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THE ALBERTA HERITAGE FUND IN 1990

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THE NATURE OF THE FUND

Alberta's Heritage Savings Trust Fund has, since its beginning in 1976, become widely known, and has been subjected to considerable analysis[1]. This paper adds to previous work in a number of ways. First, it is updated to include 1990 information. Second, it reclassifies the listed holdings of the Fund into a more easily interpreted statement. And finally, it addresses the issue of market investment values – what the Fund (or at least the part of the Fund that is really a fund) is potentially worth to contemporary investors.

The Heritage Fund is under direct Government control. It is not a separately administered trust like the Alaska Permanent Fund, another well-known cache of resource revenues. The Fund's legislated purpose is investing proceeds from dispositions of Provincial resources. The Fund reports its value and investment results in a publicly distributed annual report each year. Even though the Fund has no legal identity separate from Government, it is an identifiable economic entity – the portfolio of investments which have resulted from monies committed under Heritage Fund legislation. Information about the Fund discloses how that segment of public investment has been managed.

Since the Fund is part of Government, its statement must be read in context. The Fund's balance sheet tends to exaggerate public treasure, since it is offset by Alberta's public debt. But the Fund is only a small part of Alberta Government wealth –which includes a roster of public properties far beyond conventional roads and schools. The Province owns mineral resources of great worth, and also has gathered within the public fold a variety of enterprises including the Treasury Branch banking system, a continuing major shareholding in a telephone utility, and a liquor distribution system.

The overall result of the analysis carried out below is a reduction of approximately 18 per cent in Heritage Fund asset values to a total of $9 billions.

A CURRENT STATEMENT OF FUND INVESTMENTS, MARCH, 1990

Fund enabling legislation named a number of investment divisions which were effectively categories of Fund investments, not separate administrative units. The five currently active divisions are:

Canada

interprovincial investments for "reasonable return or profit";

Alberta

investment within the Province for "reasonable return or profit" and to "strengthen or diversify the economy of Alberta";

Commercial

investment for "commercial return";

Cash and Marketable Securities[2]

short-term investments at "market return";

and *Capital Projects*

pending for "long-term economic or social benefits to the people of Alberta".

Another division originally identified as *Energy*, has been effectively discontinued.

The Fund's published balance sheet reports assets by division. A slightly rearranged version of the March 31, 1990 balance sheet in which investments are separated into categories that facilitate later analysis is presented as Table 1.

A. Canada and Commercial Divisions, and liquid assets includes

(i) $2.152 billion in safe, short-term investments; this is very close to a holding of cash, and the reader can be quite confident in the reported value. Most of the items in this category appear in the "Cash and Marketable" securities section of the Fund balance sheet.

(ii) $1.306 billion in loans to other Provinces; these are bonds issued by the Atlantic Provinces, Quebec and Manitoba. The bonds are valued at cost (approximately face value), and because they are high quality bonds that were negotiated when interest rates were unusually high, they are worth at least the reported value. On the Fund balance sheet, these bonds comprise the Canada Investment Division.

(iii) $0.316 billion in investments listed as the Commercial Division, which are largely common stocks and which are valued modestly at their original cost.

B. Alberta division and other Alberta investment includes

(i) $5.791 billion in investments in Alberta crown corporations (ACCs), which in turn operate a telephone utility, arrange financing for municipalities, own large amounts of public housing, and make loans in housing, agriculture and small business. This was the largest single investment category. The value placed on these assets is very dependent on the investments being guaranteed by the Provincial Government. Since the Provincial Government owns the Fund, the guarantees are meaningless, and hence these asset values are highly questionable. A later section will reexamine their values.

(To reinforce the point on the guarantee, consider a situation where an ACC cannot meet a $50 million payment promised to the Fund, because its own investments have been unsuccessful. This has been a loss to the Alberta Government, which owns the Fund. Government's nominal restitution of the $50 million obviously cannot change the fact.)

(ii) $1.342 billion in investments within Alberta[3] These are a diverse collection of loans, common shares and direct investment participations. Some values are too high; others too low. The details will be discussed later as well.

