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A CRITICAL ASSESSMENT OF THE
USE OF THE ALBERTA HERITAGE
SAVINGS TRUST FUND

by

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B.A., University of Western Ontario
London, Ontario, Canada 1981


Presented in partial fulfillment of the requirements
for the degree of
Master of Public Administration

University of Montana

1985

Approved by


Chairman, Board of Examiners


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DEDICATION

To my wife and son, Roberta and Dwayne for their perseverance and love throughout my stay away from home for the MPA program in Missoula. This paper is also dedicated to my late father Rev. J.F. Olatonade. Finally, I like to dedicate this paper to Mrs. Geraldine Fitzgerald and my mother Mrs. B. S. Olatonade.

ACKNOWLEDGEMENTS

I wish to acknowledge the advice and guidance I received from Dr. Thomas Payne, Chairman, Department of Political Science and Chairman for this professional paper. Special thanks to my Advisor Dr. Gregg Cawley for his academic advice throughout my stay at the University. Also I am grateful to Dr. Peter Koehn and Dr. Jon Tompkins both of the Department of Political Science for their usual assistance and for serving as members of my oral comprehensive examination committee. Finally, I wish to express my gratitude to Dr. Michael Kupilik of the Department of Economics and Dr. Louis Hayes of the Department of Political Science who served as members of the board of examiners for this professional paper.

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CHAPTER I

INTRODUCTION

The basic questions addressed in this professional paper are: the performance of the Heritage Fund in achieving its stated objectives; the role of the Heritage Fund in agriculture, and the economic impact of the Heritage Fund. These are questions of more than academic interest. The ability of the provincial government to establish such a fund to achieve certain stated objectives may serve as a model for other regions with similar problems.

Any analysis of the Heritage Fund must begin by explicitly recognizing the special set of economic circumstances Alberta faces. Therefore, this chapter will first review some of these economic circumstances, followed by a discussion on the policy options available to the provincial government to maximize resource revenue. Also, the chapter will provide some background information on the source and use of the fund, its objectives, the administrative structure, and the issues presently facing the fund.

Circumstances That Led to the Establishment of the Alberta Heritage Savings Trust Fund

The province of Alberta, Canada, traditionally has been an agricultural region. For many years it has been one of the world's major grain producers as well as a land of cattle ranches and irrigated farms; hence, the province was commonly thought of as a "prairie" province. The Prairie regions, including "Manitoba, Saskatchewan, and Alberta, contain 75 percent of the farm land in Canada."¹

As observed, the climatic condition of these regions, particularly Alberta, favor the production of high quality hard red spring wheat and also support a large cattle population and the rearing of livestock in general. "Most of the grain marketed in Canada is grown in the Prairie provinces,"² and "Alberta is second to Saskatchewan in the grain production but has more beef cattle than any other province."³ The economic base of the province of Alberta began to change when large oil fields were discovered in 1947 near the town of Leduc.⁴ In succeeding years, even larger fields have been discovered. Oil and gas exploration then became a major industry. Table 1 will help visualize the changes that have taken place in Alberta's industrial picture.

As Table 1 shows, it is evident that in 1946, the value of agricultural output was greater than the value of all other economic activity combined. Since 1956, Alberta has experienced a situation whereby construction activity has passed agriculture in each of the years shown in Table 1 with the exception of 1965. The table also shows a tremendous increase in the value of mining production in the province.

As a result of the increases in oil prices since 1973, the province experienced an unprecedented economic boom based largely on the conventional oil and gas products. The economic boom enhanced the profitability of oil and gas industry and aroused interest in the province's energy

TABLE 1
NET VALUE OF PRODUCTION: MAJOR ECONOMIC
SECTORS BY SELECTED YEARS
(MILLIONS OF DOLLARS)

	1946	1956	1965	1976	1979
Agriculture	249	397	511.9	1082.5	1290
Mining (including Oil and Gas)	65	373	690.5	6336.7	11,930
Manufacturing	84	292	475.3	1804.3	3030
Construction	65	399	470.8	2936.9	4280
Forest Products	5	9	9.3	34.7	52
Electric Power	9	35	69.4	245.6	313

Source: Compiled from the Alberta Statistic Review

supplies. The result has been a rate of job creation and capital investment in the energy sector well above Alberta's previous experience in agriculture. Consequently, Alberta's economic base shifted dramatically from the dependence on agriculture to a new reliance on the oil and gas industry.

The Alberta government is well aware that the booming economic conditions have resulted largely from a rising demand for non-renewable energy resources. In recognition of the fact that economic diversification of the province's economy was necessary, provincial Premier Lougheed suggested that "the economic boom will not last very long unless we're able to put in place a more balanced economy for that inevitable day when oil and gas no longer provide such a large number of jobs, when production begins to decline, and resource revenues fall..."⁵ The important question then is

how the government should deploy the resource revenues to maximum advantage. To explore this question requires an analysis of the policy alternatives available to the government to maximize resource rent.

Policy Options to Maximize Resource Revenue

As observed, there are basically four ways in which the government could use the windfall resource revenues. The first option would be to use the resource revenue in efforts to promote aggregate economic growth and a more diversified industrial base. This could be accomplished by direct subsidies, tax relief, direct public enterprises, or any of a host of other tax or regulatory measures.⁶ The point is simply that the government would be investing in a deliberate restructuring of its economy in an attempt to thwart the economic decline that is expected to follow resource depletion.

The second option would be for the government to act as an agent to collect the resource revenue and to distribute it to its residents. This could be done in two ways: through a dividend of some form, with the government expenditure financed out of conventional tax revenue. Here, the government may give away to each current provincial residents a fixed but equal number of transferable share certificates in the existing fund on a one-time only basis.⁷ The alternative way to distribute the resource revenue, and this represents the third option, would be through the traditional

tax-expenditure system by providing public goods at low prices.⁸

The fourth option would be for the provincial government to take no action and to allow economic activities to run their course in the free market.

Each of these options has its own distinct impact on the economy. For instance, it might not be possible to pursue the last three strategies without increasing the federal tax liabilities of the provincial residents. Also, these options deny the government the possibility of directly employing the resource revenue in activist economic planning. Moreover, if any of the last three options is followed, the provincial government would have to impose a substantial increase in taxation in order to provide public goods and services when the resource revenue declines. Imposing a high tax rate would lead inevitably to a reduction in the ability of Alberta residents to purchase private goods and services in the market place. From this point of view, it follows that an economy such as Alberta's which has the ability to extract and sell a non-renewable resource might well want to build up a stock of capital assets. This would enable the provincial government to continue the provision of a reasonably high level of public goods and services without a substantial increase in taxation. In recognition of these points discussed above, the Alberta Heritage Savings Trust Fund was established by an Act of the legislature of Alberta on May 19, 1976.⁹ A more detailed analysis of

the economic impact of this chosen option, will be discussed in chapter two.

Objectives of the Heritage Fund

The objectives of the Heritage Fund as outlined in the 1977-78 Annual Reports may be summarized as follows:

- (1) To improve the quality of life of Alberta by undertaking projects which will provide long-term social and economic benefits to Albertans.
- (2) To make investments which will strengthen and diversify the economy of Alberta to ensure that new jobs and opportunities are available for Albertans in the future.
- (3) To provide a source of investment incomes and perhaps capital in the longer term which can be used to cushion the impact of the inevitable relative decline in revenues received from the sale of the province's depleting, non-renewable resources.¹⁰

These objectives are both political and economic. The first objective may be viewed as a concession to political considerations. It is evident that the extent to which this goal is being achieved has an immediate impact on the political party in power. The second objective, discussed at length in this paper, places the Heritage Fund in what has been termed "Province Building." The idea here is to encourage industrial development and diversification; to improve training of the provincial labor force, and to improve the management of natural resources.¹¹ All of these activities contribute directly to economic growth of the region. Many economic theorists, particularly Gunnar Myrdal, have suggested that regions where economic activity is

expanding will attract net immigration from other regions of the country.¹² This being the case, there is a tendency to expect provincial politicians to have a strong incentive to pursue province-building in order to increase the province's population. Population growth or declining population tend to increase or erode the political base of a region, respectively.

However, since the inception of the Heritage Fund, the major emphasis has been to achieve a reasonable rate of return on investment and to strengthen and diversify the economy of Alberta. To achieve these policy objectives, the Heritage Fund was separated into three divisions: the Capital Projects Division, the Alberta Investment Division, and the Canada Investment Division. The nature and functions of each Division will be discussed below.

Source of Funds

As a result of the legislation of May 19, 1976, 30 percent of the province's revenue from non-renewable resources were transferred by special appropriation act on an annual basis to the Heritage Fund.¹³ To paraphrase Collins, the Deputy Provincial Treasurer's discussion on this issue, the 30 percent figure was chosen to reflect in a general way the incremental revenues accruing from the increase in oil prices. A lesser transfer would have represented an insufficient commitment to the principle of government savings on the resource wealth on behalf of Albertans. Conversely, to transfer a significantly greater

proportion would perhaps have been viewed as too great an intrusion on the part of the government. It follows then that since the provincial government recognized the necessity that the allocation to the fund and the principle of the fund itself be acceptable to Albertans, the decision to transfer 30 percent of the resource revenues had political as well as economic elements. "On August 30, 1976 a special capital contribution of \$1.5 billion of cash and other financial assets was transferred from the General Revenue Fund of the Province to the Heritage Fund."¹⁴ In short, from 1976 until 1982-83 fiscal year, the Heritage Fund derived its funds from two sources: (1) An annual transfer of 30 percent as discussed above; (2) The retention of its investment earnings.¹⁵

In March 1982, two significant amendments were made to the Trust Fund. The first amendment initiated the transfer of the Heritage Fund's net investment income to the Province's General Revenue Fund for a two-year period beginning September 1982. The second amendment allows the percentage of non-renewable resource revenue to be transferred to the fund be reduced from 30 percent to 15 percent. The purpose for these amendments was to provide funds for the so-called "Economic Resurgence Expenditure Programs."¹⁶ As Table 2 shows the Heritage Fund assets had grown by 518 percent from \$2,217 million in 1976-77 to \$13,712 million in 1983-84 fiscal year.

