

FOCUS

**ON
ALBERTA'S
INDUSTRIAL
AND SCIENCE
STRATEGY
PROPOSALS**



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**ON
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STRATEGY
PROPOSALS**

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PREFACE AND SUMMARY

I. INTRODUCTION

The purpose of the volume

In July 1984 the Government of Alberta released a "White Paper" entitled, **Proposals for an Industrial and Science Strategy for Albertans 1985 to 1990**. The document, the government made clear, was designed to stimulate discussion rather than to give a firm indication of the government's specific intentions. The purpose of this volume is to react in the spirit of the Paper's intention, to support those proposals that stand the test of critical scrutiny and to suggest alternative courses of action where the proposals seem not to be in the interests of Albertans.

The Fraser Institute has another motive for commissioning a book about the Alberta White Paper, that is because there is at the moment in North America a battle of ideas about the appropriate course of industrial strategy. As Professor William Watson writes in his contribution to this volume, the Alberta White Paper comes down, "foursquare on the side of interventionism." However, the Paper is a veritable quagmire of ambivalence and inconsistency. Time and again the authors of the Paper take due note of all the arguments in favour of competitive market solutions to economic problems on the way to proposing yet another intervention.

This tension between interventionist and non-interventionist solutions in the Paper should alert us to the fact that there is indeed a battle of ideas underway. Its resolution is important not only for this particular policy determination in the Province of Alberta, but also for policy decisions which are being made across the country -- in particular in Ottawa. These decisions will affect the country for the next decade.

As the remainder of this introductory summary will make clear, there is much about the Paper with which the authors disagree. However, the Government of Alberta deserves credit for taking the initiative to articulate their proposals for industrial

strategy and thereby to expose themselves to the merciless critique and cross-examination which has been underway since the day after the report was released. Whether the future is characterized by an interventionist or non-interventionist market strategy, the ideological raw material out of which it will be constructed is available to us right now. Careful consideration of these ideas can only serve to improve the nature of the future in which we must live.

The assumed motive

For the most part, the analysis contained in this volume assumes that the objective of the White Paper is to establish a program of governmental action which will be in the interest of Albertans. It would be naive, however, to assume that this is the only possible intent of the document. An entirely plausible alternative explanation is that the government, under political pressure to do something about the current depressed state of economic growth, seeks a plausible set of arguments for dipping significantly into the Heritage Trust Fund in order to enable it to spend handsomely in advance of the next provincial election. While a somewhat cynical representation of the possible motive of the government, it is one which, nevertheless, has adequate precedent as a motivating sentiment. Moreover, if that is the motivating concern, the content of this volume and all of the other feedback which the White Paper has prompted will have been to no avail.

The authors

The authors of this volume are diverse in their backgrounds, geographical locations and specializations. Professor William Watson of McGill University, for example, is one of North America's leading experts in the economics of industrial policy. Professor Barichello, an expert in agricultural economics, teaches at the University of British Columbia. Professors Percy, McMillan and Wilson all teach at the University of Alberta and, having diverse research interests, have provided an overview of the White Paper and its implications. Professor West, who teaches at Carleton University is one of the world's experts on the historical development of understanding about the market system and, in particular, on the ideas of Adam Smith. He has provided some historical perspectives on the document. Professor Watkins, President of DataMetrics Limited and Adjunct Professor at the University of

Calgary, is one of Canada's foremost experts in the area of petroleum economics. He has provided an analysis of the White Paper's prospective impact on the petroleum sector. Professor Lermer from the University of Lethbridge, like his colleagues at the University of Alberta, has provided an overview but from a different perspective. Professor Palda, who has written extensively on the subject of technology --including two books for the Fraser Institute -- teaches at Queen's University and is widely sought for consultation on the problems of industrial innovation.

I think it is fair to say that the authors are unanimous in acknowledging the importance of the White Paper in the evolution of Alberta's economic policy strategy. Moreover, on most matters where they have jointly considered subject areas they agree on the central criticisms which economic science has for the White Paper. However, this **Focus** volume is very much the product of nine independent authors and their contributions must be separately considered to get the full flavour of their reaction. The summary of views contained in this Preface is not meant to be a consensus expression of the authors' views. Rather, it is a survey of the impressions which I, as editor of the volume, have drawn from their work.

II. OVERALL ASSESSMENTS OF THE WHITE PAPER

Three of the studies in this volume examine the White Paper in general terms. They are the papers by Watson; Percy, McMillan and Wilson; and Lermer. They are unanimous in their assessment that the Paper is fraught with ambivalence and inconsistency, that the ideas for policy change are considered as though they would create benefits without levying costs, and finally that no convincing rationale has been provided for the apparently intended expansion in or extension of government intervention in the Alberta economy.

Ambivalent and inconsistent

Many examples are available of the ambivalence and inconsistencies which arise in the Paper. The ambivalence comes in the recognition throughout the Paper of the dangers of enlarging the scope of government and, on the other hand, proposing, at every turn, an expansion of government activity. To some extent this ambivalence is an unstated reflection of the view, noted by Watson, that just because one can identify problems in the structure of the Alberta economy does not mean that government intervention will make

matters better. While this is implicitly recognized in the statement of concern about the growth and size of government, it is abandoned when the time comes for providing "solutions" to perceived problems.

Examples of inconsistency are also common. For example, at one point it is acknowledged that discriminatory actions taken by the Government of Alberta with regard to industrial subsidies or other matters, will lead to retaliation by other governments. Having identified this possibility, the authors proceed to ignore it. In another case, the federal government is castigated for failing to allow Alberta to have full price for its resources but as part of its industrial strategy the government proposes to price resources at less than the market price. Similarly, the federal government is criticized for the regional impact of its policy but within the White Paper, the government proposes in effect, an intra-provincial regional policy.

The need for clear principles and objectives

In part the reason the document flounders between interventionism and non-interventionism and is seemingly ambivalent on many issues is because there is no clear statement, or apparently understanding, in the document as to the principles which ought to guide government in the construction of its strategy. An effective strategy requires a clear understanding of the objective which government policy aims to achieve and also an understanding of how government can productively assist. The most important aspect of settling on the objective of government policy is to be realistic in the targets that are established.

Setting a reasonable target

As Professors Watkins, and Percy, McMillan, and Wilson have noted, in part current economic difficulties in Alberta are merely the strains of adjustment back to the kind of economic growth profile which was normal in Alberta before the unusual forces which were exerted on the province during the period 1972-1982. While there is some attempt within the White Paper to take credit for the economic evolution of the 1970s, it is a hard fact that the economic boom had little if anything to do with the policies adopted in the province. Acknowledgement of this reality should lead the government away from the view that it must attempt to create, by

artificial policy means, the kind of economic performance which in the past has been due almost exclusively to external events.

In the decade which preceded 1971 the Alberta economy grew slightly less than the Canadian national average -- 5.3 per cent versus 5.7 per cent growth per year. In the period 1971 to 1981 the province grew 65 per cent faster than the national average (6.3 per cent versus 3.8 per cent.) The target for provincial policy during the next decade ought to be established closer to the 1961-1971 experience than to recent experience.

What government policy can accomplish

A second requirement is for government to acknowledge their limited power to produce positive outcomes. Conditions which the government has targeted for special concern in the Paper reflect two different kinds of forces and in only one of these cases is the inter-position of government, even in principle, capable of bringing about an improvement. The two basic sets of factors are market forces and market failure.

If a particular feature of the Alberta economy, for example its relative dependence on natural-resource-related activities, is due to the interaction of a large number of diverse market factors, then the ability of government to alter the situation is limited. Moreover, the effect of any government intervention is much more likely to be adverse than advantageous.

A second explanation for some of the conditions which attract attention in the White Paper is market failure. Market failure is said to occur if there is some aspect of an activity which causes it to occur in the province less frequently or less widely than is thought to be desirable. For example, agricultural research is an activity which would probably, without the interposition of government, be underinvested in because the results of the research are widely distributed beyond the activities of the individual who actually undertakes and pays for the research. Similar assertions have been made about research in the area of heavy oil and tar sands development.

To the extent that there is market failure, there is in principle the possibility that government can improve matters. Even in this case, however, that intervention will not necessarily be beneficial. The reason is the possibility of government failure -- the inability of government institutions to operate effectively in particular kinds of environments.

The policies of other governments

A sub-group or almost third category of factors which may be significant in determining the economic structure of a province are the policies of other governments. In some cases the policy actions of governments outside a province can produce effects which resemble market failure in their impact. An example of this is the Crowsnest Pass freight rates which have historically had the effect of artificially raising the prices of grains to the processing industries in the prairies, thereby reducing the incentive for development of a processing industry related to these grains. A policy of the provincial government which reduced the extent of this artificial disadvantage could have a very beneficial effect for the processing industry.

Know the costs in application of principle

In applying these three principles to determine those areas where government interventions can be beneficial for Albertans, the government should also give consideration to the costs and benefits of such intervention. In other words, it may well be that an intervention which in principle could be effective can only be made effective at an unacceptably high cost in terms of resources used. In such instances, although intervention is warranted, it would not be in the interests of Albertans to pursue it.

III. THREE REASONS FOR INTERVENTION

In the White Paper the government basically identifies three reasons for intervening, none of which have anything to do with the foregoing taxonomy. First of all, the province is alleged to be too dependent on natural resources and, therefore, diversification is essential. Secondly, in order to provide attractive job opportunities so that young Albertans can stay in the province, the government aims to create high technology and related jobs. The third reason is to counteract the tax incentives and other programs of other governments.

A. Diversification

If there is a single theme that is most important in the White Paper it is the desire to encourage diversification of the economic

activities in the province. Fortunately, the White Paper acknowledges that the key sectors in the province will continue to be energy and agriculture and there is not to be a total denigration of the "hewers of wood and drawers of water" image. Indeed, a hallmark of the diversification strategy suggested is to focus on the processing of the products of the two primary sectors.

I think it is fair to say that all of the contributors to this volume are critical of the government's diversification policy. As Professor West indicates, this form of economic policy is at least 300 years old and probably older. Moreover, the economic structure of the province is predominantly reflecting the effects of market forces and not a conjunction of factors the effect of which the actions of the provincial government can offset. The consequence is that intervention to foster diversification may be very expensive but in the end ineffectual.

Different baskets -- same truck

Even if that were not the case, several of the authors point to the fact that diversification on the basis of the two primary sectors of energy and agriculture may destabilize rather than stabilize the economic situation in the province. The reason for this is that processing industries based on the primary sectors would themselves reflect the economic variations to which the primary sectors are subject.

The reason energy and agriculture experience economic instability is because of the instability in the basic demand for those products. The encouragement of even more employment and economic activity related to that basic demand could not help but make the provincial economy more sensitive to variations in world market conditions. Recent experience in the construction industry, which is directly tied to the demand from the primary sectors, illustrates the kind of amplification which can occur. As Professor Watson put it, while diversification may put provincial eggs in more baskets, all of the baskets are on the same truck.

This observation does not necessarily mean that government initiatives to effect the processing industry's development in either energy or agriculture are unwarranted. Several of the authors including Professor Barichello indicate that at this moment in time and at least until the agreements affecting the Crowsnest Pass freight rates produce a truly economic rate, it might make sense to simulate the price that processors would then face for grains by temporarily subsidizing them.

However, all of the authors are sensitive to the possibility that the industrial strategy would do nothing more than create a province of subsidy seekers. The attempt via underpricing of natural resources by the extension of direct grants or subsidies or tax incentives to artificially create a wide variety of industrial activities would be unduly costly to Albertans and make the inevitable adjustment to more modest growth levels even more difficult. Activities created in response to subsidies or grants would probably require continuing subsidy. The maintenance of these subsidies would amplify the difficulties which will arise as revenue sources contract in line with depletion of the province's primary resource.

B. Create Jobs for Young Albertans

The second objective, to retain young Albertans in the province, while having a certain satisfying political ring to it, has no particular substance at least from an economic point of view. On the level of common sense, while the province may expend considerable resources in the creation of artificial high technology or R&D employment in the province, there is no way to effectively ensure that these job opportunities are taken up by "Albertans" in whatever sense that term might be used. As the province discovered during the course of its economic boom in the 1970s, Canadians tend to be very mobile in response to economic benefits. That fact also suggests an alternative to the artificial job creation policy.

As Professors Percy, McMillan and Wilson suggest, one of the great advantages of belonging to the Canadian economic union is that it provides an opportunity for residents of every part of the country to take advantage of jobs elsewhere. Young Albertans do not have to be employed in Alberta in order to have meaningful and productive lives. And, in fact, while many came to the province during the economic boom, some may well have to go elsewhere to serve their own interests as the economy of the province settles.

Notwithstanding the economic and demographic factors involved, it may well be that Albertans would derive an enormous amount of psychic income from the creation of artificial high-tech jobs within the province. While that may be the case, at the very least government should make clear to Albertans that the costs will be very high and increase over time.

C. Counteracting Other Governments

A third reason suggested for intervention is to counteract the activities of other governments in attracting industrial development in their jurisdictions. Many of the authors deal directly with this issue and none are convinced that it is a suitable rationale for intervention. Professor Watson concludes that *laissez faire* might be the best response to initiatives by other governments.

While retaliation only seems to be fair turnabout, reactions should be governed by the overriding concern that they be in the interests of Albertans. It is unclear how Albertans can benefit by the retaliatory actions proposed in the Paper. In fact, there is even within the Paper some ambivalence about retaliation in that it is acknowledged that retaliation will produce counter-retaliation. That recognition is subsequently ignored when the effects are considered.

IV. COMMENTS ON SPECIFIC PROPOSALS

There are a number of specific proposals in the White Paper which have drawn comment.

1. Alberta Export Development Corporation

There was a concern by some authors about the difficulty of developing a trading firm within Alberta given that these firms in a worldwide context have generally relied on a wide range of products and have been importers as well as exporters. With its limited manufacturing base, Alberta would not appear to be a candidate for such an innovation. In assessing the net impact of such an undertaking, the government should also consider what kinds of private activities will be stifled by the existence of the export development corporation.

Professor Barichello sees some potential benefit from the development of an agricultural export expanding activity given that the proposal seems rather mild in its intent. A provincial version of Canagrex, which the Alberta government itself has heavily criticized, would not be a desirable development.

2. Grants or subsidies to emerging enterprises

All of the research that has been done including a recent major assessment of federal programs shows that, "It is difficult to justify

the usage of firm specific investment grants in any circumstances" as cited by Professor Lerner. From an economic point of view, since the raising of taxes is an expensive proposition with a net cost of 25 cents on the dollar, the return on public subsidized projects must be at least 25 per cent simply to break even.

A survey of experience with subsidies in other countries yields not a single word of encouragement from any of the authors. There is general concern amongst the authors that Alberta not become a province of subsidy seekers.

As several of the authors indicate, not only do subsidies not seem to work in their main object but they have a number of bad side-effects which should warn against their use. Subsidies mean higher tax loads; higher tax loads mean a degradation of the general business environment which, of course, is counter-productive to the aims of the policy.

Consideration of the effect of future tax burdens also suggests that a program of restraint and privatization will be an essential feature of any successful development strategy.

3. High Tech

Kristian Palda finds the proposals in the paper modest and certainly not radical. On the other hand, he also finds that existing support for R&D and high tech in Canada is the most generous in the Western world and Alberta's is one of the most generous in Canada. There is, therefore, concern as to why there should be further extensions of aid. Professor Palda is of the view that there is adequate support to and adequate effort in, the technological area in the province.

Nevertheless, Palda also provides a test program which would determine whether more R&D expenditures by government could possibly be justified -- a test procedure which he thinks is reasonable to apply since a quarter of a billion dollars is currently being expended. He also provides tests that should be applied to any particular program that might be adopted. In his words, such tests, "Make mincemeat of the tax incentives proposed for Alberta."

4. Tax incentives

Extensive research cited by Percy, McMillan and Wilson shows that tax incentives are not efficient or effective. Moreover, since they have the effect of enhancing the attractiveness of capital at the

expense of labour in production, they may have a negative effect on job creation. Since the tax incentives are designed to be competitive with those offered by other provinces, if beggared neighbours react there will be no net effect even in the short run.

But an even more important fact that emerges from the studies is that energy availability and low tax rates seem to be the most important explanations for capital investment. Since both of these conditions already exist in Alberta, it is highly likely that there will be almost no further effect from the provision of tax incentives.

5. To create an independent personal tax system

The White Paper proposes the creation of an Alberta personal income tax system, comparable to that operated by the Province of Quebec, to enable it to pursue a variety of specific tax measures designed to affect saving and investment behaviour. In reviewing this proposal the Focus authors point to a major study conducted by the Ontario Economic Council for their province which concluded that the adoption of such a system would be expensive, would yield little in the way of benefits, and would leave both the Province of Ontario and the other provinces worse off.

Calculations by the authors suggest that the cost of establishing an independent tax system in Alberta would be \$50 million for set up and \$20 to \$27 million per year to operate it. For taxpayers a startup cost of \$8 to \$16 million dollars would be involved and an annual compliance cost of \$28 to \$76 million dollars. While the financial costs of the system are not small, the most important costs would be the loss of uniformity of the existing personal income tax system and the decline of cooperative fiscal federalism. They also point to the fact that most of the things Alberta might wish to accomplish in an independent tax system are already possible within the existing tax system -- Saskatchewan, for example, rebates capital gains taxes on farms.

6. Provincial procurement

There is a suggestion in the Paper that one instrument of industrial development strategy is to give a premium to Alberta-produced goods and services amounting to say, 10 per cent. The authors are unanimous in rejecting this aspect of the industrial policy as being costly to Albertans without yielding any benefits. The absurdity of this aspect of the proposed industrial strategy can be easily seen by

imagining that instead of offering 10 per cent the government offered a 50 per cent premium to Alberta producers. If 10 per cent creates more industrial activity in the province on a net basis, then 50 per cent should generate nearly five times as much. But, of course, when such a proposal is made, the cost to Albertans is made evident as is the fact that the higher taxes necessary to support the premium paid to local producers squeezes out as much economic activity as the procurement premium is likely to produce.

Such a procurement policy is often proposed as a retaliatory measure against other provinces. As Professor Lerner points out, if that really is the intent of the policy, then a much more effective approach would be to give a disadvantage to producers from provinces which have a procurement policy. That approach would be much more likely to have the desired effect on the offending provinces and would not impose costs on Albertans.

V. AN ECONOMIC POLICY STRATEGY FOR ALBERTA?

All of the contributors to this volume are critical of the White Paper. That in itself is not surprising since to some extent the Paper was intended to be merely a target at which constructive criticism could be aimed. Along with the criticism emerges a view of how government should conduct itself with regard to economic policy. The most important feature is for provincial governments to recognize that they have very, very limited powers to affect the pace of provincial economic development. Accordingly, the goals of provincial economic policy must be limited.

Having selected modest targets which reflect the province's overall economic history, the government must recognize that many activist policies, such as the provision of subsidies or tax incentives that might be used to achieve the targets, will imply a future economic burden in the form of taxation. The prospect of these burdens will affect the willingness of citizens to undertake long-term investment and, hence, the province's development. In other words, even if the government does not accept that it has limited powers to influence the province's economic future, it must calculate the negative as well as the supposed positive effects of any such intervention.

While adopting a passive policy role when the province faces such high levels of unemployment is unlikely to appear initially to be very attractive, time and again what the economic analysis suggests is that this is the only sensible tack for government to take.

The petroleum sector will continue to be a major source of Alberta's economic activity and specific proposals for government conduct in that area do emerge, particularly in Professor Watkins' paper. The government should, as it has indicated is its intention, press for world price for all oil produced in Alberta. It should pressure the federal government to remove the Canadian ownership charge. It should encourage free trade in petroleum and continue its support for research on oil sands and heavy oil extraction.

However, the government should not carry on a broad-based program of direct investment in energy projects. If the government is to involve itself in energy projects, then it should establish clear guidelines as to the basis upon which this involvement will occur. Use, for example, of the existing resources of the Alberta Heritage Fund to finance tar sands or heavy oil projects is not in the interests of Albertans if the economic returns from the project are less than the assets are currently earning within the Heritage Fund.

The government should, however, seriously consider its policy with regard to royalties on both major specific projects and on conventional oil development. Royalties are set at an uneconomic level in some instances as is implicitly acknowledged when they are removed for major projects with marginal economic characteristics. Conventional oil and gas development should also be considered as potentially marginal in the sense of requiring the removal of royalties to make it economically feasible.

Recent research shows that cash flow may be the most important determinant of exploration activity in the petroleum sector. A re-evaluation of current royalty policy with a view to making royalties more cost-sensitive and recognizing that, in economists' jargon, the supply-curve for petroleum slopes upward may be the single most important thing that the Government of Alberta can do to encourage future economic development.

The government's objective in fostering diversification is to stabilize cycles in the level of private incomes in the province. The approach implied in the White Paper is to use resources from the Heritage Trust Fund to directly accomplish this by funding new, diverse economic activities in the province. An alternative approach would be to ensure that the assets in the Heritage Trust Fund themselves are well diversified and to utilize the resulting stable income flow to directly reduce the tax burden as future economic cycles impact the province. While lacking some of the political appeal of more grandiose development schemes, diversification in this way is likely to serve the interests of Albertans much

better than the much-flawed activist program implied in the White Paper.

The Fraser Institute is pleased to publish this **Focus: On Alberta's Industrial and Science Strategy Proposals**. However, owing to the independence of the authors, the views expressed by them may not conform singly or collectively with those of the Institute, its members or trustees.

Michael A. Walker
October, 1984

ALBERTA'S NEW VIEW OF INDUSTRIAL STRATEGY

WILLIAM G. WATSON*

The issue facing Alberta and Canada is basic. Do we assist or protect certain industries to ensure their survival, or do we rely on free trade principles and on natural competitive advantage?

- Alberta White Paper (p. 23)

Alberta is well positioned to exploit the natural advantages which are ours to attract new high tech industries to our province....The question is, which of these many industries should we encourage and on what basis?

- White Paper (p. 45)

I. INTRODUCTION: THE CENTRAL DEBATE

The interventionists

The last fifteen years have witnessed a vigorous debate among Canadian policy makers and academics on the question of whether Canada - and each of the provinces - needs an interventionist, "hands-on" industrial strategy involving large-scale government encouragement to secondary industry particularly "higher-technology" manufacturing.¹

Interventionists argue that leaving all allocation decisions to private decision makers creates an industrial structure excessively dependent on extracting natural resources, a manufacturing sector excessively dependent on research and development performed

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elsewhere and a corporate citizenry excessively dependent on direction from executives located in foreign countries. They recommend subsidies and tax favours for Canadian-owned manufacturing, especially high-technology manufacturing, increased use of government purchases to encourage local producers greater provision of government risk capital for industries and firms considered likely to play a strategic role in future technological development and, in some cases, direct government participation in high-technology investments. These high-technology proposals are referred to by their opponents as "picking winners," inasmuch as they involve the provision of government support and sponsorship to aggressive Canadian firms whom the governments in question would like to see become major competitors in world markets.

The free market proponents

Opponents of an interventionist strategy argue that, while the market system is far from perfect, it is likely to do a better job of allocating resources than a government-sponsored process. The reason is not just that governments seem to do given tasks less efficiently than private agents do. Rather, the concern is that the allocation of investment resources by government would be determined more by political expedience than economic efficiency; that governments would have great difficulty closing down high-risk investments that did not pay off; and that, finally, no relatively small group of individuals, however talented, would ever be able to marshal vast amounts of information required to make reasonable guesses about which firms and industries are likely to do well in the 1990s and beyond the year 2000.

Private capital markets consume the energies and intelligence of thousands of individuals on this very problem. But, as even the most casual observer of the stock market knows, they have often made incorrect decisions about new firms and products.

Those who oppose interventionist industrial strategies argue that if the market does not allocate Canadian investment resources to many types of secondary manufacturing, this is because these resources can be put to more profitable use elsewhere in the economy. Moreover, devoting resources to their most profitable possible use will raise the value of the economy's output to its highest possible level. In the view of its opponents, the fact that interventionist strategies require subsidies is *prime facie* evidence that the allocation they would produce is inefficient.² Accordingly, in devising industrial policies governments should try, within the

limits imposed by their pursuit of other, non-economic goals, to create the most hospitable possible environment for entrepreneurial activity -- and that is (just about) all.

The White Paper in the debate

In its recent White Paper,³ **Proposals for an Industrial and Science Strategy for Albertans**, the "Government Party" of Alberta comes down foursquare on the side of the interventionists. Alberta's economy is held to be excessively dependent on oil and gas; diversification of the industrial structure is given the highest priority; special emphasis is to be placed on high-technology, R&D-intensive manufacturing; and the tools that are to be used to accomplish this are tax benefits, government procurement policies, special assistance to Alberta-based firms, and discretionary government finance of sectors and firms believed likely to do well in the international marketplace of the late 1980s and the 1990s.⁴

A strange conversion

In view of the government's and many Albertans' well-known preference for private enterprise, the market system and hands-off government -- a preference they have expressed energetically, to say the least, on many occasions -- this conversion to an activist, winner-picking industrial strategy is no less noteworthy than, say, were the Pope to announce that lately he had been having serious doubts about the Virgin Birth.

