

Statutory Permanent Fund Dividend
PERMANENT FUND WORKING GROUP ASSIGNMENT
by Senator Shelley Hughes, Senate District F
June 27, 2019

Economic Impacts of Statutory \$3000 Dividend

- According to an Institute of Social and Economic Research (ISER) Study “Short-Run Economic Impacts of Alaska Fiscal Options” at Table III-6, supplying the multiplier accounting effects due to dollars in the hands of citizens versus government,¹ a transfer of \$1.9 billion from the Earnings Reserve to the Permanent Fund Dividend (PFD) program could result in the following:
 - o Between \$2.47 and \$2.83 billion in total Alaska additional income
 - o Positive impacts to 10,602 and 16,948 total jobs in Alaska
 - o Between 36,000 and 45,000 Alaskan incomes raised above poverty level
- Reducing PFDs to pay for government operations and to maintain state employees adds to total additional income and state job numbers, however, it does not have a material impact on raising Alaskan incomes above poverty.²
- Reducing PFDs to pay for government operations and capital spending adds minimally to additional income and job numbers but does not raise Alaskan incomes above poverty.³
- Arbitrary reductions in the PFD have the largest adverse impact on Alaska’s economy of all revenue generating considerations. Taxing via a reduction to Alaskans’ PFD falls solely on the backs of Alaskans. Non-residents do not contribute revenue like they would with a sales tax (including via an estimated 2 million tourists visiting Alaska annually) or with an income tax.⁴
- Examining Alaska’s fiscal gap and its impacts on Alaska families, of all the options for revenue generation, PFD cuts are “by far the costliest measure to Alaska families.”⁵
- Of the options for revenue generation, “[c]uts to the PFD payout are the most regressive option.... A PFD cut would impact the bottom 20 percent of earners nearly 10 times as heavily as the top 20 percent, when measured relative to family income.”⁶

Social Impacts of Statutory \$3000 Dividend

- **Employment:** It is estimated that a \$1000 increase in the amount of the PFD per person “increases the probability of employment by 1.8 percent among men” and a reduction in hours worked by 0.9 hours per week among women.⁷ By extrapolation, \$3000 would increase the probability of employment by Alaskan

¹ Gunnar Knapp, Matthew Berman, & Mouhcine Guettabi, Short-Run Economic Impacts of Alaska Fiscal Options, INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH, at III-9 (Table III-6) (Mar. 30, 2016). [Appendix A] (On File with Office of Senator Shelley Hughes)

² *Id.* at III-9 (Table III-6); Mathew Berman, Resource Rents, *Universal Basic Income, and Poverty Among Alaska’s Indigenous Peoples*, WORLD DEVELOPMENT 106, 162-72 (2018). [Appendix A (On File with Office of Senator Shelley Hughes) & Appendix B]

³ *Id.* at III-9 (Table III-6); Mathew Berman, Resource Rents, *Universal Basic Income, and Poverty Among Alaska’s Indigenous Peoples*, World Development 106, 162-72 (2018). [Appendix A (On File with Office of Senator Shelley Hughes) & Appendix B]

⁴ Knapp, *supra* note 1, at A-15. [Appendix A] (On File with Office of Senator Shelley Hughes)

⁵ Matthew Berman & Random Reamey, *How Much Might Closing the State Budget Gap Cost Alaska Families?* Research Summary No. 83, at 1 (Feb. 2017). [Appendix C]

⁶ Carl Davis & Aidan Russell Davis, Comparing the Distributional Impact of Revenue Options in Alaska, INSTITUTE ON TAXATION AND ECONOMIC POLICY, at 3 (April 2017). [Appendix D]

⁷ Mouhcine Guettabi, What Do We Know About the Effects of the Alaska Permanent Fund Dividend?, INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH, at 2 (May 20, 2019) (citing Bibler, A., M. Guettabi, & M. Reimer, Short-term Labor Responses to Unconditional Cash Transfers (2019) (working paper)). [Appendix E]

males by 5.4% and the reduction in the workplace of women by 2.7% fewer hours. (Some women choose to take on tasks outside of workplace when PFD provides some income.)

- Consumption: “On average, the marginal propensity to consume non-durable goods out of the PFD is 25 cents out of each dollar.”⁸ By that calculation, a \$3000 dividend would result in approximately \$750 per dividend spent on non-durable goods, or approximately \$480 million total (based on 640,000 qualified recipients), serving to provide a boost to Alaska’s economy, particularly noticeable in rural, cash-based economies.
- Health: Two major studies have focused on the effect of the PFD on health. The first concentrated on birth weight and concluded that “an additional \$1,000 [through a PFD] increases birth weight by 17.7g and substantially decreases the likelihood of a low birth weight (a decrease of around 14% of the sample mean).”⁹ The second study examined impacts on childhood obesity, particularly in toddlers, and found “the effect of the PFD on obesity and overweight status is negative and statistically significant.”¹⁰ According to the research, “an additional \$1000 [by the PFD] reduces the probability of being obese by 4.5 percentage points.”¹¹ The report continued, “extrapolating these estimated effects to the Alaska three-year old population, they find that 500 cases of obesity were averted from an additional \$1000 in PFD payments, which is equivalent to a 22.4% reduction in the number of obese three-year-olds.”¹²
- Poverty: “The PFD provides an income floor and therefore, perhaps, one of its most important contributions is in eliminating poverty.”¹³ According to the cited report, in 2000 roughly 12.4% of rural Alaskan Natives were lifted out of poverty due to the PFD. We believe that the current statutory formula PFD of \$3000 would have a net positive impact on poverty, particularly among rural Alaskans and the elderly.
- Charitable Giving: Via the Pick.Click.Give. program associated with the PFD application, the number of donors increased by 25% and the amount collected by 20% in 2015, resulting in recording breaking fundraising for non-profits via Pick.Click.Give. This record has not been broken. The PFD in 2015 was \$2072, the highest since the Pick.Click.Give. program’s inception.
- Income: The PFD is “the most equitable way to distribute the benefits from oil development” to Alaskans.¹⁴
- Crime: A study examining criminal reports and the PFD distribution from 2000 to 2016 indicates a 10% increase in substance abuse incidents and an 8% decrease in property crimes in the four weeks following PFD distribution.¹⁵ The possibility that “undesirable outcomes are increasing in payment size but socially beneficial outcomes—property crime decrease—is not” might tend to “suggest that there may be implied gains from spreading the payments out over the year.”¹⁶

⁸ *Id.* at 7 (citing Kueng, L., *Excess Sensitivity of High-Income Consumers*, QUARTERLY JOURNAL OF ECONOMICS 133 (4), at 1693-1751 (2018)). [Appendix E]

⁹ *Id.* at 4 (citing Chung, W., H. Ha, and B. Kim, *Money Transfer and Birth Weight: Evidence From the Alaska Permanent Fund Dividend*, ECONOMIC INQUIRY 54 (1), 576-90 (2016)). [Appendix E]

¹⁰ *Id.* at 4 (citing Watson, B., M. Guettabi, and M. Reimer, *Universal Cash Transfers Reduce Childhood Obesity Rates* (2019) (working paper)). [Appendix E]

¹¹ *Id.* (citing Watson, et al., *supra* note 10). [Appendix E]

¹² *Id.* at 4-5 (citing Watson, et al., *supra* note 10). [Appendix E]

¹³ *Id.* at 7 (citing Berman, M., *Resource Rents, Universal Basic Income, and Poverty Among Alaska's Indigenous Peoples*, WORLD DEVELOPMENT 106, 161-172 (2018)). [Appendix E]

¹⁴ *Id.* at 8 (citing Goldsmith, S., *The Alaska Permanent Fund Dividend Program*, THE 13TH BASIC INCOME EARTH NETWORK CONGRESS, University of Sao Paulo, Sao Paulo, Brazil (2001)). [Appendix E]

¹⁵ *Id.* at 8 (citing Watson, B., M. Guettabi, and M. Reimer, *Universal Cash and Crime*, REVIEW OF ECONOMICS AND STATISTICS ACCEPTED (2019)). [Appendix E]

¹⁶ *Id.* (citing Watson, et al., *supra* note 15). [Appendix E]

Context of Historical Dividend Payments

The average dividend payment since the inception of the PFD program, adjusted for inflation, is \$1,700.¹⁷ The largest dividend Alaskans received, adjusted for inflation, was \$2864 in 2000.¹⁸ The smallest, adjusted for inflation, was \$801 in 1984.¹⁹ Had Gov. Hammond's original proposal for a PFD based on length of state residency been upheld by the courts, the largest amount (for those who had been residents since statehood in 1959) would have been \$1050 in 1980 dollars. Adjusted for inflation, that amount would be \$3264 in 2019 dollars.

Statutory PFD under Current FY2020 Budget

Distribution of \$3000 PFD and FY2020 Budget Consequences

- POMV revenue (drawn from ERA): \$2.93 billion²⁰
- Amount required for PFDs, if funded at statutory \$3,000 payout: \$1.94 billion²¹
 - ➔ POMV remaining for government: \$990 million
- Unrestricted revenue (derived primarily from oil): \$2.30 billion²²
 - ➔ Total funds available for government: \$3.29 billion
- Amount needed for operating and capital budgets, absent any vetoes and assuming capital budget fund source changes occur: \$4.65 billion²³
 - ➔ Additional funds needed to fill budget gap: \$1.36 billion

Options to Fill FY2020 Budget Gap

1. \$700 million (approximate) in budget reductions still obtainable this year through vetoes
2. Available Fund Sources²⁴
 - Constitutional Budget Reserve (CBR): \$2,268.5 million
 - Statutory Budget Reserve (SBR): \$172.4 million
 - Alaska Higher Education Investment Fund: \$340.7 million
 - Community Assistance Fund \$90 million
 - Power Cost Equalization Endowment (PCE): \$989.4 million
 - Alaska Housing Capital Corporation Fund: \$0.2 million
 - Alaska Capital Income Fund: \$11 million
 - Permanent Fund Earnings Reserve Account (ERA): \$19 billion*

The \$1.36 billion budget shortfall could be funded from with the SBR (\$172 million) and/or the CBR (\$2.27 billion) or potentially with a portion taken from the Higher Ed Fund (\$340 million). A \$1.36 billion draw from one or a combination of these sources would leave a combined balance of \$1.42 billion of these three fund sources.

¹⁷ See Legislative Research Services, Alaska Permanent Fund Dividend Amounts Adjusted for Inflation to 2018 Dollars (June 2019). [Appendix F]

¹⁸ *Id.* [Appendix F]

¹⁹ *Id.* [Appendix F]

²⁰ See Department of Revenue, Tax Division, Spring 2019 Revenue Forecast, at 7. (On File with Office of Senator Shelley Hughes)

²¹ See Legislative Finance Division, LFD Fiscal Model, Full Statutory PFD – Current FY20 Budget, at page 2 (FY20 “POMV Amount for PFDs”) (June 25, 2019). [Appendix L]

²² See Department of Revenue, Tax Division, Spring 2019 Revenue Forecast, at 7 (reflecting Total Unrestricted Revenue of \$5,237 million and Alaska Permanent Fund Investment revenue of \$2,933 million, for a difference of \$2,203 million). (On File with Office of Senator Shelley Hughes)

²³ See Legislative Finance Division, LFD Fiscal Model, Full Statutory PFD – Current FY20 Budget, at page 2 (FY20 “UGF Budget”) (June 25, 2019). [Appendix L]

²⁴ Account balances confirmed by Legislative Finance Division on 6/27/19. (On File with Office of Senator Shelley Hughes)

**Additional Draw from ERA:*

Taking an additional \$1.36 billion from the ERA would violate a statutory restriction on the amount of Permanent Fund income that may be withdrawn. Increasing the draw from \$2.93 billion to \$4.25 billion would equal to a 7.6% POMV draw which is 2.33% above the 5.25% allowed under AS 37.13.140(b) for FY2020, and the size of a draw this large could reduce future earnings. It also would violate the 50/50 split principle under the distribution of income and traditional formula statutes (AS 37.13.140(a) and AS 37.13.145(b)) as it would apply a larger amount of the income to government than to the PFD distribution. Not only is it inadvisable to take an additional draw from the ERA this year, it would be unnecessary in light of the reductions and the account amounts still available for appropriation, noted in the table above.

PLEASE NOTE: In addition to presenting the short-term financials above for a full \$3000 statutory PFD based on the current budget, the following short-term financials are included in the Appendix:

1. *Short-term financials for a full statutory PFD based on a FY21 (Barnhill) right-sized budget [Appendix G]*
2. *Short-term financials for a 50/50 POMV PFD based on current FY20 budget [Appendix H]*
3. *Short-term financials for a 50/50 POMV PFD based on a FY21 (Barnhill) right-sized budget [Appendix I]*

Sustainability of Statutory PFD FY2021 and Beyond

The PFD amount calculated under the statutory formula is “sustainable.” Governor Hammond and the 1982 enacting legislature devised the PFD formula specifically to provide the people with a direct payment of *half* of the calculated Permanent Fund income available for distribution—leaving the other half free for general government purposes.²⁵ That statutory formula was intended to effect mandatory PFD funding levels,²⁶ so the PFD would “take priority” over government programs that tend to “convey hidden ‘dividends’ to a favored few at the collective cost to all Alaskans.”²⁷ Only once when Governor Bill Walker attempted to veto PFD funding levels in 2016 was the fortitude of the formula ever tested, with the Alaska Supreme Court deciding the program “must compete” annually as if any other budget appropriation.²⁸

Even if the legislature is now technically permitted to cut dividends, that does not mean that it should. The legislature was always expected to maintain the PFD as statutorily calculated, and to seek cuts or more sensible revenue to *pay for government* when necessary.²⁹

Without exceeding the POMV draw,³⁰ the legislature should adhere to the statutory dividend formula and re-prioritize the PFD—deducting it from the POMV—then make wise decisions on other fiscal options like additional

²⁵ See Ch. 102, § 1, SLA 1982 (“[E]ach year the commissioner shall transfer to the dividend fund 50 percent of the income of the Alaska permanent fund earned during the fiscal year ending on June 30 of the current year and available for distribution.” (emphasis added)).

²⁶ See Jay S. Hammond, Official Election Pamphlet, Statement of Opposition (1999), available at <https://www.elections.alaska.gov/doc/oep/1999/constmt.htm> (“Make no mistake, the existing law sets your current dividend amount.” (emphasis added)); see also Jay Hammond, DIAPERING THE DEVIL: A LESSON FOR OIL RICH NATIONS 48, 2d Ed. (2011) (elucidating Hammond’s thoughts on a possible POMV draw whereby “the use of no more than 40% of the money appropriated from the fund for government services might be acceptable, so long as dividends will be no less than under the status quo” (emphasis added)). (On File with Office of Senator Shelley Hughes)

²⁷ Jay Hammond, Governor, Letter to Al Adams, House Finance Committee Chairman (Apr. 1, 1982). [Appendix J]

²⁸ *Wielechowski v. State*, 403 P.3d 1141, 1152 (Alaska 2017). (On File with Office of Senator Shelley Hughes)

²⁹ See House Finance Committee, Committee Letter of Intent HCS CSSB 842, Minutes of House Finance Committee, Senate Bill 842, at 736 (May 14, 1982) (emphasis added) (“[T]he payment of dividends *shall have first call* on 50 percent of the income of the Permanent Fund available for distribution, *regardless of what other uses the income is put to.*” (emphasis added)). [Attachment K] See also Jay S. Hammond, Official Election Pamphlet, Statement of Opposition (1999), available at <https://www.elections.alaska.gov/doc/oep/1999/constmt.htm> (stating in 1999, when considering whether to use the Permanent Fund earnings to pay for government, that: “Liberals realize once Fund earnings are accessed, pressure to extract new sources of wealth to offset even more regressive future dividend ‘taxes’ will evaporate. Conservatives, on the other hand, know pressure to cut spending will disappear. Certainly most legislators won’t support new income, spending cuts or more innovative approaches to balancing the budget if allowed to use fund earnings instead.”). (On File with Office of Senator Shelley Hughes)

³⁰ As of 2018, AS 37.13.140(b) limits the amount withdrawn from the Earnings Reserve to the POMV, which is 5.25% for three fiscal years then 5.0% thereafter, providing: “The combined total of the transfer under (b) of this section [(establishing the transfer to the dividend fund)] and an appropriation under (e) of this section [(establishing maximum amount that may be

budget cuts or more sensible revenue to address government's needs. As discussed, as the budget stands today at \$4.61 billion UGF with PFDs left unfunded, for statutory \$3,000 PFDs, the state could depend on the SBR and the CBR through this year to cover a shortfall.³¹

Next year, the legislature must plan to "right-size" government with new cuts without harming essential services. The Office of Management and Budget (OMB) has provided a target total UGF budget number of \$3.6 billion³²—representing nearly \$1.3 billion in cuts to the operating budget, while maintaining the approximately \$200 capital budget. With these appropriate cuts, the state would likely not need to depend on new revenue until FY2024, and even then only in relatively modest sums of hundreds of millions instead of billions as under the current budget.³³

PLEASE NOTE: The following are included in the Appendix

1. Long-term Projections for full statutory PFD based on current FY20 budget [Appendix L]
2. Long-term Projections for full statutory PFD based on FY21 (Barnhill) right-sized budget [Appendix M]
3. Long-term Projections for 50/50 POMV PFD based on current FY20 budget [Appendix N]
4. Long-term Projections for 50/50 POMV PFD based on FY21 (Barnhill) right-sized budget [Appendix O]

Other Potential Revenue Ideas

The following are not recommended by this paper or the author, but in the future, to continue to pay the statutory dividend, if the budget is not adequately reduced and/or oil revenues drop for a sustained period, some legislators may wish to explore the following:

- Diverting the oil and gas property tax plus the raw fish tax from municipalities (as proposed by the governor this year) for \$450 million
- A 3% sales tax for \$480 million
- A 2% flat income tax of adjusted gross income for \$500 million
- \$1/gallon added to motor fuel tax for \$500 million

Closing Remarks

The following are additional observations, based on the breadth of research conducted while working on this assignment, concerning present and historic policy rationales for providing for full PFDs as statutorily calculated, and protecting those payments into the future.

As discussed, the PFD provides social and economic benefits to Alaskans, particularly Alaskan families. Research clearly shows that reducing or ending the PFD would have negative consequences. Accordingly, preserving the full statutory PFD will result in higher overall Alaska income, greater rates of reduced poverty, growth of small businesses, healthier families, and would lower costs for Alaskan families than if those same dollars were used to fund government. The PFD was designed as Alaskans' direct, equitable "shareholder" benefit of their resource wealth—unlike dollars spent on government projects and programs which frequently benefit special interests.³⁴

transferred to the general fund)] may not exceed the amount available for appropriation under AS 37.13.140(b) [(establishing the POMV)]."

³¹ See Legislative Finance, LFD Fiscal Model, Full Statutory PFD – Current FY20 Budget, at page 2 (June 25, 2019). [Appendix L]

³² (On File with Office of Senator Shelley Hughes)

³³ See Legislative Finance, LFD Fiscal Model, Full Statutory PFD – (Barnhill) Right-sized Budget (\$1.3 Billion Cut), at page 2 (June 25, 2019). [Appendix M]

³⁴ See Governor Jay S. Hammond, Statement to Alaskans, Permanent Fund Dividend Application (1980) ("This distribution of resource wealth directly to the people of Alaska who really own it, instead of spending it all for more government, is the fulfillment of a dream for those of us who have worked long and hard to achieve it. My only regret is that it has taken so long for us to permit you to choose how at least of a portion of your resource wealth is spent, rather than having those choices all made for you by government. Spend it wisely as you choose." (emphasis in original)) [Attachment P]; Jay Hammond, DIAPERING THE DEVIL: A LESSON FOR OIL RICH NATIONS 16-17, 2d Ed. (2011) ("In the past [before inception of the PFD program], those who knew how to play the game were able to secure subsidies for their pet projects, many times at the collective expense of all other Alaskans.") (On File with Office of Senator Shelley Hughes); Testimony of Representative Terry Gardiner before the Senate Finance Committee (Apr. 8, 1982) ("State spending does not benefit all residents equally," whereas, "[a] permanent fund dividend would ensure that everyone gets something."). (On File with Office of Senator Shelley Hughes)

Economically, a PFD dollar funneled through government diminishes in value and falls short of the maximum benefit of those resources. A PFD dollar in the hands of a private citizen multiplies in value to grow our state's economy.

Probably the most significant economic impact of all is that the PFD, and the priority and steadiness of the annual payments, have caused Alaskan shareholders to become watchdogs over the Permanent Fund, successfully protecting it from politician's spending over the years.³⁵

As demonstrated in this paper, the budget gap can be reasonably closed by a combination of reductions and other funds available for appropriation, without expanding the draw on the Earnings Reserve, without jeopardizing the Permanent Fund's growth, and without reducing the PFD. As shown in our years, a right-sized budget can pay a full statutory PFD, with a need to seek only modest increases in revenue.³⁶

Additionally, the erosion of the public's trust in elected leaders, due to the recent disregard for the historic statutory PFD formula, calls for the legislature this year to proactively change the dynamic by adhering to the PFD law as written. It is recommended that the legislature follow the PFD statutory law, pay the dividend, and fund operating and capital budgets for FY2020.

Since its inception, the funding of the dividend was never intended to be part of the operating and capital budget equation and discussion; it was intended to receive "first call" from the Fund earnings and was off-limits to politicians, just like the corpus of the Fund.³⁷ The recent tug-of-war in the legislature over the amount of the annual dividend is largely attributed to two philosophical perspectives: (1) *the budget itself is unsustainable and needs to be reduced to exist within the current level of revenues*; and (2) *the PFD is unsustainable and must be changed in order to fund government*.

By design, neither the statutory PFD or the historic statutory draw are unsustainable; the draw for the PFD is from the earnings and can never diminish the corpus, not even by one penny.

In addition, a number of lawmakers have forgotten the foundational principles and reasons why the PFD was established which still ring true today,³⁸ and instead view the PFD as a source of revenue, which it was never intended to be. Based on a review of historic documents dating back to 1975, below are key - and *timeless* - reasons for a full PFD:

- Only 1% of Alaska land available for private individual ownership.
- Subsurface rights became jointly owned at statehood.

³⁵ Governor Hammond, urging passage of PFD legislation as an ongoing program, explained that the idea some had of a one-time-only benefit "does nothing to create a constituency which will safeguard against invasion of the Permanent Fund," and "does nothing to recognize that oil wealth is our children's legacy and belongs not just to those here today." Jay Hammond, Governor, Letter to Al Adams, House Finance Committee Chairman (Apr. 1, 1982). [Appendix J] "I wanted to encourage contributions into the investment account and to protect against its invasion by politicians by creating a *militant ring of dividend recipients* who would resist any such usage if it affect their dividends." Jay Hammond, DIAPERING THE DEVIL: A LESSON FOR OIL RICH NATIONS 16, 2d Ed. (2011) (emphasis added). (On File with Office of Senator Shelley Hughes)

³⁶ See Legislative Finance, LFD Fiscal Model, Full Statutory PFD – (Barnhill) Right-sized Budget (\$1.3 Billion Cut), at page 2 (June 25, 2019). [Appendix O]

³⁷ "[T]he payment of dividends *shall have first call* on 50 percent of the income of the Permanent Fund available for distribution, *regardless of what other uses the income is put to*." House Finance Committee, Committee Letter of Intent HCS CSSB 842, Minutes of House Finance Committee, Senate Bill 842, at 736 (May 14, 1982) (emphasis added). [Attachment K] The PFD program "should take priority over such programs as subsidized loans, revenue sharing, and any number of existing government programs which now convey hidden 'dividends' to a favored few at a collective cost to all Alaskans." Jay Hammond, Governor, Letter to Al Adams, House Finance Committee Chairman (Apr. 1, 1982). [Appendix J]

³⁸ See policy statements, *supra* notes 34, 35, & 37. The plan for the Permanent Fund Dividend program was foremost rooted in the constitutional principle that Alaska's natural resources are held collectively in trust for the Alaskans as the beneficiaries. "The legislature shall provide for the utilization, development, and conservation of all natural resources belonging to the State . . . for the maximum benefit of the people." ALASKA CONST. art. IIIX, § 2. As Jay Hammond once said, "I believed the best, perhaps the *only* way to meet our constitutional mandate to manage our natural resources for the maximum benefit of all the people was to grant each citizen an ownership share in Alaska's resource wealth to be used as they, not the government, felt was for their maximum benefit." Jay Hammond, DIAPERING THE DEVIL: A LESSON FOR OIL RICH NATIONS 16, 2d Ed. (2011). (On File with Office of Senator Shelley Hughes)

- Annual PFD payouts will cause Alaskan shareholders to be watchdogs, protecting the fund and ensuring its growth.
- A PFD dollar funneled through government diminishes in value while a PFD dollar in the hand of a private citizen multiplies in value to better grow economy.
- PFD dollars distributed to government always benefit special interests while PFD dollars distributed to Alaskan shareholders always benefit shareholders equitably.

To restore public trust, to put focus back where it needs to be (on the budget instead of the PFD), to halt what has become an annual legislative battle, the legislature should work together with the people of Alaska to come to an agreement on a sustainable budget path forward and to settle the matter of the PFD in a constitutional amendment.

Ultimately, Alaskans will have the final say on such an important issue that directly impacts each and every resident. If changes are made with which the people do not agree, a referendum may be pursued by citizens; in addition, discussions around the necessity of calling a Constitutional Convention are underway. It would be foolish not to allow the people of Alaska to weigh in on a Constitutional Amendment on the PFD. Otherwise, we can expect this perennial problem plaguing the state to continue to consume focus and rob our state of important progress in areas of economic development, education, crime reduction, and other issues vital to ensuring Alaska continues to be a great place to live.

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Appendices cited in this document are attached in the following pages.

Appendix A

ISER 2016 Economic Impacts Study

(Cover Page only for reference purposes, contact the office of Senator Shelley Hughes for more information)

SHORT-RUN ECONOMIC IMPACTS OF ALASKA FISCAL OPTIONS

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EXECUTIVE SUMMARY

Today Alaskans are talking about how to close the huge budget deficit the state government is facing, with the oil revenues it has depended on for decades now a small fraction of what they once were. Alaska has had budget deficits for several years, and it has made budget cuts—but it has mainly relied on billions of dollars in savings from the Constitutional Budget Reserve and other funds to cover the deficit. Those savings are dwindling, and the state needs to take measures to close the deficit.

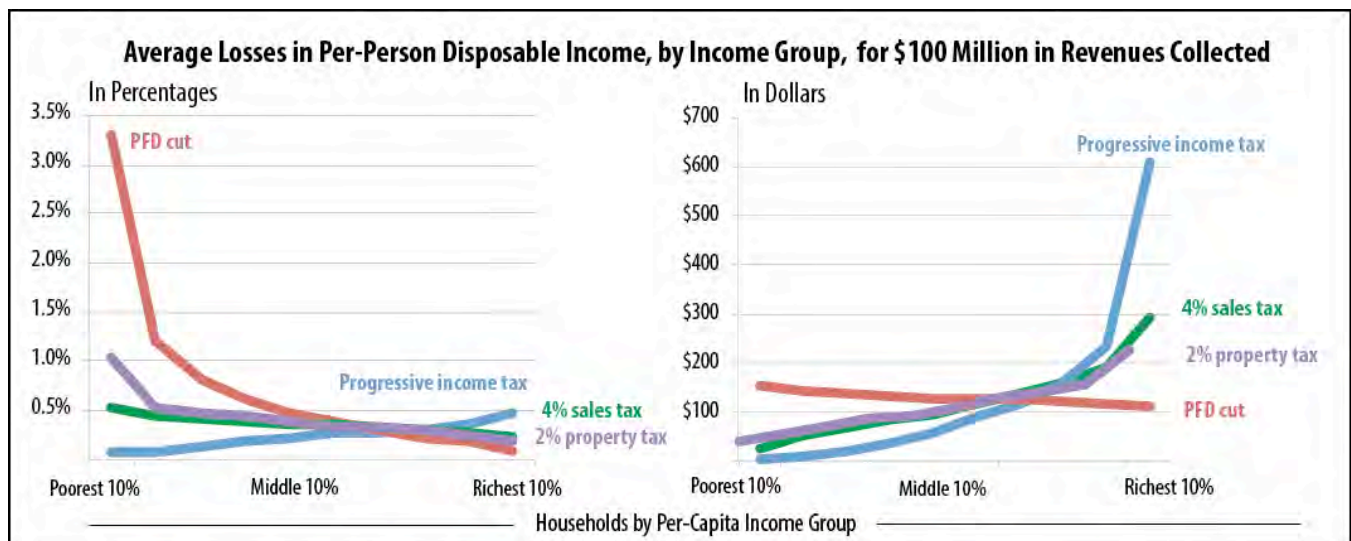
An important consideration is how various ways of reducing the deficit might affect Alaska's economy. This study compares potential short-run economic effects of 11 options the state might take in the next few years to reduce the deficit and that are sustainable over the long term. We looked at economic effects of several types of spending cuts and taxes, as well as reducing the Permanent Fund dividend—the annual cash payment the state makes to all residents—and saving less of Permanent Fund earnings. We're not advocating or opposing any option: our purpose is to estimate and compare the magnitude of the short-run economic effects of different ways of reducing the deficit. Broadly speaking:

- Different ways of collecting money from Alaskans affect those with lower and higher incomes in significantly different ways.
- Anything the state does to reduce the deficit will cost the economy jobs and money. But spending some of the Permanent Fund earnings the state currently saves would not have short-run economic effects. Saving less would, however, slow Permanent Fund growth and reduce future earnings.
- Because the deficit is so big, the overall economic effects of closing the deficit will also be big.

Effects on Individual Alaskans of New Taxes or Smaller Permanent Fund Dividends

We looked at how paying various taxes and or getting smaller Permanent Fund dividends would reduce Alaskans' disposable incomes—the amount they have to spend. To compare across options, we estimated how much raising \$100 million in revenues would cost Alaskans at different income levels.

- *Dividend cuts would cost the poorest Alaskans the most, both in dollars and percentages of income.* For \$100 million in revenue raised, the poorest Alaskans would lose about \$150 each, or more than 3% of their disposable income. By comparison, the wealthiest Alaskans would lose about 0.1% per person.
- *Income taxes would affect the highest-income Alaskans the most*—for \$100 million of revenue raised, they would each pay about \$600, or 0.5%, of their disposable incomes. Middle-income Alaskans would pay around 0.2% of their incomes, and the poorest would pay little—because they have little income.



- *Sales and property taxes would have intermediate effects.* Wealthier Alaskans would pay the most in sales taxes or property taxes—about 0.2% of their disposable income per person, for \$100 million of revenue raised—because they spend more and own more valuable property. But sales or property taxes would cost poorer Alaskans a bigger percentage of income—around 0.5% to 1% per person of their disposable income.
- *The effects of taxes on Alaskans would be reduced because tourists and non-residents would pay part.* Tourists and non-resident workers would pay about 10% of sales taxes, non-resident workers would pay close to 7% of income taxes, and non-residents would pay about 11% of a property tax.
- *Reduced federal income taxes would also partly offset state taxes and reduced dividends.* Alaskans who itemize deductions could deduct some state tax from their federal taxes. Reduced federal taxes would offset about 9% to 11% of state income taxes, 7% to 8% of sales taxes, and 9% of a property tax. And since the federal government taxes dividends, about 16% of a cut in dividends would be offset by reduced federal taxes.

Short-Run Economic Effects of Fiscal Options

We just described the direct effects various taxes or a smaller Permanent Fund dividend could have on disposable incomes of Alaskans. Cuts in state spending would also directly cost some Alaskans jobs and income. But all the fiscal options that directly reduce incomes or eliminate jobs also have broader, additional effects, called “multiplier” effects. That’s because the households and businesses directly affected in turn spend less for goods and services—costing the economy more jobs and income.

It’s impossible to know just how much households and businesses would reduce spending. So we made low and high estimates of the overall (direct plus multiplier) short-run economic losses under various fiscal options, based on reasonable but different assumptions about changes in household and business spending.

The only option we assessed that would create no short-run job and income losses is saving less of the Permanent Fund earnings—that is, helping reduce the deficit by using some earnings that are currently added to the fund principal to protect it from inflation, or added to the Permanent Fund earnings reserve (approximately half of realized earnings over time). But as noted earlier, in the long run saving less would reduce fund growth and so reduce earnings.

The figure shows estimated job and income losses under 10 fiscal options, for \$100 million of deficit reduction. It's clear that the effects of closing the deficit through state spending cuts vary substantially, depending on the types of cuts.

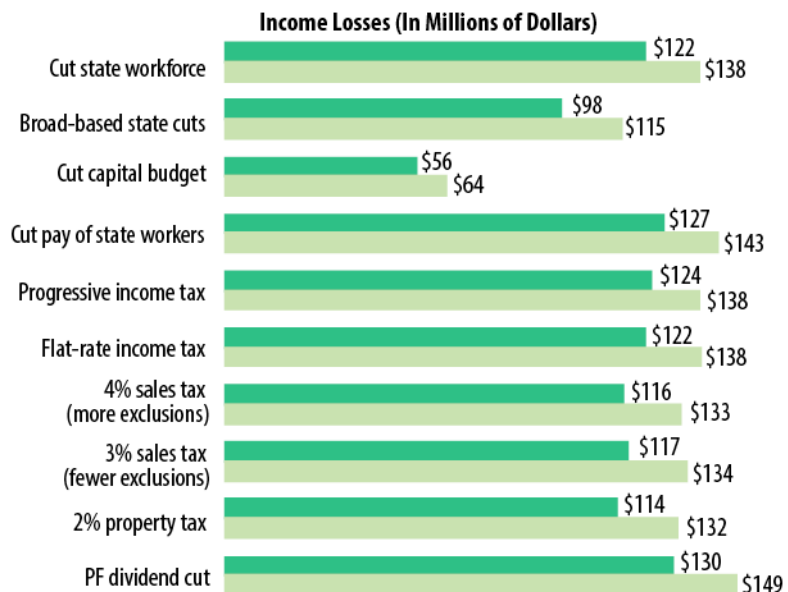
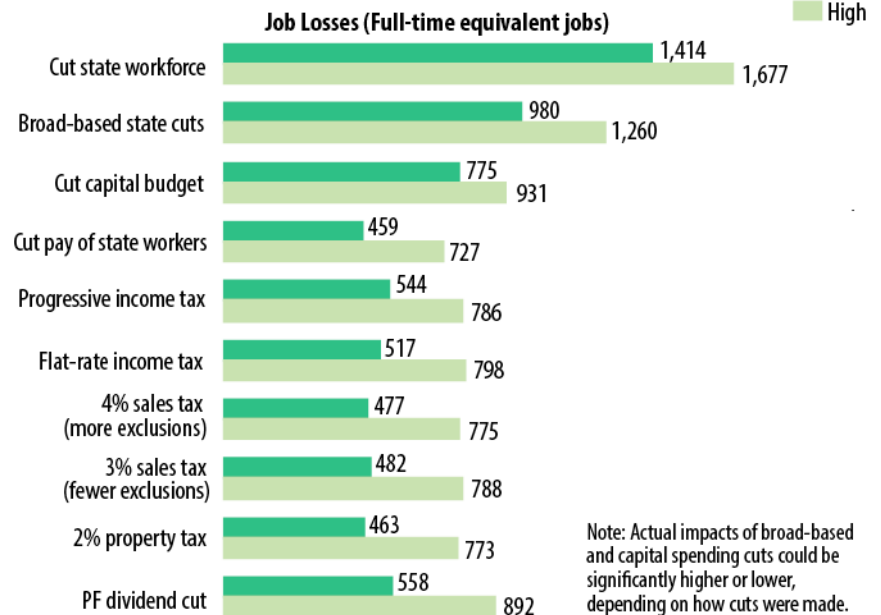
- *Closing the deficit just by cutting state jobs would cost the economy the most jobs—as many as 1,677 jobs for a \$100 million reduction in the deficit. That's because the losses would include direct state jobs and additional jobs due to reduced spending.*

- *By contrast, cutting spending by reducing state workers' pay would eliminate only about a third to half as many jobs—but the income losses would be about the same as for cutting state jobs.*

- *Dividend cuts would have the greatest short-run effects on income—in the range of \$130 million to \$150 million in losses for \$100 million in deficit reduction. That's because they would have the largest direct effects on incomes of all Alaskans—and they would disproportionately affect low-income Alaskans, who spend more of their income.*

- *Taxes would be partly paid by non-residents, so they have smaller direct impacts on incomes—and therefore the multiplier effects are smaller. Income, sales, or property taxes would cost the economy around \$115 million to \$135 million per \$100 million of deficit reduction.*

Estimated Job and Income Losses per \$100 Million of Deficit Reduction*



*Low and high estimates are based on different assumptions about how households and markets would react to changes in disposable income.

Regional Differences in Economic Effects

We couldn't analyze in detail the differences in economic effects different fiscal options would have in regions of Alaska. But we know those effects would vary, partly because income distribution varies by region. Those where incomes tend to be lower—for example, in areas of western Alaska—are likely to be more affected by dividend cuts and sales taxes. Regions with generally higher incomes—like parts of Southcentral and Southeast Alaska—would tend to be more affected by income taxes.

Also, the economies of different regions depend more or less on state-funded jobs and services. Juneau, for example, where more than one-quarter of wages and salaries are from state government, would clearly be more affected by cuts in state jobs than the North Slope Borough, where state wages make up only 1% of wages. But many rural areas depend more than urban places on state spending that helps pay for local government—like revenue sharing and schools.

And regions that depend the most on trade and service industries—Anchorage, for example—would be more affected by the multiplier effects of fiscal options.

Conclusions

Within a few years we will have to greatly reduce the deficit. Reducing the deficit will have significant effects on Alaska's economy, regardless of how or when we do it. Trying to fully close the deficit in one year would have a very large impact on an economy already weakened by cuts in oil-industry jobs and past cuts in state capital spending.

But not making significant progress toward reducing the deficit would also cause significant harm, 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 clearly demonstrate to Alaskans, businesses, and investors that we will make the necessary further changes in spending, revenues, and uses of Permanent Fund earnings—so we can achieve sustainable state finances, reduce uncertainty about future state spending and how we pay for it, and build confidence in Alaska's fiscal future.

And finally, all the options for closing the budget deficit would affect Alaska's economy and society in many important ways that go beyond the short-term economic impacts we estimated for this study. We should base our fiscal choices not only on their short-term impacts but also their effects on Alaska's economy and society over time.

I. INTRODUCTION

Alaska's state government faces a very serious fiscal challenge. This year's (FY16) General Fund spending greatly exceeds current and projected future General Fund revenues, and there have also been budget deficits in the past several years. We have been paying for the deficits mostly by drawing down savings in the Constitutional Budget Reserve Fund (CBRF) and other funds. But our savings are limited, and 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 these choices might have on Alaska's economy. This study looks at some of these potential short-run economic impacts of 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 11 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 the fiscal options would have on Alaska jobs and income. We also assessed the potential revenue impacts of increasing several types of excise taxes (Table I-2).

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 that amount of Permanent Fund earnings 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, because using more than the average would draw 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 that met the following criteria:

- Options that are part of the political discussion: options that are currently being discussed as potential ways of reducing the deficit.
- Short-term options: options that could, if implemented, reduce the deficit within the next three years. Thus, we didn't analyze options that would take longer to affect state revenues or spending—such as encouraging new kinds of economic development that might generate new royalty or tax income in the future.
- Sustainable options: options that would be sustainable over time. Thus, we did not study options for closing 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 while, it would not be sustainable over the long run. Note, however, that using Permanent Fund earnings currently being added to the Permanent Fund principal (to protect it from inflation) or to the Permanent Fund earnings reserve *could* be sustainable—as long as the average use of such earnings over time did not result in drawing down the average balance of the earnings reserve.
- Options within the state's control: If oil prices or production increased, state oil revenues could increase and reduce the deficit, without any of the economic impacts that 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 increases in oil revenues as 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 revenue increases that are beyond the state's control as fiscal options for reducing 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 in oil credits or oil taxes; changes in taxes on specific industries such as fishing or mining; or changes in how the state delivers services—such as K-12 education, the University of Alaska, or Medicaid—that might affect costs and spending. These are examples of options that might significantly reduce the deficit and are receiving substantial attention. 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 or opposing any of the fiscal options 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 options for reducing the deficit.

Organization of this Report

Chapter II of this report discusses revenue impacts of the tax and dividend-cut options—these are options that would reduce Alaskans’ incomes, either because Alaskans would pay taxes or receive smaller Permanent Fund dividends. We estimate how much revenue each option would collect from household groups at ten different income levels, 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 reduced federal taxes, and how much of the taxes non-residents would pay. Finally, we estimate how the losses in disposable income under each option could affect Alaskans’ spending—those estimated changes in spending drive the “multiplier” effects on the economy discussed in Chapter III.

Chapter III discusses the potential short-run effects of the fiscal options on income and jobs in Alaska. The various options would raise different total amounts of revenue, so to compare effects across options, we estimated the short-run economic impacts of each option per \$100 million of deficit reduction.

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

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

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

Limitations of the Analysis

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

The devil is in the details. With the exception of dividend cuts, all the fiscal options we studied are “generic” options. But 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 were made or how the taxes were 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 others. We analyzed four “generic” spending cut options, to contrast the impacts of different kinds of cuts—ranging from those that might have the highest economic impacts (cuts in the state workforce or state worker pay) to cuts that would have lower economic impacts (broad-based cuts or cuts in

capital spending). None of the impacts of these generic spending cut options are necessarily the same as the actual economic impacts of specific cuts the state might make, and that might be characterized using the same names. Nor are all the options necessarily feasible for large-scale cuts. For example, the FY16 capital budget is only \$118 million, so a (hypothetical) \$500 million cut in 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 might be requires making many assumptions about factors such as incomes of Alaskans, how much non-residents spend in Alaska for different kinds of products, marginal federal tax rates Alaskans pay, how Alaskans spend money, and how Alaskans might change their spending in response to changes in their incomes. We developed assumptions based on the best available data, but in many cases the data to develop necessary assumptions were limited or non-existent—so 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 all the options, we are 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 conclusions.

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 technique is the best available 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. But 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 to say that they reflect immediate income and jobs losses resulting from less money circulating in the economy.

As Chapter VI discusses, our analysis focused only on potential revenue impacts and short-run economic impacts of selected fiscal options. All the options would have longer-term economic impacts that are harder to predict and that we did not analyze—but such impacts are also potentially as important or more important than the short-term economic impacts we did analyze.

Our analysis offers useful perspectives on some of the potential economic impacts of the fiscal options we studied. But it is not sufficient to support conclusions about 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 we analyzed. 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.

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 what we wrote about our conclusions.

In our study design, analysis, and conclusions we are not advocating or opposing any fiscal options or choices 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 besides the short-term economic impact matter in this discussion—including value choices about what kind of economy and society Alaskans want.

