

A SPENDING STRATEGY FOR FISCAL STABILITY:
RESETTING THE SPENDING LIMIT AND PLANNING THE
USE OF THE PERMANENT FUND

by

Scott Goldsmith
Steve Colt

Institute of Social and Economic Research
University of Alaska, Anchorage

ISER Working Paper 85.4

June 20, 1985

A. INTRODUCTION

In the absence of a long-term state fiscal plan, declining petroleum revenues will result in unprecedented dislocation and loss to the economy of Alaska and disruption to the continuity and quality of public goods and services available to Alaskans. This paper presents a framework for comprehensive fiscal planning for Alaska, based upon the existing institutions in place for guiding such a plan--the spending limit and the Permanent Fund.

Based upon current state assets and projected revenues, the state could sustain a spending limit of \$1.4 billion (1984 \$) for 40 years before exhausting the Permanent Fund and all petroleum revenues. Reimposition of the income tax and elimination of the Permanent Fund dividend would increase the sustainable spending limit to \$1.9 billion (Table 1). A shorter "planning horizon" would also increase the sustainable limit.

TABLE 1. MAXIMUM SUSTAINABLE SPENDING LEVEL
FORTY-YEAR PLANNING HORIZON

(billion 1984 \$)^a

		Collect Personal Income Tax	
		NO	YES
Pay Permanent Fund Dividend	YES	\$1.410	\$1.625
	NO	\$1.675	\$1.890

^aAssuming inflation of 10 percent between 1984 and 1986 the elements of the matrix in 1986 dollars are as follows:

\$1.55	\$1.79
\$1.84	\$2.08

In contrast, continued annual appropriations at the level of the 1986 fiscal year budget of \$2.25 billion,¹ adjusted for inflation, can be sustained for only 15 years, and then only by exhausting all of the Permanent Fund earnings and principal. In 2002, appropriations would fall by half and continue at that level from that time onward.

This paper presents a consistent plan--involving both a revised spending limit and the Permanent Fund--for meeting any long-range state expenditure target. The analysis shows what the annual spending limit can be, what revenues must be saved (invested), or what previous savings withdrawn (dissaved) in order to meet the predetermined spending level for a specified number of years. The analysis is based upon a simple model of Alaska revenues, expenditures, and assets.²

B. ASSUMPTIONS OF ANALYSIS

Annual Appropriation: Spending Limit. The annual appropriation is determined by a spending limit, defined as the maximum spending level in dollars of constant purchasing power sustainable for the number of years chosen as the planning horizon.³ As with the current spending limit, debt service is excluded. No attempt is made to differentiate expenditures on capital or operations.

¹Not including debt service or power project appropriations which will not actually be expended this year.

²SUSTAIN1.1--a user-friendly Lotus 1-2-3 spreadsheet model which will run on any microcomputer of 256K or greater and which supports 1-2-3. The model as well as a user's guide ("User's Guide to SUSTAIN1.1," by Steve Colt, ISER Working Paper 85.5) is available from the Institute for a nominal charge.

³Thus, if the limit is set at \$1.5 billion in 1984 dollars and the inflation rate is a constant 5 percent, the limit in 1989 would be $\$1.5 \times 1.055 = \1.9 billion.

Savings. Unless specifically placed into the Permanent Fund, all unappropriated revenues go into the General Fund to be invested for future use.

Dissaving. When current revenues fall below the spending limit money is withdrawn from state funds in the following sequence:

- (1) general fund
- (2) The undistributed income account of the Permanent Fund
- (3) The contributed equity of the Permanent Fund including the inflation proofing account⁴

General Fund. Assets in the General Fund, which are ultimately available for state expenditures at the beginning of FY 1987, will consist of the Rainy Day Account, about \$400 million⁵, and unspent power development appropriations of about \$400 million.⁶ The remaining balances in the General Fund at the beginning of FY 1987 are assumed not to be available for future appropriations.

