HB

4004

<TARGET><BILL>HB4004</BILL><SUBJECT>HB4004</SUBJECT><COMM>
HFIN29</COMM></TARGET>

Fiscal Note

State of Alaska
2016 Legislative Session

Bill Version:	HB 4004
Fiscal Note Number:	1
(H) Publish Date:	5/27/2016

Identifier: DOR-TAX-5-26-16
Title: INDIVIDUAL INCOME TAX
Sponsor: RLS BY REQUEST OF THE GOVERNOR
Requester: Governor

Department: Department of Revenue
Appropriation: Taxation and Treasury
Allocation: Tax Division
OMB Component Number: 2476

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2017 Appropriation Requested	Included in Governor's FY2017 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2017**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**
Personal Services	150.0		150.0	150.0	150.0	150.0	150.0
Travel							
Services							
Commodities							
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**150.0**	**0.0**	**150.0**	**150.0**	**150.0**	**150.0**	**150.0**
Fund Source (Operating Only)							
1004 Gen Fund	150.0		150.0	150.0	150.0	150.0	150.0
Total	**150.0**	**0.0**	**150.0**	**150.0**	**150.0**	**150.0**	**150.0**
Positions							
Full-time	1.0		1.0	1.0	1.0	1.0	1.0
Part-time							
Temporary							
Change in Revenues			100,000.0	205,000.0	210,000.0	215,000.0	220,000.0

Estimated SUPPLEMENTAL (FY2016) cost: 0.0 *(separate supplemental appropriation required)*
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY2017) cost: 500.0 *(separate capital appropriation required)*
(discuss reasons and fund source(s) in analysis section)

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency? yes
If yes, by what date are the regulations to be adopted, amended or repealed? 01/01/18

Why this fiscal note differs from previous version:

Original bill version, based on language split out from original omnibus special session tax bill HB/SB 4001.

Prepared By:	Ken Alper, Director	Phone:	(907)465-8221
Division:	Tax	Date:	05/26/2016 02:00 PM
Approved By:	Jerry Burnett, Deputy Commissioner	Date:	05/26/16
Agency:	Department of Revenue		

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2016 LEGISLATIVE SESSION

Analysis

Bill Analysis
The bill establishes a personal income tax based on 6% of the taxpayer's federal tax liability. The tax is payable by both Alaska residents and non-residents. The tax on non-residents is calculated based on the portion of their calendar year income derived from a source in the State.

To qualify as "from a source in the state," income is broadly defined to include regular compensation, as well as income and rents from property, business, and other assets within Alaska. Business income, including partnership income and earnings from subchapter-S corporations transacting business in Alaska will also be subject to this tax.
The bill provides for withholding of income by employers, with regular remittance to the state. Employers must also provide annual income statements analogous to the federal W-2. The annual tax return would be due at the same time as the federal return. This portion of the bill has a delayed effective date, applying to income earned after January 1, 2018. At full implementation, revenue will be about $200 million / year.

Implementation Cost
The Department is requesting $500.0 in FY17 capital funds to begin the process of planning for the 2018 implementation of the individual income tax component. With these funds, we will engage with outside expertise with experience building an individual income tax at the state level. We will also begin the outreach to Alaska's business community to prepare for wage withholding. The essential deliverable of the outside contract will be an implementation plan that includes staffing, infrastructure, and additional outreach needs. The full cost of implementing this tax will be brought to the legislature during the 2017 regular session. We are also requesting one new employee, an Income and Excise Specialist (Range 25A) to lead the project.

STATE CAPITOL
P.O. Box 110001
Juneau, AK 99811-0001
907-465-3500
fax: 907-465-3532

Governor Bill Walker
STATE OF ALASKA

550 West Seventh Avenue, Suite 1700
Anchorage, AK 99501
907-269-7450
fax 907-269-7461
www.Gov.Alaska.Gov
Governor@Alaska.Gov

May 26, 2016

The Honorable Mike Chenault
Speaker of the House
Alaska State Legislature
State Capitol, Room 218
Juneau, AK 99801-1182

Dear Speaker Chenault:

Under the authority of Article III, Section 18, of the Alaska Constitution, I am transmitting a bill to establish an individual income tax.

This is a necessary measure to address our fiscal situation. The bill would establish a personal income tax of six percent of total federal tax liability. I have chosen a structure similar to our State's prior income tax, which was repealed in 1980. The bill would tax income earned by residents and nonresident individuals with income from a source in this state. Because the tax that would be established by the bill is calculated based on federal tax liability and not on income, the bill effectively incorporates federal brackets and exemptions and so permits this bill, and the Alaska personal income tax system it would create, to be as simple and transparent as possible and minimizes administrative burdens both for the State and for taxpayers. The bill would apply to income earned on or after January 1, 2018. In addition, the bill would repeal a set of orphaned individual tax credits from the former income tax.

The citizens of our state are ready to pitch in to solve our fiscal crisis. My measure is part of that solution. Together we can continue to assure Alaska's strong and stable financial future.

I appreciate your consideration of this issue, and urge your prompt and favorable action on this measure.

Sincerely,

Bill Walker
Governor

Enclosure

ALASKA AFL-CIO

3333 Denali Street, Suite 125 · Anchorage, Alaska 99503 · 907-258-6284 · Fax 777-7276

VINCE BELTRAMI
Executive President

JIM DUNCAN
Secretary / Treasurer

Date: February 11, 2016
Resolution: 01-2016
Submitted by: Alaska AFL-CIO

TITLE: RESOLUTION SUPPORTING A STATE INCOME TAX

WHEREAS Alaska is in the throes of a $3.8 billion budget deficit which grows closer to $4 billion every day;

WHEREAS oil which has traditionally funded around 90% of the state's operating budget currently only funds around 20% due to low oil prices and diminishing production;

WHEREAS Alaskans have the lowest tax burden by far of any other state in the nation;

WHEREAS every Alaskan worker must be willing to participate in the shared sacrifice necessary to retain essential public services;

WHEREAS an income tax is among the least regressive taxes and will generate greater contributions from Alaska's most wealthy citizens;

WHEREAS non-resident workers took $2.6 billion in earnings out of the state last year without paying any taxes whatsoever;

WHEREAS an income tax is only one part of a comprehensive solution to solving Alaska's massive budget deficit;

WHEREAS the governor has proposed an income tax equal to six percent of one's federal income tax liability, which for a married couple filing jointly earning gross income of $100,000 annually with two child dependents and using only the standard deductions would amount to $626;

THEREFORE BE IT RESOLVED that the AFL-CIO supports the governor's bills, Senate Bill 134 and House Bill 250 "An Act relating to the taxation of income of individuals"

MMSC - unanimously V.B.

NEW SUSTAINABLE
ALASKA
PLAN

Pulling Together to Build Our Future

Governor's Special Session Individual Income Tax Bill
HB 4004

Presentation to the House Finance Committee
June 2, 2016

Individual Income Tax

"An Act establishing an individual income tax; and providing for an effective date."

Income Tax (new AS 43.22)

What it Does

- Creates Individual Income Tax at 6% of Federal Tax Liability
- Similar structure to Alaska's historic income tax, which was repealed in 1980
- The historic tax peaked at 16% of Federal Tax liability
- Provides for withholding by employers
- Also taxes out of state income, partnerships, S-corps

How it Differs from Regular Session Bill

- Cleans up language related to taxation of trusts
- Removes fishery crew shares from withholding tax requirements
- Delays effective date to January 2018

Income Tax (new AS 43.22)

How Much Does it Raise?

- $100 million in FY18, $205 million in FY19
- After 2019 tied to inflation and income growth

How Does it Impact Alaskans?

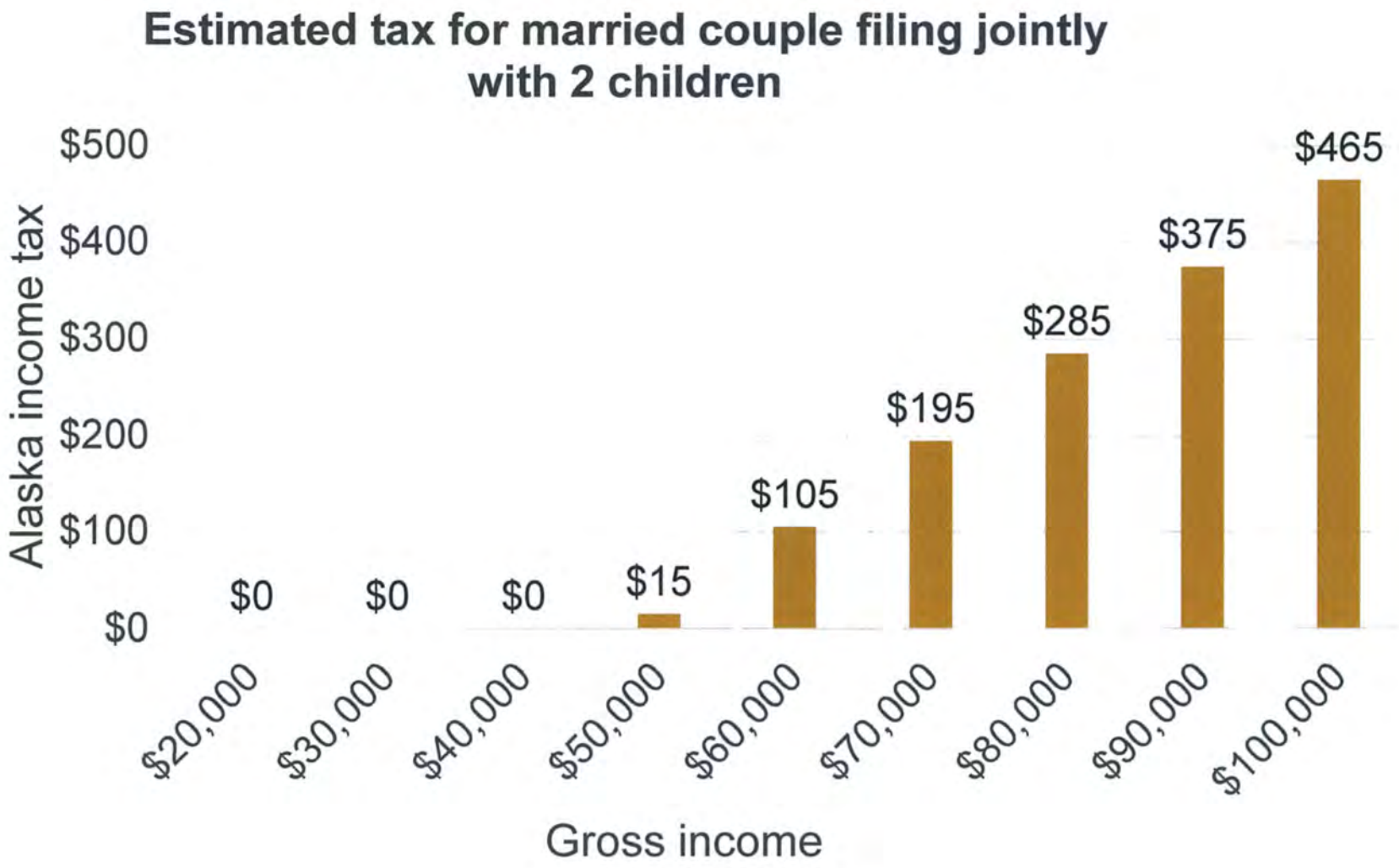
- About 20-30% of Alaskans will have no liability
- Very low tax burden on households who make < $50,000
- Most households will pay substantially less than 1% of income
- State income taxes are deductible from federal income tax, for those who itemize
- 43 states currently have an income tax

Income Tax (new AS 43.22)

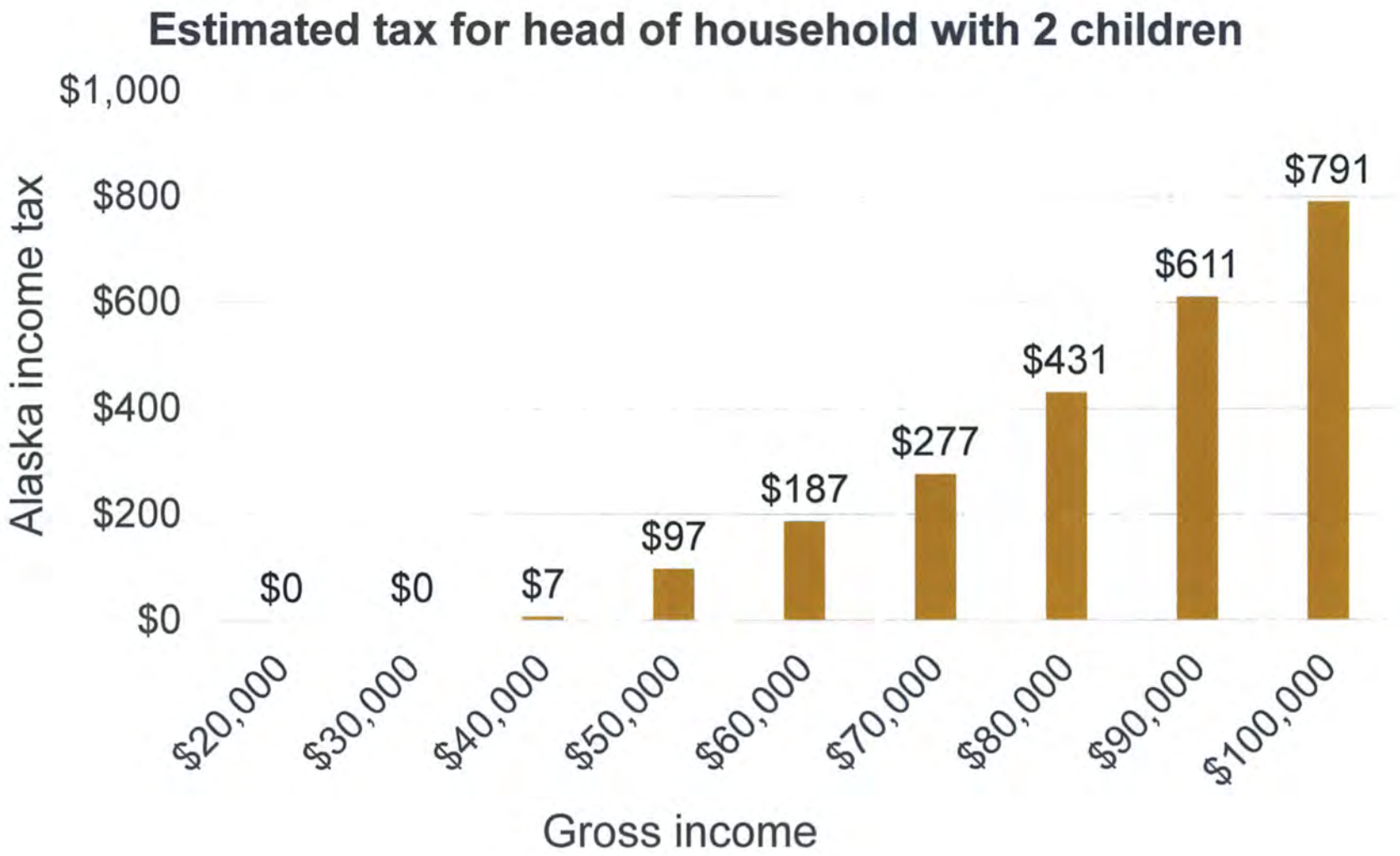
- Creates a tax on an individual's income. The proposed rate is 6% of a person's federal income tax liability (rates applied against Taxable Income, not Gross Income)

Federal Income Rate	Effective Alaska Rate
10%	0.60%
15%	0.90%
25%	1.50%
28%	1.68%
33%	1.98%
35%	2.10%
39.6%	2.38%

Income Tax Estimates



Income Tax Estimates



Sectional Analysis

Sec. 1. Adds a new chapter 22 in AS 43 for individual income taxes.

43.22.010 Imposes an income tax on both resident and nonresident individuals. The tax is six percent of a resident's federal tax liability. The tax for a nonresident is six percent of the portion of federal tax liability that is from a source in the state.

43.22.020 Provides a credit to residents for taxes paid to another state based on income earned in that other state.

43.22.030 Provides for annual returns to the Department of Revenue with taxes due on the date the federal tax return is due. The taxpayer must provide a copy of their IRS return. The department is authorized to pay refunds of overpaid taxes.

43.22.040 Defines sources of income within Alaska that are subject to the tax.

Sectional Analysis (Continued)

43.22.050 Provides for withholding from wages and salaries by employers, with those withheld taxes periodically remitted to the state.

42.22.060 Authorizes DOR to administer the tax.

42.22.190 Adds definitions for specific terms used in this section.

Sec. 2. Repeals statutes related to a former tax credit for political contributions that existed under Alaska's prior individual income tax which was repealed in 1980.

Sec. 3. Applicability section establishing that the new tax applies to income received on or after the effective date of the bill.

Sec. 4. Authorizes DOR to adopt regulations.

Sec. 5. Immediate effective date for Section 4, so that regulations can be drafted immediately.

Sec. 6. Effective date of 1/1/2018 for the rest of the bill.

NEW SUSTAINABLE
ALASKA
PLAN

Pulling Together to Build Our Future

Thank You!

Contact Information

Ken Alper
Director, Tax Division
Department of Revenue
Ken.Alper@Alaska.gov
(907) 465-8221

Brandon Spanos
Deputy Director, Tax Division
Department of Revenue
Brandon.Spanos@Alaska.gov
(907) 269-6736

Title: Alaska average income by tax filing type and family size

Preparer: Will Bishop, Economist

Purpose: To estimate the mean and median income in Alaska for different types of tax filers (single, married filing jointly, and head of household), and by different sizes of families.

Data Source: Internal Revenue Service and American Community Survey. Estimates based on the most recent year of data available (2013 for IRS, 2014 for ACS).

Key Assumptions: For federal marginal tax rate estimates, assumes taxpayers take the standard deduction rather than itemizing deductions; qualify for no credits other than the child tax credits; and that single parents file as "head of household".

History:

Disclaimer:

The Department of Revenue is in the process of reviewing and updating the data on which this analysis is based. As a result, future analysis could have different results.

B19119: MEDIAN FAMILY INCOME IN THE PAST 12 MONTHS (IN 2014 INFLATION-ADJUSTED DOLLARS) BY FAMILY SIZE - Universe: Families
2014 American Community Survey 1-Year Estimates

	Alaska	
	Estimate	Margin of Error
Total:	82,307	+/-2,332
2-person families	75,937	+/-3,437
3-person families	78,887	+/-6,209
4-person families	105,542	+/-6,639
5-person families	99,562	+/-10,219
6-person families	84,480	+/-12,148
7-or-more-person families	73,023	+/-10,052

Table 2. Individual Income and Tax Data, by State and Size of Adjusted Gross Income, Tax Year 2013

[Money amounts are in thousands of dollars]

Item	All returns	Size of adjusted gross income									
		Under $1 [1]	$1 under $10,000	$10,000 under $25,000	$25,000 under $50,000	$50,000 under $75,000	$75,000 under $100,000	$100,000 under $200,000	$200,000 under $500,000	$500,000 under $1,000,000	$1,000,000 or more
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ALASKA											
Number of returns	**359,140**	**3,600**	**55,370**	**65,930**	**80,690**	**51,400**	**35,660**	**53,120**	**11,470**	**1,320**	**590**
Number of single returns	184,100	2,330	48,220	46,070	45,530	22,620	10,180	7,670	1,260	150	70
Number of joint returns	128,510	1,010	2,530	7,810	19,260	21,220	22,150	43,060	9,880	1,120	490
Number of head of household returns	37,590	140	3,710	10,090	12,910	5,950	2,580	1,900	260	30	20

Department of Revenue estimates	Mean	Median	Federal marginal tax bracket
Single returns	$36,644	$23,000	15% (assuming no children)
Joint returns	$115,516	$90,000	15%
Head of household returns	$44,615	$35,000	10% (assuming at least 1 child)

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Revenue
COMMISSIONER'S OFFICE
State Office Building
333 Willoughby Avenue, 11th Floor
PO Box 110400
Juneau, Alaska 99811-0400
Main: 907.465.2300
Fax: 907.465.2389

June 7, 2016

The Honorable Mark Neuman and the Honorable Steve Thompson
Alaska State Representatives
Co-chairs, House Finance Committee
State Capitol Rooms 505 and 515
Juneau, AK 99801

Dear Co-Chairs Neuman and Thompson:

The purpose of this letter is to provide you with responses to the questions asked of the Department of Revenue during our presentation to the House Finance Committee on June 2, 2016, regarding the personal income tax bill House Bill 4004. Please see questions in italics and our responses immediately below the questions.

1. *What percentage of the roughly $200 million in income tax revenue would come from each income cohort? Within each of these cohorts, how many are Alaskans vs. non-Alaskans?*

   The 2013 IRS Statistics of Income data break down Alaska taxpayers' federal income tax liability into brackets by the size of their adjusted gross income. Since the income tax in HB 4004 would be a flat percentage of the federal tax liability, and Alaska's income distribution has not changed dramatically since 2013, we would expect the distribution to follow approximately these percentages.

Size of adjusted gross income (AGI)	Federal income tax liability ($ '000)	Percentage of total income tax liability
Total of all income groups	3,320,217	100.0%
Under $10,000	6,323	0.2%
$10,000 to $25,000	44,469	1.3%
$25,000 to $50,000	201,638	6.1%
$50,000 to $75,000	311,030	9.4%
$75,000 to $100,000	347,954	10.5%
$100,000 to $200,000	1,054,005	31.7%
$200,000 to $500,000	680,404	20.5%
$500,000 to $1,000,000	257,377	7.8%
$1,000,000 and over	417,018	12.6%

   Also attached is the "Alaska income by filing type and family size" document which shows the number of returns in each of these categories and some additional information.

   The numbers above only apply to taxpayers who are Alaska residents. The Department of Revenue does not have data on actual tax liability for non-resident workers in Alaska. According to the Department of Labor's 2014 "Nonresidents Working in Alaska" report, non-residents were 20.4% of workers and earned 15.6% of wages in Alaska in 2014, and their average wages were $29,230 compared with $41,559 for residents. Therefore, the percentage of tax revenue contributed by non-residents would likely be higher in the low-income categories, and lower in the high-income categories. Note that wages are not the same thing as gross income, but are likely the only source of income for which non-residents could be charged Alaska income tax. More details on non-resident workers can be found in the attached Department of Labor report.

2. *Can the Department of Revenue provide the commissioned ISER report that compares income tax to sales tax?*

   Yes, please see the attached ISER report.

3. *What would the revenue impact of the income tax bill be if various different income groups were charged the average rate in the country, instead of 6% of their federal income tax liability?*

   Among the 41 states that tax personal income, DOR's estimate of the average ratio of state to federal income tax liability is between 20% and 40%. There is no single number, as the other states all use a base of adjusted gross income or federal taxable income rather than federal tax liability, and therefore the ratio of state to federal tax liability varies by income level.

   Here are some alternative revenue impacts DOR has estimated for tax rates other than 6% in a HB 4004-style income tax bill:

Tax rate on federal tax liability	Revenue impact ($ millions)
20%	690
30%	1,030
40%	1,375
50%	1,720

   The table in question 1 can be used to estimate the impact of raising the tax rate on some, but not all, taxpayers. For example, suppose the tax rate were 6% on taxpayers with an AGI below $100,000 but 20% on those with an AGI above $100,000. The table shows that 27.5% of revenue comes from taxpayers below $100,000 AGI, so the revenue impact would be about 27.5% of the impact of a 6% rate plus 72.5% of the impact of a 20% rate. In other words, it would be 27.5% * ($200 million) + 72.5% * ($690 million) = $560 million. The same procedure can be used to calculate revenue impacts of a variety of scenarios. However, this would be an unusual way to structure an income tax, as it would result in a taxpayer incurring a large amount of new tax liability upon crossing the $100,000 threshold.

In addition, some questions were asked by the committee about the impacts of income tax interacting with a reduction of Permanent Fund dividends at different parts of Alaska's income distribution. Please see the attached report from the Rasmuson Foundation. The Rasmuson report's depiction of the administration's plan to restructure the Permanent Fund requires clarification. The plan does not simply "cap" the dividend at $1,000 and use the excess dividend money for state government, which would result in a very volatile revenue stream. Instead, the plan proposes a draw equal to 5.25% of the market value of the entire fund, which would be fairly consistent from year to year. However, on the issue of distributional impacts, the Rasmuson report addresses the committee's questions.

I hope you find this information to be useful. Please do not hesitate to contact me if you have further questions.

Sincerely,

Randall Hoffbeck
Commissioner

Attachments: Alaska income by filing type and family size; Nonresidents Working in Alaska 2014; ISER revenue options report; Rasmuson Foundation report

UAA Institute of Social and Economic Research
UNIVERSITY of ALASKA ANCHORAGE

Economic Impacts of Alaska Fiscal Options

Draft Report

Gunnar Knapp, Mouhcine Guettabi and Matthew Berman
Institute of Social and Economic Research
University of Alaska Anchorage
3211 Providence Drive
Anchorage, Alaska 99508

March 11, 2016

This is a draft report.
We invite comments and questions.
These should be sent to Gunnar Knapp at:
Gunnar.Knapp@uaa.alaska.edu
by March 18, 2016.

We will prepare a final report incorporating
responses to comments and questions
by March 25, 2016.

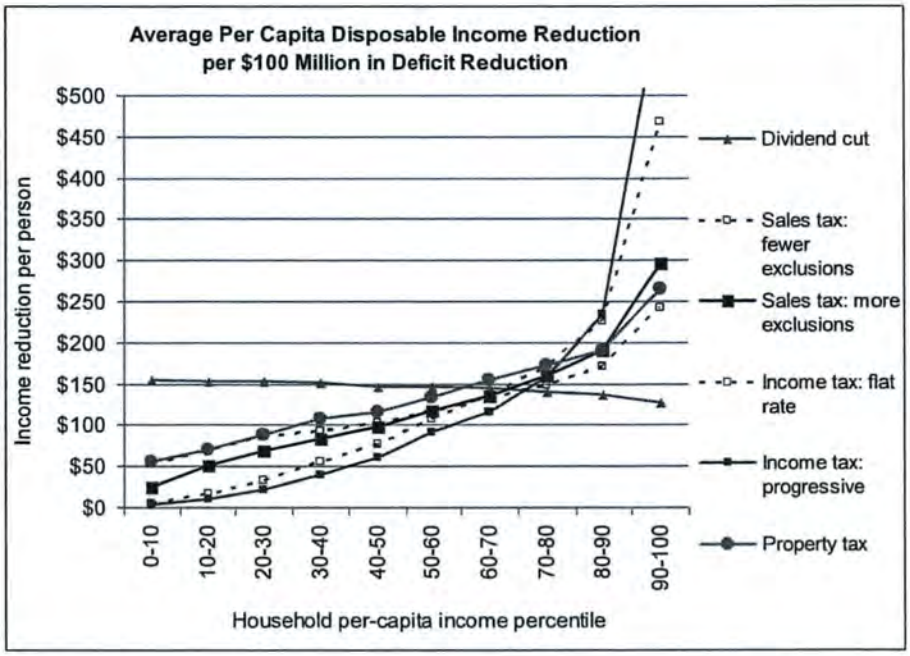
Some of the estimates in this report are changed slightly
from earlier presentations we have made about this analysis.
These changes are due to minor technical corrections which we
made while preparing the technical documentation for the report,
and do not change any conclusions which might be
drawn from any of the analysis.

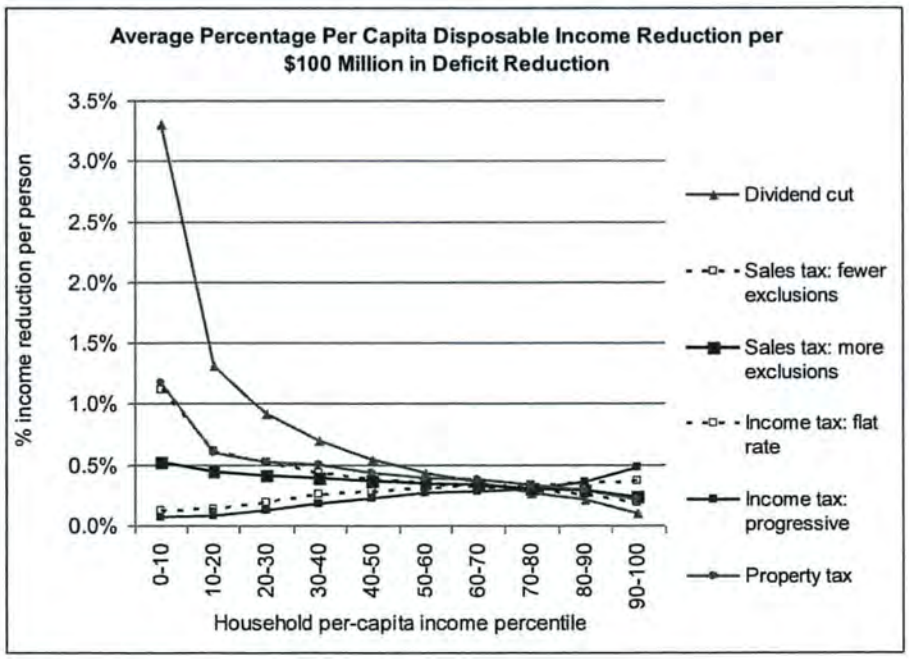
EXECUTIVE SUMMARY

This study compares potential revenue impacts and short-run economic impacts of eleven "fiscal options" for reducing Alaska's budget deficit, including several types of spending cuts, several types of taxes, dividend cuts and saving less of Permanent Fund earnings. The study does not advocate for or against any option.

About 9-11% of sales taxes would be paid by visitors to Alaska, about 6-7% of income taxes would be paid by non-residents working in Alaska, and at least 3% of a statewide property tax would be paid by non-resident property owners.

The costs to Alaskans of income taxes, sales taxes, and dividend cuts would be partly offset by reductions in their federal income tax obligations. The reduction of federal taxes would be about 9-11% for income taxes, and 7-8% for sales taxes, 8% for a property tax, and 6% for dividend cuts. Reductions in federal taxes would most benefit higher-income households which pay higher marginal federal income tax rates.





Dividend cuts would most affect the lowest-income households, both in the total and relative loss of income. Income taxes would most affect the highest-income households. Sales taxes would have intermediate effects, as would combinations of taxes and dividend cuts.

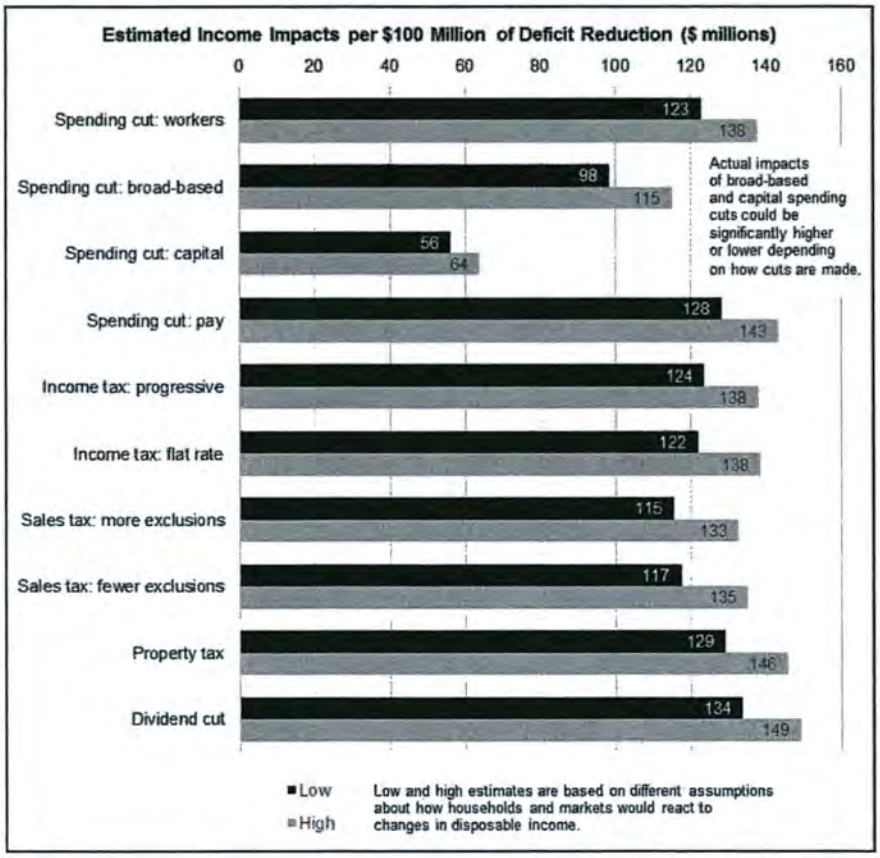
The estimated short-run income and job impacts of different fiscal options include both direct impacts (the initial losses in income and jobs) as well as multiplier impacts due to reductions in spending by households and businesses.

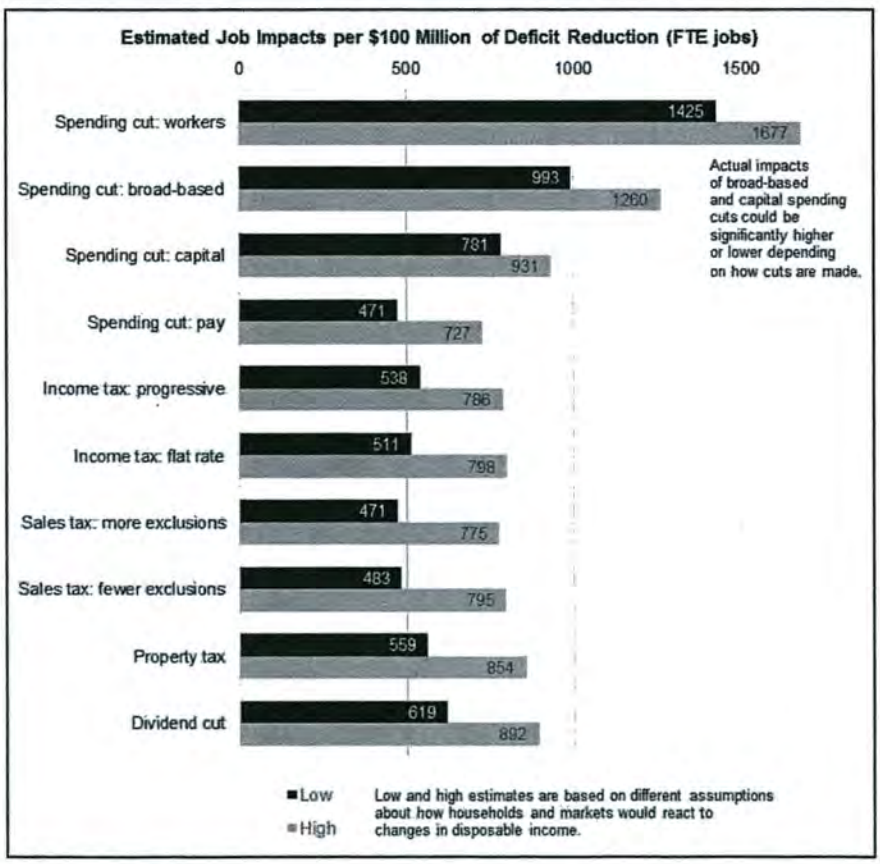
The impacts of spending cuts would vary significantly depending on the types of cuts and the extent to which they include cuts to jobs or pay of workers.

Dividend cuts would have the greatest short-run impacts on income—because they would have the greatest direct impacts on Alaskans' incomes. Taxes would have smaller direct impacts on incomes because they would be partly paid by non-residents.

Cutting spending for government workers would have the greatest short-run impacts on jobs—because the job losses would include both direct job losses for government workers as well as multiplier job losses due to reduced spending.

Of all the fiscal options for closing the deficit, only saving less of the Permanent Fund earnings which are currently added to the principal as inflation proofing or added to the Permanent Fund earnings reserve (approximately half of realized earnings over time) would have no short-run economic impacts. But saving less would result in slower Permanent Fund growth and smaller future earnings.





Summary of Fiscal Options & Estimated Impacts per $100 Million of Deficit Reduction

Fiscal Option	Direct economic impacts	Who would be most affected	Short-run income impacts ($ millions)	Short-run job impacts (FTE jobs)
Spending cut: workers	Reduce gov't jobs & pay	Gov't workers	123 - 138	1425 - 1677
Spending cut: broad-based	Reduce gov't jobs & pay Reduce other gov't purchases	Gov't workers Gov't contractors & workers	98 - 115	993 - 1260
Spending cut: capital	Reduce gov't capital spending	Construct. ind. & workers	56 - 64	781 - 931
Spending cut: pay	Reduce gov't employee pay	Gov't workers	128 - 143	471 - 727
Income tax: progressive	Reduce Alaskans disposable income	Higher income Alaskans	124 - 138	538 - 786
Income tax: flat rate			122 - 138	511 - 798
Sales tax: more exclusions		Medium & lower income Alaskans	115 - 133	471 - 775
Sales tax: fewer exclusions			117 - 135	483 - 795
Property tax			129 - 146	559 - 854
Dividend cut	Reduce Alaskans' income	Lower income Alaskans	134 - 149	619 - 892
Saving less	No short-term impacts	Future Alaskans	0	0

Note: The numbers shown for income and job impacts represent low and high estimates of impacts based on different assumptions about how households and markets would react to changes in disposable income.

The relative impacts of different fiscal options would vary for different regions of Alaska because income distribution varies between regions and because the economies of different regions vary in their relative dependence on state-funded jobs and services and on the trade and service industries which would be affected by the multiplier impacts of fiscal options.

Within a few years we will have to greatly reduce the deficit. Reducing the deficit will significantly impact Alaska's economy, regardless of how or when we do it. Fully closing the deficit in one year would have a large impact on an economy already weakened by oil industry job cuts and past cuts to state capital spending. But not making significant progress towards reducing the deficit would also have large negative impacts including increased business and consumer uncertainty, reduced private investment, and further downgrading of Alaska's credit rating. Our economic adjustment to lower oil revenues will be smoother if we substantially reduce the deficit this year and also clearly demonstrate to Alaskans, businesses, and investors that we will make the necessary further changes to spending, revenues and uses of Permanent Fund earnings to achieve sustainable state finances, reduce uncertainty about future state spending and how we will pay for it, and build confidence in Alaska's fiscal future.

Alaska's fiscal options would impact Alaska's economy and society in many important ways beyond the short-term economic impacts which we estimated for this study. We should base our fiscal choices not only on their short-term economic impacts but also on their longer-term impacts on Alaska's economy and society over time.

Table of Contents

I. INTRODUCTION

The state of Alaska faces a very serious fiscal challenge. This year's (FY16) general fund spending greatly exceeds current and projected future general fund revenues. We have been paying for the resulting deficit between general fund spending and revenues by drawing down savings in the Constitutional Budget Reserve Fund (CBRF) and other funds. Because our savings are limited, within a few years we will have to significantly reduce the deficit.

Alaskans are currently engaged in an important discussion of how and when we should close the deficit. Among the important considerations in this discussion are the impacts that these choices might have on Alaska's economy. This study looks at some of these potential economic impacts for a range of fiscal options.

Fiscal Options

We use the term "fiscal option" to refer to sustainable approaches the state might take within the next three years to reduce the deficit. We define the "deficit" as the difference between the state's unrestricted general fund appropriations and revenues.

We estimated both revenue impacts and short-run economic impacts of the ten fiscal options summarized in Table I-1. We use the term "revenue impacts" to refer to how much income the tax and dividend-cut options would collect from (or not pay to) Alaska residents and non-residents, by income group. We use the term "short-run economic impacts" (or sometimes "economic impacts") to refer to the short-run direct and multiplier impacts that the fiscal options would have on Alaska jobs and income.

Table I-1
Fiscal Options for Which We Analyzed Both Revenue Impacts and Economic Impacts

Fiscal option	Description
Spending cut: workers	A spending cut achieved entirely by reducing the state workforce
Spending cut: broad-based	A spending cut achieved by a broad range of cuts to state spending
Spending cut: capital	A spending cut achieved by cutting the capital budget
Spending cut: pay	A spending cut achieved entirely by reducing the pay of state workers
Income tax: progressive	Constant percentage of the taxpayer's federal individual income tax liability
Income tax: flat rate	Constant percentage of federal taxable income
Sales tax: more exclusions	Four percent sales tax on retail expenditures excluding food at home, health care, education, and shelter
Sales tax: fewer exclusions	Three percent sales tax on retail expenditures excluding health care and education
Property tax	20 mil (2 percent) tax assessed on real and personal property with an exclusion for the amount of property taxes currently paid to local governments
Dividend cut	Reducing Permanent Fund Dividends and diverting amount of Permanent Fund earnings that would have paid for dividends to fund general fund spending.
Saving less	Using some of the annual Permanent Fund earnings that are currently saved in the Permanent Fund (either in the principal as inflation proofing or in the earnings reserve) to fund general fund spending. We exclude uses of earnings above the average level of earnings not used for dividends, which would result in drawing down the Permanent Fund earnings reserve over time.

Table I-2
Fiscal Options for Which We Analyzed Only Revenue Impacts

Fiscal option	Description
Excise tax: motor fuels	Increase in the state motor fuels tax
Excise tax: alcohol	Increase in state alcoholic beverages tax
Excise tax: tobacco	Increase in the state tobacco tax

In choosing fiscal options to analyze for this study, we tried to select a range of options which met the following criteria:

- Part of the political discussion: options which are currently being discussed as potential options for reducing the deficit.

- Short-term options: options which could, if implemented, reduce the deficit within the next three years. Thus we didn't analyze options which would take longer to affect state revenues or spending, such as encouraging new kinds of economic development which might generate new royalty or tax income in the future.

- Sustainable options: We only studied options which would be sustainable over time. Thus we did not study options of paying for the deficit by drawing down funds such as the Permanent Fund earnings reserve or other smaller funds such as the Power Cost Equalization fund. Although drawing down these funds would be a potential way of paying for general fund deficits for a period of time, it would not be sustainable. Note however that using Permanent Fund earnings that are currently added to the Permanent Fund principal (as inflation proofing) or which are added to the Permanent Fund earnings *could* be sustainable—as long as the average use of these earnings over time did not result in drawing down the average balance of the earnings reserve over time.

- Options within the state's control. If oil prices or production rise, oil revenues could increase and reduce the deficit, without any of the economic impacts which would result from spending cuts, new taxes, or dividend cuts. While we can hope that oil prices and revenues increase, and while we may wish to assume some level of oil revenue increases in how we respond to the state's fiscal challenge, we cannot control whether and to what extent they will increase. Thus we did not include higher oil revenues or other potential revenues increases beyond the state's control as "fiscal options" for "reducing the deficit." Technically, increases in oil revenues would not be actions the state might take to reduce the deficit, but rather reductions in the amount by which we need to reduce the deficit.

- Options we were able to analyze: options that we had the time, funding and expertise to analyze. Thus we didn't analyze complex options such as potential changes to oil credits or oil taxes; changes to taxes on specific industries such as fishing or mining; or changes to how the state deliver services such as K-12 education, the University of Alaska or Medicaid which might affect costs and spending. These are examples of options which might significantly reduce the deficit and which are receiving significant discussion. But

they are all sufficiently complex that analyzing their potential economic impacts would require detailed and specific analysis far beyond the scope of what we had time or funding (and in some cases expertise) to analyze for this study.

We are not advocating for or against any of the fiscal options which we studied, nor are we offering any conclusions about whether they are practical or politically feasible. Our purpose is only to inform the ongoing important discussion about potential fiscal options.

Organization of this Report

Chapter II of this report discusses revenue impacts of the tax and dividend-cut fiscal options, which would affect Alaskans' incomes either by collecting taxes from them or by reducing their dividend income. We estimate how much revenue each option would collect from different ten different household income groups, both as dollar amounts and as a relative share of each group's income. We also estimate the extent to which these revenue collections would be offset by lower federal tax obligations, and the extent to which tax revenues would be collected from non-residents. Finally, we estimate the potential impacts of the changes in income associated with each option on Alaskans' spending, which drive the "multiplier" impacts on the economy discussed in Chapter III.

Chapter III discusses potential short-run economic impacts of fiscal options on income and jobs. To help in comparing options, we estimated their short-run economic impacts per $100 million of deficit reduction.

Chapter IV briefly discusses potential regional differences in the revenue impacts and short-run economic impacts of fiscal options.

Chapter V discusses potential total impacts on the economy of reducing the deficit, and how these might be affected by how fast the deficit is reduced.

Chapter V briefly describes potential longer-term and indirect economic and social impacts of fiscal options which we did not study for this report. These other impacts are important, but they were beyond the scope of what we were able to study.

Limitations to the Analysis

It is important to recognize several limitations to the analysis reported in this study.

The devil is in the details. With the exception of dividend cuts, all of the fiscal options which we studied are "generic" options. For any spending cut or tax option, "the devil is in the details": the actual impacts would depend on specific details of how the spending cuts are made or how the taxes might be structured. Our estimates of the impacts of each fiscal option reflect specific assumptions about how the option might be implemented. If it were implemented differently, the impacts might differ.

Our ability to analyze impacts of spending cuts is limited by uncertainty about how they would be implemented. The potential economic impacts of spending cuts depend greatly on what would be cut. Some kinds of spending cuts would have much greater impacts than other kinds of cuts. We analyzed four "generic" spending cut options for the purpose of contrasting the impacts of different kinds of cuts, ranging from those that might have the highest economic impacts (cuts to the state workforce or state worker pay) to cuts that would have lower economic impacts (broad based cuts or cuts to capital spending). None of these generic spending cut options' impacts are necessarily representative of the actual economic impacts of specific cuts which might be characterized using the same names. Nor are they necessarily feasible for large-scale cuts. For example, the FY16 capital budget is only $118 million, so a (hypothetical) $500 million cut to state capital spending would not be possible.

Our ability to analyze impacts is limited by available data. Analyzing how much different fiscal options might contribute to reducing the deficit and what the impacts on Alaskans and the Alaska economy requires many assumptions about factors such as incomes of residents and non-residents, how much non-residents spend in Alaska for different kinds of products, marginal federal tax rates that they pay, how they spend money and how their spending might change in response to changes in their incomes. We developed assumptions based on the best available data, but in many cases data are limited or non-existent to develop necessary assumptions, so that we had to use our best judgment. As a result, some of our estimates are inherently uncertain: different reasonable assumptions would have resulted in different estimates. In general, because we used consistent assumptions for different options, we are able to be more confident in our estimates of the *relative* economic impacts of different options than in their total economic impacts. In the following chapters we discuss the most important areas of uncertainty and how different assumptions might change the report assumptions.

Our estimates of short-run impacts exclude some potential impacts. To analyze short-run economic impacts in Chapter III, we used a standard economic technique known as "economic impact modeling" and a commonly used model known as "IMPLAN." This approach and this model are widely used in Alaska and elsewhere. The approach is the best available technique for estimating how a change in spending or income attributable to a particular industry or government policy "ripples" through the economy as a result of further changes in spending flows between industries and households. However, it does *not* account for potential behavioral adjustments in spending, wage rates, prices, or migration to and from Alaska. The best way to interpret our estimates is as immediate effects of income and jobs resulting from less money circulating in the economy.

As we discuss in Chapter VI, our analysis focused only on potential revenues impacts and short-run economic impacts of selected fiscal options. All of the options would have potential longer-term economic impacts which are harder to predict and analyze, and which we did not analyze—but which are also potentially as important or more important than the short-term economic impacts which we analyzed for this study.

Our analysis offers useful perspectives on some of the potential economic impacts of the fiscal options we studied. But our analysis is insufficient to conclude whether any option is "good" or

"bad" (or "best" or "worst"). Ultimately Alaska's fiscal choices will significantly affect Alaska's future economy and society in many ways beyond the short-term economic impacts which we analyzed of this study. In thinking about our fiscal options, we should consider not only their short-term economic impacts but also their longer-term economic and social impacts.

Report Funding

ISER's preparation of this report was supported with funding from the Alaska Department of Revenue and the Office of Management and Budget. Each agency provided $30,000 in funding.

Study Independence

As with all ISER research, this report and its conclusions are solely the work of the individual authors and should be attributed to them, not to ISER, the University of Alaska Anchorage, or the research sponsors. Neither of the funding agencies influenced the conclusions of the report. We decided what fiscal options to study, what kinds of economic impacts to study, how we studied them, and how we wrote about our conclusions.

In our study design, analysis and conclusions we are not advocating for or against any fiscal options or choices that the state may make. Our purpose is solely to help inform the important discussion occurring in Alaska about how and when to close the deficit. While we believe that the information in this report is relevant to this discussion, it is not sufficient to draw conclusions about which options the state should choose. Many other factors matter in this discussion beyond the short-term economic impacts which we analyzed—including value choices about what kind of economy and society Alaskans wish to have.

Our findings and conclusions are limited to those in this report and presentations which we have prepared. We are not advocating for or against any fiscal options or choices, and we have attempted to describe and emphasize the limitation to our analysis. Other people may argue for or against fiscal options or choices based on their interpretations of our findings, and/or may not acknowledge the limitations to our analysis. We have no control over how other people interpret or use our findings: what they say we said is not necessarily what we said.

Study Authors

Gunnar Knapp directed this research and led the analysis and writing for Chapters I, IV and V. Matt Berman led the analysis of revenue impacts reported in Chapter II and Appendixes A and B. Mouhcine Guettabi led the analysis of short-run economic impacts reported in Chapter III and Appendixes C and D. Technical questions about the analysis should be directed to the lead authors at Gunnar.Knapp@uaa.alaska.edu, Matthew.Berman@uaa.alaska.edu, and mguettabi@alaska.edu.

II. REVENUE IMPACTS OF TAXES AND DIVIDEND CUTS

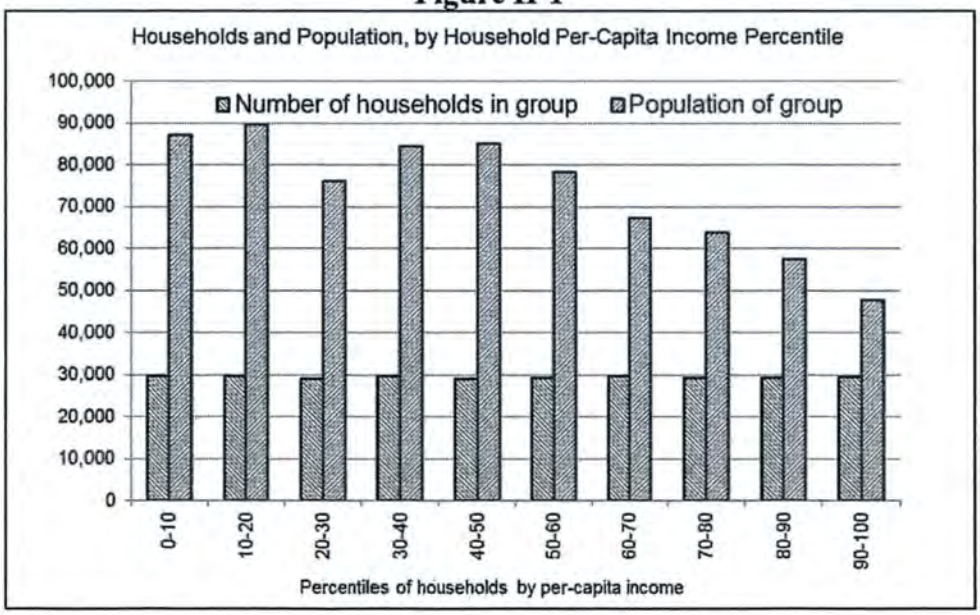
In this chapter we discuss potential revenue impacts of tax and dividend cut options, including the relative shares of revenues they would raise from different Alaska income groups and from non-residents, as well as the extent to which they would be offset by reductions in federal taxes paid by Alaskans. This chapter summarizes our results. Appendix A provides technical details of the methodology and results

All measures to raise revenues from households through dividend cuts or taxes will have some adverse effect on the economy, because taking money out of the private economy reduces the amount that households can spend. However, the amount that a given revenue measure affects spending per dollar of revenue raised differs for different measures. Three main factors explain the differences in expenditure effects among the various measures. These are (1) the share of revenues contributed by non-residents, (2) the share revenues offset by reductions in federal taxes, and (3) the distribution of the impact of the revenue measure on different income groups. A fiscal measure is considered *progressive* if the percentage collected rises as income rises, and *regressive* if the percentage collected falls as income rises. Lower-income Alaskans typically spend a higher share of their income than higher income Alaskans, so more regressive measures will have a larger adverse effect on expenditures than less regressive or progressive measures.

Alaska Income Distribution

To analyze how taxes and dividend cuts might differently affect Alaskans with different income levels, we divided Alaska households into ten groups based on their per-capita income using U.S. Census data for 2014, the latest year available. Each group represents about 29,000 households, but as the Figure II-1 shows, households with higher per-capita income have fewer household members on average than lower-income households.

Figure II-1



Income in the 2014 Census data represents income earned in 2013. The richest ten percent of households earned over $200,000 that year, while the poorest ten percent earned less than $14,000 (Figure II-2). The top ten percent of households accounted for 21 percent of all personal income, only a little less than the bottom 50 percent of households combined (Figure II-3). Census income includes PFD payments for everyone in the household that received a dividend. It also includes cash public assistance, but not food stamps or any other non-cash benefits. Income distribution in Alaska has become more inequitable over the past 25 years, mirroring national trends. However, Alaska income distribution remains more equitable than the nation as a whole, in part due to the PFD, which plays an important role in providing an income floor for the poorest Alaska residents.

Figure II-2

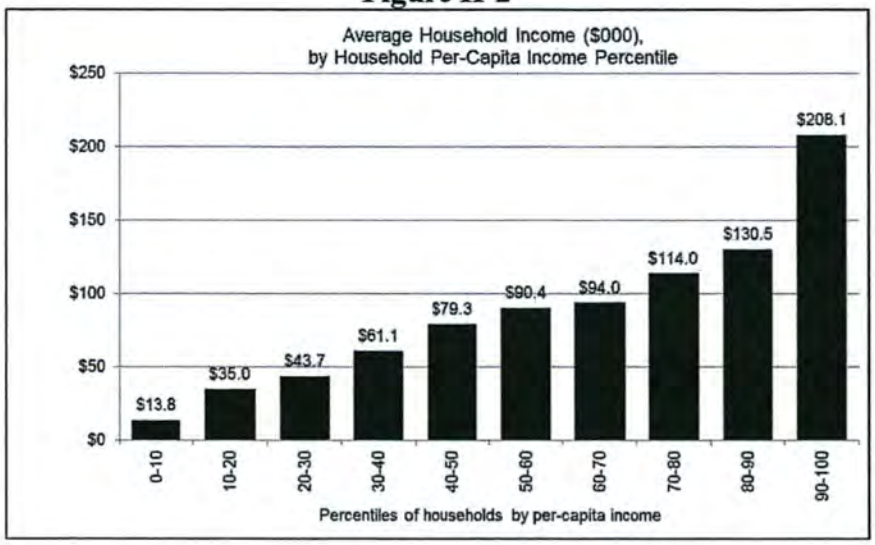


Figure II-3

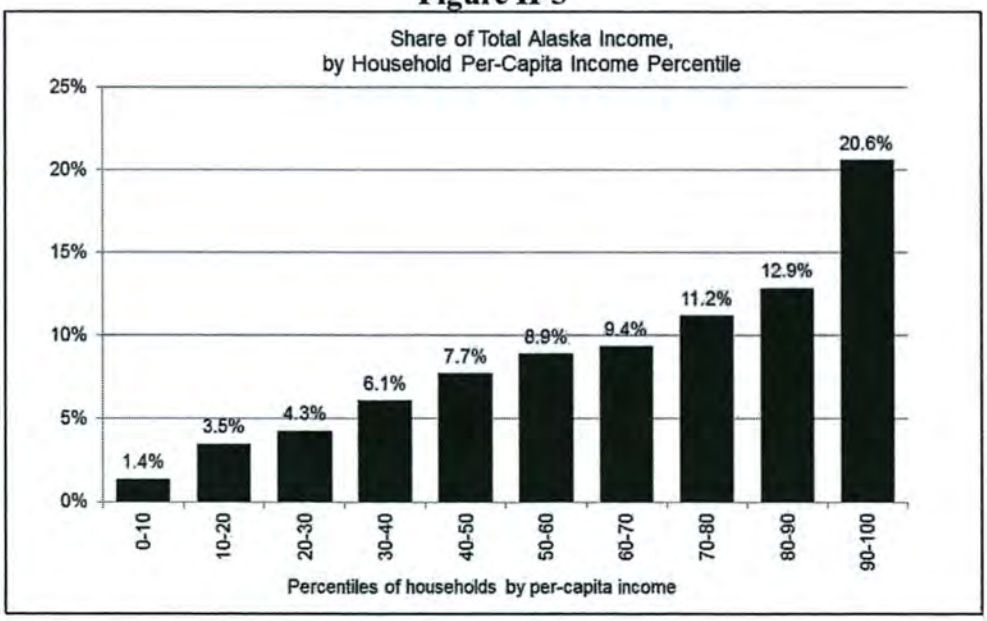


Table II-1 shows the Census estimates for population, household size and 2013 income for the ten household groups. The Alaska Permanent Fund Dividend (PFD) was $900 in 2013. Dividends have been larger in more recent years. For comparison, the last column of Table A-1 shows what per-capita income would be if all income except for the PFD was the same as in 2013, but with a PFD of $2,000.

Table II-1
Alaska Population, Persons per Household, and Per-capita Income by Per-capita Household Income Percentile.

Income percentile, households	Population	Average persons per household	Per-capita income in 2013	Per-capita income with $2,000 PFD[a]
Lowest 10 percent of households	87,006	2.94	$ 3,594	$ 4,694
10-20th percentile	89,660	3.03	10,465	11,565
20-30th percentile	76,040	2.62	15,613	16,713
30-40th percentile	84,404	2.84	20,412	21,512
40-50th percentile	85,077	2.93	25,935	27,035
50-60th percentile	78,178	2.66	32,818	33,918
60-70th percentile	67,327	2.27	40,265	41,365
70-80th percentile	63,722	2.18	51,154	52,254
80-90th percentile	57,284	1.95	65,707	66,807
Highest 10 percent of households	47,771	1.63	126,890	127,990
All residents	736,471	2.51	$ 39,246	$ 40,346

Non-Resident Workers and Visitors

In addition to the 736 thousand Alaska residents the Census Bureau estimated for 2013, the Alaska Department of Labor reported 86 thousand non-residents were employed in Alaska and earned an average of nearly $28,000 per worker. It should be noted that this figure understates the total number of non-resident workers, as it does not include federal government employees including active-duty military personnel, or self-employed individuals.

Non-resident workers spend money in Alaska while they are working. Most non-resident workers have temporary or permanent homes in Alaska and spend part of the income in the state, generating additional economic activity. In addition to non-resident workers, visitors to the state also spend money in Alaska on many different items. The amount that non-resident workers and visitors might contribute to state revenues will vary by the type of revenue. Income taxes can be structured to include wages of non-resident workers in the tax base. Sales taxes collect money from visitors as well as non-resident workers.

