Using Flow-Through Shares to Stimulate Innovation Companies in Canada

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1. Executive Summary

Prior to 1954, natural resource exploration in Canada suffered major setbacks due mainly to risk and lack of capital, leading to the introduction of flow-through share investment tax credit and super flow-through shares in 1954 and 2000 respectively. These enabled exploration companies to renounce their tax deductions and pass them in the form of shares to investors who are to claim tax deductions from their incomes. Flow-through shares and super flow-through shares have helped Canada in two ways. They have:

1. stimulated and financed exploration and development, and
2. positioned Canada as a global leader in mining finance and exploration expertise by developing strong capital markets and exploration management expertise unique to Canada.

As the global economic competition is giving birth to emerging countries that are closing in on Canada's leading position in the mining sector, there is need for policies that are geared towards creating additional economic sectors that offer comparative advantage to Canadian based businesses. Innovation that leads to increased productivity is the fundamental source of increasing wealth in an economy. Canada has been benefiting from foreign innovations. Unfortunately, as more and more countries are realizing the competitive edge technological innovation gives them over other countries, they are jealously guarding their innovations. Developing indigenous innovation is apparently the alternative. Regrettably, lack of innovation policy coherence, resulting in financial constraints to innovation companies in Canada, is a major setback to the innovation companies. Existing financing for innovation in Canada through the Scientific Research and Experimental development, venture capital, etc is insufficient.

The inherent risk associated with innovation financing, coupled with the long gestation period, is very similar to the situation that confronted the natural resource exploration companies in Canada which led to the introduction of flow-through shares in 1954. Innovation companies have attributes very similar to mining projects such as the following:

1. it is hard to discover a commercially viable innovation;
2. they have long gestation periods without product sales based cash flow;
3. there are several critical points in time over a number of years at which financing is required without sales based revenue to buttress the financial case for investment;
4. there is limited expertise in the financial community on how to structure finance; and
5. they have scarce management expertise to bring projects from conception to completion.

In view of the above attributes being so similar to those of mining projects, it is believed and recommended that a similar flow-through share program should be introduced to stimulate innovation companies in Canada. Innovation based companies have narrow gates to capital with a small and shrinking venture capital market and almost no ability to access broader capital markets. Innovation based companies have a small pool of experienced management to bring projects from conception to a sales based revenue model. A flow-through share system and super flow-through share system for innovation companies can provide a mechanism for multiple rounds of financing which over time widen the gates as progressively larger numbers of financing teams emerge in Canada. As these projects develop, more management expertise will also develop with progressively more management teams familiar with how to bring the projects from conception to sales revenue based businesses. As the talent pool of financiers and management develop in Canada, the country has the potential to become a global leader in innovation finance and project execution in a manner similar to the expertise now existing in mining finance, exploration, and development. This would position Canada as a world

leader in innovation based business conception, finance and execution. The benefits to Canada and its citizens would be significant and centered around industrial clusters of the future. The expected increase in the number of patents to be registered in Canada, even by foreign inventors, will generate new companies, employment opportunities, products and services, as well as capital inflows, foreign exchange conservation and build the potential of a sustainable comparative advantage of leading expertise in innovation finance and management.

2. Introduction

The first objective of this paper is to advocate for the creation of government tax incentives that would be designed to support influx of private venture capital into high-risk and long-term research and innovation projects in industries, such as health or biotechnology. We argue that the successful practice of flow-through shares in the Canadian mining industry as a tool for raising finances for exploration and minimizing investment risk should be extended to other sectors of the economy with similar needs. Secondly, our aim is to emphasize that the creation of a finance sector with research and innovation expertise should be an objective in itself. We argue that just like Canada is a world leader in mining finance, it could become a leader in research and innovation finance services.

Prior to 1954, mineral resource exploration in Canada suffered many setbacks as a result of non-availability of capital. This was due to the long gestation period involved in individual mining projects and the risk of loss at the end. The exploration of a single natural resource to actual mine could take well over 10 years. Even then, some exploration was inconclusive and, as a result, investors lost all of their investment. The vast mineral and to a lesser extend oil and gas resources of Canada remained undeveloped due to lack of financing or incentives to finance. Investors did not like to tie down their money in such a risky venture with such long-term payback. The government, on the other hand, sought to develop those natural resources. The need to induce investors' money became necessary. The government needed to create a conductive investment climate.

In 1954, the Federal government of Canada introduced a tax incentive to encourage investment in the mining, oil and gas extraction sector of the economy. This incentive was called the flow-through share program. It allowed resource exploration companies to issue common shares which were 100 per cent income tax deductible for the investor. In other words, the right to deduce 100 per cent of the investment is transferred to any investor that purchases any of those shares to reduce income from other sources.

Similarly to the mining industry also industries such as health or biotechnology suffer from lack of venture capital due to high risks and long-term life cycles associated with investments in their research and innovation projects. Just as it takes many years from exploration to a mine, developing a new drug to a commercially successful product takes longer than investors are often willing to wait. What is more, as much as it is likely that exploration will fail to bring desired results, the majority of health or biotechnology research and innovation projects are terminated during the primary stages of development. Therefore, we argue that due to the level of risk and distant returns associated with investing in these sectors, the investors need to have an attractive climate for making these investments. Today, Canada is a world leader in mining finance, exploration, and mining itself, however, the country falls behind in lucrative future oriented sectors as those discussed in this paper. It is argued that we as Canadians should take advantage of our unique knowledge and experience with financing risky and long-term projects and use it to develop new cutting edge technologies and industries. This will not only secure new high paid jobs, but it will also help diversify our economy and strengthen the country's finance sector.

3. What are flow-through shares?

Flow-through shares are a type of common share that offer tax benefits to their purchaser/investor. These tax benefits, passed on from the resource company (the issuer), allow the investor to claim up to the subscription amount as a deduction on his/her income tax return. Investors are allowed to apply tax credits to income from employment, business, or property. However, like a normal common share, when flow-through shares are later sold, the investor must pay capital gains tax on any proceeds.[1]

"Flow-through shares are almost always issued as private placements. They have a minimum holding period of 4 months."[2] Ideal investors for flow-through shares are those who earn a high income, want exposure to the resource sector, are willing to take the risk involved, and can wait years or more before regaining liquidity.

4. Why Flow-Through Shares were Introduced in Canada

For a period of 25 years after the World War II, Canada experienced a time of unprecedented growth. Its economy surged ahead but the mining industry remained largely untapped. It was very risky to pursue a mining project because of the long gestation period, uncertainty of the future, and the capital intensiveness. Canada had to find a way to make it more encouraging to resource companies and investors alike. Thus, the idea of a tax incentive known as flow-through shares was introduced in 1954.[2]

When first introduced, flow-through shares only allowed the transfer of tax credits between corporations. In 1972, this was revised to allow tax credits to be passed on (flown through) to individual investors. This modification improved investors' interest in resource exploration companies.[2]

Towards the year 2000, investor interest again began to decline and the industry witnessed a severe lack of capital injection or funding. This prompted the federal government to introduce an additional tax incentive known as super flow-through shares.[3] These include a 15% federal tax credit for grass-root mineral exploration, plus provincial or territorial deduction and tax credits. Grass-root exploration refers to exploration expenses for mining of metals and minerals, not for extraction of oil and gas. The following are the currently participating provinces and their corresponding harmonizing tax credits: British Columbia (20%), Saskatchewan (10%), Manitoba (10%), and Ontario (5%). The 15% federal tax credit and provincial/territorial tax credits are in addition to the fixed 100% flow-through share tax incentive (see Appendix A).[4]

Unlike flow-through shares which are constant, super flow-thorough shares are a temporary measure and renewable every couple of years. After being introduced in 2000, the super flow-through shares tax incentive has been extended 5 times. In the January 2009 federal budget, the government announced its intention to extend the program to March 31, 2010.[3]

5. How the Flow-Through Share Program Works

Before the flow-through share program, mining companies were allowed to deduct 100% of prospecting, drilling, geological and/or geophysical expenses. This deduction would have been possible where the company was earning or generating some income. This is because it was from their income that these expenses would have been deducted before taxation. If they did not have any revenue, then these deductions remained unclaimed or wasted.