Our findings and conclusions are limited to those in this report and in presentations we have prepared. We have attempted to describe and emphasize the limitations of our analysis. Other people may argue for or against fiscal options or choices based on their interpretations of our findings, or may not acknowledge the limitations of 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 of 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

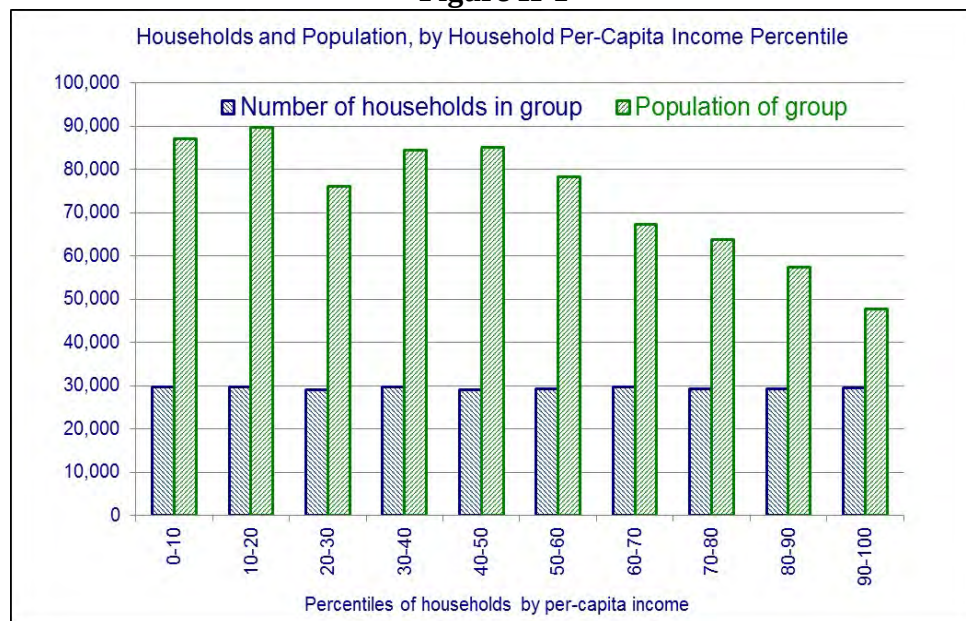
In this chapter we discuss the potential revenue impacts of imposing several types of taxes and of reducing Permanent Fund dividends—the annual cash payment the state makes to all residents. We looked at the relative shares of state revenue each measure would raise from different Alaska income groups and from non-residents, as well as the extent to which the revenues collected would be offset by reductions in federal taxes Alaskans pay. This chapter summarizes our results. Appendix A provides technical details of the methodology and results.

Raising revenue through any tax, or by cutting the dividend, will have some adverse effect on the economy—because taking money out of the private economy reduces the amount households have to spend. But different revenue measures have different effects on household spending. Three main factors explain the differences in how specific revenue measures affect spending: (1) the share of revenues contributed by non-residents, (2) the share of revenues offset by reductions in federal taxes, and (3) the distribution of the effects of a given revenue measure on households at different income levels. A fiscal measure is considered *progressive* if the percentage collected rises as income rises, and *regressive* if the percentage falls as income rises. Alaskans with lower incomes typically spend a larger share of their income than those with higher incomes—so more regressive measures will reduce spending more than less regressive or progressive measures.

Alaska Income Distribution

To analyze how different taxes and a dividend cut might affect Alaskans at different income levels, we divided Alaska households into ten groups, based on their per-capita incomes. We used U.S. Census Bureau data for 2014, the latest year available. Each group represents about 29,000 households—but because households with higher incomes are on average smaller than those with low- and mid-range incomes, there are fewer people in the high-income percentiles (Figure II-1).

Figure II-1



Income reported in the 2014 census data represents income earned in 2013. Households in the richest ten percent earned on average more than \$200,000 that year, while those in 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 Permanent Fund dividend (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. Still, income distribution in Alaska remains more equitable than in the nation as a whole, partly due to the PFD—which plays an important role in providing an income floor for the poorest Alaskans.

Figure II-2

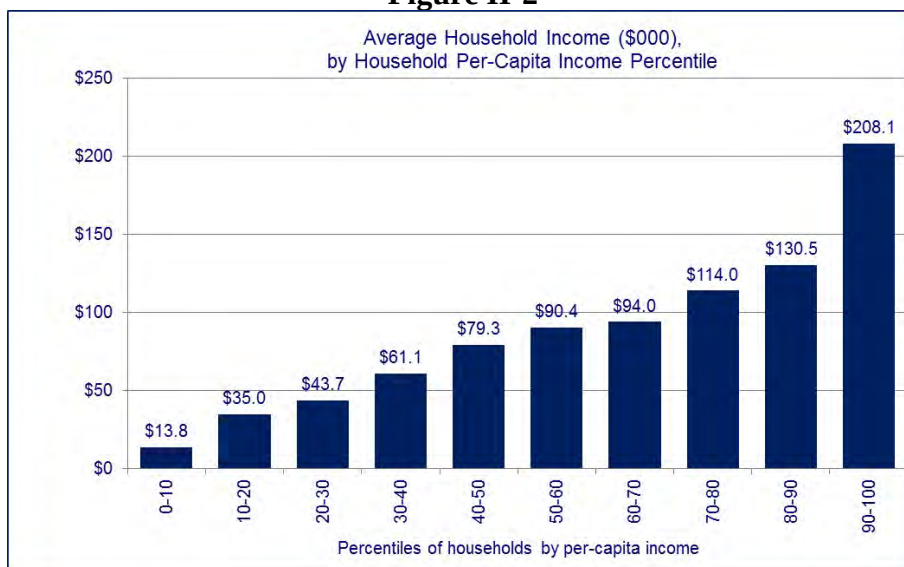


Figure II-3

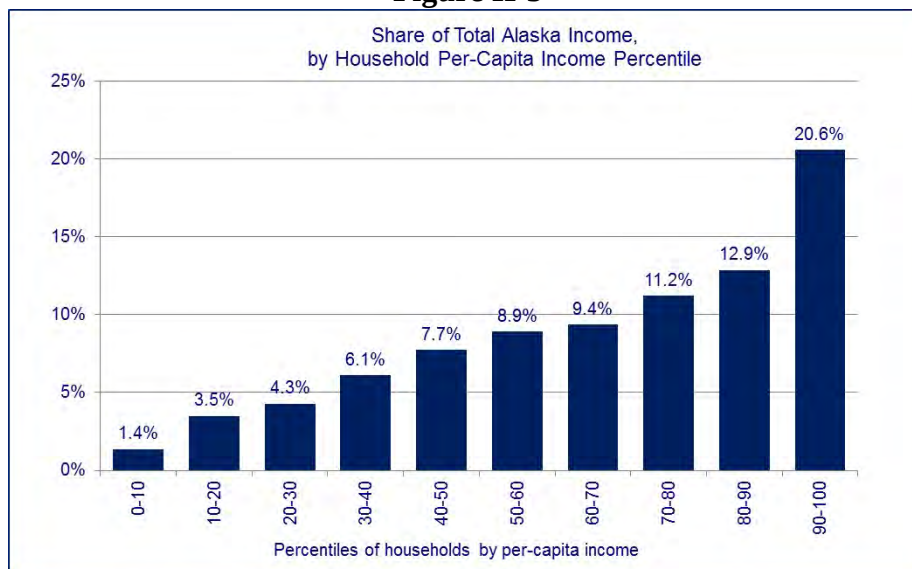


Table II-1 shows the census estimates for population, household size, and 2013 income for the ten household groups. The PFD was \$900 in 2013, but has been larger in more recent years. For comparison, the last column of Table A-1 shows what 2013 per-capita income would have been, with a PFD of \$2,000.

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	 \$ 33,578	 \$ 34,678

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 thousand per worker. It should be noted that this figure understates the total number of non-resident workers, because it does not include federal government employees (including active-duty military personnel), or self-employed people (including commercial fishermen).

Non-resident workers spend money in Alaska while they are here working. Most non-resident workers have temporary or permanent homes in Alaska and spend part of their income in the state, generating additional economic activity. In addition to non-resident workers, visitors to the state also spend money on many different items. The amount that non-resident workers and visitors might contribute to state revenues would vary by the type of revenue measure. 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 six broad-based fiscal measures. Five of those could 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
- \$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 but excluding education and health care

The sixth option, a potential state property tax, is more difficult to scale than the other options. We assumed that property taxes levied by local governments would be credited from the state tax, analogous to the way the state credits local governments in the existing state petroleum property tax—that makes it harder 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 (in Valdez) is also currently at 20 mils. 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 potential 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 in 2013. 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 assumed that non-residents spend money in Alaska on living expenses in proportion to their share of total state wages. Using recent data on seasonal patterns of state alcohol taxes and local sales taxes, we estimated that non-residents bought 15 percent of commodities and 10 percent of services. It should be noted that these are generous estimates of non-resident expenditures. The true figures are unlikely to be higher, 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. Almost all the value of potentially taxable property—except for a portion of the trans-Alaska pipeline (already taxed by the state)—is located in areas already subject to local property taxes. 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 are highly uncertain, since information on non-resident property ownership is not systematically available. We estimate non-residents would contribute roughly 11% of property taxes.

Table II-2 shows the estimated revenues raised from the six potential measures, and the amounts residents and non-residents would pay. In estimating potential revenues from a reduced PFD, we assumed that one percent of dividends would be paid to people who filed for the dividend 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 local governments are collecting—which 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 Annual Revenues Raised
from Six Potential Revenue Measures

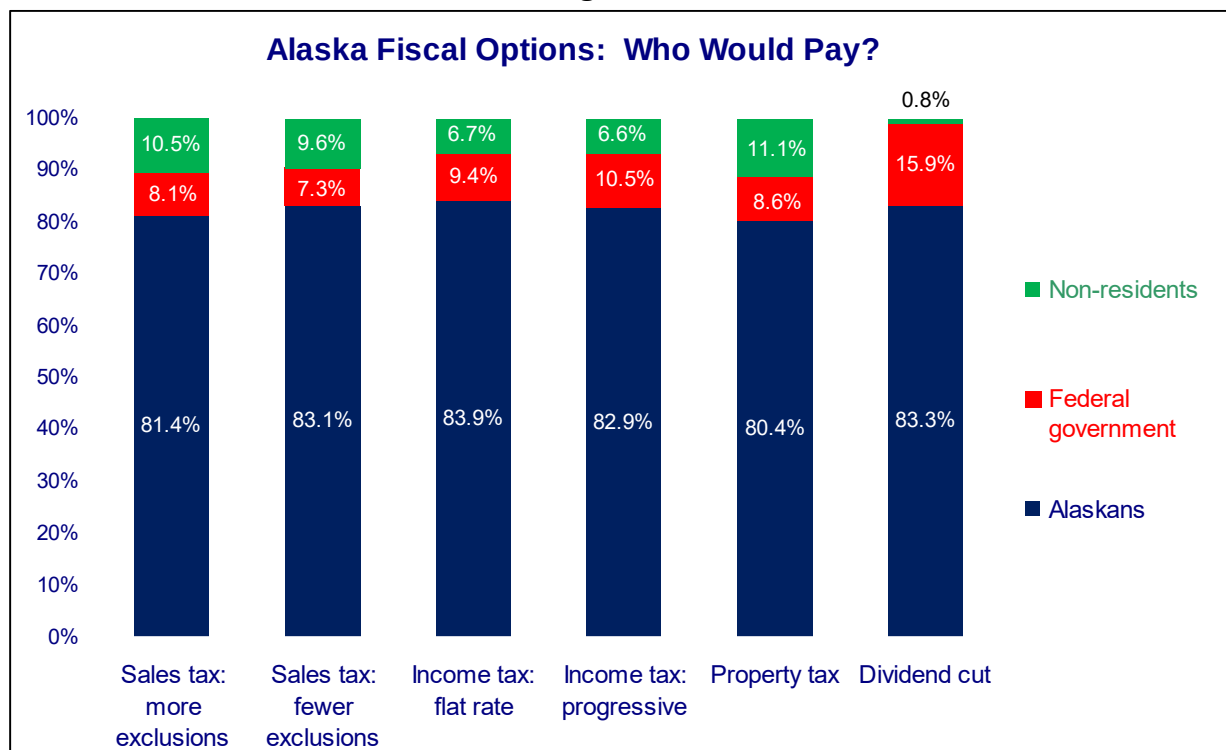
Revenue measure	Total revenue raised (\$ millions per year)		
	Alaska residents	Non-residents	Total, residents and non-residents
2 percent flat rate income tax	\$366	\$ 29	\$396
10 percent federal income tax surcharge	\$338	\$ 28	\$366
\$600 cut in PFD	\$380	\$ 4	\$384
4 percent sales tax excluding food at home, health care, shelter, and education	\$318	\$ 41	\$359
3 percent sales tax excluding education and health care	\$388	\$ 45	\$433
20 mil state property tax with local credit	\$ 716	\$ 99	\$815

The federal government would also contribute some of the amounts shown in Table II-2 for Alaska residents and non-residents, in the form of reduced federal income taxes. The federal government would “pay” for a portion of revenues from reduced PFD payments, because the federal government taxes PFDs—and those federal income taxes would be reduced if PFDs were reduced. Alaska taxpayers itemizing deductions can also deduct property taxes, and either state income or sales taxes (but not both), 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 under the five tax options (Figure II-4). The federal share varies across the tax measures because higher-income taxpayers are more likely to itemize deductions—and therefore deduct the state tax from taxable income—and are also taxed at higher rates. Lower- and middle-income taxpayers are less likely to itemize and so less likely to be able to deduct state taxes. The federal offset would be highest for an income tax based on a percentage of federal income taxes,

which collects a higher percentage as income increases—and lowest for sales taxes with fewer exemptions, which fall more heavily on lower-income taxpayers, if they have taxable income.

For a reduced PFD, the federal share would be higher—about 16%. A smaller PFD would be a direct reduction in taxable income, so federal income taxes would be reduced for all those who have taxable income.

Figure II-4



Distribution of the Revenue Burden Among Alaska Households

Figures II-5 and II-6 compare how each of the broad-based revenue measure would reduce per-capita disposable income—income after taxes—for households with different levels of per-capita income, in dollars and in percentages. Because each revenue option would raise a different total amount of revenue, the numbers in the figures are normalized to show the loss in disposable income per \$100 million in revenue raised. We assumed 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

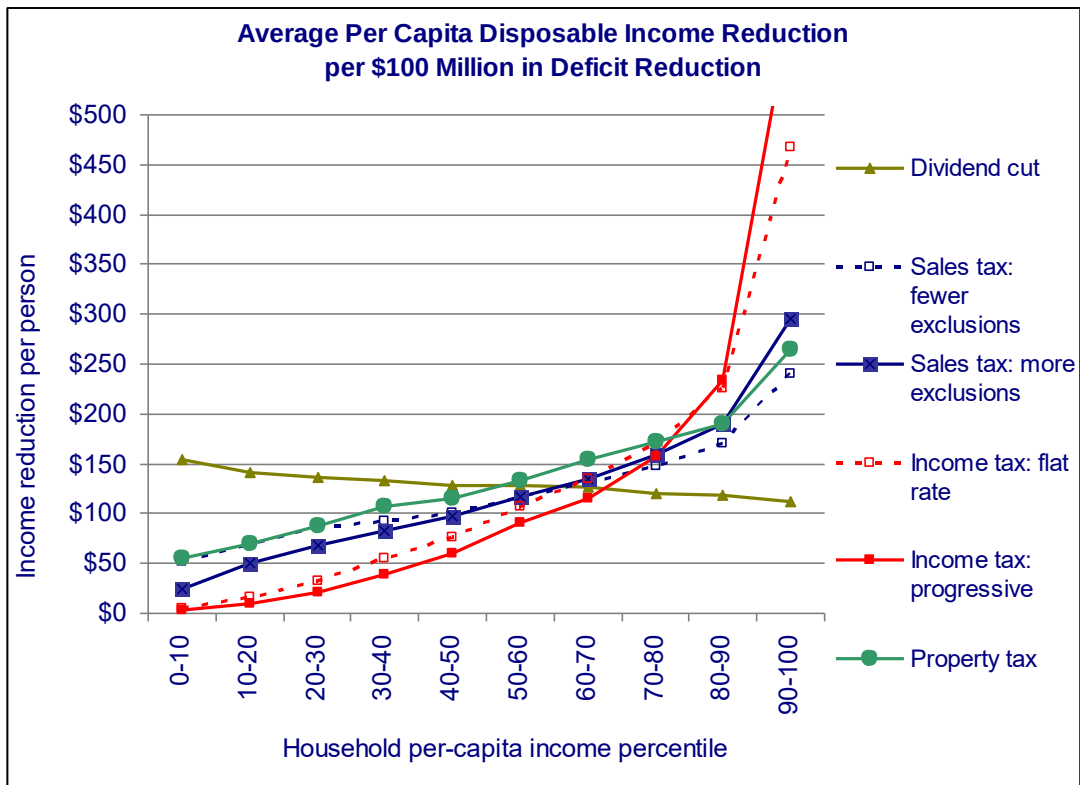
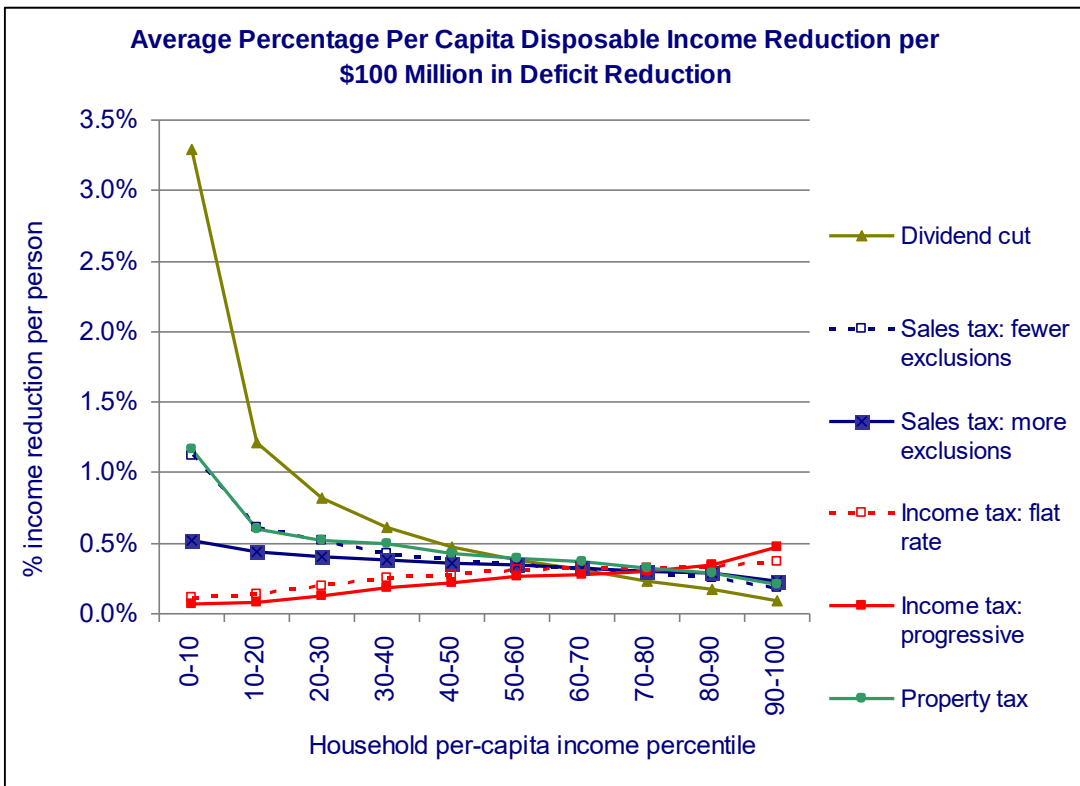


Figure II-6



- *Reducing Permanent Fund dividends would cost the poorest households the most, in both dollars and in percentage of income.*

Reducing the PFD by \$156 per person and diverting the revenue to state government would raise \$100 million. But only the poorest households would actually lose the full amount. Most households would get a portion of the lost income back in reduced federal income taxes, but the poorest households might not have any income tax liability. The higher the household's per-capita income, the more the federal taxes would be reduced and the PFD loss offset. Per-person disposable income of the richest ten percent of households would fall on average \$112.

The dollar losses for the poorest households amount to 3.3 percent of their per-person disposable income—compared with 0.1 percent for the wealthiest households.

- *The wealthiest households would pay five to twelve times as much in sales taxes as the poorest—but the poorest would lose significantly more as a percentage of their income.*

For a sales tax that raised \$100 million in revenue, the wealthiest ten percent of households would pay about \$250 to \$300 per person and the poorest about \$25 to \$50 per person, depending on whether it was the 3% tax including food and shelter or the 4% tax excluding food and shelter.

Those dollar amounts represent about 0.2 percent of the per-capita disposable income of the wealthiest households, but 0.5 percent to 1 percent of the poorest.

The 3% sales tax option has a lower rate but a broader base than the 4% option. The two types of expenditures excluded in the 4% 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 little variation in shelter expenditures across the different income percentiles. So while both sales-tax options would be regressive, the one including food and shelter is more regressive. Also, non-residents purchase less food at home and shelter, relative to residents, than they purchase other potentially taxable goods and services.

- *A state property tax would also cost the wealthiest households about five times more in dollars than the poorest households—but again, the poorest would pay a bigger percentage.*

A 2% state property tax that raised \$100 million would cost the wealthiest households about \$230 per person and the poorest about \$50. That translates into about 0.2 percent of per capita income for the wealthiest household and 1 percent for the poorest—making it as regressive as the sales tax that includes food and shelter.

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.

- *The income tax options would cost the wealthiest households 70 to 160 times as much in dollars as the poorest, which have very little income to tax. These are the only options that would cost the wealthiest households a higher percentage of their incomes.*

A 2% flat-rate income tax that raised \$100 million would cost the wealthiest households about \$470 per person, and a 10% federal income tax surcharge about \$600 per person. 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 per-capita disposable income of the richest ten percent of households by about 0.5 percent per \$100 million raised.

Effects of Broad-Based Revenue Measures on Household Expenditures

All the fiscal options would have some adverse effect on the economy, because they would reduce disposable income. As disposable income falls, households spend less on goods and services. But the amount 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 addressed 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 scenarios are based on two data sources: the U.S. Census Bureau and the IMPLAN input-output model.

We used the IMPLAN input-output model to estimate the indirect (multiplier) effects of changes in spending, as discussed more in Chapter III. The model 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 and visitors. We used 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, people might eat more meals at home rather than going out. Consequently, estimates of expenditure changes from IMPLAN are likely to be larger than what will actually take place. IMPLAN also includes non-cash benefits households receive from employers and government, such as employer-provided health insurance and food stamps. The census data include only cash income. Non-cash benefits do increase household purchasing power and contribute to the economy, so leaving them out could potentially underestimate economic impacts. Also, the census questionnaire does not have an entry for income of children under 16. It is not possible to determine, therefore, whether children's PFD payments are counted in household income—so the income reported in the census may be somewhat understated.

Because it is not possible to reconcile the two data sources, we estimated two sets of impacts, based on the assumptions tied to the different data sources. Since the assumptions embedded in the IMPLAN model generally result 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 under 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

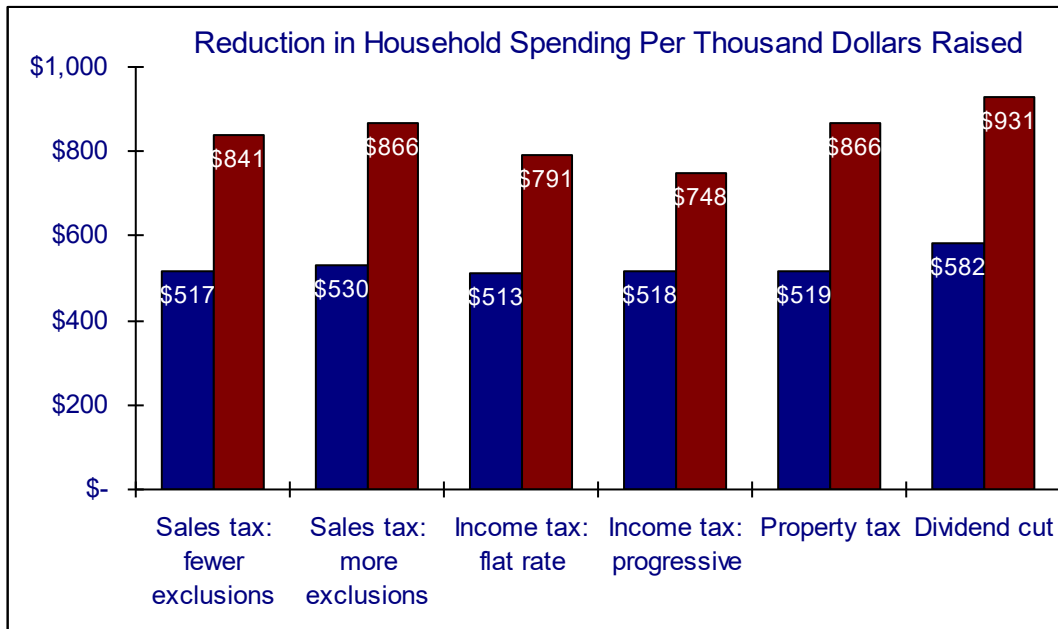
Assumption	High	Low
<i>Income driving spending patterns includes</i>		
Wages and salaries	x	x
Proprietors' income	x	x
Rent, interest, and dividends	x	x
Employer-paid job benefits	x	
In-kind assistance such as food stamps	x	
Rent homeowners avoid by owning their dwellings	x	
<i>Spending patterns driving economic impacts</i>		
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 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 have detailed explanations of our methods.

Income taxes would have the least effect on expenditures—reductions in the range of \$515 to \$790 per thousand dollars of revenue raised, and the PFD cut would have the largest—about \$580 in the low scenario and \$930 in the high. This difference in the effects of income taxes and PFD cuts is directly related to their distribution. A cut in the PFD would reduce disposable income much more for lower-income households than the income tax would—and lower-income households spend a much bigger share of their income than higher-income households do.

The low scenario estimates that the two sales-tax options would reduce household spending by about \$515 to \$530 per thousand dollars of revenue raised, while the high scenario puts the reduction in the range of \$850. Reduced spending under the property tax is estimated to be very similar—\$519 under the low scenario and \$866 under the high.

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 from and effects on households and the economy of potential increases in excise taxes. Alaska already taxes petroleum fuels, alcoholic beverages, and tobacco products. The state could raise additional revenue 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. But the distribution of the effects on household disposable income would be different.

Alaska taxes different types of petroleum fuel at different rates. 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, a trade organization, Alaska would have to increase its fuel taxes by about 17.5 cents 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 unit of the Department of Transportation and Public Facilities that

deals 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. 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 to drive less fuel-efficient vehicles. Rural Alaska households with lower incomes use gasoline for snowmachines, boats, and all-terrain vehicles, but generally use less fuel than urban households. So 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, the low current state tax rates, and the cost of maintaining the state's transportation infrastructure, raising motor fuel taxes could be a reasonable measure to increase revenues.

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 \$13 million 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 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 bigger share of their income on alcohol than lower-income households do. This apparent contradiction may be related to how higher income households buy alcohol. More affluent households would be much more likely to buy wine and beer in restaurants, for example, where the retail price per drink is much higher 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 taxes tobacco at a rate based on a tax of \$2.00 per pack of cigarettes. Tobacco taxes brought in \$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 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 more people buying through the Internet and using other means to 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 increase state revenues. 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 various fiscal options on income and jobs. Appendix D provides technical details of the methods and results.

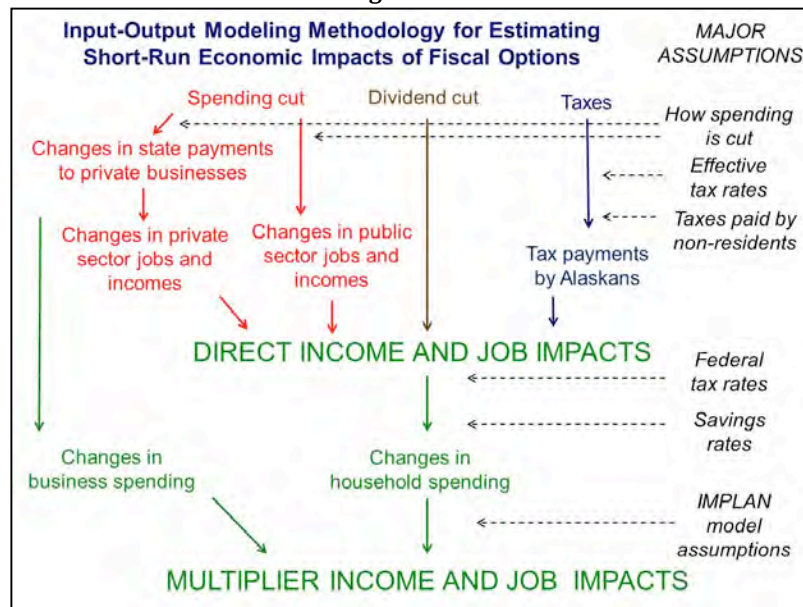
As we noted in Chapter II, each of the options would raise a different amount of total revenue—so to compare across options, we show the estimated short-run economic impacts per \$100 of revenue collected. To estimate the total economic impacts of a specific option, the impacts reported here can be scaled up or down. For example, the estimated economic impacts of an income tax that raised \$200 million in new revenues would be twice those shown in this chapter.

Overview of Methodology

To compare the 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 in Figure III-1, we began by estimating the “direct” impacts on income and jobs of the various fiscal options: cuts in state spending, a cut in the Permanent Fund dividend, and several kinds of taxes. For the tax and dividend-cut options, these direct effects result from the initial changes in payments to and income of Alaska households and businesses when they pay new taxes or get smaller dividends. The corresponding direct impacts from state spending cuts are changes in public sector jobs and income, and changes in private jobs and income that follow when the state reduces payments to private businesses.

Next we estimated how these direct impacts would affect spending by businesses and households. These changes in spending generate additional, or “multiplier,” impacts on income and jobs, as the effects of less spending ripple through the economy.

Figure III-1



As shown on the right 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, which 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 rates affect how much direct income impacts are partially offset by reduced federal taxes.
- The marginal savings rates of Alaskans experiencing direct income impacts: that means the extent to which they would respond to reduced income by reducing their savings or reducing their 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 of how various 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 the U.S. census income data). The high-scenario assumptions generally result in higher estimated impacts on Alaska household spending—and correspondingly higher multiplier economic impacts—than the low-scenario assumptions. In the following sections, we first discuss the estimated impacts under the high scenario and then the estimated impacts under the low scenario.

High-Scenario Estimates of Short-Run Economic Impacts

Table III-1 summarizes our estimates of the short-run economic impacts of 11 fiscal options per \$100 million of deficit reduction, under the high-scenario expenditure impact assumptions. Below we discuss the estimated direct, multiplier, and total effects on income, and effects on employment.

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. This option would involve using some of the earnings the state currently saves, either by adding them to the fund principal—to protect it from inflation—or to the earnings reserve.

Table III-1
Estimated Short-Run Economic Impacts of Selected Fiscal Options
Per \$100 Million of Deficit Reduction (High 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	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	134	0	788	788
Property tax		88	44	132	0	773	773
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 when public or private sector workers have reduced earnings as a direct result of cuts in government spending. *Direct other income* impacts result from reductions in household disposable income, either from paying state taxes or getting smaller dividend payments.

The state could structure spending cuts in many ways; we analyzed four generic options to show the different effects of cutting spending in different ways. Table III-1 illustrates the potential range of direct impacts on earned income from different kinds of spending cuts.

Direct Earned Income Impacts

- The direct earned income impacts would be largest if the state cut workers’ pay or eliminated jobs, and could be significantly less under broad-based cuts or cuts in the capital budget.

If a \$100 million spending cut were made entirely to the pay of state workers, the direct earned income impact would be \$100 million. If a \$100 million spending cut were made by cutting state government jobs, then the direct earned income impact would be slightly less (\$95 million), because some of the cut would be in other costs of state workers, such as costs of office space.

If spending cuts were broad-based—that is, spread throughout the state budget—or in the capital budget, the direct earned income impact might be significantly lower. That’s because relatively less of the cuts would be in payments to state or contractor workers, and relatively more would be in payments for other costs—such as energy, supplies, and construction materials. Note that the direct earned income impact we estimate for broad-based spending cuts (\$67 million) and capital spending cuts (\$42 million) reflect the generic scenarios we analyzed: the impacts might differ for any actual broad-based or capital-budget spending cuts.

Direct Other Income Impacts

- *The direct other income impact of a dividend cut would be larger than that of taxes, because non-residents would pay part of the taxes.*

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 non-residents would pay. The estimated non-resident share is in the range of 7% to 11% for various taxes—meaning the direct other income impact would vary between 88% and 93%.

In estimating income effects of a cut in Permanent Fund dividends, we assumed that non-residents collect about one percent of dividends every year, because they were residents at the time they applied but for various reasons later left the state. So the directed other income impact of a \$100 million cut in dividend payments would be \$99 million, rather than \$100 million.

In general, the fact that non-residents would pay part of sales, property, and income taxes means that not only the direct income and job impacts but also the resulting multiplier income and job impacts would be lower for the tax options than for the dividend-cut option—under which Alaska residents would experience almost the entire loss of income.

Multiplier and Total Income Impacts

When the incomes of households and businesses are directly affected, they in turn reduce their spending—which creates additional, broader effects on income: these are multiplier effects. Total income impacts are the sum of direct and multiplier impacts. In general, the larger the direct effect on income, the larger the multiplier effect.

- *The estimated total income impacts are largest for the dividend-cut option—\$149 million in lost income for a \$100 million cut in dividends.*

As Table III-1 shows, the direct effects on income are virtually the same for the dividend-cut option and the spending-cut option that reduces workers' pay by \$100 million. But the total estimated income impact of reduced workers' pay is somewhat lower—\$143 million. That's because a higher share of dividend cuts would be from lower-income households, for whom the effects on spending would be greater—because they spend more of their incomes.

- *The total income impacts of the tax options are in the range of \$135 million for \$100 million in revenue raised.* Because taxes would be partly paid by non-residents, they wouldn't directly reduce Alaskans' incomes by as much as dividend cuts.

- *Total effects on income are lowest for broad-based spending cuts or cuts in capital spending.* Unlike the dividend-cut and reduced-pay options, only part of broad-based or capital spending cuts would be direct reductions in household incomes. This doesn't mean their income effects would be small or insignificant; it only means they wouldn't be as large as for other options.

Estimating Multiplier Effects

How did we estimate the multiplier effects on income? Our estimates are driven by our assumptions about how direct income impacts reduce household spending, 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" for the high scenario, 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 tax and dividend-cut options (about 0.50), reflecting our assumption that direct income impacts under those options would have proportionally similar impacts on expenditures.

By contrast, the implicit income multipliers for the four spending cut options vary. For the options that would eliminate state jobs or cut state workers' pay, the variation in part reflects differences in the assumed income distribution of state workers who would be affected by these options, and the broader income distribution of Alaska households that would be affected by the tax and dividend cut options. For the broad-based and capital-budget spending cut options, the variation is in part because some of the multiplier impacts would be caused by changes in spending by businesses directly affected by changes in state spending.

Job Impacts

Direct Job Impacts

As shown in the top three rows of Table III-1, only three of the spending cut options—eliminating state jobs, making broad-based cuts, and cutting the capital budget—would have direct job impacts. The direct impacts of the other options are reductions in income, but not job losses.

- *The direct job impacts are highest—960 jobs—for cutting \$100 million solely through job cuts. Direct losses under broad-based cuts and capital-budget cuts would be roughly half that size.*

Multiplier and Total Job Losses

Only three of the fiscal options would cause direct job losses, but all the options would cause indirect, multiplier job losses, as the effects of less income moved through the economy.

- *Total job losses would be largest under the option of cutting spending just through job cuts—nearly 1,700 jobs lost for \$100 million in state spending cuts.*
- *Total job losses under the dividend-cut option would be larger than under any of the tax options—nearly 900 jobs for \$100 million in dividend cuts.*

Total job losses under any of the tax options would be in the range of about 780 jobs per \$100 million of revenue raised. Broad-based spending cuts would cost the economy an estimated 1,260 jobs per \$100 million in cuts, and cuts in the capital budget 930 jobs.

Estimating Job-Loss Multiplier Effects

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 Multiplier 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

Low-Scenario Estimates of Short-Run Economic Impacts

Table III-4 summarizes our estimates of the short-run economic impacts of fiscal options under the low-scenario assumptions. These estimates differ from those under the high scenario because they are based on different assumptions, estimated from a different data source. The low scenario assumes that households wouldn't reduce their spending as much if their incomes were reduced, but rather save less or borrow more. As a result, the estimated multiplier impacts are about one-third smaller than those we just discussed for the high scenario.

Table III-4
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	Multiplier	Total	Direct	Multiplier	Total
Spending cut: workers	95		27	122	962	452	1414
Spending cut: broad-based	67		30	98	504	476	980
Spending cut: capital	42		14	56	506	269	775
Spending cut: pay	100		27	127		459	459
Income tax: progressive		93	31	124		544	544
Income tax: flat rate		93	30	122		517	517
Sales tax: more exclusions		89	27	116		477	477
Sales tax: fewer exclusions		90	27	117		482	482
Property tax		88	26	114		463	463
Dividend cut		99	31	130		558	558
Saving less				0			0

Table III-5 shows the ratio of the impacts projected for the low scenario in Table III-4 to the impacts projected for the high-scenario estimates, shown in Table III-1. The low-scenario multiplier impacts range from 60% to 69% of the high-scenario multiplier impacts. The low-scenario total impacts range from 85% to 90% for income and between 60% and 84% for jobs.

Table III-5
Ratio of Low Scenario to High Scenario Estimates of Short-Run Economic Impacts of
Selected Fiscal Options

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		0.63	0.89	1.00	0.63	0.84
Spending cut: broad-based	1.00		0.63	0.85	1.00	0.63	0.78
Spending cut: capital	1.00		0.63	0.87	1.00	0.63	0.83
Spending cut: pay	1.00		0.63	0.89		0.63	0.63
Income tax: progressive		1.00	0.69	0.90		0.69	0.69
Income tax: flat rate		1.00	0.65	0.88		0.65	0.65
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	0.60	0.87		0.60	0.60
Dividend cut		1.00	0.62	0.87		0.62	0.62

Table III-6 summarizes the total short-run economic impacts estimated for the two scenarios. The relative ranking of impacts is almost the same, except that rankings for employment impacts shift slightly between some of the income and sale tax options.

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	122	138	1414	1677
Spending cut: broad-based	98	115	980	1260
Spending cut: capital	56	64	775	931
Spending cut: pay	127	143	459	727
Income tax: progressive	124	138	544	786
Income tax: flat rate	122	138	517	798
Sales tax: more exclusions	116	133	477	775
Sales tax: fewer exclusions	117	134	482	788
Property tax	114	132	463	773
Dividend cut	130	149	558	892
Saving less	0	0	0	0

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.

Short-Run Economic Impacts of Combinations of Options

Up to this point, we’ve discussed our estimates of potential impacts of individual fiscal options, to illustrate the effects of specific changes. But in reality, it is more likely the state will reduce the deficit through some combination of fiscal options. 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 more the combination of options includes those with lower economic impacts (particularly the “saving less” option), 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

Examples of potential combinations of options	Option	Two options						Three options				Four 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											
Range of estimated impacts	Dividend cut		50%	50%		50%		33%	33%		33%	25%
	Saving less				50%	50%	50%		33%	33%	33%	25%
	Total income impact (millions of \$ of income)											
	Low scenario	111	114	127	49	65	62	117	76	74	85	88
	High scenario	127	132	143	58	74	69	134	88	84	96	101
	Total jobs impact (FTE jobs in Alaska)											
	Low scenario	762	769	551	490	279	272	694	513	508	367	521
	High scenario	1023	1076	839	630	446	393	980	717	682	560	735

Note: Some of those who commented on the draft of this report asked a reasonable question: if cutting Permanent Fund dividends would potentially cost the economy hundreds of jobs, why didn’t Alaska see a substantial number of new jobs created in recent years, when the size of dividends increased sharply? The answer is that we likely would have seen the economy expand, if other changes—including significant losses in federal spending and losses in the oil industry—hadn’t been costing the state jobs. At any given time, many factors are affecting the state economy. Positive effects of one factor may be offsetting negative effects of others. That makes it hard to see the effects of both kinds of factors—but it doesn’t mean they aren’t happening.

Limitations of Comparative Short-Run Economic Impact Estimates

The input-output modeling approach 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.

But our economic-impact estimates should be considered approximate rather than precise measures of the actual impacts that each fiscal option might 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 that might result from people changing their behavior if their economic circumstances changed.
- 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 might be affected by new taxes over time. As we discuss in Chapter VI, these other economic impacts of fiscal options might be as important or more important than the short-run economic impacts 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) Alaskans 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%.

By contrast, the share of exemptions accounted for by returns with more than \$75,000 in adjusted gross income was 48% for the Juneau City and Borough but only 9% for the Kusilvak census area, with an Alaska average of 39%. Clearly, there would be significant differences in how these two census areas would be affected 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 affected relatively more by dividend cuts and sales taxes, which have relatively greater effects on lower-income groups. Higher-income regions are likely to be affected relatively more by income taxes, which have relatively greater effects on higher-income groups.