In 1983-84, the Heritage Fund received \$720 million

in resource revenue, a decrease of 47 percent from 1982-83. The weakening oil price situation prevailing through most of 1982-84 presumably accounted for the decrease in resource revenue received. The composition of the non-renewable resource revenue varies from year to year. Nonetheless, royalties received from oil and natural gas account for the greater part of the province resource revenue, followed by the crude oil royalty.

TABLE 2

ALBERTA HERITAGE SAVINGS TRUST FUND
COMPOSITION OF TOTAL ASSETS - SELECTED YEARS
MARCH
(MILLIONS OF DOLLARS)

For the Year:	1976-77	1982-83	1983-84
Non-Renewable Resource Revenue Received	620	1,370	720
Net Income Retained	<u>88</u>	<u>616</u>	<u>--</u>
New Revenues Retained in Heritage Fund	708	1,986	720
Net Investment Income Transferred to Province's General Revenue Fund	--	866	1,469
New Investments in Alberta	790	2,570	1,237
Transfer of Assets on August 30, 1976	1,500	--	--
<u>At Year End:</u>			
Financial Assets	2,181	11,397	11,777
Deemed Assets	<u>36</u>	<u>1,605</u>	<u>1,935</u>
Total Assets	2,217	13,002	13,712

Source: Compiled from Alberta Heritage Saving Trust Fund Annual Report 1977-84.

Uses of Funds

The Heritage Fund has been used predominantly for various projects that will affect the development and diversification of Alberta's industrial structure. As shown in Table 3, the core of the Heritage Fund Act is the division of the fund into three discrete investment Divisions: the Capital Projects Division, the Canada Division, and the Alberta Investment Divisions. The Heritage Fund spending under the Capital Project Division are allowed to total as much as 20 percent of the fund. Investments under this Division are expected to provide long term economic or social benefits to Albertans. Such investments are not expected to yield a return of income to the fund. Some of the projects fostered by this Division are discussed in chapter two.

The Second Division of the Heritage Fund is the Alberta Investment Division. The purpose of this Division, as stated in the Heritage Fund Act, is to make investments that will tend to strengthen and diversify the economy of Alberta and, at the same time, provide a reasonable rate of return to the Heritage Fund. This Division has no specified limit on the size of investments to be made.

The Canada Investment Division, which represents the third division, makes loans available from the Heritage Fund to other provincial or federal government or to persons guaranteed by them. The composition of investments in this Division are shown in Table 6. The maximum share of the

fund's assets in this Division are allowed to total as much as 15 percent. The Legislative Act also allowed those revenues not required for making investment under these divisions to be invested by the Provincial Treasurer in marketable securities. About \$808 million were held in marketable securities as of March 31, 1984, see Appendix A attached.

Chapter two will explore some of the specific projects undertaken in each Division.

Description of the Administrative Structure

This section discusses the amount of discretion and power that is vested in the Provincial Executive Council (Cabinet), and the legislative checks that were being instituted to control the Heritage Fund spending.

As a common procedure for all expenditure of the public funds, particularly in a parliamentary democratic society, the Legislative branch of the provincial government control the expenditure from the Heritage Fund. It is worth noting that investment decision would be affected by the extent of executive powers in the parliamentary system. In the case of the province of Alberta, there is normally a Conservative Government majority and a weak opposition. Such a situation increases the discretionary powers of the provincial cabinet to influence the investment decisions.

As Table 3 shows, funds for investments into Capital Projects Division are subject to legislative oversight while

the Canada and Alberta Investment Divisions are approved by the Cabinet's Heritage Fund Investment Committee without prior legislative debate. It follows that investments under the Capital Projects Division are made only after they go through the identical process which is followed for government expenditures. This involves the tabling of a project proposals before the Appropriation Committees and a full debate thereon by the Committee followed by passage by the House of an appropriation bill. However, the Alberta Cabinet enjoys the discretionary powers to manage and invest all of the assets of the Heritage Fund.

TABLE 3

AHSTF: ORGANIZATION AND ADMINISTRATIVE STRUCTURE

Division	Objectives	Investment Criteria	Maximum share of Fund's assets (actual share 31 March 1979)	Executive control and Management	Legislative control and review
Capital projects	The undertaking of projects which will provide long-term social or economic benefits to Albertans	Projects which by their nature will not yield a return of capital or income to the Fund	20% (5.4% 'deemed assets')	Executive Council and operating departments	a) Tabling of estimates; votes on appropriations by full Committee of Supply and b) <u>post facto</u> review by Select Standing Committee
Canada Investment	Provisions of loans to the federal government, other provinces or to any entity whose debt is guaranteed by one of these governments	Loans are made at market rates of interest	15% (5.7%)	Executive Council (Investment Committee)	a) Investments shall be made or approved by the Investment Committee in accordance with the directions contained

TABLE 3 - continued

					in any resolution of the Legislative Assembly and b) <u>post facto</u> review by Select Standing Committee
Alberta investment	Investments for purposes of strengthening and diversifying the Alberta economy	Investments must strengthen and diversify the Alberta economy and yield a reasonable financial return to the Fund	no limit (34.3)	Executive Council (Investment Committee)	a) Investments shall be made or approved by the Investment Committee in accordance with the directions contained in any resolution of the Legislative Assembly and b) <u>post facto</u> review by Select Standing Committee
Current assets	Investments in government and high quality corporate bonds, treasury bills, and other marketable securities	Management of the portfolio is concerned with the quality, term, yield, risk and liquidity of the investments as well as basic portfolio diversification	residual (51.9%) assets not committed to the three investment divisions	Provincial Treasurer	<u>Post facto</u> review by Select Standing Committee

Sources: Alberta Heritage Savings Trust Fund, 1978-79 Annual Report, Alberta Heritage Savings Trust Fund Act.

In order that control of these investments be maintained by the Legislative Assembly, the Select Standing Committee on the Alberta Heritage Savings Trust Fund Act was created. Section 13 of the Act provides that a committee of fifteen members of the Legislative Assembly be appointed at the commencement of each session.¹⁷ This committee is charged with the responsibility of reviewing the investments made in the preceding year and to report its findings to the Legislative Assembly. The committee has been able to play a worthwhile role as a watchdog committee in its investigative capacity.¹⁸ For instance, in the review process, the Minister of the Departments directly involved in any project or investment funded from the Heritage Fund are requested to appear before the Committee. In addition to replying verbally to questions asked by the Committee, the Ministers are required to provide all information and documentation which may be requested. The review sessions are usually open to the public.

Issues Facing the Heritage Fund

The recent downturn in the economy of Alberta has aroused some concern over the role the Heritage Fund has played in strengthening and diversifying the economic base of the region. With the high unemployment rate in the province, the after effect of the oil boom is now being felt. If it is accepted that government savings have a role to play to stimulate and diversify the economy, then one can

begin to ask what steps were taken by the provincial government to use funds from the Heritage Fund to achieve the stated objectives. In the Alberta context, the primary and stated purpose of industrial diversification strategy is to move to a broader based economy which is less dependent on non-renewable national resources. In this case, the government would guard against the possibility of a decline in oil and gas on the long run. Such a notion implies an improvement in Agriculture, Education, and Processing Industries. Drugge and Veeman have argued that the fund is being used for the provision of infrastructure rather than the provision of directly productive investment such as education, plant and equipment.¹⁹ The subsequent chapters will examine and analyze the role of the fund in the achievement of economic diversification.

METHODOLOGY AND SOURCE OF DATA

The main objective of this professional paper is to assess the role the Heritage Fund has played in diversifying the economic base of the province. This objective will be accomplished by determining and comparing the net value of production in the four major economic sectors of Alberta: Agriculture, Mining, Manufacturing and Construction for the year 1974 through 1983 fiscal year. The time periods were chosen to reflect the position of each economic sector before and after the establishment of the Heritage Fund. Clearly demonstrated in a table form they will show the

position of each sector before and after the creation of the funds. By so doing, it may be possible to infer whether or not diversification has occurred during the periods under study. Also, the yearly allocation of revenue from the Heritage Fund to each economy sector will be examined with the hope of determining whether greater emphasis was placed on investment projects that will diversify the economy particularly agriculture.

For source of data and information, primary reliance will be placed on personal interviews and documents from the following sources: Alberta Heritage Fund Annual Report; Canada and Alberta Bureau of Statistics; Alberta Agricultural Development Corporation; Alberta Treasury Branch and relevant books and journals.

It seems appropriate at this juncture to point out some of the many deficiencies that may beset this study. We must recognize that changes in the market price and interest rate will affect the value of output in each of the economic sectors mentioned above. Constraints to agriculture such as geographical features of the province will alter agricultural output. A more complete analysis would account for these variables. The possible effects will be discussed, however.

Organization of the Study

The structure of the paper is as follows. Chapter two will evaluate the investment projects aimed at achieving

policy objectives. Circumstances that may affect economic diversification will be discussed. Chapter three examines the administration of the fund with respect to agricultural development. Also, obstacles to agricultural productivity peculiar to the province will be discussed. The concluding chapter will focus on recommendations.

