Deloitte.

Submission to the Expert Panel Conducting the Review of Federal Support to Research and Development

Recommendations of Deloitte & Touche LLP
February 18, 2011

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Private and confidential

February 18, 2011

Mr. Thomas Jenkins, Chair
The Expert Panel Conducting the Review
of Federal Support to Research and Development
c/o 1200-270 Albert Street,
Ottawa, Ontario, K1A 5G8

Dear Sir:

Introduction

Deloitte is pleased to make this submission to The Expert Panel Conducting the Review of Federal Support to Research and Development. The government is reviewing the federal support for business R&D to see how this support could be enhanced to ensure that federal investment in R&D is effective and delivers maximum results.

In this submission, we will focus on the issues raised in question 10 of the Expert Panel Consultation paper focusing on the SR&ED program. We have extensive knowledge and experience with the SR&ED program through our interaction with many of our clients who utilize the program, our involvement with previous consultations including the CRA-Industry joint initiatives starting in 1997, as well as published research on the relevant legislation and administrative policies. In 2008, we were commissioned by Montreal International and the Toronto Region Research Alliance to undertake a survey to examine R&D issues and the role that the SR&ED program plays in fostering research spending by large firms. We believe that this study is important in understanding the rationale for R&D investment by large firms. It is attached as Appendix 1.

As the nation's largest tax practice, Deloitte is committed to helping shape the tax policy that will create a globally competitive and innovation-friendly economy. This commitment is made real through direct communication with key government committees, policy makers, our clients and the public at large. Our Future of Tax website[1] is our vehicle for engaging Canadians in a discussion on the role of tax policy in influencing the future of Canada.

[1] http://www.deloitte.com/view/en_CA/ca/services/tax/future-of-tax/index.htm

As a part of our commitment, we have made previous submissions to the government on the SR&ED program including:

- "Tax Incentives for Scientific Research and Experimental Development"[2];
- Letter of October 22, 2010 presenting tax policy recommendations[3] to the Minister of Finance in anticipation of Budget 2011; and
- Submission to the CICA Tax Policy Committee.

These papers are attached as Appendices 2-4 inclusive.

The SR&ED Program

The Role of Government in Stimulating R&D

The government has recognized the importance of Science and Technology to the Canadian economy and the role that the government has to play in ensuring a competitive marketplace and fostering an investment climate that encourages private sector investment in R&D in its 2007 publication entitled *"Mobilizing Science and Technology to Canada's Advantage"*.[4]

In a global economy, countries are competing for investment and incentives are necessary for Canada to remain attractive to foreign investors. Global investors demand progressive strategies, including R&D incentives, to invest in Canada. Canada has many attractive features including a strong economy, a good standard of living, a highly educated workforce and low income tax rates. However there are other factors where we are less competitive and which may lead investors to locate in more attractive jurisdictions. Our high labour rates and our high dollar make us an expensive place to do business. Government incentives that reduce the cost of performing R&D in Canada are important in maintaining a competitive profile. Canada was once a leader in the implementation of R&D incentive programs; however, more than 30 countries now have substantial tax incentive programs related to R&D and most countries have some form of R&D support.

Business requires government support to invest in the technologies that will build our future. It is crucial that the R&D incentives that are currently available in Canada be maintained and improved in order that industry continues to invest in R&D and drive innovation.

Our Response to your Consultation Questions on the SR&ED Program

1. *Does the current structure of the SR&ED credit encourage incremental investment in R&D? Does it free up capital to invest in other aspects of innovation activities to the firm? Does this vary by size of ownership, sector or nationality of firm?*

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[2] *Tax Incentives for Scientific Research and Experimental Development", Submission to the Honourable Jim Flaherty, Minister of Finance and The Honourable Gordon O'Connor, Minister of National Revenue, Recommendations of Deloitte & Touche LLP,* November 29, 2007
[3] *Deloitte's comments: Budget 2011-Tax Policy Issues for consideration, Letter to the Department of Finance.* This can be viewed *http://www.deloitte.com/view/en_CA/ca/services/tax/dc23a74b1d4eb210VgnVCM2000001b56f00aRCRD.htm*
[4] *"Mobilizing Science and Technology to Canada's Advantage"* Industry Canada (Ottawa, 2007)

We believe that the current SR&ED Program is effective in encouraging incremental R&D investment. This is based on the following:

- As set out in the Expert Panel Consultation Paper, numerous studies and analyses have evaluated the positive impact of direct and indirect government support for R&D including the federal government's own analysis.
- The results of the survey of large performers conducted for Montreal International and the Toronto Region Research Alliance and attached as an Appendix 1.
- Our years of experience with our clients who are claiming under the program, many of whom spend every dollar received under the program on incremental R&D spending

The SR&ED program allows all taxpayers to access the program and to choose where to invest their R&D dollars. This universality of access is one of the key characteristics of the SR&ED program. Furthermore, it is the undertaking of SR&ED that matters. Success or failure of the work undertaken is not a criterion. This allows companies the freedom to take risks on new unproven technologies and encourages innovation. Both of these features recommend the SR&ED program over direct grants and incentives that are targeted to specific industries or technologies and require applicants to demonstrate economic benefits.[5]

However, we don't believe that the program is effective for all large companies performing R&D. For example, the benefits of the program are eroded for Canadian subsidiaries of U.S. companies by the U.S. foreign tax credit legislation. In this case, the benefits of the program only represent a timing difference to the Canadian company as they are clawed back when dividends are paid to their U.S. parent. This is a major issue as Statistics Canada reports that 26 per cent of corporate profits and 30 per cent of revenues in Canada were earned by foreign companies in 2007.

In addition, as the incentives are treated as reduction of tax for accounting purposes rather than a reduction of the costs to which they relate, the benefits of the program are invisible to the R&D performer. Some, but not all, companies reallocate the R&D incentives to the R&D performer for budget purposes.

What is the impact of these issues on the effectiveness of the program in stimulating additional R&D investment? *The survey conducted by Deloitte for Montreal International and the Toronto Research Alliance found that 58% of the large companies interviewed factor the SR&ED incentives in making their investment decisions.* It should be noted that the survey was significant in that it covered 43 companies in Ontario and Quebec in the advanced manufacturing, information communication technology and pharmaceutical sectors. The companies surveyed are estimated to be responsible for 25% of all R&D expenditures in Canada and 15% of all R&D personnel in Canada. The employment number includes only direct employment and the percentage would be

[5] Natan Aronshtam and Joanne Hausch, *Innovation and the SR&ED Program,*to be published in the Canadian Tax Foundation in Report of Proceedings of the Sixty-Second Tax Conference, 2010 Conference Report (Vancouver: Canadian Tax Foundation, 2010)."

higher if subcontractors to these entities were included. Seventeen of the companies interviewed are ranked in the top 50 Global companies by R&D investment.

We believe that the SR&ED program can be more effective and the percentage of companies using the SR&ED incentives to stimulate additional R&D investment can be increased by introducing full of partial refundability of SR&ED investment tax credits earned. While the SR&ED program offers tax credits at a generous rate, "for Canada to stay competitive and maintain and create quality employment opportunities for an educated work force, it is essential that we enhance the economic impact of our SR&ED incentives. We recommend that the investment tax credit become partially refundable as it is in many countries and in certain provinces of Canada. Currently, only Canadian-controlled private corporations (whose income does not exceed the specified limit) may claim a refundable credit. Expanding the refundable credit to all businesses would appropriately reward the risks inherent in carrying out SR&ED in Canada. This would send a strong message to foreign companies seeking appropriate sites for new investment opportunities.

Refundability enhances predictability regarding timing of the benefits particularly for companies that are not currently paying tax. This will have positive impact on investment decisions as investors can clearly see the matching of risk and reward. This is particularly relevant to US-based multi-national enterprises for which the interplay of the Canadian and US tax regimes makes a non-refundable credit less relevant. From an accounting perspective, a refundable credit is preferable as it is considered an increase in EBIT (reduction in cost). In terms of the delivering the refunds, different models may be considered. For example, refunds could be withheld pending review and assessment. Alternatively, refunds could be issued after a certain time period has elapsed and the tax credits have not been used to reduce taxes payable"[6] (similar to the rules in France.). Another model would deliver the refunds through payroll tax offsets. For a more detailed analysis of our comments on the effectiveness of the program and our recommendation on refundability, see the paper entitled "Innovation and the SR&ED Program" attached as Appendix 5.[7]

2. *What are the strengths and weaknesses of the refundable portion of the SR&ED tax credit for Canadian-controlled private corporations and to what extent does it encourage growth and commercial success of the program?*

We believe that the current program is effective in encouraging growth in the corporations that can access the enhanced rate of investment tax credits and refunds. We applaud the federal government for increasing access to the program in the 2008 Budget. However, we would note the one of the stated goals for the program is to assist small business to perform SR&ED. Although small companies are innovative, the support for commercialization that drives productivity often comes from larger companies. We therefore recommend that the enhanced rate, refundable tax credits be available to all

[6] Andrew Dunn, Albert Baker, Natan Aronshtam , submission -*CICA Tax Policy Committee Background Paper* dated February 7, 2011.
[7] Supra note 5

corporations, not just Canadian-controlled small business. In addition, many companies must balance their business growth objectives with the limits on taxable income and taxable capital that are necessary to retain their eligibility for the high rate refundable incentives. Our recommendations would eliminate the need to make business decisions that are driven by the tax rules.

3. *Bearing in mind the improvements being made by the Canada Revenue Agency, are there additional opportunities for change to simply the administration of the SR&ED tax credit and to facilitate the application process?*

   For our views on the administration of the SR&ED program, please see our paper to the Canadian Tax Foundation included as Appendix 5. We do note that there is a forthcoming report of the Office of the Taxpayer's Ombudsman on the administration which should be considered in your deliberations.

Conclusion

We believe that Canada requires an innovation-friendly economy and that the tax regime is a powerful instrument for bringing this about. Innovation requires entrepreneurs, competitive R&D incentives, a willingness to invest in emerging companies and other measures to support development of the world-class businesses that will drive Canada's economic growth.

The Canadian economy has fared well relative to many other industrialized nations. One factor in the past has been the strength of the Canadian resource industry. However it becomes crucial for our future economic development to rely more on our ability to create knowledge and to enhance productivity through innovation. This will benefit all sectors and enable Canada to become a net exporter of related technologies. The wealth created through technical innovation will ensure that future generations will compete globally.