Potential Revenues from Fiscal Options

To analyze the effects of potential revenue options, we examined five specific potential broad-based fiscal measures that can be imposed at different rates to raise varying amounts of revenue. For the analysis, we examined hypothetical options of a similar scale: each measure was designed to raise $350-$400 million annually:

- Two percent flat rate income tax;
- Ten percent federal income tax surcharge;
- A $600 reduction in the annual PFD;
- Four percent sales tax excluding food at home, health care, shelter, and education;
- Three percent sales tax including food at home and shelter, excluding education and health care.

In addition to these five measures, we also analyzed the effects of a potential state property tax. We assumed that property taxes levied by local governments would be credited from the state tax, analogous to the way that the state credits local governments in the existing state petroleum property tax. This makes it more difficult to scale than the other broad-based measures. The state of Alaska taxes petroleum property at a rate of 20 mils, or 2 percent. The highest local property tax rate in Alaska is also currently at 20 mils (Valdez). Consequently, we examined the potential effects of a 20 mil, or 2 percent state property tax with a credit for taxes paid to local governments.

To estimate revenue from income taxes, we relied on data from the Internal Revenue Service on the amount Alaska taxpayers at different income levels and filing status paid in federal individual income taxes. We assumed that wages of non-residents would be taxed at the same average tax rates as residents.

Estimating revenue from sales taxes requires information on retail expenditures. The national Consumer Expenditure Survey provides detailed data on expenditures for residents of all states, including Alaska. Data on retail expenditures by non-residents is severely limited. We estimated that non-resident spend money in Alaska on living expenses in proportion to their share of total state wages. Using data on seasonal patterns of state alcohol taxes and local sales taxes, we estimated that 15 percent of commodities and 10 percent of services were purchased by non-residents. It should be noted that these are generous estimates of non-resident expenditures. The true figures are unlikely to be higher than these estimates and could be somewhat lower.

We estimated property tax revenues based on the "full and true value" of real and personal property as determined by the Alaska State Assessor's office. We adjusted the state tax base for property located outside the boundaries of taxing jurisdictions based on Census data. It should be noted that almost all the value of potentially taxable property except for a portion of the Trans-Alaska Pipeline (already taxed by the state) is located within areas already subject to local property taxation. Property owned by non-resident households and businesses is included in the tax base. Estimates of the share of property tax revenues contributed by non-residents highly uncertain, since information on non-resident property ownership is not systematically available.

We estimate non-residents would contribute at least 2.8 percent of property taxes, and probably more.

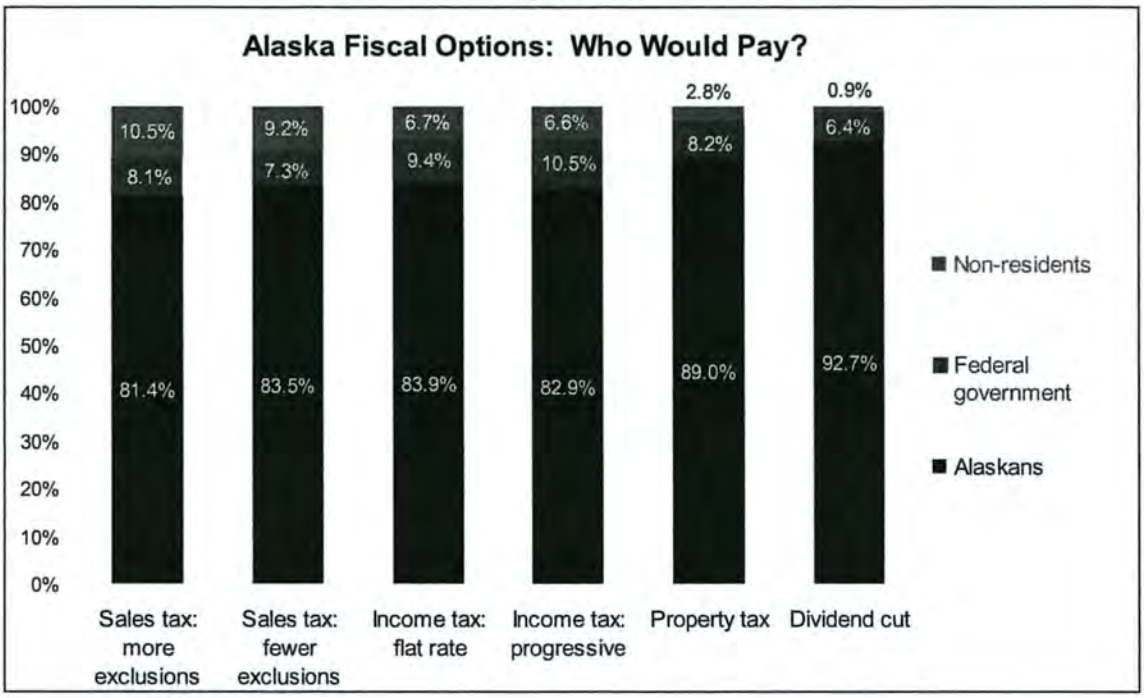
Table II-2 summarizes the total estimated revenues raised and the amounts from residents and non-residents for the five hypothetical options. As mentioned above, the PFD reduction assumes that one percent of dividends are paid to individuals who filed for the PFD as residents but for various reasons were no longer Alaska residents by the end of the year. A 20 mil property tax would collect $1.7 billion annually. After subtracting the amount that local governments are collecting that we assume would be credited from the state tax, the residual amount is $815 million, or about twice as much annual revenue as the other five measures would collect.

Table II-2.
Estimated Resident, Non-resident, and Total Revenues Raised from Five Potential Revenue Measures

Revenue measure	Total revenue raised ($ millions per year) Alaska residents	Non-residents	Total, residents and non-residents
2 percent flat rate income tax	$366	$ 29	$396
10 percent federal income tax surcharge	$338	$ 28	$366
$600 cut in PFD	$380	$ 4	$384
4 percent sales tax excluding food at home, health care, shelter, and education	$318	$ 41	$359
3 percent sales tax excluding education and health care	$388	$ 43	$431
20 mil state property tax with local credit	$ 792	$ 23	$815

Some of the amounts shown in Table II-2 for Alaska residents and non-residents will actually be contributed by the federal government in the form of reduced federal income taxes. One could say that the federal government "pays" for a portion of revenues from reduced PFD payments because federal income taxes will be reduced when payments fall for most taxpayers. Alaska taxpayers itemizing deductions can also deduct property taxes and either state income or sales taxes from federal taxable income. Based on IRS data for the percentage of taxpayers itemizing deductions and tax rates at different income levels, we estimated that the reduced federal taxes would offset between 7 and 11 percent of tax revenues collected (Figure II-4). The federal share is highest for an income tax based on a percentage of federal income taxes, and lowest for sales taxes with fewer exemptions. The share contributed by the federal government for a reduction in PFS payments is even lower.

Figure II-4



The federal share varies across the different revenue measures because higher income taxpayers are both more likely to itemized deductions – and therefore deduct the state tax from taxable income – and are taxed at higher tax rates. That is, the more regressive a revenue measure, the less that the federal government will offset revenues collected from Alaska households. We now discuss the distribution of the revenue burden among resident households.

Distribution of the Revenue Burden Among Alaska Households

Figure II-5 compares how each of the broad-based revenue measures discussed above affects per-capita disposable income—income net of taxes—for households with different levels of per-capita income. Because each revenue option raises a different amount of revenue, the numbers in Figure A-2 are normalized to show the disposable income loss per $100 million raised. We assumed that the entire amount of property taxes assessed on rental property would be passed on to renters. Although renters might not feel the full impact of the tax immediately, the higher costs to landlords would likely get built into new rental contracts as old contracts expire.

Figure II-5

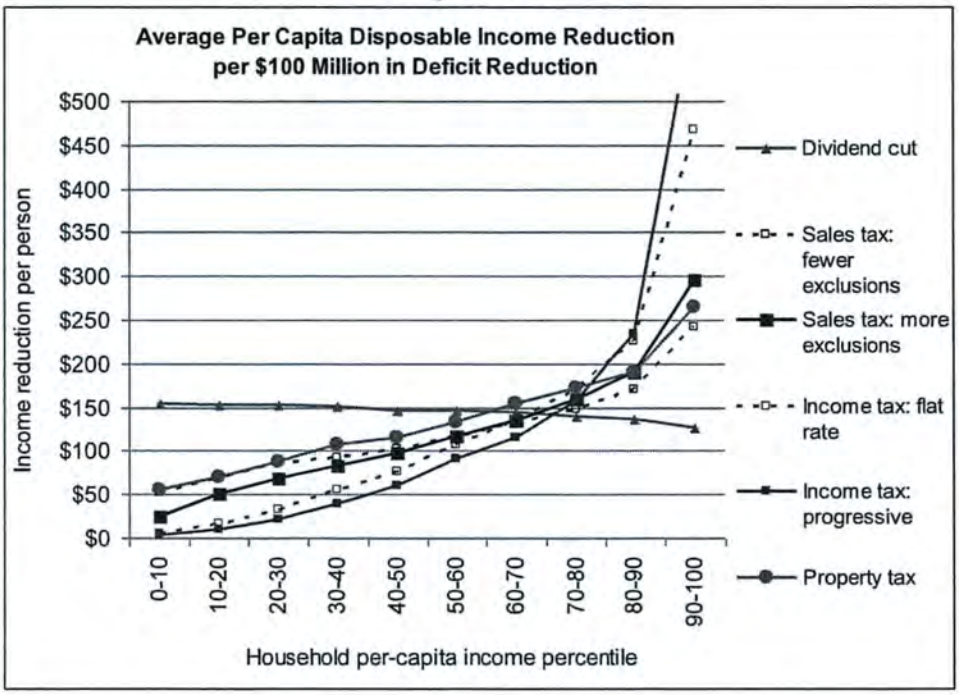
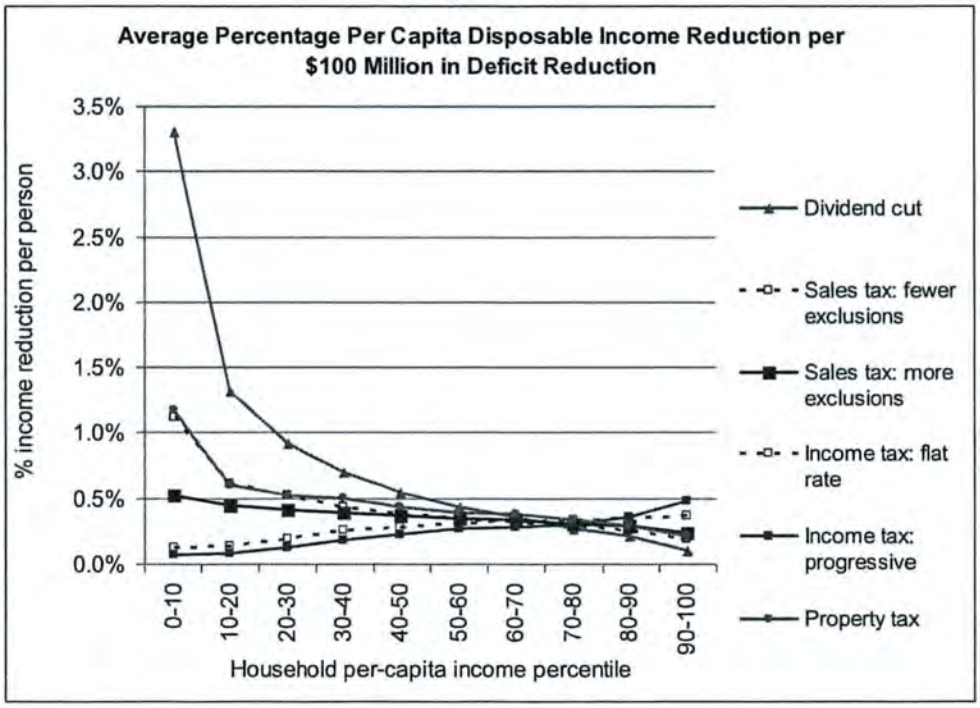


Figure II-6



Reducing the PFD by $156 per person and diverting the revenue to state government would raise $100 million. However, only the poorest households would actually lose the full amount. Most households get a portion of the loss of income back in reduced federal income taxes. The higher the household's per-capita income, the more the taxes are reduced; disposable income of the

richest ten percent of households would only fall on average by $127. For all the other measures, the amount paid would rise as per-capita income rises, although in varying degrees.

The ten percent of households with the highest per-capita income would pay about five times as much as the poorest ten percent for the sales tax including food at home and shelter. They would pay about 12 times as much if the sales tax excludes food and shelter, about the same multiple as the state property tax. In contrast, the ten percent of households with the highest per-capita income would pay about 70 times as much flat rate income tax as the poorest 10 percent, and about 160 times as much with the income tax surcharge.

Property taxes paid by businesses would also almost certainly be passed on to customers. The only exception would likely be natural resource exports such as fish and minerals, where prices are set by world markets, not Alaska supply and demand. To assess the distribution of these business property taxes among Alaska households, we assumed that the property tax would add to the cost of living in proportion to non-shelter expenditures.

Figure II-6 shows how the various fiscal measures would reduce disposable income for households for different per-capita income percentiles. The figure shows that the 2 percent flat rate income tax is progressive at lower income scales, due to the fixed exemptions and deductions for the tax base: federal taxable income. The 10 percent income tax surcharge is more progressive, following the progressive structure of the federal income tax. Even with the progressive rates, the income tax surcharge would reduce disposable income of the richest ten percent of households by less than 0.4 percent per $100 million raised.

In contrast to the income tax measures, the other fiscal options are quite regressive. The three percent sales tax option has lower rate but a broader base than the four percent option. The two types of expenditures excluded in the four percent tax -- food at home and shelter -- vary much less with income than do expenditures for other goods and services. In fact, because the shelter category includes rent but excludes payments for owner-occupied housing, and higher income households are much more likely to own their homes, there is very little variation in shelter expenditures across the different income percentiles. This makes sales taxes more regressive if they include food and shelter in the tax base. Non-residents also purchase less food at home and shelter relative to residents than they purchase other potentially taxable goods and services.

The poorest ten percent would lose 1.2 percent of income with the sales tax that includes food at home and shelter, while the richest 10 percent would lose only 0.2 percent of income. Even if food at home and shelter were excluded, the sales tax would still reduce disposable income of the poorest ten percent of households by twice as much as it reduced disposable income of the richest ten percent. The distribution of property taxes, as mentioned above, is very similar to the distribution of the sales tax that includes food and home and shelter. The reduction in the PFD is the most regressive of all. For every $100 million raised with PFD cuts, the ten percent of households with the lowest income lose 3.3 percent of disposable income, while disposable income of the ten percent with the highest income falls by only 0.1 percent.

Effects of Broad-Based Revenue Measures on Household Expenditures

All the fiscal options will have some adverse effect on the economy, because they reduce disposable income. As disposable income falls, households spend less on goods and services. However, the amount that a tax increase or spending cut changes spending depends on how households react to the change in their economic circumstances, and how markets respond to the changes in household behavior. Because we do not know how households and markets will react, our estimates of economic impacts are uncertain. We address the uncertainty by analyzing two scenarios, each based on a set of assumptions about how taxes and dividend cuts affect household purchasing power (disposable income) and about how changes in disposable income affect spending.

The IMPLAN input-output model used to estimate the indirect (multiplier) effects of changes in spending, discussed in Chapter III, has a set of embedded assumptions about income and spending. IMPLAN cannot distinguish income of residents from that of non-resident workers, nor does it distinguish spending of residents vs. visitors, we use the Census income data to represent the distribution of the effects of revenue measures. IMPLAN also assumes that all changes in the economy are proportional to changes in spending. This means that the model cannot account for people adjusting their household spending patterns when their incomes change; for example, eating more meals at home rather than dining out. Consequently, estimates of expenditure changes from IMPLAN are likely to be larger than will actually take place. IMPLAN also includes non-cash benefits that households receive from employers and governments such as employer-provided health insurance and food stamps, while the Census includes only cash income. These non-cash benefits do increase household purchasing power and contribute to the economy, so leaving them out could potentially underestimate the economic impacts.

Because it is not possible to reconcile the two data sources, we address the uncertainty in potential economic impacts by estimate two sets of impacts, based on two sets of assumptions tied to the different data sources. Since the assumptions embedded in the IMPLAN model generally results in higher estimated impacts, we call the estimates based on IMPLAN expenditure changes the "high" scenario, and the estimates based on Census data the "low" scenario. Table II-3 summarizes the assumptions about income and spending for the low and high scenarios. We present the projected expenditure changes of the six revenue measures in this chapter. Chapter III, which discusses economic impacts using the IMPLAN model, also discusses the expenditure effects in the high scenario.

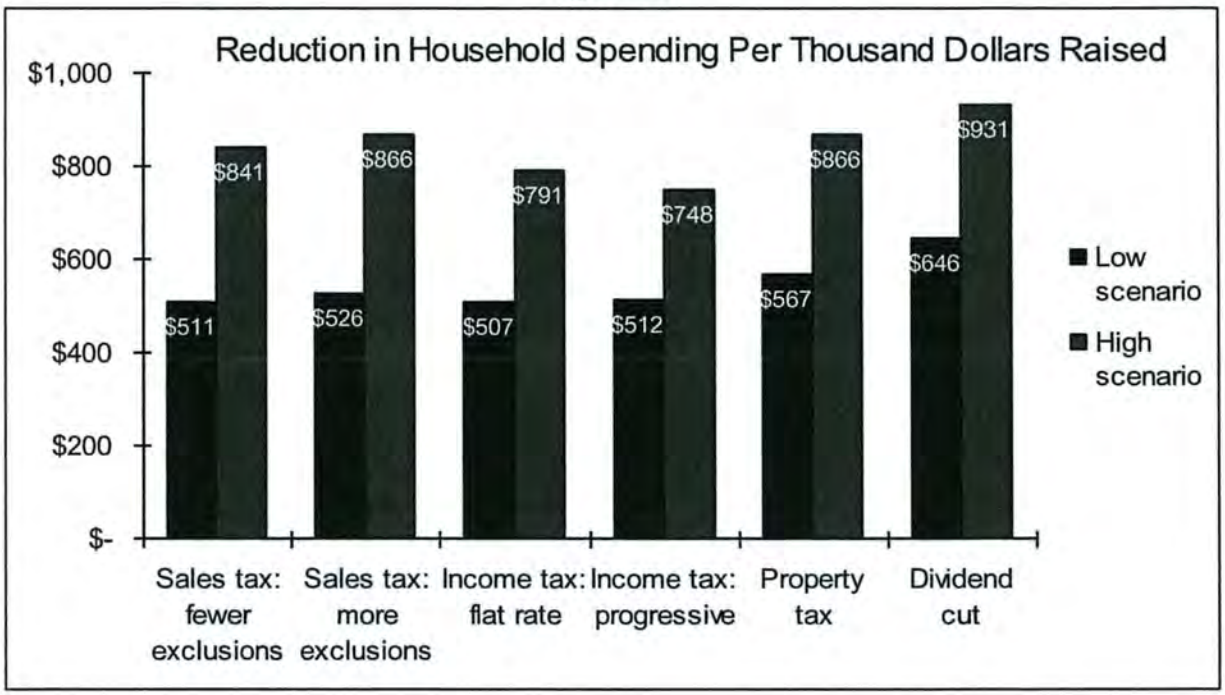
Table II-3.
Summary of Assumptions About Income and Spending for Two Methods of Estimating Economic Impacts of Spending Cuts and Revenue Measures

Assumption	High	Low
Income driving spending patterns includes		
Wages and salaries	x	x
Proprietors' income	x	x
Rent, interest, and dividends	x	x
Employer-paid job benefits	x	
In-kind assistance such as food stamps	x	
Rent homeowners avoid by owning their dwellings	x	
Spending patterns driving economic impacts		
Spending changes in proportion to income	x	
Spending patterns differ between residents and non-residents		x
Resident households adjust spending patterns with income		x
Loan payments change in proportion to income	x	
Loan payments assumed fixed in short term		x
Change in housing prices considered part of spending change	x	
Change in housing prices ignored (benefits cancel out costs)		x

Figure II-7 summarizes the amount that each of the six fiscal options would reduce household expenditures per thousand dollars of revenue raised, based on the low and high scenario assumptions. Appendixes A and C contain a detailed explanation of the methods. Income taxes have the least effect on expenditures. The PFD cut has the largest effect – about $0.65 reduction in expenditures per dollar of revenue raised in the low scenario and $0.93 in the high scenario. This difference between income taxes and PFD cuts is directly related to the distribution of the effects. The PFD reduces disposable income much more for lower-income households than the income tax, and lower-income households spend a much higher share of their income than higher-income households.

The estimated relative effects of sales taxes and the property tax on household spending differ for the two scenarios. The low scenario takes into account the higher proportion of sales taxes than property taxes paid by non-residents. The lower contribution of non-residents leads to a higher estimated adverse effect for property taxes on household spending. For the high scenario, which does not distinguish between resident and non-resident spending, the property tax and sales taxes have similar effects.

Figure II-7



Increases in Excise Taxes on Alcohol, Tobacco, and Petroleum Fuels

In addition to the six broad-based revenue measures discussed above, we also considered potential revenues and effects on households and the economy of potential increases in excise taxes. Alaska already levies excise taxes on petroleum fuels, alcoholic beverages, and tobacco products. The state could raise additional revenues by increasing the tax rates on these products. For the most part, increased excise taxes would have similar effects on the economy per dollar of revenue raised as general sales taxes. However, the distribution of the effects on household disposable income would differ from that of general sales taxes.

Alaska taxes petroleum fuels at different rates depending on the type of fuel. Motor fuels are taxed at a rate of $0.0895 per gallon, marine fuels at $0.05 per gallon, aviation gasoline at $0.047 and jet fuel at $0.032 per gallon. The $0.0895 per gallon highway rate includes a surcharge of $0.95 cents per gallon effective July 1, 2015. Commercial enterprises pay a substantial portion of motor fuel taxes. In Fiscal Year 2015, the state collected $42 million from fuel taxes, and will likely collect $45 million in 2016 with the surcharge in effect. Even with the surcharge, Alaska fuel taxes are the lowest in the nation. According to data from the American Petroleum Institute, and trade organization, Alaska would have to increase its fuel taxes by about $17.50 per gallon to bring its fuel tax rates to the national average. Such an increase would provide an estimated $87 million per year of additional revenue.

The justification often made for levying excise taxes on transportation fuels is that it is a user fee to allow the state to recover its cost of operating, maintaining, and upgrading state highways, harbors, and airports. The federal gasoline tax is specifically earmarked for the Highway Trust Fund, which pays for highway and other surface transportation infrastructure. In Alaska, the

current state budget for the portion of the Department of Transportation and Public Facilities dealing with transportation facilities exceeds $200 million. Even if Alaska raised fuel taxes to the national average rates, the total fuel taxes paid of $133 million would still fall far short of what it actually costs to maintain Alaska's transportation infrastructure, let alone the state's share of new highway construction and port expansion. In order to cover the state's actual share of the costs of maintaining and improving Alaska's transportation infrastructure, the motor fuels tax would have to increase by a factor of five.

Although gasoline taxes are considered regressive nationally, Alaska appears to be different. Data from the Consumer Expenditure Survey suggest that fuel expenditures are roughly proportional to per-capita household income, although fuel purchases vary greatly among households. In Alaska, higher income households are more likely to own and use recreational vehicles, boats, and airplanes, as well as drive less fuel-efficient luxury vehicles. Rural Alaska households with lower incomes use gasoline for snow machines, boats, and all-terrain vehicles, but generally use less fuel than urban households. In Alaska at least, it does not appear that gasoline taxes would place a higher burden on low income households. Given the pattern of fuel use in Alaska, the low current state tax rates, and the cost of maintaining the state's transportation infrastructure, raising motor fuels taxes should be considered a relatively high priority for revenue enhancement.

Current tax rates on alcohol are based on a rate of $0.10 per drink, which translates to $1.07 per gallon for beer, $2.50 per gallon for wine, and $12.80 per gallon for hard liquor. Small breweries get a substantial tax reduction. The state alcohol tax raises about $38 million per year, of which $19 million comes from liquor sales, $6 million from wine, and the remainder from beer.

Raising the alcohol tax rate to $0.25 per drink would likely bring in about $55 million more revenue. Although no solid data exist for Alaska, the tax is presumed to be quite regressive, as it seems unreasonable to expect that total alcohol consumption would rise proportionately as income rises. That means that the burden of the additional tax would fall more heavily on lower income households. On the other hand, consumer expenditure survey data for Alaska show that higher income households spend a greater proportion of their income on alcohol than lower income households. The explanation for this apparent contradiction is likely related to how higher income households purchase the product. More affluent households would be much more likely to purchase wine and beer in restaurants, for example, where the retail price is much higher per drink than in liquor stores. This finding suggests that the state could avoid imposing an undue burden on lower-income households by considering changing the alcohol tax from a constant amount per unit of alcohol to an "ad valorem" tax; that is, a tax based on a constant percentage of the retail alcohol price.

Alaska levies tobacco taxes at a rate based on a tax of $2.00 per pack of cigarettes. Tobacco taxes collected $65 million in 2015. The amount collected has been declining in recent years. Only about one in five Alaska households in the Consumer Expenditure Survey reported spending any money on tobacco products, and the amount those households do spend on tobacco purchases is not correlated with income. The downward trend of tax collections is partly due to the decline in tobacco use, but is also likely related to increased internet sales and other means

that avoid paying Alaska's relatively high tax. Raising tobacco taxes would only increase the incentive for tobacco users to find ways to avoid the tax, and therefore would not necessarily lead to higher state revenues being collected. This problem, coupled with the fact that tobacco taxes are highly regressive, suggests that increased tobacco taxes are not a promising strategy for reducing the state budget deficit.

III. SHORT-RUN ECONOMIC IMPACTS OF FISCAL OPTIONS

In this chapter we discuss our estimates of the short-run economic impacts of fiscal options on income and jobs. Appendix D provides technical details of the methodology and results.

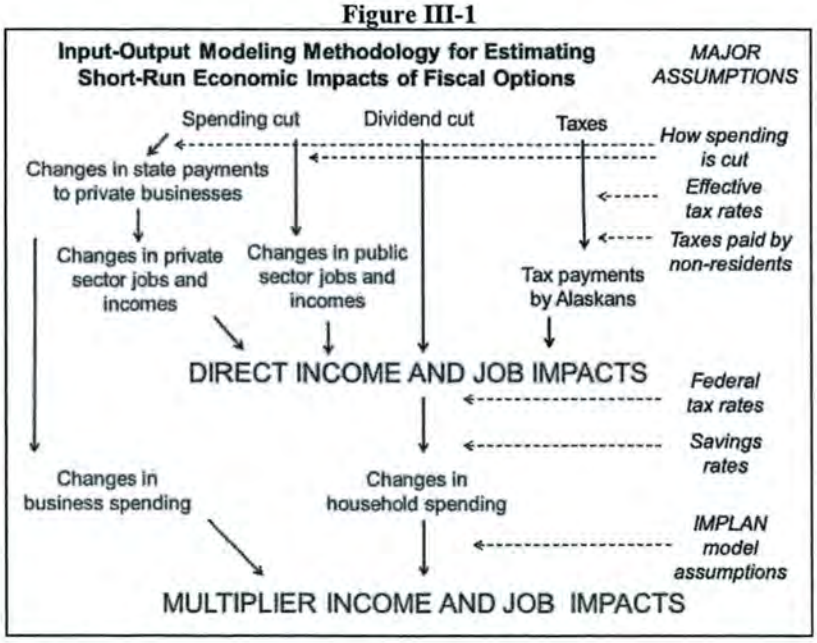
To help in comparing options, we report estimated short-run economic impacts per $100 million of deficit reduction. The estimated short-run economic impacts of an option which would reduce the deficit by a greater or lesser amount can be calculated by scaling these estimates up or down. For example, the estimated economic impacts of an income tax which raises $200 million in new revenues would be twice the estimated impacts reported in this chapter.

Overview of Methodology

To compare short-run economic impacts of different fiscal options, we used a standard economic technique known as "economic impact modeling" and a commonly used model known as "IMPLAN." As illustrated by Figure III-1, we began by estimating the "direct" income impacts of the fiscal options which result from the initial resulting changes in payments to and/or income of Alaska households and businesses, and the corresponding "direct" impacts on jobs of public sector and private sector workers resulting from spending cuts (but not from dividend cuts or taxes).

Next we estimated how the direct income impacts would affect spending by businesses and households. These changes in sending generate further "multiplier" impacts on income and jobs as "ripple" effects of reduced payments throughout the economy.

Figure III-1



As shown on the right-hand side of Figure III-1, five types of assumptions are particularly important for our analysis of short-run economic impacts:

- For the spending cut options, how spending is cut. This affects both the absolute and relative direct impacts of the cuts on private sector and public sector income and jobs.

- For the tax options, the effective tax rates paid by Alaskans of different income groups, and the share of taxes paid by non-residents.

- The marginal federal tax rates of Alaskans experiencing direct income impacts. These affect the extent to which direct income impacts are partially offset by reduced federal tax obligations.

- The marginal savings rates of Alaskans experiencing direct income impacts, or the extent to which they would respond to reductions in income by reducing savings or by reducing spending. These marginal savings rates, which directly drive our estimates of multiplier impacts, are the most difficult to estimate and the greatest source of uncertainty in our estimates of short-run economic impacts.

- The numerous assumptions embedded in the IMPLAN model about the extent to which payments to households and businesses in different sectors result in further payments to households and businesses in different sectors, all of which cumulatively result in the estimated multiplier impacts on income and jobs.

As discussed in Chapter II, we analyzed two scenarios for how fiscal options might affect household spending, based on different assumptions estimated from different data sources. We refer to these as the "high" scenario (based on assumptions embedded in the IMPLAN model) and the "low" scenario (based on assumptions estimated from Census income data). The "high" scenario assumptions generally result in higher estimated impacts of the fiscal options on Alaska household spending and correspondingly higher multiplier economic impacts than the "low" scenario options. In the following discussion, we first discuss the estimated impacts for "high" scenario. We then discuss the estimated impacts for the "low" scenario.

High Scenario Short-Run Economic Impact Estimates

Table III-1 summarizes our estimates of the short-run economic impacts of fiscal options per $100 million of deficit reduction under the high scenario expenditure impact assumptions. Below we discuss in turn the estimated direct income impacts, multiplier and total income impacts, and employment impacts. Note first, however, that the "saving less" option has no short-run economic impacts: saving less of the state's annual Permanent Fund earnings would not result in any short-term changes in income or employment.

Table III-1
Estimated Short-Run Economic Impacts of Selected Fiscal Options
Per $100 Million of Deficit Reduction (High Scenario)

	Income Impacts (millions of $ of income)				Employment Impacts (FTE jobs in Alaska)		
Option	Direct earned	Direct other	Multi-plier	Total	Direct	Multi-plier	Total
Spending cut: workers	95		43	138	962	715	1677
Spending cut: broad-based	67		48	115	504	754	1260
Spending cut: capital	42		22	64	506	425	931
Spending cut: pay	100		43	143	0	727	727
Income tax: progressive		93	45	138	0	786	786
Income tax: flat rate		93	46	138	0	798	798
Sales tax: more exclusions		89	44	133	0	775	775
Sales tax: fewer exclusions		90	45	135	0	795	795
Property tax		97	48	146	0	854	854
Dividend cut		99	50	149	0	892	892
Saving less				0			0

Direct Income Impacts

We divide direct income impacts into two types. *Direct earned* income impacts result from reduced earnings of public or private sector workers as a direct result of cuts to government spending. *Direct other* income impacts result from reductions in household disposable income due to state taxes or reductions in dividend payments.

The four generic spending cut options illustrate the potential range of direct earned income impacts of spending cuts. If spending cuts were entirely to the pay of state workers, then a $100 million cut to state spending would directly reduce income earned in Alaska by $100 million. If spending cuts were achieved by reducing the state workforce, then (for our assumed generic option) the direct earned income impact would be slightly less ($95 million), because some of

the spending cut would be to other costs associated with state workers, such as the costs of office space.

If spending cuts were achieved through broad-based cuts or cuts to the capital budget, the direct earned income impacts might be significantly lower, because relatively less of the cuts would be to payments to state or contractor workers, and relatively more would be to payments for other costs such as energy, supplies, and construction materials. Note that the direct income impacts which we assume for "broad-based" spending cuts ($67 million) and "capital spending" cuts ($42 million) are illustrative amounts for the particular generic scenarios we analyzed: the direct income impacts might differ for any actual "broad based" spending cut or "capital" spending cut.

The direct other income impacts assumed for the tax and dividend cuts reflect our estimates from Chapter II (Figure II-4) of the share of taxes and dividend cuts which would be paid by non-residents. For the income and sales tax options, the non-resident share ranges from 9% to11%, so the corresponding "direct other" income impacts vary from 93% to 89%. For the property tax option, the non-resident share is a lower 3%. For the dividend option, we assume that a small share of Alaskans (about 1%) leave the state each year after receiving dividends, and thus become non-residents, so that a $100 million cut to dividend payments reduce the income of "Alaskans" by $99 million rather than by $100 million.

In general, the fact that between 7% and 11% of sales and income taxes would be paid by non-residents means that both the direct income and job impacts as well as the resulting multiplier income and job impacts would be lower for these tax options than for the property tax and dividend cut options, for which Alaska residents would experience almost the entire loss of income.

Multiplier and Total Income Impacts

Multiplier income impacts are additional changes in income caused by the direct income impacts as a result of changes in the spending of households (known as induced impacts) and changes in spending of businesses (known as indirect impacts). Total income impacts are the sum of direct income impacts and multiplier income impacts.

Our estimates of multiplier income impacts are driven by our assumptions about how direct income impacts result in changes in household expenditures as well as by the numerous IMPLAN model assumptions about the allocation of household and business expenditures among different industries and households. These combined assumptions result in the implicit "income multipliers" shown in Table III-2.

Table III-2
Implicit Income Multipliers for Fiscal Options ("High Scenario")

	Ratio of multiplier income impacts to direct income impacts	Ratio of total income impacts to direct income impacts
Spending cut: workers	0.45	1.45
Spending cut: broad-based	0.71	1.71
Spending cut: capital	0.53	1.53
Spending cut: pay	0.43	1.43
Income tax: progressive	0.49	1.49
Income tax: flat rate	0.49	1.49
Sales tax: more exclusions	0.50	1.50
Sales tax: fewer exclusions	0.50	1.50
Property tax	0.50	1.50
Dividend cut	0.50	1.50

The implicit income multipliers are almost the same for the six tax and dividend cut options (about 0.50), reflecting the fact that we assumed that direct income impacts would have proportionally similar impacts on expenditures for these options.

In contrast, the implicit income multipliers vary for the four spending cut options. For the "worker" and "pay" spending cut options, the variation in part reflects differences in the assumed income distribution of state workers that would be affected by these options from the broader income distribution of Alaska households which would be affected by the tax and dividend cut options. For the "broad-based" and "capital" spending cut options , the variation in part is because some of the multiplier impacts would be indirect impacts caused by changes in spending by businesses directly impacted by changes in state spending.

Of all the fiscal options, estimated total income impacts are greatest for dividend cut option. This is because dividend cuts would directly reduce Alaskans' incomes by more than the tax options (because taxes would be partly paid by non-residents) or the worker, broad-based and capital spending cut options (which would only partly occur as direct reductions to household incomes). Although the "pay" spending cut option results in a similar direct income impact, the total impact is lower than for the dividend cut option because a higher share of dividend cuts would be from lower income households for whom the expenditure impacts would be greater.

Job Impacts

As shown in the top three rows of Table III-1, only the "workers," "broad-based" and "capital" spending cut options would have direct job impacts. The direct impacts of the other options occur only as reductions in income, but not as job losses. The direct job impacts are highest for the "workers" spending cut options because we included this generic option specifically to illustrate the impacts of spending cuts achieved entirely by reducing the state workforce.

The estimated multiplier job impacts reflect IMPLAN model assumptions about the full-time-equivalent (FTE) multiplier job impacts resulting from multiplier income impacts (Table III-3). In general, the ratio of multiplier job impacts to multiplier income impacts is similar across fiscal options, and ranges from 16 to 19 FTE multiplier job impacts per million dollars of multiplier income impacts (the differences result from differences in the relative shares of different industries in changes in estimated spending flows).

Table III-3
Multiplier FTE Job Impacts
per Million Dollars of Muliplier Income Impacts

Option	Ratio of multiplier job impacts to multiplier income impacts
Spending cut: workers	16.7
Spending cut: broad-based	15.8
Spending cut: capital	19.1
Spending cut: pay	16.8
Income tax: progressive	17.3
Income tax: flat rate	17.5
Sales tax: more exclusions	17.6
Sales tax: fewer exclusions	17.7
Property tax	17.6
Dividend cut	17.9

As shown in Table III-1, the total job impacts (direct job impacts and multiplier job impacts) are highest for the "workers" and "broad-based" spending cut options. This is because these two options reduce the number of jobs in the economy directly, while the other options reduce fewer jobs directly (the "capital" spending cut option) or remove jobs only indirectly as a result of multiplier income impacts (the "pay" spending cut option and the tax and dividend cut options.)

Low Scenario Short-Run Economic Impact Estimates

Table III-4 summarizes our estimates of the short-run economic impacts of fiscal options per $100 million of deficit reduction under the low scenario expenditure impact assumptions. These estimates differ from the high scenario estimates because they assume, based on a different data source, that reductions in household income would result in lower reductions in household spending (but higher reductions in household savings). As a result, the estimated multiplier impacts are about one-third smaller than the high scenario multiplier impacts.

Table III-4
Estimated Short-Run Economic Impacts of Selected Fiscal Options
Per $100 Million of Deficit Reduction (Low Scenario)

	Income Impacts (millions of $ of income)				Employment Impacts (FTE jobs in Alaska)		
Option	Direct earned	Direct other	Multi-plier	Total	Direct	Multi-plier	Total
Spending cut: workers	95		28	123	962	464	1425
Spending cut: broad-based	67		31	98	504	489	993
Spending cut: capital	42		14	56	506	275	781
Spending cut: pay	100		28	128		471	471
Income tax: progressive			31	124		538	538
Income tax: flat rate			29	122		511	511
Sales tax: more exclusions			27	115		471	471
Sales tax: fewer exclusions			27	117		483	483
Property tax			32	129		559	559
Dividend cut			35	134		619	619
Saving less				0			0

Table III-5 (on the following page) compares the low scenario and high scenario estimates. The low scenario multiplier impacts range from 61% to 69% of the high scenario multiplier impacts. The low scenario total impacts range from 61% to 85% of the high scenario multiplier impacts. The relative ranking of impacts is almost the same, except that rankings shift slightly between some of the income and sale tax options.

Table III-5
Estimated Short-Run Economic Impacts of Selected Fiscal Options
Per $100 Million of Deficit Reduction (Low Scenario)

Option	Income Impacts (millions of $ of income)				Employment Impacts (FTE jobs in Alaska)		
	Direct earned	Direct other	Multi-plier	Total	Direct	Multi-plier	Total
Spending cut: workers	1.00		0.65	0.89	1.00	0.65	0.85
Spending cut: broad-based	1.00		0.65	0.85	1.00	0.65	0.79
Spending cut: capital	1.00		0.65	0.88	1.00	0.65	0.84
Spending cut: pay	1.00		0.65	0.89		0.65	0.65
Income tax: progressive		1.00	0.68	0.90		0.68	0.68
Income tax: flat rate		1.00	0.64	0.88		0.64	0.64
Sales tax: more exclusions		1.00	0.61	0.87		0.61	0.61
Sales tax: fewer exclusions		1.00	0.61	0.87		0.61	0.61
Property tax		1.00	0.65	0.89		0.65	0.65
Dividend cut		1.00	0.69	0.90		0.69	0.69

Which estimates of economic impacts are "better"? We don't know, because we don't have enough data about the extent to which Alaska households would react to reductions in their incomes by reducing spending or reducing their savings. Both sets of estimates are reasonable. Taken together, they suggest a range within which actual economic impacts would likely fall.

Table III-6
Estimated Total Short-Run Economic Impacts of Selected Options for Reducing the Deficit by $100 Million: Low and High Scenarios

Option	Income Impacts (millions of $ of income)		Employment Impacts (FTE jobs in Alaska)	
	Low scenario	High scenario	Low scenario	High scenario
Spending cut: workers	123	138	1425	1677
Spending cut: broad-based	98	115	993	1260
Spending cut: capital	56	64	781	931
Spending cut: pay	128	143	471	727
Income tax: progressive	124	138	538	786
Income tax: flat rate	122	138	511	798
Sales tax: more exclusions	115	133	471	775
Sales tax: fewer exclusions	117	135	483	795
Property tax	129	146	559	854
Dividend cut	134	149	619	892
Saving less	0	0	0	0

Short-Run Economic Impacts of Combinations of Options

It is more likely that the deficit will be reduced through a combination of fiscal options rather than by any single option. The economic impacts of any given combination of options can be calculated as the economic impacts of the individual options weighted by their share in the total deficit reduction. Table III-7 shows the economic impacts of selected hypothetical combinations of fiscal options, per $100 million of deficit reduction. Note that the greater the extent to which the combination of options includes options with lower economic impacts (particularly "saving less"), the lower the economic impact of the combination.

Table III-7

Examples of Ranges of Estimated Economic Impacts Per $100 Million of Deficit Reduction Resulting from Selected Potential Combinations of Fiscal Options

	Option	Two options						Three options				Four options
Examples of potential combinations of options	Spending cut: workers											
	Spending cut: broad-based	50%	50%		50%			33%	33%	33%		25%
	Spending cut: capital											
	Spending cut: pay											
	Income tax: progressive	50%		50%			50%	33%		33%	33%	25%
	Income tax: flat rate											
	Sales tax: more exclusions											
	Sales tax: fewer exclusions											
	Property tax											
	Dividend cut		50%	50%		50%		33%	33%		33%	25%
	Saving less				50%	50%	50%		33%	33%	33%	25%
Range of estimated impacts	**Total income impact (millions of $ of income)**											
	Low scenario	111	116	129	49	67	62	119	77	74	86	89
	High scenario	127	132	143	58	74	69	134	88	84	96	101
	Total jobs impact (FTE jobs in Alaska)											
	Low scenario	765	806	578	496	309	269	716	537	510	386	537
	High scenario	1023	1076	839	630	446	393	980	717	682	560	735

Limitations of Comparative Short-Run Economic Impact Estimates

The input-output modeling approach which we used to estimate short-run economic impacts is the best available technique for estimating how a change in spending or income attributable to a particular industry or government policy "ripples" through the economy as a result of further changes in spending flows between industries and households.

However, our economic impacts estimates should be considered approximate rather than precise measures of the actual impacts that each fiscal option would have, for a number of reasons:

The spending cut assumptions are based on generic assumptions about how state spending cuts would be made; actual spending cuts might differ significantly.

The estimates do not account for potential behavioral adjustments in spending, wage rates, prices, or migration to and from Alaska. The best way to interpret our estimates is as the impacts resulting from less money circulating in the economy, but not those which might result from potential behavioral adjustments.

The estimates do not include other potential short-term and longer-term economic impacts not directly caused by changes in spending flows. These might include, for example, the economic impacts over time of reductions in state services due to spending cuts, or how investment and growth in different Alaska industries over time might be affected by new taxes. As we discuss in Chapter VI, these other economic impacts of fiscal options might be as or more important than the short-run economic impacts which we estimated—but analyzing them was well beyond the scope of what we could do for this study.

IV. REGIONAL DIFFERENCES IN IMPACTS OF FISCAL OPTIONS

Regional Differences in Revenue Impacts

There are significant regional differences in income distribution in Alaska. Figure IV-1 (on the following page) shows one of many potential measures of regional income distribution: the share of exemptions (a rough measure of population) claimed on 2013 federal income tax returns for five ranges of adjusted gross income reported on the return. The share of exemptions for returns with less than $25,000 in adjusted gross income ranged from as high as 55% for the Kusilvak (formerly Wade Hampton) Census Area to as low as 17% for the Juneau City and Borough, with an Alaska average of 22%.

In contrast, the share of exemptions accounted for by returns with more then $75,000 in adjusted gross income was 48% for the Juneau City and Borough and but only 9% for the Kusilvak Census area, with an Alaska average of 39%. Clearly, there would be significant differences in the relative extents to which these two census areas would be impacted by dividend cuts and income taxes.

As discussed in Chapter II, the revenue impacts of the tax and dividend cut fiscal options vary significantly by income groups. We would expect corresponding variation in revenue impacts by region: lower-income regions are likely to be impacted relatively more by dividend cuts and sales taxes, which have relatively greater impacts on lower-income groups. Higher-income regions are likely to be impacted relatively more by income taxes, which have relatively greater impacts on higher-income groups.

Regional Differences in Employment Impacts

There are also significant regional differences in Alaska in shares of different industries in employment and in wage and salary income. As shown in Figure IV-2, in 2014 the share of state government jobs in total wage and salary earnings was 28% in Juneau but less than 1% in the North Slope Borough. Clearly, Juneau would be relatively far more impacted than the North Slope Borough by cuts to state government jobs or pay.

As shown in Figure IV-3, in 2014 the share of local government jobs in total wage and salary earnings was 60% in the Wade Hampton (now Kusilvak) Census area, but only 4% in the Denali Borough. Clearly, the Wade Hampton Census Area would be relatively far more impacted than the Denali Borough by cuts to revenue sharing, K-12 education funding, or other kinds of state spending which help pay for local government.

Figure IV-1

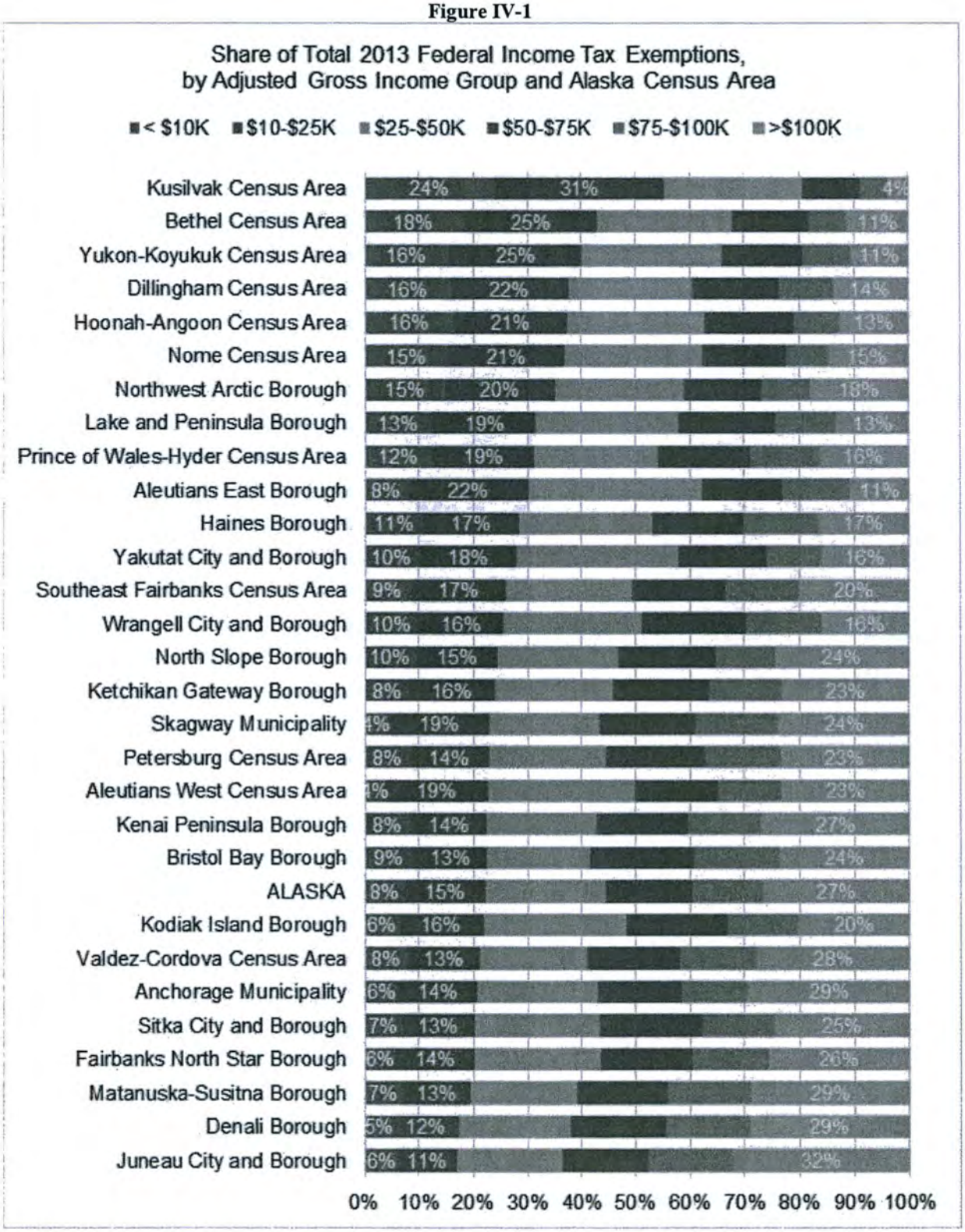

Share of Total 2013 Federal Income Tax Exemptions,
by Adjusted Gross Income Group and Alaska Census Area
< $10K
$10-$25K
$25-$50K
$50-$75K
$75-$100K
>$100K
Kusilvak Census Area 24% 31% 4%
Bethel Census Area 18% 25% 11%
Yukon-Koyukuk Census Area 16% 25% 11%
Dillingham Census Area 16% 22% 14%
Hoonah-Angoon Census Area 16% 21% 13%
Nome Census Area 15% 21% 15%
Northwest Arctic Borough 15% 20% 18%
Lake and Peninsula Borough 13% 19% 13%
Prince of Wales-Hyder Census Area 12% 19% 16%
Aleutians East Borough 8% 22% 11%
Haines Borough 11% 17% 17%
Yakutat City and Borough 10% 18% 16%
Southeast Fairbanks Census Area 9% 17% 20%
Wrangell City and Borough 10% 16% 16%
North Slope Borough 10% 15% 24%
Ketchikan Gateway Borough 8% 16% 23%
Skagway Municipality 4% 19% 24%
Petersburg Census Area 8% 14% 23%
Aleutians West Census Area 4% 19% 23%
Kenai Peninsula Borough 8% 14% 27%
Bristol Bay Borough 9% 13% 24%
ALASKA 8% 15% 27%
Kodiak Island Borough 6% 16% 20%
Valdez-Cordova Census Area 8% 13% 28%
Anchorage Municipality 6% 14% 29%
Sitka City and Borough 7% 13% 25%
Fairbanks North Star Borough 6% 14% 26%
Matanuska-Susitna Borough 7% 13% 29%
Denali Borough 5% 12% 29%
Juneau City and Borough 6% 11% 32%
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Figure IV-2

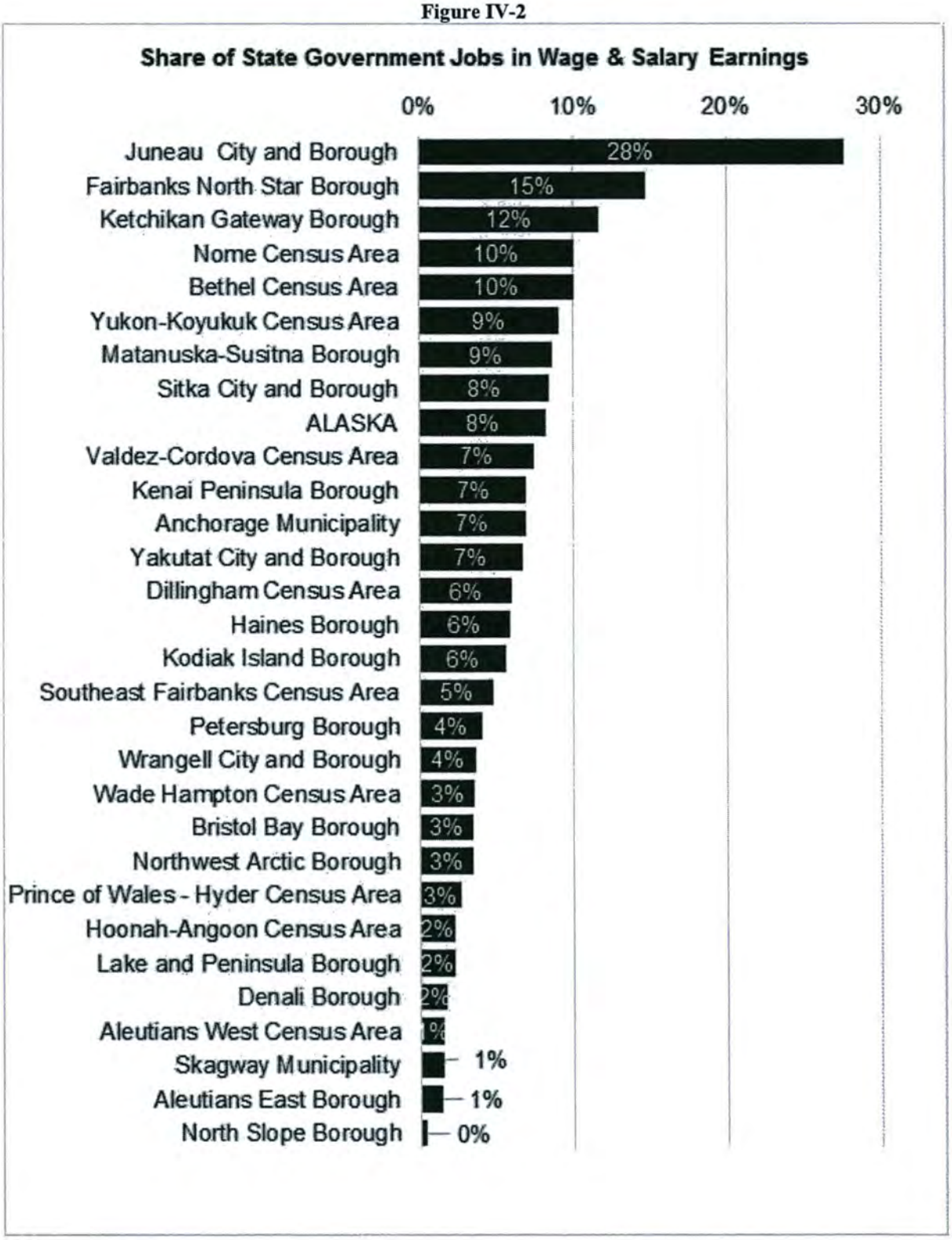
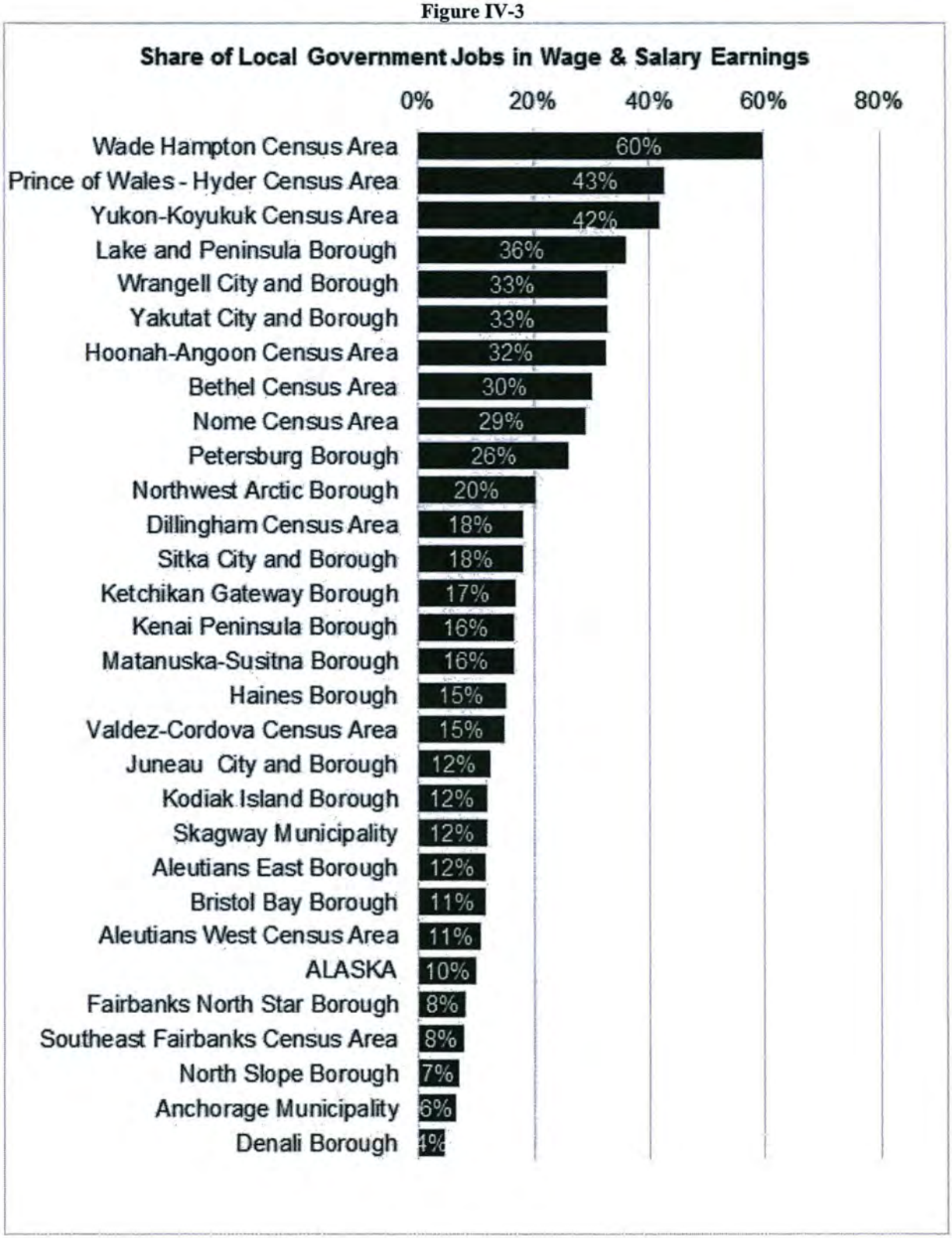

Share of State Government Jobs in Wage & Salary Earnings
0%
10%
20%
30%
Juneau City and Borough 28%
Fairbanks North Star Borough 15%
Ketchikan Gateway Borough 12%
Nome Census Area 10%
Bethel Census Area 10%
Yukon-Koyukuk Census Area 9%
Matanuska-Susitna Borough 9%
Sitka City and Borough 8%
ALASKA 8%
Valdez-Cordova Census Area 7%
Kenai Peninsula Borough 7%
Anchorage Municipality 7%
Yakutat City and Borough 7%
Dillingham Census Area 6%
Haines Borough 6%
Kodiak Island Borough 6%
Southeast Fairbanks Census Area 5%
Petersburg Borough 4%
Wrangell City and Borough 4%
Wade Hampton Census Area 3%
Bristol Bay Borough 3%
Northwest Arctic Borough 3%
Prince of Wales - Hyder Census Area 3%
Hoonah-Angoon Census Area 2%
Lake and Peninsula Borough 2%
Denali Borough 2%
Aleutians West Census Area 1%
Skagway Municipality 1%
Aleutians East Borough 1%
North Slope Borough 0%

Figure IV-3


Share of Local Government Jobs in Wage & Salary Earnings
0%
20%
40%
60%
80%
Wade Hampton Census Area 60%
Prince of Wales - Hyder Census Area 43%
Yukon-Koyukuk Census Area 42%
Lake and Peninsula Borough 36%
Wrangell City and Borough 33%
Yakutat City and Borough 33%
Hoonah-Angoon Census Area 32%
Bethel Census Area 30%
Nome Census Area 29%
Petersburg Borough 26%
Northwest Arctic Borough 20%
Dillingham Census Area 18%
Sitka City and Borough 18%
Ketchikan Gateway Borough 17%
Kenai Peninsula Borough 16%
Matanuska-Susitna Borough 16%
Haines Borough 15%
Valdez-Cordova Census Area 15%
Juneau City and Borough 12%
Kodiak Island Borough 12%
Skagway Municipality 12%
Aleutians East Borough 12%
Bristol Bay Borough 11%
Aleutians West Census Area 11%
ALASKA 10%
Fairbanks North Star Borough 8%
Southeast Fairbanks Census Area 8%
North Slope Borough 7%
Anchorage Municipality 6%
Denali Borough 4%

V. TOTAL ECONOMIC IMPACTS OF REDUCING THE DEFICIT

In this chapter we discuss potential total impacts on the economy of reducing the deficit, and how these might be affected by how fast the deficit is reduced.

