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2050 SSA LONG RANGE PLAN ECONOMIC PLANNING 2.5d

[15]A return of 3% is reasonable, but it should not be taken for granted. The average return for both the Alaska Permanent Fund and the General Fund over the years 1977-79 was negative. James Love, "Comments on Leasing Methods," prepared for the House Interim Committee on Oil and Gas Leasing Policy (October 18, 1979).

[16]Kresge, et al., Issues in Alaska Development

PART II

Long-Range Expenditure Planning

- What to do when revenues are lumpy? -

For the Senate State Affairs Committee

Senator Victor Fischer, Chair

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Long-Term Expenditure Planning

The Need for Planning

The most important reason to forecast revenues is to help policy makers and citizens plan expenditures over time. Alaska has a highly unusual revenue stream--very large in the next ten years, and then rapidly declining as Prudhoe Bay plays out. This revenue stream represents the "cashing out" of a non-renewable resource. It can be spent now, later, or spread between the present and the future.

There are several reasons to be concerned about "lumpy" revenue streams such as this. Perhaps the most obvious one is the question of equity between generations. But a number of other less philosophical issues are also involved. The state is under intense pressure to make investments in buildings and infrastructure and to create new programs and "entitlements." Before decisions are made to begin multi-stage capital projects, it is important to know where the money will come from to finish the development. The same can be said for major new state efforts to fund communities, education, subsidize businesses and home purchases or the novel schemes to distribute oil wealth directly to citizens. If these programs are started in 1982, can they be sustained ten or fifteen years hence? And just as important, are resources sufficiently finite so that the creation of a new program today will foreclose the option to make other investments later on?

Policy makers can evaluate different "spending strategies" by comparing projected expenditures to revenues over time. Such long-range planning can help to take some measure of the changes and shocks the state will have to cope with as it adjusts to a leaner diet of oil revenue. If shocks are to be minimized and spending "smoothed out" into the future, then money will have to be saved in the near term. Even if there is no attempt to share today's oil receipts with future citizens, it will be useful to know what the consequences of a particular level of government spending today will be. Is the government going to build facilities which it cannot afford to maintain in the future? Will the bureaucracy be so swollen that it will create an unmanageable burden for taxpayers in the 1990s?

Policy makers certainly have an intuitive feel for these questions. This is reflected in much of the colorful rhetoric surrounding the debate over oil "wealth management." Moreover, in recent years the legislature has passed two constitutional amendments, ostensibly to preserve some of the oil wealth for future generations. The first measure, the Alaska Permanent Fund, mandates that a share of oil royalties be placed into a "savings" account, and not spent. The second proposal, passed by the legislature in 1981 and awaiting voter approval in 1982, will "limit" the amount, or at least the way, the state spends.

But do these two measures really address the long-term financial planning problem. Unfortunately, the answer is no--or perhaps only in a trivial sense. Both the Permanent Fund and the proposed constitutional amendment to limit spending provide but minimum restraints on the legislature's freedom to liquidate Alaska's oil wealth. These limitations, because they are so modest, do not by themselves eliminate the need for fiscal planning. The Permanent Fund only requires that one-tenth of current oil revenues be "saved," and the fund is set up in such a way that inflation will erode the purchasing power of the principal. The spending limit is riddled with loopholes and is set so high that it will soon exceed the available revenues from oil production.

The problem remains a lack of planning. When both the Permanent Fund and the spending limit were passed by the legislature, it was clear that many policy makers and citizens were acutely concerned about the long-run consequences to today's budget policies. But most of the debate was little more than one platitude competing against another. A more rigorous, analytical, and quantitative approach is needed, and is for the most part lacking.

What do we owe future generations? How much do we need to save today to maintain an "appropriate" level of government services twenty years from now? Will the permanent fund provide enough revenue to sustain the government

when the oil is gone? What will the proposed state spending limit mean over the next decade?

As fundamental as these issues sound, they are rarely addressed in the public debate over spending policies. Is this because conventional political wisdom rejects long-run planning considerations as too esoteric to be understood by the public? Is planning simply an unpopular word in Alaska--to be avoided at all costs? Or is the problem a lack of competence on the part of policy makers, rather than cynicism or a theological aversion to planning?

For whatever reason, today's fiscal policies are only tenuously linked to the state's longer-term revenue picture. Indeed, few policy makers appear to have even a modest grasp of the state's long-term fiscal condition.

This is an urgent problem--one the state cannot deal with later as it moves along the wealth management "learning curve." Time is of the essence. The state is rushing into, and perhaps out of, the petroleum era. Day by day and year by year a greater proportion of Alaska's special oil "endowment" is ripped from the earth and brought to market. In just two years, 14% of Prudhoe Bay's estimated recoverable reserves will be gone. In six years, 42% will be exhausted. The longer the state waits to plan its future, the less of a difference planning will make. Moreover, if current expecations of spending levels are unrealistically high, it is better to change those expectations now rather than later.

The Alaska Permanent Fund and Inflation

The first serious thinking about the need to create a "savings" account for current oil revenues occurred shortly after the 1969 North Slope oil lease sale which brought $900 million into state coffers. The Brookings Institute was hired by the state to conduct a series of seminars on "The Future of Alaska."

> After the Brookings seminars, several bills were introduced in the 1970 legislative session to establish some sort of "permanent fund" with the $900 million. However, other more immediate uses for the money were judged to be more important, and no permanent fund was established.[1]

The idea endured, however, and it became a major political issue in the years immediately preceding the start-up of Prudhoe Bay production. Notable support for a "savings" fund came from younger democrats in the House of Representatives, led by Representative Hugh Malone, and Governor Jay Hammond. The young democrats and Hammond both were considered politically liberal on distributional and environmental concerns, but fiscally conservative when it came to spending levels. The immediate influx of billions of dollars in short-term revenues presented the opportunity for unprecedented waste, in their view. Moreover, supporters of the fund were motivated by a desire to share the riches of Prudhoe Bay with future generations. In 1976 the legislature finally passed and the voters approved, by a nine to one margin, a constitutional amendment which created the Alaska Permanent Fund.

The constitutional amendment provides that a minimum of 25% of the royalties from oil fields leased before 1976 and 50% of the royalties of lands leased thereafter will be deposited in the Permanent Fund. This works out to about 10% of the revenues from Prudhoe Bay and Kuparuk, and 20% of the revenues from the Lisburne field.[2] In addition to this minimum payment, the legislature may make special appropriations from the general fund to the Permanent Fund--such as the $900 million contribution in 1979 and the $1.8 million appropriation in 1981. According to the state constitution, the fund must be invested in "income producing" assets.

The ultimate size of the state's "endowment" to future generations is undecided by the mere creation of the Permanent Fund. First, the minimum contribution is considered by many political leaders to be very inadequate for the next ten years when the revenue stream will be at its peak. Secondly, an extremely important question regarding the definition of "income" will determine how "permanent" the principal of the fund is.

The first point is intuitively easy to grasp. If the state is depleting half of a special asset like Prudhoe Bay in just ten years, is 10% enough to set aside for savings? Obviously some citizens and policy makers think otherwise and will continue to press the legislature to set aside much larger amounts.

The definitional issue is less obvious and has attracted much less public attention but will have profound consequences in determining how large the fund will eventually be, and whether or not there will be a steady erosion of the principal. There are really two definitional issues. The first one is whether or not "income-producing investments" can be defined to include infrastructure investments and other capital projects which do not provide direct benefits to the treasury through interest or capital gains on securities, but rather provide <u>indirect</u> benefits through economic development. If the latter interpretation is allowed, the permanent fund will simply become just one more source for capital projects--and will be a likely candidate for precisely the type of pork barrel waste and extravagance that its proponents hope to avoid. The current directors of the permanent fund have rejected such a loose interpretation of the term "income producing." Ultimately, this question may be tested in the courts, although at the present time it does not seem to be a pressing issue.

The second definitional issue regards the problem of inflation. "Income" from the Permanent Fund is not retained. Every year it is deposited directly into the general fund, where it can be spent as the legislature desires. The question is whether income should be defined in nominal or real terms.[3]

As noted earlier, nominal returns represent a combination of the real increase in the value of the asset and a

decrease in the purchasing power of the principal. Thus, a 10% nominal return in an era of 8% inflation is only a 2% net increase in wealth.

If the goal is to create a fund which is truly "permanent" then it is necessary to retain in the fund as principal everything but the "real" income. Otherwise, the Permanent Fund will be depleted over time as inflation erodes its purchasing power. Consider the following example. If the Permanent Fund has a balance of $4 billion and is receiving an annual contribution of $350 million, is it getting bigger or smaller? The answer, it turns out, depends entirely on the rate of inflation. If the rate of inflation is zero, the fund increases by $350 million per year. If the rate of inflation is 8%, the fund balance is reduced by [$4 billion - ($4 billion/1.08)] = $296 million in terms or purchasing power and increased by the $350 million contribution. The net impact is an increase in the fund's assets of $54 million.

If, however, the rate of inflation is 10%, the fund balance is reduced by [$4 billion - ($4 billion/1.10)] = $364 million in purchasing power and increased by $350 million in new contributions. The result is a decrease in the fund's assets of $14 million.

The net change in the size of the Permanent Fund balance can be expressed by the following equation.

$$\text{(previous balance)}/(1 + r) + \text{(contribution)} = \underline{\text{new balance}}$$

where r = rate of inflation.

The equilibrium point for the fund balance can be expressed as a function of the inflation rate and the annual contribution.

$$\text{(contribution)}(1 + r)/r = \underline{\text{fund balance equilibrium}}$$

If the equilibrium is greater than the fund balance, it will continue to grow. If the equilibrium is smaller than the fund balance it will shrink in terms of purchasing power.

What does this mean in terms of the Permanent Fund? First, so long as income is defined in nominal terms, the growth of the fund will be much less than commonly expected--and indeed may well be negative. Secondly, the amount of annual contributions will be determined by a random variable outside the influence of policy makers--the rate of inflation. In other words, the minimum contributions to the Permanent Fund will be arbitrary amounts that are a function of exogenously determined inflation rates rather than legislative policy.

This is illustrated further in Table 2-1, which shows the annual contributions the Permanent Fund, from North Slope oil, net of inflation, for the years 1981 through 2000. The 1981 contribution is really just the cumulative balance

Table 2-1

Annual Contribution to Permanent Fund
Net of Inflation (minimum contribution after 1982)
(millions of 1981 dollars)

Price / Rate of Inflation	$20/b			$25/b		
	0%	5%	10%	0%	5%	10%
1981	$1,964	$1,964	$1,964	$2,005	$2,005	$2,005
82	2,146	1,966	1,803	2,223	2,147	2,069
83	352	165	10	440	242	70
84	356	161	13	445	236	68
85	356	153	11	445	225	62
86	356	146	11	445	213	57
87	356	140	9	445	204	51
88	356	132	9	445	194	47
89	356	126	8	445	185	42
90	356	120	7	445	176	39
1991	446	204	96	558	281	418
92	396	145	38	495	204	72
93	356	98	(6)	445	144	15
94	322	61	(37)	405	98	(27)
95	298	32	(60)	373	61	(56)
96	276	9	(76)	345	30	(79)
97	238	(30)	(107)	298	(19)	(118)
98	210	(56)	(126)	263	(53)	(143)
99	184	(80)	(140)	230	(83)	(163)
2000	160	(99)	(152)	200	(109)	(178)
Subtotal for years 1983-2000	$5,732	$1,427	$(492)	$7,167	$2,229	$(93)

of the fund for that year. The 1982 contribution includes the $1.8 billion appropriation made by the legislature this year. Thereafter, only the minimum contribution is assumed.*

Under the zero inflation scenario the fund increases by $5.732 million under the $20/b price assumption, and $7,167 million for the $25/b price assumption over the period from 1983 to 2000. When inflation of 5% is introduced, new contributions are reduced to $1,427 million for the $20/b price, and $2,229 for the $25/b price. When 10% inflation is introduced, net contributions to the Permanent Fund are negative for both price assumptions.

In other words, under the 10% inflation case, the size of the Permanent Fund is less in the year 2000 than its balance in 1982. This is illustrated in Table 2-2, which shows the cumulative balance in the Permanent Fund under the different price and inflation assumptions.