Regional Differences in Employment Impacts

There are also significant regional differences around Alaska in what shares different industries make up of employment and 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 affected far more than the North Slope Borough by cuts in 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 affected far more than the Denali Borough by cuts in revenue sharing, K-12 education funding, or other kinds of state spending that 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

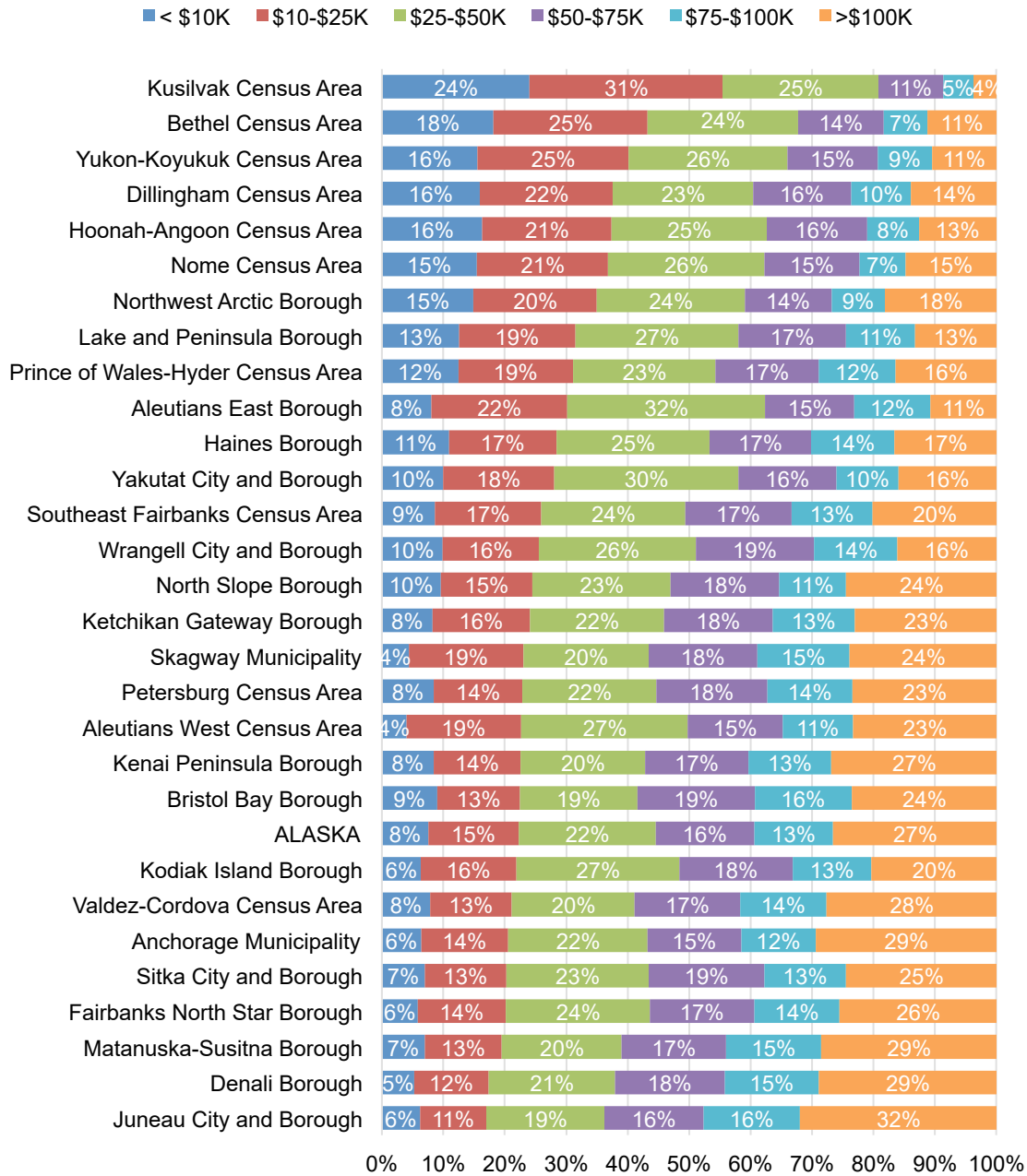


Figure IV-2

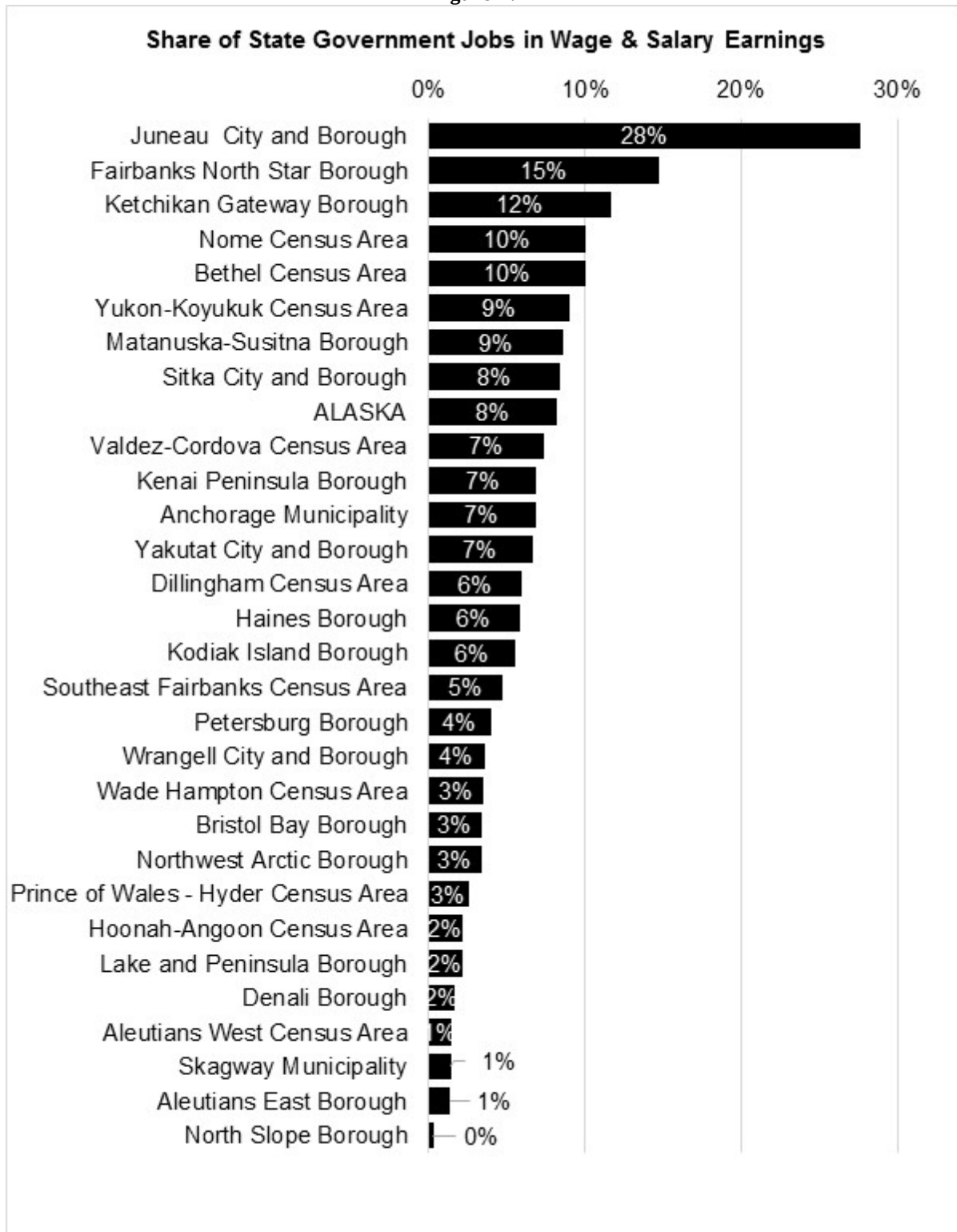
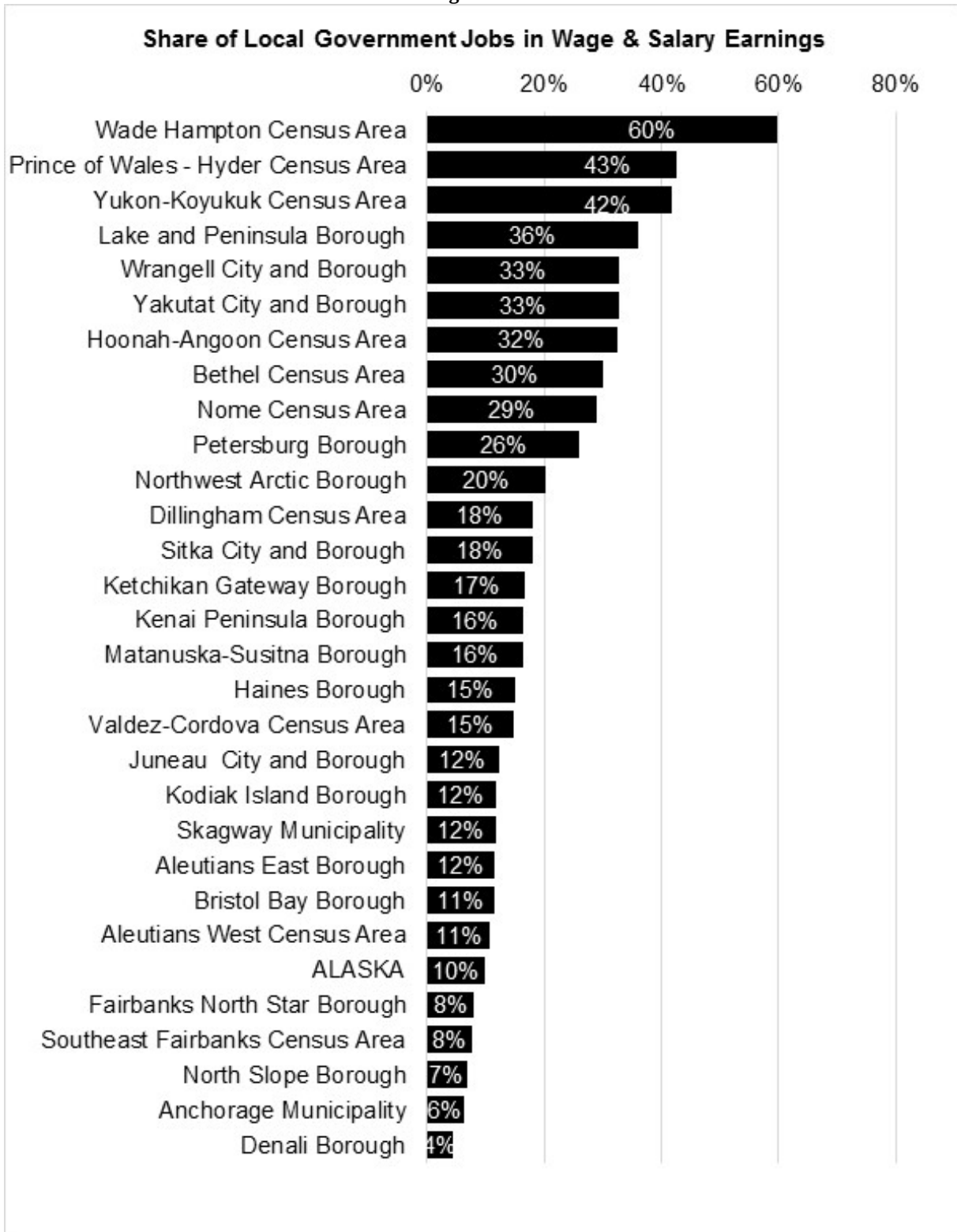


Figure IV-3



V. TOTAL ECONOMIC IMPACTS OF REDUCING THE DEFICIT

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

Table V-1 shows the estimated total impacts of reducing the deficit by specific amounts, using selected potential combinations of fiscal options. We calculated these estimates by extrapolating from the estimates in Table III-7 in Chapter III, of the impacts of reducing the deficit by \$100 million using these combinations. 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 be 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 deficit 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 deficit 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 deficit 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 deficit 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 deficit 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 deficit 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 deficit 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 which 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 (Table 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 that 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-4.

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 impacts on the economy, or about how fast we should reduce the deficit. We can, however, 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 cuts in oil-industry jobs and large cuts in state capital spending over the past few years that we haven't yet felt the full effects of. We could delay—but not escape—some of these direct short-run economic impacts by spreading out deficit reduction over a longer period.

But continued large deficits and draws from our savings would also have significant negative economic impacts. These include but are not limited to:

- Loss of future investment income. For every billion dollars we draw down our remaining savings, we lose the potential to generate \$50 million in future *annual* income, assuming a conservative 5% rate of return on investments.
- Certain further downgrading of Alaska's credit rating, and increases in future borrowing costs.
- Potential future insufficient cash in the Permanent Fund earnings reserve to cover otherwise sustainable payouts of Permanent Fund investment earnings. Over time, the Permanent Fund can generate large investment earnings to support sustainable state government spending and dividend payments. But several consecutive years of low earnings could deplete the earnings reserve of the cash needed to make these payouts. The likelihood of that happening increases, the more the earnings reserve is drawn down by non-sustainable draws to cover deficits.

More difficult to quantify, but perhaps the most important potential negative economic impact of continued large deficits, is continued and growing uncertainty—among Alaskans, Alaska businesses, resource industries, and public and private employees—about Alaska's fiscal and economic future, and about whether Alaska will remain a good place for businesses to invest and for people to work, live, and call home. Uncertainty causes both businesses and households to postpone investment. Uncertainty increases the likelihood that young Alaskans will leave Alaska to seek better opportunities elsewhere. Uncertainty hurts public and private employee morale, turnover, and recruitment: it increases the likelihood that the best public and private employees will leave to look for better opportunities elsewhere. Uncertainty increases the likelihood that resource industries will choose to invest elsewhere. Uncertainty causes businesses and households to focus on the negative effects of what may be coming, rather than on the opportunities the future holds.

Thus, we face a tradeoff between the short-run negative economic impacts of reducing the deficit and the significant short-run and longer-run economic impacts of *not* reducing the deficit. Our economic adjustment to lower oil revenues will likely be smoother if we substantially reduce the deficit this year, and also clearly demonstrate to Alaskans, businesses, and investors how we will make the further changes necessary in 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 that formerly supported most of state General Fund spending—and that 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. We can't permanently support our economy by running deficits.

VI. OTHER ECONOMIC IMPACTS OF ALASKA FISCAL OPTIONS

In this chapter we briefly list some of the potential longer-term and indirect economic impacts of closing Alaska's budget deficit under the fiscal options we analyzed in this study. We analyzed only the potential revenue impacts and short-run economic impacts of those options—which include several kinds of budget cuts and taxes, as well as cutting the Permanent Fund dividend and using more of the Permanent Fund earning the state currently saves. All those options would also have longer-term and indirect impacts that we didn't study. And there are important fiscal options currently under discussion—such as changes in oil taxes and credits—that we didn't study at all.

It was far beyond the scope of this study to estimate these other impacts. The available funding for the study—and the time ISER researchers had to spend on it—limited what we were able to analyze. 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—due to 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 in oil taxes and credits, because those impacts would be complex and difficult to predict and would require a major separate study.

The potential longer-term and indirect impacts we identify below might be considered a start toward a more comprehensive list of other economic impacts that matter—and that we Alaskans should think about as we discuss fiscal options.

In briefly talking about some of these other potential impacts, 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. We simply want 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 Reduced State Services

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

- Cuts in spending for the state ferry system could affect ferry service routes and timing—which in turn could affect tourist travel to some communities and the tourism industry in those communities.

- Cuts in fisheries management spending could limit the ability of fisheries managers to monitor and research fisheries catches, salmon escapement, and fishery resource conditions. Given the state’s constitutional requirement to manage fisheries sustainably, such cuts could lead to more conservative fisheries management—reducing commercial fish harvests and sport fishing opportunities, with effects on commercial harvest values (and fish-tax revenues) and on incomes of sport-fishing guides.
- Cuts in University of Alaska funding could affect the number and quality of program and course offerings, which could in turn affect the number of young Alaskans choosing to attend the University of Alaska. In the short-term, such changes could influence how much of what young Alaskans spend on tuition, housing, food, recreation (and everything else) stays in Alaska—creating income and jobs—or leaves Alaska, if they choose other universities. Over the longer-term, reduced UA offerings 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 reduced state services; 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 Alaskans should understand that the economic impacts may exceed the short-term effects on jobs and income that we analyzed. Put differently, if we care about the economy, then we shouldn’t make decisions about what and how much to cut based just 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 that may generate not only future economic benefits but also state revenues. For example:

- Transportation infrastructure projects may lower the costs of and stimulate new resource development, increasing potential future state revenues.
- Marketing for tourism or seafood may increase tourism or seafood sales or prices, benefiting these industries and also increasing the taxes they pay.
- Workforce training may reduce the costs of labor for new economic development and increase the share of jobs Alaskans can fill.

There are many other examples of the potential adverse effects that cutting spending could arguably have on Alaska’s future economic development and revenues.

In the extreme, the argument could be made that almost any kind of state spending is an “investment” in economic development. Anything the state does to improve the quality of life for Alaskans, or reduces the cost of living or doing business in Alaska, could conceivably stimulate economic development by making Alaska a more attractive place for businesses to invest and for people to work and live.

In evaluating arguments about whether some kinds of state spending 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 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 those of other potential state investments?

Just because an investment might have economic benefits, or might generate revenues, does not necessarily mean the benefits outweigh the costs, or that it 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. The state could cut spending by deferring maintenance for some period. But over time the quality and reliability of roads, buildings, and equipment deteriorates, and lack of maintenance can eventually lead to costly repairs or even the complete loss of assets. Deferring costs can be a useful strategy for dealing temporary shortfalls in state funding. But it is less likely to be a useful way of dealing with a long-term decline in state oil revenues.

Some kinds of state spending today might help hold down costs tomorrow—and cutting those might increase the future need for and cost of some programs. Examples of spending that may help hold down future costs:

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

Advocates for many kinds of programs argue 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 the benefits of some programs. In other cases, the evidence may be weak or non-existent.

We haven't studied what kinds of spending cuts might cost money—by increasing the need for and cost of other kinds of spending—rather than save money. Clearly this is an important question to be considered for some kinds of potential spending cuts.

Impacts of Cost Shifting

Some kinds of state spending cuts might shift more of the costs to local governments (and taxpayers) and to those who use state services. Here are a few potential examples:

- Cuts in state revenue sharing for local governments could lead to increases in local taxes, to make up for any resulting shortfalls in local government revenue.
- Cuts in state funding for retirement obligations could increase the share of those obligations local governments and school systems pay—which could also lead to higher local taxes.
- Cuts in state agency budgets could lead to shifting of responsibilities to local government agencies—which would require increased local taxes to pay for the increased 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 in state agency budgets could also lead to increases in user fees for services these agencies provide. For example, cuts in the ferry-system budget could lead to higher fares; cuts in the state-parks budget could lead to higher park user fees; and cuts in the Department of Fish and Game’s budget could lead to higher fees for sport fishing licenses and commercial fishing permits.

Our point is not to argue against cost-shifting. It may be appropriate for local governments or service users to pay more of the costs 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 the state to “match” a share of the federal funds. Cuts in state spending that are matches 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 state matching funds.

We have not done (or seen) any analysis of how much of total state spending serves as a match for federal funds, or whether there have been—or there are proposed—cuts in state spending that would cost the state federal matching funds. To clarify the potential effects of budget cuts, it would be useful to review how much of the funding for various state agencies serves as a match for federal funds, and how much and what kinds of federal funding those agencies bring in. Our point is not to argue that the state should necessarily pay for anything that brings in federal funding. It is simply that when state spending does bring in federal funding, the economic impacts of cutting that spending are magnified.

Impacts on Public Employees

The quality of services that state agencies, K-12 schools, and other state-funded entities provide depends 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 job.

How state spending is cut, and how decisions are made about spending cuts, will 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 state staffing levels, pay, and benefits should not be scrutinized. Clearly, given the seriousness of the financial challenge the state faces, 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 focused on potential revenue impacts and short-run economic impacts of selected tax options: how much money they would collect from whom, and how the loss of disposable income would affect spending and the economy.

In addition to the potential impacts we analyzed, 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 services and benefits government provides and the negative effects of taxes?
- What kinds of taxes help keep the negative effects to a minimum?
- What kinds of taxes are most fair?

These same broad economic and political questions matter for Alaska, as we think about potential tax options for reducing the deficit. Also, there are many specific questions related to potential negative and positive effects of tax options. To name just a few, potential negative effects include:

- Sales taxes might affect the extent to which Alaskans buy from local retailers rather than 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), thus reducing resource industry investment and jobs.

- Taxing fish-processing workers might increase the wages fish processors need to pay to attract workers, adding to their costs and reducing prices paid 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 the potential economic effects of taxes would necessarily be negative. Examples of potential positive effects include:

- When people pay taxes, they have skin in the game in political decisions about spending. If they don't pay taxes, they may not care as much about—and pay less attention to—what government spends and for what. The more they pay in taxes, the more careful attention they may pay to spending (and the less spending they may demand).
- When people and industries pay taxes, economic growth and population growth pay for themselves. Currently, when the economy and the population grow, most Alaskans and most Alaska businesses pay relatively low taxes to state government. That's good for business, but it's not good for state finances. The demand for and cost of state government services—such as schools and roads—increases as the economy and population grow, but state revenues don't increase enough to pay those higher costs. This problem has been called the “Alaska disconnect.” If Alaska residents and businesses paid higher taxes, it would help reduce the Alaska disconnect.

Our point is not to argue for or against any of these potential negative or positive effects 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. Since the 1980s, the state has made annual cash payments—dividends—from the earnings of the Permanent Fund, to all residents. Some Alaskans emphasize what they see as positive effects of the dividend program (and corresponding potential negative effects of dividend cuts). Others emphasize what they see as negative effects of the dividend program (and corresponding potential positive effects of dividend cuts).

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

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

- How would dividend cuts affect the ability of lower-income residents 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 education and down payments on homes?
- How would dividend cuts affect Alaska wage rates? Would lower dividends mean employers would have to pay workers more, because people would need to earn more to live in Alaska?
- How would dividend cuts affect how many and what kinds of people move to Alaska or leave Alaska? Do dividends “attract” poor people or large families to Alaska?
- Would dividend cuts affect how much Alaskans feel they have a stake in the Permanent Fund—and their commitment to increasing and protecting it over time?

Our point is not to argue for or against the philosophical perspectives on whose money the dividends are, or what the longer-term and indirect impacts of the dividend might be. Our point is that what matters, in considering dividend cuts, clearly goes beyond the short-run impacts, to longer-term and more complex potential impacts.

Conclusions

Choices Alaskans make about closing the budget deficit would affect Alaska’s economy and society in many important ways beyond the short-term economic impacts we estimated for this study. We should base our fiscal choices not only on their short-term effects but also on what they might mean for 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 among 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 (including home, vehicle, and life), 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 available for analysis at the household level.

CES data can be summarized by per-capita household income and many other household characteristics. But 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 for education expenditures; the linear censored regression provided a more realistic prediction for education expenditures, probably because 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 through 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 of people at different income levels, from published tables at the state level (<https://www.irs.gov/uac/SOI-Tax-Stats-Historic-Table-2>). We then used the estimated relationships between total income, taxable income, and income tax payments 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 respondents say 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 residents of group quarters, so we assumed that per-capita household income of those in group quarters was the same as individual income. To develop the distribution of income, we divided all the households into ten groups, ranked by per-capita household income. For this step, residents of group quarters were considered households with a household size of one. Each decile of the income distribution therefore represents ten percent of households, plus residents of group quarters, rather than ten percent of individuals. Since lower-income households tend to be larger than higher-income households, the poorest deciles include somewhat more people than the richer deciles.

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 736,000 Alaska residents the census bureau estimated for 2013, the Alaska Department of Labor reported 86,000 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, because it does not include federal government employees—including active-duty military personnel—or self-employed people.

**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	\$ 33,578	\$ 34,678
Non-resident workers	86,455		27,760	27,771

^aAssuming 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 were 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 only residents can receive PFDs, 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 PFDs, then non-residents would have received about one percent of PFD payments.

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.

Our 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 that 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 made rough estimates of non-resident expenditures on food at home and shelter in proportion to non-resident wages as a share of total state wages. We estimated 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, but 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 people who are no longer Alaska residents when they receive the payments.

Table A-3. Estimated Resident, Non-resident, and Total Revenues Raised Under 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	\$ 45	\$ 433

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 that don't levy 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.

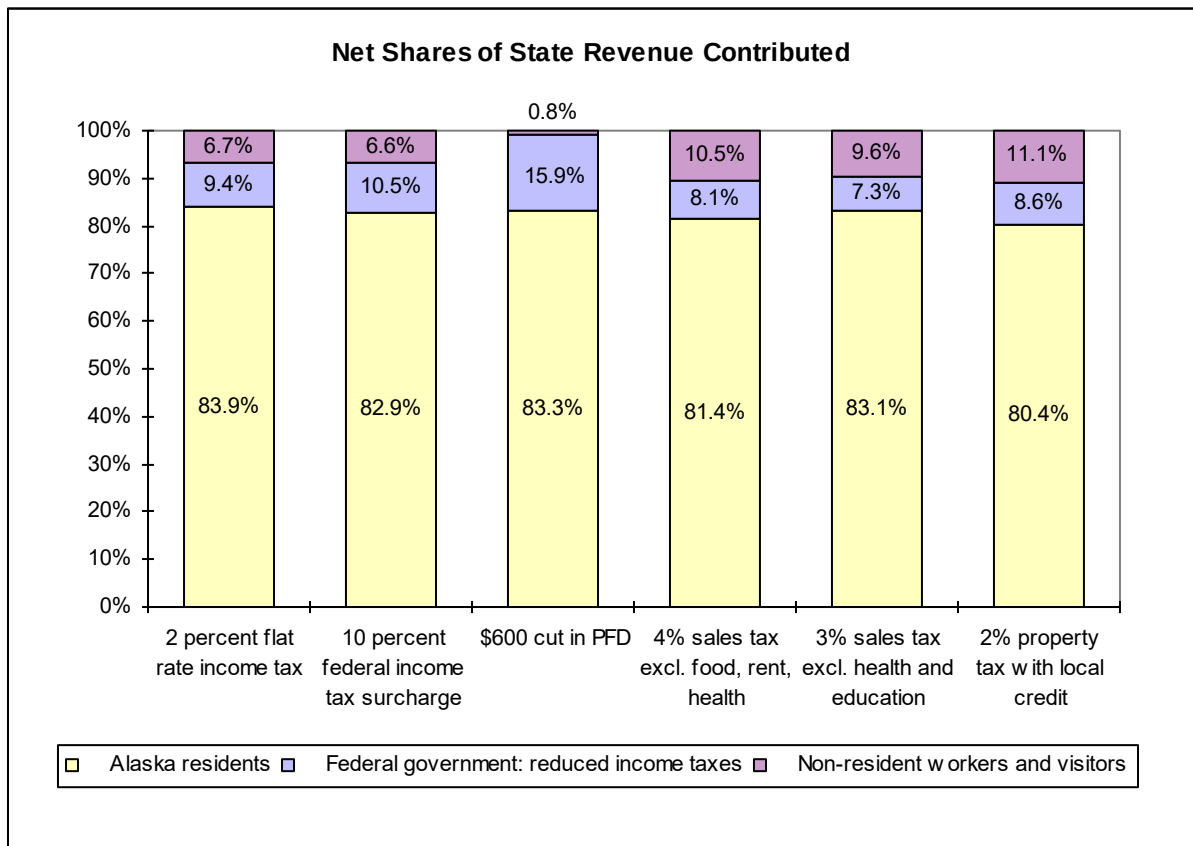
^c Total unorganized borough less cities in unorganized borough levying property taxes.

As shown in Table A-4, the scaled-up estimate of statewide property value was \$87 billion, which is \$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. Subtracting the \$924 million collected by local governments in 2015 leaves \$815 million in potential new state revenues from the property tax.

Figure A-1 compares the percentages of revenues paid by residents, non-residents, and the federal government that the state receives under the various fiscal options. 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. Businesses can deduct property taxes from federal taxable income. 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. Property taxes on businesses not owned by Alaskans and selling products primarily outside Alaska—such as mines and fish processing plants—would not generally fall on Alaska residents either. Property tax assessment rolls for the Mat-Su Borough and the Kenai Peninsula Borough show 7-10 percent of locally assessed value of property is owned by people who are not Alaska residents. Given the limited information available, we estimate, as shown in Figure A-1, that non-residents would contribute 8.6 percent of property tax revenues, after netting out the share contributed by the federal government through reduced individual and corporate income taxes.

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 therefore assumed 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

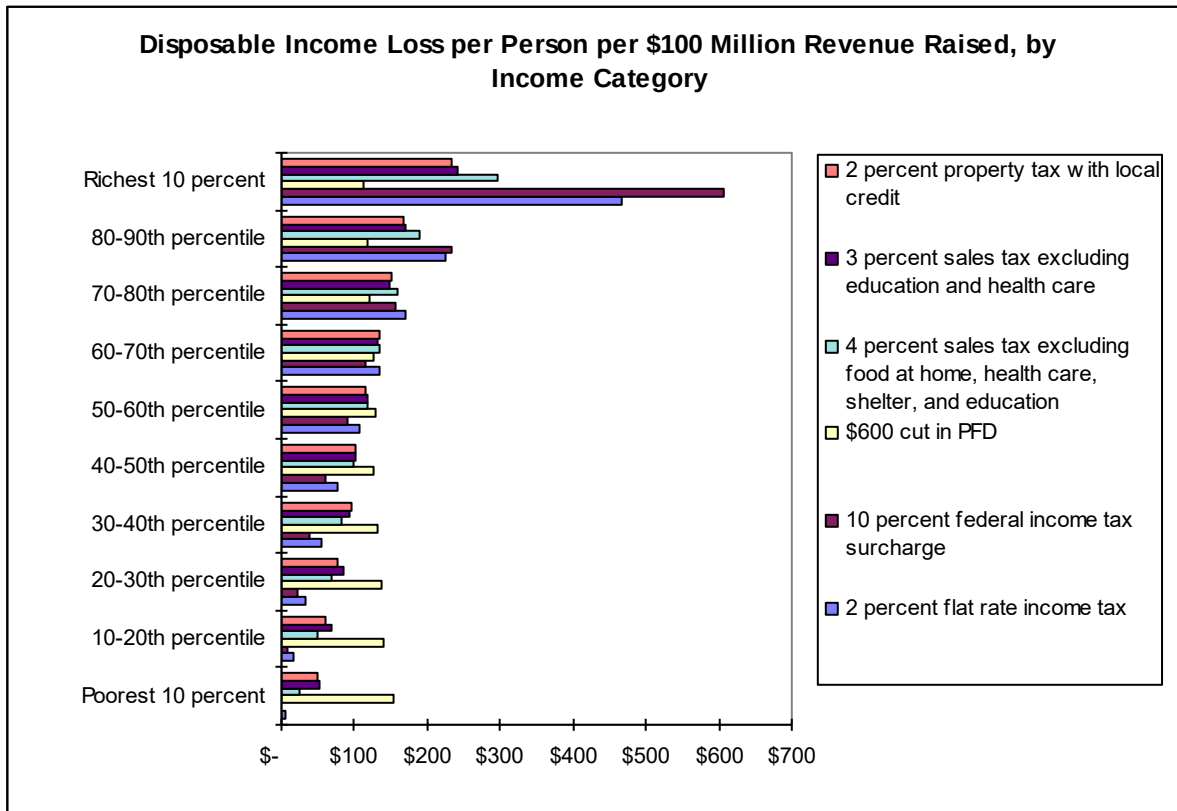
Figure A-2 compares how each of the broad-based revenue measures discussed above affects per-capita disposable income—income net of taxes—for households with different levels of per-capita income. Because each revenue option raises a different amount of revenue, the numbers in Figure A-2 are normalized to show the disposable income loss per \$100 million of revenue 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; per-capita disposable income of the richest ten percent of households would only fall on average by \$112. For all the other measures, the amount paid would rise as per-capita income rises, although in varying degrees.

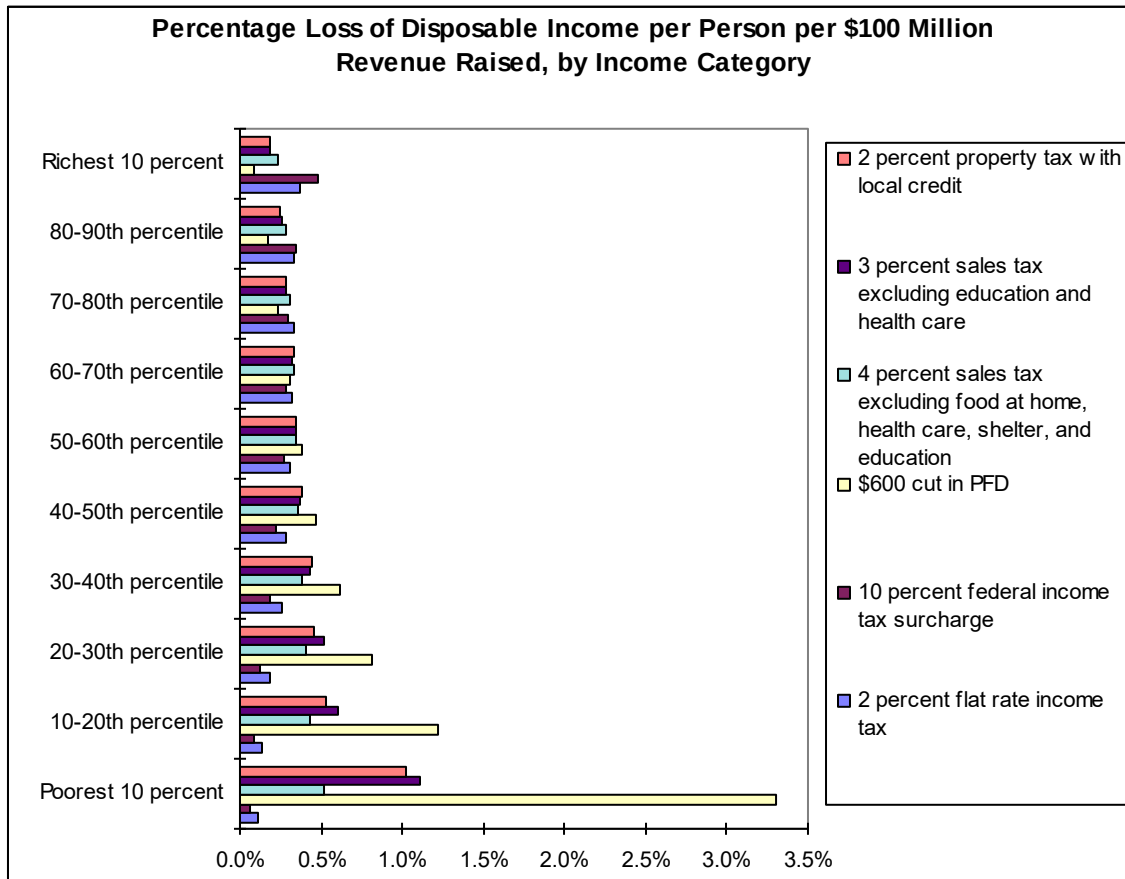
The ten percent of households with the highest per-capita income would pay about five times as much as the poorest ten percent for the sales tax including food at home and shelter. They would pay about 12 times as much if the sales tax excludes food and shelter, about the same multiple as the state property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



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 per-capita disposable income of the richest ten percent of households by about 0.5 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 1.1 percent of per-capita disposable income with a sales tax that includes food at home and shelter, while the richest 10 percent would lose only 0.2 percent. Even if food at home and shelter were excluded, the sales tax would still reduce per-capita disposable income of the poorest ten percent of households by twice as much as for the richest ten percent. The distribution of property taxes, as mentioned above, is very similar to the distribution of a 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 per-capita disposable income, compared with only 0.1 percent among households with the highest incomes.

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 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 deriving estimates of the effects of revenue measures on expenditures using the Census/ACS and Alaska CES data. Appendix D discusses methods for deriving estimates of effects of revenue measures on expenditures using IMPLAN.

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. But neither probably accurately captures the income of self-employed non-residents such as commercial fishermen.

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

Assumption	IMPLAN	Census
<i>Household income driving spending patterns includes</i>		
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	
<i>Spending patterns driving economic impacts</i>		
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 do, 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 on the cost of living of property taxes on commercial property.

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

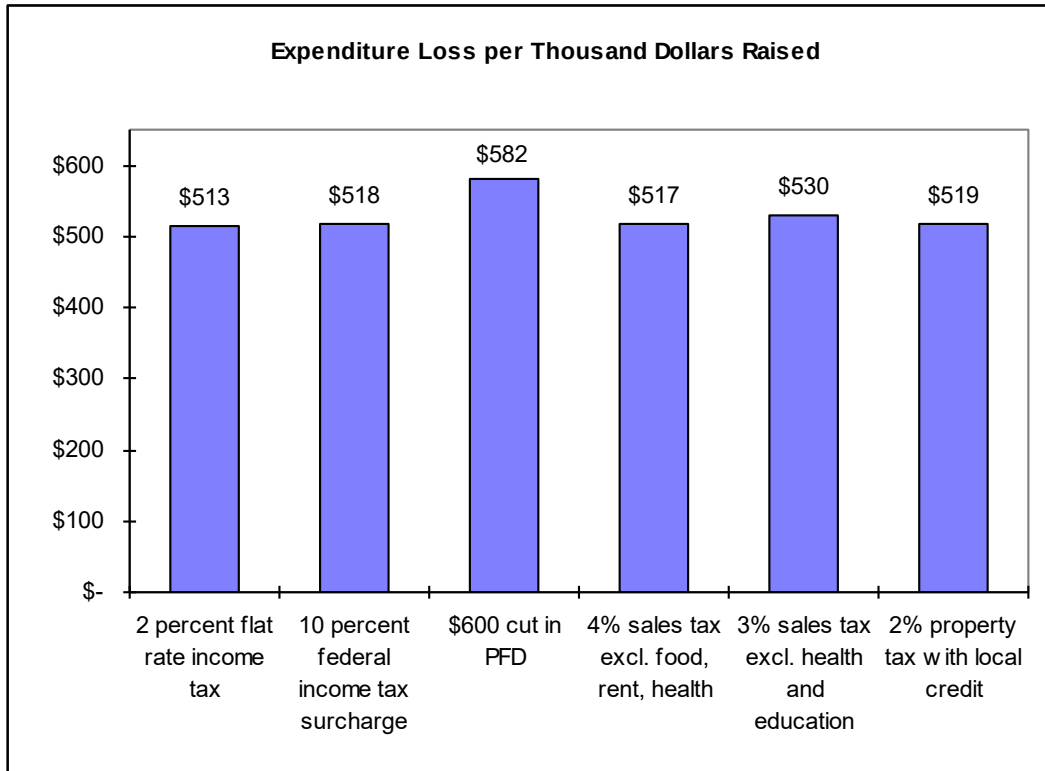


Table A-6 shows that how sensitive different types of expenditures are to the loss of disposable income varies among the potential measures. Expenditures on health care and education are the most sensitive to disposable income loss. Food at home is not as sensitive as other goods and services. Shelter 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 CES expenditures 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 likely 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	\$ (4,181)	\$ (3,429)	\$ (9,799)	\$ (5,037)	\$ (7,275)	\$ (13,121)
Other commodities	(50,116)	(44,808)	(64,746)	(49,001)	(62,359)	(114,496)
Services	(34,670)	(31,030)	(44,598)	(33,838)	(43,031)	(79,013)
Shelter	(331)	(271)	(862)	(411)	(611)	(1,097)
Health care	(37,052)	(38,726)	(19,085)	(26,942)	(29,459)	(54,677)
Education	(24,036)	(22,065)	(26,422)	(22,251)	(27,476)	(50,641)
Other items	(52,635)	(49,115)	(57,930)	(48,118)	(59,573)	(109,566)
Total	\$(203,022)	\$(189,443)	\$(223,443)	\$(185,599)	\$(229,783)	\$ (422,611)
Reduction in expenditures per \$1,000 raised						
Food at home	\$ 11	\$ 9	\$ 26	\$ 14	\$ 17	\$18
Other commodities	127	122	169	136	144	141
Services	88	85	116	94	99	97
Shelter	1	1	2	1	1	1
Health care	94	106	50	75	68	67
Education	61	60	69	62	63	62
Other items	133	134	151	134	138	134
Total	\$ 513	\$ 518	\$ 646	\$ 517	\$ 530	\$519

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.

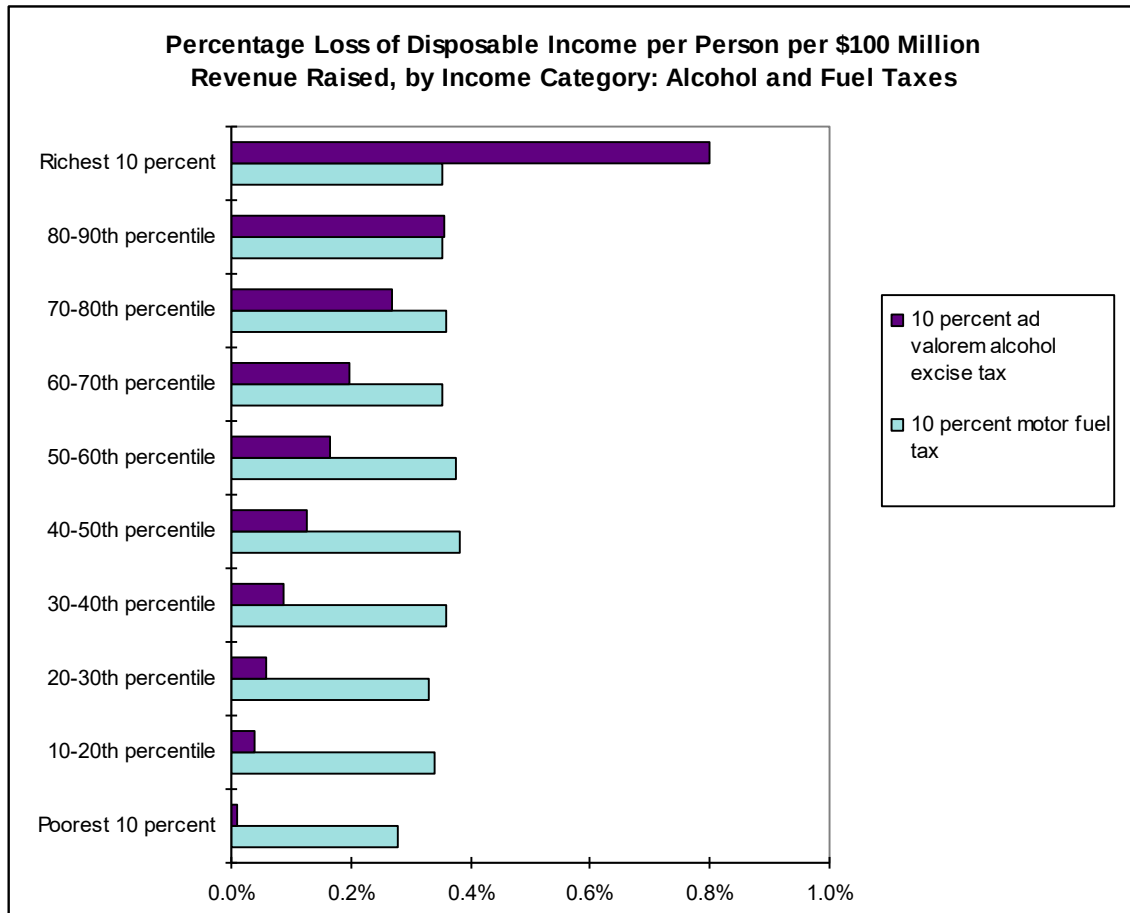
Alaska taxes motor fuels at a rate of \$0.0895, marine fuels at \$0.05 per gallon, aviation gasoline at \$0.047 and jet fuel at \$0.032 per gallon. The highway rate includes a surcharge of 0.95 cents per gallon, effective July 1, 2015. Commercial enterprises pay a substantial portion of motor fuel taxes. 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 Alaska taxes average 12.25 cents for gasoline and 12.75 cents for diesel. National averages (including all other taxes and fees) 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 17.5 cents per gallon, with a similar percentage rise in marine and aviation fuels, would raise Alaska rates 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 Alaska 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. Revenues from tobacco taxes were \$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 evade 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 different revenue options would raise. 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 measures 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 about just what types of expenditures the DOR study included in the sales tax base.

A 1993 ISER study 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 a state longevity bonus (a payment of up to \$250 per month to older Alaskans) accounted for 25 percent of household income of the poorest ten percent of households. Although the longevity bonus has since been eliminated, 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. We estimated the equations 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 alcoholic 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, we can trace flows of economic activity associated with any change in spending either forwards (spending generating income, which induces further spending) or backwards (industry purchases of fuel that lead 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. Increased sales in truck-tire supply firms resulting from more shipping services sales are 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 IMPLAN¹ 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, Covered Employment and Wages (CEW)² data from the Bureau of Labor Statistics provide the county-level industry structure for the IMPLAN database. The U.S. 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 sectors⁴).

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. Employee compensation is derived for each industry from ES202⁵ and Regional Economic Information System Employment (REIS) data.

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.

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

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
<i>Value Added</i>	
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
<u>Total Value Added</u>	<u>\$64,776,426,833</u>
<i>Final Demand</i>	
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
<u>Total Final Demand:</u>	<u>\$64,776,426,879</u>

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 Bureau of Labor Statistics (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.

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. Forest 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 bookkeeping 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 contribute 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 BEA Regional Economic Information System (REIS) CA 35 Table. The third is the BLS Consumer Expenditure Survey (CES), 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 REIS data. REIS has estimates of income by place of work and place of residence, as well as some transfer-payment 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 the fiscal options we analyzed.

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). All the direct economic impacts are the same for the low scenario as for the high. The differences are in the multiplier economic impacts, because they are based on different assumptions about how changes in household income would affect household spending. 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 option.

High-Scenario Estimates of Economic Impacts

In this appendix, we first discuss the estimated impacts for the high scenario. The following analysis and discussion—and including the tables through Table D-12—are all about the high scenario, until we conclude with the section “Low Scenarios for Economic Impacts.”