To reverse this, the federal government decided to allow exploration companies to renounce or give up those tax deductions and pass them on to investors. These investors could then apply these tax deductions to reduce their taxable income. The exploration company bundles the tax deductions with their shares and sells them to investors. They then use the proceeds from the sale of these shares to finance their exploration projects while the investors claim the tax deductions.

These deductions, sold as shares, are called "flow-through shares" because they transfer (flow-through) the benefit of the tax deductions from the company to the investor. What this implies is that the government allows a tax deduction that ought to be granted to an exploration company to be passed on or "flown through" to their investors. The exploration company gets the money to finance its exploration work while investors can claim up to 100% of their investment as a tax deduction. The exploration company must spend the entire investment on resource exploration in order for the investment to be 100% tax deductible. The tax deduction equals the actual amount spent on resource exploration.[5]

Investors can buy flow-through shares directly from a natural resource exploration company, or buy indirectly by purchasing units from a limited partnership. These limited partnerships are specially created to buy shares in several junior exploration companies. Buying units from a limited partnership gives the investor the additional benefit of having a portfolio of shares (basket of startups) from different exploration companies. This reduces the investor's investment risk. Due to the fact that a lot of

exploration companies could go bankrupt or walk away from their projects, buying shares in several of them minimizes the risk that an investor could lose his/her entire investment.[5]

The additional 15% federal government investment tax credit introduced in the year 2000 and its provincial equivalents are usually summed up for the purpose of calculation. This additional tax incentive is called super flow-through shares. It is for companies that are exploring for metals and minerals only. The super flow-through share and its provincial equivalents are in addition to the 100% tax deductible flow-through share.

If the investor sells the investment or triggers a deemed disposition (which means the government deems that the investor has sold the investment even if he/she has not actually sold it), then the investor is liable for capital gains tax.

Illustration

Assuming that you live in Saskatchewan, your annual taxable income is $160,000, and you are taxed at the highest marginal tax rate of 44%, then you would pay $70,400 in tax. This is assuming there are no personal exemptions or other allowable deductions and that all income is taxed at the same rate. If you invest $50,000 (out of the $160,000) in flow-through shares, and the entire amount qualified as a Canadian Exploration Expense (CEE), then 100% of your investment could be deducted from your taxable income. Your taxable income is reduced to $110,000 and you now owe $48,400 in taxes – a savings of $22,000.

If your investment in flow-through shares is with companies that are exploring for metals and minerals, you will get an additional tax credit of $7,500 (15% of $50,000). That extra credit would cut your total bill down to $40,900, thereby saving a total of $29,500 in taxes (federal deductions).

In addition to the above saving from federal government programs, there are other provincial super flow-through initiatives which vary from one province to the other. In Saskatchewan, the tax credit is 10%. This tax credit would further reduce the tax by $5,000 (10% of $50,000). The investor's total tax savings would increase to $34,500 ($29,500 + $5,000), making the taxes payable $35,900 instead of $70,400. The after-tax cost of the investment then becomes $15,500 ($50,000 investment less tax credits). This substantially reduced the risk for the investor in a high risk venture.

Limitations

It is obligatory for an exploration company to spend 100% of the money it realizes from selling flow-through shares on expenditures that qualify for tax deductions. If for some reason, the company is unable to spend all of the investment on exploration, then the investor in its shares cannot claim 100% tax deductions.

"Investors can be an individual, trust, corporation, or partnership, but only the original investor may deduct the renounced expenses."[6]

Illustration of How Canadian Exploration Expense (CEE) is Passed to the Limited Partner (Investor)

"Mavrix Resource Fund Management acts as a general partner in resource offerings. The management team purchases shares of targeted resource companies. Investors, who are the limited partners, obtain from the General Partner, the applicable income tax deductions associated with flow-through shares on their T5013 tax form. The funds from flow-through shares are used by resource based companies to explore new deposits and develop existing properties towards production. The resource exploration company that has been invested in decides what qualifies as a CEE credit. These tax deductions are passed to the limited partnership."[5]

Operation and Dissolution of a Flow-Through Share Partnership

Let us assume that a limited partner (investor) invests $50,000 to purchase flow-through shares of resource companies through a limited partnership. The resource companies would have renounced $50,000 of exploration expenses to the partnership. So the partnership is taken to have incurred these expenses.

These expenses are passed on to the limited partner (investor) to claim as a tax deduction on his/her personal tax return. "After these transactions have occurred, the shares of the resource companies owned by the partnership have a nil cost base and the limited partner's cost base of his partnership interest is also nil. The partnership might decide to sell certain of its shareholdings in due course and, if it does, a capital gain will be realized in an amount equal to the proceeds. Should these proceeds be reinvested in another flow-through share, the partnership will be able to allocate out to its

limited partners a capital gain, of which only 50% is taxable, and resource expenses, which are fully deductible.

Most flow-through limited partnerships anticipate that they will transfer their flow-through share investments, which we will assume still to be worth $10,000, to a mutual fund corporation in exchange for $10,000 worth of shares of that corporation, and will pass these out to their partners. The purpose of this transaction is to give liquidity to the partners. Since the flow-through shares have a nil cost base to the partnership, this transaction would normally give rise to a $10,000 capital gain to the partnership which would have to be allocated to the partners. To avoid this result, the partnership and the mutual fund corporation will file an election, for tax purposes, that the transaction takes place at the partnership's nil cost base, notwithstanding that full value has been paid.

Thereafter the mutual fund corporation shares will be passed out to the partners and the partnership wound up. The end result is that the partners end up with $10,000 worth of shares of the mutual fund corporation which have a nil cost base, and the mutual fund corporation ends up with $10,000 of flow-through shares which have a nil cost base. When the partner sells or redeems his or her mutual fund corporation shares for $10,000 (to continue the example), a capital gain of $10,000 will result and tax will be payable. Likewise, the mutual fund corporation will have a $10,000 capital gain when it sells the flow-through shares. However, a mutual fund corporation may recover its capital gains tax upon the payment of capital gains dividends to its shareholders or through share redemptions. Accordingly, "double taxation" of the $10,000 gain, once in the partner's hands and again in the mutual fund corporation, is essentially avoided."[5]

6. The Use of Flow-Through Shares and Canada's Excellent Performance in Mining Exploration and Finance

Following the introduction of flow-through shares and super flow-through share programs in 1954 and 2000 respectively, natural resource exploration in Canada has witnessed a significant level of growth. Largely as a result of the flow-through and super flow-through share system in Canada, this country and its businesses have become global leaders in mining, global exploration and global mining finance. Canada presently ranks as one of the world's largest producers of natural resources. This sector of the economy has proven to be a profitable area for investment over the years. Canada is the world's third largest producer of natural gas and the ninth largest producer of crude oil. More than 22% of North America's crude oil and natural gas are produced by Canada. Only 10% of this is consumed in Canada. Canada is also one of the largest mining nations in the world, producing more than 70 minerals and metals in over 200 mines in different locations across Canada. We are a leading producer and exporter of minerals and mineral-based products, with exports nearing $50 billion yearly. This represents approximately 13% of Canada's total domestic exports. Canadian-based companies conduct approximately 40% of all mineral exploration undertaken in the world, with exploration in Canada accounting for 22% of the total. Canada remains one of the most resource-rich countries in the world. Productivity growth in this area has been quite positive and encouraging.[7]

The introduction of the investment tax credit known as super flow-through shares in the year 2000 has resulted in the new improvement in investors' activity. The success of this tax credit is illustrated by the rise in expenditures on exploration in Canada. They have risen from approximately $300 million in the late 1990's to an estimated $1.722 billion in 2006. As of 2006, this figure was the highest total for exploration and deposit appraisal since 1987 and 1988. Canada is presently the number one destination in the world for investors who are interested in exploration investment. From as low as 15 new mineral discoveries in Canada in 1999, the number has risen to as high as 268 in 2005. This

represents approximately a 1,687% (or more than 16 times) increase in new mineral discoveries within 6 years. It should be noted that the super flow-through share program was introduced in 2000, the year following 1999.[3] In 2006, products from mining accounted for 17.5% or $71.9 billion of the country's domestic exports.

