Alaska's Economy

Historical Trends and Future Outlook

BY MOUHCINE GUETTABI AND GUNNAR KNAPP

In this article we review recent trends in Alaska's economy and the economic outlook for the near-term and longer-term future. We begin with a brief description of the structure of Alaska's economy and key factors that drive it. Next we review historical trends in the economy. We then discuss factors likely to affect the economy in the near-term future, including the dramatic decline in oil prices and state oil revenues and the state's response to the resulting very large deficits. Finally, we discuss the longer-term outlook for the Alaska economy, including the potential economic impacts of an LNG (liquefied natural gas) export project.

Alaska's economy is complicated. In this brief article we have to omit important details due to lack of space. In particular, we do not address regional variation in the economy, which is significant, or the significant changes occurring in many industries.

Major Alaska Economic Sectors

Basic or Support	Sectors	Major Industries	Selected Important Economic Drivers
Basic	Resource industries	▸ Oil ▸ Seafood ▸ Mining	▸ Oil prices ▸ Other resource prices ▸ Federal and state regulations ▸ Resource technology
	Federal government	▸ Federal civilian ▸ Federal military	▸ Federal politics
Support	State and local government	▸ State government ▸ Local government *(including K-12 education)*	▸ State oil revenues ▸ State investment revenues ▸ State politics
	Trade, service, transportation, and infrastructure industries*	▸ Retail trade ▸ Wholesale trade ▸ Healthcare Services ▸ Transportation ▸ Construction	▸ Basic sectors' output, employment and income ▸ Extent to which households and businesses spend money in Alaska ▸ State and local government spending ▸ Government transfer payments (including Permanent Fund dividends) ▸ Rate of and expectations for future economic growth

* Some of these industries are partially "basic" to the extent that they sell services outside Alaska. For example, the shares of the retail trade and accommodation and food service industries supported by sales to tourists are "basic." However, in practice it is difficult to estimate the "basic" components of these industries.

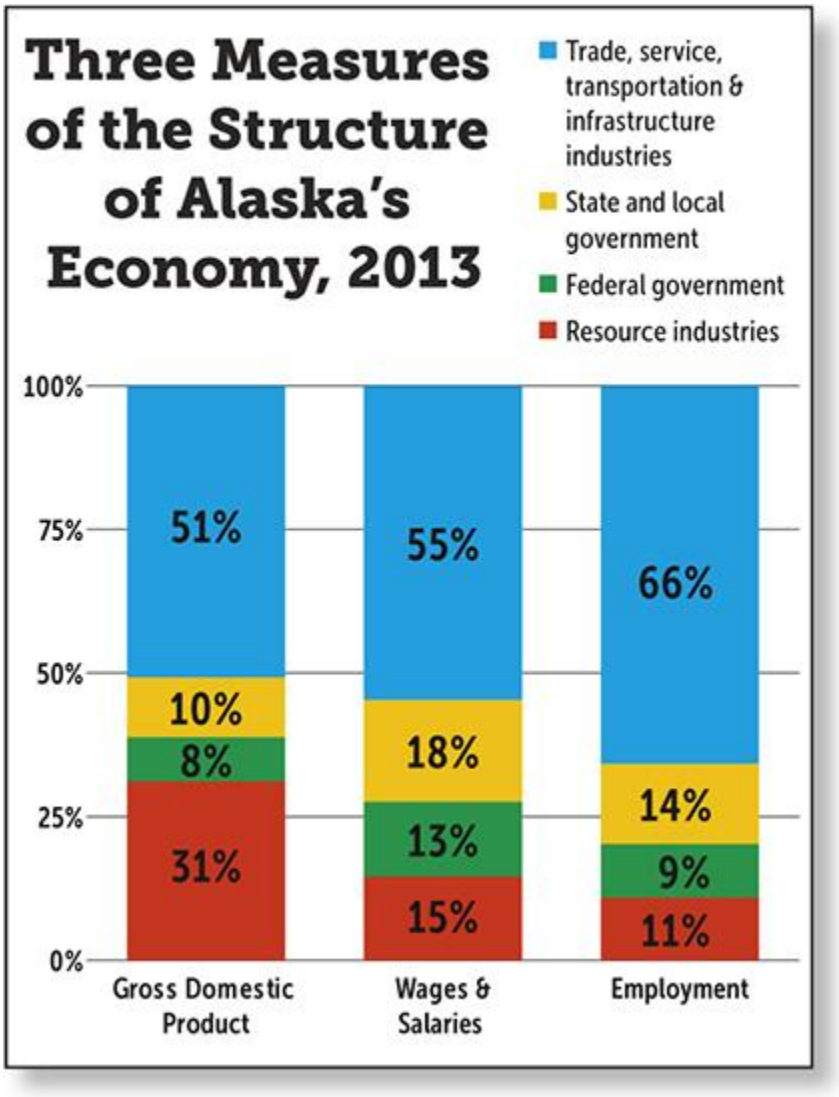
Alaska's future economic outlook is uncertain. We can't predict with certainty the combined effects of the many factors which may affect it. Our primary goal is to describe potential implications of factors which we know will affect it.