IMPLAN Model Assumptions for Spending Cut Options

Spending Cut: Workers

We modeled the impacts of removing 1,300 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. and terminals, and Housing and 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 modeled those similarly to how we modeled 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

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	\$716,071	\$380,019
Non-residents	\$27,033	\$29,234	\$41,198	\$44,975	\$98,572	\$3,800
Total	\$365,880	\$395,676	\$359,168	\$433,193	\$814,642	\$383,819
Resident share	92.6%	92.6%	88.5%	89.6%	87.9%	99.0%
Non-resident share	7.4%	7.4%	11.5%	10.4%	12.1%	1.0%

We also used the methodology discussed in Appendix A to develop the following estimates of revenue that 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	\$34,264	\$44,895
10-20 percent	\$3,108	\$5,520	\$16,439	\$27,411	\$44,960	\$46,265
20-30 percent	\$5,843	\$9,594	\$18,889	\$28,661	\$48,344	\$39,236
30-40 percent	\$11,940	\$18,232	\$25,751	\$34,847	\$66,999	\$43,552
40-50 percent	\$18,625	\$25,480	\$31,284	\$39,082	\$73,980	\$43,900
50-60 percent	\$25,808	\$32,938	\$34,663	\$41,560	\$78,052	\$40,340
60-70 percent	\$28,427	\$35,777	\$35,202	\$41,521	\$80,219	\$34,740
70-80 percent	\$36,652	\$43,038	\$40,368	\$45,248	\$87,247	\$32,880
80-90 percent	\$48,862	\$51,275	\$44,450	\$48,089	\$88,851	\$29,559
highest 10 percent	\$106,255	\$88,335	\$63,299	\$62,092	\$113,156	\$24,650
Total	\$338,847	\$366,442	\$317,970	\$388,218	\$716,071	\$380,019

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%	11.81%
10-20 percent	1.08%	1.77%	5.17%	7.06%	6.28%	12.17%
20-30 percent	2.04%	3.07%	5.94%	7.38%	6.75%	10.32%
30-40 percent	4.17%	5.84%	8.10%	8.98%	9.36%	11.46%
40-50 percent	6.50%	8.16%	9.84%	10.07%	10.33%	11.55%
50-60 percent	9.01%	10.55%	10.90%	10.71%	10.90%	10.62%
60-70 percent	9.92%	11.46%	11.07%	10.70%	11.20%	9.14%
70-80 percent	12.79%	13.79%	12.70%	11.66%	12.18%	8.65%
80-90 percent	17.06%	16.43%	13.98%	12.39%	12.41%	7.78%
highest 10 percent	37.09%	28.31%	19.91%	15.99%	15.80%	6.49%
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 that would result from collecting the total revenues 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	\$21,989	\$38,980	\$45,344
10-20 percent	\$3,970	\$6,999	\$18,569	\$30,586	\$51,149	\$46,728
20-30 percent	\$7,463	\$12,164	\$21,336	\$31,982	\$54,998	\$39,629
30-40 percent	\$15,249	\$23,116	\$29,087	\$38,884	\$76,222	\$43,988
40-50 percent	\$23,786	\$32,305	\$35,337	\$43,610	\$84,163	\$44,339
50-60 percent	\$32,958	\$41,761	\$39,154	\$46,375	\$88,797	\$40,743
60-70 percent	\$36,303	\$45,361	\$39,763	\$46,331	\$91,262	\$35,088
70-80 percent	\$46,808	\$54,567	\$45,598	\$50,490	\$99,257	\$33,209
80-90 percent	\$62,401	\$65,011	\$50,209	\$53,661	\$101,082	\$29,854
highest 10 percent	\$135,696	\$111,999	\$71,501	\$69,285	\$128,733	\$24,896
Total	\$365,880	\$395,676	\$359,168	\$433,193	\$814,642	\$383,819

We then estimated spending reductions per dollar of lost income.

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 derived 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 equal to 1 minus (savings + taxes).

To derive how much each income group allocates to taxes and savings, we did the following. To generate flows from households to government (taxes), we divided 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 divided the amount they allocate to capital (14001) by the overall income (Total).

Lower-income households receive distributions from the government that 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):
High Scenario

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	\$21,989	\$38,980	\$45,344
10-20 percent	\$3,970	\$6,999	\$18,569	\$30,586	\$51,149	\$46,728
20-30 percent	\$7,463	\$12,164	\$21,336	\$31,982	\$54,998	\$39,629
30-40 percent	\$15,249	\$23,116	\$29,087	\$38,884	\$76,222	\$43,988
40-50 percent	\$23,786	\$32,305	\$35,337	\$43,610	\$84,163	\$44,339
50-60 percent	\$32,958	\$41,761	\$39,154	\$46,375	\$88,797	\$40,743
60-70 percent	\$34,488	\$43,093	\$37,775	\$44,015	\$86,699	\$33,334
70-80 percent	\$41,191	\$48,019	\$40,127	\$44,431	\$87,346	\$29,224
80-90 percent	\$44,305	\$46,158	\$35,648	\$38,099	\$71,768	\$21,197
highest 10 percent	\$69,205	\$57,119	\$36,465	\$35,336	\$65,654	\$12,697
Total	\$273,861	\$313,127	\$302,112	\$375,306	\$705,776	\$357,223

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” (Table D-7) for the fiscal options we analyzed.

Table D-7
Fiscal Option Names

Full name	Short name
Used in Appendix A and earlier parts of Appendix D	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 under each fiscal option on employment, labor income, total value added, and output, using the high scenario assumptions for expenditures. 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: High Scenario
(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 assume 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: High Scenario
(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	\$433,192,952	0.2308	Direct Impact	0	\$0	\$0	\$0
			Indirect Impact	0	\$0	\$0	\$0
			Induced Impact	879	\$49,738,981	\$81,461,325	\$128,597,199
			Total Impact	879	\$49,738,981	\$81,461,325	\$128,597,199
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 for 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:
High Scenario (before 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		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	49.8	149.8	0	879	879
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	0.0	0.0	0.0	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 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.” Saving less means spending some of the annual Permanent Fund realized earnings that currently go to the Permanent Fund principal (as inflation proofing) or 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	89.6%
Property tax	87.9%
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 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:
High Scenario (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: Government workers	95.0		42.8	137.8	962	715	1677
Spending cut: Government enterprise	67.5		47.7	115.2	504	754	1260
Spending cut: Capital spending	41.7		22.3	63.9	506	425	931
Spending cut: Government pay	100.0		43.3	143.3	0	727	727
Income tax: share of federal tax		92.6	45.3	137.9	0	786	786
Income tax: flat rate		92.6	45.7	138.3	0	798	798
Sales tax: excl. food, rent		88.5	44.1	132.6	0	775	775
Sales tax: incl. food, rent		89.6	44.7	134.3	0	788	788
Property Tax		87.9	43.8	131.7	0	773	773
Dividend cut		99.0	49.9	148.9	0	892	892
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-Scenario Estimates of Economic Impacts

As discussed above, we analyzed two scenarios for how fiscal options might affect household spending, based on different assumptions estimated from different data sources (high and low scenarios). The earlier sections of this appendix discussed the estimated impacts for the high scenario. Here we discuss the estimated impacts under the low scenario.

As we said at the outset, all the direct economic impacts are the same for the low scenario as for the high scenario. The differences are in the multiplier economic impacts. These differ because they incorporate different assumptions about how changes in household income would affect household spending.

The top two rows of Table D-13 show the estimated expenditure reductions per thousand dollars raised for the low and high 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 (63.2%).

Table D-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)	518	513	517	530	519	582
Multiplier adjustment factor for low scenario economic impact estimates (= ratio of low scenario expenditure reductions to high scenario expenditure reductions)	69.2%	64.8%	61.5%	61.2%	59.9%	62.5%

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

Table D-14
Estimated Short-Run Economic Impacts of Selected Options for Reducing the Deficit by \$100 Million:
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	95.0		27.0	122.1	962	452	1414
Spending cut: broad-based	67.5		30.1	97.6	504	476	980
Spending cut: capital	41.7		14.1	55.7	506	269	775
Spending cut: pay	100.0		27.4	127.4	0	459	459
Income tax: progressive		92.6	31.4	124.0	0	544	544
Income tax: flat rate		92.6	29.6	122.2	0	517	517
Sales tax: more exclusions		88.5	27.1	115.6	0	477	477
Sales tax: fewer exclusions		89.6	27.3	116.9	0	482	482
Property tax		87.9	26.2	114.1	0	463	463
Dividend cut		99.0	31.2	130.2	0	558	558
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 final report represent our best estimates of the short-run economic impacts of the fiscal options we analyzed, and they 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 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.”

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	Multiplier	Total	Direct	Multiplier	Total	Employment	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 estimates published in the magazine were based on simpler assumptions made when we were at a much earlier stage of our analysis.

For these earlier 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 or paying a state income tax.

By contrast, in this final 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 in this report the relative impacts we estimate for an income tax are smaller 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 these adjustments together make this final analysis a much better estimate of the implications of the two options.

In short, the estimates for the magazine article were based on the preliminary analysis we had done at that time. Our estimates for this report are based on much more detailed (and time-consuming) analysis and thinking we have done since that time.

Gunnar Knapp also provided presentations called “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 in the short-run economic impacts shown in this report, compared with those in the presentations, but 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 modeled 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 departments in which they were 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 they purchase. This household response is a reasonable one but implicitly assumes that the tax is passed on to the consumer.

Appendix B

Resource Rents, Universal Basic Income, and Poverty among Alaska's Indigenous Peoples



Resource rents, universal basic income, and poverty among Alaska's Indigenous peoples

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ABSTRACT

The Alaska Permanent Fund Dividend (PFD) program provides universal basic income (UBI) to all residents from investment earnings of a state sovereign wealth fund created from oil rents. This paper evaluates the effect of the PFD to mitigate poverty among the state's rural Indigenous (Alaska Native) peoples: a population with historically high poverty rates living in a region with limited economic opportunities. Errors in recording PFD income in data used to calculate official poverty statistics cause them to misrepresent poverty in Alaska and understate the effect of the PFD. Estimating poverty rates with and without PFD income therefore requires reconstruction of family incomes from household-level data. Estimated poverty rates from reconstructed income show that the PFD has had a substantial, although diminishing mitigating effect on poverty for rural Indigenous families. The PFD has had a larger effect on poverty among children and elders than for the rural Alaska Native population as a whole. Alaska Native seniors, who receive additional sources of UBI derived primarily from resource rents besides the PFD, have seen a decline in poverty rates, while poverty rates for children have increased. Evidence has not appeared for commonly hypothesized potential adverse social and economic consequences of UBI.

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1. Introduction

Universal basic income (UBI) – a cash grant awarded periodically without conditions – is an old idea (Van Parijs, 2004) that has attracted new interest in recent years. A number of experiments are currently underway in Europe, North America, and elsewhere (Matthews, 2017; Freedman, 2016; Segal, 2016; Kela, no date). Most UBI initiatives arise in the specific context of poverty alleviation: i.e., as a conversion of conditional transfers to unconditional cash payments (Garcia, Moore, & Moore, 2012). Because recipients are limited to identified low-income beneficiaries, it is difficult to evaluate the ability of UBI to reduce the incidence of poverty. Segal (2011) estimated that converting resource rents to universal cash transfers could reduce extreme poverty globally by one-fourth to two-thirds, depending on assumptions used. Despite the potential for reducing poverty and income inequality, attempts to distribute even a portion of resource rents in the form of UBI are rare.¹

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¹ Oil-rich countries typically distribute some resource rents in the form of subsidies to fuel and other consumer products rather than as universal cash transfers. An exception, although arguably short-lived, took place recently in Iran (Salehi-Isfahani, 2016). The Iranian program started in 2011 as a relatively large cash transfer (29 percent of median family income) to soften the impact of reducing costly energy subsidies, but subsequent inflation quickly eroded its real effect.

The Alaska Permanent Fund Dividend (PFD) program represents a unique case, in which a significant portion of resource rents has been distributed as an unconditional cash payment to all residents annually for several decades. We evaluate the effect of the Alaska PFD program on poverty alleviation, focusing on the state's rural Indigenous people, an economically disadvantaged minority population with historically high poverty rates. We begin with a brief description of the Alaska Permanent Fund and the history of the PFD, providing the social and political context. Next, we discuss the problems with the data sources for evaluating poverty in Alaska, and detail methods for constructing historical household-level income and poverty data with and without the PFD. Then we present estimates of poverty rates for the rural Indigenous population over the past 25 years excluding and including PFD income, and compare these reconstructed estimates to poverty statistics based on official data. The results include estimates over time for the overall population, as well as for children and seniors. A discussion section considers the cost of the PFD program, effects on labor force participation, and other issues raised in the UBI literature. The conclusion notes the limits of the study and the outlook for the PFD program.

2. Background

2.1. Alaska state resource rents and the Permanent Fund dividend program

When Alaska gained status as a state in 1959, it was permitted to acquire 104 million acres (43 million hectares) of unreserved U. S. public lands (Public Law 85–508, 72 Stat. 339) as well as near-shore submerged lands granted to other coastal states.² Fortuitous land selections and subsequent petroleum discoveries on state-owned lands provided the relatively small Alaska population an opportunity to realize resource rents matched by few jurisdictions worldwide. Citizens voted in 1976 to amend the state constitution to create the Alaska Permanent Fund as a state sovereign wealth fund, to save a portion of nonrenewable oil revenues for future public needs (Alaska Constitution, Article IX, Section 15). The constitutional amendment allocated at least one-fourth of royalties and other payments the state realized in its role as resource owner to the Permanent Fund. In addition, the Alaska Legislature may, and has appropriated additional revenues to the fund during years when the state accumulated a large budgetary surplus because of temporarily high oil prices.

In 1980, the Alaska Legislature enacted the PFD program to distribute a portion of the Permanent Fund earnings to residents. In addition to satisfying populist demands for sharing the rewards of publicly owned wealth, the PFD program generated political support for conservative management of the fund, increasing the likelihood that the principal would be protected and grow over time. Annual contributions from oil revenues, combined with reinvested earnings enabled the Permanent Fund balance to grow to nearly \$60 billion by July 1, 2017, or approximately \$80,000 per resident. Since 1982, a portion of earnings from the Fund's investments has been distributed in equal annual PFD payments unconditionally to all Alaskans who meet residency requirements.³ Residents send a simple application form with information to verify residency by mail or internet during the first three months of year. Awareness of the enrollment deadline is greatly enhanced by media advertising from non-profit groups alerting potential donors to the option to donate a portion of their dividend to a designated charitable organization.

One-half the Permanent Fund earnings are reinvested to protect the principal from the effects of inflation, with the other half available for dividends. The formula for determining the size of the annual PFD ties the annual amount to the average of fund earnings over the previous five years. Although the five-year average smooths the PFD somewhat, volatility in the securities markets and associated Permanent Fund earnings has caused the dividend to vary substantially over time. Fig. 1 shows the annual PFD amount since the program's inception in 1982, along with the percentage of per-capita personal income that it represented each year. The figure shows percentages under two definitions of income: the U.S. Census Bureau definition and the Bureau of Economic Analysis (BEA) definition. The Census Bureau definition represents self-reported cash income, available for a more limited time series, for rural Alaska Native people and for the state population as a whole. BEA income includes in-kind household receipts such as employer-provided health care and pension contributions

and imputed rent from owner-occupied dwellings, and is available every year, but only for the state population as a whole.

As the Permanent Fund and its associated earnings grew over time, the number of Alaska residents and their incomes increased as well. Recent PFD payments, although generally larger than those in earlier years, have lagged inflation, and therefore represent a smaller percentage of per-capita personal income than during much of the 1990s.

2.2. Alaska Native people and land claims

According to the 2010 U.S. Census, 138,312 American Indian and Alaska Native (AIAN) people, the official term for the North American Indigenous population, resided in the state of Alaska, constituting about one-sixth of the state population. About half this total, including 80 percent of the 33,441 reporting a mixed AIAN and other identity, lived in urbanized areas and are mostly integrated into the modern economy characteristic of high-income nations. About 60,000, however, remain in isolated small communities in rural areas of the Alaska that are not connected by road to larger population centers. Economic opportunities in this region are limited. Most of the available jobs are in public administration or in scattered resource extraction enclaves staffed with shift workers (Goldsmith, 2007). Few AIAN residents possess the skills for these jobs, and many continue to practice mixed cash and subsistence fishing and hunting livelihoods (Wolfe & Walker, 1987).

Persistent economic and social disadvantage for rural AIAN people is manifest across a broad range of economic and social indicators. Barely half of working-age adults were employed in 2015, per capita income was only 52 percent of the national average (American Community Survey data, PUMA 400 region), with the cost of living much higher (Fried, 2017). Many predominantly Alaska Native rural school districts show performance on standardized tests in the bottom 20 percent of schools nationally, and associated low high school graduation rates (Alaska Department of Education, no date). Mortality rates for Alaska Natives statewide are 40 percent higher than the state and national averages, driven by injury death rates 3–4 times the national average (Day, Provost, & Lanier, 2009). Suicide rates for rural Alaska Native young males are particularly high (Berman, 2014).

The United States had acquired Russia nearly 100 years earlier without negotiating treaties with the Indigenous population, leading to land claims conflicts with the state. The discovery of oil in 1968 on state-selected lands near Prudhoe Bay spurred the U.S. government to resolve these claims in December 1971 through the Alaska Native Claims Settlement Act (ANCSA) (43 U.S. Code, section 1601 et seq.). ANCSA awarded mineral rights to 44 million acres (18 million hectares) of Alaska to 12 regional for-profit corporations owned by Indigenous residents of record at the time of enactment. Congress attempted to mitigate inequity in regional resource endowments by adding a clause (section 7(i)) in ANCSA that required each corporation to share 70 percent of resource revenues with the other regional corporations; yet large wealth disparities remain. Table 1 shows dividends paid annually by each of the 12 ANCSA regional corporations between 2005 and 2015 to a typical shareholder owning 100 shares of stock.

Ownership of regional corporation shares was originally limited to beneficiaries enrolled at the end of 1971. The original shares may only be passed on to others by gift or inheritance. However, shareholders of several regional corporations have voted over the years to create additional shares for descendants, with varying rules for voting rights and payment of dividends. Regional corporations also distribute additional special dividends of varying amounts to elders. These complications, combined with the lack of public information on residence of shareholders, make it impossible to

² The Submerged Lands Act of 1953 (43 U.S. Code § 1301–1356b) awarded all coastal U.S. states title including mineral rights to subsea lands offshore to three nautical miles (5.6 km).

³ Generally, eligibility for the PFD requires one calendar year or more of legal residence, and no more than 180 days absence from the state during the previous calendar year (see <https://pfd.alaska.gov/Eligibility/Requirements>). Individuals convicted of serious crimes who are sentenced or incarcerated during the year are also ineligible for that year's dividend.

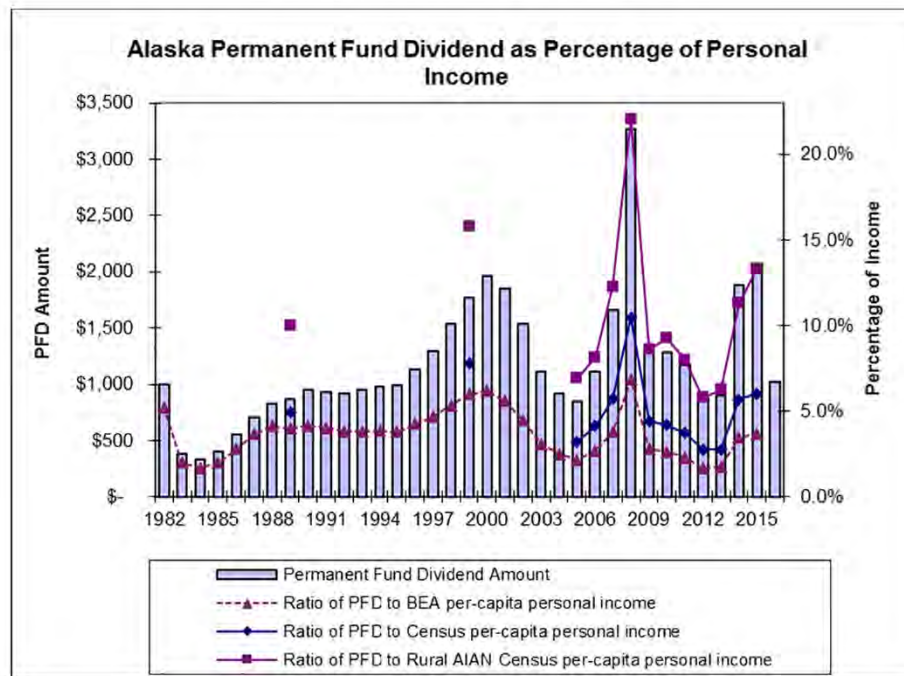


Fig. 1. Alaska Permanent Fund Dividend as Percentage of Personal Income. Source: Permanent Fund Dividend amount from the Alaska Permanent Fund Dividend Division. Per-capita income data from U.S. Census Bureau, American Community Survey and 1990 and 2000 Censuses, and U.S. Bureau of Economic Analysis, Personal Income by State.

Table 1
Annual Dividends per 100 Shares Paid by Alaska Native Regional Corporations, 2005 = 2015.

Year	Ahtna	Aleut	ASRC	BSNC	BBNC	Calista	Chugach	CIRI	Doyon	Koniag	NANA	Sealaska
2005	\$ 0	\$ 450	\$2861	\$ 0	\$ 800	\$ 0	\$4,150	\$3,100	\$ 311	\$ 370	\$ 381	\$ 433
2006	0	500	4,741	0	860	0	4,640	3,100	275	118	700	602
2007	279	0	5,855	0	960	0	5,251	3,393	322	300	1,500	761
2008	279	560	6,110	100	1,100	178	5,030	3,539	356	600	2,475	432
2009	279	600	5,712	100	1,200	211	4,072	3,524	368	873	1,200	215
2010	400	2100	6,426	150	1,280	262	4,192	3,542	421	1,000	1,400	356
2011	202	2000	5,084	235	1,380	313	4,000	3,498	388	1,050	1,470	224
2012	353	500	5,038	235	2,200	342	4,000	3,537	415	1,065	772	221
2013	530	600	11,000	250	2,500	369	4,000	3,499	423	300	772	225
2014	442	700	5,750	300	2,700	519	4,000	3,506	495	300	0	136
2015	443	400	6000	325	3000	581	4000	3651	518	300	600	260

Source: Annual reports filed by Alaska Native Regional Corporations with the Alaska Division of Banking and Securities.

quantify specifically the effect of ANCSA resource dividends on Indigenous poverty rates. We do address it qualitatively, however.

3. Methods

Assessing the effect of the PFD on poverty involves three steps. First, we decide on an empirical measure to represent the social construct of poverty. Second, we address data sources that include information on income distribution by region by race or ethnicity. Third, we discuss how to distinguish PFD income from other income in the household data that are available.

3.1. Poverty definition

One may measure poverty with a relative or an absolute indicator. The [OECD \(2017\)](#) uses a relative measure, based on one-half of median household income. This definition makes poverty synonymous with household income disparity. The OECD definition is also inadequate for evaluating effects of UBI for vulnerable populations, because it does not account for household composition: specifically, household size or the presence of children. The United States,

on the other hand, uses an absolute measure. The official definition of poverty used by the U.S. Census Bureau dates from the Johnson Administration's "War on Poverty" initiative in the mid 1960s. Poverty status is determined for a family living together in one household, based on the ratio of family money income to a threshold level. The threshold varies according to household size, number of children in the household, and age of the household head. Different poverty thresholds exist for 48 different family configurations ([U.S. Census Bureau, no date](#)).⁴ Poverty thresholds are adjusted every year for inflation in proportion to changes in the national Consumer Price Index.

The official poverty rate was 13.5 percent in 2015 for the United States population as a whole, 19.7 percent for children under 18, and 8.8 percent for seniors 65 years and older ([Proctor, Semega,](#)

⁴ The Census Bureau defines the family for determining poverty status as the set of related individuals (through blood or marriage) living together in one household. The official definition of poverty in the United States was developed by the Social Security Administration to represent a proportion of the family income required to purchase a survey-based economy food plan. There have been only minor changes in the definition since 1969, other than to update the thresholds each year based on the percentage change in the Consumer Price Index. For more information, see [Fisher \(1992\)](#).

& Kollar, 2016). Despite the complex attempt to adjust for different family configurations, the U.S. Census poverty definition has a number of limitations. There has been no attempt to redefine the index to reflect changes in consumption patterns in the 50 years since the original thresholds were defined. Although the cost of living in rural Alaska communities is typically much higher than in other U.S. states or even urban Alaska communities (Robinson & Fried, 2005), the same poverty thresholds are applied to all areas of the United States. On the other hand, in-kind income is not considered in the poverty calculation, and many rural Alaskans use subsistence harvests of country foods for a significant proportion of their diet (Wolfe & Fischer, 2003). In addition, unmarried partners and children living in the household who are unrelated to the household head are not considered as family members in poverty calculations.

Any absolute poverty measure is somewhat arbitrary. In this study, we use the U.S. Census Bureau definition as the primary metric for evaluating the effects of the Alaska PFD on poverty because it is so widely used in the United States. However, we do also consider the effect on poverty rates of the Census Bureau's exclusion of unmarried partners from the definition of family.

3.2. Data sources

Household-level data sources for the Alaska population are extremely limited. The U.S. Census Bureau reports national poverty statistics using data from the Annual Social and Economic Supplement (ASEC) to the Current Population Survey (CPS). However, the Alaska sample for the CPS includes only about 1,000 households per year, with insufficient geographic detail to identify rural households. Census data, collected since 2005 with the American Community Survey (ACS), provide the only systematic source of household data for a large representative sample of Alaskans. The ACS collects information on race, family relationships, place of residence, income by source, and poverty status from about 8,000 Alaska households annually. In 2000 and previous decadal census years, the information now collected with the ACS was collected in conjunction with the population census for a much larger sample of households. The Census Bureau provides Public Use Microdata Samples (PUMS) containing individual and household data from the ACS as well as from the previous Census Long Form Surveys.

We obtained Alaska Long-Form Survey PUMS data sets from the Census Bureau for 1990 and 2000, and ACS annual PUMS data sets for 2005 through 2015. The Census PUMS data represent a five percent sample of the population: 14,000 Alaska households in 2000 and 10,300 households in 1990. The ACS PUMS data sets represent much smaller sample sizes, ranging from 2,200 to 2,700 households per year. However, the combined ACS samples over a five-year period are similar in size to the Census Long Form data sets. We also examined Alaska CPS ASEC data sets (Flood, King, Ruggles, & Warren, 2015) for the last seven years (2010 through 2016), available from the University of Minnesota Population Center IPUMS data portal (<https://cps.ipums.org/>). The CPS ASEC sample is too small to estimate poverty rates for the rural Alaska Native population, as mentioned above, but we used it to test how overall state poverty rates and the effects of the PFD compared to those derived from the ACS.

The PUMS data sets report place of residence by Public Use Microdata Areas (PUMAs): a regional geography designed to ensure anonymity of respondents. Census PUMAs must have at least 100,000 residents as of the previous decennial census. The ACS currently has five PUMAs in Alaska, one of which represents the rural roadless region (PUMA 400), or the "Subsistence PUMA" (Fig. 2). The boundaries of the Subsistence PUMA changed slightly from the 1990 and 2000 definition as a result of the 2010 Census.

The CPS ASEC has even more limited geography, reporting only whether or not the residence is within the Anchorage Metropolitan Statistical Area. In addition to the PUMS data sets, we obtained the annual applicable poverty thresholds from the Census Bureau, and annual statistics on the number of PFD applications, dividends received, and the dividend amount from the Alaska Permanent Fund Dividend Division.

3.3. Reporting of Alaska Permanent Fund dividend income in Census Bureau data

The decennial Census Long-Form Surveys, the ACS, and the CPS ASEC all calculate income as the sum of self-reported income in a number of categories over the previous 12 months. The PFD is not mentioned specifically in the questionnaire, and because most interviews are completed before the PFD is paid out in October, many respondents apparently forgot to report the previous-year's PFD. PFD income could theoretically be included in either one of the two categories of unearned income: interest, rent and dividends, or "other income". Since the annual PFD amount is known, one may easily discern from the data that most respondents who did report PFD receipts reported it as "other income." The problem is that only about one-half of Alaska households responding to the ACS or to the earlier Census Long Form Surveys reported receiving any "other income," and thirty percent reported no one in the household receiving any of either type of unearned income. Data from the Alaska CPS ASEC show even lower reported rates of household unearned income. In contrast, Alaska Permanent Fund Dividend Division data show that more than 90 percent of the Alaska population typically receives PFD payments each year.

An additional problem is that neither the ACS nor CPS ASEC report income of children under 15 years of age, despite the fact that the PFD is paid to children one year old and older. If parents were including income of children in their own income, then the household total unearned income should be positively correlated with the number of children in the household as well as the number of adults. We tested this hypothesis by estimating linear regressions for the amount of household other income and interest, rent, and dividend income as a function of the number of adults (age 15 and older in this case), the number of children under 15 in the household, and the age of the respondent for households reporting positive unearned income, for each year of the ACS and for the Census Long-Form Surveys in 1990 and 2000. The coefficients for number of adults in the "other income" equation was \$300–\$400 greater than the annual PFD in each year, and significantly different from zero ($p < .005$), while the coefficients for children were effectively zero and insignificant in all years. Coefficients for the number of children were also always near zero or negative and statistically insignificant in the equations for interest, rent, and dividend income. Similar equations estimated with the CPS ASEC data likewise showed no evidence of reporting of children's unearned income in income of adults. The evidence therefore suggests that Census household income data miss PFD income of children under age 15.

Non-reporting of income of children under 15 also presumably affects national income and poverty measures calculated from the Census Bureau data. However, the downward bias is almost certainly more acute in Alaska than in other states. In addition to the PFD, which nearly all Alaska children receive, some Alaska Native corporations have been paying dividends to children.⁵

⁵ Four regional corporations – Arctic Slope (ASRC), NANA, Doyon, and Sealaska – have enrolled descendants. A fifth regional corporation, Calista, has voted to enroll descendants starting in 2017. In most cases, descendant children of these corporations receive some benefits at birth, and more benefits at age 18. A fifth regional corporation, Calista, has voted to enroll descendants starting in 2017.

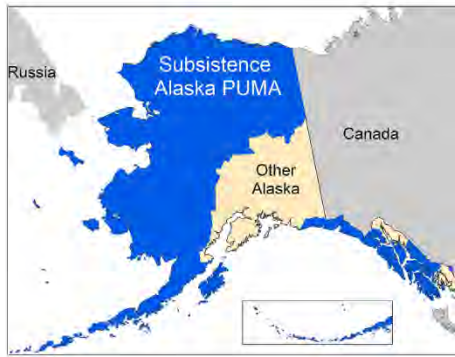


Fig. 2. Rural Alaska Region (Subsistence Alaska PUMA). Source: U.S. Census Bureau, 2010 Subsistence PUMA Reference Map (http://www2.census.gov/geo/maps/dc10map/PUMA_RefMap/st02_ak/puma0200400/DC10PUMA0200400_001.pdf).

3.4. Analysis steps

The information reported in the ACS PUMS is insufficient to be able to determine missing ANCSA dividend income for children. However, with minor exceptions, it is possible to determine whether individuals, including children, were eligible to receive the PFD.⁶ Data are not available on dividend applications and receipts by race. However, 2015 state data showed that the number of applicants exceeded 98 percent of the total population in rural Alaska census areas with high Alaska Native populations (ADLWD, 2017). Statewide, 98 percent of 2015 PFD applicants received dividends (Permanent Fund Dividend Division (PFDD), 2016). We therefore determined that information on residency and mobility in the PUMS data were sufficient to estimate presumed PFD receipts, along with income and associated poverty rates with and without the dividend income. The procedure involved four steps.

The ACS PUMS and the 1990 and 2000 Census Long-Form Survey data include a variable for the ratio of income to the poverty threshold for each individual living in a household, or in non-institutional group quarters such as remote work camps and boarding homes. As a first step, we attempted to replicate the Census Bureau's ratio of family income to the poverty threshold, to ensure that we could correctly calculate each individual's poverty status based on the reported incomes of household members, age, and relationships to the respondent. We were able to replicate the reported ratio of family income to the applicable Census Bureau poverty threshold for each person within a small round-off error.⁷

The second step was to determine the amount of PFD income reported for each individual, and then remove that income to estimate income without the PFD. To determine if PFD income had been reported, we checked whether either "other income" or interest, rent, and dividends was less than the current or previous year's PFD amount, whichever was smaller, rounded down to the nearest \$100. If neither category of unearned income achieved this threshold, we assumed that PFD income was not reported, and made no adjustment to estimate income without the PFD. If either "other income" or interest, rent, and dividends was equal to or greater than the PFD amount, and the previous year's place of residence

was in Alaska, we assumed that PFD income was included in reported income, and removed it to estimate income without the PFD.⁸

The third step in the analysis was to estimate individual income including the PFD, by adding the current year's PFD to the calculated income without PFD income for all individuals whose response to the previous place of residence would have qualified them to receive the PFD. The calculated income with the PFD therefore differed from reported income for nearly all individuals, because we included the amount of the current year's PFD, which few respondents had yet received, rather than the previous year's amount, which some had reported. We determined that the current year's PFD more accurately reflected the effect of the PFD on poverty status, since the timing of the residence question corresponded closely to the timing of the eligibility period for the current rather than the previous year's PFD. Nearly all eligible respondents would have received the current year's PFD in October of the survey year.

For the final step, we estimated family income with and without the PFD by adding the respective income amounts for related individuals as per the Census Bureau definition of family. We compared the estimated family income with and without PFD income to the applicable poverty threshold for that family configuration for the survey year. As an additional analysis, we also compared estimated family income with and without PFD income to the poverty threshold for a more inclusive definition of the family that included unmarried partners. To determine the poverty threshold applicable to this "social family" definition, we included the unmarried partner and his or her children living in the household as family members, regardless of whether the children were reported to be related to the respondent.⁹

4. Results

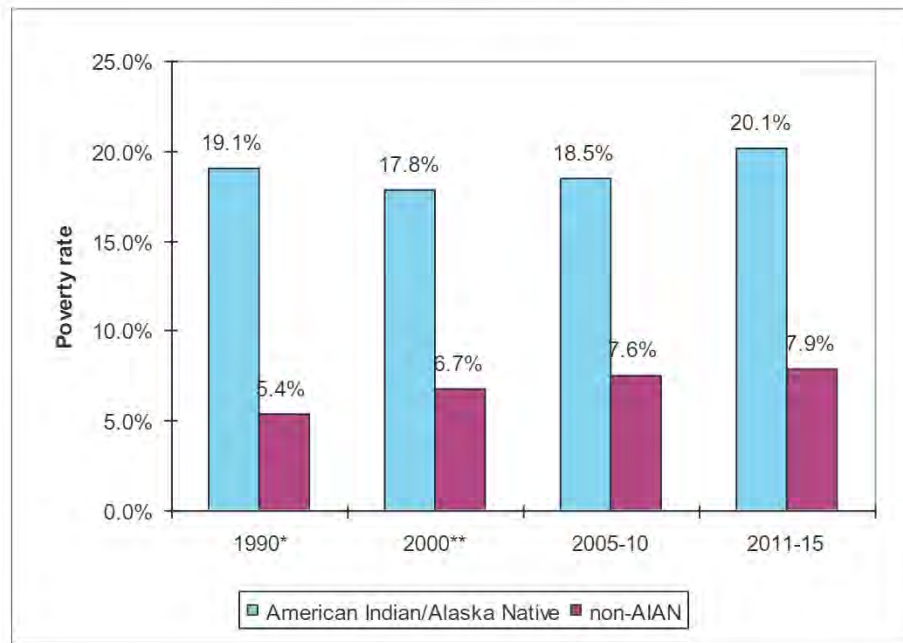
Official poverty rates for all Alaska Natives, based on income as recorded by the Census Bureau, are about 2.5 times the poverty rate for non-Native Alaskans, and twice the rate for the Alaska population as a whole, (Fig. 3). The Native-non-Native disparity has persisted as poverty rates drifted upwards after 2000. Reported poverty rates for Indigenous Alaskans living in rural areas are even higher: 25 percent in 2011–2015, up from 20.5 percent in 2000. The estimates shown in Table 2 indicate that Alaska Native poverty rates in rural Alaska would be especially high without the PFD. On average over the past eleven years, income without the PFD would have put over 28 percent of rural Alaska Native people below the poverty threshold, a slight increase from 27 percent in 1990 and

⁸ To determine the amount of PFD income to remove, we first checked whether reported "other income" was between the amount of the previous year's PFD rounded down and the amount rounded up to the nearest \$100. If so, we removed the amount of "other income" reported. If the first test failed, we performed the same test using interest, rent, and dividends. If that test failed, too, we repeated the procedure using the current year's PFD amount. If that test also failed, but the amount of either "other income" or interest, rent, and dividends was nevertheless greater than the PFD threshold, we assumed that the individual had received unearned income in addition to the PFD. In that case, we estimated income without the PFD by removing the amount of the previous year's PFD from reported income.

⁹ In 2008, the Census Bureau divided the own child relationship type in the ACS questionnaire into three subtypes: biological son or daughter, adopted son or daughter, and stepson or stepdaughter. Children in all three categories were considered "related" for the official definition of family for poverty calculations. Although it is not possible to determine how individual respondents reacted to this change, it appears that after the stepchild option became available, some respondents living with unmarried partners who had previously reported the partner's children as "unrelated" now reported the same children as stepchildren. To the extent this occurred, the addition of the stepchild category might have caused official poverty rates to show a slight increase after 2007. Our calculated "social family" poverty rate would not be affected by the change in reporting, however.

⁶ It is possible, for example, that an Alaska resident who reported living in Alaska one year ago might have been absent from the state for more than 180 days during the previous year for a reason other than allowable absences, such as military service or attending college.

⁷ Income and the poverty ratio in the PUMS are both rounded to protect anonymity of respondents. The PUMS reports a value of 501 when family income exceeds 500 percent of the poverty threshold.



* based on 1989 income

** based on 1999 income

Fig. 3. Percentage of Alaska Population with Income Below the Poverty Threshold: Income as Reported. Source: Estimated from US Census and American Community Survey PUMS data.

2000. Including PFD income, we estimate that rural Alaska Native poverty rates were 22 percent, up from 14 percent in 2000.¹⁰

Clearly, the PFD has substantially mitigated poverty rates among rural Alaska Natives. However, its ability to mitigate poverty for this vulnerable population has been declining in recent years. Fig. 4 illustrates how the ameliorating effect of the PFD has declined as poverty rates based on income excluding the PFD have increased. In 2000, the PFD lifted 12.4 percent of the rural Alaska Native population out of poverty, a 46 percent reduction in the population in poverty without the PFD. By 2011–2015, these figures had fallen to 6.1 percent of the population, or 22 percent of the population in poverty excluding PFD income.

Table 3 shows the effect of the PFD on rural Alaska Native poverty rates separately by household type. The results for households without children exhibit smaller corrections from misreporting of PFD income compared to the results for households with children, highlighting the effects of the omission of children's income in the official statistics. Poverty rates rose in single-person households while declining in multiple-adult households, mainly due to increased labor-force participation and earnings among married rural Alaska Native women. The figures illustrate both the high poverty rates among single-parent families excluding PFD income, and the diminishing ability of the PFD to mitigate these high rates in the more recent years.

The results by household type in Table 3 suggest that pattern of change has not been uniform across the rural Alaska Native population; in particular, trends for seniors and children have

diverged. Poverty rates for Alaska Native seniors have declined dramatically since 1990. Considering only non-PFD income, poverty rates for rural Alaska Natives age 65 or older would have fallen by nearly 50 percent over this period. Including PFD income, the decline was even larger, from 20.1 percent to 7.6 percent, or 59 percent (Fig. 5). If the PFD were eliminated, poverty rates for rural Alaska Natives age 65 and older would increase by 72 percent.

Rural Alaska Native children show the opposite trend (Fig. 6). Excluding PFD income, poverty rates for rural AIAN children were essentially unchanged between 1990 and 2000, but would have risen four percent since 2000, to nearly one-third of the population. Taking estimated PFD income properly into account, child poverty rates increased by 11.5 percent since 2000, an 86 percent rise. In 2000, the PFD was very effective in mitigating poverty among Alaska Native children, reducing poverty rates by more than half. It has been increasingly ineffective since then, however, enabling only a 25 percent reduction in 2011–2015.¹¹ Poverty trends shown in Table 2 for the working-age population are similar to those for children, but show a more muted rise since 2000. The PFD reduces poverty by less for working-age rural Alaska Natives than for children and seniors, because earnings represent a much larger share of income for this group, even among the poor.

Another way to gauge the effect of the PFD on rural Indigenous poverty is to measure its effect on the depth of poverty. The U.S. Census Bureau defines “deep poverty” as family income less than one-half the poverty threshold (Proctor et al., 2016). Using this definition, Table 2 shows that the PFD reduced deep poverty among rural Alaska Natives from 13.1 percent to 8.1 percent (38%) in the period 2011–2015. The PFD's effectiveness in mitigating deep

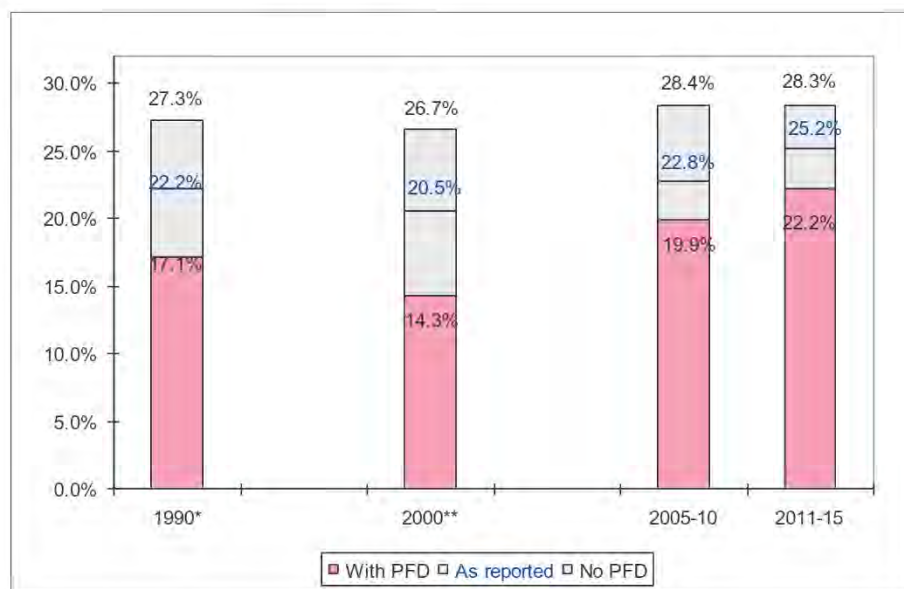
¹⁰ Sampling error confidence intervals for these poverty figures cannot be computed directly, but may be estimated from published 90% margins of error for the number of persons in poverty on which they are based (U.S. Census Bureau, 2002, 2016). Based on the published figures, the estimated 90 percent margin of errors for poverty rates with and without PFD income for all rural AIAN people are 0.8 percent in 1990 and 2000, 1.5 percent for 2005–2010, and 1.6 percent for 2011–2015. Estimated margins of error for child poverty rates are similar, with elder poverty rates somewhat smaller.

¹¹ One should note that the 24.8 percent average poverty rate that we estimated over the past five years is five percentage points lower than the rate based on income reported in Census Bureau data. So while child poverty rates have indeed been rising in Alaska, reported rates are overstated.

Table 2

Alaska Poverty Rates: Reported Rates and Estimated Rates With and Without Permanent Fund Dividend Income.

	1990 ^a	2000 ^b	2005–2010 ^c	2011–2015 ^c
<i>All Alaska residents</i>				
Income as reported	7.6%	8.9%	9.6%	10.3%
Excluding PFD income	8.7%	10.6%	11.0%	11.4%
Including all PFD income	6.7%	6.4%	8.6%	9.1%
<i>All Alaska AIAN residents</i>				
Income as reported	19.1%	17.8%	18.5%	20.1%
Excluding PFD income	23.2%	22.4%	22.3%	22.5%
Including all PFD income	14.1%	12.6%	16.3%	17.2%
<i>Rural AIAN residents</i>				
Income as reported	22.2%	20.5%	22.8%	25.2%
Excluding PFD income	27.3%	26.7%	28.4%	28.3%
Including all PFD income	20.4%	14.3%	19.9%	22.2%
<i>Rural AIAN children under age 18</i>				
Income as reported	23.9%	22.0%	25.7%	29.8%
Excluding PFD income	29.1%	28.9%	32.2%	32.9%
Including all PFD income	21.0%	13.3%	21.0%	24.8%
<i>Rural AIAN adults age 18–64</i>				
Income as reported	21.0%	20.2%	22.5%	24.0%
Excluding PFD income	26.0%	25.6%	27.3%	27.3%
Including all PFD income	18.7%	15.4%	20.4%	22.4%
<i>Rural AIAN elders age 65 and older</i>				
Income as reported	20.6%	13.3%	11.5%	9.7%
Excluding PFD income	26.1%	19.7%	16.8%	13.3%
Including all PFD income	20.1%	11.0%	9.6%	7.6%
<i>Deep poverty, Rural Alaska AIAN residents</i>				
Income as reported	9.3%	7.1%	8.4%	10.4%
Excluding PFD income	12.3%	11.7%	12.1%	13.4%
Including all PFD income	6.8%	3.5%	6.2%	8.1%

^a 1990 Census poverty rates based on 1989 income and poverty thresholds.^b 2000 Census poverty rates based on 1999 income and poverty thresholds.^c Estimated from the American Community Survey Public Use Microdata Samples.