Permanent Fund. At the start of FY 1987, the balance in the Permanent Fund will consist of approximately \$5.15 billion of contributed equity (dedicated funds and appropriations) and \$.874 billion in inflation proofing and the undistributed income account. Dedicated revenues from state petroleum rents and royalties are assumed to continue in future years at the same rates as specified by current law,⁷ and earnings of the Fund not distributed as dividends accrue in the inflation proofing account

⁴This would require a change in current law.

⁵All figures in 1984 dollars.

⁶Reappropriation of these funds would require legislation.

⁷Even after withdrawals from the Permanent Fund begin.

and undistributed income account. Unless assumed otherwise, dividends are paid according to the current formula based upon earnings.

Other State Financial Assets. The state controls other financial assets such as the equity in Alaska Housing Finance Corporation (AHFC), Alaska Industrial Development Authority (AIDA), and the state enterprise funds. We assume the balances in these funds will continue to support these "off-budget" programs and not be available for General Fund appropriations in future years.

Return on State Investments. The real rate of return on all fund balances is 3 percent.

Inflation Rate. The inflation rate is 5 percent per year.

Petroleum Revenues. The March 1985 Alaska Department of Revenue 50 percent case serves as the base for the revenue projections. After 2001, revenues are assumed to decline gradually until 2010 and subsequently to remain constant at \$400 million (1984 dollars). This reflects an assumption of continued development of petroleum resources beyond the depletion of the Prudhoe Bay field at a rate which generates a continuous flow of revenues to the state, albeit considerably below the current rate. A portion of rents and royalties goes into the Permanent Fund until 2011.

Recurring Revenues (Nonpetroleum). This category consists of all General Fund revenues currently collected by the state, including earnings on the General Fund balance. The values through 2010 for all except General Fund earnings are taken from a simulation of the MAP econometric model.⁸ Subsequent values are based upon the annual growth rate of .75 percent (in real dollars) projected in

⁸ Case A5.11.

that analysis for the period 2005 to 2010. General Fund earnings vary with the assumptions of the particular case analyzed.

New Revenue Sources. Five new revenue sources are considered in this analysis (see Table 2). We assume the occurrence of two, as follows:

1. TAPS Tariff Settlement. The state will receive higher revenues if the TAPS tariff case settlement currently under negotiation is successfully completed. Although part of the additional revenues would be royalties subject to deposit in the Permanent Fund, for simplicity we assume all additional revenues go into the General Fund. The assumption underlying these figures is that the state will collect \$2.2 billion between 1987 and 2011 in added revenues under this settlement.⁹
2. Mineral Development. Development of mineral deposits such as the Red Dog mine will lead to increased state revenues. To reflect this, we assume a growth in mineral activity beginning in 1990 which adds \$25 million annually in each succeeding five years up to a maximum of \$100 million.¹⁰

We assume the possibility of two "revenue augmentation" measures as follows:

3. Personal Income Tax. If reimposed, we assume the personal income tax would annually produce a level of revenues equal to recurring revenues net of General Fund earnings.
4. Permanent Fund Dividend. If eliminated, this money accrues in the Permanent Fund until needed to finance General Fund spending.

⁹From "A Review of the TAPS-TARIFF Agreement between the State of Alaska and ARCO" by Connie Barlow of ARTA, Inc., 3/15/85.

¹⁰This is approximately equal to one new Red Dog Mine every five years for twenty years.