Table V-1 shows the estimated total impacts of reducing the deficit by selected potential total amounts using selected potential combinations of fiscal options, calculated by extrapolating from the estimates in Table III-7 of the impacts of reducing the deficit by $100 million using these options. Note that we are not arguing for or against the need to reduce the deficit by any of these amounts or in any ways. Our purpose is simply to illustrate what the estimated impacts would by of reducing the deficit by these amounts in these ways.

Table V-1

Estimated Impacts of Reducing the Deficit by Selected Total Amounts Using Different Potential Combinations of Fiscal Options

		Two options						Three options				Four options
Combinations of fiscal options	Spending cut: broad-based	50%	50%		50%			33%	33%	33%		25%
	Income tax: progressive	50%		50%			50%	33%		33%	33%	25%
	Dividend cut		50%	50%	0%	50%		33%	33%		33%	25%
	Saving less				50%	50%	50%		33%	33%	33%	25%
Estimated impacts of reducing defcit by $100 million	Income: Low scenario	111	116	129	49	67	62	119	77	74	86	89
	Income: High scenario	127	132	143	58	74	69	134	88	84	96	101
	Jobs: Low scenario	765	806	578	496	309	269	716	537	510	386	537
	Jobs: High scenario	1,023	1,076	839	630	446	393	980	717	682	560	735
Estimated impacts of reducing defcit by $500 million	Income: Low scenario	555	580	643	246	334	309	593	387	370	429	445
	Income: High scenario	633	660	717	288	372	345	670	440	422	478	503
	Jobs: Low scenario	3,826	4,029	2,892	2,481	1,547	1,345	3,582	2,686	2,551	1,928	2,687
	Jobs: High scenario	5,116	5,380	4,196	3,150	2,230	1,966	4,898	3,587	3,411	2,798	3,673
Estimated impacts of reducing defcit by $1.0 billion	Income: Low scenario	1,110	1,160	1,286	492	668	618	1,185	773	740	858	889
	Income: High scenario	1,265	1,320	1,434	576	745	690	1,340	880	844	956	1,005
	Jobs: Low scenario	7,652	8,057	5,784	4,963	3,094	2,690	7,164	5,371	5,102	3,856	5,373
	Jobs: High scenario	10,232	10,761	8,393	6,300	4,461	3,932	9,795	7,174	6,821	5,595	7,346
Estimated impacts of reducing defcit by $1.5 billion	Income: Low scenario	1,665	1,740	1,930	738	1,002	927	1,778	1,160	1,110	1,286	1,334
	Income: High scenario	1,898	1,981	2,152	864	1,117	1,035	2,010	1,320	1,265	1,434	1,508
	Jobs: Low scenario	11,479	12,086	8,676	7,444	4,641	4,034	10,747	8,057	7,652	5,784	8,060
	Jobs: High scenario	15,348	16,141	12,589	9,450	6,691	5,898	14,693	10,761	10,232	8,393	11,019
Estimated impacts of reducing defcit by $2.0 billion	Income: Low scenario	2,220	2,320	2,573	984	1,337	1,236	2,371	1,547	1,480	1,715	1,778
	Income: High scenario	2,531	2,641	2,869	1,152	1,489	1,379	2,680	1,761	1,687	1,913	2,010
	Jobs: Low scenario	15,305	16,114	11,568	9,926	6,188	5,379	14,329	10,743	10,203	7,712	10,747
	Jobs: High scenario	20,464	21,521	16,785	12,600	8,921	7,864	19,590	14,348	13,643	11,190	14,693
Estimated impacts of reducing defcit by $2.5 billion	Income: Low scenario							2,964	1,933	1,850	2,144	2,223
	Income: High scenario							3,350	2,201	2,109	2,391	2,513
	Jobs: Low scenario							17,911	13,428	12,754	9,640	13,433
	Jobs: High scenario							24,488	17,934	17,053	13,988	18,366
Estimated impacts of reducing defcit by $3.0 billion	Income: Low scenario							3,556	2,320	2,220	2,573	2,667
	Income: High scenario							4,020	2,641	2,531	2,869	3,015
	Jobs: Low scenario							21,493	16,114	15,305	11,568	16,120
	Jobs: High scenario							29,385	21,521	20,464	16,785	22,039

Note: Units for income impacts are millions of dollars. Units for job impacts are FTE jobs. Table omits combination of options and total deficit reduction which would require reductions of more than $1 billion from any single option. Table calculated by extrapolating from the estimated impacts of reducing the deficit by $100 million shown in Table III-7.

Table V-2 shows several measures of the scale of Alaska jobs and income against we can compare the scale of potential short-run economic impacts of reducing the deficit. We believe that the largest measures of income and employment (total personal income and total full-time and part-time employment) are most appropriate for thinking about the relative income and job impacts of reducing the deficit.

Table V-2
Selected Estimates of Alaska Income and Employment, 2014

Income ($ millions)	Total personal income	39,793
	Total earnings by place of work	30,059
	Total wages and salaries	20,683
Employment (jobs)	Total full-time and part-time employment	465,130
	Total wage and salary jobs	367,291
	Total other jobs	97,839

Source: Bureau of Economic Analysis, SA30 Economic Profile (updated September 30, 2015), www.bea.gov.

In the tables on the following page, we compare estimated short-run income impacts of reducing the deficit with total personal income (Table V-3) and estimated short-run job impacts of reducing the deficit with total full-time and part-time employment (Table V-4). Note that using smaller measures of total incomes or jobs would result in proportionally larger percentage short-term economic impacts.

Depending on which short-run impact estimates we use (low or high scenarios) and which combination of fiscal options we assume, the short-run income impacts of reducing the deficit by $3 billion could be between 5% and 10% of Alaska income (Table V-3). Depending on which short-run impact estimates we use (low or high scenarios) and which combination of fiscal options we assume, the short-run job impacts of reducing the deficit by $3 billion could be between 3% and 6% of Alaska jobs (Tables V-4). The income and job impacts would be proportionally less for smaller total deficit reductions.

Clearly the potential economic impacts of fully reducing the deficit are large. Reducing the deficit will significantly impact Alaska's economy, regardless of how we do it. But some combinations of options for closing the deficit would have smaller short-run impacts than others, particularly those which include saving less (adding less of Permanent Fund earnings to the principal as inflation proofing or to the earnings reserve).

Table V-3

Estimated Income Impacts of Reducing the Deficit by Selected Total Amounts Using Different Potential Combinations of Fiscal Options, Expressed as a Share of Estimated Total Alaska Personal Income in 2014 ($39.8 billion)

		Two options						Three options				Four options
Combinations of fiscal options	Spending cut: broad-based	50%	50%		50%			33%	33%	33%		25%
	Income tax: progressive	50%		50%			50%	33%		33%	33%	25%
	Dividend cut		50%	50%		50%		33%	33%		33%	25%
	Saving less				50%	50%	50%		33%	33%	33%	25%
$100 million	Income: Low scenario	0.3%	0.3%	0.3%	0.1%	0.2%	0.2%	0.3%	0.2%	0.2%	0.2%	0.2%
	Income: High scenario	0.3%	0.3%	0.4%	0.1%	0.2%	0.2%	0.3%	0.2%	0.2%	0.2%	0.3%
$500 million	Income: Low scenario	1.4%	1.5%	1.6%	0.6%	0.8%	0.8%	1.5%	1.0%	0.9%	1.1%	1.1%
	Income: High scenario	1.6%	1.7%	1.8%	0.7%	0.9%	0.9%	1.7%	1.1%	1.1%	1.2%	1.3%
$1.0 billion	Income: Low scenario	2.8%	2.9%	3.2%	1.2%	1.7%	1.6%	3.0%	1.9%	1.9%	2.2%	2.2%
	Income: High scenario	3.2%	3.3%	3.6%	1.4%	1.9%	1.7%	3.4%	2.2%	2.1%	2.4%	2.5%
$1.5 billion	Income: Low scenario	4.2%	4.4%	4.8%	1.9%	2.5%	2.3%	4.5%	2.9%	2.8%	3.2%	3.4%
	Income: High scenario	4.8%	5.0%	5.4%	2.2%	2.8%	2.6%	5.1%	3.3%	3.2%	3.6%	3.8%
$2.0 billion	Income: Low scenario	5.6%	5.8%	6.5%	2.5%	3.4%	3.1%	6.0%	3.9%	3.7%	4.3%	4.5%
	Income: High scenario	6.4%	6.6%	7.2%	2.9%	3.7%	3.5%	6.7%	4.4%	4.2%	4.8%	5.1%
$2.5 billion	Income: Low scenario							7.4%	4.9%	4.6%	5.4%	5.6%
	Income: High scenario							8.4%	5.5%	5.3%	6.0%	6.3%
$3.0 billion	Income: Low scenario							8.9%	5.8%	5.6%	6.5%	6.7%
	Income: High scenario							10.1%	6.6%	6.4%	7.2%	7.6%

Note: Table omits combination of options and total deficit reduction which would require reductions of more than $1 billion from any single option.

Table V-5

Estimated Job Impacts of Reducing the Deficit by Selected Total Amounts Using Different Combinations of Fiscal Options, Expressed as a Share of Estimated Total Alaska Full-Time and Part-Time Employment in 2014 (465,000 jobs)

		Two options						Three options				Four options
Combinations of fiscal options	Spending cut: broad-based	50%	50%		50%			33%	33%	33%		25%
	Income tax: progressive	50%		50%			50%	33%	0%	33%	33%	25%
	Dividend cut		50%	50%		50%		33%	33%		33%	25%
	Saving less				50%	50%	50%		33%	33%	33%	25%
$100 million	Jobs: Low scenario	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%
	Jobs: High scenario	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.2%
$500 million	Jobs: Low scenario	0.8%	0.9%	0.6%	0.5%	0.3%	0.3%	0.8%	0.6%	0.5%	0.4%	0.6%
	Jobs: High scenario	1.1%	1.2%	0.9%	0.7%	0.5%	0.4%	1.1%	0.8%	0.7%	0.6%	0.8%
$1.0 billion	Jobs: Low scenario	1.6%	1.7%	1.2%	1.1%	0.7%	0.6%	1.5%	1.2%	1.1%	0.8%	1.2%
	Jobs: High scenario	2.2%	2.3%	1.8%	1.4%	1.0%	0.8%	2.1%	1.5%	1.5%	1.2%	1.6%
$1.5 billion	Jobs: Low scenario	2.5%	2.6%	1.9%	1.6%	1.0%	0.9%	2.3%	1.7%	1.6%	1.2%	1.7%
	Jobs: High scenario	3.3%	3.5%	2.7%	2.0%	1.4%	1.3%	3.2%	2.3%	2.2%	1.8%	2.4%
$2.0 billion	Jobs: Low scenario	3.3%	3.5%	2.5%	2.1%	1.3%	1.2%	3.1%	2.3%	2.2%	1.7%	2.3%
	Jobs: High scenario	4.4%	4.6%	3.6%	2.7%	1.9%	1.7%	4.2%	3.1%	2.9%	2.4%	3.2%
$2.5 billion	Jobs: Low scenario							3.9%	2.9%	2.7%	2.1%	2.9%
	Jobs: High scenario							5.3%	3.9%	3.7%	3.0%	3.9%
$3.0 billion	Jobs: Low scenario							4.6%	3.5%	3.3%	2.5%	3.5%
	Jobs: High scenario							6.3%	4.6%	4.4%	3.6%	4.7%

Note: Table omits combination of options and total deficit reduction which would require reductions of more than $1 billion from any single option.

How Fast Should We Reduce the Deficit?

Our primary focus in this study was on the *relative* economic impacts of different fiscal options, rather than their total impact on the economy or how fast we should reduce the deficit. However, we can offer a few observations on this question.

Fully closing the deficit in one year would have a large impact on an economy already weakened by oil industry job cuts and large cuts to state capital spending over the past few years for which we have not yet felt the full impacts. This would be an argument for not attempting to fully close the deficit this year.

But there are also strong arguments for making significant progress towards closing the deficit this year. First, within a few years we will *have to* substantially reduce the deficit, because we do not have sufficient reserves to continue very large deficits. The sooner we begin to substantially reduce the deficit, the longer the reserves will last.

Second, delay in making significant progress towards closing the deficit this year—and planning for how we will close the rest of it—would also have significant negative economic consequences. These include:

- Falling confidence in whether Alaska *can* make the tough choices we face in achieving sustainable and predictable spending, services and revenues.
- Increasing business and household uncertainty about future state spending, state services and taxes—and whether Alaska will remain a good place for businesses to invest and for people to work, live and call home.
- Reduced business and household investment
- Negative effects on public and private employee morale, turnover and recruitment
- Certain further downgrading of Alaska's credit rating.

Our economic adjustment to lower oil revenues will be smoother if we substantially reduce the deficit this year and also clearly demonstrate to Alaskans, businesses, and investors that we will make the necessary further changes to spending, revenues and uses of Permanent Fund earnings to achieve sustainable state finances, reduce uncertainty about future state spending and how we will pay for it, and build confidence in Alaska's fiscal future.

Our fundamental problem is that we have lost billions of dollars of oil revenue which formerly supported most of state general fund spending, and which we are unlikely to regain. We will have to adjust to this new reality. We can't avoid significant economic impacts from this adjustment. We can only delay them by drawing down our savings, but we don't have enough savings to delay them very long—and delay also has significant negative economic consequences. We can't permanently support our economy by running deficits.

VI. OTHER ECONOMIC IMPACTS OF ALASKA FISCAL OPTIONS

This report has focused on revenue impacts and short-run economic impacts of selected Alaska fiscal options. All of the fiscal options which we studied would have longer-term and indirect impacts which we didn't study. And there are important fiscal options currently under discussion (such as changes to oil taxes and credits) that we didn't study at all.

What we could study was limited by the available funding and by the time of ISER researchers. We focused on revenue impacts and short-run economic impacts because they are important to the ongoing discussion of Alaska fiscal options, and because they are relatively straightforward to analyze.

We didn't study potential longer-term and indirect impacts of fiscal options because they are more varied, more complex and harder to estimate—because of the many complex feedback loops between state spending and revenues and Alaska's economy and population over time. Similarly, we didn't study potential impacts of changes to oil taxes and credits because these impacts would be complex and difficult to predict and would require a major separate study.

In this chapter we briefly list some of the potential longer-term and indirect economic impacts of selected fiscal options. This list might be considered a start towards a list of other economic impacts which matter and which we should think about as we discuss Alaska fiscal options—and which deserve further research. It would have been far beyond the scope of this study to estimate these other economic impacts.

In briefly listing some of these other potential impacts of fiscal options, our purpose is not to offer any conclusions about how much weight they should or shouldn't carry as arguments for or against any fiscal option. Our purpose is simply to emphasize that while this study has addressed *some* of the questions relevant to understanding the economic impacts of fiscal options, many other questions remain to be answered.

Other Potential Economic Impacts of Spending Cuts

Impacts of Reductions in State Services

The potential economic impacts of spending cuts go beyond potential job and income losses of state employees and the resulting multiplier impacts on other jobs and income. They also include the potential economic impacts of reductions in state services resulting from the spending cuts. These potential impacts range from direct, immediate and obvious economic impacts to indirect, longer-term and less obvious impacts. For example:

- Cuts to Marine Highway spending, by affecting ferry service routes and timing, could affect tourist travel to some communities and the tourism industry in those communities.

- Cuts to fisheries management spending could affect the ability of fisheries managers to monitor and research fisheries catches, salmon escapement, and fishery resource conditions. Given the constitutional requirement to manage fisheries sustainably, this

could lead to more conservative fisheries management, reducing commercial fishing catches and sport fishing opportunities, with impacts on commercial harvest values (and fish tax revenues) and on sport fishing guide incomes.

- Cuts to University of Alaska funding could affect the number and quality of University of Alaska program and course offerings, which could in turn affect the number of young Alaskans who choose to attend the University of Alaska. In the short-term, this could affect the extent to which the spending of these young Alaskans on tuition, housing, food, recreation (and everything else they spend money on) stays in Alaska—creating income and jobs—or leaves Alaska. Over the longer-term, it could affect how many young Alaskans stay in or leave Alaska permanently, and Alaska's future workforce.

These are only a few examples of potential economic impacts of reductions in state services , but the list could be as long as the full range of state services. Note that our point is not to argue that any of these spending cuts should not be made. It is simply that the economic impacts may exceed the short-term job and income impacts which we analyzed for this study. Put differently, if we care about the economy, then we shouldn't make decisions about what and how much to cut just based on how many jobs or how much income the spending creates, or how many jobs or how much income would be lost if the spending is cut. We should also think about what we get from the spending, and how what we get affects the economy.

Impacts on Alaska Economic Development and Future Revenues

Some kinds of state spending may be thought of as investments in economic development which may in the future generate not only economic benefits but also state revenues. For example:

- Transportation infrastructure projects may lower costs of and stimulate new resource development, increasing potential future state revenues.

- Marketing for tourism or seafood may increases tourism or seafood sales or prices, benefiting these industries and also increasing the tax revenues which they pay.

- Workforce training may lower the costs of labor for new economic development and increase the share of jobs that can be filled by Alaskans.

Cutting spending for these kinds of "investments" could arguably have potential adverse economic impacts on Alaska's future economic development and revenues. There are numerous other potential examples.

In the extreme, the argument could be made that almost any kind of state spending is an "investment in economic development." Anything that the state does to improve the quality of life for Alaskans, or reduces the cost of living or doing business in Alaska, can arguably stimulate economic development by making Alaska a more attractive place for businesses to invest and for people to work and live. So in the extreme, any cuts to any kind of state spending could be argued to have potential adverse economic impacts on Alaska's future economic development.

In evaluating arguments that some kinds of state spending are should not be cut because they are investments in economic development, it is important to consider the relative rates of return on these "investments." How much economic benefit is any given "investment" actually likely to create, and when will we get these benefits? How much additional state revenue is the "investment" likely to generate, and when will we receive these revenues? How do the economic benefits and financial rates of return compare with other potential state investments?

Just because an investment will have positive economic benefits or will generate economic revenues does not necessarily mean that the benefits outweigh the costs, or that the investment is the best use of available funds.

Impacts on Future State Costs and Spending

Some kinds of spending cuts may be "penny-wise but pound foolish." They may save money now, but may lead to higher costs in the future.

Some kinds of costs can be temporarily but not permanently deferred. These include but are not limited to maintenance of state roads, buildings and equipment. Spending can be cut by deferring maintenance for a period of time. But as maintenance is deferred, over term the quality and reliability of roads, buildings and equipment deteriorates, and lack of maintenance can eventually lead to the necessity of costly repairs or full losses of assets. Deferring costs can be a useful strategy for addressing temporary short-falls in state funding. But it is less likely to be a useful strategy for dealing with a long-term decline in state oil revenues.

Cuts to some kinds of state spending now may lead to higher needs for and costs of other kinds of state spending in the future. For example:

- Spending for preventative medical services may reduce future costs of medical treatment.

- Spending for education, alcohol and drug treatment programs, and prisoner rehabilitation and education may all reduce crime rates and recidivism and future costs of crime and prisons.

Advocates for many kinds of programs that spending for their programs will more than pay off in reduced costs for other programs. It can be difficult to tell whether this is actually the case, given the number and complexity of factors that drive demand for different state services. In some cases, there may be well-documented research that shows that they are justified. In other cases, the evidence may be weak or non-existent.

We haven't studied what kinds of spending cuts might cost money rather than save money, by increasing needs for and costs of other kinds of spending. Clearly this should be an important question and consideration for some kinds of potential spending cuts.

Impacts of Cost Shifting

Some kinds of state spending cuts could result in cost shifting, or shifting the responsibility of paying for state services that are currently paid for by state general funds. Here are a few potential examples:

- Cuts to revenue sharing for local governments could lead to increases in local taxes to make up for local government revenue short-falls.

- Cuts to state funding for retirement obligations could increase the share of these obligations which would have to be paid by local governments and school systems, which could also lead to higher local taxes.

- Cuts to state agency budgets could lead to shifting of responsibilities for providing services to local government agencies, which would need to increase local taxes to pay for the increase in local government costs. For example, if the state plows fewer roads or reduces the number of state troopers, local governments may face higher costs for road plowing or police protection.

- Cuts to state agency budgets could also lead to increases in user fees to pay for services provided by these agencies. For example, cuts to the University of Alaska budget could lead to higher tuition fees; cuts to the Marine Highway budget could lead to higher Marine Highway fares; cuts to the state parks budget could lead to higher park user fees; and cuts to the Department of Fish and Game budget could lead to higher sport fishing license and commercial fishing permit fees.

Our point is not to argue against cost-shifting. It may be appropriate for local governments or service users to pay higher shares of costs which the state is currently paying. Rather, our point is that the economic impacts of cost shifting would be more like those of tax increases than of spending cuts. They may not necessarily result in less being spent on government services, but rather increases in what Alaskans have to pay for services, in the form of local taxes or user fees.

Impacts on Federal Matching Funding

Federal spending is a significant driver of Alaska's economy. Some kinds of federal spending, such as federal transportation projects, require that the state "match" a share of the federal funding. Cuts to state spending which serve as a "match" to bring in additional federal funding could have a significantly amplified economic effect. The greater the ratio of federal spending to the required state match, the greater the potential economic impact of cutting funds which match federal funds.

We have not done (or seen) any analysis of how much of total state spending serves as a match for federal funds, or the extent to which cuts to state spending have occurred or been proposed which have or would cost the state federal matching funds. It would be useful, in advancing understanding the potential implications of spending cuts, to review how much of the budgets of

different state agencies serves to match federal funds, and how much and what kinds of federal funding they bring in. Our point is not to argue that the state should necessarily pay for anything that brings in federal matching funding. It is simply that when spending does bring in federal funding, the economic impacts of state spending cuts are magnified.

Impacts on Public Employees

The quality of the services which state government, the University of Alaska, K-12 schools and other state-funded organizations provide to Alaska depends critically on the quality, experience and morale of the people who provide these services. It matters a lot what kinds of people we have as state troopers, fishery managers, school teachers, and oil tax accountants--and in fact in every kind of state government position.

How state spending is cut, and how spending cut decisions are made, significantly affect working conditions for public employees and how they feel about their future career prospects, which in turn can significantly affect public employee morale, turnover, and recruitment. Over time, these factors may significantly affect the quality of Alaska's public workforce and the public services they provide.

We are not arguing that state spending should not be cut, or that public employees staffing levels, pay and benefits should not be scrutinized. Clearly, given the seriousness of the financial challenge faced by the state, every kind of state spending should be scrutinized. But it is important to recognize that over time spending cuts, and how we make them, may affect not only the number of public employees but also what kinds of public employees we have.

Other Potential Economic Impacts of Taxes

Our analysis for this study focused on potential revenue impacts and short-run economic impacts of selected tax options: how much money would they collect from whom, and how would the loss of disposable income affect spending and the economy.

In addition to these revenue impacts and short-run economic impacts, taxes may have a wide variety of indirect and longer-term economic impacts, which are the subject of very broad and long-running economic and political debates. In general, and in most states, taxes are a "necessary evil"—countries and states impose taxes not because they are good for the economy or because anyone likes paying taxes, but rather because there needs to be some level of government and there needs to be some way of paying for it. Thus the major economic and political debates are over:

- What is the appropriate balance between the positive impacts of government and the negative impacts of taxes?
- What kinds of kinds of taxes minimize the negative impacts of taxes?
- What kinds of taxes are most fair?

These same broad economic and political questions matter for Alaska in thinking about potential tax options for reducing the deficit. In addition, there are many specific questions related to potential negative impacts as well as potential positive impacts of tax options. Examples of potential negative impacts include (to name just a few):

- Sales taxes might affect the extent to which Alaskans buy from local retailers as opposed to out-of-state or online retailers.

- In areas where prices are high, people would pay relatively higher sales taxes for any given item than people would pay in areas where prices are lower.

- Taxes on resource industries might reduce the rate of return on investments and make Alaska less competitive (relative to other resource producing states or regions), reducing resource industry investment and jobs.

- Taxing fish processing workers might increase the wage rates fish processors might need to pay to attract workers, adding to their costs and reducing fish prices to fishermen.

- Taxes have both administrative and enforcement costs. Some kinds of taxes have significantly higher administrative costs than others. For example, sales taxes would likely have significantly higher administrative costs than income taxes (particularly income taxes tied directly to federal tax obligations).

Not all potential economic impacts of taxes for Alaska would necessarily be negative. Examples of potential positive impacts include:

- When people pay taxes, they have "skin in the game" in political decisions about spending. If they don't pay taxes, they may care less about and pay less attention to how much government spends and what the spending goes to. The more they pay in taxes, the more careful attention they may pay to spending (and the less they may demand in spending).

- When people and industries pay taxes, economic growth and population growth pays for itself. Currently, because most Alaskans and most Alaska businesses pay relatively low taxes to state government, when the economy grows and population grows, it's good for business but it's not good for state finances, because the demands for and costs of state government services such as schools and roads increase but the revenues don't increase enough to pay for the higher costs. This problem has been called the "Alaska disconnect." If Alaska residents and businesses paid higher taxes, it would help to reduce the Alaska disconnect.

Our point is not to argue for or against any of these potential negative or positive impacts of taxes. Rather, our point is that these potential longer-term and indirect impacts of taxes matter—and deserve further discussion and research as we consider Alaska's fiscal options.

Other Potential Economic Impacts of Dividend Cuts

Alaskans have widely differing perspectives on the Permanent Fund dividend program. Some emphasize what they perceive to be positive impacts of the dividend program (and corresponding potential negative effects of dividend cuts). Others emphasize what they perceive to be negative impacts of the dividend program (and corresponding potential positive effects of dividend cuts).

To some extent, these differences in perspectives reflect fundamental philosophical differences about "whose money it is" and what Permanent Fund dividends are. Some Alaskans argue that dividends are the peoples' share of Alaska's resource wealth and that the money is their money rather than money which the government gives them. Other Alaskans argue that the dividends are government spending like any other kinds of spending, and should be subject to the same kind of scrutiny and prioritization as other kinds of spending.

Beyond these philosophical issues, there are important questions about a wide range of potential indirect and long-term impacts of dividend cuts and/or other changes to the dividend program. Some examples include:

- How would dividend cuts affect the ability of lower-income Alaskans to afford to live in Alaska, particularly in high-cost rural areas?

- How would dividend cuts affect the ability of Alaskans to accumulate wealth for "big-ticket" costs and investments such as college educations and home down-payments?

- How would dividend cuts affect Alaska wage rates? Would lower dividends mean that employers would have to pay workers more because people would need to earn more in order to live in Alaska?

- How would dividend cuts affect how many and what kinds of people more to Alaska or leave Alaska? Do dividends "attract" poor people or large families to Alaska?

- How would dividend cuts affect the extent to which Alaskans feel they have a stake in the Permanent Fund and their commitment to growing and protecting it over time?

Our point is not to argue for or against either of the philosophical perspectives of whose money the dividends are or what the longer-term and indirect impacts of the dividend might be. Our point is rather that what matters, in thinking about the option of cutting dividends, clearly goes beyond the short-term revenue and economic impacts to longer-term and more complex potential impacts.

Conclusions

Alaska's fiscal options would impact Alaska's economy and society in many important ways beyond the short-term economic impacts which we estimated for this study. We should base our fiscal choices not only on their short-term economic impacts but also on their longer-term impacts on Alaska's economy and society over time.

APPENDIX A
ESTIMATION OF REVENUE IMPACTS OF FISCAL OPTIONS

This appendix provides technical documentation and detailed results for our analyses of fiscal options involving new revenues or dividend cuts, including the total and relative shares of revenues that would be collected from different income groups, and impacts on expenditures by different income groups.

Data and Methods

The analysis relied on three primary data sets. Data from Alaska respondents to the national Consumer Expenditure Survey (CES) provided information on household expenditures and potential sales tax revenues and effects. Internal Revenue Service (IRS) tabulations of federal income returns of Alaska residents provided information on potential income tax revenues. The American Community Survey Public Use Microdata Sample (ACS PUMS) provided demographic information and income of Alaska residents to scale up effects per person and per household to the state as a whole. Estimating total revenues and the distribution of effects across households required linking these three different data sets, each of which uses a different unit of analysis.

Consumer Expenditure Survey (CES)

The CES is an annual survey conducted in all 50 states by the U.S. Bureau of Labor Statistics (http://www.bls.gov/cex/home.htm). The survey unit is a "consumer unit" (CU), which is basically a family. Residents of group quarters such as student housing, remote industrial work sites, and jails, are not included in the survey. The CES consists of two parts: an interview survey that asks about expenditures over the previous three months, and a separate weekly diary survey for items such as food and household supplies that are typically purchased frequently in small quantities. The most recent year of data available for research -- the Public Use Microdata (PUMD) -- represents expenditures in 2014. The Alaska sample size is quite limited. We combined the 2013 and 2014 CES PUMD samples, which provided 678 quarterly observations on 279 CUs (families).

To analyze expenditure patterns, we added all the observations on expenditures during the previous three months on each type of product for each CU. We multiplied the sum of expenditures by four divided by the number of quarters observed to obtain an estimate of annual expenditures for each CU. We then combined the detailed annual expenditure categories into six large categories: food at home, goods, services, shelter, health care, and education (primarily tuition). The goods category included food away from home, alcoholic beverages, tobacco products, household furnishings, apparel, vehicle purchases (new and used), gasoline and motor oil, reading materials, other household expenditures, and miscellaneous goods. The services category included telecommunications services, insurance (home, vehicle, life, etc.), domestic services, child care, home and vehicle maintenance and repair, vehicle rental, public transportation, entertainment, and personal care services. The shelter category included rent, other lodging, and household utilities excluding telecommunications. Expenditures on loan payment interest and principal were not included in the analysis.

It is important to understand the limitations of the Alaska CES sample. The number of households sampled each year is relatively small. It is not clear what the geographic coverage is, so it is not possible to determine if the sample is geographically representative. Despite these limitations, the CES remains a valuable tool for understanding consumer expenditure patterns and potential sales tax revenues, as it is the only source of expenditures that is available for analysis at the household level.

CES data can be summarized by per-capita household income and many other household characteristics. However, the small sample size and unknown geographic coverage makes these breakdowns unreliable. We instead estimated equations to predict how much a family would spend on the various categories of goods and services as a function of per-capita income and the number of people in the CU (household size). We estimated both linear and loglinear relationships. The equations were estimated as censored regressions to address the fact that expenditures could not be negative. The loglinear specifications generally provided a better fit to the data, except in the case of education expenditures, for which the linear censored regression provided a more realistic prediction, probably due to the fact that relatively few households had education expenditures.

We used the equations estimated from the CES to estimate the tax base for sales taxes as well as the effect of various revenue measures on expenditures and the economy, as described below. Appendix B, Tables B-1 through B-8 display the complete statistical results of the equations used to project expenditures in the six categories.

IRS Statistics of Income (SOI) data

The Internal Revenue Service publishes data summarizing federal individual income tax returns at various geographic scales though its Statistics of Income (SOI) program. We estimated the relationship between total income and taxable income, as well as average and marginal effective tax rates for tax returns at different income levels, from published tables at the state level (https://www.irs.gov/uac/SOI-Tax-Stats-Historic-Table-2). The estimated relationships between total income, taxable income, and income tax payments were then used to estimate both the amount and distribution of hypothetical state income taxes and the effect of state taxes and changes in Permanent Fund Dividend payments on Alaska taxpayers' federal income tax liabilities.

The IRS groups tax returns by income per return. The unit is therefore the tax return rather than the household or family. The main important difference between tax returns and households is that married taxpayers filing separately generate two returns. We therefore adjusted the distribution of income per return to account for returns with a married-filing-separately status.

The IRS SOI has a number of limitations in addition to the problem of joint tax returns. Not all taxpayers file returns. In particular, low income households are much less likely to file tax returns. Neither the number of exemptions nor number of dependents plus one exactly captures household size, due not only to the issue of married taxpayers filing separately mentioned above but also because there are often multiple taxpayers living in the same household. For example,

employed adult children living with their parents will likely file their own returns, as will unmarried partners living together. The income reported to the IRS may differ from income reported on surveys such as the CES and ACS, especially for self-employed taxpayers.

Despite its limitations, the IRS SOI provide an essential data source that permits us to estimate how effective tax rates vary by income as well as total federal taxes paid: the best base for estimating how much money a state income tax might raise. We used data for the most recent year available: 2014 tax filings, representing income earned in 2013.

American Community Survey Public Use Microdata Sample (ACS PUMS)

Neither the CES nor IRS SOI data sets represent the entire population of Alaskans. To scale to the Alaska population and properly represent demographic patterns and the distribution of income, we rely on the ACS PUMS (https://www.census.gov/programs-surveys/acs/technical-documentation/pums/documentation.html).

The ACS is an annual survey of households and residents of group quarters conducted by the U.S. Census Bureau. It provides the official statistics on income, household composition, poverty rates, and many other social and economic characteristics of the population. Income in the ACS is self-reported, so it includes whatever the respondent says they earned. It should include PFD payments for everyone in the household that received a dividend. It will also include cash public assistance, but not food stamps or any other "in kind" assistance.

The PUMS is a five percent sample of survey returns stripped of information that could identify individual households. The main difference between the PUMS and the original surveys is that geographic information is limited to large regions of Alaska. We used PUMS data for 2014, the most recent year available. The individual and household income reported in the 2014 survey represents income earned in 2013. Note, as discussed below, that the PFD was $900 in 2013, which is significantly less than it was in 2014 or 2015.

The ACS reports both total household income and income of individuals. We computed per-capita household income by dividing household income by the number of people in the household. Household income is not defined for group quarters residents, so we assumed that per-capita household income of group quarters residents was the same as individual income. To develop the distribution of income, we divided the all the households into ten groups, ranked by per-capita household income. For this step, group quarters residents were considered households with a household size of one. Each decile of the income distribution therefore represents ten percent of households plus group quarters residents, not ten percent of individuals. Since household size tends to be somewhat larger in households with lower per-capita household income relative to those with higher per-capita household income, the poorest deciles include somewhat more individuals than the richer households.

Table A-1 shows the number of people, average household income and per-capita income for the ten deciles of households. The data represent 2013 income in 2013 dollars. In addition to the 736 thousand Alaska residents the Census Bureau estimated for 2013, the Alaska Department of Labor reported 86 thousand non-residents were employed in Alaska and earned an average of

nearly $28,000 per worker (http://laborstats.alaska.gov/reshire/NONRES.pdf). It should be noted that this figure understates the total number of non-resident workers, as it does not include federal government employees including active-duty military personnel, or self-employed individuals.

Table A-1. Alaska Population, Persons per Household, and Per-capita Income by Per-capita Household Income Percentile.

Income percentile, households	Population	Average persons per household	Per-capita income in 2013	Per-capita income with $2,000 PFD[a]
Lowest 10 percent of households	87,006	2.94	$ 3,594	$ 4,694
10-20th percentile	89,660	3.03	10,465	11,565
20-30th percentile	76,040	2.62	15,613	16,713
30-40th percentile	84,404	2.84	20,412	21,512
40-50th percentile	85,077	2.93	25,935	27,035
50-60th percentile	78,178	2.66	32,818	33,918
60-70th percentile	67,327	2.27	40,265	41,365
70-80th percentile	63,722	2.18	51,154	52,254
80-90th percentile	57,284	1.95	65,707	66,807
Highest 10 percent of households	47,771	1.63	126,890	127,990
All residents	736,471	2.51	$ 39,246	$ 40,346
Non-resident workers	86,455		27,760	27,771

[a] Assuming all income is the same as in 2013 except the Permanent Fund Dividend, and that one percent of dividends is paid to non-residents.

Source: American Community Survey 2014 Public Use Microdata Sample. Group quarters residents included as one-person households.

In 2013, the Alaska Permanent Fund Dividend (PFD) was $900. Dividends have been larger in more recent years. For comparison, the last column of Table A-1 shows what per-capita income would be if all income except the PFD was the same as in 2013, but with a PFD of $2,000. Data from federal income tax filings (http://labor.alaska.gov/research/pop/migration/data/IRSMigrationState.xls) and the ACS (http://live.laborstats.alaska.gov/cen/acsdetails.cfm) indicate that each year about five percent of residents moved to Alaska within the previous year. In the past few years, the population has been stable, indicating that about six percent moved out of state every year.

Although the PFD is available only to residents, some of those moving away would likely have received dividends. Leaving aside the issue of fraud, there are many reasons why some people might have filed legitimate PFD applications early in the year but unexpectedly moved before the PFD was paid out, such as dissolving relationships, military transfers, job loss, and family

medical issues. If we assume that one-sixth of those leaving each year received their PFD, then about one percent of the PFD would have been received by non-residents.

Estimating Revenues and Their Distribution

Using the CES, IRS, and ACS data to estimate potential state revenues generated by various fiscal options and the distribution across the population of the impact on disposable income involved a number of steps. First, we applied the relationships between total income per tax return, the number of dependents, taxable income, and average and marginal tax rates in the IRS SOI data to household income and household composition in the ACS PUMS households to estimate federal income taxes per ACS household. Persons in households reporting a marital status of separated were assumed to have a tax status of married filing separately. One person in households with children under 18 but no married adults was assumed to file as head of household, and any others with income above the IRS threshold were assumed to file as single taxpayers.

The initial attempt to impose the federal income tax structure on ACS households generated federal income taxes about 25 percent higher than actual tax payments reported in the IRS SOI data. There are a number of possible explanations for the discrepancy. Chief among them are the likelihood that income reported in the ACS exceeded income reported to the IRS, especially for self-employed individuals, and that more households generated multiple separate tax returns than we estimated. Consequently, we multiplied the computed federal income taxes by 0.8 to scale the total tax payments to the amount actually received by the IRS.

In the next step we applied the expenditure functions estimated from the CES consumer units to the per-capita income and household size of the ACS PUMS population. In addition to residents, non-resident workers and visitors contribute to retail sales in Alaska. Data on retail expenditures by non-residents is severely limited. Alaska alcoholic beverage tax receipts (http://www.tax.alaska.gov/programs/programs/reports/index.aspx?60165) show that alcohol sales in the three summer months are about 10 percent higher than in the September to May average. Sales tax receipts for Juneau and the Kenai Peninsula Borough show a 50 percent increase in the summer, but these boroughs are not representative of the state as a whole.

Given the uncertainties, we make rough estimates of non-resident expenditures on food at home and shelter are in proportion to non-resident wages as a share of total state wages. We estimate that 15 percent of commodities and 10 percent of services are purchased by non-residents. It should be noted that these are generous estimates of non-resident expenditures. The true figures are unlikely to be higher than these estimates and could be somewhat lower.

After including estimated purchases by non-residents, the total estimate expenditures still fall somewhat short of County Business Patterns (CBP) retail sales data for Alaska compiled by the U.S. Census Bureau (http://www.census.gov/econ/cbp/). CBP data indicate that 2013 total expenditures in Alaska in the six categories we modeled amounted to $158 billion. We therefore adjusted estimated total expenditures to scale to the CBP total.

Table A-2 shows estimated per-capita expenditures for the six categories of expenditures analyzed in the same per-capita income deciles as in Table A-1.The bottom rows of the table show estimated total expenditures for residents and non-residents in the same categories. As mentioned before, the figures exclude mortgages payments (other than insurance) and other loan payments.

Table A-2. Estimated Annual Per-Capita Expenditures by Six Expenditure Categories

Income percentile, households	Food at home	Other commodities	Services	Shelter	Health care	Education
Lowest 10 percent of households	$ 1,775	$ 1,299	$ 892	$ 3,584	$ 12	$ -
10-20th percentile	2,087	2,718	1,866	3,520	85	-
20-30th percentile	2,332	3,677	2,533	4,022	179	-
30-40th percentile	2,389	4,520	3,108	3,745	320	16
40-50th percentile	2,472	5,449	3,744	3,648	534	420
50-60th percentile	2,652	6,564	4,520	3,983	842	194
60-70th percentile	2,883	7,729	5,342	4,603	1,217	-
70-80th percentile	3,048	9,361	6,476	4,784	1,992	-
80-90th percentile	3,295	11,454	7,944	5,289	3,255	196
Highest 10 percent of households	3,928	19,526	13,600	6,271	12,466	3,582
Average, all households	$ 2,584	$ 6,382	$ 4,411	$ 4,194	$1,563	$ 319
Total, residents ($ millions)	$ 1,903	$ 4,700	$ 3,249	$ 3,088	$1,151	$ 235
Non-residents ($ millions)	154	7050	325	250	93	19
Total expenditures ($ millions)	$ 2,057	$ 5,405	$ 3,574	$ 3,338	$1,244	$ 254

Source: Estimated from Consumer Expenditure Survey, combined 2013 and 2014 Alaska sample households, and U.S. Census, County Business Patterns

Total Revenues Raised and Distribution Effects of Broad-Based Revenue Options

To analyze the effects of potential revenue options, we examined five specific potential broad-based fiscal measures that can be imposed at different rates to raise varying amounts of revenue. For the analysis, we examined hypothetical options of a similar scale: each measure was designed to raise $350-$400 million annually:

- Two percent flat rate income tax;
- Ten percent federal income tax surcharge;
- A $600 reduction in the annual PFD;
- Four percent sales tax excluding food at home, health care, shelter, and education;
- Three percent sales tax including food at home and shelter, excluding education and health care.

In addition to these five measures, we also analyzed the effects of a potential state property tax. We assumed that property taxes levied by local governments would be credited from the state tax, analogous to the way that the state credits local governments in the existing state petroleum property tax. This makes it more difficult to scale than the other broad-based measures. Since the highest local property tax rate is currently 20 mils (2 percent), and the state already taxes petroleum property at that rate, we examined the potential effects of a 20 mil state property tax.

Total Revenue Raised

Table A-3 summarizes the total estimated revenues raised and the amounts from residents and non-residents for the five hypothetical options. As mentioned above, the PFD reduction assumes that one percent of dividends are paid to individuals who are no longer Alaska residents when the payments are received.

Table A-3. Estimated Resident, Non-resident, and Total Revenues Raised from Five Potential Revenue Measures

Revenue measure	Total revenue raised ($ millions per year)		
	Alaska residents	Non-residents	Total, residents and non-residents
2 percent flat rate income tax	$366	$ 29	$396
10 percent federal income tax surcharge	$338	$ 28	$366
$600 cut in PFD	$380	$ 4	$384
4 percent sales tax excluding food at home, health care, shelter, and education	$318	$ 41	$359
3 percent sales tax excluding education and health care	$388	$ 43	$ 431

As shown in Table A-4, we estimated that a 20 mil tax on the full value of real and personal property, excluding oil and gas property already subject to state property taxation, would yield $1.7 billion per year. To estimate the state property tax base, we started with the full and true value of real and personal property as determined by the Alaska state assessor's office, which was $83 billion in 2015 (https://www.commerce.alaska.gov/web/Portals/4/pub/OSA/2015-Full.pdf).

Areas of Alaska outside the boundaries of established boroughs or cities not levying property taxes are not included in the state assessor's report. To estimate the statewide total property value, we multiplied the state assessor's figure for real property by the ratio of the state total value of housing to the value of housing in the organized boroughs of Alaska, as reported in the

American Community Survey (ACS). The state assessor's figure for real property includes commercial and industrial real estate (except oil and gas property) as well as housing; we assumed that the ratio of commercial real estate to residential housing was the same in the unorganized areas as in the boroughs. We estimated the value of rental housing by multiplying the reported monthly rent by 120. We estimated the state total personal property by multiplying the state assessor's estimate of personal property in the established boroughs by the ratio of state total number of motor vehicles to the number of vehicles in the established boroughs, as reported in the ACS. Taxable personal property includes mobile homes, airplanes, and boats as well as vehicles, so our assumption was that the ratio of all personal property to motor vehicles was the same in the boroughs as outside the boroughs.

Table A-4. Estimated Tax Base and Revenues Raised from a 20mil State Property Tax with Local Exemption, Excluding State-Assessed Oil and Gas Property

	Real property	Personal property	Total
	(Million dollars)		
Boroughs[a]	$ 71,084	$ 9,561	$ 80,645
Cities in unorganized borough[a]	$ 2,076	$ 411	$ 2,487
Total municipalities with property taxes[a]	$ 73,160	$ 9,971	$ 83,131
Estimated unorganized borough property tax base[b]	$ 5,740	$ 560	$ 6,300
Potential additional tax base[c]	$ 3,663	$ 150	$ 3,813
Potential state total property tax base	$ 76,824	$ 10,121	$ 86,945
tax rate (mils)	20.0		
Annual tax revenues			$ 1,739
2015 local property tax revenues[a]			$ 924
Potential annual new state revenues			$ 815

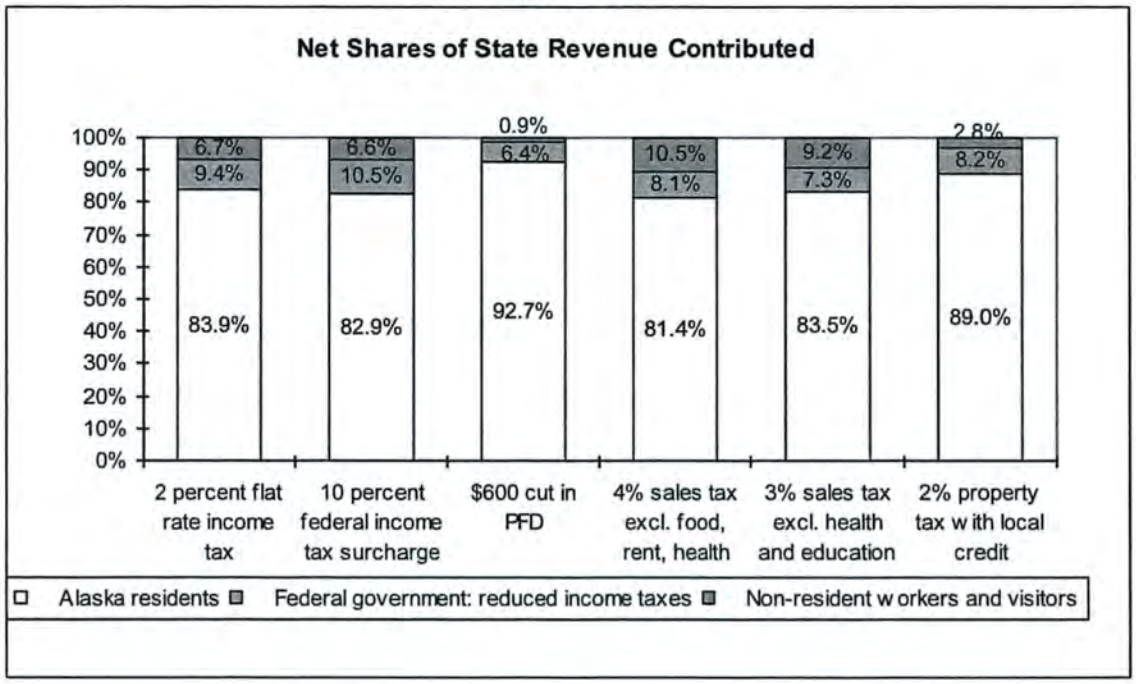
[a] Source: Full and true value as determined by the state assessor, *Alaska Taxable, 2015.*
[b] Estimated from American Community Survey, ratio of Census Areas in the Unorganized Borough to Borough Totals, 2010 - 2014 average.
[c] Total unorganized borough less cities in unorganized borough levying property taxes.

As shown in Table A-4, the scaled-up estimate of statewide property value was $87 billion, $3.8 billion more than the value currently subject to property taxation at the local level. Applying a 20 mil levy yields annual tax revenues of $1.7 billion. After subtracting the $924 million collected by local governments in 2015, one obtains $815 million in potential new state revenues from the property tax.

Figure A-1 compares the percentages of revenues received by the state under the various fiscal options paid by residents, non-residents and the federal government. The federal government "pays" for a portion of the revenues because federal income taxes will be reduced when PFD

payments fall for most taxpayers. Alaska taxpayers itemizing deductions can deduct property taxes and either state income or sales taxes from federal taxable income. Information on non-resident property ownership is not systematically available, making estimates of the share of property tax revenues contributed by non-residents highly uncertain. To the extent that businesses pass the property tax on to their customers, non-residents purchasing goods and services from Alaska businesses would also be contributing a portion of the taxes along with residents. The estimated percentage of property taxes paid by businesses (other than housing rental businesses) times the non-resident share of total expenditures amounts to 2.8 percent of property taxes. This percentage, shown in Figure A-1, should be considered a low estimate, since it does not include property taxes paid by non-resident owners of vacant land and residential property.

Figure A-1



The two state income tax options differ only in the tax rate structure. The first tax option assumed a flat two percent rate on taxable income, while the tax rate for the second option was structured to be ten percent of the federal tax rate for that level of taxable income. State income or sales taxes are potentially deductible from federal taxable income. We assumed, however, that the state tax law would require that deductions for Alaska taxes would have to be added back in to the state definition of taxable income. Both income taxes assumed, therefore that the tax base for the state tax was equal to federal taxable income before state tax deductions. We did, however, consider the potential for Alaska taxpayers to deduct the Alaska tax from their taxable income for federal tax purposes. We estimated the federal tax savings as the Alaska tax times the marginal tax rate times the percentage of taxpayers at each income level itemizing deductions, according to the IRS SOI data.

Distribution of the Revenue Burden Among Alaska Households

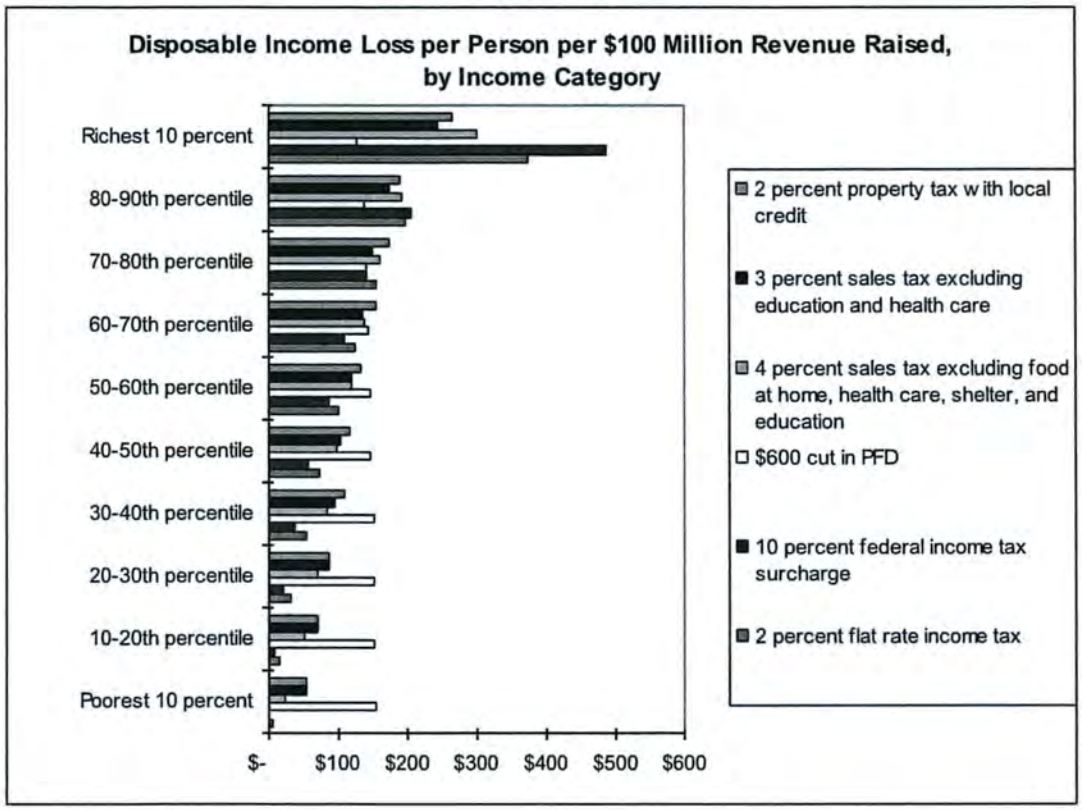
Figure A-2 compares how each of the broad-based revenue measures discussed above affects per-capita disposable income—income net of taxes—for households with different levels of per-capita income. Because each revenue option raises a different amount of revenue, the numbers in Figure A-2 are normalized to show the disposable income loss per $100 million raised. We assumed that the entire amount of property taxes assessed on rental property would be passed on to renters. Although renters might not feel the full impact of the tax immediately, the higher costs to landlords would likely get built into new rental contracts as old contracts expire.

Property taxes paid by businesses would also almost certainly be passed on to customers. The only exception would likely be natural resource exports such as fish and minerals, where prices are set by world markets, not Alaska supply and demand. To assess the distribution of these business property taxes among Alaska households, we assumed that the property tax would add to the cost of living in proportion to non-shelter expenditures.

Reducing the PFD by $156 per person and diverting the revenue to state government would raise $100 million. However, only the poorest households would actually lose the full amount. Most households get a portion of the loss of income back in reduced federal income taxes. The higher the household's per-capita income, the more the taxes are reduced; disposable income of the richest ten percent of households would only fall on average by $127. For all the other measures, the amount paid would rise as per-capita income rises, although in varying degrees.

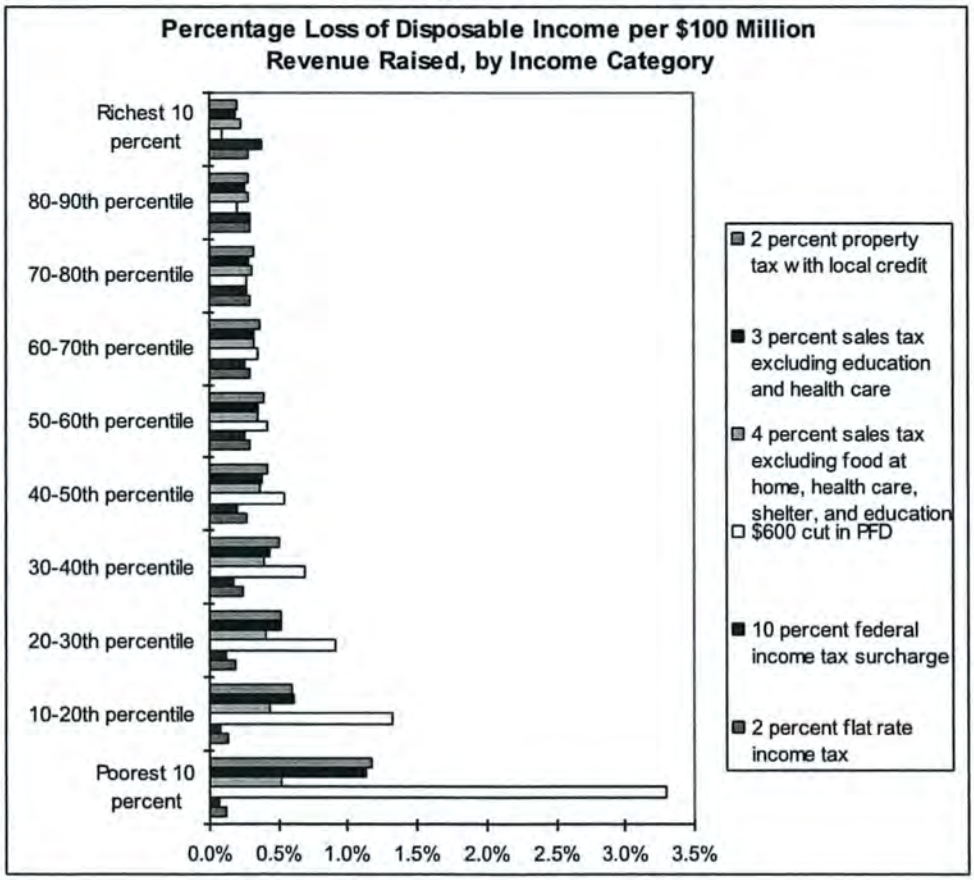
The ten percent of households with the highest per-capita income would pay about five times as much as the poorest ten percent for the sales tax including food at home and shelter. They would pay about 12 times as much if the sales tax excludes food and shelter, about the same multiple as the state property tax. In contrast, the ten percent of households with the highest per-capita income would pay about 70 times as much flat rate income tax as the poorest 10 percent, and about 160 times as much with the income tax surcharge.

Figure A-2


Disposable Income Loss per Person per $100 Million Revenue Raised, by Income Category
Richest 10 percent
80-90th percentile
70-80th percentile
60-70th percentile
50-60th percentile
40-50th percentile
30-40th percentile
20-30th percentile
10-20th percentile
Poorest 10 percent
$-
$100
$200
$300
$400
$500
$600
2 percent property tax with local credit
3 percent sales tax excluding education and health care
4 percent sales tax excluding food at home, health care, shelter, and education
$600 cut in PFD
10 percent federal income tax surcharge
2 percent flat rate income tax

A fiscal measure is considered *progressive* if the percentage collected rises as income rises, and *regressive* if the percentage collected falls as income rises. Figure A-3 shows how the various fiscal measures would reduce disposable income for households for different per-capita income percentiles. The figure shows that the 2 percent flat rate income tax is progressive at lower income scales, due to the fixed exemptions and deductions for the tax base: federal taxable income. The 10 percent income tax surcharge is more progressive, following the progressive structure of the federal income tax. Even with the progressive rates, the income tax surcharge would reduce disposable income of the richest ten percent of households by less than 0.4 percent per $100 million raised.

Figure A-3



In contrast to the income tax measures, the other fiscal options are quite regressive. The three percent sales tax option has lower rate but a broader base than the four percent option. The two types of expenditures excluded in the four percent tax -- food at home and shelter -- vary much less with income than do expenditures for other goods and services. In fact, because the shelter category includes rent but excludes payments for owner-occupied housing, and higher income households are much more likely to own their homes, there is very little variation in shelter expenditures across the different income percentiles. This makes sales taxes more regressive if they include food and shelter in the tax base. Non-residents also purchase less food at home and shelter relative to residents than they purchase other potentially taxable goods and services.