Investments in this section comprise the Alberta Division and the asset component of the Capital Projects Division in the Fund balance sheet.

C. **Deemed assets** Deemed assets, according to the Fund auditor's report, "represent amounts expended which are not recoverable by the Fund, and where assets do exist, they belong to other organizations." They include about

(i) $1 billion spent for or dedicated to research and education. Energy and medical research have predominated.

(ii) $1 billion spent on rural development. Irrigation is the largest category.

(iii) $1 billion spent on hospitals, parks and other public works.

The cost of deemed assets was listed in the Fund report, as a record of spending done under the authority of Fund legislation. These costs imply little about remaining value.

D. **Government of Alberta obligations** isolates $1.357 billion in securities issued by the Province of Alberta. Since the Government owns and runs the Fund, the obligations of Government are not really owned by the Fund (for detailed discussion, see Mumey and Ostermann, 1989, op.cit.) Therefore, money "loaned" by the Fund to the Government was treated as if it had been withdrawn from the Fund. (An analogy: a private citizen, having withdrawn $1,000 from his savings account, adds back a New Years resolution to save $1,000 next year and says the account balance is unchanged.) These Government of Alberta obligations are listed on the Fund balance sheet as part of "Cash and Marketable Securities" and as "Due from General Revenue".

The Fund reported $15.343 billions worth of assets in 1990, or $13.954 billion when Alberta Government obligations are expunged. Of this approximate $14 billion, 3 billion was deemed assets, leaving $11 billion in assets at values reported. The $4 billion of assets in category A on Table 1 have values which are essentially uncontroversial. But the $7 billion in category B require significant additional analysis. The mandate of the Alberta division – investment within the Province for "reasonable return or profit" and to "strengthen or diversify the economy of Alberta" — is itself ambiguous, so variant characteristics in intra-Province investments are not unexpected.

Table 1: ALBERTA HERITAGE FUND, OFFICIALLY REPORTED VALUE
Statement asset classifications, March 31, 1990 (millions of dollars)

A.	**Canada and Commercial divisions, and liquid assets**			
	Liquid and short-term assets			
	Government of Canada obligations	772		
	Other money market securities and deposit	999		
	Other bonds, and minor items	111		
	Accrued interest and receivables (net*)	270	2,152	
	Bonds of other provinces (Canada Division)		1,306	
	Diversified investment portfolio (Commercial Division)		316	3,774
B.	Alberta division and other Alberta investment			
	Investments in Alberta Crown Corporations			
	Alberta Government Telephones Commission	999		
	Alberta Municipal Financing Corporation	710		
	Alberta Mortgage and Housing Corporation	2,926		
	Alberta Agricultural Development Corporation	999		
	Alberta Opportunity Company	157	5,791	
	Other Alberta investments			
	Participation in Syncrude Project	519		
	Common shares and debentures of NOVA Corp. of Alberta	175		
	Common shares of Alberta Energy Company	159		
	Loan to Ridley Grain Ltd.	134		
	Loan to Millar Western Pulp Ltd.	120		
	Other (incl. 30 million, Lloydminster upgrader)	35		
	Loan to Vencap Equities Alberta Ltd.)	200	1,342	7,133
	TOTAL ASSETS			10,907
C.	Deemed assets			
	Research and education			
	Alberta Oil Sands Technology and Research Authority	419		
	Foundation for Medical Research Endowment	300		
	Other medical research (including Clinical Research Bldg.)	88		
	Scholarship Fund	100		
	Other research, development and education**	103	1,010	
	Rural improvements			
	Irrigation	721		
	Rail cars, grazing reserves, Paddle River development	135		
	Individual Line Service	151	1,007	
	Hospitals			
	Walter C. Mackenzie Health Services Centre	391		
	Children's Hospital and Tom Baker Cancer Centre	134	525	
	Parks and tourism			
	Kananaskis Country Recreation Development	225		
	Other park and tourism development	186	411	
	Miscellaneous (forestry, reclamation, airports, lake outlet)	94		
	TOTAL DEEMED ASSETS			3,047
	Total assets and deemed assets			13,954
D.	Government of Alberta obligations with estimated accrued interest			1,357
	Fund net assets and deemed assets included in March 1990 annual report			15,312

*Net of 22, short-term Fund liabilities and 40, estimated accrued interest from Govt. of Alberta.