TABLE 2. REVENUE PROJECTIONS

(1984 million \$)

	Existing Sources		New Sources ^a		
	Petroleum Revenues	Recurring Revenues ^b	TAPS Tariff Settlement	Revision of	
				Petroleum Corporate Income Tax ^c	Mineral Development
1986	\$2,440	\$226	-	-	-
1987	2,316	226	\$450	\$317	-
1988	2,003	220	200	221	-
1989	1,845	214	185	158	-
1990	1,720	213	170	94	\$25
1991	1,569	213	155	47	25
1992	1,502	211	140	26	25
1993	1,425	209	125	7	25
1994	1,298	211	110	(12)	25
1995	1,170	216	95	(32)	50
1996	1,059	217	80	0	50
1997	967	219	65	0	50
1998	901	217	50	0	50
1999	825	220	35	0	50
2000	768	221	20	0	75
2001	698	224	20	0	75
2002	677	224	20	0	75
2003	642	223	20	0	75
2004	608	222	20	0	75
2005	576	223	20	0	100
2006	545	224	20	0	100
2007	516	226	20	0	100
2008	487	227	20	0	100
2009	460	229	20	0	100
2010	430	231	20	0	100
2011	400	233	20	0	100
2012	400	235	0	0	100
2013	400	236	0	0	100
.
.
2035	400	279	0	0	100

^aNot including the personal income tax and the Permanent Fund dividend.^bNet of General Fund earnings.^cConverted to \$1984 using 6 percent inflation rate assumption.

A fifth potential new revenue source is not included:

5. Petroleum Corporate Income Tax Revision. We assume the state does not return to the separate accounting method of calculating the base for the petroleum corporate income tax. If it did, this would increase revenues in the early years as Prudhoe Bay is taxed more heavily. This assumption is based upon preliminary Department of Revenue estimates.¹¹

C. RESULTS OF ANALYSIS

Continuation of Current Policies. In FY 1986, General Fund appropriations were about \$2.25 billion.¹² Table 3 shows the futility of trying to maintain that spending level in the absence of revenue augmentation measures. With savings in the near term when revenues exceed \$2.25 billion, withdrawals from the state's savings need not commence until 1989. Subsequently, 14 years of dissavings exhausts the General and Permanent Funds. By 2003, the level of General Fund appropriations falls to about \$1 billion and the exhaustion of the Permanent Fund has simultaneously eliminated the Permanent Fund dividend.¹³

If revenue augmentation measures (repeal of the Permanent Fund dividend and reimposition of the personal income tax) are imposed when the balances in the General Fund and the Undistributed Income Account are exhausted (1995), the current level of spending can be sustained for three additional years through 2004 (Table 4).

¹¹Memorandum from Vincent Wright to Mary Nordale, Commissioner of Revenue, "Analysis of HB 353," May 2, 1985, Table 1.

¹²Net of debt service and appropriations for power projects which will not be expended during the fiscal year.

¹³Dedicated petroleum revenues continue to flow into the Permanent Fund after 2002, but they are immediately withdrawn for General Fund appropriations.

TABLE 3. PATTERN OF SPENDING AND DISSAVING: \$2.25 BILLION SPENDING
LIMIT WITHOUT REVENUE AUGMENTATION

(million 1984 \$)

Fiscal Year	Realized General Fund Appropriations	Savings (Dissavings) ^a	Source of Dissavings		
			General Fund	Undistributed Income Account	Permanent Fund Equity Contribution ^b
1986	\$2,250	\$298	-	-	-
1987	2,250	617	-	-	-
1988	2,250	95	-	-	-
1989	2,250	(72)	\$(72)	-	-
1990	2,250	(184)	(184)	-	-
1991	2,250	(348)	(348)	-	-
1992	2,250	(438)	(438)	-	-
1993	2,250	(541)	(483)	\$(58)	-
1994	2,250	(688)	0	(688)	-
1995	2,250	(795)		(71)	\$(724)
1996	2,250	(914)			(914)
1997	2,250	(1014)			(1014)
1998	2,250	(1093)			(1093)
1999	2,250	(1176)			(1176)
2000	2,250	(1220)			(1220)
2001	2,250	(1283)			(1283)
2002	1,358	(412)			(412)
2003	1,020	0			0
2004	982	0			0
2005	970	0			0
2006	937	0			0
2007	905	0			0
2008	874	0			0

^aNot including dedicated contributions to the Permanent Fund.

^bIncluding the inflation-proofing account.