Canada's Ranking

Canada ranks among the top five countries in the production of 14 major minerals and metals. In 2006, Canada ranked first globally in the production of potash and uranium; second in nickel and cobalt; third in aluminum, gypsum, magnesium, platinum-group metals, and titanium concentrate; fourth in asbestos and cadmium; and fifth in zinc and molybdenum. Canada is a top ten producer of gold, silver, copper and lead. The oil sand industry which is based in the western province of Alberta is unique in the mining world because it produces synthetic crude oil. In 2005, the oil sands produced about 15% of Canada's crude oil and were worth $9.2 billion. Oil sands development was facilitated by innovative tax policies implemented at the federal and provincial levels.[8]

Industrial mineral production was worth $10.2 billion which was a reflection of the booming construction industry worldwide. Potash is the largest non-metal commodity in terms of production value in 2006 with diamond in the second position. Canada is third in the world in diamond production, valued at $1.6 billion. Coal production added $2.2 billion to the value of all minerals produced.[8]

Mining added $3.6 billion to the economy in 2006. Employment in mineral extraction and concentrating totaled 49,173 individuals. In all mining and mineral processing industries – mining to metal fabrication – the number of employees was 368,745 in 2006. This number does not include exploration and services such as contract drilling, nor does it include industries that supply services – railways, ports, consultants, and legal firms. According to Natural Resources Canada, approximately 4,000 companies reap benefits of a healthy mining sector.[8]

In 2006, the United States imported $47 billion worth of Canadian mining products, or over 65% of Canada's total exports. The governments in Canada see the financial rewards from mining as $10 billion which went back to Canadian governments in 2005 alone in the form of taxes and royalties.

With the growing demand for most minerals and metals, the governments of Canada stand to benefit even more from supporting this booming industry.[8]

Interesting Data

Canada's mining companies invested more than $500 million in 2005 in research and development, as well as exploration. In 2006, Canada ranked first in global exploration at 19%, ahead of Australia at 11% and the United States at 8%. The top five destinations for exploration within the country are Ontario, British Columbia, Quebec, Saskatchewan and Nunavut. These provinces and territory respectively spent the following amounts towards exploration: $341.6 million, $304.0 million, $260.2 million, $236.3 million, and $199.7 million. The Toronto Stock Exchange (TSX)'s 341 listed mining issuers, valued at $338 billion in 2006, were only $190 billion in 2005. Today, 80% of global mining equity financing flows through the TSX.[8]

In the face of fierce global competition for exploration investment, the program has helped Canada to maintain its competitive edge over the rest of the countries in the world. The importance of the Mineral Exploration Tax Credit for flow-through share investors prompted the federal government to have quickly extended it five times (each time it expired) since its inception in 2000. The super flow-through program keeps exploration funds in Canada, particularly in northern and rural areas for Canadian projects. A number of Canadian provinces have harmonized their programs with the federal one. This is because they consider flow-through and super flow-through enhancement to be worthwhile programs.

Just as Canada is now a world leader in mining exploration and mining finance, it can also become a world leader in research and innovation and finance of these activities by adopting policies and initiatives similar to those used in the mining industry in other sectors of the economy. If the concept of flow-through shares can be introduced into the financing of research and innovation in other industries with similar needs, the result will most likely increase Canada's competitiveness in relation to the rest of the world in those sectors.

7. Evaluation of Innovation in Canada

Most of the innovations used in Canada are imported from other countries. As a result, our high technology trade deficit grows by 5% each year".[9] As more and more countries are realizing the competitive edge technological innovation gives them over other countries, they are jealously guarding their innovations. It will, therefore, become increasingly more difficult to import innovations (products and processes). It is important to look at Canada's ratings in terms of locally generated innovations. If innovations are indigenous, it results in both job creation and conservation of foreign exchange and reduced prices for goods and services.

According to a report titled Canada's Innovation Conundrum, "in spite of having a robust and educated workforce, Canada is barely making the grade in terms of innovation". The report defined innovation as "the ability to turn knowledge into new and improved goods and services." In the latest report from the Conference Board of Canada (an Ottawa-based think tank), Canada gets its worst grade – a "D" in the innovation category and it has been "D" for decades. The Conference Board of Canada (CBC), a not-for-profit group in Ottawa, recently released a report card which revealed Canada's particularly poor performance in innovation. In the 1980's, 1990's and 2000's, Canada scored "D" out of 17 countries that were sampled.[10]

The countries that received the highest overall scores were those that developed national strategies around innovation. This gave them a significant lead over their peers in one or more areas. For instance, Switzerland is a leader in pharmaceuticals. Ireland has been successful as a host for leading innovative companies. Germany has a long and successful history of supporting its science and engineering companies. Japan is committed to efficient manufacturing and new product development. The U.S. which was the leader in innovation in 2008, fosters a combination of top science and engineering faculties, broad and deep capital markets, and entrepreneurial culture, and support for innovative firms.

Canada has a very good educational system, equipped with very good universities, engineering schools, teaching hospitals, and technical institutes. Science produced by Canada is highly respected around the globe. Unfortunately, Canada does not take the steps that other countries take towards ensuring that science is successfully commercialized and used as a source of advantage for innovative companies that are seeking global share of the market. As a result of this, Canadian companies are rarely at the leading edge of new technology. They too often find themselves behind the productivity growth achieved by global industry leaders. Often, they are a generation or more behind.[10]

The above situation of Canada's poor ranking has negative implications. An economy cannot perform highly without innovation. Innovation is also critical to environmental protection, a high performing education system, a well-functioning system of health promotion and health care, and an inclusive society. Where there is no innovation, all these systems stagnate and Canada's performance deteriorates when compared to that of it peers. Canada had once been known as best in the world in some areas of innovation.

Canada's Innovations

These include the following: pablum and kerosene; electron microscope; five-pin bowling; better barley; the first successful process for freezing fish; marquis wheat; the self-propelled combine harvester which unified binding, stoking, threshing and cleaning into one operation; the rubber-cushioned drive wheel and tract which turned into the first commercial multi-passenger snowmobile and eventually the two-person skidoo; the first commercial jet in North America and the second in the world called the Avro Jet Liner; the discovery of insulin; the first mobile blood bank; the first practical diagnostic test for cancer and the use of cobalt for its treatment, etc.[9]

The importance of innovation in today's Canadian economy is not less important than the importance attached to natural resource exploration. This is because having the most advanced and newest technology increases a company's efficiency. Apart from producing traditional products more cheaply, it helps to manufacture new products. Innovation boosts productivity and drives economic growth. It is inevitable if Canada has to compete in the world markets. Canada's future success

depends on technological innovation. Generating excellent ideas has never been Canada's problem. The problem/difficulty has always been that of translating the inventions into innovation[i]; to our best advantage. "Unfortunately, Canadians have not always managed to find the financial and marketing support needed to transform their inventions into innovations. Today, with technological innovations determining international competitiveness, Canadians are becoming more aware of the importance of exploiting their ideas in the world marketplace".[9]

Coherent Strategies: One of the ways out of this situation is the use of coherent strategies. All the countries that regularly perform better than the rest have coherent innovative strategies. Though these strategies vary from one country to the other, they all stimulate their country's capacity to innovate – from the creation of ideas to the transformation of those ideas into new products and services for the domestic and world markets. Canada fails to extend the same investment it makes in university research and development to highly innovative companies to become successful on an international scale.[10]

Creative Destruction: There is need for policies that promote the destruction of the old in a creative way so as to make room for the new. "Many of Canada's industry sector policies are designed to preserve existing industrial production (such as forestry's pulp and paper sector and auto assembly manufacturing) rather than to generate new, highly innovative ones". Too many current policies are short-term, aimed at protecting jobs in the short-term. Resources channeled towards them could have been applied in supporting long-term innovation. These policies therefore work counter to innovation.[10]

[i] An innovation is created when now technology is combined with markets. An innovation is a new product or process that people can buy (market). An idea turns into an invention but cannot be called an innovation. It is when people can buy and use it that it becomes an innovation. It is the marketplace, therefore, that turns an invention into an innovation. An invention that has been commercialized is an innovation. When a technological know-how is developed, sold, distributed and used, that is when it becomes an innovation.