In this submission we confirm our support for enhancements to the SR&ED program to encourage foreign and domestic investment in R&D, and improvements in delivery of incentives to provide certainty to investors.

The outcome of these consultations has the potential to radically improve Canada's SR&ED tax incentive program. We recommend that action be taken now to reshape the SR&ED program to provide more effective tax incentives to R&D performers. This will stimulate additional R&D in this country creating the proven spill over effects to the economy.

Yours very truly,

Natan Aronshtam
Partner and Global Managing Director,
Global R&D and Government Incentives
Deloitte & Touche LLP

Deloitte.

The View From Here

Global R&D Leaders Speak Out on Canada's Scientific Research & Experimental Development Program

Version 7 Final Draft Nov 29, 2008

Funded By:

MontrealInternational

TRRA
TORONTO REGION RESEARCH ALLIANCE

Appendix 1

THE VIEW FROM HERE

Global R&D Leaders Speak Out on Canada's Scientific Research & Experimental Development Program

Executive Summary

This study was commissioned by two leading economic development organizations in Canada – Montreal International and the Toronto Region Research Alliance – and conducted by Deloitte, one of Canada's largest accounting firms. The main purpose of the study was to ascertain how best to maximize the benefits of the Scientific Research & Experimental Development (SR&ED) federal tax incentive for multi-national companies operating in Canada. SR&ED is Canada's major support for R&D in this country. According to Statistics Canada, in 2007, about 15,000 companies made SR&ED claims and accounted for $16 billion dollars of research. About half of this is spent by the 4% of companies with revenues over $100 million – most of whom are either Canadian-based or foreign-based multi-nationals. This is the first time that a study regarding SR&ED has solely focussed on these larger firms.

In the first part of 2008, Deloitte conducted in-depth interviews with 43 prominent multi-nationals operating in Quebec and/or Ontario. Seventeen of the respondent companies are among the world's top 50 R&D spenders. Deloitte found that 39 of the survey respondents applied for SR&ED tax credits. Deloitte further found that there were a number of ways that the federal government could follow to maximize the impact of the tax incentive approach. There were two main areas of comment:

- Improve the administration of the SR&ED program and the 2008 federal budget addressed this aspect.
- Introduce refundability to all companies instead of only a tax credit for large public and foreign-owned companies.

Currently, refundability is limited to smaller, Canadian-controlled private corporations.
Respondents pointed out that full refundability would help Canada's competitive positioning by creating incentive certainty and helping to avoid tax credit claw-back in some cases. It also would help where companies use EBIT calculations when evaluating world-wide R&D site decisions.

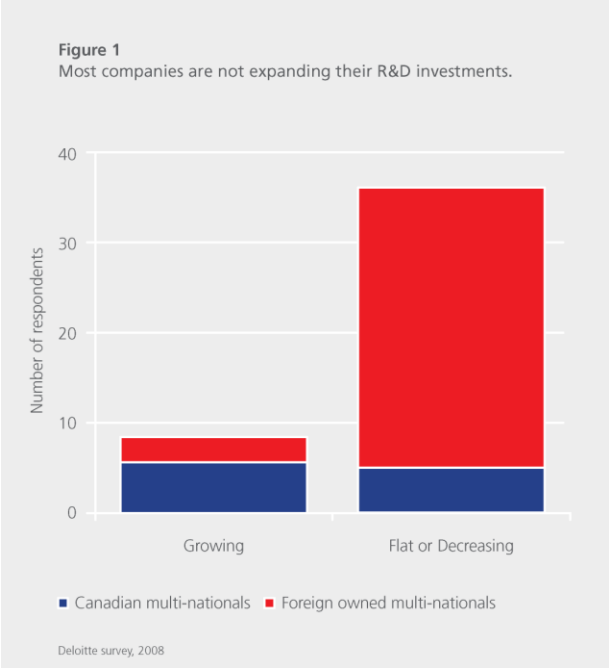
The detailed results of the study are being shared with the Governments of Quebec, Ontario and Canada as a service to them to help in their deliberations on how best to encourage the long-term, sustained development in this country of the advanced industrial sectors that greatly depend on R&D.

Amid Threats, Opportunity

While Canada has a legacy of success in securing R&D investment from large multinational organizations, today that legacy is at risk. Companies with large R&D budgets are facing pressures unlike any they have encountered before, and they're already making decisions that hold significant long-term implications for Canada's R&D environment. Additionally, a convergence of global economic factors—fluctuating global currency rates, the credit crisis, rising prominence of China and India, to name a few—add an element of uncertainty to any discussion of global corporate investing. In short, the landscape is changing before our eyes.

Montreal International and the Toronto Region Research Alliance are intimately involved in the innovation system and the economic development potential of a strong R&D presence by the private sector. Comments made to each organization by large companies over the past few years has led both organizations to be concerned enough to commission a special study focusing just on large multi-national companies operating in Quebec and Ontario in research-intensive industries. The two organizations jointly commissioned Deloitte to undertake a special confidential survey to examine R&D issues and the role that the Scientific Research and Experimental Development tax incentive (SR&ED) program plays in fostering research spending by large firms.

What issues have the greatest impact on R&D investment today? The companies surveyed spoke in unison on this point: cost and talent are the foundation for any discussion on R&D. Of course, cost and talent have always loomed large in R&D decision making. The difference today is that the range of options available to companies grappling with these issues has expanded greatly in a short amount of time. There is a thriving global marketplace for talent—and R&D talent is no longer limited to the same handful of advanced countries. India, China and Eastern Europe have emerged as places where excellent R&D talent can increasingly be found—at extremely competitive prices.



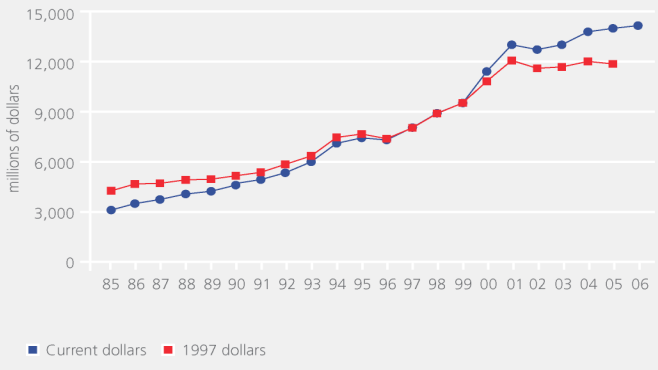
Largely due to explosive global competition and the rise of the Canadian dollar, Canada is now considered a high-cost R&D performer. And our traditional competitors (France, the UK, the U.S., Germany, and Japan), facing the same pressures, have worked to enhance their appeal to major R&D investors.

In the midst of all these factors, there are growing warning signs indicating that action is required now to defend Canada's position in the global R&D market. One unexpected finding from the survey is that Canada will likely struggle to retain even the current level of R&D investment from multi-national companies. *Only 16 per cent of the companies interviewed are increasing their R&D spending in Canada*—and most of those that are increasing spending are only doing so at a marginal pace. What will happen when current product lifecycles reach their end? The R&D challenge for Canada is not around the corner. It is now.

Appendix 1

Whether Canada responds to these changes in a manner that positions the country for future success is the problem that this report was created to help address. Canada has adopted a tax incentive approach specifically targeting R&D, as the main financial part of its strategy to become a leading center of innovation. Canada's Scientific Research and Experimental Development (SR&ED) tax incentive program is viewed as playing a significant role in attracting R&D investment from companies around the world. SR&ED is the linchpin of the Canadian government's financial support for R&D. Also, research by staff at Finance Canada indicates that overall, SR&ED creates a gross economic gain of $1.11 for every dollar spent.[1] But is it having the largest impact possible? What do the companies that are most important in Canada's quest to become a global innovation powerhouse say about the program? These are the important questions the survey was conducted to answer.

Figure 2
R&D investment in Canada is flattening



Source: Statistics Canada, "Industrial Research and Development: Intentions," 2006.

Inside are findings from a survey with some of the leading R&D organizations in the world—companies that already help define Canada's R&D landscape today. These organizations spent more than $4 billion on R&D in Canada in 2007 alone—fully one quarter of the overall amount of R&D spending performed in Canada. The companies surveyed employ more than 21,000 R&D personnel here—a figure that does not include the subcontractors and third parties whose employment relies on R&D spending. Their insights were always challenging—and frequently surprising.

Here's what was found.

Survey Sample at-a-Glance
(See Appendix 1 for more details)

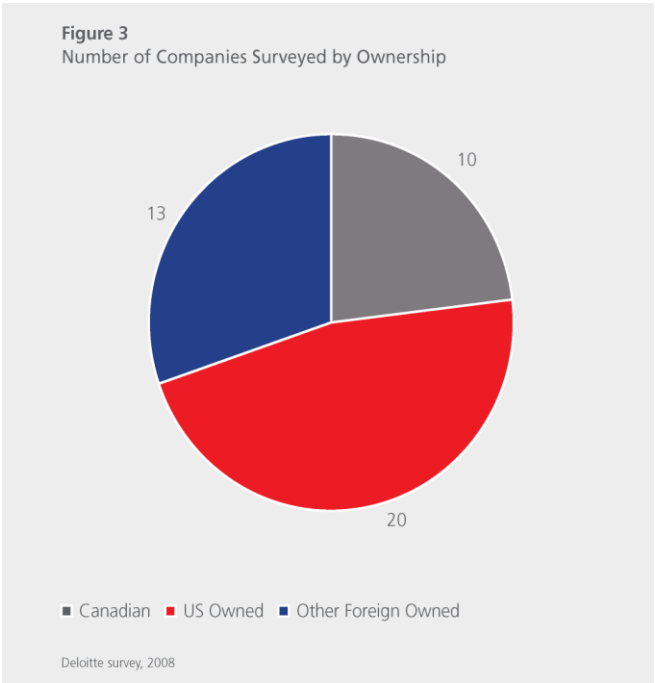
Sectors

- Advanced Manufacturing: 15
- Information Communication Technology: 20
- Pharmaceutical: 8
- TOTAL: 43

Study covered:

- Companies responsible for 25% of all R&D expenditures in Canada
- Companies responsible for 15% of all R&D personnel in Canada
- 17 of the top 50 global companies ranked by R&D investment

Figure 3
Number of Companies Surveyed by Ownership



Deloitte survey, 2008

1 M. Parsons and N. Phillips (2007), "An Evaluation of the Federal Tax Credit for Scientific Research and Experimental Development," Department of Finance, Working Paper 2007-08. Copies of Department of Finance. Working papers can be requested at www.fin.gc.ca/access/wpliste.html

The High Cost of Doing Business

Canada is considered a high-cost location for R&D. While the recent drop in the value of the Canadian dollar has moderated longer-term trends, theis country's currency still sits much higher than when most international research location decisions were made for current operations. Between 2002 and early 2008, the Canadian dollar rose 58 per cent (now sits closer to 36%). As one of our interviewees stated, "Canada is only marginally cheaper than the U.S. to perform R&D."