To put this into perspective, consider the following. Under the most favorable assumption of 5% inflation and a $25 price of oil, the fund balance by the year 2000 is $6.3 billion. Under the 10% inflation scenario and the $20 price, the balance is $ billion. This means that the Permanent Fund, if it earn real return on its investments, can expect to contribute from $98 million to $191 million in earnings by the end of the century, as measured in 1981 dollars, if future contributions are

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*Ten percent of Prudhoe Bay and Kuparuk and 20% of Lisburne revenues.

Table 5

Cumulative Balance in Permanent Fund under Different Price and Inflation Assumptions (minimum contribution after 1982)
(millions of 1981 dollars)

Price / Rate of Inflation	$20/b			$25/b		
	0%	5%	10%	0%	5%	10%
1981	$1,964	$1,964	$1,964	$2,005	$2,005	$2,005
82	4,110	3,930	3,767	4,238	4,152	4,074
83	4,462	4,095	3,777	4,678	4,394	4,144
84	4,818	4,256	3,790	5,121	4,630	4,212
85	5,174	4,409	3,801	5,568	4,855	4,274
86	5,530	4,555	3,812	6,013	5,068	4,331
87	5,886	4,695	3,821	6,458	5,272	4,382
88	6,242	4,827	3,830	6,903	5,466	4,429
89	6,598	4,953	3,838	7,348	5,651	4,471
90	6,954	5,073	3,845	7,793	5,827	4,510
1991	7,400	5,277	3,941	8,351	6,108	4,658
92	7,796	5,422	3,979	8,846	6,312	4,730
93	8,152	5,520	3,973	9,291	6,456	4,745
94	8,476	5,581	3,936	9,696	6,554	4,718
95	8,774	5,613	3,876	10,069	6,615	4,662
96	9,050	5,622	3,800	10,414	6,645	4,583
97	9,288	5,592	3,693	10,712	6,626	4,465
98	9,498	5,536	3,567	10,975	6,573	4,322
99	9,682	5,456	3,427	11,205	6,490	4,159
2000	9,842	5,357	3,275	11,405	6,381	3,981

limited to the legal minimum. Given the current rate of state spending this is trivial.

Clearly, the mere creation of the Alaska Permanent Fund has not resolved many important fiscal management issues. Because the minimum contribution is small, and because inflation can erode the purchasing power of the principal, the importance of the Permanent Fund will be determined by future rather than past acts of the legislature.

Three Different Spending Strategies

There are two major policy variables in long-range fiscal planning for the state of Alaska. First, how much of the oil money should be spent as it is received, and how much should be "saved." Second, should the state seek to maximize the "financial" rate of return on its investment portfolio, or should it provide loans to Alaskan individuals and firms at subsidized interest rates? Either issue by itself is only partly helpful in fiscal planning. Taken together, it is possible to estimate how much money will be available to spend in the future.

There are, to be sure, an infinite number of possible "spending strategies." Nonetheless, it is possible to pick a few distinctive strategies which illustrate the range of options the state can chose from. In this analysis three such strategies are analyzed.

The first would have the state save enough money over the next decade to "smooth out" the revenue stream on a

perpetual basis. The "savings would be invested to earn a high "financial" rate of return. This is referred to as the "Goldsmith" strategy, for the University of Alaska economist who has repeatedly promoted it.

Similar on the surface to the "Goldsmith" strategy is the "Hammond" strategy, named for the incumbent governor. Under this option, spending is held at the "limit" which is specified in the proposed constitutional amendment. Like the "Goldsmith" strategy, the "Hammond" spending plan would have "savings" invested to earn a high "financial" rate of return. Unlike the "Goldsmith" strategy, however, the "limit" on current spending is an arbitrary number--which has no apparent relationship to long-term revenue projections. Just how arbitrary the limit is becomes clear when it is examined over time.

Finally, there is the strategy of spending oil revenues now, as soon as possible. Contributions to the Permanent Fund are only the minimum required by law. These "savings" are invested at subsidized interest rates. This is called the "Fink" strategy, for the Anchorage gubernatorial candidate who is its most articulate and enthusiastic proponent.

The Goldsmith Strategy: Save the Principal

Scott Goldsmith is an economist with the University of Alaska's Institute for Social Economic Research (ISER). Over the past four years he has repeatedly called attention to the need to introduce longer-run fiscal planning to state

government. In 1978 he published an influential paper which compared historical growth rates of the state budget to long-run revenue forecasts and concluded the state stood a good chance going bankrupt in the 1990s.[4] In 1979 he proposed that the state change its tax laws so the oil industry could defer tax payments until some time in the future, thereby taking pressure off state government to increase its budget.[5] In October 1981 he presented the Permanent Fund Trustees with a paper which explored the question of how much of the Prudhoe Bay oil revenues to save, and how much to spend.[6]

Goldsmith underscored the point he had made many times earlier. The state of Alaska is dependent upon a source of revenue with a finite life. In his words:[7]

> In a very real sense, there is a bank on the North Slope--The First National Bank of Prudhoe Bay--and the State of Alaska has a major account there. . . . Each year the state makes a forced withdrawal from its bank account as it collects the various petroleum related revenues and royalties.

This account was going to be exhausted in the not so distant future--Goldsmith reminded the Trustees. Moreover, there was precious little evidence that other industries or resource extractions could replace it.

> Consider coal--this year's glamor resource. The current annual production of about 1 million tons directly accounts for less than four-thousandths of one percent of our revenues ($200,000, or .004 percent). If the state could get 30 cents in royalties for every ton of coal mined, 4.7 billion tons--which is just about all of our current reserves (4.8 billion tons)--would need to be extracted annually to put $1.4 billion into the treasury. So even if it were physically or technically possible to mine this much coal in one year, it only provides one year of revenues.[8]

As the state continues to make the forced withdrawals from the "First National Bank of Prudhoe Bay," it has to decide how much of the money to save for the future. In Goldsmith's view, "it is easier to deal with this question if we stand it on its head and ask how much we want to spend--not only this year but also in future years."[9] In other words, the state should specify the level of expenditures it wante to sustain in the future, and then save enough today to provide the endowment necessary to finance it.

Goldsmith then proceeded to specify not a particular level of expenditures, but a relative level. The state should "smooth out" its spending, he argued. Future expenditures should be exactly the same as today. The particular level would be just that amount which the state could sustain forever.

To sell this to the Permanent Fund Turstees, Goldsmith invoked the conservative "never spend the principal rule." The principal was the present value of oil resources. The state should endeavor to save all of this. The current level of expenditures should be limited to the "interest" on this principal. The interest was the "real" rate of return from the permanent fund. Expressed algebraically, the spending rule is as follows:

$$(\text{Present value of oil}) \times (\text{Rate of return}) = \underline{\text{Spending level}}$$

In order to make this rule work, the present value of the oil would be the projected revenue stream from future production discounted by the rate of return from investments. Thus, it can be seen that the "principal" can be much larger than the amount of savings currently in hand, and the "interest" can be many times the earnings from present savings. Moreover, both the size of the "principal" and the "rate of return" are functions of the state's investment strategy. If the state chooses a low financial return from invested assets, due to a policy of subsidizing certain borrowers, the current "spending level" will have to be much lower than would be the case if the investment objective was to maximize the financial return.

To illustrate how this spending rule would work in practice, North Slope oil resources are analyzed in Table 2-3. The present value of the future revenue stream is determined by discounting it first at zero percent, and then at five possible "real" rates of return from investments. Using the $20 and $25 price range for oil, Goldsmith's "principal" is valued at between $41 and $76 billion. The reader will note that the higher the rate of return, the higher the discount rate, and the lower the present value of the resource. However, the fact that a high rate of return results in a lower present value does not mean that the annual spending level will be lower. On the contrary, this is more than offset by the higher "interest" rate.

Table 2-3

Present Value of Oil and Annual Value of "Annuity" Income under Different "Real" Rates of Return from Investments (millions of 1981 dollars)

	Rate of Return from Investments					
	0%	1%	2%	3%	4%	5%
	Present Value of Oil					
@ $20/b	$60,874	$55,806	$51,379	$47,495	$44,072	$41,045
@ $25/b	76,179	70,190	64,656	59,804	55,523	51,739
	Annual Value of Annuity Income					
@ $20/b	-	558	1,028	1,425	1,763	2,052
@ $25/b	-	698	1,279	1,784	2,207	2,570

This is also shown in Table 2-3, where the present value of the oil, or "principal" in Goldsmith's convention, is multiplied by the "interest" rate to determine "annual value of annuity income." The "annuity income" is simply the amount of money the state can spend every year on a perpetual basis. So long as spending is limited to these sums, enough money will be socked away during the next decade or so that the savings will build an endowment large enough to sustain the spending when the oil is gone.

From this calculation it can be seen that the annual spending level is very sensitive to the rate of return from investments. At a zero rate of return, the "annuity" income is zero. At 1% the annual "annuity income" is between $558 and $698 million, depending upon price assumptions. When a 5% rate of return is considered, the state is allowed to spend from $2 to $2.5 billion every year.

Obviously the state can spend more every year if it earns a higher rate of return. Just what rate of return is reasonable to expect? While the 1% to 5% range is feasible, a more likely range is 2% to 3%, with the 3% return a good target for state money managers. To see how the state would fare at this rate of return, the "Goldsmith Strategy" is examined more closely in Tables 2-4 through 2-5. Spending in year 1981 is $3,900 million, and thereafter at the rate determined in Table 2-3. For the $20 price assumption, the annual spending level is $1,425 million. At the $25 price the annual spending level is $1,784 million.

Table 2-4

Goldsmith Spending Strategy
Save the Principal
$20/b Price of Oil
(millions of 1981 dollars)

Year	Spending	Oil Revenues	Investment Income	Surplus (Deficit)	Savings
1981	$3,900	$3,280	$ 104	$ (516)	$ 2,934
82	1,425	3,460	88	2,123	5,057
83	1,425	3,520	152	2,247	7,304
84	1,425	3,560	219	2,354	9,658
85	1,425	3,560	290	2,425	12,083
86	1,425	3,560	362	2,497	14,580
87	1,425	3,560	437	2,572	17,152
88	1,425	3,560	515	2,650	19,802
89	1,425	3,560	594	2,729	22,531
90	1,425	3,560	676	2,811	25,342
1991	1,425	3,720	760	3,055	28,397
92	1,425	3,220	852	2,647	31,044
93	1,425	2,820	931	2,326	33,371
94	1,425	2,500	1,001	2,076	35,447
95	1,425	2,240	1,063	1,878	37,325
96	1,425	2,020	1,120	1,715	39,040
97	1,425	1,720	1,171	1,466	40,506
98	1,425	1,500	1,215	1,290	41,796
99	1,425	1,300	1,254	1,129	42,925
2000	1,425	1,120	1,288	983	43,908
2001	1,425	1,000	1,317	892	44,800
02	1,425	880	1,344	799	45,599
03	1,425	760	1,368	703	46,302
04	1,425	660	1,389	624	46,926
05	1,425	580	1,408	563	47,489

Table 2-5

Goldsmith Spending Strategy
Save the Principal
$25/b Price of Oil
(millions of 1981 dollars)

Year	Spending	Oil Revenues	Investment Income	Surplus (Deficit)	Savings
1981	$3,900	$4,100	$ 104	$ 304	$ 3,754
82	1,784	4,325	113	2,654	6,408
83	1,784	4,400	192	2,808	9,216
84	1,784	4,450	276	2,942	12,158
85	1,784	4,450	365	3,031	15,189
86	1,784	4,450	456	3,122	18,311
87	1,784	4,450	549	3,215	21,526
88	1,784	4,450	646	3,312	24,838
89	1,784	4,450	745	3,411	28,249
90	1,784	4,450	847	3,513	31,762
1991	1,784	4,650	953	3,819	35,581
92	1,784	4,025	1,067	3,308	38,890
93	1,784	3,525	1,167	2,908	41,797
94	1,784	3,125	1,254	2,595	44,392
95	1,784	2,800	1,332	2,348	46,740
96	1,784	2,525	1,402	2,143	48,883
97	1,784	2,150	1,467	1,833	50,716
98	1,784	1,875	1,521	1,612	52,328
99	1,784	1,625	1,570	1,411	53,739
2000	1,784	1,400	1,612	1,228	54,967
01	1,784	1,250	1,649	1,115	56,082
02	1,784	1,100	1,682	998	57,081
03	1,784	950	1,712	878	57,959
04	1,784	825	1,739	780	58,739
05	1,784	725	1,772	703	59,442

The savings in year 1981 is the estimated sum of all state "bank accounts" including the Permanent Fund, the General Fund, and smaller special accounts.[10] For each succeeding year the savings are determined by the net surplus of oil revenues and investment income over spending. By the year 2005 the amount of "savings" is approximately equal to the "present value" of oil resources listed in Table 2-3. At this point enough savings have accumulated to sustain the spending level without any future oil revenues.