Alaska Economic Structure and Trends

It is useful to group Alaska industries as "basic" or "support" and further into the four major "sectors" shown in the table below—which vary in what drives them, how they have changed in the past, how they are likely to change in the future, and in their relative importance for different regions of Alaska. Basic sectors and industries sell goods and services primarily to markets outside Alaska and thus bring money into the economy (the federal government is "basic" because federal spending in Alaska is paid for from outside Alaska). Support sectors and industries sell goods and services primarily to markets inside Alaska and thus recirculate money in the economy.

There is no single measure which fully describes the structure of Alaska's economy and the relative economic importance of different sectors and industries. Three useful measures are employment, wage and salary income, and contribution to gross domestic product. The relative significance of different sectors varies across these measures, reflecting the fact they measure different things. Employment measures how many people work in a sector, wages and salaries measure how much they earn, and GDP measures how much value they create.

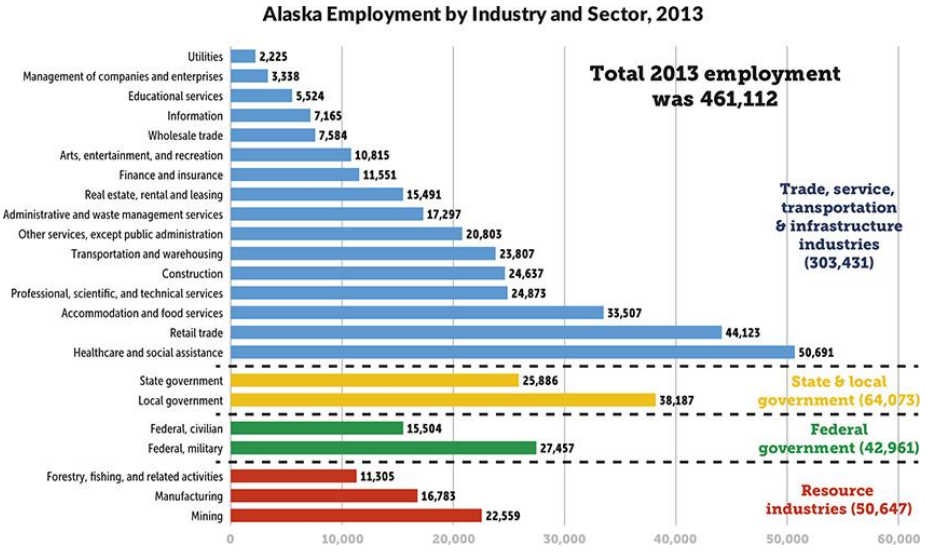
As shown in the graph below, in 2013 (the most recent year for which detailed GDP estimates are available) resource industries accounted for 31 percent of gross domestic product but only 11 percent of total employment. In contrast, trade, service, transportation, and infrastructure industries accounted for 51 percent of GDP but 66 percent of employment. State and local government accounted for 14 percent of employment but 18 percent of wages and salaries. The federal government accounted for 9 percent of employment but 13 percent of wages and salaries.