The poorest ten percent would lose 1.2 percent of income with the sales tax that includes food at home and shelter, while the richest 10 percent would lose only 0.2 percent of income. Even if food at home and shelter were excluded, the sales tax would still reduce disposable income of the poorest ten percent of households by twice as much as it reduced disposable income of the richest ten percent. The distribution of property taxes, as mentioned above, is very similar to the distribution of the sales tax that includes food and home and shelter. The reduction in the PFD is the most regressive of all. For every $100 million raised with PFD cuts, the ten percent of households with the lowest income lose 3.3 percent of disposable income, while disposable income of the ten percent with the highest income falls by only 0.1 percent.

Effects of Revenue Measures on Expenditures

All the fiscal options will have some adverse effect on the economy, because they reduce disposable income. As disposable income falls, households spend less on goods and services. However, the amount that a tax increase or spending cut changes spending depends on how households react to the change in their economic circumstances, and how markets respond to the changes in household behavior. How households and markets will react is not known, causing substantial uncertainty in estimates of economic impacts of different measures. Without solid information, one is forced to make assumptions, which generally fall into two categories. First, one must make assumptions about how best to calculate the change in disposable income that drives changes in spending patterns. Second, one must make assumptions about how changes in disposable income affect spending.

The IMPLAN input-output model used to estimate the indirect (multiplier) effects of changes in spending has a set of embedded assumptions about income and spending. Because IMPLAN is based on regional output rather than regional income, it uses a place-of-work accounting framework that does not fully represent the distribution of effects for Alaska residents. That is why we use the Census/ACS income data to represent the distribution of the effects of revenue measures. IMPLAN has more complete information on spending than is available from the Alaska data in the Consumer Expenditure Survey, but its reliance on national expenditure data to estimate spending patterns may less accurately reflect how Alaska households would respond to loss of disposable income. In this section we discuss derivation of estimates of effects of revenue measures on expenditures using the Census/ACS and Alaska CES data. Methods for deriving estimates of effects of revenue measures on expenditures using IMPLAN are discussed in Appendix D.

Table A-5 shows how the main assumptions about income and spending compare for the IMPLAN vs. Census methods. In general, the IMPLAN assumptions imply both a higher sensitivity of disposable income to changes in taxes and income and a bigger impact on spending per dollar change in disposable income. Both methods include wages of non-resident workers. Neither probably captures accurately the income of self-employed non-residents such as commercial fishermen, however.

Table A-5. Assumptions About Income and Spending for Two Methods of Estimating Economic Impacts of Spending Cuts and Revenue Measures

Assumption	IMPLAN	Census
Household income driving spending patterns includes		
Wages of residents and non-residents working in Alaska	x	x
Income Alaskans earn from working outside the state		x
Alaska Permanent Fund Dividend payments	x	x
Income of self-employed Alaska residents from work in Alaska	x	x
Income of self-employed Alaskans from work outside Alaska		x
Income of self-employed non-residents from work in Alaska		
Income Alaska residents receive from Alaska investments	x	x
Income non-residents receive from Alaska investments	x	
Income Alaska residents receive from non-Alaska investments		x
Employer-paid job benefits	x	
In-kind assistance such as food stamps	x	
Rent homeowners avoid by owning their dwellings	x	
Spending patterns driving economic impacts		
Spending patterns based on national expenditure data	x	
Spending patterns based on Alaska-specific data		x
Spending changes in proportion to income	x	
Spending patterns differ between residents and non-residents		x
Resident households adjust spending patterns with income		x
Loan payments change in proportion to income	x	
Loan payments assumed fixed in short term		x
Change in housing prices considered part of spending change	x	
Change in housing prices ignored (benefits cancel out costs)		x

Using the expenditure functions estimated for the Alaska households in the CES, we derived estimates of the effect on disposable income changes on retail purchases resulting from the fiscal options. Figure A-5 summarizes the estimated effects of the six fiscal options on total expenditures, measured as expenditure loss per thousand dollars of revenue raised. Income taxes have the least effect on expenditures. The two different income tax options and the sales tax that excludes food at home and shelter have nearly identical effects on the economy: a reduction of $507-512 per $1,000 of revenues. The sales tax measure that includes food at home has a somewhat larger adverse effect on expenditures. The PFD cut has the largest effect – a reduction of $646 per thousand dollars of revenue raised -- with the property tax having an intermediate effect between that of sales taxes and income taxes and that of the PFD cut.

Three factors explain the differences in expenditure effects among the various measures: the share of revenues contributed by non-residents, the share paid by the federal government, and how progressive or regressive the measure is. Lower-income Alaskans typically spend a higher

share of their income than higher-income Alaskans, so more regressive measures will have a larger adverse effect on expenditures. Alaska. The impact of the PFD cut falls almost exclusively on residents, and it is highly regressive, so it has the largest adverse impact on the economy per dollar of revenues raised. The property tax is as regressive as the sales tax, but higher income taxpayers who pay larger property taxes can deduct the state tax from federal taxable income, and non-residents pay a higher proportion of sales taxes. However, it must be emphasized that our estimates of the effect of property taxes on expenditures are much more uncertain than the estimates for other types of taxes, due to the lack of information on non-resident property owners and the effect of property taxes on commercial property on the cost of living.

Although reducing the PFD is much more regressive than imposing a sales tax, especially a sales tax that excludes food at home and shelter, the sales taxes would actually cause a bigger drop in expenditures. The reason is that households with the lowest income, who lose the most with the PFD cut, do not have much money to spend to begin with.

Figure A-5

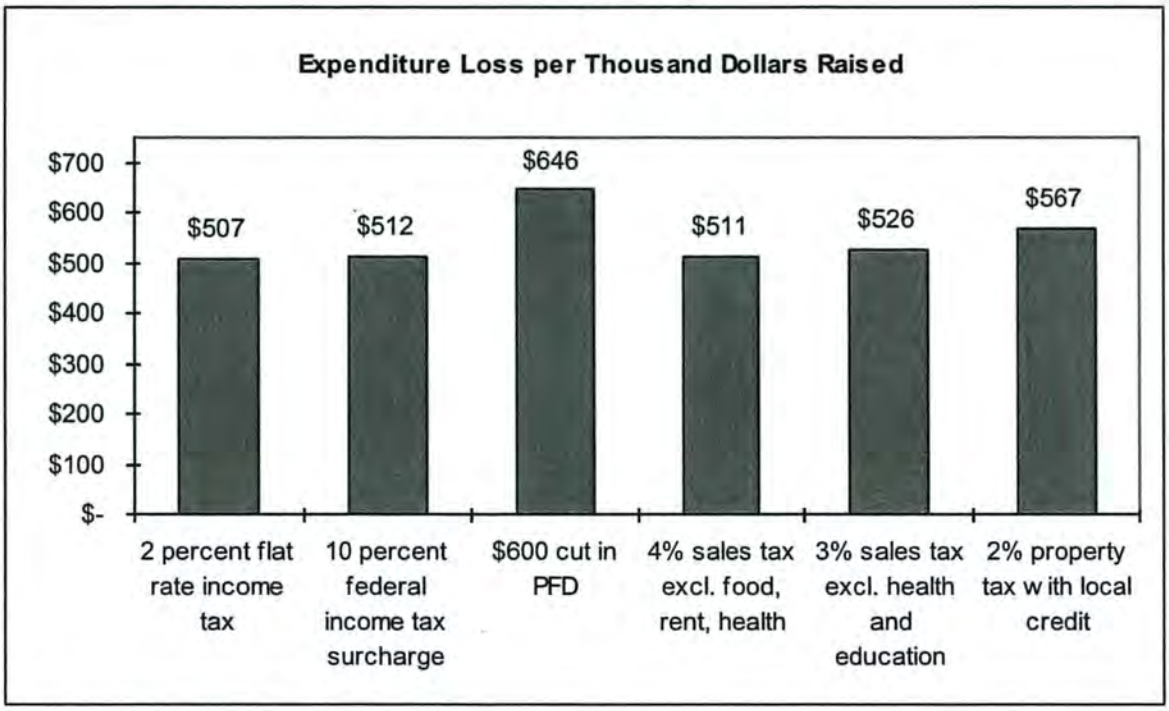


Table A-6 shows that the sensitivity of the different types of expenditures to the loss of disposable income from imposing the fiscal measures varies among the potential measures. Expenditures on health care and education are the most sensitive to disposable income loss. Food at home is not as sensitive as other goods and services. Shelter is the least sensitive, although the large reduction in disposable income for low income people from a sizable cut in the PFD could lead to a rise in homelessness. Another potential consequence of raising taxes to provide more revenue for state government is a reduction in prices for owner-occupied homes.

The expenditures covered in the CES do not include home purchases. A loss of disposable income is bound to have some adverse effect on housing markets. However, because the percentage reduction in disposable income for all the fiscal measures is relatively small for the upper half of the income distribution -- the households most likely to be considering buying a home -- the effect is likely to be small. Reductions in the state work force, for example, would be likely to have a much greater adverse effect on housing markets.

Table A-6. Estimated Impact of Potential Revenue Measures on Six Categories of Expenditures

Total change in expenditures ($000s)	2 percent flat rate income tax	10 percent federal income tax surcharge	$600 cut in PFD	4% sales tax excl. food, rent, health	3% sales tax excl. health and education	2% property tax w local credit
Food at home	$ (4,131)	$ (3,387)	$ (10,541)	$ (4,976)	$ (7,187)	$ (14,337)
Other commodities	(49,511)	(44,267)	(71,593)	(48,409)	(61,606)	(125,102)
Services	(34,251)	(30,655)	(49,319)	(33,430)	(42,511)	(86,332)
Shelter	(327)	(267)	(921)	(407)	(603)	(1,199)
Health care	(36,604)	(38,258)	(21,753)	(26,617)	(29,103)	(59,742)
Education	(23,745)	(21,799)	(29,415)	(21,982)	(27,144)	(55,333)
Other items	(52,000)	(48,522)	(64,240)	(47,537)	(52,000)	(119,705)
Total	$(200,571)	$ (187,156)	$(247,781)	$(183,358)	$(200,571)	$ (461,749)
Reduction in expenditures per $1,000 raised						
Food at home	$ 10	$ 9	$ 27	$ 14	$ 17	$18
Other commodities	125	121	187	135	143	154
Services	87	84	128	93	99	106
Shelter	1	1	2	1	1	1
Health care	93	105	57	74	67	73
Education	60	60	77	61	63	68
Other items	131	133	167	132	136	147
Total	$ 507	$ 512	$ 646	$ 511	$ 526	$567

Distribution of Impacts of Increases in Excise Taxes on Alcohol, Tobacco, and Petroleum Fuels

Alaska already levies excise taxes on alcoholic beverages, tobacco products, and petroleum fuels. Broad-based sales taxes would be in addition to the excise taxes currently on the books. Increases in the excise taxes on these products represent a viable option for increasing state revenues. These products are included in the goods category, and any increase in the excise tax rates would have similar effects on the economy through changes in expenditures as general sales taxes, per dollar of revenue raised. However, the distribution of the effects on household disposable income of changes in excise taxes on these commodities likely differs from the distribution of effects of general sales taxes.

Current tax rates on alcohol are based on a rate of $0.10 per drink, which translates to $1.07 per gallon for beer, $2.50 per gallon for wine, and $12.80 per gallon for hard liquor. Small breweries get a substantial tax reduction. The alcohol tax raises about $38 million per year, of which $19 million comes from liquor sales, $6 million from wine, and the remainder from beer. Although no solid data exist for Alaska, the tax is likely quite regressive. The CES does include alcoholic

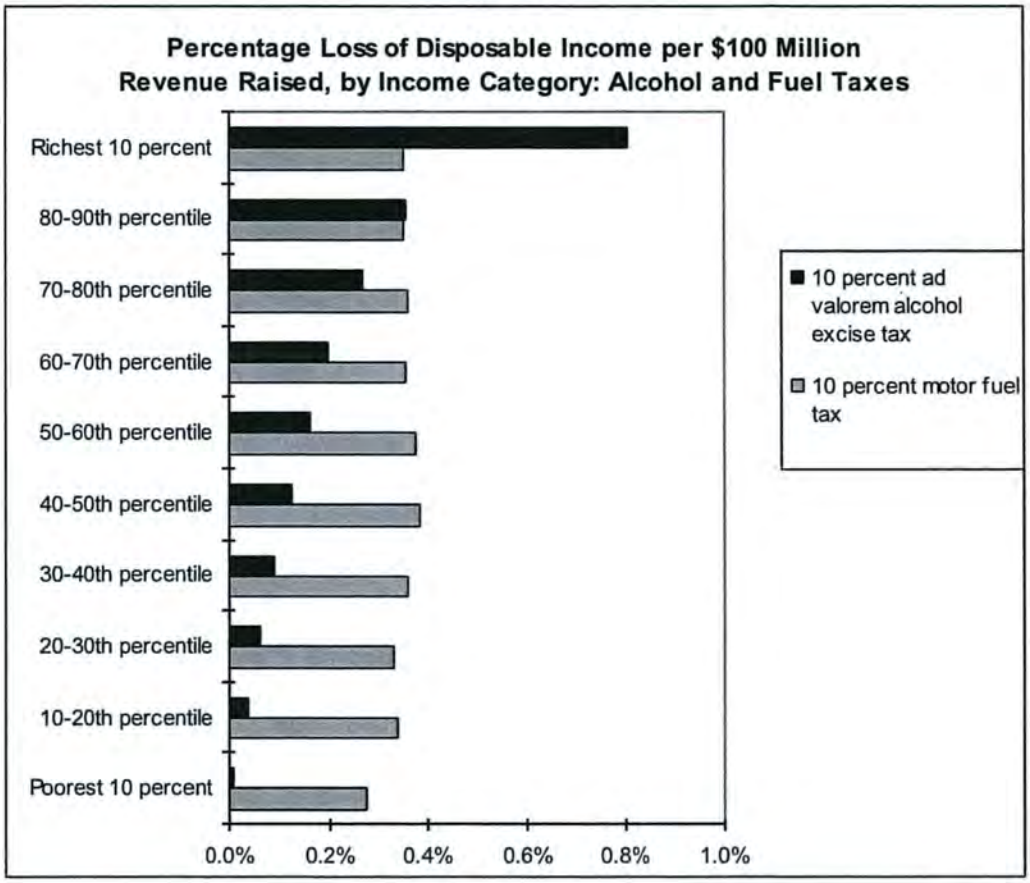
beverages as a subcategory of expenditures. Expenditure equations estimated for the Alaska CES sample, shown in Appendix Table B-7, indicate that the income elasticity of alcohol expenditures is greater than 1.0. This suggests that higher income households spend a greater proportion of their income on alcohol than lower income households. The difference is likely related to how higher income households purchase the product. More affluent households would be much more likely to purchase alcohol in restaurants, for example, where the retail price is much higher per drink than in liquor stores.

Alaska taxes motor fuels at a rate of $0.0895, marine fuels at $0.05 per gallon, aviation gasoline at $0.047 and jet fuel at $0.032 per gallon. The highway rate includes a surcharge of 0.95 cents per gallon effective July 1, 2015. Commercial enterprises pay a substantial portion of motor fuel taxes. The CES includes gasoline and motor oil as a subcategory of expenditures, which provides some data on how expenditures on gasoline vary with income. Expenditure equations estimated for motor fuels from the Alaska CES sample, shown in Appendix Table B-8, indicate that the income elasticity of fuel expenditures is approximately 1.0. This suggests that fuel expenditures are roughly proportional to per-capita household income. In Alaska at least, it does not appear that gasoline taxes would place a higher burden on low income households.

In Fiscal Year 2015, the state collected $42 million from fuel taxes, and will likely collect $45 million in 2016 with the surcharge. Even with the surcharge, Alaska fuel taxes are the lowest in the nation. According to the American Petroleum Institute, national average tax rates are 20.91 on gasoline and 20.17 on diesel. Counting all other taxes and fees including local sales taxes, total tax average 12.25 cents for gasoline and 12.75 cents for diesel. National averages are 30.28 for gasoline and 30.00 for diesel (American Petroleum Institute, State Motor Fuel Taxes by State, http://www.api.org/~/media/Files/Statistics/StateMotorFuel-OnePagers-January-2016.pdf). An increase of 17.50 with a similar percentage rise in marine and aviation fuels would raise Alaska to the national average, and provide an estimated $87 million per year of additional revenue. One could consider fuel taxes as a user fee to allow the state to recover its cost of operating, maintaining, and upgrading state highways, harbors, and airports. The current state budget for the portion of the Department of Transportation and Public Facilities dealing with transportation facilities exceeds $200 million. Even if Alaska raised fuel taxes to the national average rates, the total fuel taxes paid of $133 million would still fall far short of what it actually costs to maintain Alaska's transportation infrastructure, let alone the state's share of new highway construction and port expansion.

Figure A-6 illustrates the distribution of the tax burden among households of varying per-capita income for potential increases in alcohol and fuel taxes. The figure measures the distribution of effects as the percentage of income lost per $100 million raised, the same benchmark as used for the broad-based revenue measures in Figure A-3. The alcohol tax considered is an "ad valorem" tax -- a constant percentage of the retail price -- rather than a constant amount per drink. The CES data suggest that an ad valorem alcohol tax would be quite progressive, while motor fuel taxes are relatively neutral with respect to income class.

Figure A-6



Alaska levies tobacco taxes at a rate based on a tax of $2.00 per pack of cigarettes. Tobacco taxes collected $65 million in 2015. The amount collected has been declining in recent years. The data from the Alaska sample of the CES indicate that only one in five Alaska households reported expenditures on tobacco products. The sample is too small to estimate an expenditure relationship reliably, but the data do indicate that the amount households do spend on tobacco purchases is not correlated with income. The downward trend of tax collections is partly due to the decline in tobacco use, but is also likely related to increased internet sales and other means that avoid paying Alaska's relatively high tax. Because raising tobacco taxes would only increase the incentive for tobacco users to find ways to avoid the tax, raising tax rates would not necessarily increase state revenues collected. This problem, coupled with the fact that tobacco taxes are highly regressive, would recommend against increases in tobacco taxes as a measure to reduce the state budget deficit.

Comparison with Other Studies of Revenue Impacts

The Alaska Department of Revenue (DOR) has developed a fiscal model that estimates revenues that would be obtained from different revenue options. The model and revenue estimates for a number of revenue measures are summarized in "Potential Fiscal and Revenue Options for the Walker-Mallott Administration, Alaska Department of Revenue White Paper, 6/4/2015 (http://gov.alaska.gov/Walker_media/documents/20150605_potential-fiscal-and-revenue-

options.pdf). Two of the options investigated by the Department of Revenue -- a reduction in Permanent Fund Dividend payments and an income tax based on a state surcharge on federal individual income tax liabilities, are similar to the PFD and income tax surcharge proposals studied in this report. The estimates for the amount of revenue raised from these two measure presented here correspond closely to the DOR revenue estimates.

The DOR report also presents revenue estimates for a six percent state sales tax. DOR estimated that a 3 percent sales tax would raise $418 million if food were included and $358 million if food were excluded. The tax excluding food corresponds closely to our estimate of $359 million (Table A-3). Our estimate of $431 million is somewhat higher than the DOR estimate, but the tax base is also broader as it includes rent and utilities as well as food. The two studies, therefore, appear to estimate comparable revenues from sales taxes; however, it is difficult to compare the estimates without knowing the details on exactly what types of expenditures the DOR study included in their sales tax base.

An ISER study conducted in 1993 examined a number of options for raising state revenues and cutting spending, providing estimates of the distribution of effects that parallel those in the current study (Alexandra Hill and Matthew Berman, "Gaining and Losing Under State Fiscal Policies," ISER Fiscal Policy Papers, Number 8, December 1993, http://www.iser.uaa.alaska.edu/Publications/formal/fppapers/fpp8.pdf). The methods of the previous analysis were generally similar to those of the current study. The previous study estimated sales tax receipts and distribution using national expenditure data and assuming Alaska household expenditures had a similar distribution in relation to income as national expenditures. The 1993 study relied on 1990 Census data to develop the distribution of income and demographic profile of Alaska households.

In 1993, the study estimated that the PFD and Longevity Bonus (a state payment of up to $250 per month to seniors) accounted for 25 percent of household income of the poorest ten percent of households. Although the Longevity Bonus is no longer in effect, the data in Table A-1 suggest that the PFD alone accounted for at least one fourth of income for the poorest 10 percent of households in 2013, and considerably more in 2015 when the PFD was substantially larger.

The state personal income tax in effect before 1990 was much more progressive than the current federal income tax structure, so that analysis had the richest 10 percent of households paying 3.1 percent of their income in tax, while we estimated that the 10 percent surcharge on federal taxes would reduce disposable income of the richest 10 percent by only about half that amount. At the upper end of the income distribution, the PFD provided a much higher share of income in 1993 than it does today. This reflects the rising income inequality in the United States over the past two decades, a trend that has also occurred in Alaska.

In addition to examining effects of income and sales taxes and PFD cuts on households at different points along the income distribution, the 1993 study also analyzed the regional effect of reductions in state and local government employment. Although the scope of the current study does not include the distributional effects of state spending cuts, the previous study's conclusion that rural Alaska communities were much more vulnerable to state budget cuts than urban areas undoubtedly still holds.

APPENDIX B
EXPENDITURE EQUATIONS ESTIMATED FROM THE CONSUMER EXPENDITURE SURVEY

As discussed in Appendix A, we used Consumer Expenditure Survey (CES) data to predict how much a family would spend on various categories of goods and services as a function of per-capita income and the number of people in the Consumer Unit (household size). We estimated both linear and loglinear relationships. The equations were estimated as censored regressions to address the fact that expenditures could not be negative. The loglinear specifications generally provided a better fit to the data, except in the case of education expenditures, for which the linear censored regression provided a more realistic prediction, probably due to the fact that relatively few households had education expenditures. We used these equations to estimate the tax base for sales taxes as well as the effect of various revenue measures on expenditures. Tables B-1 through B-8 display the complete statistical results of the equations.

Table B-1. Food at Home

Tobit regression		Number of observations	279
		Likelihood Ratio chi2(2)	56.31
		Prob > chi2	0.000
Log likelihood	-364.9	Pseudo R2 =	0.072

Log of food at home	Coef.	Std. Err.	t	P>|t|	95% Conf.	Interval
Log of per-capita HH income	0.189	0.060	3.14	0.002	0.071	0.307
Log of household size	0.713	0.093	7.70	0.000	0.531	0.896
Constant	5.552	0.648	8.57	0.000	4.277	6.827
Sigma	0.814	0.035			0.746	0.882

Obs. summary: 2 left-censored observations at log food at home = 0
277 uncensored observations

Table B-2. Goods

Tobit regression		Number of observations	279
		Likelihood Ratio chi2(2)	84.66
		Prob > chi2	0.000
Log likelihood	-496.8	Pseudo R2 =	0.079

Log of goods excluding food at home + 1	Coef.	Std. Err.	t	P>|t|	95% Conf.	Interval
Log of per-capita HH income	0.819	0.097	8.46	0.000	0.628	1.010
Log of household size	0.995	0.149	6.67	0.000	0.702	1.289
Constant	-0.680	1.043	-0.65	0.515	-2.733	1.373
Sigma	1.310	0.056			1.199	1.421

Obs. summary: 4 left-censored observations at log goods = 0
275 uncensored observations

Table B-3. Services

Tobit regression		Number of observations	279
		Likelihood Ratio chi2(2)	120.6
		Prob > chi2	0.000
Log likelihood	-434.8	Pseudo R2 =	0.122

Log of services + 1	Coef.	Std. Err.	t	P>|t|	95% Conf.	Interval
Log of per-capita HH income	0.820	0.078	10.54	0.000	0.666	0.973
Log of household size	0.972	0.120	8.11	0.000	0.736	1.207
Constant	-0.828	0.837	-0.99	0.324	-2.477	0.820
Sigma	1.052	0.045			0.964	1.140

Obs. summary: 2 left-censored observations at log services = 0
277 uncensored observations

Table B-4. Shelter

Tobit regression		Number of observations	279
		Likelihood Ratio chi2(2)	0.75
		Prob > chi2	0.687
Log likelihood	-445.1	Pseudo R2 =	0.001

Log of rent plus utilities and home maintenance + 1	Coef.	Std. Err.	t	P>|t|	95% Conf.	Interval
Log of per-capita HH income	0.009	0.080	0.12	0.907	-0.149	0.168
Log of household size	0.107	0.124	0.87	0.387	-0.136	0.351
Constant	8.128	0.865	9.39	0.000	6..424	9..831
Sigma	1.087	0.047			0.996	1.179

Obs. summary: 3 left-censored observations at log shelter = 0
276 uncensored observations

Table B-5. Health Care

Tobit regression		Number of observations	279
		Likelihood Ratio chi2(2)	64.32
		Prob > chi2	0.000
Log likelihood	-649.5	Pseudo R2 =	0.047

Log of health care + 1	Coef.	Std. Err.	t	P>|t|	95% Conf.	Interval
Log of per-capita HH income	2.180	0.273	7.97	0.000	1.642	2.718
Log of household size	1.405	0.405	3.46	0.001	0.607	2.203
Constant	-18.22	2.965	-6.14	0.000	-24.05	-12.38
Sigma	3.445	1.777			3.096	3.795

Obs. summary: 64 left-censored observations at log of health care = 0
215 uncensored observations

Table B-.6. Education

Tobit regression		Number of observations	279
		Likelihood Ratio chi2(2)	11.55
		Prob > chi2	0.003
Log likelihood	-683.9	Pseudo R2 =	0.008

Education	Coef.	Std. Err.	t	P>|t|	95% Conf.	Interval
Per-capita HH income	0.0704	0.0354	1.99	0.048	0.001	0.140
Household size	3369	1101	3.06	0.002	1201	5537
Constant	-26854	4960	-5.41	0.000	-36618	-17090
Sigma	17251	1755			13795	20707

Obs. summary: 225 left-censored observations at education = 0
54 uncensored observations

Table B-7. Alcoholic Beverages
(Subcategory of Goods)

Tobit regression		Number of observations	279
		Likelihood Ratio chi2(2)	54.72
		Prob > chi2	0.000
Log likelihood	-570.0	Pseudo R2 =	0.046

Log of acoholic beverages + 1	Coef.	Std. Err.	t	P>|t|	95% Conf.	Interval
Log of per-capita HH income	2.384	0.332	7.18	0.000	1.730	3.037
Log of household size	1.575	0.492	3.20	0.002	0.605	2.544
Constant	-23.19	3.620	-6.41	0.000	-30.32	-16.07
Sigma	4.012	0.244			3.532	4.492

Obs. summary: 111 left-censored observations at education = 0
168 uncensored observations

Table B-8. Gasoline and Motor Oil
(Subcategory of Goods)

Tobit regression		Number of observations	279
		Likelihood Ratio chi2(2)	109.1
		Prob > chi2	0.000
Log likelihood	-552.2	Pseudo R2 =	0.090

Log of gas and oil + 1	Coef.	Std. Err.	t	P>|t|	95% Conf.	Interval
Log of per-capita HH income	1.146	0.123	9.30	0.000	0.903	1.388
Log of household size	1.557	0.189	8.25	0.000	1.186	1.928
Constant	-6.325	1.329	-4.76	0.000	-9.406	-3.710
Sigma	1.648	0.074			1.503	1.793

Obs. summary: 17 left-censored observations at education = 0
262 uncensored observations

APPENDIX C
IMPLAN MODEL

To estimate short-run economic impacts, we used the IMPLAN input-output model. This appendix provides a brief overview of input-output modeling and the IMPLAN model. Appendix D provides details of how we used the IMPLAN model for this analysis.

Input-Output Modeling

An input-output model is a representation of the flows of economic activity between sectors within a region. The model captures what each business or sector must purchase from every other sector in order to produce a dollar's worth of goods or services. Using an input-output model, flows of economic activity associated with any change in spending may be traced either forwards (spending generating income which induces further spending) or backwards (industry purchases of fuel that leads refineries to purchase additional inputs – crude oil, utilities, etc.). Below is a brief summary of some of the most important terms used in input-output analysis.

Final demand is the term for sales to final consumers (households or government). Sales between industries are termed intermediate sales. Economic impact analysis generally estimates the regional economic impacts of final demand changes. Household spending is one type of final demand.

Direct effects are the changes in economic activity during the first round of spending. For transportation services this involves the impacts on the transportation industries (businesses selling directly to purchasers) themselves.

Secondary effects are the changes in economic activity from subsequent rounds of re-spending of transportation dollars. There are two types of secondary effects:

Indirect effects are the changes in sales, income or employment within the region in backward linked industries supplying goods and services to transportation businesses. The increased sales in truck tire supply firms resulting from more shipping services sales is an indirect effect of transportation spending.

Induced effects are the increased sales within the region from household spending of the income earned in transportation services and supporting industries. Employees in transportation services and supporting industries spend the income they earn on housing, utilities, groceries, and other consumer goods and services. This generates sales, income and employment throughout the region's economy.

Total effects are the sum of direct, indirect, and induced effects. Multipliers capture the size of the secondary effects in a given region, generally as a ratio of the total change in economic activity in the region relative to the direct change. Multipliers may be expressed as ratios of sales, income or employment, or as ratios of total income or employment changes relative to direct sales.

Multipliers express the degree of interdependency between sectors in a region's economy and therefore vary considerably across regions and sectors. Type I multipliers measure the direct and indirect effects of a change in economic activity. Unlike Type II or SAM multipliers (discussed below), they do not include induced effects. They capture the inter-industry effects only, i.e., industries buying from local industries.

IMPLAN Model

To estimate short-run economic impacts, we used the proprietary IMPLAN input-output model (http://www.implan.com/). The most important component of IMPLAN is an input-output dollar flow table. For a specified region, the input-output table accounts for all dollar flows between different sectors of the economy. Using this information, IMPLAN models the way a dollar injected into one sector is spent and re-spent in other sectors of the economy, generating waves of economic activity, or so-called "economic multiplier" effects. The model uses national industry data and county-level economic data to generate a series of multipliers, which in turn estimate the total economic implications of economic activity. The inclusion of the Social Accounting Matrix (SAM) allows the measurement of economic relationships between government, industry, and household sectors, allowing IMPLAN to model transfer payments such as unemployment insurance.

We used the IMPLAN[1] software version (3.1) which contains 2013 data for our analysis. This model contains 299 industries, and 9 income group categories for the state of Alaska. Table C-1 (on the following page) provides summary data for the Alaska model.

IMPLAN Data Sources

The input-output model generated by IMPLAN requires data from multiple sources. Below we describe the most important sources of data.

Employment

In general, BLS' Covered Employment and Wages (CEW)[2] data provide the county-level industry structure for the IMPLAN database. The Census Bureau's County Business Patterns (CBP) data are used to estimate non-disclosed values, while the regional economic (REA)[3] data is used for control totals (to incorporate proprietors and non-covered sectors[4]).

Employee compensation describes the total payroll costs (including benefits) of each industry in the region. It includes the wages and salaries of workers who are paid by employers, as well as benefits such as health and life insurance, retirement payments, and non-cash compensation.

---

[1] See the Glossary of Terms below and IMPLAN overview here: http://www.ci.richmond.ca.us/documentcenter/home/view/6474

[2] Bureau of Labor Statistics: http://www.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables

[3] Bureau of Economic Analysis: http://www.bea.gov/regional/

[4] Since these data only capture covered employees, the data set cannot capture self-employed persons, railway employment, religious organizations, military, elected officials or any other establishments that have their own social insurance program and/or do not pay into the Unemployment Insurance program. Since most farm employment is self-employment, CEW data miss much of the farm data.

Employee compensation is derived for each industry from ES202[5] and Regional Economic Information System Employment (REIS) data.

Table C-1: Overview of IMPLAN

Model Year	2013
GRP (Gross Regional Product)	$64,776,426,833
Total Personal Income	$36,779,760,000
Total Employment	488,575
Number of Industries	299
Population	735,132
Total Households	262,327
Average Household Income	$140,206
Value Added	
Employee Compensation	$28,376,414,336
Proprietor Income	$3,874,819,622
Other Property Type Income	$24,512,101,981
Tax on Production and Import	$8,013,090,894
Total Value Added	$64,776,426,833
Final Demand	
Households	28,629,722,314
State/Local Government	$9,936,276,378
Federal Government	$10,243,953,265
Capital	$8,388,415,723
Exports	$41,848,452,645
Imports	-$32,411,848,922
Institutional Sales	-$1,858,544,524
Total Final Demand:	$64,776,426,879

Households

National household Personal Consumption Expenditures (PCE) are estimated using the Bureau of Economic Analysis (BEA) Benchmark I-O-to-PCE bridge tables and current National Income and Product Accounts (NIPA) PCE data. National PCE are distributed to states and counties based on the number of households and household income for each of the nine income categories. The spending patterns for each of the nine household income categories were created using the BLS Consumer Expenditure Survey.

Household income is based on the Bureau of Economic Analysis (BEA) "Personal Income" numbers reported by the Regional Economic Information System (REIS) in the CA5 tables – Personal Income and controlled to current BEA National Income and Product Accounts (NIPA) for the nation.

[5] Employment and Wage (ES-202) data are derived from reports filed by all employers subject to unemployment compensation laws, both state and federal. Industry employment and payroll information is produced both quarterly and annually for the state, labor market areas, workforce investment areas, cities and towns, and counties. NAICS based employment and wage data are available beginning with the first quarter of 2001. Use the query tool below to obtain Employment and Wage data by area and industry. http://lmi2.detma.org/lmi/lmi_es_a.asp

Government

Federal sales and expenditures data are estimated using NIPA control totals and the Benchmark I-O distribution, with the exception of the timber sales data, which are from the U.S. Forrest Service. Data for State and Local Government sales are obtained from the current Annual Survey of Governments: Finances data series, while State and Local Government expenditures are estimated using NIPA control totals and the Benchmark I-O distribution.

Social Accounting Matrix

Social Accounting Matrix (SAM) accounts are an extension of traditional input output accounts. Like input-output analysis, a full social accounting matrix is a double entry booking system capable of tracing monetary flows through debits and credits similar to T-Accounts in basic financial accounting. The matrix format allows the double entry bookkeeping to be displayed in a single entry format. The column entries represent expenditures (payments) made by the economic agents. The row entries represent receipts or income to agents. By accounting definition, all receipts must equal all expenditures. A SAM with complete accounting of flows actually serves as a check for IMPLAN data since a SAM gives a complete picture of taxation and savings for households and governments.

The U.S. SAM data come directly from the National Income and Product Accounts. State and county SAM data is derived from a number of sources. The IMPLAN data contributes a large portion of the local area data. All inter-industry information is derived from the MIG IMPLAN databases. IMPLAN gives the SAM the use and make tables, the factor receipts, and the commodities purchased by institutions. Other SAM elements are derived from a variety of sources.

Estimates of household income and expenditure transfers come from four primary sources. The first is the IMPLAN industry data. The second is the REIS CA 35 Table. The third is from the BLS Consumer and the fourth is the Annual Survey of Government Finances. Household income received from industries is from the IMPLAN data. This income is by place of work, and is income received by individuals where they perform the work. Social accounting data is by definition place-of-residence. The REIS data provides the residency adjustment.
Household income is adjusted for place-of-residence so it is consistent with other sources of household income. Residence-based household income is derived from the Bureau of Economic Analysis (BEA)'s Regional Economic Information System (REIS) data. REIS has estimates of income by place of work and place of residence, as well as some transfer payments data. Household expenditures on federal taxes are from the CES data distributed to states and counties on the basis of the area's demographic makeup.

APPENDIX D
ESTIMATION OF SHORT-RUN ECONOMIC IMPACTS

This appendix provides technical documentation for our estimation of short-term economic impacts of Alaska fiscal options.

"High" Scenarios for Economic Impacts

As discussed in Chapter II and Appendix A, we analyzed two scenarios for how fiscal options might affect household spending, based on different assumptions estimated from different data sources. We refer to these as the "high" scenario (based on assumptions embedded in the IMPLAN model) and the "low" scenario (based on assumptions estimated from Census income data). The "high" scenario assumptions generally result in higher estimated impacts of the fiscal options on Alaska household spending and correspondingly higher multiplier economic impacts than the "low" scenario options.

In this appendix, we first discuss the estimated impacts for "high" scenario. All of the following analysis and discussion prior to the section of the appendix named "Low Scenarios for Economic Impacts" (including all of the tables through Table D-12) refers to our analysis for the "high" scenario.

IMPLAN Model Assumptions for Spending Cut Options

Spending Cut: Workers

We modeled the impacts of removing1300 jobs from the sector named employment and payroll of state government employment (IMPLAN sector number 531). This sector consists of workers typically employed in Parks & Recreation, Health, Hospitals, Police, Judicial and Legal, Financial Administrative, Highways, Public Welfare, Fire Protection, Natural Resources, Corrections, Libraries, and Social Insurance. These jobs are associated with a total output of $135,162,159 in output and total labor income of $128,443,783.

Spending Cut: Broad-Based

We modeled the impacts of removing $100 million from the spending of a sector named other state government enterprises. This sector consists of Sewerage, Water Supply, Gas Supply, Airports, Water trans. & terminals, and Housing & Community Development.

Spending Cut: Capital

We modeled the impacts of reducing spending by $60 million in a sector named construction in new commercial structures and reducing spending by $40 million in a sector named construction in other non-residential structures. We used this weighted average of spending reductions for two sectors to reflect the fact that the labor intensity of different types of capital spending differs.

Spending Cut: Pay

We modeled the impacts of a $100 million decrease in employee compensation. We model these similarly to how we model the impacts of taxes and dividend cuts, described below. The impacts are driven by assumed changes in spending resulting from the decrease in employee compensation, after adjusting for payroll taxes, social insurance taxes, personal taxes and savings.

IMPLAN Model Assumptions for Tax and Dividend Cut Options

To develop IMPLAN model assumptions for the income tax, sales tax and dividend cut fiscal options, we used the methodology discussed in Appendix A to derive the following estimates of total income raised by each fiscal option, by residency. Note that these are the same estimates as those shown in Appendix A, Table A-3.

Table D-1

Estimated Total Revenue Raised, by Residency ($000)

Fiscal option	10% federal income tax surcharge	2% flat rate income tax	4 % sales tax excluding food at home, shelter, health care & education	3% sales tax excluding health care & education	20 mil (2%) property tax with local credit	$600 cut in PFD
Residents	$338,847	$366,442	$317,970	$388,218	$791,832	$380,019
Non-residents	$27,033	$29,234	$41,198	$42,998	$22,810	$3,800
Total	$365,880	$395,676	$359,168	$431,215	$814,642	$383,819
Resident share	92.6%	92.6%	88.5%	90.0%	97.2%	99.0%
Non-resident share	7.4%	7.4%	11.5%	10.0%	2.8%	1.0%

We also used the methodology discussed in Appendix A to estimate the following estimates of revenue which would be raised from Alaska residents, by income group:

Table D-2

Estimated Revenue Raised from Residents, by Income Group ($000)

Income group	10% federal income tax surcharge	2% flat rate income tax	4 % sales tax excluding food at home, shelter, health care &education	3% sales tax excluding health care & education	20 mil (2%) property tax with local credit	$600 cut in PFD
lowest 10 percent	$976	$1,888	$7,626	$19,706	$37,889	$48,027
10-20 percent	$3,108	$5,520	$16,439	$27,411	$49,717	$46,265
20-30 percent	$5,843	$9,594	$18,889	$28,661	$53,458	$39,236
30-40 percent	$11,940	$18,232	$25,751	$34,847	$74,088	$43,552
40-50 percent	$18,625	$25,480	$31,284	$39,082	$81,806	$43,900
50-60 percent	$25,808	$32,938	$34,663	$41,560	$86,311	$40,340
60-70 percent	$28,427	$35,777	$35,202	$41,521	$88,707	$34,740
70-80 percent	$36,652	$43,038	$40,368	$45,248	$96,478	$32,880
80-90 percent	$48,862	$51,275	$44,450	$48,089	$98,252	$29,559
highest 10 percent	$106,255	$88,335	$63,299	$62,092	$125,128	$24,650
Total	$286,496	$312,076	$317,970	$388,218	$791,832	$383,149

Note that the totals for revenues raised from residents vary between Tables D-1 and D-2 for the income tax and the dividend cut options, particularly for the progressive (10% federal income tax surcharge) option. The income tax is non-linear because of the progressive rates. The IRS data has enough information to enable us to estimate the total taxes collected. The average household per-capita income in the percentiles is not the same as for the IRS distribution of taxpayers, and there is no way to adjust for this perfectly. That is why the average amounts collected per decile don't exactly add to the total. The total is more accurate. With sales taxes, there is neither the progressive structure nor the ability to estimate the total tax, so we used the weighted average of the percentiles to estimate the total, which is why the total does equal the sum.

From Table D-2, we calculated the shares of revenues raised from residents by income group:

Table D-3

Estimated Share of Revenue Raised from Residents, by Income Group (%)

Fiscal option	10% federal income tax surcharge	2% flat rate income tax	4 % sales tax excluding food at home, shelter, health care &education	3% sales tax excluding health care & education	20 mil (2%) property tax with local credit	$600 cut in PFD
lowest 10 percent	0.34%	0.60%	2.40%	5.08%	4.78%	12.53%
10-20 percent	1.08%	1.77%	5.17%	7.06%	6.28%	12.07%
20-30 percent	2.04%	3.07%	5.94%	7.38%	6.75%	10.24%
30-40 percent	4.17%	5.84%	8.10%	8.98%	9.36%	11.37%
40-50 percent	6.50%	8.16%	9.84%	10.07%	10.33%	11.46%
50-60 percent	9.01%	10.55%	10.90%	10.71%	10.90%	10.53%
60-70 percent	9.92%	11.46%	11.07%	10.70%	11.20%	9.07%
70-80 percent	12.79%	13.79%	12.70%	11.66%	12.18%	8.58%
80-90 percent	17.06%	16.43%	13.98%	12.39%	12.41%	7.71%
highest 10 percent	37.09%	28.31%	19.91%	15.99%	15.80%	6.43%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

For our IMPLAN model assumptions, we needed to estimate the changes in expenditures which would result from collecting the total revenue collections shown in Table D-1. We had no data on the distribution of income of the non-residents from whom revenues would be collected. We therefore assumed that the shares of different income groups would be the same for total revenue collections (and therefore implicitly for non-resident revenue collections) as the shares for resident revenue collections shown in Table D-3 above.

We then estimated the total revenue collections by income group (from residents and non-residents combined) shown in Table D-4, by multiplying the income group shares in Table D-3 by the total revenue collections shown in the bottom row of Table D-1:

Table D-4

Assumed Total Revenue Raised by Income Group: Income Tax, Sales Tax and Dividend Cut Options ($000)

Income group	10% federal income tax surcharge	2% flat rate income tax	4 % sales tax excluding food at home, shelter, health care &education	3% sales tax excluding health care & education	20 mil (2%) property tax with local credit	$600 cut in PFD
lowest 10 percent	$1,246	$2,393	$8,614	$21,889	$38,980	$48,111
10-20 percent	$3,970	$6,999	$18,569	$30,447	$51,149	$46,346
20-30 percent	$7,463	$12,164	$21,336	$31,836	$54,998	$39,305
30-40 percent	$15,249	$23,116	$29,087	$38,706	$76,222	$43,629
40-50 percent	$23,786	$32,305	$35,337	$43,411	$84,163	$43,977
50-60 percent	$32,958	$41,761	$39,154	$46,163	$88,797	$40,410
60-70 percent	$36,303	$45,361	$39,763	$46,120	$91,262	$34,801
70-80 percent	$46,808	$54,567	$45,598	$50,260	$99,257	$32,938
80-90 percent	$62,401	$65,011	$50,209	$53,416	$101,082	$29,610
highest 10 percent	$135,696	$111,999	$71,501	$68,969	$128,733	$24,693
Total	$365,880	$395,676	$359,168	$431,215	$814,642	$383,819

We next estimated the assumed spending reductions resulting from the income losses shown in Table D-3. To do this we began by calculating the assumed spending reductions per dollar of lost income, shown in table D-5.

Table D-5

Assumed Spending Reduction Per Dollar of Lost Income

Income Group	Reduction
lowest 10 percent	$1.00
10-20 percent	$1.00
20-30 percent	$1.00
30-40 percent	$1.00
40-50 percent	$1.00
50-60 percent	$1.00
60-70 percent	$0.95
70-80 percent	$0.88
80-90 percent	$0.71
highest 10 percent	$0.51

We derive these by assuming that the share of a dollar of income that is spent is the share that is not devoted to savings or taxes. Put differently, a dollar reduction in income results in spending reductions which equal to 1 minus (savings + taxes).

In order to derive how much each income group allocates to taxes and savings, we do the following. To generate flows from households to government (taxes) we divide distributions from each income group to government (Federal Government Non-Defense (code 11001)), (State/Local Gov't non-education, and 12001)) by the overall spending (Total). To generate how much households are allocating to their savings, we divide the amount they allocate to capital (14001) by the overall income (Total).

Lower income households receive distributions from the government which become part of their overall incomes. For these income groups, a dollar income reduction is assumed to lead to a dollar in spending reductions.

We multiplied the estimates of total revenues collected by group in Table D-4 by the assumed spending reductions per dollar of lost income in Table D-5 to estimate the assumed expenditure reductions by income group shown in Table D-6:

Table D-6

Assumed Expenditure Reduction by Income Group: Income Tax, Sales Tax and Dividend Cut Options ($000)

Income group	10% federal income tax surcharge	2% flat rate income tax	4 % sales tax excluding food at home, shelter, health care &education	3% sales tax excluding health care & education	20 mil (2%) property tax with local credit	$600 cut in PFD
lowest 10 percent	$1,246.27	$2,393	$8,614	$21,889	$38,980	$48,111
10-20 percent	$3,970	$6,999	$18,569	$30,447	$51,149	$46,346
20-30 percent	$7,463	$12,164	$21,336	$31,836	$54,998	$39,305
30-40 percent	$15,249	$23,116	$29,087	$38,706	$76,222	$43,629
40-50 percent	$23,786	$32,305	$35,337	$43,411	$84,163	$43,977
50-60 percent	$32,958	$41,761	$39,154	$46,163	$88,797	$40,410
60-70 percent	$34,488	$43,093	$37,775	$43,814	$86,699	$33,061
70-80 percent	$41,191	$48,019	$40,127	$44,228	$87,346	$28,985
80-90 percent	$44,305	$46,158	$35,648	$37,925	$71,768	$21,023
highest 10 percent	$69,205	$57,119	$36,465	$35,174	$65,654	$12,593
Total	$273,861	$313,127	$302,112	$373,593	$705,776	$357,440

IMPLAN Estimates for Fiscal Options

To save space in the following tables, and also to simplify the tables in other parts of this report, in the remainder of this Appendix and in other parts of this report we use the following "short names" for the fiscal options for which we estimated short-run economic impacts:

Table D-7
Fiscal Option Names

Full name Used in Appendix A and earlier parts of Appendix D	Short name Used in Executive Summary and report chapters
Spending cut: workers	Spending cut: workers
Spending cut: broad-based	Spending cut: broad-based
Spending cut: capital	Spending cut: capital
Spending cut: pay	Spending cut: pay
10% federal income tax surcharge	Income tax: progressive
2% flat rate income tax	Income tax: flat rate
4% sales tax excluding food at home, shelter, health care & education	Sales tax: more exclusions
3% sales tax excluding health care & education	Sales tax: fewer exclusions
20 mil (2%) property tax with local credit	Property tax
$600 cut in PFD	Dividend cut
Saving less	Saving less

Table D-8 summarizes our IMPLAN estimates of the direct, indirect, induced and total impacts of each fiscal option that we analyzed on employment, labor income, total value added, and output. Note that these are estimated impacts before adjusting for $100 million of deficit reduction to facilitate comparison of the relative economic impacts of different options, and before adjusting for the shares of tax and dividend cut income reductions experienced by Alaska residents. Put differently, the estimates show what the total estimated economic impacts would be if we assumed that the impacts of the tax and dividend options were the same as if all revenues were collected from Alaska residents.

Table D-8

Estimated Economic Impacts of Fiscal Options

(Before Adjustments for $100 Million of Deficit Reduction or for Residency)

Fiscal Option	Impact	Employment	Labor Income	Total Value Added	Output
Spending cut: workers	Direct Impact	1,300	$128,443,783	$135,162,163	$135,162,159
	Indirect Impact	0	$0	$0	$0
	Induced Impact	967	$57,834,399	$91,080,286	$140,242,201
	Total Impact	2,267	$186,278,182	$226,242,449	$275,404,360
Spending cut: broad-based	Direct Impact	504	$67,465,139	$64,180,716	$99,999,998
	Indirect Impact	165	$12,590,276	$18,075,711	$32,541,789
	Induced Impact	589	$35,095,126	$55,496,950	$85,651,702
	Total Impact	1,260	$115,150,542	$137,753,378	$218,193,489
Spending cut: capital	Direct Impact	506	$41,660,828	$48,689,461	$100,000,000
	Indirect Impact	159	$10,380,857	$15,531,755	$29,027,814
	Induced Impact	266	$11,893,924	$22,463,822	$35,772,456
	Total Impact	931	$63,935,610	$86,685,039	$164,800,273
Spending cut: pay	Direct Impact	0	$0	$0	$0
	Indirect Impact	0	$0	$0	$0
	Induced Impact	727	$43,293,555	$68,379,638	$105,397,277
	Total Impact	727	$43,293,555	$68,379,638	$105,397,277
10% federal income tax surcharge	Direct Impact	0	$0	$0	$0
	Indirect Impact	0	$0	$0	$0
	Induced Impact	3,107	$179,068,073	$288,589,000	$452,448,266
	Total Impact	3,107	$179,068,073	$288,589,000	$452,448,266
2 percent flat rate income tax	Direct Impact	0	$0	$0	$0
	Indirect Impact	0	$0	$0	$0
	Induced Impact	3,409	$195,220,936	$316,654,054	$497,295,126
	Total Impact	3,409	$195,220,936	$316,654,054	$497,295,126
4% sales tax excl. food, rent, health	Direct Impact	0	$0	$0	$0
	Indirect Impact	0	$0	$0	$0
	Induced Impact	3,145	$178,782,037	$291,685,082	$459,844,684
	Total Impact	3,145	$178,782,037	$291,685,082	$459,844,684
3% sales tax excl. health, education	Direct Impact	0	$0	$0	$0
	Indirect Impact	0	$0	$0	$0
	Induced Impact	3,807	$215,465,761	$352,884,720	$557,074,004
	Total Impact	3,807	$215,465,761	$352,884,720	$557,074,004
20 mil (2%) property tax with local credit	Direct Impact	0	$0	$0	$0
	Indirect Impact	0	$0	$0	$0
	Induced Impact	7,160	$405,917,294	$663,662,796	$1,046,740,407
	Total Impact	7,160	$405,917,294	$663,662,796	$1,046,740,407
$600 cut in PFD	Direct Impact	0	$0	$0	$0
	Indirect Impact	0	$0	$0	$0
	Induced Impact	3,458	$193,593,641	$320,190,281	$507,127,459
	Total Impact	3,458	$193,593,641	$320,190,281	$507,127,459

Table D-9 shows the corresponding estimates of the direct, indirect, induced and total impacts of each fiscal option after adjusting for $100 million of deficit reduction, to facilitate comparison of the relative economic impacts of different options. Note that, as with Table D-8, these estimates are not adjusted for the shares of tax and dividend cut income reductions experienced by Alaska residents. Put differently, they show the estimated economic impacts per $100 million of deficit reduction if we assumed that the impacts of the tax and dividend options were the same as if all revenues were collected from Alaska residents.

Table D-9
Estimated Economic Impacts of Fiscal Options Per $100 Million of Deficit Reduction
(before adjustments for residency)

Fiscal Option	Deficit reduction	Adjustment factor*	Impact	Employment	Labor Income	Total Value Added	Output
Spending cut: workers	$135,162,159	0.7399	Direct Impact	962	$95,029,396	$100,000,003	$100,000,000
			Indirect Impact	0	$0	$0	$0
			Induced Impact	715	$42,788,898	$67,385,936	$103,758,479
			Total Impact	1,677	$137,818,294	$167,385,939	$203,758,479
Spending cut: broad-based	$100,000,000	1.0000	Direct Impact	504	$67,465,139	$64,180,716	$99,999,998
			Indirect Impact	165	$12,590,276	$18,075,711	$32,541,789
			Induced Impact	589	$35,095,126	$55,496,950	$85,651,702
			Total Impact	1,260	$115,150,542	$137,753,378	$218,193,489
Spending cut: capital	$100,000,000	1.0000	Direct Impact	506	$41,660,828	$48,689,461	$100,000,000
			Indirect Impact	159	$10,380,857	$15,531,755	$29,027,814
			Induced Impact	266	$11,893,924	$22,463,822	$35,772,456
			Total Impact	931	$63,935,610	$86,685,039	$164,800,273
Spending cut: pay	$100,000,000	1.0000	Direct Impact	0	$0	$0	$0
			Indirect Impact	0	$0	$0	$0
			Induced Impact	727	$43,293,555	$68,379,638	$105,397,277
			Total Impact	727	$43,293,555	$68,379,638	$105,397,277
10% federal income tax surcharge	$365,880,435	0.2733	Direct Impact	0	$0	$0	$0
			Indirect Impact	0	$0	$0	$0
			Induced Impact	849	$48,941,691	$78,875,221	$123,660,142
			Total Impact	849	$48,941,691	$78,875,221	$123,660,142
2 percent flat rate income tax	$395,676,227	0.2527	Direct Impact	0	$0	$0	$0
			Indirect Impact	0	$0	$0	$0
			Induced Impact	861	$49,338,556	$80,028,577	$125,682,336
			Total Impact	861	$49,338,556	$80,028,577	$125,682,336
4% sales tax excl. food, rent, health	$359,168,203	0.2784	Direct Impact	0	$0	$0	$0
			Indirect Impact	0	$0	$0	$0
			Induced Impact	876	$49,776,688	$81,211,276	$128,030,455
			Total Impact	876	$49,776,688	$81,211,276	$128,030,455
3% sales tax excl. health, education	$431,215,334	0.2319	Direct Impact	0	$0	$0	$0
			Indirect Impact	0	$0	$0	$0
			Induced Impact	883	$49,967,092	$81,834,919	$129,186,965
			Total Impact	883	$49,967,092	$81,834,919	$129,186,965
20 mil (2%) property tax with local credit	$814,642,218	0.1228	Direct Impact	0	$0	$0	$0
			Indirect Impact	0	$0	$0	$0
			Induced Impact	879	$49,827,690	$81,466,803	$128,490,847
			Total Impact	879	$49,827,690	$81,466,803	$128,490,847
$600 cut in PFD	$383,819,073	0.2605	Direct Impact	0	$0	$0	$0
			Indirect Impact	0	$0	$0	$0
			Induced Impact	901	$50,438,776	$83,422,191	$132,126,696
			Total Impact	901	$50,438,776	$83,422,191	$132,126,696

* Adjustment factor for the estimates in Table D-8, to convert to estimated economic impacts per $100 million of deficit reduction. Calculated by dividing $100 million by the deficit reduction shown in the second column.

Table D-10 summarizes the estimated short-run economic impacts of each fiscal option on income and employment, before adjustments before residency. We use the term "multiplier impacts" to refer to the sum of indirect and induced impacts.

Table D-10
Estimated Short-Run Economic Impacts of Selected Options for Reducing the Deficit by $100 Million
(before adjustments for residency)

	Income Impacts (millions of $ of income)				Employment Impacts (FTE jobs in Alaska)		
Option	Direct earned	Direct other	Multi-plier	Total	Direct	Multi-plier	Total
Spending cut: workers	95.0		42.8	137.8	962	715	1677
Spending cut: broad-based	67.5		47.7	115.2	504	754	1260
Spending cut: capital	41.7		22.3	63.9	506	425	931
Spending cut: pay	100.0		43.3	143.3	0	727	727
Income tax: progressive		100.0	48.9	148.9	0	849	849
Income tax: flat rate		100.0	49.3	149.3	0	861	861
Sales tax: more exclusions		100.0	49.8	149.8	0	876	876
Sales tax: fewer exclusions		100.0	50.0	150.0	0	883	883
Property tax		100.0	49.8	149.8	0	879	879
Dividend cut		100.0	50.4	150.4	0	901	901
Saving less				0.0			0

The direct employment impacts shown for the first three spending cut options are the same as those shown in Table D-9: only these three options have direct employment impacts.

The "direct earned income" impacts shown for the first three spending cut options are the same as the "direct labor income" impacts shown in Table D-9.

The $100 million impact on "direct other" income for the five tax and dividend cut options shown in the lower half of Table D-10 represents the loss of income from the assumed $100 million reduction in the deficit (assuming that this was entirely lost resident income). Although we show a direct earned impact of $100 million for the "Spending cut: pay" option, we actually estimate the income impacts of this option in the same way as we do for the "direct other" income impacts of the tax and dividend cut options (as multiplier impacts resulting from expenditure reductions resulting from the lost income).

The multiplier employment and income impacts shown in Table D-10 are the sums of the indirect and induced impacts shown in Table D-9. The total impacts are the sums of the direct and multiplier impacts shown in Table D-10.

Note that the bottom row of Table D-10 shows zero short-run economic impacts of "saving less". This option refer to saving less of annual Permanent Fund realized earnings in the Permanent Fund principal (as inflation proofing) or in the Permanent Fund earnings reserve (as additions to the earnings reserve). Although saving less would reduce future growth of the Permanent Fund

and thus would reduce future earnings, it would not remove any income or jobs from the economy in the short-run and would have no short-run economic impacts.

Table D-11 shows the assumed share of revenues that would be paid by residents. These are the same shares as shown above in Table D-1.

Table D-11

Assumed Share of Revenues Paid by Residents

Option	Share
Spending cut: workers	100.0%
Spending cut: broad-based	100.0%
Spending cut: capital	100.0%
Spending cut: pay	100.0%
Income tax: progressive	92.6%
Income tax: flat rate	92.6%
Sales tax: more exclusions	88.5%
Sales tax: fewer exclusions	90.0%
Property tax	97.2%
Dividend cut	99.0%
Saving less	NA

Table D-12 summarizes the estimated short-run economic impacts of each fiscal option on income and employment, after adjusting for residency by multiplying the impacts shown in Table D-10 by the resident shares shown in Table D-11. We use the term "multiplier impacts" to refer to the sum of indirect and induced impacts. These are the estimates of short-run economic impacts which we report in the Executive Summary and in Chapter III.