Hammond Spending Strategy: Pick an Arbitrary Limit

Since the start-up of the TAPS pipeline in 1977, the state has been awash with oil money. As the revenues have increased, so has the budget and concerns about the size of the budget. The minimum contribution to the Permanent Fund has increasingly been perceived as an inadequate measure of needed savings, or at least a negligible restraint on current spending. As huge surpluses piled up in the state treasury an avalanche of funding requests followed. The more money the state had, the greater the "needs" of the citizens, and the harder for the legislature to exercise restraint in the budgeting process.

Fiscal conservatives, including the governor, were shocked by the changes in the budgeting process. To many budget observers, David Stockman's assessment of the recent federal tax cut would seem apt: "The hogs were really feeding. The greed level, the level of opportunism, just got out of control."[11]

The legislature was ruled by a series of precariously patched together coalitions and required too much log-rolling and compromises to keep spending in check by itself. The governor regularly made threats to veto appropriations which were significantly above the administration's request level, but inevitably caved in to higher and higher spending. Faced with a chief executive who was unwilling to curb the explosion in the size of the budget, many legislators

became convinced that the state could only control spending through adoption of a constitutional limit on the size of the state budget.

Ironically, the strongest supporter of the constitutional limit idea was the governor himself. Indeed, although Hammond had little stomach for eyeballing the legislature over appropriation bills, he was completely in his element as the debate over the spending limit heated up. Hammond had a penchant for bold solutions to the issues of managing the state's wealth, particularly when he could bolster his case with his formidable rhetorical skills. Moreover, the problem could be tackled once and for all, rather than bit by bit, appropriation by appropriation. A limit on spending! Why not? Everyone knew something had to be done.

The problem confronting the governor and other supporters of a lid on state spending was the awakening of a growing constituency for spending programs. The traditional alliances on spending issues were undergoing a profound metamorphosis. In the early 1970s the big spenders were the liberals, who wanted to invest in education, social services, and promote economic prosperity during the period of recession which preceded the building of the TAPS pipeline. By 1981 social services spending had leveled off, and the fastest growing sectors of the budget were loan subsidies--primarily to local firms and homebuyers--and capital projects. The right wing of both the Republican

and the Democratic parties was promoting ever larger subsidies and capital outlays. This problem became acute when the house of representatives was reorganized during the dying days of the regular session. The new coalition of "checkbook" Democrats and Republicans piled on yet larger capital appropriations and was hostile to spending limit proposals.

The governor may have had the clout through the power of the line item budget veto to bludgeon the legislature into a lower spending level and perhaps into passage of a tight lid on spending. Instead, he characteristically chose to strike a deal. During a special session of the legislature, Hammond offered to accept almost unscathed the legislature's massive capital appropriations in return for action on a constitutional limit on state spending.

What emerged from the session was a compromise--a limit on certain types of expenditures, sort of. Specifically, the proposed amendment provides that the state budget is limited to $2.5 billion, of which one-third is reserved for loans and capital projects. The dollar amount is adjusted annually for inflation and by the amount of the growth in the population. There are several exemptions to the $2.5 billion limit, however. Debt service is not covered. Permanent Fund earnings which are distributed directly to citizens are exempt. Perhaps most important, capital appropriations may exceed the limit if placed before the voters for approval.

Critics of the spending limit proposal say that it is more symbolism than substance. According to Rep. Terry Gardiner and Ford Groh: "It contains loopholes large enough for a fleet of Brinks trucks to drive through, all carrying away the public's money."[12]

Whether or not the proposal will actually stop the growth of state spending remains to be seen. The "loopholes" are indeed rather large. Debt service in fy 1982 is about $124 million.[13] It has been argued that the limit could be totally circumvented by financing all expenditures over the limit through debt.[14] The program to distribute earnings from the permanent fund directly to citizens based on the length of residency is tied up in court, but regardless of the fate of the current litigation, the concept of some form of direct distribution remains a very real possibility in the future. One proposal for distribution would cost $500 million per year--none of which would "count" toward the limit.[15]

The "limit" on capital spending is not really a limit at all. In a sense, it is only a limit on the right of the governor and the legislature to determine spending levels. Now the voters have to be dealt in if the budget exceeds the $2.5 billion figure. This is <u>not</u> the same as limiting expenditures. Moreover, there is no clear guidance as to what expenditures are classified as "capital" expenditures, and which are "operating" expenditures. Where the line is fuzzy, there is room to fudge on both "limits."[16]

The debate over the loopholes is important, because it raises questions about effectiveness of the proposal to truly "limit" state spending. But what if the limit was actually enforceable? Does it make sense to pick $2.5 billion? Is this number too high or too low? What could we buy for $2.5 billion per year? If the limit is observed religiously and all surplus revenues are socked into the Permanent Fund, how large will the balance be? Why was $2.5 billion settled on rather than some other figure? These are reasonable questions--questions that citizens have a right to ask and a right to have answers to before the porposal is voted on next year.

Unfortunately, there is nothing in the record to suggest that any type of systematic analysis was undertaken before this particular spending level was chosen. It appears to have been an ad hoc decision, based more on political compromise than an attempt to achieve a particular policy goal or objective. The governor, it seems, thought that the $2.5 billion limit was the best that could be accomplished. Whether he was right or wrong, the question remains, what will it do?

Taken at face value, the proposal limits spending to $2.5 billion in 1981 dollars, plus an increase for the growth in population. The legislature uses 2.65% as the long-run growth rate for the population, a figure which is approximately the same as the historical growth rate over the past 20 years.[17] Thus, by 1985 the spending limit

would be $2.8 billion, in 1981 dollars. By 1990, the limit would be $3 2 billion. Put another way, over the next ten years spending will be limited to $28.5 billion. Over fifteen years the cumulative limit will be $46 billion, and over twenty years it is $6· billion.

The relationship between the spending limit and the projected oil revenues from the North Slope is shown in Tables 2-6 and 2-7. Table 2-6 gives the year-by-year totals for the spending limit and North Oil revenues. The spending limit actually surpluses the oil revenues by the year 1992 if the $20/b price is assumed, and by 1994 if the $25 price is assumed. The cumulative totals are shown in Table 2-7. Here the day of reckoning is a bit later--in 1997 in the $20/b assumption, and 2002 in the $25/b assumption.

Of course, the real question is whether or not the spending limit will force the state to save enough money in the next decade to provide a meaningful source of revenue in the future. To examine this question in detail a number of loose ends must be dealt with. First, it is recognized that state revenues include North Slope and Cook Inlet oil receipts, investment earnings, and non-petroleum revenues. Moreover, the spending limit contains many "loopholes" which suggest that allowable spending is understated by the "limit." To make the analysis simpler--Cook Inlet and non-petroleum revenues are assumed to equal

Table 2-6

Spending Limit and North Slope Oil Revenues Compared

(millions of 1981 dollars)

Year	Spending Limit*	North Slope Oil Revenue @ $20/b	North Slope Oil Revenue @ $25/b
1981	$2,500	$3,280	$4,100
82	2,571	3,460	4,325
83	2,645	3,520	4,400
84	2,720	3,560	4,450
85	2,797	3,560	4,450
86	2,877	3,560	4,450
87	2,959	3,560	4,450
88	3,043	3,560	4,450
89	3,130	3,560	4,450
90	3,219	3,560	4,450
1991	3,311	3,720	4,650
92	3,406	3,220	4,025
93	3,503	2,820	3,525
94	3,602	2,500	3,125
95	3,705	2,240	2,800
96	3,811	2,020	2,525
97	3,919	1,720	2,150
98	4,031	1,500	1,875
99	4,146	1,300	1,625
2000	4,264	1,120	1,400
01	4,386	1,000	1,250
02	4,511	880	1,100
03	4,639	760	950
04	4,771	660	825
05	4,907	580	725
TOTALS	$89,374	$61,220	$76,525

*Assumes 2.85% annual increase in population.

Table 2-7

Spendling Limit and North Slope Oil Revenues Compared
Cumulative Totals
(millions of 1981 dollars)

Year	Spending Limit	North Slope Oil Revenue @ $20/b	North Slope Oil Revenue @ $25/b
1981	$ 2,500	$ 3,280	$ 4,100
82	5,071	6,740	8,425
83	7,716	10,260	12,825
84	10,436	13,820	17,275
85	13,233	17,380	21,725
86	16,110	20.940	26,175
87	19,069	24,500	30,625
88	22,112	28,060	35,075
89	25,242	31,620	39,525
90	28,242	31,180	43,975
1991	31,772	38,900	48,625
92	35,178	42,120	52,650
93	38,681	44,940	56,175
94	42,283	47,440	59,300
95	45,988	49,680	62,100
96	49,799	51,700	64,625
97	53,719	53,420	66,775
98	57,750	54,920	68,650
99	61,896	56,220	70,275
2000	66,160	57,340	71,675
01	70,546	58,340	72,925
02	75,056	59,220	74,025
03	79,696	59,980	74,975
04	84,467	60,640	75,800
05	89,374	61,220	76,525

*Assumes 2.85% annual increase in population.

the "leakage" of the spending limit. In other words, the spending limit will be compared to the revenue from North Slope oil production,* and the investment earnings as North Slope revenues are "saved." Hammond, like Goldsmith, argues that the state should seek a high "financial" rate of return on its savings portfolio. As in the "Goldsmith" scenario examined earlier, a 3% real return is used.

Given these assumptions, it is possible to illustrate the impact of the spending limit on the amount of "savings" which are accumulated over time. First, the spending limit is compared to oil revenues and investment earnings, with no adjustment made to reflect the constraints the Permanent Fund places on the legislature in reducing the amount of accumulated savings. In other words, "savings" are simply the accumulated surpluses of revenues over spending. This is shown in Tables 2-8 and 2-9.

The size of the "savings" portfolio peaks out at $11,560 million in year 1992 for the $20/b price scenario and at $25,011 million in year 1994 for the $25/b scenario. Assuming that spending continues at the "limit" the balance is then rapidly depleted to cover deficits. The "savings" account actually runs into the red by the year 2000 in the $20/b price scenario, and by the year 2006 in the $25/b assumption.

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*Estimated to be 93% to 94% of all non-investment income.

Table 2-8

Hammond Spending Strategy
Pick an Arbitrary Limit
$20/b Price of Oil
(millions of 1981 dollars)

Year	Spending	Oil Revenues	Investment Income	Surplus (Deficit)	Savings
1981	$3,900	$3,280	$ 104	$(516)	$ 2,934
82	2,571	3,460	88	977	3,911
83	2,645	3,520	117	993	4,904
84	2,720	3,560	147	987	5,891
85	2,797	3,560	177	939	6,830
86	2,877	3,560	205	888	7,718
87	2,959	3,560	232	832	8,550
88	3,043	3,560	257	773	9,323
89	3,130	3,560	280	709	10,033
90	3,219	3,520	301	642	10,674
1991	3,311	3,720	320	729	11,403
92	3,406	3,220	342	157	11,560
93	3,503	2,820	347	(336)	11,224
94	3,602	2,500	337	(766)	10,458
95	3,705	2,240	314	(1,151)	9,307
96	3,811	2,020	279	(1,511)	7,796
97	3,919	1,720	234	(1,965)	5,830
98	4,031	1,500	175	(2,356)	3,474
99	4,146	1,300	104	(2,742)	732
2000	4,264	1,120	22	(3,122)	(2,390)

Table 2-9

Hammond Spending Strategy
Pick an Arbitrary Limit
$25/b Price of Oil

Year	Spending	Oil Revenues	Investment Income	Surplus (Deficit)	Savings
1981	$3,900	$4,100	$104	$ 304	$ 3,754
82	2,571	4,325	113	1,866	5,620
83	2,645	4,400	169	1,924	7,544
84	2,720	4,450	226	1,956	9,501
85	2,797	4,450	285	1,938	11,438
86	2,877	4,450	343	1,916	13,355
87	2,959	4,450	401	1,981	15,246
88	3,043	4,450	457	1,864	17,110
89	3,130	4,450	513	1,833	18,943
90	3,219	4,450	568	1,799	20,742
1991	3,311	4,650	622	1,961	22,703
92	3,406	4,025	681	1,301	24,003
93	3,503	3,525	720	742	24,746
94	3,602	3,125	742	265	25,011
95	3,705	2,800	750	(155)	24,856
96	3,811	2,525	746	(540)	24,316
97	3,919	2,150	729	(1,040)	23,276
98	4,031	1,875	698	(1,458)	21,819
99	4,146	1,625	655	(1,866)	19,952
2000	4,264	1,400	599	(2,265)	17,687
2001	4,386	1,250	531	(2,605)	15,082
2	4,511	1,100	452	(2,958)	12,124
3	4,639	950	364	(3,325)	8,798
4	4,771	825	264	(3,682)	5,116
5	4,907	725	153	(4,029)	1,087

The analysis can be modified further to reflect the constraints the Permanent Fund places on the legislature's ability to "dip into savings" to cover deficits. As discussed earlier, the minimum contribution to the Permanent Fund represents about 10% of Prudhoe Bay and Kuparuk and 20% of Lisborne revenues. To this the legislature can appropriate additional sums, which, once placed in the fund, receive the same protection against "spending the principal." Just how safe the Permanent Fund "principal" is depends on whether or not inflation is acknowledged when "income" is defined.