Beyond Innovation Initiatives: There is no doubt that Canada has some very strong innovation initiatives. These programs, however, mostly create a supply of scientific discovery instead of going the extra step of enhancing demand for innovative products successful in a global market. "The result is respected science faculties and a lot of relatively small companies without much prospect of success on a globally efficient scale".[10] The consequence is that Canada's rate of moving ahead is far slower than other countries that enjoy greater innovation policy coherence.

8. Current Funding of Innovation Companies in Canada

There are many forms of financing currently available to innovation companies in Canada. Grants, subsidies and contributions/tax credits are one route companies can take. In Ontario, for example, the Innovation Demonstration Fund (IDF) is a program supported by the Government of Ontario and, more specifically, the Ministry of Research and Innovation that helps companies to commercialize their innovative technologies, processes and/or products.[11]

There are also different forms of grants and bursaries available for research institutes, universities and firms for research. Other funding opportunities are associated with the Industrial Technologies Office (ITO) to help companies through the new Strategic Aerospace and Defence Initiative (SADI) program, the Business Development Bank of Canada (BDC) for startup funding, BDC Venture Capital and many more.[11]

With regard to funding or breaks related to tax credits there is so called "The Scientific Research and Experimental Development (SR&ED) program". It is a federal tax incentive program run by the Canadian Federal Government in cooperation with the Canada Revenue Agency. It is in place to encourage businesses to conduct research and development. It is the largest source of federal government support for industrial research and development in Canada.[12]

Companies that qualify can claim wages, materials, machinery, equipment, overhead, and contracts. Private corporations in Canada can earn a 35% credit up to the first $2 million and 20% on any excess amount. Other companies that are not private corporations can claim 20% of qualified expenditures.[12]

Most of these government supported financing options for innovation are not targeted at private inventors. They also do not encourage investment by individual investors in innovation. Investment by private investors is important because the government has limited funding for research and innovation.

Moreover, government should be separated as much as possible from business. Government's role in business should be more of that of providing a conductive investment climate.

9. Financial and Other Constraints to Innovation Companies in Canada

The importance of innovation not withstanding its financing has always been more difficult than that of physical investment projects. This is mainly because it is riskier than that of tangible projects. Investors tend to have more confidence in projects they can see physically rather than an idea-based one. As a result of the risk associated with this, outside investors need a risk premium for the financing of innovation activities. The situation is worsened by the very nature of innovation. An average inventor is always afraid of his invention being imitated or reproduced elsewhere. Therefore, they are very cautious in giving away information on their projects. This makes it difficult for outsiders to have a detailed knowledge of the innovation so that they can assess its viability. It is very difficult for investors to invest much in something they know very little about. There is a great amount of uncertainty about future benefits and costs related to the innovation as well as future market developments. This limits financing to internal sources (which are rarely available) and affects the financing of innovation. Internal equity is an unavailable or limited source of financing for startup companies without cash flow. If the firm or company, that has the innovation project, is small, it may be delayed, abandoned or even never started because of the risk of bankruptcy and the low values of intangibles (from premium) in case of liquidation.

10. Stimulating Innovation Companies in Canada with Flow-Through Shares

This paper argues that mineral exploration is an innovation on its own because it involves an explorer discovering economic deposits of minerals that other people did not locate. The risks and thought process involved in mineral exploration and, for example, in the development of new pharmaceutical product are similar. The Prospectus and Developers Association of Canada (PDAC) said, "The exploration industry is the foundation of the mining industry just as research for new drugs is the foundation of the pharmaceutical industry. Without successful exploration, there would be no mine".[13]

In order to support influx of private finances into high-risk and long-term research and innovation process in industries such as health, and biotech, we suggest different levels of tax credit should be allowed to different categories of innovation. This should be similar to what exists in the natural resource exploration where there are flow-through and super flow-through share tax incentives. Using health innovation as an example, different levels of tax credits should be allowed to differing categories of health innovation risk.

"If Canada had adopted these policies 30 years ago, we would be a lot closer to having a thriving globally competitive health innovation industry today. The first objective is to remove the barriers to Canadians who might otherwise invest in innovation by enabling them to access unusable or unused tax deductions, and then allow the incentives in the form of tax credits."[14]

The process involved in innovation commercialization in the health sector, for example, which requires financing and are not very different from those of natural resource exploration, includes the following:

- "to extract knowledge from the public sector research and clinical environments to protect intellectual property;
- to arrange financing for the first proof of concept or animal models;

- to build a multidisciplined team of colleagues and contractors;
- to finance the early stage formulation, toxicity, feasibility testing, preclinical or phase 1 trials;
- to obtain ethics reviews from multiple institutions…

However, there is no practical way of allocating expenditures to third party investors for tax purposes. Experienced investors tend to avoid even thinking about early stage health innovations."[14] This is mainly because of the risk involved. It can take well over 10 years for a new drug or cure for a particular disease to be developed. The end result is not guaranteed. Investors always want a level of security for their investment. Aside from security for investment, most of them will not want to tie down their funds for that period. Alternative investments could generate more than double the original investment sum within a 10 year period at a payback period of 5 years. "Typically in Canada the institutional sector often accepts payback periods in the 5 to 10 year range. However, the commercial sector often requires a payback period of 5 years or less."[15] This situation is also prevalent in other sectors of the economy. Investment in innovation is inherently risky. This is why an arrangement like flow-through shares and super flow-through shares has become very necessary to ease the risk.

The innovation companies or firms that help inventors to turn their inventions into innovation are no different from the Prospectors and Developers Association of Canada. If innovation in the health sector is properly harnessed, Canada's balance of trade position as well as employment generation will improve dramatically. "Canada should be doing as well as the UK that represents about 6% of the international demand for health goods and services and 12% of the supply, versus Canada which represents about 4% of the demand but only 2% of the supply. Comparable results would turn our $10 billion trade deficit in health goods and services into a $10 billion trade surplus employing an additional 100,000 to 200,000 Canadians in knowledge intensive occupations. Genentech Inc. of California, a profitable firm headquartered in close proximity to three major universities, has a basic

science investment program twice as large as the Canadian Institute of Health Research (CIHR) budget of $1 billion at the type of bridging that we have never seen in Canada.