CHAPTER I - Footnotes

¹Canada, Minister of Industry, Trade and Commerce, Yearbook of Minister of Industry, Trade and Commerce, 1978-79 (Ottawa: Government Printing Office), p. 457

²Ibid., p. 458

³Ibid

⁴G.A. Gaherty, Alberta-Province of Opportunity (Calgary: Calgary Power Ltd., 1953), p. 3

⁵John Richards and Larry Pratt, Prairie Capitalism: Power and Influence in the New West (Toronto: McClelland and Stewart Limited, 1979), p. 235

⁶Tim Ohashi and T.P. Roth, Privatization Theory and Practice (Vancouver: The Fraser Institute, 1980), p. 185

⁷Ibid., p. 185

⁸Ibid

⁹Alberta Heritage Savings Trust Fund, Annual Report, 1976-77 (Edmonton: Government Printing Office, 1976-77), p. 3

¹⁰Alberta Heritage Savings Trust Fund, Annual Report, 1977-78 (Edmonton: Government Printing Office, 1977-78), p. 5

¹¹Ibid., p. 7

¹²A.P. Thirlwall, Growth and Development, Second Edition (London: MacMillan Press Ltd., 1978) p. 134

¹³Ibid., Annual Report, 1976-77

¹⁴Ibid

¹⁵Ibid., p. 6

¹⁶Alberta Heritage Savings Trust Fund, Annual Report 1982-83 (Edmonton Government Printing Office, 1982-83), p. 2

¹⁷The Standing Committee on the Alberta Heritage Saving Trust Fund. Minority Report, 1980 (Edmonton: Government Printing Office, 1980), p. 21

¹⁸Ibid., p. 24

¹⁹S.E. Drugge and T.S. Veeman, "Heritage Fund Problems and Policies," Canadian Public Policy 6 (Fall 1980): p. 136

CHAPTER II

AN ANALYSIS OF THE HERITAGE FUND

This chapter critically reviews the operations of the Heritage Fund. The chapter will argue that the focus of the government diversification effort has been the upgrading of the oil and gas industry. To achieve this objective, Table 4 was compiled to show the relative contribution of each economic sector to the total goods producing industries. Also, Tables 5 to 7 were designed in an attempt to illustrate which of these economic sectors received the most funding from the fund. The final part of the chapter will examine some of the circumstances that may affect economic diversification. Perhaps an appropriate place to begin this section, then, is to examine to what extent the Heritage Fund had been utilized to achieve its stated objective with respect to diversifying the economic base.

Heritage Fund and Economic Diversification

To make this analysis more meaningful, "diversification shall refer to the creation or enlargement of industries which are not directly related to the primary industry of the province."¹ For instance, consider a situation where the Heritage Fund monies are invested in efforts to promote oil and gas industry. Such investments strengthen the dependence on the primary industry of the province rather than diversify the economic base.

A better indication of structural change in the Alberta

economy may be seen in the sectoral composition of production shown in Table 4. As shown in Table 4, the mining sector continues to be the dominant source of the gross domestic product (GDP). More than half of the total goods producing industries is generated from the oil and gas industry. The relative contribution to overall output of mining and construction sectors have increased whereas those of agriculture and manufacturing have declined between the periods shown in Table 4. The agricultural sector has grown in absolute size from \$1,114.24 million in 1974 to 2,614.8 million in 1981 but the relative share has declined from 13.6 percent in 1974 to 8.3 percent in 1981. Also, the relative share of manufacturing sector has fallen from 16.3 in 1974 to 13.9 in 1981. Both the agricultural and manufacturing sectors represent the most viable alternatives for industrial diversification. The question then is what role has Heritage Fund played in diversifying the economy. To answer this question requires an evaluation of some of the investment projects aimed at achieving the policy objectives.

Evaluation of Investment Projects Aimed at Achieving Policy Objectives

One of the management problems discussed here involves the funding of programs that are directly related to the primary industries of the province. It is argued in this section that the greater portion of the Heritage Fund is directed towards programs that are energy based. To address

TABLE 4

NET VALUE ADDED¹ IN GOODS PRODUCING INDUSTRIES
1974-81 \$ (MILLIONS OF DOLLARS)

Year	Agri- culture	% of Total Contri- bution	Mining	% of Total Contri- bution	Manu- facturing	% of Total Contri- bution	Construc- tion	% of Total Contri- bution	Others ²	% of Total Contri- bution	Total
1974	1,142.2	13.6	4,213.6	50.2	1,371.1	16.3	1,484.4	17.7	187.2	2.2	8,398
1975	1,191.6	11.4	5,362.6	51.2	1,638.3	15.6	2,056.5	19.6	220.7	2.2	10,470
1976	1,082.5	8.7	6,336.7	50.9	1,804.3	14.5	2,936.9	23.6	285.9	2.3	12,446
1977	956	6.6	7,843.2	53.9	2,028.5	13.9	3,397.2	23.3	334.6	2.3	14,553
1978	1,359	7.7	9,109.8	51.4	2,544	14.4	4,279.4	24.3	412.4	2.3	17,705
1979	1,610	7.2	11,854	52.7	3,050	13.6	5,441	24.2	528	2.4	22,483
1980	1,703	6.1	15,464	55.2	3,595	12.8	6,630	23.7	610	2.2	28,000
1981	2,614.8	8.3	15,571	49.7	4,346.5	13.9	8,156.8	26.0	632.2	2.0	31,321

Source: Compiled from the Alberta Statistic Review 1974-84 Catalogue 0317-3917

¹ "Value Added" figures show the real relative contributions of the goods producing industries to the economy of the province.

² Comprises Electric Power, Logging, Fisheries, and Trapping.

this issue, it is necessary to focus on the specific programs funded under each of the Investment Division.

(1) The Capital Projects Division

As Table 3 shows, the objective of this division was to provide long term economic and social benefit to the people of Alberta. Details of the investments made under this division for 1982 through 1984 are shown on Table 5. The total amount allocated to education represent 23 percent in 1982. In 1984, no funds were invested in education from the Heritage Fund. Investment in agriculture increased from 6 percent in 1982 to 9.5 percent in 1983, but fell in 1984 to 7.44 percent of the total division's appropriations. In 1984, the Legislature approved a \$200 million loan under this division to Vencap Equities Alberta Ltd. This represents 33 percent of total appropriation during that particular year. The Vencap is supposed to provide equity capital for business activities that is beneficial to Alberta's economic development. In each of the fiscal years shown on Table 5, the total funds allocated to the Energy and Natural Resources have been substantial. Also, legislative appropriations for projects in Hospital and Medical care, Environment and Recreation and Parks has been substantial. Hospital and Medical care alone represent 24 percent of total investment under this division in 1983. By the nature of investments in this division, greater emphases are placed on projects that do not directly promote economic diversification.

TABLE 5
ALBERTA HERITAGE FUND
CAPITAL PROJECTS DIVISION
AMOUNT APPROPRIATED - SELECTED YEARS
FOR THE YEAR ENDED MARCH 1981
(THOUSANDS OF DOLLARS)

Department Project	Legislative Appropriation					
	1982	%	1983	%	1984	%
Advanced Education	103,288	23.2	288	.07		
Agriculture	26,425	6	38,513	9.5	44,999	7.44
Economic Development-Venture Vencap Capitol Financing and Vencap Equities Ltd.	15,930	3.6			200,000	33.1
Energy and Natural Resources	76,509	17.2	87,475	21.6	83,817	13.86
Environment	43,487	9.7	83,093	20.0	110,853	13.33
Executive Council-Occupational Health and Safety Research and Education	1,000	.2	1,000	.25	1,351	.22
Hospital and Medical Care	99,375	22	97,344	24	106,647	17.6
Public Works Supply and Services	--		--		3,000	.5
Recreation and Parks	74,128	16.7	95,007	23.4	51,652	8.54
Transportation-Airport Terminal Buildings	<u>4,646</u>	<u>1.4</u>	<u>3,150</u>	<u>.78</u>	<u>2,505</u>	<u>.41</u>
Total	444,788	100	405,870	100	604,826	100

Source: Compiled from the Alberta Heritage Saving Trust Fund Annual Report

(2) Alberta Investment Division

The Alberta Investment Division of the Fund was originally viewed as perhaps the prime vehicle for achieving the Fund's objectives. As Table 3 shows, investments under this division must strengthen and diversify the Alberta economy and yield a reasonable financial return to the fund. In addressing this issue, Collins, the Deputy Provincial Treasurer, suggested that, "there is a conflict between the two criteria. That is, to generate high rate of return while strengthening and diversifying the Alberta economy."² He emphasized that they are in one sense complementary and in another contradictory. They are complementary in long run sense in that the diversifying the pattern of growth of the economy and reducing dependence on resources, the economy will become stronger in the future. With greater employment and investment opportunities, higher incomes for Albertans, and a diversified economic base necessary to maintain low personal and corporate tax rates. In this case, both criteria are fulfilled. They are contradictory in the sense that pursuing higher rate of returns encourages investments in the higher yielding energy sector such as investment in Syncrude Project which may not necessarily be in accordance with the intent of diversification.