To provide an illustration of how policy choices would modify the size of the "savings" account, four separate scenarios are considered.

1. The Permanent Fund is assumed to have been repealed, and savings are afforded no protection at all.

2. The Permanent Fund exists, but only the minimum contributions are made. The principal is not protected against inflation.

3. All surplus revenues are immediately appropriated into the Permanent Fund, but the principal is not protected against inflation.

4. All surplus revenues are immediately appropriated into the Permanent Fund. The principal is protected against inflation.

The modified "savings account" balances in the year 2000 are thus shown in Table 2-10. The biggest modifications occur in the $20/b price assumption. Here the balance ranges from a low of negative $2,390 million to a high of $11,560 million. The annual income from the savings, assuming a 3%

Table 2-10

"Saving Account" Balance in Year 2000 under Different Permanent Fund Management Options*
State Spending Constrained by the Proposed Spending Limit
(millions of 1981 dollars)

	Permanent Fund Repealed	Minimum Contribution/ Principal Eroded by 10% Inflation	All Surpluses Appropriated/ Principal Eroded by 10% Inflation	All Surpluses Appropriated/ Principal Protected against Inflation
		$20/b Price Assumption		
Balance	$(2,390)	$ 3,275	$ 6,995	$11,560
Earnings @ 3%	-	98	210	347
		$25/b Price Assumption		
Balance	$17,687	$17,687	$18,441	$25,011
Earnings @ 3%	531	531	553	750

*See text for assumptions.

real return from investments, ranges from a low of zero for the negative balance, to $347 million for the scenario where all surpluses are appropriated to the Permanent Fund and the principal is protected against inflation.

To put the high figure of $347 million into perspective, it is useful to remember that it represents less than 14% of the 1981 spending limit.

The $25/b barrel scenario looks rosier. The balance ranges from $17,687 million to $25,011 million, depending on how the Permanent Fund constraints are treated. It should be noted, however, that this is simply the balance for a given year--and as time goes by the balance of the savings account will decline considerably unless the principal is protected against inflation.

The income from the $25/b price scenario ranges from $531 to $750 million. This is 21% to 30% of the 1981 spending limit.

It goes without saying that these projectsions are based on the state earning a 3% real return on investments. If the actual return is lower--say 1% to 2%, both the ending balance and the earnings will be less.

Thus it can be seen just how arbitrary the proposed spending limit is, in terms of the amount of savings that will be accumulated over the next 18 years. There is no apparent relationship between the $2.5 billion lid on spending and the state's long-run fiscal resources. Moreover, the

earlier discussion regarding the Permanent Fund and inflation is seen to be highly relevant to how the spending limit will perform.

One of the potential pitfalls of a measure such as the proposed spending limit is that it gives the appearance of solving a problem, while nearly all the substantive issues remain outstanding. To underscore just how nebulous a solution the spending limit is, consider what would happen if the Supreme Court approves the Permanent Fund dividend program, or the legislature approves a new $500 million per year direct distribution scheme? For that matter, what if the combined debt service and voter approved "capital" projects exceed the "limit" by $300 to $500 million per year? As the "leakages" from the limit grow, the surpluses shrink or vanish altogether.

Such are the dangers of picking arbitrary spending limits and simple solutions to fiscal management out of the air. The "Hammond" strategy, depending as it does on the proposed spending limit, is an arbitrary and still unpredictable way of "smoothing out" the current revenue stream. Under perhaps the most optimistic conditions the state will have, by the year 2000, an annual stream of earnings from investments equal to 30% of the 1981 spending limit. Under less favorable assumptions regarding the price of oil, or Permanent Fund management practices, the income from "savings" would be in the neighborhood of $100 to $200 million per year.

The "Fink" Strategy: Spend It Now!

Tom Fink is an Anchorage businessman who once served as the Speaker of the House. In 1978 he ran for governor, using the slogan: The One with Gumption. He lost in the Republican primary, running third in a field of three.* Encouraged by his showing, he decided to renew his quest and is now a candidate for the 1982 election. His political support has traditionally come from the heart of the business community--although in 1982 he is expected to run a somewhat populist campaign--with sharing the oil wealth serving as the centerpiece of his campaign.

Fink is nothing if not consistent. In 1970 he opposed the creation of a "Permanent Fund" for the $900 million windfall from the 1969 North Slope oil lease sale. He has since opposed the creation of the Alaska Permanent Fund and today opposes the approval of the proposed limit on state spending. He does not believe that the government should husband large surpluses. If the money is there, the state should spend it--now!

In Fink's view, the major problem with state government is simply that it cannot manage to spend money fast enough. He is particularly annoyed with the Department of Public Works for allegedly "holding up" bids on capital projects approved by the legislature. Under his direction, he

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*His opponents included the incumbent governor, Jay Hammond, and the former governor and Secretary to the Department of the Interior, Wally Hickel.

promises, the state will gear up to spend at least $2 billion in capital projects annually.

This is not to say that Fink favors just any method of spending the oil money. He is high on capital projects and generally opposed to "operating" budget items, such as funding for social services. Indeed, one of the reasons he gives for bolstering capital spending is to keep the money away for programs that will expand public payrolls or create yet more state grant programs. He is also opposed to the various plans to distribute money directly to citizens.

Fink's program is more than just bricks and concrete, however. He also wants to make low-interest loans available to Alaskans. A former banker, Fink has been a dogged proponent of usury laws. Forced by the constitution to save at least some money in the Permanent Fund, Fink will make the money available at cheap interest rates to businesses and individuals. He suggests that the state finance home mortgages at 8%.

More than any other major political figure, Fink is unabashedly fearless of the future. Undaunted by pessimistic long-term revenue forecasts, he simply says that Alaska is entering a century of development that will fill the state coffers with every increasing sums of oil revenue. Two new pipelines will cross the North Slope to handle the oil which will be discovered in the Beaufort Sea and other North Slope acreage in the next two decades, he asserts.

While Fink opposes the proposed spending limit, he does not think it will present a major obstacle to his plan to gear up capital spending. Like Gardiner and Groh, he believes the spending limit is riddled with loopholes, and he plans on exploiting them. If nothing else works, he says, he will just finance projects on short-term debt.

It is not difficult to envision the "Fink" spending strategy. Every dollar, except for the minimum contribution to the Permanent Fund, is spent as it is received. The balance in the Permanent Fund is not protected against inflation. Earnings from investments are less than the market return--as money is poured into subsidized loans to Alaskan individual and firms. For purposes of this analysis a real return of zero is assumed.

The "Fink" strategy for spending North Slope oil revenues is examined in Tables 2-11 and 2-12. As expected, expenditures conform closely to the revenue stream. Under the $20/b scenario, spending over the next decade is approximately $3.5 billion per year. For the $25/b case spending is pegged at $4.4 billion. After 1991 the state budgets begin a nose-dive. In just five years spending declines by more than 40%. Within ten years spending is but a third of the top level in 1991.

To the North Slope revenues are added Cook Inlet and non-petroleum revenues. Under the present tax laws these two sources contribute very little, estimated at $184 million

Table 2-11

Fink Spending Strategy*

Spend It Now

$20/b Price of Oil

(millions of 1981 dollars)

Year	Spending	Oil Revenue	Surplus (Deficit)	Savings
1981	$3,900	$3,280	$(620)	$2,934
82	2,627	3,460	833	3,767
83	3,510	3,520	10	3,777
84	3,547	3,560	13	3,790
85	3,549	3,560	11	3,801
86	3,549	3,560	11	3,812
87	3,551	3,560	9	3,821
88	3,551	3,560	9	3,830
89	3,553	3,560	8	3,838
90	3,554	3,560	7	3,845
1991	3,624	3,720	96	3,941
92	3,182	3,220	38	3,979
93	2,826	2,820	(6)	3,973
94	2,537	2,500	(37)	3,936
95	2,300	2,240	(60)	3,876
96	2,096	2,020	(76)	3,800
97	1,827	1,720	(107)	3,693
98	1,627	1,500	(126)	3,567
99	1,440	1,300	(140)	3,427
2000	1,272	1,120	(152)	3,275

*Minimum contribution to Permanent Fund. Investment return is 0%. Inflation at 10%.

Table 2-12

Fink Spending Strategy*

Spend It Now

$25/b Price of Oil

(millions of 1981 dollars)

Year	Spending	Oil Revenue	Surplus (Deficit)	Savings
1981	$3,900	$4,100	$ 200	$3,754
82	4,005	4,325	320	4,074
83	4,330	4,400	70	4,144
84	4,382	4,450	68	4,212
85	4,388	4,450	62	4,274
86	4,393	4,450	57	4,331
87	4,399	4,450	51	4,382
88	4,403	4,450	47	4,429
89	4,408	4,450	42	4,471
90	4,411	4,450	39	4,510
1991	4,502	4,650	148	4,658
92	3,953	4,025	72	4,730
93	3,510	3,525	15	4,745
94	3,152	3,125	(27)	4,718
95	2,856	2,800	(56)	4,662
96	2,604	2,525	(79)	4,583
97	2,268	2,150	(118)	4,465
98	2,018	1,875	(143)	4,322
99	1,788	1,625	(163)	4,159
2000	1,578	1,400	(178)	3,981

*Minimum contribution to Permanent Fund. Investment return is 0%. Inflation at 10%.

by the year 2000. Fink is not convinced that Prudhoe Bay revenues will in fact decline in the 1990s. But even if they do, he is confident that new oil discoveries will take up the slack. If he is wrong, the state will be faced with a major period of adjustment. Spending will have to be cut drastically, or taxes raised. In Fink's view, we should cross that bridge when we come to it.

Comparison of the Three Spending Strategies

The three alternative scenarios for spending Alaska's oil wealth present stark contrasts to the Alaska public (Tables 2-13 and 2-14). The selection of one approach over another stands to be the biggest public policy choice since statehood. What's important to remember is that there is a choice. Alaska is now spending roughly $10,000 per capita. This means that the state is spending the equivalent of $40,000 annually for a family of four. There is nothing to suggest such fabulous outlays are needed to meet any identified development or distributional objectives the state presently has. The level of spending has become a moving target. The numbers keep getting bigger, until now there is a certain numbness.

The speed at which we deplete our "house of antiquities" should be deliberate. To use a football phrase, the citizens of the state of Alaska should be in control of their own destiny. What criteria should be used to justify one spending strategy over another?