* based on 1989 income

** based on 1999 income

Fig. 4. Rural Alaska Native Poverty Rates: Reported Rate and Estimated Rate Including and Excluding PFD Income. Source: Estimated from US Census and American Community Survey PUMS data.

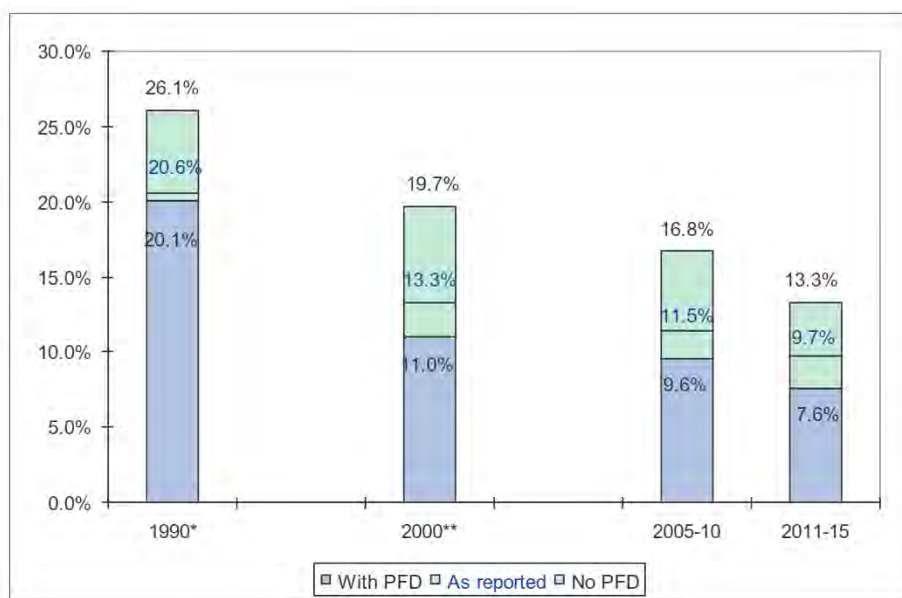
poverty has declined greatly since 2000, when only 3.5 percent of the rural Indigenous population remained in deep poverty, a 70 percent reduction from 11.7 percent without the PFD.

An important demographic trend in the United States – an increase in unmarried partner households with children – could have a significant effect on poverty rates over time. As mentioned

Table 3

Rural Alaska Native Poverty Rates by Household Type: Reported Rates and Estimated Rates With and Without Permanent Fund Dividend Income.

	1990 ^a	2000 ^b	2005–2010 ^c	2011–2015 ^c
<i>Single-person households</i>				
Income as reported	26.2%	29.5%	30.0%	29.8%
Excluding PFD income	28.2%	34.6%	34.7%	33.3%
Including all PFD income	25.7%	29.4%	29.7%	29.6%
<i>Households with multiple adults, no children</i>				
Income as reported	16.5%	14.3%	13.8%	11.9%
Excluding PFD income	20.7%	20.9%	17.5%	14.3%
Including all PFD income	16.5%	12.0%	13.1%	11.5%
<i>Households with one adult and children</i>				
Income as reported	30.4%	40.0%	29.5%	37.2%
Excluding PFD income	32.6%	43.8%	34.4%	38.2%
Including all PFD income	20.9%	23.3%	26.5%	31.3%
<i>Households with multiple adults and children</i>				
Income as reported	22.8%	20.1%	24.1%	27.2%
Excluding PFD income	28.6%	26.3%	30.3%	30.7%
Including all PFD income	18.1%	12.8%	20.3%	23.5%

^a 1990 Census poverty rates based on 1989 income and poverty thresholds.^b 2000 Census poverty rates based on 1999 income and poverty thresholds.^c Estimated from the American Community Survey Public Use Microdata Samples.

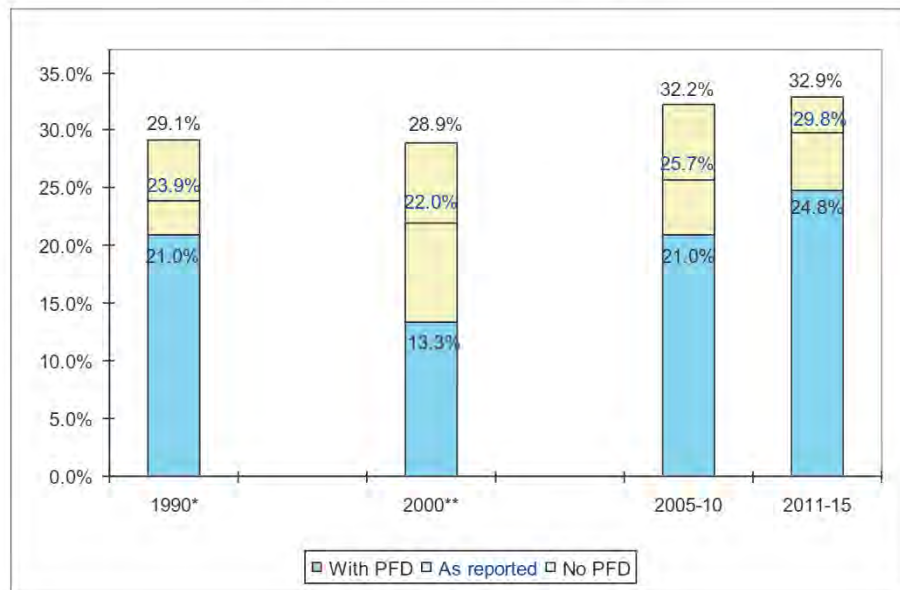
* based on 1989 income

** based on 1999 income

Fig. 5. Poverty Rates for Rural Alaska Native Seniors: Reported Rate, and Estimated Rate Including and Excluding PFD Income. Source: Estimated from US Census and American Community Survey PUMS data.

above, the official U.S. poverty definition excludes unmarried partners when calculating the poverty status of families. The official poverty definition dates from the 1960s and has not been revised since, beyond cost of living adjustments. At that time, unmarried partner households with children were so rare in the United States that the Census Bureau did not attempt to ascertain their numbers. However, the number of children living in unmarried partner households has been rising steadily over the last several decades. By 2010, U.S. Census data for Alaska show that 15 percent of all intimate partner households were unmarried partner households, the majority of which had children under 18 living with them. Among the Alaska Native population, the ratio of children living in married partner households to those living in unmarried partner households declined from more than six to one in 1990, to three to one in 2011–2015.

Including unmarried partners as family members in the definition of poverty could either raise or lower poverty rates, depending on the income of the unmarried partners, and whether they also have children living in the household who the survey respondent reports as related to the householder. In the case of the rural Alaska Native population, including unmarried partners in the family significantly reduces calculated poverty rates. Table 4 reveals that revising the definition of the family to include unmarried partners and their children eliminates the upward trend since 2000 in rural Alaska poverty rates excluding PFD income, and cuts in half the increase in the rate for rural AIAN children. When PFD income is included, rural Alaska Native poverty rates with the revised family definition still rise substantially. However, poverty rates for children and for the rural AIAN population as a whole are both more than four percentage points lower when unmarried partners are



* based on 1989 income

** based on 1999 income

Fig. 6. Poverty Rates for Rural Alaska Native Children: Reported Rate, and Estimated Rate Including and Excluding PFD Income. Source: Estimated from US Census and American Community Survey PUMS data.

Table 4

Estimated Rural Alaska Native Poverty Rates With and Without Permanent Fund Dividend Income, Unmarried Partners Included as Family Members.

	1990 ^a	2000 ^b	2005–2010 ^c	2011–2015 ^c
<i>All Rural AIAN residents</i>				
Excluding PFD income	25.4%	24.9%	26.7%	24.4%
Including all PFD income	18.0%	12.2%	18.4%	17.8%
<i>Rural AIAN children under age 18</i>				
Excluding PFD income	26.8%	26.9%	28.4%	28.8%
Including all PFD income	18.6%	11.2%	18.8%	20.6%

^a 1990 Census poverty rates based on 1989 income.

^b 2000 Census poverty rates based on 1999 income.

^c Estimated from the American Community Survey Public Use Microdata Sample.

counted as family members. The PFD reduces the percentage of rural Alaska Natives in poverty by 27 percent, and the percentage of AIAN children by 28 percent. Revising the poverty definition to include unmarried partners as family members would substantially reduce poverty rates for non-Native Alaskans, too, but the effect is stronger for Alaska Native families, who have a higher proportion of children living in unmarried partner households.

5. Discussion

We found that poverty rates in Alaska based on reported income are biased upward, due to systematic underreporting of PFD income among adults, and non-reporting of income to children under age 15. The degree that underreporting of PFD income in census data biases poverty rates depends on the distribution of family income as well as the size of the PFD. In 2000, the PFD reduced the number of rural Alaska Native people living in poverty by 46 percent. Although the PFD represented a somewhat larger share of per-capita income in 2000, more people were living close to the poverty threshold then as well, so a relatively small incre-

ment in income had a big effect on poverty rates. Since 2000, the effectiveness of the PFD in reducing poverty rates has declined both because the PFD has declined as a percentage of personal income, and because incomes without the PFD have fallen farther below the poverty threshold for more families. A major contributing factor to the latter trend is the increase in unmarried partner households, especially those with children. The official U.S. poverty definition does not count unmarried partners as family members. If unmarried partners were considered as family members for poverty calculations, a PFD amount slightly higher than that in recent years – to the real amount distributed in 2000 – would still cut poverty rates by nearly one-half.

We found that poverty rates for Alaska Native seniors have overwhelmingly declined over the past 25 years. The PFD played a significant part in that decline. Dividends and additional payments by ANCSA corporations to elder shareholders represent another form of UBI available to many Alaska Native seniors that contributed to the observed poverty reduction. Supplemental payments to elders vary among the corporations and over the years, and come in the form of special stock, special dividends, and

payments from elders benefit trust funds.¹² Information in the ACS is insufficient to determine which seniors are shareholders of which ANCSA corporations, making a quantitative estimate of the effect of ANCSA payments infeasible.

The uneven performance of ANCSA regional corporations and associated dividend disparities shown in Table 1 bears similarities to the experience of AIAN people living on reservations in other U.S. states. Two main sources of basic income available to AIAN reservation residents are dividends from earnings of tribal casino operations, and lease revenues from minerals, agriculture, or real estate development of tribal or other lands held in trust by the federal government. The U.S. Department of the Interior, which manages mineral lease revenues, paid \$560.4 million to tribes and allottees in 2016 (USDI, no date). Most likely went to a few tribes with active oil leases, but the amount individual tribes received is confidential. Historical mismanagement of trust accounts by the federal government has led to a series of legal settlements involving some large cash payments, but nothing comparable to UBI.¹³

Reservation gambling casinos involve much larger sums: gross receipts exceeded \$30 billion in 2016, with 84 casinos grossing more than \$100 million each (NIGC, no date). Profitable casinos may distribute cash dividends to tribal members if they have a federally approved distribution plan, although only tribes with smaller membership generally do so. Unlike the PFD, most tribes do not distribute casino earnings directly to children, but rather hold them in trust until age 18 (Taggart & Conner, 2011; Cornell et al., 2008). Overall, the evidence shows that gaming has had broadly positive effects on tribes (Akee, Spilde, & Taylor, 2015). However, effects of basic income from distributions from successful casino operations are confounded by much larger effects of the employment opportunities casinos generate. For example, Evans and Topoleski (2002) found that employment increased by 26 percent in reservations 4 years after casinos opened there. Large disparities in casino earnings, often due simply to a favorable location near population centers, are analogous to the disparities noted for ANCSA regional corporation dividends: some tribes have undoubtedly realized large benefits, but many have seen little impact on poverty reduction. Even considering the recent rise in poverty rates, the PFD has reduced Alaska Native poverty considerably below the average for AIAN reservation residents reported by Akee et al. (2015), especially for children.

UBI skeptics have raised a number of concerns about unintended consequences. These include reduction in labor force participation, increased purchase “temptation goods” such as alcohol and drugs, family dissolution, and the sheer cost of financing the

payments. Earlier claims that the U.S. negative income tax experiments in the 1960s had caused an increase in the divorce rate were refuted by Cain and Wissoker (1990). Forget (2011) likewise found no increase in family dissolution rates or increase in fertility in a 1974–1979 Canadian field experiment.

Much of the academic literature critically evaluating UBI programs focuses on potential effects on labor supply. While inconclusive, this literature finds relatively weak evidence for adverse labor supply effects. For example, Skoufias and di Maro (2006) found that the Mexico *Oportunidades* program had no significant impact on labor supply. Widerquist (2005) reviewed the literature on early UBI experiments in the U.S. and Canada, concluding that the evidence showed that concerns about depressing effects on labor supply have been exaggerated. Observed reduction in work hours was greatest for youth and for married women. For the latter group, reduction in work outside the home was likely offset by increased household production. For youth, higher school attendance and staying in school longer yield potentially large future returns on the investment in human capital. A DFID (2011) report found that the benefits in terms of higher earnings due to use of a portion of the increased income for investment in higher learning exceeded the cost of a Canadian UBI experiment. Other studies have found positive effects of UBI programs on school attendance and performance in poorer countries, including India (Standing, 2013), South Africa (Case, Hosegood, & Lund, 2003; Samson et al., 2004), and Malawi (Miller, Tsoka, & Reichert, 2006).

The Alaska PFD differs from the UBI welfare experiments with respect to its potential effects on labor supply in that participation in the PFD program does not reduce incremental earnings from work at any income level. The PFD therefore has an income effect but no substitution effect.¹⁴ The closest analogy to the PFD is the universal cash transfer program that Iran implemented to mitigate the effects of reduced energy subsidies following the imposition of international sanctions in 2011. Salehi-Isfahani and Mostafaei-Dehzoeei (2017) found no evidence that this program reduced labor supply except for youth, many of whom likely gained additional education and training. On the other hand, they found that service sector workers increased work hours, speculating that some used the transfers to expand their businesses. A formal statistical investigation of the effect of the Alaska PFD on labor supply would be challenging, because there is no control group. The program has been in place for 35 years, and everyone is eligible to receive the PFD except newly arrived in-migrants, who obviously differ from longer-term residents. A simple test – comparing labor force participation in Alaska to that of other states – reveals that both the labor force participation rate and the employment rate (ratio of the employed to the population) are higher in Alaska than in the United States as a whole. Some of the observed difference may derive from a larger proportion of youth attending college outside Alaska and older persons leaving the state after retirement. However, Census data show that the Alaska labor force participation and the employment rates are higher than the national averages for both men and women in every age group, despite the scarcity of job opportunities in many rural areas of the state.

A World Bank report (Evans & Popova, 2014) reviewed evidence from multiple studies of another potential adverse effect of UBI – that the extra income would be used for temptation goods and not actually improve well-being – finding little evidence for that hypothesis. Most Alaskans receive their PFD in early to mid October, although the amount of the year’s PFD is known as much as six months in advance. Monthly state alcohol tax data for October show only a continuation of the seasonal decline as the summer

¹² Nine of the twelve ANCSA regional corporations publicly disclosed additional elder payments of some kind in the past year, as follows. Doyon: twice the dividend upon reaching age 65. (<https://www.doyon.com/our-shareholders/records-stocks/s-stock-classes/>); NANA: elders trust started in 2008 distributed a \$1,000 dividend in 2016 (<http://nana.com/regional/news-and-press/press-releases/nana-elders-settlement-trust-announces-2016-distribution/>); ASRC: Elders Benefit Trust pays out monthly checks of an unspecified amount to original ASRC shareholders 65 and older (<https://www.asrc.com/About/History/Pages/1990toPresent.aspx>); CIRI: CIRI Elders’ Settlement Trust: \$450 per year (<http://www.ciri.com/shareholders/benefits/dividends-and-distributions/distribution-schedule/>); Bering Straits Regional Corporation: \$750 (double dividend) for elders in 2017 (<http://beringstraits.com/bsnc-declares-special-elders-dividend-distribution-3/>); Ahtna: \$400 elder dividend in 2016 (<http://ahtna-inc.com/ahtna-declares-largest-shareholder-dividend-in-10-years/>); Bristol Bay Native Corporation: \$500 elder dividend in 2016 (<http://www.bbnc.net/bbnc-2016-tax-information/>); Aleut: \$550 Elder Benefit in 2017 (<http://www.aleut-corp.com/2017-dividend-schedule/>); Sealaska: Owners of elder stock received \$133 for the first quarter of 2017 (<https://www.sealaska.com/news/item/2017-03-31/sealaska-announces-2017-spring-distribution>).

¹³ The largest such lawsuit, the Cobell case, was settled in 2009 for \$3.4 billion. (*Class Action Settlement Agreement, December 7, 2009*. Elouise Pepion Cobell, et al., vs. Ken Salazar, Secretary of the Interior, et al. Case 1:96-cv-01,285-TFH Document 3660-2. Filed 12/10/10 in the United States District Court for the District of Columbia.)

¹⁴ Technically, there is the possibility of a reduction in the incremental income from work if an individual moves into a higher marginal income tax rate as a consequence of receiving the PFD.

tourist season winds down in the fall. A 2011 expenditure survey reported that only 23 percent of Alaska households said they would spend any of their PFD on new purchases; most would use it to pay bills or save it (Northern Economics, 2011). Hsieh (2003) similarly found no statistically significant differences between Alaska households and households in the other 49 states in quarterly durable or nondurable consumption patterns, but did find that debt balances decreased and savings balances increased more in the fourth quarter. This suggests that residents treat the PFD as permanent rather than windfall income.

Since the entire Alaska resident population receives the PFD, it is much more costly than programs with a need-based eligibility requirement. In 2015, the PFD constituted 3.7 percent of state personal income.¹⁵ However, although Alaska has no state income tax, progressive federal income taxes recapture a portion of the PFD payment from more well-off individuals. A recent study estimated that federal income taxes collect 16 percent of PFD receipts on average, rising to 31 percent for the richest 10 percent of households (Knapp, Berman, & Guettabi, 2016). The fact that everyone receives the benefit also allowed the PFD to easily overcome the political obstacles that have arisen elsewhere to funding UBI programs. Accounting for the cost simply in terms of the gross payout ignores any potential reduction in state welfare expenditures for the poor, or improvements in productivity and savings in health care costs arising from improved physical and mental health, as found by Forget (2011).

6. Conclusion

The Alaska Permanent Fund Dividend program represents a unique case of a sovereign wealth fund being used to provide universal basic income to the population. Although the entire resident population receives the PFD, its income maintenance properties strongly affect low-income households, especially families with children. After adjusting U.S. Census data for errors in reported income, we found that the Alaska PFD has been highly effective in reducing high poverty rates among the state's rural Indigenous people. The PFD has not eliminated poverty, however: it represents "partial" rather than "full" Universal Basic Income. Furthermore, its effectiveness has declined: from a 46 percent reduction in the number of Alaska Natives below the poverty income threshold in 2000 to 22 percent between 2011 and 2015.

The poverty-reducing effects of the PFD for rural Alaska Natives have been most pronounced for the elderly. Poverty rates for rural Alaska Native seniors have declined substantially since 1990 due in large part to other sources of resource-rent-derived UBI from Indigenous land claims. Nevertheless, the PFD reduced rural Alaska Native elder poverty rates in 2011–2015 by an additional 40 percent. Child poverty rates have been increasing in Alaska as well as in the United States as a whole. However, the PFD reduced rural Alaska Native child 2011–2015 poverty rates by one-quarter, and by nearly 30% if unmarried partners were counted as family members.

It is difficult to test whether the PFD has caused adverse social and economic effects, because the program has been in effect for 35 years and all residents are eligible to receive it. We found no evidence, however, that the program has had any significant long-term adverse effects on labor force participation or spending patterns. The Alaska PFD was not designed as a poverty-reduction measure, but rather as a populist program to share the state's resource wealth with citizens. Nevertheless, its equal per-capita (taxable) payments amounted to a progressive transfer that has significantly mitigated poverty, especially among Alaska's vulnerable rural Indigenous population. As current and future state budget

challenges lead to a reduction in PFD distributions to permit the Fund's earnings to be applied to support provision of public services, poverty rates in Alaska are almost certain to rise.¹⁶ If errors in income recording by the U.S. Census Bureau are not corrected, official statistics on poverty rates will understate the actual increase in poverty.

Conflict of interest declaration

The author received financial support for this research from the National Science Foundation, First Alaskans Institute, and the Alaska Children's Trust. Non of these organizations had any role in the study design; in the collection, analysis and interpretation of data; in the writing of the report; or in the decision to submit the article for publication. The author has no other relationships that might create an actual or perceived conflict of interest.

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¹⁵ Based on U.S. Bureau of Economic Analysis State Personal Income Estimates.

¹⁶ By far the largest state expenditure that directly benefits the poor consists of health care provided through the Medicaid program. Medicaid eligibility is determined by federal rules; consequently, most budget savings would have to be realized elsewhere, such as with cuts in state support for public education.

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Appendix C

ISER 2017 Families Study

“How Much Might Closing the
State Budget Gap Cost Alaska
Families?”



Research Summary

No. 83

How Much Might Closing the State Budget Gap Cost Alaska Families?

By Matthew Berman and Random Reamey

Institute of Social and Economic Research · University of Alaska Anchorage

February 2017

Alaska's state government has a huge hole in its budget, created by plummeting oil revenues. The state has cut spending for the past several years, but in fiscal year 2017 a \$3 billion gap remains between what it spends and what it collects (see back page). Closing that gap will require new revenues and more budget cuts—but different ways of balancing the budget would have different effects on Alaska families.

We estimated how several revenue-raising measures—three kinds of taxes and a cut in Permanent Fund dividends—would affect households with and without children. But we didn't estimate effects of spending cuts. While it's clear some cuts—in school funding, for instance—would directly affect children, many other programs, from public safety to transportation, benefit all households. It's impossible to compare how cuts in such programs would affect those with and without children.

- *A cut in PFDs would be by far the costliest measure for Alaska families. Households with children would pay about 2.5 times more per person than those without children, for every \$100 million of revenue raised. A big reason is that children receive PFDs—so PFDs make up a bigger share of income for households with children.*

- *Sales taxes would be the next costliest for households with children. Again, those households tend to have lower incomes; sales taxes are the same for everyone, so they take a bigger share of the income of poorer households.*

- *All measures except a graduated income tax would cost households with children more of their per-person incomes than those*

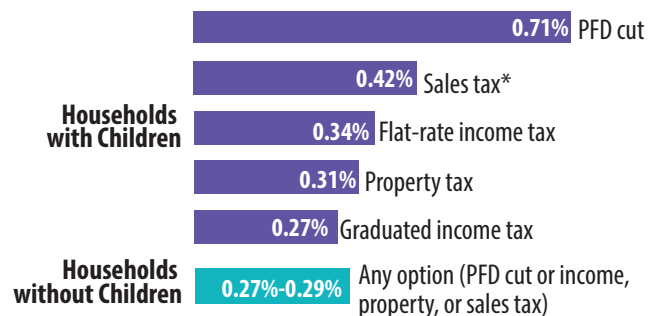
without children. Such a tax—tied to federal income taxes paid—would cost households with and without children close to the same share of per-person income.

- *The effects of any of the fiscal options on incomes of households without children would be much the same—roughly 0.27% to 0.29% of per-person income, for every \$100 million of revenue raised. PFD cuts wouldn't fall as hard on these households, mostly because their incomes tend to be higher and a bigger share of the PFD cut would be offset by reduced federal taxes.*

- *Non-residents would pay a share of any of the potential taxes, reducing the burden on Alaska households.*

Figure 1. How Much Might Different Ways of Raising Revenues Cost Alaska Households Per Person Annually?

(Percent Loss of Per-Person Disposal Income per \$100 million in Revenue Raised)



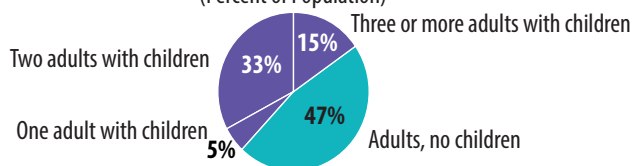
*Either a 4% sales tax excluding food and shelter or a 3% tax including those items costs Alaska households on average the same share of income.

Figure 2. Snapshot of Alaska Households (Average 2014-2015)

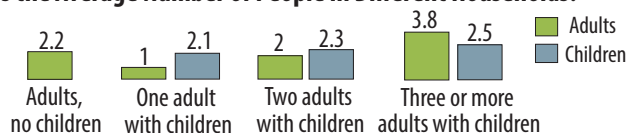
How Many People Live in Alaska Households?^a



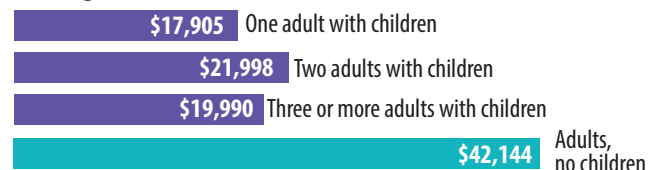
What Kinds of Households Do Alaskans Live In?^a (Percent of Population)



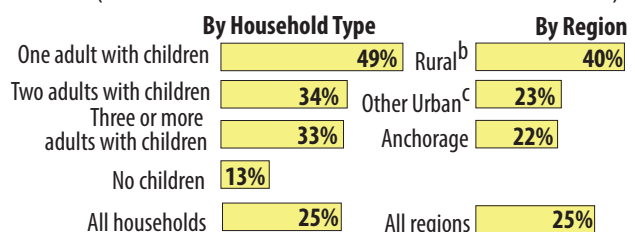
What's the Average Number of People in Different Households?^a



Average Per-Person Annual Income of Different Households



What Percentage of Households Have Low Per-Person Incomes? (In Lowest 25% of Alaska Household Income Distribution)



^aExcludes an estimated 675 children not living in households but in group quarters—dormitories, shelters, or detention centers. The census doesn't provide information on their economic status.

^bRural Alaska includes all areas outside Anchorage, the rest of the Railbelt, and the Juneau, Haines, and Ketchikan boroughs.

^cThe Railbelt, excluding Anchorage, and the Juneau, Haines, and Ketchikan boroughs.

Source: American Community Survey, Microdata Samples

How Do Alaska Households Compare?

The differences among households (Figure 2) help explain the differences in the effects of various revenue-raising measures. Nearly half the state's households have no children under 18, and on average they have much higher per-person incomes. That's partly because in households with only adults, more people are likely to work—but also, some of these households are middle-aged or older couples with good incomes and grown-up children.

In households with children under 18, per-person incomes are lower, because they're spread among working adults and children.

What About Low-Income Households?

As Figure 2 also shows, some types of households are likelier than others to have low incomes. Nearly half of single adults with children, a third of households with two or more adults with children, and 40% of all rural households have per-person incomes at the bottom of the Alaska household income distribution.

Figure 3 shows how much per-person income (in dollars) various measures would cost low-income households with and without children.

- All measures except a property tax and a graduated income tax would cost low-income households with children more than those without children.
- A PFD cut would cost low-income households with children the most of any measure—two to three times as much per-person as sales or property taxes, and 10 times more than a graduated income tax, for every \$100 million of revenue raised.
- A property tax and a PFD cut would cost low-income households without children the most. The property tax would be costly to these households because they tend to spend more of their income on housing.

What's the Basis for Our Estimates?

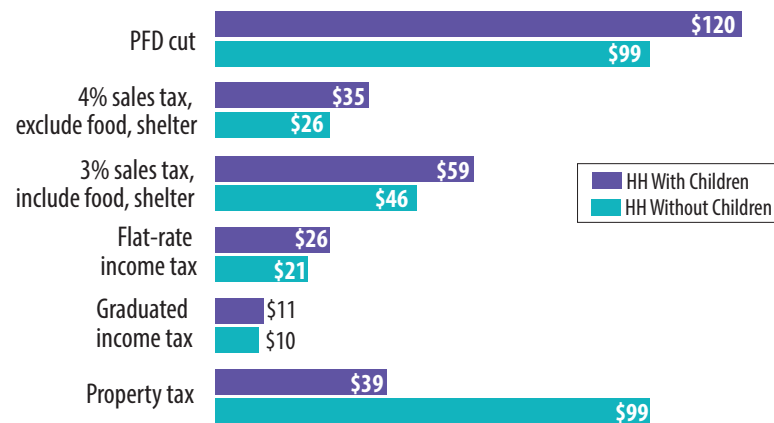
We looked largely at the same options analyzed in an earlier report on state fiscal options (see Figure 4 sources), but we focused on effects on families. Figure 4 shows assumptions we used for each option, and how much revenue each might raise annually. To compare across options, we estimated income effects per \$100 million of revenue raised. We also looked at the effects of increasing taxes on gasoline and alcohol, but those measure don't have the potential to raise as much revenue as the broader-based measures.

Why is the State Budget So Much in the Red?

Figure 5 summarizes what happened to the state budget. As recently as FY 2012, the state collected \$9 billion in oil revenues—more than

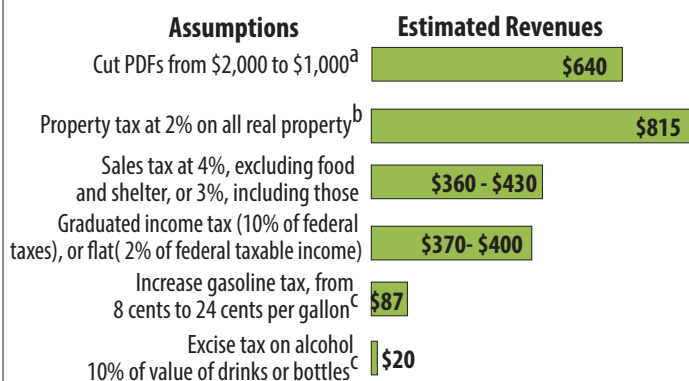
Figure 3. How Much Might Different Ways of Raising Revenues Cost Low-Income Households per Person Annually?*

(In Dollars of Disposable Income Per Person for \$100 million of Revenues Raised)



*Households with incomes in the lowest 25% of the Alaska household income distribution.

Figure 4. How Much Might Revenue Options Raise?
(In Millions of Dollars Per Year)



^a Assumes 640,000 recipients.

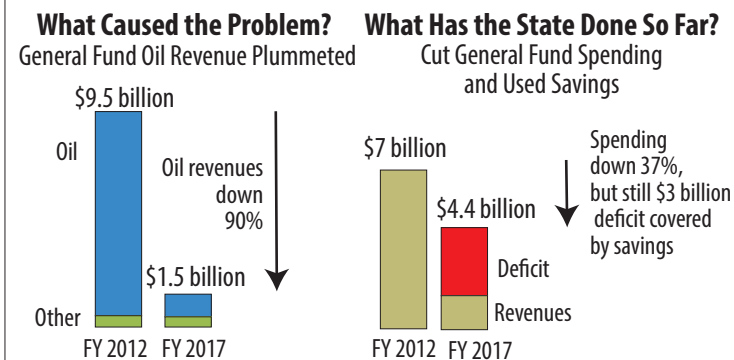
^b After credits to property owners for local property taxes they already pay.

^c In addition to gasoline and alcohol taxes the state already collects.

Sources: Gunnar Knapp, Matthew Berman, and Mouhcine Guettabi, *Short-Run Economic Impacts of Alaska Fiscal Options*, Institute of Social and Economic Research, UAA, March 2016; authors' estimates

enough to cover state General Fund spending. That was when oil prices were still \$100 per barrel. Then, in the past several years, oil prices have been far lower, dropping as low as \$30 a barrel. Sharply lower prices, together with a long-term decline in North Slope oil production, have made oil revenues a small fraction of what they were before—and despite cuts in state spending, a \$3 billion gap remains in FY 2017.

Figure 5. Why Does the State Have Such a Big Deficit?



Sources: Alaska Department of Revenue, *Fall 2016 Revenue Sources Book*; Legislative Finance, *Informational Paper 17-1*

About the Authors and Acknowledgments

Matthew Berman is a professor of economics at ISER and Random Reamey is a research graduate assistant. This summary is based on their report, *Effect of Alaska State Fiscal Options on Children and Families*. The findings in this publication are theirs, and shouldn't be attributed to research sponsors, ISER, or the University of Alaska Anchorage.

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Appendix D

2017 Institute on Taxation &
Economic Policy

“Comparing the Distributional
Impact of Revenue Options in
Alaska”

Comparing the Distributional Impact of Revenue Options in Alaska

Institute on Taxation & Economic Policy

April 2017

Carl Davis

Aidan Russell Davis

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.

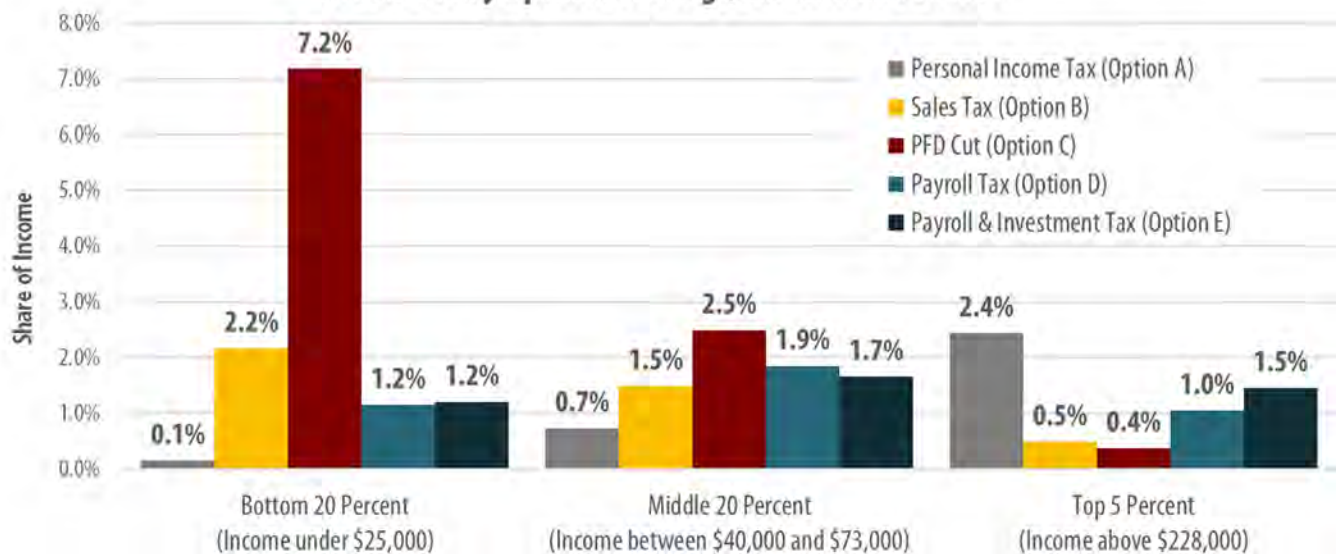
EXECUTIVE SUMMARY

Alaska is facing a significant budget gap because of a sharp decline in the oil tax and royalty revenue that has traditionally been relied upon to fund government. This report examines five approaches for replacing some of the oil revenue that is no longer available: enacting a broad personal income tax, state sales tax, payroll tax, investment income tax, or cutting the Permanent Fund Dividend (PFD). Any of the options examined in this report could make a meaningful contribution toward closing Alaska's budget gap. To allow for comparisons across options, this report examines policy changes designed to generate \$500 million annually. This amount would be insufficient to close Alaska's \$3 billion budget gap, but any of these options could be modified to raise additional revenue, or could be incorporated into a larger package of changes designed to close the gap.

In studying each of these approaches, this report makes the following findings:

- ♦ **Most Alaska households would pay less under a graduated rate personal income tax than they would under a payroll tax, sales tax, or a cut to the PFD payout designed to raise the same amount of revenue.** This finding holds true across at least the bottom 60 percent of the income distribution, and for some families above this level.
- ♦ **Low-income families in Alaska would fare far better under a progressive personal income tax than under a sales tax, payroll tax, or a cut to the PFD payout.** Under the options examined in this report, the bottom 20 percent of Alaska families (those earning less than \$25,000 per year) would pay roughly 0.1 percent of their income under a personal income tax versus 1.2 percent under a payroll tax, 2.2 percent under a sales tax, or 7.2 percent under a cut to the PFD.

Figure 1: Impact on Alaska Residents at Various Income Levels of Five Policy Options Raising \$500 Million Per Year



Source: Institute on Taxation and Economic Policy, April 2017. Modeled in a Tax Year 2016 economy, modified to assume a baseline Permanent Fund Dividend payout of \$2,200 per person.

- ♦ **Middle-income families would also fare better under a progressive personal income tax than under any other option examined in this report.** The middle 20 percent of earners (those earning between \$40,000 and \$73,000 per

year) would pay 0.7 percent of their income under a personal income tax designed to raise \$500 million versus 1.5 percent under a sales tax, 1.9 percent under a payroll tax, or 2.5 percent under a cut to the PFD designed to raise the same amount.

- ♦ **The impact on upper-middle income families is similar under each of the fiscal policy options in this report.** Families earning between \$73,000 and \$115,000 per year could expect to pay roughly 1.2 percent of their incomes under either a sales tax or income tax designed to raise \$500 million, versus 1.6 percent under a cut to the PFD and 1.7 percent under a payroll tax.
- ♦ **High-income families are the only group that would be most impacted by an income tax.** The top 5 percent of earners (those with incomes over \$228,000 per year) would pay 2.4 percent of their income, on average, under a personal income tax designed to raise \$500 million versus 1.0 percent under a payroll tax, 0.5 percent under a sales tax, or 0.4 percent under a cut to the PFD payout designed to raise the same amount.
- ♦ **Cuts to the PFD payout are the most regressive option examined in this report, followed by a statewide general sales tax.** A PFD cut would impact the bottom 20 percent of earners nearly 10 times as heavily as the top 20 percent, when measured relative to family income. A statewide general sales tax would also be regressive, costing low-income earners more than three times as much, relative to their incomes, as high-income earners.
- ♦ **A personal income tax similar to the one passed by the Alaska House of Representatives would be progressive, with tax rates steadily rising for taxpayers with higher incomes.** The progressive nature of personal income taxes is one reason that some Alaska lawmakers, including Gov. Bill Walker, have suggested implementing such a tax alongside regressive cuts to the PFD payout.

INTRODUCTION

After decades of funding state government primarily with oil tax and royalty revenues, lawmakers in Alaska are now debating supplementing those revenues with broad-based taxes similar to those levied in most other states. There is a growing acceptance that the state's energy sector is unlikely to see a resurgence strong enough to remedy the state's unsustainable fiscal standing.

For decades, most Alaskans have paid very little in state taxes because Alaska lacks a statewide personal income tax or sales tax. Given the state's inexperience with broad-based taxes, it can be difficult for Alaskans to judge how different tax policy options might affect them. And it can be equally difficult for Alaskans to determine how those options would compare to another fiscal policy change under consideration: cutting the flat dollar Permanent Fund Dividend (PFD) payout that most Alaskans receive each year as a way of sharing in the state's natural resource wealth.¹

This report seeks to provide clarity regarding the impact that various fiscal policy options would have on Alaska families at various income levels. This is done by using the ITEP Microsimulation Tax Model to analyze five types of fiscal policy changes, with each designed to generate an equal amount of revenue for Alaska's public services: approximately \$500 million per year.²

The \$500 million target used in this report was chosen as a benchmark for facilitating comparisons across options. The options are not intended as specific recommendations, but instead are designed to show how fiscal policy options with nearly identical budgetary impacts can have vastly different impacts on Alaskans at different income levels.

It is important to note that a \$500 million fiscal plan would be insufficient to close Alaska's \$3 billion budget gap. Of course, any of the categories of options examined here could be modified to raise a higher level of revenue, or could be incorporated into a larger package of changes designed to close the gap in full.

[report continues on next page]

¹ Waldholz, Rachel, "Alaska's annual dividend adds up for residents," Marketplace, Mar. 16, 2016 at <https://www.marketplace.org/2016/03/12/economy/alaskas-annual-dividend-residents-adds>.

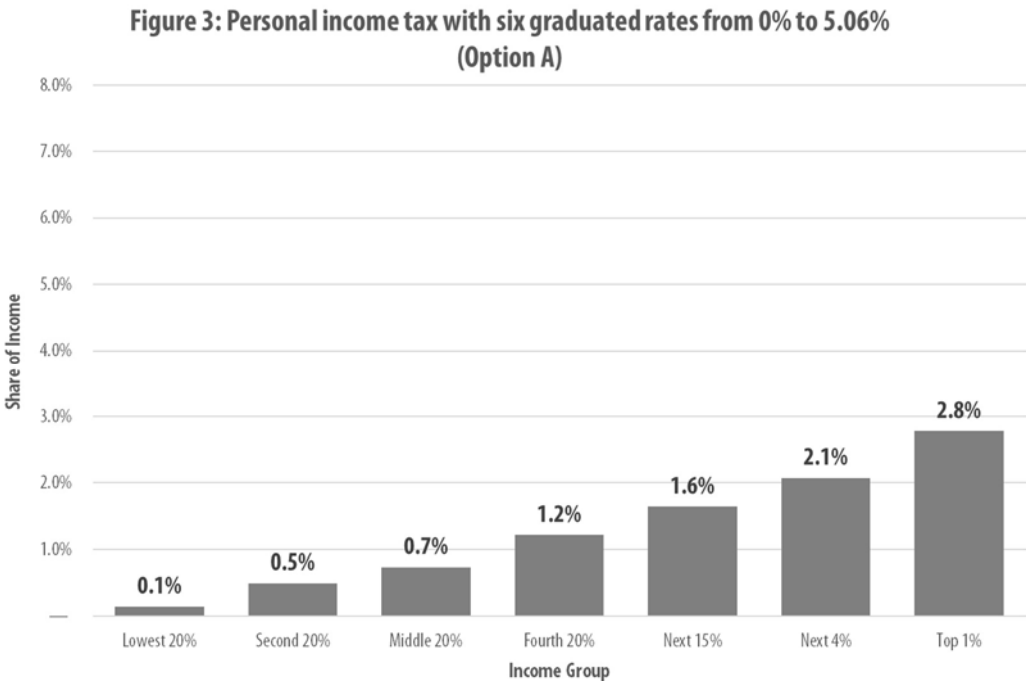
² An overview of the ITEP Microsimulation Tax Model is available in Appendix C of this report and at: http://itep.org/about/itep_tax_model_simple.php.

OPTION A: INCOME TAX

Alaska lawmakers are currently debating reinstating a personal income tax for the first time in more than 35 years. The main proposal under consideration is House Bill 115, which would implement a personal income tax with rates ranging from 0 to 7 percent.³ The income tax analyzed in this report is very similar to this bill, though its rates have been reduced across the board to bring its revenue yield down to \$500 million—the same amount raised by the other policy options explored in this report. Figure 2 describes the income tax structure in more detail.

Figure 2: Personal Income Tax (Option A)	Tax Base	Tax Brackets: Single Filers			Tax Brackets: Married Filing Joint		
	Federal Adjusted Gross Income (FAGI) with a \$4,000 exemption per person, an exemption for Permanent Fund Dividend (PFD) payouts, and various other modifications.	0%	\$0	to \$10,300	0%	\$0	to \$20,600
		1.8063%	\$10,300	to \$50,000	1.8063%	\$20,600	to \$100,000
		2.8900%	\$50,000	to \$100,000	2.8900%	\$100,000	to \$200,000
		3.6125%	\$100,000	to \$200,000	3.6125%	\$200,000	to \$400,000
		4.3350%	\$200,000	to \$250,000	4.3350%	\$400,000	to \$500,000
		5.0575%	\$250,000	and up	5.0575%	\$500,000	and up

As shown in Figure 3, this tax would have a progressive impact across the income distribution. The bottom 20 percent of earners in Alaska (with incomes below \$25,000 per year) would pay an average of just 0.1 percent of their income in tax, while middle-income families would pay 0.7 percent and the state’s top 1 percent of earners would pay 2.8 percent. More detailed results are available in Table A on page 15.