TABLE 4. PATTERN OF SPENDING AND DISSAVING: \$2.25 BILLION SPENDING
LIMIT WITH REVENUE AUGMENTATION IN 1995

(million 1984 \$)

Fiscal Year	Realized General Fund Appropriations	Savings (Dissavings) ^a	Source of Dissavings		
			General Fund	Undistributed Income Account	Permanent Fund Equity Contribution ^b
1986	\$2,250	\$298	-	-	-
1987	2,250	617	-	-	-
1988	2,250	95	-	-	-
1989	2,250	(72)	\$(72)	-	-
1990	2,250	(184)	(184)	-	-
1991	2,250	(348)	(348)	-	-
1992	2,250	(438)	(438)	-	-
1993	2,250	(541)	(483)	\$(58)	-
1994	2,250	(688)	0	(688)	-
1995	2,250	(590)		(71)	\$(519)
1996	2,250	(707)			(707)
1997	2,250	(807)			(807)
1998	2,250	(887)			(887)
1999	2,250	(967)			(967)
2000	2,250	(1010)			(1010)
2001	2,250	(1070)			(1070)
2002	2,250	(1091)			(1091)
2003	2,250	(1127)			(1127)
2004	<u>2,250</u>	(1159)			(1159)
2005	2,121	<u>(1036)</u>			<u>(1036)</u>
2006	1,149	0			0
2007	1,120	0			0
2008	1,090	0			0

^aNot including dedicated contributions to the Permanent Fund.

^bIncluding the inflation-proofing account.

Sustainable Spending Levels. With a forty-year time horizon, the maximum sustainable spending limit the state can maintain without revenue augmentation is \$1.41 billion.¹⁴ Table 5 and Figure 1 show the pattern of saving and dissaving associated with that case. For nine years, the state accumulates savings in the General Fund, and then in 1998, withdrawals begin. In 2015, the General Fund is exhausted, and withdrawals from the Permanent Fund begin.¹⁵ These withdrawals continue until 2027, at which time all the accumulated savings of the state from petroleum have been exhausted. Annual appropriations must contract to \$765 million, the level of recurring revenues.

The limits associated with three other cases involving a 40-year time horizon are shown in Table 6. Revenue augmentation would substantially increase the spending limit. Eliminating the Permanent Fund dividend would have about the same effect as reimposing the income tax. Changing both policies would increase the limit to about \$1.9 billion.

D. SENSITIVITY OF RESULTS

Time Horizon. Choice of the time horizon has the largest effect on the sustainable level of spending. Table 7 shows this.

¹⁴The limit increases each year only to adjust for inflation to maintain purchasing power equity.

¹⁵Continued payment of the dividend, together with declining dedicated contributions, have eliminated the undistributed income account before it can be used to supplement General Fund revenues.

TABLE 5. PATTERN OF SPENDING AND DISSAVING: A 40-YEAR TIME HORIZON
WITH NO REVENUE AUGMENTATION

(million 1984 \$)