Table 2-13

Comparison of Different Spending Strategies
$20/b Price of Oil
(millions of 1981 dollars)

	"Goldsmith"		"Hammond"		"Fink"	
	Spending	Savings	Spending	Savings	Spending	Savings
1981	$3,900	$ 2,934	$3,900	$ 2,934	$3,900	$2,934
82	1,425	5,057	2,571	3,911	2,728	3,767
83	1,425	7,304	2,645	4,904	3,510	3,777
84	1,425	9,658	2,720	5,891	3,547	3,790
85	1,425	12,083	2,797	6,830	3,549	3,801
86	1,425	14,580	2,877	7,718	3,549	3,812
87	1,425	17,152	2,959	8,550	3,551	3,821
88	1,425	19,802	3,043	9,323	3,551	3,830
89	1,425	22,531	3,130	10,033	3,553	3,838
90	1,425	25,342	3,219	10,674	3,554	3,835
1991	1,425	28,397	3,311	11,403	3,624	3,941
92	1,425	31,044	3,406	11,560	3,182	3,979
93	1,425	33,371	3,503	11,224	2,826	3,973
94	1,425	35,447	3,602	10,458	2,537	3,936
95	1,425	37,325	3,705	9,307	2,300	3,876
96	1,425	39,040	3,811	7,796	2,096	3,800
97	1,425	40,506	3,919	5,830	1,827	3,693
98	1,425	41,796	4,031	3,474	1,627	3,567
99	1,425	42,925	4,146	732	1,440	3,427
2000	1,425	43,908	4,264	(2,390)	1,272	3,275

Table 2-14

Comparison of Different Spending Strategies
$25/b Price of Oil
(millions of 1981 dollars)

	"Goldsmith"		"Hammond"		"Fink"	
	Spending	Savings	Spending	Savings	Spending	Savings
1981	$3,900	$ 3,754	$3,900	$ 3,754	$3,900	$3,754
82	1,784	6,408	2,571	5,620	4,005	4,074
83	1,784	9,216	2,645	7,544	4,330	4,144
84	1,784	12,158	2,720	9,501	4,382	4,212
85	1,784	15,189	2,797	11,438	4,388	4,274
86	1,784	18,311	2,877	13,355	4,393	4,331
87	1,784	21,526	2,959	15,246	4,399	4,382
88	1,784	24,838	3,043	17,110	4,403	4,429
89	1,784	28,249	3,130	18,943	4,408	4,471
90	1,784	31,762	3,219	20,742	4,411	4,510
1991	1,784	35,581	3,311	22,703	4,502	4,658
92	1,784	38,890	3,406	24,003	3,953	4,730
93	1,784	41,797	3,503	24,746	3,510	4,745
94	1,784	44,392	3,602	25,011	3,152	4,718
95	1,784	46,740	3,705	24,856	2,856	4,662
96	1,784	48,883	3,811	24,316	2,604	4,583
97	1,784	50,716	3,919	23,276	2,268	4,465
98	1,784	52,328	4,031	21,819	2,018	4,322
99	1,784	53,739	4,146	19,952	1,788	4,159
2000	1,784	54,967	4,264	17,687	1,578	3,981

The economics profession would suggest at least two approaches be considered. First, there is the issue of intertemporal equity. What right, some ask, does the present generation of Alaskans have to make decisions for future generations? Can we fairly choose between present and future consumption of wealth when we are the immediate beneficiaries of a decision to consume rapidly?

The flip side of this argument is that future generations have historically been materially better off than their predecessors, due to technological progress. Why should the present generation deny themselves when the next generation is always expected to have a higher standard of living? In his remarks to the Permanent Fund Trustees, Goldsmith rejects this argument by saying that there is no evidence that the state will realize significant long-term benefits from the investments made today. In his words:

> What this suggests to me is that history will repeat itself, and Alaska will be relatively much poorer in the future when the petroleum boom has passed.

The second approach that economists would recommend is to look at the "marginal benefit" from the "marginal dollar of expenditure" and compare this to the benefits of waiting to spend the money. How do policy makers compare present and future benefits? This, of course, is a formidable task. There are two key ingredients. First, the state needs to develop methods of quantifying the net benefits of various spending programs. The word for this is cost benefit analysis.

Everyone knows what it means. It isn't easy to do for some state programs--one thinks of emergency health care services or support for the humanities--but there are few if any substitutes.*

The next step is to put a price on the passage of time. Clearly, citizens today are not oblivious to benefits which occur in the future. But just as clearly, most people would rather have the benefits now rather than later. The key question is, how much greater would the future benefit have to be before the individual became indifferent between the present and the future benefit? Would you rather have $1 today or $2 in two years? Would you rather have one poor family housed today, or two families housed in two years?

The price on the passage of time for an entire community is the "social rate of discount." It is not quoted in the financial pages of the evening paper. Nor is the social rate of discount a non-controversial concept. A plethora of techniques for deriving it abound.[18] But as an explicit or implicit value, few argue that it does not or should not exist.

There are two primary reasons that today's citizens might prefer to delay expenditures. First, as the state gets better at managing huge budgets, it should become more efficient. As we learn to spend wisely, there will be "more bang for the buck." Like many of the regional Native Corporations,

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*Indeed, even for the most difficult programs to quantify, it is possible to establish some threshold over which it is difficult to justify an additional dollar of expenditure.

we are learning the wisdom of being more selective about which projects to invest in and which to ignore. One hopes we can learn as fast as the Natives have, but in any event, it is hard to remain ignorant.

Secondly, if the state "saves" money today, it can invest those dollars and earn more. Thus, a decision to delay spending today will mean that there will be more to spend tomorrow. That is why, for example, the "Hammond" strategy results in more spending over the next twenty years than the "Fink" strategy. Fink eschews positive investment returns, but even if he wanted to earn a high financial return, he does not save enough to make any money.

For some policy makers the issue of intertemporal equity is the most important one. Certainly this is the case for Scott Goldsmith. Judging from public statements (as opposed to public actions), one would also guess that Hammond is primarily concerned with looking after future generations. If the state does indeed want to "smooth out" the spending of the oil wealth, the "Goldsmith" strategy is clearly the best.

If, on the other hand, the issue is decided on the basis of how best to accommodate the present generation, it is much more difficult to recommend a particular level of spending. Indeed, everything depends upon how the money is spent. In essence, policy makers should attempt to determine the point at which the "rate of return" from an additional dollar of

expenditure dips below the "social rate of discount."

Of course, the usefulness of this approach depends upon how well the state can carry out cost-benefit studies. While in principle the concept is relatively straighforward, in practice it can present very difficult theoretical and empirical problems, and it also requires a trained corps of analysts who may or may not be available for employment.

Ultimately the decision on how much to spend and how much to save is a political one. The question before policy makers is not whether analysts or consultants should replace popular will in making that choice--but rather how best to "inform" the debate. Is it really better to throw one's hands up when the issues seem complicated or just toss darts against a wall to pick an expenditure level? Or do policy makers have an obligation to provide at least some evaluation of the long-term consequences of different spending strategies?

Notes

[1]1980 Annual Report, Alaska Permanent Fund Corporation.

[2]For Prudhoe Bay and Kuparuk, 25% of the 12.5% royalty equals 3.125% of the gross revenue from production. The state's total share of production amounts to about 30%. For the Beaufort proportion of the Lisburne formation, the average royalty is estimated at 20%. Fifty percent of the 20% royalty is 10% of the gross value of production. The state share of production is estimated at 50%.

[3]On this point the author is indebted to Herman Leonard, and the case he developed titled "Inflation and the Alaska Permanent Fund."

[4]Oliver S. Goldsmith, "Alaska's Revenue Forecasts and Expenditure Options," Alaska Review of Social and Economic Conditions (July 1978).

[5]Goldsmith, "Petroleum Tax Policy to Achieve Smooth Economic Growth in Alaska," The Journal of Energy and Development (Fall 1979).

[6]Goldsmith, "The Three Basic Policy Questions Concerning the Permanent Fund," Remarks Made before the Board of Trustees of the Alaska Permanent Fund (October 22, 1978).

[7]Ibid.

[8]Ibid.

[9]Ibid.

[10]Includes such items as the "rainy day" account & "illiquid" assets.

[11]William Greider, "The Education of David Stockman," The Atlantic (December 1981).

[12]Representative Terry Gardiner and Ford Groh, "Alaska's Rainbow of Opportunity."

[13]Milt Barker, "General Funds Available for FY 83--Current and Previous Statutes," Memorandum to Senator Vic Fischer (September 9, 1981), Table II.

[14]Tom Fink made this point to the author recently.

[15]Gardiner and Groh favor such a program in "Alaska's Rainbow."

[16]One example of a "fuzzy" item is general revenue sharing to municipalities. Will this be classified as an operating budget item, or will it find its way into the capital budget? In August the administration was undecided.

[17]From 1960 to 1980 the compound rate of population growth was 2.9%. From 1970 to 1980 the growth rate was 2.85%.

[18]One argument is that the rate should equal the pretax return earned by capital in the private sector. See Jack Hirshleifer, James C. DeHaven, and Jerome W. Milliam, Water Supply: Economics, Technology, and Policy (University of Chicago Press, 1960).

Another group proposes that the net after tax rate on savings be used. See Richard A. Musgrave and Peggy B. Musgrave, Public Finance in Theory and Practice, 3rd Edition, pp. 186-188.

A further modification of this is to make an adjustment to "reflect the fact that foregone private investment has a higher social return than social consumption." See Partha Dasgupta, Amartya Sen and Stephen Marglin, Guidelines for Project Evaluation (United Nations Industrial Development Organizations, 1972); Stephen Marglin, "The Social Rate of Discount and the Optimal Rate of Investment," Quarterly Journal of Economics (February 1963), pp. 95-111; and Martin Feldstein, "The Social Preference Discount Rate in Cost-Benefit Analysis," Economic Journal (June 1964), cited in Glenn P. Jenkins, "Economic and Social Analysis of Public Investment Projects" (August 1979).

Arnold Harberger argues that the discount rate should be a weighted average of the pre-tax return of private capital and the after tax return on savings. See Arnold C. Harberger, "On Measuring the Social Opportunity Cost of Public Funds," Project Evaluation (University of Chicago Press, 1972), pp. 94-122.

Others suggest that intergenerational equity is served by a low discount rate, thereby placing a higher value on benefits for future generations. See Talbot Page, Conservation and Economic Efficiency, An Approach to Materials Policy (The Johns Hopkins University Press, 1977), part 3.

Most of these proposals address the rate to be used when evaluating public expenditure programs, when the resources for the projects come from a closed economy. For a local or state government which both invests and borrows funds in national and international markets, it is recommended that the discount rate be tied to either borrowing costs, or the expected return on government investments in securities. See Musgrave and Musgrave, Public Finance in Theory and Practice, p. 193.

PART III

ANALYSIS AND BUDGET REFORM

For the Senate State Affairs Committee

Senator Victor Fischer, Chair

James Packard Love

Harvard University

February 1, 1981

CONTENTS

ANALYSIS AND BUDGET REFORM

Introduction

The State of Alaska's budget decisions are made in a unique environment. Citizens do not pay taxes. Oil production, mostly from just one oil field--Prudhoe Bay--provides the government with a fabulous source of money. Revenues are not set to match expenditures, but rather are taken as given (the major variable in longer range revenue forecasting is the investment return from savings of current revenues).[1]

Money is spent on programs that would never be seriously considered in the pre-Prudhoe Bay era. Capital plums, like new sports and cultural facilities, road and street improvements, docks, boat harbors, and other infrastructure projects are showered on communities like pennies from heaven. Virtually every non-profit civic group is hustling the legislature for grants. The business community is demanding, and receiving, low-interest loan programs, subsidizing hotel builders, miners, farmers, fishermen, fish processors, timber companies, and just about everyone else who can find a place at the trough. Homebuyers are receiving interest subsidies which total four times the state expenditures for Aid to Families with Dependent Children.

Concern over the explosion of state spending is widespread. Appropriations are seen as wasteful and extravagant. Looking at the capital budget, former Commissioner of Revenue Eric Wolforth said, "I'm terribly afraid this state is building infrastructure or going to build infrastructure, that number one, really isn't what people had in mind, and secondly, will be terribly costly to operate and really inappropriate to the population level . . . [when these things] will be on stream."[2]

People complain about spending money on "frivolous" projects, while "basic needs" are ignored.[3] There is a major debate over how much wealth should be saved for future generations.[4] Serious questions about distributional equity are emerging. Some observors say the oil money is fundamentally changing the social fabric of the state. According to Groh and Gardiner:

> Government is creating sharp divisions in our society between those lucky enough to get state loans, state jobs, or state contracts, and those who are not so fortunate. The lobbyist is replacing the prospector, the trapper and the fisherman as the symbol of the Last Frontier.[5]

At least three approaches to "budget reform" have gained a following. First, there is broad-based (although not unanimous) support for some type of a constitutional limit on state spending. Secondly, there has been periodic interest in various schemes to "privatize" Alaska's oil wealth (taking it away from the government and putting it directly in the hands of citizens). Third, there are muted, but growing, calls for better planning, wider use of cost benefit evaluation, and other administrative reforms.