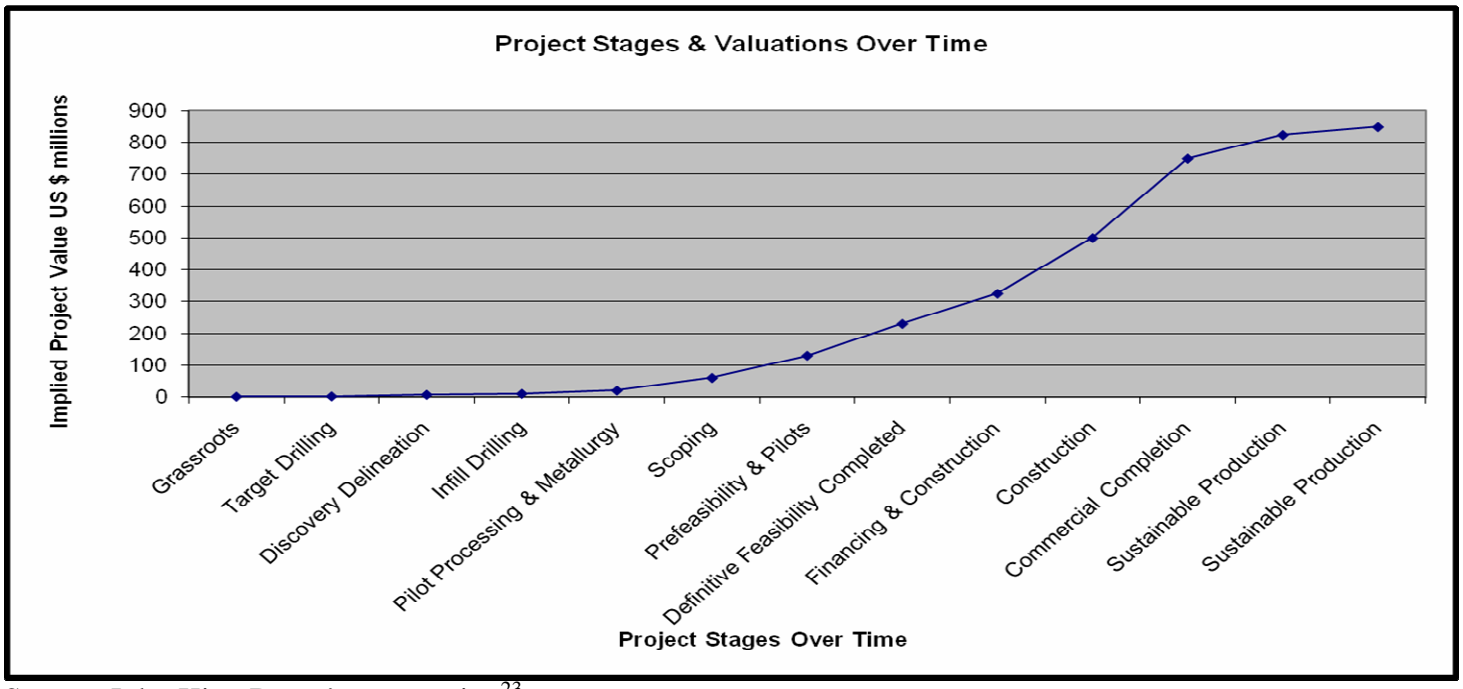
Current SR&ED policies and tax credits are internationally competitive for mature and profitable companies who are the ones that carry out research that is related to the business. However, the current SR&ED and combined provincial tax incentives do not recognize the realities of early stage health innovation. This problem is practically identical to the one experienced by junior mining companies in early 1950s. Companies that are engaged in resource exploration or in this case in early stage of health innovation often do not yet have income from which they could deduce tax incentives offered to them. Currently, there is no practical way of spreading the risks to individual investors in recognition that the failure rate will be very high. Also, there is no practical way of allocating expenditure to third party investors for tax purposes. As mentioned earlier, experienced investors tend to avoid even thinking about early stage health innovations."[14] Thus, the introduction of flow-through and super flow-through shares in this sector will make it possible to allocate expenditure to investors who are to be called limited partners.

Currently, "If an early stage health company is a non-profitable Canadian controlled private corporation it can get a 35% federal and an additional 10% to 15% provincial refund on its health innovation investment. Although that can be an important source of cash flow, for example for a software company with 2-year product development cycle, it is not a material incentive for health innovation.

On the net investment of 50% to 55% the risks remain very high and the revenue potential is likely to be 10 to 15 years into the future. Tax policies limit expenditures to $2 million before tax credits are reduced. It is not usually enough to get health innovations up to the $5 to $10 million level at which the sources of venture capital can reasonably assess the risk and financial demands of going forward. The reality of continuing losses creates an incentive to prematurely sell the investment to existing companies that can use the tax losses and before enough pre-clinical work has been done to

properly assess the potential not mentioning value for the initial research initiated company. If individual taxpayers such as family, friends, colleagues, inactive partners, etc wish to invest in the work of a scientist they are not eligible for SRED incentives and their entire investment is at risk and unlikely to produce returns for many years. Very real tax losses go unclaimed and their investment is not eligible for tax credits. Any such investors are likely to encourage scientists to sell their intellectual property as soon as it has any value. Investments are at risk to be sold prematurely. Individuals who gratuitously want to invest in health research are almost better to contribute to health charities where they at least get a 29% tax credit. The consequence of this choice is research without development.

The following graph depicting valuation of a mining project over time clearly shows that also exploration projects do not add on value in a short period of time. The first significant valuation occurs with the completion of feasibility reports. Therefore, selling prematurely a mining project would lead to similar losses of profits as often witnessed in the health research.



Source: John King Burns' presentation[23]

The lack of risk tolerant seed money has been identified in Price Waterhouse studies as the biggest challenge facing Canada's health innovation sector. The net result is that Canadian scientists

have to seek, almost beg for, venture capital too early, usually at less than the $1 million level, before pre-clinical research has been done and before the risks are known. Many innovations fail at that level. Others proceed, but only after the equity and management responsibilities of the scientists have been prematurely diluted or reduced. Few health innovations survive the steps of pre-clinical research. For those that do, the next round of financing, typically at the $3 to $6 million level, usually attract only tax-incentivized labour-sponsored venture capital or foreign investors with access to larger sources of clinical research finances.

Many Canadian discoveries are eligible for the U.S. National Institutes of Health (NIH) clinical research support once they are controlled by American investors. The Canadian Institutes of Health Research has been stretching its resources to the limit to try to strategically invest about 10% of its budget, or $80 million per year, on clinical research whereas the NIH invests about 20% of its budget, or $5 billion per year, on clinical research (about 60 times as much as CIHR. Almost every month the intellectual property of another very promising health technology is transferred out of the country for development by foreign investors. The biggest barriers to bridging the gap between our science knowledge and commercialization opportunities have been our SR&ED policies that block:

- potential investors who do not have health research as their principal business from investing in research or, as they do in mining, in finding creative ways of sharing and spreading extraordinary risks among a wide range of investors;
- the very necessary fluidity in ownership among scientists, contractors, expert managers and investors which could and should change many times in the life cycle of a health innovation;
- the very real losses of the early investors from flowing through to be applied to other sources of income of subsequent investors – including those who do not have research as their principal business (unless innovative tax advisors can create a structure appearing to have health as the principal business).

"The reality is that the investment risk and losses in health innovation are all too real and it takes more than the current SR&ED policies to attract investors into health innovation."[14] The introduction of flow-through shares in health innovation will attract individuals, corporations and partners who are not in the health business to invest in health research the same way that they can now invest in mining, oil and gas. "With flow-through shares and limited partnership structures, the tax losses can be passed through (flown through) to investors as the expenditures are incurred."[14]

An illustration of the application of flow-through shares in innovation in Saskatchewan in 2008

The prevailing marginal tax rate of 44% (a federal tax rate of 29% and a provincial tax rate of 15%) should apply to every individual's investment in innovation (assuming they are in the highest tax bracket). Essentially, this will make the individual's entire investment in innovation tax deductible, just like in natural resource exploration. If the innovation is in some preferred areas such as health, super flow-through tax incentives should apply as is the case for exploration of metals and minerals. This will entitle the investor to an additional super flow-through tax incentive of 25% (a federal tax credit of 15% and a provincial tax credit of 10%). Innovation/research corporations and companies can substitute for the natural resource exploration companies. Existing innovation companies, firms and individuals can form an association to be an equivalent of the Prospectors and Developers Association of Canada (PDAC).