Compared to the rising stars of the global R&D marketplace, the portrait that emerges is even bleaker. Anecdotal evidence indicates that the "fully loaded" cost for a Canadian engineer is over three times more costly than that of an engineer in China or India. Framed another way, that's about the cost of an engineer in Germany or a medium-cost U.S. state such as Texas.

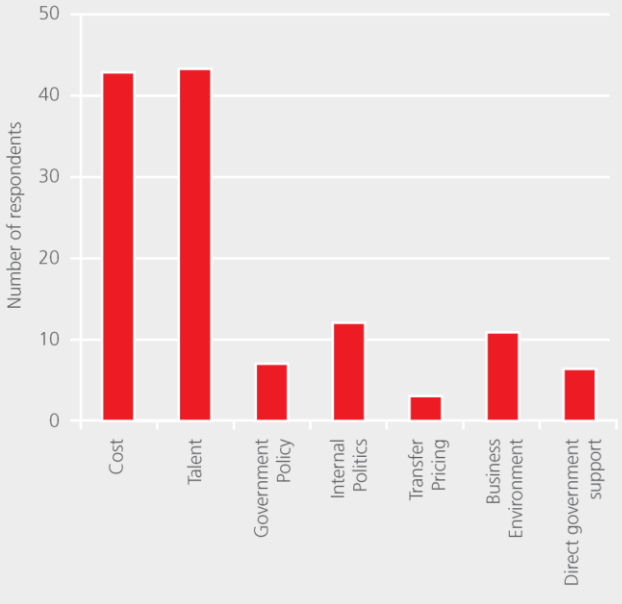
While most major R&D investments in Canada come from large multi-national corporations based elsewhere, even companies headquartered in Canada appear willing to outsource R&D activities to other lower-cost locations in light of the extraordinary pressures to minimize costs.

In short, the companies surveyed are constantly examining new ways to shave costs from their R&D expenses, and location is a major consideration in those calculations. In the past, their location choices were limited to a relatively small set of comparable advanced countries that had the specialized talent required for R&D—a set that included Canada. As you will see, this is rapidly changing.

"When I ran global R&D for a major multi-national, when one took into account the exchange rate on the Canadian dollar and the tax incentives available, Canada was at least 50% cheaper than any other alternative. This is no longer true."

—from executive interviews

Figure 4
What most influences R&D investment decisions?



Deloitte survey, 2008. Multiple responses allowed.

Talent–and Other Battlegrounds

While talent was not the focus of the survey, the frequency with which it appeared in the study as a major issue bears some discussion here. Canada continues to be an excellent source of talent, fueled by a strong university and college system. But simply having a steady supply of great talent isn't enough to attract R&D investment. Countries such as India and China are making tremendous strides in terms of talent, with huge gains in the availability of highly skilled workers. And while many companies are already entrenched with highly specialized Canadian talent, for some of them this expertise will only remain relevant for another three to five years as their product plans evolve. This means that Canadian R&D talent isn't necessarily protected, especially when it comes time to bid on the next generation of technology. One consequence of losing R&D investments to other countries is losing talent—a trend that is exceedingly hard to reverse.

In addition to talent, there are a host of other complex issues guiding R&D investment. For 15 of the companies interviewed, there are industry-specific challenges—in the pharmaceutical industry, for instance, government policy (on intellectual property issues, pricing, patent protections, and the like) are at least as important as cost and talent, if not more so.

Internal politics can also have a major impact on R&D spending patterns. Within huge multinational R&D organizations, individual units often spar among one another for slices of the R&D budget. In R&D, the home-court advantage can also be strong, leading companies to invest R&D dollars where they are most comfortable.

The *availability of direct government support* is another important issue for many R&D decision makers—many of whom (seven of 43) cited the loss of the Technology Partnerships Canada (TPC) program.

Many companies (11 of 43) spoke of the importance of *business environment issues*—clusters of similar companies, proximity to customers, etc.—in determining R&D investments.

For several of these extremely large organizations, *transfer pricing*—the pricing of contributions within an organization—is also emerging as a major issue. The Canada Revenue Agency's aggressive stance on transfer pricing appears to have had a chilling effect on R&D investment in some cases.

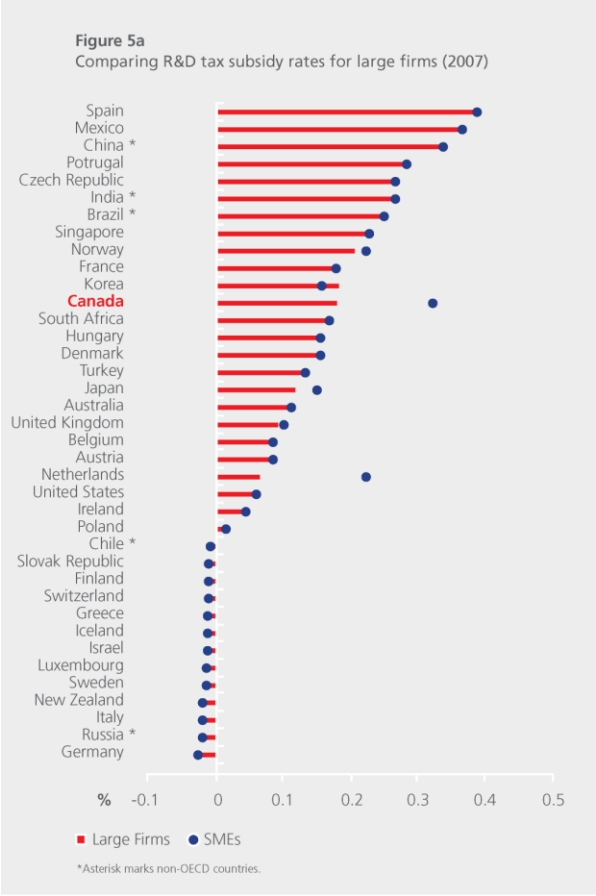
Appendix 1

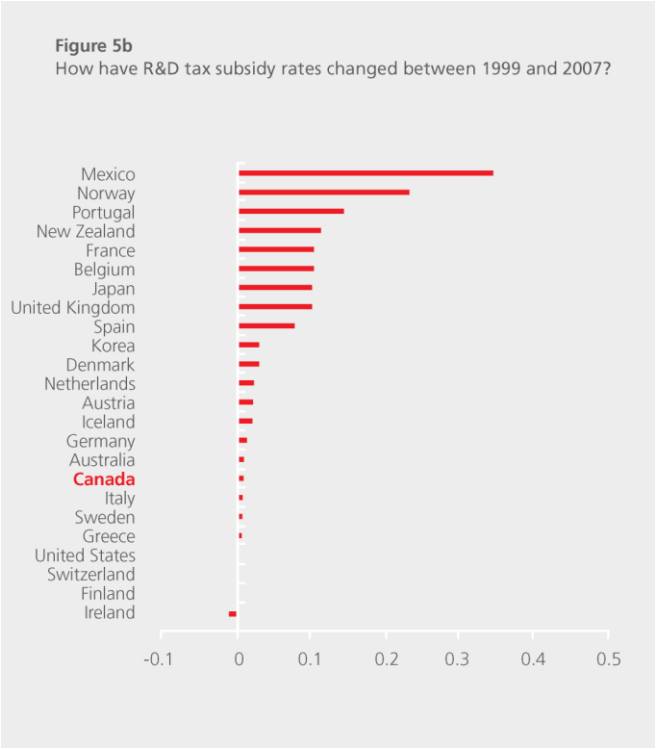
On the Global Stage

Countries are increasingly turning to tax incentives like Canada's SR&ED program to influence R&D investment decisions. Today, global competition for R&D using tax incentives has markedly increased, with 37 countries now boasting established R&D tax incentive regimes, the newest of these being China, New Zealand, and South Africa. There are simply more serious contenders for global R&D spending than ever before—and there are more on the way. Not only have these new entrants to the R&D world crafted innovative new incentive programs, they have the added benefit of a growing, skilled workforce—something that in many cases they did not have even ten years ago. All of this has contributed to erosion in Canada's global standing among countries with major R&D infrastructures.

In response, longtime competitors such as France, the U.S. (especially at the state level) and the UK have all enhanced their tax incentive offerings. In this environment, no one is sitting still. Canada, always considered to be a serious player in R&D investment, must work harder than ever before to protect—much less expand—its share of the market.

In 2003, Canada offered the most favourable treatment for R&D of any G7 nation—today it is second, behind France. According to the Organisation for Economic Co-operation and Development (OECD), Canada has slipped to 12th place among the countries it tracks in its support for large companies, from 4th in 2002. The 2008 federal budget included no new major tax support improvements for multi-national organizations performing R&D in Canada. Our tax incentive program is no longer a clear advantage to Canadian performance in the global race for R&D investment. It should be noted that other analyses by Finance Canada using different methodolgies put Canada in a better light than does the OECD analysis.