Fiscal Year	Realized General Fund Appropriations	Savings (Dissavings) ^a	Source of Dissavings		
			General Fund	Undistributed Income Account	Permanent Fund Equity Contribution ^b
1986	\$2,250	\$298	-	-	-
1987	1,410	1,457	-	-	-
1988	1,410	960	-	-	-
1989	1,410	819	-	-	-
1990	1,410	733	-	-	-
1991	1,410	598	-	-	-
1992	1,410	535	-	-	-
1993	1,410	462	-	-	-
1994	1,410	344	-	-	-
1995	1,410	246	-	-	-
1996	1,410	135	-	-	-
1997	1,410	39	-	-	-
1998	1,410	(39)	(39)	-	-
1999	1,410	(123)	(123)	-	-
2000	1,410	(170)	(170)	-	-
2001	1,410	(239)	(239)	-	-
2002	1,410	(267)	(267)	-	-
2003	1,410	(309)	(309)	-	-
2004	1,410	(351)	(351)	-	-
2005	1,410	(368)	(368)	-	-
2006	1,410	(407)	(407)	-	-
2007	1,410	(446)	(446)	-	-
2008	1,410	(485)	(485)	-	-
2009	1,410	(524)	(524)	-	-
2010	1,410	(562)	(562)	-	-
2011	1,410	(609)	(609)	-	-
2012	1,410	(645)	(645)	-	-
2013	1,410	(662)	(662)	-	-
2014	1,410	(681)	(681)	-	-
2015	1,410	(699)	(258)	0 ^c	(441)
2016	1,410	(705)	0	0	(705)
2017	1,410	(704)			(704)
2018	1,410	(702)			(702)
2019	1,410	(700)			(700)
2020	1,410	(698)			(698)
2021	1,410	(696)			(696)
2022	1,410	(695)			(695)
2023	1,410	(693)			(693)
2024	1,410	(691)			(691)
2025	1,410	(689)			(689)
2026	1,410	(687)			(687)
2027	1,261	(536)			(536)
2028	727	0			0

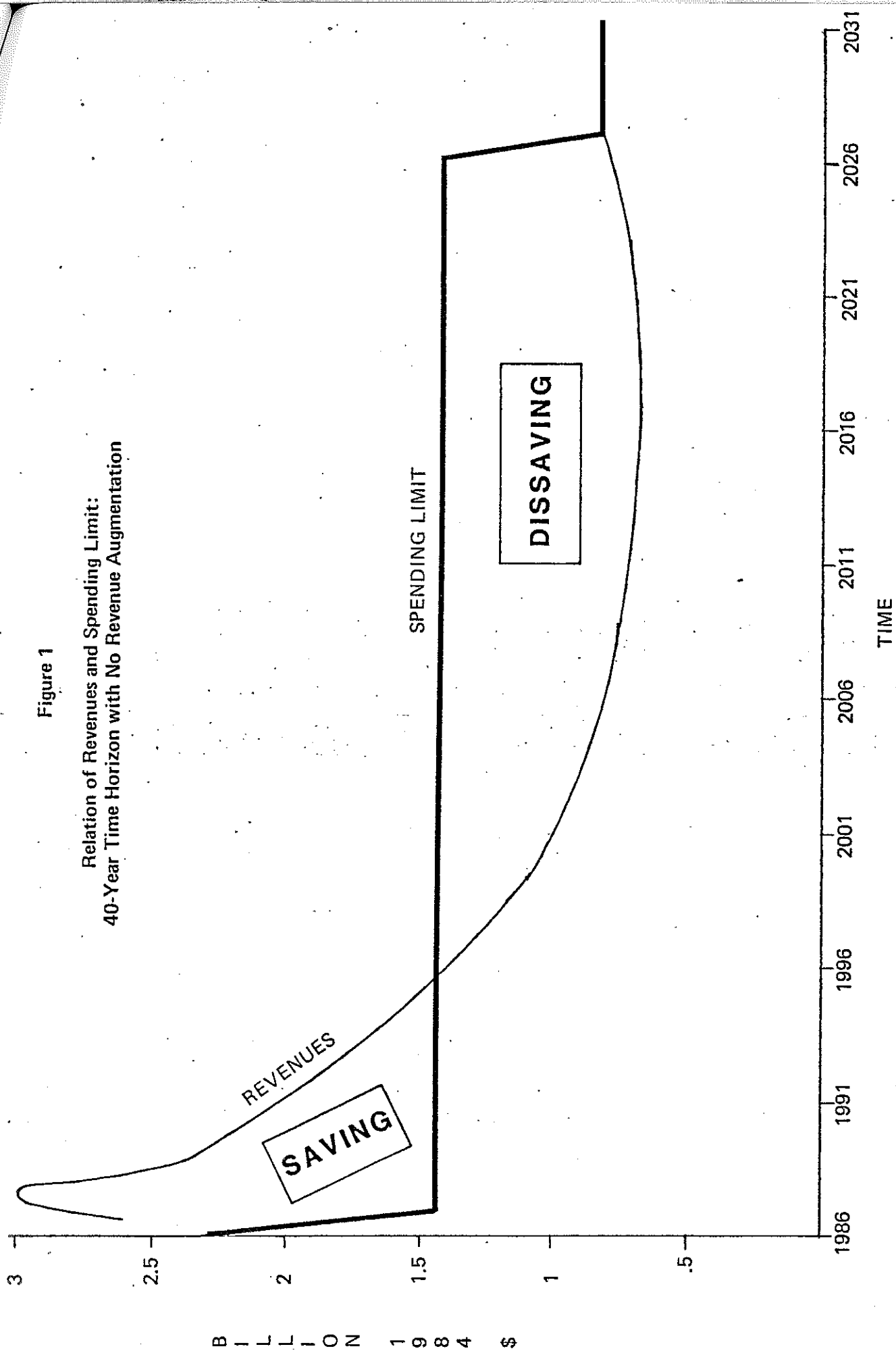
^aNot including dedicated contributions to the Permanent Fund.