Table D-12
Estimated Short-Run Economic Impacts of Selected Options for Reducing the Deficit by $100 Million
(after adjustments for residency)

Option	Income Impacts (millions of $ of income)				Employment Impacts (FTE jobs in Alaska)		
	Direct earned	Direct other	Multi-plier	Total	Direct	Multi-plier	Total
Spending cut: workers	95.0		42.8	137.8	962	715	1677
Spending cut: broad-based	67.5		47.7	115.2	504	754	1260
Spending cut: capital	41.7		22.3	63.9	506	425	931
Spending cut: pay	100.0		43.3	143.3	0	727	727
Income tax: progressive		92.6	45.3	137.9	0	786	786
Income tax: flat rate		92.6	45.7	138.3	0	798	798
Sales tax: more exclusions		88.5	44.1	132.6	0	775	775
Sales tax: fewer exclusions		90.0	45.0	135.0	0	795	795
Property tax		97.2	48.4	145.6	0	854	854
Dividend cut		99.0	49.3	148.3	0	870	870
Saving less				0.0			0

Note that this residency adjustment implies the assumption that the tax and dividend cut options impact the economy only because of their impacts on resident income and expenditures: impacts on non-resident incomes are not assumed to result in any impact on non-resident expenditures in Alaska.

"Low" Scenarios for Economic Impacts

As discussed in Chapter II and Appendix A, we analyzed two scenarios for how fiscal options might affect household spending, based on different assumptions estimated from different data sources. We refer to these as the "high" scenario (based on assumptions embedded in the IMPLAN model) and the "low" scenario (based on assumptions estimated from Census income data). The "high" scenario assumptions generally result in higher estimated impacts of the fiscal options on Alaska household spending and correspondingly higher multiplier economic impacts than the "low" scenario options.

The preceding sections of this appendix discussed the estimated impacts for "high" scenario. This section discusses the estimated impacts for the "low" scenario.

All of the direct economic impacts are the same for the "low" scenario as for the "high" scenarios. The differences are in the multiplier economic impacts. These differ because we assume that changes in household income have smaller impacts on household spending.

The top two rows of Table D-13 show the estimated expenditure reductions per thousand dollars raised for the high and low scenarios, as reported in Figure II-7. We use the ratio of the low scenario expenditure reductions to the high scenario expenditure reductions as "multiplier adjustment factors" for each of the tax and dividend cut fiscal options. For the spending cut options, we assume a multiplier adjustment factor equal to the average of the multiplier adjustment factors for the tax and dividend cut options (64.8%).

Table II-13

Calculation of Multiplier Adjustment Factors for Low Scenario Economic Impact Estimates

Fiscal option	Income tax: progressive	Income tax: flat rate	Sales tax: more exclusions	Sales tax: fewer exclusions	Property tax	Dividend cut
Assumed expenditure reductions per thousand dollars raised						
High scenario (based on IMPLAN data)	748	791	841	866	866	931
Low scenario (based on Census data)	512	507	511	526	567	646
Multiplier adjustment factor for low scenario economic impact estimates (= ratio of low scenario expenditure reductions to high scenario expenditure reductions)	68.4%	64.1%	60.8%	60.7%	65.5%	69.4%

We multiply the estimated economic impacts from Table II-12 by the multiplier adjustment factors from Table II-13 to calculate the low scenario economic impact estimates shown below in Table II-14.

Table II-14

Estimated Short-Run Economic Impacts of Selected Options for Reducing the Deficit by $100 Million: Low Scenario

	Income Impacts (millions of $ of income)				Employment Impacts (FTE jobs in Alaska)		
Option	Direct earned	Direct other	Multi-plier	Total	Direct	Multi-plier	Total
Spending cut: workers	95.0		27.7	122.8	962	464	1425
Spending cut: broad-based	67.5		30.9	98.4	504	489	993
Spending cut: capital	41.7		14.4	56.1	506	275	781
Spending cut: pay	100.0		28.1	128.1	0	471	471
Income tax: progressive		92.6	31.0	123.6	0	538	538
Income tax: flat rate		92.6	29.3	121.9	0	511	511
Sales tax: more exclusions		88.5	26.8	115.3	0	471	471
Sales tax: fewer exclusions		90.0	27.3	117.3	0	483	483
Property tax		97.2	31.7	128.9	0	559	559
Dividend cut		99.0	34.6	133.7	0	619	619
Saving less				0.0			0

Changes in Estimated Economic Impacts from Earlier Estimates

In response to requests by the press and legislators, we prepared several sets of estimates of short-run economic impacts of selected fiscal options prior to finishing this draft report. Some of these earlier estimates differ from the estimates provided in this appendix and elsewhere in this report.

The estimates in this report represent our best estimates of the short-run economic impacts of the fiscal options which we analyzed, and replace any earlier estimates. Below we provide a brief description of the reasons for differences between the estimates in this report and earlier estimates.

All of our earlier estimates were "high scenario" estimates based on the IMPLAN spending assumptions.

We prepared the estimates shown below for an article in the January 2016 edition of *Alaska Business Monthly* (http://www.akbizmag.com/Alaska-Business-Monthly/January-2016/Alaskas-Economy/). We noted that these were "preliminary calculations for an ongoing ISER study of economic impacts of state fiscal options."

Estimated Short-Run Economic Impacts of Selected Options for Reducing the Deficit by $100 Million

How the $100 million is cut	Employment Impacts (full-time equivalent jobs in Alaska)			Income Impacts (millions of $ of income earned in Alaska)			Impacts as % of Alaska total		Deficit reduction per lost job
	Direct	Multi-plier	Total	Direct	Multi-plier	Total	Employ-ment	income	
Spending cut: state workers	962	715	1677	95.0	42.8	137.8	0.50%	0.81%	$59,622
Spending cut: across the board	505	755	1260	67.5	47.7	115.2	0.38%	0.67%	$79,346
Spending cut: capital projects	506	425	931	41.7	22.3	63.9	0.28%	0.37%	$107,449
Income tax	0	971	971	0.0	53.9	53.9	0.29%	0.32%	$103,033
Permanent Fund Dividend reallocation	0	727	727	0.0	43.3	43.3	0.22%	0.25%	$137,476
Spend other Permanent Fund earnings	0	0	0	0.0	0.0	0.0	0.00%	0.00%	NA

Source: Preliminary calculations for an ongoing ISER study of economic impacts of state fiscal options, using IMPLAN economic impact model, December 2015. Note that economic impacts of fiscal options may vary substantially depending on what kinds of spending are cut (payments to workers of different income levels, utilities, contracts, capital spending, etc.) or how taxes are structured.

While the spending cut estimates for the *Alaska Business Monthly* (ABM) article are the same as those in Table D-12, the estimated impacts are different for an "income tax" and for a "Permanent Fund Dividend reallocation" than for the income tax and dividend cuts we estimated in Table 12, and they also differ in their relative magnitudes. There are a number of reasons for these differences, all of which derive from the fact that the ABM estimates were based on simpler assumptions made when we were at a much earlier stage of our analysis.

For these earlier ABM estimates we modeled the impacts of dividend cuts as reductions in average employee compensation, and we modeled impacts of an income tax as specific reductions by income group. We did not adjust for household size in order to derive impacts of dividend cuts by income group. This choice meant that the estimated multiplier impacts of dividend cuts were smaller because our estimates did not account for the fact that lower income households spend more of their income than their higher income counterparts. We did not adjust for residency, so we implicitly assumed that both the income tax and the dividend cuts would equally affect the Alaska economy. We also did not adjust for the decline in federal tax liability the households experience as a result of not receiving the dividend and/or paying a state income tax.

In contrast, for this report, we treat both income taxes and PFD reductions as income reductions, which means that the same taxes and savings are removed by income group. We adjust for household size by income group in order to generate the appropriate PFD reductions. We adjust for residency status in order to allow for the fact that the income generated by a dividend cut is almost all coming from Alaskans while the income generated by an income tax has a much larger non-resident component. This is probably the most important reason why the relative impacts which we estimate for an income tax are smaller in this report than for a dividend cut. We also adjust for the decline in the federal tax liability resulting from a state income tax or PFD reductions. All of these adjustments together make the analysis for this report a much better estimate of the implications of the two options.

In short, the estimates for the ABM article were based on the preliminary analysis we had done as of that time and represented our best estimates as of that time. Our estimates for this report are based on much more detailed (and time-consuming) analysis and thinking which we have done since that time.

Gunnar Knapp also provided presentations entitled "Economic Impacts of Alaska Fiscal Options: Overview of Draft Conclusions" to the House Finance Committee on February 25, 2016 and to the House Labor and Commerce Committee on February 29 and March 2, 2016. After we had given these presentations, we discovered a small error in our calculations for the revenue impacts of the tax and dividend cut options. Correcting for this error resulted in small changes to the short-run economic impacts shown in this report compared with those shown in the presentations, but these did not change the absolute or relative estimates in any significant way.

Limitations of Short-Run Economic Impacts Analysis

It is important to be aware of several significant limitations to our short-run economic impact estimates, which reflect inherent limitations of economic impact analysis using input-output (IO) models such as the IMPLAN model.

First, IO models are demand oriented and assume that the supply of outputs is unlimited. This means that an increase in demand is always met by an increase in supply. Put differently, there are no supply constraints. In general, this limitation would be more important if we were estimating the impacts of increasing spending or dividends or reducing taxes than it is for estimating the impacts of reducing spending or dividends and increasing taxes.

Second, IO models assume that commodity and factor prices are fixed regardless of any change in demand. Due to these assumptions, IO models tend to overestimate the effects of policy changes (Miller and Blair, 1985). For example, we did not take into account the fact that job loss impacts might potentially affect labor markets, causing wage rates to fall, which might in turn cause some employers to hire more labor, thus partially offsetting the original impact of the job losses.

Third, IO models assume zero substitution elasticities in production and consumption. The lack of substitution coupled with the fixed prices means that results from IO models are best suited for understanding the short-run implications of shocks.

The options we model are approximations of how the different options would translate into statewide economic impacts. The impact of government job and earning cuts would depend on the salaries of those affected and the department in which they are employed. On the earnings side, benefit cuts would reduce overall compensation but do not affect near term consumption of the workers.

Our sales tax estimates assume that households view the taxes as a reduction in income and therefore cut back on all expenditure components in proportion to their personal expenditure mix, without changing the mix of goods and services which they purchase. This household response is a reasonable one but implicitly assumes that the tax is passed onto the consumer.

Distributional Analyses of Revenue Options for Alaska

Institute on Taxation & Economic Policy

April 2016

Aidan Russell Davis
Carl Davis
Matthew Gardner

About The Institute on Taxation & Economic Policy

The Institute on Taxation and Economic Policy (ITEP) is a non-profit, non-partisan research organization that works on federal, state, and local tax policy issues. ITEP's mission is to ensure that elected officials, the media, and the general public have access to accurate, timely, and straightforward information that allows them to understand the effects of current and proposed tax policies. ITEP's work focuses particularly on issues of tax fairness and sustainability.

This study was made possible by a grant from the Rasmuson Foundation.

EXECUTIVE SUMMARY

- Alaska faces a budget gap exceeding $4 billion, due largely to the state's heavy reliance on declining oil tax and royalty revenues. Lawmakers recently enacted large cuts to the state's budget and are now exploring a variety of revenue-raising measures to help the state regain its fiscal footing.

- Gov. Bill Walker has proposed an ambitious package of reforms in his "New Sustainable Alaska Plan." Among the proposed changes are scaling back the Permanent Fund dividend distributed to Alaskans each year, reinstating a personal income tax for the first time in 35 years, and increasing existing taxes on various items and industries.

- While each component of the New Sustainable Alaska Plan would have varying implications for Alaskans at different income levels, the overall package would disproportionately impact low-income families and would ask relatively little of high-income Alaskans. If the plan had been in effect in 2015, ITEP estimates that the poorest 20 percent of Alaska households would have seen their incomes decline by 9.6 percent. Middle-income families, by contrast, would have seen their incomes decline by 3.9 percent while the top 20 percent of Alaska households would have seen an average decline ranging from 1.3 to 2.0 percent.

- It is not possible to reliably forecast Alaska's Permanent Fund dividends, or the precise impact that the governor's plan would have on those dividends, in the years ahead. If the dividend reduction brought about by the plan is smaller than 2015 data suggest, the impact on Alaskans could decline substantially, though the overall regressivity of the plan would remain intact. Under one such scenario examined in this report, low-income Alaskans could anticipate a decline in their incomes of 5.5 percent while middle-income families would face a 2.4 percent decline and high-income families would face declines ranging from 1.2 to 1.5 percent.

- At its core, the New Sustainable Alaska Plan is regressive because its single largest component is a reduction in the Permanent Fund dividend—a flat dollar payment that most Alaskans receive each year but that, relatively speaking, is a far more important source of income for those families of limited means. At the same time, the progressive personal income tax that Gov. Walker has described as being designed to "offset" this regressivity is extremely modest. If that tax were to take effect, Alaska would have by far the smallest state income tax in the nation—equal to just 0.5 percent of total state personal income. A tax of this size is not capable of counterbalancing the regressive nature of sizeable reductions to the dividend.

- The distributional impact of the New Sustainable Alaska Plan could be significantly improved if it were rebalanced to derive more of its revenue from the personal income tax and less from reductions in the dividend. This report illustrates that point with three alternative personal income tax structures. The first,

introduced by Rep. Paul Seaton in 2015, would implement a tax equal to 15 percent of federal liability plus an additional surcharge of 10 percent of long-term capital gains income. The second would simply double the governor's proposed income tax from 6 percent to 12 percent of federal tax liability. And the third would be levied at a flat rate of 6.4 percent on the portion of income above $100,000 for single taxpayers and above $200,000 for married couples. Any of these options would, at a minimum, reduce the regressivity of the governor's proposal. In the case of Rep. Seaton's plan, implementing an income tax of this size and scaling back the governor's proposed reduction to the dividend would actually result in a roughly proportional impact throughout most of the income distribution.

INTRODUCTION

Alaskans are faced with a stark fiscal reality. Following the discovery of oil in the 1960s and 1970s, state lawmakers repealed their personal income tax and began funding government primarily through oil tax and royalty revenues. For decades, oil revenues filled roughly 90 percent of the state's general fund.[1]

For years, this allowed Alaska to provide education, infrastructure, and other public services to its citizens at a relatively low direct cost to most taxpayers. More recently, however, declining oil production and the plummeting price of oil have impacted the state's undiversified revenue structure in a major way. Today the state faces a budget gap exceeding $4 billion and revenues are expected to cover just 25 percent of the state's costs, despite major cuts in spending enacted last year.[2]

Now lawmakers must decide whether to further cut spending, draw down the state's reserves, reduce the Permanent Fund dividend, or enact revenue-raising measures to narrow the state's budget gap. Given the magnitude of the problem, it is unlikely that any one of these options, taken on its own, will be enough to remedy the state's fiscal situation in the long-run.

Instead, a comprehensive plan will require a combination of policy changes, likely including reforms to the state's tax structure as well as its system of distributing Permanent Fund dividends. Before undertaking those types of reforms, however, lawmakers should carefully consider the potentially disparate impacts that various tax and dividend changes can have on Alaskans of different income levels. While two potential policy changes may appear similar in terms of their aggregate revenue impact, the reality is that those two options could have very different implications for low- versus middle- versus high-income Alaskans. This report attempts to contribute to a better understanding of these issues by analyzing key components of the revenue options in Gov. Walker's New Sustainable Alaska Plan, as well as potential modifications to that plan that could improve its distributional impact.

---

[1] Knapp, Gunnar. "Resource Revenues and Fiscal Sustainability," *Economic Development Journal*, Spring (2015): Vol. 14, No. 2. http://www.iser.uaa.alaska.edu/Publications/2015-ResourceRevenuesAndFiscalSustainability.pdf

[2] Herz, Nathaniel. "Alaska Budget Deficit Just Jumped $300M Because of Low Oil Prices, Walker Administration Says," Alaska Dispatch News, March 21, 2016. http://www.adn.com/article/20160321/walker-administration-alaskas-budget-deficit-just-jumped-300-million-because-low State of Alaska, Department of Revenue, Press Release. "Preliminary Spring 2016 Forecast Adjusts Revenue to Reflect Lower Oil Prices," March 21, 2016, No. 16-002, Juneau, AK. http://dor.alaska.gov/Portals/5/16-002%20Preliminary%20Spring%202016%20Forecast%20Adjusts%20Revenue%20to%20Reflect%20Lower%20Oil%20Prices.pdf?ver=2016-03-21-090111-370

REVENUES IN THE NEW SUSTAINABLE ALASKA PLAN

Gov. Walker and his administration have put forth the ambitious "New Sustainable Alaska Plan" to deal with the state's fiscal challenges. In addition to cutting state spending, the plan would raise a significant amount of revenue by levying a personal income tax for the first time in 35 years, raising taxes on various products and industries, and reducing and reworking the way in which the Alaska Permanent Fund dividend is structured. Specifically, the plan would:

- Restructure and reduce the Permanent Fund dividend to roughly $1,000 per person (compared to $2,072 in 2015);
- Implement a personal income tax levied at 6 percent of federal tax liability;
- Scale back tax credits for oil and gas companies;
- Increase motor fuel taxes by 8 cents per gallon for highway fuels, 6.8 cents for jet fuel, 5.3 cents for other aviation fuel, and 5 cents for marine fuel;
- Increase taxes on alcoholic beverages by doubling the current per gallon rates for liquor ($12.80 to $25.60), wine ($2.50 to $5.00), and beer, malt beverages and cider ($1.07 to $2.14);
- Increase taxes on cigarettes by $1 per pack and other tobacco products by 25 percent of the wholesale price;
- Increase taxes on the fisheries industry by 1 percentage point;
- Increase the commercial vessel passenger excise tax; and
- Increase the top bracket of the mining license tax by 2 percentage points.

Figure 1 shows the relative importance of the revenue measures listed above in Fiscal Year 2019, under the assumption that the dividend would be reduced by $1,072 per person.[3] The dividend reduction is the largest component of the governor's proposed new revenues, but the complicated nature of the restructuring also makes it among the most difficult to forecast.[4] A reduction of $1,072 per person is based on the 2015 dividend value of $2,072 and the administration's explanation that "the proposal sets a 2016 transitional dividend at $1000; but dividends are expected to remain in the $1000 range going forward based on current estimates of future royalty revenues."[5] Under this assumption, the governor's plan raises a total of over $1.13 billion in new revenues per year with nearly two-thirds of that, or $700 million, coming from the reduction in the dividend.

---

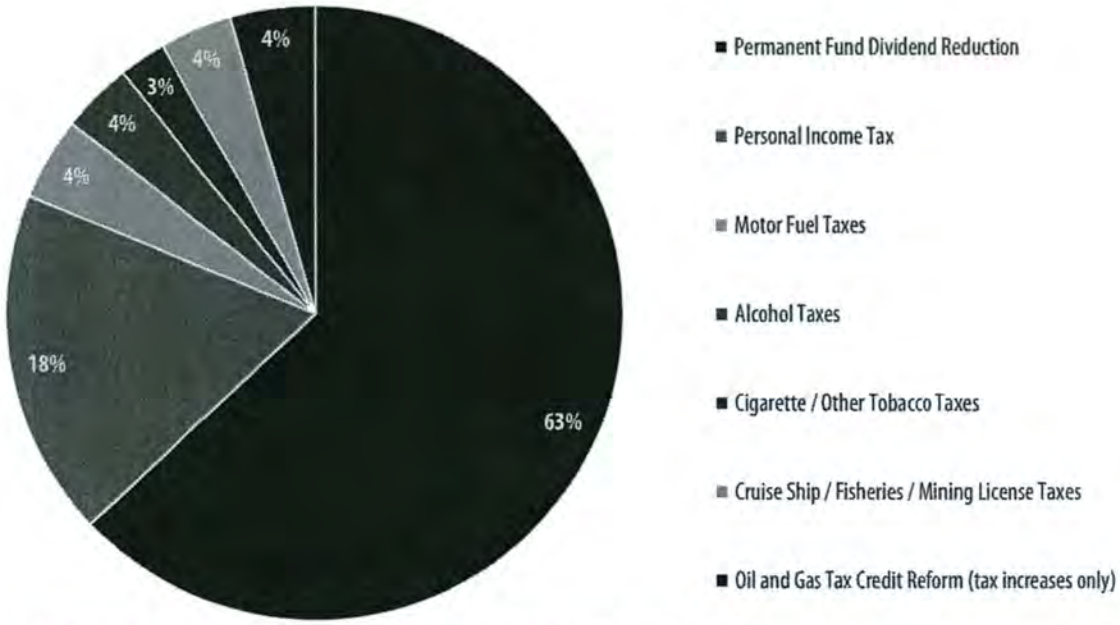
[3] These revenue figures are based on official fiscal notes prepared by the Alaska Department of Revenue. The plan, as proposed, would initially begin generating revenue in FY17, but the revenue figures presented here are for FY19 because the income tax and oil and gas credit reforms have transitional revenue impacts in the early years that are not representative of their long-term impact.

[4] The single largest infusion of revenue into the state's general fund would actually come from an annual transfer from the Permanent Fund, but this discussion focuses only on those revenue measures with immediate, direct impacts on Alaska households.

[5] The State of Alaska, Governor Bill Walker. *New Sustainable Alaska Plan: Pulling Together to Build Our Future*, December 9, 2015. http://gov.alaska.gov/Walker_media/documents/sustainable-alaska/the-new-sustainable-alaska-plan_narrative-overview.pdf

Figure 1: Revenues in Gov. Walker's "New Sustainable Alaska Plan" in FY2019

Assuming dividend reduction of $1,072 per person



Source: Institute on Taxation and Economic Policy (ITEP) analysis of 2016 fiscal notes prepared by the Alaska Department of Revenue and other sources.
Excludes portion of oil and gas tax credit reform categorized as spending cuts.

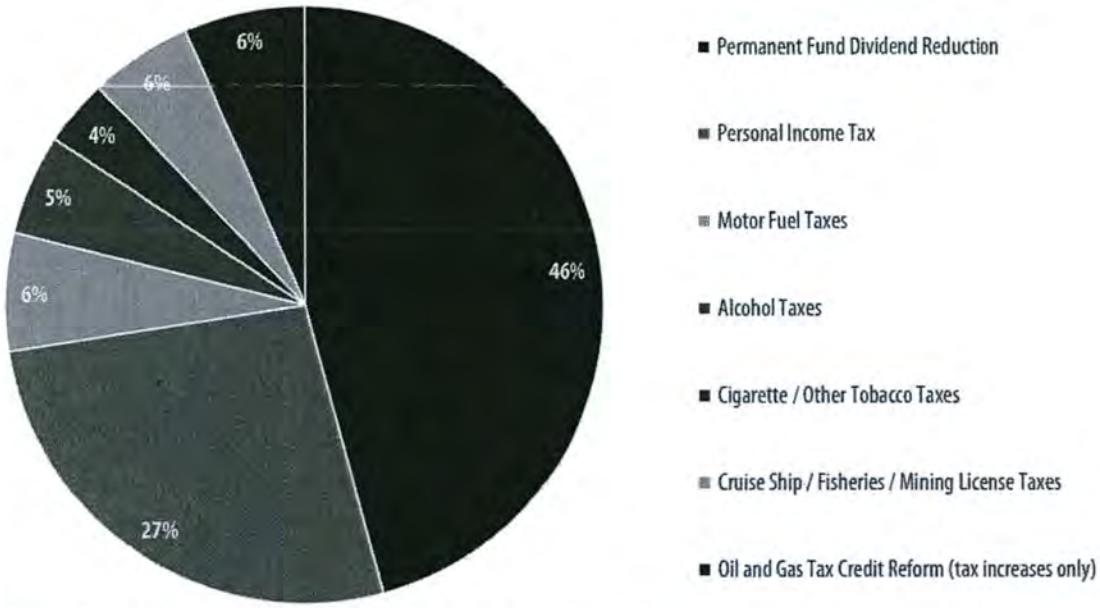
It is unclear, however, whether future dividends would continue to be paid out at the relatively high level of $2,072 per person in the absence of the governor's proposed reforms. Over the last ten years, dividends have averaged $1,532 per person after adjusting for inflation. If that average holds in the years ahead, then a reduction in the dividend to $1,000 would be roughly half that just described—$532 rather than $1,072 per person. Figure 2 shows how the relative makeup of the governor's proposed revenues would change under this assumption. Specifically, if the divided reduction to $1,000 per person is calculated against a baseline dividend of $1,532, the revenue raised via the dividend reduction falls from $700 million to $350 million, and from 63 percent to 46 percent of the total package. The overall revenue potential of the package falls as well, from $1.13 billion to $770 million.

Assumptions about the dividend's size in the years ahead are important in gauging where the New Sustainable Alaska Plan would derive its revenues. But under most reasonable assumptions, it is clear that the dividend reduction would remain the largest revenue component in the package, followed next by the reinstatement of the state's personal income tax. In order for the dividend reduction to lose its place as the largest revenue source in the package, the annual reduction per person would have to fall below roughly $310 (in 2015, for example, this would have meant reducing the dividend from $2,072 to $1,762).[6]

[6] This calculation assumes that there will be 659,895 dividend recipients in FY2019. Reducing the dividend by $310 for each of those recipients would retain $204.6 million in revenue for the state—slightly less than the Alaska Department of Revenue's $205 million revenue estimate for an income tax equal to six percent of federal tax liability in FY2019.

Figure 2: Revenues in Gov. Walker's "New Sustainable Alaska Plan" in FY2019

Assuming dividend reduction of $532 per person



Source: Institute on Taxation and Economic Policy (ITEP) analysis of 2016 fiscal notes prepared by the Alaska Department of Revenue and other sources.
Excludes portion of oil and gas tax credit reform categorized as spending cuts.

DISTRIBUTIONAL BREAKDOWN OF THE NEW SUSTAINABLE ALASKA PLAN

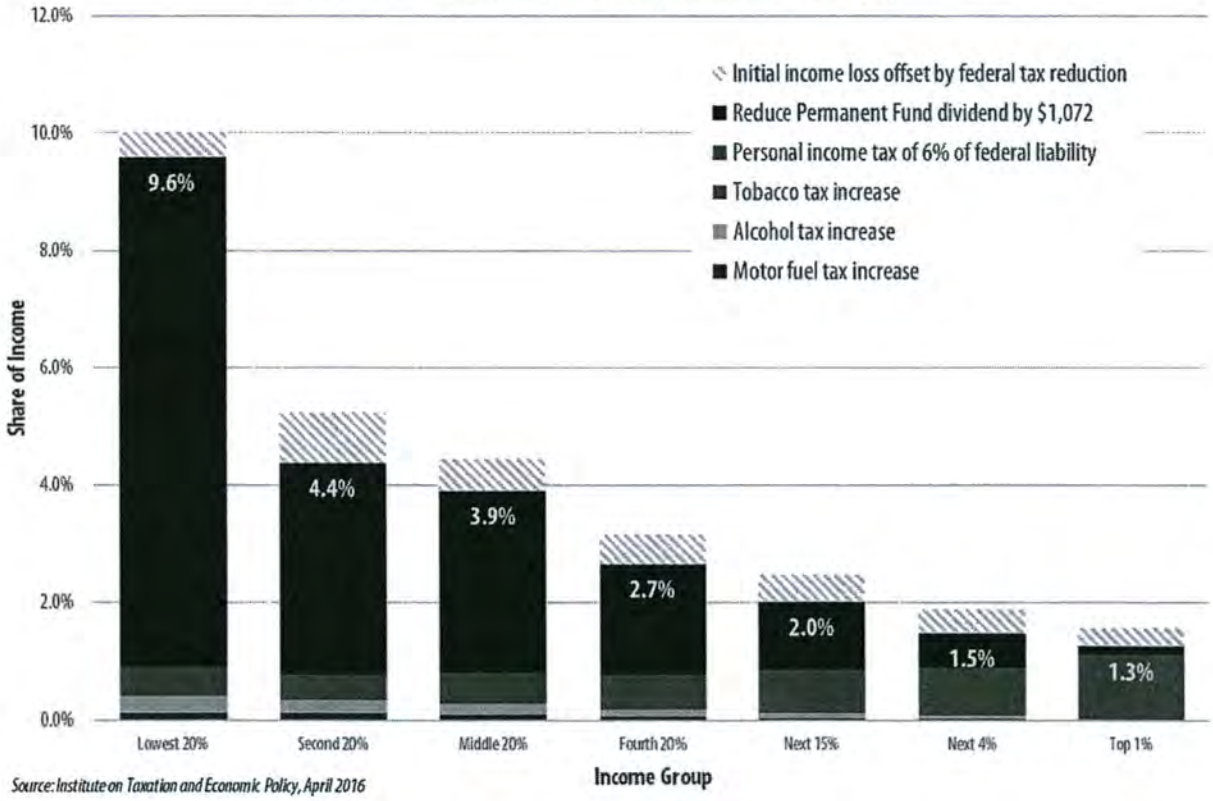
In order to fully understand the impact of the revenue options contained in the New Sustainable Alaska Plan, it is important to examine the effects that the plan would have on Alaska residents at different income levels. To accomplish this task ITEP used its microsimulation tax model (described in Appendix E) to analyze most of the tax and dividend changes described in the previous section. Analyses of the mining license tax, fisheries industry taxes, commercial vessels tax, and oil and gas tax credits were not included due either to data limitations or, in the case of the commercial vessels tax, the limited direct impact that this tax would have on Alaska residents. Nonetheless, as is suggested in Figures 1 and 2, the following analyses include roughly 90 percent of the revenues contained in the New Sustainable Alaska Plan.

New Sustainable Alaska Plan, Scenario 1: Assuming a reduction of $1,072 per person in the Permanent Fund dividend

Figure 3 shows that the New Sustainable Alaska Plan, if implemented in 2015, would have a sharply regressive impact overall. In other words, low- and middle-income Alaskans would face a much steeper drop in their incomes than high-income Alaskans. Specifically, the poorest 20 percent of Alaska households would see their after-tax incomes fall by 9.6 percent. Middle-income families, by contrast, would face a decline of 3.9 percent and the wealthiest 20 percent of Alaska households would see declines averaging between 1.3 and 2.0 percent of their incomes. All of these are net of the "federal offset" effect, meaning that they include the federal tax cuts that most Alaska households could expect to receive if their Permanent Fund dividends are reduced, and/or of if they begin to deduct Alaska personal income tax payments on their federal tax returns.[7]

Figure 3: Impact of Gov. Walker's New Sustainable Alaska Plan

Scenario 1: Assuming dividend reduction of $1,072 per person (from $2,072 to $1,000)



Source: Institute on Taxation and Economic Policy, April 2016

[7] Further discussion of the federal offset effect is available at:
Institute on Taxation and Economic Policy (ITEP). *How State Tax Changes Affect Your Federal Taxes: A Primer on the "Federal Offset."* August 1, 2011.
http://itep.org/itep_reports/2011/08/how-state-tax-changes-affect-your-federal-taxes-a-primer-on-the-federal-offset.php

This sharply regressive impact is a result of three primary factors: the large magnitude of the reduction to the Permanent Fund dividend, the increases in excise taxes on tobacco, alcohol and motor fuel, and the modest nature of the proposed personal income tax.

As explained above, the single largest component of the New Sustainable Alaska Plan is a reduction in the Permanent Fund dividend. If the plan had been in effect in 2015, the dividend would have been reduced by $1,072 per person (from $2,072 to $1,000). While all eligible Alaskans receive the same flat dollar amount from the dividend, the income that dividend represents is far more important, relatively speaking, for families of limited means.[8]

To its credit, the Walker Administration has acknowledged the potential fairness problems associated with reducing the dividend and has stated that a personal income tax was included in the New Sustainable Alaska Plan in part because "its progressive nature was seen as a way to help offset any regressive effects a potential reduced dividend payout might bring."[9] Unfortunately, offsetting the regressivity of a dividend reduction of this size is a daunting task that the governor's modest personal income tax proposal cannot accomplish.

Levying a state income tax equal to 6 percent of federal tax liability would offer Alaska a relatively progressive, and administratively simple, source of revenue. As detailed in Appendix C, such a tax would amount to roughly 1.3 percent of income for high-income families, compared to of just 0.1 to 0.4 percent for low- and middle-income families.[10] But when viewed alongside a dividend reduction that would reduce low-income families' incomes by 9 percent or more, the effects of this income tax proposal are extremely modest.

Figure 4: Personal Income Tax (PIT) at 6% of Federal Tax Liability Would be Smallest In the Nation

Rank (out of 41 states with PIT)	State	PIT as a Share of Personal Income
38	Mississippi	1.7%
39	Louisiana	1.4%
40	Arizona	1.4%
41	North Dakota	1.2%
42	Alaska (as proposed by Gov. Walker)	0.5%

Source: Institute on Taxation and Economic Policy (ITEP) analysis of 2014 data from the Census Bureau, Bureau of Economic Analysis, and Alaska Department of Revenue.

Alaska is one of just nine states that lacks a broad-based personal income tax—the most significant progressive revenue option available to the states.[11] While the governor's plan would change this fact, it would also leave Alaska with, by far, the smallest personal income tax in the country. A tax equal to 6

[8] Further discussion and analysis of the regressive nature of cuts to the Permanent Fund dividend is available at: Knapp, Gunnar, Mouhcine Guettabi and Matthew Berman. *Economic Impacts of Alaska Fiscal Options (Draft Report)*, University of Alaska Anchorage: Institute of Social and Economic Research, March 11, 2016. http://www.iser.uaa.alaska.edu/Publications/2016_03_11-EconomicImpactsOfAKFiscalOptions-DraftReport.pdf (PDF)

[9] The State of Alaska, Governor Bill Walker. *The New Sustainable Alaska Plan: Frequently Asked Questions.* http://gov.alaska.gov/Walker_media/documents/sustainable-alaska/new-sustainable-alaska-plan-faqs.pdf

[10] Note that these figures actually overstate final tax liability, particularly for high-income families, since many Alaskans would receive federal tax cuts once they begin to deduct state income tax payments on their federal tax returns.

[11] New Hampshire and Tennessee have narrow income taxes on certain types of investment income that are not included in this analysis.

percent of federal income tax liability would collect an amount equal to just 0.5 percent of personal income—less than half the amount of the smallest state income tax in existence today, in similarly resource-rich North Dakota.

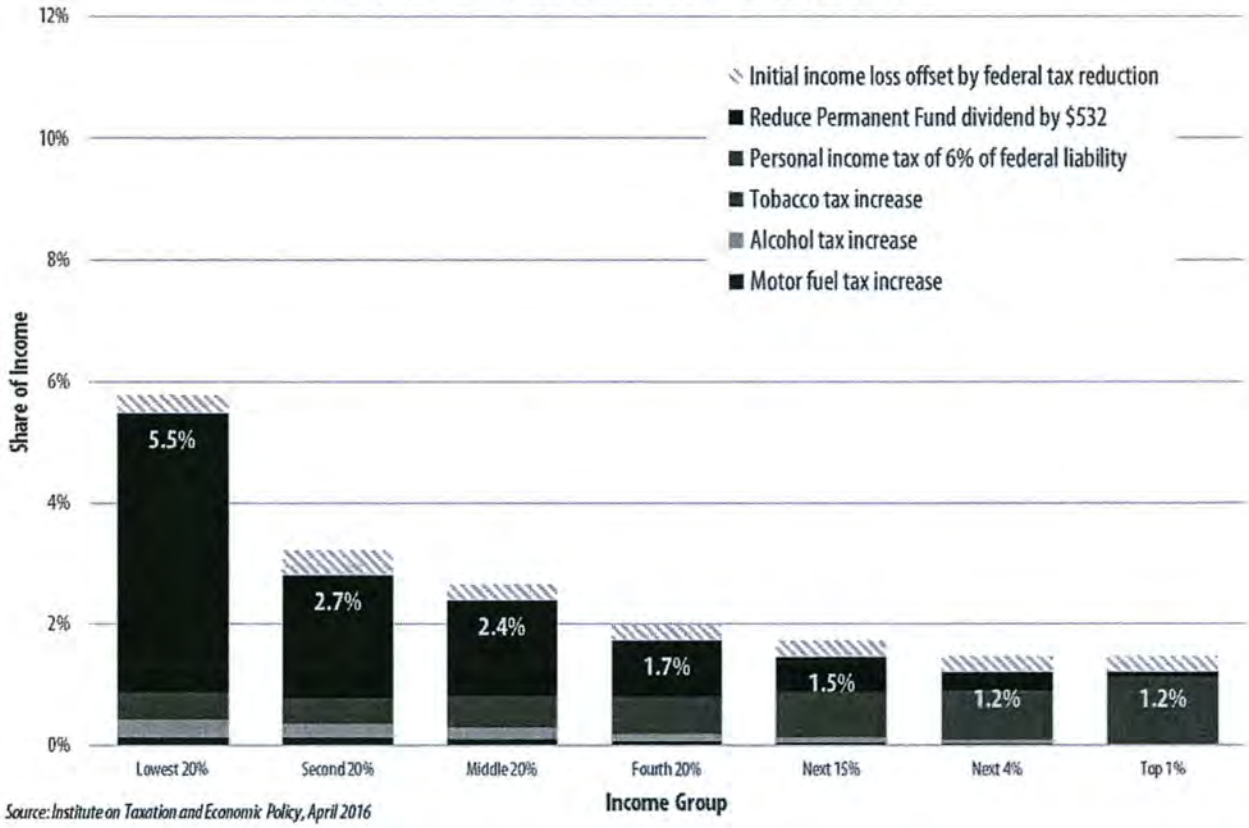
New Sustainable Alaska Plan, Scenario 2: Assuming a reduction of $532 per person in the Permanent Fund dividend

The above analysis was performed in a 2015 model economy, meaning that Alaska residents were assumed to receive an annual dividend of $2,072 per person. That analysis may not be a reliable representation of reality in the years ahead if current law dividend payouts differ significantly from that $2,072 value. In Figure 5, the New Sustainable Alaska Plan is analyzed against a modified baseline where, absent any policy change, Alaska residents could expect to receive a dividend more typical of what they have received over the last decade: approximately $1,532 per person, after adjusting for inflation.

In this second scenario, capping the dividend at $1,000 per person results in a $532 drop, rather than the full $1,072 drop explored in the previous analysis. Even with this more modest dividend reduction, however, the overall package remains regressive. Figure 5 demonstrates that while low-income families would face a 5.5 percent decline in their incomes, middle-income families would face a decline of less than half that amount—or 2.4 percent—while high-income families would face declines ranging from 1.2 to 1.5 percent.

Figure 5: Impact of Gov. Walker's New Sustainable Alaska Plan

Scenario 2: Assuming dividend reduction of $532 per person (from $1,532 to $1,000)



Source: Institute on Taxation and Economic Policy, April 2016

DISTRIBUTIONAL BREAKDOWN OF POSSIBLE MODIFICATIONS TO THE NEW SUSTAINABLE ALASKA PLAN

The New Sustainable Alaska Plan includes a bold package of revenue measures, but the plan has a starkly uneven impact on Alaska households at different income levels. Specifically, the plan asks far more of low- and middle-income families than it does from wealthier families that are better able to absorb a reduction in their incomes.

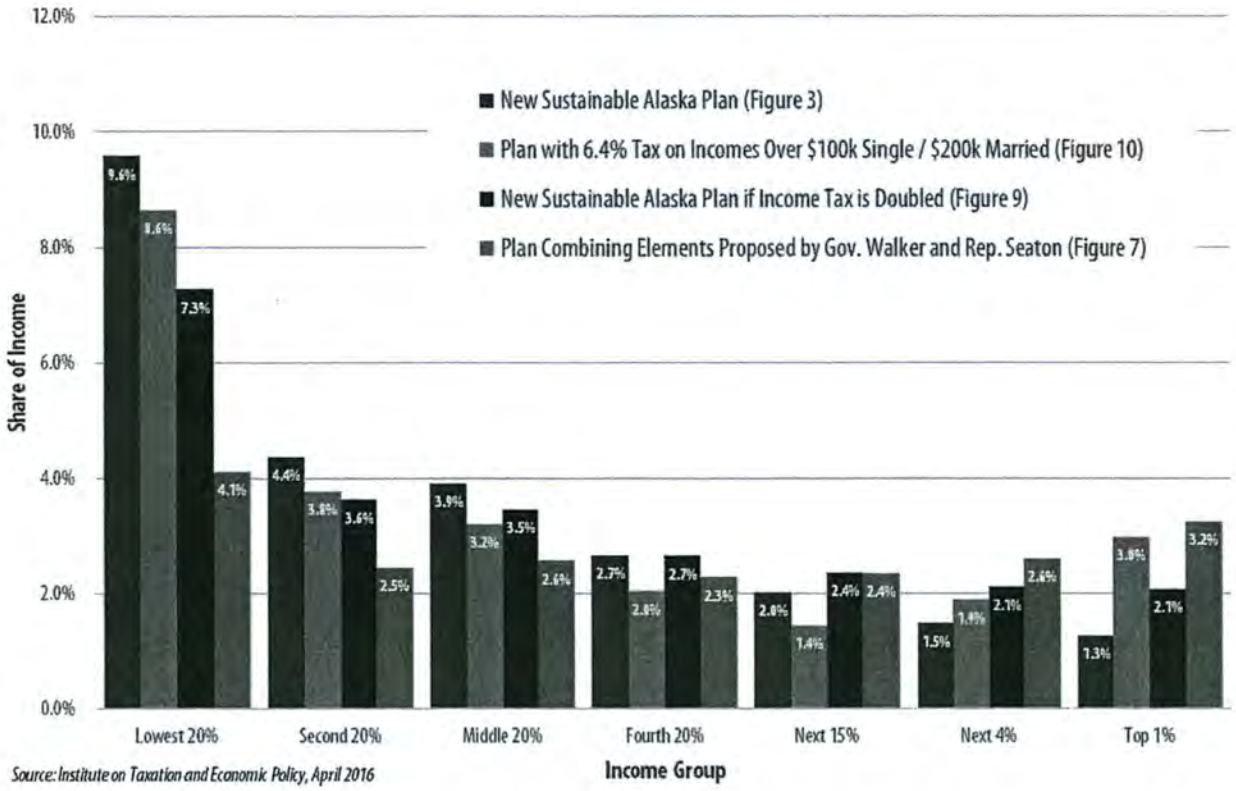
One way to remedy this shortcoming would be to rebalance the plan so that it generates more of its revenue through progressive personal income taxes, and less of its revenue from regressive cuts to the Permanent Fund dividend. This type of restructuring could pave the way for a fiscal solution that better serves Alaskans of all income levels.

The following discussion outlines three possible approaches along these lines while remaining within the broad framework laid out in the New Sustainable Alaska Plan. By raising, and in some cases restructuring, the income tax contained within the plan, all three options raise roughly the same overall level of revenue as the New Sustainable

Alaska Plan while requiring smaller cuts to the Permanent Fund dividend (the dividend would be capped at levels ranging from $1,100 to $1,700 depending on the specific option examined). All three plans also retain the same tobacco, alcohol, and motor fuel tax increases contained in the governor's plan.

Figure 6: Comparison of New Sustainable Alaska Plan and Possible Modifications

Plans raise roughly equal amounts of revenue; modified options raise more from income tax and less from dividend reductions



Source: Institute on Taxation and Economic Policy, April 2016

Figure 6 provides a side-by-side comparison of the New Sustainable Alaska Plan and each of the three modified options described in the following sections.

Option 1: Replace Personal Income Tax with Proposal Introduced by Rep. Seaton and Cap Dividend at $1,700 (reduction of $372 in 2015)

In 2015, state Rep. Paul Seaton introduced House Bill 182, which would establish an income tax equal to 15 percent of federal tax liability and would levy an additional 10 percent tax on long-term capital gains income. The portion of HB182 linked to federal tax liability is essentially the same as Gov. Walker's income tax proposal, except that its rate is 2.5 times higher.

Coupling Alaska's income tax to federal tax liability would afford the state a progressive and relatively easily to administer source of revenue. But linking the fate of the state's income tax so closely to federal tax law also has

downsides. Perhaps the most notable problem with this approach is that almost any tax break enacted by Congress would effectively be mimicked by Alaska's tax structure as well.

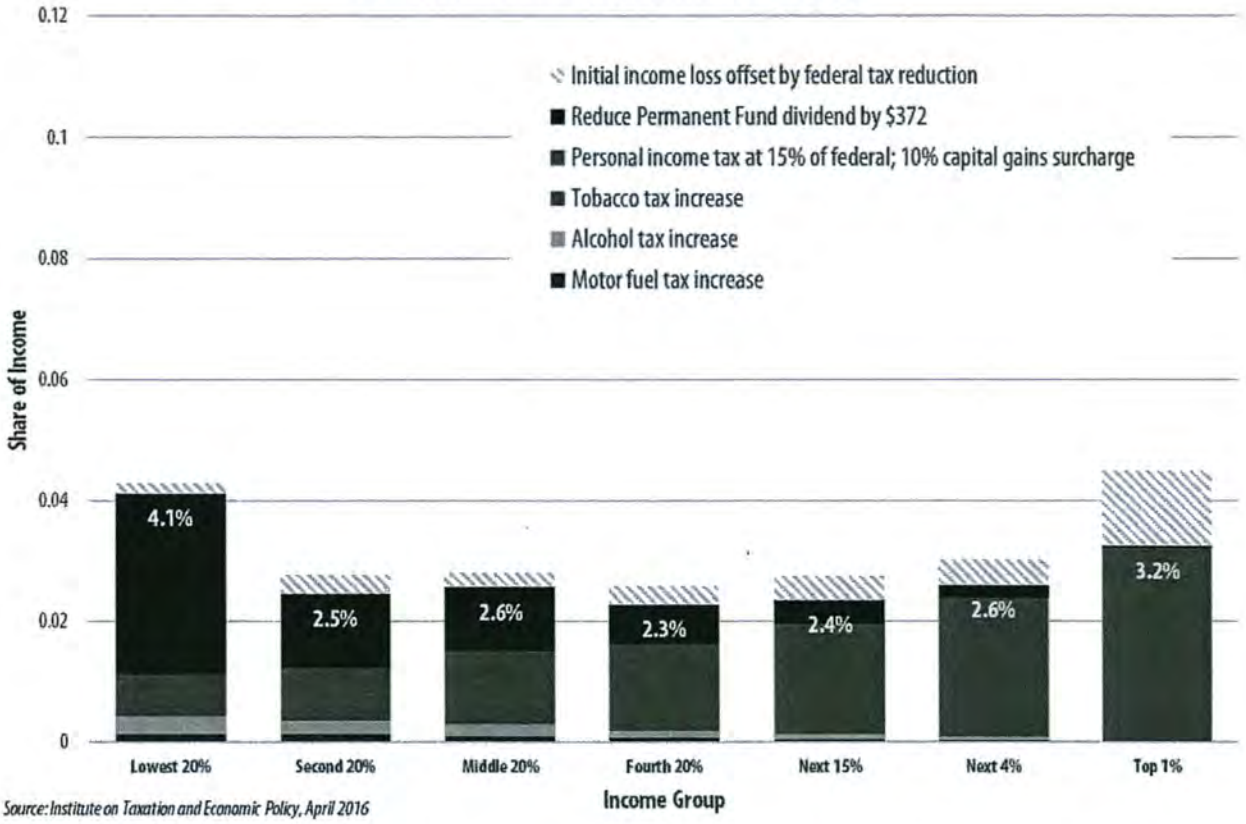
One such break is the preferential treatment that the federal government affords to capital gains income—profits from the sale of assets such as stocks, bonds, and real estate. The top federal tax rate for capital gains income is currently set at just 20 percent, or roughly half the top rate applied to ordinary earned income. Since most capital gains income is collected by high-income taxpayers, this preferential treatment of investment income is strikingly regressive and grants wealthy investors favorable treatment not afforded to wage earners and those with other sources of income. Rep. Seaton's proposal attempts to partially negate this regressive impact by levying a 10 percent tax on capital gains income in addition to its broader 15 percent surcharge on federal tax liability.

Retaining Gov. Walker's proposed excise tax increases while swapping out his income tax for the one proposed by Rep. Seaton would allow for a much more modest reduction in the Permanent Fund dividend while still generating roughly the same level of revenue overall. Figure 7 analyzes a scenario in which these tax changes were paired with a cap on the dividend of $1,700—meaning that the 2015 dividend would have been reduced by $372 from its 2015 level of $2,072.

Under this scenario, the poorest 20 percent of Alaskans would see their after-tax incomes fall by roughly 4.1 percent. Throughout most of the rest of the income distribution, however, the plan ranges from proportional to progressive in nature. Middle-income families could expect an impact equal to 2.6 percent of their income, while the wealthiest twenty percent of taxpayers would see tax and dividend changes between 2.4 and 3.2 percent of their incomes.

Figure 7: Impact of Elements of Plans Proposed by Gov. Walker and Rep. Seaton

Assuming dividend reduction of $372 per person (from $2,072 to $1,700)

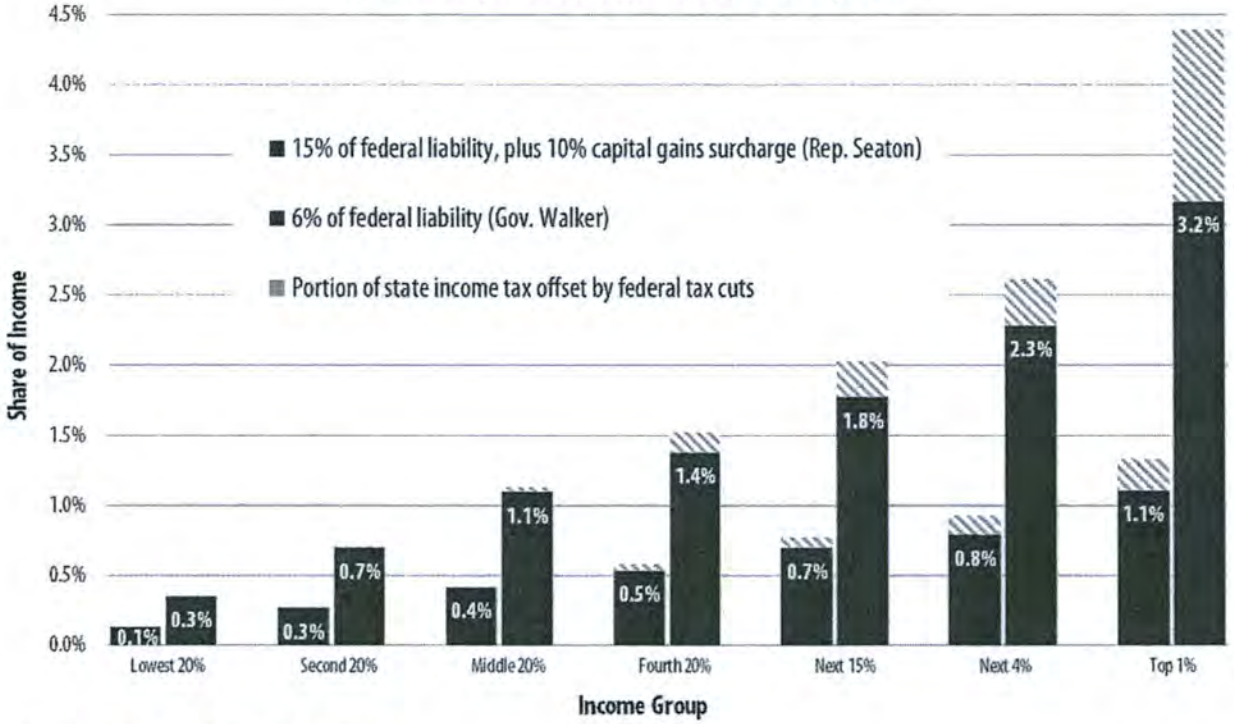


Source: Institute on Taxation and Economic Policy, April 2016

Relative to the New Sustainable Alaska Plan, this package of changes would have a smaller impact across the bottom 80 percent of Alaska families and would only have a larger impact on the top 5 percent of earners. For the remaining 15 percent that earn between $133,000 and $235,000 per year, this movement toward a heavier reliance on income taxes and a lower reliance on dividend reductions would leave their net impact essentially unchanged on average.

This dramatic shift in distribution relative to the New Sustainable Alaska Plan hinges on the additional revenue, and progressivity, offered by Rep. Seaton's proposed income tax. Figure 7 shows that while most Alaskans would face a larger income tax bill under Rep. Seaton's proposal, the largest increases would be at the top of the income distribution.

Figure 8: Comparison of Personal Income Tax Options



Source: Institute on Taxation and Economic Policy, April 2016

More detail on this package of changes, and on a similar package of changes calculated against the same alternative baseline used in Figure 4, are available in Appendices B and C.

Option 2: Double Gov. Walker's Personal Income Tax to 12 Percent and Cap Dividend at $1,300 (reduction of $772 in 2015)

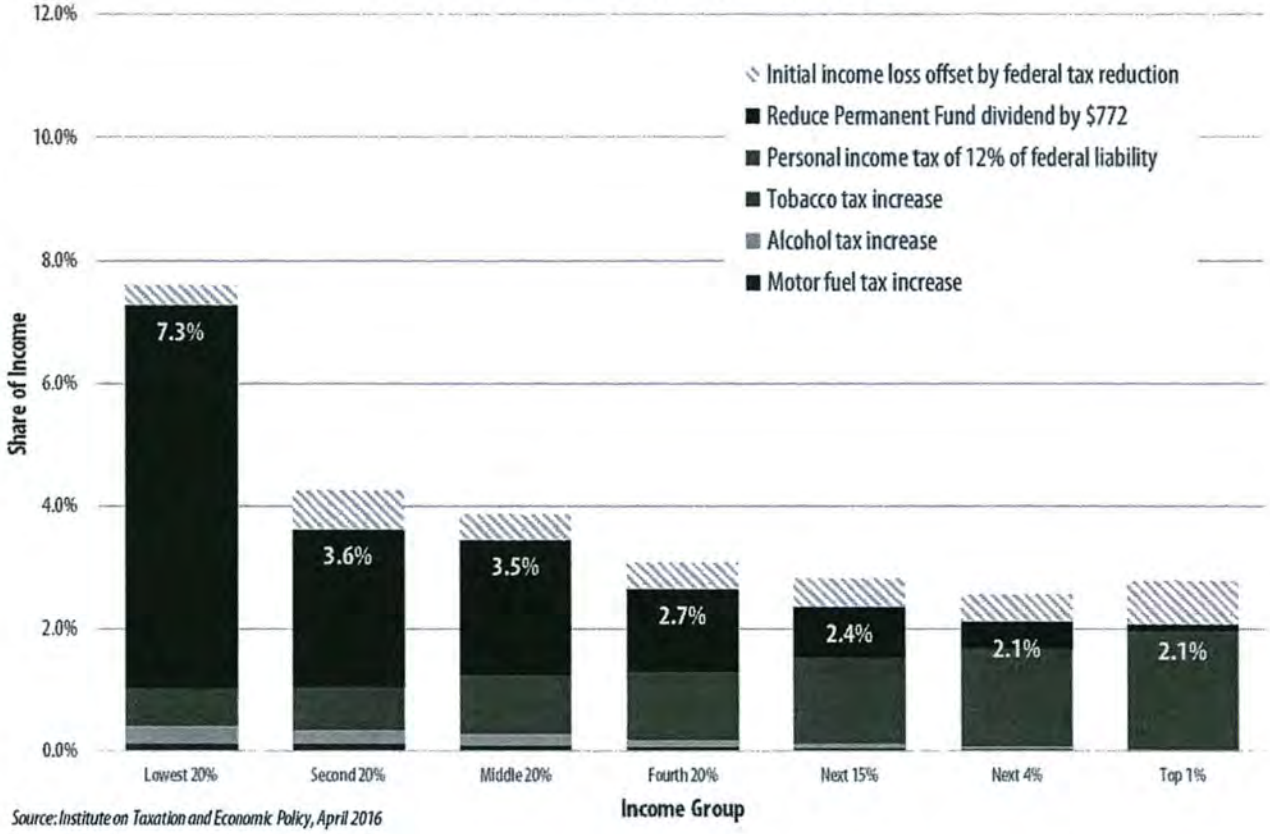
Given that much of the regressivity in the New Sustainable Alaska Plan comes from its sparing use of the income tax as a source of revenue, one obvious reform option is to simply increase the tax rate proposed by Gov. Walker and to use the additional revenue to pare back the reduction in the dividend.

Figure 8 examines this type of reform in a situation where the personal income tax rate is doubled to 12 percent of federal liability (instead of 6 percent) and the dividend is capped at $1,300 (instead of $1,000). Under this proposal, Alaska would still have the smallest personal income tax in the nation and the overall distribution of the plan would remain regressive, though somewhat less so than in the original version of New Sustainable Alaska Plan. Specifically, the poorest 20 percent of Alaskans would see their incomes decline by 7.3 percent (instead of 9.6 percent under the original proposal), while middle-income Alaskans would see a decline of 3.5 percent

(instead of 3.9 percent), and the wealthiest 20 percent would face tax increase and dividend reductions ranging from 2.1 to 2.4 percent of their income (as opposed to 1.3 to 2.0 percent).

Figure 9: Impact of New Sustainable Alaska Plan if Income Tax is Doubled

Assuming dividend reduction of $772 per person (from $2,072 to $1,300)



Source: Institute on Taxation and Economic Policy, April 2016

With this type of restructuring, the bottom 60 percent of Alaska taxpayers would be made better off relative to the New Sustainable Alaska Plan while the top 20 percent would pay slightly more (averaging 0.4 to 0.8 percent of their income). For the fourth quintile, a group earning between $76,000 and $133,000 per year, this movement toward a heavier reliance on income taxes and a lower reliance on dividend reductions would have almost no net impact on average.

More detail on this package of changes, and on a similar package of changes calculated against the same alternative baseline used in Figure 4, are available in Appendices B and C.

Option 3: Replace Personal Income Tax with a 6.4% Flat Tax on FAGI over $100,000 ($200,000 married) and Cap Dividend at $1,100 (reduction of $972 in 2015)

Rather than coupling Alaska's income tax to federal tax liability, lawmakers could also consider implementing a state income tax tied to federal adjusted gross income (FAGI). Coupling to FAGI affords some of the same simplicity gains as coupling to federal tax liability, with the added benefit that the state would not be forced to inherit all of the same tax breaks, such as itemized deductions, that are made available at the federal level. This approach involves an additional step, however, in that for such a tax to be progressive, Alaska lawmakers would need to implement exemptions and/or graduated tax brackets that reduce taxes for lower- and middle-income families while raising them for higher-income families.

