PUBLIC FINANCE AND ECONOMIC DEVELOPMENT PROSPECTS FOR ALASKA

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Most Alaskans are aware that over the next ten to twenty years large sums of money will be funneled into the state treasury. For most of us, however, there is a natural myopia which makes it difficult to look very far into the future to speculate on the possibilities this wealth makes available to the state or to consider the constraints the Alaska economic facts of life place on use of this wealth. This paper is a attempt to begin to provide such a perspective.

1. The Alaskan Petroleum "Grubstake"

The quantity of proved reserves of crude oil in Alaska clearly put it in the same class as the world oil powers of OPEC. Table 1 shows Alaska's position in comparison to the other OPEC nations at the beginning of 1980. This table reveals several interesting facts.

1. Alaskan crude oil proved reserves account for almost one-third of those of the U.S. as a whole (8.6 billion vs. 26.5 billion).

2. Alaskan proved reserves are comparable to those of the less oil rich OPEC states as Algeria and Indonesia.

3. On a capita basis, Alaskan proved reserves rank fourth when compared to the OPEC nations. Proved reserves per Alaskan is 21,446 barrels. This is exceeded only by Kuwait, United Arab Emirates, and Qatar. By comparison, the U.S. as a whole, has 121 barrels of proved reserves per capita.

Thus on a per capita basis, Alaskan crude oil proved reserves are comparable to those of Saudia Arabia - the nation with the world's

Table 1. Crude Oil Resources of Various Regions

	Estimated Proved Reserves[a] (1/1/80) (billion barrels)	Barrels/ Population
Kuwait	65.4	57,672.0
United Arab Emirates	29.4	37,658.1
Qatar	3.7	23,566.9
Alaska	8.6	21,446.1
Saudi Arabia	163.4	21,420.1
Libya	23.5	8,874.6
Iraq	31.0	2,573.0
Iran	58.0	1,562.5
Venezuela	17.9	1,314.2
Algeria	8.4	495.0
Nigeria	17.4	261.2
Ecquador	1.1	150.2
United States	26.5	121.5
Indonesia	9.6	67.9

[a] International Petroleum Encyclopedia, Penn Well Publishing Company, Tulsa, Oklahoma, 1980, p. 224.

largest reserves and the OPEC member with the highest daily production rate. Alaskan oil is expensive to produce and transport to markets and a relatively small proportion of the market value is net back to the government but these factors do not detract from the reality that each citizen of the state has a large "grubstake" represented by his per capita share of oil in the ground.

In fiscal year 1981, the per barrel "grubstake," the taxes and royalties collected by the state, will amount to approximately $7 almost exclusively derived from Prudhoe Bay production. At a production rate of 1.5 million barrels daily, this totals to $3.8 billion or $9,600 per Alaskan. If we look at the total potential "grubstake" represented by all the crude oil reserves in the ground and we assume each barrel whenever produced yields $7 in revenues to the state (in 1981 dollars), there is about $60 billion to be collected from production from present reserves. Dividing this incomprehensible figure by population results in the average Alaskan "grubstake" of $150,000 which is a more manageable quantity. For the average family of three, the Alaskan family "grubstake" is $450,000.

This is a rough estimate of the size of the resource which the state has at its disposal. Three observations immediately modify interpretation of the size of the "grubstake."

1. A substantial proportion, between one-third and one-half, is already allocated to fund existing government programs such as education because this "grubstake" is essentially the only source of revenue to the state.

2. The remaining available resources are less than they appear to be because experience (Alaskan historical as well as personal) shows that "needs" always increase faster than the available budget (although sometimes with a lag) and when more than one person has access to a fund of money each underestimates the ability of the others to spend it.

3. The revenues should not be counted at full value until they are actually in the bank. Two obvious factors which could very substantially reduce the "grubstake" are elimination of the special corporate tax on petroleum (this would drop the per barrel state share to $5.50) or a slowdown in the rate of increase of the real price for crude oil caused, for example, by a softening of demand.

Discounting for these factors may leave between $50,000 and $100,000 as the real available "grubstake" per Alaskan household--still a considerable amount after these adjustments. What impact could this "grubstake" have on Alaskan development?

2. Defining Alaskan Economic Development

There are a large number of definitions of economic development. It is important to distinguish the objectives of economic policy, and the means to the accomplishment of those objectives.

For a majority of Alaskans, some combination of the following would probably constitute the objectives of economic policy.

1. Increase in employment opportunities.
2. Minimum variability in employment growth.

3. Personal income growth both aggregate and per capita.

4. Reduced seasonality of employment.

5. Low unemployment levels.

These attributes of an economy are often identified with increased industrialization, economic diversification, increased value added of resources, and increased production for local markets. Such strategies may lead to the objectives listed above, but not necessarily. In addition, they may be able to do so only temporarily. That is those strategies may lead to growth but not development. Economic development implies creation of an economic structure which is self-sustaining and spontaneously generates additional growth and further development. A corollary of this self-sustaining growth is the ability of the economy to provide for public needs through the collection of taxes and other revenues. Is this a possible or reasonable target of Alaskan economic policy?