Total Alaska employment in 2013, as estimated by the Bureau of Economic Analysis and including non-wage and salary employment, was 461,112. Employment for 2015, for which data are not yet available, would be slightly higher. A useful rule of thumb to remember is that 4,600 jobs would be about 1 percent of Alaska employment and 46,000 jobs would be about 10 percent of Alaska employment. The six largest Alaska industries in 2013, as measured by employment, were healthcare and social assistance, retail trade, local government, accommodation and food services, federal military, and state government.

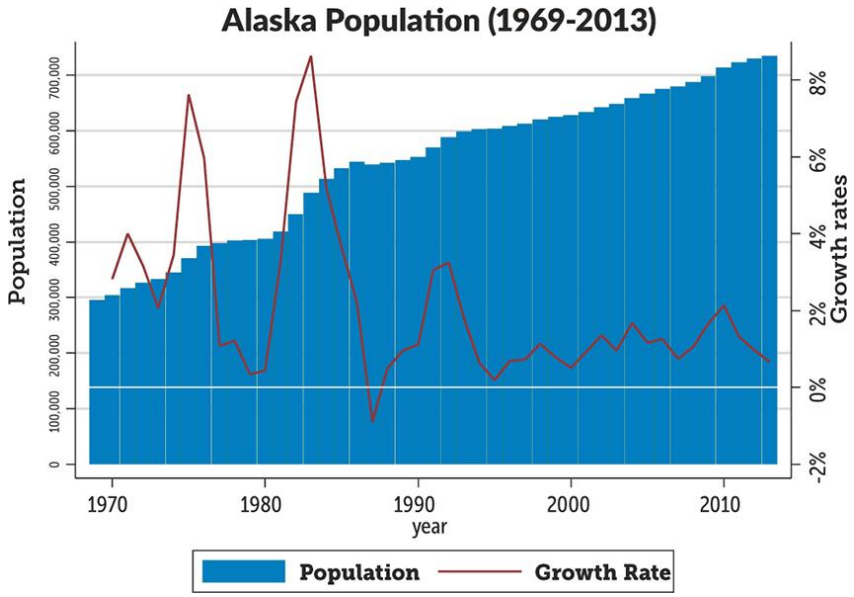
Long-time Alaskans may remember Alaska as a state with rapidly rising employment and population, characterized by periods of boom and bust such as the construction of the trans-Alaska oil pipeline in the mid-1970s, the recession following completion of the pipeline in the late 1970s, the government-spending and construction-driven boom of the early 1980s, and the oil price-crash-driven deep recession of the late 1980s. While true once—as shown in the graphs below—that picture is no longer true. For the past quarter-century, Alaska's economy has been characterized by relatively slow and steady growth in population and employment—driven by growth across many sectors such as the federal government, mining, tourism, air cargo, healthcare, and retail trade, and with significant regional variation.

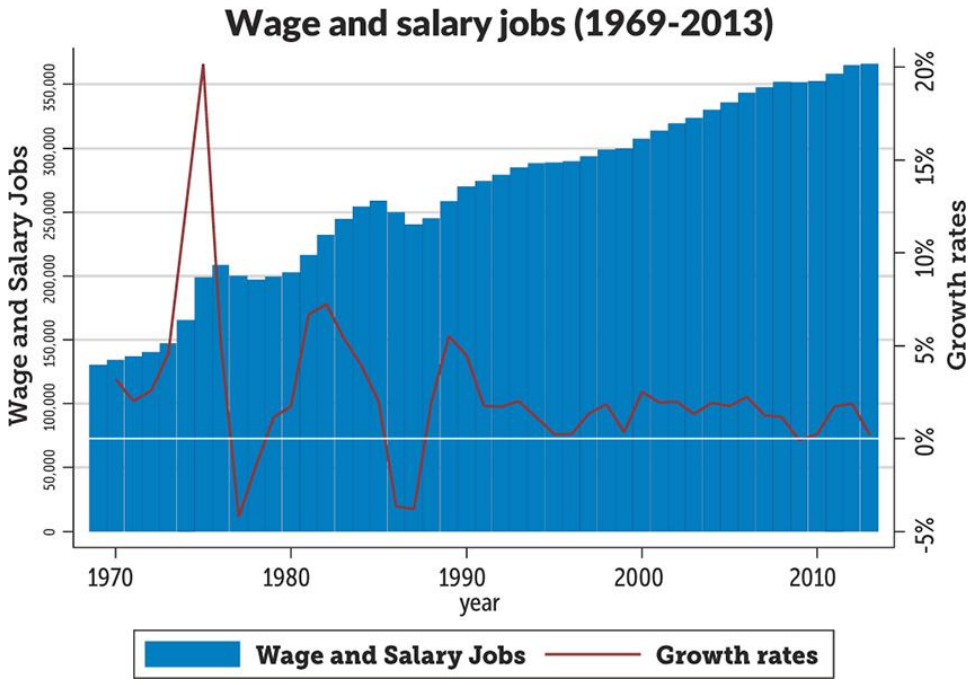
More recent data suggest that this long period of gradual growth may be ending. From July 2013 through June 2015, year-over-year growth in monthly employment averaged 0.93 percent for private sector employment, 0.46 percent for total employment, 0.18 percent for state government, -0.79 percent for local government, and -3.64 percent for federal government employment. This suggests that declining government employment—which accounts for 23 percent of Alaska employment and 31 percent of total wage and salary income—may end or reverse a long period of growth in Alaska employment.