**Library, learning resources, occupational health and renewable energy research, electronic test and microchip facilities, Farming for the Future and Food Processing Centre.

RECLASSIFICATION AND REVALUATION

OF ASSETS REPORTED BY FUND

In examining the status of the Fund, the issue of market value is particularly important. The Fund's annual statements report the value of most assets at cost, ie. the amount the Fund paid for them. However, the reader of those statements is likely to have a more immediate interest in market value, or the amount at which the Fund could currently sell the assets. Market value is the best measure of the Fund's potential for achieving its objectives, since this value is based on the potential benefits from asset holdings. Market value is also essential as a gauge of past investment success, since capital appreciation or depreciation are important elements of that success.

Another objective for examining the Fund is some reclassification of assets by investment quality. Sorting is particularly needed in the case of investments within Alberta. Classification issues will be noted first, and then assets will be revalued to estimated market. Results will appear in a revised Fund balance sheet, Table 2.

CLASSIFICATION OF ASSETS

In Table 2, assets are sorted into three new categories. The first, *Liquid assets and marketable securities*, includes cash, claims which can be collected in cash within a year, and security types routinely traded in public security markets. All assets previously described as "Canada and Commercial divisions, and liquid assets" fall into the this category. So do two major Alberta Division assets. The second, *Mortgages, venture loan and participations*, includes a set of assets which are largely long-term, and for which no public market exists. Most "Alberta division and other Alberta investment" was of this type. The third category, *Housing and deemed assets*, includes the public housing purchased through the Alberta division as well as the "deemed assets" listed on the Fund's statement.

Within these categories, assets are grouped into types of financial instrument (e.g., bonds, common shares); these groups generally coincide with different degrees of risk exposure. All issues in reclassification of investments relate to "Alberta division and other Alberta investment". There are five major sets of investments of investments to be reclassified:

a. Bonds of Alberta Government Telephones (AGT) and Alberta Municipal Financing Corporation (AMFC). Both of these companies were established long before the Fund and both derived most of their financing from sources other than the Fund. Both had sizable retained earnings positions and stable sources of income. AGT sold telephone services in a regulated environment, and AMFC acted as a financing agent for Alberta municipalities which have their own taxing power to support their obligations. Both had consistently met their obligations to the Fund. These obligations of AGT and AMFC are readily salable as high-quality securities in public markets, and are classed as long-term, high quality bonds under "Liquid assets and marketable securities".

b. Investments in Alberta Energy and NOVA. Within its Alberta investments, the Fund holds common shares of Alberta Energy Corporation, and common shares and convertible debentures of NOVA Corporation of Alberta. Common shares of both companies trade on the TSE. Since the NOVA debentures are convertible by contractual formula into NOVA common, and primarily derive their value from this right to convert, market values can be placed on Fund holdings of these companies. Both Alberta Energy and NOVA are examples of investments

REVALUING LONG-TERM, HIGH QUALITY BONDS

Market information is not provided for the bonds of AGT, AMFC, and those of other provinces. While the promises made by these debtors are almost certain to be fulfilled, the value of the promises, like all long-term debt, is sensitive to market interest rate fluctuations. For example, old 20-year bonds with "locked in" interest rates of 12% will be devalued by investors if new bonds command 15%; but investors will drive the price of old 12% bonds up if only 9% is available on new bonds.

Because the bond issues held by the Fund do not trade in the public financial market, their value must be estimated from market information. Their approximate value, V, can be obtained with a short formula:

$$V = (E/r)[1-(1+r)^{-n}] + F(1+r)^{-n}.$$

Terms are defined as

E = current year's interest payment.