Source: Institute on Taxation and Economic Policy, April 2017. Modeled in a Tax Year 2016 economy, modified to assume a baseline Permanent Fund Dividend payout of \$2,200 per person. This tax is very similar to House Bill 115 of Alaska’s 2017 legislative session, though its rates have been reduced by 27.75% across the board to reduce its yield to \$500 million per year.

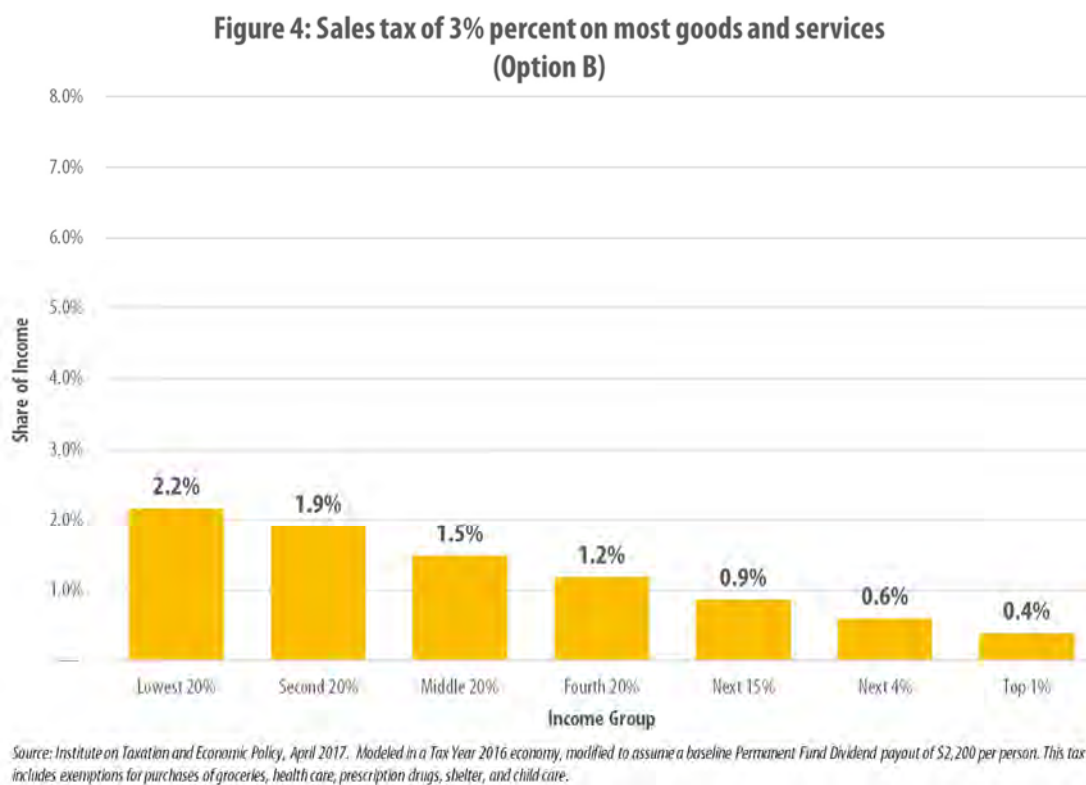
³ Davis, Carl, “Assessing the Distributional Consequences of Alaska’s House Bill 115 (Version L),” Institute on Taxation and Economic Policy, Mar. 28, 2017 at http://itep.org/itep_reports/2017/03/assessing-the-distributional-consequences-of-alaskas-house-bill-115-version-l.php.

OPTION B: SALES TAX

Unlike personal income taxes, general sales taxes tend to be regressive, impacting low- and middle-income families more heavily than high-income families when measured as a percentage of household income.⁴ This effect comes about largely because low- and middle-income families spend a larger fraction of their earnings on items subject to sales tax, while high-income families direct a large share of their income into savings and investments.

Researchers at the Alaska Department of Revenue have determined that a 3 percent sales tax would raise approximately \$500 million in revenue per year.⁵ This tax would include exemptions for various necessities such as groceries, health care, prescription drugs, shelter, and child care. Even with these exemptions, Figure 4 reveals that the tax would be regressive overall, requiring payments from low-income Alaskans equal to roughly 2.2 percent of their incomes compared to 1.5 percent for middle-income families and 0.4 percent from the state's top 1 percent of earners.

More detailed results are available in Table A on page 15. Those results show that the impact on the bottom 20 percent of earners (at 2.2 percent of income) is more than three times as large as the impact faced by the top 20 percent (at 0.7 percent of income).



⁴ Researchers at the Institute of Social and Economic Research (ISER) at the University of Alaska Anchorage have also studied the impact of implementing a sales tax in Alaska and found it to be similarly regressive. Knapp, Gunnar et al., “Short-Run Economic Impacts of Alaska Fiscal Options,” Mar. 30, 2016 at http://www.iser.uaa.alaska.edu/Publications/2016_03_30-ShortrunEconomicImpactsOfAlaskaFiscalOptions.pdf.

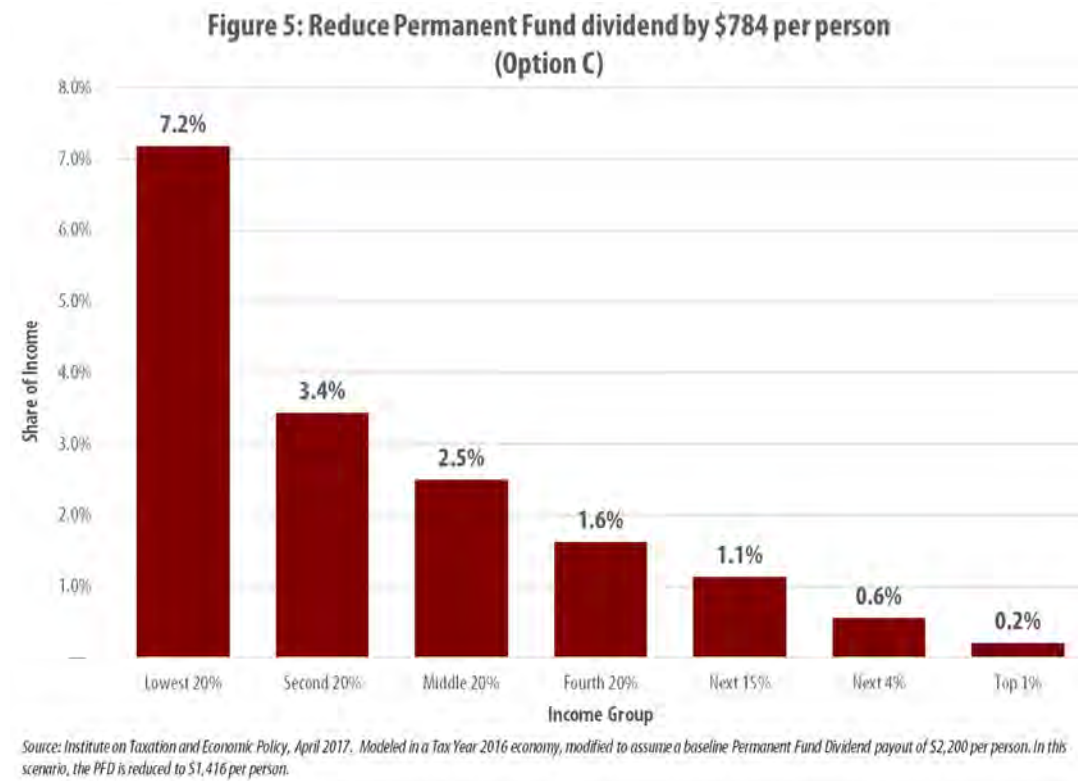
⁵ Alaska Department of Revenue, Fiscal Note for SB 5004 of the 2016 Legislative Session, 0516-DOR-TAX-07-08-16, Jul. 11, 2016 at <http://www.legis.state.ak.us/PDF/29/F/SB5004-1-3-071116-REV-Y.PDF>.

OPTION C: REDUCTIONS IN THE PERMANENT FUND DIVIDEND PAYOUT

Alaska's Permanent Fund Dividend (PFD) is unique among the states, offering every full-time Alaska resident a chance to share in the state's natural resource wealth. Annual payouts under the PFD typically range from \$1,000 to \$2,000 per person. But while every individual in Alaska receives the same size PFD, this payout is a much more significant source of income for families of modest means. While a \$2,000 annual payment amounts to 2 percent, or less, of the income of an Alaskan earning a six-figure salary, its value is closer to 10 percent of income for a minimum wage worker bringing home roughly \$20,000 in earnings per year.

As a result, reductions in the PFD are steeply regressive, having a far larger impact on families with lower incomes. Figure 5 demonstrates that while a \$784 cut to the PFD payout could free up approximately \$500 million for Alaska's budget, that gain would come at a high cost for Alaska's most vulnerable residents. Low-income families could expect to see their incomes cut by 7.2 percent under this change while the impact on middle-income families would amount to 2.5 percent and high-income Alaskans would see impacts well below 1 percent of their incomes.

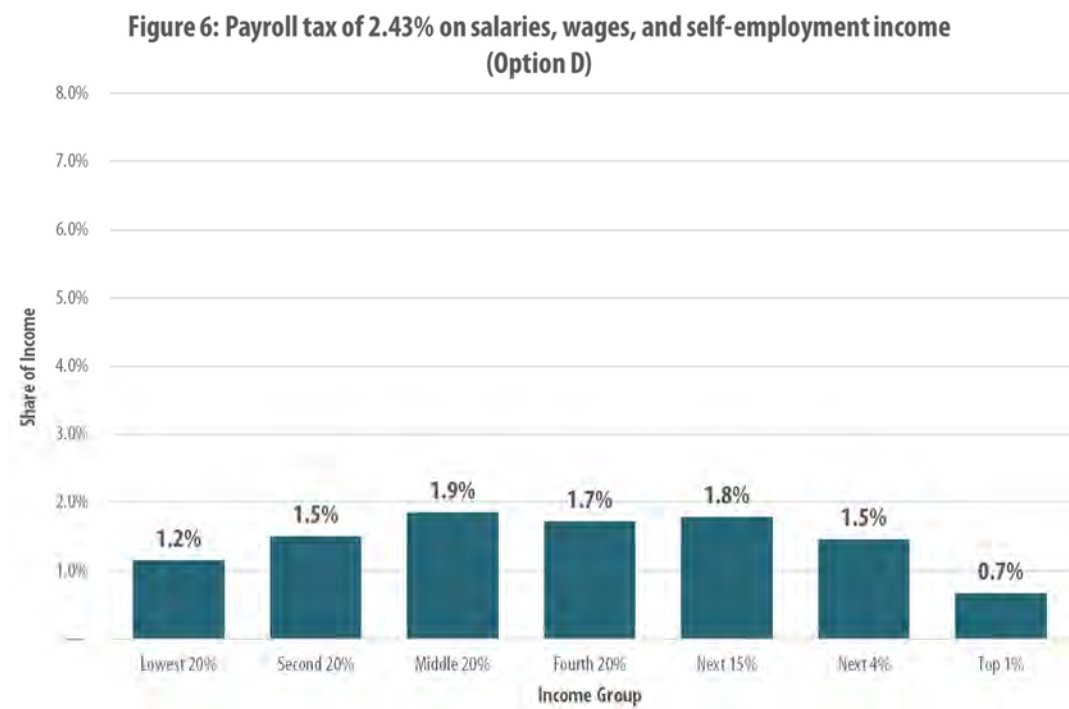
More detailed results are available in Table A on page 15. Those results show that the impact on the bottom 20 percent of earners (at 7.2 percent of income) is nearly ten times as large as the impact faced by the top 20 percent (at 0.8 percent of income).



OPTION D: PAYROLL TAX

Payroll taxes are a narrower type of personal income tax that apply only to current earnings from work, such as salaries, wages, and self-employment income. These taxes do not apply to investment income (such as capital gains and dividends) or retirement income (such as pensions and Social Security). Unlike broad-based personal income taxes, payroll taxes typically lack personal exemptions, meaning that they apply even to the first dollar that taxpayers earn each year.

Figure 6 shows the impact of a payroll tax designed to raise \$500 million per year at a tax rate equal to 2.43 percent of earned income. This tax is moderately progressive throughout the bottom 60 percent of the income distribution because lower-income taxpayers are more likely to receive significant shares of their income from retirement income, unemployment compensation, or other sources that would be exempted from this tax. At the top of the income distribution, the tax becomes regressive because high-income earners receive a large share of their income from investments that would also be exempted under this tax. A payroll tax would fall heaviest on middle- and upper-middle income families in their prime working years that do not receive significant income from their investments. More detailed results are available in Table A on page 15.

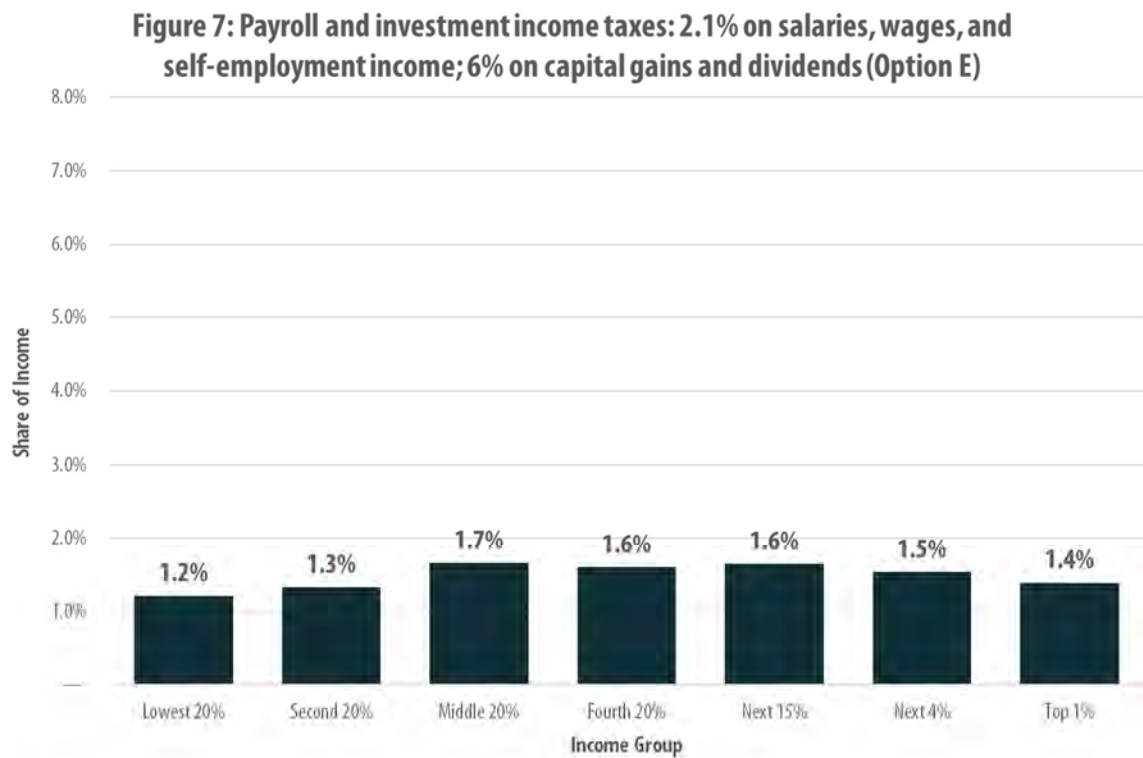


Source: Institute on Taxation and Economic Policy, April 2017. Modeled in a Tax Year 2016 economy, modified to assume a baseline Permanent Fund Dividend payout of \$2,200 per person.

OPTION E: PAYROLL TAX PAIRED WITH INVESTMENT INCOME TAX

One of the most significant drawbacks of a payroll tax is that it asks less of high-income families with substantial investment income than it does of middle-income families living on their salaries or wages. To remedy this shortcoming, a payroll tax could be paired with a standalone tax on investment income such as capital gains and dividends. As seen in Figure 7, this type of hybrid approach would come close to achieving a proportional result overall—meaning that families at various income levels would pay roughly equal shares of their income in tax under such an arrangement. More detailed results are available in Table A on page 15.

Levying an investment income tax alongside a payroll tax also means that the rate on salaries, wages, and self-employment income could be reduced while generating the same level of revenue as the previous example (Option D). In this scenario, levying a 6 percent tax on investment income would allow for a reduction in the payroll tax rate from 2.43 to 2.1 percent, while still generating \$500 million in revenue overall. As with Option D, retirement income would remain exempt from tax under this system.



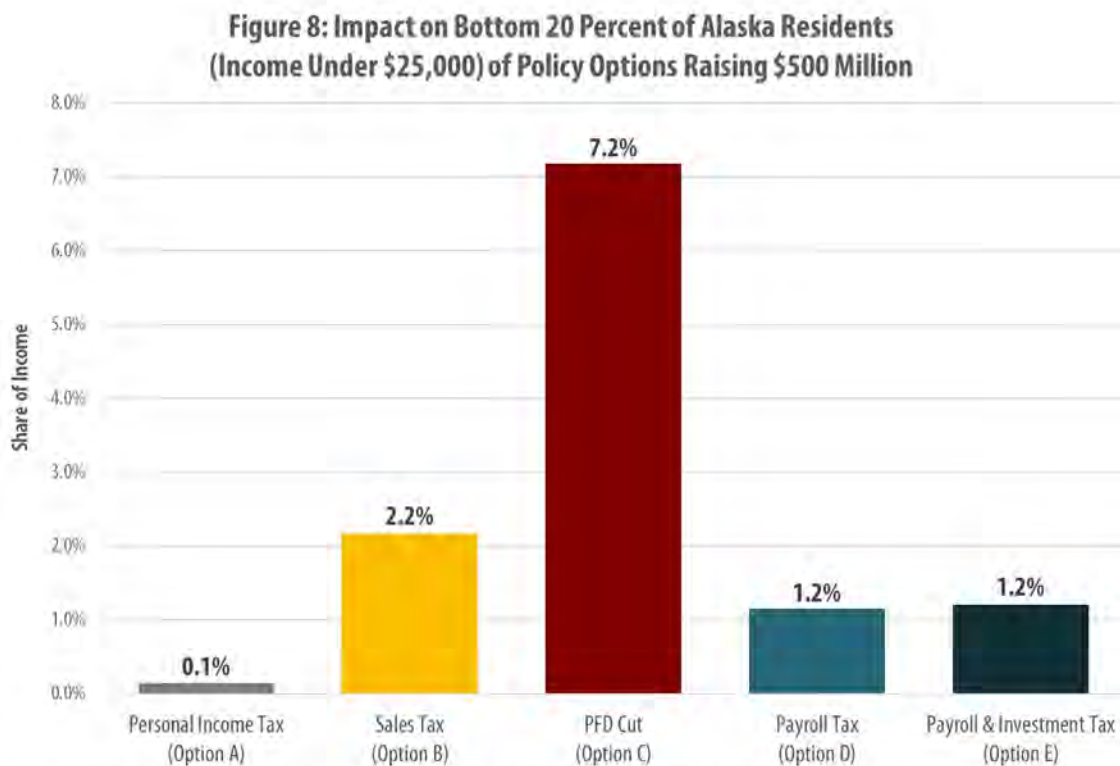
Source: Institute on Taxation and Economic Policy, April 2017. Modeled in a Tax Year 2016 economy, modified to assume a baseline Permanent Fund Dividend payout of \$2,200 per person.

COMPARING FIVE OPTIONS

The analyses described above make clear that families at different income levels would be impacted very differently by each of the five options explored in this report. Reducing the PFD payout or implementing a statewide sales tax would have a regressive impact, with low-income families being affected most relative to their incomes. At the other end of the spectrum, a graduated rate personal income tax would be progressive, requiring the largest payments from Alaska families with high incomes. Finally, the distribution of the payroll taxes explored in this report tends to be progressive at the bottom of the income distribution and regressive at the top. These stark differences in distributional impact mean that even when policy options are designed to raise the same level of revenue, the cost of those options to specific families can vary widely.

Low-Income Families

While each of the five options explored in this report would raise \$500 million in revenue per year for public services, Figure 8 shows that the impact on the bottom 20 percent of Alaska earners (with incomes below \$25,000) would range widely, from 0.1 percent of income under a personal income tax to 7.2 percent of income under a cut to the PFD. The heavy impact of PFD cuts comes about because the PFD is a highly significant source of income for this group. At the same time, the income tax modeled in this report includes exemptions that benefit all Alaskans, but that are particularly important to low-income families (the first \$14,300 earned by single taxpayers and the first \$28,600 earned by married couples is exempt from tax). Finally, it is also worth noting that the sales tax option would amount to 2.2 percent of income for low-income taxpayers while each of the payroll tax options would collect 1.2 percent of this group's income.

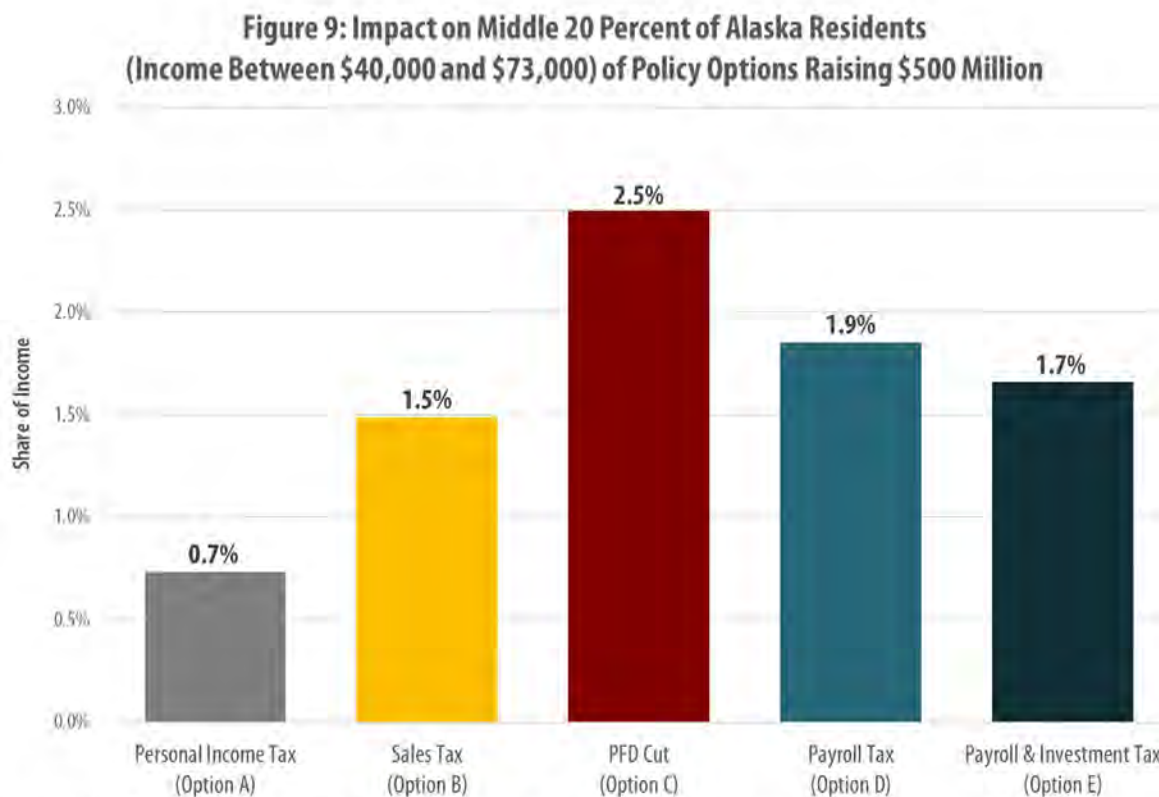


Source: Institute on Taxation and Economic Policy, April 2017. Modeled in a Tax Year 2016 economy, modified to assume a baseline Permanent Fund Dividend payout of \$2,200 per person.

Middle-Income Families

The impacts felt by middle-income families under each of these options are broadly similar to those faced by families with low incomes, though the degree of difference between the various options is somewhat less pronounced. Figure 9 shows that the middle 20 percent of Alaska earners (those with incomes between \$40,000 and \$73,000) would pay less under the personal income tax than under any of the other four options examined. In this scenario, the personal income tax would amount to 0.7 percent of their income, on average. The PFD cut, by contrast, would be the costliest policy course for this group. Reducing the PFD by \$784 per person would reduce this group's income by approximately 2.5 percent, on average.

For middle-income earners, the payroll taxes and sales taxes examined in this report would have similar impacts. A sales tax designed to raise \$500 million would collect roughly 1.5 percent of this group's income. A payroll tax designed to raise the same amount would vary between 1.7 to 1.9 percent of this group's income, with the lower amount associated with the combination payroll and investment income tax (Option E).



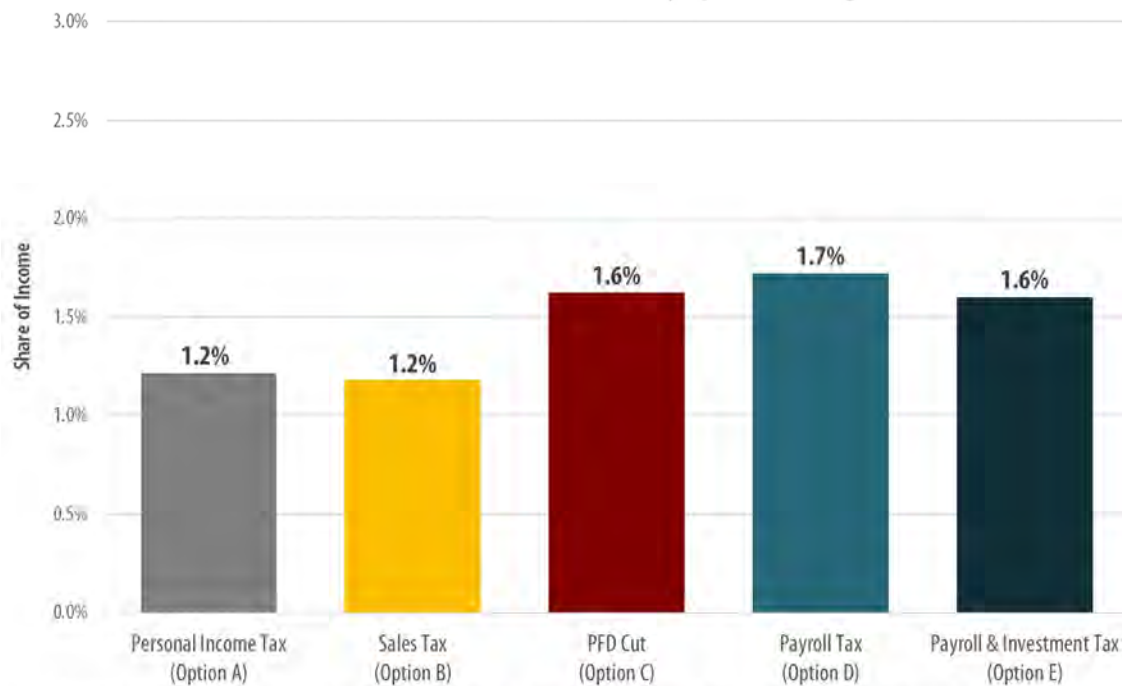
Source: Institute on Taxation and Economic Policy, April 2017. Modeled in a Tax Year 2016 economy, modified to assume a baseline Permanent Fund Dividend payout of \$2,200 per person.

Upper-Middle Income Families

The differences between the five options examined in this report are smallest for upper-middle income families. Those Alaskans between the 60th and 80th percentiles of income (earning between \$73,000 and \$115,000 per year) would see similar impacts to their household budgets regardless of whether lawmakers opted to raise \$500 million under an income tax, sales tax, payroll tax, or PFD reduction.

For this group, personal income taxes and sales taxes are roughly comparable in impact, at 1.2 percent of income. Since this group tends to include a disproportionate number of working age Alaskans, the payroll tax options levied on this group's earnings tend to have a somewhat larger impact of between 1.6 and 1.7 percent of income. This is roughly equivalent to the 1.6 percent drop in income that this group could expect under a cut to the PFD payout.

**Figure 10: Impact on Fourth Quintile of Alaska Residents
(Income Between \$73,000 and \$115,000) of Policy Options Raising \$500 Million**



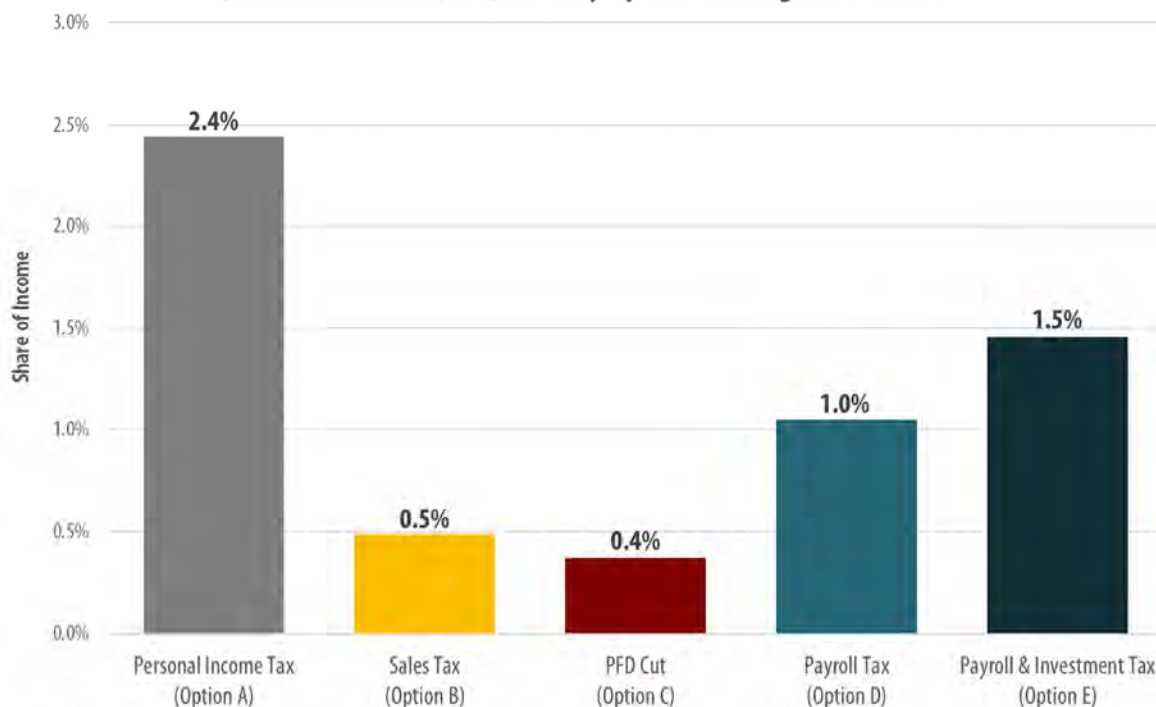
Source: Institute on Taxation and Economic Policy, April 2017. Modeled in a Tax Year 2016 economy, modified to assume a baseline Permanent Fund Dividend payout of \$2,200 per person.

High-Income Families

Alaska's high-income earners are the only group that would face a larger impact under a personal income tax than under the other options explored in this report. Figure 11 reveals that the top 5 percent of Alaska families (those earning over \$228,000 per year) would face a personal income tax bill equal to 2.4 percent of their income, on average, under the income tax examined in this report. A cut to the PFD payout, by contrast, would be the least consequential policy change for this group, amounting to just 0.4 percent of their income. Similarly, a statewide sales tax could be expected to amount to just 0.5 percent of income for the state's highest income earners.

The payroll tax options fall between these amounts. A standalone payroll tax would collect 1.0 percent of this group's income while pairing that tax with an investment income tax would boost that figure to 1.5 percent.

**Figure 11: Impact on Top 5 Percent of Alaska Residents
(Income Over \$228,000) of Policy Options Raising \$500 Million**



Source: Institute on Taxation and Economic Policy, April 2017. Modeled in a Tax Year 2016 economy, modified to assume a baseline Permanent Fund Dividend payout of \$2,200 per person.

CONCLUSION

Alaska lawmakers have a variety of fiscal policy options available to close the state's budget gap. Each of those options would impact families at different income levels in very different ways. A personal income tax, for instance, would be progressive, requiring higher payments relative to income from high-income families than from low-income families. Both sales taxes and cuts to the state's PFD payout, by contrast, would have a regressive impact.

Most Alaska families would find that a graduated rate personal income tax would have less impact on their household budgets than a sales tax, payroll tax, or cut to the PFD designed to generate an equivalent amount of revenue for the state. This finding holds true across at least the bottom 60 percent of the income distribution, and for some families above this level. This is because income taxes can be fine-tuned to require lower payments from taxpayers earning modest incomes and higher payments from those wealthy taxpayers who have benefited most from the economic opportunities that Alaska has made available to them.

APPENDIX A: DETAILED RESULTS

Table A: Distributional Impact of Fiscal Options Raising Approximately \$500 Million in Annual Revenue

All Alaska residents, 2016 income levels

2016 Income Group	Lowest 20%	Second 20%	Middle 20%	Fourth 20%	Next 15%	Next 4%	Top 1%	State Revenue Change	Top 20%	Top 5%
Income Range	Less Than \$25,000	\$25,000 – \$40,000	\$40,000 – \$73,000	\$73,000 – \$115,000	\$115,000 – \$228,000	\$228,000 – \$566,000	\$566,000 – Or More		\$115,000 – Or More	\$228,000 – Or More
Average Income in Group	\$ 16,000	\$ 31,000	\$ 55,000	\$ 92,000	\$ 166,000	\$ 299,000	\$ 1,311,000		\$ 250,000	\$ 502,000

Legend:	Blue cells indicate lowest impact for this group among five possible options (A-E)
	Orange cells indicate highest impact for this group among five possible options (A-E)

Option A. Personal income tax: HB115 (Version L) with rates reduced by 27.75% (six graduated rates ranging from 0% to 5.0575%)

Tax Increases as % of Income	0.1%	0.5%	0.7%	1.2%	1.6%	2.1%	2.8%	+501,100,000	2.0%	2.4%
Average \$ Impact of Tax Increases	\$ 23	\$ 157	\$ 400	\$ 1,113	\$ 2,723	\$ 6,205	\$ 36,406		\$ 5,104	\$ 12,250
Share of In-State Impact	0%	2%	6%	16%	30%	18%	27%		75%	45%

Option B. Sales tax: 3 percent on goods and services, excluding groceries, health care, prescription drugs, shelter, and child care

Tax Increases as % of Income	2.2%	1.9%	1.5%	1.2%	0.9%	0.6%	0.4%	+500,000,000	0.7%	0.5%
Average \$ Impact of Tax Increases	\$ 341	\$ 603	\$ 814	\$ 1,083	\$ 1,432	\$ 1,783	\$ 5,073		\$ 1,684	\$ 2,441
Share of In-State Impact	7%	13%	19%	24%	24%	8%	6%		37%	13%

Option C. Reduce Permanent Fund dividend by \$784 per person

Dividend Reductions as % of Income	7.2%	3.4%	2.5%	1.6%	1.1%	0.6%	0.2%	+500,600,000	0.8%	0.4%
Average \$ Impact of Dividend Reduction	\$ 1,128	\$ 1,083	\$ 1,364	\$ 1,490	\$ 1,880	\$ 1,658	\$ 2,733		\$ 1,878	\$ 1,873
Share of In-State Impact	15%	16%	20%	21%	20%	5%	2%		27%	7%

Option D. Payroll tax: Flat 2.43% rate on salaries, wages, and self-employment income

Tax Increases as % of Income	1.2%	1.5%	1.9%	1.7%	1.8%	1.5%	0.7%	+500,600,000	1.4%	1.0%
Average \$ Impact of Tax Increases	\$ 181	\$ 473	\$ 1,013	\$ 1,578	\$ 2,964	\$ 4,368	\$ 8,824		\$ 3,538	\$ 5,260
Share of In-State Impact	2%	7%	16%	23%	33%	13%	6%		52%	19%

Option E. Payroll and investment income taxes: 2.1% on salaries, wages, and self-employment income; 6% on capital gains and dividends

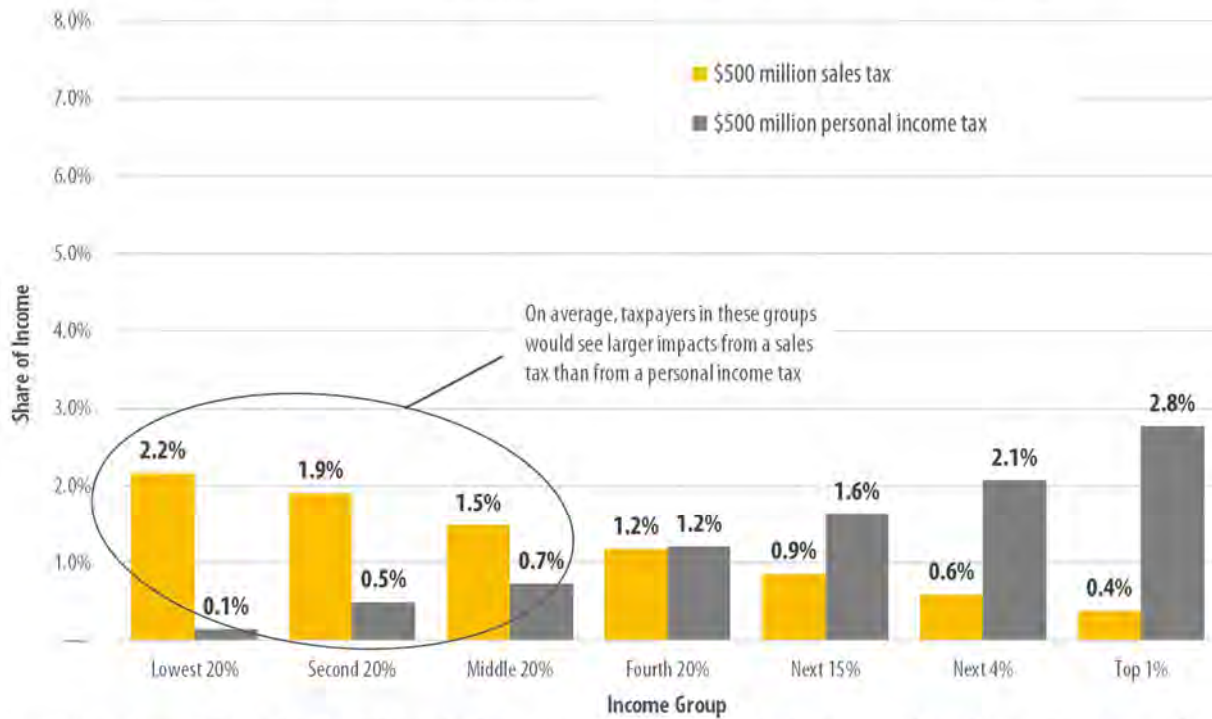
Tax Increases as % of Income	1.2%	1.3%	1.7%	1.6%	1.6%	1.5%	1.4%	+500,100,000	1.6%	1.5%
Average \$ Impact of Tax Increases	\$ 190	\$ 417	\$ 907	\$ 1,468	\$ 2,733	\$ 4,584	\$ 18,169		\$ 3,874	\$ 7,303
Share of In-State Impact	2%	6%	13%	20%	28%	12%	12%		53%	25%

SOURCE: Institute on Taxation and Economic Policy, April 2017

Modeled in a Tax Year 2016 economy, modified to assume a baseline Permanent Fund Dividend payout of \$2,200 per person.

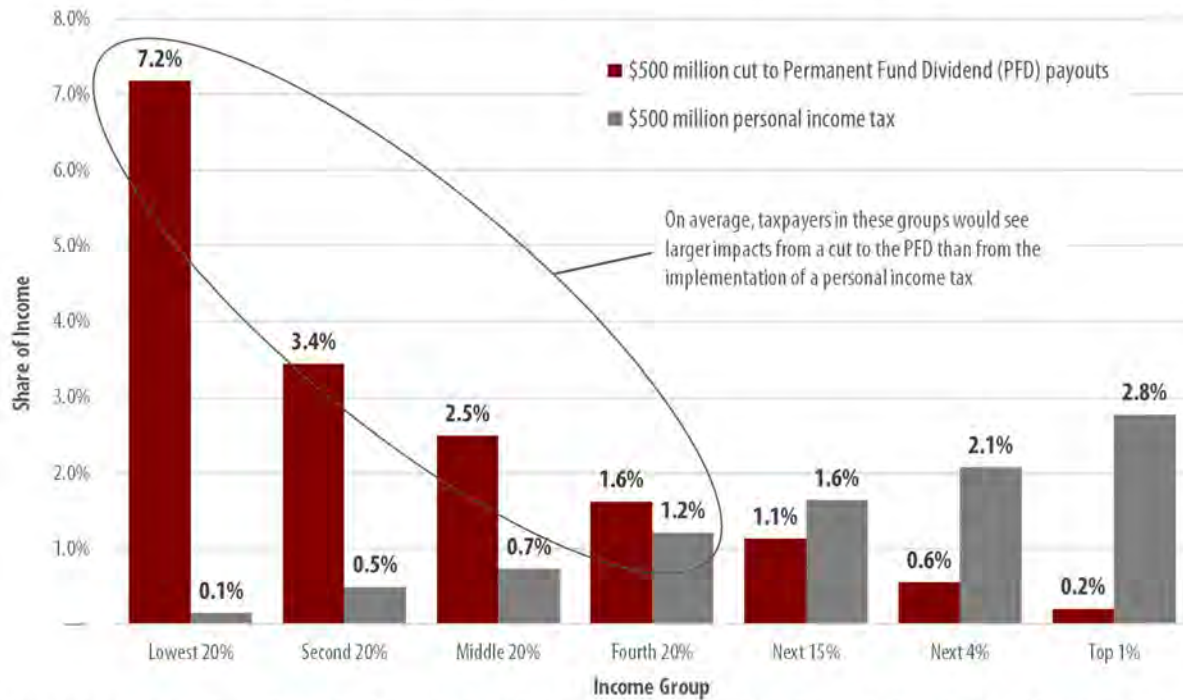
APPENDIX B: COMPARING AN INCOME TAX TO OTHER REVENUE OPTIONS

Figure 12: Comparing the Impact of a Sales Tax to an Income Tax in Alaska



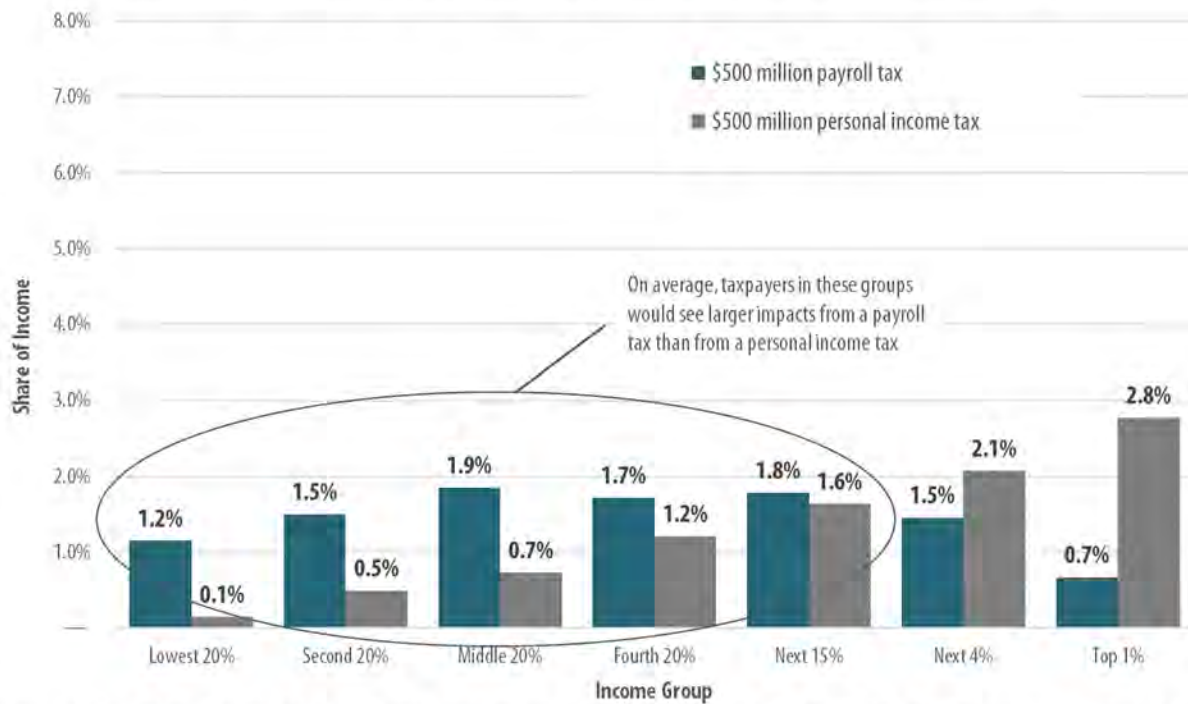
Source: Institute on Taxation and Economic Policy, April 2017. Modeled in a Tax Year 2016 economy, modified to assume a baseline Permanent Fund Dividend payout of \$2,200 per person. In the sales tax scenario the rate is 3% and includes exemptions for purchases of groceries, health care, prescription drugs, shelter, and child care. In the personal income tax scenario, the tax is assumed to be very similar to House Bill 115 of Alaska's 2017 legislative session, though its rates have been reduced by 27.75% across the board to reduce its yield to \$500 million per year.