^bIncluding the inflation-proofing account.

^cContinued payment of the dividend, together with declining dedicated contributions, eliminate the UIA before it can be used to supplement General Fund revenues.

Figure 1

Relation of Revenues and Spending Limit:
40-Year Time Horizon with No Revenue Augmentation



B I L L I O N 1 9 8 4 \$

TABLE 6. SPENDING LIMITS FOR FORTY-YEAR
TIME HORIZON

(billion 1984 \$)

		Collect Personal Income Tax	
		NO	YES
Pay	YES	\$1.410	\$1.625
Permanent Fund Dividend	NO	\$1.675	\$1.890

TABLE 7. SUSTAINABILITY OF DIFFERENT SPENDING LIMITS

Spending Limit (billion 1984 \$)	No Revenue Augmentation		Revenue Augmentation	
	Funds Exhausted (Fiscal Yr)	Years Limit Sustained	Funds Exhausted (Fiscal Yr)	Years Limit Sustained
\$1.500	2021	34	-	-
1.600	2017	30	-	-
1.700	2013	26	-	-
1.800	2010	23	-	-
1.900	2008	21	2026	39
2.000	2006	19	2020	33
2.100	2004	17	2015	28
2.200	2003	16	2012	25
2.300	2001	14	2009	22
2.400	2000	13	2006	19
2.500	1999	12	2005	18
2.600	1998	11	2003	16
2.700	1997	10	2001	14
2.800	1996	9	2000	13
2.900	1996	9	1999	12
3.000	1995	8	1998	11
3.100	-	-	1997	10
3.200	-	-	1996	9
3.300	-	-	1996	9
3.400	-	-	1995	8
3.500	-	-	1994	7

Rate of Return on Fund. Table 8 shows the effect on the spending limit of variation in the assumption about real rate of return on fund balances.

TABLE 8. SENSITIVITY OF RESULTS TO RATE OF RETURN ON FUND BALANCES: FORTY-YEAR LIMIT

(billion 1984 \$)

Real Rate of Return	Spending Limit	
	No Revenue Augmentation	Revenue Augmentation
4%	\$1.480	\$2.010
3%	1.410	1.890
2%	1.350	1.770
1%	1.280	1.660
0%	1.220	1.560

Rate of Inflation. The rate of inflation affects the analysis only because Permanent Fund dividends are calculated as half of the nominal Fund earnings averaged over the previous five years. Consequently, the higher the rate of inflation, the larger will be the proportion of real Permanent Fund earnings distributed under the dividend program. Table 9 shows the effect.