3. Economic Development Since Statehood

Examination of the record of the Alaskan economy since statehood seems to support the idea that there has been little progress toward the goal of a developed economy in the sense of the strategies listed above and the target of self-sustaining growth. This is in spite of a clear development orientation by state government throughout the past twenty-year period. There has been very little industrialization or economic diversification. With the exception of petroleum the industries in the state in 1959 are the industries here today. Downstream processing of the state's natural resource is limited in the fisheries, timber industry, and the petroleum industry to primary processing. Production of goods for local consumption in some sectors has actually declined in spite of a growth of the size of the local market. Agriculture is an example of this phenomenon. Table 2 shows some indicators of the importance of the basic industries in Alaska since statehood. Petroleum clearly dominates (even before the recent oil price increasesand has reduced the relative importance of all other industries. (The difficulty in compiling this table is an indication of a lack of targeting of economic development objectives. In other words it is hard to measure the success of development strategies such as diversification, or industrialization without a scorecard of some sort.)

In spite of this lackluster record of development strategies however the economy has grown and if measured by objectives of economic policy mentioned above, is not bad off. The size of the market is much larger in terms of population, employment, and personal income. This has resulted in and been the result of a very substantial increase in the support sector of the economy: the trade, services, and infrastructure industries. Personal income per capita has increased in real terms and now more closely approaches the national average. Seasonality of employment has declined in relative if not absolute terms (some Alaskans prefer seasonal employment).

The variability of employment (boom-bust cycle) continues to effect the state, but future cycles of employment are likely to be less pronounced because of the larger size of the labor supply. In addition the

Table 2. Evolution of Alaskan Basic Industries

	1960	1970	1979
MARKET VALUE OF NATURAL RESOURCES (BEFORE PROCESSING) (million $)			
Crude Oil[a]	$ 1.2	$232.8	$5,493.6
Natural Gas[a]	.0	27.4	91.5
Seafood[b]	40.9	97.5	606.0
Timber[c]	10.0	44.0	114.3
Other Minerals[d]	15.1	18.1	17.5
Agriculture[e]	5.6	5.2	9.1
Furs[f]	4.8	?	?
FEDERAL GOVERNMENT OUTLAYS (million $)	414.3	728.7	1,932.2
TOURISTS (000)	?	129.0	500.0

[a] Wellhead value

[b] Price to fishermen for fish landed in Alaska

[c] Value at the mill for sales of forest service timber

[d] Net of sand and gravel

[e] Value of production net of reindeer products

[f] Fur seal only

large and stable government workforce increases immunity to most types of fluctuation of economic activity.

The unemployment rate continues to be high, but this is partially a reflection of structural unemployment and partially of the attractiveness of Alaskan wage rates. The typical development strategies are not capable of dealing with this type of unemployment on the regional level.

4. Requirements of a Self-Sustaining Diversified Economy

The examination of the historical record of the Alaskan economy indicates that there has been an increase in economic well-being since statehood, but it cannot be traced to the success of specific development strategies. This raises the obvious question of whether development via these strategies is necessary or possible for Alaska.

Perspective on this issue can be gained in two ways. First, we can calculate the amount of additional capital investment that would be necessary to put into place each year over the next twenty years so that if the oil revenues terminate at that time the economy would not be forced to contract but could, in fact, continue to grow at a rate approaching the national rate. A modest estimate of direct employment supported by petroleum would be 7,000 in the mining, construction, and transportation industries. In addition about 75 percent of state government and perhaps 50 percent of local government employment are supported by petroleum revenues (assuming some currently untapped tax bases such as the personal income tax). A *very* rough estimate would thus be about 30,000 total jobs. If $1 million in investment could generate one job, it would be necessary to invest $1.5 billion annually for twenty years to create the 30,000 jobs now directly supported by petroleum.

Another perspective would be to calculate the capital investment necessary to build the capital stock up to a level such that it could produce revenues to state and local government, at reasonable tax rates, sufficient to support present spending levels. If $1 billion in revenues were needed annually and the effective tax rate were equivalent to 5 percent of the capital, it would be necessary to invest $1 billion annually. If the in-state market value of non-petroleum resources were to expand to replace the market value of petroleum, the combined value of other producing natural resources would need to increase at least ten times (see Table 2). This would require a 12 percent annual growth rate in the real market value of these products.

These are obviously extremely rough estimates. In fact at present neither this capital investment level nor this growth rate of the market value of non-petroleum resources is occurring. Because there is no program of this magnitude currently underway or proposed, it does not seem reasonable to expect self-sustaining diversification to provide an alternative base for the economy twenty years hence.