F = a single future principal payment, the loan's face value.

n = the number of years over which interest payments of E each year will be received, and also the number of years until principal F will be repaid.

r = an interest rate which would be charged on a loan of the type being valued if there were little or no likelihood of default.

The formula's first component, $(E/r)[1-(1+r)^{-n}]$, values interest over the life of the obligation; the second, $F(1+r)^{-n}$, values principal.

The simple formula for V requires simple characterization of investments. For example, a loan requiring equal installments of principal each year for 10 years might be characterized as one where all principal must be repaid in 5 years. Or several loans, yielding between 10% and 15% on a combined face value of $1 billion, might be characterized as having a collective E of $125 million. [5]

The long-term high-quality bonds to be valued are those of AMFC, AGT and other provinces. The most recent AMFC annual report, supported by information on past Fund statements, indicates that its loans from the Fund pay interest at an average rate of about 13.5% and that the average maturity date of those $710 million in loans was about 10 years. Therefore, within the formula, E = $710 million x .135 = $96 million, and n = 10. Information in the Bank of Canada Review indicates that in March, 1990 high grade corporate and provincial bonds were yielding about 11.75%, so r = .1175 in valuing all high grade bonds. Applying the formula to AMFC,

V = $780 million (rounded),

an amount considerably more than the $710 million cost figure.

AGT's annual report and previous Fund statements indicate AGT bonds pay about 12% and tend to mature around 2000. Accordingly, E = $120 million on $999 million of AGT bonds outstanding and n = 10. These bonds are valued slightly more than their $999 million cost, $1,010 million.

Bonds of other provinces, according to the present Fund report on Canada Division income, are earning $165 million per year on a face amount of about $1,320 million. Past Fund records indicate an n of about 10. These bonds are estimated to have had a market value of about $1,380 million.

Overall, the write-ups of these high quality bonds exceeds $150 million. These writeups are all attributable to fact that contractual interest rates on these bonds are higher than current interest rates as of March 31, 1990.

REVALUING MORTGAGES AND VENTURE LOANS

The Fund's agricultural and housing mortgages, and the venture loans through AOC, can be revalued like the bonds above. However, since the mortgages and AOC loans have checkered histories of repayment, the valuation formula is modified to reflect recent bad-loan experience reported on the AADC, AMHC and AOC 1990 annual reports. [6] The resulting V is an approximation of what the Fund might have been able to obtain for the mortgages or loans if it were to negotiate their orderly sale to a private-sector financial institution.

The mortgages and venture loan revaluations form three groups: the large holding of AADC farm mortgages; the venture loans made through AOC and directly to Ridley Grain, Millar Western Pulp and Vencap; and finally, the extensive AMHC mortgage portfolio. Evaluation of AMHC requires an accounting separation of AMHC's mortgage activity from its housing activity.

For AADC, current loan face value, F, interest earnings, E and 1990 bad loan writeoffs are obtained from AADC's last annual report. Descriptive material in this report enables n to be estimated. A discount rate, r, is set on the basis of the March 1990 residential mortgage rate (Bank of Canada Review) of 13.25%, with 2% added to reflect special monitoring, supervision and collection effort on loans to borrowers who are often unable to obtain credit from commercial sources. With F = $913 million, E = $74 million, n=8, and r = 15.25% and bad debt/asset ratio, w, = 3%, V = $$527 million, a massive writedown. When some real estate and other items are accounted for the approximate value is $540 million, an amount slightly over half the official Fund statement of $999 million. Details of this and other calculations are shown in the Appendix. The primary cause of the writedown is low interest rates on AADC loans.

A similar approach applied to AOC venture loans produces a write down from $157 million to $70 million, accounted for largely by substantial bad debt problems.

Ridley Grain, Millar Western Pulp and Vencap Equities are long-term loans with irregular terms or prospects for payment. Ridley Grain had paid little interest since 1985; most had been accrued, increasing the outstanding balance. Millar Western Pulp's payment depends on the company's own cash flow; no payment had been received to date. Vencap's interest is also tied to performance; the Fund had been receiving about 4% on its principal. Setting E is difficult for these companies. About $32 million in interest was potentially accumulated in the year ended March 1990, but only $12 million was received. To roughly approximate a value on these three holdings, E is regarded as equal to the full $32 million, but r is set at 3% above the prevailing rate for high-quality bonds because of the indefinite nature of repayment prospects. This produces v = $230 million, nearly a 50% writedown from the reported $454 million.