As Table 6 shows, the investments of Alberta Investment Division are highly concentrated in the debentures of Provincial Crown Corporation. About 90 percent of the Alberta Investments Division was taken up every year in

TABLE 6
ALBERTA HERITAGE FUND
ALBERTA INVESTMENT DIVISION INVESTMENTS
MARCH 31 — SELECTED YEARS
(THOUSANDS OF DOLLARS)

	1982	%	1983	%	1984	%
<u>Provincial Corporation Debenture:</u>						
Alberta Agric. Development Corp.	548,240	8.7	718,000	8.8	847,000	10.5
Alberta Government Telephone Co.	1,472,402	23.2	1,713,340	21.0	1,494,802	18.5
Alberta Home Mortgage Corp.	1,903,210	30	2,540,077	31.1	2,541,003	31.5
Alberta Housing Corp.	725,732	11.4	1,021,232	12.5	906,581	11.2
Alberta Municipal Financing Corp.	1,008,178	16	1,449,522	17.8	1,451,696	18.0
Alberta Opportunity Co.	125,800	2	161,200	2.0	168,200	2.4
<u>Corporate Debenture</u>						
Trans ALTA Utilities Corp.	19,787	.3	19,857	.24	19,927	.25
Baralorne Resource Ltd.	5,000	.08	5,000	.06	4,625	.06
Interprovincial Steel & Pipe Corp.	5,000	.08	5,000	.06	4,615	.05
Canadian Commercial Banks	5,000	.08	5,000	.06	5,000	.06
Ridley Grain Ltd.			31,369	.38	116,592	.06
Convertible Debentures						1.4
<u>Common Shares</u>						
Alberta Energy Co. LTD	76,764	1.2	76,759	.94	76,759	.95
Participation in Syncrude Project	<u>439,024</u>	<u>.7</u>	<u>411,344</u>	<u>5.06</u>	<u>442,548</u>	<u>5.5</u>
Total	\$6,335,237	100	\$8,157,700	100	\$8,079,348	100

Source: Compiled from AHSTF Annual Report

the purchase of debt of Crown Corporation. Although such investments assist in improving job opportunity in the province, they represent concentration of debt in low yield, long term bonds which tend to reduce the returns as compared to investment in a higher yield securities.

The table shows the annual equity investment in Syncrude Project. Participation in Syncrude Project designed to produce synthetic crude oil is by no means an economic diversification. Rather, it strengthens the oil and gas industry. Also, investments in the Alberta Opportunity Corporation (AOC), and the Alberta Agricultural Development Corporation (ADC), are both too limited in scope and function to diversify the economy. For instance, as of the fiscal year ended March 31, 1984, the total Heritage Fund investment in the ADC and AOC are \$847 million and \$168 million respectively. This represents only 6.2 percent of total fund for ADC and one percent for AOC. By the criteria established for the Heritage Fund, the nature of investments in this division combined, does little to meet either of the stated goals of the funds.

Canada Investment Divisions

Investments in this Division are in the form of loans to the federal and other provincial governments or agencies guaranteed by them. The policy of loaning funds to provincial government has its own side effects. For instance, loans to the province of Quebec were used by that province

to subsidize agricultural development in Quebec. Consequently, export of livestock to Quebec province from Alberta fell considerably, since Quebec province can now produce livestock at a relatively cheaper quantity.³ Table 7 shows the total investments for selected years in this division. If we compute the total investment in this division as a percentage of total asset for the fiscal year end of March 1984 we find that 13.8 percent of the Heritage Fund Asset has been invested in other province which is greater than the direct investment in agriculture and manufacturing combined.

The evidence shown in each of these tables above indicates that the Heritage Fund is not structured in a manner which clearly reflects the goals put forth in the Alberta Heritage Savings Trust Fund Act. Chapter four of this paper will include detailed recommendations for restructuring the fund in order for it to meet its objectives.

Meanwhile, it will be necessary to discuss some of the circumstances that may affect economic diversification.

Constraints to Diversification

When dealing with obstacles that may inhibit industrial diversification, two considerations readily come to mind. First, there may be a political constraint requiring that a certain portion of the fund be invested in a specific program within the region. This may account for the huge concentration of the investments under the Alberta

TABLE 7

ALBERTA HERITAGE FUND
CANADA INVESTMENT DIVISION INVESTMENTS
MARCH 31, 19 __ SELECTED YEARS
(THOUSANDS OF DOLLARS)

<u>Debentures</u>	1982	%	1983	%	1984	%
Province of Manitoba	257,984	13.5	258,227	13.6	258,471	13.5
Province of New Brunswick	243,859	12.8	244,164	12.8	244,470	13
New Brunswick Electric Power Comm.	132,881	7	133,028	7	133,176	7
Province of Newfoundland	153,587	8	153,789	8	153,994	8
Newfoundland & Labrador Hydro	147,714	7.7	147,842	7.7	147,970	7.8
Newfoundland & Municipal Finance Corp.	79,102	4	77,465	4	75,826	4
Province of Nova Scotia	231,429	12	231,633	12	231,837	12.2
Nova Scotia Municipal Finance Corp.	70,836	3.7	66,289	3.5	61,736	3.2
Nova Scotia Power Corp.	123,525	6.5	123,615	6.5	123,706	6.5
Province of Prince Edward Island	92,553	4.8	90,689	4.8	88,824	4.7
Hydro-Quebec	<u>375,322</u>	<u>19.7</u>	<u>375,775</u>	<u>20</u>	<u>376,228</u>	<u>19.8</u>
	1,908,792	100%	1,902,516	100%	1,896,238	100%

Source: Compiled from AHSTF Annual Report.

Investment Division in the purchase of debt of Crown Corporation. Garth Stevenson addressed two obstacles to diversification that fall more within the realm of politics than in that of economics. The first of these is the notion that the government will provide public goods and services in a manner that is satisfactory to politically influential users. The second constraint is that the government may want to maintain the existing social class composition of the province.⁴ This concern was indirectly expressed by

Premier Lougheed during the legislative debate: "We have no dream of an industrial state. We don't want the smokestacks here. We want the best jobs here. We want the brain power here. We want the upgrading of our sources here."⁵

Based on these points above, we would expect investments from the Heritage Fund to favor projects that are energy based.

The second consideration involves economic constraints. In light of the economic boom that prevailed in the province, it was necessary that the Heritage Fund be concentrated at least during the boom periods outside rather than into Alberta. The reason is that the relatively small provincial economy cannot absorb a large amount of additional investment without increasing the already high inflation rate.

Another economic consideration that inhibits diversification pertains to locational decisions of industries. Industrial location depends on such factors as the availability of raw material, capital and labor, market size and so on. To minimize transport costs, for instance, manufacturing or processing industries, particularly those that incur substantial weight-loss, will locate as close to the input source as possible. The reason is the transport rate discrimination between raw versus processed outputs. In earlier stages of Alberta's development, no significant local markets existed for manufactured commodities if compared to provinces like Ontario or British Columbia. Therefore, if transport rates favored raw material movements,

we would expect industrial plants to locate away from Alberta. This is equally true in the situation where the Heritage Fund was used to subsidize rates on rail and pipeline transport of some agricultural and petroleum outputs.

In short, Albertans are faced with constraints that are beyond their control. The most obvious constraints are the relative low population, great distance from other major centres of population in both Canada and the United States, and lack of access to water transportation. These factors limit Alberta's potential as industrial centre thus impeding the province's diversification efforts.

Economic Impact of the Fund

Alberta has attempted to maximize its resource revenue by creating the Heritage Fund with the objective that the revenues would be used to promote economic diversification. By funding a specific project from the fund, the province will affect the direction of growth of the Alberta economy in order to reduce its dependence on oil and gas industry.

Secondly, by creating the Heritage Fund, the government was able to reduce the pace of economic boom in order to ease off the inflationary impact of over supply of money. As well as reducing inflationary pressures, this approach has generated several opportunities for the province. For instance, investment of funds provides a source of income and perhaps capital that could be used in the future to supplement other government revenues. In this way, the usual upward adjustment of personal and corporate tax rate

to support both new and ongoing government programs during recession, could be made more gradually than would otherwise be possible. Over the past two years, the Heritage Fund has helped to protect the province from the full impact of the economic downturn by making funds available to pursue what has been termed the Economic Resurgence Expenditure Programs. If the Heritage Fund had not contributed its investment income to budgetary revenues during this period, Albertans would have faced significant reductions in government services or an increase in tax rates.⁶

Another significant economic impact of the fund concerns its effect on labor immigration. The implicit goal of the fund was to stimulate a regional economy that would be able to provide jobs for Albertans. But with Alberta's relative low population, the industrial production schemes will apparently promote population immigration. Immigration increases market size and stimulates other economic activities.

Summary

The foregoing is an attempt to describe some of the programs that the Alberta government has developed to help achieve the policy objective particularly to help strengthen and diversify the economic base. The three major divisions established include the Capital Project Division, Canada and Alberta Investment Division. Each division has been equipped with strategies to help achieve a particular goal.

It was argued in the chapter that the government diversification effort has been the upgrading of the oil and gas industry. The analyses were based on some of the specific projects funded from the Heritage Fund. Nonetheless, the constraints that may impede the success of this policy has been noted.

In short, establishing the Heritage Fund has reduced the inflationary pressure which may have occurred otherwise. Presently, the fund is being utilized to finance recovery programs. Without the fund's contribution to Alberta's budgetary revenues, it would have been necessary to increase the provincial personal income tax or introduce a sales tax in order to maintain government services in the province. The next section will examine the role of the Heritage Fund in Agriculture.

CHAPTER II - Footnotes

¹The Standing Committee on the Alberta Heritage Savings Trust Fund, Minority Report, 1980 (Edmonton: Government Printing Office, 1980), p. 2

²A.F. Collins, "Alberta Heritage Savings Trust Fund: An Overview of the Issues," Canadian Public Policy 6 (Fall 1980): 192

³Interview with David Zukerman, Alberta Agricultural Development Corporation, Calgary, Alberta, 19 February 1985.