As probably is true of many conversions, Alberta's decision to alter course evidently has not been derived from a carefully argued statement of intent. In fact, what is most notable about the White Paper is its internal inconsistencies revealing a profound ambivalence. For instance, there are several lengthy passages in which the virtues of the market-oriented approach are stressed and the shortcomings of the alternative interventionist strategy all but ridiculed. Less than 15 pages before recommending that the government "should select specific sectors or areas for special support" (p. 57), i.e., that it should pick winners, the White Paper closes a skeptical review of the possibilities for detailed manpower training -- a task similar in difficulty to detailed winner-picking -- by asking "Who is so perceptive to know which skills will be actually (sic) needed in 1990 and what if we guess wrong?" Needless to say, precisely the same problem arises with an interventionist investment strategy.

A second example: there is emphasis throughout the White Paper on the likelihood that other governments will respond to protectionist interventions in Alberta by engaging in protection of their own. Thus "Alberta could suffer heavy trading losses if discriminatory trade practices become a common occurrence" (p. 40). Yet, when it comes time to recommend policies, no further mention is made of the possibility of retaliation. Finally, and most noticeably of all, the White Paper is punctuated with *encomia* to the very market process whose influence its policies will reduce. And the government declares repeatedly that it is "fully committed to the market system" (p. 55). In fact, in one of its more extraordinary passages the paper recommends that the

mandatory program of studies in our education system should teach students about Alberta's economy, by instruction and by example. Considerations should include the model of the market economy and its application to Alberta...Education should foster ideas of risk taking, innovation and the pursuit of excellence (p. 67).⁵

One cannot help but observe that should the policy menu laid out in the White Paper be adopted, the market model will have mainly a historical interest for students, who would be better off taking courses in grantsmanship, in how best to please their public investment officer, and in the manipulation of tax loopholes to greatest corporate advantage.

Not based on sound theory

Of course, that the document which proposes a change in public policy itself has certain inconsistencies does not necessarily imply that the policies it recommends will be administered incoherently (though neither does it augur well for the future).

However, in its confusion the White Paper ignores -- or, at least, raises but does not examine the implications of -- serious difficulties with the interventionist approach. Not least among these is that there is no clear rationale in economic theory for the interventions proposed. In the following three sections of this paper, several of these difficulties are probed at greater length.

The plan of the paper

The next section, section II, examines the absence of even implicit cost-benefit analysis in the White Paper. Without a clear idea of

the goals of the interventions proposed and the costs they will involve, no reasonable person should be ready yet to endorse them.

Section III deals with possible difficulties in the design and administration of the policies the White Paper proposes. Just because a market imperfection is thought to exist that does not mean the government can or should do something as implied in the White Paper. Unfortunately, identifying a problem is not the same as solving it.⁶

Before recommending that the government act, there also has to be a reasonable presumption that government action can, in fact, improve matters. The informational and political demands of an interventionist industrial strategy are so great, however, that, while governments clearly can act, it is not at all obvious that action can improve matters much. Moreover, there is the distinct possibility that it will make them worse.

Section IV provides a brief examination of Alberta's existing efforts in the area of industrial strategy and, in view of the great deal of assistance that is already available, concludes that it is not clear why still more assistance should be provided to high-risk, high-tech investors.⁷

II. THE GOALS OF ALBERTA'S INDUSTRIAL STRATEGY

Three Reasons For Intervention

The White Paper provides at least three reasons why Alberta is thought to need an interventionist industrial strategy. First, market forces leave the province too dependent on the extraction of natural resources, especially oil and gas. Second, the Paper argues, without a high-technology manufacturing sector it will be difficult to keep well-educated, young Albertans in the province. Finally, since most other jurisdictions -- both Canadian and foreign -- have opted for them, Alberta must also equip itself with a full battery of investment assistance programs simply to maintain its fair share of economic activity.

While in some cases, reasoning of this sort may warrant energetic intervention of the type that is proposed, it is not at all clear that in Alberta's current circumstances the three rationales just mentioned provide sufficient justification for action. Accordingly, this section of the paper examines the government's stated reasons for intervention. Perhaps not surprisingly, it concludes that conditions do not yet require a radical departure from the province's traditional reliance on the market mechanism for allocating investment resources.

A. Diversification

The government's most important rationale for engaging in industrial strategy-making is that Alberta's economy is excessively dependent on petroleum and gas extraction. Reference is made repeatedly to the government's longstanding commitment to diversify the economy but the White Paper provides little explanation for why dependence is hurtful to Albertans. It presumably is felt to be only common sense that the province not put all its eggs in one basket: when the oil and gas industries are in the doldrums, it would be useful to have other industries for the province to fall back on.⁸

Costs and benefits of diversification

Most economists would argue, on the contrary, that the province should consider the costs of diversification and compare them with the benefits. Taking this approach to the problem, one obvious difficulty with moving eggs out of the oil and gas basket (as it were) is that it is an extremely comfortable basket, and one that, with the prospect of several more decades of unrest in the Middle East, is unlikely to become uncomfortable at any early date. In fact, looking back at the rapid accumulation of wealth in Alberta over the last decade, many other Canadian provinces are likely to think: "We should have been so dependent."

Of course, things have not gone as well for the oil and gas industry in the last two or three years as they did in the seven or eight years following October, 1973. It appears -- not altogether surprisingly -- that the international oil market moves in rhythm with the major industrialized economies. When overall economic output declines in the OECD countries oil prices soften and oil development consequently slows down. Thus one possible benefit of economic diversification in Alberta is that it may help smooth the path of gross provincial product and, therefore, of provincial unemployment and investment.⁹

Different baskets -- same truck

There are several difficulties with this argument, however. In the first place, economic diversification may not in fact provide much smoothing of Alberta's output and income cycle. The reason for this has already been implied: when oil and gas are in the doldrums this is generally because the very manufacturing industries into which

Alberta apparently wishes to diversify are also in the doldrums. This is just a variant of the stockbrokers' rule that when different stocks are known to move together through the business cycle, they may as well be one stock for they can provide no economically useful diversification against cyclical fluctuations. The eggs may well be in different baskets but all the baskets are on the same truck.

Low but stable incomes the goal?

A second problem with this argument is that it is not at all clear that Albertans do in fact prefer more stable, lower incomes to less stable, higher incomes. And incomes almost certainly would be lower if any significant government-sponsored diversification into manufacturing took place. The reason is that by definition such diversification must be unprofitable. If it were profitable to expand the manufacturing sector significantly, then private firms already would have undertaken such expansion. But the fact that, so far, at least, they have found it unprofitable suggests that many of the ventures currently being contemplated by the government are not an efficient use of Alberta's stock of labour, capital, and natural resources. This follows from the economist's standard result that the way to maximize the value of the output produced by an economy's resources is to undertake only those investments that make profits.¹⁰

High wages compensated for instability

A second difficulty with this argument is that even if Albertans do prefer stable to unstable incomes, the normal operation of the labour market is likely to take this into account. If employment in the oil and gas industries is, in fact, more unstable than other forms of employment, then in order to attract workers, the industry will have to pay higher wages than are paid elsewhere, with the difference being proportional to the difference in the instability of employment. While wages in many parts of the oil and gas industry are higher than in other sectors of the Alberta economy, there do not seem to be any studies of whether this difference represents a "risk premium" paid to workers reluctant to enter the industry because of fluctuations in industry employment. On the other hand, it is a standard result in the literature on the North American construction industry that one reason the wages of construction workers are so high is that working the industry is notoriously intermittent.

Of course, if the difference in wages is a risk premium, then by encouraging diversification into non-oil and gas industries the provincial government is in effect purchasing a second insurance policy for workers. Insurance is often useful, no doubt, but it is possible to have too much of a good thing.

What to do when the resources run out?

A somewhat different argument favouring diversification into manufacturing is that someday the resources will run out and -- as it is usually put -- where will the province be then? Several points should be made here.

To begin with, the province's economically exploitable oil and gas reserves may not run out for some considerable time to come. Moreover, as suggested earlier, the international situation is unstable enough so that many demanders of petroleum products likely will continue to put a premium on contracts with reliable suppliers. Thus, even accepting for the moment the argument that jurisdictions should prepare for economic diversification when they think they see it on the horizon, it may still be too early for Alberta to begin laying the foundation for a new industrial structure. True, economies presumably will wish to have some background in industries that seem likely to become more crucial to them as older industries fade in importance but, especially if such preliminary re-deployment of resources involves substantial short-term losses, it clearly is possible to diversify too early. Moreover, once the time comes, there may be advantages in not already having committed too many resources to what at the time appeared to be sunrise industries but in fact turned out to be false dawns. Many of the glamour industries of the 1960s and 1970s -- steel, petrochemicals, shipbuilding, aircraft -- are currently suffering from excess capacity worldwide, much of it created by government subsidies. No doubt it takes courage not to pamper your industrialists when all about you are subsidizing frantically, but in the long run you may well be better off.¹¹

A second difficulty here is that until the sunset industries actually have faded away, diversification into new industries is likely to be expensive. The reason is that -- unless an economy faces very elastic supplies of factors -- trying to be active in all industries at once may have the effect of bidding up the costs of production in all industries. Unlike Stephen Leacock's famous horseman, modern economies cannot ride off in all directions at

once. Moreover, until the old industries do die, the economy may be burdened with a cost structure that makes diversification a luxury. Thus, the White Paper argues that one reason Alberta has not gone heavily into the processing of agricultural goods is that wages are too high (p. 47).¹²

Meat and poultry packers simply cannot make money paying the high wages Albertans are accustomed to. Of course, wages are high in Alberta mainly because well-paying jobs are available in oil and gas and related industries. This is no accident. Wages are high in oil and gas because the industry's output is in great demand and employers can therefore afford to pay them. Thus, the high wages meat and poultry packers have to pay represent the "opportunity cost" of using labour in these industries when it could be used in oil and gas instead. But dispatching high opportunity-cost resources to where their return is low clearly is not the way to use an economy's resources to greatest advantage.

Of course, when decline does set in in the oil and gas industries, wages paid in the industry can be expected to fall in relation to those paid elsewhere, and diversification into other industries will become profitable -- and therefore can be expected to take place. But until that time, preparatory diversification will have to command a large return in accumulated expertise before it can justify taking resources from industries where their current return is high.

Perhaps it is best to close the discussion of diversification by underlining this point. Preparatory diversification beyond what business firms will engage in on their own may bring some benefits to an economy. But, before recommending ambitious policies to sponsor large-scale diversification, a government should estimate the gains and the costs of making these investments. In Alberta's case, considerable diversification already has taken place. On the other hand, the economy does remain largely dependent on the extraction of oil and gas reserves. It seems unlikely, therefore, that even substantial diversification -- say, raising the share of manufacturing output in GPP by 5 percentage points -- will have much effect on the Alberta business cycle, which will continue to be dominated for some time to come by the fortunes of the extractive industries. Moreover, diversification will bring no benefits of this sort at all if, as is probably the case, the new industries exhibit the same output cycle as oil and gas do. Nor is it clear how much of a gain there would be even if policy were aimed, not at smoothing the provincial business cycle, but rather at assuring that there will be industries for Albertans to work in once the oil and gas are gone.

On the other hand, the cost to the province in terms of the subsidies and foregone tax revenues that would be required to effect such a substantial shift of resources likely would be large. And, of course, there would be losses of output and employment as a result both of the taxes that would have to be raised to finance subsidies and of the foregone output of resources that could be used in oil and gas but now will be persuaded to move into new fields.

Unfortunately, the White Paper does not contain even implicit cost-benefit analysis of this sort but merely assumes that diversification is efficient and therefore that virtually any expenditure to encourage it must be worthwhile. Unless analysis of this sort is done, however, public funds should not be spent. Diversified economies may in some aesthetic sense be more "balanced" than non-diversified economies but it does not necessarily follow that they provide greater prosperity for their citizens. The point of public policy -- certainly of public industrial policy -- is to make citizens better off economically, not to please the aesthetic sensibilities of bureaucrats.

B. Providing Jobs for Young Albertans

According to the White Paper, a second reason for an interventionist industrial strategy for Alberta is to provide jobs for young Albertans, especially highly educated young Albertans. The worry is, presumably, that unless R&D jobs are created in high-tech manufacturing many such people will leave.

Are the children leaving?

There are several obvious objections to this argument -- none of which is dealt with by the White Paper. In the first place, are large numbers of young Albertans leaving the province? Canadian governments have a reputation for solving problems that do not exist. As is well known, in the recent past Alberta has experienced a net inflow of well-educated young people. Although the province's relative economic performance has declined in the last two or three years, has there yet been a dramatic -- or even perceptible -- outflow?

Are the benefits economic or psychic?

Second, is it necessary that jobs be created in industries other than oil and gas in order to keep young Albertans in the province? Of

course, if the government does give independent weight to having highly qualified, young manpower employed in industries other than oil and gas, then subsidies may well be necessary.¹³

But there is no clear economic rationale for pursuing such a goal. Quite the contrary, it is analagous to hoping your team will do well at the Olympics. Such hopes clearly have economic implications: subsidies presumably will improve your chances of doing well. But there is no improvement in economic welfare as a result. Thus if the people of Alberta do derive psychic satisfaction from the knowledge that substantial numbers of young Albertans are employed in high-tech jobs outside the oil and gas industries, then subsidies to these young people to get them to stay in the province may create a general feeling of well-being. But they will not improve the province's economic performance. Paying people to work in jobs where their productivity is lower than it would be elsewhere -- whether "elsewhere" is another province or simply another industry inside the province -- is not the way to maximize the economic well-being of Albertans.

What is the optimal size for a province?

At issue here is the general question of what is the optimal size for a province. Those who wish in effect to pay young Albertans to stay in the province obviously believe that bigger is better. This need not be so, however. People who enter (or leave) a province may impose costs or benefits on those living there (or who remain behind). During the 1970s many Albertans -- among them the Mayor of Calgary -- clearly felt that immigrants to the province were imposing net costs on "native" Albertans. Housing costs rose rapidly, urban life became more chaotic and each "native" Albertan's share of the Heritage Fund fell. It would have made sense, in theory at least, to pay people not to come to the province although in practice there are obvious difficulties with such a policy.

Now, however, the government seems to be worried that net emigration is a likely prospect. Just what has happened between the late 1970s and the mid-1980s to justify this change of heart is not clear, however. One argument implicit in the White Paper is that if young people can be encouraged to stay in the province, then this will help create work for their fellow citizens. The difficulty most economists have with this argument is that in commercial transactions of this sort there are no external benefits that would justify public subsidies to encourage people to stay. When new citizens purchase goods from in-province suppliers, they are

purchasing goods that have a value (virtually) equal to the value of the resources -- including the local supplier's time -- that went into producing them. This follows from the fact that at the margin of production the gains from trade, though positive, are quite small. In fact, the only way in which immigration can produce net gains is if local production processes exhibit increasing returns to large-scale production -- returns that can only be exploited once the economy reaches a given (large) size.¹⁴

Yet it seems unlikely that even lavish subsidies to local high-tech industry will produce population increases large enough to allow Alberta industries to experience the economies of large-scale production. If that is so, then such subsidies can be presumed to cause net losses: taxpayers will be worse off by the amount of the subsidies; their recipients will be better off by the same amount; but the changes in relative prices caused both by the taxes needed to raise the funds in question and by the subsidies themselves will induce people to move resources into inefficient uses and this will cause per capita incomes to fall. As the White Paper says: "As taxes are increased...essential competitiveness is eroded. Concurrently, investor confidence will substantially diminish" (p.14).

C. Responding to Other Governments' Interventions

At some points, the authors of the White Paper seem almost wistful about what they obviously feel is the need to abandon the non-interventionist policies consistent with their accustomed ideology and to opt instead for a more or less detailed industrial strategy. For instance, they say that:

Unfortunately, trade restrictions, import barriers, and other government interventions are now commonly applied by all industrialized nations. The result is the loss of economic efficiency which non-discriminatory trade would achieve....Greater specialization and the development of a nation's comparative advantage seem to be forsaken goals (p.22).

The government argues that it is forced into intervention by the fact that many other jurisdictions already are giving substantial support to their own local enterprises. Thus Alberta must subsidize high-tech industry in order to gain its fair share of world trade --and therefore of world employment -- in this sector.

Laissez-faire best for Albertans?

Assuming their regret is genuine, the Paper's authors presumably will be happy to learn that, in fact, abandoning *laissez-faire* is not necessarily the best response to interventionism in neighbouring jurisdictions. Several well-known studies of the Canadian economy conclude, for instance, that even in the face of protectionist policies in the United States and Europe, Canada may be better off declaring free trade unilaterally and allowing most foreign goods into the country free of duty -- especially if foreign countries provide export subsidies to their domestic producers. Canadian producers may be hard hit by such policies but Canadian consumers - whose welfare should also weigh in policy makers' considerations, but often seems not to -- will benefit, sometimes substantially. And, in fact, it is possible that increased competition from foreigners will force wholesale rationalization of Canadian production processes, so that productivity actually rises in Canadian industry (see Harris and Cox 1984).

The 10 per cent solution

Of course, Alberta does not (yet) have the power to impose tariffs on goods imported into the province. On the other hand, many of the policies proposed in the White Paper are clearly protectionist in intent. One obvious example is preferential government procurement policies which would give government contracts to Alberta producers provided their bids were no more than 10 per cent higher than the lowest bid on a contract. Alberta taxpayers clearly are made worse off whenever the government rejects low bids from out-of-province suppliers of goods and services and instead pays more for the made-in-Alberta product. Alberta producers obviously benefit but it is hard to see how giving them a monopoly over sales to the government is likely to improve the efficiency with which the province's resources are transformed into goods and services that people want. As in the tariff example cited above, taking away protection may force local producers to rationalize their production methods and therefore increase provincial output.

The White Paper also pays insufficient attention to the strategic considerations involved in its decision to opt for what are effectively protectionist policies. As noted above, the Paper argues repeatedly that the province has a great deal to lose from a general movement to protectionism. This clearly is true. Very large countries like the United States probably would not be hurt much by

a movement toward 'autarky' -- that state of the world in which every jurisdiction produces everything consumed within its borders. By contrast, small jurisdictions -- and with barely two million people, Alberta is a very small jurisdiction -- can prosper only by exporting, for only by exporting can they reach the scale of operations that drives the unit cost of output to its lowest value.¹⁵ This is especially true if they wish to specialize in the production of high-tech goods and services which typically have high start-up costs. The only way to absorb such costs is to sell lots of output and the only way for a small jurisdiction to sell lots of output is to export.

The obvious dilemma Alberta faces, then, is that if she adopts the explicitly protectionist policies proposed in the White Paper, her trading partners are likely to respond with protection of their own. Thus one effect of the protectionist promotional policies proposed in the White Paper is that it will become increasingly difficult to sell the output of the very Alberta industries whose expansion the policies are intended to encourage. Alternatively, other jurisdictions will respond with protective measures aimed at Alberta's traditional industries. In either case, the chance that the policies will cause net increases in the wealth and/or employment prospects of Albertans will be significantly reduced.

Of course, it may be possible to achieve commercial peace through strength (as it were). Thus the White Paper may serve as an effective warning to other jurisdictions that if they persist with their own protectionist regulations, Alberta will have to respond in kind. In fact, at one or two points the White Paper argues that if other jurisdictions do draw back, especially on procurement policies, then so will Alberta. The Paper's tone does not lend much credence to this idea that the policy proposals are intended mainly as an opening salvo in a bargaining round whose ultimate purpose is to restore a regime of *laissez-faire*, however. Rather, the Paper seems to argue that escalating intervention is -- more or less inevitably -- the way of the future. If this is so, it is sad news for young Albertans.

III. POSSIBLE DIFFICULTIES WITH INTERVENTIONIST POLICIES

The detailed interventions the White Paper calls for are beset by several difficulties that are well known to economists but which the Paper either ignores or -- worse -- raises but fails to address in any significant way. The purpose of this section is to suggest that these

difficulties may prove insuperable, so that, in fact, there is no clear likelihood that policies of the sort proposed will be able to remedy the misallocation of resources that the White Paper argues exists in Alberta.

A. Picking Winners

The White Paper recommends that the government put financial and other resources behind high-tech firms and industries that can be expected to do well in the world economy of the late 1980s and the 1990s. What it fails to explain -- does not even address, in fact -- is just how governments are supposed to predict the performance of specific investments.¹⁶

Picking winners is no easy task. Large numbers of private agents spend most of their time trying to do just that and often without success. There is no obvious reason for supposing government can do a better job of it. In fact, because government agents usually do not face the same financial constraints as private agents, they may well do a worse job of allocating capital to potentially profitable pursuits. Moreover, in many instances governments quite explicitly are not interested in the profitability of an investment. Their concern, rather, is with the political payoff to be had from providing employment for constituents. Most economists would argue that, in fact, creating jobs is a relatively simple matter. The real trick, however, is to create jobs that produce output that is valued more highly than the wages workers are paid to produce it. Encouraging entrepreneurs to make unprofitable investments would not at first blush seem to be the best way to do this.

B. Dumping Losers

The obvious intent of the policies the White Paper proposes is to put government resources into areas where private investors normally fear to tread -- mainly because there is greater risk to the high-tech investments the government favours than to investment in more traditional industries. But if the government does get into the business of financing high-risk investment, at least some such investments are bound not to pay off. This raises the very serious problem of how the government goes about disengaging itself from losing investments. This is no simple matter. Since the investments will have been made largely at the government's request, an implicit moral obligation can be presumed to exist between government and

the investors it has encouraged. Of course, it is no reflection on government to suppose that some of its investments will turn sour. Even the very best private investors occasionally make mistakes. The advantage private investors have, however, is that they can walk away from their mistakes relatively easily.

Governments, by contrast, will always be tempted to delay any final reckoning by sending good money after bad. Obviously, the last thing a government wants to do is fire its constituents. Even if the great majority of government-sponsored investments were to pay off handsomely, it would take only one or two De Havillands or CanadAirs to undo all the good that policy may have done. Yet the White Paper does not even mention this problem.

C. How To Identify the Marginal Investment?

An even more elemental difficulty with subsidies to specific investments is -- as Dan Usher has demonstrated at length¹⁷ -- that such subsidies may not bring about any net increase in the amount of the favoured activity undertaken in the economy but instead will merely affect who it is that undertakes the activity. Thus, if the government decides to support a given firm, the effect is mainly to discourage any other firm from going ahead with a similar investment. As a result there is no net increase in investment: the same amount is performed as before the subsidy, only by different agents. The obvious remedy here would seem to be to provide assistance to all producers in an industry but, of course, this just means the same effect now occurs across industries as originally occurred within whatever industry was originally being considered for special treatment. The government now will have chosen which industries will receive investment funds but need not have increased the overall amount of investment undertaken in the economy. Clearly, the ultimate solution is to provide investment subsidies to every investor in the economy, though this will be extremely expensive.¹⁸

It obviously would be preferable to give assistance only to marginal investors. The problem is that once people learn that money goes only to marginal investors, they have an incentive to represent themselves as such whether they are or not. To convince the government of their sincerity it may be necessary from time to time to threaten to abandon -- or actually abandon -- the occasional investment when they do not get the investment subsidy they want. Thus it is not inconceivable that at least the short-run effect of firm-specific subsidies may be to reduce investment.

These are all problems of which the White Paper seems blithely unaware, however.

D. Rent-seeking

A further difficulty with subsidies and tax concessions is that when governments start to award prizes (as it were) to firms and industries that it chooses on more or less arbitrary grounds, they create an incentive for firms and individuals to expend real resources in an attempt to persuade government that they are the people best qualified to receive the prize. In the limit, the resources wasted in this effort will just equal the value of the prize being offered. In the economics literature this type of behaviour is referred to as "rent-seeking," since what the agents who do it are after is not income, which is earned, but a rent, i.e. a payment in excess of what is necessary to get them to provide the service in question.¹⁹ Thus the net effect of such grant programs is to cause firms to undertake essentially wasteful expenditures which may more or less completely offset whatever social benefit is created by the activity the subsidy was meant to encourage.