The annual report of AMHC provides a basis for splitting the mortgage and housing information. Details are shown in an Appendix note. Valuation proceeds as in the case of other mortgage portfolios, except that a residential mortgage rate is used for r (13.25%) and a low n, 3, is used to represent the traditional short terms on residential mortgages. The result is a mortgage portfolio value at about $1,390 million. Remaining value in AMHC is assigned to housing, to recognize that Fund investment had resulted in housing with cost of $786 million. The difference between these two values and the $2,926 AMHC investment claimed on the Fund statement is a writedown of $750 million. (It should be noted that much of this writedown has also been recognized in the AMHC statement; the Fund's balance sheet has not recognized it because of the fictional Government guarantee.

PARTICIPATIONS IN SYNCRUDE AND THE LLOYDMINSTER UPGRADER

Fund participations are on the increase, with major commitments ahead for the Lloydminster upgrader and possibly for the OSLO tar sand project. Currently, Syncrude earns $20-25 million annually on a cost of $519 million. The venture is high risk, but potential future payouts may also be very high. Present information does not justify challenging cost, but this valuation should be studied in the future. Participation commitment costs will soon approach, or exceed, $1 billion.

SUMMARY OF THE REVISIONS

The revised balance sheet in Table 2 differs from the published balance sheet in a number of major ways; comparisons are shown in the right-hand column. The most important difference is that total assets are reduced to $9 billion from $11 billion. In order of importance, the adjustments are

(1) A $2 billion reduction in earning assets held by AMHC and AADC. Nearly $0.8 billion of this is simply housing reclassified to non-earning housing, but the remaining $1.2 billion is value lost. This was caused partly by past and prospective bad debt writeoffs and property losses, and partly by low net interest return on AADC mortgages.

(2) A $1.35 billion removal of Government of Alberta obligations from the Fund. The Fund cannot really own the debt of its sole owner.

(3) A positive revaluation of $0.5 billion for long-term bonds and common shares to reflect their current market value. This results from relatively high contracted interest rates on the bonds and the state of the stock market in March, 1990.

(4) An approximate $0.3 billion writedown of venture loans. This arises from past and prospective non-performance by debtors, and generous terms to several large borrowing companies.

About $5.3 billion is invested conservatively in liquid assets and high quality bonds. The remaining $3.8 billion is invested at risk: agricultural and housing mortgages of varying quality, common shares, speculative energy participations, and a tenuous set of venture loans.

A comparison with a similar institution, the Alaska Permanent Trust Fund, may be of interest. The 1990 annual report showed assets at cost of $11.2 billion. Over 90% of the Fund was invested in marketable securities. Market values were provided supplementally for virtually all assets; market values exceeded costs substantially. The Alaska Fund does not transact with the State of Alaska in any significant way.

This paper has attempted to present the current state of the Heritage Fund. A second paper, forthcoming, will address the investment performance of the Fund, and its future prospects.

FOOTNOTES

1. For example, Warrack, Allan A., "Making Sense of the Alberta Heritage Fund", University of Western Ontario *Business Quarterly*, Summer, 1983. Mumey and Ostermann, "Alberta Heritage Fund: Measuring Value and Achievement", *Canadian Public Policy*, March, 1990
2. Cash and Marketable Securities is not a formally legislated division.
3. The Ridley loan to support a grain terminal in Prince Rupert, British Columbia is an exception which relates to grain shipped from Alberta.
4. The investment in Alberta Energy shares, 23.2 million common shares at statement data, were valued at their March 1990 price on the TSE, $16 7/8 per share. The Fund's investment in NOVA was in two parts--2.8 million common shares and $150 million in convertible debentures. The debentures pay low interest, but are presently convertible into common shares at $10.70 per share; i.e., convertible into about 14 million additional shares. Since the principal source of value in the debentures appears to lie in their convertibility, the NOVA investment is valued as 16.8 million shares at TSE market price of $7 5/8.
5. In some instances, available information permits use of a more precise formula than the one given; tests in these cases indicate that the present formula is adequately accurate.
6. The modification uses a conventional growth formula, with decay rate, w.