5. State Fiscal Policy

Can state government, through its spending and lending policies, generate development or self-sustaining growth? Over the last decade, both spending and lending have increased dramatically. The state budget has increased about 1000 percent before adjusting for inflation. In the four years from 1976 to 1979, the total value of business loans extended has increased 1000 percent. Over a slightly longer period (1974-1979), the value of mortages purchased by Alaska Housing Finance authority has grown 500 percent. Growth in these programs has undoubtedly resulted in growth of the Alaskan economy, particularly direct state spending programs, but it is difficult to correlate growth in these programs with significant development of the economy in the form of diversification, stability, or increase in value added in natural resource industries.

Studies of the effects of traditional state fiscal policies on the growth and structure of the economy using computer simulation models confirm this hypothesis. Reduction or elimination of the personal income tax stimulates the economy because additional consumer spending occurs to the extent that it results in increased disposable income and does not reduce real wage rates. The impact in terms of jobs created, additional local income and new tax revenue is surprisingly modest because of what the federal government "skims" off the top and because of the "leaks" out of the economy from any consumer good purchases. The tax cut does not "pay for itself" through increased revenues generated by the growing economy. Thus, when the source of revenue which funds the tax cut (taxes and royalties from Prudhoe Bay oil) have been used up, the income tax must either be reinstated or government services must be cut, or both. In either case, the size of the economy contracts.

During the years the tax cut is in effect, there is growth but not development, and, subsequently, there must be a contraction.

Based on these studies a very rough rule of thumb might be that $1 million of tax rebates creates fifteen additional jobs. Then, $1 billion would add 15,000 jobs which would last as long as $1 billion each year were channeled into the program. Even if twice the number of jobs were created for the money, an expenditure of $20 billion over twenty years would create 30,000 jobs, an increase of 15 percent over the present level of 200,000. Essentially, this type of program would give people money so that they could increase their purchases of consumer goods and services, most of which are manufactured outside the state. The trade and service sectors would grow, but a 15 percent increase in population and disposable income would not be a significant increase in the size of the market and, thus, would not be a stimulus to development through economies of scale due to market size.

Also, it would be difficult to effect a large transfer of $1 billion annually to the private sector. Elimination of all income, property, and sales taxes in the state would pump about $300-$400 million into the economy. Permanent fund dividends could account for perhaps $200 million additional.

There are other methods of creating jobs, of course, which may be more cost effective. Carefully structured and negotiated subsidies could perhaps result in much larger employment gains for each dollar expended. Temporary subsidies have been suggested as a means of encouraging basic industry to locate in the state. After factor costs have fallen sufficiently, market size increased, and agglomeration economies occurred so that the project no longer requires the "infant industry" subsidy, it would be eliminated and the industry could "carry its own weight."

It would be interesting to see if there ever were a case in the U.S. in which such an infant industry nurtured by subsidies grew to maturity. There is a possibility of this happening but temporary subsidy schemes should be viewed with some suspicion when the presumably mature basic industries already in the state such as agriculture, fisheries, and tourism operate with various forms state subsidization already.

6. The Price Level as an Impediment to Development

One of the major impediments to the development of Alaskan resources as well as downstream processing of those resources is the high price of labor in the state. Conventional wisdom attributes the high price to the high cost of living which is a function of distance from markets, climate, and the geography of the state.

However, a comparative study of cost of living differentials in Canadian communities suggests that, for urban Alaska, distance from Seattle and climate can account for only a fraction of the actual differential.[1] Anchorage, for example, has only slightly more heating degree days than upper midwestern cities like Duluth and much less expensive heating fuel prices. Two other factors, probably more important in the urban parts of the state, are (1) demand pull inflation combined with labor markets in which wages are not freely determined by supply and demand and (2) federal and state income taxes.

It has been argued that the history of large construction projects, federally, privately, or state financed on a cost plus budget, have contributed to labor costs being higher than otherwise would have been the case. These high labor costs in construction spill over into other labor markets contributing to higher costs throughout the economy. In slack times, there is a natural reluctance by labor to reduce its price and labor market imperfections allow the high labor costs to persist.

In spite of this, there does seem to have been some progress since statehood in reducing the cost of living differential between urban Alaska and the contiguous 48 states. During the 1960s, the Anchorage Consumer Price Index (CPI) grew 21 percent while the U.S. CPI grew 32 percent. In the 1970s, however, both have grown at almost the same rate of 90 percent.

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[1] Arlon Tussing, Studies on Alaska Regional Inflation, Federal Field Committee for Development Planning in Alaska, 1969.

One might think that the explanation for the parallel growth in the 1970s was partly in the progressive feature of the personal income tax. Because of this, a person in Alaska earning a higher nominal but equal real income with someone in the contiguous states pays a larger percentage of income (real and nominal) as taxes.