Essentially the same thing happens when various jurisdictions -- the Canadian provinces, say -- offer tax favours to mobile factors of production -- multinational enterprises (MNEs), say -- to come and settle in their jurisdiction. Since it makes sense for the provinces to offer any amount of tax favours up to just less than any external benefit the investment is expected to create, and since the MNE is effectively a monopolist in the external benefits market, competitive bidding by the provinces all but guarantees that whatever external benefits exist will be transferred back to the MNE in the form of reduced taxes and/or subsidies. In the limit, the favours the province is forced to provide exactly offset any advantage from having the MNE operate in-province. But again, problems of this sort are simply ignored by the White Paper.

E. Simple Corruption

A final possibility is that discretionary grants from governments to businesses will lead to ordinary -- but nonetheless harmful -- corruption. Self-interest is a powerful motivator. Apparently even Japanese allocative processes are not immune to such influences. Several years ago, the Lockheed Corporation celebrated its successful conclusion of a contract with the Japanese government by leaving the prime minister a \$2 million **pourboire**. And, of

course, even if corruption this crude does not occur, there is every likelihood that investment funds will be funnelled into those electoral districts where the political payoff is greatest.²⁰ Though this may well assure the economic well-being of individual incumbents, it is unlikely to improve Canadian industrial productivity. No doubt it would be too much to expect a government-published White Paper to raise the possibility that the allocation of investment funds would be subject to political manipulation but it is something citizens should bear in mind when they are asked to approve such programs.

In conclusion, government intervention should take place only if there is a reasonable prospect that such intervention can make good the market failures that have caused a misallocation of resources. In this case, not only are there no discernible market failures (as section III above suggested) but there is every reason to expect that the suggested remedies will themselves cause serious misallocations of resources. Unfortunately, the White Paper does not address any of these problems, not even in passing.

IV. HOW MUCH ASSISTANCE IS ENOUGH ASSISTANCE?

The White Paper is -- and was intended to be -- a political document. It was written by a government that has clear plans for the future but which has also been in power for a decade and a half and therefore has a record to defend. It is not surprising, therefore, that much of the White Paper is meant to demonstrate that the provincial government already is doing a creditable job of encouraging investment and diversification in the province. Indeed, at one stage the Paper's authors boast that Alberta already "has developed an industrial strategy much further than any other Canadian province" (p. 29). In an effort to demonstrate this, many of the Paper's initial sections are devoted to describing programs the government already has put in place. It becomes clear very early on that a great deal of assistance is currently available to Alberta manufacturers, in general, and to high-tech investors, in particular. Among the more impressive efforts are the following:

- * Since 1972 the Alberta Opportunity Company has provided more than \$181 million of assistance to small businesses (p.33).

- * In 1983 the province established Vencap Equities "as a new arms-length venture capital entity" (p. 33) and assisted it with "a \$200 million investment from the Capital Projects Division of the Alberta Heritage Savings Trust Fund" (p.45). Vencap is "intended

for larger sized investments in most sectors...with hightech and Alberta based growth companies a focus for equity purchases" (ibid.).

- * The government has created several important new Crown corporations. Though these were intended to be operated on a commercial basis there is "no question that these entities were part of an industrial strategy for the province" (p. 31).

- * "On a per capita basis, the government continues to fund research and development at approximately three times the level of any other provincial government and, in total, spends only slightly less than Ontario" (p.35).

- * For medical research alone, the government recently established an endowment fund of "Three Hundred Million Dollars" (sic) from the Heritage Fund.

- * The Alberta Treasury Bank network has provided substantial financial intermediation aimed mainly at local entrepreneurs.

- * "Since the formation of the Alberta Research Council in 1921...the province has led all provinces in Canada in its commitment to research in general and the development of new technologies" (p. 35).

Moreover, Alberta's performance in many of these areas seems to be quite satisfactory. Some examples:

- * Despite having only 10 per cent of the Canadian population and despite a significant decline in investment in recent years, Alberta still is responsible for over 20 per cent of total Canadian construction (p.17).

- * "A very aggressive Alberta based business sector has developed with the province's growth" (p.31) and "scores of talented entrepreneurs and managers" are "well placed to capitalize on the opportunities ahead for Alberta" (p. 9).

- * "Step by step Alberta has been building a base for technology and the necessary 'critical mass' of scientists" (p.8).

- * The province is now endowed with "an increasingly impressive list of new technology facilities" (p. 34).

- * "Alberta has the foundations of a diversified economy in place, and several advanced technology companies now operate here" (p. 40).

- * New Alberta based Canadian banks" have "carved out a special niche in providing loans mainly to entrepreneurs" (p. 48).

In sum, the impression is created of a province whose economy is increasingly diversified and impressively dynamic and whose many entrepreneurs have ready access to venture capital. The obvious

question -- especially in view of the flimsiness of the White Paper's rationales for intervention -- is "Why is still more assistance necessary?" Even accepting that a case can be made for government intervention in principle, why is it necessary that the government raise what is already a high level of support for entrepreneurs and innovators? Though this probably is one of the first questions that will occur to any reader of the White Paper, he or she will search in vain for an answer.

V. CONCLUSION

Not much will be gained by adding a detailed summary to what is already a long paper. The major points that have been made are the following:

1. The stated goals of the government's proposed industrial strategy would, if achieved, bring little improvement of economic efficiency in Alberta and might well cause a reduction in the average incomes of Albertans.
2. The government pays little, if any, attention to the very considerable difficulties inherent in a strategy that amounts essentially to backing what seem likely to be "winning" firms and industries.
3. The government fails to explain how increasing the effective rate of protection provided for Albertan industries will persuade Alberta's customers to continue to provide the easy access to their markets on which a high-tech strategy depends.
4. The government provides an impressive list of existing programs of assistance for Alberta businesses yet fails to explain why still more assistance should be piled on top of this. Nor does it suggest how a dispassionate observer might go about testing whether any given amount of assistance was enough. In the minds of many economists, the suspicion will arise that the government favours an activist industrial strategy mainly because this will allow it to distribute funds throughout the provinces in a manner best calculated to redound to its political benefit.

In conclusion, the White Paper makes a very poor case -- no case at all, really -- for the quite dramatic departure it proposes from the government party's traditional view of allocation. Whether

this means the government is determined to go ahead or whether in fact there is still time for a recantation before these heresies are written into provincial law is hard to say. In any case, there is little doubt that the province was -- and would be -- better served by the old-time religion.

Notes

¹For an excellent summary of the two main schools of thought, see Saunders 1982. For a concise statement of the interventionist school see Rotstein 1984. For a critique of the interventionist position see Watson 1983 or Palda 1979.

²It is mainly economists who hold this policy position, unfortunately.

³As it calls itself in the White Paper. Page references throughout are to the White Paper.

⁴The White Paper even goes so far as to suggest that the new federal government should itself 'develop a correspondingly National Industrial and Science Strategy for medium term planning,' thus effectively endorsing what is commonly known as the 'Science Council view' of industrial strategy (p.68).

⁵Though after the Keegstra affair one might have thought it would be prudent to keep all matters of a potentially controversial nature off the curricula of Alberta's - or any other province's - school system. If the government insists on using the classroom to try to increase the future rate of growth of Alberta GNP, greater good is likely to be done by teaching students reading, writing, and arithmetic than by attempting to indoctrinate them with one or another view of how society should work.

⁶This is not to concede that the problems the White Paper perceives actually exist.

⁷That there is a lot going on belies Alberta's presumed ideological purity in this area, though, of course, most economists recognize that political imperatives often preclude the indulgence of even the worthiest ideological preferences.

⁸It may also thought (sic) that the province should start planning for the day when the resources run out, as they inevitably will do at some stage. For a discussion of this idea, see below, this section. The White Paper says some very strange things about diversification. For instance, it argues -- mystifyingly --that diversification is 'intended to broaden our base -- not artificially change our base' (p. 29; emphasis in original), though how changes prompted by tax incentives will not be artificial the White Paper does not explain.

⁹In fact, at one stage the White Paper argues that the province's economy has been excessively volatile: "Extreme peaks are invariably traded off against subsequent downturns" (p. 3).

¹⁰This assumes there are no important "external" benefits produced by high-technology manufacturing -- external benefits being any that accrue to persons other than those responsible for making the investment decision. If there are no such benefits then the potential investor will have taken into account all the benefits and costs of his investment. Should he or she decide not to go ahead with it, this can be read as very strong evidence that the costs exceed the benefits. To be sure, there is a standard argument in the literature that R&D often does produce significant external benefits, though there probably also would be general agreement that a province as small as Alberta may have difficulty capturing even a modest proportion of them. Moreover, the White Paper does not make use of this argument and nowhere describes the external benefits it thinks would flow from the aid it proposes.

¹¹Funnily enough, the government seems to be aware of this problem. Thus:

"With the importance attached to 'high tech' enterprises in all countries, everyone is trying to start 'Silicon Valley 1984'. In the U.S. competition among the states for high tech industries is nearing a 'war'. To lure these enterprises to their region, politicians are eager to offer very attractive tax packages or other incentives and assistance to sway location decisions" (p. 44).

Yet in the Paper's policy sections this kind of sensible thinking is nowhere to be found.

¹²Another reason is that transportation costs to Alberta's major markets are too high. The White Paper argues that this is the result of the federal government's insistence on running the railways on a 'user pay' basis. It is a safe bet that the national industrial strategy which the Alberta government says it is going to urge on the new federal government will involve subsidies to encourage producers to set up in uneconomic locations far from the markets they serve. How this will improve Canada's economic performance relative to, say, the Japanese is hard to understand, however.

¹³Although, as mentioned earlier, the White Paper argues that substantial economic diversification already has taken place and without government assistance (p.41).

¹⁴Thus many economists argue that until Canadian manufacturers acquire unrestricted access to the U.S. market they will not be able to reach the same productivity levels as U.S. producers.

¹⁵As the White Paper recognizes: 'The province's comparatively small population makes it difficult for many enterprises to survive or expand on strictly the Alberta market'(p.56).

¹⁶The government's own preferences apparently run toward the pharmaceuticals and life insurance industries (pp.66,50). What factors lead it to conclude that such industries will prosper in Alberta are not described, however. The government also believes that more Alberta companies should list their stocks on the province's exchanges -- and promises to use its influence to see that they do so -- though why a market-oriented government should take a position on a private decision of this sort is hard to understand (p.50).

¹⁷See Usher 1983.

¹⁸Note that global assistance probably is easier to deliver if it takes the form of a reduction in corporate taxes.

¹⁹For a detailed discussion of this phenomenon, see Dales 1983.

²⁰The Special Recovery Investment Program announced in the April 1982 federal budget is a good example of this sort of behaviour. Evidently, 70 per cent of Manitoba's share of the \$4.2 billion spent by the fund went to the province's two Liberal ridings. It will be recalled that in the recent federal election Lloyd Axworthy, the minister from Manitoba, was the only Liberal --Mr. Turner excepted -- to win a seat in the West.

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PROPOSALS FOR AN INDUSTRIAL AND SCIENCE STRATEGY FOR ALBERTANS 1985 TO 1990: INNOVATIVE OR WISHFUL THINKING?

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I. INTRODUCTION

Origins of a strategy

On July 11, 1984 the Alberta government released its **Proposals for an Industrial and Science Strategy for Albertans 1985 to 1990**. This White Paper is to provide a reassessment of the industrial policy followed by the present Alberta government. The primary goal of the existing policy as stated in 1974 has been economic diversification; diversification in the sense of making the Alberta economy less dependent on the scale of unprocessed natural resources.¹ Important, but supplementary, objectives were (a) decentralization through a balance in economic growth throughout the province, (b) enhancing the private sector by strengthening small and locally-controlled businesses, (c) upgrading the skills of the Alberta workforce, and (d) pursuit of the competitive advantages available in the province from its natural resource base.

For most of the last ten years, Alberta rode the crest of an energy driven economic boom during which the government was able, as the White Paper points out, to undertake a variety of activities in pursuit of its goals. More recently, however, that boom faltered and Albertans have, like other Canadians, experienced the most severe recession since World War II. This experience has served to remind Albertans that they are not immune from economic adversity and, indeed, given the economy's extreme dependence on the energy sector, may be particularly susceptible to economic instability. In this environment, it is not surprising that Albertans and the Alberta government are reassessing their industrial strategy with much consideration being given to the pursuit of new opportunities to help further broaden the provincial economic base beyond that of a primary resource producer.

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An industrial and science strategy

Fundamentally, the goals and objectives proposed for the 1985-1990 period are the same as those established in 1974 (Alberta, 1984, p. 53). However, there is now a greater emphasis on developing and exploiting the talents of the province's human resources, the provision of jobs, and the pursuit of new economic developments besides resource upgrading. It is also recognized that the extent to which these objectives can be achieved and the methods by which they may be attained are influenced by the characteristics of the Alberta economy and external factors. Alberta enjoys a number of advantages but also faces a number of limitations to be avoided or overcome. The strategy is to build upon the strengths and to circumvent the weaknesses. Though very optimistic, the recognition given to these realities provides the document with an element of practicality.

The oil and gas sector is expected to remain the "engine for growth" in the province in the future although a continuing strong role for agriculture is also seen. One of the objectives is, however, to promote the further processing of both of these primary sectors outputs and so further broaden the industrial structure of the economy. Despite its rapid growth in Alberta to date, petrochemicals production is still seen as an avenue of opportunity in the proposed strategy. Expansion of the processing of agricultural commodities is viewed similarly. This emphasis is not to imply that the primary sectors are to be neglected. The government will continue to support primary production but will endeavour to "broaden" the province's economic structure by expansion of the processing of primary products. Here much of the emphasis is on jobs -- i.e., not exporting jobs with our resources and providing employment opportunities for young Albertans.

The key role of technology and trade

While the Alberta government proposes to maintain its existing strategies in most areas, the essence of its proposal is to advance a science and technology oriented industrial policy for the province. This policy would see the expansion of scientific and technological activities applied to the marketplace. The intended result is not only an improvement of the productivity and market opportunities of the primary and processing sectors which are already the foundation of the Alberta economy but it would open new avenues for the economic development of the province. The major new

initiatives outlined for this industrial and science strategy are (a) promotion of a high technology and research oriented manufacturing and service sector and (b) an expansion of the international marketing of Alberta products. High technology industry is deemed desirable because it offers employment opportunities for a skilled labour force and involves a high value-added component in an exportable final product. The government apparently sees potential for "high tech" developments in a variety of areas including pharmaceuticals and the communication-information field. While the risks are large and the competition stiff, Alberta is felt to have a reasonable opportunity to realize a "fair share" of the successes through a focused strategy.

External markets, particularly foreign markets, are seen as promising opportunities for the products and services of both the expanded high technology and the resource based industries. Natural resources, in raw or semi-processed form, constitute the bulk of Alberta's exports. While growing, a further significant potential is seen for the export of provincial resources in processed form and for the manufactured products and the services of the resource industries and their service sector. The development and expansion of a high technology sector will demand yet further pursuit and exploitation of external markets. While challenging, the prospects are appealing because of the additional opportunities for quality employment and the reduced reliance of the provincial economy on resource markets which results. However, external markets are highly competitive. In addition, the provincial government sees many (perhaps an increasing number of) impediments and barriers to trade both to the province's traditional and to its conceivably potential exports. In consideration of these obstacles, the province apparently feels that a competitive export sector will require more than quality products and good marketing.

Implementation

How does the Alberta government propose to accomplish these changes in the province's industrial structure so as to achieve its revised and expanded diversification, growth and development targets? The answer, simply put, is more government intervention in the economy. The major forms of this "positive" intervention are (a) direct involvement with private interests in cooperative ventures to undertake projects that would not be undertaken otherwise, (b) the promotion of selected sectors through taxation and fiscal

policies, and (c) augmenting a variety of specific services assisting industrial development. We elaborate somewhat.

(a) Public-Private Ventures. The government sees its active participation with private interests as a potential catalyst to stimulate ventures consistent with its industrial and science strategy. Energy and transportation projects receive special mention. The public participation may include equity investment, loans, loan guarantees and/or royalty deferral.

(b) Taxation and Fiscal Stimulants. The White Paper proposes using a variety of tax incentives and, if necessary, grants and subsidies to promote research and development, investment in high technology and resource processing industries, and initiatives into foreign markets. The fact that Alberta operates its own corporate income tax independent of the federal system is seen as offering the province more flexibility in the tax incentive area. Thought is also given to adopting an independent personal income tax system for the same reason. The proposal to change its policy and give preferential treatment to Alberta based suppliers of goods and services to the government also falls into this category.

(c) Services to Support Favoured Industries. For convenience we lump a number of the proposed strategies under this heading. A major category in this class is the policy to give priority in the education system to programs felt to complement the government's strategy by supporting science and technology oriented industry. Science and internationally directed business programs in advanced education and languages and computer skills in the school system are noted. An International Business Institute is proposed. In a related area, several measures are suggested for assisting with the development and marketing of new products and processes, and the transfer of new technologies. For example, an Alberta Innovation Centre. Government supported research would be directed more towards application and greater efforts made to relate it to industry problems. Strategies are also proposed to assist (beyond tax and fiscal concessions) the financing of favoured activities to offset perceived inadequacies in the capital market -- an expansion of Alberta based financial institutions and the expansion of their role, encouragement of Alberta based business and for the location of head offices in (or relocation to) Alberta, and the promotion of Alberta equity markets. An Alberta International Export Corporation would assist the financing of foreign ventures. Various other services would be expanded to assist firms in identifying and becoming established in foreign markets.

Our approach

The White Paper proposes a shift in the province's industrial strategy from diversification based on existing resource strength towards one also integrating industrial restructuring. The government is to be commended for advancing this proposal to Albertans for their review and assessment. While all provinces follow some industrial strategy, many do not define their strategies so specifically nor invite comment on their development.² The White Paper has a broad scope. In responding to it, we focus only on the more important and debatable issues within the limits of our expertise and ignore many others. One difficulty we encounter in this exercise is identifying the extent of the proposed strategies. The White Paper indicates the direction which strategies may take but not the intended speed nor the outlay of resources which the government anticipates or would find acceptable for achieving a specific change. That is, what sorts of changes achieved at what cost would lead the government to consider the policy successful? These are important considerations in the ultimate assessment. While one might agree with the direction of a policy, it is easy to disagree on the extent or the method.

The remainder of this paper proceeds in the following fashion. Section two examines government intervention in the context of the provincial government's objectives. Three sets of points are made. First, it is argued that the White Paper provides no credible rationale for the degree of intervention envisaged. Second, the costs of the proposed intervention are underestimated or neglected entirely. Third, the lack of consistency among the goals is noted as is the failure of the document to examine perhaps the most viable and low-cost solution to many of its concerns -- that is, to utilize and strengthen the Canadian economic union. In section III some of the specific proposals of the White Paper are discussed in detail. Section IV contains the concluding observations.

II. GOVERNMENT INTERVENTION AND POLICY OBJECTIVES

A. Government Intervention

The White Paper is a double-edged document when it comes to the issue of government intervention in the provincial economy. On one hand, the document urges a smaller role for the government sector through privatization of a range of activities presently performed

directly by the government and a reduction in the level of red tape imposed on the private sector. These initiatives are welcome so long as the private sector is the cost-efficient producer of the required services.

On the other hand, the document proposes extensive intervention in the economy through the use of a variety of fiscal instruments to influence the timing, location and type of economic activity by the private sector in the provincial economy. It is a major omission of the document that no effort is made to define the circumstances under which government intervention is warranted, particularly, how the proposals advanced would enhance the welfare of provincial residents. Instead much of the discussion relates to efforts to promote aggregate growth and influence industrial structure and ignores the issue of whether provincial government policy is ensuring the most productive use of capital, labour and natural resources within the province. More investment, more people, and a more diversified economy do not necessarily mean higher incomes and improved well-being for the residents of Alberta. More likely the reverse is true if the growth is induced solely by government tax breaks or subsidies.

The fundamental objective of government economic policy should be to increase the real income of individual residents of Alberta. That is, the primary goal of economic policy should be to ensure that the scarce economic resources of society -- labour, capital and natural resources, including land -- are allocated among competing users in the most efficient manner possible. At the macroeconomic level this intervention can and should take the form of counter-cyclical fiscal policy to offset recessions and inflationary booms in the provincial economy. The White Paper, however, suggests a role for government intervention in individual markets either directly (Crown corporations, equity interests, loans) or indirectly through tax and expenditure policies beyond that necessary for counter-cyclical purposes to achieve an apparently desired pattern of economic development which market forces are not generating.

In ideal circumstances unhindered market forces (no government intervention) will yield the most productive and efficient allocation of economic resources in individual markets. The exception is when a difference between the costs and benefits perceived by individuals and those faced by society exists. This phenomenon, called "market failure," arises when market prices fail to reflect the costs and benefits to society as a whole of activities undertaken by individuals and firms. Government intervention

which corrects market failure will lead to improved resource allocation and higher incomes.

Market forces or market failure?

Given that the goals and objectives set out for debate in the White Paper individually and collectively may appear desirable, one must inquire why these outcomes have not been realized to date. There are two possible explanations.

The first is that market forces preclude these outcomes. The provincial economy is small in absolute terms and in relation to national and international markets, and is distant from major markets and has abundant resources. These factors may have led to a highly specialized but very efficient economic structure emerging in the province.

The second possible explanation is that the current pattern of economic activity is the result of market failure or the effects of non-market constraints imposed by government policy at provincial or federal levels.

If the former scenario (market forces) accounts for the pattern of industrial activity, then government policies that artificially shift the structure of the economy or promote aggregate growth will lower the real income per capita of Alberta residents in comparison to the non-intervention case. We may possess a larger and more diversified economy but we will no longer be as efficient as we were before we impeded the operation of market forces. Citizens of the province may be quite willing to accept these costs if they value a more diversified economy as an end in itself. They should be aware, however, that there is no "free lunch." A trade-off will exist between a more diversified economy and individual incomes.

On the other hand, if it is the market failure or government policy scenario which has led to too small or too specialized an economy, then government intervention may shift industrial structure and realize higher incomes for residents of Alberta. Elements of both the "market forces" and "market failure" argument are found throughout the document. However, it often seems that the product of market forces is interpreted as market failure justifying intervention. This problem is perhaps most evident in the discussion of the White Paper of public-private ventures as an element of industrial and science strategy.

Direct bold action desirable?

It is argued in the White Paper (p. 57) that "...the Alberta government should be prepared to take even bolder action in developing with the private sector large scale projects...that either cannot or will not be completely undertaken by the private sector...." Equity investment, loans, loan guarantees and royalty deferrals are mentioned as possible mechanisms and examples exist of each.³ If carefully assessed and structured, such investments may prove socially beneficial to the province. The province's equity investment in Syncrude, given the increase in oil prices since the agreement and the nature of that agreement, has probably evolved as a reasonably attractive financial arrangement for the government.⁴ Whether other ventures the White Paper cites or future initiatives will prove to be successful financial (or social) investments is yet to be seen. Not all will prove beneficial and efforts must be made to avoid the less attractive alternatives.

Any time public intervention is required to stimulate a project that would normally be undertaken privately, one must seriously question its economic value. Is the project being considered prematurely? Is it viable at all or are there other benefits to society which cannot be captured by the private participants? When public investments or concessions are required to promote private undertakings consistent with the province's industrial strategy, it is important to distinguish between those ventures needing support because they are simply not economically sound or are advanced too soon and those which generate extra-market benefits unavailable to the private investors (market failure). Only in the latter case should the government participate. Otherwise, public and private resources are better used elsewhere. Careful financial and cost-benefit analysis will reveal the need for government intervention. Where public participation is considered, the costs and benefits resulting from the public involvement should be spelled out carefully and exposed for public review and discussion.

Jobs or revenue?

We are somewhat concerned about the economic soundness of possible ventures in which the province might become involved given the repeated reference in the White Paper to the need to favour employment generation over revenue flows (White Paper, p. 57). If natural resource and tax revenues are reduced or deferred, the returns foregone to the government should yield provincial residents

other benefits which at least compensate. Certainly in times of economic recession when resources, particularly labour, are under-utilized, the social cost of projects may be less than their financial cost because undertaking them will result in the employment of unemployed labour and other inputs. In such situations, a case can clearly be made for public stimulus as part of counter-cyclical fiscal policy. Even so, there is a need to scrutinize the benefits and costs of the public involvement -- that is, what additional projects are actually undertaken as a result? How much is unemployment reduced? What are the costs to the government, etc.? While the current under-utilization of the province's productive capacity affords a rationale for stabilizing intervention, the strategies proposal claims to be taking a longer term perspective outlining policies that while initiated during the period 1985-1990, could continue well beyond this time frame.