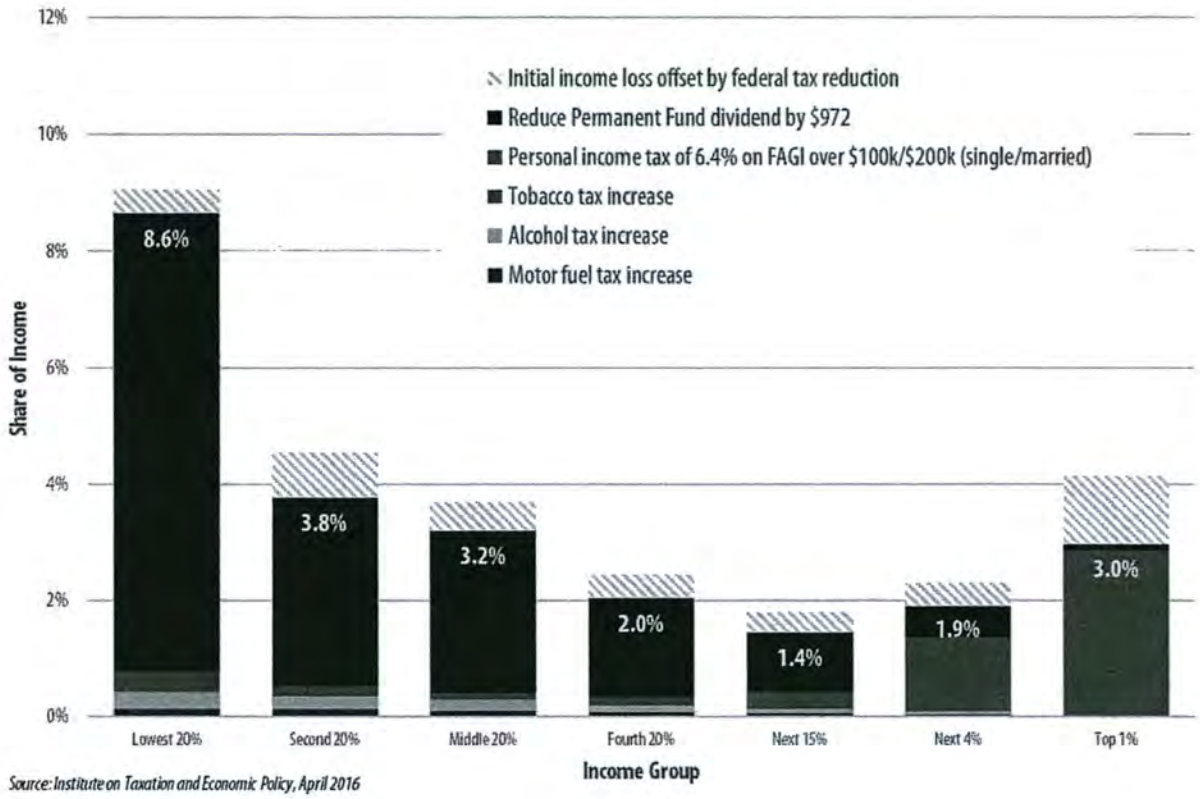
As a third alternative modification to the New Sustainable Alaska Plan, ITEP explored a scenario in which the state would apply a 6.4 percent tax rate to all FAGI over $100,000 for single childless filers, over $150,000 for heads of household, and over $200,000 for married couples. This 6.4 percent rate is equal to the average state's top marginal tax rate in 2016.[12] As a result of the large exemptions involved, less than 1 in 10 Alaska households would owe any income tax under this proposal.

This type of income tax would raise slightly more than the Governor's proposal and would therefore allow for a somewhat scaled back reduction to the dividend (capped at $1,100 instead of $1,000). Under this package of changes, the poorest 20 percent of Alaskans would face a decline in their incomes of 8.6 percent, the middle 20 percent of Alaska families would face a 3.2 percent decline, and the wealthiest 20 percent would face declines ranging from 1.4 and 3.0 percent of their income.

Since only a small fraction of Alaska households would be paying state income taxes under this scenario, the vast majority of Alaska residents would find themselves better off than under the New Sustainable Alaska Plan. In comparing the data presented in Figures 3 and 9, we find that the bottom 95 percent of the income distribution would be better off, while the top 5 percent would pay somewhat more (facing increases of 0.4 to 1.7 percent of their income).

[12] ITEP analysis of various sources.

Figure 10: Combined Impact of Various Alaska Revenue Options



Source: Institute on Taxation and Economic Policy, April 2016

More detail on this package of changes, and on a similar package of changes calculated against the same alternative baseline used in Figure 4, are available in Appendices B and C.

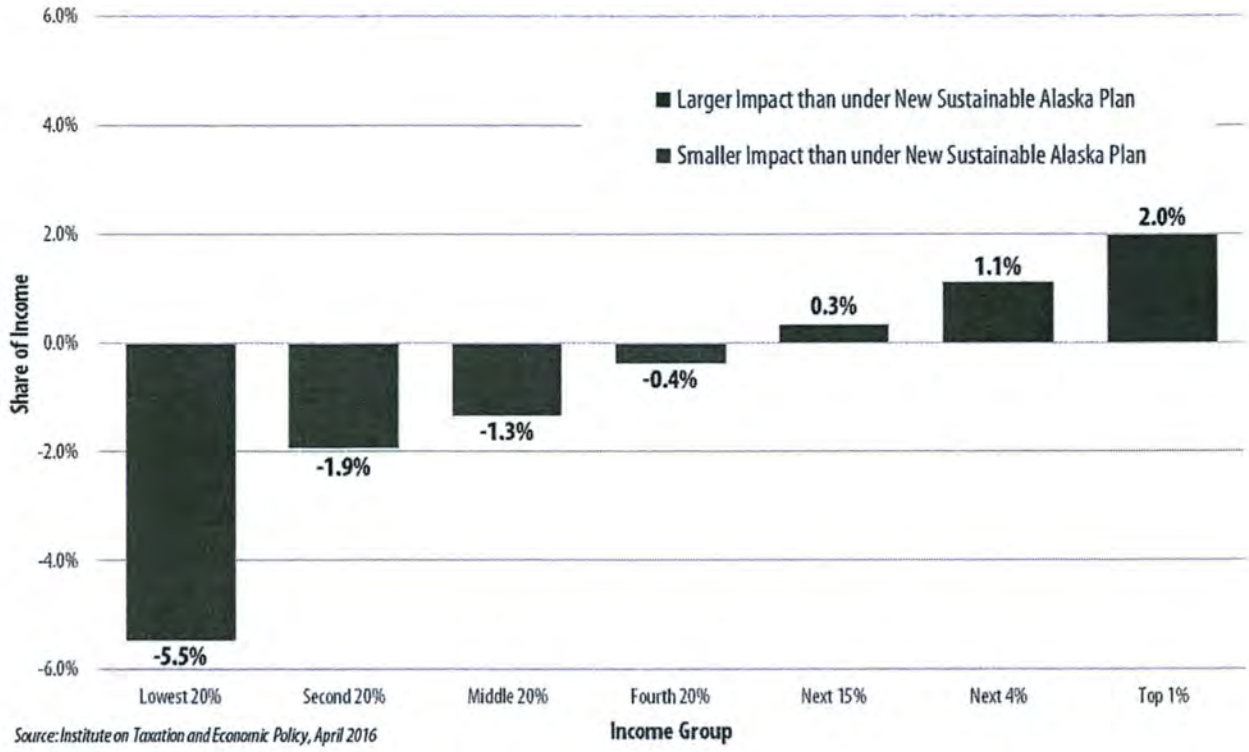
CONCLUSION

Gov. Walker's New Sustainable Alaska Plan includes a bold package of revenue measures that could significantly improve the state's fiscal standing. Unfortunately, however, the plan has a starkly uneven impact on Alaska households at different income levels. This is due largely to its heavy reliance on reductions to the Permanent Fund dividend, as well as the fact that the personal income tax designed to offset that regressivity is extremely modest. The distributional impact of the New Sustainable Alaska Plan could be significantly improved if it were rebalanced to derive more of its revenue from the personal income tax and less from reductions in the dividend.

Appendix A: Change in Distributional Impact Under Potential Modifications to the New Sustainable Alaska Plan

Figure 11: Change In Impact from Incorporating Rep. Seaton's Proposed PIT into the New Sustainable Alaska Plan and Scaling Back Dividend Reduction

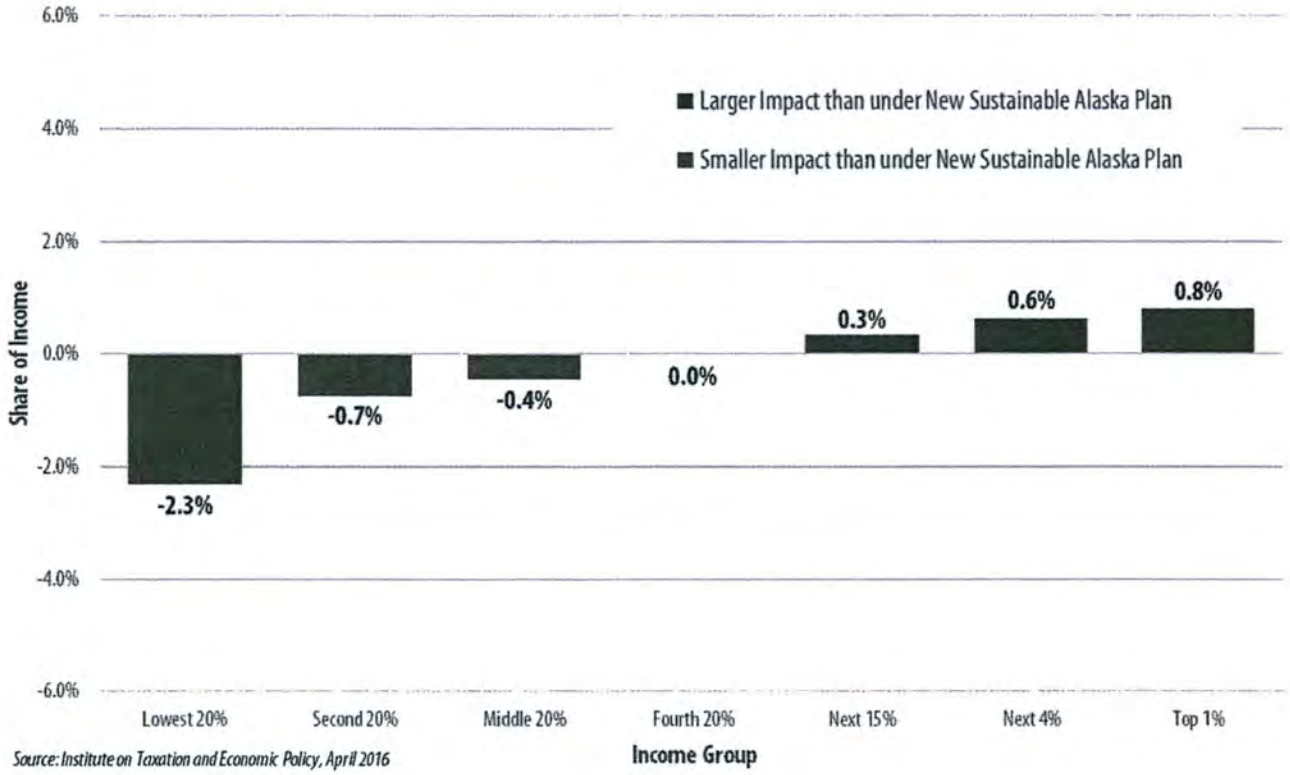
Comparison of distributions presented in Figures 3 and 7



Source: Institute on Taxation and Economic Policy, April 2016

Figure 12: Change in Impact from Doubling the PIT in the New Sustainable Alaska Plan and Scaling Back Dividend Reduction

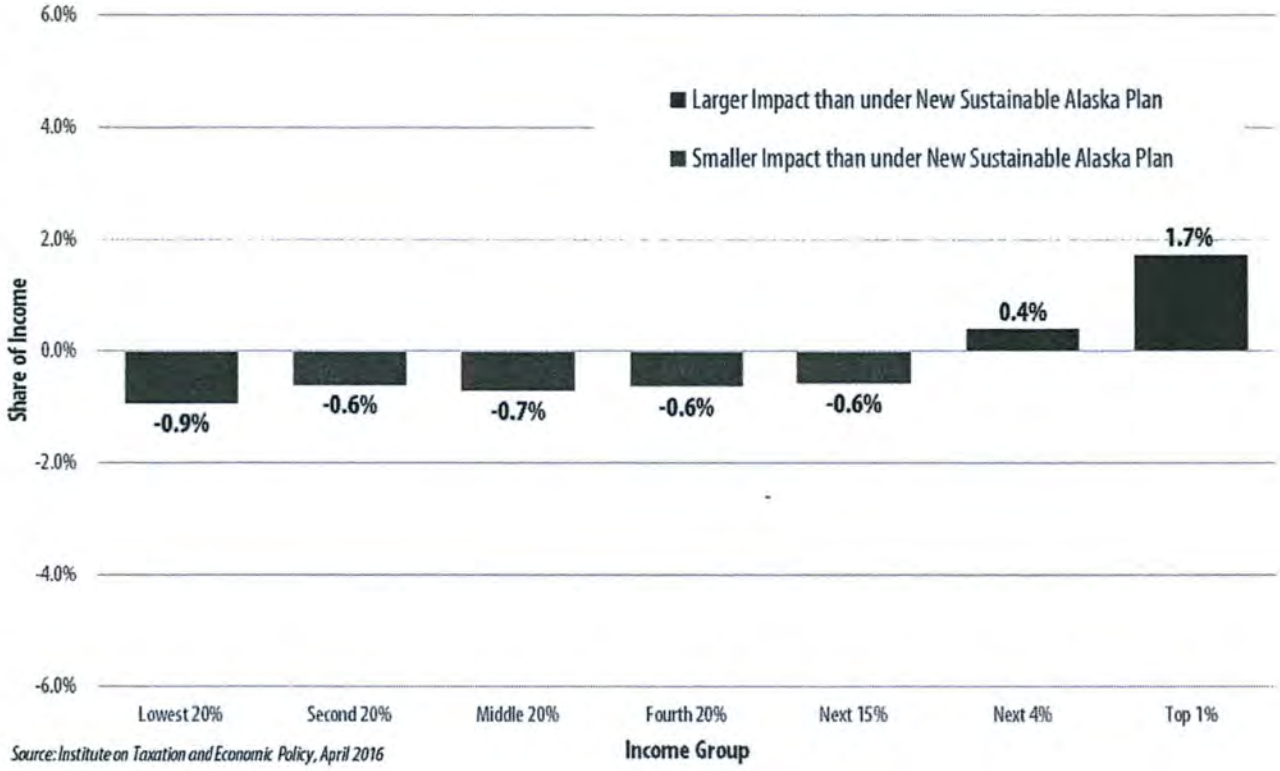
Comparison of distributions presented in Figures 3 and 9



Source: Institute on Taxation and Economic Policy, April 2016

Figure 13: Change in Impact from Replacing PIT in the New Sustainable Alaska Plan with a Flat Tax of 6.4% on Incomes over $100k/$200k and Scaling Back Dividend Reduction

Comparison of distributions presented in Figures 3 and 10



Source: Institute on Taxation and Economic Policy, April 2016

Appendix B: Revenue Plan Overviews

Combined Impact of Scenario 1 Plans

All Alaska residents, 2015 income levels

2015 Income Group	Lowest 20%	Second 20%	Middle 20%	Fourth 20%	Next 15%	Next 4%	Top 1%				
Income Range	Less Than $25,000	$25,000 – $44,000	$44,000 – $76,000	$76,000 – $133,000	$133,000 – $235,000	$235,000 – $495,000	$495,000 – Or More	State Revenue Change	Federal Tax Change	Federal Offset %	Net Tax Change
Average Income in Group	$ 17,000	$ 34,000	$ 62,000	$ 104,000	$ 170,000	$ 301,000	$ 1,514,000				

Combined Impact (State and Federal)

Impact of Gov. Walker's New Sustainable Alaska Plan, Scenario 1											
Tax Increases and Dividend Reductions as % of Income	9.6%	4.4%	3.9%	2.7%	2.0%	1.5%	1.3%				
Average $ Impact of Tax and Dividend Changes	$ 1,585	$ 1,506	$ 2,402	$ 2,771	$ 3,436	$ 4,477	$ 19,141	+967,700,000	–146,600,000	15%	+821,000,000
Share of Net State/Federal Impact	12%	12%	19%	22%	20%	7%	8%				

Option 1, Scenario 1: Combination of Elements of Plans Proposed by Gov. Walker and Rep. Seaton											
Tax Increases and Dividend Reductions as % of Income	4.1%	2.5%	2.6%	2.3%	2.4%	2.6%	3.2%				
Average $ Impact of Tax and Dividend Changes	$ 681	$ 845	$ 1,577	$ 2,374	$ 4,007	$ 7,827	$ 49,105	+955,600,000	–148,400,000	16%	+807,200,000
Share of Net State/Federal Impact	5%	7%	12%	19%	24%	13%	20%				

Option 2, Scenario 1: Impact of New Sustainable Alaska Plan if Income Tax is Doubled and Dividend Reduction is Scaled Back											
Tax Increases and Dividend Reductions as % of Income	7.3%	3.6%	3.5%	2.7%	2.4%	2.1%	2.1%				
Average $ Impact of Tax and Dividend Changes	$ 1,203	$ 1,249	$ 2,126	$ 2,764	$ 4,022	$ 6,362	$ 31,404	+1,006,500,000	–153,700,000	15%	+852,800,000
Share of Net State/Federal Impact	8%	10%	16%	21%	23%	10%	12%				

Option 3, Scenario 1: Impact of Revenue Options, Including Personal Income Tax of 6.4% on FAGI over $100k Single/200k Married											
Tax Increases and Dividend Reductions as % of Income	8.6%	3.8%	3.2%	2.0%	1.4%	1.9%	3.0%				
Average $ Impact of Tax and Dividend Changes	$ 1,429	$ 1,298	$ 1,972	$ 2,121	$ 2,468	$ 5,700	$ 45,077	+952,600,000	–171,200,000	18%	+781,400,000
Share of Net State/Federal Impact	11%	11%	16%	17%	15%	9%	19%				

NOTE: Does not include impact of increases in taxes on commercial vessels, fisheries industry, or mining. Also does not include the impact of oil and gas tax credit changes.
SOURCE: Institute on Taxation and Economic Policy, April 2016

Combined Impact of Scenario 2 Plans

All Alaska residents, 2015 income levels, modified to assume baseline dividend of $1,532 instead of $2,072

2015 Income Group	Lowest 20%	Second 20%	Middle 20%	Fourth 20%	Next 15%	Next 4%	Top 1%				
Income Range	Less Than $25,000	$25,000 – $43,000	$43,000 – $75,000	$75,000 – $132,000	$132,000 – $235,000	$235,000 – $493,000	$493,000 – Or More	State Revenue Change	Federal Tax Change	Federal Offset %	Net Tax Change
Average Income in Group	$ 16,000	$ 34,000	$ 60,000	$ 103,000	$ 169,000	$ 300,000	$ 1,513,000				

Combined Impact (State and Federal)

Impact of Gov. Walker's New Sustainable Alaska Plan, Scenario 2											
Tax Increases and Dividend Reductions as % of Income	5.5%	2.8%	2.4%	1.7%	1.5%	1.2%	1.2%				
Average $ Impact of Tax and Dividend Changes	$ 885	$ 954	$ 1,441	$ 1,784	$ 2,457	$ 3,608	$ 18,178	+637,500,000	–84,500,000	13%	+553,000,000
Share of Net State/Federal Impact	10%	11%	17%	20%	22%	8%	11%				

Option 1, Scenario 2: Combination of Elements of Plans Proposed by Gov. Walker and Rep. Seaton											
Tax Increases and Dividend Reductions as % of Income	1.1%	1.2%	1.5%	1.7%	2.0%	2.4%	3.2%				
Average $ Impact of Tax and Dividend Changes	$ 170	$ 406	$ 896	$ 1,716	$ 3,316	$ 7,188	$ 48,368	+721,300,000	–105,100,000	15%	+616,100,000
Share of Net State/Federal Impact	2%	4%	9%	18%	26%	15%	26%				

Option 2, Scenario 2: Impact of New Sustainable Alaska Plan if Income Tax is Doubled and Dividend Reduction is Scaled Back											
Tax Increases and Dividend Reductions as % of Income	3.0%	1.8%	1.9%	1.7%	1.8%	1.8%	2.0%				
Average $ Impact of Tax and Dividend Changes	$ 477	$ 647	$ 1,150	$ 1,789	$ 3,036	$ 5,471	$ 30,414	+670,700,000	–91,600,000	14%	+579,200,000
Share of Net State/Federal Impact	5%	7%	13%	20%	26%	12%	17%				

Option 3, Scenario 2: Impact of Revenue Options, Including Personal Income Tax of 6.4% on FAGI over $100k Single/200k Married											
Tax Increases and Dividend Reductions as % of Income	4.5%	2.2%	1.7%	1.1%	0.9%	1.6%	2.9%				
Average $ Impact of Tax and Dividend Changes	$ 718	$ 730	$ 1,001	$ 1,111	$ 1,467	$ 4,810	$ 44,087	+616,800,000	–109,100,000	18%	+507,700,000
Share of Net State/Federal Impact	9%	9%	13%	14%	14%	12%	28%				

NOTE: Does not include impact of increases in taxes on commercial vessels, fisheries industry, or mining. Also does not include the impact of oil and gas tax credit changes.
SOURCE: Institute on Taxation and Economic Policy, April 2016

Appendix C: Detailed Results

Impact of Gov. Walker's New Sustainable Alaska Plan, Scenario 1 All Alaska residents, 2015 income levels											
2015 Income Group	Lowest 20%	Second 20%	Middle 20%	Fourth 20%	Next 15%	Next 4%	Top 1%				
Income Range	Less Than $25,000	$25,000 – $44,000	$44,000 – $76,000	$76,000 – $133,000	$133,000 – $235,000	$235,000 – $495,000	$495,000 – Or More	State Revenue Change	Federal Tax Change	Federal Offset %	Net Tax Change
Average Income in Group	$ 17,000	$ 34,000	$ 62,000	$ 104,000	$ 170,000	$ 301,000	$ 1,514,000				
Combined Impact (State and Federal)											
Tax Increases and Dividend Reductions as % of Income	9.6%	4.4%	3.9%	2.7%	2.0%	1.5%	1.3%	+967,700,000	–146,600,000	15%	+821,000,000
Average $ Impact of Tax and Dividend Changes	$ 1,585	$ 1,506	$ 2,402	$ 2,771	$ 3,436	$ 4,477	$ 19,141				
Share of Net State/Federal Impact	12%	12%	19%	22%	20%	7%	8%				
State Components											
Reduce Permanent Fund dividend by $1,072 (from $2,072 to $1,000)											
Dividend Reduction as a % of Income	9.1%	4.4%	3.6%	2.3%	1.5%	0.8%	0.2%	+666,600,000			
Average $ Impact of Dividend Reduction	$ 1,509	$ 1,527	$ 2,225	$ 2,421	$ 2,600	$ 2,546	$ 3,151				
Share of In-State Impact	14%	16%	21%	23%	19%	5%	2%				
Personal income tax: 6 percent of federal liability											
Tax Change as % of Income	0.1%	0.3%	0.4%	0.6%	0.8%	0.9%	1.3%	+227,000,000			
Average Tax Change	$ 21	$ 93	$ 259	$ 600	$ 1,313	$ 2,791	$ 20,127				
Share of In-State Tax Change	1%	3%	7%	17%	28%	16%	29%				
% Subject to Income Tax	52%	54%	73%	92%	98%	95%	99%				
Additional Detail											
Total % Subject to Income Tax	73%										
Excise tax increases (tobacco, alcohol, and motor fuel) -- for breakdown see Appendix D											
Tax Change as % of Income	0.8%	0.5%	0.4%	0.3%	0.2%	0.1%	0.0%	+110,800,000			
Average Tax Change	$ 128	$ 179	$ 252	$ 265	$ 312	$ 333	$ 449				
Share of In-State Tax Change	10%	16%	22%	23%	20%	6%	2%				
Federal Components											
Federal income tax decrease (offset effect)											
Tax Change as % of Income	–0.4%	–0.9%	–0.5%	–0.5%	–0.5%	–0.4%	–0.3%	N/A	–146,600,000		
Average Tax Change	$ –73	$ –293	$ –334	$ –514	$ –789	$ –1,193	$ –4,586				
Share of Tax Change	3%	14%	14%	23%	26%	11%	10%				

NOTE: Does not include impact of increases in taxes on commercial vessels, fisheries industry, or mining. Also does not include the impact of oil and gas tax credit changes.
SOURCE: Institute on Taxation and Economic Policy, April 2016

Option 1, Scenario 1: Combination of Elements of Plans Proposed by Gov. Walker and Rep. Seaton

All Alaska residents, 2015 income levels

2015 Income Group	Lowest 20%	Second 20%	Middle 20%	Fourth 20%	Next 15%	Next 4%	Top 1%	State Revenue Change	Federal Tax Change	Federal Offset %	Net Tax Change
Income Range	Less Than $25,000	$25,000 – $44,000	$44,000 – $76,000	$76,000 – $133,000	$133,000 – $235,000	$235,000 – $495,000	$495,000 – Or More				
Average Income in Group	$ 17,000	$ 34,000	$ 62,000	$ 104,000	$ 170,000	$ 301,000	$ 1,514,000				

Combined Impact (State and Federal)

Tax Increases and Dividend Reductions as % of Income	4.1%	2.5%	2.6%	2.3%	2.4%	2.6%	3.2%	+955,600,000	–148,400,000	16%	+807,200,000
Average $ Impact of Tax and Dividend Changes	$ 681	$ 845	$ 1,577	$ 2,374	$ 4,007	$ 7,827	$ 49,105				
Share of Net State/Federal Impact	5%	7%	12%	19%	24%	13%	20%				

State Components

Reduce Permanent Fund dividend by $372 (from $2,072 to $1,700)								
Dividend Reduction as a % of Income	3.2%	1.5%	1.3%	0.8%	0.5%	0.3%	0.1%	+231,200,000
Average $ Impact of Dividend Reduction	$ 523	$ 529	$ 772	$ 839	$ 902	$ 883	$ 1,093	
Share of In-State Impact	14%	16%	21%	23%	19%	5%	2%	

Personal income tax at 15% of federal; 10% capital gains surcharge								
Tax Change as % of Income	0.3%	0.7%	1.1%	1.5%	2.0%	2.6%	4.4%	+650,400,000
Average Tax Change	$ 58	$ 243	$ 695	$ 1,588	$ 3,463	$ 7,872	$ 66,516	
Share of In-State Tax Change	1%	3%	7%	16%	26%	16%	33%	
% Subject to Income Tax	52%	54%	79%	95%	98%	95%	99%	

Additional Detail	
Total % Subject to Income Tax	74%

Excise tax increases (tobacco, alcohol, and motor fuel) -- for breakdown see Appendix D								
Tax Change as % of Income	0.8%	0.5%	0.4%	0.3%	0.2%	0.1%	0.0%	+110,800,000
Average Tax Change	$ 128	$ 179	$ 252	$ 265	$ 312	$ 333	$ 449	
Share of In-State Tax Change	10%	16%	22%	23%	20%	6%	2%	

Federal Components

Federal income tax decrease (offset effect)									
Tax Change as % of Income	–0.2%	–0.3%	–0.2%	–0.3%	–0.4%	–0.4%	–1.3%	N/A	–148,400,000
Average Tax Change	$ –28	$ –108	$ –141	$ –318	$ –670	$ –1,262	$ –18,953		
Share of Tax Change	1%	5%	6%	14%	22%	11%	42%		

NOTE: Does not include impact of increases in taxes on commercial vessels, fisheries industry, or mining. Also does not include the impact of oil and gas tax credit changes.
SOURCE: Institute on Taxation and Economic Policy, April 2016

Option 2, Scenario 1: Impact of New Sustainable Alaska Plan if Income Tax is Doubled and Dividend Reduction is Scaled Back

All Alaska residents, 2015 income levels

2015 Income Group	Lowest 20%	Second 20%	Middle 20%	Fourth 20%	Next 15%	Next 4%	Top 1%	State Revenue Change	Federal Tax Change	Federal Offset %	Net Tax Change
Income Range	Less Than $25,000	$25,000 – $44,000	$44,000 – $76,000	$76,000 – $133,000	$133,000 – $235,000	$235,000 – $495,000	$495,000 – Or More				
Average Income in Group	$ 17,000	$ 34,000	$ 62,000	$ 104,000	$ 170,000	$ 301,000	$ 1,514,000				

Combined Impact (State and Federal)

Tax Increases and Dividend Reductions as % of Income	7.3%	3.6%	3.5%	2.7%	2.4%	2.1%	2.1%	+1,006,500,000	–153,700,000	15%	+852,800,000
Average $ Impact of Tax and Dividend Changes	$ 1,203	$ 1,249	$ 2,126	$ 2,764	$ 4,022	$ 6,362	$ 31,404				
Share of Net State/Federal Impact	8%	10%	16%	21%	23%	10%	12%				

State Components

Reduce Permanent Fund dividend by $772 (from $2,072 to $1,300)								
Dividend Reduction as a % of Income	6.6%	3.2%	2.6%	1.7%	1.1%	0.6%	0.1%	+480,000,000
Average $ Impact of Dividend Reduction	$ 1,086	$ 1,099	$ 1,602	$ 1,743	$ 1,872	$ 1,833	$ 2,269	
Share of In-State Impact	14%	16%	21%	23%	19%	5%	2%	

Personal income tax of 12% of federal liability								
Tax Change as % of Income	0.3%	0.5%	0.9%	1.2%	1.5%	1.8%	2.6%	+452,500,000
Average Tax Change	$ 43	$ 188	$ 525	$ 1,206	$ 2,625	$ 5,561	$ 39,506	
Share of In-State Tax Change	1%	3%	7%	17%	28%	16%	28%	
% Subject to Income Tax	52%	54%	78%	95%	98%	95%	99%	

Additional Detail	
Total % Subject to Income Tax	74%

Excise tax increases (tobacco, alcohol, and motor fuel) – for breakdown see Appendix D								
Tax Change as % of Income	0.8%	0.5%	0.4%	0.3%	0.2%	0.1%	0.0%	+110,800,000
Average Tax Change	$ 128	$ 179	$ 252	$ 265	$ 312	$ 333	$ 449	
Share of In-State Tax Change	10%	16%	22%	23%	20%	6%	2%	

Federal Components

Federal income tax decrease (offset effect)									
Tax Change as % of Income	–0.3%	–0.6%	–0.4%	–0.4%	–0.5%	–0.5%	–0.7%	N/A	–153,700,000
Average Tax Change	$ –55	$ –218	$ –254	$ –449	$ –788	$ –1,365	$ –10,820		
Share of Tax Change	2%	10%	11%	19%	25%	11%	23%		

NOTE: Does not include impact of increases in taxes on commercial vessels, fisheries industry, or mining. Also does not include the impact of oil and gas tax credit changes.
SOURCE: Institute on Taxation and Economic Policy, April 2016

Option 3, Scenario 1: Impact of Revenue Options, Including Personal Income Tax of 6.4% on FAGI over $100k Single/200k Married

All Alaska residents, 2015 income levels

2015 Income Group	Lowest 20%	Second 20%	Middle 20%	Fourth 20%	Next 15%	Next 4%	Top 1%	State Revenue Change	Federal Tax Change	Federal Offset %	Net Tax Change
Income Range	Less Than $25,000	$25,000 – $44,000	$44,000 – $76,000	$76,000 – $133,000	$133,000 – $235,000	$235,000 – $495,000	$495,000 – Or More				
Average Income in Group	$ 17,000	$ 34,000	$ 62,000	$ 104,000	$ 170,000	$ 301,000	$ 1,514,000				

Combined Impact (State and Federal)

Tax Increases and Dividend Reductions as % of Income	8.6%	3.8%	3.2%	2.0%	1.4%	1.9%	3.0%	+952,600,000	–171,200,000	18%	+781,400,000
Average $ Impact of Tax and Dividend Changes	$ 1,429	$ 1,298	$ 1,972	$ 2,121	$ 2,468	$ 5,700	$ 45,077				
Share of Net State/Federal Impact	11%	11%	16%	17%	15%	9%	19%				

State Components

Reduce Permanent Fund dividend by $972 (from $2,072 to $1,100)								
Dividend Reduction as a % of Income	8.3%	4.0%	3.3%	2.1%	1.4%	0.8%	0.2%	+604,400,000
Average $ Impact of Dividend Reduction	$ 1,368	$ 1,384	$ 2,018	$ 2,195	$ 2,357	$ 2,309	$ 2,857	
Share of In-State Impact	14%	16%	21%	23%	19%	5%	2%	

Personal income tax of 6.4% on FAGI over $100k/$150k/$200k (single / head of household / married)								
Tax Change as % of Income	—	—	—	0.1%	0.2%	1.4%	3.9%	+274,200,000
Average Tax Change	—	—	—	$ 88	$ 397	$ 4,320	$ 59,520	
Share of In-State Tax Change	0%	0%	0%	2%	7%	20%	71%	
% Subject to Income Tax	0%	0%	0%	12%	19%	85%	96%	

Additional Detail	
Total % Subject to Income Tax	9%

Excise tax increases (tobacco, alcohol, and motor fuel) – for breakdown see Appendix D								
Tax Change as % of Income	0.8%	0.5%	0.4%	0.3%	0.2%	0.1%	0.0%	+110,800,000
Average Tax Change	$ 128	$ 179	$ 252	$ 265	$ 312	$ 333	$ 449	
Share of In-State Tax Change	10%	16%	22%	23%	20%	6%	2%	

Federal Components

Federal income tax decrease (offset effect)									
Tax Change as % of Income	–0.4%	–0.8%	–0.5%	–0.4%	–0.4%	–0.4%	–1.2%	N/A	–171,200,000
Average Tax Change	$ –67	$ –266	$ –298	$ –426	$ –599	$ –1,262	$ –17,749		
Share of Tax Change	2%	11%	11%	16%	17%	10%	34%		

NOTE: Does not include impact of increases in taxes on commercial vessels, fisheries industry, or mining. Also does not include the impact of oil and gas tax credit changes.
SOURCE: Institute on Taxation and Economic Policy, April 2016

Impact of Gov. Walker's New Sustainable Alaska Plan, Scenario 2

All Alaska residents, 2015 income levels, modified to assume baseline dividend of $1,532 instead of $2,072

2015 Income Group	Lowest 20%	Second 20%	Middle 20%	Fourth 20%	Next 15%	Next 4%	Top 1%	State Revenue Change	Federal Tax Change	Federal Offset %	Net Tax Change
Income Range	Less Than $25,000	$25,000 – $43,000	$43,000 – $75,000	$75,000 – $132,000	$132,000 – $235,000	$235,000 – $493,000	$493,000 – Or More				
Average Income in Group	$ 16,000	$ 34,000	$ 60,000	$ 103,000	$ 169,000	$ 300,000	$ 1,513,000				

Combined Impact (State and Federal)

Tax Increases and Dividend Reductions as % of Income	5.5%	2.8%	2.4%	1.7%	1.5%	1.2%	1.2%	+637,500,000	–84,500,000	13%	+553,000,000
Average $ Impact of Tax and Dividend Changes	$ 885	$ 954	$ 1,441	$ 1,784	$ 2,457	$ 3,608	$ 18,178				
Share of Net State/Federal Impact	10%	11%	17%	20%	22%	8%	11%				

State Components

Reduce Permanent Fund dividend by $532 (from $1,532 to $1,000)								
Dividend Reduction as a % of Income	4.9%	2.4%	1.8%	1.1%	0.8%	0.4%	0.1%	+336,500,000
Average $ Impact of Dividend Reduction	$ 790	$ 822	$ 1,101	$ 1,178	$ 1,278	$ 1,286	$ 1,590	
Share of In-State Impact	14%	16%	21%	22%	19%	5%	2%	

Personal income tax: 6 percent of federal liability								
Tax Change as % of Income	0.1%	0.3%	0.4%	0.6%	0.8%	0.9%	1.3%	+227,000,000
Average Tax Change	$ 16	$ 86	$ 252	$ 608	$ 1,314	$ 2,791	$ 20,127	
Share of In-State Tax Change	0%	2%	7%	17%	28%	16%	29%	
% Subject to Income Tax	2%	9%	25%	61%	131%	279%	2013%	

Additional Detail	
Total % Subject to Income Tax	70%

Combined excise taxes (tobacco, alcohol, motor fuel)								
Tax Change as % of Income	0.8%	0.6%	0.4%	0.3%	0.2%	0.1%	0.0%	+110,800,000
Average Tax Change	$ 127	$ 186	$ 248	$ 268	$ 307	$ 333	$ 449	
Share of In-State Tax Change	10%	16%	22%	23%	20%	6%	2%	

Federal Components

Federal income tax decrease (offset effect)									
Tax Change as % of Income	–0.3%	–0.4%	–0.3%	–0.3%	–0.3%	–0.3%	–0.3%	N/A	–84,500,000
Average Tax Change	$ –48	$ –140	$ –161	$ –271	$ –442	$ –802	$ –3,989		
Share of Tax Change	3%	11%	12%	20%	26%	12%	15%		

NOTE: Does not include impact of increases in taxes on commercial vessels, fisheries industry, or mining. Also does not include the impact of oil and gas tax credit changes.
SOURCE: Institute on Taxation and Economic Policy, April 2016

Option 1, Scenario 2: Combination of Elements of Plans Proposed by Gov. Walker and Rep. Seaton

All Alaska residents, 2015 income levels, modified to assume baseline dividend of $1,532 instead of $2,072

2015 Income Group	Lowest 20%	Second 20%	Middle 20%	Fourth 20%	Next 15%	Next 4%	Top 1%	State Revenue Change	Federal Tax Change	Federal Offset %	Net Tax Change
Income Range	Less Than $25,000	$25,000 – $43,000	$43,000 – $75,000	$75,000 – $132,000	$132,000 – $235,000	$235,000 – $493,000	$493,000 – Or More				
Average Income in Group	$ 16,000	$ 34,000	$ 60,000	$ 103,000	$ 169,000	$ 300,000	$ 1,513,000				

Combined Impact (State and Federal)

Tax Increases and Dividend Reductions as % of Income	1.1%	1.2%	1.5%	1.7%	2.0%	2.4%	3.2%	+721,300,000	–105,100,000	15%	+616,100,000
Average $ Impact of Tax and Dividend Changes	$ 170	$ 406	$ 896	$ 1,716	$ 3,316	$ 7,188	$ 48,368				
Share of Net State/Federal Impact	2%	4%	9%	18%	26%	15%	26%				

State Components

No reduction in Permanent Fund dividend								
Dividend Reduction as a % of Income	—	—	—	—	—	—	—	—
Average $ Impact of Dividend Reduction	—	—	—	—	—	—	—	
Share of In-State Impact	—	—	—	—	—	—	—	

Personal income tax at 15% of federal; 10% capital gains surcharge								
Tax Change as % of Income	0.3%	0.7%	1.1%	1.6%	2.0%	2.6%	4.4%	+647,200,000
Average Tax Change	$ 43	$ 224	$ 669	$ 1,595	$ 3,442	$ 7,845	$ 66,452	
Share of In-State Tax Change	0%	2%	7%	16%	26%	16%	33%	
% Subject to Income Tax	45%	61%	78%	95%	98%	95%	99%	

Additional Detail	
Total % Subject to Income Tax	74%

Combined excise taxes (tobacco, alcohol, motor fuel)								
Tax Change as % of Income	0.8%	0.6%	0.4%	0.3%	0.2%	0.1%	0.0%	+110,800,000
Average Tax Change	$ 127	$ 186	$ 248	$ 268	$ 307	$ 333	$ 449	
Share of In-State Tax Change	10%	16%	22%	23%	20%	6%	2%	

Federal Components

Federal income tax decrease (offset effect)									
Tax Change as % of Income	–0.0%	–0.0%	–0.0%	–0.1%	–0.3%	–0.3%	–1.2%	N/A	–105,100,000
Average Tax Change	$ –0	$ –4	$ –20	$ –147	$ –433	$ –991	$ –18,534		
Share of Tax Change	0%	0%	1%	9%	20%	12%	57%		

NOTE: Does not include impact of increases in taxes on commercial vessels, fisheries industry, or mining. Also does not include the impact of oil and gas tax credit changes.
SOURCE: Institute on Taxation and Economic Policy, April 2016

Option 2, Scenario 2: Impact of New Sustainable Alaska Plan if Income Tax is Doubled and Dividend Reduction is Scaled Back

All Alaska residents, 2015 income levels, modified to assume baseline dividend of $1,532 instead of $2,072

2015 Income Group	Lowest 20%	Second 20%	Middle 20%	Fourth 20%	Next 15%	Next 4%	Top 1%				
Income Range	Less Than $25,000	$25,000 – $43,000	$43,000 – $75,000	$75,000 – $132,000	$132,000 – $235,000	$235,000 – $493,000	$493,000 – Or More	State Revenue Change	Federal Tax Change	Federal Offset %	Net Tax Change
Average Income in Group	$ 16,000	$ 34,000	$ 60,000	$ 103,000	$ 169,000	$ 300,000	$ 1,513,000				

Combined Impact (State and Federal)

Tax Increases and Dividend Reductions as % of Income	3.0%	1.8%	1.9%	1.7%	1.8%	1.8%	2.0%	+670,700,000	–91,600,000	14%	+579,200,000
Average $ Impact of Tax and Dividend Changes	$ 477	$ 647	$ 1,150	$ 1,789	$ 3,036	$ 5,471	$ 30,414				
Share of Net State/Federal Impact	5%	7%	13%	20%	26%	12%	17%				

State Components

Reduce Permanent Fund dividend by $232 (from $1,532 to $1,300)								
Dividend Reduction as a % of Income	2.1%	1.0%	0.8%	0.5%	0.3%	0.2%	0.0%	+144,200,000
Average $ Impact of Dividend Reduction	$ 339	$ 352	$ 472	$ 505	$ 548	$ 551	$ 682	
Share of In-State Impact	14%	16%	21%	22%	19%	5%	2%	

Personal income tax of 12% of federal liability								
Tax Change as % of Income	0.2%	0.5%	0.8%	1.2%	1.6%	1.8%	2.6%	+452,500,000
Average Tax Change	$ 33	$ 175	$ 511	$ 1,223	$ 2,627	$ 5,561	$ 39,506	
Share of In-State Tax Change	0%	3%	7%	17%	28%	16%	28%	
% Subject to Income Tax	45%	61%	78%	95%	98%	95%	99%	

Additional Detail

Total % Subject to Income Tax	74%

Combined excise taxes (tobacco, alcohol, motor fuel)								
Tax Change as % of Income	0.8%	0.6%	0.4%	0.3%	0.2%	0.1%	0.0%	+110,800,000
Average Tax Change	$ 127	$ 186	$ 248	$ 268	$ 307	$ 333	$ 449	
Share of In-State Tax Change	10%	16%	22%	23%	20%	6%	2%	

Federal Components

Federal income tax decrease (offset effect)									
Tax Change as % of Income	–0.1%	–0.2%	–0.1%	–0.2%	–0.3%	–0.3%	–0.7%	N/A	–91,600,000
Average Tax Change	$ –22	$ –66	$ –81	$ –207	$ –445	$ –974	$ –10,223		
Share of Tax Change	1%	5%	6%	14%	24%	14%	36%		

NOTE: Does not include impact of increases in taxes on commercial vessels, fisheries industry, or mining. Also does not include the impact of oil and gas tax credit changes.
SOURCE: Institute on Taxation and Economic Policy, April 2016

Option 3, Scenario 2: Impact of Revenue Options, Including Personal Income Tax of 6.4% on FAGI over $100k Single/200k Married

All Alaska residents, 2015 income levels, modified to assume baseline dividend of $1,532 instead of $2,072

2015 Income Group	Lowest 20%	Second 20%	Middle 20%	Fourth 20%	Next 15%	Next 4%	Top 1%	State Revenue Change	Federal Tax Change	Federal Offset %	Net Tax Change
Income Range	Less Than $25,000	$25,000 – $43,000	$43,000 – $75,000	$75,000 – $132,000	$132,000 – $235,000	$235,000 – $493,000	$493,000 – Or More				
Average Income in Group	$ 16,000	$ 34,000	$ 60,000	$ 103,000	$ 169,000	$ 300,000	$ 1,513,000				

Combined Impact (State and Federal)

Tax Increases and Dividend Reductions as % of Income	4.5%	2.2%	1.7%	1.1%	0.9%	1.6%	2.9%	+616,800,000	–109,100,000	18%	+507,700,000
Average $ Impact of Tax and Dividend Changes	$ 718	$ 730	$ 1,001	$ 1,111	$ 1,467	$ 4,810	$ 44,087				
Share of Net State/Federal Impact	9%	9%	13%	14%	14%	12%	28%				

State Components

Reduce Permanent Fund dividend by $432 (from $1,532 to $1,100)								
Dividend Reduction as a % of Income	3.9%	2.0%	1.5%	0.9%	0.6%	0.3%	0.1%	+268,600,000
Average $ Impact of Dividend Reduction	$ 631	$ 656	$ 879	$ 941	$ 1,021	$ 1,026	$ 1,270	
Share of In-State Impact	14%	16%	21%	22%	19%	5%	2%	

Personal income tax of 6.4% on FAGI over $100k/$150k/$200k (single / head of household / married)								
Tax Change as % of Income	—	—	—	0.1%	0.2%	1.4%	3.9%	+274,200,000
Average Tax Change	—	—	—	$ 84	$ 397	$ 4,321	$ 59,520	
Share of In-State Tax Change	0%	0%	0%	2%	7%	20%	71%	
% Subject to Income Tax	0%	0%	0%	11%	19%	84%	96%	

Additional Detail	
Total % Subject to Income Tax	9%

Combined excise taxes (tobacco, alcohol, motor fuel)								
Tax Change as % of Income	0.8%	0.6%	0.4%	0.3%	0.2%	0.1%	0.0%	+110,800,000
Average Tax Change	$ 127	$ 186	$ 248	$ 268	$ 307	$ 333	$ 449	
Share of In-State Tax Change	10%	16%	22%	23%	20%	6%	2%	

Federal Components

Federal income tax decrease (offset effect)									
Tax Change as % of Income	–0.2%	–0.3%	–0.2%	–0.2%	–0.2%	–0.3%	–1.1%	N/A	–109,100,000
Average Tax Change	$ –40	$ –112	$ –126	$ –182	$ –258	$ –870	$ –17,152		
Share of Tax Change	2%	7%	7%	11%	12%	10%	51%		

NOTE: Does not include impact of increases in taxes on commercial vessels, fisheries industry, or mining. Also does not include the impact of oil and gas tax credit changes.
SOURCE: Institute on Taxation and Economic Policy, April 2016

Appendix D: Excise Tax Detail

Impact of Excise Tax Changes Under Scenario 1 Plans

All Alaska residents, 2015 income levels

2015 Income Group	Lowest 20%	Second 20%	Middle 20%	Fourth 20%	Next 15%	Next 4%	Top 1%	
Income Range	Less Than $25,000	$25,000 – $44,000	$44,000 – $76,000	$76,000 – $133,000	$133,000 – $235,000	$235,000 – $495,000	$495,000 – Or More	State Revenue Change
Average Income in Group	$ 17,000	$ 34,000	$ 62,000	$ 104,000	$ 170,000	$ 301,000	$ 1,514,000	

Combined Impact of Excise Tax Changes

Tobacco, alcohol, and motor fuel								
Tax Change as % of Income	0.8%	0.5%	0.4%	0.3%	0.2%	0.1%	0.0%	+110,800,000
Average Tax Change	$ 128	$ 179	$ 252	$ 265	$ 312	$ 333	$ 449	
Share of In-State Tax Change	10%	16%	22%	23%	20%	6%	2%	

Excise Tax Components

Tobacco tax increase: $1 per pack increase on cigarettes; 25 percentage point increase on wholesale price of other tobacco products								
Tax Change as % of Income	0.3%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	+26,700,000
Average Tax Change	$ 57	$ 58	$ 74	$ 68	$ 83	$ 70	$ 78	
Share of In-State Tax Change	16%	18%	22%	20%	18%	4%	1%	

Alcohol tax increase: doubling the current per gallon rates								
Tax Change as % of Income	0.3%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	+38,700,000
Average Tax Change	$ 48	$ 77	$ 111	$ 114	$ 135	$ 150	$ 179	
Share of In-State Tax Change	9%	16%	22%	23%	21%	6%	2%	

Motor fuel tax increase: 8 cents per gallon for highway fuels, 6.8 cents for jet fuel, 5.3 cents for other aviation fuel, 5 cents for marine fuel								
Tax Change as % of Income	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	+45,400,000
Average Tax Change	$ 23	$ 45	$ 67	$ 83	$ 95	$ 114	$ 192	
Share of In-State Tax Change	7%	15%	21%	26%	22%	7%	3%	

SOURCE: Institute on Taxation and Economic Policy, April 2016

Impact of Excise Tax Changes Under Scenario 2 Plans

All Alaska residents, 2015 income levels, modified to assume baseline dividend of $1,532 instead of $2,072

2015 Income Group	Lowest 20%	Second 20%	Middle 20%	Fourth 20%	Next 15%	Next 4%	Top 1%	
Income Range	Less Than $25,000	$25,000 – $43,000	$43,000 – $75,000	$75,000 – $132,000	$132,000 – $235,000	$235,000 – $493,000	$493,000 – Or More	State Revenue Change
Average Income in Group	$ 16,000	$ 34,000	$ 60,000	$ 103,000	$ 169,000	$ 300,000	$ 1,513,000	

Combined Impact of Excise Tax Changes

Tobacco, alcohol, and motor fuel								
Tax Change as % of Income	0.8%	0.6%	0.4%	0.3%	0.2%	0.1%	0.0%	
Average Tax Change	$ 127	$ 186	$ 248	$ 268	$ 307	$ 333	$ 449	+110,800,000
Share of In-State Tax Change	10%	16%	22%	23%	20%	6%	2%	

Excise Tax Components

Tobacco tax increase: $1 per pack increase on cigarettes; 25 percentage point increase on wholesale price of other tobacco products								
Tax Change as % of Income	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	
Average Tax Change	$ 57	$ 60	$ 73	$ 69	$ 81	$ 70	$ 78	+26,700,000
Share of In-State Tax Change	16%	18%	22%	20%	18%	4%	1%	

Alcohol tax increase: doubling the current per gallon rates								
Tax Change as % of Income	0.3%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	
Average Tax Change	$ 48	$ 79	$ 109	$ 115	$ 132	$ 150	$ 179	+38,700,000
Share of In-State Tax Change	9%	16%	22%	23%	21%	6%	2%	

Motor fuel tax increase: 8 cents per gallon for highway fuels, 6.8 cents for jet fuel, 5.3 cents for other aviation fuel, 5 cents for marine fuel								
Tax Change as % of Income	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	
Average Tax Change	$ 23	$ 46	$ 66	$ 84	$ 93	$ 114	$ 192	+45,400,000
Share of In-State Tax Change	7%	15%	21%	26%	22%	7%	3%	

NOTE: Assumes no change in consumption resulting from reduction in Permanent Fund dividend.
SOURCE: Institute on Taxation and Economic Policy, April 2016

Appendix E: The ITEP Model

The Institute on Taxation & Economic Policy has engaged in research on tax issues since 1980, with a focus on the distributional consequences of both current law and proposed changes. ITEP's research has often been used by other private groups in their work, and ITEP is frequently consulted by government estimators in performing their official analyses. Since 1994, ITEP has built a microsimulation model of the tax systems of the U.S. government and of all 50 states and the District of Columbia.

Microsimulation Model

The ITEP model is a tool for calculating revenue yield and incidence, by income group, of federal, state, and local taxes. It calculates revenue yield for current tax law and proposed amendments to current law. Separate incidence analyses can be done for categories of taxpayers specified by marital status, the presence of children and age.

In computing its estimates, the ITEP model relies on one of the largest databases of tax returns and supplementary data in existence, encompassing close to three quarters of a million records. To forecast revenues and incidence, the model relies on government or other widely respected economic projections.

The ITEP model's federal tax calculations are very similar to those produced by the congressional Joint Committee on Taxation, the U.S. Treasury Department and the Congressional Budget Office (although each of these four models differs in varying degrees as to how the results are presented). The ITEP model, however, adds state-by-state estimating capabilities not found in those government models.

Below is an outline of each area of the ITEP model and what its capabilities are:

The Personal Income Tax Model analyzes the revenue and incidence of current federal and state personal income taxes and amendment options including changes in:

- Rates, including special rates on capital gains,
- Inclusion or exclusion of various types of income,
- Inclusion or exclusion of all federal and state adjustments,
- Exemption amounts and a broad variety of exemption types and, if relevant, phase-out methods,
- Standard deduction amounts and a broad variety of standard deduction types and phase-outs,
- Itemized deductions and deduction phase-outs, and
- Credits, such as earned-income and child-care credits.

The Consumption Tax Model analyzes the revenue yield and incidence of current sales and excise taxes. It also has the capacity to analyze the revenue and incidence implications of a broad range of base and rate changes in

general sales taxes, special sales taxes, gasoline excise taxes, and tobacco excise taxes. There are more than 250 base items available to amend in the model, reflecting, for example, sales tax base differences among states and most possible changes that might occur.

The Property Tax Model analyzes revenue yield and incidence of current state and local property taxes. It can also analyze the revenue and incidence impacts of statewide policy changes in property tax, including the effect of circuit breakers, homestead exemptions, and rate and assessment caps.

The Corporate Income Tax Model analyzes revenue yield and incidence of current corporate income tax law, possible rate changes and certain base changes.

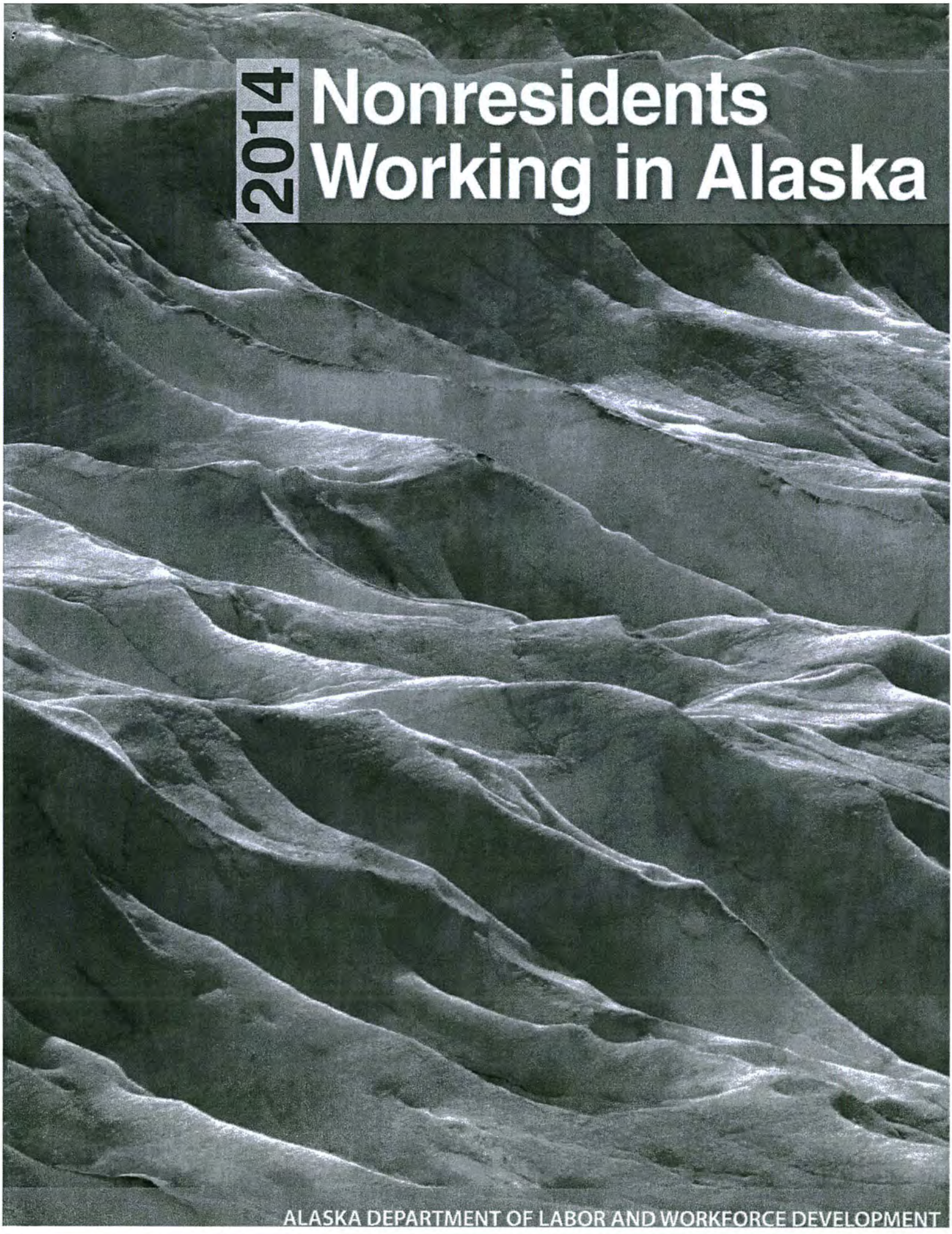
Local taxes: The model can analyze the statewide revenue and incidence of aggregate local taxes (not, however, broken down by individual localities).

Data Sources

The ITEP model is a "microsimulation model." That is, it works on a very large stratified sample of tax returns and other data, aged to the year being analyzed. This is the same kind of tax model used by the U.S. Treasury Department, the congressional Joint Committee on Taxation and the Congressional Budget Office. The ITEP model uses the following micro-data sets and aggregate data:

Micro-Data Sets: IRS 1988 Individual Public Use Tax File, Level III Sample; IRS Individual Public Use Tax Files; Current Population Survey; Consumer Expenditure Survey; U.S. Census; American Community Survey.

Partial List of Aggregated Data Sources: Miscellaneous IRS data; Congressional Budget Office and Joint Committee on Taxation forecasts; other economic data (Moody's Economy.com, Commerce Department, WEFA); state tax department data; data on overall levels of consumption for specific goods (Commerce Department, Census of Services); state specific consumption and consumption tax data (Census data, Government Finances, data from state revenue departments); state specific property tax data (Govt. Finances, data from state revenue departments.); American Housing Survey; Census of Population Housing; and other sources.


2014
Nonresidents
Working in Alaska
ALASKA DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

Nonresidents Working in Alaska: 2014

Alaska Department of Labor and Workforce Development
Research and Analysis Section

Bill Walker, Governor
Heidi Drygas, Commissioner

Dan Robinson, Chief, Research and Analysis

Prepared by:
Rob Kreiger, Economist
Karinne Wiebold, Economist
Sara Whitney, Editor
Sam Dapcevich, Cover Artist

Published January 2016 at a cost of $1.72 per copy.

For more information, contact Rob Kreiger at (907) 465-6031 or rob.kreiger@alaska.gov.
Research and Analysis Online: laborstats.alaska.gov

On the cover:
John Hopkins Glacier in Glacier Bay. Photo by Flickr user Piero Sierra

Table of Contents

Table of Contents

Exhibits

Highlights

- **Alaska's workforce grew by 0.8 percent to 422,516.** The number of resident workers rose by 1,478, or 0.4 percent, to 334,628. Nonresident workers increased by 1,691, or 2.0 percent, to 87,888.

- **Alaska residents made up 79.2 percent of all workers in 2014 and earned 84.4 percent of wages.**

- **The percentage of nonresident workers in Alaska increased by two-tenths of a percentage point, from 20.6 percent in 2013, to 20.8 percent in 2014.**

- **Residents' annual wages were higher on average than nonresidents' wages.** Resident workers in Alaska earn more each year on average than nonresidents, and 2014 was no exception. Average resident wages grew 3.5 percent to $41,559, while average nonresident wages increased 4.9 percent to $29,230.

- **Growth in total nonresident wages outpaced that of residents.** Resident wages increased 4.0 percent to $13.9 billion in 2014, while nonresident wages increased 7.0 percent to $2.6 billion.

- **The percentage of wages earned by nonresidents increased by four-tenths of a percentage point.** Nonresidents earned 15.6 percent of total wages, up from 15.2 percent in 2013.