   w = writeoff rate = 1990 writeoff on ACC statement / F,

   $V = [E(1-w)/(r+w)][1-(1-w)^n(1+r)^{-n}] + F(1-w)^n(1+r)^{-n}$.

   Implicitly, principal and earning power are assumed to decrease each year by the factor (1-w) until the portfolio has matured at n.

APPENDIX 1:
ALBERTA HERITAGE FUND,
REVALUATION WORKSHEET FOR ALBERTA INVESTMENT

March 31, 1990 (millions of dollars)

	Marketable securities			Venture loans and mortgages			AMHC	
Name	AGT	AMFC	Oth. prov.	AOC	MRV	AADC	Mort.	Housing
Bal., loan or mortgages, F	999	710	1320	126	454	913	1547	
Interest earned, E	120	96	165	15	32	74	93	
Current bad debt expense				13		26	18	
Discount rate, r	11.75%	11.75%	11.75%	15.25%	14.75%	15.25%	13.25%	
Approx. mean maturity, n	10	10	10	8	20	8	3	
Writeoff rate, w				10%		3%	1%	
Revised F, MRV								
Revised E, MRV								
Present value, mort. int.				47		294	214	
Present value, mort. prin.				17		232	1028	
Present value, V	1013	781	1376	65	234	527	1242	
Cash, receivables				8		15		
Real estate				5		23	143	
Liabilities to external creditors				-3		-26		
AMHC housing from Fund (see note below)								786
NET REVISED VALUE	1010	780	1380	70	230	540	1390	786
VALUE FROM FUND REPORT	999	710	1306	157	454	999	(Com-	2926
CHANGE	11	70	74	-87	-224	-459	bined)	-750

NOTES, 1990 REVALUATION

1. Pro rata allocation of AGT interest is used. Details on rates and maturities are provided by AMFC.
2. Ridley interest reported as promised, including interest on unpaid interest.
3. Millar interest reported 10% of face value; final settlement 2004. Actual repayment depends on Miller performance.
4. Vencap interest, at most annual recent figure, is $5.6 million.
5. NOVA debentures are valued as if converted to common shares. If left un-converted, they bear interest at 6.25%.
6. Fund reported Syncrude profits 1990: 22.5 1989: -3.1 1988: 33.6 1987: 44.1
7. Alberta Energy 16.8 million shares @ TSE pr. 7.63 Value 128
8. NOVA 23.2 million potential shares @ TSE pr. 16.88 Value 392
9. Details of AMHC balances, as derived from AMHC 1990 annual report, are:

ASSETS ALLOCATED TO MORTGAGE ACTIVITY			
Mortgages, loans and agreements receivable	1547		
Real estate	143		
A. Total assets allocated to mortgage activity		1691	
ASSETS ALLOCATED TO HOUSING ACTIVITY			
Housing	1065		
Land and fixed assets	105		
Cash and marketable securities	32		
Accounts receivable	28		
B. Total assets allocated to housing activity		1231	
Total assets, per AMHC report			2922
LIABILITIES ALLOCATED TO HOUSING ACTIVITY			
Accounts payable, property tax deposits and unearned premiums	-43		
Long-term debt payable to Canada Mortgage and Housing Corp.	-108		
Due to Prov. of Alberta (including notes)	-41		
Advance from Prov. of Alberta	-254		
C. Total liabilities allocated to housing activity		-446	

NET BOOK ASSETS TO MORTGAGE ACTIVITY (A)	**1691**
NET BOOK ASSETS TO HOUSING ACTIVITY (B , C)	**786**
Total book value attributed to Fund financing	2476