Factors Affecting Alaska's Near-Term Economic Outlook

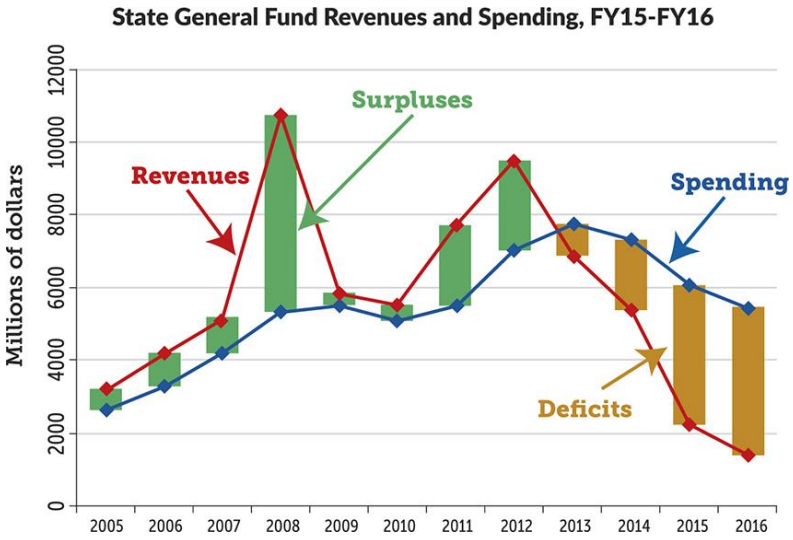
In the near term—over the next few years—three factors appear most likely to drive change in Alaska's economy, all of which are uncertain and difficult to project. First, the decline in federal spending and employment of recent years appears likely to continue, although we don't know what specific cuts may occur, and particularly whether or not significant reductions will occur to military units based in Alaska. National politics, including the outcomes of next year's presidential and congressional elections, will likely influence how much money the federal government spends in Alaska and what it spends it on.





A second important factor will be the response of Alaska's oil industry to likely continued low oil prices and to potential reductions in state oil and gas tax credits. To date, Alaska has not yet experienced the dramatic decline in oil industry employment that has occurred in most other US oil-producing states. This reflects in part the larger scale of Alaska oil fields and investments and the increased difficulty of oil extraction from aged fields which requires more labor. However, Shell's recent decision to stop further offshore oil exploration on its Chukchi Sea leases—in which low oil prices were almost certainly a contributing factor—was a reminder that oil prices affect profitability and investment in remote, high-cost areas such as Alaska. Moreover, the recent further slide in oil prices to below $40/barrel (as of early December) will further test the oil industry's ability and willingness to invest in Alaska exploration and development.

A third important factor—and likely the largest driver of near-term economic changes—will be how the state adjusts to dramatically lower oil revenues. After rising for many years, state revenues have fallen dramatically since 2012, the combined result of declining oil production, increasing tax-deductible costs of oil production, and a drastic fall in oil prices from more than $100/barrel in August 2014 to below $40/barrel in early December 2015. State spending has also fallen since 2013, but not as far or as fast as revenues, resulting in large deficits which the state has funded by drawing down savings reserves. Current deficit levels—likely to exceed $3.5 billion in FY16—cannot be sustained as they would drain available state savings in the state's Constitutional Budget Reserve Fund (projected to be about $7.7 billion at the end of FY16) within a few years.