- **The seafood processing industry still employs the most nonresidents.** Seafood processing had 17,792 nonresidents and 6,165 residents. In 2014, 20.2 percent of all nonresident workers were in seafood processing, down from 20.5 percent in 2013. Nonresident seafood processors earned 10.0 percent of all nonresident wages.

- **The oil industry added more nonresidents than residents.** The oil industry added 725 workers in 2014, growing by 4.1 percent. The number of residents in the oil industry increased by 210, or 1.8 percent, and nonresidents increased by 515, or 8.7 percent. Resident and nonresident wages in the oil industry increased by 9.6 and 13.5 percent respectively.

- **The percentage of nonresidents in the oil and gas industry increased.** The oil industry had 6,464 nonresident and 11,992 resident workers. Nonresidents accounted for 35.0 percent of oil industry workers, up from 33.6 percent in 2013. The oil industry employed 7.4 percent of all nonresident workers but paid 25.6 percent of total nonresident wages.

Job counts vs. worker counts

The worker counts in this analysis differ from employment estimates — that is, job counts. Job counts are the number of filled positions at a point in time or averaged over a period of time, and worker counts are the cumulative number of people who worked in an occupation over the course of a year.

Because a single position can be filled by more than one person over a period of time due to turnover, worker counts are almost always higher than job counts. Worker counts are less useful for identifying trends in the broad economy than the job counts published by the Alaska Department of Labor and Workforce Development, but useful for other purposes such as this report.

This analysis also makes no distinction between part-time and full-time workers. For more information on the methods used to create this report, see the appendix on page 23.

Employers provide quarterly occupation information to the Department of Labor and Workforce Development, and for this report, we assigned workers a code based on the occupation in which they earned the most money in 2014.

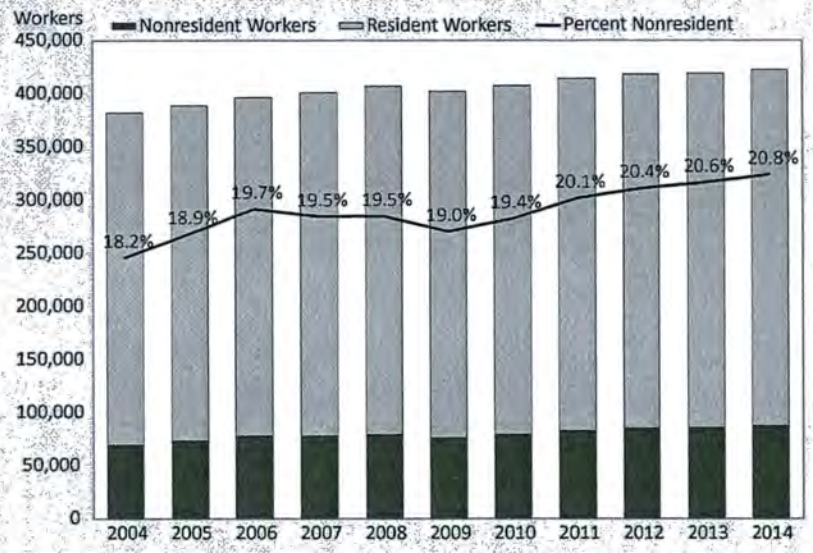
Nonresidents Working in Alaska: 2014

Introduction

This report, produced as required by AS 36.10.130, details nonresident employment in the state. It also helps the state meet its constitutional obligation to use, develop, and conserve its natural resources "for the maximum benefit of its people."

Knowing the industries and occupations in which nonresidents are working can guide policy makers in promoting the hiring of Alaska residents, whether through creating or expanding certain types of training programs, collaborating with companies to help them identify qualified local workers, or requiring that publicly funded projects hire Alaskans to the extent the law allows.

1 Resident and Nonresident Workers
Alaska, 2004 to 2014



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Two of the main findings in this report:

1. A large percentage of Alaska's nonresident workforce is employed in the state's most seasonal industries, with seafood processing at the top of that list.

2. High-paying, year-round jobs with high percentages of nonresidents are most heavily concentrated in the oil and gas industry, where remote work sites play a major factor. It is easier for North Slope oil workers, who generally work a schedule such as two weeks on and two weeks off, to live elsewhere than it is for those with a typical Monday through Friday schedule and a need for a reasonable daily commute.

A person is considered a resident for this report if he or she applied for a Permanent Fund Dividend in either of the two most recent years. Because a person must live in the state for a full calendar year before becoming eligible for a PFD, people who move to Alaska and consider it their new principal place of residence will be initially identified as nonresidents. The appendix details these caveats more fully.

Nonresident Workforce Increased in 2014

The total number of private-sector and state and local government wage and salary[1] workers employed in Alaska during 2014 was 422,516, up by 3,169 workers from 2013. Federal government workers are not included in this report.

- Nonresidents[2] were 20.8 percent of workers in 2014, two-tenths of a percentage point higher than 2013's rate of 20.6 percent. (See Exhibit 1.)

- The number of resident workers increased by 1,478, or four-tenths of a percentage point, to 334,628. The number of nonresident workers increased by 2.0 percent, adding 1,691 workers to reach 87,888.

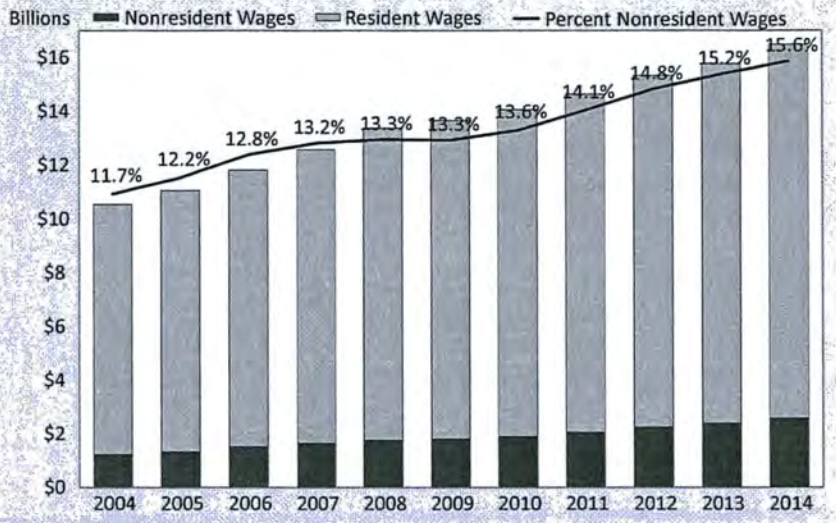
- Total wages grew 4.4 percent to $16.5 billion in 2014. Nonresidents earned 15.6 percent of that total, up from 15.2 percent in 2013. (See Exhibit 2.)

- Total resident wages increased by $530 million (4.0 percent) to $13.9 billion in 2014, while total

nonresident wages increased by $168 million (7.0 percent) to $2.6 billion.

- With some exceptions, nonresidents typically didn't work all four quarters of the year. (See exhibits 3 and 28.) Many nonresidents worked only short-term or seasonal jobs, including those in seafood processing and tourism.
- In 2014, residents earned an average annual wage of $41,559, while nonresidents earned $29,230.
- Average annual wages grew by $1,407 (3.5 percent) for residents and $1,377 (4.9 percent) for nonresidents.
- The average wage per quarter worked for nonresidents was $12,241 in 2014, while residents earned $12,090.

2 Resident and Nonresident Wages
Alaska, 2004 to 2014



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

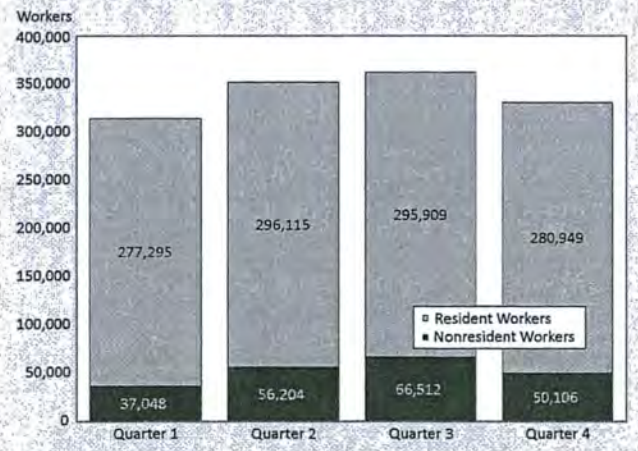
Nonresidents by Industry

Nonresident worker percentages are highest in the private sector. In 2014, 24.0 percent of private-sector workers in Alaska were not residents, but nonresident percentages varied significantly by industry.

The seafood processing industry is the largest employer of nonresidents. (See Exhibit 4.) Nonresident percentages were also high in the leisure and hospitality and trade, transportation, and utilities industries. The nonresident workforce for these three industries combined represented more than half, or 54.3 percent, of all nonresident workers in 2014.

Other industries with high percentages of nonresidents included oil and gas, construction, metal mining, and other visitor-related industries. These industries generally have one or more of the following: high seasonality, a need for specialized skills, or remote work sites.

3 Alaska Workers by Quarter
Resident and nonresident, 2014



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Oil and Gas Industry

The oil and gas industry employs less than 5 percent of all Alaska workers but has a substantial effect on Alaska's economy. Oil and gas wages are 2.8 times higher than average. The percentage of nonresident workers in the oil and gas industry has also historically been higher than the statewide average.

- The number of workers in the oil industry rose during 2014, with increases in both oilfield services and extraction. Alaska's oil industry employed 18,456 workers in 2014: an increase of 725 workers, or 4.1 percent, from 2013.
- The percentage of nonresidents working in the oil and gas industry rose from 33.6 percent in 2013 to 35.0 percent in 2014. (See Exhibit 6.)

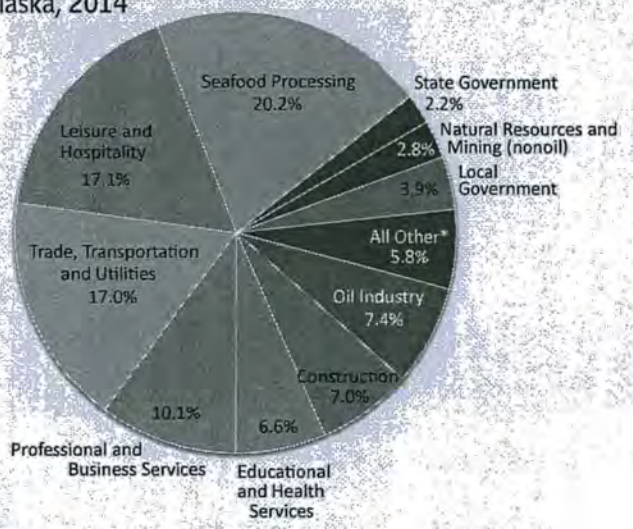
- Oil industry wages grew by 10.8 percent in 2014, to $2.0 billion, and increased for both residents and nonresidents. Total resident wages rose 9.6 percent to $1.4 billion, while nonresident wages increased 13.5 percent to $658.5 million.

- Overall, nonresidents earned 32.1 percent of total wages in the industry, up from 31.4 percent in 2013.

The oil industry is made up of oil and gas extraction and oilfield services. Oil and gas extraction includes firms that primarily operate and develop oil and gas fields, and most are in remote sites on the North Slope.

- Oil and gas extraction workers made up 25.3 percent of the industry total but earned 47.2 percent of industry wages in 2014.

4 Nonresident Workers, Industry Distribution
Alaska, 2014



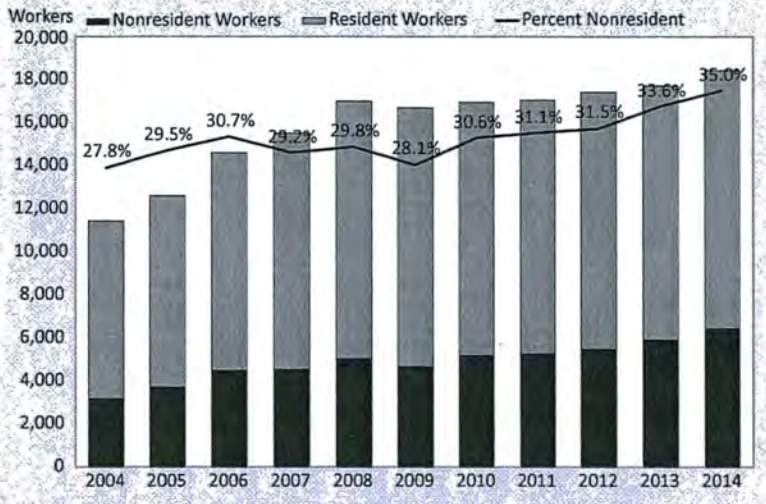
Note: Percentages may not add to 100 due to rounding.
*All other includes nonseafood manufacturing, information, financial activities, public administration, other services, and unclassified industries.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

5 Workers and Wages, Major and Selected Industry Categories
Alaska, 2014

	Total		Nonresident			
Industry	Workers	Wages (mil)	Workers	Percent	Wages (mil)	Percent
Agriculture, Forestry, Fishing and Hunting	2,424	$55.8	1,257	51.9%	$27.8	49.9%
Mining	22,316	$2,361.9	7,690	34.5%	$752.4	31.9%
Oil and Gas	4,666	$893.8	1,248	26.7%	$237.2	26.5%
Oilfield Services*	13,790	$1,155.4	5,216	37.8%	$421.3	36.5 %
Utilities	2,580	$188.5	142	5.5%	$6.3	3.3%
Construction	27,763	$1,343.0	6,172	22.2%	$237.0	17.6%
Manufacturing	29,156	$612.7	18,642	63.9%	$277.3	45.3%
Seafood Processing	23,957	$398.2	17,792	74.3%	$257.8	64.7%
Wholesale Trade	7,318	$346.7	688	9.4%	$21.1	6.1%
Retail Trade	49,196	$1,126.9	7,629	15.5%	$90.1	8.0%
Transportation and Warehousing	25,147	$1,194.6	6,488	25.8%	$286.7	24.0%
Air Transportation	7,349	$317.9	1,772	24.1%	$57.2	18.0%
Information	7,551	$401.8	710	9.4%	$25.4	6.3%
Finance and Insurance	8,049	$430.6	637	7.9%	$16.6	3.9%
Real Estate and Rental and Leasing	7,025	$216.3	712	10.1%	$15.6	7.2%
Professional, Scientific, and Technical Services	18,378	$1,027.0	4,359	23.7%	$224.6	21.9%
Management of Companies and Enterprises	2,757	$185.2	566	20.5%	$25.9	14.0%
Administrative Support/Waste Management and Remediation	17,905	$545.3	3,923	21.9%	$90.6	16.6%
Educational Services	2,873	$67.2	669	23.3%	$7.3	10.8%
Health Care and Social Assistance	50,708	$2,108.6	5,101	10.1%	$158.0	7.5%
Arts, Entertainment, and Recreation	7,153	$93.2	2,208	30.9%	$20.5	22.0%
Accommodation and Food Services	42,235	$625.1	12,823	30.4%	$130.0	20.8%
Accommodation	12,523	$200.7	5,704	45.5%	$61.8	30.8%
Food Services and Drinking Places	29,497	$422.9	7,022	23.8%	$67.6	16.0%
Other Services	13,090	$372.7	1,979	15.1%	$36.1	9.7%
Other/Unknown	428	$7.0	156	36.4%	$2.1	30.0%
Local Government	49,949	$1,808.1	3,388	6.8%	$69.8	3.9%
State Government	28,515	$1,357.7	1,949	6.8%	$47.9	3.5%
Total	422,516	$16,475.9	87,888	20.8%	$2,569.0	15.6%

Notes: Data exclude the self-employed, fishermen and other agricultural workers, and private household workers. For estimates of fish harvesting employment, go to labor.alaska.gov/research/seafood/seafood.htm.
*This industry category includes support activities for oil and gas drilling and related occupations.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

6 Oil Industry Workers
Alaska, 2004 to 2014



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

7 Oil Industry, 20 Largest Occupations
Alaska, 2014

Occupation title	Total workers	Percent nonres
Service Unit Operators, Oil, Gas, and Mining	1,822	47.2%
Managers, All Other	1,764	33.4%
Operating Engineers and Other Construction Equipment Operators	1,289	40.2%
Roustabouts, Oil and Gas	1,143	25.5%
Electricians	567	45.1%
Construction Laborers	561	18.0%
Petroleum Engineers	491	27.5%
Plumbers, Pipefitters, and Steamfitters	465	55.1%
Heavy and Tractor-Trailer Truck Drivers	461	32.8%
Engineers, All Other	453	28.7%
Supervisors of Construction and Extraction Workers	417	39.8%
Rotary Drill Operators, Oil and Gas	412	38.6%
Mobile Heavy Equipment Mechanics, Except Engines	353	38.0%
Geological and Petroleum Technicians	345	35.7%
Welders, Cutters, Solderers, and Brazers	345	38.8%
Construction Managers	338	40.2%
Maintenance and Repair Workers, General	310	36.8%
Petroleum Pump System Operators, Refinery Operators, and Gaugers	299	32.4%
Carpenters	277	32.9%
Geoscientists, Except Hydrologists and Geographers	273	29.7%

Note: Includes occupations in oil and gas extraction and related oilfield services. Occupation totals include only workers in this industry. Additional workers in these occupations may be found in other industries.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

- Extraction firms employed 4,666 people in 2014, up from 4,585 in 2013. Its percentage of nonresidents dropped over the year, falling from 27.2 percent to 26.7 percent.
- All of the 81 extraction workers added in 2014 were residents.
- The percentage of total extraction wages paid to nonresidents also fell, from 27.3 percent in 2013 to 26.5 percent in 2014. (See Exhibit 5.)
- Extraction was a high-wage industry for both residents and nonresidents, but nonresidents earned more per quarter. In 2014, nonresidents earned 11.2 percent more than residents per quarter, at $55,374 versus $49,808.
- Because residents in oil and gas extraction tend to work more quarters than nonresidents, the average annual wage for residents is higher. In 2014, residents earned an average annual wage of $192,092, and nonresidents earned $190,080.

Oil field services differs from extraction in that firms provide support services including drilling oil and gas wells, excavation, and well services, but do not physically extract the oil from the field.[3] The oilfield services sector made up 74.7 percent of total oil industry workers in 2014.

- The number of oil field services workers increased to 13,790, up 4.9 percent from 2013. Nonresidents increased by 11.0 percent to 5,216 while residents increased 1.5 percent to 8,574.
- The overall nonresident percentage in oilfield services rose during the year. In 2014, 37.8 percent of oilfield service workers were nonresidents, up from 35.8 percent in 2013.
- Workers in oilfield services earned $1.2 billion, or 56.4 percent, of total oil industry wages in 2014. Nonresidents made $421.3 million, or 36.5 percent of that total. (See Exhibit 5.)

- In 2014, nonresidents in oilfield services earned an average of $25,224 per quarter — 10.8 percent more than residents, who earned $22,756 per quarter.

- Although nonresidents earn more per quarter, residents earn more annually — $85,619 versus $80,769 — primarily because residents work more quarters.

Construction Industry

The construction industry employed 6.6 percent of workers in the state in 2014. Though not to the same degree as oil and gas, wages in construction are also higher than the state average.

- The number of construction workers rose to 27,763 in 2014. That was an increase of 1,003 workers, 604 of whom were nonresidents.

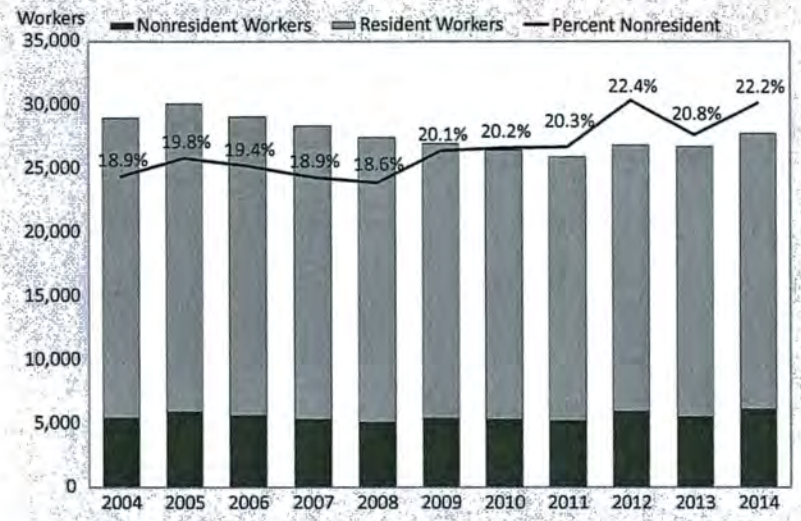
- Nonresidents constituted 22.2 percent of all construction workers in 2014, up from 20.8 percent in 2013. (See Exhibit 8.)

- The construction industry paid 10.1 percent of all private sector wages in 2014. Total construction wages increased 9.5 percent to $1.3 billion. The nonresident share rose from 16.0 percent in 2013 to 17.6 percent in 2014.

- Construction wages for residents rose 7.3 percent during the year while nonresident wages grew by 20.7 percent. Like the oil industry, residents in construction work more quarters than nonresidents, averaging 3.3 quarters versus 2.3.

Within the construction industry, specialty trade contractors accounted for most of the workers and wages, and were an even greater share in 2014. The number of residents in the specialty trade contractors sector increased 1.2 percent, or by 123 workers, while the number of nonresidents went up by 16.2 percent, or 398 workers.

8 Construction Industry Workers
Alaska, 2004 to 2014



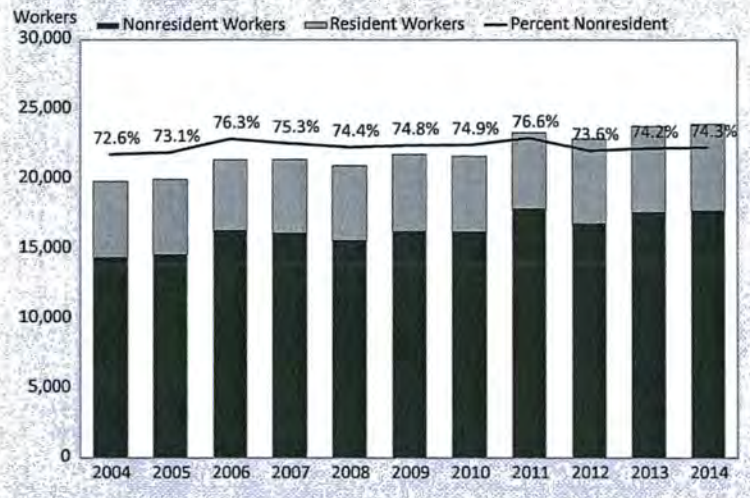
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

9 Construction Industry, 20 Largest Occupations
Alaska, 2014

Occupation title	Total workers	Percent nonresident
Construction Laborers	4,469	22.6%
Carpenters	2,809	21.7%
Operating Engineers and Other Construction Equipment Operators	2,018	24.8%
Electricians	1,651	11.7%
Plumbers, Pipefitters, and Steamfitters	1,224	13.5%
Construction and Related Workers, All Other	948	38.6%
Heavy and Tractor-Trailer Truck Drivers	773	17.3%
Construction Managers	663	23.4%
Helpers, Construction Trades, All Other	569	19.3%
Painters, Construction and Maintenance	543	23.9%
Supervisors of Construction and Extraction Workers	540	32.6%
Roofers	468	16.5%
Helpers — Carpenters	453	23.6%
Office and Administrative Support Workers, All Other	439	16.4%
Sheet Metal Workers	405	9.4%
Office Clerks, General	393	10.4%
Maintenance and Repair Workers, General	381	69.0%
Bookkeeping, Accounting, and Auditing Clerks	380	7.6%
Cement Masons and Concrete Finishers	355	35.8%
Structural Iron and Steel Workers	249	29.7%

Note: Occupation totals include only workers in this industry. Additional workers in these occupations may be found in other industries.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

10 Seafood Processing Workers
Alaska, 2004 to 2014



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Heavy and civil engineering had the lowest number of workers but the highest quarterly wages. Its number of nonresidents increased 15.4 percent to 1,879, and the number of residents increased 11.4 percent to 5,300.

Seafood Processing Industry

Fishing is a critical component of Alaska's economy, but because fish harvesters are self-employed and exempt from reporting employment and wages, most harvesters and crew aren't included in this report. Seafood processors, on the other hand, are included in wage record data and can be described in this report.

- Historically, seafood processing has had the highest percentage of nonresident workers of any industry, a trend that continued in 2014.
- Alaska's seafood processing industry employed 17,792 nonresidents in 2014, representing 74.3 percent of the processing workforce. (See Exhibit 10.) Nonresidents earned $257.8 million, or 64.7 percent, of total wages.
- Nonresident seafood processors made up 20.2 percent of the total nonresident workforce, down from 20.5 percent in 2013.
- The number of workers in seafood processing was up 0.7 percent from 2013, and the proportion of nonresidents rose from 74.2 percent to 74.3 percent.
- Total seafood processing wages increased 1.6 percent in 2014. Wages for nonresidents rose 0.2 percent and resident wages increased 4.2 percent.
- The portion of seafood processing wages earned by nonresidents fell in 2014, from 65.7 percent to 64.7 percent.

Although self-employed fish harvesters aren't part of the worker totals or the total nonresident hire rate, the department estimates their numbers each year from other data sources. In 2014, nonresidents were an estimated 44.9 percent of the harvesting workforce, which includes permit holders and their crew. Nonresidents took in 61.9 percent of gross earnings.[4]

Metal Mining Industry

Metal mining is of both historical and contemporary importance to Alaska's economy. The quests for gold, silver, copper, lead, and rare earth elements employed 3,252 people in 2014 and contributed $278.7 million in wages.

- Worker counts in the metal mining industry[5] dropped to 3,252 in 2014, a 9.8 percent decrease.
- The number of nonresidents in metal mining fell 17.7 percent, from 1,341 to 1,104, while residents decreased by 5.1 percent, from 2,264 to 2,148.
- The percentage of nonresidents fell from 37.2 in 2013 to 33.9 in 2014. (See Exhibit 13.)
- The share of overall wages going to nonresidents also fell, from 33.7 percent to 31.9 percent. Nonresidents earned $89.0 million in 2014, just 0.2 percent more than the year before.
- Resident wages increased 8.7 percent to $189.7 million.
- Average annual wages for residents in metal mining were higher than for nonresidents. Residents earned $88,331 compared to $80,620 for nonresidents. With fewer nonresident workers and slightly higher total wages, nonresidents' average annual wages increased 21.8 percent while annual

11 Seafood Processing, 20 Largest Occupations
Alaska, 2014

Occupation title	Total workers	Percent nonresident
Seafood Processing Workers, Except Surimi and Fish Roe	16,301	78.5%
Meat, Poultry, and Fish Cutters and Trimmers	2,090	79.2%
Fishers and Related Fishing Workers	746	58.7%
Office Clerks, General	305	65.9%
Laborers and Freight, Stock, and Material Movers, Hand	277	27.4%
Material Moving Workers, All Other	240	84.6%
Fish Roe Technicians	199	64.8%
Maids and Housekeeping Cleaners	187	61.5%
Maintenance and Repair Workers, General	185	69.2%
Production Workers, All Other	181	61.3%
Seafood Processing Workers Supervisors/First-Line Managers	160	65.6%
Surimi Technicians	131	89.3%
Machinists	124	90.3%
Receptionists and Information Clerks	118	15.3%
First-Line Supervisors of Production and Operating Workers	108	60.2%
Ship Engineers	108	81.5%
Cooks, Institution and Cafeteria	96	69.8%
Electricians	90	83.3%
Packaging and Filling Machine Operators and Tenders	83	28.9%
Mechanical Engineers	82	74.4%

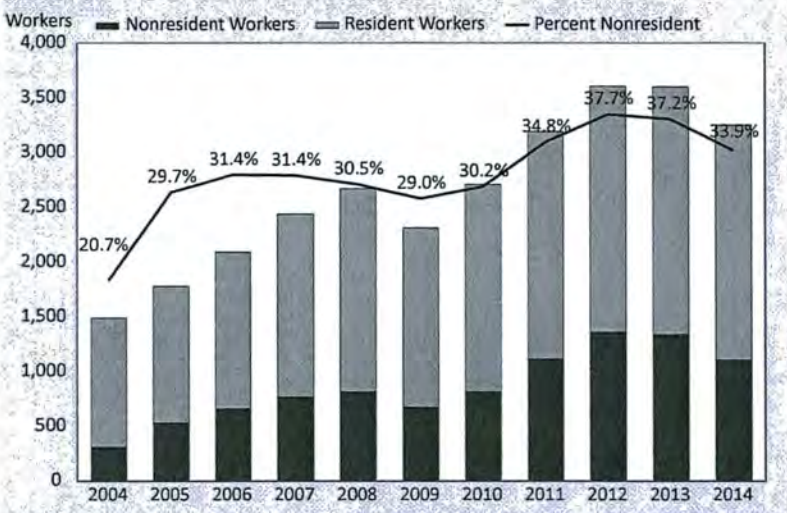
Note: Occupation totals include only workers in this industry. Additional workers in these occupations may be found in other industries.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

12 Seafood Processing, Workers and Wages
By area, Alaska, 2014

	Total		Nonresident			
Borough or Census Area	Workers	Wages	Workers	Percent	Wages	Percent
Aleutians East	3,569	$74,528,288	3,244	90.9%	$63,451,584	85.1%
Aleutians West	3,025	$64,776,501	2,027	67.0%	$33,942,051	52.4%
Anchorage	559	$11,175,514	222	39.7%	$2,496,929	22.3%
Bethel	189	$1,549,455	57	30.2%	$616,372	39.8%
Bristol Bay	2,532	$22,228,691	2,340	92.4%	$20,026,604	90.1%
Denali	0	$0	0	–	$0	–
Dillingham	1,005	$9,378,650	881	87.7%	$8,049,844	85.8%
Fairbanks North Star	12	$164,607	N/D	N/D	N/D	N/D
Haines	310	$3,412,345	290	93.5%	$3,040,685	89.1%
Hoonah-Angoon	32	$445,659	14	43.8%	$112,263	25.2%
Juneau	362	$5,697,769	242	66.9%	$3,553,630	62.4%
Kenai Peninsula	1,639	$16,680,472	1,092	66.6%	$9,029,941	54.1%
Ketchikan	871	$11,542,846	685	78.6%	$7,547,033	65.4%
Kodiak Island	2,667	$54,430,569	1,190	44.6%	$16,766,954	30.8%
Kusilvak	449	$3,162,474	23	5.1%	$462,191	14.6%
Lake and Peninsula	368	$4,068,319	354	96.2%	$3,637,784	89.4%
Matanuska-Susitna	11	$71,766	0	–	$0	–
Nome	270	$4,956,360	40	14.8%	$360,578	7.3%
North Slope	0	$0	0	–	$0	–
Northwest Arctic	6	$6,425	0	–	$0	–
Petersburg	837	$10,806,277	691	82.6%	$7,348,450	68.0%
Prince of Wales-Hyder	471	$7,093,482	323	68.6%	$5,059,149	71.3%
Sitka	765	$16,613,491	519	67.8%	$8,194,397	49.3%
Skagway	18	$158,413	9	50.0%	$54,708	34.5%
Southeast Fairbanks	0	$0	0	–	$0	–
Valdez-Cordova	1,628	$20,420,375	1,381	84.8%	$14,459,940	70.8%
Wrangell	351	$5,213,739	286	81.5%	$3,829,971	73.5%
Yakutat	60	$1,312,531	22	36.7%	$298,635	22.8%
Yukon-Koyukuk	44	$112,008	N/D	N/D	N/D	N/D
Unknown	1,907	48,226,099	1,851	97.1%	45,423,013	94.2%
Total	23,957	$398,233,125	17,792	74.3%	$257,808,146	64.7%

N/D = Not disclosable. Note: Private sector only
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

13 Metal Mining Workers
Alaska, 2004 to 2014



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

14 Metal Mining Industry, 20 Largest Occupations
Alaska, 2014

Occupation title	Total workers	Percent nonres
Mining Machine Operators, All Other	681	27.0%
Extraction Workers, All Other	325	54.5%
Miners, Except Drillers and Machine Operators	259	38.6%
Millwrights	180	33.3%
Mobile Heavy Equipment Mechanics, Except Engines	130	55.4%
Mining and Geological Engineers, Including Mining Safety Engineers	105	46.7%
Plant and System Operators, All Other	98	7.1%
Mechanics, Mine Machinery	87	34.5%
Construction Laborers	79	15.2%
First-Line Supervisors of Mechanics, Installers, and Repairers	65	18.5%
Electricians	64	64.1%
Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	57	12.3%
Earth Drillers, Except Oil and Gas	55	85.5%
Geoscientists, Except Hydrologists and Geographers	42	33.3%
Chemical Technicians	40	20.0%
Mine Cutting and Channeling Machine Operators	35	42.9%
Managers, All Other	33	51.5%
Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	30	46.7%
Water and Wastewater Treatment Plant and System Operators	30	30.0%
First-Line Supervisors of Production and Operating Workers	29	44.8%

Note: Occupation totals include only workers in this industry. Additional workers in these occupations may be found in other industries.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

wages for residents increased by 14.5 percent.

- Residents worked more quarters than nonresidents. In 2014, 82.3 percent of residents in metal mining worked all four quarters, compared to 52.5 percent of nonresident workers. Both residents and nonresidents are working more, however. Residents worked an average of 3.7 quarters, up from 3.5 in 2013, while nonresidents worked an average of 3.1, up from 2.7.

- Nonresidents earned an average of $26,301 each quarter (up 8.9 percent), while residents made $23,884 (up 8.7 percent).

Visitor-Related Industries

Although visitor expenditures play a major part in several Alaska sectors, there is no specific "visitor industry" in the data. However, several industries can be considered "visitor-related": accommodation, air transportation, scenic and sightseeing transportation,[6] and food service and drinking establishments. (See Exhibit 15.)

- Nonresidents in visitor-related industries accounted for 21.5 percent of the state's nonresident workers but made just 9.6 percent of nonresident wages.

- Visitor-related industries employed 62,356 workers in 2014, up from 61,864 in 2013. The number of nonresidents was up 3.8 percent in 2014, to 18,856, and the number of residents dropped 0.4 percent, to 43,500.

- Nonresidents in visitor-related industries earned $245.9 million in wages, up 7.8 percent, while residents earned $957.2 million, up 3.7 percent.

Food services and drinking places is the largest of the visitor-related industries, with 29,497 workers in 2014, down 0.7 percent from 2013. (See Exhibit 15.)

15 Visitor-Related Industries, Workers and Wages
Alaska, 2014

Industry	Total Workers	Total Wages (mil)	Nonresident Workers	Nonresident Percent	Nonresident Wages (mil)	Nonresident Percent
Air Transportation	7,349	$317.9	1,772	24.1%	$57.2	18.0%
Scenic and Sightseeing Transportation	3,342	$59.5	1,768	52.9%	$25.1	42.2%
Support Activities for Transportation	3,112	$122.0	567	18.2%	$15.8	13.0%
Performing Arts, Spectator Sports, and Related Industries	1,248	$14.8	339	27.2%	$3.0	20.5%
Amusement, Gambling, and Recreation Industries	5,285	$65.3	1,684	31.9%	$15.4	23.6%
Accommodation	12,523	$200.7	5,704	45.5%	$61.8	30.8%
Food Services and Drinking Places	29,497	$422.9	7,022	23.8%	$67.6	16.0%
Leisure and Hospitality*	49,388	$718.3	15,031	30.4%	$150.5	21.0%

*Leisure and hospitality is a NAICS designation that combines the recreation, accommodation, and food services sectors.
Note: Occupation totals include only workers in this industry. Additional workers in these occupations may be found in other industries.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

- In 2014, 47.3 percent of workers in a visitor-related industry worked in food services and drinking places.

- The sector's nonresident percentage fell in 2014, from 24.0 to 23.8, but the percentage of wages remained the same at 16.0 percent. (See Exhibit 16.)

Within the visitor-related industries, the worker numbers grew fastest in air transportation, increasing by 4.5 percent, or 314 workers, in 2014. Nonresidents made up most of that increase, adding 266 workers compared to 48 resident workers. Air transportation is the highest-paying visitor-related industry in terms of average wages per worker, primarily due to high-paying occupations such as pilots.[7]

- Nonresidents made up 24.1 percent of air transportation workers and earned 18.0 percent of wages.

- The number of nonresidents in air transportation increased 17.7 percent over the year, from 1,506 in 2013 to 1,772 in 2014. Resident workers increased by 0.9 percent, to 7,349.

Accommodation typically has one of the highest nonresident percentages of all visitor-related industries and is also among the highest in all industries.

- Total accommodation workers were up 4.1 percent in 2014, to 12,523. Nonresidents were 45.5 percent and they earned 30.8 percent of wages. (See Exhibit 17.)

- The number of nonresident accommodation workers rose from 5,212 in 2013 to 5,704 in 2014.

Health Care Industry

The health care industry was one of the largest industries in Alaska in 2014 and has grown considerably over the last decade. Some rapidly expanding industries have hired more nonresidents, but there is little evidence of this in health care.

Despite a 29.5 percent increase in the number of health care workers in Alaska over the last 10 years, to 38,444 in 2014, the percentage of nonresident workers has remained largely consistent. (See Exhibit 19.)

- In 2014, 3,983 nonresident workers made up 10.4 percent of all health care workers and earned 7.9 percent of the industry's $1.8 billion in wages.

- Average quarterly wages for health care workers rose from $12,852 in 2013 to $13,275 in 2014.

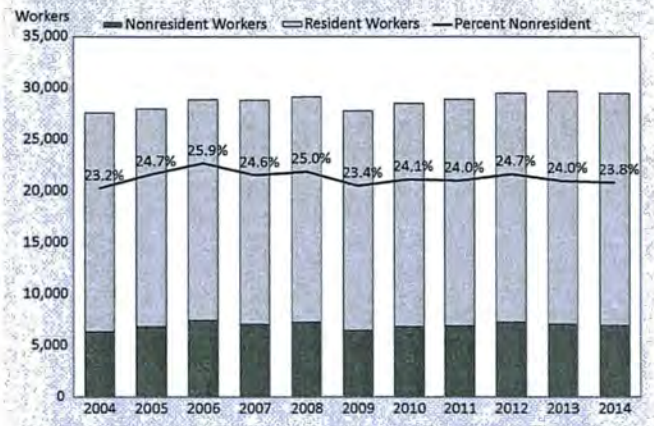
- Residents in health care earned less per quarter in 2014, at $13,176 versus $14,535 for nonresidents.

Within the health care industry are ambulatory health care services, hospitals, and nursing and residential care facilities.

- Ambulatory health care service companies, which do not provide inpatient care, employed 19,744 workers, or 51.4 percent of all health care workers, of which 10.9 percent were nonresidents.

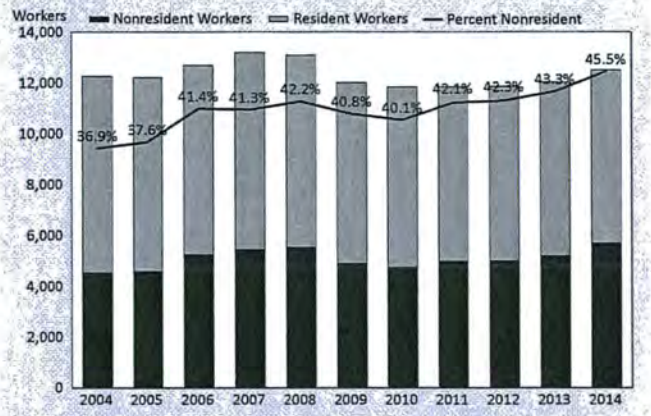
- Hospitals employed an additional 34.9 percent, or 13,424 workers, with 9.5 percent nonresidents.

16 Workers in Eating and Drinking
Alaska, 2004 to 2014



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

17 Accommodation Workers
Alaska, 2004 to 2014



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

18 Visitor-Related Industries, 20 Largest Occupations
Alaska, 2014

Occupation title	Total workers	Percent nonres
Waiters and Waitresses	5,793	30.7%
Combined Food Preparation and Serving Workers, Including Fast Food	5,772	20.4%
Maids and Housekeeping Cleaners	3,425	38.8%
Cooks, Restaurant	3,268	37.7%
Food Preparation Workers	3,240	22.2%
Dishwashers	1,984	37.1%
Bartenders	1,532	28.1%
Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	1,497	20.3%
Food Preparation and Serving Related Workers, All Other	1,363	29.3%
Airline Pilots, Copilots, and Flight Engineers	1,239	41.4%
Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	1,216	24.0%
Hotel, Motel, and Resort Desk Clerks	1,157	36.6%
Tour Guides and Escorts	1,059	65.8%
Dining Room and Cafeteria Attendants and Bartender Helpers	1,054	27.6%
First-Line Supervisors of Food Preparation and Serving Workers	986	25.4%
Material Moving Workers, All Other	979	11.5%
Aircraft Mechanics and Service Technicians	941	17.5%
Reservation and Transportation Ticket Agents and Travel Clerks	901	10.3%
Customer Service Representatives	808	31.1%
Commercial Pilots	720	50.7%

Note: Occupation totals include only workers in this industry. Additional workers in these occupations may be found in other industries.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

- Nursing and residential care facilities had the smallest share of health care workers at just 13.7 percent, or 5,276 total workers, of which 10.5 percent were nonresidents.

Other Industry Sectors

Exhibit A2 in the appendix gives detailed resident data by industry. Private sector industries with a low percentage of nonresidents are primarily in the utilities and the financial and insurance industries. State and local government both continue to employ a low percentage of nonresidents, at 6.8 percent each in 2014.

Nonresidents by Occupation

We found large numbers of nonresidents in a variety of occupations, particularly seafood processing workers, retail sales persons, waiters and waitresses, and cashiers. (See exhibits 21 and 22.)

Some occupations with large numbers of nonresidents have relatively high pay, and though they may require significant training or education, this suggests an opportunity for

training programs or a career path for unemployed Alaskans with the necessary credentials.

Exhibit 23 lists higher-than-average wage occupations with the largest number of nonresident workers. Notable high-paying occupations with large numbers of nonresidents include construction laborers; fishers and fishing-related workers; operating engineers and other construction equipment operators; airline pilots, copilots, flight engineers; and hand laborers.

Exhibit 21 lists occupations with the largest numbers of nonresidents regardless of wages. Many of these occupations present entry-level opportunities for unemployed Alaskans with minimal work experience or few skills. These include seafood processing workers, retail sales workers, waiters/waitresses, and cashiers.

Geographic Distribution

Matching employment records that show place of work with Permanent Fund Dividend applicant addresses also helps determine whether Alaska residents live in the borough or census area where they work, or live elsewhere in the state.[8] Overall, 66.7 percent of workers were residents of their work area in 2014, while 12.1 percent were residents of Alaska but didn't live in the borough or census area where they worked. (See exhibits 24 through 27 for regional and resident data.)

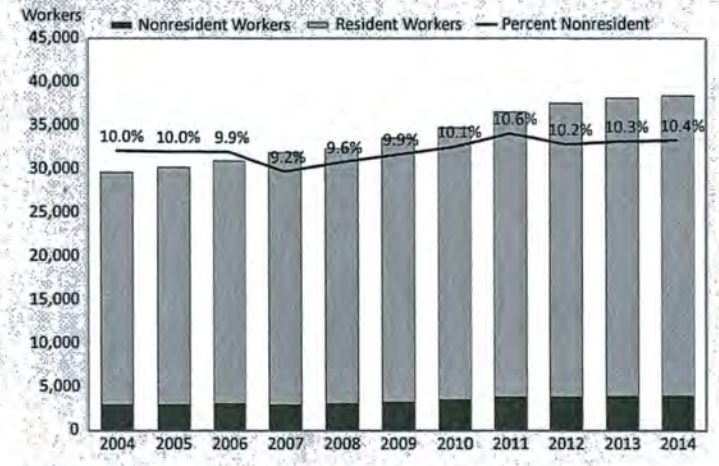
Municipality of Anchorage

Anchorage is Alaska's most populous city and the workplace of 171,023 people, or 40.5 percent of all 2014 workers in the state. Because of its size, Anchorage has a diverse economy with no dominant industry. Service industries such as health care and social assistance, retail trade, and accommodation and food services are among the city's largest.

Anchorage is a major air transportation hub, hosts the headquarters of firms that do business elsewhere, and has a large city government and school district.

The Port of Anchorage, the Ted Stevens Anchorage International Airport, the Alaska Railroad, and the highway system all make the city Alaska's primary distributor of goods.

19 Health Care Workers
Alaska, 2004 to 2014



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

20 Health Care, 20 Largest Occupations
Alaska, 2014

Occupation title	Total workers	Percent nonres
Registered Nurses	4,695	13.7%
Personal Care Aides	3,752	8.1%
Nursing Assistants	1,527	4.3%
Medical Assistants	1,470	8.5%
Receptionists and Information Clerks	1,392	9.9%
Office and Administrative Support Workers, All Other	1,349	5.3%
Dental Assistants	1,197	10.1%
Health Care Support Workers, All Other	1,066	8.6%
Medical and Health Services Managers	720	6.5%
Billing and Posting Clerks	647	6.3%
Medical Secretaries	629	7.2%
Home Health Aides	619	14.1%
Office Clerks, General	501	10.0%
Dental Hygienists	480	10.0%
Medical Records and Health Information Technicians	433	6.7%
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	421	4.5%
Physical Therapists	412	20.6%
Family and General Practitioners	393	28.5%
Radiologic Technologists	380	8.9%
First-Line Supervisors of Office and Administrative Support Workers	379	6.6%

Note: Occupation totals include only workers in this industry. Additional workers in these occupations may be found in other industries.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

21 Occupations with the Largest Numbers of Nonresident Workers

Alaska private sector, 2014

Occupation title	Nonresident workers	Resident workers	Percent nonresident	Nonresident wages (mil)	Resident wages (mil)	Percent nonresident
Seafood Processing Workers, Except Surimi and Fish Roe	12,933	3,528	78.6%	$144.2	$56.8	71.7%
Retail Salespersons	2,879	12,428	18.8%	$24.3	$193.9	11.1%
Waiters and Waitresses	1,877	4,226	30.8%	$16.3	$62.9	20.6%
Cashiers	1,787	8,731	17.0%	$12.5	$124.6	9.1%
Meat, Poultry, and Fish Cutters and Trimmers	1,741	658	72.6%	$11.2	$8.3	57.4%
Maids and Housekeeping Cleaners	1,679	3,524	32.3%	$13.9	$54.2	20.4%
Construction Laborers	1,348	5,270	20.4%	$33.4	$160.2	17.3%
Fishers and Related Fishing Workers	1,289	699	64.8%	$23.0	$9.1	71.6%
Combined Food Preparation and Serving Workers, Including Fast Food	1,278	5,222	19.7%	$8.2	$52.4	13.5%
Cooks, Restaurant	1,268	2,100	37.6%	$12.3	$34.6	26.1%
Operating Engineers and Other Construction Equipment Operators	1,121	2,582	30.3%	$61.5	$151.1	28.9%
Airline Pilots, Copilots, and Flight Engineers	971	951	50.5%	$115.3	$98.9	53.8%
Laborers and Freight, Stock, and Material Movers, Hand	966	3,456	21.8%	$12.8	$88.4	12.6%
Service Unit Operators, Oil, Gas, and Mining	917	978	48.4%	$61.8	$88.2	41.2%
Managers, All Other	907	3,113	22.6%	$109.5	$315.4	25.8%
Maintenance and Repair Workers, General	895	1,987	31.1%	$22.8	$78.3	22.5%
Food Preparation Workers	878	3,145	21.8%	$6.4	$35.5	15.2%
Office Clerks, General	864	4,150	17.2%	$17.9	$113.9	13.6%
Carpenters	854	2,903	22.7%	$26.8	$117.5	18.5%
Registered Nurses	854	4,208	16.9%	$28.9	$258.7	10.0%
Tour Guides and Escorts	830	526	61.2%	$7.0	$5.0	58.5%
Dishwashers	767	1,439	34.8%	$4.7	$12.5	27.4%
Office and Administrative Support Workers, All Other	721	5,200	12.2%	$18.2	$161.7	10.1%
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	715	3,692	16.2%	$6.9	$57.7	10.7%
Heavy and Tractor-Trailer Truck Drivers	680	3,059	18.2%	$26.9	$154.0	14.9%
Electricians	652	1,949	25.1%	$42.8	$124.9	25.5%
General and Operations Managers	599	3,623	14.2%	$48.9	$289.5	14.5%
Bus Drivers, Transit and Intercity	532	637	45.5%	$6.9	$11.2	38.1%
Sailors and Marine Oilers	524	503	51.0%	$14.6	$14.2	50.7%
Captains, Mates, and Pilots of Water Vessels	520	364	58.8%	$27.4	$17.2	61.4%
Personal Care Aides	519	6,226	7.7%	$4.9	$105.0	4.5%
Food Preparation and Serving Related Workers, All Other	515	1,695	23.3%	$4.2	$25.6	14.1%
Bartenders	513	1,354	27.5%	$4.6	$20.3	18.5%
Customer Service Representatives	496	2,600	16.0%	$6.5	$70.1	8.5%
Plumbers, Pipefitters, and Steamfitters	487	1,487	24.7%	$25.7	$92.3	21.8%
Welders, Cutters, Solderers, and Brazers	482	859	35.9%	$18.9	$45.4	29.4%
Material Moving Workers, All Other	468	1,658	22.0%	$12.8	$64.3	16.6%
Stock Clerks and Order Fillers	464	2,811	14.2%	$4.6	$51.6	8.2%
Hotel, Motel, and Resort Desk Clerks	458	878	34.3%	$3.7	$13.0	21.9%
Sales and Related Workers, All Other	441	2,394	15.6%	$5.0	$63.3	7.3%
Supervisors of Construction and Extraction Workers	428	822	34.2%	$43.4	$83.8	34.1%
Commercial Pilots	415	508	45.0%	$15.9	$31.2	33.9%
Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	415	1,885	18.0%	$2.0	$15.7	11.2%
Construction and Related Workers, All Other	404	858	32.0%	$14.0	$31.3	30.9%
Construction Managers	379	986	27.8%	$41.2	$97.4	29.7%
Roustabouts, Oil and Gas	365	974	27.3%	$19.4	$51.4	27.4%
Receptionists and Information Clerks	364	2,798	11.5%	$4.2	$59.9	6.5%
Security Guards	363	1,846	16.4%	$8.1	$61.6	11.6%
Bookkeeping, Accounting, and Auditing Clerks	350	3,475	9.2%	$6.5	$115.1	5.3%
Transportation Workers, All Other	346	1,497	18.8%	$35.8	$82.2	30.4%

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

22 Occupations With High Percentages of Nonresident Workers

Alaska private sector, 2014

Occupation title	Percent nonresident	Nonresident workers	Resident workers	% Nonres wages	Nonresident wages	Resident wages
Seafood Processing Workers, Except Surimi and Fish Roe	78.4%	12,922	3,554	72.6%	$147,271,792	$55,588,329
Seafood Processing Workers Supervisors/First Line Managers	74.9%	167	56	69.4%	$4,731,061	$2,081,258
Ship Engineers	73.4%	207	75	71.6%	$12,864,303	$5,101,394
Zoologists and Wildlife Biologists	70.7%	341	141	43.7%	$5,593,888	$7,219,881
Fishers and Related Fishing Workers	68.6%	1,218	557	71.4%	$20,333,350	$8,138,471
Fish Roe Technicians	68.6%	142	65	72.4%	$2,783,942	$1,059,011
Travel Guides	68.0%	289	136	61.8%	$2,531,721	$1,563,248
Meat, Poultry, and Fish Cutters and Trimmers	67.6%	1,641	787	53.2%	$10,203,870	$8,992,665
Entertainers and Performers, Sports and Related Workers, All Other	67.2%	168	82	70.1%	$1,390,363	$592,332
Captains, Mates, and Pilots of Water Vessels	61.9%	520	320	62.6%	$26,068,545	$15,598,516
Tour Guides and Escorts	61.6%	797	497	61.0%	$6,932,221	$4,435,945
Earth Drillers, Except Oil and Gas	59.9%	154	103	55.3%	$6,057,547	$4,905,237
Machinists	54.7%	168	139	42.6%	$6,124,513	$8,244,913
Sailors and Marine Oilers	53.3%	549	481	51.3%	$14,319,349	$13,588,195
Extraction Workers, All Other	51.8%	232	216	53.5%	$17,401,124	$15,144,637
Service Unit Operators, Oil, Gas, and Mining	51.1%	802	766	42.4%	$50,937,570	$69,199,948
Inspectors, Testers, Sorters, Samplers, and Weighers	50.8%	364	352	53.1%	$29,552,152	$26,124,904
Chefs and Head Cooks	49.4%	307	314	39.6%	$6,579,597	$10,033,693
Airline Pilots, Copilots, and Flight Engineers	48.8%	932	978	54.0%	$114,365,287	$97,533,957
Construction and Building Inspectors	48.6%	138	146	48.2%	$9,391,034	$10,083,352
Miners, Except Drillers and Machine Operators	48.2%	148	159	41.6%	$8,140,147	$11,441,822
Millwrights	45.6%	136	162	39.3%	$7,499,249	$11,587,339
Recreation Workers	44.6%	254	316	34.2%	$1,710,566	$3,286,502
Entertainment Attendants and Related Workers, All Other	43.8%	120	154	38.4%	$838,256	$1,342,007
Teachers and Instructors, All Other	43.4%	204	266	21.7%	$1,350,749	$4,864,224
Commercial Pilots	41.9%	343	476	31.9%	$13,282,938	$28,361,663
Bus Drivers, Transit and Intercity	40.6%	458	669	35.2%	$6,056,515	$11,135,620
Designers, All Other	40.5%	111	163	47.7%	$14,678,030	$16,110,816
Dancers	40.3%	112	166	30.3%	$587,702	$1,352,414
Rotary Drill Operators, Oil and Gas	39.9%	177	267	36.4%	$13,377,160	$23,383,650
Welders, Cutters, Solderers, and Brazers	37.6%	364	604	27.9%	$12,391,935	$31,952,352
Cement Masons and Concrete Finishers	37.6%	133	221	36.1%	$3,486,794	$6,184,147
Helpers — Extraction Workers	37.5%	113	188	31.1%	$4,846,901	$10,749,344
Cooks, Restaurant	37.4%	1,210	2,021	26.6%	$11,631,179	$32,126,903
Baggage Porters and Bellhops	36.1%	127	225	23.3%	$1,367,330	$4,495,729
First-Line Supervisors of Housekeeping and Janitorial Workers	36.0%	140	249	23.3%	$1,923,034	$6,316,457
Electrical and Electronic Engineering Technicians	35.9%	111	198	38.8%	$10,640,735	$16,755,330
Hotel, Motel, and Resort Desk Clerks	35.0%	484	899	23.8%	$3,931,413	$12,574,138
Agricultural Workers, All Other	34.6%	90	170	22.7%	$781,778	$2,654,843
Mining Machine Operators, All Other	34.2%	284	547	27.3%	$13,672,876	$36,392,836
Cooks, All Other	33.9%	332	646	26.7%	$5,246,670	$14,421,615
Compliance Officers	33.9%	78	152	17.7%	$2,012,330	$9,335,187
Mining and Geological Engineers, Including Mining Safety Engineers	33.3%	74	148	25.8%	$4,477,768	$12,854,971
Dishwashers	33.0%	666	1,354	25.3%	$4,004,265	$11,809,423
Insulation Workers, Floor, Ceiling, and Wall	33.0%	88	179	33.0%	$3,288,112	$6,667,793
Maids and Housekeeping Cleaners	32.3%	1,688	3,541	22.3%	$14,695,104	$51,131,727
Cooks, Fast Food	32.2%	122	257	23.6%	$829,958	$2,688,192
Geoscientists, Except Hydrologists and Geographers	32.1%	134	284	29.1%	$16,776,746	$40,922,138
Supervisors of Construction and Extraction Workers	31.9%	391	835	33.0%	$35,875,082	$72,700,678
Motor Vehicle Operators, All Other	31.9%	65	139	18.6%	$570,392	$2,492,832
Structural Iron and Steel Workers	31.6%	116	251	23.7%	$3,810,416	$12,280,037
Geological and Petroleum Technicians	31.5%	246	535	29.1%	$13,681,570	$33,296,739
Lodging Managers	31.2%	100	221	16.8%	$1,795,298	$8,874,237
Construction and Related Workers, All Other	31.0%	406	902	31.8%	$16,109,644	$34,585,430
Cooks, Short Order	30.7%	183	414	25.0%	$1,900,720	$5,702,781
Electrical and Electronics Repairers, Commercial and Industrial Equipment	30.6%	71	161	26.7%	$5,382,578	$14,755,553
Mobile Heavy Equipment Mechanics, Except Engines	30.3%	289	664	29.0%	$17,647,149	$43,280,078

22 Occupations With High Percentages of Nonresident Workers, continued
Alaska private sector, 2014

Occupation title	Percent nonresident	Nonresident workers	Resident workers	% Nonres wages	Nonresident wages	Resident wages
Production Workers, All Other	30.1%	446	1,034	31.2%	$25,634,678	$56,624,330
Mechanical Engineers	29.5%	104	248	24.4%	$6,899,683	$21,407,790
Occupational Health and Safety Specialists	29.4%	103	247	27.4%	$8,680,415	$22,948,100
First-Line Supervisors of Production and Operating Workers	29.2%	174	422	23.7%	$11,015,383	$35,467,438
Waiters and Waitresses	28.7%	1,627	4,047	20.1%	$14,508,984	$57,775,273
Roustabouts, Oil and Gas	28.7%	371	920	26.7%	$17,489,341	$47,952,519
Self-Enrichment Education Teachers	28.6%	63	157	20.9%	$541,147	$2,051,896
Dentists, General	28.6%	60	150	14.1%	$2,824,141	$17,245,232
Material Moving Workers, All Other	28.5%	494	1,239	20.4%	$12,355,073	$48,193,412
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	28.4%	91	229	25.7%	$7,958,223	$22,967,611
Operating Engineers and Other Construction Equipment Operators	28.3%	1,030	2,615	26.2%	$51,155,946	$143,854,284
Petroleum Engineers	27.9%	137	354	24.6%	$24,280,691	$74,370,058
Helpers, Construction Trades, All Other	27.5%	255	673	24.3%	$6,042,931	$18,835,014
Amusement and Recreation Attendants	27.5%	131	345	20.5%	$732,336	$2,840,601
Media and Communication Workers, All Other	27.5%	66	174	16.3%	$1,087,235	$5,573,151
Family and General Practitioners	27.2%	113	302	17.4%	$7,264,872	$34,494,581
Industrial Machinery Mechanics	27.0%	105	284	25.4%	$7,350,591	$21,565,864
Maintenance Workers, Machinery	26.4%	115	321	23.5%	$5,185,051	$16,922,310
Cooks, Institution and Cafeteria	26.3%	162	453	19.6%	$2,933,899	$12,033,216
Construction Managers	26.1%	356	1,006	24.9%	$31,302,529	$94,588,526
Food Servers, Nonrestaurant	26.1%	108	306	12.6%	$477,505	$3,325,322
Physical Therapists	26.0%	114	325	15.0%	$3,408,453	$19,302,574
Bartenders	25.8%	502	1,442	17.2%	$4,289,600	$20,703,477
Physicians and Surgeons, All Other	25.8%	94	270	13.5%	$10,336,278	$66,436,564
Dining Room and Cafeteria Attendants and Bartender Helpers	25.7%	301	869	17.9%	$1,760,566	$8,088,903
Grounds Maintenance Workers, All Other	25.2%	259	768	15.1%	$2,394,530	$13,421,467
Transportation Attendants, Except Flight Attendants	25.2%	172	510	22.1%	$2,394,558	$8,435,250
Landscaping and Groundskeeping Workers	24.9%	372	1,123	19.7%	$3,011,139	$12,288,153
Electricians	24.6%	664	2,038	24.2%	$38,219,732	$119,508,207
Surgical Technologists	24.4%	49	152	15.3%	$1,269,697	$7,055,280
Logisticians	24.0%	69	218	20.0%	$2,122,620	$8,489,930
Computer Programmers	24.0%	59	187	18.2%	$2,645,795	$11,906,412
Maintenance and Repair Workers, General	23.9%	615	1,962	17.9%	$15,914,525	$72,825,935
Surveyors	23.9%	114	363	20.9%	$5,593,973	$21,186,530
Painters, Construction and Maintenance	23.7%	157	506	17.2%	$2,746,593	$13,177,773
Engineers, All Other	23.2%	343	1,135	21.1%	$31,790,043	$118,979,986
Industrial Truck and Tractor Operators	23.2%	136	449	16.2%	$3,260,480	$16,892,560
Production, Planning, and Expediting Clerks	23.1%	96	319	25.4%	$5,292,046	$15,516,770
Food Preparation and Serving Related Workers, All Other	23.0%	504	1,692	14.6%	$3,936,058	$23,087,274
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	23.0%	112	376	21.3%	$870,906	$3,209,822
Managers, All Other	22.8%	685	2,317	31.2%	$83,970,342	$185,119,171
Food Preparation Workers	22.7%	955	3,250	16.6%	$6,835,500	$34,263,741
Physician Assistants	22.2%	103	360	17.8%	$6,705,251	$30,874,355
Laborers and Freight, Stock, and Material Movers, Hand	22.0%	931	3,293	13.9%	$12,579,403	$77,850,742
Nonfarm Animal Caretakers	22.0%	87	308	16.2%	$749,737	$3,872,794
Laundry and Dry Cleaning Workers	21.7%	107	385	9.4%	$764,223	$7,375,150
Excavating and Loading Machine and Dragline Operators	21.7%	57	206	15.0%	$2,018,977	$11,451,217
Surveying and Mapping Technicians	21.7%	53	191	16.7%	$1,868,377	$9,350,483
Carpenters	21.4%	823	3,020	16.6%	$22,574,662	$113,757,201
Tire Repairers and Changers	21.4%	93	342	11.9%	$910,982	$6,774,820
Hazardous Materials Removal Workers	21.3%	144	531	21.1%	$5,857,661	$21,916,457
Computer Systems Analysts	21.3%	100	369	26.2%	$9,961,908	$28,064,743
First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	21.2%	53	197	20.1%	$2,822,096	$11,206,317

Note: Occupations with 200 or more total employees
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

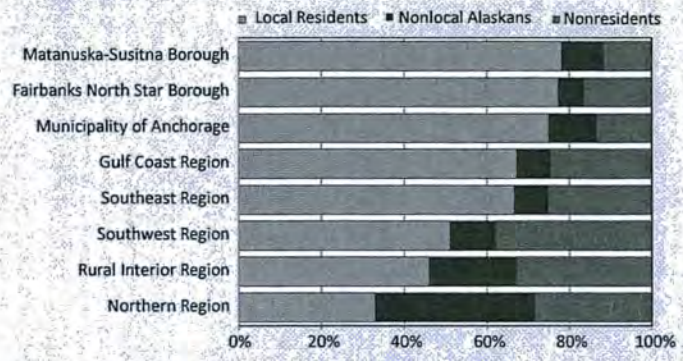
23 High-Paying Private Occupations With Large Numbers of Nonresidents

Greater than Alaska median earnings ($7,223 per quarter), 2014

Occupation title	Nonresident workers	Total workers	Percent nonresident	Avg quarterly wages
Construction Laborers	1,348	6,618	20.4%	$10,143
Fishers and Related Fishing Workers	1,289	1,988	64.8%	$7,969
Operating Engineers and Other Construction Equipment Operators	1,121	3,703	30.3%	$17,263
Airline Pilots, Copilots, and Flight Engineers	971	1,922	50.5%	$32,921
Laborers and Freight, Stock, and Material Movers, Hand	966	4,422	21.8%	$7,719
Service Unit Operators, Oil, Gas, and Mining	917	1,895	48.4%	$23,262
Managers, All Other	907	4,020	22.6%	$28,941
Maintenance and Repair Workers, General	895	2,882	31.1%	$11,426
Office Clerks, General	864	5,014	17.2%	$8,084
Carpenters	854	3,757	22.7%	$12,586
Registered Nurses	854	5,062	16.9%	$16,054
Office and Administrative Support Workers, All Other	721	5,921	12.2%	$9,017
Heavy and Tractor-Trailer Truck Drivers	680	3,739	18.2%	$14,175
Electricians	652	2,601	25.1%	$18,616
General and Operations Managers	599	4,222	14.2%	$22,218
Sailors and Marine Oilers	524	1,027	51.0%	$10,404
Captains, Mates, and Pilots of Water Vessels	520	884	58.8%	$17,657
Customer Service Representatives	496	3,096	16.0%	$7,526
Plumbers, Pipefitters, and Steamfitters	487	1,974	24.7%	$17,645
Welders, Cutters, Solderers, and Brazers	482	1,341	35.9%	$15,774
Material Moving Workers, All Other	468	2,126	22.0%	$10,984
Sales and Related Workers, All Other	441	2,835	15.6%	$7,616
Supervisors of Construction and Extraction Workers	428	1,250	34.2%	$28,626
Commercial Pilots	415	923	45.0%	$16,303
Construction and Related Workers, All Other	404	1,262	32.0%	$12,647
Construction Managers	379	1,365	27.8%	$28,148
Roustabouts, Oil and Gas	365	1,339	27.3%	$15,400
Security Guards	363	2,209	16.4%	$9,580
Bookkeeping, Accounting, and Auditing Clerks	350	3,825	9.2%	$9,089
Transportation Workers, All Other	346	1,843	18.8%	$18,106
Production Workers, All Other	334	1,004	33.3%	$14,682
Chefs and Head Cooks	327	681	48.0%	$9,246
Mobile Heavy Equipment Mechanics, Except Engines	316	971	32.5%	$19,977
Engineers, All Other	313	1,298	24.1%	$31,319
Zoologists and Wildlife Biologists	312	436	71.6%	$9,779
First-Line Supervisors of Retail Sales Workers	308	2,387	12.9%	$9,464
Light Truck or Delivery Services Drivers	302	1,704	17.7%	$10,017
Flight Attendants	281	676	41.6%	$7,274
Inspectors, Testers, Sorters, Samplers, and Weighers	273	591	46.2%	$22,770
Automotive Service Technicians and Mechanics	235	1,719	13.7%	$9,925
Mining Machine Operators, All Other	232	792	29.3%	$18,941
Helpers, Construction Trades, All Other	229	932	24.6%	$9,216
Sales Representatives, Services, All Other	223	1,908	11.7%	$12,810
Aircraft Mechanics and Service Technicians	220	1,195	18.4%	$14,034
Ship Engineers	208	280	74.3%	$20,001
Geological and Petroleum Technicians	203	563	36.1%	$21,780
Installation, Maintenance, and Repair Workers, All Other	202	1,141	17.7%	$17,966
Helpers Installation, Maintenance, and Repair Workers	194	984	19.7%	$10,396
Executive Secretaries and Executive Administrative Assistants	193	2,298	8.4%	$10,310
Extraction Workers, All Other	193	383	50.4%	$25,388

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

24 Worker Residency by Region
Alaska, 2014



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Anchorage is also home to Alaska's largest military base, Joint Base Elmendorf-Richardson, which also creates civilian jobs.