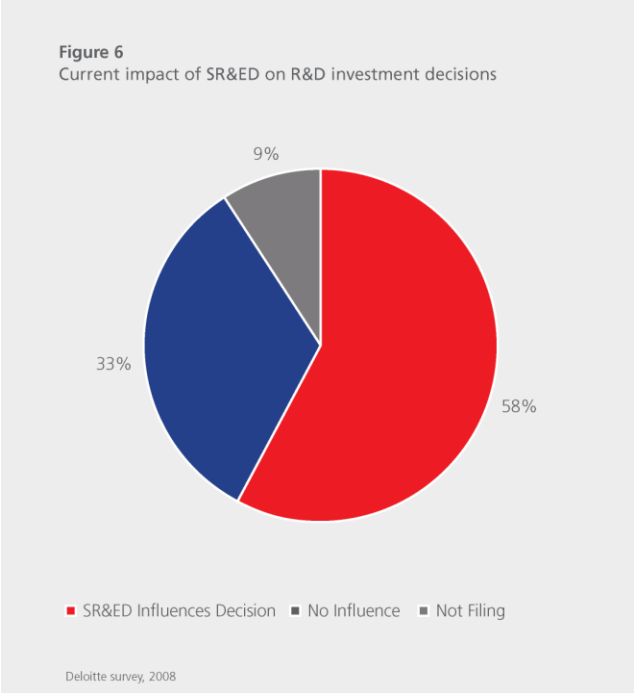
Charts from OECD Science, Technology and Industry Scoreboard 2007, OECD. Paris, 2007. These charts do not include state or provincial data.

Is It Working?

Canada's SR&ED program is designed specifically to reduce the cost of R&D, and should figure heavily in the investment decision-making process. But does it? On this topic, the jury is split. Fifty-eight per cent of the companies interviewed consider the SR&ED tax incentives as a significant factor when making investment decisions—an encouraging sign, but what to make of the remaining 42 per cent? These companies' responses bear closer scrutiny if we want to make the program work for them.

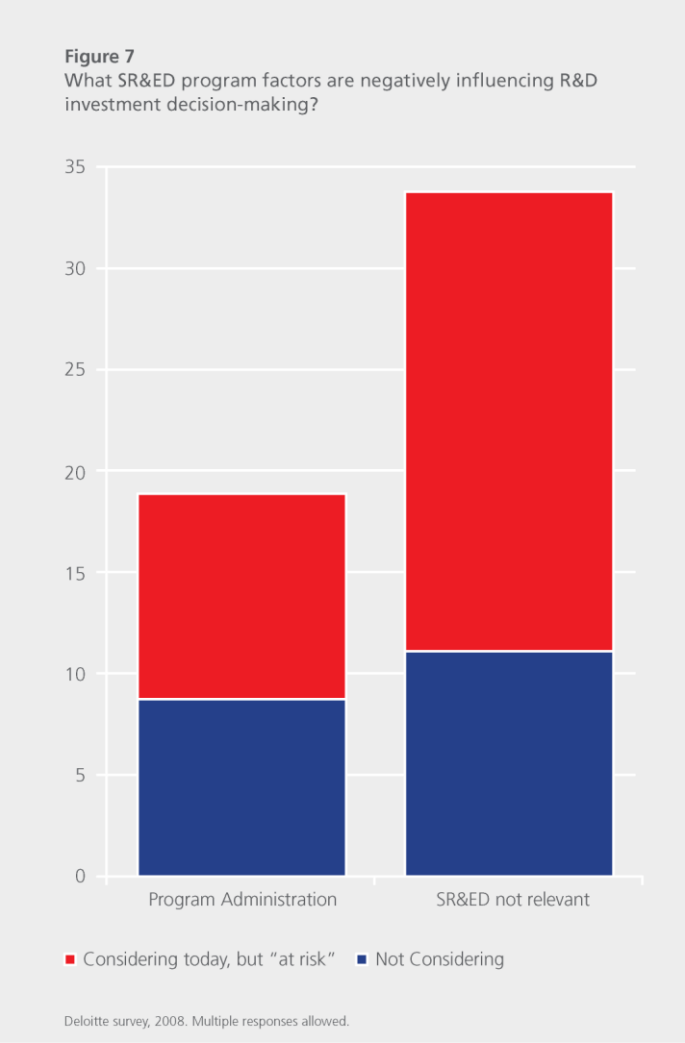
Forty-two percent indicated that the SR&ED program specifically does not influence their decision making. The 33 per cent who claim that it has "no influence" have signaled that if they could make use of the benefits of the program, it would have a positive impact on their decisions. Additionally, the 9 per cent who aren't even filing have indicated that with the right changes to the program, they would likely reconsider their involvement. There is a clear opening to influence the decisions of both those who currently claim that the program has no influence, as well as those who aren't filing. This is an important opportunity for Canada—one third of R&D investors are merely standing on the sidelines, waiting for the right incentive package before deciding to deepen their R&D investment in Canada.

Figure 6
Current impact of SR&ED on R&D investment decisions



What will make the difference?

"Needs Improvement"



Clearly, the SR&ED program is working for many companies, and not in need of a massive overhaul. At the same time, the program can work harder for Canada. The survey uncovered a consistent set of current issues with the SR&ED program that, if properly addressed, would make the program considerably more attractive to R&D decision makers.

It should be emphasized that even among those companies that are considering the SR&ED program in their decision making, there are serious doubts about the program that Canada should address to maximize their R&D activities.

Program Administration
Nineteen of the forty-three companies surveyed identified unpredictable, inconsistent program administration as an impediment to considering SR&ED. Additionally, documentation requirements from the Canada Revenue Agency (CRA) are widely considered to be excessive; defending challenged claims is correspondingly excessive.

Relevance
Fixing program administration alone will not be sufficient. Is the SR&ED program even relevant to the very businesses it is designed to attract? Many of these companies are juggling a range of related considerations before deciding whether the program is relevant to their R&D investment decisions. Using the SR&ED program, can these companies accurately predict the impact of tax credits for their business planning purposes? Here are the most important considerations in determining whether SR&ED has a role to play in their strategy.

Irrelevant?

The reasons that companies consider SR&ED tax credits to be irrelevant to their decision making are as varied and unique as the companies themselves. However, the companies surveyed identified a fairly consistent set of issues contributing to this perception. Here are the most important considerations in determining whether SR&ED has a role to play in their strategy. Note that even companies that consider SR&ED in their investment decisions have the same issues.

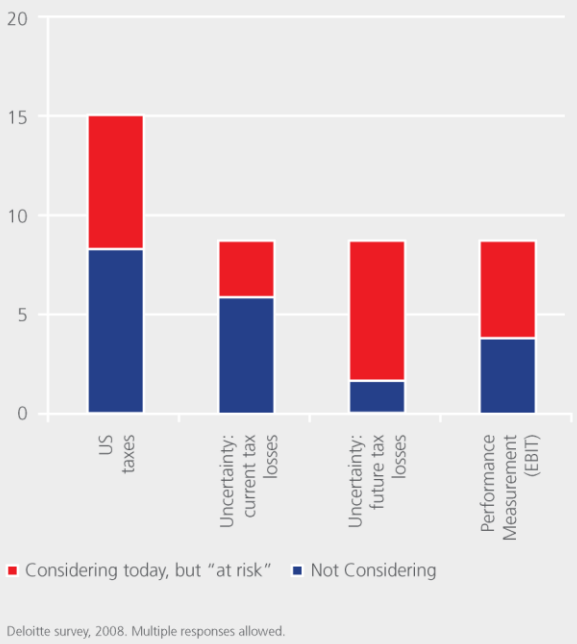
Adverse U.S. Tax Consequences

Of the 43 companies surveyed, 20 are headquartered in the U.S. For 15 of these, adverse U.S. tax consequences are an issue—and of those, nine consider SR&ED to be irrelevant. While Canadian subsidiaries of U.S.-based companies gain tax advantages in Canada, they face tax increases when funds are moved back to the U.S. In fact, under the eyes of U.S. tax law, non-refundable tax incentives reduce the amount of Canadian tax credited against the U.S. tax levied on the funds repatriated. Among the companies we talked to, 56 per cent of R&D spending in Canada came from U.S.-owned companies—making this a major challenge for Canadian efforts to attract more R&D spending.

Uncertainty

Currently SR&ED incentives for large companies can only be used to offset taxes in periods of profitability. For companies that are in cyclical industries and expect to experience losses, or companies that are already experiencing losses, under the current system they cannot accurately assume the financial benefits of future tax credits. As a result, they do not factor SR&ED incentives into their R&D investment planning—even in light of the fact that the credits can either be carried back three years or forward twenty years. That is, if the credits aren't immediate, they're not even considered.

Figure 8
Why isn't the SR&ED program considered relevant?



Deloitte survey, 2008. Multiple responses allowed.

Performance Measurement (Earnings Before Interest and Taxes)

Under international accounting guidelines, non-refundable tax incentives such as those offered through the SR&ED program are generally considered as a reduction in taxes payable—*not a reduction in cost.* Because many companies measure their own performance by closely tracking Earnings Before Interest and Taxes (EBIT), the cost benefits of the program are invisible to all but those who are familiar with the Canadian tax incentive structure. For many, this creates such confusion that SR&ED tax incentives are simply not considered in R&D investment planning.

The challenge for Canada today is to make the SR&ED program relevant to major R&D decisions. Fortunately, the companies surveyed offered clear, specific input that should influence Canada's handling of the program.

Appendix 1

Where To Go From Here

There is a clear opportunity to increase R&D spending in Canada through improving the SR&ED tax incentive program. While competition is fierce, Canada continues to have a formidable base of R&D talent, and will continue to show up in the considered set of countries for R&D investment. After that, however, the decision to invest is heavily influenced by cost considerations, and in this environment the SR&ED program can play a large role.

There are a host of improvements that can be made to the program. Following the clear, specific recommendations of the companies surveyed, we suggest only focusing on two major issues that will have the greatest positive impact on the overall program:

- Program administration
- Refundability

Make Program Administration Consistent and Predictable

Nearly half of the companies interviewed (19 of 43) pointed to program administration as a major concern with the SR&ED program. One company has even decided not to file because of the way in which its SR&ED claims were handled by the CRA.

These companies are simply seeking consistent, predictable program administration—something that the Canadian government has already identified as a problem. In fact, the government outlined a proposed course of action in the 2008 budget to address the issues with program administration. In light of that development, we recommend that the federal government closely monitor progress on these issues and take immediate steps should any improvement fail to be delivered in a reasonable time frame.

Introduce Refundability for Large Companies

The interviews clearly pointed to one solution for the challenge of financial relevancy – make the tax credit fully refundable within limits for all companies irrespective of size and ownership (currently it is fully refundable for smaller Canadian-controlled corporations – CCPC's).

Companies that operate in cyclical industries expect periods of tax losses, or are experiencing tax losses as they plan for the future. These companies need reasonable assurance that if they invest R&D resources in Canada, the SR&ED program will work in their favor. Refundability will fix this problem. This would have a positive impact on 18 of the 43 companies surveyed.