The 1981 proposal for a constitutional limit on state spending puts a $2.5 billion cap on state spending, subject to: the requirement that one third of the limit be devoted to capital projects; adjustments for inflation and population changes; and several "exemptions," or as critics say, "loopholes." The "limit" was adopted by the legislature after a long and acrimonious debate and represents a compromise between those who want to spend the state's wealth now on large capital projects and loan subsidies, and those who want to save a large share of today's oil revenues for future generations of Alaskans. The "cap" is large, more than $6,000 per capita, and the exemptions are so extensive, that one wonders how important the "limit" will be in practice.[6]

The "privatization" schemes are numerous. In 1980 the legislature adopted Governor Hammond's plan to distribute to citizens half of the annual earnings from the Alaska Permanent Fund. The money was allocated on the basis of residence (one "share" for every year of residency since statehood), a provision which predictably led to a legal challenge. Before and after the Permanent Fund Dividend program have been proposals to establish the Alaska General Stock Ownership Plan (AGSOC), the Portfolio of Alaska Citizen Enterprise (PACE), royalty trusts, and distribution of the proceeds from the sale of royalty oil. So far none of the direct distribution plans have gotten off the ground, due in no small part to the difficulty of defining the beneficiaries, coping with tax problems, and avoiding a reduction in social welfare benefits for poor people. Direct distribution of some sort or another remains an intriguing and important option, however, and will continue to receive serious attention.[7]

This paper will not discuss in detail either of the first two "reforms," but rather will explore the third--namely, how can the state of Alaska improve its priority setting process through administrative reforms. That is, what contributions can be made through better planning, cost benefit evaluation, and other methods of analysis, and under what circumstances are these contributions likely to flourish?

The Role of Analysis in Policy Making

Planning, cost benefit analysis, post hoc evaluation, forecasting, and any number of other analytical methods are part of an effort to use the tools of "science" to improve the policy-making process. The degree that such efforts are successful is determined by a multitude of factors, including the competence of the practitioners, the resource devoted to the analysis, the availability and reliability of data imputs, the validity, relevance and limitations of theoretical models, the credibility

given to outputs by decision makers, and the political environment in which the analysis is undertaken and presented.

Given the nature of the ingredients which determine the usefulness of analysis, it is not surprising that many government decisions are made with little or none of the formal types of "systematic" analysis which the social sciences have developed over the years. Indeed, as Lindbloom and others have argued, there should be no a priori assumption that analytical efforts will necessarily improve a given decision-making process. Coin flipping, drawing straws, bargaining, voting, or other non-analytical methods of making choices may be preferred.[8] Lindbloom and Cohen use, as an example, the dilemma faced by a group of people, who, having decided to dine together, have trouble choosing a restaurant.

> They can shortcut or bypass an analysis of the available restaurants and of their own prererences simply; by the act of delegation to one among them. . . . That simple method of interaction will achieve a decision. . . . The delegated person can make a choice, if he wishes, impulsively, according to his own preferences, as arbitrarily as he pleases. He may, of course, turn to analysis, just as he may turn to a toss of a coin. In any case, the group solved its problem with the act of delegation.[9]

Government officials use many such alternatives to make policy choices. Detailed "systematic" analysis of a particular problem can be costly and time consuming, and the benefits may not justify the effort. It is also widely recognized that there are many policy problems which cannot be resolved by analysis alone. The debate over the proper benefit level for Aid to Families with Dependent Children, the optional services to be provided under the state medicaid program, and the special health and housing benefits provided to veterans are decisions which involve value judgments about income dsitribution. Although economists and other social scientists have recommended techniques for deriving "social welfare functions," it is fair to say that these proposals remain little

more than academic exercises--without a demonstrated record of usefulness in the real world.[10]

This is not to say that analysis has nothing to offer when income distribution or other such issues are considered. Indeed, some of the most impressive examples of the contribution of "policy analysis" can be found in the ambitious experiments in Seattle, New Jersey, and elsewhere on the proposed negative income tax.[11] Recent research by the Rand Corporation on the impact of copayments and other changes in the Medicaid program will undoubtedly be weighed in debates about the future of that program. It's simply that analysis is just one of many imputs to a policy decision.

For example, with regard to the AFDC issue, policy makers will be interested in the analyst's prediction of the impact of a change in the benefit scheme on migration, work incentives, or even on family structures. But these considerations will be weighted against a number of other factors, such as the political power of the recipients, competing demands on the public purse, and cultural or even religious values about charity.[12]

The decision of when and how much to invest in analysis is an important one, and one that is not answered by simply avoiding problems that seem too "political," or fraught with value judgments. Indeed, it is often precisely such instances where analytical tools can sharpen the debate. Moreover, it is not necessary for the analysis to be represented by "neutral" technicians. Partisan use of analysis, as a weapon in a debate, is neither an unimportant or improper use.[13] The question is not whether or not the tools of analysis can be manipulated. Obviously they can. But should controversial issues be decided without making attempts

to challenge the assertions and assumptions advanced by any party in the debate?

Ultimately, the decision to invest in analysis is one that is decided by many factors, including those alluded to above, such as the cost and the likelihood of obtaining a "useful" output. There are also a number of reasons to suppress analysis. The immediate beneficiaries of an inefficient development project might oppose a cost benefit study out of fear that the conclusion will undermine political support for future funding. Legislators who want few budget constraints over the short term may find it inconvenient to have the state institutionalize long-range fiscal planning. Certain real estate interests may not be happy with studies which examine the distributional equity of state housing programs.

Analysis and Budget Reform in Alaska

Given that analysis is neither a substitute for or even necessarily an essential element of the political decision-making process, what can be said about its contribution to improving the budget process in Alaska? That is, what can budget reformers realistically expect from analysis?

On a general level, this question has been partly answered already. Under favorable circumstances, research can sort out fact from fiction, and narrow the debate by focusing less on "what is" and more on "what should be." The techniques of analysis can also be used to help policy makers identify program ends and distinguish the ends from the means. By paying more attention to the importance of outputs, analysis provides a framework for comparing alternative strategies (imputs) to meet the same goals. Planning can help policy makers keep track of the longer run consequences of decisions made today. Cost benefit evaluation can help to identify inefficient programs and perhaps just as important, provide

a powerful rationale to end them. Analysis can also help to illuminate the distributional consequences of state spending.

To apply these principles to specific budget issues, two important policy questions are examined below.

1. How much should we spend, and how much should we save?

Alaska's revenue stream is "lumpy." For the next seven to ten years revenues will be very large, declining rapidly thereafter. Policy makers can spend the revenue as rapidly as it comes in or save some for the future. The question is, just how much should be saved?

I have argued elsewhere that the state of Alaska needs to develop better long-term revenue and expenditure planning.[14] The state currently makes long-term revenue projections. It has also analyzed trends in spending, although not in any systematic fashion. The primary shortcoming of the revenue forecasting models is the failure to incorporate the importance of spending on future revenues. That is, to make explicit the impact that a particular spending strategy has on future revenues. There are two important aspects of this problem.

First, it is argued that certain state-funded projects will create economic development, provide a broader tax base, and when needed, a further source of tax revenue for the government. While there is no doubt that there is some merit to this argument, in the qualitative sense, the interesting question is a quantitative one. Planners should make some effort to place parameters around the relationship. It is not necessarily important that planners make accurate estimates. Some range of sensitivity analysis alone is likely to make an enormous contribution to the debate. Policy makers will then have some idea of the rate of return from state investments which would be necessary to replace a given amount of oil

revenues. This information in turn is useful in project evaluation.

The second issue is the size of the state's "savings" portfolio and the rate of return earned on its investments. Today current oil revenues represent about 95% or all state revenues. But over time, an important source of new revenue could be the earnings from "savings." A particular spending strategy today will determine the amount of "savings" available to earning interest on in the future. Therefore, it is impossible to forecast future state revenues without making assumptions about spending trends. The spending trends, however, are a policy variable. The state can modify its spending levels as it suits. Long-term revenue forecasts should include scenarios which are based on different state spending strategies, so that policy makers have a more concrete idea of the trade-off between current and future spending.

Remarkable as it seems, the State of Alaska has made no systematic attempt to incorporate either of these two features into its long-term revenue forecasting models. There can be no doubt that to do so would add a powerful dimension to the debate over current spending levels.

But while the improved revenue forecasting efforts are an important planning tool, there is still no obvious answer to the original question--how much to save and how much to spend? Economists might suggest that analysis identify the return on the marginal dollar of state expenditure and compare it to a "social discount rate," which represents the society's preference for current over future benefits.

Logical and rational as this prescription is, it is unlikely to be a useful decision rule, for a number of reasons. First, such an approach assumes that analysts can accurately measure the rate of return on state expenditures. As we shall see later, this is easier said than done. Second, there is little consensus as to how to derive the "social

discount rate."[15] Moreover, a single "social" discount rate obscures the heterogeneous nature of individual discount rates. Wealthy people, for example, are likely to have lower discount rates than poor people. There is even an argument that tody'as citizens do not have an ethical right to make consumption choices that will affect future generations of citizens, and a counter argument that the welfare of future generations is less important since they can expect to be better off due to technological progress. Finally, even if the measurement of benefits and discount rates could be estimated within reasonable ranges, there is the complication of current citizens who want to migrate. As stated by Matthew Berman:

> The discussions of a "social rate of discount" leaves out one basic point that lies at the root of [the] long-range planning problem. A substantial fraction of the population see the state's revenues as a mechanism [indirect, of course] for the creation of private wealth. The problem with locking it away in an untouchable fund [savings] is that they may want to leave the state at some time in the future and will not be able to take their share with them. Or, alternatively, if the wealth is not privatized, citizens will not have the ability to bequeath the benefits to heirs not living in Alaska. Such a desire for mobility may have a strong influence over the politics of the Permanent Fund, even if it never becomes explicit. The challenge with long-range planning is to come to grips with this problem rather than continuing to pretend that it doesn't exist.[16]

Berman's comment reveals a great deal about the nature of the controversy. The dispute is largely distributional, and how one feels about the size of the budget is in part determined by how much one expects to gain from a rapid rate of state spending. Moreover, expected tenure in Alaska is only one consideration. In a sense, the "marginal" dollar of state expenditure is found in the capital budget (see Appendix, The Budget Process), and in particular, in public works and loan subsidies. Cutting the budget means cutting back on these programs and, therefore, taking more away from some citizens than

others. Some amount of polarization is expected, regardless of the amount or quality of analysis.

The ultimate decision on spending will thus be influenced, but not decided, on the basis of analysis. The most useful role of analysis is providing long-term revenue forecasts which illustrate the impact of different spending strategies. Attempts to compare the return on the marginal state expenditure to the "social discount rate" are more problematic but still helpful, if for no other reason than to make a point of the efficiency considerations. The distributional issue obviously matters to decision makers. Analysts can contribute to the debate by focusing on the distributional issue in more detail. Partisans who want to save wealth for future generations would be wise to use all three elements of the analysis as ammunition in the debate. Partisans who want to spend the state's oil revenues as rapidly as possible have an interest in suppressing such analysis.

2. What to spend the money on?

Sorting out spending priorities is undeniably a political process. Just as undeniable, planning, cost benefit evaluation, and other methods of analysis have a contribution to make. To better understand the role of analysis, we examine the changes in the process brought about by analysis.

One of the most avoidable spending problems is "back of the postcard" budgeting. The governor sends down a budget. A legislator decides that the budget isn't big enough, or at least, the appropriations for her district aren't large enough. The governor loses the battle over spending constraints, and dozens or hundreds of new projects get dumped into the budget at the last minute. Many are "back of the postcard" projects. That is, they are projects which constituents lobbied the

legislator for, chosen on an ad hoc basis, often with little or no back-up on need, feasibility, or effectiveness.

This system has evolved for a number of reasons. When the dam breaks and the money is suddenly available, legislators may have few alternatives. The legislator may also prefer a system which gives her great discretionary (patronage) power.