More nonresidents work in Anchorage than in any other region, but were only 13.6 percent of the Anchorage workforce in 2014. The 23,305 nonresidents who worked in Ancorage were most heavily concentrated in the accommodation and food services and transportation and warehousing management industries, which were both 20 percent nonresident or more.

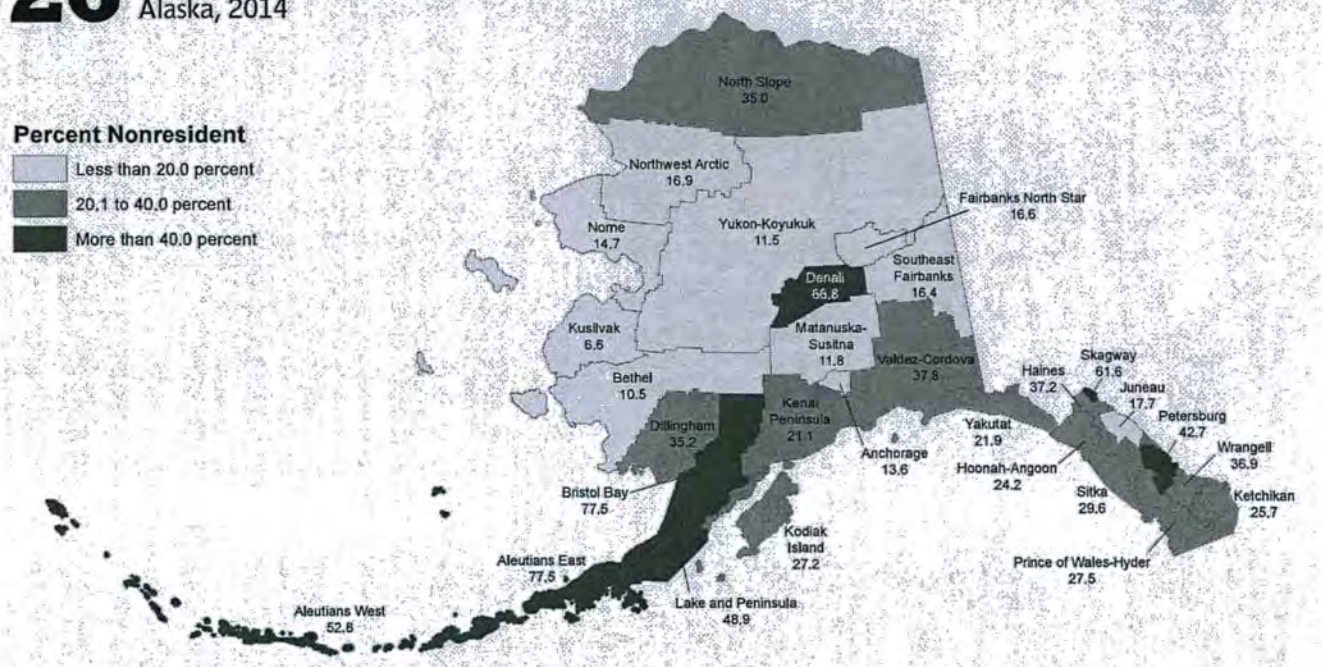
Nearly 75 percent of Anchorage workers were local residents (74.9 percent), and 11.4 percent were residents of other places in Alaska. Most of these nonlocal workers lived in the Matanuska-Susitna

25 Worker Residency by Borough or Census Area
Alaska, 2014

Region	Percent local	Local residents	Nonlocal residents	Nonresidents	Total workers
Kusilvak Census Area	84.3%	2,980	321	234	3,535
Matanuska-Susitna Borough	78.1%	23,068	2,991	3,492	29,551
Fairbanks North Star Borough	77.2%	34,760	2,799	7,454	45,013
Nome Census Area	74.9%	4,407	615	863	5,885
Anchorage Municipality	74.9%	128,166	19,552	23,305	171,023
Bethel Census Area	74.6%	7,942	1,597	1,114	10,653
Juneau, City and Borough	74.3%	15,966	1,716	3,810	21,492
Kenai Peninsula Borough	71.4%	21,137	2,224	6,232	29,593
Yukon-Koyukuk Census Area	68.3%	2,441	719	412	3,572
Yakutat, City and Borough	68.1%	280	41	90	411
Kodiak Island Borough	66.3%	5,674	551	2,328	8,553
Northwest Arctic Borough	65.7%	2,921	772	750	4,443
Prince of Wales-Hyder Census Area	65.5%	2,380	253	1,000	3,633
Hoonah-Angoon Census Area	65.4%	698	111	258	1,067
Sitka, City and Borough	64.9%	3,796	324	1,733	5,853
Ketchikan Gateway Borough	64.1%	6,133	975	2,461	9,569
Southeast Fairbanks Census Area	56.6%	1,789	855	518	3,162
Dillingham Census Area	54.8%	2,096	383	1,345	3,824
Haines Borough	54.4%	848	131	581	1,560
Wrangell, City and Borough	51.7%	764	168	546	1,478
Valdez-Cordova Census Area	50.7%	3,846	871	2,863	7,580
Petersburg Borough	50.3%	1,082	149	919	2,150
Aleutians West Census Area	40.0%	2,113	376	2,789	5,278
Lake and Peninsula Borough	38.1%	676	230	867	1,773
Skagway Municipality	29.8%	483	139	998	1,620
Denali Borough	16.7%	648	641	2,591	3,880
North Slope Borough	15.5%	3,433	11,015	7,771	22,219
Aleutians East Borough	15.3%	691	328	3,510	4,529
Bristol Bay Borough	11.2%	405	410	2,807	3,622
Unknown in Alaska	0	0	167	76	243
Offshore	0	0	319	2,740	3,059
Outside Alaska	0	0	1,262	1,431	2,693

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

26 **Nonresident Workers by Place of Work**
Alaska, 2014



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Borough, Anchorage's northern neighbor. For Mat-Su residents, Anchorage is about an hour-and-a-half commute round-trip — and with cheaper homes in Mat-Su and higher average wages in Anchorage, some workers prefer the drive.

Nonlocal Anchorage workers were concentrated in the construction industry, which was 23.1 percent nonlocal, and the mining industry (which includes the oil and gas industry), which was 16.9 percent nonlocal.

Matanuska-Susitna Borough

The Matanuska-Susitna Borough is Alaska's fastest-growing and second most populated area. Although most of the Mat-Su population lives in the greater Palmer-Wasilla area, smaller communities dot the Parks and Glenn highways.

In some ways, Mat-Su is a suburb of Anchorage, and many residents work and shop in the big city to the south. However, retail trade is Mat-Su's biggest industry, spurred by the recent construction of several new big box stores in the borough.

In 2014, 29,551 people worked in the Mat-Su Borough and just 11.8 percent were not residents of Alaska. The borough doesn't have as much employment in the industries that tend to employ high percentages of nonresidents, such as seafood processing and tourism.

Health care and social assistance and local government were other large employers in Mat-Su, with 82.4 and 94.0 percent local workers, respectively.

The largest employer of nonresidents was the accommodation and food services industry, where 20.1 percent of its 3,355 workers were nonresidents. Transportation and warehousing employed 1,169 workers, 26.6 percent of whom were nonresidents, and the educational services industry (providing training or instruction, but not including public schools) employed 607 workers at 35.7 percent nonresident. The construction industry employed 2,848 workers, of whom 452, or 15.9 percent, were nonresident.

While 78.1 percent of workers in Mat-Su were local residents in 2014, many Mat-Su residents worked elsewhere. Estimates of Mat-Su commuter patterns from 2014 suggest nearly one-third worked in Anchorage and 8.5 percent worked in the North Slope Borough.

Fairbanks North Star Borough

The Fairbanks North Star Borough is the third most

27 Resident and Nonresident Workers and Wages

By place of work and Alaska place of residence, 2014

		Resident Workers		Nonresident Workers		Wages (millions)			
Borough or Census Area	Ownership	Local resident	Other AK resident	Number	Percent nonresident	Local resident	Other AK resident	Nonresident	Percent nonresident
Anchorage/Mat-Su									
Anchorage	State Government	9,110	1,397	486	4.4%	$455.9	$69.6	$10.9	2.0%
Anchorage	Local Government	10,233	848	472	4.1%	$500.5	$48.9	$7.9	1.4%
Anchorage	Private Sector	108,823	17,307	22,347	15.1%	$4,750.2	$820.3	$741.5	11.7%
Mat-Su	State Government	1,406	201	50	3.0%	$64.3	$9.3	$1.2	1.5%
Mat-Su	Local Government	3,645	139	92	2.4%	$141.1	$5.7	$1.3	0.9%
Mat-Su	Private Sector	18,017	2,651	3,350	13.9%	$506.4	$77.9	$46.0	7.3%
Gulf Coast Region									
Kenai	State Government	1,170	160	85	6.0%	$55.6	$6.9	$2.4	3.7%
Kenai	Local Government	3,545	100	224	5.8%	$153.6	$3.1	$5.5	3.4%
Kenai	Private Sector	16,422	1,964	5,923	24.4%	$581.4	$78.7	$126.9	16.1%
Kodiak Island	State Government	273	34	34	10.0%	$13.3	$1.4	$0.7	4.4%
Kodiak Island	Local Government	889	33	100	9.8%	$31.3	$1.0	$1.9	5.5%
Kodiak Island	Private Sector	4,512	484	2,194	30.5%	$147.6	$15.5	$35.7	18.0%
Valdez-Cordova	State Government	272	86	46	11.4%	$12.1	$4.6	$1.2	6.7%
Valdez-Cordova	Local Government	734	90	109	11.7%	$23.8	$3.2	$2.1	7.2%
Valdez-Cordova	Private Sector	2,840	695	2,708	43.4%	$116.8	$27.7	$36.9	20.4%
Interior Region									
Denali	State Government	24	6	N/D	N/D	$1.4	$0.4	N/D	N/D
Denali	Local Government	128	15	16	10.1%	$3.1	$0.6	$0.3	7.8%
Denali	Private Sector	496	620	2,573	69.7%	$24.9	$28.4	$34.6	39.3%
Fairbanks North Star	State Government	4,903	327	542	9.4%	$238.9	$9.3	$10.9	4.2%
Fairbanks North Star	Local Government	3,478	122	255	6.6%	$150.6	$2.8	$3.3	2.1%
Fairbanks North Star	Private Sector	26,379	2,350	6,657	18.8%	$995.2	$82.6	$136.9	11.3%
Southeast Fairbanks	State Government	128	13	16	10.2%	$6.1	$0.7	$0.3	3.7%
Southeast Fairbanks	Local Government	423	31	27	5.6%	$11.1	$0.9	$0.4	3.5%
Southeast Fairbanks	Private Sector	1,238	811	475	18.8%	$38.0	$53.8	$25.5	21.7%
Yukon-Koyukuk	State Government	59	83	11	7.2%	$2.6	$4.1	$0.4	5.4%
Yukon-Koyukuk	Local Government	1,643	273	163	7.8%	$26.4	$4.5	$2.9	8.6%
Yukon-Koyukuk	Private Sector	739	363	238	17.8%	$16.5	$15.5	$5.5	14.7%
Northern Region									
Nome	State Government	236	41	19	6.4%	$14.7	$1.8	$0.3	2.0%
Nome	Local Government	1,888	98	219	9.9%	$43.0	$2.5	$4.5	9.1%
Nome	Private Sector	2,283	476	625	18.5%	$79.9	$18.3	$16.5	14.4%
North Slope	State Government	20	25	N/D	N/D	$1.2	$1.7	N/D	N/D
North Slope	Local Government	2,031	243	231	9.2%	$86.8	$13.1	$8.4	7.8%
North Slope	Private Sector	1,382	10,747	7,535	38.3%	$56.5	$869.5	$589.7	38.9%
Northwest Arctic	State Government	83	8	11	10.8%	$4.2	$0.8	$0.2	4.3%
Northwest Arctic	Local Government	1,225	95	176	11.8%	$30.3	$3.3	$4.2	11.1%
Northwest Arctic	Private Sector	1,613	669	563	19.8%	$62.9	$49.6	$33.8	23.1%
Southeast Region									
Haines	State Government	47	9	N/D	N/D	$1.5	$0.3	N/D	N/D
Haines	Local Government	168	33	22	9.9%	$4.7	$0.6	$0.2	4.1%
Haines	Private Sector	633	89	554	43.4%	$15.4	$1.7	$6.0	25.9%
Hoonah-Angoon	State Government	15	0	N/D	N/D	$0.5	0	N/D	N/D
Hoonah-Angoon	Local Government	295	26	40	11.1%	$6.7	$0.9	$0.5	6.3%
Hoonah-Angoon	Private Sector	388	85	217	31.4%	$7.0	$2.4	$2.6	21.5%
Juneau	State Government	4,045	403	228	4.9%	$209.4	$19.2	$7.1	3.0%
Juneau	Local Government	2,208	78	164	6.7%	$102.3	$2.6	$4.1	3.8%
Juneau	Private Sector	9,713	1,235	3,418	23.8%	$343.2	$48.6	$80.7	17.1%
Ketchikan Gateway	State Government	576	141	99	12.1%	$28.3	$8.0	$3.1	7.9%
Ketchikan Gateway	Local Government	1,176	232	106	7.0%	$52.0	$8.6	$2.5	3.9%
Ketchikan Gateway	Private Sector	4,381	602	2,256	31.2%	$139.7	$17.5	$35.7	18.5%
Petersburg	State Government	46	N/D	N/D	N/D	$2.1	N/D	N/D	N/D
Petersburg	Local Government	351	15	33	8.3%	$12.1	$0.3	$0.5	3.5%
Petersburg	Private Sector	685	131	885	52.0%	$17.6	$2.9	$10.2	33.2%
Prince of Wales-Hyder	State Government	49	N/D	N/D	N/D	$1.9	N/D	N/D	N/D
Prince of Wales-Hyder	Local Government	1,088	34	130	10.4%	$29.2	$1.2	$1.9	6.0%
Prince of Wales-Hyder	Private Sector	1,243	216	868	37.3%	$31.9	$8.6	$15.4	27.5%
Sitka	State Government	344	30	25	6.3%	$15.2	$1.0	$0.5	3.1%
Sitka	Local Government	755	21	92	10.6%	$33.7	$0.8	$1.5	4.1%
Sitka	Private Sector	2,697	273	1,616	35.2%	$87.9	$8.4	$29.0	23.2%
Skagway	State Government	18	0	0	0	$0.6	0	0	0
Skagway	Local Government	104	8	18	13.8%	$4.5	$0.2	$0.3	6.0%
Skagway	Private Sector	361	131	980	66.6%	$11.2	$2.7	$13.3	48.8%
Wrangell	State Government	19	6	N/D	N/D	$0.8	$0.2	N/D	N/D
Wrangell	Local Government	271	8	22	7.3%	$10.3	$0.2	$0.8	7.2%
Wrangell	Private Sector	474	154	523	45.4%	$12.5	$4.6	$7.6	30.8%

27 Resident and Nonresident Workers and Wages
Continued

		Resident Workers		Nonresident Workers		Wages (millions)			
Borough or Census Area	Ownership	Local resident	Other AK resident	Number	Percent nonresident	Local resident	Other AK resident	Nonresident	Percent nonresident
Southeast (cont.)									
Yakutat	State Government	12	N/D	N/D	N/D	$0.5	N/D	N/D	N/D
Yakutat	Local Government	122	11	N/D	N/D	$3.3	$0.3	N/D	N/D
Yakutat	Private Sector	146	29	83	32.2%	$3.9	$0.4	$1.0	$19.5
Southwest Region									
Aleutians East	State Government	15	12	N/D	N/D	$0.5	$0.2	N/D	N/D
Aleutians East	Local Government	247	45	40	12.0%	$7.0	$1.5	$0.5	$5.7
Aleutians East	Private Sector	429	271	3,467	83.2%	$13.6	$9.9	$68.9	$74.6
Aleutians West	State Government	33	6	N/D	N/D	$2.3	$0.4	N/D	N/D
Aleutians West	Local Government	422	28	50	10.0%	$18.9	$1.1	$1.3	$6.3
Aleutians West	Private Sector	1,658	342	2,735	57.8%	$69.4	$15.2	$66.1	$43.9
Bethel	State Government	313	50	24	6.2%	$20.3	$3.2	$0.9	$3.5
Bethel	Local Government	3,416	179	279	7.2%	$72.4	$5.0	$6.6	$7.8
Bethel	Private Sector	4,213	1,368	811	12.7%	$111.0	$40.1	$29.1	$16.1
Bristol Bay	State Government	17	16	10	23.3%	$1.2	$0.2	$0.2	$13.6
Bristol Bay	Local Government	117	48	26	13.6%	$4.5	$1.0	$0.6	$10.1
Bristol Bay	Private Sector	271	346	2,771	81.8%	$10.2	$6.7	$28.5	$62.9
Dillingham	State Government	103	26	12	8.5%	$4.9	$0.6	$0.2	$3.8
Dillingham	Local Government	687	47	78	9.6%	$16.6	$1.6	$1.6	$7.9
Dillingham	Private Sector	1,306	310	1,255	43.7%	$43.2	$8.5	$17.2	$24.9
Kusilvak	State Government	64	27	N/D	N/D	$1.8	$1.4	N/D	N/D
Kusilvak	Local Government	1,695	103	134	6.9%	$29.7	$2.4	$3.2	$9.0
Kusilvak	Private Sector	1,221	191	98	6.5%	$15.9	$8.3	$3.4	$12.5
Lake and Peninsula	State Government	10	6	N/D	N/D	$0.4	$0.1	N/D	N/D
Lake and Peninsula	Local Government	494	73	63	10.0%	$8.5	$2.2	$0.8	$7.1
Lake and Peninsula	Private Sector	172	151	803	71.3%	$4.3	$5.0	$9.7	$51.0
Other/Unknown		N/A	1,748	4,247	70.8%	N/A	$217.5	$204.3	$48.4
Total		281,623	53,005	87,888	20.6 %	$11,094.7	$2,812.6	$2,568.9	$15.6

Notes: N/D = not disclosable. Local residents live in the reported borough/census area as determined by the ZIP code of the most recent Permanent Fund Dividend mailing address. Worker employment records showing place of work information are matched with Permanent Fund Dividend applicant address information to determine the number of local residents, Alaska residents and nonresidents working in each borough/census area. Place of work was based upon employer reported place of work information. Workers were assigned to a geographic area based upon place of work where they earned the most money in 2014. If employers did not provide specific place of work information for the worker, the borough/census area of the primary business location was used to determine the place of work.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

populated area in the state. Fairbanks is at the heart of Alaska's interior and is the northern terminus of the Parks and Richardson highways and the southern terminus of the Dalton Highway to the North Slope.

In addition to serving as the interior's transportation hub, Fairbanks is its economic, medical, educational, and cultural center. Alaska's flagship university, the University of Alaska Fairbanks, is the borough's largest employer. Eielson Air Force Base and Fort Wainwright also generate civilian jobs in the borough.

Fairbanks' workforce was 45,013 in 2014, or 10.7 percent of the state's workers. The 7,454 nonresidents working in Fairbanks made up 16.6 percent of Fairbanks' workers.

Fairbanks is another mostly urban center with workers spanning all industries. Nonresidents were concentrated in the accommodation and food services; mining; professional, scientific, and technical services; and administrative support, waste management, and remediation industries. The largest share of nonresidents was in accommodation and food service, at 1,512 or 28.5 percent. Just 6.2 percent of Fairbanks workers were nonlocal Alaskans, which isn't surprising considering Fairbanks' relative isolation from other population centers.

Fairbanks is home to Fort Knox Gold Mine, a major mining employer. Nonresidents made up 24.3 percent of all mining workers in Fairbanks in 2014. Nonlocal Alaska residents made up another 18.7 percent making locals the remaining 57.0 percent.

Rural Interior Region

The Rural Interior Region is the largest geographically but the least populous in Alaska. This doughnut-

shaped region includes the vast Yukon-Koyukuk Census Area, the Denali Borough, and the Southeast Fairbanks Census Area (but it excludes the Fairbanks North Star Borough). The region is so large and diverse that it can't be characterized as a single economy, but a few key industries keep parts of the region flourishing.

The region had 10,614 workers in 2014, but only 46.0 percent were local residents. The percentage of nonresident workers in the region was 33.2 percent, the second-highest of all eight regions.

Local government is the region's largest industry and one of the few to offer year-round employment across the entire area. Even the smallest communities along the Yukon River or on the arctic tundra typically have a school or local government. Of the area's 2,719 local government workers in 2014, 80.7 percent were local residents.

The major sources of nonresident workers in the region were the accommodation and food services industry and mining, which are concentrated in Denali National Park, Usibelli Coal Mine in Denali Borough, and the Pogo Gold Mine in the Southeast Fairbanks Census Area.

In 2014, 76.9 percent of accommodation and food services workers were nonresidents and another 10.2 percent were nonlocal Alaska residents, meaning just 12.9 percent of the accommodation and food services jobs were filled by locals. Nearly all of these tourism-related jobs are seasonal, and both local residents and nonlocals who work in the industry earn more than nonresidents.

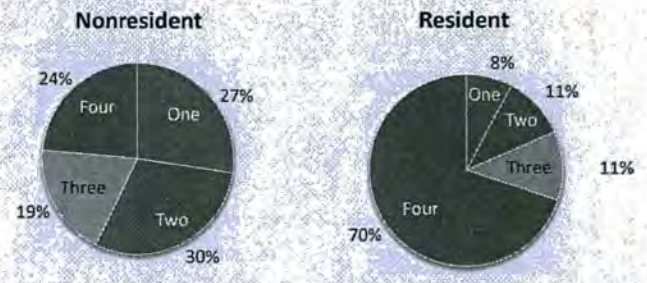
Mining employed 750 workers in the Rural Interior in 2014, 21.3 percent of whom were local residents. The largest share of mining workers — 40.5 percent — were nonlocal, and the remaining 38.1 percent were nonresidents. Many other industries in the region had high percentages of nonresidents as well, typical of highly seasonal or remote work.

Northern Region

Alaska's Northern Region includes the North Slope and Northwest Arctic boroughs and the Nome Census Area. Most communities in the Northern Region are on the arctic coast and are home to primarily Inupiat populations.

The Northern Region has two economies. One is village-based, with local government and service jobs augmented by subsistence production, and the other is industrialized resource extraction at North Slope oil fields and the Red Dog Mine.

28 Workers by Quarters Worked
Alaska, 2014



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

In 2014, 28.8 percent of the Northern Region's 32,547 workers were nonresidents, and another 38.1 percent were nonlocal Alaska residents. The Northern Region has the state's lowest percentage of local workers at 33.1 percent.

The mining industry, which includes workers at Red Dog Mine in the Northwest Arctic Borough as well as North Slope oil employment, is the region's largest with 10,441 workers in 2014. Just 1.9 percent of workers in the Northern Region mining industry were local, and 56.6 percent were nonlocal Alaskans. Nonresidents made up 41.5 percent.

Local government, which includes schools, is the region's second largest industry with 6,206 workers, 82.9 percent of whom were locals. Construction is another major industry in the region, serving local communities and the extractive industries. Of the 3,670 construction workers in the Northern Region in 2014, 12.2 percent were local residents, 48.1 percent were nonlocal Alaska residents, and 39.8 percent were nonresidents.

Southwest Region

The Southwest Region includes the Kusilvak, Bethel, Dillingham, and Aleutians West census areas and the Bristol Bay, Lake and Peninsula, and Aleutians East boroughs. Fishing and fish processing are the region's dominant industries, but because of the limitations of available data, this report can't capture most fish harvesting employment.

The Southwest Region had 33,214 total workers in 2014, excluding fish harvesters, with manufacturing as its largest employer (mainly seafood processing). The Southwest manufacturing industry employed 11,234

workers in 2014, or 33.8 percent of the area's wage and salary workers.

Seafood processing has historically employed a high percentage of nonresidents, as it tends to be extremely seasonal, remote, and relatively low-paying. In most communities with seafood processing plants, the local population can't satisfy the peak demand for workers.

Of all manufacturing workers in Southwest, 79.7 percent were nonresidents and just 5.4 were nonlocal Alaskans. Local residents were 14.8 percent, and they earned more on average than nonlocals and nonresidents. Local workers tend to hold higher-paying jobs and work more months of the year.

The seafood processing industry in Southwest Alaska makes up a significant portion of Alaska's total nonresident workforce. Nonresidents in Southwest manufacturing represent 48.0 percent of all nonresidents working in manufacturing and 10.2 percent of Alaska's total nonresident workforce. It's the primary reason 38.1 percent of Southwest workers were nonresidents, which is the highest percentage in all Alaska regions.

Local government is the second largest employer, similar to other rural regions. It employed 8,271 workers in 2014, 85.6 percent of whom were local residents. Other large industries in the region are health care and social services and retail.

Not all of Southwest is tied to the commercial fishing industry. Lake and Peninsula Borough and the Bethel and Kusilvak census areas have much smaller numbers of seafood processors, and Kusilvak had the highest percentage of local workers in 2014, at 84.3 percent. (See Exhibit 25.)

Gulf Coast Region

The economically and geographically diverse Gulf Coast Region includes the Kodiak Island and Kenai Peninsula boroughs and the Valdez-Cordova Census Area. Much of the Kenai Peninsula is a few hours' drive from Anchorage and shares many of the same urban characteristics.

Tourism plays a significant role on the peninsula, and both sport and commercial fishing are economic drivers. The borough also has considerable oil and gas extraction.

The Kodiak Island Borough is home to part of Alaska's fishing fleet as well as one of the largest Coast Guard bases in the U.S. The Valdez-Cordova Census Area includes the coastal communities of Valdez and Cordova as well as inland communities in the Copper River basin.

The Gulf Coast Region had 45,726 workers in 2014, and almost two-thirds worked in the Kenai Peninsula Borough. Manufacturing — mostly seafood processing but including oil refining — employed 6,713 people in 2014. Local residents were 39.2 percent of manufacturing workers and nonresidents made up 56.5 percent.

Local government was another large employer in the Gulf Coast with 5,824 workers, 88.7 percent of whom were local.

Visitor-related industries had high percentages of nonresidents in the Gulf Coast in 2014. The agriculture, forestry, fishing, and hunting industry had a nonresident percentage of 52.8; the arts, entertainment, and recreation industry was 42.2 percent nonresident; and the accommodation and food services industry was 35.6 percent. The mining industry, which includes mostly Cook Inlet oil and gas extraction, had a nonresident percentage of 26.4.

Southeast Region

The Southeast panhandle is home to 10 boroughs and census areas, the largest of which is the City and Borough of Juneau, the state's capital.

Southeast had 48,833 workers in 2014, 25.4 percent of whom were nonresidents, and 8.2 percent were nonlocal Alaska residents.

The largest industry in Southeast was local government, which employed 7,635 total workers and 6,538 (85.6 percent) local residents. State government was next with 6,132 workers in 2014. State government had a lower percentage of nonresidents than local government at 6.0 percent versus 8.3 percent.

Other large industries in the region included retail trade, with 5,739 workers of which 23.3 percent were nonresident, and healthcare and social assistance with 4,560 workers of which 12.5 percent were nonresident.

Manufacturing was the fourth-largest industry and the largest source of nonresidents, largely because of the seafood processing industry. Of the 4,761 manufacturing workers in Southeast, 68.7 percent were nonresidents.

Accommodation and food services employed 1,685 nonresidents, who made up 37.5 percent of the industry's workforce. Arts, entertainment, and recreation also had high shares of nonresidents, at 46.4 percent of 1,475 workers.

The agriculture, forestry, fishing, and hunting industry, which includes mostly timber jobs, was 47.0 percent nonresident but wasn't among the region's largest industries. Mining, which has grown since the opening of Kensington Mine near Juneau, employed 1,024 workers, 44.3 percent of whom were nonresidents. The mining industry had one of the highest nonlocal resident shares of all industries in Southeast at 17.1 percent.

Economic Impact of Nonresident Workers

Slightly more than 422,500 people worked in Alaska at some point in 2014, and about one-fifth weren't residents. The nonresident workforce has a significant effect on Alaska's economy, but determining when it's negative and when it's positive is a complicated economic question the available data can't answer.

The largest driver of nonresident employment in Alaska is dramatic seasonality. More than half of nonresidents who worked in Alaska in 2014 worked in only one or two quarters. (See Exhibit 28.) Those workers primarily filled seafood processing and tourism positions that would have been difficult or impossible to fill with residents during the busy summer. In those industries, the availability of workers from other states or countries who are willing to relocate during peak periods can be an asset.

On the other hand, the nonresidents who work in Alaska year-round and spend some or most of their paychecks outside the state represent an economic loss. For businesses that hire nonresidents because there aren't enough Alaskans with the necessary skills or experience, training and apprenticeship programs can increase the supply of qualified Alaskans and capture more of those payroll dollars.

To give a rough sense of how much more money could be kept in the state if residents filled those positions, nonresidents who worked all four quarters earned $1.6 billion in 2014. Including nonresidents who worked for at least three quarters brings the total to $2.1 billion. Not all of nonresident wages are spent outside of Alaska, of course, just as not all of resident wages are spent inside the state.

Notes

[1]The Alaska Department of Labor and Workforce Development unemployment insurance wage file only includes workers covered by Alaska unemployment insurance. Therefore, all references to resident and nonresident workers exclude self-employed and federal workers, who are covered by federal unemployment insurance.

[2]Nonresident workers are those who didn't apply for a Permanent Fund Dividend in 2014 or 2015. The methodology in the appendix on the next page provides complete information on workers identified as nonresidents.

[3]Oilfield services support oil and gas companies. This subsector is a combination of the 213111 and 213112 NAICS codes. For more information on industry coding, see the NAICS 2012 manual.

[4]Alaska Seafood Industry Research Project, November 2015

[5]The metal mining industry incorporates the metal ore mining and support activities for metal mining subsectors, NAICS 2122 and 213114, respectively. For more information on industry coding, see the NAICS 2012 manual.

[6]Scenic and sightseeing transportation refers to the 487 NAICS subsector.

[7]Includes the two Standard Occupational Code groups "airline pilots, co-pilots, and flight engineers" and "commercial airline pilots." Not all pilots are counted as employed in the air transportation industry. Industry classification is based on the employer's activities, not the specific tasks of an employee.

[8]We assigned workers to a geographic area based on where they earned the most money in 2014. If employers did not provide a specific place of work for a worker, we used the borough or census area of the primary business location to determine the place of work. We derived place of residence for Alaskans from the ZIP code of the most recent PFD mailing address.

Appendix

About the Data

To calculate residency, the Department of Labor and Workforce Development matches quarterly Alaska unemployment insurance records (which contain industry, occupation, wages, and place of work information) for each worker with Alaska Permanent Fund Dividend applications. Wage records are not available for federal employees, the military, or the self-employed, so those workers are not included in this report.

People were considered residents for this report if they applied for a PFD in either one of the two most recent years. Of the 334,628 workers identified as residents in the 2014 report, 297,216 or 88.8 percent appeared in both the 2014 and 2015 PFD applicant files. Of the remaining 37,412 resident workers, 17,444 appeared in only the 2014 file, suggesting they lived in Alaska for all of 2013 (the qualifying period for the 2014 PFD), but most likely left the state in 2014 and didn't apply for a 2015 PFD.

Another 19,968 workers appeared in only the 2015 PFD file. These workers most likely moved to Alaska during 2013 but weren't here for the entire calendar year and thus were not eligible for a 2014 PFD.

A1 Nonresidents Who Became Residents
Select industries, Alaska, 2014

Note: Graph covers those who were nonresidents in 2013 and became residents in 2014.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Limitations of the Data

One of the obvious limitations of using PFD applications to determine residency is the lag in identifying residents due to the strict PFD requirement that a person must live in the state for a full calendar year to be eligible. Understanding that a certain percentage of the people initially identified as nonresidents will eventually be categorized as residents is key to understanding this report.

All industries hire people who are new to the state and at least occasionally hire people from outside the state. That has different policy implications than industries that hire seasonal nonresidents or workers who maintain their principal places of residence outside of Alaska.

An analysis of 2013 worker information showed that 12.1 percent of nonresident workers ultimately applied for a PFD and were considered residents for the 2014 report. The likelihood that someone new to Alaska will stay in the state and later become eligible for a PFD varies significantly by industry. (See Exhibit A1.)

For example, nonresident oil and seafood processing workers are much less likely to become residents than state and local government workers and health care workers. This again highlights the difference between workers who would be considered new residents by other measures and workers who would be considered nonresidents by any measure.

Alaska has especially large in and out migration flows — 40,000 to 50,000 people move to Alaska and another 40,000 to 50,000 leave each year — and a certain number of workers would also live here and be considered residents by other measures but not stay for long enough to establish PFD eligibility.

Other Measures of Residency

Despite these limitations, the PFD data provide easily the most comprehensive, reliable, and consistent way available to measure residency. Other options such as voter registration, motor vehicle registration, driver's licenses, or fishing and hunting licenses capture a much smaller fraction of the Alaska workforce. The monetary incentive the PFD provides and the strict penalties for providing false information make it the clear choice to use for this type of report.

A2 Resident and Nonresident Workers and Wages

Private, state, and local government in Alaska, 2014

Industry	Resident workers	Nonresident workers	Percent nonresident workers	Resident wages	Nonresident wages	Percent nonresident wages	Avg resident wages/qtr	Avg nonresident wages/qtr
Agriculture, Forestry, Fishing, and Hunting								
Animal Production and Aquaculture	340	224	39.7%	$10,404,958	$3,187,876	23.5%	$9,450	$5,807
Crop Production	334	81	19.5%	$2,899,350	$635,718	18.0%	$3,675	$3,612
Fishing, Hunting and Trapping	209	588	73.8%	$3,719,098	$14,780,125	79.9%	$8,530	$13,388
Forestry and Logging	235	296	55.7%	$9,700,497	$7,864,194	44.8%	$12,714	$11,633
Support Activities for Agriculture and Forestry	35	58	62.4%	$1,002,888	$1,234,193	55.2%	$9,286	$11,535
Mining								
Mining (except Oil and Gas)	2,565	1,120	30.4%	$215,349,875	$89,575,405	29.4%	$22,897	$26,085
Oil and Gas Extraction	3,418	1,248	26.7%	$656,569,116	$237,220,426	26.5%	$49,808	$55,374
Support Activities for Mining	8,642	5,298	38.0%	$737,568,835	$424,841,102	36.5%	$22,697	$25,131
Utilities								
Utilities	2,438	142	5.5%	$182,211,069	$6,257,563	3.3%	$20,006	$16,424
Construction								
Construction of Buildings	5,846	1,388	19.2%	$279,055,215	$45,557,247	14.0%	$14,746	$14,412
Heavy and Civil Engineering Construction	5,300	1,879	26.2%	$323,661,254	$112,198,717	25.7%	$18,258	$23,394
Specialty Trade Contractors	10,360	2,859	21.6%	$499,946,578	$78,528,973	13.6%	$14,389	$12,802
Manufacturing								
Apparel Manufacturing	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D
Beverage and Tobacco Product Manufacturing	340	104	23.4%	$9,824,045	$1,508,986	13.3%	$8,397	$5,826
Food Manufacturing	6,646	17,893	72.9%	$150,795,329	$258,777,802	63.2%	$7,193	$6,477
Leather and Allied Product Manufacturing	13	N/D	N/D	$230,177	N/D	N/D	$5,115	N/D
Textile Mills	9	N/D	N/D	$175,561	N/D	N/D	$5,486	N/D
Textile Product Mills	90	13	12.6%	$2,765,553	$231,559	7.7%	$9,008	$7,719
Chemical Manufacturing	42	6	12.5%	$1,879,535	$449,999	19.3%	$12,048	$28,125
Nonmetallic Mineral Product Manufacturing	208	43	17.1%	$8,531,586	$895,484	9.5%	$12,329	$8,528
Paper Manufacturing	8	0	0	$237,872	0	0	$8,202	0
Petroleum and Coal Products Manufacturing	662	29	4.2%	$56,377,130	$1,578,991	2.7%	$23,011	$19,256
Plastics and Rubber Products Manufacturing	115	N/D	N/D	$4,302,069	N/D	N/D	$10,864	N/D
Printing and Related Support Activities	358	39	9.8%	$11,785,748	$526,060	4.3%	$9,369	$5,845
Wood Product Manufacturing	509	109	17.6%	$21,407,592	$3,780,609	15.0%	$13,206	$14,054
Computer and Electronic Product Manufacturing	118	N/D	N/D	$9,016,096	N/D	N/D	$20,036	N/D
Electrical Equipment, Appliance, and Component Manufacturing	14	0	0	$679,059	0	0	$13,581	0
Fabricated Metal Product Manufacturing	519	97	15.7%	$24,667,453	$2,821,834	10.3%	$13,502	$11,066
Furniture and Related Product Manufacturing	113	21	15.7%	$4,311,992	$381,835	8.1%	$10,673	$7,793
Machinery Manufacturing	79	13	14.1%	$3,704,676	$1,035,263	21.8%	$13,326	$23,529
Miscellaneous Manufacturing	191	36	15.9%	$6,533,605	$937,374	12.5%	$10,083	410,189
Primary Metal Manufacturing	18	N/D	N/D	$785,823	N/D	N/D	$12,090	N/D
Transportation Equipment Manufacturing	447	173	27.9%	$17,079,456	$2,777,307	14.0%	$10,984	$8,391
Wholesale Trade								
Merchant Wholesalers, Durable Goods	2,992	303	9.2%	$162,149,435	$11,941,464	6.9%	$14,630	$14,670
Merchant Wholesalers, Nondurable Goods	3,117	287	8.4%	$133,054,613	$6,429,472	4.6%	$11,704	$9,539
Wholesale Electronic Markets and Agents and Brokers	517	96	15.7%	$30,352,358	$2,609,836	7.9%	$16,327	$12,547
Retail Trade								
Building Material and Garden Equipment and Supplies Dealers	4,193	690	14.1%	$131,201,142	$9,329,896	6.6%	$8,934	$5,699
Clothing and Clothing Accessories Stores	1,924	829	30.1%	$29,096,937	$9,392,159	24.4%	$5,003	$5,198
Electronics and Appliance Stores	726	126	14.8%	$19,721,612	$1,964,304	9.1%	$7,936	$6,990
Food and Beverage Stores	7,393	1,153	13.5%	$157,959,558	$12,030,331	7.1%	$6,480	$4,659
Furniture and Home Furnishings Stores	983	188	16.1%	$28,893,395	$2,171,595	7.0%	$8,656	$5,170
Gasoline Stations	1,984	308	13.4%	$35,481,464	$2,611,303	6.9%	$5,514	$3,939
Health and Personal Care Stores	1,223	225	15.5%	$38,041,985	$4,050,527	9.6%	$9,156	$8,101
Motor Vehicle and Parts Dealers	4,661	566	10.8%	$183,955,205	$9,807,282	5.1%	$11,114	$7,346
General Merchandise Stores	11,621	2,008	14.7%	$251,682,725	$19,417,628	7.2%	$6,557	$4,620

A2 Resident and Nonresident Workers and Wages
Continued

Industry	Resident workers	Nonresident workers	Percent nonresident workers	Resident wages	Nonresident wages	Percent nonresident wages	Avg resident wages/qtr	Avg nonresident wages/qtr
Miscellaneous Store Retailers	2,910	765	20.8%	$52,208,004	$6,820,323	11.6%	$5,739	$4,099
Nonstore Retailers	1,356	189	12.2%	$66,676,855	$7,575,423	10.2%	$13,596	$15,587
Sporting Goods, Hobby, Musical Instrument, and Book Stores	2,532	566	18.3%	$41,052,480	$4,785,987	10.4%	$5,013	$4,015
Transportation and Warehousing								
Air Transportation	5,577	1,772	24.1%	$260,636,315	$57,248,044	18.0%	$12,724	$13,351
Pipeline Transportation	845	73	8.0%	$111,563,205	$9,232,345	7.6%	$34,615	$39,967
Scenic and Sightseeing Transportation	1,574	1,768	52.9%	$34,399,433	$25,078,762	42.2%	$7,173	$5,631
Support Activities for Transportation	2,545	567	18.2%	$106,213,126	$15,824,147	13.0%	$11,976	$11,136
Transit and Ground Passenger Transportation	1,729	205	10.6%	$36,201,382	$2,307,464	6.0%	$6,130	$5,071
Truck Transportation	2,992	505	14.4%	$137,797,416	$14,369,253	9.4%	$12,835	$11,235
Water Transportation	1,116	750	40.2%	$70,784,910	$34,820,736	33.0%	$19,013	$17,766
Couriers and Messengers	1,950	774	28.4%	$131,936,298	$123,466,908	48.3%	$18,661	$48,571
Postal Service	59	14	19.2%	$1,446,329	$193,365	11.8%	$6,987	$6,668
Warehousing and Storage	245	49	16.7%	$16,085,866	$3,959,330	19.8%	$17,223	$23,019
Information								
Broadcasting (except Internet)	791	112	12.4%	$37,414,211	$2,762,338	6.9%	$12,631	$9,830
Data Processing, Hosting, and Related Services	208	21	9.2%	$9,252,324	$824,899	8.2%	$12,047	$13,094
Motion Picture and Sound Recording Industries	601	100	14.3%	$5,189,719	$405,339	7.2%	$3,215	$2,145
Other Information Services	104	12	10.3%	$4,121,468	$193,420	4.5%	$11,354	$7,737
Publishing Industries (except Internet)	679	96	12.4%	$23,635,788	$1,975,155	7.7%	$9,767	$8,857
Telecommunications	4,339	332	7.1%	$294,799,306	$18,395,159	5.9%	$17,931	$19,282
Finance and Insurance								
Credit Intermediation and Related Activities	5,064	377	6.9%	$255,168,902	$7,785,104	3.0%	$13,351	$8,777
Funds, Trusts, and Other Financial Vehicles	21	N/D	N/D	$1,598,676	N/D	N/D	$19,983	N/D
Insurance Carriers and Related Activities	1,775	209	10.5%	$96,149,817	$5,627,094	5.5%	$14,664	$12,259
Securities, Commodity Contracts, and Other Financial Investments and Related Activities	546	45	7.6%	$60,789,169	$2,980,980	4.7%	$31,238	$26,149
Real Estate and Rental and Leasing								
Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	567	7	1.2%	$6,022,116	$148,623	2.4%	$4,802	$13,511
Real Estate	3,955	369	8.5%	$134,181,159	$6,500,764	4.6%	$10,060	$7,455
Rental and Leasing Services	1,769	331	15.8%	$60,123,166	$8,913,654	12.9%	$10,117	$11,128
Professional, Scientific, and Technical Services								
Professional, Scientific, and Technical Services	13,957	4,315	23.6%	$800,501,389	$223,787,806	21.8%	$16,244	$19,926
Management of Companies and Enterprises	2,182	564	20.5%	$158,619,359	$25,887,219	14.0%	$20,770	$15,595
Administrative Support/Waste Management and Remediation								
Administrative and Support Services	12,149	3,519	22.5%	$362,202,032	$78,735,656	17.9%	$9,239	$9,565
Waste Management and Remediation Services	1,759	326	15.6%	$91,916,404	$11,485,098	11.1%	$14,982	$13,904
Educational Services								
Educational Services	2,200	666	23.2%	$59,944,886	$7,237,144	10.8%	$8,284	$5,389
Health Care and Social Assistance								
Ambulatory Health Care Services	17,594	2,150	10.9%	$816,952,219	$73,878,351	8.3%	$12,907	$14,080
Hospitals	12,143	1,281	9.5%	$704,563,170	$60,636,192	7.9%	$15,398	$18,526
Nursing and Residential Care Facilities	4,724	552	10.5%	$135,397,886	$8,232,106	5.7%	$8,108	$6,328
Social Assistance	11,059	1,091	9.0%	$292,086,561	$14,994,919	4.9%	$7,672	$5,901
Arts, Entertainment, and Recreation								
Amusement, Gambling, and Recreation Industries	3,601	1,684	31.9%	$49,893,348	$15,406,126	23.6%	$4,732	$4,358
Museums, Historical Sites, and Similar Institutions	430	181	29.6%	$11,011,947	$2,003,395	15.4%	$7,894	$4,606
Performing Arts, Spectator Sports, and Related Industries	909	339	27.2%	$11,800,053	$3,043,152	20.5%	$5,242	$4,583
Accommodation and Food Services								
Accommodation	6,819	5,704	45.5%	$138,867,742	$61,783,188	30.8%	$6,400	$4,859
Food Services and Drinking Places	22,475	7,022	23.8%	$355,219,474	$67,649,340	16.0%	$5,078	$4,431
Other Services								
Personal and Laundry Services	2,393	404	14.4%	$45,346,354	$4,193,178	8.5%	$5,834	$4,765
Private Households	208	44	17.5%	$4,117,459	$461,226	10.1%	$6,344	$5,363

A2 Resident and Nonresident Workers and Wages
Continued

Industry	Resident workers	Nonresident workers	Percent nonresident workers	Resident wages	Nonresident wages	Percent nonresident wages	Avg resident wages/qtr	Avg nonresident wages/qtr
Religious, Grantmaking, Civic, Professional, and Similar Organizations	5,518	854	13.4%	$181,007,115	$11,186,506	5.8%	$9,769	$5,944
Repair and Maintenance	2,905	651	18.3%	$103,088,242	$19,876,984	16.2%	$10,394	$12,157
Unclassified/Unknown	1,067	641	37.5%	$22,008,788	$8,820,774	28.6%	$7,894	$8,183
Total Private Sector	261,501	82,551	24.0%	$10,858,845,985	$2,451,228,397	18.4%	$12,421	$12,154
State Government	26,566	1,949	6.8%	$1,309,814,746	$47,884,524	3.5%	$13,415	$10,007
Local Government	46,561	3,388	6.8%	$1,738,293,863	$69,845,419	3.9%	$10,922	$9,016
Total Private and Government	334,628	87,888	20.8%	$13,906,954,588	$2,568,958,336	15.6%	$12,090	$12,241

N/D - Not disclosable
N/A - Not applicable
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

THE STATE
of ALASKA
GOVERNOR BILL WALKER

Department of Revenue
COMMISSIONER'S OFFICE
State Office Building
333 Willoughby Avenue, 11th Floor
PO Box 110400
Juneau, Alaska 99811-0400
Main: 907.465.2300
Fax: 907.465.2389

June 7, 2016

The Honorable Mark Neuman and the Honorable Steve Thompson
Alaska State Representatives
Co-chairs, House Finance Committee
State Capitol Rooms 505 and 515
Juneau, AK 99801

Dear Co-Chairs Neuman and Thompson:

The purpose of this letter is to provide you with responses to the questions asked of the Department of Revenue during our presentation to the House Finance Committee on June 2, 2016, regarding the personal income tax bill House Bill 4004. Please see questions in italics and our responses immediately below the questions.

1. *What percentage of the roughly $200 million in income tax revenue would come from each income cohort? Within each of these cohorts, how many are Alaskans vs. non-Alaskans?*

   The 2013 IRS Statistics of Income data break down Alaska taxpayers' federal income tax liability into brackets by the size of their adjusted gross income. Since the income tax in HB 4004 would be a flat percentage of the federal tax liability, and Alaska's income distribution has not changed dramatically since 2013, we would expect the distribution to follow approximately these percentages.

Size of adjusted gross income (AGI)	Federal income tax liability ($ '000)	Percentage of total income tax liability
Total of all income groups	3,320,217	100.0%
Under $10,000	6,323	0.2%
$10,000 to $25,000	44,469	1.3%
$25,000 to $50,000	201,638	6.1%
$50,000 to $75,000	311,030	9.4%
$75,000 to $100,000	347,954	10.5%
$100,000 to $200,000	1,054,005	31.7%
$200,000 to $500,000	680,404	20.5%
$500,000 to $1,000,000	257,377	7.8%
$1,000,000 and over	417,018	12.6%

Also attached is the "Alaska income by filing type and family size" document which shows the number of returns in each of these categories and some additional information.

The numbers above only apply to taxpayers who are Alaska residents. The Department of Revenue does not have data on actual tax liability for non-resident workers in Alaska. According to the Department of Labor's 2014 "Nonresidents Working in Alaska" report, non-residents were 20.4% of workers and earned 15.6% of wages in Alaska in 2014, and their average wages were $29,230 compared with $41,559 for residents. Therefore, the percentage of tax revenue contributed by non-residents would likely be higher in the low-income categories, and lower in the high-income categories. Note that wages are not the same thing as gross income, but are likely the only source of income for which non-residents could be charged Alaska income tax. More details on non-resident workers can be found in the attached Department of Labor report.

2. *Can the Department of Revenue provide the commissioned ISER report that compares income tax to sales tax?*

   Yes, please see the attached ISER report.

3. *What would the revenue impact of the income tax bill be if various different income groups were charged the average rate in the country, instead of 6% of their federal income tax liability?*

   Among the 41 states that tax personal income, DOR's estimate of the average ratio of state to federal income tax liability is between 20% and 40%. There is no single number, as the other states all use a base of adjusted gross income or federal taxable income rather than federal tax liability, and therefore the ratio of state to federal tax liability varies by income level.

   Here are some alternative revenue impacts DOR has estimated for tax rates other than 6% in a HB 4004-style income tax bill:

Tax rate on federal tax liability	Revenue impact ($ millions)
20%	690
30%	1,030
40%	1,375
50%	1,720

   The table in question 1 can be used to estimate the impact of raising the tax rate on some, but not all, taxpayers. For example, suppose the tax rate were 6% on taxpayers with an AGI below $100,000 but 20% on those with an AGI above $100,000. The table shows that 27.5% of revenue comes from taxpayers below $100,000 AGI, so the revenue impact would be about 27.5% of the impact of a 6% rate plus 72.5% of the impact of a 20% rate. In other words, it would be 27.5% * ($200 million) + 72.5% * ($690 million) = $560 million. The same procedure can be used to calculate revenue impacts of a variety of scenarios. However, this would be an unusual way to structure an income tax, as it would result in a taxpayer incurring a large amount of new tax liability upon crossing the $100,000 threshold.

In addition, some questions were asked by the committee about the impacts of income tax interacting with a reduction of Permanent Fund dividends at different parts of Alaska's income distribution. Please see the attached report from the Rasmuson Foundation. The Rasmuson report's depiction of the administration's plan to restructure the Permanent Fund requires clarification. The plan does not simply "cap" the dividend at $1,000 and use the excess dividend money for state government, which would result in a very volatile revenue stream. Instead, the plan proposes a draw equal to 5.25% of the market value of the entire fund, which would be fairly consistent from year to year. However, on the issue of distributional impacts, the Rasmuson report addresses the committee's questions.

I hope you find this information to be useful. Please do not hesitate to contact me if you have further questions.

Sincerely,

Randall Hoffbeck
Commissioner

Attachments: Alaska income by filing type and family size; Nonresidents Working in Alaska 2014; ISER revenue options report; Rasmuson Foundation report

UAA Institute of Social and Economic Research
UNIVERSITY of ALASKA ANCHORAGE

Economic Impacts of Alaska Fiscal Options

Draft Report

Gunnar Knapp, Mouhcine Guettabi and Matthew Berman
Institute of Social and Economic Research
University of Alaska Anchorage
3211 Providence Drive
Anchorage, Alaska 99508

March 11, 2016