Figure 13: Comparing PFD Cuts to an Income Tax in Alaska



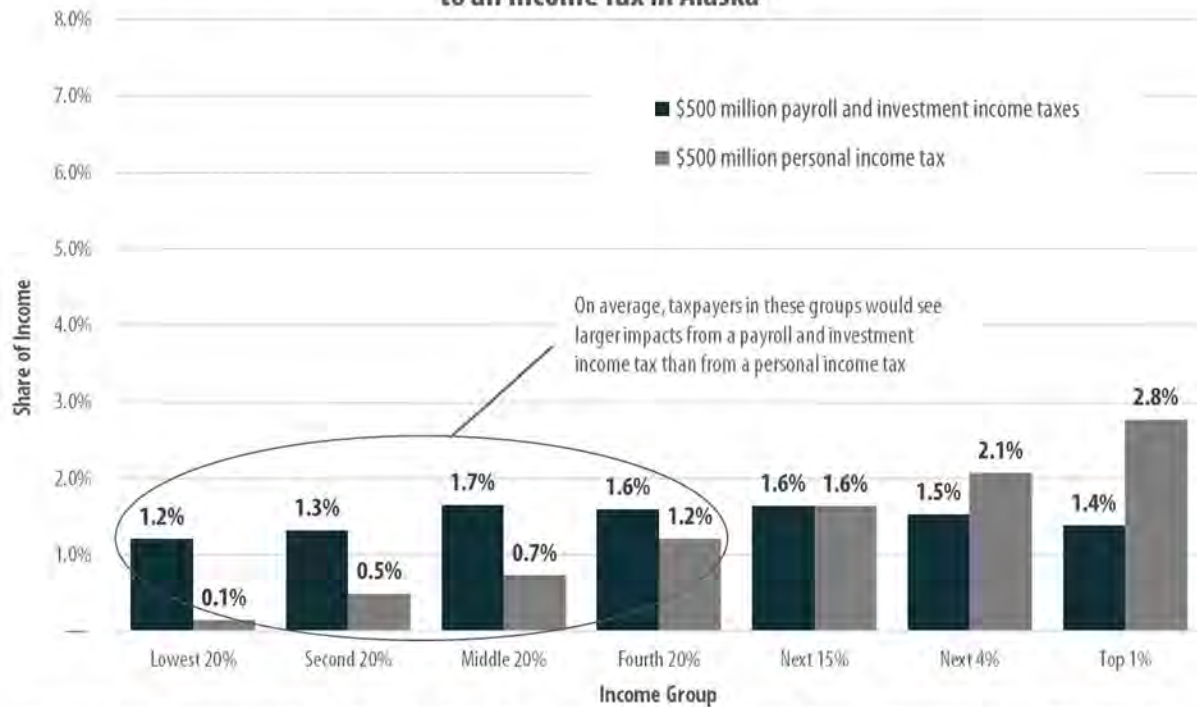
Source: Institute on Taxation and Economic Policy, April 2017. Modeled in a Tax Year 2016 economy, modified to assume a baseline Permanent Fund Dividend payout of \$2,200 per person. In the PFD scenario the payout is reduced to \$1,416 per person. In the personal income tax scenario, the tax is assumed to be very similar to House Bill 115 of Alaska's 2017 legislative session, though its rates have been reduced by 27.75% across the board to reduce its yield to \$500 million per year.

Figure 14: Comparing the Impact of a Payroll Tax to an Income Tax in Alaska



Source: Institute on Taxation and Economic Policy, April 2017. Modeled in a Tax Year 2016 economy, modified to assume a baseline Permanent Fund Dividend payout of \$2,200 per person. In the payroll tax scenario the rate is 2.43% on salaries, wages, and self-employment income. In the personal income tax scenario, the tax is assumed to be very similar to House Bill 115 of Alaska's 2017 legislative session, though its rates have been reduced by 27.75% across the board to reduce its yield to \$500 million per year.

Figure 15: Comparing the Impact of a Payroll/Investment Tax to an Income Tax in Alaska



Source: Institute on Taxation and Economic Policy, April 2017. Modeled in a Tax Year 2016 economy, modified to assume a baseline Permanent Fund Dividend payout of \$2,200 per person. In the payroll/investment tax scenario the rate is 2.1% on salaries, wages, and self-employment income and 6% on capital gains and dividends. In the personal income tax scenario, the tax is assumed to be very similar to House Bill 115 of Alaska's 2017 legislative session, though its rates have been reduced by 27.75% across the board to reduce its yield to \$500 million per year.

APPENDIX C: 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.

Appendix E

2019 ISER Study

“What do we know about the effects of the Alaska Permanent Fund Dividend?”

What do we know about the effects of the Alaska Permanent Fund Dividend?

Mouhcine Guettabi *

¹ Institute of Social and Economic Research, University of Alaska Anchorage

May 20, 2019

Abstract

The Alaska Permanent Fund Dividend (PFD) has been distributed to Alaska residents for 37 years, providing each resident an equal share of a yearly government appropriation based on the earnings of the Alaska Permanent Fund. While support for the program is high, work assessing the PFD's influence on the lives of Alaskans is limited. Recently, a number of researchers have analyzed the causal effect of the PFD on a variety of socio-economic outcomes including employment, consumption, income inequality, health, and crime. This paper summarizes this empirical literature and highlights future areas of research.

Keywords: Permanent Fund Dividend, Research, Alaska, universal income.

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1 Summary

1.1 Main findings

- Alaskans have received an unconditional cash transfer since 1982. The recent literature is starting to shed light on the socio-economic effects of the distribution on employment, consumption, poverty, health, and crime. While this research has been useful, there are still significant gaps in our understanding of the role the PFD plays in influencing education, health care usage, financial health, migration, and general welfare. In the years to come, there should be a strong push to use detailed administrative datasets to evaluate the long term effects of the program. Below is a summary of what we know:

Employment:

- Three papers have examined the effect of the Permanent Fund Dividend on employment and hours. The findings across papers show that the PFD has not had a negative influence on the labor market. In fact, there is evidence of small positive demand responses. Overall, however, the employment-related effects of the dividend are fairly small on annualized basis.

Consumption:

- Early research showed that Alaskans do not change their consumption patterns in the months after the distribution. More recent work using a detailed data set shows that Alaskans spend significantly more on non-durables¹ and services in the month when they receive the dividend payment, and this excess consumption persists over the first quarter after the dividend payment.

¹Examples of non-durable goods include cosmetics, cleaning products, food, fuel, clothing, footwear, and other consumables.

Health:

- **Birthweight:** The evidence indicates that the PFD has a positive, but modest effect on birth weight. This effect is particularly pronounced for low income mothers.
- **Childhood Obesity:** A recent paper finds that the health benefits extend beyond birth weight. For three-year-olds, there is strong evidence that the PFD reduces obesity.

Poverty:

- The PFD has resulted in substantial poverty reductions for rural Alaska Natives. These effects have been particularly pronounced for the elderly. Interestingly, the poverty reducing effect of the PFD has declined as regional corporation dividends have increased in size over time.

Income inequality:

- Perhaps the most unexpected result in this literature is that while the distribution has been shown to reduce poverty, recent evidence suggests that the PFD increases income inequality in both the short and long run.

Crime:

- In the weeks following the PFD distribution, substance abuse related incidents increase while property crime related events decrease. Additionally, both substance abuse and medical assist instances are increasing in the payment size but there is no evidence that property crime is responsive to fluctuations in the amount.

1.2 Future work

There is significant room for improving our understanding of the PFD's effect on education, health care usage, migration, financial health, and general welfare. To evaluate these questions adequately, there should be an attempt to use detailed health, financial, and expenditure datasets.

- Alaskans can save PFDs towards their children's education and yet there is no understanding of how this option has affected educational opportunities or outcomes.
- All Alaska residents qualify for a PFD after one year of residency which has raised questions about its effect on migration decisions. To date, there has been no empirical work on the effect of the PFD on within state migration patterns or its role in attracting individuals/families from outside of the state.
- Alaska health-care costs are the highest in the country and access is challenging in rural areas. Therefore, the PFD can potentially relax the financial constraints and increase usage. Studying this question would, however, require access to hospital discharge or claims data.
- Debt levels and delinquencies are argued to be affected by the PFD and yet there has been no rigorous evaluation of this link.
- Finally, there should be efforts to ask questions with a regional dimension as the PFD interacts with industrial structure, remoteness, and availability of resources.

2 Background on the Permanent Fund Dividend

The state's financial windfall tied to the discovery of the large Prudhoe Bay oil resulted in the establishment of the Alaska Permanent Fund (APF) in 1976 to save a portion of the revenues. The fund receives a percentage of Alaska's revenue from oil production as an investment and has grown substantially in value, reaching 65 billion dollars as of April, 2019. It is now well diversified with assets in stocks, bonds, and real estate. Each year since 1982 in the late fall, every person who has been a resident of Alaska for the previous year and indicates an intention to remain gets a Permanent Fund Dividend (PFD) check from the state. As Goldsmith (2001) notes, the reasons for establishing the program are many and have evolved over time. They range from the fact that it creates a constituency to protect the Permanent Fund to the idea that people own the resource and the revenues from its sale. Other reasons often cited include compensation for the high cost of living, and that individuals know better than the government. Through 2017, almost \$22 billion has been paid out in annual amounts ranging from about \$300 to \$2100² per Alaskan. The PFD is routinely covered in the state's newspapers and as a result of the state's recent financial difficulties, there has been intense debate over the appropriate size of the dividend, the role it plays in the economy, and in people's lives. The real difficulty underlying the discussions, however, is the lack of empirical research done on the PFD.

3 Paper structure

We summarize all the empirical papers that have examined different aspects of the PFD. They fall into six different categories and include a total of 10 papers. Employment(3 papers), income inequality(1), health(2), spending(2), poverty(1), and crime(1). For the purposes of this summary, we do not include surveys and economic impact analyses.

²These figures are in nominal dollars.

4 Employment

4.1 Short run

One of the most pressing questions associated with unconditional cash transfers has to do with its effect on work. In the case of a universal transfer such as the PFD, there are questions about its potential effect on labor supply as well as any increases in labor demand due to higher consumption levels. Using the timing of disbursements and annual fluctuations in disbursement size, Bibler et al. (2019) find evidence of both a positive labor demand response and a negative labor supply response to the PFD in the short-run. They estimate that a \$1,000 increase in the size of the per person PFD increases the probability of employment among men by 1.8 percent over the months following the disbursement, which they interpret as direct empirical evidence that universal transfers can induce demand shocks that increase the demand for labor. For women, they find that a \$1,000 increase in the size of the per person PFD leads to a reduction of 0.9 hours per week (a four-percent decrease) among employed women in the months following the disbursement, with no corresponding extensive-margin response. Importantly, they find that decreases in hours of work among women are concentrated among those who are younger, lower wage earners, and those with young children in the household. Combining the effects for men and women together, they find that an additional \$1,000 in the per-person PFD results in a 0.7% labor market contraction in the months following the disbursement, or less than a 0.2% contraction on an annual basis.

In a related paper, Feinberg and Kuhn (2018) use the American Community Survey between 2005 and 2015 to evaluate how the PFD affects the number of hours worked in the year prior year to the survey. Unlike Bibler et al. (2019), they use yearly data to compare long term residents to people who have been in the state for less than a year, and also compare Alaskans' labor supply to those living in Hawaii and Montana. They find that married women are the most responsive to the family's cumulative PFD with elasticities³

³Elasticity is defined as the percentage change in the number of hours induced by a 1 percent change in the size of the family PFD. In this case, a 10% increase in the size of the PFD is associated, in the case of

ranging from -0.17 to -0.18. The elasticity for single women is -0.138 (compared to -0.141 in the baseline model). For men, they find that the elasticity is -0.115. They conclude that the decline in labor are modest and are unlikely to offset the income gains from the PFD distribution.

4.2 Long run

Unlike the two previous papers which exploit the variation in the size of the PFD, Jones and Marinescu (2018) investigate the long-term effect of the PFD on the Alaska labor market. Essentially, they attempt to identify how Alaskans' hours and employment rates changed since the inception of the program in 1982. They use the synthetic control method to create a counterfactual Alaska from the other U.S. states. They find that the employment to population ratio in Alaska after the introduction of the dividend is similar to that of synthetic control states. On the other hand, the share of people employed part-time in the overall population increases by 1.8 percentage points after the introduction of the dividend and relative to the synthetic controls. They conclude that the PFD has no significant effect on employment, yet increases part-time work.

- **Takeaway:** From these three papers, it appears clear that the PFD does not discourage employment and that it has mild demand positive effects. There is no evidence that the PFD has fundamentally changed the Alaska labor market in either the short or long run.

married women, with a 1.7 to 1.8% decrease in number of hours of worked in a year.

5 Health

5.1 Birthweight

There is a great deal of interest and research on the relationship between income and health (Smith, 1999). This relationship is notoriously difficult to parse out as it is two-directional -income influences health and vice-versa- and low income individuals may have attributes that cause poor health aside from income. Lately, a number of papers exploiting exogenous changes to transfers have examined the causal link of income on health (Jo, 2018). The first paper to evaluate the PFD’s effect on health focuses on birth weight (Chung et al., 2016). The authors find that income has a positive, but modest effect on birth weight. They find that an additional \$1,000 increases birth weight by 17.7g and substantially decreases the likelihood of a low birth weight (a decrease of around 14% of the sample mean). This income effect is higher for less educated mothers. Additionally, the authors evaluate the effect of the PFD on the “Appearance, Pulse, Grimace, Activity, and Respiration” (APGAR) score which assesses the infant’s health. They find small but positive effects indicating that the distribution positively influences infants’ health. These positive birthweight PFD induced effects seem to be driven by earlier pre-natal visits and longer gestation periods.

5.2 Childhood obesity

The second paper to investigate the health effects of the PFD focuses on the weight of toddlers. The authors take advantage of the yearly fluctuations in the size of the PFD coupled with eligibility rules based on date of birth (Watson et al., 2019a). In their analysis, they exploit these features to evaluate how the accumulation of PFDs by age 3 affects obesity. The authors find that the effect of the PFD on obesity and overweight status is negative and statistically significant. An additional \$1,000 decreases the probability of being obese as a child by 4.5 percentage points. Extrapolating these estimated effects to the Alaska three-year-old population, they find that 500 cases of obesity were averted from an additional

\$1,000 in PFD payments, which is equivalent to a 22.4% reduction in the number of obese three-year-olds. Using a simulation exercise, they find that the state of Alaska saves between two and 10 million dollars due to the averted cases. Furthermore, they find that the results are driven by toddlers in families earning between (\$25,000-\$75,000) and find no effect for low and high income households.

- **Takeaway:** From these two papers, it is clear that the PFD improves children’s health by increasing birth weight and decreasing childhood obesity.

5.3 Future health related work

The intersection of the PFD and health, in particular how additional income affects health-care usage, is an important potential avenue for research. Recent work shows that, for example, women with low incomes who had high-deductible insurance plans waited an average of 1.6 months longer for diagnostic breast imaging, 2.7 months for first biopsy, 6.6 months for first early-stage breast cancer diagnosis and 8.7 months for first chemotherapy, compared with low-income women with low-deductible plans (Wharam et al., 2019). These findings indicate that it would be useful to, for example, understand how the PFD distribution affects the type of care people seek immediately before and after the cash transfer. Another question worth pursuing is the amount of follow up care people receive if a health incident occurs around the cash distribution versus follow up received if an incident occurs in months distant from the distribution.

6 Consumption

The economics profession has grappled for years with the extent to which individuals change consumption patterns in response to anticipated payments. In theory, because the PFD is fully predetermined in October and predictable with reasonable accuracy months in advance, the textbook models imply that non-durable consumption by households with sufficient liquid

assets should not be responsive to the PFD payments. Two papers have tried to use the PFD to test this question (Hsieh, 2003; Kueng, 2018). They find contradictory results as Hsieh (2003) finds that Alaskans are not responsive to the distribution, while Kueng (2018) finds that households do, in fact, respond to the distribution and increase their consumption on non-durables by 22 to 24 cents per PFD dollar in the three months post distribution.

6.1 Using Consumer Expenditure Survey Data

To our knowledge, Hsieh (2003) is the first paper to ever empirically evaluate any aspect of the PFD. He finds no evidence that the consumption of Alaskan households reacts to these payments. Interestingly, he finds that although households in Alaska do not overreact to payments from the Permanent Fund, the consumption of the very same households is excessively sensitive to their income tax refunds.

6.2 Using detailed transaction data

The second and more recent paper relies on transaction level data from a personal finance website. The data is considerably more detailed than the Consumer Expenditure Survey (CES) but potentially includes individuals who are more financially savvy than average. In his paper, Kueng (2018) finds non-durable consumption strongly responds to the arrival of dividend payments. On average, consumption increases by 11 cents for each dollar of PFD received in October, 5 cents in November, and another 7 cents in December. Overall, this points to an increase of between 22 and 24 cents for every PFD dollar in the three months post distribution. When evaluating the responsiveness by income level, the author finds that households in the top income quintile have a marginal propensity to consume (MPC)⁴ of around 70%. This is much higher than an MPC of about 10% for households in the lowest quintile, for whom the PFD is a substantial source of total family income. While the author

⁴the proportion of an increase in income -PFD in this case- that a consumer spends on the consumption of goods and services.

acknowledges that it is difficult to explain the reasons why higher income households are more responsive, he offers the following two theories as potential explanations: “First, households might see the unearned PFD income as an annual windfall, and richer households might feel less guilty squandering it than the less affluent. Second, the fact that almost everybody receives these salient payments regularly at the same time of year suggests that social norms or common practices might have evolved, and richer households can afford to spend more lavishly on these occasions.”

- **Takeaway:** Based on the most recent and complete evidence, The PFD increases the consumption of Alaskans when the payment occurs. On average, the marginal propensity to consume non-durables out of the PFD is 25 cents out of each dollar.

7 Poverty

The PFD provides an income floor and therefore, perhaps, one of its most important contributions is in alleviating poverty. Yet, establishing this fact is challenging due to the inaccurate reporting of income in the American Community Survey (ACS), the omission of the income received by children younger than 15, and the fact that only about half of households reported receiving “other income” (Berman, 2018). The author solves these issues by correctly adding the right amount of PFD to each survey respondent and then calculating income with and without the PFD. He finds that the PFD has resulted in substantial poverty reductions for rural Alaska Natives. In 2000, the PFD lifted 12.4 percent of the rural Alaska Native population out of poverty. Interestingly by 2011-2015, the poverty reducing effect of the PFD declined to 6.1% as regional corporation dividends have increased in size over time. When examining sub-groups, the author finds that the poverty reducing effects of the PFD were particularly pronounced for the elderly.

8 Income inequality

Perhaps the most surprising result regarding the PFD concerns income inequality. Most observers, including Goldsmith (2001), note that it is the most equitable way to distribute the benefits from oil development. It is argued that the PFD reduces income inequality because it represents a larger share of income for lower income households; these statements are, however, at odds with new findings (Kozminski and Baek, 2017). Using time series techniques and income inequality indices, they find that the PFD worsens income inequality in both the short and long run. The authors argue that one possible explanation for their finding is that there may exist differences in consumption patterns between low- and high-income groups with the PFD payment. If the PFD is spent on non-durable goods by the lowest income groups but is saved or invested by the higher income, then it may gradually result in increasing disparities between the groups.⁵

9 Crime

The last paper we cover examines the relationship between the PFD and crime. While the relationship between earned income and crime has been explored in numerous articles, there is less known about how unearned income- such as the PFD- affects crime (Watson et al., 2019b). The authors estimate the causal effects of the PFD on criminal activity by exploiting the timing and size of the PFD between 2000 and 2016. Using a database of daily policing incidents, they find a 10% increase in substance-abuse incidents and an 8% decrease in property-crime in the four weeks after the PFD is issued, with no average change in violence. They also show that medical assist instances and substance abuse are increasing in payment size. Given that socially undesirable outcomes are increasing in payment size but the socially beneficial outcome -property crime decrease- is not, the authors suggest that there may be implied gains from spreading the payments over the year.

⁵It is important to note that this explanation is inconsistent with Kueng (2018) who finds that the MPC for the highest income group is much higher than lower income Alaskans.

10 Where does the research on the PFD go?

The PFD has been distributed to Alaska residents for 37 years and yet the first empirical evaluation only happened in 2003. Since then, a number of researchers have evaluated different facets of the program's effects. As interest in universal basic continues to rise, research on the PFD can provide many useful answers even if it is too small to be considered basic.⁶ As Hoynes and Rothstein (2019) note, many of the basic income pilots are trying to understand the short-term effects of giving people money with no strings attached but are ill-suited to understand the long term implications. Therefore, the PFD's longevity provides a rather unique opportunity to understand how the distribution affects long term outcomes such as education, financial health, migration, and healthcare usage.

⁶If the statutory formula is retained, the payments will continue to grow with the fund. This year, for example, the PFD is expected to be \$3,000.

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Appendix F

Permanent Fund Dividend
Historic Values Adjusted for
Inflation

Alaska Permanent Fund Dividend Amounts Adjusted for Inflation to 2018 Dollars				
Year	Permanent Fund Dividend (PFD) Amount	U.S. City Average Consumer Price Index (CPI)	Percentage Increase to Match 2018 CPI (Inflation)	PFD Amount Adjusted to 2018 Dollars
1982	\$1,000	96.5	160.2%	\$2,602
1983	\$386	99.6	152.1%	\$974
1984	\$331	103.9	141.7%	\$801
1985	\$404	107.6	133.4%	\$943
1986	\$556	109.6	129.1%	\$1,274
1987	\$708	113.6	121.0%	\$1,565
1988	\$827	118.3	112.3%	\$1,755
1989	\$873	124.0	102.5%	\$1,768
1990	\$953	130.7	92.1%	\$1,830
1991	\$931	136.2	84.4%	\$1,717
1992	\$916	140.3	79.0%	\$1,639
1993	\$949	144.5	73.8%	\$1,650
1994	\$984	148.2	69.4%	\$1,667
1995	\$990	152.4	64.8%	\$1,632
1996	\$1,131	156.9	60.0%	\$1,810
1997	\$1,297	160.5	56.5%	\$2,028
1998	\$1,541	163.0	54.1%	\$2,374
1999	\$1,770	166.6	50.7%	\$2,668
2000	\$1,964	172.2	45.8%	\$2,864
2001	\$1,850	177.1	41.8%	\$2,623
2002	\$1,541	179.9	39.6%	\$2,151
2003	\$1,108	184.0	36.5%	\$1,512
2004	\$920	188.9	32.9%	\$1,223
2005	\$846	195.3	28.6%	\$1,087
2006	\$1,107	201.6	24.6%	\$1,379
2007	\$1,654	207.3	21.1%	\$2,003
2008	\$2,069	215.3	16.6%	\$2,413
2009	\$1,305	214.5	17.0%	\$1,527
2010	\$1,281	218.1	15.2%	\$1,475
2011	\$1,174	224.9	11.6%	\$1,311
2012	\$878	229.6	9.4%	\$960
2013	\$900	233.0	7.8%	\$970
2014	\$1,884	236.7	6.1%	\$1,998
2015	\$2,072	237.0	5.9%	\$2,195
2016	\$1,022	240.0	4.6%	\$1,069
2017	\$1,100	245.1	2.4%	\$1,127
2018	\$1,600	251.1	0.0%	\$1,600
Notes: The Consumer Price Index is a commonly used measure inflation based on the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. Sources: Permanent Fund Dividend amounts: Alaska Permanent Fund Dividend Division, https://pfd.alaska.gov/Division-Info/Summary-of-Applications-and-Payments ; Consumer Price Index data: U.S. Bureau of Labor Statistics, https://data.bls.gov/timeseries/CUUR0000SA0 .				

Appendix J

Governor J Hammond Letter to
House Finance Chair,
Representative Al Adams
(April 1, 1982)

40500
history

Permanent
Fund

issues vs PF dividend
existing constituency idea
future 1991

April 1, 1982

The Honorable Al Adams
Chairman, House Finance Committee
Alaska State Legislature
Pouch V
Juneau, AK 99811

Dear Al:

I am increasingly convinced that an ongoing Permanent Fund dividend program should take priority over such programs as subsidized loans, revenue sharing, and any number of existing government programs which now convey hidden "dividends" to a favored few at a collective cost to all Alaskans.

The latter programs are now more than 90% funded by oil wealth which belongs to all Alaskans. Unfortunately, however, all Alaskans are not beneficiaries. Accordingly, we are taking wealth which belongs equally to both the "haves" and the "have nots" and distributing it to only a few of the "have somes."

Some inconsistently oppose an ongoing dividend program, yet ardently support inequitably distributed hidden dividends such as those inherent in subsidized loans. Their rationale is that the latter are warranted to bolster Alaska's economy.

However, A.H.F.C., for example, issued 12,000 loans over an 18-month period. Of these, only 25% were for new construction which generates jobs. Moreover, only 1,300 were to persons whose income level precluded their eligibility for loans from other sources. Very few went to rural residents.

Because of such revelations, more and more legislators and economists have concluded that a distribution system which puts dollars in the pockets of all will provide a far greater boost to the Alaskan economy per dollar spent than would either loans or capital projects.

PF 79-82

Some fear that a dividend program might increase the public's dependence on government. Compared to what? An ongoing dividend program would do so far less than the status quo. However, to enhance this aspect, if we, say, dispense 150 million in dividends to all Alaskans we should cut an equivalency of "non-essential" programs, such as funding rifle ranges; loan subsidies; paying for one's campaign contributions; etc., etc., etc. These are programs which foster government dependency. Far better, in my view, to cut them and permit the people to make their own choices as to how a share of their wealth will be spent. Having government make all those choices for them is what creates far more unhealthy dependency.

Let me urge you to support an ongoing program. A one time only program makes no sense, save perhaps politically. It does nothing to create a constituency which will safeguard against invasion of the Permanent Fund. It does nothing to recognize that the oil wealth is our children's legacy and belongs not just to those here today. Nor does it derive from a source of recurrent revenue such as would the dividend program.

Here's our chance to strike a small blow against those who'd make drones out of folk who could meet their own needs were they simply granted a chance to use a share of their wealth for what they, not government, determine are their greatest needs. What's wrong with that? Why must we filter all dollars through a bureaucratic blanket in the vain hope they will trickle down with any equity? Haven't we learned we cannot?

The B.I.A. has tried this for years, yet Indian families remain the nation's most destitute. I'm told that if that agency were eliminated and their last year's budget instead equally distributed, each Indian family could receive \$30,000 per year! Sure, some would blow it. However, I suspect most would use it in ways which would improve the collective lot of their people far beyond what has occurred.

Al, let's not make that mistake up here. We have the chance to try something different which demonstrates a greater faith in the people to do some things better than can government. I think it is long overdue. Moreover, it requires nothing more than that we give back to the people

The Hon. Al Adams

-3-

April 1, 1982

at least a small portion of wealth which is already theirs. Remember also, we're only talking about a tiny portion. The vast bulk can still go into government programs -- both good and bad. I urge you to support the ongoing dividend program as structured in my draft legislation. I can almost guarantee if you do that ten years from now most Alaskans will find it's the only thing they can point to as a benefit they got from oil.

Sincerely,

Jay S. Hammond
Governor

bcc: Keith Specking
Chuck Kleeschulte
Jerry Reinwand
Susan Greene

JSH:lsg

Appendix K
House Finance Chair,
Representative Al Adams Letter
of Intent
(May 14, 1982)

HOUSE FINANCE COMMITTEE

COMMITTEE LETTER OF INTENT

HCS CSSB 842

The Committee intends that the Department of Revenue engage in careful audit of Permanent Fund dividend applications and vigorously enforce the laws pertaining to fraud.

The Committee intends that the State's Attorney General carefully consider and review the United States Supreme Court's decision on the Permanent Fund dividend program created by the Legislature in 1980. The Committee intends that this consideration and review include consultation with interested attorneys and other citizens before the State's Attorney General issues an opinion as to whether the Supreme Court's decision allows Permanent Fund dividend payments to be based on accumulated years of residency if those years are counted after January 1, 1979.

Whatever the result of the State's Attorney General's opinion on the constitutionality of cumulative payments in 1983 and future years, the Committee intends that Permanent Fund dividends in the amount of \$1,000 per capita be paid in 1982 to eligible applicants if the United States Supreme Court either rules the Permanent Fund dividend program created by the Legislature in 1980 invalid for any reason by October 19, 1982, or if the Court has not made a determination by that date.

If the United States Supreme Court determines the Permanent Fund dividend program created by the Legislature in 1980 to be valid, the Committee intends that individuals who turn 18 years of age after January 1, 1979 have one year after attaining that age in which to claim all Permanent Fund dividends for which they have been eligible except for their age. This one-year "window of eligibility" at age 18 for claiming prior years' dividends does not apply until after the last day for filing an application for a Permanent Fund dividend in 1983, so that individuals who have turned 18 between January 1, 1979 and the last day of filing an application in 1983 may be able to collect dividends for 1979, 1980, and 1981. The Committee intends that individuals collecting for prior years' dividends upon reaching the age of 18 shall receive interest on their dividends; that interest shall be calculated at the average rate of return earned by the dividend fund.

If the United States Supreme Court determines the Permanent Fund dividend program created by the Legislature in 1980 to be for any reason invalid--or if the United States Supreme Court issues no decision on the program by October 19, 1982--the Committee intends that payment of Permanent Fund dividends be made to parents, guardians, or other authorized representatives for minors and incompetent individuals on behalf of those minors and incompetents. In cases in which there is no other appropriate guardian and the State is caring for a minor or incompetent, the State should ensure that the Permanent Fund dividends are protected and invested.

Under no circumstances should the State claim a Permanent Fund dividend for a minor who has a legal parent, guardian, or authorized representative other than the State. Under no circumstances should the State claim a dividend for an incompetent individual who has a legal guardian or authorized representative other than the State. A procedure should be established by regulation to avoid the necessity for a multitude of legal proceedings to establish guardianship for purposes of receiving Permanent Fund dividends.

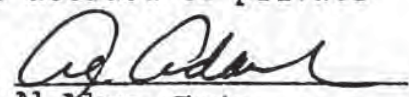
The Committee intends that the Department of Health and Social Services monitor the impacts of Permanent Fund dividends on public assistance programs and make a report to the Legislature within 90 days after the first payment of Permanent Fund dividends.

The Committee intends that the Department of Revenue issue warrants to eligible applicants as soon as possible under this legislation.

The Committee intends that the **payment of dividends shall have first call** on 50 percent of the income of the Permanent Fund available for distribution, **regardless of what other uses the income is put to.**

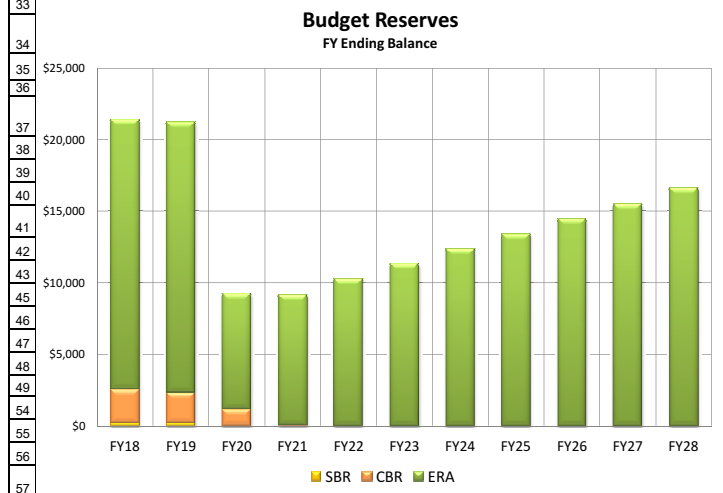
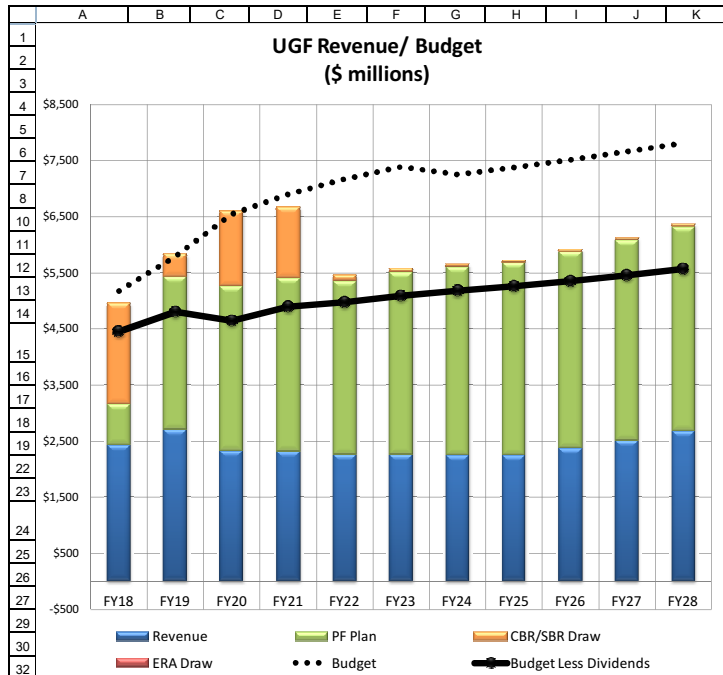
Economists appearing before the Legislature have predicted an economic slowdown in Alaska resulting from a decline in state spending and lending caused by recent drops in world oil prices. Economists appearing before the Legislature and other public forums in Alaska have argued that direct distribution of a portion of state revenues to all Alaskans--such as that embodied in the Permanent Fund dividend program--is the most efficient method of increasing Alaskans' incomes.

The Committee recognizes that virtually all the petroleum development in Alaska has occurred on publicly owned lands. This is in sharp contrast to other states, where vast accumulations of wealth have accrued to private landholders.


Al Adams, Chair
House Finance Committee

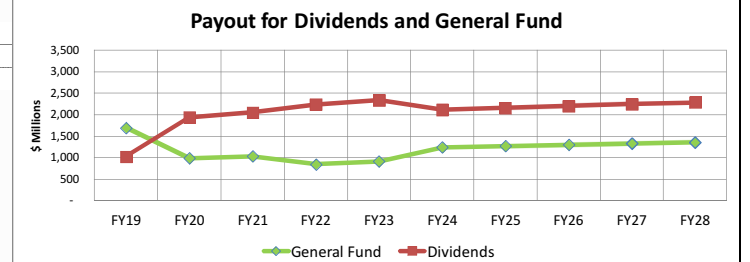
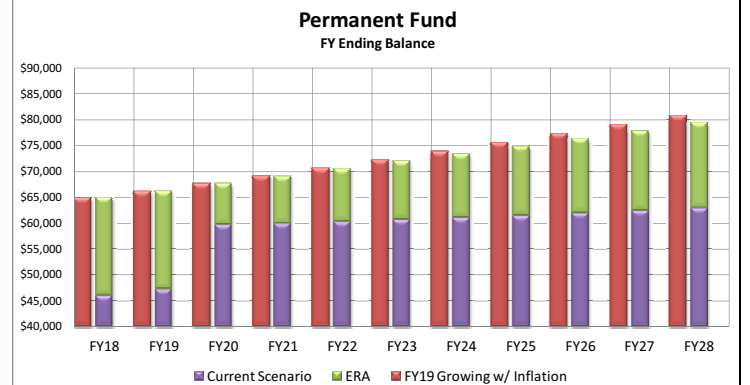
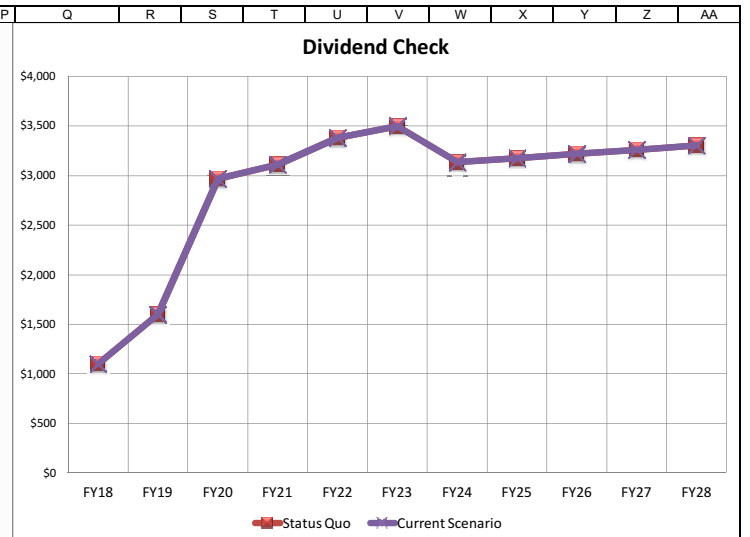
Appendix L

Long-term Projections – Full
PFD with Current FY20 Budget



	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Reserves	21,206	9,219	9,137	10,268	11,325	12,352	13,390	14,439	15,504	16,585
Surplus/ (Deficit)	-406	-1,342	-1,553	-1,874	-1,928	-1,696	-1,749	-1,691	-1,630	-1,540
Remaining CBR Years	5	2	1	0	0	0	0	0	0	0
Deficit Filled	84%	52%	47%	35%	34%	44%	44%	45%	42%	44%
Unplanned ERA Draw	0	0	0	0	0	0	0	0	0	0

Price Scenario	Spring Forecast
Production	Spring Forecast
COST VARIABLES	
Operating Budget	
Starting Point (FY20)	CC
Growth Rate	2.250%
Budget Change (FY20+)	\$ -
School Debt Reimbursement	100%
Capital Budget (FY20-28)	House w/ UGF
Supplemental Budget	50.0
REVENUE VARIABLES	
Sales Tax	N
Income Tax	N
Motor Fuel Tax	N
Municipal Property Tax	N
DGF Fund Sweep	N
Assumptions	
Inflation Rate	2.25%
PF Investment Return	6.55% (Callan)
Population Growth Rate	Labor Stats
CBR Earnings	2.38%
Minimum CBR Balance	\$ -
Unplanned ERA Draws	0
Permanent Fund Plan	
	SB 26
Plan Specifications	
	Payout to GF
POMV Payout	5.00%
POMV Override	5.25%
Override Ends	21
% Statutory Net Income	0.00%
Dividend	
% of Stat Net Income to Div	50%
% of POMV Draw to Div	0%
% of UGF Royalties to Div	0%
Fixed Dividend	\$ -
Repay Dividends	None
Dividends without Deficits	0
Inflation Proofing	
Status Quo Inflation Proofing	1
POMV Inflation Proofing	0
Advance Inflation Proofing	1
Other Provisions	
New Royalties to PF	50%



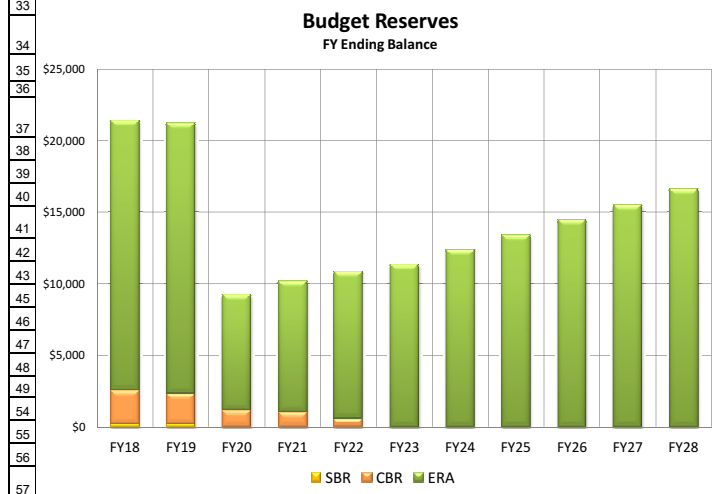
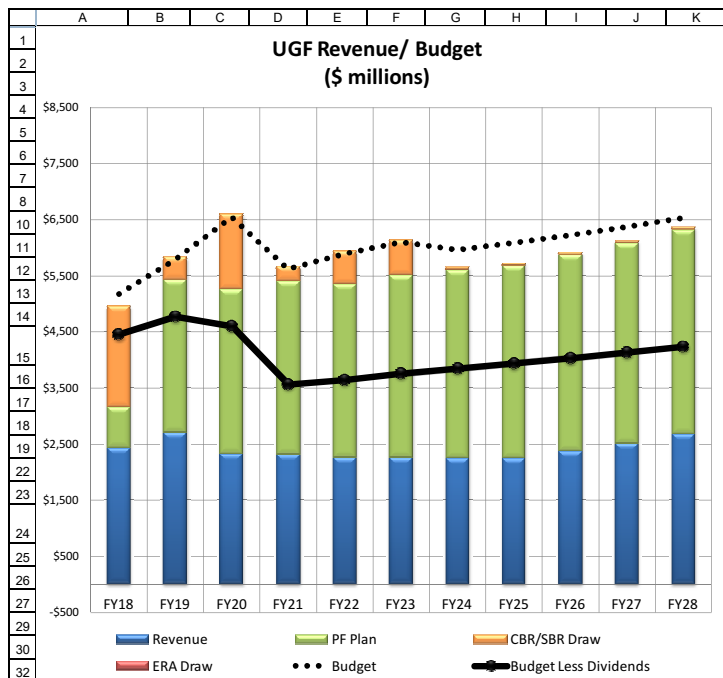
Dividends	1,024	1,944	2,053	2,245	2,339	2,115	2,158	2,202	2,246	2,290
General Fund	1,699	989	1,037	846	915	1,246	1,274	1,302	1,330	1,358
POMV Plan %	5.25%	5.25%	5.25%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Effective %	4.20%	4.44%	4.57%	4.48%	4.61%	4.67%	4.68%	4.69%	4.69%	4.69%