TABLE 9. SENSITIVITY OF RESULTS TO INFLATION RATE

(billion 1984 \$)

Rate of Inflation	Spending Limit	
	No Revenue Augmentation	Revenue Augmentation
9%	\$1.360	\$1.890
7%	1.380	1.890
5%	1.410	1.890
3%	1.460	1.890
1%	1.510	1.890

Timing of Implementation. The later a sustainable spending policy is adopted, the lower the sustainable level of spending can be for a given planning horizon. Table 10 shows the levels associated with adoption of a sustainable limit in conjunction with revenue augmentation measures at different times. Prior to the implementation, the appropriation level is \$2.25 billion.

TABLE 10. SUSTAINABLE SPENDING LIMIT WITH FORTY-YEAR TIME HORIZON FROM THE PRESENT WITH DIFFERENT IMPLEMENTATION DATES

(billion 1984 \$)

Startup Year	Delay in Years	Sustainable Spending for Remainder of 40-Year Planning Horizon
1987	0	\$1.890
1988	1	1.850
1989	2	1.815
1990	3	1.780
1991	4	1.740
1992	5	1.700
1993	6	1.660
1994	7	1.610

Recurring Revenues. Doubling of recurring revenues increases the sustainable spending level, as shown in Table 11.

TABLE 11. SENSITIVITY OF RESULTS TO RECURRING REVENUE LEVEL

(billion 1984 \$)

	Sustainable Spending	
	Base Case	Doubled Recurring Revenues
No Revenue Augmentation	\$1.410	\$1.620
Revenue Augmentation	\$1.890	\$2.100

E. COMMENTS AND IMPLICATIONS

Stability for Planning. The advantage of knowing for several years in advance the general size of the budget has obvious advantages for planning programs and expenditures.

Nonstationary Spending Limits. This analytical framework can be used to calculate annual savings and dissavings with the spending limit defined any way or with arbitrarily chosen appropriation levels for each year.

Periodic Adjustment to Limit. Because actual revenues will always be different than projections and projections will always be changing, any spending limit (including this one based on the maximum sustainable rule) should be recalculated about once every two years. At those times, the length of the planning horizon should also be reevaluated. With this method of formulating spending decisions, these adjustments would be relatively modest.

BIBLIOGRAPHY

- Goldsmith, Scott. "Sustainable Spending from Alaska State Revenues," Alaska Review of Social and Economic Conditions, Vol. XX, No. 1 (February 1983).
- _____. "Alaska's Revenue Forecasts and Expenditure Options," Alaska Review of Social and Economic Conditions, Vol. XV, No. 2 (June 1977).
- _____. "Fiscal Planning and the Long-run Growth Pattern of Resource-Based Open Economies," xerox copy, June 1978.
- _____. A Sustainable Spending Expenditure Limit, for Senate Advisory Council, March 1984.
- _____. Thinking About Alaska's Financial Future, for Alaska House Finance Committee, January 1980.
- _____. BAM3: A Fiscal Planning Model for Alaska, for Office of the Governor, July 1979.

APPENDIX A
VALUATION OF STATE ASSETS--
THE PERMANENT FUND AND SADLEROCHIT OIL

An alternative method of thinking about how large the spending limit can be is to consider the present value of all nonsustainable state revenues from petroleum. The spending limit would be the sum of recurring revenues and a portion of nonrecurring revenues based upon how long those nonrecurring revenues were required. The basic calculations to determine the present value of state assets are shown in the accompanying tables.

In Table A.1, the value of State of Alaska assets defined as the Permanent Fund balance and the state share of Sadlerochit oil are shown for recent years. Asset value has fallen from a high in 1981 due to both asset liquidation (spending of nonrecurring revenues) and asset devaluation (fall in the price of oil). The composition of assets has also changed substantially.

The method of valuation of Sadlerochit oil to the state is shown in Table A.2. Each year, remaining reserves are determined. The present value of these reserves is calculated at a discount rate of 3 percent and a per-barrel value of \$1. This is converted to a total value by multiplying it by the per-barrel state revenues actually collected during that fiscal year.