Introducing refundability to the program will have the added benefit of addressing the foreign tax credit issue encountered by U.S. companies with Canadian subsidiaries. Today, these incentives are not incenting additional R&D investment in Canada—they are merely "nice-to-have" benefits in a much larger mix of critical issues affecting decision-making. Refundability would positively impact 15 of the respondents since refundability is treated much differently under the U.S. tax code than is a tax credit.

Refundability also creates the following benefits

- Eliminates the EBIT issue. (positive development for 9 companies)
- Puts the Canadian SR&ED program on equal footing with other countries already offering certain refundable incentives
- Helps companies avoid overly cumbersome tax planning

We recommend that the government introduce refundability of SR&ED tax credits to all corporations, implemented over a reasonable time period (perhaps four years) to spur immediate additional R&D investments at a critical juncture in Canada's future in R&D investment.

The Whole Story

While this survey was clearly focused on the role of tax incentives in R&D planning, it confirmed that there are many other issues that hold the potential to significantly affect this process. For instance, what role can Canada play in improving the talent pool for these companies? The companies that participated in this survey are considering an array of choices and options alongside tax incentive programs when making investment decisions. Understanding issues like these could dramatically improve Canada's efforts to secure more R&D investment.

Canada must move quickly to remain competitive as an R&D powerhouse. The current SR&ED program is fundamentally sound—so rather than a complete overhaul, thoughtfully implemented improvements such as these hold significant potential for Canada to make an immediate impact in R&D.

In closing, Montreal International and the Toronto Region Research Alliance would like to thank the 43 companies for their time and effort in responding to the survey – and even more importantly, we would like to thank them for their major contributions to the innovation landscape in Canada through their R&D activities.

Appendix 1: The Study Methodology

This study was conducted by Deloitte & Touche LLP. The purpose of the study was:

- to determine the climate for the investment in research and development (R&D) for multinationals in Canada;
- the impact of the Scientific Research and Experimental Development (SR&ED) tax incentive program on that investment and what changes if any could be made to the federal and provincial governments' tax incentive programs to attract more R&D investment to Canada

The study was divided into two phases:

- a background review of previous research and formal submissions to the federal government, and
- an in-person interview of relevant individuals at large multi-national companies operating in Quebec and/or Ontario in key research-intensive companies

In the first phase, Deloitte documented all of the current economic research on the SR&ED program and the recommendations made by various groups and associations to Finance Canada to improve the SR&ED program. These recommendations mainly focused on three areas:

- Make the SR&ED investment tax credits fully refundable. A number of groups and associations noted this may be too expensive and recommended various limitations on refundability.
- Suggestions on how to improve the administration of the SR&ED program.
- Suggestions for changes to the SR&ED legislation to provide greater clarity.

Almost all briefs and studies included analyses and reports on all sizes of companies and types and locations of ownership. And most of these tended to focus on smaller, private, Canadian-controlled companies (CCPC's). None focussed only on large multi-nationals. Thus, the choice was made at the outset to focus on multi-national corporations which in total conduct the bulk of business R&D in Canada. Department of Finance[2] statistics show that in 2004, only 23% of all allowable SR&ED expenditures were claimed by corporations that were Canadian Controlled Private Corporations (CCPC's) meeting the tests for refundable credits and the remaining 77% were claimed by other corporations including multi-nationals.

The survey and resulting analyses were restricted to companies operating in Ontario and Quebec and operating principally in three areas, advanced manufacturing (aerospace and automotive), ICT and pharmaceutical.

A total of about 75 firms were initially targeted for interviews with a goal of completing 50. The sample size was selected based on budget, number needed to cover reasonably the three sectors and a judgement by the authors and commissioning organizations that such a number would be significant enough to reflect the experiences of large multi-nationals operating in these three sectors.

The interviews were conducted by senior staff (usually partner-level) from Deloitte's tax practice. The fieldwork was undertaken from December 2007 to April 2008. In the end, 43 companies were available to participate and completed the survey and interview process.

Of the 43 companies interviewed, 15 are located in Quebec and 28 are in Ontario. Some of the companies have operations in both provinces.

[2] Tax Incentives for Scientific Research and Experimental Development, Consultation Paper, Department of Finance, October, 2007

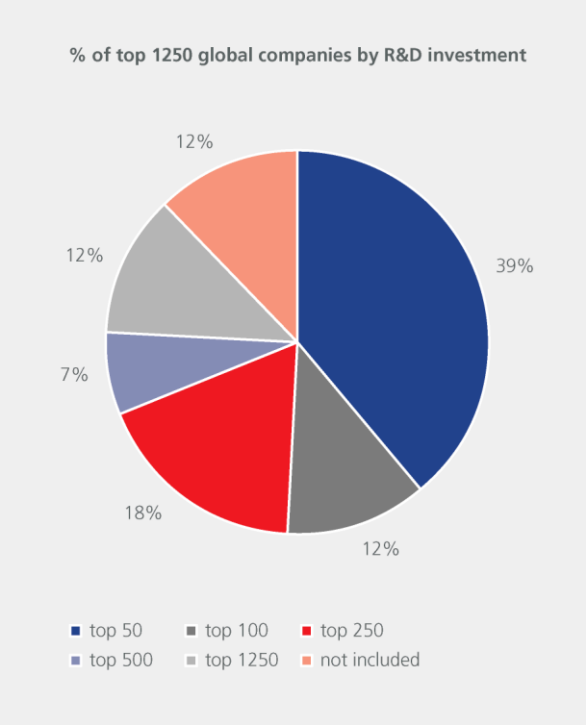
Appendix 1

Sample Selection

The sample was picked from a list published in "Ranking the Top 1250 Global Companies by R&D Investment"[3] based on the experience of Deloitte's senior tax partners. The selected sample had a range of R&D commitment to Canada. Many of these companies conduct a significant amount of R&D in Canada; however, others are undersized when compared to their global R&D spend.

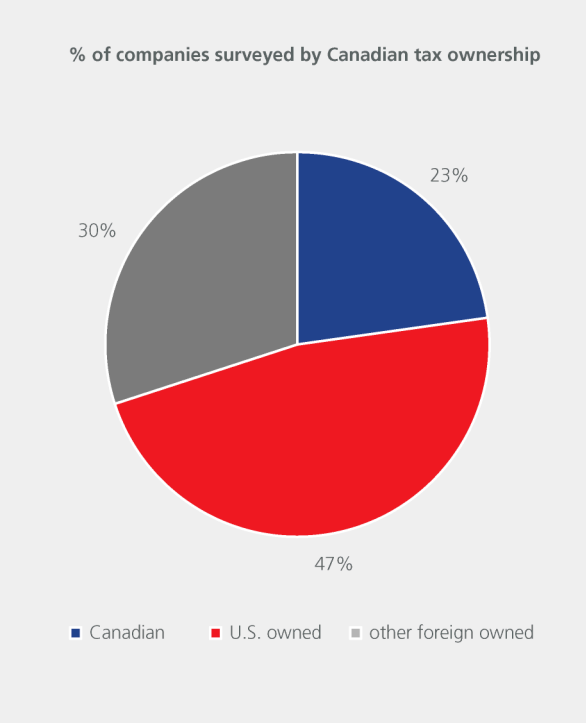
In choosing the sample, Deloitte included Canadian owned companies, companies owned directly by a U.S. parent as well as companies owned by other foreign companies. This cross section was important because of the foreign tax credit issue as well as the potential for different R&D investment decision criteria.

Figure A1
Interviewed Companies by Presence in World Listing



39% of the World Top 50 is in the sample[4]

Figure A2
Location of Ownership for Tax Purposes of Interviewed Companies



[3] *"The 2007 R&D Scoreboard"* Department for Innovation, Universities & Skills (DIUS) and the Department for Business, Enterprise & Regulatory Reform (BERR), (United Kingdom, 2007).
[4] Of the companies surveyed, two of the companies not included in the Ranking of the Top 1250 global companies by R&D investment qualify for inclusion based on their R&D global R&D spend. Also, the sample excluded Nortel Networks Corporation as the quantum of it's spending on R&D may have potentially skewed tabulations.

Appendix 1

Interview Process and Results

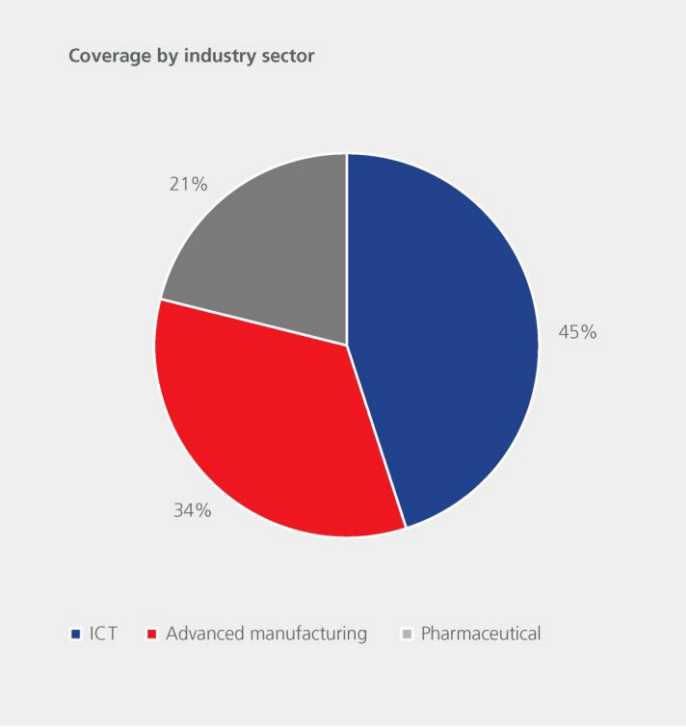
Deloitte and the two sponsors agreed on a standard list of questions which were used as guidelines with all interviewees. Montreal International and Toronto Region Research Alliance sent a letter of introduction to the CEOs and CFOs of the companies included in the sample.

Deloitte contacted the prospective interviewees to discuss the list of questions with representatives from the company who understood both the global R&D investment decision making process of the company but also the SR&ED program and its impact on the company's Canadian operations. In many instances, this required interviewing at least two people.

In this study, Deloitte interviewed senior executives from 43 companies. These companies were all multi-national in scope, some headquartered in Canada and others are subsidiaries of foreign companies.