For example, based upon the present schedule, the average tax rate for a $30,000 nominal income is 18.7 percent, which is 36 percent above the 13.8 rate for a $20,000 nominal income. If those two nominal incomes represent the same real income, then the tax burden of the person earning the higher nominal income is 36 percent larger. The fact that inflation has been pushing up nominal incomes for everyone and putting everyone into higher tax brackets has not appeared to increase the "Alaskan excess burden" of the tax (defined as the difference in effective tax rates at equal real incomes).

Higher tax rates amplify the higher cost of living resulting from real cost differences and also amplify the cost of labor differential between Alaska and the contiguous U.S. A reduction in taxes could consequently have a significant effect on the Alaskan cost of living and potentially on the cost of labor. This can be illustrated by showing the impact of various tax alternatives on the relative Alaskan cost of living. Table 3 shows the differential rises with the imposition of the federal progressive tax and a 14 percent state add-on tax and falls when

Table 3. Hypothetical Impact of Personal Taxes on the Relative Alaskan Cost of Living

	Alaska (thousand $)	U.S. Average (thousand $)	Ratio of Alaska to U.S. Average
Cost of Living Net of Personal Taxes	30.000	20.000	1.50
Cost of Living Including Federal Income Tax (Average Rate)	35.610 (18.7)	22.760 (13.8)	1.565
Cost of Living Including a 14 percent State Income Tax Add-on to Federal Tax	36.395	23.146	1.572
Cost of Living with Alaskan State Income Tax Eliminated	35.610	23.146	1.539
Cost of Living with Alaskan State Income Tax Eliminated and "Alaskan Excess Burden" of Federal Tax Eliminated	34.140	23.146	1.475

the Alaska state tax is reduced and as the "Alaskan excess burden" is eliminated. Assuming a hypothetical 50 percent basic cost of living differential, taxes increase the differential to 57 percent. The elimination of the state income tax reduces the differential somewhat, but the elimination of the "Alaskan excess burden" of the federal tax reduces the differential to 47.5 percent, which is nearly a 20 percent reduction in the Alaskan differential cost of living (at this hypothetical differential).

People tend to view a reduction in personal taxes as an increase in real income, but when everyone's taxes decline the cost of living falls and the cost of labor can potentially also fall. A fall in the cost of labor in Alaska would make it relatively more attractive to locate not only support sector economic activities in the state but also downstream processing of raw materials and production of raw materials themselves. With the anticipated elimination of the state income tax there could be a drop in the rate of growth of labor costs and a reduction of the Alaskan differential, but it will not occur automatically because of the stickiness of wage rates in a downward direction. (Many wage rates in Alaska are administratively determined but to the extent these administratively determined wage rates are tied to the cost of living they will fall.

A much larger potential impact on the cost of business in Alaska would result from elimination of the "Alaskan excess burden" of the progressive federal tax. Alaska consistently receives a greater portion of federal expenditures than it pays in taxes, and so there is an argument for Alaskans paying a larger portion of income as taxes (although it is not clear who benefits from those payments). The use of the progressive income tax to collect those revenues, however, discriminates against the use of labor in Alaska and thus results in lower employment and higher cost of living than would be the case if Alaska were equitably treated. It seems that a reasonable area of study of the newly-formed Statehood Commission would be a detailed investigation of this problem and possible methods the state could use to eliminate this "excess Alaskan burden." The result would be a modest reduction of Alaskan living costs and the cost of doing business in the state and an increase in employment. The objective would be to eliminate an obvious inequity in the tax treatment of Alaska rather than a reduction of Alaska's tax contribution per se.

7. Conclusion

1. Despite the pursuit of the objective of economic development since statehood, there has been little "development" in Alaska in the sense of diversification, downstream processing, industrialization, or stabilization. The petroleum industry dominates.

2. There is little evidence that the next twenty years will bring substantial "development" as thus defined in spite of a very large amount of available capital.

3. The economy is nonetheless larger and richer than at statehood, and most residents are both much better off materially and can look forward to continued economic gains.

4. This is not to say that our capital and natural resource position will not result in some "development" projects. However, it is unreasonable to believe that we can somehow "transform" the economy into a broadly diversified one in the next 25 years.

5. There is essentially no monitoring of Alaskan economic progress toward growth and development objectives. If there were such a monitoring system which evaluated government spending, loan, and subsidy policies, a more reasonable set of expectations of the possibilities of economic policies might evolve over a period of years.

6. Reducing the relative cost of living and consequently the cost of labor is one possibility which should be investigated. It is not "sexy" politically but makes economic sense. The success of this policy requires that cost of living reductions pass thru to lower wage rates.

7. The newly-formed Statehood Commission could investigate the implications of and ways to eliminate the "Alaskan excess burden" of the federal personal income tax.