⁴Garth Stevenson, "Political Constraints and the Province-Building Objective." Canadian Public Policy 6 (Fall 1980): 236

⁵Alberta Legislative Debates, 23 April 1876, cited by Garth Stevenson, Canadian Public Policy, 6 (Fall 1980): 237.

⁶Alberta Heritage Savings Trust Fund, Annual Report, 1982-84 (Edmonton: Government Printing Office, 1982-84) p. 4

CHAPTER III

THE ROLE OF HERITAGE FUND IN AGRICULTURE

This chapter will review the role the Heritage Fund has played in agriculture. The purpose is to reveal some of the projects funded from the Heritage Fund that may directly expand the permanent economic base. The chapter will first examine the position of agriculture before and after the establishment of the Heritage Fund followed by discussion of the role of the fund in agriculture.

Agriculture Before and After the Establishment of the Heritage Fund

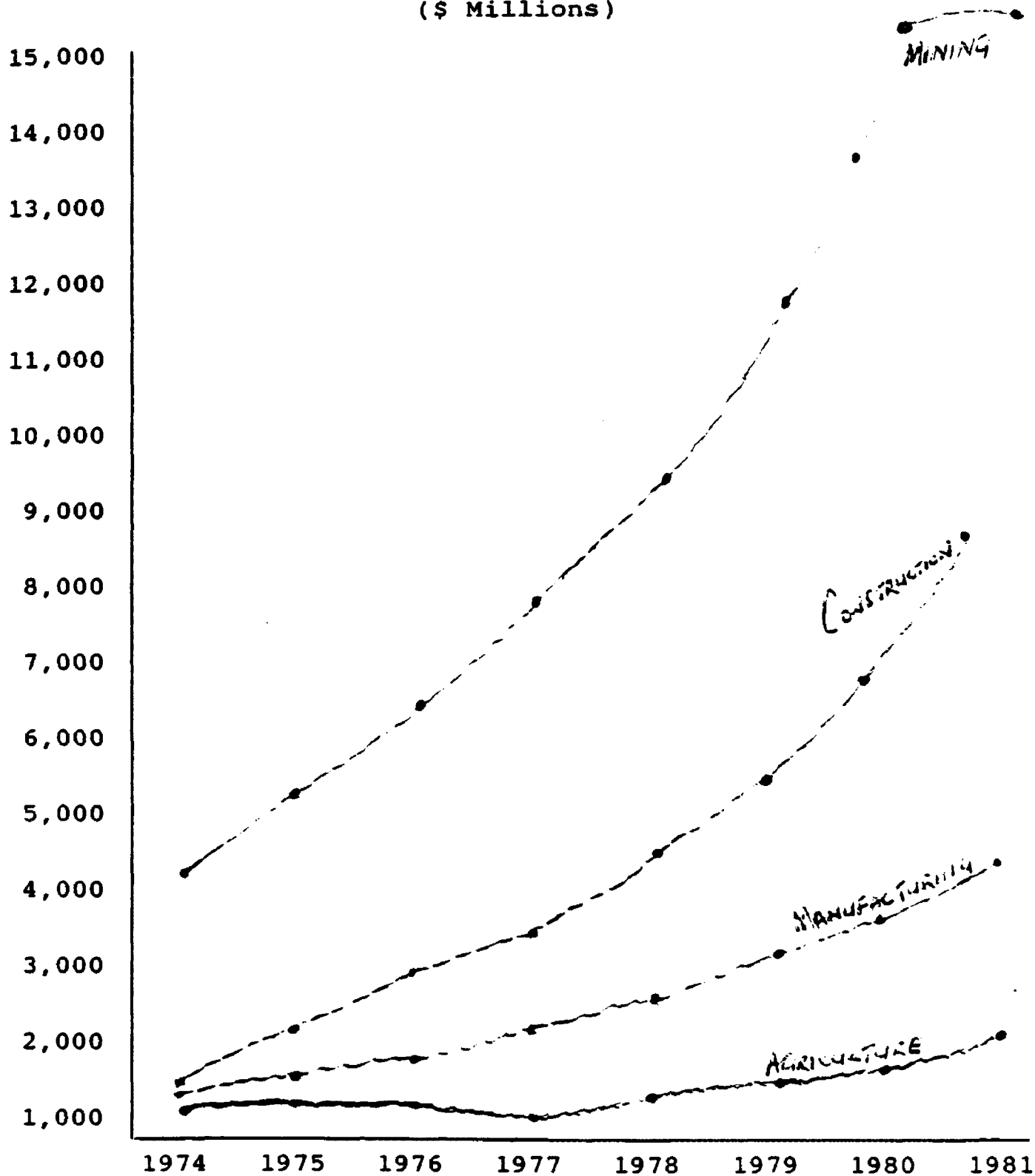
Table 4 shows that the percentage contribution of agriculture to the total goods producing industries before the creation of the Heritage Fund in 1976, has been significant. But from 1977 through 1983, its relative contribution has fallen considerably. The relatively low contribution is a result of the increasing world oil prices resulting in a higher non-renewable resource revenue and thus GDP.

Graph 1 reflects at a glance, the position of each of these economic sectors before and after the creation of the Heritage Fund. The diagram shows that agricultural growth rate has been decreasing over the years even after the establishment of the Heritage Fund. Its low growth rate can be attributed to changes in the demand for agricultural products and the high interest rate which may increase the cost of farm production. Graph 1 shows that the mining sector of the economy, which includes petroleum production

GRAPH 1

Net Value Added in Goods Producing Industries
Alberta, 1974-1981

(\$ Millions)



Source: Table 4

and refining, has actually increased from 4.213 million in 1974 to 15,571 in 1981. Agriculture has decreased, as has manufacturing.

Alberta Heritage Fund and Agricultural Development

The Heritage Fund monies affect the agricultural development through the Alberta Agricultural Development Corporation (ADC) a subset of the Alberta Investment Division, and through projects funded within the Capital Project Division. ADC provide loans to farmers at lower than market cost to improve farmer's income. Under the Capital Investment Division, the Heritage Fund spending affects agriculture in three distinct project areas: Farming for the Future Program; Food Processing Development Centre, and Irrigation Rehabilitation and Expansion. The most pronounced impact of the Heritage Fund among the three programs has been the establishment of the Farming for the Future Program.

Farming for the Future is an agricultural research funding program financially supported by the Heritage Fund. The program was created in 1977 during which time it was set to run for a five-year funding period. The program has two specific objectives: (1) to improve the longrun viability of agriculture in Alberta; (2) to help improve the net income of Alberta producers.¹ The program completed its five-year mandate on March 31, 1984. But because of the continued need to intensify Alberta's agricultural research effort, it has been extended for another three-year funding mandate. To achieve the program's objective,

three sub-programs were created during the first mandate:

- (1) the Research Program, designed to expand the store of scientific and technical knowledge applicable to Alberta conditions
- (2) the On-farm Demonstration Program, which transferred that knowledge to producers across the province; and
- (3) the Graduate Student Research Support Program, a short-term effort aimed at ensuring future expertise in the agricultural sciences.²

The Research Program

The major emphasis of the program is to support the advancement of agricultural technology through research programs carried out by universities, private industries and agencies of the provincial and federal government. The Agricultural Research Council of Alberta (ARCA) was created in 1978 to administer the program. The council is presently composed of 15 members, including the Minister of Agriculture (chairman); the Deputy Minister of Agriculture (vice-chairman); seven producers and one representative each from Alberta Agriculture, the University of Alberta, the Alberta Research Council, Agricultural Canada, the Legislative Assembly of Alberta, and the Alberta Irrigation Council. Their major responsibilities are identifying research needs and helping to ensure continuity and expansion of agricultural research in Alberta. To provide these services, the council established nine program areas that represent the major components of Alberta's agricultural sector. The program areas, the distribution of research projects, and estimated

funding by program area are shown in Table 8. The council also created nine program committees to review and evaluate research proposals submitted for support under the program areas. Project proposals are submitted to the appropriate program committee for evaluation. The committee evaluation and recommendation are then forwarded to the Council for a final decision.

As shown in Table 8, \$7,042,460 were distributed in support of 142 research program projects in 1983/84. Over the entire mandate 1979/80-1983-84, \$22,121,975 were awarded to 199 research programs. According to Yilma Teklemarian, "The Farming for the Future has to date supported 338 research projects, 175 On-farm Demonstration Projects and 37 Graduate Student Research support programs at a total cost of \$300 million."³

The following are a few examples of the research projects supported under the program.

Cereals and Oilseeds

The production of cereals and oilseed crop is a cornerstone of Alberta's agricultural industry. "In 1983, Alberta producers harvested 250 million bushels (6.8 million tonnes) of wheat, 243 million bushels (5.3 million tonnes) of barley, and 49 million bushels (1.1 million tonnes) of Canola. Farm cash receipts for cereal and oilseeds production the same year were estimated at \$1.87 billion."⁴ Because of the vital importance of these commodities, cereal and oil

TABLE 8

DISTRIBUTION OF RESEARCH PROJECTS AND ESTIMATED FUNDING
BY PROGRAM AREA 1979/80 - 1983-84

Program Area	Number of Projects			Funding Awarded				
	1983/84	% of Total Number	1979/80 to 1983/84	% of Total Number	1983/84	% of Total Awarded	1979/80 to 1983/84	% of Total Awarded
Apiculture/Entomology	8	5.6	13	6.5	\$ 409,200	5.8	\$ 1,597,025	7.2
Cereals and Oilseeds	21	14.8	28	14.1	1,951,519	27.7	5,333,600	24.1
Forages	21	14.8	32	16.1	935,993	13.3	3,729,623	16.9
Irrigation	6	4.2	7	3.5	190,735	2.7	460,735	2.1
Land Resources and Engineering	10	7.0	13	6.5	767,880	10.9	2,466,205	11.1
Non-Ruminants	18	12.7	22	11.1	619,500	8.8	1,487,010	6.7
Processing Transportation, Marketing and Socio-Economics	12	8.5	16	8.0	325,000	4.6	819,960	3.7
Ruminants	34	23.9	50	25.1	1,445,764	20.5	4,870,192	22.0
Special Crops	12	8.5	18	9.1	396,869	5.7	1,357,625	6.2
TOTAL	142		199		\$7,042,460		\$22,121,975	

Source: Farming for the Future Progress Report 1983

seed research received considerable funding from Farming for the Future. Since its inception, twenty-eight research projects (14.1 percent of total projects) were awarded at a total cost of \$5,333,600 (24.1 of total awarded), see Table 8. These included studies on plant breeding, development of new crop varieties, disease and weed control, and improved methods of production.