Costs of underpricing resources

The costs of the deferral or abatement of natural resource revenues to promote industrial development may be significant. While the growth of the Alberta petrochemical industry may not have been promoted by an explicit subsidy, its feedstock is underpriced relative to other petrochemical centres and other uses of the gas.⁵ The need for this difference results from the fact that other costs have been higher in Canada and Alberta and the costs of transporting the processed and semi-processed products of the industry are greater than the costs of transporting the natural gas itself. Typically, petrochemical firms tend to base location decisions on proximity to their markets or sources of low cost transport to markets, rather than on proximity to their inputs. Regardless of foreseeable future pricing arrangements, it appears that the price of feedstocks to Alberta plants will need to be discounted to keep their products competitive in a continental or world market. The concessions made on natural gas prices for Alberta petrochemical production has meant lower natural resource revenues to the province and its residents.⁶ Even the presumed diversification benefits typically attributed to the development of the industry are questionable. Building the plants contributed to the pressures on Alberta's economy during its energy boom and, in the face of a reduced demand for natural gas and oil (and their products), the consequences of having the petrochemical plants using Alberta gas in Alberta rather than in Ontario or elsewhere seem only to be that the magnitude of the adjustment imposed on

the Alberta economy is larger. Further concessions on resource revenues, it is hoped, would be less costly to Albertans.

Privatization potential ignored

Further intervention with private sector investment decisions conflicts with the purported claim to want to reduce the role of government through privatization and reduced regulation. While arguments for intervention prevail in the White Paper, almost nothing is said about improving provincial productivity by restoring investment decision making to the private sector. Water supply and irrigation is certainly an area in which this deserves consideration. Because the provincial government now finances most of the infrastructure for providing irrigation water at very low cost to users, there is an excessive demand for irrigation development and water in existing systems.⁷

To supply water through a self-financing utility, independent of the government is an option with obvious appeal for those interested in the best use of resources. Users might be the owners or at least users could be represented. Because major interbasin water transfers have been considered, the concept might be expanded to encompass a system for diversions but organized to represent major interests much along the lines that the Alberta Gas Trunk Line Co. was in the 1950s for the movement of natural gas within Alberta.

Regardless of the form that government intervention takes for these public-private ventures -- direct subsidy, loss of tax revenues through tax deferrals or reductions, or underpricing resources (failure to price provincially-owned natural resources at their opportunity cost) -- they should be undertaken only if the social return is at least equal to the next best alternative available in the market. If such investments do not meet the market test, the government should make it clear to the public the magnitude of the costs (in terms of income foregone) of achieving the policy objectives.

A "second-best" argument?

One economic argument for intervention in the market which might be implied by the White Paper is what economists would call the "second-best" argument. It is argued (see proposals F1.C and F1.G, pp. 57-58, White Paper) that the governments of other provinces artificially encourage the location of industry within their

territories and thus that the Alberta government must retaliate by doing the same thing.

In some rather restrictive cases, such moves might be efficiency increasing and so increase residents' incomes but in most cases it seems quite unlikely. Moreover, the information required to judge whether a second-best policy is efficiency improving is normally unobtainable.⁸ Secondly, and perhaps more seriously, second best policy is usually found in the context of the expectation that other "players" will not change their own behaviour, i.e., that if Alberta begins to subsidize industrial location here, that the stakes will not go up. Non-reaction may, of course, not be the case.

Two of many possible cases provide a sense of the issues at stake. First, take the case where the least cost production and distribution location for a firm or industry would be central Canada and the two central Canadian provinces "bid" (through subsidies and tax deferrals) against one another to attract it. Whichever of the central Canadian locations is chosen will result in a subsidy from the taxpayers of that province to shareholders and customers of that industry. For Alberta taxpayers to enter into this competition would clearly be foolhardy as they would pay not only the subsidy to shareholders and customers of the industry available in the central provinces but also for the inefficiency of the industry's sub-optimal location in Alberta.

The second case is where the industry would most efficiently be located in Alberta but other provinces are offering to subsidize the industry to locate elsewhere. In this case, out bidding the other province to get the industry to Alberta would improve efficiency with respect to the firm's locational choice but would still tax one sector or income group in Alberta to subsidize another. If, for example, labour was taxed to subsidize capital, then we would have the efficiency costs that would arise from higher taxes on labour and the possibility of an excess of capital formation. In this case then a second-best argument is possible for subsidization of industrial location in Alberta but the information required to know whether subsidies are moving us towards a more efficient allocation of resources is considerable. In particular, we need to know whether the increased efficiency of better location outweighs the loss in efficiency resulting (a) from income taxes necessary to raise the revenue and (b) from excess capital formation resulting from the subsidy to the industry. Regardless, the subsidy is unlikely to be to Alberta's advantage because it would bear the cost of the subsidy while the efficiency gains are distributed nationally.

Subsidy retaliation in Alberta's interest?

The argument as made in the White Paper, then, that others are doing it thus we must, is far from necessarily true. There are a considerable number of other considerations that must be taken into account even in the absence of strategic response by the other provinces. When one considers that their response to Alberta's entry into the competition for industry might be further distortion of Canadian markets, adoption of this policy to promote industrialization seems even less attractive. Moreover, because the tax advantages available in Alberta already distort industry and population towards Alberta (see below), the concessions being offered elsewhere could easily be argued as distortion correcting in a second-best world.

The role of taxes

The impression given by the White Paper is that the government takes the peculiar view that taxes are primarily instruments for guiding industrial development. That taxes can function as the means by which individuals and firms pay for the provision by the government of publicly provided goods and services (urban infrastructure, highways, education, medical services) from which they benefit is ignored, as are the redistributive consequences of the tax policies outlined. This cavalier attitude to the major role of taxation at the provincial level has its roots in the fact that Alberta governments can draw upon natural resource revenues to fund government expenditures.

Natural resource revenues constitute approximately 50 per cent of government revenues in Alberta and this has led the province to rely far less on various direct and indirect taxes on labour and capital to fund expenditures. In the fiscal year 1982-83, for example, total revenues from own sources excluding natural resource revenues and returns on investments (interest or income from government, corporations or from savings funds such as the Alberta Heritage Savings Trust Fund) accounted for 61.0 per cent of gross general expenditures for all provinces. In the case of Ontario this share was 70.7 per cent while for Alberta it was only 33.8 per cent.⁹

Subsidies or tax incentives can be wasteful

The ability of Alberta governments to fund a large share of expenditures from natural resource revenues and cross subsidize

expenditures on services provided by government may give the impression that subsidies can be granted without the loss of efficiency involved in taxing other sectors or groups to raise funds or that taxes can be lowered in one sector or across sectors without adverse efficiency consequences because there is no need to increase taxes elsewhere. This perception is not correct. The theoretical literature predicts and the empirical evidence confirms that labour and capital flows to the province are highly responsive to these fiscal incentives to move or to invest in Alberta.¹⁰ The use of natural resource revenues in this fashion can be distortionary and lead to their dissipation through inefficient economic activity in the province.¹¹

The White Paper stresses the role of tax policy as a tool to achieve the goals of government industrial policy through creation of the "proper environment" for the private sector. The province has opted out of the federal government corporate tax collection scheme and is considering implementing its own personal tax system rather than follow the federal government uniform tax system. Assuming these initiatives are to allow the government to subsidize some sectors of the economy by setting the tax price of services at less than the cost, these initiatives may be very costly in the longer run.

Benefits may turn to amplified costs

The provincial government can draw upon resource revenues to lower personal and corporate tax levels significantly below those prevailing elsewhere in Canada. In so doing, it will promote greater investment in Alberta and migration into the province. But what happens when resource revenues fall because of declines in resource prices or the depletion of low cost (conventional) energy supplies? To meet its expenditure needs, the government will then be forced to increase taxes on individuals and capital. Individuals and firms induced into the region solely because of tax advantages relative to other jurisdictions will exit the region. Thus when the energy sector contracts, the province will be left with a double adjustment problem. It will have to accommodate the direct consequences of a contracting energy sector and the effects that this will have through falling resource revenues and higher taxes on other sectors of the economy. The growth and diversification of the provincial economy induced by a low-tax scenario may not be sustainable in the longer run.

Resource revenues serve to mask the distributional implications of the industrial strategy tax policies. An extensive variety of tax subsidies to capital to promote the expansion and development of certain sectors are proposed. The foregone revenue of these tax expenditures must bear upon someone. To maintain services, taxes on other taxpayers (notably the ordinary Albertan) are likely to be increased. Alternatively, less resource revenue could be allocated to the Heritage Savings Trust Fund (HSTF) or the Trust Fund could be dipped into directly. In this latter case, the collective savings of all Albertans would be sacrificed for the benefit of investors in the favoured industries and those few others advantaged by provincial growth. Either way, the proliferation of tax (and other) concessions for capital are likely to benefit capital owners at the expense of the average Alberta resident and taxpayer.

Distribution and stability

There are reasons other than market failure which lead society to wish governments to intervene and allocate resources differently than would freely operating markets. The public might view a more equitable distribution of income than that generated by the market as desirable. However, the consequences of the proposed strategy suggest that achieving a more equitable income distribution is not a consideration.

A society may prefer a more industrialized or diversified economy than market forces would produce; possibly because it is more stable in terms of economic fluctuation. We, however, know of no evidence to support or reject that view and casual observation of the data does not suggest that the answer is evident. For whatever the reason a society might want to deviate from the market outcome, it should make its choice fully aware of the magnitude of the trade-off between the alternative goal and market income. That trade-off is not evident in the White Paper.

In review

Unfortunately, the White Paper is most unclear regarding the government's rationale for market intervention. No case is made for correction of market failure as a justification. It seems almost an implicit assumption that the proposed strategy will lead to higher incomes for residents of the province. We seriously doubt whether most (even many) residents will be better-off as a result. The degree of intervention contemplated by the government may well

introduce a range of costly distortions into the economy whose true cost to the public is not well perceived.

An industrial strategy which distorts the economy does impose costs and these costs depreciate the value of the strategy. The purported advantages of a more diverse and apparently larger Alberta economy are enumerated throughout the White Paper but the costs of the strategy are not. The variety of policies suggested would certainly have at least some marginal effect on the economic structure of the province if the government is persistent in its efforts. However, while the favourable treatment afforded stimulates some new and different developments, it imposes costs on others. When labour and capital are sensitive to fiscal treatment in regard to their location decisions as the evidence suggests, unfavourable treatment of the other impedes some from coming and induces others to leave. Such adverse responses tarnish the strategy and are ignored entirely by the White Paper. The proposed industrial strategy may tilt somewhat the economic structure of the province but likely at some cost to growth and development.

B. Policy Goals

The five objectives and goals set out in the White Paper (p. 53) are, necessarily and deliberately we are sure, somewhat vague and general. Indeed some of the goals are virtually platitudes with which, on face value, it is difficult to disagree. The policies implied by these goals, however, are much less clearly attractive to all, especially in light of the proposed degree of government intervention and its possible consequences discussed in this section.

Diversification as broadening

There are three general points regarding these goals which deserve brief mention. The first is that the document adopts a very realistic perspective about the extent of diversification possible for the industrial structure of the province. Diversification is viewed as a "broadening" of industrial structure around sectors of observed strength such as energy and agriculture. This narrow definition of feasible diversification is consistent with the constraints imposed on economic growth in the province because of small domestic markets, long distances from large national and international markets and the basic resource endowments of the province. The current fiscal capacity of the province might well permit, for example, a large scale effort to promote a greater absolute and

relative role for secondary manufacturing. This objective, however, could only be accomplished at significant cost and in any case would not be sustained in the long run in the absence of subsidies for reasons discussed earlier.

Even this modest degree of diversification will impose economic costs on the residents of Alberta without accomplishing the goal to "...lessen dependence upon the sale of unprocessed resources and the vagaries of world commodity markets" (A.3, p. 53). Increasing the degree of further processing of resources within the province will, if anything, exacerbate the problem of cyclical instability for two reasons. First, the instability experienced by the primary resource sector emanates from demand fluctuations from the processing sector which derives in turn from shifts in final and industrial demands. Consequently, the new or larger resource processing sector will display the same pattern of cyclical activity as exhibited by the resource sector.

Second, the emergence of a high-cost resource processing sector sustained through subsidy, tax breaks or underpricing of inputs will only exacerbate the severity of any cyclical downturn in the economy. As a high-cost marginal supplier, the resource processing sector will be the first to require financial aid if it is to continue in production. The province will be faced with the dilemma of accommodating a falling price for its primary resources and declining provincial revenues while at the same time facing requests for additional funds from the non-competitive processing sector.

A related issue also deserves mention. Specialization in resource products does not imply market failure. One of the basic predictions of economic theory is that all parties gain from trade (between individuals, regions and countries) and the specialization that results. Yet for some reason most primary producing regions opt for vigorous diversification strategies without first articulating why it might be costly to exploit one's comparative advantage and specialize in resource production. What is wrong with being "hewers of wood and drawers of water" if it yields the highest possible income for residents? If necessary, the market, through a risk premium component to wages, compensates workers for risk arising from cyclical or secular (non-renewability) factors. The White Paper should confront this issue head-on but it doesn't.

Inconsistency of goals

The second general point is the lack of internal consistency among the goals and policies. The possibility that the effort to diversify

the economy through promoting the further processing of resources may exacerbate rather than ameliorate the adverse effects of demand downturns is one example. Two others deserve mention.

First, the document often notes and criticizes federal policies that lead Alberta to receive less than world prices for its energy resources. On the other hand, it implicitly suggests that receiving less than world or national prices will be an acceptable element of provincial policy if it achieves provincial goals.

Second, the White Paper correctly notes that several federal industrial strategies discriminate against the West and Alberta in particular and impose real costs on the region. Yet the White Paper proposes to adopt similar types of policies at the provincial level which will discriminate against larger urban centres through emphasizing "balanced growth" as a separate goal. It appears that the provincial government is willing to thwart market forces in order to redirect the location of economic activity within the province. The aim appears to be to shift the entry of new firms to smaller urban areas and away from Calgary and Edmonton.

This may be a very costly policy. The Alberta economy in absolute terms is very small and certainly Calgary and Edmonton are small cities by national and international standards. There does seem to be evidence that larger urban centres are productive and act as a magnet to attract new firms and migrants. Large urban centres offer a wide range of amenities to individuals and "cross-fertilization" of new ideas, techniques, and labour across various industrial sectors. Provincial balanced growth policies may impede the very diversification the overall policy hopes to promote.

A failure to appreciate the strengths of economic union

The third and final point concerns the parochial attitude of the White Paper with respect to both the operation of markets or to the role the Canadian economic union could play in addressing concerns of the document. The White Paper is concerned with providing jobs for Albertans and broadening the economic structure of the province. The former goal is deemed desirable because it reduces the need for outmigration or reduces unemployment of Albertans while the latter is felt to reduce instability arising from specialization. Yet the role that the Canadian economic union could play in addressing these issues is neglected entirely. Much of the emphasis on employment generation appears to assume the need to employ young Albertans in Alberta. Fortunately, the economic union of our

federal system avoids that necessity and permits people to move to and from provinces so that they will be employed in their most productive alternative subject to their own locational preferences. Consequently, there is no need to artificially generate jobs in Alberta for our children and even less cause to provide inducements to attract others to Alberta when their productivity is greater elsewhere.

Though not explicitly reflected in the goals, the White Paper adopts a similar myopic view towards capital markets. One of the weaknesses suggested in the Alberta economy is "...a shortage of Alberta controlled risk taking capital to fully develop our opportunities. This forces us to be quite dependent upon outside sources of decision making for the commitment of capital" (White Paper, p. 56). This argument suggests market failure. That is, entrepreneurs outside Alberta are unwilling to invest in the province despite the existence of profitable opportunities. Yet the empirical evidence suggests that capital markets are highly efficient and most responsive to differential returns. The lack of risk capital in Alberta may simply reflect the paucity of profitable opportunities in the province relative to other regions or countries. Or this quote could be interpreted as suggesting that Alberta-controlled risk capital firms would be willing to accept lower returns on investment in Alberta than they could elsewhere. Certainly profit maximizing private firms would not operate in this fashion and we certainly hope that provincially controlled risk capital firms would not. The income of society is maximized when capital is allocated among projects and regions such that rates of return for investments of equivalent risk are equalized. To do otherwise is to misallocate society's scarce resources.

Confederation or the Canadian economic union provides an insurance mechanism for provinces such as Alberta to specialize in sectors where capital and labour are most productively employed, to reap the higher income gains which result without incurring the potential costs that might arise from specialization were Alberta an independent region. Confederation permits the country as a whole to be diversified given the high degree of regional specialization evident in Canada. Consequently, when the prices of primary products fall, for example, the relative prices of manufacturing goods in central Canada rise. Labour and capital released in the contracting primary sectors can be productively employed in expanding manufacturing or services elsewhere in Canada. Similarly transfer payments ranging from equalization to unemployment insurance help ameliorate the consequences of cyclical factors in

affecting particular regions. Certainly, access to the rest of Canada's labour markets is the least cost insurance against the long-run problem of non-renewability of certain resources in the West. Pursuing provincial diversification strategies only dissipates many of the possible real income gains from Confederation and neglects the insurance aspects of the economic union already in place.

III. REFLECTIONS ON SPECIFIC PROPOSALS

In the previous section, we reviewed the general approach of the White Paper towards an industrial strategy. Here we focus upon the more specific proposals for export development, tax incentives, procurement policy and the development of high tech industry. Our overall conclusion is that the potential for intervention in these areas is more restricted than the White Paper suggests.

A. An Alberta Export Development Corporation

The more active pursuit of international markets is seen as an avenue for selling both more of Alberta's existing products and its potential new outputs. A major vehicle of government support would be an Alberta International Export Corporation which would financially assist Alberta-based corporations pursuing international markets. Conceivably, the export corporation could potentially play a greater role by serving as a trading firm. We consider these possibilities and conclude that a relatively limited role, even in financing, is to be preferred.

Trading firms are businesses specializing in the international trade of products usually produced by other businesses. While trading firms have a long history, interest in them has expanded as a result of the importance of trading houses in Japan's international marketing success. Nine large and diverse trading firms (Sogoshoska) account for half of Japan's exports.¹² Many countries have sought to emulate this aspect of Japan's trading structure.

By international standards, Canada exports little (about 10 per cent) through trading firms. Some see this fact as a weakness in Canadian international marketing which might be overcome by the establishment of national trading firms, possibly government owned, while others see it as partly the result of the Canadian industrial structure which suggests more modest approaches to improving the country's trading capacities.¹³ Considering these arguments at the provincial level offers some suggestions for provincial strategy.

A major advantage of trading firms is that they can market internationally the products of small and medium-sized firms that find foreign marketing beyond their capacity. Because many Alberta firms with potential for development are small, this service could be very much to their advantage. At the same time, many firms have advantages in products and services to very specific markets which suggest small, specialized trading firms will be best able to market those products. Even in specialized markets, however, the range of products from Alberta may be small for even specialized trading operations and require that related products from the West or the rest of Canada be a necessary part of their package with the result that Alberta products will not be the centre of their attention. Also, trading houses deal best with standardized products not requiring adaption to the buyer's needs or after sales services -- i.e., supplier-customer contact. Because much of the anticipated future expansion, and even existing areas with export potential, do not meet these characteristics well, the potential of trading firms is constrained. Furthermore, trading firms import as well as export. Because many imports to Alberta and even Canada are finished goods sold through large corporations, new operations will find it difficult to establish import markets. Trading firms operate on very low margins, require specialized skills,¹⁴ require an entrepreneurial spirit and must be adaptable. It is difficult to see a bureaucratic organization suiting the requirements and particularly maintaining a credible independence from political influence.

Thus, while the trading firm concept appears to offer a path for promoting Alberta exports, the nature of the market suggests that specialized private operations are best able to serve the function. Perhaps this is what the Alberta government has in mind and its strategy is only to provide the stimulus and incentives sometimes seen as lacking in the Canadian setting (McMillan, 1981). The successful growth of Alberta exports thus far indicates that existing enterprises are already adapting and developing to meet the opportunities of the export market. If the government intervenes with its own trading firm(s) and trade financing corporation, it may only impede trade development by preempting private ventures in these areas. Rather than directly financing Alberta business trade initiatives, an Alberta Export Development Corporation would be better to provide back-up support to Alberta's financial institutions aiding them to gain the experience of serving this new sector and so promote the development of both the producer and the financial service sectors.

B. Tax and Fiscal Incentives

The White Paper proposes new initiatives in the government's tax and expenditures programs to promote favoured activities or sectors of the economy, the foremost being research and development, resource processing and export. Tax incentives, often for investment, are widely advocated. The apparent appeal of tax incentives and their potential magnitude requires that this strategy receive some attention.¹⁵

Tax incentives

Tax incentives can be used to achieve stabilization or structural objectives. The White Paper is concerned about the latter; that is, to stimulate economic growth, employment and the development of specific industries. Given the attraction of tax incentives and the potentially significant revenue losses, what is the likely effectiveness of such concessions? Some insight into this question can be obtained from Richard Bird's review and assessment of tax incentives for investment in Canada (Bird, 1980). Bird's assessment of tax incentives for investment is generally negative. He concludes that, while we still know relatively little about the effect of investment incentives, the evidence we have indicates that they are neither efficient nor effective. In light of this uncertainty, he advises that it is probably better simply not to rely upon them.¹⁶

Incentives reduce employment?

More specific results of particular interest are the effect of investment incentives on growth, employment and competitive position. Opinions vary but there is no strong evidence to suggest that aggregate long-term investment (and savings) increases as a result of tax incentives once the full impact of the program is taken into consideration. Second, investment tax incentives have a limited and possibly even adverse effect on employment. Large investments are required for each job and the cost of generating the additional investment in terms of foregone tax revenue may be substantial -- possibly one half of or even equal to the investment. In some cases, investment incentives may have a perverse effect on employment because they result in the installation of labour-saving capital improvement. Third, the effect of investment incentives on business competitiveness is inconclusive but may result in a somewhat more modern and technologically advanced capital stock. Overall, investment incentives do not have a strong case in their favour. It appears that they do little if anything to augment the

capital stock, enhance employment or improve productivity and so their proponents should be put on the defensive. On the other hand, incentives favouring a particular sector do (at least at the national level) tend to shift investment somewhat towards that sector -- e.g., manufacturing -- but probably at a not insignificant efficiency cost.

Beggared neighbours react

The studies examined consider the effects of federal programs on the Canadian economy. The effect of incentives in Alberta may be somewhat different because the interprovincial mobility of capital probably exceeds its international mobility. Thus, additional incentives in Alberta might serve to shift investment towards Alberta from other provinces (though perhaps only to be replaced by investment funds from foreign sources there), to increase investment by Albertans in Alberta (but that would likely largely displace outside investment otherwise coming to the province), or to shift investment somewhat towards certain industries. The direction of these results may be consistent with provincial policy objectives even if the net effects are relatively modest and achieved at some economic cost. Incentives which have a beggar-thy-neighbour flavour about them -- e.g., those which are seen to induce capital to shift from A to B -- are unlikely to be effective long because provinces felt to be adversely affected are likely to soon establish offsetting measures. Such a response is facilitated by the fact that these provinces accounting for 75 per cent of taxable corporate income (Alberta, Ontario and Quebec) administer their own corporate income taxes and are not bound by fiscal harmonization imposed by the federal tax collections arrangement. The eventual result could be the evolution of a system of parallel incentives across provinces having little effect on investment but costly to the provinces in terms of foregone revenues and with the gain distributed among business, labour and consumers.¹⁷

Investment incentives cause distortions

Investment incentives, and business tax incentives more generally, are a part of the barrier to interprovincial trade which are often seen as a potential threat to the Canadian economic union.¹⁸ A variety of barriers to the interprovincial mobility of goods, labour and capital have developed, or at least been recognized, recently. Provincial tax incentives are only a part of the provincially induced barriers to capital flows.¹⁹ Other potential barriers include

restrictive investment policies covering heritage, pension and insurance funds, and the indirect subsidies provided to certain activities through Crown corporations. An interesting result of the analysis of interprovincial distortions is that the estimated costs to society are low; possibly amounting to less than 1 per cent of GNP annually. Even assuming large distortions, the cost of the distortions to capital mobility are probably less than one-half of 1 per cent of GNP per year.²⁰ Even then, most of the costs result from federally, rather than provincially, induced distortions. The reason for the relatively small magnitude is that less than a fifth of Canadian goods and services are involved in interprovincial trade and only about 7 per cent of that is subject to severe distortions.²¹ While the significance of interprovincial barriers to trade may have been overstated, particularly relative to the social costs of other distortions like international trade barriers, they still involve a loss that could be avoided.

Extent of distortions difficult to see

In Alberta's case, the proposed strategies probably involve small distortions relative to those imposed by existing policies, even those originating from the provincial government. However, due to the vagueness about the commitment to the various proposals the extent of the potential distortions and their cost is difficult to predict because some are potentially large.

Why adopt ineffective, costly measures?