The obvious shortcomings of "back of the postcard" budgeting can be overcome through planning. The administration should have available a much greater list for projects than those for which funding is requested. If the budget is to grow, projects of a lower priority can be included. Dave Rose argues that the state should carry out a needs assessment, and through "good" budgerary review, put together a laundry list of projects that deserve funding at some point over the next five years.

> As a politician, this is gonna be good for me . . . we're gonna build the project, we're gonna build the bridge from South Naknak. Now the political question is when do we build it. Is the out year 87, or do we move it up to 82? But at least it's a focused type of project where everyone agrees that yes, it's necessary. The only disagreement is on timing.[17]

Economists don't like the concept of needs assessment, because they find "need" a slippery item which defies objective analysis. Without some appreciation of the scarcity of resources, it is impossible to make distinctions between "needs" and "wants."[18] But if one thinks about needs assessment as a process, it may very well help to identify "opportunity costs." A systematic attempt to indentify the state's "needs" over the next five or ten years would put many of today's spending requests into perspective by drawing attention to the multitude of spending requests the state will face over time. It will be harder to disregard the argument that funding an additional project today will mean one less project can be funded tomorrow.

In addition to driving home the notion of "opportunity cost," a well-designed needs assessment can open up the priority setting proces to wider participation by local government officials and citizens. Legislators from single member districts will find that constituents take a greater role in the priority setting process, and the worst patronage abuses may be reined in.

Being more systematic about how funding requests are assembled can help to get a handle on the demand for public funds, but decision makers must still make choices between the many competing demands. One of the most powerful tools for reforming the priority setting process is cost benefit analysis. However, like other analytical tools, it has limitations. It uses resources itself, and as Budget Director Ron Lehr observes, "it's necessary to make a cost benefit analysis of cost benefit analysis."[19] The resource constraint is more than money. Trained personnel are also in short supply.

Moreover, cost benefit analysis is only useful if you can measur the costs and benefits. The task is easy enough when the costs can be measured in dollars, and the benefits are housing units built, or kilowatts of electricity. But how about when the costs of a road includ the penetration of a pristine environment, or the destruction of a subsistence way of life? Or how does one measure the benefits of emergency health services, education, or police protection?

In fact, economists have designed a number of ingenious ways to quantify such items. It's hard to ignore, however, the biases and implicit values which are built into such efforts. First, if it's hard to quantify, the odds of being left out of the analysis is that much greater. Second, a great deal of emphasis is put on an individual' ability to pay, or earning capacity. For example, the value of a human

life is typically measured by the future earnings foregone. Using this standard, saving a man's life yields more benefits than saving a woman's life. Whites are more valuable than blacks, and young people more valuable than the elderly. A retired person might be worth nothing, or even have a negative value. While earnings foregone provide a convenient yardstick, it's hardly a value-free standard.[20]

The benefits of education are also frequently measured by future earnings. Education is assumed to influence labor productivity. Wages are assumed to equal the marginal product of labor. If more education leads to higher income, the difference in earnings is the economic benefit from education. But a theory that seemed relatively straightforward twenty years ago has seen a number of serious challenges, and researchers today can't agree what difference, if any, education makes in productivity or wages. Do people get ahead because they are more productive, or is social class or luck more important? Does education provide training, or is it simply a screening device for employers? Do wages reflect the marginal product of labor, or is the job market segmented into a competitive and a "protected" sector, where job rationing determines earnings?[21]

Moreover, what does this theory tell us about the benefits of educating the handicapped? Should we restructure our curriculum to reduce emphasis on those subjects, like philosophy, music, or ethics, which are unlikely to lead to high-paying jobs? And what about the external benefits to society from a better educated citizenry; should they be ignored because they can't be measured?[22]

One way to overcome some of the measurement problems is to present the benefits as the program outputs, rather than attempt to convert everything to dollars. Lives saved are the benefit measure,

to be compared against the costs of a program. For example, a study of a health program might show that it costs $30,000 to save a life through an extension of emergency health services, but only $1,500 for a program of screening and preventative health. People might still prefer to spend the $30,000 on the emergency health program rather than the $1,500 on the preventative health program, but the cost benefit study will have deepened our understanding about the problem of providing efficient health care services.[23]

Other examples of output measures might include achievement scores for education benefits, families raised from poverty, or changes in some form of "social indicators" index.[24] William Gorham argues that efforts to compress all benefits from social programs into monetary terms causes "a great deal of violence . . . to their inherent heterogeneity, and useful information is suppressed."[25] The use of output measures provides "trading terms" for devoting resources to different purposes. "The decision maker will be better off because he will be comparing not imputs but rather alternative outcomes of resources added to education, to health, or to other social programs."[26]

Another thorny problem for cost benefit analysis is income distribution. Typically, projects provide both public and private benefits, and in some cases, entirely private benefits. Cost benefit analysis, in its most common application, measures net gains for the society as a whole. In Aaron Wildavsky's words, "this means that the costs to whomever may incur them should be less than the benefits to whomever may receive them."[27] But if income distribution matters to policy makers, and who would argue that it doesn't, this simple wealth-creating criterion is not sufficient. That is, analysts should pay

attention to whether society as a whole gains or loses, and also how the gains and losses are distributed.

By introducing another objective, the task of the analyst is made much more difficult. Should a project which yields positive net benefits be disqualified because of the distributional consequences? Or conversely, should a project which has an overall negative net benefit yield be allowed to qualify on the basis of distributional considerations? Should benefits or costs to different groups be weighted to reflect distributional values? Should income distributional considerations be treated as constraints, and, if so, what "shadow price" are we willing to pay for a given change in income distribution?

While it is relatively simple to argue in the abstract that distribuitonal considerations are important, the task of providing practical criteria or standards for use in cost benefit analysis is very hard. Most of the models for doing so are still experimental and controversial.[29] Is the absence of satisfactory analytical tools for plugging distributional objectives into the cost benefit equation reason enough to ignore them? Maybe the answer would be yes, if this were the only option available. But there are ample opportunities for distribution to be "counted" in the budget making process--so long as the distributional consequences of programs are known. That is, it may be less important for the analyst to estimate or predict how the distributional weights would be applied by policy makers than to spell out just who the winners and losers are.

The distributional issue is by its very nature political. Analysts can attempt to derive social welfare functions which say who should win, but this effort is unlikely to be as valuable as better estimates of who does win. Not only does the analysis give policy makers

better information upon which to make choices given their own values, but it also serves as an important weapon in the budget debate by challenging the legitimacy of claimants.

Summary

In general, planning and cost benefit techniques have a role to play in allocating state resources between competing projects, but that role is constrained both by the practical dictates of political forces and the real limitations of the analytical models. The political constraints are important, and planners and analysts who lack a sensitivity to both the pitfalls and the opportunities presented in the political process will be ineffective in exploiting the best contributions that analysis can make. This much is well known already.

Less understood are the limitations of the analytical techniques and the degree to which "what is" and "what should be" are melted together in the "scientific" process. Value judgments are made in the explicit ways discussed above, such as the attempt to measure the loss of a human life through earnings foregone, and also in more subtle ways. The most important normative role for the policy maker or the analyst is to frame the question itself. As stated by Quade, "the difficulties lie in deciding what ought to be done--not simply how to do it--and honors go to people who . . . find out what the problem is."[29] Does the state want to create jobs? Does it want to create jobs for residents? Does it want to create high-paying jobs with good career prospects? Are jobs a means of raising incomes, an essential training opportunity, an ordeal necessary to qualify for sharing in oil wealth, or an end in themselves? Depending upon the chosen objective, a given state employment program will look good or bad. The answers are determined as much by

the questions as the data. Moreover, the process of defining objectives is a dynamic one which is modified by the results of the analysis. In Wildavsky's words, "most people do not know what they want, when what they want is compared to what they can get."[30]

Because it is so hard to eliminate the role of values it is essential for policy makers to become both better consumers and better managers of analytical imputs to the decision-making process. Those who make the effort to gain a deeper understanding of planning, cost benefit, and other techniques will be rewarded by access to powerful tools. Despite many caveats presented above, rigorous analytical evaluation of budget priorities is a useful but woefully underused weapon for budget reformers. Cost benefit evaluation is well suited for those infrastructure projects like dams and roads which are designed to provide purely economic benefits. Quantification of the costs for achieving less quantifiable benefits is still a major leap forward. For all its rough edges, cost benefit analysis is relatively helpful in identifying the worst "dogs" among projects, and when the right questions are asked, identifying how state spending priorities change the distribution of income. "Needs assessment," long-term revenue forecasting, and otherplanning techniques are useful both in helping policy makers understand the inevitable trade-offs between intertemporal spending decisions, and opening the priority setting process up for borader public participation.

Where analysis can provide limited assistance, policy makers are better off relying upon subjective judgements, cultural norms, rules of thumb, comparisons to other government entities, guesses, luck, arbitrary choices, or common sense. The trick is to know when an investment in analysis is worthwhile, and when it's just a waste of time. As a final note, it is important to remember there are at least two dangers. First,

that investments in analysis will be chosen indiscriminately, with little sophistication as to how questions are framed, the implicit value judgements hidden in the assumptions, and how useful outputs will ultimately be. Second, that the role of analysis will be ignored and underutilized. Given the recent explosion of state spending, and the ad hoc method of choosing spending priorities, Alaska should be most concerned with the second point.

Notes

[1]See James Love, A Policy Makers Guide to Revenue Forecasting: A Look Inside the Black Box (Report to Senate State Affairs Committee, December 1, 1981).

[2]Personal communication.

[3]Ford Groh and Terry Gardiner, "Alaska's Rainbow of Opportunity" (1981).

[4]See James Love, Long Range Expenditure Planning: What To Do When Revenues Are Lumpy (Report to Senate State Affairs Committee, December 1, 1981).

[5]Groh and Gardiner, "Alaska's Rainbow."

[6]An evaluation of the proposed constitutional limit is provided by James Love, Long Range Expenditure Planning.

[7]A discussion of various privatization schemes is found in: Joe McKinnon,"Distribution of Oil Wealth," forthcoming; Policy Analysis Paper No. 81-24, "Option 1," Discussion Paper, Permanent Fund Alternatives, October 12, 1981, State of Alaska, Office of the Governor, Division of Policy Development and Planning; Richard B. Coffman, "Capital Shortgage, Public vs. Private Allocation of Capital, and Alternative Ownership Systems for Alaska's Oil Wealth" (Paper submitted to the Alaska Permanent Fund Trustees, August 20, 1981); Donald F. Gordon, "The Problem of Wealth" (Remarks before the Alaska Permanent Fund Board of Trustees and the Joint Legislative Budget and Audit Committee, May 8, 1981).

[8]Lindblom has made a number of contributions in this area. Among them are: Charles E. Lindblom, "The Science of 'Muddling Through,'" Public Administration Review, Vol. XIX, No. 2 (Spring 1959), pp. 79-88; "Decision-Making in Taxation and Expenditures," in National Bureau of Economic Research, Public Finances: Needs, Sources, and Utilization (Princeton University Press for NBER, 1961); David Braybrooke and Charles Lindblom, A Strategy for Decision: Policy Evaluation as a Social Process (Macmillan, 1963); Charles Lindblom, The Intelligence of Democracy (Macmillan, 1965); Charles E. Lindblom, Politics and Markets (Basic Books, 1977); Charles E. Lindblom and David K. Cohen, Usable Knowledge: Social Science and Social Problem Solving (Yale University Press, 1979); Charles E. Lindblom, The Policy-Making Process (Prentice-Hall, 1980), 2nd Edition.

[9]Lindblom and Cohen, Usable Knowledge.

[10]See for example, Burton A. Weisbrod, "Income Redistribution Effects and Cost-Benefit Analysis," in Chase (ed.), Problems in Public Expenditure Analysis (Washington, D.C.: The Brookings Institution, 1968); or Partha Dasgupta, Amartya Sen, and Stephen Marglin, Guidelines for Project Evaluation, chapters 7, 12, and 18.

[11]U.S. Department of Health, Education, and Welfare, Summary Report: New Jersey Graduated Work Incentive Experiment (Washington, D.C.: Department of Health, Education, and Welfare, 1973); Laurence E. Lynn, Jr., "A Decade of Policy Developments in the Income-Maintenance System, included in Haveman (ed.), A Decade of Federal Antipoverty Programs (Academic Press, 1977).