But why do we need to use flow-through shares to stimulate the innovation sector? The innovation sector, especially in the area of biotechnology, is in crisis. One article argues, that the "amount of new capital raised by biotechnology companies fell 41% last year compared to 2007...because research by biotechnology companies usually takes eight to 10 years to produce profits, the companies depend on venture capital and other investor funds to finance the research...smaller biotechnology firms are facing a huge crisis."[16] Firms are not only in trouble and at risk of going bankrupt. Many firms have already shutdown or gone into bankruptcy. "In October and November last year, 13 Canadian biotechnology companies closed or went into bankruptcy. Dozens more reduced their 'cash burn' rates, making them vulnerable to takeovers that may well transfer intellectual property

developed in Canada to foreign companies."[16] Canada is at risk of losing brilliant ideas and inventors to other countries. This will most definitely hurt Canada's competitiveness in all other markets because they will not be able to keep up with new products and product improvements. This sector could benefit greatly from the use of flow-through shares.[16]

Another sector that could benefit from the implementation of the flow-through share program is the health care sector. It is the area that the government spends the most on – more than $100 billion or about 12% of GDP. It is very hard for entrepreneurs to get funding for medical innovations that are not already approved by the government. It is also very expensive and time-consuming for a scientist to develop a new medical innovation. There is little incentive because the success and payback are almost completely unknown. Although there is little incentive to innovate in this sector, this is the most important area for innovation. It benefits and affects all Canadians in one way or another. Thus, finding a way to encourage innovation and stimulate investment in this area is vital.

As written by Roger Martin, "It is similarly tricky to find an effective way to support and encourage would-be entrepreneurs. One approach would be to further strengthen the commercialization efforts of Canada's research-intensive universities, by giving researching professors more support to take their ideas from lab to market."[17] If commercialization is occurring, this may also mean that there is a place for the use of flow-through shares. Flow-through shares can be used to stimulate this sector that is in dire need of innovation.

There are several benefits to having a strong innovative presence within the Canadian economy. Such benefits are that it:

1. "Provides more and better paying jobs for Canadians;
2. Supports stronger business growth through continued improvements in productivity and innovation performance;

3. Gives consumers, businesses and investors confidence that the marketplace is fair, efficient, and competitive;
4. Ensures a more sustainable economy, environmental and social future for Canadians."[16]

Also, the "social and economic benefits of these innovations contribute to Canadians' standard of living and quality of life."[16] These benefits support the fact that investment in innovation needs to be encouraged.

If flow-through shares can be introduced to stimulate innovation companies in Canada, even foreigners with inventions would like to register their patents in Canada. This will give Canada the rights and benefits of the country of origin of those inventions when they are commercialized in Canada, using flow-through shares. This will in turn generate companies, employment, products and services, as well as foreign capital inflow and foreign exchange conservation. Canada will turn out to be the source of so many innovations just as there are so many natural resources explored and waiting for mining.

To make innovation more competitive, we need to find a way to make financing this high risk sector more appealing to investors. A "sound market framework" needs to be developed. "In order for the marketplace to be responsive, attract investment and protect consumers, marketplace frameworks must minimize the regulatory burden, where appropriate, and create the incentive to innovate, while discouraging illegal and fraudulent marketplace behaviour."[16] The problem is that, in this investment climate, willing investors are scarce. These are very difficult times for research. These are scary times for a lot of the research companies because they need to raise money from the capital markets to pay for the research. But in this financial climate, there are no investors,' said Brenders (Peter Brenders, BIOTECanada). 'We are seeing companies cutting back their research, we see companies shrinking, we see companies moving to other countries where they can raise money. Private-sector research is an important part of the economy, but it is at risk right now.'"[18] How can we improve the perceptions of

investors and persuade them that this sector is worth investing in? Flow-through shares are one of the most promising tools. As we have seen in the mining sector, flow-through shares have the ability to not only encourage investment but to increase it. Flow-through shares are what the innovation sector in Canada needs to pull it through these hard times and give it a competitive advantage in the world market. It's what Canada needs to move from a D grade to an A+.

11. The Research and Innovation Financing Infrastructure and Expertise as an Objective in Itself

Another point discussed in this paper aims to emphasize the importance of creating a parallel finance infrastructure to the one that facilitates exploration projects in the mining industry, this time specializing in research and innovation. Although new cutting edge health or bio technologies are certainly among the desired results of a would-be introduction of flow-through shares as an investment tool, we argue that the financial infrastructure and expertise that will constitute this system are equally if not more important to ensure Canada's future competitive advantage.

Even though Canada's ranking in the world in producing various minerals and metals is astonishing, it is argued that Canada's performance in the financial services associated with the mining industry is to be appreciated as well. The fact that The Toronto Stock Exchange (TSX) hosts 55 per cent of the listed mining companies in the world speaks for itself. In 2008, there were 1,427 listed mining companies on the TSX which compared to 684 and 216 companies on each of the Australian and London Stock Exchanges. Between 2004 and 2008, there were 8,253 financings completed for mining companies on the TSX. This represents 81 per cent of the world total and 31 per cent of the world value.[19] In other words, Canada's mining finance sector has evolved into an industry of its own and has become the world leader in it. Its services and expertise are sought after by mining companies from all around the world.

The advantages of a Canadian listing for a foreign mining company include: [20]

- greater mining analyst coverage for junior and medium-sized companies – which frequently leads to higher valuation multiples for the company;
- greater notice taken of the company by Canadian and US institutions;
- greater contact with both senior and junior exploration and development companies based in North America;
- less onerous shareholder approval provisions on the issue of additional shares than in many other jurisdictions;

and

- the possibility of access to the Multi-Jurisdictional Disclosure System (MJDS, see below)

"Canadianizing" the company may also permit access to the MJDS, reciprocal initiative by the Canadian Securities Administrators and the US Securities and Exchange Commission (SEC) to facilitate US/Canadian cross-boarder securities offerings by Canadian and US issuers.

As an example of what a potential parallel research and innovation finance infrastructure and expertise could mean for Canada are the words of a spokesman for Trelleborg AB (Swedish engineering company) given in an interview for The Globe and Mail earlier in 1997. "He was speaking of his company's decision to list its mining subsidiary, Boliden AB, on The Toronto Stock Exchange and to move its head office from Sweden to Canada." He explained: "We saw Canada as the best place in terms of knowledge of the mining sector. There are banks that are comfortable in making loans, and geologists, lawyers and accountants who offer top-notch services."[20] In fact, this was just one of many examples of offshore mining enterprises being attracted to Canada. Therefore, we should strive to replicate this situation also in other sectors of our economy.

The International Financial Law Review further explains this remarkable Canadian achievement by arguing that this should be no surprise to anyone. Canada offers exceptionally favourable climate for mining and mining finance, as well as it has decades of experience in mining and exploration projects both within and outside Canada. "This was reflected not only in technical expertise, but in knowledgeable industry analysis and advisors resulting, ultimately, in a sophisticated financial market." It continues by arguing that the availability of investment capital makes this country particularly attractive to small and medium-sized companies whether they are based in Canada or abroad.[20]

If we are able to create similar conditions for research and innovation in other sectors of our economy, Canada could become a place that will not only benefit from increased financing for home-

grown research and innovation projects, but it will likely become a destination for companies from abroad just as we could see in the case of Trelloborg's mining subsidiary. If foreign countries decide to relocate their research and innovation to Canada, the whole society will benefit from it. It will bring high-paid jobs and spin-off companies which may result in completely new industries. As mentioned earlier almost every month a new promising technological innovation is moved abroad. By introducing flow through shares we have not only a chance to stop this trend, we may likely reverse it.

12. Practical Aspects of the Research and Innovation Finance Infrastructure

Just as experienced financing in the mining industry, an elaborate system of companies specializing in research and innovation finance will not emerge over night. It will take years to develop necessary expertise among financiers. Yet, unlike existing government means of financing science through grants, a private system based on the advantages of flow-through shares will institute itself and have a legacy impact on the Canadian economy for in excess of and larger than a new government initiative or finite fund. What is needed is the government's legislative action to allow the use of flow-through shares in financing research and innovation. In this discussion paper, we identify several main benefits of having a private finance sector that is experienced in and knowledgeable of investing in research and innovation.