Since investment tax incentives may do little to achieve the stated objectives and involve some social cost (albeit small in the total picture), why are they so popular? One possible reason may be that many believe they are effective in accomplishing the stated objectives. Another, less generous assessment, is that their inadequacies are recognized but while many bear their cost a politically influential group does not benefit (Bird, 1980; Melvin, 1983). The relative invisibility of tax concessions in comparison to expenditure subsidies facilitates such concessions and argues in favour of tax expenditure budgets to better reveal their cost and so assist policy evaluation.²²

Recent research says incentives don't work

The use of incentives in an effort to influence business location decisions also conflicts with the typical results of empirical

investigations which suggest that such incentives are relatively ineffective. A recent study of state industrial growth in the United States adds new insights to this literature and has some implications for Alberta's strategy (Plaut and Pluta, 1983). Three measures of industrial growth over the 1967-1977 period are explained by independent variables reflecting four factors believed to influence industrial location --market accessibility; cost and availability of inputs; climatic and environmental factors; and business climate, state and local taxes, and expenditures. While public sector variables are not important in explaining the change in value-added, they do make a significant contribution to the explanation of employment and capital stock changes. Cost and availability of energy is an important determinant of state value-added and capital growth while climate and labour variables are more important determinants of employment change. Interestingly, market accessibility variables do not play a major role in any of these equations. Drawing inferences rather recklessly to the Alberta case, these results suggest that Alberta's energy and business climate-tax advantages will likely be associated most with greater rates of capital stock growth. Energy security and low prices are already a policy and the low tax efforts are well known. Both of these measures already likely stimulate high levels of investment, so, the benefits of further marginal incentives to stimulate investment are likely limited to small effects on structural changes and may well involve substantial costs to Alberta taxpayers in lost resource and tax revenue.

An independent personal tax system

To establish a separate Alberta personal income tax system is one of the possible future strategies found in the White Paper. While relatively little is said about this proposal in the document, it was emphasized in the announcement. While the province apparently sees some possibility of remaining within the existing tax agreement, it sees an independent personal income tax as a means of tailoring investment and employment to Alberta's new priorities.

Since 1962, federal-provincial Tax Collection Agreements have enabled the provinces to have their corporate and personal income taxes collected without charge by the federal government. To comply, the provinces essentially have to accept the federal definitions of taxable income, exemptions and schedules but are free

to set their own rates as a percentage of the basic federal tax. Most provinces adhere to this arrangement.

Quebec, for constitutional reasons, never did join the federal collection system and operates its own personal and corporate income taxes; Ontario has operated its own corporate income tax since 1957; and Alberta opted out of the agreement with respect to corporate income taxes in 1981. Several provinces, Alberta, British Columbia, and Ontario are considering abandoning the joint personal income tax collection agreement.

Provincial dissatisfaction with the collections agreement stems from what the provinces regard as federal inflexibility. The provinces individually have often sought to introduce special features to the income taxes applying to their own provinces so as to better tune the tax to provincial needs and objectives. While Ottawa was prepared to accommodate some of those requests (e.g., Ontario's property tax credit)²³ many have been rejected on the grounds that they were discriminatory -- i.e., that they created distortions and interprovincial barriers impeding the functioning of the economic union. Alberta withdrew from the agreement because it wanted to use the provincial corporate income tax as an instrument of economic policy promoting investment and diversification in the province.²⁴ Establishment of a stock savings plan through the Quebec personal income tax which encouraged Quebec investors to invest in Quebec business caused other provinces to request somewhat similar measures designed to affect industrial development. Their rejection by Ottawa has heightened the discontent of some provinces over the tax collection arrangements.

Major study rejected stand alone tax system

Ontario is also considering establishing its own personal income tax system. In investigating that option, it requested a study of the implication of such a move from the Ontario Economic Council. The Council's position (Ontario Economic Council, 1983) is that a separate Ontario personal income tax is not in the interests of the province at this time. That, however, is not to imply that the status quo should be retained. Rather, it recommends that the province encourage negotiation on the Tax Collection Agreements between the federal and provincial governments in a renewed spirit of cooperation and consultative federalism.

The modification to the agreements which the Council would prefer to see evolve would allow a province to tax the income base

with its own rates and tax brackets rather than taxing the federally defined base at an escalation of federal rates through a levy based on the basic federal tax. In addition, the Council wants the provinces to have more flexibility in establishing tax credits provided they do not discriminate among provinces. That is, credits should apply to a specific activity (e.g., investment) of a provincial resident whether or not the investment occurred in his home province. The achievement of such an intermediate position is felt to afford the bulk of the gains possible through a separate personal income tax system while avoiding the majority of the costs.²⁵

Violating a code of economic conduct?

It would appear that Alberta too might take a more moderate stand and join with Ontario and the other provinces to seek reform adding flexibility to the tax collection agreements. The structure of the Alberta economy and provincial aspirations may warrant a personal income tax differing in some ways from the federal government and that of other provinces. Tax incentives, such as Quebec's stock savings plan, likely appeal to Alberta policy-makers as a mechanism for achieving provincial goals. However, Alberta first policies which may reflect adversely on other provinces offer no lasting advantage. As the Ontario paper notes, they will soon lead to the larger and richer provinces opting out of the tax collection agreement and establishing their own tax systems with offsetting schemes -- witness British Columbia's notice that it may leave the agreement following rejection of its proposal for a credit paralleling the Quebec plan.

Competing tax incentives could soon leave all participants worse off. While Alberta may not be able to institute all the incentives it might like under a modified tax collection agreement, it and the other provinces may be better off in the long run for the absence of discriminatory schemes. It is for this reason that the final recommendation of the Ontario Economic Council's paper is agreement on a code of economic conduct, which because provincial tax policies are not the only impediment to the performance of the economic union, would also restrict regulatory and expenditures policies creating barriers to interprovincial mobility.

Even under the existing arrangement Alberta has considerable ability to pursue its own objectives further. For example, elimination of the provincial portion of the capital gains tax is suggested. It is not necessary to establish a separate personal income tax to achieve that end. Saskatchewan already rebates

provincial taxes on capital gains on family farms and small businesses. Also the province already has its own corporate income tax and probably many of the policies it may intend to implement via the personal income tax could be accomplished through the corporation tax instead.

Separate tax system costly for taxpayer

Finally, opting for a separate personal income tax would impose a cost on the province and its taxpayers. Extrapolating with back-of-the-envelope calculations from the Ontario study, the additional administration cost to Alberta would likely be \$20 - 27 million annually plus \$50 million set-up costs. The costs to Alberta taxpayers to comply with the separate tax could be in the order of \$28 - 76 million annually plus \$8 - 16 million start-up.²⁶

Given the added cost to the province of operating its own personal income tax, the policy options still available with an independent corporate income tax in combination with the existing personal income tax, the dubious long-term benefits and the potential advantages of renegotiated tax collection agreements evolving from concerted provincial efforts, there appears to be no merit in establishing a separate Alberta income tax in the near future.

C. Provincial Procurement Policy

Most provinces have explicit policies regarding the purchase of government goods and services which favour provincial suppliers. Alberta is considering abandoning its policy of giving no preference to provincial suppliers and contractors.²⁷ No reason for adapting such a policy is offered in the White Paper, perhaps, other than the fact that other provinces are doing it. We see no advantage to provincial preferences and feel that Alberta should continue its present practice and (like Manitoba, for example) resist the pressures for such a change.

Provincial procurement preferences impose barriers to interprovincial trade which we have already criticized for the costs they impose upon society. Besides, in a competitive environment the provincial preference will not make any difference. If there is more than one Alberta supplier, and they do not collude, competition among them will result in bids as low as would have prevailed in the absence of the preference. However, if there is only one Alberta supplier, it will be able to charge the full premium

the province is prepared to allow for Alberta suppliers. The province pays more than necessary for a given product, the firm pockets the extra profit, and the taxpayer loses -- a simple transfer. If the Alberta supplier is a marginal firm and needs the premium allowed provincial suppliers to cover costs and remains in business, the taxpayer again gets less goods for his money but supports a weak uncompetitive provincial industry. Is this result better than buying from a lower cost competitive firm elsewhere and using the funds saved to buy other products, likely from healthy Alberta operations? Provincial preferences seem to offer little for the typical Alberta resident-taxpayer, only something for the monopolist or marginal businessman. Even if there were some advantage to the province, the scope for gaining from provincial preferences is very limited -- the government of Alberta already purchases over 90 per cent of its goods and services from Alberta businesses.²⁸

D. Support for Research and High Tech

The development and growth of high technology industry is a major objective proposed in the White Paper and the government has outlined a strategy aimed at that objective. Part of that strategy is to support the research and educational programs upon which high technology relies and in which it sometimes thrives. This is of course where the public sector role is important because the returns of much research cannot be appropriated by those undertaking it and so too little may be done and, similarly, the acquisition of many skills needs to be publicly supported because neither the student nor his employer-trainer can capture the total benefits of the education. However, an assumption upon which the strategy is partially based is that an environment of research and skills will be an important ingredient for attracting high tech business to the province. We feel that such a strategy ignores the pattern of the industry's development.

High tech businesses tend to evolve in two ways -- as spinoffs of larger companies or as start-up companies which develop a new idea into a marketable product (Crawford, 1984). Spinoff companies are likely to continue in their original locations because the critical people are there and the local resources and environments are familiar. Also, spinoff companies, by their nature, need donors and because there are few of the donor class of company in Alberta, new high tech companies of this type may be limited. Branch operations are more mobile and sensitive to new locations with appealing conditions. While they lack some of the appeal of Alberta based

firms, they may eventually spawn spinoff businesses. Start-up, or "acorn" companies, are small operations which often emerge out of a university or research lab and usually take a longer time to develop and market their product. Start-up companies are likely to be indigenous to the region, but are slow to grow and the few that survive will require time to develop. Fewer still will reach the size where they produce spinoff firms.

Some implications of the pattern of high tech development emerge. Most likely it will take time -- possibly 15 to 20 years. The development of an indigenous industry will rely in part upon the strength of the basic research and development facilities, primarily the universities. The attraction of new high tech firms from outside can be only one facet of the policy.

These items suggest some obvious amendments in the high tech strategy and that patience will be required because the rate of its growth will be more modest than anticipated. In addition, there is a need to support new high tech firms through stable, and possibly but not necessarily more, grants and tax incentives during the critical initial five years to insure the greater chance of survival. But once underway, we need the good sense to require that they manage independent of government intervention in a competitive environment.

The proposal to pick "winners" as candidates for specific sectoral support deserves some comment. If the province is to proceed along the road of picking winners it should do so in those areas where the expertise is in place and which complement the province's comparative advantage. That is, the obvious candidates to support are the users and developers of modern production technology in those areas which are directly relevant to our particular cost-efficient resource based industries. But it must be emphasized that it is the role of market forces not government bureaucrats to determine which sectors are efficient and productive and deserve to expand.

The government must confront head-on the issue of why the desired high tech firms and resource processing industries have not already located in the province. If market forces mitigate against their location here should these disadvantages be offset to induce them to Alberta? The answer is no unless it can be demonstrated that they will survive here in the absence of subsidies or lower taxes or if agglomeration effects in these modern technology-intensive sectors exist. If on the other hand it is market failure which is the cause of their failure to locate here, there might be a case for provincial government intervention. Certainly the emphasis on a

failure of capital markets with regard to the provision of risk capital is not supported by any evidence. The White Paper, however, fails to make a convincing case for the latter as the best explanation for current industrial structure of the province. Consequently the proposed industrial and science policy could impose significant costs on residents of Alberta if its goals are to be achieved.

IV. CONCLUSIONS

Our discussion highlighted several areas of concern. The first is the high degree of government intervention envisaged in the White Paper. The White Paper does not provide evidence to support the need for government intervention of the magnitude proposed and it tends to ignore the costs which such policies may impose on Alberta residents. The use of government fiscal instruments to promote greater growth in the Alberta economy may only induce the emergence of a sheltered industrial structure unable to sustain itself in the absence of subsidies, tax reductions or underpriced resource inputs. Moreover some of the goals and accompanying policies are not internally consistent. The object of promoting balanced growth within the various regions of Alberta, for example, may well conflict with the goal of diversifying the provincial economy.

One theme we would like to reiterate at this point is that adopting a provincial diversification strategy in response to protectionist moves by other provinces does not raise Albertan incomes; it only serves to further lower them. It is the residents of Alberta who ultimately will bear the cost of a less efficient distribution of capital, labour and resources in the province that would result from adoption of interventionist strategies on the part of the provincial government. Other provincial governments may do so but in reality they likely only penalize their residents with lower levels of income. Certainly we sympathize with the frustration of government officials in Alberta as they witness the progressive balkanization of the Canadian economic union as federal and provincial governments adopt de facto protectionist measures. But adopting policies in retaliation may only reduce the income of individual residents of Alberta. It is argued that the best strategy of all is to live well. We would suggest that the provincial government opt for the approach that increases the income of Albertans and leads to greater productivity of the resources available in the provincial economy.

The desire for greater diversification of the provincial economy stems largely from the feeling that the pattern of specialization in the province leads to too much instability in provincial incomes and government revenues. Cyclical factors in the near term and the consequences of the non-renewable resource depletion in the longer term contribute to this instability. Yet rather than invest in industrial diversification within the province and incur the array of costs previously discussed, the province should consider greater use of an instrument already in hand - the Heritage Savings Trust Fund - to cope with this instability. The strategy should be to diversify the source of provincial government revenues through portfolio investment by the Savings Fund in efficient and profitable industries regardless of location. That is, the rate of return and not location should be the motivating factor behind the investment decision. In that way, returns to Albertans can be maximized while ensuring the most efficient allocation of resources within the province and the rest of Canada.

A diversified and well managed portfolio can provide good insurance against instability. When the resource-based economy is in recession, for example, contributions to the fund can be diminished and directed to general revenues along with interest and dividends as required (and if necessary, capital) to support services and/or reduce taxes. Access to such a reserve and its more stable revenue flow allows the economy to be buoyed up in adverse periods without having to bear the cost of supporting a more diverse but less efficient provincial economic base. The cost to achieve the desired diversification -- tax and/or royalty concessions, subsidies, etc. -- should be invested instead (along with other Trust Fund monies) in a portfolio of profitable industries independent of the Alberta economy. Portfolio diversification of this sort can effectively substitute for a more diversified industrial structure and, in addition, yield greater returns and more security for provincial residents. Diversification of this kind is likely to serve Albertans much better than the inefficient and frequently inequitable strategies proposed in the White Paper.

There is a role for government in the provincial economy -- it should maintain a competitive and stable economic environment in Alberta. Yet as we have suggested the structure of taxes in Alberta already provides an unusually large attraction to labour and capital to reside in the province so we would caution against further moves in this area. Within the limits of the existing revenue structure, maintaining a relatively neutral tax policy will provide the greatest long-run payoff. Also, creating a stable economic environment in

the sense of no sudden shifts in government policy or unanticipated changes in the use of fiscal instruments should continue to be a goal.

If there is a role for further public intervention in the Alberta economy it is to correct market failures which are amenable to policy solution and provide public goods and services in as efficient and equitable a manner as possible. Consequently, we submit that the role for intervention is much more modest than that proposed in the White Paper -- although we support several of the suggestions made there. The government should act to promote trade and export development for small and medium sized businesses which individually are unable to pursue external markets. But such action should be of the type which facilitates forging linkages between buyers and sellers and promoting private initiatives in marketing and in establishing the terms and conditions of trade. Similarly, government involvement in the financing of trade should be limited to assisting business in learning by doing, not government financing itself. Too much government involvement will preempt private initiatives and hamper the emergence of a viable export sector.

Government should also encourage research in development generally. Even if the improvement is oriented to Alberta operations, often the benefits cannot be realized by the developer but are dispersed widely. Efforts may be justified to promote the commercial development and application of new ideas and to encourage the adoption of innovations and new technologies. The proposed Alberta Innovation Centre could prove a useful vehicle to speed commercial developments and informational programs might speed adoption. Also a healthy research environment in both the private and public sector may be the womb which gives birth to the technological industries the government desires.

Training and education to improve the productivity of Albertans can also be supported. It must be remembered, however, that the direction that is given to that education should be constrained by the demands of the market for the product if resources are not to be wasted. A major disadvantage of education is that if benefits Albertans wheresoever opportunities take them.

In conclusion, whereas we are critical of an industrial strategy which can only have a marginal effect on the provincial economic structure and is achieved at some cost to Albertans generally due to distortions and inequities, we feel that there is some room for government involvement to promote further development in the province. Fortunately, the White Paper identifies these but, unfortunately, it goes too far in the intervention it recommends.

Notes

¹See the White Paper, Alberta (1984), particularly pages 29 to 32 and Appendix A for details and further references.

²For an overview of provincial industrial strategies see Jenkins (1983), particularly part 2.

³The examples offered are respectively Syncrude, the Prince Rupert Grain Terminal, the Husky Oil Upgrader and the Syncrude Expansion. Other illustrations of the Alberta government's involvement in business ventures include Pacific Western Airlines, the Alberta Energy Company and Nova and its predecessor, Alberta Gas Trunk Line Co. The failure or tardiness of the private sector to act was not the reason for these interventions -- e.g., Alberta Gas Trunk was established to protect Alberta's jurisdiction over its resources.

⁴See Helliwell and May (1975) for an early assessment.

⁵A three-tier pricing policy exists with the price in Alberta being lower than the export price to the rest of Canada and that below the export price to the United States. (During the 1984 federal election campaign, proposals on natural gas pricing emerged which could result in a narrowing of the prices of gas exported to the rest of Canada and to the United States.) While the prices are private arrangements on which public information is unavailable, the agreements are often based on rates quoted at discounts from the Alberta border price. These differences in prices result from the segmenting of the market. Exports from Alberta to the rest of Canada are traded at a price subject to federal-provincial negotiation but foreign exports come under federal control.

⁶Given the federal control on sales of gas outside of Canada, petrochemical development may have been seen at one time, as a potential avenue to circumvent price and volume regulations by exporting gas in a processed form.

⁷Note that the drought in southern Alberta in 1984 resulted in water shortages in irrigation systems and a commitment from the government to proceed soon with the often criticized Old Man River Project.

⁸See Watson (1983) Chapter 6, p. 78-87.

⁹These rates are calculated from data in Canadian Tax Foundation (1983, Tables 3.1 and 3.2). The categories of resource revenues and return on investments have been excluded so as to focus on direct and indirect taxes levied on labour and capital in Alberta.

¹⁰See Mills, Percy and Wilson (1983), Winer and Gauthier (1982) and Economic Council of Canada (1982).

¹¹See Norrie and Percy (1982). Their simulation results of various provincial policies to promote diversification suggest that the main beneficiaries are the owners of land in urban areas. Labour itself in the longer run, after inter-regional migration does not benefit from government policies. There is more labour in the province but the real wage is virtually unchanged as a result. This result depends, however, critically on how responsive inter-regional labour migration is. See as well Economic Council of Canada (1982). Finally, an alternative method of distributing resource rents which might be preferred on both efficiency and equity grounds has been suggested by McMillan and Norrie (1980).

¹²Thousands of smaller and more specialized (in terms of products and markets) also play an important role and the sales arms of manufacturing firms are becoming more significant (McMillan, 1981).

¹³For example, compare Tsurumi (1980) and McMillan (1981).

¹⁴Many of the skills required by trading houses are acquired on the job and a solid general education is as or more useful a preparation than that given by business schools.

¹⁵We do not know the significance of tax concessions to Alberta business. However, the tax revenue foregone due to tax incentives for investment in 1975 in Canada equalled one-half of corporate taxes levied and were growing in importance.

¹⁶Bird (1980, p. 2, 60).

¹⁷Recognition of this situation could eventually lead to efforts to restore tax harmonization.

¹⁸See Trebilcock, Prichard, Courchene and Whalley (1983).

¹⁹Trebilcock, Whalley, Rogerson and Ness (1983).

²⁰Trebilcock, Prichard, Courchene and Whalley (1983, p. 549).

²¹Also, concessions granted to industries with limited relocation possibilities will cause little distortion. They would, of course, be of little value to the granting province if maintaining or attracting the industry is their purpose. In addition, many potential distorting activities and programs impose their costs and benefits within the province. When this is the case, at least the gainers and losers have voices in the same political jurisdiction.

²²For more on tax expenditures see Smith (1979) and McLaughlin and Proudfoot (1981).

²³Since 1972, modifications could be implemented through tax credits. Guidelines for acceptable tax credits require that they not interfere with the uniform progressivity of the personal income tax, relate to other taxes actually paid, apply to all provincial residents and be administratively reasonable (Ontario Economic Council, 1983, p. 23).

²⁴See (Abizadeh and Hudson, 1983).

²⁵Negotiations might also go some way towards achieving some needed reform in the tax system -- e.g., capital gains and dividend income.

²⁶The Council estimates that for Ontario, administrative costs of \$75 to \$100 million with an initial investment of \$60 million and compliance costs of \$105 to \$285 million and a set-up cost to employers of \$30 to \$60 million. Little savings were thought possible in the initial administrative start-up costs to the government. The other costs are prorated by the number of taxpayers.

²⁷An initial move in this direction involves limiting the area from which bids for steel fabrication contracts on two hospitals will be accepted so as to exclude some regional suppliers. Beyond this, the province does review projects requiring certain provincial permits to insure that they are making the maximum possible use of Alberta

inputs. For a review of provincial procurement policies see Jenkins (1983, 91-93 and Trebilcock, Whalley, Rogerson and Ness (1983, 244-47).

²⁸Trebilcock et al., (1983), 246.

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A CRITICAL REVIEW: WHITE PAPER PROPOSALS FOR AN INDUSTRIAL AND SCIENCE STRATEGY FOR ALBERTANS 1985 TO 1990

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I. INTRODUCTION

What is an economist to make of the Government of Alberta's White Paper, **Proposals for an Industrial and Scientific Strategy for Albertans 1985 to 1990**? Even accepting that it is a political instrument first and an economic statement second, we should expect a modicum of consistency in the economic thrust of the paper. We do not find it. Instead we find a plea to allow the government to intervene in the economy without a convincing economic rationale for conceding it the authority. This critique explains why the White Paper policies should be rejected in favour of a less interventionist posture.

II. PROLOGUE: CAN A PROVINCIAL GOVERNMENT SUCCESSFULLY PLAN ITS ECONOMY?

A pretense of power

The White Paper attacks various federal government policies and rightly so in my judgement. But the thrust of this Paper, if not the tone, might have come from the Ottawa bureaucracy. At least the federal government has the excuse that it governs a nation state. A provincial government should never lose sight of the fact that it does not control the key economic levers that make a nation an economic unit. Thus, quite apart from the desirability of doing so, provinces must accept the fact that they have a limited ability to engage in economic planning.

Everyone knows a nation is not a natural economic region, and Canada is more unnatural than most. But Canada controls immigration and our neighbour states limit emigration from Canada. This is the single most important distinction between a

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province and a nation. A second distinction is that Canada controls the money supply and thus the rate of inflation and nominal interest rates. In turn, this influences the exchange rate which greatly impacts Alberta.

Monetary policy determined centrally

The report makes much of Alberta's inability to control interest rates and it blames high interest rates on the Bank of Canada (White Paper, p. 7; item 10). Interest rates are unavoidably international and a shift in Canadian rates from international norms signifies one of two possibilities. Either the Canadian inflation rate is diverging from the rates in neighbouring countries or the Canadian money supply is being artificially manoeuvred. Whatever the source of change, the result is a movement in the exchange rate. Alberta, being to a large extent dependent upon its resource exporting sector, generally benefits from a depreciating Canadian dollar. Since our agricultural products and natural gas sell at prices denominated in U.S. dollars, the exporter gains as the U.S. dollar rises.

To this extent, the remarks in the White Paper about federal monetary policy are correct. Lower interest rates would probably benefit Alberta more than Ontario because it leads to a lower exchange rate. But this sort of tampering with the economy is a short-run panacea. It has little to do with the basic long-run factors affecting sustained economic development. The benefit from a decline in the exchange rate might help over a single business cycle but as domestic inflation inevitably accelerated in the long term the benefit would be eroded.

Population dynamics limit power of policy

Interestingly enough, the White Paper is quiet about the most important lever of national power that is unavailable to Alberta. The report is silent about population dynamics, the movement of peoples across provincial boundaries. This is an important omission because population dynamics are a key factor influencing the impact of interventionist policies by a provincial government.

If, for example, taxes go up in Alberta and take-home pay falls or investment declines because rates of return are unattractive to investors, immigration will slow and emigration speed up. The same process affects Canada as a whole but at a far slower pace since migration across national borders is restricted. (When, until the

mid-sixties, the United States allowed Canada almost free access, our population loss was substantial.)