The companies interviewed conducted R&D in Canada of over $4.0 billion in 2007. The breakdown of R&D by sector in those interviewed is in Figure A3.

Figure A3
Industry of Completed Interviews

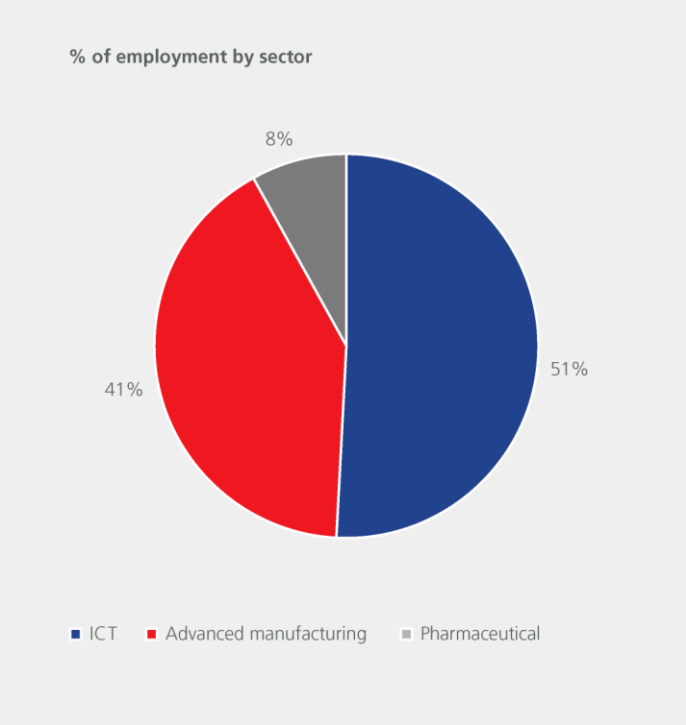


Appendix 1

The companies interviewed had direct R&D employment of over 20,000 jobs. Figure A4 shows the breakdown of employment by sector.

Note: The employment numbers excludes contractors which for R&D performers in general is a significant portion of their R&D work especially in the pharmaceutical industry which out sources its clinical trials.

Figure A4
R&D Employment of Completed Interviews

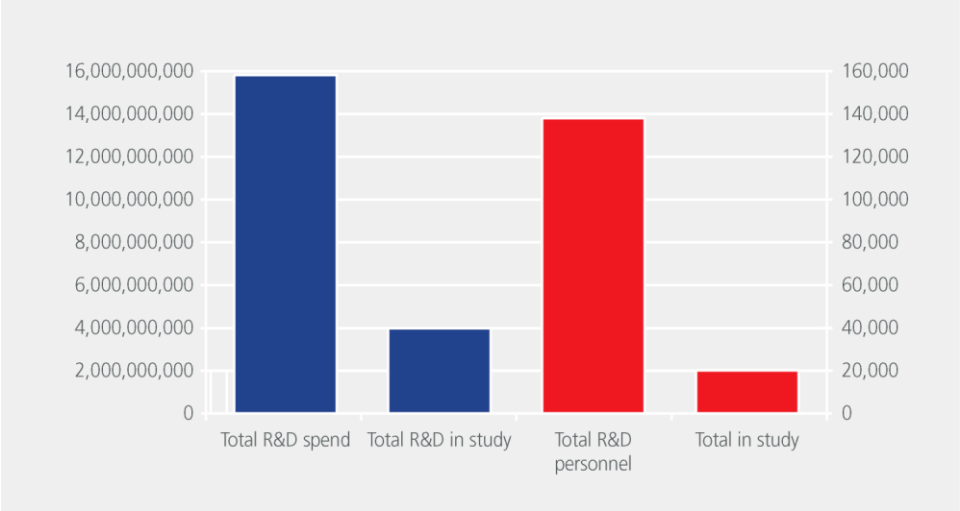


Appendix 1

Coverage by the Study of All R&D Expenditures Conducted in Canada

Statistics Canada reported that in 2007, Canadian businesses performed over $15.7 billion of R&D; in 2005 they employed over 137,000 employees in R&D. [5] Based on these statistics, the 43 companies that participated covered over 25% of all R&D conducted in Canada and 15% of all R&D personnel. The coverage of R&D employment would be higher if significant work sub-contracted by some of these multi-nationals was included in these data.

Figure A5
R&D Employment and Spending of Companies Completing Interviews Compared To The Total For All Companies in Canada



[5] *Gross Domestic Expenditures on Research and Development in Canada and the Provinces-National Estimates 1996-2007 Provincial estimates 2001-2005,* (Ottawa, Statistics Canada, 2008)

Appendix 2: Interaction of the Canadian SR&ED Incentives and the U.S. Foreign Tax Credit System

Canadian companies that are subsidiaries of a U.S. parent company face the erosion of any SR&ED investment tax credits (ITCs) earned. This is because the parent company may incur increased U.S. taxes when funds are remitted as dividends to its U.S. parent company. This erosion decreases or eliminates the value of the ITCs earned. Why does this happen and what can the Canadian government do to alleviate this problem?

The United States employs a global tax system which taxes the income earned abroad by its residents including foreign corporations owned by U.S. parents. For corporations, the U.S. tax is payable when dividends are distributed (or deemed to be distributed) from the foreign company to its U.S. parent. This U.S. foreign source income is generally subject to tax in the foreign country where it is earned. To avoid double taxation, a credit is given in the U.S. for foreign income taxes paid. All foreign income taxes paid are eligible for the credit including federal and local governments such as the Canadian provinces.

The following example demonstrates what happens to a U.S.-based company when its Canadian subsidiary earns a profit in Canada, with and without a SR&ED claim and when funds are repatriated to its U.S. parent company.

In the following example, in the *No R&D* (No SR&ED) scenario, a company earns $400 in Canada which it repatriates to the U.S. on an after-tax basis. In the U.S., there is no additional tax payable as the credit for the Canadian taxes paid offsets the U.S taxes on the dividend paid. In the *R&D* scenario (SR&ED Claim), the company does not benefit from the $100 of SR&ED ITCs earned because of an increase in Canadian taxes of $34 and U.S. taxes of $66. Therefore, the only value of the SR&ED ITCs is in the time value of money between when the funds are earned and when they are repatriated to the U.S.

Appendix 1

Figure A6
Impact of Overall Net Corporate Income Taxes for a U.S. – Based Subsidiary Operating In Canada Under the Current SR&ED System[6]

		No R&D	R&D
Revenue		$5,200	$5,200
Expenses		-$4,800	-$4,800
Net profit		$400	$400
Canadian taxes	33.5%	-$134	-$168[7]
Non-refundable ITCs		$0	$100[8]
Net Canadian taxes		-$134	-$68
After tax profit (Canada)		$266	$332
Funds repatriated to the U.S.	A	$266	$332
Gross up for underlying Canadian taxes (net of credits)		$134	$68
Taxable income to the U.S.		$400	$400
U.S. Taxes on funds repatriated	35%	$140	$140
Less credit for Canadian taxes		-$134	-$68
Net Additional U.S. taxes	B	$6	$72
After tax funds repatriated to the U.S.	A - B	$260	$260

Note: The above example assumes that the Canadian withholding tax on the dividend and the foreign tax credit earned in the United States on the Canadian dividend can be fully utilized by the U.S. parent.

[6] Assumes that the U.S. parent company has no ability to utilize foreign tax credits from other foreign jurisdictions to mitigate the claw back of the Canadian ITC's. 75% of the 20 U.S.-controlled respondents indicated that claw back was a problem.
[7] The $100 of ITC's earned in the R&D Scenario are taxable, hence the difference in the Canadian tax numbers between the two scenarios
[8] Assumes an R&D expenditure eligible for SR&ED of $500 at a 20% claim rate

Appendix 1

However, there is a different result if the SR&ED ITCs are refundable. Under a U.S. Letter Ruling 200146001 (April 2, 2001), foreign tax credits that are refundable within a reasonable period of time are not a credit within the meaning of the Treas. Reg. § 1.901-2(e)(2)(i). Accordingly, there is no reduction in foreign taxes paid as was the case in the example above.

The following example compares a *No R&D* (No SR&ED) scenario with a scenario where the R&D credits are refundable. It shows that the Canadian company and its U.S. parent are better off by $65 (the ITCs earned of $100 less the Canadian taxes payable on the ITCs of $34 and additional U.S. taxes of $1).

Therefore, by making the Canadian SR&ED investment tax credits refundable, more Canadian companies owned by U.S. corporations would be able to utilize the ITCs to reduce their consolidated taxes payable and hence would factor the ITCs into their R&D investment decisions.

Figure A7
Impact of Overall Net Corporate Income Taxes for a U.S. – Based Subsidiary Operating In Canada If Refundability of SR&ED ITCs is Permitted.

		No R&D	R&D
Revenue		$5,200	$5,200
Expenses		-$4,800	-$4,800
Refundable Credits		$0	$100[9]
Net profit		$400	$500
Canadian taxes	33.5%	-$134	-$168[10]
After tax profits (Canada)		$266	$332
Funds repatriated to the U.S.	A	$266	$332
Gross up for underlying Canadian taxes		$134	$168
Taxable income to the U.S.		$400	$500
U.S. Taxes on funds repatriated	35%	$140	$175
Less credit for Canadian taxes		-$134	-$168
Net Additional U.S. taxes	B	$6	$7
After tax funds repatriated to the U.S.	A - B	$260	$325

[9] Assumes an R&D expenditure eligible for SR&ED of $500 at a 20% claim rate
[10] The $100 of ITC's earned in the R&D Scenario are taxable, hence the difference in the Canadian tax numbers between the two scenarios

Appendix 1

About the Authors of This Study

The **Toronto Region Research Alliance** (TRRA) is an innovative network of regional industry, finance, research and government leaders engaged in transforming the Toronto region into a world-leading centre for research and research-intensive industry.

TRRA serves the broader Toronto Region including the Greater Toronto Area, Waterloo Region, the City of Hamilton, and the City of Guelph. The TRRA is funded by the Governments of Canada and Ontario as well as regional stakeholders including leading companies, major cities, universities, hospitals and colleges. TRRA is a results-oriented, non-profit organization dedicated to making the TRRA region a world-leading centre for research and research intensive industry by:

- Building public and private research capacity;
- Enhancing the commercialization of research;
- Attracting new research intensive companies to the region and working to expand those already here.