Our first argument is that there are inherent financial limitations to government grants. Since the government has only a limited amount of finances that it can distribute among applicants for research grants, it happens that the research projects with the highest potential, and which often require most finances, may not be successful when applying for subsequent funds to secure continuation. It is the very lack of options to refinance projects that holds progress back. It is not uncommon that an exploration project in the mining industry changes ownership and is refinanced several times before it is ready to be sold to or becomes a company that finally develops the project into a mine. What makes this an attainable task is the fact that mining companies have a number of finance providers to choose from to secure continuation of their exploration projects. What is more, theoretically the private finances available for a research project are not limited by its size but rather by the confidence investors have in its future profitability. In contrast, there are only few government programs with limited budgets. CEO of Research Infosource Inc. Ron Freedman argues in an article for thestar.com that application of the flow-through share model common in the energy sector to research-based companies will compensate for low levels of venture capital funding.[21]

In the research and innovation, a possibility to refinance a project over several subsequent rounds could not only solve the problem with the lack of funds but it could also make the project more flexible as it moves on its development path from a research place with one set of expertise to another. As argued earlier, the Canadian Universities carry out widely respected research. Yet, they experience difficulties to transform their results into new commercial applications. This is often due to the lack of subsequent financing. Therefore, we argue that selling and/or subsequent of refinancing for a promising but not yet risk-free research could be done much easier if a community of private finance institutions with a developed specialization in innovation financing would be encouraged to emerge. Research and innovation projects would go over several rounds of financing with the use of flow-through share issuances.

Our next argument is concerned with discipline private finance could impose on researchers just as it does on explorers in the mining industry. We argue that researcher's motivation in progress with regard to his or her project will increase as this will likely be one of the requirements for additional funding by finance groups. It may also streamline researchers' activities on projects or research findings with the highest potential for applicability and marketing based on establishing a sequence of targets upon which flow-through share issuances could occur.

Lastly, we argue that private business may be more efficient distributor of research money than the government is. While now there is only one government agency or few at best responsible for assigning research grants, there may eventually be hundreds of private companies willing to invest in research and innovation. We like to think about this difference as that the government has only few eyes looking at a large number of research projects from all sorts of fields while implying that the necessary expertise to identify a quality project in such a scenario may be limiter. On the other, a developed finance sector could provide room for specialization. Individual finance companies could develop various expertise, so that the likelihood, that a quality project will be omitted for lack of knowledge by those assessing it, may be substantially reduced as researchers can always address more

than one company. As Rick Sutin explains, a system based on flow-through shares would stop the government from picking the winners and would give private sector investors a tax incentive to make those choices and take those risks (see Appendix B).[22]

From the government perspective, on one hand, it incurs an expense by foregoing tax that would otherwise be paid by investors. However, on the other hand, the government recoups tax revenues from the recipients of the expenditures that would otherwise not have been made without this program and on the subsequent sale of shares, as the tax cost of shares is reduced to zero in the hands of the investors.[22]

13. Conclusion

We have seen that innovation can be useful and beneficial in every corner of the economy, from healthcare to biotechnology. Innovation is beneficial not only to business but also society as a whole. It can stimulate growth, create new markets, and lead to increased GDP and leadership in the related industry. As important as innovation is in this current world market, Canada still lags behind. We do not have the competitive edge over other countries that we have in the mining industry. Something must be done.

Investment in innovation companies in Canada is hampered by financial challenge very similar to the situation before the flow-through shares were introduced to encourage natural resource exploration. This is a major reason for Canada's poor position in the world innovation industry. Introducing flow-through shares to finance innovation companies could result in the same success that marked its use in natural resource exploration. The introduction of flow-through shares will encourage investment in new innovation.

What is more, the introduction of flow-through shares as a tool for financing research and innovation will necessarily be accompanied by gradual creation of experienced and knowledgeable finance sector that will not only provide high-skilled jobs to the Canadians, but it may also function as a magnet to research and innovation companies from abroad. Professional services of private finance companies may encourage foreign technology firms to locate their research centers in Canada just as we see in the mining industry. This may ultimately reverse the current negative trend of technology transfers from Canada to other countries which effectively undermines Canada's competitive edge.

14. Glossary

1) Canadian Exploration Expenses (CEE): also known as qualifying expenses, specific expenses of a Canadian natural resource company that can be deducted 100% for tax purposes by the purchasers of flow-through shares.[1]

2) Capital Gains: profit from the sale of assets, as shares.

3) Capital Gains Tax: The tax applicable to gains realized from the sale of capital assets, including stocks. The capital gains tax rate and holding period requirements are periodically changed by government. A favorable tax rate is generally applied to realized gains on assets that are sold following a holding period of over one year. Realized capital gains on assets held a year or less do not generally receive favorable tax treatment.

5) Creative Destruction: Occurs when something new kills an old thing. A great example of this is personal computers. The industry, led by Microsoft and Intel, destroyed many mainframe computer companies--but in doing so, entrepreneurs created one of the most important inventions of this century.

6) Discriminatory Tax Policy: A tax policy that displays partiality.

7) Domestic Export: Is equal to total exports minus re-exports. Therefore, they include all exports that are not re-exports (foreign goods exported in the same state as previously imported, from the free circulation area, premises for inward processing or industrial free zones, directly to the rest of the world and from premises for customs warehousing or commercial free zones, to the rest of the world).

8) Double Taxation: Taxation of the same income twice by the same taxing authority. It is generally used to refer to the taxation of dividends that are taxed once at the corporate level (as income before dividends are declared) and again at the personal level (when the dividends are received).

9) Expansionary Macroeconomic Policies: A macroeconomic policy used to increase aggregate demand. Such policies include increasing money supply, increasing government spending and decreasing taxation

10) Flow-Through Share: A type of common share that offer tax benefits to their purchaser/investor. These tax benefits, passed on from the resource company (the issuer), allow the investor to claim up to the subscription amount as a deduction on his/her tax return. Investors are allowed to apply tax credits to income from employment, business, or property.

11) Gestation: The time period before a new investment project starts generating income/return.

12) Grass Root Exploration: Refers to exploration expenses for mining of metals and minerals, not for extraction of oil and gas.

13) Greenfields Exploration Companies: Broadly speaking, there are two categories of exploration, commonly referred to as greenfield exploration, and brownfield exploration. Greenfield exploration focuses on finding minerals in previously unexplored areas or in areas where gold is not already known to exist.[32]

14) Holding Period: The real or expected period of time during which an investment is attributable to a particular investor. In a long position, holding period refers to the time between an asset's purchase and its sale. In a short sale, the holding period is the time between when a short seller initially borrows an asset from a brokerage, and when he or she sells it back - in other words, the length of time for which the short position is held.

15) Information Asymmetry: Deals with the study of decisions in transactions where one party has more or better information than the other. This creates an imbalance of power in transactions which can sometimes cause the transactions to go awry.

16) Innovation: A new way of doing something. It may refer to incremental, radical, and revolutionary changes in thinking, products, processes, or organizations. It is distinct from invention in that the ideas have been applied successfully.

17) Innovation Company: A company that helps inventors turn their inventions into innovations. See definitions for innovation and invention.

18) Innovative Company: A company that displays an "innovative culture, deep customer understanding and focus, and is market focused."[33] Innovation, however, is not their core business. For example, a company with a well developed product research and development department is considered an innovative company.

19) Innovation Recession: A dramatic decline in research and development in relation to previous years.

20) Internal Equity: Equity or financing raised from sources within the company or firm.

21) Invention: Creation of a new configuration, composition of matter, device, or process. Some inventions are based on pre-existing models or ideas. Other inventions are radical breakthroughs which may extend the boundaries of human knowledge or experience. The ideas have not yet been successfully applied.

22) Junior Exploration Companies: An exploration company that looks for new deposits of natural resources. See definition for natural resource.

23) Limited Partnership: A form of partnership similar to a general partnership, except that in addition to one or more *general partners* (GPs), there are one or more *limited partners* (LPs). It is a partnership in which only one partner is required to be a general partner.

24) Liquidation: The process by which a company (or part of a company) is brought to an end, and the assets and property of the company redistributed.

25) Liquidity: A business' ability to meet its payment obligations, in terms of possessing sufficient liquid assets, and to such assets themselves.

26) Moral Hazard: A party insulated from risk may behave differently from the way it would behave if it were fully exposed to the risk.