LFD Fiscal Model

	A	H	I	J	K	L	M	N	O	P	Q
1	Output Summary Brief										
2	(millions unless otherwise noted)										
3											
4	Statutory PFD	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
5	Principal Ending Balance	47,216	59,554	59,919	60,270	60,636	61,010	61,402	61,827	62,284	62,776
6	ERA Ending Balance	18,903	8,070	9,123	10,268	11,325	12,352	13,390	14,439	15,504	16,585
7	Permanent Fund Total Ending Balance	66,119	67,625	69,043	70,539	71,961	73,362	74,792	76,267	77,788	79,362
8	Am Hess	424.4	424.4	424.4	424.4	424.4	424.4	424.4	424.4	424.4	424.4
9	Adjusted EOY Balance for POMV Calc	65,695	67,201	68,618	70,114	71,536	72,937	74,367	75,842	77,363	78,937
10	Ave. Market Value (5 of last 6 FY)	51,860	55,868	58,849	61,814	65,069	67,220	68,633	70,081	71,515	72,959
11	POMV %	5.25%	5.25%	5.25%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
12	POMV Amount	2,723	2,933	3,090	3,091	3,253	3,361	3,432	3,504	3,576	3,648
13	POMV Amount for PFDs	1,024	1,944	2,053	2,245	2,339	2,115	2,158	2,202	2,246	2,290
14	PFD Check Amount (actual dollars)	\$ 1,600	\$ 2,970	\$ 3,110	\$ 3,380	\$ 3,500	\$ 3,130	\$ 3,170	\$ 3,220	\$ 3,260	\$ 3,300
15	Remaining POMV for General Fund	1,699	989	1,037	846	915	1,246	1,274	1,302	1,330	1,358
16	Other UGF Revenue (Oil Taxes, etc)	2,699	2,317	2,304	2,254	2,246	2,235	2,238	2,360	2,496	2,669
17	Total Available for UGF Budget	4,398	3,306	3,341	3,100	3,161	3,481	3,512	3,662	3,826	4,027
18	UGF Budget	4,804	4,649	4,894	4,974	5,089	5,177	5,261	5,353	5,457	5,566
19	Budget Surplus/(Deficit)	(406)	(1,343)	(1,553)	(1,874)	(1,928)	(1,696)	(1,749)	(1,691)	(1,630)	(1,540)
20	Budget Draw from SBR	-	172	-	-	-	-	-	-	-	-
21	SBR Ending Balance	172	-	-	-	-	-	-	-	-	-
22	Remaining Deficit after SBR Draw	(406)	(1,170)	(1,553)	(1,874)	(1,928)	(1,696)	(1,749)	(1,691)	(1,630)	(1,540)
23	Budget Draw from CBR	406	1,170	1,274	114	75	50	50	50	50	50
24	CBR Balance	2,131	1,149	14	0	-	-	-	-	-	-
25	Remaining Deficit after CBR Draw	-	-	(300)	(1,760)	(1,853)	(1,646)	(1,699)	(1,641)	(1,580)	(1,490)

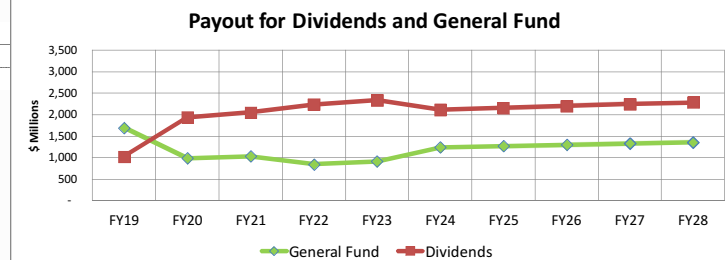
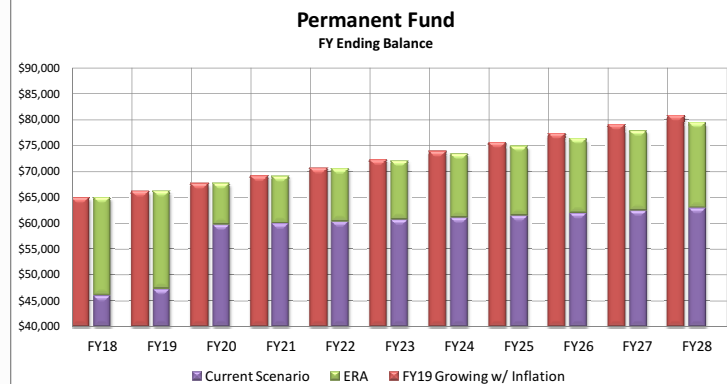
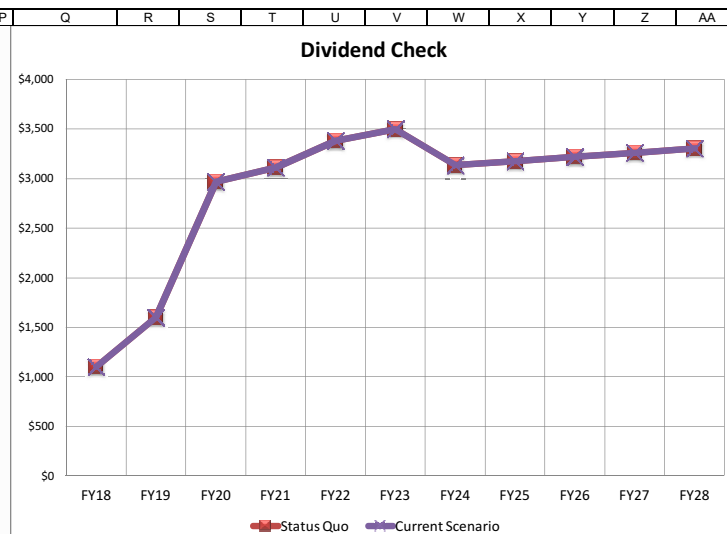
Appendix M

Long-term Projections – Full PFD with Right Sized Government (Barnhill)



	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Reserves	21,206	9,219	10,154	10,827	11,332	12,352	13,390	14,439	15,504	16,585
Surplus/ (Deficit)	-406	-1,342	-269	-590	-644	-412	-465	-407	-347	-256
Remaining CBR Years	5	2	4	2	1	0	0	0	0	0
Deficit Filled	84%	12%	83%	63%	61%	76%	74%	77%	77%	82%
Unplanned ERA Draw	0	0	0	0	0	0	0	0	0	0

Price Scenario	Spring Forecast
Production	Spring Forecast
COST VARIABLES	
Operating Budget	
Starting Point (FY20)	CC
Growth Rate	2.250%
Budget Change (FY20+)	\$ (1,283.9)
School Debt Reimbursement	100%
Capital Budget (FY20-28)	House w/ UGF
Supplemental Budget	50.0
REVENUE VARIABLES	
Sales Tax	N
Income Tax	N
Motor Fuel Tax	N
Municipal Property Tax	N
DGF Fund Sweep	N
Assumptions	
Inflation Rate	2.25%
PF Investment Return	6.55% (Callan)
Population Growth Rate	Labor Stats
CBR Earnings	2.38%
Minimum CBR Balance	\$ -
Unplanned ERA Draws	0
Permanent Fund Plan	SB 26
Plan Specifications	
Payout to GF	
POMV Payout	5.00%
POMV Override	5.25%
Override Ends	21
% Statutory Net Income	0.00%
Dividend	
% of Stat Net Income to Div	50%
% of POMV Draw to Div	0%
% of UGF Royalties to Div	0%
Fixed Dividend	\$ -
Repay Dividends	None
Dividends without Deficits	0
Inflation Proofing	
Status Quo Inflation Proofing	1
POMV Inflation Proofing	0
Advance Inflation Proofing	1
Other Provisions	
New Royalties to PF	50%



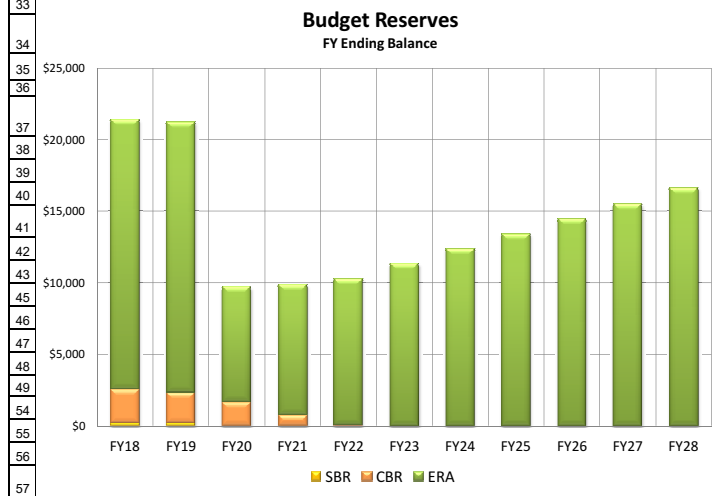
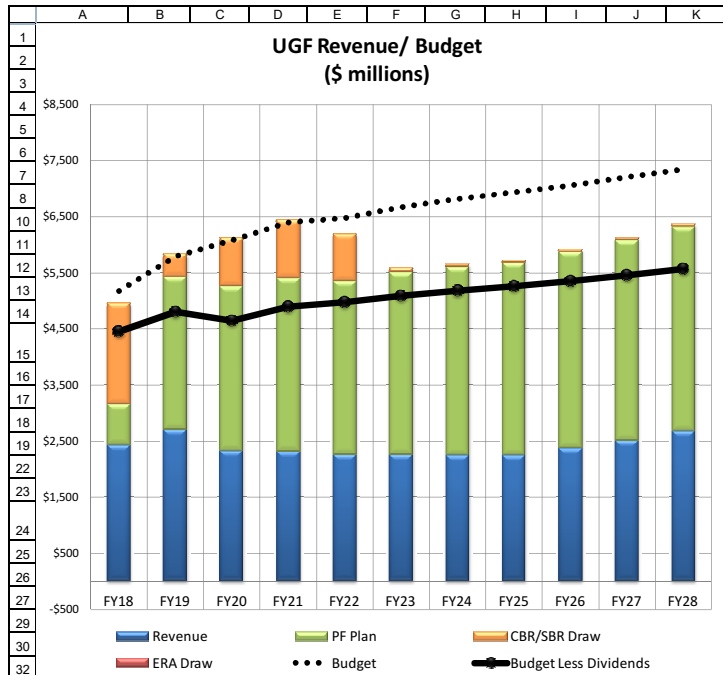
Dividends	1,024	1,944	2,053	2,245	2,339	2,115	2,158	2,202	2,246	2,290
General Fund	1,699	989	1,037	846	915	1,246	1,274	1,302	1,330	1,358
POMV Plan %	5.25%	5.25%	5.25%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Effective %	4.20%	4.44%	4.57%	4.48%	4.61%	4.67%	4.68%	4.69%	4.69%	4.69%

LFD Fiscal Model

	A	H	I	J	K	L	M	N	O	P	Q
1	Output Summary Brief										
2	(millions unless otherwise noted)										
3											
4	Statutory PFD w/ \$1.3 billion UGF Cut	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
5	Principal Ending Balance	47,216	59,554	59,919	60,270	60,636	61,010	61,402	61,827	62,284	62,776
6	ERA Ending Balance	18,903	8,070	9,123	10,268	11,325	12,352	13,390	14,439	15,504	16,585
7	Permanent Fund Total Ending Balance	66,119	67,625	69,043	70,539	71,961	73,362	74,792	76,267	77,788	79,362
8	Am Hess	424.4	424.4	424.4	424.4	424.4	424.4	424.4	424.4	424.4	424.4
9	Adjusted EOY Balance for POMV Calc	65,695	67,201	68,618	70,114	71,536	72,937	74,367	75,842	77,363	78,937
10	Ave. Market Value (5 of last 6 FY)	51,860	55,868	58,849	61,814	65,069	67,220	68,633	70,081	71,515	72,959
11	POMV %	5.25%	5.25%	5.25%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
12	POMV Amount	2,723	2,933	3,090	3,091	3,253	3,361	3,432	3,504	3,576	3,648
13	POMV Amount for PFDs	1,024	1,944	2,053	2,245	2,339	2,115	2,158	2,202	2,246	2,290
14	PFD Check Amount (actual dollars)	\$ 1,600	\$ 2,970	\$ 3,110	\$ 3,380	\$ 3,500	\$ 3,130	\$ 3,170	\$ 3,220	\$ 3,260	\$ 3,300
15	Remaining POMV for General Fund	1,699	989	1,037	846	915	1,246	1,274	1,302	1,330	1,358
16	Other UGF Revenue (Oil Taxes, etc)	2,699	2,317	2,304	2,254	2,246	2,235	2,238	2,360	2,496	2,669
17	Total Available for UGF Budget	4,398	3,306	3,341	3,100	3,161	3,481	3,512	3,662	3,826	4,027
18	UGF Budget	4,804	4,649	3,610	3,690	3,805	3,893	3,978	4,069	4,173	4,282
19	Budget Surplus/(Deficit)	(406)	(1,343)	(269)	(590)	(644)	(412)	(465)	(407)	(347)	(256)
20	Budget Draw from SBR	-	172	-	-	-	-	-	-	-	-
21	SBR Ending Balance	172	-	-	-	-	-	-	-	-	-
22	Remaining Deficit after SBR Draw	(406)	(1,170)	(269)	(590)	(644)	(412)	(465)	(407)	(347)	(256)
23	Budget Draw from CBR	406	1,170	269	590	634	57	50	50	50	50
24	CBR Balance	2,131	1,149	1,030	559	7	0	-	-	-	-
25	Remaining Deficit after CBR Draw	-	-	-	-	(10)	(355)	(415)	(357)	(297)	(206)

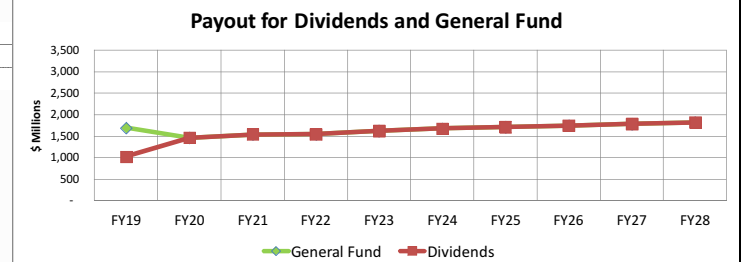
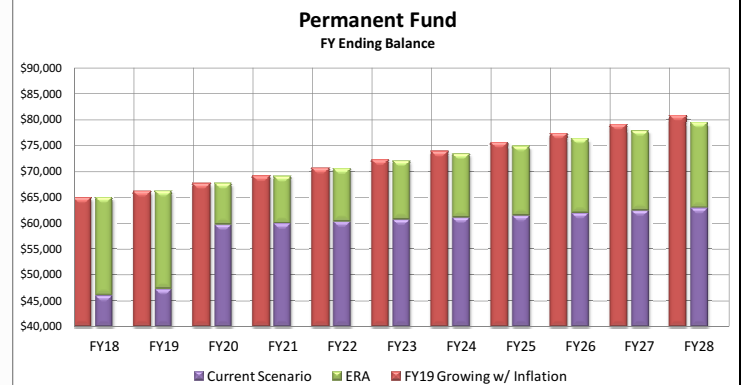
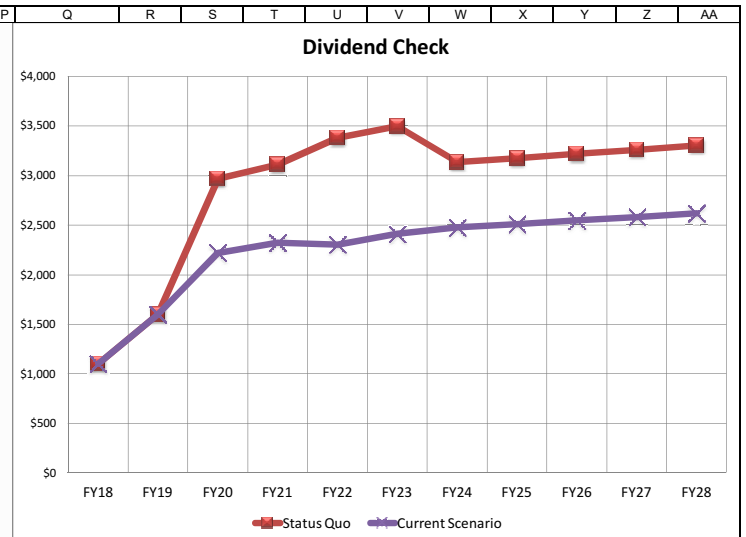
Appendix N

Long-term Projections – 50%
POMV PFD with Current FY20
Budget



	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Reserves	21,206	9,703	9,863	10,277	11,325	12,352	13,390	14,439	15,504	16,585
Surplus/ (Deficit)	-406	-865	-1,045	-1,175	-1,216	-1,261	-1,307	-1,241	-1,172	-1,074
Remaining CBR Years	5	2	2	1	0	0	0	0	0	0
Deficit Filled	84%	69%	64%	59%	59%	58%	58%	60%	58%	61%
Unplanned ERA Draw	0	0	0	0	0	0	0	0	0	0

Price Scenario	Spring Forecast
Production	Spring Forecast
COST VARIABLES	
Operating Budget	
Starting Point (FY20)	CC
Growth Rate	2.250%
Budget Change (FY20+)	\$ -
School Debt Reimbursement	100%
Capital Budget (FY20-28)	House w/ UGF
Supplemental Budget	50.0
REVENUE VARIABLES	
Sales Tax	N
Income Tax	N
Motor Fuel Tax	N
Municipal Property Tax	N
DGF Fund Sweep	N
Assumptions	
Inflation Rate	2.25%
PF Investment Return	6.55% (Callan)
Population Growth Rate	Labor Stats
CBR Earnings	2.38%
Minimum CBR Balance	\$ -
Unplanned ERA Draws	0
Permanent Fund Plan	SB 26
Plan Specifications	
Payout to GF	
POMV Payout	5.00%
POMV Override	5.25%
Override Ends	21
% Statutory Net Income	0.00%
Dividend	
% of Stat Net Income to Div	0%
% of POMV Draw to Div	50%
% of UGF Royalties to Div	0%
Fixed Dividend	\$ -
Repay Dividends	None
Dividends without Deficits	0
Inflation Proofing	
Status Quo Inflation Proofing	1
POMV Inflation Proofing	0
Advance Inflation Proofing	1
Other Provisions	
New Royalties to PF	50%



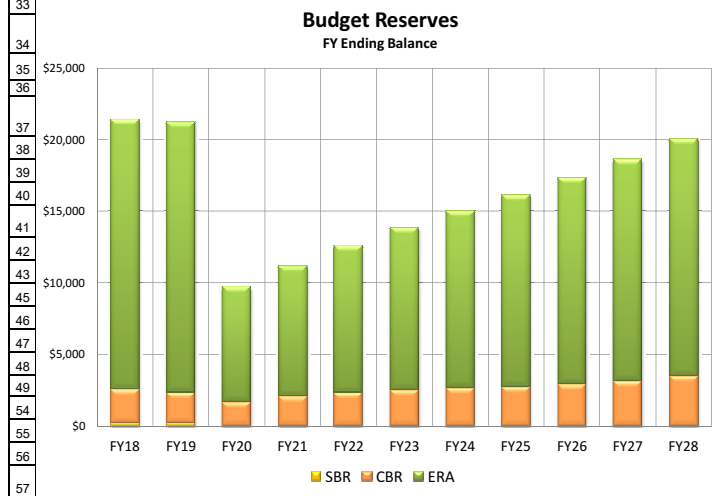
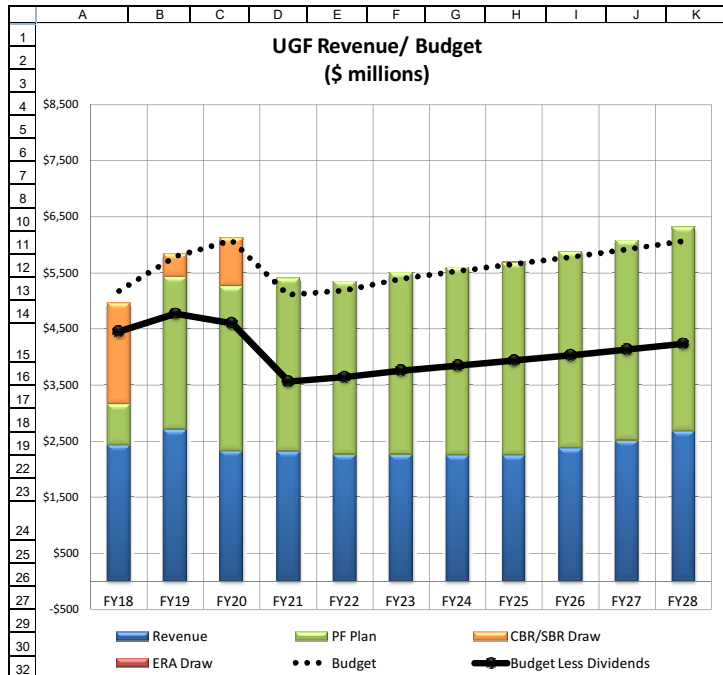
Dividends	1,024	1,467	1,545	1,545	1,627	1,680	1,716	1,752	1,788	1,824
General Fund	1,699	1,467	1,545	1,545	1,627	1,680	1,716	1,752	1,788	1,824
POMV Plan %	5.25%	5.25%	5.25%	5.25%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Effective %	4.20%	4.44%	4.57%	4.48%	4.61%	4.67%	4.68%	4.69%	4.69%	4.69%

LFD Fiscal Model

	A	H	I	J	K	L	M	N	O	P	Q
1	Output Summary Brief										
2	(millions unless otherwise noted)										
3											
4	50% POMV PFD	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
5	Principal Ending Balance	47,216	59,554	59,919	60,270	60,636	61,010	61,402	61,827	62,284	62,776
6	ERA Ending Balance	18,903	8,070	9,123	10,268	11,325	12,352	13,390	14,439	15,504	16,585
7	Permanent Fund Total Ending Balance	66,119	67,625	69,043	70,539	71,961	73,362	74,792	76,267	77,788	79,362
8	Am Hess	424.4	424.4	424.4	424.4	424.4	424.4	424.4	424.4	424.4	424.4
9	Adjusted EOY Balance for POMV Calc	65,695	67,201	68,618	70,114	71,536	72,937	74,367	75,842	77,363	78,937
10	Ave. Market Value (5 of last 6 FY)	51,860	55,868	58,849	61,814	65,069	67,220	68,633	70,081	71,515	72,959
11	POMV %	5.25%	5.25%	5.25%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
12	POMV Amount	2,723	2,933	3,090	3,091	3,253	3,361	3,432	3,504	3,576	3,648
13	POMV Amount for PFDs	1,024	1,467	1,545	1,545	1,627	1,680	1,716	1,752	1,788	1,824
14	PFD Check Amount (actual dollars)	\$ 1,600	\$ 2,220	\$ 2,320	\$ 2,300	\$ 2,410	\$ 2,470	\$ 2,510	\$ 2,550	\$ 2,580	\$ 2,620
15	Remaining POMV for General Fund	1,699	1,466	1,545	1,545	1,627	1,680	1,716	1,752	1,788	1,824
16	Other UGF Revenue (Oil Taxes, etc)	2,699	2,317	2,304	2,254	2,246	2,235	2,238	2,360	2,496	2,669
17	Total Available for UGF Budget	4,398	3,784	3,849	3,799	3,873	3,916	3,954	4,112	4,284	4,493
18	UGF Budget	4,804	4,649	4,894	4,974	5,089	5,177	5,261	5,353	5,457	5,566
19	Budget Surplus/(Deficit)	(406)	(865)	(1,045)	(1,175)	(1,216)	(1,261)	(1,307)	(1,241)	(1,172)	(1,074)
20	Budget Draw from SBR	-	172	-	-	-	-	-	-	-	-
21	SBR Ending Balance	172	-	-	-	-	-	-	-	-	-
22	Remaining Deficit after SBR Draw	(406)	(693)	(1,045)	(1,175)	(1,216)	(1,261)	(1,307)	(1,241)	(1,172)	(1,074)
23	Budget Draw from CBR	406	693	1,045	840	84	50	50	50	50	50
24	CBR Balance	2,131	1,632	740	9	0	-	-	-	-	-
25	Remaining Deficit after CBR Draw	-	-	-	(335)	(1,132)	(1,211)	(1,257)	(1,191)	(1,122)	(1,024)

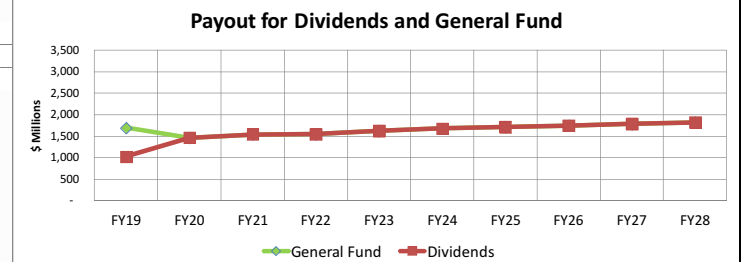
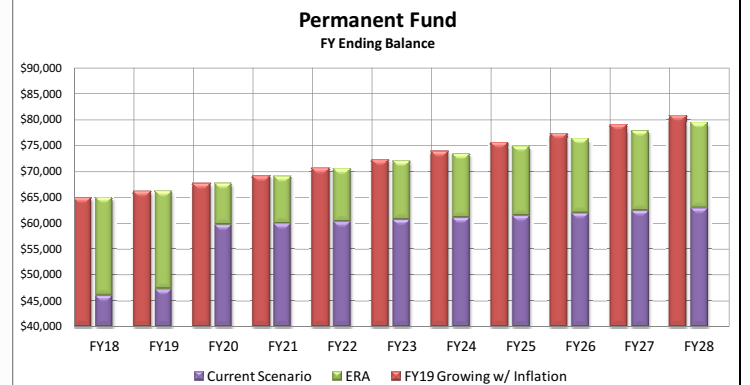
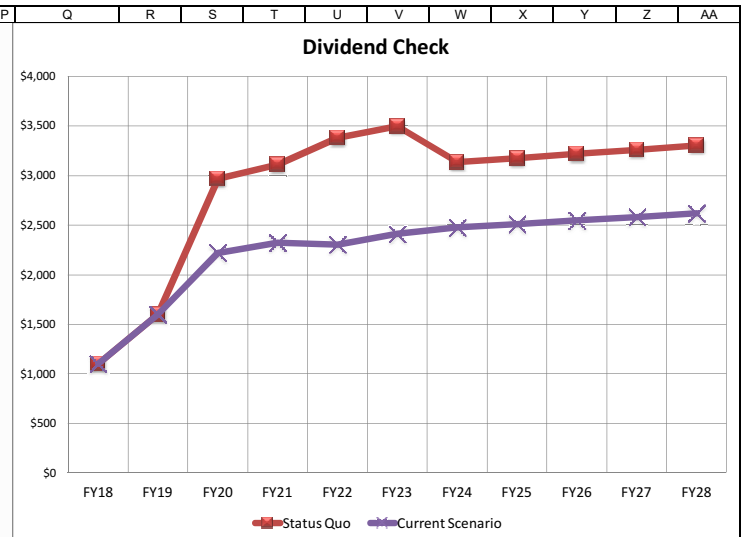
Appendix O

Long-term Projections – 50%
POMV PFD with Right Sized
Government (Barnhill)



	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Reserves	21,206	9,703	11,162	12,567	13,823	14,984	16,111	17,319	18,616	20,035
Surplus/ (Deficit)	-406	-865	239	109	68	23	-23	43	111	210
Remaining CBR Years	5	2	*	*	*	*	113	*	*	*
Deficit Filled	84%	44%	100%	100%	100%	100%	99%	100%	100%	100%
Unplanned ERA Draw	0	0	0	0	0	0	0	0	0	0

Price Scenario	Spring Forecast
Production	Spring Forecast
COST VARIABLES	
Operating Budget	
Starting Point (FY20)	CC
Growth Rate	2.250%
Budget Change (FY20+)	\$ (1,283.9)
School Debt Reimbursement	100%
Capital Budget (FY20-28)	House w/ UGF
Supplemental Budget	50.0
REVENUE VARIABLES	
Sales Tax	N
Income Tax	N
Motor Fuel Tax	N
Municipal Property Tax	N
DGF Fund Sweep	N
Assumptions	
Inflation Rate	2.25%
PF Investment Return	6.55% (Callan)
Population Growth Rate	Labor Stats
CBR Earnings	2.38%
Minimum CBR Balance	\$ -
Unplanned ERA Draws	0
Permanent Fund Plan	SB 26
Plan Specifications	
Payout to GF	
POMV Payout	5.00%
POMV Override	5.25%
Override Ends	21
% Statutory Net Income	0.00%
Dividend	
% of Stat Net Income to Div	0%
% of POMV Draw to Div	50%
% of UGF Royalties to Div	0%
Fixed Dividend	\$ -
Repay Dividends	None
Dividends without Deficits	0
Inflation Proofing	
Status Quo Inflation Proofing	1
POMV Inflation Proofing	0
Advance Inflation Proofing	1
Other Provisions	
New Royalties to PF	50%



Dividends	1,024	1,467	1,545	1,545	1,627	1,680	1,716	1,752	1,788	1,824
General Fund	1,699	1,467	1,545	1,545	1,627	1,680	1,716	1,752	1,788	1,824
POMV Plan %	5.25%	5.25%	5.25%	5.25%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Effective %	4.20%	4.44%	4.57%	4.48%	4.61%	4.67%	4.68%	4.69%	4.69%	4.69%

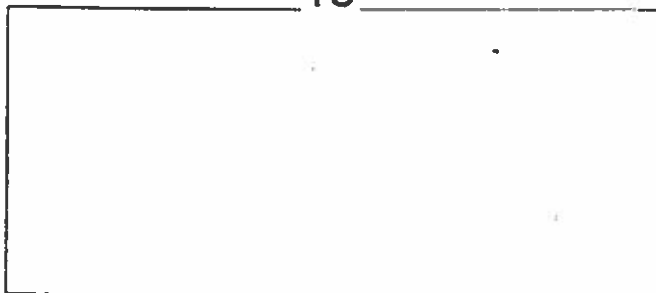
LFD Fiscal Model

	A	H	I	J	K	L	M	N	O	P	Q
1	Output Summary Brief										
2	(millions unless otherwise noted)										
3											
4	50% POMV PFD w/ \$1.3 billion UGF Cut	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
5	Principal Ending Balance	47,216	59,554	59,919	60,270	60,636	61,010	61,402	61,827	62,284	62,776
6	ERA Ending Balance	18,903	8,070	9,123	10,268	11,325	12,352	13,390	14,439	15,504	16,585
7	Permanent Fund Total Ending Balance	66,119	67,625	69,043	70,539	71,961	73,362	74,792	76,267	77,788	79,362
8	Am Hess	424.4	424.4	424.4	424.4	424.4	424.4	424.4	424.4	424.4	424.4
9	Adjusted EOY Balance for POMV Calc	65,695	67,201	68,618	70,114	71,536	72,937	74,367	75,842	77,363	78,937
10	Ave. Market Value (5 of last 6 FY)	51,860	55,868	58,849	61,814	65,069	67,220	68,633	70,081	71,515	72,959
11	POMV %	5.25%	5.25%	5.25%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
12	POMV Amount	2,723	2,933	3,090	3,091	3,253	3,361	3,432	3,504	3,576	3,648
13	POMV Amount for PFDs	1,024	1,467	1,545	1,545	1,627	1,680	1,716	1,752	1,788	1,824
14	PFD Check Amount (actual dollars)	\$ 1,600	\$ 2,220	\$ 2,320	\$ 2,300	\$ 2,410	\$ 2,470	\$ 2,510	\$ 2,550	\$ 2,580	\$ 2,620
15	Remaining POMV for General Fund	1,699	1,466	1,545	1,545	1,627	1,680	1,716	1,752	1,788	1,824
16	Other UGF Revenue (Oil Taxes, etc)	2,699	2,317	2,304	2,254	2,246	2,235	2,238	2,360	2,496	2,669
17	Total Available for UGF Budget	4,398	3,784	3,849	3,799	3,873	3,916	3,954	4,112	4,284	4,493
18	UGF Budget	4,804	4,649	3,610	3,690	3,805	3,893	3,978	4,069	4,173	4,282
19	Budget Surplus/(Deficit)	(406)	(865)	239	109	68	23	(23)	43	111	210
20	Budget Draw from SBR	-	172	-	-	-	-	-	-	-	-
21	SBR Ending Balance	172	-	-	-	-	-	-	-	-	-
22	Remaining Deficit after SBR Draw	(406)	(693)	239	109	68	23	(23)	43	111	210
23	Budget Draw from CBR	406	693	(239)	(109)	(68)	(23)	23	(43)	(111)	(210)
24	CBR Balance	2,131	1,632	2,039	2,299	2,498	2,632	2,721	2,880	3,112	3,449
25	Remaining Deficit after CBR Draw	-	-	-	-	-	-	-	-	-	-

Appendix P

Governor Jay Hammond 1980 PFD Application Statement to Alaskans

TO



My Fellow Alaskan:

On April 15, 1980, I signed into law legislation that provides for the payment of Alaska Permanent Fund Dividends to state residents, and grants immediate personal income tax relief to most Alaska taxpayers.

This booklet contains all the forms necessary for claiming payments to which you may be entitled:

1. 1979 Alaska Permanent Fund Dividend Application (to be filed on or before November 15, 1980).
2. 1979 Alaska Individual Net Income Tax Refund and Exemption Application (to be filed on or before June 30, 1981).
3. 1980 Alaska Individual Net Income Tax Exemption Application and Claim for Refund of Withholding (to be filed before December 31, 1980).

Please take your time to read this material carefully. Eligibility requirements vary. Check to see that your name, address and Social Security number are correct; make changes if necessary, so your payments will be properly issued.

If you have any questions regarding your eligibility for any of the three types of payments, or if you need help completing these forms, feel free to contact one of our offices listed below.

This distribution of resource wealth directly to the people of Alaska who really own it, instead of spending it all for more government, is the fulfillment of a dream for those of us who have worked long and hard to achieve it. My only regret is that it has taken so long for us to permit you to choose how at least a portion of your resource wealth is spent, rather than having those choices all made for you by government. Spend it wisely but as you choose.

Sincerely,

Jay S. Hammond
Governor

11th Floor
State Office Building
Juneau, Alaska 99811
Phone 465-2333

201 East Ninth Avenue
Anchorage, Alaska 99501
Phone 276-2678

103 State Office Building
415 Main Street
Ketchikan, Alaska 99901
Phone 225-4116

675 Seventh Avenue
Fairbanks, Alaska 99701
Phone 452-1512

Inside Alaska, Outside Anchorage
CALL TOLL FREE
ZENITH 4900

770 United Airlines Building
2033 6th Avenue
Seattle, Washington 98121
Phone 622-7588

FINANCIALS FOR 50/50 POMV PFD BASED ON CURRENT BUDGET

Context of Historical Dividend Payments

The average dividend payment since the inception of the PFD program adjusted for inflation is \$1,700, with the mean landing at \$1833. The largest dividend Alaskans have received adjusted for inflation was \$2864 in 2000. The smallest (adjusted for inflation) was \$801 in 1984.

Distribution of 50/50 POMV PFD and Budget Consequences

- POMV revenue (drawn from ERA): \$2.93 billion
- Amount required for a 50/50 POMV dividend: \$1.465 billion
- POMV Remaining for Government: \$1.465
- Regular revenue (derived primarily from oil): \$2.30 billion
- Total Funds Available: \$3.765
- Amount needed for operating and capital budgets absent any vetoes and assuming capital budget fund source changes occur: \$4.65 billion
- Additional funds needed to fill budget gap: \$885 million

Options to Fill Budget Gap

1. \$700 million (approximate) in budget reductions still obtainable this year through vetoes

2. Available fund sources

- Constitutional Budget Reserve (CBR): \$2,268.5 million
- Statutory Budget Reserve (SBR): \$172.4 million
- Alaska Higher Education Investment Fund: \$340.7 million
- Community Assistance Fund \$90 million
- Power Cost Equalization Endowment (PCE): \$989.4 million
- Alaska Housing Capital Corporation Fund: \$0.2 million
- Alaska Capital Income Fund: \$11 million
- Permanent Fund Earnings Reserve Account (ERA): \$19 billion*

***Additional Draw from ERA: Unlawful and Inadvisable**

Taking an additional \$885 million from the ERA is not advisable or legal according to statutes to fill the budget gap. Increasing the draw from \$2.93 billion to \$3.815 billion would equal to a 6.84% POMV draw which is 1.59% above the 5.25% allowed under AS 37.13.140 (b) (this size of a draw could also jeopardize future earnings). It also would violate the 50/50 split principle under the distribution of income and traditional formula statutes (AS 37.13.140(a) and AS 37.13.145(b)) as it would apply a larger amount of the ERA to government than to PFD distribution. Not only is it unlawful and inadvisable to take an additional draw from the ERA, it is unnecessary in light of the reductions and revenues available noted above.

In the future, if the budget is not adequately reduced and/or oil revenues drop and stay at low levels, some may explore the following:*

- *Diverting the oil and gas property tax plus the raw fish tax from municipalities (as proposed by the governor,) for \$450 million.*
- *A 3% sales tax for \$480 million.*
- *A 2% flat income tax of adjusted gross income for \$500 million*
- *\$1/gallon added to motor fuel tax for \$500 million*

**The authors are NOT making these recommendations.*

FINANCIALS FOR \$3000 STATUTORY DIVIDENDS BASED ON CURRENT BUDGET

Context of Historical Dividend Payments

The average dividend payment since the inception of the PFD program adjusted for inflation is \$1,700, with the mean landing at \$1833. The largest dividend Alaskans have received adjusted for inflation was \$2864 in 2000. The smallest (adjusted for inflation) was \$801 in 1984.

Distribution of \$3000 PFD and Budget Consequences

- POMV revenue (drawn from ERA): \$2.93 billion
- Amount required for a \$3,000 dividend: \$1.94 billion
- POMV remaining for Government: \$990 million
- Regular revenue (derived primarily from oil): \$2.30 billion
- Total funds available: \$3.29 billion
- Amount needed for operating and capital budgets absent any vetoes and assuming capital budget fund source changes occur: \$4.65 billion
- Additional funds needed to fill budget gap: \$1.36 billion

Options to Fill Budget Gap

1. \$700 million (approximate) in budget reductions still obtainable this year through vetoes
2. Available fund sources
 - Constitutional Budget Reserve (CBR): \$2,268.5 million
 - Statutory Budget Reserve (SBR): \$172.4 million
 - Alaska Higher Education Investment Fund: \$340.7 million
 - Community Assistance Fund \$90 million
 - Power Cost Equalization Endowment (PCE): \$989.4 million
 - Alaska Housing Capital Corporation Fund: \$0.2 million
 - Alaska Capital Income Fund: \$11 million
 - Permanent Fund Earnings Reserve Account (ERA): \$19 billion*

***Additional Draw from ERA: Unlawful and Inadvisable**

Taking an additional \$1.36 billion from the ERA is not advisable or legal according to statutes to fill the budget gap. Increasing the draw from \$2.93 billion to \$4.29 billion would equal to a 7.7% POMV draw which is 2.45% above the 5.25% allowed under AS 37.13.140 (b) (this size of a draw could also jeopardize future earnings). It also would violate the 50/50 split principle under the distribution of income and traditional formula statutes (AS 37.13.140 (a) and AS 37.13.145 (b)) as it would apply a larger amount of the ERA to government than to PFD distribution. Not only is it unlawful and inadvisable to take an additional draw from the ERA, it is unnecessary in light of the reductions and revenues available noted above.

In the future, if the budget is not adequately reduced and/or oil revenues drop and stay at low levels, some may explore the following:*

- *Diverting the oil and gas property tax plus the raw fish tax from municipalities (as proposed by the governor,) for \$450 million.*
- *A 3% sales tax for \$480 million.*
- *A 2% flat income tax of adjusted gross income for \$500 million*
- *\$1/gallon added to motor fuel tax for \$500 million*

**The authors are NOT making these recommendations.*

FINANCIALS FOR 50/50 POMV PFD BASED ON RIGHT-SIZED BUDGET

Context of Historical Dividend Payments

The average dividend payment since the inception of the PFD program adjusted for inflation is \$1,700, with the mean landing at \$1833. The largest dividend Alaskans have received adjusted for inflation was \$2864 in 2000. The smallest (adjusted for inflation) was \$801 in 1984.

Distribution of 50/50 POMV PFD and Budget Consequences

- POMV revenue (drawn from ERA): \$2.93 billion
- Amount required for a 50/50 POMV dividend: \$1.465 billion
- POMV Remaining for Government: \$1.465
- Regular revenue (derived primarily from oil): \$2.30 billion
- Total funds available: \$3.765 billion
- Amount needed for operating and capital budgets: \$3.39 billion
- Additional funds needed to fill budget gap: \$0, \$375 million surplus

Options to Fill Budget Gap

1. \$700 million (approximate) in budget reductions still obtainable this year through vetoes

2. Available fund sources

- Constitutional Budget Reserve (CBR): \$2,268.5 million
- Statutory Budget Reserve (SBR): \$172.4 million
- Alaska Higher Education Investment Fund: \$340.7 million
- Community Assistance Fund \$90 million
- Power Cost Equalization Endowment (PCE): \$989.4 million
- Alaska Housing Capital Corporation Fund: \$0.2 million
- Alaska Capital Income Fund: \$11 million
- Permanent Fund Earnings Reserve Account (ERA): \$19 billion*

***Additional Draw from ERA: Unlawful and Inadvisable**

Taking any additional funds from the ERA is not advisable or legal beyond the historical draw formula or beyond the POMV draw formula. Increasing the draw above the 5.25% POMV draw allowed under AS 37.13.140(b) could jeopardize future earnings. It also would violate the 50/50 split principle under the distribution of income and traditional formula statutes (AS 37.13.140(a) and AS 37.13.145(b)) as it would apply a larger amount of the ERA to government than to PFD distribution. Not only is it unlawful and inadvisable to take an additional draw from the ERA, it is unnecessary in light of the reductions and revenues available noted above.

In the future, if the budget is not adequately reduced and/or oil revenues drop and stay at low levels, some may explore the following:*

- *Diverting the oil and gas property tax plus the raw fish tax from municipalities (as proposed by the governor,) for \$450 million.*
- *A 3% sales tax for \$480 million.*
- *A 2% flat income tax of adjusted gross income for \$500 million*
- *\$1/gallon added to motor fuel tax for \$500 million*

**The authors are NOT making these recommendations.*

FINANCIALS FOR \$3000 STATUTORY DIVIDENDS BASED ON RIGHT-SIZED BUDGET

Context of Historical Dividend Payments

The average dividend payment since the inception of the PFD program adjusted for inflation is \$1,700, with the mean landing at \$1833. The largest dividend Alaskans have received adjusted for inflation was \$2864 in 2000. The smallest (adjusted for inflation) was \$801 in 1984.

Distribution of \$3000 PFD and Budget Consequences

- POMV revenue (drawn from ERA): \$2.93 billion
- Amount required for a \$3,000 dividend: \$1.94 billion
- POMV remaining for Government: \$990 million
- Regular revenue (derived primarily from oil): \$2.30 billion
- Total funds available: \$3.29 billion
- Amount needed for operating and capital budgets: \$3.39 billion
- Additional funds needed to fill budget gap: \$100 million

Options to Fill Budget Gap

1. \$700 million (approximate) in budget reductions still obtainable this year through vetoes
2. Available fund sources
 - Constitutional Budget Reserve (CBR): \$2,268.5 million
 - Statutory Budget Reserve (SBR): \$172.4 million
 - Alaska Higher Education Investment Fund: \$340.7 million
 - Community Assistance Fund \$90 million
 - Power Cost Equalization Endowment (PCE): \$989.4 million
 - Alaska Housing Capital Corporation Fund: \$0.2 million
 - Alaska Capital Income Fund: \$11 million
 - Permanent Fund Earnings Reserve Account (ERA): \$19 billion*

***Additional Draw from ERA: Unlawful and Inadvisable**

Taking an additional \$100 million from the ERA is not advisable or legal according to statutes to fill the budget gap. Increasing the draw from \$2.93 billion to \$3.03 billion would equal to a 5.43% POMV draw which is .18% above the 5.25% allowed under AS 37.13.140(b) (this size of a draw could also jeopardize future earnings). It also would violate the 50/50 split principle under the distribution of income and traditional formula statutes (AS 37.13.140(a) and AS 37.13.145(b)) as it would apply a larger amount of the ERA to government than to PFD distribution. Not only is it unlawful and inadvisable to take an additional draw from the ERA, it is unnecessary in light of the reductions and revenues available noted above.

In the future, if the budget is not adequately reduced and/or oil revenues drop and stay at low levels, some may explore the following:*

- *Diverting the oil and gas property tax plus the raw fish tax from municipalities (as proposed by the governor,) for \$450 million.*
- *A 3% sales tax for \$480 million.*
- *A 2% flat income tax of adjusted gross income for \$500 million*
- *\$1/gallon added to motor fuel tax for \$500 million*

**The authors are NOT making these recommendations.*