Further information may be obtained at www.trra.ca.

Montréal International's mission is to contribute to the economic development of Metropolitan Montréal and increase the region's international status. Montréal International seeks to position the Montréal Metropolitan Community among North American leaders with respect to wealth per inhabitant. Its mandates are to:

- Increase foreign investment
- Increase the presence of international organizations
- Support the relocation of foreign workers
- Stimulate the development of innovation.

The 3,839 km^2 of the Montréal Metropolitan Community includes 82 municipalities and 3.7 million residents. The organization is funded by the Government of Canada, the Government of Québec, the Communauté métropolitaine de Montréal, the City of Montréal and private companies.

Further information may be obtained at www.montrealinternational.com.

This report was prepared with assistance from Deloitte. The survey was conducted by Deloitte & Touche LLP.

Deloitte, one of Canada's leading professional services firms, provides audit, tax, consulting, and financial advisory services through more than 7,600 people in 56 offices. Deloitte operates in Québec as Samson Bélair/Deloitte & Touche s.e.n.c.r.l. The firm is dedicated to helping its clients and its people excel. Deloitte is the Canadian member firm of Deloitte Touche Tohmatsu.

Deloitte.

Tax Incentives for Scientific Research and Experimental Development

Submission to The Honourable Jim Flaherty, Minister of Finance
and
The Honourable Gordon O'Connor, Minister of National Revenue

Recommendations of Deloitte & Touche LLP

November 29, 2007

Deloitte.

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November 29, 2007

The Honourable Jim Flaherty, Minister of Finance
and
The Honourable Gordon O'Connor, Minister of National Revenue

Dear Sirs:

Deloitte is pleased to present our recommendations in response to the request for submissions issued by the Honourable Jim Flaherty, Minister of Finance, and the Honourable Gordon O'Connor, Minister of National Revenue on the scientific research and experimental development (SR&ED) incentive program. The government is interested in how to make the SR&ED program more effective for Canadian business and to allow it to play an even greater role in fostering a more competitive and prosperous economy. We believe that the SR&ED program is an important tool of the federal government to promote industrial R&D in Canada. The take-up of the program with over 19,000 companies accessing the program in 2004 and in excess of $3 billion in assistance provided to corporations in 2006, demonstrate the importance of the program to Canadian industry.

This is an opportune time for the government to consult on the SR&ED program for the following reasons:

- Canada's SR&ED program once considered the leading R&D tax incentive program in the world is facing much more intense global competition as now over 30 countries have R&D tax incentive regimes as well as other forms of assistance;
- R&D investment is much more mobile today. With current technology, R&D can occur virtually anywhere in the world with a pool of highly skilled workers;
- The impact of the rising dollar has weakened Canada in the competition for incremental investment in R&D by global multi-nationals;
- There is increased competition for R&D investment from other countries with lower wage rates, large pools of highly educated professionals with advanced degrees and government support (both direct and indirect). This has eroded Canada's advantage;
- The SR&ED program has been overly complex for the Canada Revenue Agency to administer and taxpayers to comply with. Simplification would reduce the compliance costs for both.

Our submission will make recommendations for improvements to the program, focusing on increasing immediate access to the SR&ED tax incentives to both Canadian controlled private corporations (CCPCs) and all other corporations; and alternative methods to deliver the incentives. A summary of these recommendations is as follows:

Canadian Controlled Private Corporations

Small business represents the bulk of SR&ED performers in Canada. While many of these corporations meet the ownership, taxable income and taxable capital tests in order to qualify for refundable credits, a significant number fail to do so. In order to provide increased access to the credits for CCPCs, Deloitte recommends that the limits for refundable credits be increased immediately as follows:

- The SR&ED expenditure limit for the high rate refundable credits should be increased to $ 10 million per annum;
- The taxable income limits should be increased from the current $400,000 to $600,000 for purposes of computing the high rate refundable investment tax credits for 2008 and subsequent years and;
- Change the grind of the expenditure limit from a $10 reduction in the expenditure limit for every $1 of taxable income in excess of the business limit to a ratio of $25 for every $1. This would effectively increase the phase-out range from $600,001 to $1,000,000. It would allow taxpayers to access the fully refundable credits with taxable income up to $600,000 and proportionately reduced amounts with taxable incomes between $600,001 and $1,000,000; and
- Eliminate the capital tax restrictions.

These recommendations will increase immediate accessibility to the incentives for CCPCs and adjust limits such as the expenditure limit that have remained unchanged since inception to reflect inflation. It will also promote the reinvestment of earnings in emerging forms to assist them in successfully commercializing the results of their SR&ED.

All other corporations

Deloitte recommends that the government consider in the longer term:

- Eliminating the CCPC requirement for refundable credits. The government can further stimulate SR&ED in small businesses by removing the current ownership restrictions and by increasing the size limits for all small and medium sized enterprises (SMEs). An example of such a system can be drawn from the United Kingdom where there are no ownership restrictions and the size tests for an SME is less than 250 employees and either sales of under €50 million or gross assets not exceeding €43 million. These limits are due to increase to 500 employees and sales of €100 million and assets of €86 million. In addition, both Ontario and Quebec have eliminated the CCPC restriction for their respective refundable credits which are available to all corporations within limits. We believe that the current Canadian ownership and size restrictions unnecessarily impede the growth of SMEs and should be revised.
- Allowing refundability within limits to all corporations. One of the objectives of the SR&ED program is to provide incentives that as much as possible are of immediate benefit. Currently, taxpayers in a loss position; certain of those with foreign parents located in a country with a foreign tax credit regime such as the United States; and those operating in the limited partnership form have difficulty accessing the immediate benefits of the program.

Deloitte recommends that the federal government introduce refundable credits within limits for all corporations. There are a number of ways to introduce such a regime:

- Allow investment tax credits to be offset against a limit. One such limit could be the employers portion of Employment Insurance premiums or;

- Introduce a refundable mechanism such as the one in France where the government will refund the credits up to a maximum of €16 million per year provided that the incentives are not used in the following three years.

Of the $3 billion in support to business through the SR&ED program in 2006, over $1 billion represents tax credits earned in previous years but claimed in 2006. Therefore, part of the cost of this recommendation is a timing issue with taxpayers receiving their incentives on a current basis rather than at unspecified time in the future.

Companies that can only claim the benefits when they are taxable greatly discount these benefits in planning their R&D investment. Additional refundability will provide taxpayers with greater certainty that they will be able to access the credits on an immediate basis which in turn will stimulate additional R&D investment in Canada.

Other legislative changes

- Proposed section 220(2.2) of the Income Tax Act which will prevent the Minister from accepting SR&ED claims filed after the 18 month deadline should be repealed and replaced with a provision allowing the claims but subject to a penalty;
- To reduce the number of issues over the contract payment rules, introduce an election to allow the parties to a contract to elect who is entitled to claim the SR&ED incentives;
- Change the definition of SR&ED to clarify the difference between the inclusions and the exclusions; and
- Amend the legislation on SR&ED and partnerships. The current legislation is overly restrictive and places partnerships at a disadvantage to corporations.

These recommendations would alleviate some of the current compliance issues.

Other alternatives

Additional alternative proposals exist to increase R&D investment in Canada. It is recognized that these alternatives would require further study and consultation prior to implementation. We are not recommending these alternatives; however, we believe that they should be included in the discussions. These alternatives include:

- The use of flow through share mechanisms to allow corporations that are unable to utilize their investment tax credits to sell the credits to their investors. It is recognized that such measures were implemented in 1983 and then shut down due to abuse. Any such measure must be structured differently from the 1983 alternatives.
- The use of an Innovation Account to recognize that R&D is not conducted in a linear fashion. Companies could contribute to such an account and receive a current deduction provided that the funds were spent on eligible SR&ED within a prescribed time frame.
- Allow companies to elect on an annual basis to choose between the current system and a refundable wage tax credit system such as the one used by Quebec. It is recognized that such a system favours labour intensive SR&ED and is not favourable to capital intensive SR&ED.

The outcome of these consultations has the potential to radically improve Canada's SR&ED tax incentive program. We recommend that action be taken now to reshape the SR&ED program to provide more effective tax incentives to R&D performers. This in turn will stimulate additional R&D in this country with all of the proven spill over effects to the economy.

Yours very truly,

Deloitte & Touche LLP

Natan Aronshtam
National Leader SR&ED Tax
Partner

Introduction

Policy rationale

The policy principles underlying the current system of income tax incentives for SR&ED were first set out in a 1983 budget document[1] and continue to remain in effect. As stated in that document, these principles are:

"The private sector is in the best position to determine the amount and type of industrial research and development that it should undertake. Any firm's research and development projects have to make business sense; the results need to be marketable, and the project should be profitable. Thus, the incentive structure for research and development should continue to contain general measures, such as broad-based tax incentives, that leave day-to-day decisions on research and development projects in the hands of the private sector. While there will also continue to be a role for grant programs targeted to research and development in industry, the tax system is best suited to delivering general incentives.

The goal of research and development policy is not to create research and development solely for its own sake. To be effective, the results of research and development have to be used – to create jobs, to improve productivity and competitiveness, to develop new products that Canadians can sell to other Canadians and to the world. To a large extent, the responsibility for this must rest with the private sector.

The objectives of the policy are to:[2]

- encourage SR&ED to be performed in Canada by the private sector through broadly based support;
- assist small businesses to perform SR&ED;
- provide incentives that are, as much as possible, of immediate benefit;
- provide incentives that are as simple to understand and comply with and as certain in application as possible; and
- promote SR&ED that conforms to sound business practices.

As noted in the current Department of Finance Consultation Paper, "the rationale for this tax support is that the benefits of SR&ED extend beyond the performers themselves to other firms and sectors of the economy. The existence of these spillovers, or externalities, means that, in the absence of government support, firms would perform less SR&ED than is optimal for the economy."[3]

Our submission will focus on three areas within these policy objectives:

- In assisting small business to perform SR&ED are the current ownership, SR&ED expenditure limit, taxable income limits, and taxable capital limits overly restrict the assistance to small R&D performers?
- Do the current incentives provide as much as possible an immediate benefit?
- Are the incentives simple to understand and comply with?

We believe that improvements can be made in each of these areas.

