it is not bigger in the natural business environment, where it competes with other activities for the available resources. Before using tax policy to alter the mix of output in the economy, sophisticated cost-benefit calculations should be undertaken to see if the tax change is a good idea. Given the current state of art, economists generally are skeptical that policy officials can improve economic outcomes by distorting the local tax structure.

FIGURE 1

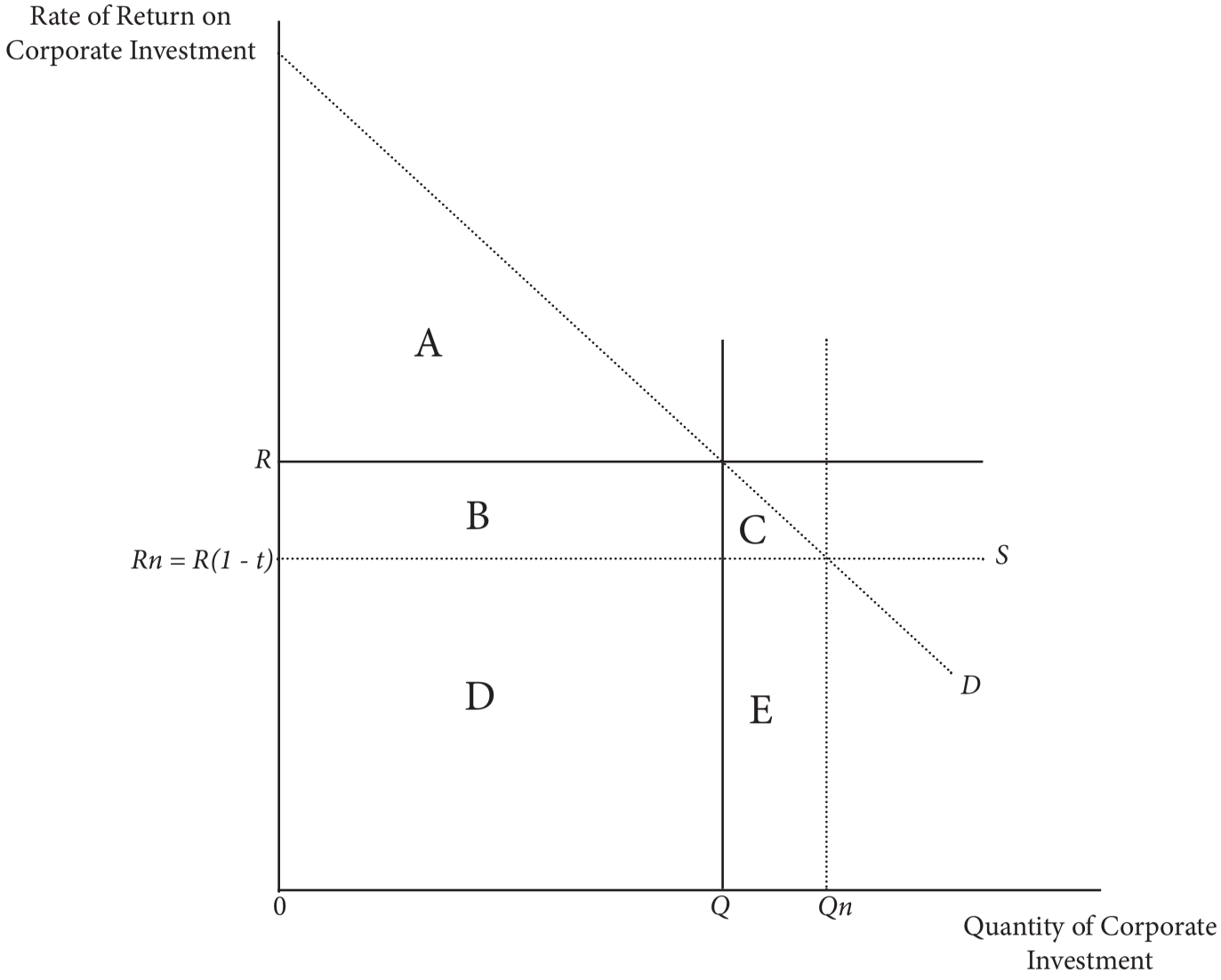
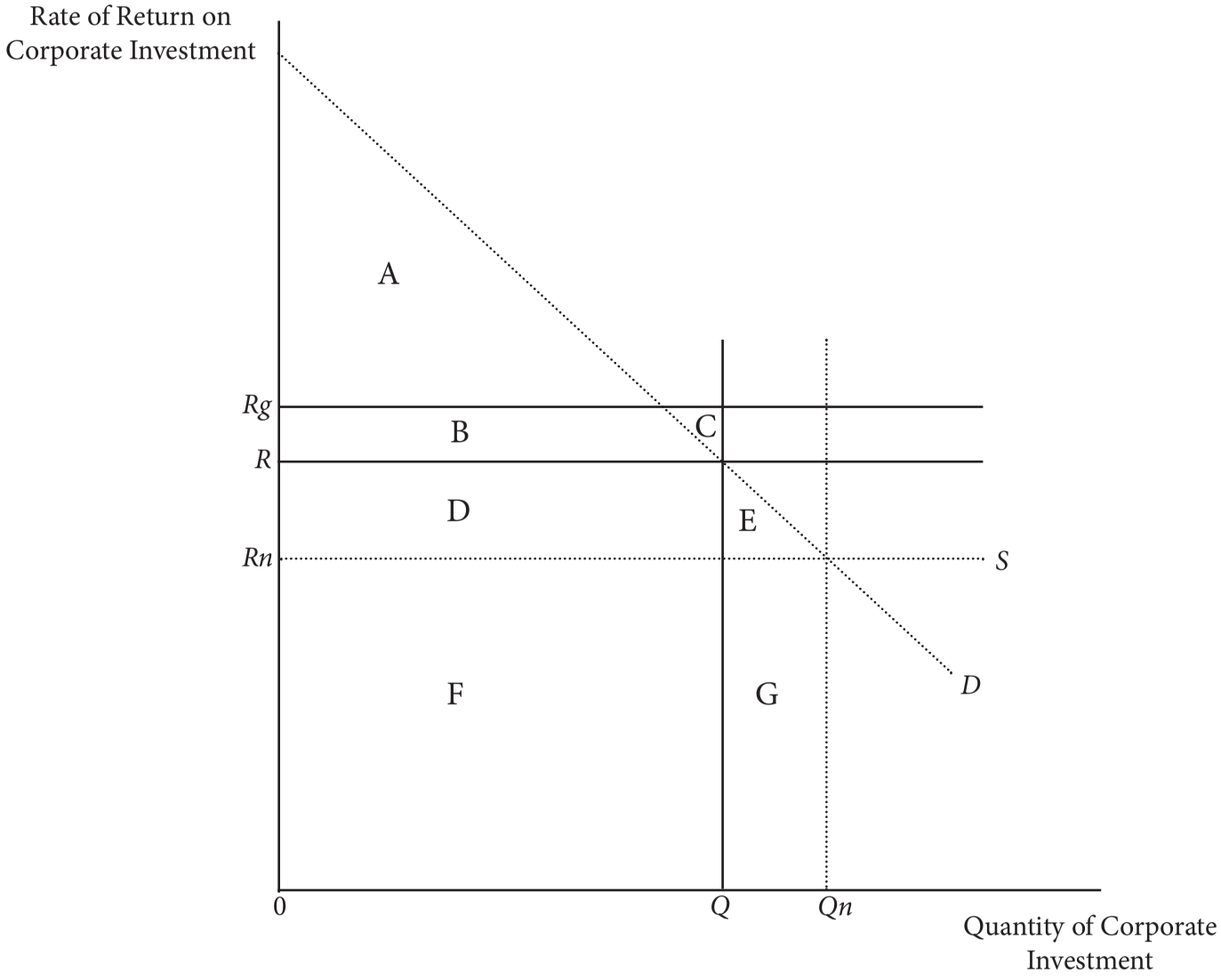

Rate of Return on Corporate Investment
A
R
B
C
Rn = R(1 - t)
S
D
D
E
0
Q
Qn
Quantity of Corporate Investment

FIGURE 2


Rate of Return on Corporate Investment
A
Rg
B
C
R
D
E
Rn
S
F
G
D
0
Q
Qn
Quantity of Corporate Investment