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

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

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

Unless oil prices rise dramatically and unexpectedly, within a few years the state will have to reduce the deficit by either reducing spending or finding new ways to pay for spending. The only “fiscal options” which could significantly reduce the deficit are some combination of:

- Further cuts in state spending
- Broad-based taxes such as income or sales taxes
- Reallocating spending of Permanent Fund earnings from dividends to state government
- Spending other Permanent Fund earnings

The Alaska Legislature faces difficult choices between these options, none of which are popular.

The table above shows estimates of the potential short-run economic impacts of selected options for reducing the deficit by $100 million. The estimates are based on input-output analysis, which tracks how the “direct” impacts of a cut in state spending or a reduction in household income are “multiplied” in the economy. The short-run economic impacts of larger spending cuts or new revenues would be proportional: the impacts of cuts or new revenues of $1 billion would be ten times as large.

The estimated employment and income impacts include both “direct” and “multiplier” employment and income. Direct impacts are changes in employment and income of employees of state government and state contractors. Multiplier impacts are changes in employment and income in other industries due to ripple effects in the rest of the economy as households, which lose income, and businesses, which lose sales, spend less.

The estimated impacts are based on generic assumptions about how state spending cuts would be made and how income taxes or lower Permanent Fund Dividends would affect household spending. They should be considered approximate estimates of the initial short-run impacts of these fiscal options, as well as indicators of how the relative economic impacts of fiscal options may differ. They do not show potentially important indirect or longer-term impacts of fiscal options, such as how they might affect state services on which the economy depends, economic confidence, investment, and real estate prices. They also don't show how the relative effects of different options may vary by region, or their relative impacts on different income groups. (We are currently studying these other potential economic impacts.)

Here are some approximate rules of thumb about potential short-run employment impacts of state fiscal options:

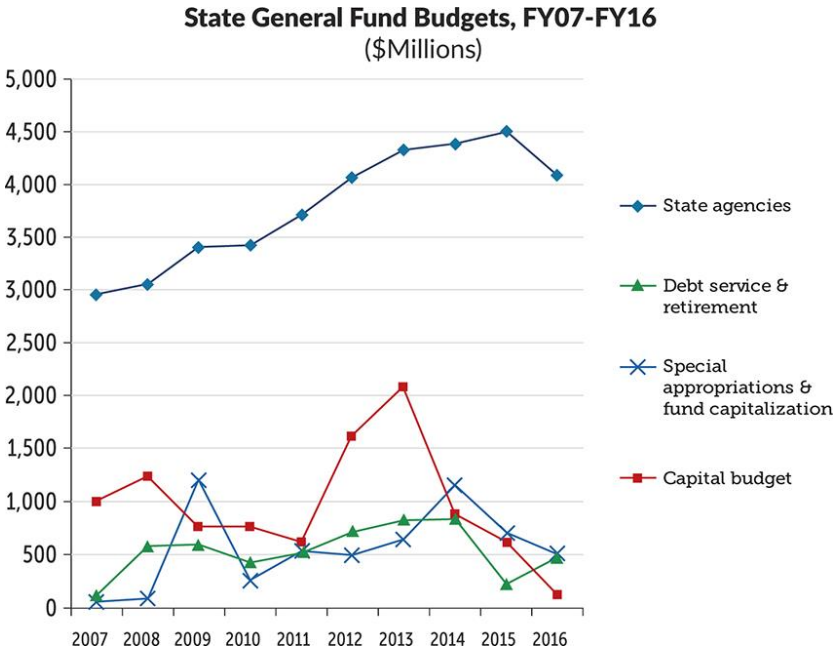
Cutting state spending by $1 billion by cutting the state workforce could cause a loss of about 17,000 Alaska jobs, or about 5 percent of total employment: each lost job would reduce the deficit by about $60,000.

Cutting state spending in other ways would have smaller employment and income impacts. For example, across the board cuts of $1 billion might cause a loss of about 13,000 jobs, or 4 percent of employment: each lost job would reduce the deficit by about $80,000.