This means that the Alberta government's policy can have little impact upon the rate of expansion or contraction of the Alberta economy. Anything that makes it less attractive to live in the provinces causes population decline and vice versa. But except for the sometimes significant transitory costs to the people coming and going, the basic standard of living of Albertans with a particular marketable skill or occupation will tend to the same level as that of other Canadians in the same occupation.

Population dynamics limit what the Alberta government can do about the long-term real income prospects of most Albertans, though they can dramatically advantage some at the expense of others.

Pump-priming doesn't work for provinces

This principle, governing real incomes of residents of smaller economic units like a province, is parallel to the well-known fact that a provincial government can do little to cushion its population from a business cycle through fiscal pump-priming.

Industrial strategy, however ambiguously it is defined, acts much like pump-priming. Pump-priming is governments' attempt to compensate for an unsatisfactory level of investment expenditure in the private sector. Economists differ about whether pump-priming works or not but all agree that the smaller, more open to trade, an economy is, the less likely is such a policy to work and the more likely it is to be wasteful. Some economists argue, for example, that Canada as a whole is too small and too open to use fiscal policy successfully.

However weak fiscal policy may be for a small open economy, industrial strategy is far more fragile and much more likely to be wasteful. All that we are likely to reap is higher taxes, initially lower standards of living, followed by a return to normal but with a somewhat smaller population.

This is most easily seen by observing what happens if the policies turn out to be a smash success -- every subsidy succeeds and every investment is a winner. We know that Albertans will pay the taxes to finance the subsidies and take on the risk of failure. But if the policies succeed, other Canadians will move here until the net benefits of living in Alberta equates with those outside. Just like a fiscal policy that primes our neighbour's economy, even an industrial strategy that succeeds largely benefits outsiders who do not share in the initial costs of investing in the strategy. By way of compensa-

tion, we are safeguarded from extraordinary losses because some of us can also pick up and leave the province leaving behind a smaller population to shoulder the loss.

This is not counsel for inaction. There is a lot the government of Alberta should do and some of it can be found in the White Paper. Many of the proposals are, however, regressive even though the authors reveal a good understanding of the realities in which Alberta finds itself. Unfortunately, they do not translate this understanding into effective program suggestions but choose instead to promote policies that have already failed elsewhere.

III. CONSIDERING THE POLICY OPTIONS

Passive or active government

1. Should the provincial government remain active and supportive of the Alberta economy or become more passive and concentrate primarily on encouraging a good climate for private sector investment?

Some interventions are good and others bad. The Prince Rupert Terminal and other interventions in support of the railways were attempts to redress the damage done by the Crow rate. They were therefore good because they offset an existing mis-allocation. Agricultural Development Corporation, Alberta Opportunity Company, and the Alberta Mortgage Corporation cannot be similarly defended. Financial markets in Alberta are highly competitive and government interventions are merely superfluous if not outright wasteful.

If federal taxpayers want to subsidize loans and otherwise interfere in financial markets, Albertans should accept the benefits. There is no reason, however, to pay additional taxes in order to duplicate these services. No economic rationale justifies these activities by Alberta. What is understandable is a government's political desire to have institutions which, because they bear the province's name, show that the province is as compassionate and pro-active as the federal government. On the economic plane, nevertheless, it must be recognized that subsidizing mortgages and other activities of this sort do mis-allocate resources.

There is a general principle illustrated by the above. Few government policies are so neutral that their consequences do not need subsequent repair. The problem for government planners is

that the market system works so well that it responds sharply to policy. When Canada chose to cushion Canadians from world oil prices, interventionist policies followed to subsidize domestic oil and gas exploration. The irony is that taxpayers paid for the oil and gas explorations instead of motorists.

An outline of a rational economic strategy for Alberta emerges from the above brief discussion. Those policies that offset the damage done by other government policies should be taken seriously. For instance, a policy of subsidizing all Alberta purchasers of grain by an amount sufficient to offset the effect of the Crow rate would be pro-efficient. It would redirect Alberta grain into value added processing uses. But there is no need for countervailing policies like those advocated here to discriminate between firms within a given sector.

The trade-off between revenue and jobs

2. Should the provincial government in most cases decide in favour of job activity and deferred revenue growth rather than immediate revenue?

This is a difficult question to respond to during a recession. The answer is that if a very high per cent of the resources used in a project are local, then job activity has to be considered on compassionate grounds. But it should be kept in mind that deferring revenues raises the government's deficit. The higher deficit threatens future tax increases and thereby crowds out some private investment. This second mechanism destroys some -- maybe all -- of the jobs created by the expenditure. Nonetheless, job creation can be useful if it is timed right and is later cutback early during the expansionary phase of the business cycle.

Picking winners or supporting losers

3. Should the provincial government select specific sectors or areas for special support and encouragement or should it take a very standback attitude towards economic development?

This is what "industrial strategy" is all about and the answer is a plain and simple **no**. The operative words are "is judged to." These three simple words raise a host of questions that all reinforce the negative reply. The government cannot "judge" as well as the market does.¹ Bad news signalled by the market is as important as good

news and a wise government will allow the economic adjustment to occur. Cushioning the damage suffered by losers should not go to the point of postponing adjustment.

It is misleading of the White Paper to characterize a policy of neutrality between firms and sectors of the economy as an indication of passivity towards development. The opposite conclusion is more convincing. Those who deem economic development a high priority want the government to remain neutral. They believe that economic development is fostered by entrepreneurship, agility, flexibility, trial and error, winners and losers, and sound business practice. They also believe that economic planning or industrial strategy, if that term is less odious, brings rigidity, non-market dictated priorities and weak feedback mechanisms. Simply put, a pre-determined industrial strategy weakens all those characteristics that give the market system its edge. The result is that entrepreneurs are rewarded according to their skill as lobbyists instead of any ability to skillfully respond to market signals.

Involved in this general dispute is the appropriate role of subsidies and tax changes as instruments of involvement. Taxes are more standoffish while subsidies are pro-active. The advantage tax policies have over subsidies is that they usually apply evenly to everyone. The rules are known and everyone is free to adjust accordingly.

To the extent that Alberta is concerned that new firms cannot benefit from tax deductions because profits are low in the early years after entry, the government should directly attack this issue. It has the power to extend forward averaging to allow more opportunities for "pass through" shares which permit shareholders to deduct capital depreciation consumption allowances against personal income or to permit unprofitable firms to sell tax deductions to profitable firms. All such policies have been used in various jurisdictions and they merely supplement other means of responding to this bias in the tax system. For instance, firms that expect to be unprofitable over the near future can lease equipment from profitable firms. Finally, it should be kept in mind that a firm with good prospects for future income and present tax losses is an attractive acquisition for a profitable firm. In short, the excuse that a tax is hamfisted and a subsidy is a scalpel simply will not wash.

4. To what extent should the provincial government press universities and other educational entities to prioritize job directed versus general education?

No simple answer is available. Since job directed education must build upon a solid foundation of general education, the choice is a false one.

5. What should be the parameters of the provincial government role in international marketing of our products and services?

This question was reviewed intensively in Alberta when the federal government established Canagrex. I do not recall hearing a single good thing said by Alberta on behalf of Canagrex. Those of us who think bureaucrats are not likely to make good salesmen see little benefit. Nonetheless, if any policy deserves support, this one does because it does the least damage and its cost can hopefully be controlled.

7. Should the Alberta government abandon its current policy of providing no specific preference to local suppliers, contractors, and others on tendered purchases or contracts?

Instituting a bias in procurement is unsound. Disadvantaging companies from provinces with biased procurement systems is another matter. This might be worth considering as a means of placing pressures on other provinces to see the error of their ways.

IV. THE PROPOSALS

- a. The provincial government should continue with its priorities (see Speech from the Throne 1984) to reduce the role of government by continuing to privatize as much of its operations as practical and by reducing the amount of government regulation, particularly for small Alberta businesses. The Alberta government should also sustain its efforts to encourage a positive climate for private sector investment in the province.

A positive climate for private sector investment in the province will be maintained if present personal and corporate tax rates are held below the norms in other provinces. But investment is based on the outlook for future net earnings so expectations of future tax rates are almost as important to the investor as today's rates. Here is where government policies that threaten future deficits threaten today's decisions. For this reason, that govern-

ment encourages business most that maintains a frugal stance on expenditures and avoids making commitments to industries that risk being a continual draw on the provincial treasury.

- b. The provincial government should decide in favour of present job activity and deferred revenue flows in the financing of large provincial projects, provided the province's credit rating and favourable tax structure are not significantly jeopardized.

The White Paper is aware of the risks of losing control of its budget thereby affecting its favourable tax structure and possibly its credit rating. But, other governments have found themselves with little room for manoeuvre after the best-intentioned investment strategies turned out poorly. The amount of revenue to be diverted to "industrial strategy" may never be enormous. Because, however, political realities require that these expenditures cannot be at the expense of basic social programs, they are additional and discretionary. They can be avoided and should be.

The White Paper is ambitious for education, R&D programs and government-led export marketing drives. Little will be achieved in these fields unless money is allocated to them. Whether conscious of the importance of frugality or not, this White Paper has an implicit air of profligacy about it because of program requirements.

Lower tax rates with an acceptable level of public services can be maintained. This is the best policy by far for stimulating growth and development because it shifts, in a concrete way, the advantages and disadvantages for firms of locating in Alberta. Being neutral between sectors, a policy of low tax rates provides balanced growth consistent with the comparative advantages among sectors.

- c. The Alberta government should select specific sectors or areas for special support.

These policies have a dismal record around the world and none more so than in Canadian provinces. Japan is usually singled out as the star performer in the "picking winners" sweepstakes. Even in Japan, however, where centralized control of a large economy is involved, the record is filled with blemishes.

Don Lecraw, in a paper to be published by the Royal Commission on the Economic Union and Canada's Development Prospects, reviews the U.S. literature on industrial policy.² He

gives it a low score. He finds that fears over de-industrialization and the failure of manufacturing industries in the United States are plain wrong. Secondly, he notes that little of Japan's success is related to targeting of industries. He reports that even Lester Thurow, a strong advocate of targeting sectors in an industrial strategy and for government support, concedes that industry policy can claim credit for at most 5-10 per cent of Japanese performance. Keeping in mind that targeting works better for large states without much migration across borders, why should we expect Alberta to do better?

Japan has been successful but most observers associate Japanese growth with high levels of domestic savings and investment in capital together with solid management practices. These do not emerge from industrial strategies. What Japan does enjoy is having among the lowest taxes and expenditure levels of all OECD countries.

Implementing an industrial strategy involving targeted expenditures is even more dangerous to the community that chooses to follow it than is evident at the conceptual stage. The reason is that such a policy, however beautifully presented in its planning stages, almost inevitably deteriorates into a "pork barrel" in practice.

Predictably, entrepreneurs will rearrange their affairs to become seemingly eligible for support. Some economists believe that the resources wasted in the competition for government benefits wipes out fully the social return even if the program is successful. One needs to remember that many people will lobby for the limited resources being targeted for industrial development. The losses suffered by losers in these sweepstakes are rarely totalled in when the projects that go ahead are evaluated.

The bottom line in industrial strategy implementation is that the agency set up to administer it cannot be depoliticized. In the end, funds will be available to bail out losers, especially those losers in which the government has invested a lot of prestige. It is impossible for government to differentiate between firms that are poorly run and those that are still infants that, with just a little more help, will see the sunshine again. Inevitably, funds are allocated to the entrepreneur with the most successful lobbying campaign.

The reason industrial strategies are so prone to failure are numerous. To begin with, firms entering new businesses have a high failure rate even when a subsidy is not part of the calculus that leads to the go ahead decision. Second, the government agency

cannot have the same information as the companies about the true state of their affairs. Third, once the government's prestige is committed to a project, every manner of publicity will be used to try and maintain its image as a winner. Fourth, there is the risk that money will be siphoned off for uses other than what the proposal called for. In this connection, there is a common joke about R&D expenditure. When the plumber is sent to fix a leaky pipe, the expense is allocated to a maintenance account if he succeeds but to R&D if he fails. Fifth, targeted funds often enter the riding of every member on the government side of the house. This is usually referred to as equitable regional distribution of industrial activity. Finally, owners and managers are less earnestly motivated for success when they are aware that a rich uncle is available should marketing efforts fail.

In a nutshell, subsidies breed more subsidies and infant industries usually make the transition to declining industries without ever enjoying a mature stage.

- d. The provincial government should use tax incentives much more aggressively to encourage activity and growth. Tax measures are more effective and more long-lasting in encouraging risk investment than subsidies or grants. They also tend to reward success and be more equitable in treating enterprises which are in competition. However, special circumstances may warrant expanded use of subsidies or grants in order to compete with other provinces or to meet a particular objective where tax incentives would be inadequate.

Tax incentives are preferred to subsidies and grants because the former are generally available to all comers on equal terms whereas the latter must be administered by a bureaucracy with enormous discretionary authority.

A study for the Economic Council of Canada by Dan Usher shows that the firm specific discretionary subsidy programs formerly administered by Industry, Trade and Commerce have been failures.³ Usher minces no words in concluding that, "It is difficult to justify the usage of firm specific investment grants in any circumstances." And further on, Usher adds, "Though it is not clear why the federal government should protect one industry at the expense of another, this can be effected through tariffs or by tax credits, or the corporation income tax. The potential benefits of firm specific investment grants are too speculative and uncertain, and the potential costs are too large; to justify the inclusion of firm

specific investment grants among techniques of economic policy."

A policy of tax measures, open to all who qualify, and preferably neutral between industries is not to be confused with industrial strategy. Tax policy is a traditional tool in the economic tool box.

Not that tax policies are free. If taxes are increased elsewhere in order to make up the revenue loss, recent estimates place the cost of the tax at about 25 cents per dollar collected.⁴ This figure puts in perspective how costly it is for government to effect economic change. Even when a government program is super successful and it returns 25 cents on the dollar of annual expenditure, the program's social return is not more than break even. The extra tax imposed to maintain revenues places a wedge between the value of extra work and leisure time or between the price a buyer is willing to pay and the seller needs to recover costs. The effect is to cause re-allocation of resources that cost in total about 25 cents on the dollar. This is the flip side of the popular Laffer Curve in supply-side economics. In the Laffer Curve, a reduced tax rate generates sufficient income so that taxes collected remain stable. If marginal tax rates are 50 per cent, then a dollar tax decrease needs to generate at least two extra dollars of income to keep tax collections whole. The best evidence we have is that a tax reduction of one dollar generates about \$1.25 in income so that with a 50 per cent tax rate, only 62.5 cents in taxes will be collected.

When a subsidy program is favoured over a tax incentive, the cost of the offsetting increase in taxes is magnified by the additional operating costs of the subsidy program itself.

- e. The Alberta government should request Alberta's advanced educational institutions to prioritize any supplementary funding requests. If the universities, colleges and technical institutes choose programs and faculty expansions which will effectively complement the Industrial and Science Strategy, the Alberta government should give priority to such funding subject to agreed conditions.

The responsibilities of government in the fields of education and scientific research are generally acknowledged. In education, government intervention is needed because students would otherwise have trouble borrowing against future income prospects and therefore government assistance is appropriate. A direct loan for the full cost (not just tuition which pays about 8 per cent of the

total cost) of university education would be an attractive means of overcoming the difficulty students have in paying for their own education. Alberta might provide an incentive to hold educated people in the province by making the repayment terms more favourable for those graduates choosing to work within the province.

As a director of a school of management, it is self-serving for me to support a policy of directing funding to educational programs that are job directed. I will, therefore, limit myself to saying that there is a clear need to fund programs more generously in those fields where potential faculty are demanded by industry. Within standard salary scales, the university cannot compete for scarce skills with the private sector which offers better salaries, research facilities, and support. Since it takes about five years before a new generation of graduate students enter the market, it is a vital social need for universities to hold onto top flight people in order that the next generation of trained people will be at the forefront of their fields.

Having said this, it must be recognized that the quality of education depends upon the strength of the university community as a whole and redirection of funding within universities must be handled with great delicacy.

- f. The Alberta government should act as a catalyst to initiate export consortia provided that, with the government's participation, the prospects of the sale of the product or service are improved. The Alberta government should make the decision in consultation with private sector exporters on a case by case and country by country basis without any significant parameters other than the text of improving the prospects of the sale.

Export consortia that help lower the cost of doing business abroad should be an attractive vehicle for the firms that wish to participate. Government intervention would be unnecessary except possibly for dealing with authorities in other countries. Thus, Alberta may wish to involve itself in state to state deals or to provide assistance when government regulations in the importing country prove to be a hurdle for exports.

- g. The Alberta government -- subject to an unexpected withdrawal by other provinces -- should develop its own Alberta procurement policy to give advantage and preference to Alberta-based suppliers and contractors. It should test step by

step the net benefits of this new policy and evaluate first the current decision regarding the steel fabrication for the two new metropolitan hospitals before further enlarging such a provincial procurement and preference policy.

Procurement policy should not be tampered with except as a possible means of negotiating a bilateral agreement with another province not to discriminate against Alberta producers.

Implement Alberta's own personal tax system

It is beyond the scope of this review to consider the dozens of additional strategy proposals advanced by the White Paper. But if the authors of the White Paper get excited about anything it is the possibility of taking over the collection of personal income taxes in the province. I hope this is just a shot at the federal government and not a serious proposal. It is beyond my understanding how personal tax simplification is consistent with forcing a whole extra tax system on Albertans. Nor should anyone be sanguine about the costs both to government and to tax filers for this superfluous structure. When one considers how ineffective the social engineering of tax concessions tends to be, it is sad to consider that patriating tax collection to Alberta should become a government priority.

Pre-requisite for economic growth

Paradoxically, the extensive growth of the province depends significantly on government restraint. Government supplies a large part of the services that in total loom far above manufacturing in the share of resources consumed by individuals in a modern society. The level of efficiency with which such services are supplied impacts directly on tax levels within the province. Low tax rates together with excellent services are the best ways of assuring Alberta's future growth. This is why it is vital to resist the temptation to respond to pressures to build expensive installations that carry with them a commitment to high operating costs.

Population growth is important to Alberta because there are significant overheads in the delivery of services. The growth of cities is imperative to efficient supply of services as well as of manufacturing. Speaking recently at a conference sponsored by the School of Management at the University of Lethbridge, Dr. Neil Swan of the Economic Council of Canada explained that if the

resources industry declines in Alberta, the eventual population of Alberta will depend upon how efficiently services are supplied.⁵ Productivity improvement in the supply of services is every bit as important to economic growth as improvements in "hi-tech" or in other glamorous fields.

While the economy boomed, we were able to afford both inefficiency and unnecessarily high taxes. With oil and gas revenues exploding, Alberta became an attractive place to live. The Honourable Lou Hyndman, the Provincial Treasurer, reported that in 1982, Alberta's expenditures per person was more than 30 per cent above the national average. Because half of provincial revenues are tied to sale of oil and gas resources, personal tax rates remained the lowest in Canada.

The White Paper rightly points out that investment is fundamental to job security and economic growth. Investment, however, follows profitable opportunities and does not lead to them. Artificially stimulated investments weaken an economy and in the long run reduce growth.

The White Paper acutely pinpoints also the key to economic success. "As taxes are increased to pay for an expanding government debt and repetitive deficits, the essential competitiveness is eroded. Concurrently, investor confidence will substantially diminish" (p. 14). Investor confidence is affected by the tone of government pronouncements as much as by the substance of its policies. That is why this White Paper is worrisome. Should investors conclude that the government is going on a spending spree to stimulate industries, they will guess that budget deficits will follow that will, in turn, lead to increases in future taxes. In this way, today's investment decisions are affected by anticipations of future taxes.

One of the strengths of the Alberta Heritage Savings Trust Fund is that it provides investors some confidence that, in future, tax rates will not be increased. An "industrial strategy" points in just the opposite direction.

One can only hope that the group within Cabinet that recognizes the important impact of budget policy on private sector investment decisions will prevail when the White Paper is translated into government policy.

Notes

¹See Watson, William G., *A Primer on the Economics of Industrial Policy*. Policy Study Series. Toronto: Ontario Economic Council, 1983.

²Donald J. Lecraw, *Industrial Policy in the United States: A Survey*, Royal Commission on the Economic Union and Canada's Development Prospects (forthcoming, 1984).

³Dan Usher, *The Benefits and costs of Firm-Specific Investments Grants; A Study of Five Federal Programs*, (Mimeo, Department of Economics, Queen's University, (Kingston, Ontario.)

⁴C. Stuart, *Welfare Costs per Dollar of Additional Tax Revenue in the United States*, American Economic Review, June (1984), p. 352-362.

⁵Neil Swan, *Can the Service Sector be an Engine of Growth*, Managing the Service Sector, School of Management, University of Lethbridge (March 29, 1984).

THE WHITE PAPER AND BLACK GOLD

G.C. Watkins*

I. INTRODUCTION

If total isolationism is no answer, total interventionism is no answer, either. In fact the clear, quick, definitive measurable answers are ruled out. In this twilight of power, there is no quick path to a convenient light switch. (Adlai Stevenson)

While "twilight of power" exaggerates Alberta's predicament, nevertheless the fall in provincial output in 1982 and the loss of population in 1983 were a rude awakening for the Alberta government. It is not surprising, then, that such economic misfortune, after a decade of high and even euphoric growth, should have provoked some soul searching. The issuance of a "White Paper" confirms the gravity of the situation seen by the Alberta government as it seeks a suitable "industrial strategy" to combat a less propitious outlook.¹ The term "industrial strategy" is familiar to students of federal policy, but in that context it has amounted to little more than a phrase. And, perhaps this is just as well if the National Energy Program, a policy that has accentuated Alberta's recent woes, represented an example of federal strategic initiatives.

This paper reviews those proposals in the White Paper relating to oil, gas and petrochemicals. It is divided into three sections: The first provides a perspective on the relevant economic background, including the Alberta government's interpretation of some aspects of recent economic history. The second summarizes the Alberta government's proposals relating to petroleum and cognate activities. The final section evaluates the measures.

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II. AN ECONOMIC PERSPECTIVE ON REVISIONIST HISTORY

Over the period 1971-1980 the growth rate of Alberta's (real) GDP averaged 6.3 per cent each year, exceeding the corresponding Canadian rate of 3.8 per cent by a very considerable margin. In contrast, over the period 1961 to 1971 Alberta's growth at some 5.3 per cent closely approximated the Canadian rate of 5.7 per cent.² The main reason for the strong performance in the 1970s is quite simple: OPEC. Although the dramatic world oil price rises in 1973-1974 and in 1979-1980 were only partially transmitted to Alberta, nevertheless the unit value of Alberta oil and gas production increased by an unprecedented 80 per cent in real terms or at an average annual rate of some 6 per cent, 1981 over 1971. At the same time, the volume of Alberta oil production grew marginally, while natural gas production rose at an annual average rate of some 2.5 per cent.³

The Alberta government White Paper lists what it sees as various negative and positive factors affecting Alberta's economy since 1971. The positive factors cited include several Alberta government initiatives (self adulation is not dead). Yet, curiously, there is no mention of the main part played by rising oil and gas prices in achieving the remarkable economic growth rates, 1971 to 1981. Perhaps the reason for the omission is the fact that OPEC's success in engineering increases in the world price of oil was an exogenous event. The Alberta government only came into the picture by influencing the transmission of world market prices to Alberta. In contrast, the negative factors listed in the paper do include external factors such as the recent deterioration in natural gas markets.

The role of the Alberta Petroleum Marketing Commission

In this light, the reference made in the White Paper to the "dramatic" action taken by the government to set up the Alberta Petroleum Marketing Commission (APMC) in 1973 is droll. The paper argues that before the creation of the APMC the price of oil had been set by "certain integrated oil companies" and that thereafter the price had been set by the APMC. This seems redolent of the Bertrand Report, which accused the oil majors of price fixing. In reality, examination of the development of Canadian oil prices shows that before 1961 they were, by and large, set by world oil prices, prices which increasingly registered competitive pressures. Between 1961 and 1973 they were set within the framework of the National Oil Policy.⁵

Beyond 1973, prices have been fixed by inter-governmental agreements -- the APMC's role has been an administrative one of applying the price agreements, not one of price determination.

The decline in diversification

The growth of the Alberta economy, 1971 to 1981, has not been accompanied by any significant diversification, industrialization and import substitution -- goals beloved of politicians seeking to avoid what they see as undue reliance on "unstable" sectors.⁶ Indeed, the evidence shows that, to the contrary, the share of gross provincial product (GPP) represented by mining (over 90 per cent oil and gas) and "finance" (which includes royalties) increased from 34 per cent in 1974 to 41 per cent in 1982.⁷ At the same time, while until the recent downturn Alberta attracted high levels of immigration, there is little evidence of the province reaching economic threshold levels that would induce significant import substitution by local enterprises.⁸ However, the development of the petrochemical industry does offer an example of how the availability of assured and relatively cheap feedstock supplies at a time of perceived shortages can overcome some locational disadvantages.