Ruminants

The ruminants industry is the second largest contribution to Alberta's total agricultural income. "In 1983, farm cash receipt from ruminants production were estimated at \$1.32 billion accounting for 35.8 percent of total farm cash receipts."⁵ Beef cattle were the major focus of ruminant research supported by the Farming for the Future. Funding was also awarded for experiments related to dairy cattle and sheep. Table 8 shows that 50 research studies (25.1 percent of total research projects) were carried out between 1979/80 through 1983/84. Such research includes breeding, reproduction, nutrition, and meat grading and processing. The total cost of these projects as of 1983 progress report was \$1,445.764 (22 percent of total funding awarded).

Forage

Forage is the third largest funding program area listed in Table 8. The funding in this area has supported projects in such areas as disease resistance and control, brush

control, optimum use of fertilizer, regional varietal testing, and harvesting and storage techniques. Total research projects 1978-80 throughout 1983/84 were 32 (16.1 of total research projects) at a total cost of \$3,729,623 (16.9 percent of total funding).

Irrigation

Irrigation received the least funding of all the nine program areas listed in Table 8. Between 1979 and 1984, seven research projects (3.5 percent of total projects) were pursued in this area with a total cost of \$190,735 (2.7 percent of total funding). "Alberta has greater than 50 percent of all the irrigated lands in Canada."⁶ Therefore, there is a need to further enhance agricultural productivity by improving and expanding irrigation techniques through more research fundings. It is worth noting, however, that the Heritage Fund expenditure also effects irrigation under the Irrigation Rehabilitation and Expansion program funded within the Capital Projects Division. Such projects will assist irrigation districts in rehabilitating irrigation system which will ensure efficient distribution of water to Alberta irrigation farmers. According to Lou Hyndman, the Provincial Treasurer, "Two categories of projects has been funded under the Irrigation Rehabilitation and Expansion Program. They include the rehabilitation of larger canals and the rehabilitation and construction of reservoirs. The total investment in this program at March 31, 1984 stands at 127.3 million."⁷

Another sub-program area that warrants brief comment involves the creation of the On-farm Demonstration Program. This sub-program area was created in January 1982 in order to encourage the transfer of research projects from the laboratory to the farm. According to Leroy Fjordbotten, Minister of Agriculture, "Seventy-two new and renewed projects were awarded in 1983 through 1984 at a total cost of \$270,000."⁸ The procedure of this program is that any producer or farm organization with an innovative idea for a demonstration that could benefit farmers can apply for a grant through the local district agriculturist. Each application is evaluated on the basis of many criterias such as its potential contribution or significance of the demonstration to the region's agricultural industry, the size, duration and cost of the proposal. Approved funds can be used to hire project labor, purchase equipment and supplies and other necessary activities directly related to the project. An example of the On-farm Demonstration involved the assessment of the use of solar energy in grain drying. Substituting solar energy for grain drying instead of using gas or other fossil fuels reduce costs with a corresponding increase in net farm income an incentive to increase productivity.

The last sub-program of the Farming for the Future is the Graduate Student Research Support Program. The program was established to help improve the number and the quality of graduate students available for future postgraduate

research in the agricultural sciences. The program provides one-time grants of up to \$10,000 from the Heritage Fund to help graduate students at Alberta Universities and the Western College of Veterinary Medicine in Saskatoon to cover their individual research cost.⁹

This section revealed some of the many programs pursued by the provincial government with the Heritage Fund monies to improve agriculture. Heritage Fund spending also affects agriculture in ways that are not directly apparent. For instance, projects administered by Environment Agency such as stabilizing lake levels that prevent the flooding of communities, will at the same time, improve agricultural lands around such areas. Projects funded under the Transportation Department will also improve movement of agricultural products both within the province as well as to other regions.

Constraints to Agricultural Development in Alberta

The dominant factor affecting agriculture in Alberta has been the geographical feature of the province such as its location and climate. Natural resources and physical environment are the basic factors determining the location of economic activities. Chapter two discussed the locational factors affecting the province's diversification efforts. The same obstacles can be applied to agriculture. For instance, distance from other major market areas and lack of water transportation are factors affecting agricultural productivity in the areas.

The relationship between agricultural productivity and the cost of production should also be recognized. In 1980-81 many Alberta farmers were declaring themselves pressed by the soaring cost of land, machinery, fertilizer and chemicals. According to M. Hopley, "It cost me \$83 to produce an acre of wheat last year after adding up everything from fuel and seeds to equipment repairs and taxes. In return, I received \$87. Compare this to what I could have received from the boom year of 1973-74 when I could find as much as \$100 difference between cost and returns."¹⁰ Another cost that is worth noting here is the increased cost of labor. Some economic incentive will almost certainly be required to induce agricultural labor from migrating from the agricultural sector into oil and gas industry particularly during the oil boom periods. Having established these facts, there are reasons for believing that with the world agricultural prices sliding downwards while production costs are on the rise, the agricultural output may fall. There was a consensus among farmers interviewed by this author that what is required is a rise in price of agricultural products relative to industrial products to induce extra supply of agricultural products.

In seeking other reasons for the declining agricultural output in Alberta, the influence of natural factors should also be borne in mind. Climate and terrain determine to a large degree what crop a region can produce, the amount of cultivable land available per inhabitant, and the land's

fertility. To some extent, the research findings and application of capital to the land can compensate for the unfavorable natural forces, but there are obvious limits. For instance, mountains lie between Alberta and the sea, and Alberta weather has wide extremes and variability. Mountains cannot easily be flattened or snow covered land be overemphasized. Suitability of Alberta's climate for agriculture is evident as one moves southward through the province. Rainfall in most years is adequate over most of Alberta except in the southeast areas of the province where aridity is a problem to agriculture. In the southern areas of the province where rainfall is inadequate, irrigation farming is largely practiced or cattle ranching takes the place of grain growing. Extreme winter temperatures of 50 to 60 degrees below zero Fahrenheit have been recorded in the province.¹¹ However, the fact that more than one-quarter of annual precipitation falls as snow reduces agricultural output in the province.

Two other considerations of importance affecting agricultural development have been the changes in the numbers and size of farms. Over the years, there has been a marked decline in the numbers of farms, attributable to the improved opportunities for work and higher incomes outside agriculture.¹²

Summary

As part of its economic diversification strategy, Alberta

government is pursuing numerous policies to increase agricultural productivity in the province. It has established Farming for the Future solely funded by the Heritage Fund, to fund research projects aimed at improving the province's agriculture. Its creation is in response to the realization that without a continuing flow of new technology, Alberta might find it difficult to maintain productivity growth and a competitive advantage both world and domestic market. The Farming for the Future Program receives and disburses funding under the Capital Project Division appropriations. The idea helps to obtain support for research projects unable to obtain funding from other sources. There are two basic programs instituted under the program: The Research Program and On Farm-Demonstration Programs.

The Heritage Fund spending also affects agriculture through funding of Food Processing Development Centres and Irrigation Rehabilitation and Expansion Program. Through the Alberta Agricultural Development Corporation under the Alberta Investment Division, loans are expanded to farmers and agri-business at lower than market cost.

Geographical features of the province such as climate - snow, rainfall, frost free days, and hours of sunshine affects agricultural development in the province. Cost of production both labor and capital has also been identified to impede agriculture in the province.

The following chapter that forms the concluding section of this professional paper will focus on recommendations that may help achieve policy objectives.

CHAPTER III - Footnotes

¹Farming for the Future, Progress Report, 1983 (Edmonton: Government Printing Office, 1983), p. 4

²Farming for the Future, Progress Report, 1979 (Edmonton: Government Printing Office), p. 4

³Interview with Yilma Teklemarian, Alberta Agriculture Farming for the Future, Edmonton, Alberta, 13 February 1985.

⁴Ibid., Progress Report, 1983, p. 7

⁵Ibid., p. 10

⁶G.A. Gaherty, Alberta-Province of Opportunity (Calgary: Calgary Power Ltd., 1953), p. 12

⁷Lou Hyndman, Alberta Heritage Savings Trust Fund, Annual Report, 1984 (Edmonton: Government Printing Office, 1984), p. 11

⁸Leroy Fjordbottem, Farming for the Future, Progress Report, 1984 (Edmonton: Government Printing Office, 1984), p. 1

⁹Ibid., p. 15

¹⁰Interview with M. Hopley, Hopley Farms, Calgary, Alberta, 5 March 1985.

¹¹G.A. Gaherty, Alberta-Province of Opportunity (Calgary: Calgary Power Ltd., 1953), p. 4

¹²Interview with David Lukerman, Alberta Agricultural Development Corporation, Calgary, Alberta, 19 February 1985.