Reducing the deficit by collecting income taxes or reallocating Permanent Fund Dividend payments to pay for state government would have smaller total impacts on employment and income than cutting state government—because there would be no direct cuts to jobs or income of state employees or contractors. There would be "multiplier" impacts due to impacts on household disposable income and spending. Collecting $1 billion in income taxes or Permanent Fund Dividend reallocations could cause a loss of about 10,000 jobs or 7,000 jobs, respectively.

Reducing the deficit by spending other Permanent Fund earnings would not have any short-run impacts on the economy: it would not reduce payments to state workers or contractors or reduce household disposable income.

Note that the relative economic impacts of different fiscal options would vary significantly by region. The relative economic impacts of cutting the state workforce would be highest in regions where state government accounts for a relatively higher share of employment, such as Juneau and Fairbanks, and where state-funded local government (particularly K-12 education) accounts for a relatively high share of employment, such as rural western Alaska. In contrast, the relative economic impacts of an income tax would be highest in wealthier urban areas such as Anchorage.



Clearly the short-term economic impacts of significantly reducing the state deficit—which will exceed $3.5 billion this year—could be significant. How large they will be, and how and when they will be felt, will depend on how and when the state reduces the deficit. It will not be possible to avoid significant impacts: Permanent Fund earnings over and above those used to fund dividends are insufficient to close the deficit. While the economic impacts of different fiscal options will surely play a role in the political debate over how to close the deficit, significant economic impacts of the decline in state revenues since 2012 are already inevitable—because of the effects of budget cuts that have already been made but not yet reflected in lower state spending. Since 2013, the state budget has been cut by $2.7 billion, or by 34 percent. Of this cut, $1.9 billion, or 73 percent, was in cuts to the capital budget. Because capital projects take time—often several years—to plan and build, the full impacts of the large cuts that have already been made to the capital budget have not yet been felt as cuts to state spending. When they are felt, they will have significant economic impacts. If, for example, the impacts of $1 billion in capital spending cuts remain to be felt, the estimates shown in the table above suggest that they could cause a total loss of about 9,000 Alaska jobs, or about 3 percent of total employment.

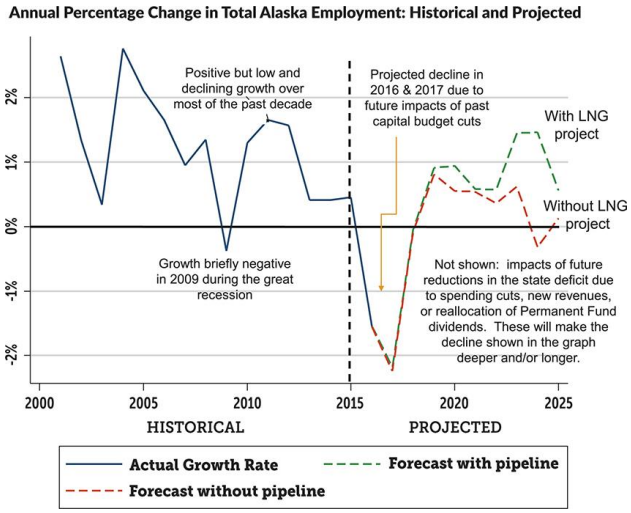
The state faces a difficult economic tradeoff in how rapidly it reduces the deficit. Clearly the impacts would be very large if the entire deficit of more than $3.5 billion were to be closed in one year—regardless of how it is closed. For this and other reasons, it is likely that the deficit will be reduced more gradually, spreading the economic impacts out over time.

However, there are also significant potential negative economic consequences to delay in significantly reducing the deficit. Continued deficits of more than $3.5 billion could drain state savings in as little as two years—forcing major adjustments with major economic impacts all at once. Delay in reducing the deficit could harm business confidence, reducing business investment and availability of credit to home-buyers and businesses.

It could also harm the state's credit rating. In August, Standard & Poor's Ratings Services affirmed its "AAA" rating for state bonds but revised its outlook from stable to negative, stating that "the negative outlook reflects that the large structural deficit in the state's unrestricted general fund could render its overall fiscal position inconsistent with our 'AAA' rating. We expect that if lawmakers do not enact significant fiscal reforms to reduce the imbalance within the next year, the state's rating could begin transitioning downward. The rating migration lower would likely persist and accelerate if lawmakers continued to fail to act as the state's budget reserves (not including the Permanent Fund) approached depletion."