27) Natural Resource: Naturally forming substances that are considered valuable in their relatively unmodified (natural) form.

28) Payback Period: The period of time required for the return on an investment to "repay" the sum of the original investment.

29) Private Placement: A direct offering of securities to a limited number of sophisticated institutional investors. Quoted on the stock exchange?

30) Re-Export: Foreign goods exported in the same state as previously imported, from the free circulation area, premises for inward processing or industrial free zones, directly to the rest of the world and from premises for customs warehousing or commercial free zones, to the rest of the world.

31) Reductive Innovation: Innovation that aims at reducing the cost of goods and services.

32) Risk Premium: The expected rate of return above the risk-free interest rate. When measuring risk, a common sense approach is to compare the risk-free return on T-bills and the very risky return on other investments. The difference between these two returns can be interpreted as a measure of the excess return on the average risky asset. This excess return is known as the risk premium.

33) Short-Termism: The excessive focus on short-term returns in the financial sector.

34) Spin-Off Company: A new organization or entity formed by a split from a larger one, such as a television series based on a pre-existing one, or a new company formed from a university research group or business incubator.

35) Strategic Renewal: The act of dynamically adjusting business models and strategies to the deep changes at work in the external environment. Also, it can be defined as creative reconstruction.

36) Super Flow-Through Share (Mineral Exploration Tax Credit): An additional tax incentive to flow-through shares prompted by the federal government. This includes a 15% federal tax credit for grass root exploration, plus provincial or territorial deduction and tax credits.

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17. Appendices

Appendix A: Flow-Through Shares (Line A) and Super Flow-Through Shares (Line D and E) 2008 Amounts[4]

"Super" Flow-Through Shares

After-Tax Cost of a $1,000 Investment by an Individual Investor by Province in 2008
(based on existing and proposed legislation, as well as administrative positions, as of June 30, 2008)

	Notes		Quebec	B.C. (Note 7)	Manitoba	Sask.	Ontario	Nova Scotia	P.E.I.	New Brunswick	Nfld. & Labrador	Northwest Territories	Yukon	Nunavut	Alta.
Combined federal/provincial tax rate		A	48.22%	43.70%	46.40%	44.00%	46.41%	48.25%	47.37%	46.95%	45.00%	43.05%	42.40%	40.50%	39.00%
Federal tax rate		B	24.22%	29.00%	29.00%	29.00%	29.00%	29.00%	29.00%	29.00%	29.00%	29.00%	29.00%	29.00%	29.00%
Provincial tax rate		C	24.00%	14.70%	17.40%	15.00%	17.41%	19.25%	18.37%	17.95%	16.00%	14.05%	13.40%	11.50%	10.00%
Federal tax credit		D	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
Provincial tax credit		E	-	20%	10%	10%	5%	-	-	-	-	-	-	-	-
Amount of investment		F	$ 1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Less: tax benefit of deduction of flow-through investment – federal		FxB	(242)	(290)	(290)	(290)	(290)	(290)	(290)	(290)	(290)	(290)	(290)	(290)	(290)
Less: tax benefit of deduction of flow-through investment – provincial	(2)	FxC	(360)	(147)	(174)	(150)	(174)	(193)	(184)	(180)	(160)	(141)	(134)	(115)	(100)
subtotal			(602)	(437)	(464)	(440)	(464)	(483)	(474)	(470)	(450)	(431)	(424)	(405)	(390)
Less: 15% non-refundable federal investment tax credit	(1)	G=F(1-E)xD	(150)	(120)	(135)	(135)	(143)	(150)	(150)	(150)	(150)	(150)	(150)	(150)	(150)
Less: provincial tax credit	(3)	H=ExF	-	(200)	(100)	(100)	(50)	-	-	-	-	-	-	-	-
Add: income tax on inclusion of federal tax credit in 2009	(4)	GxA	36	52	63	59	68	72	71	70	67	65	64	61	59
Add: income tax on inclusion of provincial tax credit		HxA	-	87	46	44	23	-	-	-	-	-	-	-	-
			(716)	(618)	(590)	(572)	(568)	(561)	(553)	(550)	(533)	(516)	(510)	(494)	(481)
Net cost of $1,000 investment in flow-through shares	(5),(6)		$ 284	382	410	428	432	439	447	450	467	484	490	506	519

Notes

(1) The federal government allows a credit of 15% of qualifying expenditures incurred (or deemed incurred under the "look-back" rule) before December 31, 2008, for the purposes of the 2008 tax year.
(2) The province of Quebec deduction is 150%.
(3) Provincial tax credits reduce the amount of expenditures qualifying for the federal tax credit.
(4) In the case of Quebec, the formula is "GxB" since the federal investment tax credit is not taxed in Quebec.
(5) Capital gains tax applicable when the shares are sold is ignored – the cost of the shares sold will be nil, therefore capital gains tax applies to 50% of the sales proceeds.
(6) Alternative minimum tax is ignored in this analysis.
(7) BC has an enhanced credit of 30% for projects in prescribed Mountain Pine Beetle affected areas.

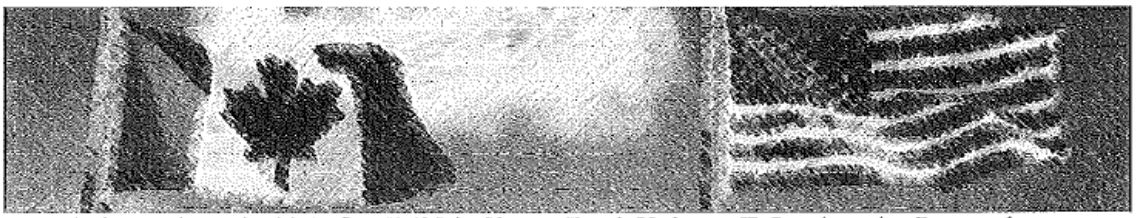
Assumptions

- Taxpayers are subject to income taxes at top marginal rates.
- Canadian exploration expenses are 100% eligible for federal and provincial tax credits.
- Available tax deductions are taken in full.
- Exploration expenditures are made in the applicable province and the taxpayer is a resident of that province for tax purposes.

Appendix B: Flow-Through Shares for Cleantech and Biotech in Canada

The Cross-Border Biotech Blog

- Front Page
- About the Authors
- Biotech Bailout Page
- Trends in 2009



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Flow-Through Shares for Cleantech and Biotech in Canada

May 29, 2009 · Leave a Comment

Rick Sutin, a partner at Ogilvy Renault (my home-away-from-home), has a post up at Cleantech in Canada singing the praises of flow-through shares.

So far, the flow-through program in Canada has been available (mainly) to resource exploration and development companies, but we have been arguing for a while that the program would be ideal for Cleantech and Biotech as well.

Why? See if any of these points sound familiar to a Biotech audience:

1. Success comes from discovery and development programs, and relies on large amounts of high risk venture capital where revenues are uncertain and remote; flow-through shares filled the gap for resource exploration by providing venture capital at premium valuations through the public markets.
2. Flow-through shares have made Canada's capital markets the recognized global leader in resource finance and home to more resource companies than any other country in the world. The Canadian industry now develops and attracts the top resource management talent in the world.
3. Government participates not by picking potential winners, but by giving private sector investors a tax incentive to make those choices and take those risks.

Here's how flow-through shares work:

> A company that issues flow-through shares must spend the proceeds on qualifying expenditures in Canada. The expenditures are then renounced by the issuer to its investors, who can treat the expenditures as if they made them themselves.

How does it look from government's perspective?

> The government incurs an expense by foregoing tax that would otherwise be paid by the investors. However, the government recoups tax revenues from the recipients of the expenditures that would otherwise not have been made without this program and on the subsequent sale of shares, as the tax cost of shares is reduced to zero in the hands of the investors.

This is one of the few government programs that has successfully run for 20 years, contributing to Canada's dominance in a significant sector without any problems or abuse.

A good deal all around.

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1 Votes

Categories: Jeremy Grushcow
Tagged: biotech, biotechnology, Canada, Cleantech, flow-through

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