CHAPTER IV

CONCLUSION AND RECOMMENDATION

The choice to establish the Heritage Fund rather than the distribution of the resource revenue through either of the alternatives discussed in chapter one is a great potential source for economic diversification. It is also a desirable and important tool for helping to distribute over time the benefits from the province's nonrenewable resource revenue. Thus, by establishing the Alberta Heritage Savings Trust Fund within the public sector, the provincial government may insure that the bulk of the revenues if properly utilized remain available to the province to pursue economic development where it would not otherwise exist.

The aspect of the Heritage Fund's activities that has received the most public attention is the effect of the fund on economic diversification. The analyses in previous chapters, particularly in chapter two, indicate that problems exist in clearly identifying and executing a suitable industrial diversification strategy for the province. By the criteria established for the Heritage Fund, there seems to be lack of clearer goals for diversifying the economic base. The fact that most of the Heritage Fund's spending as shown in chapter two, were expanded into oil and gas industry supports such proposition. The province should stimulate further research into the identification of key industries and instruments of diversification policy. This point forms the basis of the discussion later in this section.

March 31, 1985 marked the end of the Heritage Fund's ninth fiscal year. "On that day, the total assets of the fund are expected to be \$16 billion."¹ However, if the provincial government is to avoid a drastic reduction in government services and a major increase in taxation when the nonrenewable resources are depleted, a greater portion of the fund must be directed toward programs that will expand the permanent economic base. In this context, it is necessary to address the question of the type of economic development that the government should be attempting to stimulate in Alberta.

It is easy to criticize the fund for being unimaginative and not doing enough in this area, but it is more difficult to come up with sound proposals that will help achieve these goals. Nonetheless, the description and criticism of the topic in this paper posed an important question: how can such fund be utilized to achieve its stated objective? To answer this question, one needs to examine some of the industrial areas that exist in the province and those that might suit the primary resources of the province.

The economic potential of Alberta is most apparent in the Agricultural and Manufacturing sector that utilize those primary products. As shown in Table 4, the relative importance of manufacturing in the economy of Alberta has changed very little between 1974 and 1981. It has decreased slightly from 16.3 percent to 13.9 percent in 1981. The relative importance of agriculture has also changed from

13.6 percent to 8.3 percent for the same period (see Table 4). It is evident, therefore, that the manufacturing and agricultural sectors would be the economic area which could have the best chance of success in Alberta. Following this line of thought, it is the purpose of the next section to point out specific areas where opportunities for changes appear to exist in the province with the use of the Heritage Fund.

Heritage Fund and Agricultural Development

The development of agriculture, owing to the initial importance in the country's economic structure, plays a crucial role in establishing the framework for industrialization. The agricultural sector for instance, must provide, in large measure, the factor supplies for manufacturing industries not to mention its contribution to the gross domestic product. Therefore, it is important that the government dedicate a more substantial portion of the Heritage Fund into the sector. Chapter three discussed some of the programs undertaken to improve its efficiency. Based on the analyses in the previous chapters, the government is making a limited contribution to this area relative to the funds expended to the energy sector. The five year total allocation of \$22,121,975 under the Farming for the Future Program which began in year three of the Heritage Fund is minimal if compared to over \$100 million for conventional petroleum research projects. The total direct investment projects administered by agriculture under the umbrella of

the Heritage Fund total \$158.1 million as of March 31, 1984. Whereas, a total of \$306.8 million worth of projects were administered by the Energy and Natural Resources for the same period.² Therefore, more consideration should be given to increasing the balance of the funds which are invested in agriculture and energy sectors.

One of the activities of the Agricultural Development Corporation is the program which is designed to assist individuals just starting out in the farming business.³ More effort is needed in this area to improve the overall picture of Alberta's agriculture. For instance, activities of this corporation could be further decentralized to assist those in the rural areas to have access to its operations. Moreover, more public awareness is needed of its function possibly through the media. According to D. Zukerman, District Agriculturist, "Well established farmers are well aware of the existence and functions of this corporation. Some of the new or small scale farmers do not know that ADC exists."⁴ An improvement in this Corporation is needed in order to bring about an effective use of the Heritage Fund.

The beef farmers or cattlemen in Alberta are looking elsewhere in agriculture to make a living due to the weakening of the policy of beef imports and inability to compete effectively with the cheaper beef allowed into the country.⁵ The Province of Quebec in Canada, for instance, has been able to subsidize its beef industry with loans from the

Alberta Heritage Fund under the provisions of the Canada Investment Division. This action has improved Quebec's competitive position. The Heritage Fund should be utilized in the same manner. The research findings suggests that the present government policy on agriculture programs, plus the contributions to the Western Grains Stabilization Plan, favors grain production. These government policies will swing farmers' attention to grain production with a corresponding reduction in other areas such as cattle business in the province, despite the fact that cattle prices are reasonably good and grain prices are in a slump. A somewhat balanced incentive is needed across the agricultural industry to discourage over production of a particular product.

Heritage Fund and Manufacturing

Based on the definition in chapter two, diversifying the economic base will also call for expansion in manufacturing sector. The question is which industries within the manufacturing sector would be most likely to suit Alberta's situation. One would expect however, that the provincial government would encourage the development of manufacturing industries which utilize the output of existing agricultural products.

Two basic factors have been emphasized by A.P. Thirlwall to account for the expansion of production of goods for exchange at home and abroad. One is the expansion of communications to create outlets and markets for surplus production and to encourage the production of the surplus

itself. The other is the emergence of a class of middlemen or export/import merchants acting as agents between world market and home producers.⁶ It is necessary in this case to provide the favorable climate required for the private sector to make investments in this type of business. The Alberta Opportunity Company, funded under the Alberta Investment Division, could improve its equity funding in order to encourage both new and existing small business investors in exporting activities. Exports will create or provide a powerful stimulus to both the agricultural and manufacturing sector's productivity.

The following discussion will outline specific cases where opportunities for expansion and diversification of existing processing industries appear to exist in the province.

It is recommended that the government should encourage the production of goods now imported into the province. It is not suggested here that all present imports should be replaced by domestic production, but only demonstrating some of the areas in which production for local market or for exports appears to have a likelihood of economic success such as the following processing industries.

Food and Beverages

The first of these industrial areas would be food processing. The agricultural base of Alberta would surely sustain a major food manufacturing sector considerably larger

than it is at the present time. At the moment, the Heritage Fund has supported the Food Processing Development Centre in Leduc, Alberta. The Centre provides the food industry and researchers with facilities which can be used for the development and testing of new products, processes and packaging systems. More effort is needed in this area to substitute domestic production for imports.

Iron and Steel Products

Imports in this area have been substantial and indicate opportunity for construction of more steel mill capacity in Alberta. "This industry group has the largest import value of any manufacturing group."⁷ It is obvious that the Mining and Agriculture in Alberta economy is responsible for the high value added of this product. Therefore there is a strong case for expansion in this area with the use of the Heritage Fund.

Other industrial areas that opportunities may exist include clothing, wood products and products of petroleum and coal.

However, it is worth emphasizing that the specific areas of industrial development will be determined by the free market through the normal profit incentive. The provincial government merely needs to create the most favorable economic environment within which the free enterprise may operate effectively such as providing industrial incentives and by encouraging the AOC and ADC to expand equity financing.

As mentioned earlier, ADC and AOC are designed to make loans available to farmers and small business respectively at lower than market rates. According to Daniels and Swack, "Subsidizing the cost of money for small business people or large scale development projects is both unwise and unnecessary. Lowering the cost of capital does not lower the cost of production of most business enterprises sufficiently to lead a firm to change its business decision merely because of the subsidy. The central issue is the availability of capital and not its cost."⁸ Nonetheless, such subsidy may attract and promote Albertan ownership in a given industry rather than having outside individuals or firms from other regions to dominate the market. Therefore, consideration should be given to expansion and decentralization of the activities of the ADC and AOC.

The Alberta Investment Division was designed to strengthen and diversify the economy of Alberta. As noted in chapter two, a large part of the Division assets are devoted to Housing and areas that have more to do with short term political advantage than with economic diversification. Table 6 shows that every year, about 90 percent of the Heritage Fund's assets consist of the securities of various Alberta government agencies. Some of these securities would in the absence of the fund, have been offered on Canadian or foreign bond markets in the usual manner. In addressing this issue, Daniel and Swack emphasized that "Alberta has the highest credit rating of any state or

province in North America. By selling Alberta government corporation bonds at the lowest market interest rate and investing non-renewable resource revenue in a diversified portfolio, the government could add several percentage points to the rate of return on Heritage Fund monies."⁹ If the provincial government chose to put the debentures of these Crown Corporations on the commercial bond market, the Heritage Fund can be utilized in areas that the private market neglects, such as the capital needs of the small business sectors. The point here is that Alberta could best diversify its economy by investing in new and small enterprises not large corporations.

Rather than concentrating the investment in Crown Corporations, the government should recognize that there are some benefits to be derived from further diversification of the Heritage's Fund Investment portfolio. This leads to another major recommendation; that is, to diversify investments internationally. There are some obstacles to diversifying the fund internationally which are worth mentioning here. International investments involves two risks. One is the exchange rate risk and the other is the country risk.¹⁰

Exchange Rate Risk - This risk is due to the variations of the exchange rate as a result of capital outflow. Investment in foreign stock represent or increases capital outflows and reduces a country's foreign exchange reserves. With the current low exchange rate of Canadian currency relative

to U.S. dollars, we would expect that a further increase in capital outflow will worsen the exchange rate position.