[12]This point is made succinctly by Lester C. Thurow, discussing Laurence Lynn's review of the development of income-maintenance programs. Included in A Decade of Federal Antipoverty Programs, chapter 2.

[13]Making this point is Carol H. Weiss, "Improving the Linkage between Social Research and Public Policy," included in Laurence E. Lynn, Jr. (ed.), Knowledge and Polic, The Uncertain Connection (Washington, D.C.: National Academy of Sciences, 1978), pp. 23-81. See also, Lindblom, The Policy Making Process, chapter 4.

[14]Love, Long-Range Expenditure Planning.

[15]I provide a review of the major approaches in Long-Range Expenditure Planning, footnote 18.

[16]Matthew D. Berman, "Letter to Senator Victor Fischer," commenting on my earlier paper, Long-Range Expenditure Planning.

[17]Personal communication.

[18]Wayne A. Kimmel, Needs Assessment: A Critical Perspective (Washington, D.C.: Office of Program Systems, Office of the Assistant Secretary for Planning and Evaluation, Department of Health, Education, and Welfare, December 1977).

[19]Personal communication.

[20]Examples of this approach can be found in Burton A. Weisbrod, Economics of Public Health: Measuring the Economic Impact of Diseases (Philadelphia: University of Pennsylvania Press, 1960); Selma J. Mushkin, "Health as an Investment," Journal of Political Economy, Vol. LXX (Supplement), October 1962; and E. J. Mishan, Cost-Benefit Analysis (Praeger, 1976).

[21]A few of the important contributions in this field include: Gary Becker, Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education (New York, National Bureau of Economic Research, 1975), 2nd edition; Christopher Jencks, et al., Inequality (New York: Basic Books, 1972); Michael Spence, Market Signaling (Cambridge: Harvard University Press, 1974); Christopher Jencks, Who Gets Ahead? (New York: Basic Books, 1979); Lester Thurow, Generating Inequality (New York: Basic Books, 1975); and Samuel Bowles and Herbert Ginits, Schooling in Capitalist America: Educational Reform and the Contradictions of Economic Life (New York: Basic Books, 1976). A readable survey of developments in the field is provided by Henry J. Aaron, Politics and the Professors: The Great Society in Perspective (Washington, D.C.: The Brookings Institution, 1978), chapter 3.

[22]Alice Rivlin acknowledges the shortcomings of earnings as a measure of benefits, but notes "Once we leave the fairly firm ground of income we move into a kind of never-never land where we must set values on self-reliance, freedom from fear, the joys of outdoor recreation, the pleasures of clean air, and so forth. The result may not be worth the effort." Systematic Thinking for Social Action (Washington, D.C.: The Brookings Institution, 1971).

[23]An interesting discussion of early cost benefit studies on health is provided by Elizabeth B. Drew, "HEW Grapples with PPBS," included in The Public Interest (Summer, 1967).

[24]The concept of a "social indicators" alternative to GNP measures of welfare is an intringuing one, and deserves more study. For a discussion of early efforts at the U.S. Department of H.E.W. to create such an index, see Daniel Bell, "The Idea of a Social Report," and Mancur Olson, Jr., "The Purpose and Plan of a Social Report," both included in The Public Interest (Spring, 1969).

[25]William Gorham, "PPBS: Notes of a Practitioner," The Public Interest (Summer, 1967).

[26]Ibid.

[27]Aaron Wildavsky, "The Political Economy of Efficiency," The Public Interest (Summer, 1967).

[28]See, for example, Dasgupta, Sen and Marglin, Guidelines for Project Evaluation; Lyn Squire and Herman G. van der Tak, Economic Analysis of Projects (Baltimore: The Johns Hopkins University Press, 1975); and Arnold. C. Harberger, "On the Use of Distributional Weights in Social Cost-Benefit Analysis," Journal of Political Economy (April, 1968).

[29]Quoted by Wildavsky, "The Political Economy of Efficiency."

[30]Wildavsky, ibid.

Appendix

The Budgeting Process - 1981

The following is a brief description of the budget process as it has evolved in the past several years. The discussion is broken into three parts, each distinguished by the nature and character of decision making. They include the operating budget, the cost of new legislation, and the capital budget.

The Operating Budget

The basic system for organizing and presenting the operating budget was developed in 1971 by the MAC Corporation, headed by Graeme Taylor--a well-known national figure in the promotion of systems analysis and Planning, Programming, and Budgeting Systems (PPBS). In recent years the administration has introduced modifications to the system, including an Alaskan version of zero-based budgeting.

It is a program budget, presented in nine basic categories. Each budget category covers a broad area of government services and may include budget requests for several state agencies, including those in different departments of state government. Categories are broken down into 45 "programs," which are in turn disaggregated into 275 "subprograms," also known as "budget review units," or "BRUs"." Finally, BRUs are broken down further to 600 "components." The idea is to bring together various agencies and programs which deal with a common problem, so that the priority setting process deals

with the parts in a comprehensive, rather than piecemeal way. The process is supposed to put emphasis on the program objectives, or "outputs" and asks the questions--"is this the best strategy to meet our objectives?" Analytical techniques, such as cost benefit, or cost effectiveness analysis are, in theory, introduced. Supporters of the program budgeting concept argue that it provides a rational framework to review state spending, because it considers simultaneously all government activities which affect a particular state policy objective.

In recent years there have been changes in the timing and organization of the budgeting process. In 1979 the governor introduced the "Policy Budget," as a preliminary priority setting step before the "Detail Budget" was prepared. In 1981 Department heads were asked to provide an initial "Major Items" memorandum prior to the submission of either the "Policy" or the "Detail" budget.

The "major items" memos are due by July 1 and are designed to provide the governor with "feedback" on big ticket items "at an early stage in the process." In his instructions to the cabinet, the governor said:[1]

> If you intend to request either significant new programs, or major program expansions, please send a memo to me summarizing what your request is, and why you believe it is important. After reviewing these memos, I will meet with each Cabinet member to discuss the proposal and make a decision whether the item(s) should be included as departmental requests in the . . . Policy Budget. . . . [This] does not guarantee inclusion in my . . . budget, but instead will indicate that I would like to review the proposal in more complete form in the . . . Policy Budget.

The Policy Budget is the next step. Agencies must submit paperwork by August 10 to the Division of Budget and Management. Broad spending priorities are shaken down in this stage. Agencies are expected to detail the program outputs, in measurable terms, and relate these to a series of "Policy Themes." In 1983 these "Policy Themes" included such broad topics as:[2]

- To enhance and protect the quality of life of Alaskans and to enable Alaskans to achieve their full potential.
- To enhance the safety and security of Alaska's population.
- To encourage economic development which offers long-term net benefits to Alaskans.

The policy budget is evaluated by the governor's budget advisors, and priorities are set among programs so that the total budget does not exceed the amount authorized by the Governor. Decisions are finalized by September 18.

This is followed by the "Detailed Budget"--a document which fleshes out the program and dollar amounts in the Policy Budget. Whereas the Policy Budget only breaks down budget requests to the BRU level, the Detail Budget goes the one step further to the "component" level and provides more specific information about agency activities and budget outlays. The Detail Budget is again reviewed by the governor's budget advisors, and final adjustments are made in spending priorities.

In January the governor's budget is finalized and formally submitted to the legislature. By this time a massive amount

of information has been assembled. The complete 1983 operating and capital budget included some 30,000 pages of numbers, forms, exhibits, and narrative, and was bound in 63 binders.[3] At least one administration official believes that it contains "too bloody much information." Most legislators only review summaries of the budget.

The legislature goes over the governor's budget methodically, relying to a large degree on a system of subcommittees for the nine different budget categories. In general, however, only small changes are made in the governor's version, with the majority of disputes involving those programs where a particular legislator has an interest, or where some political advantage is perceived by temporarily cutting one of the governor's pet programs, thereby increasing negotiating power with the governor over budget vetoes.

Critics of the program budget approach allege that it provides the administration with too many opportunities to manipulate the budget process and "hide" appropriations. In 1981 the legislature passed, but the governor vetoed, a bill which would require the state to return to line item agency budgeting, which was last used during the Miller administration.[4] Most argument over the program versus agency approach to budgeting stems from some legislators' desire to gain greater control over the budgets of specific agencies (as opposed to programs). It has not had much to do with the merits of the analytical work which is the basis

for the program budget approach. Indeed, the legislature has given scant attention to the quality of the analysis of budget objectives and alternatives. In the eyes of administration budget officials, certain legislators want to "jerk people around," and see the line item budget as a better way to find "the short hairs." Despite the governor's veto, the issue is still very much alive. On July 31, 1981 the Chairman of the House and Senate Finance Committees jointly signed a letter asking the Director of the Legislative Finance Division to obtain whatever information they could to rearrange the governor's program budget into a budget which is "arranged by agency for review by the standing finance committees during the 1982 legislative session."[5]

The amount of the operating budget has ballooned in recent years. In fy 1980 the legislature appropriated $952.5 million in operating funds. The fy 1982 governor's budget request was $1,776.5 million--an increase of $824 million in two years. The 1981 proposal for a constitutional limit on state spending would limit the operating budget to two-thirds of $2.5 billion, with future increases limited to inflation and population increases. For 1981 the limit, had it been in effect, would have amounted to $1.67 billion. Although the limit would have required about $100 million in spending cuts, it still allows a staggering amount of spending, equal to about $4,128 per capita.

New Legislation

From year to year the legislature creates new programs with significant fiscal impact. In the past these would include "entitlements" such as the longevity bonus, Medicaid, or AFDC, plus major new programs, such as the system of grants for energy. Future programs might include the proposed state health care subsidies for moderate-income families. Generally such programs receive considerable attention by legislators and the public. In most cases legislation receives at least one committee referral in addition to the Finance Committee, and several public hearings are held. Major programs are often discussed in party caucuses before floor votes and reported extensively in the news media. The administration, if not the initiator of the program, is no less a key player with the power of the veto, and usually well represented in the process. In 1981 the fiscal note for new legislation was $43 million--equal to about 2.5 percent of the operating budget.

The Capital Budget

The capital budget can include almost any item, including those which are not capital expenditures by any strict meaning of the word. Grants to a local 4-H club, a trip to Europe for a handful of village children for cultural enrichment, a statewide tour of the symphony or repertory theater or a promotional effort to host a world's fair in Alaska all might end up in the capital budget. To the more

esoteric budget items discussed above are added hundreds of park acquisitions, street and road improvements, new schools, swimming pools, and gymnasiums, weather stations, books for libraries, and almost anything which can catch the attention of a friendly legislator.

The capital budget has always been a catch-all for legislative goodies--although in recent years the size of the capital budget has grown at an astronomical rate--and the required "back up" or rationalization for projects has rapidly deteriorated.

In the pre-bonanza budget days, the governor would submit a modest budget including your garden variety capital projections, most of which were road or other infrastructure projects. The governor would generally pick items off a six-year capital improvement plan, with some attention to the geographic allocation of projects. Individual lawmakers would then make some changes. The more influential legislators, including the members of the Finance Committees, would usually get more than others, although it was rare to be overlooked entirely. The capital budget also played a political role, as it was the primary tool for enforcing party discipline and buying votes. Despite its acknowledged role in providing the grease to keep the machine running smoothly, however, most legislators were expected to make a case for their specific projects.

In 1979 the system was modified in an important way, when Representative Russ Meekins, at the urging of Legislative

Finance Director Jay Hogan, initiated a quota for members of the House Majority. In that year, the first following the Iran crisis price increases, each member was given about $750,000 to add to the capital budget. Members submitted lists, frequently as one page memos only listing the names of projects and the dollar amount. The rationalization for making the political nature of the capital budget more explcit was that it would be "fairer" than the past practice--as each member of the caucus, and hence their constituents, were treated equally. Minority members either had to work with their Senate counterparts or "sell votes" to get items in.

In 1980 the new system was used again, only by now the limit had been raised to about $2.5 million per member. Again, little back-up was required from members.

As the legislature increased the dollar amounts in the capital budget, it became transformed from a modest but essential method of maintaining party discipline to a major expression of state policy. By 1982 the capital budget totaled $2.27 billion--a half billion more than the total operating budget and equal to about $5,400 per capita.

The governor portrayed himself as a fiscal conservative but did little to discourage the growth of the capital budget, choosing instead to use his line item veto power as leverage to achieve his major legislative priorities. The larger the size of the capital budget, the more individual