Table A.3 shows the method of determining the per-barrel revenues from Sadlerochit oil. Total petroleum revenues are calculated. The percentage of total state production from Sadlerochit is used to allocate revenues to Sadlerochit. This is divided by production to arrive at revenues per barrel.

TABLE A.1. STATE ASSETS

(billion \$)

July 1 Assets

Year	Sadlerochit Oil ^a	Permanent Fund ^b	Total
1977	\$10.290	\$.004	\$10.294
1978	12.382	.055	12.437
1979	23.771	.139	23.910
1980	40.719	.483	41.202
1981	41.478	1.827	43.305
1982	31.214	3.213	34.427
1983	27.877	4.375	32.252
1984 ^c	24.914	5.375	30.289
1985 ^c	21.617	6.100	27.717
1986			
1987			
1988			
1989			
1990			

^aCalculated in Table A.2^bPrincipal and Accumulated Earnings^cEstimate.

TABLE A.2. VALUE OF SADLEROCHIT OIL

Year ^a	Production (million barrels)	Remaining Reserves July 1	Value of Oil Still in the Ground ^b at \$1/Barrel July 1 (billion \$)	Per Barrel State Revenues ^c Fiscal Year Beginning July 1	Total Present Value of Oil in Ground (billion \$)
1977	325	9,958	\$7.566	\$1.36	\$10.290
1978	550	9,633	7.459	1.66	12.382
1979	550	9,083	7.117	3.34	23.771
1980	550	8,533	6.764	6.03	40.719
1981	550	7,983	6.401	6.48	41.478
1982	550	7,433	6.026	5.18	31.214
1983	550	6,883	5.641	4.94	27.877
1984 ^d	550	6,333	5.245	4.75	24.914
1985 ^d	550	5,783	4.836	4.47	21.617
1986	550	5,233	4.414		
1987	550	4,683	3.980		
1988	495	4,133	3.533		
1989	445	3,638	3.129		
1990	402	3,193	2.765		
1991	362	2,791	2.434		
1992	326	2,429	2.134		
1993	293	2,103	1.862		
1994	264	1,810	1.616		
1995	237	1,546	1.393		
1996	214	1,309	1.190		
1997	192	1,095	1.006		
1998	173	903	.838		
1999	156	730	.685		
2000	140	574	.545		
2001	126	434	.417		
2002	114	308	.300		
2003	102	194	.191		
2004	92	92	.092		
2005		0	0		
Total	9,958				

^aFiscal year beginning in this year.

^bDiscounted at 3 percent annually. For example, 1978 is $325 \times 1 + 550 \times .97 + 550 \times .94 + \dots + 92 \times .45$; 1979 is $550 \times 1 + 550 \times .97 + \dots + 92 \times .46$, etc.

^cSource: Table A.3. ^dEstimated

TABLE A.3. CALCULATION OF REVENUES PER BARREL FOR SADLEROCHIT OIL

Year ^a	State Revenues (billion \$)					Attributable to Sadlerochit ^b		Sadlerochit Production ^c (mil. barrels)	Per Barrel Revenues
	Reserves Tax	Severance	Corporate	Royalty	Total	Percent	Total		
1978	\$.223	\$.108	-	\$.203	\$.534	.83	\$.443	325	\$1.36
1979	.271	.174	\$.233	.335	1.013	.90	.912	550	1.66
1980	.0	.506	.548	.922	1.976	.93	1.838	550	3.34
1981	.0	1.170	.860	1.499	3.529	.94	3.317	550	6.03
1982	.0	1.581	.669	1.543	3.793	.94	3.565	550	6.48
1983	.0	1.493	.236	1.439	3.168	.90	2.851	550	5.18
1984	.0	1.392	.265	1.397	3.054	.89	2.718	550	4.94
1985 ^d	.0	1.371	.190	1.372	2.933	.89	2.610	550	4.75
1986 ^d	.0	1.245	.240	1.280	2.765	.89	2.461	550	4.47

^aFiscal Year

^bPercent of total state production from Sadlerochit

^cTable A.2

^dEstimate