Country Risk - This type of risk may occur from the fact that the investment is issued in many countries with different political jurisdiction. In this case, there may be a political risk such as the possibility of exchanged controls measures affecting repatriation of interest and principal. Country risk also refers to default risk and the general uncertainty about economic and political developments in the foreign country. The issue of international portfolio diversification has been the subject of a variety of studies all of which have in common the higher rate of return.¹¹ As far as international diversification is concerned, the government may of course, invest in Canadian firms which themselves have expanding international operations.

Finally, there is a clear case for reforming the organizational structure of the Heritage Fund. In particular, major investment commitments in Canada and Alberta Investment Divisions should be made conditional on legislative approval rather than on investment committees that are made up of the political party in power. Prior legislative approval permit debate and subject to more public scrutiny on investment issues. The argument against this sort of idea is the possible cost of legislature delays. Prior legislative debate could, under certain circumstances, adversely affect the price paid for certain investments,

hence the rate of return generated. But we should also recognize that such procedure may produce better investment decision such that the rate of return outweighs the possible cost of legislative delays. The Provincial Treasurer should minimize investment in marketable securities, redistributing such funds to the three major divisions of the Fund so that they are subject to legislative scrutiny. A Board should also be created with responsibilities to provide a continuing analysis of the Heritage Fund. Such committee should be independent of political parties and those corporations that provide and utilize its revenue. Members may be selected from academic fields. It is not suggested here that the Select Committee of the Legislative Assembly should be discontinued. On the contrary, criticism and recommendation of the Board may help to strengthen the activities of the Select Committee and also enhance the quality of debate about the Heritage Fund in the Legislature. Operating within the realm of such criticism may improve the longrun effectiveness of the Heritage Fund Investments.

In summary, appreciating that agriculture is the most feasible way to diversify the economic base, and recognizing the importance of expanding Alberta's secondary industry, suggest that the development of both sectors should be a top priority for Heritage Fund Investments. Also, investment from the Heritage Fund in the area of irrigation agriculture should continue. Comparing the yearly allocation of funds to these areas indicates a decrease every year.

CHAPTER IV - Footnotes

¹ Alberta Heritage Savings Trust Fund, Annual Report, 1984 (Edmonton: Government Printing Office, 1984), p. 9

² Ibid., p. 11

³ Interview with David Zuicermen, Alberta Agricultural Development Corporation, Calgary, Alberta, 19 February 1985.

⁴ Ibid.

⁵ The Standing Committee on the Alberta Heritage Savings Trust Fund, Minority Report 1980 (Edmonton: Government Printing Office, 1980), p. 8

⁶ A.P. Thirlwall, Growth and Development, Second Edition (London: MacMillan Press Ltd., 1978), p. 88.

⁷ G.A. Gaherty, Alberta-Province of Opportunity (Calgary: Calgary Power Ltd., 1953), p. 258

⁸ Hull Belden Daniels and Michael E. Seveck, Thinking About the Alberta Heritage Savings Trust Fund (Cambridge: Counsel for Community Development, Inc., 1980), p. 16

⁹ Ibid., p. 17

¹⁰ T.L. Powrie and B.L. Scarfe, "The Optimal Savings Questions: An Alberta Perspective," Canadian Public Policy 6 (Fall 1980), p. 162

¹¹ Ibid., p. 163

APPENDIX A

Alberta Heritage Savings Trust Fund
Balance Sheet
March 31, 1984
(Thousands of Dollars)

Assets and Deemed Assets	1984	1983
Assets:		
Deposit in the Consolidated Cash Investment Trust Fund	\$ 111,860	\$ 117,336
Accrued Interest and Accounts Receivable	429,412	419,603
Due from the General Revenue Fund	28,273	--
Marketable Securities	807,760	575,769
Canada Investment Division Investments	1,896,238	1,902,516
Alberta Investment Division Investments	8,079,348	8,157,700
Energy Investment Division Investments	25,000	25,000
Commercial Investment Division Investments	199,155	198,785
Capital Project Division Investments	200,000	--
	<u>\$11,777,046</u>	<u>\$11,396,709</u>
Deemed Assets:		
Capital Project Division Investments	1,934,638	1,604,920
	<u>\$13,711,684</u>	<u>\$13,001,629</u>
Liabilities and Fund Equity		
Liabilities:		
Accounts Payable	37,355	38,786
Due to the General Revenue Fund	--	6,950
	<u>37,355</u>	<u>45,736</u>
Fund Equity:		
Represented by net assets	11,739,691	11,350,973
	11,777,046	11,396,709
Represented by deemed assets	1,934,638	1,604,920
	<u>\$13,711,684</u>	<u>\$13,001,629</u>

Source: Alberta Heritage Savings Trust Fund Annual
Report 1983-84

APPENDIX B

Following is Section 13 of the Alberta Heritage Savings Trust Fund Act, in which the nature and purpose of the Select Standing Committee is outlined.

13.(1) There is hereby established a select standing committee of the Legislative Assembly called the "Select Standing Committee on the Alberta Heritage Savings Trust Fund Act" consisting of 15 members.

(2) The members of the Select Standing Committee shall be appointed at the commencement of each session in the same way that members are appointed to other select standing committees of the Legislative Assembly.

(3) When a copy of an annual report is furnished to the Clerk of the Legislative Assembly pursuant to section 12, subsection (3) the annual report shall be deemed to be referred to the Select Standing Committee for review and a report concerning the investments of the Trust Fund which may contain any recommendations of the Committee concerning those investments.

(4) Where a motion is made in the Legislative Assembly for second reading of a Bill for a Special Act relation to the 1978-79 or any succeeding fiscal year, then, unless the Assembly by resolution otherwise directs, the debate on the motion shall be proceeded with only if the report of the Select Standing Committee relating to the preceding fiscal year has been tabled in the Assembly.

(5) The Select Standing Committee may, without leave of the Assembly, sit during any period when the Assembly is adjourned or after prorogation of a session of the Legislature.

SELECTED BIBLIOGRAPHY

BOOKS

- Amling, Fredrick. Investments: An Introduction to Analysis and Management. England: Prentice-Hall, 1978.
- Blackman, W. The Cost of Confederation An Analysis of Costs to Alberta. Calgary: University of Calgary, 1974.
- Christy, G.A. and Clendenin, John C. Introduction to Investments. New York: McGraw-Hill, 1978.
- Curley, Anthony and Bear, Robert M. Investment Analysis and Management. New York: Harper and Row, 1979.
- Daniels, Belden Hull and Sevack, Michael E. Thinking About the Alberta Heritage Savings Trust Fund. Cambridge: Counsel for Community Development, Inc., 1980.
- Dougall, Herbert. Investments. Englewood: Prentice-Hall, 1977.
- Gaherty, G.A. Alberta-Province of Opportunity. Calgary: Calgary Power Ltd., 1953.
- Levy, Haim and Sarnet, Marshall. Investment and Portfolio Analysis. New York: John Wiley and Sons, Inc., 1972.
- Lithwick, N.H. Regional Economic Policy: The Canadian Experience. Toronto: McGraw-Hill Ryerson Limited, 1978.
- Ohasi, T.M., and Roth, T.P., Privatization Theory and Practice. Vancouver: Fraser Institute, 1980.
- Richards, John and Pratt, Larry. Prairie Capitalism: Power and Influence in the New West. Toronto: McClelland and Stewart Limited, 1979.
- Thirlwall, A.P. Growth and Development, Second Edition. London: MacMillan Press Ltd., 1978.

GOVERNMENT PUBLICATIONS

- Alberta Heritage Savings Trust Fund. Annual Report, 1977-84. Edmonton: Government Printing Office, 1977-1984.
- Canada, Minister of Industry, Trade and Commerce. Yearbook of the Minister of Industry, Trade and Commerce, 1979. Ottawa: Government Printing Office, 1979.
- Farming for the Future. Progress Report, 1972-83. Edmonton: Government Printing Office, 1979-84.

The Standing Committee on the Alberta Heritage Savings Trust Fund. Minority Report 1980. Edmonton: Government Printing Office, 1980.

PERIODICALS

"Alberta's Heritage Fund." The Economist 279 (May 16, 1981): 79-81.

Alberta Legislative Debates, 23 April 1876. Cited by Garth Stevenson, Canadian Public Policy 6 (Fall 1980): 236-44.

Collins, A.F. "Alberta Heritage Savings Trust Fund: An Overview of the Issues." Canadian Public Policy 6 (Fall 1980): 191-204

Courchene, Thomas J., and Melvin, J.F. "The Heritage Fund: Consequences for the Rest of Canada." Canadian Public Policy 6 (Fall 1980): 141-57.

Drugge, S.E. and Veeman, T.S. "Heritage Fund Problems and Policies." Canadian Public Policy 6 (Fall 1980): 135-139.

Gainer, N.D. and Powrie, T.L. "Public Revenue from Canadian Crude Petroleum Production." Canadian Public Policy 1 (Winter 1975): 1-12.

Hartwick, J.M. "Intergeneration of Equity and the Investing of Rents from Exhaustible Resources." American Economic Review 657 (December 1977): 972-74.

Norrie, K.H. "Some Comments on Praire Economic Alienation." Canadian Public Policy 2 (Spring 1976): 211-224.

Powrie, T.L. and Scarfe. "The Optimal Saving Questions: An Alberta Perspective." Canadian Public Policy 6 (Fall 1980): 158-65.

INTERVIEWS

Hopley, M. Hopley farms, Calgary, Alberta Interview, 5 March 1985.

Teklemariam, Yilma. Alberta Agricultural Farming for the Future. Edmonton, Alberta. Interview, 13 February 1985.

Zukerman, David. Alberta Agricultural Development Corporation, Calgary, Alberta. Interview 19 February 1985.