High growth was a windfall

Thus, evaluation of Alberta's economic performance over its recent high growth period should recognize the unusually favourable circumstances conferred by unprecedented increases in the value of oil and gas production. It follows that replication of such performance in the future would require an equally favourable exogenous event. In short, any expectation that new government policies will be rewarded by a return to the halcyon days of the 1970s should be tempered by the realization that Alberta was the beneficiary of a windfall gain and did not discover some new, internal dynamic.

III. THE PETROLEUM PROPOSALS

Several of the proposals with respect to oil, gas and petrochemicals are rather vague, but their main tenor envisages more direct involvement by the Alberta government. This is notwithstanding White Paper references to reducing the role of government by privatization and to a lessening of regulation.⁹ But "bold action" is

promised, in conjunction with the private sector, to encourage oil sands and heavy oil plants, especially if the private sector proves to be a reluctant investor. Here, the government would deploy fiscal and other muscle to implement projects. The form of government involvement could range from special tax measures, the provision of loan funds (or loan guarantees) and direct equity involvement. Also, the government is to favour present job activity by, if necessary, deferring revenue flows in financing large projects, providing the province's credit rating and taxation structures were not jeopardized.¹⁰

No royalty reduction planned

There is an important caveat in that no further reduction in the net level of royalties on oil and gas is contemplated.¹¹ However, the government proposes to use tax incentives more aggressively to encourage "activity and growth." Also, "special circumstances may warrant expanded use of subsidies or grants."¹² Pressure is to be maintained to obtain market value for natural resources, especially for all rather than just some crude oil.¹³

A key element of the industrial strategy is seen as the processing and upgrading of resources in Alberta, particularly in terms of ensuring the petrochemical industry can expand and weather cyclical trends.¹⁴ The economic climate is to be clement to outside investment, and resources are to be used to encourage diversification and balanced growth; a role for the Heritage Trust Fund is cited here.¹⁵ Further exploration for new oil and gas fields in Alberta is to be encouraged by employing "reward based" incentives.¹⁶

The Alberta Oil Sands Technology and Research Authority (AOSTRA) is to joint venture with the private sector on promising projects to develop new oil sands techniques, while a greater effort (unspecified) is to be applied to use natural gas in new ways, such as for agricultural upgrading or for vehicle fuel.¹⁷

In terms of petrochemicals, the federal government is to be pressured to remove taxes on feedstock and to urge "a federal taxation review based on net profits" (no explanation). Feedstock prices that assure long-term competitiveness are to be sustained. Policies to provide long-term feedstock supplies are to be reaffirmed, free trade for petrochemicals with the United States is to be encouraged, as is access to new markets in the Pacific Rim. Construction of suitable tidewater facilities for petrochemicals, if necessary by direct provincial investment, is to be pursued. "Realistic" freight rates for petrochemicals are to be sought, in

recognition of "competitive realities." Policies are to be developed in close co-operation with the private sector, with public support if necessary.¹⁸

Finally, greater availability of equity and overall capital is to be encouraged by tax policies, the stimulation of head office location and expansion of the role of provincial financial institutions.¹⁹

The question is, will this program be useful? Will it meet provincial objectives? Is it consistent? These questions are pursued below.

IV. HOW DO THE PROPOSALS STACK UP?

Past - the result of a windfall

The White Paper is quite reticent on the overall prospects for the Alberta economy over the next decade or so. Recently, some commentators have seen the province facing a quite dismal outlook, basically because the combination of constraints on oil and gas output and a much softer outlook for energy prices will reduce Alberta GDP growth to modest levels.²⁰ Publication of the White Paper is of itself perhaps an indication of the unease about the future which such views typify. The Paper seems reluctant to recognize explicitly that the quite exceptional economic growth Alberta enjoyed, 1971 to 1981, was fuelled primarily by a major external event -- the rise in world energy prices sponsored by OPEC -- and had little to do with policies pursued by the Government of Alberta. And to the extent the White Paper presages more active intervention by the government, an observer might feel more comfortable had there been evidence that the numerous initiatives undertaken by the government during the boom times had borne corresponding benefits to the economy.

Future -- beyond Alberta's control?

Thus, an evaluation of the White Paper should be grounded in the sombre fact that the level and path of Alberta economic activity has been, is, and will remain quite highly dependent on factors essentially beyond its control, of which the most obvious determinant is the world price of oil. The White Paper rightly acknowledges the degree to which the province's growth potential is dependent on interest rates, agriculture markets, federal policies

and does single out the world oil price as "a very significant factor in job creation in Alberta."²¹

In the absence of sustained high levels of oil production and a resurgence in oil prices (with the associated impact on the prices of other forms of energy) there is little likelihood of a reversion to the economic growth rates that characterized the 1970s. And if there were such a reversion, it will not stem from Alberta government policies. Rather, it will reflect a shift in the terms of trade that higher (real) energy prices represent.

The White Paper refers to significant strides having been made in economic diversification, citing petrochemicals, agricultural processing, coal, forest products, engineering services and the like.²² However, the data cited earlier suggest structural change in the Alberta economy has been at best modest, with the evidence favouring increased emphasis on energy linkages rather than diversification.²³

A. Positive Outlook on Definite Policy Proposals

Given the modest overall outlook in terms of economic growth, how do the proposals measure up? Several of them are too vague to warrant comment, amounting to exhortation or the provision of "encouragement" in ways left unspecified. I concentrate, then, on the more definitive features, several of which are very positive.

The push for world price

In this category, first there is the promise to continue to press towards achieving world oil equivalence for all oil prices, thus removing the distinction between "old" and "new" oil prices. Currently, Alberta administers a very cumbersome oil pricing package identifying 10 categories of oil to which various pricing provisions apply. The acronyms that are conferred, such as SOOP -- the special "oil" oil price (oil discovered between 1973 and 1980) illustrate the problems of such regulation. The suppression of Alberta oil prices below competitive levels at a time when the province is struggling, while world oil prices have stabilized, is a grotesque anomaly which Alberta should continue to vigorously oppose. It is one thing for Alberta oil to be underpriced vis a vis world prices when the underlying price trajectory was upward, which simply resulted in lagged increases. It is quite another thing for prices to be held below world equivalent prices when world prices are flat or declining in real terms.

The recognition of no-rent projects

Second, the government recognizes that collection of economic rents from relatively large, individual resource projects should be deferred at least until such rents actually appear. This recognition is important because it properly treats economic rent, to which the government, as a resource owner representing the citizens, is entitled, as the "fat without the lean." Hopefully also it may herald acknowledgement by the government that marginal but nevertheless economically desirable projects may never generate government revenues in excess of normal levels of corporation profits tax. In other words, there may be no economic rents for the government to collect from certain projects.

The removal of specific taxes

Third, the government's proposal to agitate for removal of specific taxes such as the Canadian Ownership Charge on petrochemical feedstocks is worthy of support. Such taxes directly raise costs and make the already shaky economics of processing less attractive.

Free trade in petrochemicals

Fourth, the decision to continue encouraging free trade in petrochemicals in the United States and other markets is commendable.

Continued support for oil sands research

Fifth, continued government support for research on oil sands and heavy oil extraction is wise. It is entirely appropriate for the resource owner to devote some of the income it receives to promote survival of the goose that lays the eggs.

B. Some Disturbing Proposals

The willy-nilly complex

However, other government proposals are disturbing. There is little discussion of the rationale for and nature of government participation in projects. The impression is left that certain projects are going to be implemented, come what may. There is no mention of whether, say, investment of Heritage Trust funds in a project is at least intended to attract the same sort of risk

equivalent return as would alternative investments. There is no clear statement that the government funds devoted to a project should have to surmount a minimum social rate of return hurdle to protect the income of Alberta citizens. Moreover, if such an economic criteria were violated, no guidelines are cited of alternative criteria to justify public participation.

Lack of an involvement criterion

In the absence of more detailed prescriptions, the impression remains that the province would be willing to provide capital subsidies to projects, thereby rendering schemes that are marginal or uneconomic sufficiently attractive to go ahead. In other words, investments may be pursued which would not attract private funding. The province's experience with cost subsidies (for example, PIP grants) and the federal government deployment of funds in uneconomic enterprises should make it sceptical about providing financial support to projects which offer little prospect for repayment of, and a return on, the capital invested. The proposals, then, seem to leave too much latitude for government involvement in projects which may be economically dubious. And, the citizens lack the protection that a specific provision for government investment to at least exceed certain hurdle rates of return would provide.

Retraction of taxes versus support of uneconomic projects

This comment does not contradict the earlier discussion of government deferral or retraction of taxes, where the issue there is having the government avoid attempting to acquire an economic surplus that turns out to be a mirage, not the promotion of uneconomic projects.

Preferential feedstock price or subsidization?

The government policy on petrochemicals is not overly specific. There is a firm commitment to support and encourage the industry but the precise parameters are not laid out. Again, there is no statement that would protect Alberta citizens from the government supporting the construction of uneconomic plants. No limit is placed on what may become preferential feedstock pricing, suggesting that subsidization could emerge over the long run. In the near term, nothing is said about encouraging greater freedom for

negotiation of prices between plant owners and producers. At present, the price paid for ethane --the building block for ethylene production -- is tied to the Alberta border price for natural gas. This linkage precludes petrochemical plant operators in Alberta from negotiating lower than border prices for their natural gas supply -- a possibility available to other industrial gas customers in the province.

Royalty rigidity incompatible with development

The apparent rigidity of the government's position on royalties contradicts the intention of the government to encourage new conventional oil and gas exploration and development. New reserves are much more costly than old reserves: the supply curve is upward sloping. And, just as the government has recognized that rent collection deferral (always assuming rents exist) on large scale projects may be justified, so the stimulation of conventional oil and gas activity is best served by making royalty formulae more cost sensitive -- a policy at odds with any inflexible royalty floor.

Royalties must relate to costs

More generally, there is quite a lot of evidence that exploration activity is strongly influenced by basic company cash flows.²⁴ Consequently, attempts to stimulate oil and gas activity may well be better advanced by across-the-board tax and royalty reductions rather than by the specific incentive approach the government favours.

Thus, just as the incoming Conservative administration in Ottawa has declared a preference for more profit-related tax measures and a reluctance to subsidize costs, so the Alberta government might better assist industry health by taking a similar stance, indicating a willingness to review royalty formulae with the intent of making them more cost sensitive.

Concerns about the size and function of government

Finally, the White Paper makes little mention about the size and role of government. Not only would a slimmer, leaner government establishment make reductions in taxes and royalties more feasible but a commitment by the Alberta government to reduce the complexity of its own regulations will materially ease the administrative burden under which the oil and gas industry labours.

There is also no mention of revisions to Alberta government attitudes which in the past, to the detriment of the industry, have laid so much emphasis on matters of form to the detriment of substance. Thus in the 1981 Alberta-Ottawa agreement, the symbolism of avoiding a gas export tax and of having Alberta administering the PIP grant system was traded for the real financial burden of financing PIP and the imposition of ever more substantial and new federal government taxes than the 1980 version of the NEP proposed. Thus, notwithstanding higher prices, in terms of revenue shares the industry was no better off -- and possibly worse off -- after the 1981 Energy Accord than it was under the NEP itself,²⁵ a situation the Alberta government implicitly acknowledged in its royalty reductions of April 1982.

Overall, the outlook for the Alberta economy is much more sombre than a decade ago, suggesting a more prudent and less profligate government attitude should prevail and that there should be a commitment to avoid what may turn out to be costly interventions and participation in projects that may become liabilities rather than assets.

As the government acknowledges, oil and gas remain the engine of growth for the economy. The government should eschew specific incentives which can so often lead to distortions and rely more heavily on the redesign of royalty formulae in terms of overall levels and cost sensitivity. Improved cash flows for industry may be the best policy instrument to mitigate the prospective decline in conventional oil and gas output, the major negative factor that will adversely affect Alberta's economic performance in the years ahead.

Notes

¹Government of Alberta "Proposals for an Industrial and Science Strategy for Albertans 1985 to 1990," July 1984.

²Source: Alberta Bureau of Statistics, Alberta Economic Accounts, various issues, and Statistics Canada, Canadian Statistical Review, various issues.

³Source: Alberta Bureau of Statistics, Alberta Statistical Review, 1973 and 1982.

⁴White Paper. p. 30.

⁵For background on Canadian oil pricing, see Bradley and Watkins (1982).

⁶See Western Economic Opportunities Conference (1973, pp. 19-23) and Norrie and Percy (1982).

⁷Source: Alberta Bureau of Statistics, Alberta Economic Accounts, 1978 and 1982.

⁸Norrie and Percy (1982).

⁹White Paper, p. 97.

¹⁰Ibid.

¹¹Ibid.

¹²Ibid.

¹³Op.cit., p. 58. Currently, about 65 per cent of Alberta oil production receives only some 75 per cent of world oil price equivalence.

¹⁴Op.cit., p.58.

¹⁵Op.cit., p.59.

¹⁶Op.cit., p.61.

¹⁷Op.cit., p.62.

¹⁸Op.cit., p.67-68.

¹⁹Op.cit., p.68.

²⁰For example, see recent analysis by Norrie and Percy (1983) and Schweitzer (1983).

²¹Op.cit., p.55.

²²White Paper, p. 54.

²³See Norrie and Percy (1983).

²⁴See Scarfe and Rilkoff (1984).

²⁵See Helliwell and McRae (1982).

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A LOOK AT THE ALBERTA WHITE PAPER SCIENCE STRATEGY PROPOSALS

Kristian S. Palda*

It has become evident that a new, specific Science Policy is required for Alberta at this stage of our development and for this reason this White Paper is referred to not just as an industrial strategy, but as an Industrial and Science Strategy for Albertans 1985 to 1990.

White Paper, p. 3.

I. INTRODUCTION

It is not evident, from the information and analysis presented in the White Paper that a new, specific science policy is needed and, given the paper's conclusions and proposals, it is not even clear that such a new and specific policy is contemplated. On reading the proposals and their substrata in the appendices it is difficult to escape a reassuring impression. The trendy and presumably vote-getting hi-tech jargon adopted by the White Paper in imitation of winner-pickers elsewhere does not appear to lead, after all, to the usually inevitable plea for more public intervention. The temptation is to be reminded of Mexico's socialist revolutionary rhetoric which creates a comfortable cover for free-wheeling market activities.

To see if the science policy -- technology would be a much more accurate and less diffuse adjective here -- proposals are destined to benefit Albertans rather than special interests and if they appear otherwise reasonable we shall first take a brief look at the province's past accomplishments and policies in the technology area. We raise questions regarding their adequacy before coming to examine the new proposals. These are astonishingly modest and, on the face of it, incremental rather than radical. Since, however,

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they are rather brief, we must go to the background analysis and suggestions scattered throughout the White Paper to confirm this impression. To escape being overwhelmed by detail we shall apply certain test questions to some of the detailed sub-proposals to form a judgement as to whether the thrust of the proposed policies is likely to harm or to benefit the taxpaying citizens of Alberta.

II. THE NEED TO REVISE CURRENT POLICY

Alberta was the first Canadian province to become convinced that industrial development could be stimulated through the agency of a provincially sponsored body specially dedicated to this purpose. The Alberta Research Council was created in 1921 "to ascertain more definitely the mineral resources of the country and the possibility of their development."¹ As the White Paper states with some justification (p. 35), the province has led all provinces in Canada in its commitment to research in general and the development of new technologies. The Alberta Research Council (ARC) has of course, as most other provincial research councils, as well as the federal National Research Council, been active in facilitating the diffusion of new technology to private sector organizations.

The ARC's fiscal 1982-83 budget was set at nearly \$37 million, with 33 per cent going to natural resources research and development, 22 per cent to oil sands research, 20 per cent to industrial and engineering development, 13 per cent to coal and 10 per cent to "frontier sciences," such as biotechnology.² AOSTRA, the Alberta Oil Sands Technology and Research Authority, budgeted \$38 million for research and development in fiscal 1982-83.³ Between 1977 and 1983 the Farming for the Future Program spent \$25 million supporting universities, public agencies, and the private sector. The Alberta Heritage Foundation for Medical Research expended approximately \$40 million in 1981-82.⁴

As the White Paper states (p. 35), Alberta funds R&D on a per capita basis at approximately three times the level of any other provincial government. In 1981-82 GERD (Gross Expenditure on R&D) in Alberta was over \$500 million, of which \$90 million represented provincial government funding and \$40 million Heritage Foundation support to medical research.

Finally, the mix of provincial R&D support appears in line with the importance of provincial resources: oil and oil sands, coal, agriculture, forestry, supportive manufacturing and now, increasingly, the electronics sector. Add to this fairly substantial federal R&D expenditures in the province (approximately \$75

million in 1981-82), "invisible R&D imports" from affiliated companies abroad and Ontario which directly benefit the oil and gas industry, and Alberta's new venture capital investment banker, Vencap Equities, and a picture emerges of adequate support to and adequate effort in the technology area in the province.

Yet the White Paper frets vaguely over the situation. While the government credits its initiatives in leading "to world leadership in selected areas of agriculture, natural resources and medicine," it deplors the fact that "Alberta's overall investment in research and science, expressed as a percentage of gross domestic product in 1980, lagged behind Ontario, Quebec and the Maritimes" (p. 99). Furthermore, it is pointed out, "Canada is generally weak in its ability to transfer research results from the laboratory to the market place" and while this problem has been successfully tackled by Alberta Agriculture and the Oil Sands Authority, "analogous transfer mechanisms in the medical, manufacturing, and technologically intensive services are lacking" (ibid.).

The GERD/GDP yardstick is now thoroughly discredited as a measure of an economy's innovativeness (it depends heavily on the proportion of GDP generated by manufacturing, not Alberta's strong suit, and disregards access to new technology such as via gratis transfer of R&D results for multinational headquarters).⁵ The Alberta Research Council and the National Research Council's activities in the province (the former was actually the model for the latter's reorganization in the 'thirties) have a strong commitment to transfer and it is surprising to hear them deprecated.

If we are therefore to believe that substantial new commitments in tax funds and bureaucratic efforts to the creation and diffusion of technology in Alberta are justified, more coherent evidence should be presented along the following lines:

1. Define and attempt to measure statistically the gap between "target" and realized levels of innovative performance in the province, this performance to be assessed both with respect to the development of new products/processes and the adoption of such.
2. Estimate statistically the relationship between this gap and its several identifiable determinants.
3. Decide which determinants are accessible to or manipulable by provincial actions.
4. Attempt to determine whether the yield from such actions exceeds the return which the taxpayer could have achieved from the incremental tax dollar not taken away from him.

In view of the alleged total provincial government expenditure on science and technology in the vicinity of a quarter-billion dollars (p. 97) this call for justification does not seem unreasonable.

III. THE POLICY PROPOSALS

The White Paper talks indistinguishably of "conclusions, proposals, further strategies." As far as can be made out the main new policy proposals are set out on p. 66. They are related to analyses developed on pp. 34-36, 44-46 and to excerpts from a "Service and Technology Development in Alberta Proposal," listed in Appendix C and prepared by the Research and Service Advisory Committee to the Cabinet Committee on Research and Science (sic!) and by the Department of Economic Development.

There are two basic proposals and one conclusion. First, create a centralized, "one-window" authority through which the provincial government would deal, with the exception of oil sands and medical research, with all science and technology matters; this authority would also serve as a focal point for the funding of R&D and the diffusion of technology. Second, create an Alberta Innovation Centre which would provide advice and assistance in product and process development and in commercialization. The conclusion states that Alberta is well positioned to encourage growth of a native pharmaceutical industry but cannot do so until the federal government repeals the compulsory licensing of patents.

These proposals appear modest, mainly organizational in nature, not voracious of public funds and altering but incrementally past policies. What of the background analyses and sub-proposals? Of these the most weighty seems a recommendation for a dual science strategy, put forward by the advisory committee of the cabinet and contained in Appendix C on p. 100:

1. To develop and apply advanced technology for upgrading Alberta's traditional resource based industries.

(This implies, in the context of the whole White Paper, a continuation of emphasis on heavy fossil fuels and petrochemicals, as well as on agriculture and forestry -- nothing startlingly new therefore.)

2. To engage in high technology opportunities that are identified by the private sector and encouraged, where necessary, by joint industry/government initiatives....

This recommendation is followed by another one which includes the remark that "investment in research and technology will have to increase significantly over existing levels in several

critical areas in order to accomplish the dual strategy," but not so fast, for "Alberta lacks at present an effective method to establish either the total level of its effort, or to define priorities for an expanded effort" (p. 100).⁶

Taken together, the proposal to support by public funds the opportunities identified by the private sector, but with prudence, appears sensible. Potential product/process winners are picked by the very people who will have to back them in part with their own funds rather than by faceless bureaucracy. Yet the condition that private sector entrepreneurs be jointly responsible for the selection (and financing) of prospective innovations is but a necessary and not a sufficient one to ensure that public funds are not wasted.

Recent research at the Economic Council of Canada specifies three conditions of incrementality for the approval of direct subsidies to research:⁷

1. The project is incremental to the firm in that it will cost more than the present value of its expected private benefit.
2. The project is incremental to the market in that no other firm is ready to undertake it without a subsidy.
3. The project is incremental to the (provincial) economy in that the benefits accruing to it as a consequence of the innovation must exceed the subsidy and the cost of its delivery.

For a provincial subsidy a fourth condition holds:

4. There is not already a federal program available achieving the same purpose.

It is not clear that at least the first three test questions are being asked either of current Alberta subsidy programs or of the contemplated ones. Such questions, when put to the Canada-wide and recently soundly-condemned Enterprise Development Program,⁸ obtained totally unsatisfactory answers. Would the answers be satisfactory in Alberta's case?

Furthermore, the cited incrementality conditions make mincemeat of the justification of tax incentive systems which reward firms for research they could have undertaken in any case. Such tax incentive facilities, additional to the incredibly generous federal tax credits, are being contemplated for Alberta elsewhere in the Paper (p. 63).

A disquieting tone is struck throughout the Paper by an insistence that some of the existing and more of the future research funds should be shifted toward the high-technology sector, a sector identified only by implication as being either chippy or bio (pp. 44, 57, 66, 100, 105 among others). We read suggestions for the building

of a bio-technology centre (to duplicate NRC's monster centre in Montreal, undoubtedly) and for efforts toward fifth generation computers (to outstrip the Japanese, no doubt). Unlike the bringing of the latest technology to existing strength and resources, as in the case of the oil sands, such suggestions smack of attempts to increase the employment of scientists and research administrators for its own sake.

The hi-tech undercurrent of the Paper is basically interventionist and spendthrift with the taxpayers' hard-earned money. The official tone of the Paper keeps insisting on the "encouragement of the province's private sector in the development and commercialization of new technologies" (p. 101), and is of two minds about picking winners (p. 43). Neither tendency, supportive or interventionist, is predominant in the Paper.

Tax support to science and R&D is rapidly becoming one of Leviathan's largest intakes. On reading the White Paper the impression is gained that this is not yet -- and may not become -- the case with Alberta, committed as it is officially to fiscal prudence.

It is now conclusively established that the federal Government of Canada runs the most generous R&D tax incentive and subsidy program in the Western world.⁹ It appears that Alberta's program is one of the most generous in Canada. It seems therefore pertinent to leave the reader with a question that Senator Duff Roblin asked of one-time federal Minister of Science and Technology, Donald Johnston:¹⁰

I am curious to know by what process of policy development you decided that the richest policy in the OECD was not good enough.

Notes

¹D.J. LeRoy and P. Dufour, Partners in Industrial Strategy: The Special Role of the Provincial Research Organizations, Science Council of Canada Background Study No. 51, Ottawa: November 1983, p. 16.

²1983 Annual Report, Alberta Research Council, p. 37.

³Alberta Public Accounts 1982-3, V. 1.

⁴There is no single, unified report on government-performed and government-funded R&D expenditures in Alberta. As is evident, these figures are pieced together from scattered sources.

⁵K. Palda and B. Pazderka, International Comparison of Canada's R&D Expenditures, Economic Council of Canada: Ottawa, 1982.

⁶See the last paragraph of the preceding section on the need to revise current policy.

⁷Summarized in K. Palda, Industrial Policy Toward Technology, Vancouver: The Fraser Institute, 1984, ch. 7.

⁸MOSST, Report of the Task Force on Federal Policies and Programs for Technology Development, Ottawa: July 1984

⁹D.G. McFetridge and J.P. Warda, Canadian R&D Incentives, Toronto: Canadian Tax Foundation, 1983.

¹⁰Senate Subcommittee on Estimates, May 11, 1983, Issue No. 11, p. 12.