Longer-Term Economic Outlook

Over the longer term, once the state has adjusted to significantly lower average oil revenues, the most important factor potentially driving change in Alaska's economy would be the development of an Alaska LNG export project—combining a North Slope gas conditioning plant, a natural gas pipeline, and a Southcentral Alaska liquefaction plant. If built, these would be huge projects, with a combined total cost currently estimated at between $45 billion and $65 billion. If the project proceeds on the currently envisioned schedule, construction employment might peak in 2024 and 2025 at about 6,500 jobs. Subsequent revenues to the state from its project ownership share and LNG sales could approach $2 billion, further stimulating the economy over the longer term.



However, whether or when an LNG project will be built remains far from certain. The project is still in the pre-front-end engineering and design (pre-FEED) phase, with the decision about whether to proceed to the much more expensive front-end engineering and design (FEED) phase still at least a year away. Many issues remain to be resolved between the state and the three multinational oil companies participating in the project, and many uncertainties remain about the project cost, markets, and potential economic returns. Given the scale of the project, the fact that hundreds of millions of dollars have already been spent and are planned on pre-FEED studies does not necessarily mean that the project will be built as currently scheduled or built at all. Thus the LNG export project remains a very large economic opportunity, but also an uncertainty, over the coming decade.

Beyond the potential LNG project, other important drivers of change in the Alaska economy will continue to be the federal government, the oil industry, the seafood and mining industries, the tourism industry, air cargo, and (over time) newer service industries such as engineering and environmental consulting. It is very difficult to predict how these industries will change over time, given their dependence on highly variable international market conditions as well as federal and state political and regulatory decisions. What is most certain is that there will be changes and surprises—but there is no obvious reason to expect either dramatic long-term growth or decline.

Conclusions

The graph at left shows historical annual growth rates of Alaska employment over the period 2000-2015 as well as our projections for 2016-2025. We calculated our projections using ISER's econometric model of Alaska's economy, population, and finances. The projections are based on two economic scenarios which consist of numerous assumptions about levels of future basic industry activity (both generic and project specific), national economic variables, and state fiscal policy variables. Both scenarios assume constant oil prices of $55/barrel. The difference between the scenarios is that one assumes that no LNG export project occurs, while the other assumes that a project occurs with the schedule and impacts described above.

As discussed earlier, growth in total Alaska employment was positive but low and declining over most of the past decade, with a small decline in employment in 2009 during the great recession. As shown in the graph, we project a decline in total employment of about 2 percent during 2016 and 2017 as a result of cuts to the state capital budget which have already occurred but have not yet been reflected in actual capital spending.

What the graph does not show is the economic impacts of the inevitable further state adjustments to the budget deficit over the next few years, which will have to include some significant combination of spending cuts, new revenues, and/or reallocation of Permanent Fund dividends. These adjustments will make future employment declines either deeper or longer-lasting than shown in the graph. However, when the deficit has been significantly

reduced, employment rates should rebound to continue the low but positive historical trend—with significantly higher growth rates if an LNG project occurs.

Our projections are of course speculative. There are many reasons for which they could appear foolish within a few years or even months from now, in response to events we cannot foresee, ranging from major oil discoveries to natural disasters to global economic or political crises which might drive prices for oil and other Alaska resources unexpectedly higher or lower. However, our goal is not to argue that the projections will necessarily come true. Rather our goal is to suggest a way of thinking about the factors that may drive Alaska's near and longer-term economic future—which may be a useful starting point for thinking about the implications of alternative assumptions about these factors.

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Gunnar Knapp is director and professor of economics at the University of Alaska Anchorage Institute of Social and Economic Research (ISER), where he has worked since receiving his PhD in Economics from Yale University in 1981. For much of his career his research has focused on markets for and management of Alaska fisheries. Currently he is engaged in extensive research and outreach about Alaska's fiscal situation and options. For many years he has taught a University of Alaska Anchorage course on the economy of Alaska.

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