PROPOSALS FOR AGRICULTURE

Richard R. Barichello*

I. INTRODUCTION

Government plays large role in Alberta agriculture

As befits a province with a large and productive agriculture, Alberta's White Paper gives significant attention to policies and proposals for the food and agriculture sector. In terms of the contents of the White Paper, the specific attention accorded agriculture is probably second only to energy among sectors of the Alberta economy. This attention includes a review of existing policies as well as proposals for future initiatives, and as Appendix B of the Paper illustrates policy attention to agriculture has been substantial. Since 1976, almost 30 per cent of the listed important general and industry-specific policy initiatives have been specific to the agricultural industry. This sizeable role of the government in agriculture may appear inconsistent with the general policy objective held by the Alberta government, "to reduce the role of government" (p. 57), but is commonly observed in virtually all Canadian provinces and in federal government policies as well.

Past policies

The flavour of this intervention can be appreciated by reviewing the major areas of current and proposed agricultural policies. The policies of the last 13 years have a wider scope than those proposed as future initiatives. They include policies concerned with (a) transportation of agricultural products (mostly varied responses to deal with the distortion arising from statutory (Crows Nest Pass) grain freight rates), (b) primary agriculture and food processing research, (c) improving the marketing, particularly export of agri-

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cultural products, (d) input subsidies, including grazing lands, irrigation, credit, fuel and feed freight rates, and (e) disaster and financial assistance to various segments of agriculture in response to cyclically low prices or margins and periodic regional problems such as drought. These latter two policy areas cover a large number of specific initiatives and they appear to be less important in future proposals than they were during the period from 1972 to 1984.

Changed emphasis in future

The text of the White Paper and the concluding proposals for agriculture emphasize five areas as well, with much overlap but different emphasis. Attention to the areas of transportation distortions and research (including both primary agriculture and food processing) remains a high priority. But the variety and extent of input subsidies appears to diminish while the importance attributed to policies to increase agricultural processing and expand agricultural exports clearly increases. The high priority of these latter two issues is a noteworthy feature of the White Paper's agricultural proposals and suggests a perceptible shift in the orientation of Alberta's agricultural policy.

II. PROPOSALS FOR 1985-1990

A. Focus on Food Processing

The proposals to increase processing of Alberta's agricultural products is the first agricultural strategy outlined (p. 61) and is the most vague. The establishment of a "world class" food processing centre in Alberta is said to require resolution of some industry problems, market expansion and an evolution of the industry, but aside from general recommendations in the transportation areas (said to be complementary to agriculture processing) and proposed tax advantages for processing activities, no specifics on how this proposal is to be achieved are presented. Some guidance may be had from past policy which is lauded in the text of the White Paper.

Insights from the past

The two major initiatives have been the federal-provincial Nutritive Processing Agreement (\$45 million committed to date by the "provision of capital for food processing infrastructure") and the

Alberta Food Processing Development Centre, where \$8.6 million has been spent on applied research and development. One might expect continued programs of this sort to attract and encourage expansion of agricultural processing firms with capital grants, financing assistance and tax advantages. (Processing research activities will be dealt with later under the general topic of research.)

Support for senescent industry?

The disadvantages of providing direct grants to corporations is recognized in the White Paper, but an exception is allowed in the case of agricultural processing. The Paper's rationale for this type of policy is that (a) it helps diversify the provincial economy, (b) it adds value to provincial farm production by providing employment and a more balanced regional pattern of production, and (c) public support is needed in the face of "serious transportation inequities...in the Canadian freight rate system." Extended discussion of the ills of some part of the processing sector make one wonder if the true rationale for this support is a senescent-industry argument: support them now while they reform themselves enough to do competitive battle.

Is there a case for food processing subsidies?

The case for such policies on economic growth grounds (or alternatively, on economic efficiency grounds) is contingent upon there being some distortion or externality which government action can offset. Such arguments exist here, but are fewer than the White Paper suggests.

For diversification?

First, the diversification argument is not very persuasive. Diversification is attractive because it provides a smoother or more stable pattern of income over time. Adding employment to industries whose output is clearly cyclical such as beef and hogs would appear to increase instability, not reduce it. Crop production is less cyclical although subject to rather large variations in both output and price, and crop product processing would face this variability as well. The question is whether this pattern of variability in agricultural processing would offset or add to the variability in income in the rest of the provincial economy, and the answer is not obvious.

To offset the Crow

Second, the Crow rates for grains do contribute an important distortion by raising unprocessed prairie grain prices, and this does appear to adversely affect prairie processing because of the large wedge created between the freight rates for raw and processed grain. This is likely to be particularly important for the prairie production (and slaughter) of finished beef but is probably of some importance for certain crop processing activities as well. There do not appear to be other significant distortions which would provide additional arguments for subsidizing agricultural processing. The desire for greater regional balance in provincial production is an argument for providing encouragement to all industries to locate in various centres across the province, not an argument to subsidize agricultural processing *per se*. And the senescent-industry argument, if it is being made, offers such low odds on success that it too is unpersuasive.

In summary, the only persuasive argument for encouraging agricultural processing on broad economic growth or efficiency grounds is that it offsets Crow rate distortions in freight rates. But current changes in those freight rates are likely to gradually weaken this case. Other arguments are not persuasive or at least require better evidence to justify public support. Consequently, some support for livestock processing may be called for until Western grain freight rates are better rationalized, but the case for more ambitious government support of all agriculture processing as suggested in the White Paper will have to be made on other than economic growth or efficiency grounds.

B. Expansion of Exports Goal

The second major agriculture proposal is to expand the export of Alberta's farm production. This is to be the first priority of the proposed "Alberta International Export Corporation," which would provide financial assistance (working capital loans for large orders, seed financing of exploratory studies, consortia financing, and unspecified tax relief) to the private trade. The rationale is that (a) there are large gains to Alberta to be made from expanded export-trade, and (b) export market access for Alberta products is prejudiced by trade barriers in importing countries and by foreign government subsidization of competing export products.

At the outset it should be made clear that as trade intervention goes, the proposals of the White Paper are mild stuff. This proposed corporation is not a state trading firm like a provincial CANAGREX and the long term annual outlays for the measures suggested do not appear to be that large. Nevertheless, the rationale deserves examination.

There is no question that international commodity markets feature a wide array of distortion, including competitors' subsidies, but the real question of public support of exports is the value to Canada of selling in those export markets. Due to domestic trade barriers, a dollar of foreign exchange is worth somewhat more to Canada than a dollar, substantiating lay impressions of the social desirability of earning foreign exchange. This in itself supports providing limited public funds to a domestic enterprise producing traded goods, including of course exporters. To avoid inter-provincial distortions this support should not be specific to one province, so the Alberta proposal would have the disadvantage of potentially distorting regional exporting activity.

In summary, if this export corporation proposal is kept modest in scale and is limited to the activities described on page 60, it will probably have relatively benign consequences for the economy. Compared to some trade policy initiatives which feature heavy budget costs and substantial intervention, this mild assessment constitutes high praise. It will have positive effects if it does not overlap with federal export assistance and if it affects firms and production that do not expand in Alberta at the expense of reduced production in other provinces of the country. Additional efforts to reduce international trade barriers and to include agricultural trade more seriously in multilateral GATT negotiations are to be lauded whole-heartedly.

C. Agricultural Transportation

The third class of proposals for agriculture deals with improving agricultural transportation efficiencies, by such measures as hopper car purchases, investments in Inland Terminals in Alberta and contributing to the Prince Rupert Grain Terminal financing. The main rationale is that the distortions of the statutory grain freight rates have so weakened an efficient rail transportation network that public intervention is justified. The point is well taken, although the Western Grain Transportation Act has changed the level and determination of freight rates and will be reviewed in 1986. Policy proposals for the 1985-1990 period must be responsive to these

changing conditions, particularly if previous distortions become reduced. Early observations on the new freight rate regime suggest that although grain prices may fall only marginally, railway cost recovery is increasing substantially and network efficiency may improve markedly. Policy initiatives in this area above all must remain flexible to obviously changing events. Elements of the old rationale for major public investment may disappear over the period.

D. Agricultural Research

A fourth class of proposals found in the White Paper concerns agricultural and food processing research, including the development and transfer (extension) of new technologies to primary producers. This is an element of science policy applied to agriculture, and the rationale is largely that this maintains competitive advantages and is necessary for growth. The evidence, certainly for agriculture, is strongly supportive of the rationale. The public pay-off to agricultural research investment, considering the time period from the Second World War to date and across a wide variety of countries and commodities, is remarkably high. The calculated real rates of return range from 30 to over 100 per cent per annum, far higher than the usual investment alternatives. Whether such specific institutions as the Food Processing Development Centre will match these historically high returns remains to be seen, but the likelihood is promising. Related to this research emphasis is attention to the transfer of research-generated new technology to primary producers and improvements in farmers' business and financial management skills. Here too, there is general (i.e., not specific to Alberta) evidence of higher than normal rates of return to public investments, suggesting that it too is a desirable component of public policy. In fact, given this evidence and the relatively brief attention to this type of policy in the White Paper, we later argue that even more attention could be given to farm skills, management decision making and extension programs.

E. Farm Input Subsidies

The last class of proposals are those which subsidize particular physical farm inputs. Although these input subsidies have been more prominent in past policies, there are still proposals to increase credit subsidies, increase the investment in water and irrigation projects and expand the agricultural land base, particularly grazing

land. No particular rationale is provided and it is difficult to do so. What features or distortions of these markets merit public support, especially when subsidizing one input will distort efficient production methods? The commercial banking system has dramatically increased its offerings to agriculture over the past 15 years to the extent that a number of farm accounts have become problems to the banks due to their unusually high debt-equity ratio. The argument for additional financing sources and cheaper credit for agriculture does not bear up under close scrutiny. Land and water investments often require evaluation on a case by case basis, but past evidence for public range improvement investments in Western Canada is not encouraging: one commonly finds very low rates of return. In sum, continued attention to this class of public support programs would appear unwise on the grounds of economic growth and efficiency. In fact, despite the support which can be expected from the interest groups involved, these projects should be generally discouraged due to the low rate of return that is to be anticipated.

III. ALTERNATIVES

As noted earlier, past evidence on the returns to public agricultural investments provides some guidance on where the largest gains may be expected. In general this appears to be in the generation and dissemination of new productive knowledge. This translates as investments in agricultural research and development, and subsequently in extension of that knowledge to primary producers. Closely related is the general question of farm level skills, and more specifically, the abilities of farm managers to access the appropriate knowledge and make appropriate decisions in applying it to their operations. This latter area, of extension efforts and providing opportunities for farmers to improve these entrepreneurial skills, received some attention in the report but could have received much greater emphasis.

The possibilities range from agricultural training programs at post-secondary institutions to locally-provided programs in selected areas of management decision making such as financial management and new technology assessment. Furthermore, research programs can often be improved by increased field-level contact to define priorities, design experiments and address microclimate and other local conditions. There remains the opportunity to elaborate on these program areas to exploit more completely the demonstrated above-normal social rates of return.

It is difficult to read these White Paper proposals for the 1985-1990 period without drawing some comparisons with the recent (1981) federal government long-term strategy for Canadian agriculture, **Challenge for Growth**. That paper provides more detail on agriculture, and mentions few specifics on policies to be adopted, but the similarity between the two sets of proposals is striking. As with Alberta, the federal government emphasizes market development, particularly exports, research and development and improvements in the supply base. The Alberta proposals are different in the emphasis on agricultural processing, the emphasis on increasing the efficiency of the agricultural transportation system, and on the particular elements of the supply base emphasized.

IV. CONCLUSIONS

One's first impression on reading the White Paper's proposals for the agriculture industry is the extent of public intervention when objectives to the contrary are often mentioned. On closer examination this criticism is maintained for the set of proposals which subsidize specific physical farm inputs. The case for subsidizing agricultural processing is less clear but is certainly less strong than the White Paper argues. A less ambitious and more selected program of support for agricultural processing would be much more persuasive for enhancing overall economic growth. On a more positive note, the proposals in export marketing appear modest and not unreasonable. The transportation proposals are currently defensible but changing federal policy makes flexible provincial initiatives a necessity. Attention to research and extension is well-founded, and one might even argue this area deserved relatively more emphasis. In all, given our second-best world and with the exceptions noted, it is difficult to be particularly critical of these proposals for Alberta's agriculture.

ADAM SMITH ON AN INDUSTRIAL STRATEGY FOR ALBERTANS

Edwin G. West*

I. INTRODUCTION

On page 67 of Alberta's White Paper¹ there is a heading entitled "New Directions for Education by 1990." The paragraphs that follow explain that the mandatory program of studies in Alberta's education system should teach students about Alberta's economy. The second sentence reads "considerations should include the model of the market economy and its application to Alberta...." The reasoning throughout the rest of the document constitutes strong evidence that instruction about the model of the market economy would not be wasted on the authors of the White Paper themselves.

The invisible hand and its works

The essence of the market economy, as first described for us in Adam Smith's **The Wealth of Nations** (1776) is that prices established by market forces create a vast and spontaneous network of interaction and communication between consumers and producers. The system is inherently dynamic in that new products are being offered on a continuous basis while consumers are constantly screening them according to their individual emerging preferences. For example if, after experience with some new type of good, consumers decide that they have an intense desire for it, the consequence will be an increase in the price because of an immediate shortage. This price increase provides a signal and encouragement to producers to supply more of the item because the high price means abnormal profits and it is this profit motive that is the key incentive in the system. The motive applies simultaneously to consumers as well as to producers. If prices rise consumers have an automatic incentive to use the item more sparingly in order to profit best from their limited incomes.

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This continuous linkage of consumers and producers through the flexible price mechanism of the free market acts, in Adam Smith's words, like an "invisible hand." The plans of widely dispersed economic agents are thus coordinated and no individual need be told what to consume or what to produce by some government official. It is in this way that the price system resolves the central problem of a modern, highly complex economy, namely, the problem of how to harmonize the plans and activities of vast numbers of separate individuals where each one separately has hardly any information of the specific plans and actions of others.²

Shackling the invisible hand

In contrast to the Smithian model of the market economy, the authors of Alberta's White Paper imply on nearly every page that individuals do need to be told by government officials what should be produced and consumed. One is never told in the White Paper the qualifications of government officials or their source of information that enables them to exercise superior judgement. Neither is there any costing of the 50 or so specific government policies proposed. Instead the White Paper proceeds by simple assertion as if the information were self-evident and the costs of the proposed programs negligible. Industries that are favoured by government are described repeatedly as "vital." Thus on page 19 we are told "agriculture is a vital industry in Alberta...." The same is true of the petrochemicals industry and high technology in general.

The White Paper is quite candid about its advocacy of the super-session of government over individual decision making. It asks, for instance (page 43), whether the provincial government should select specific sectors or areas for special support and encouragement or, in contrast, "take a very standback attitude towards economic development?" The former of these choices, which it obviously supports, is then described as "picking winners and losers." The authors are ready to implement a whole array of government instruments that will emasculate the market in the interests of centrally dictated policies. "It involves, for example, special tax measures and concessions for either one industry or one element of an industry over others because that industry or element is judged (by government officials) to provide greater potential for future jobs and growth (than the unhampered market outcome)" (p. 43).

II. HISTORICAL PERSPECTIVES

Not a new plan

The advocacy of an industrial strategy is by no means novel in this day and age. Indeed it has become very fashionable in other countries and is reflected, for instance, in the policy platforms of Walter Mondale and Senator Hart in the U.S. and the Fabian Socialist Labour Party in England. Yet Alberta's White Paper fails to make any reference to discussions and experiments elsewhere in the world concerning the type of policies that it is proposing. More important, it fails to address the question whether or not countries with industrial strategies have done any better than others in recent years. Several countries with such policies may, indeed, have made themselves worse off.³

The experience of Japan is commonly quoted as a country that has had a successful government industrial strategy. Recent investigators, however, have come to the conclusion that much of Japan's public funds have been wasted on supporting "losers." A graphic example of its failure is the fact that in the 1960s the Japanese government attempted to discourage the emergence of a competitive automobile industry in Japan because it did not believe it to be a prospective "winner" in world competition.⁴

Experience in Britain could also have been drawn upon as an object lesson in the mistakes of national industrial policies. Such experience could start with the abysmal failure of the British government's grandiose program in the immediate post-war world for the development of ground nuts in Africa. The testimony could then have proceeded by way of the equally depressing propensity of British governments since that time to back "losers" in the form of large subsidies to various unremunerative nationalized industries. The most recent disastrous experience has been with the British government investment of millions of pounds in the abortive attempt to establish the DeLorean automobile industry in Northern Ireland.

To some it may be understandable that other countries have been flirting with the idea of an industrial policy in view of recent serious setbacks associated with the recession. In Alberta, however, there appears to be no such degree of adversity. Indeed, the White Paper argues that its proposed industrial strategies "are directed towards an Alberta where the quality of life is high and improving...even today there are more actual jobs in Alberta in relation to total population than in any other province in Canada. In

comparative terms, the vast majority of Albertans are enjoying a good quality of life, freedoms and opportunities" (p. 69).

While the writers of the White Paper may believe that its proposals are new and trendy, in fact they first appeared in the historical period of mercantilism that immediately preceded Adam Smith. The term "mercantilism" is now used to symbolize certain doctrinal threads that recurred throughout the 16th, 17th and 18th Century pamphlet literature of many nationalities (Spanish, Flemish, Scandinavian, French, German and British). The central feature was the doctrine that national prosperity was best pursued by obtaining a favourable balance of trade. While the objective of this, in turn, was to increase the quantity of gold at home, the means adopted resulted in the same detailed central planning of the economy with its need to pick winners over losers that is featured in Alberta's White Paper proposals.

Mercantilist winners picked on same terms

The criterion of "winning" in mercantilist times involved special weights according to the contribution to exports and to economic growth generally. Such a strategy involved import substitution wherever possible and the export of goods in the higher (more technological) stages of production since these, it was thought, would produce more domestic employment. If raw wool was exported from England, for instance, it was objected that the jobs associated with manufacturing the wool would be exported to foreign countries to the detriment of the home country. The planned increase of population was also an aspect of mercantilist policy especially where it came in the form of immigration of well-skilled individuals. The whole argument of mercantilism, meanwhile, was couched in terms of impending emergencies threatened by hostile foreign nations. The idea was to weaken potential aggressors economically by winning the "battle" for international exports. The economic game was one of zero (or negative) sum, not the positive sum outcome of Smith's model.

Strategy implies mobilization

It is probably no coincidence that the word "strategy" in the term "industrial strategy" is a military expression. The whole flavour of Alberta's White Paper is that of a nation state collectively "mobilizing" its resources against some unspecified enemy. The document's notion of competition also has a warlike interpretation.

Thus it warns that "competition in the international market place will continue to increase over the decade ahead" (p. 59). To an economist the only way that competition can "increase" is if monopoly should decrease, a situation that should be welcome. To the White Paper's authors, however, an increase in competition appears to be seen as some external threat.

A mercantilist-like emphasis on exports is abundantly clear in the White Paper. There is anxiety, for example, to establish the new vehicle described as the "Alberta International Export Corporation." This organization is intended to provide "a range of financial assistance to Alberta businesses." In other words, exports are to be subsidized from funds derived from taxpayers. The tax system is intended to be used "to encourage selected or general manufacturing, processing and diversification; to buttress our export sales..." (p. 62). The mercantilist policy of reduced reliance on imports is again seen in the search for "food import replacement opportunities" (p. 61). And yet another mercantilist aspect is the policy of welcoming an increased population especially in the form of skilled immigrants. Thus one of the objectives of the proposed policies listed on page 68 is that of "encouraging entrepreneurs from other parts of the world to move to Alberta and bring both risk capital and extensive business experience" (p. 68).

On the usefulness of export subsidies

To return to the White Paper's plans to make instruction in the model of the market economy mandatory in Alberta, it is interesting to refer once more to Adam Smith. Smith's major work **The Wealth of Nations** was, indeed, provoked largely by the prevalence of mercantilist doctrines. Chapter 5 of Book IV of Smith's volume attacks, for instance, the mercantilists' use of the export subsidy (subsidies such as those proposed for Alberta). The potential absurdity of such a policy is demonstrated by Smith as follows:

By means of them (export subsidies) our merchants and manufacturers, it is pretended, will be enabled to sell their goods as cheap or cheaper than their rivals in the foreign market. ... we cannot give our workmen a monopoly in the foreign, as we have done in the home market. We cannot force foreigners to buy their goods, as we have done our own countrymen. The next best expedient, it has been thought, therefore, is to pay them for buying. (my emphasis)

It must be acknowledged that, since Smith's time, some sophisticated arguments have been developed in defense of limited export subsidies in special circumstances. It has been contended, for instance, that the entering of new foreign markets may call for special (costly) efforts to cultivate local tastes for the commodity. If one firm undertakes this effort, however, it will benefit not only itself but also all other firms who supply the same good. The social returns from market-cultivating expenditures will thus exceed the private returns and for this reason some economists⁵ now argue that temporary intervention in the form of export subsidization is justified to raise society's welfare.

A "temporary" bureaucracy?

The legitimacy of limited export subsidy is not conclusively established even on the above reasoning. What has to be shown in addition is that the costs of the government intervention do not outweigh the benefits. Smith would suspect a proposal that advocates the government establishment of a temporary bureaucracy for the purposes in question. Governments, to Smith, were suspect institutions, and bureaucracies were very rarely temporary establishments. Be that as it may, however, one would be encouraged to take Alberta's White Paper more seriously if it contained some references to sophisticated economic arguments about alleged market failure such as the one just mentioned. In their absence it seems impossible for it to escape the "jaundiced" eye of master economists such as Adam Smith.

III. THE ROLE OF EDUCATION

Not everybody will be enamoured by the White Paper's brash utilitarian policy to harness education to the needs of the state. Exponents of the market model assume that individuals are their own best judges of their educational requirements. A state (province) that forcibly encourages one selected part of the education curriculum today is likely to lurch about in other directions tomorrow. Indeed the history of public education conspicuously features the progress from one current fad to another.

The fad adopted by the White Paper is the promotion of the study of foreign language in the primary education system and the provision of scholarships to students of languages at the university level. Who is to say that in the next few months there will not be an

over-supply of language specialists and a drastic shortage of, say, mathematicians, biologists or even practitioners of the English language!?

The market model explains that if there is an urgent need for any particular skill it will be reflected in the (high) income earned by those who already possess it. Shortages will be reflected in higher than average incomes, a situation that will automatically attract new entrants until the price or income has reached a new equilibrium level. Without any explanation, the authors of the White Paper do not trust this mechanism and are readily prepared to forgo the liberty of the individual as a result. The point is openly confronted on page 58: "At issue is the question of whether (training) programs should be determined on the basis of what Albertans request or on (officially) forecasted needs." The authors appear to be in no doubt that individuals should be compulsorily marched to the tune of the forecasts.

The policy of "forced feeding" in education is bound to result in conflicts between the official policy makers and individuals who stubbornly follow their own judgements as to the best skill to acquire. Such conflict will immediately result in an element of failure in the government plans, a failure that is usually responded to by calls for still further government coercion and expenditures. Consider again the words of Adam Smith who pointed out the inevitability of such conflict. The government planner, Smith argued,

...seems to imagine that he can arrange the different members of a great society with as much ease as the hand arranges the different pieces upon a chess-board; he does not consider that the pieces upon the chess-board have no other principle of motion besides that which the hand impresses upon them; but that, in the great chess-board of human society, every single piece has a principle motion of its own, altogether different from that which the legislator might choose to impress upon it. (Adam Smith, *The Theory of Moral Sentiments*, 1759.)

The pieces of the chess-board moved according to the principle of self-direction and also the principle of the pressure of the planner's hand.

If those two principles coincide and act in the same direction, the game of human society will go on easily

and harmoniously, and is very likely to be happy and successful. If they are opposite or different, the game will go on miserably, and the society must be at all times in the highest degree of disorder. (Ibid.)

Smith, it seems, would predict a considerable degree of disorder for Alberta if the mercantilist proposals of its latest White Paper are to be implemented. And he would look with incredulity at the one solitary proposal for mandatory instruction in his "market model."

Notes

¹Proposals for an Industrial and Science Strategy for Albertans 1985-1990, White Paper, Government of Alberta, July 1984.

²For the classic interpretation and development of Adam Smith's core idea see F.A. Hayek, "The Use of Knowledge in Society," American Economic Review, Vol. XXXV, No. 4, September 1945, pp. 519-30.

³Robert J. Samuelson, "The Policy Peddlars," Harper's, June 1983, p. 62.

⁴Richard B. MacKenzie, "National Industrial Policy: An Overview of the Debate," The Heritage Foundation Backgrounder, No. 275, Washington, D.C., July 12, 1983 p. 20.

⁵See, for instance, Wolfgang Mayer, "The Infant-Export Industry Argument," Canadian Journal of Economics, XVII, No. 2, May 1984.