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[1] Department of Finance Canada (1983) *Research and Development Tax Policies: A Paper for Consultation.* April 19.
[2] *The Federal System of Income Tax Incentives for Scientific Research and Experimental Development: Evaluation Report.* Department of Finance Canada and Revenue Canada. December 1997.
[3] Tax Incentives for Scientific Research and Experimental Development, Consultation Paper, Department of Finance, October 2007

Appendix 2

Incentives

The SR&ED program offers tax incentives in the form of investment tax credits (ITCs) which are earned on a taxpayer making eligible SR&ED expenditures and a 100% write-off of both eligible current and capital SR&ED expenditures. Alternately the expenditures may be placed in a pool and written off in a future year. The rates of the ITCs range from 20% to 35%. These ITCs can be utilized to offset federal taxes payable on a dollar for dollar basis. In addition, CCPCs are entitled to refundable ITCs to the extent that the credits are not used to offset taxes payable and within limits. These ITCs are taxable as income in the year following the year that are refunded or utilized to offset federal taxes payable.

In addition, many of the provinces offer additional incentives for SR&ED performed in that province. These provincial incentive systems piggyback the federal system with some differences.

The definition of SR&ED is modelled after the one contained in the Frascati Manual[4] and is consistent with the definition used in most of the R&D tax incentive regimes around the world. CRA has published extensive documentation to assist taxpayers in understanding what SR&ED is within their industry sectors. Much of this documentation was developed with the assistance of industry.

Eligible expenditures include both current and capital expenditures in respect of SR&ED carried on in Canada and performed by the taxpayer or undertaken on its behalf and related to the taxpayers business or a possible extension thereof. Again, CRA has published guidelines on what expenditures are eligible as well as how to allocate expenditures to SR&ED projects from a taxpayers business records.

International competition

For companies operating on a multi-national basis, the R & D tax incentives can be one important factor that influences the location of their R & D activities. There are now over 30 countries with established R & D tax incentive regimes, including new regimes in South Africa, New Zealand and many states in the United States. In addition, China has announced a new regime and both the United Kingdom and the United States have enhanced their regimes.

Despite this proliferation of regimes, Canada's still rates as one of the world's best systems when considering the following criteria:

- Is the system volume-based or incremental-based? Incremental-based systems are less attractive.
- What is the effective rate of the credit on an after-tax basis? Canada's federal 20 percent pre-tax rate for large companies compares favourably to that of many regimes, including the United Kingdom at 7.5 percent (to be increased to 8.4% in 2008) on an after-tax basis and the United States federally at 6.5 percent on an after-tax basis on incremental expenditures only.
- Is all or a portion of the credit refundable? For example, in France, unused credits are refundable to a maximum of €16 million a year, are refundable after three years, and can even be sold to a bank on a discounted basis.
- What types of activities qualify? As a general rule, most regimes use the definition of research and development contained in the Frascati manual[5] and has consistent views on what is and is not R & D. What types of expenditures qualify? The Canadian regime has one of the broadest bases of allowable expenditures, including R & D capital and overhead. An example of a restrictive regime would be the United Kingdom where only salaries and limited amount of materials and subcontracts can be included as eligible expenditures.
- Can a taxpayer be certain of obtaining the credits and how arduous is the process?

While it is true that Canada's regime compares favourably to other regimes, Canada has lost its distinct advantage that it had in this area. The Department of Finance statistics show that large corporations conduct the bulk of SR&ED in Canada. These companies have a choice as to where to make to make their R&D investment. A regime that fails to offer distinct advantages and certainty that

[4] Organisation for Economic Cooperation and Development: *Frascati Manual 2002* (Paris, OECD,2002)
[5] Ibid

the incentives applied for will be received without going through an arduous process, will not be a deciding factor in making that investment decision.

By introducing greater refundability and improving the administration of the program, Canada once again will have a distinct advantage over many other R&D tax regimes.

Recent changes to the program

In the recent years the government has made or proposed a number of legislative changes to the SR&ED program. Some of these changes have been to enhance the program and others to fix perceived abuses. These changes include:

- Changes as a result of the Alcatel case to exclude the value of stock options of SR&ED employees from being included as SR&ED expenditures
- Proposed section 220(2.2) of the Income Tax Act which will prevent the Minister from accepting SR&ED claims filed after the 18 month deadline.
- Increase the carry forward period for investment tax credits to 20 years
- Increase the small business limit to $400,000
- Introduction of a deemed year end for CCPCs on a change of control caused by signing an agreement to sell shares at a future date

However, one major beneficial change was recently proposed by the federal government and that is the decrease in the corporate rates. This impacts the SR&ED program as the investment tax credits earned are taxable in the year following the year that they are refunded or used to offset federal taxes payable. Therefore, the value of the credit increases as the corporate rates decrease as follows:

After-tax value of the Canadian investment tax credits

	2007	2008	2009	2010	2011	2012
Credit	20%	20%	20%	20%	20%	20%
Existing Tax Rate	22.12	20.5	20.0	19.0	18.5	18.5
Value of the Credit	15.576	15.9	16	16.2	16.3	16.3
Proposed Tax Rate	22.12	19.5	19.0	18.0	16.5	15.0
Value of the Credit	15.576	16.1	16.2	16.4	16.8	17.0

Between 2007 and 2012, the absolute value of the after-tax value of the credit will increase by 1.424%.

It should be noted that in addition to the value of the credit shown above, there is additional value to corporations in being able to write-off eligible SR&ED capital equipment on a current basis rather than over time through the capital cost allowance provisions of the Income Tax Act.

Appendix 2

Recommendations

The focus on our submission in respect of legislative changes is to provide enhanced immediate access to the SR&ED tax incentives for taxpayers and to suggest certain other legislative changes to improve the program.

Canadian Controlled Private Corporations

Deloitte is proposing both immediate and longer term changes to the access to the incentives for SMEs. We believe that the government should immediately increase the limits for refundability for CCPCs and in the longer term remove the ownership restrictions and make the incentives refundable to all corporations within limits.

Immediate recommendations

Many CCPCs conduct significantly higher amount of R&D as a percentage of their total spend when compared to the average of all companies. For many of them, one key issue is lack of cash flow which impinges on their ability to spend as much on R&D as they would want to. For many of them, the support received through the federal refundable investment tax credit system and from certain of the provinces with parallel programs has been a key factor in assisting them to fund their R&D and to grow and prosper by exploiting their technology. Deloitte believes that while the current system is an important source of cash to these corporations that the current limits to access the refundable credits hamper this important phase of business development for CCPCs and we recommend that each of these limits be increased.

We recommend that:

- the SR&ED expenditure limit for the high rate refundable credits be increased to $10 million;
- the taxable income limit for these purposes be increased to $600,000
- the grind of the expenditure limit from current $10 of reduction in the expenditure limit for every $1 of taxable income in excess of the business limit would be changed to a ratio of $25 to $1;
- the capital tax restriction be removed.

Issue	Recommendations
Erosion of Expenditure Limit Currently, CCPCs are limited to a maximum of $2 million a year in eligible SR&ED spending that is eligible for the high rate of refundable investment tax credits (ITCs). This $2 million expenditure limit was introduced in 1985. However, in the 20 years since its introduction, the Consumer Price Index has risen by over 80%. On this basis alone, the expenditure limit would need to be in excess of $3.5 million for an SR&ED claimant to receive the same benefit as envisioned by the legislators when the legislation was drafted.	An increase in the expenditure limit to $10 million.

Appendix 2

Issue	Recommendations
Clawback of Investment Tax Credit (ITC) at Enhanced Rate after $400,000 of Taxable Income The $2 million expenditure limit referred to above is reduced as the taxable income in the immediately preceding year of an associated group of companies, including the particular CCPC, exceeds $400,000 (assuming that the current proposal is passed into law) of taxable income. The expenditure limit is reduced by $10 for every $1 by which the taxable income of the associated group exceeds $400,000 for calendar year 2007 and afterwards. Therefore, the expenditure limit is reduced to NIL when the taxable income of the associated group reaches $600,000 for 2007 and afterwards. Currently, owners can re-invest a limited amount of income in the corporation (and in SR&ED) since the taxable income limit forces them to extract earnings from the corporation in excess of $400,000 in 2007 and afterwards.	(1) Increase the taxable income limit for these purposes from $400,000 in 2007, to $600,000. Thus, the threshold for subsequent years where no high rate ITCs could be claimed would be $1,000,000 (including the proposed additional $200,000 phase out as set out below) and; (2) Change the grind of the expenditure limit from $10 of reduction in the expenditure limit for every $1 of taxable income in excess of the business limit to a ratio of $25 to $1. This would effectively increase the phase-out range from $600,001 to $1,000,000 and would allow taxpayers to access the fully refundable credits with taxable income up to $600,000 and proportionately reduced amounts with taxable incomes between $600,001 and $1,000,000. The increases in SR&ED incentives due to these measures will be partially offset by increases in the corporate tax on income generated by the taxability of the ITCs in the subsequent year.
Capital Restriction The current legislation also reduces the $2 million expenditure limit where a corporation's taxable capital computed under the large corporations tax rules is greater than $10 million and is reduced to $NIL when taxable capital reaches $15 million. Taxable capital is primarily comprised of debt financing obtained by the corporation and equity and earnings that are retained and reinvested in a corporation. The purpose of the enhanced ITC and its refundability is to aid CCPCs that are in need of cash to survive and to continue funding their research and development activities. The taxable capital restriction penalizes companies that have the ability to either raise financing or retain earnings in their corporation by limiting those taxpayers' access to the high rate refundable ITC.	The taxable capital restriction be completely removed from the calculation of the expenditure limit for SR&ED purposes or at least that the threshold at which the restriction applies be significantly raised.

Longer term recommendation

Canada has 2 tier incentive program, where a higher rate of refundable incentive (35%) is provided to small CCPCs within limits and a lower rate (20%) of non-refundable incentives to companies who fail to meet the limits. Deloitte questions the need to restrict the higher rate refundable credits only to CCPCs. In addition, we recommend that the current limits on how much can be refunded annually and the definition of a small medium sized enterprise should be raised dramatically.

Other Canadian corporations-high rate incentives

While we recognize that the limitation for refundable SR&ED incentives is based on the current legislation for the lower rate of income tax, we don't believe that there is economic rationale to distinguish between a CCPC and a SME. We recommend that the requirement for CCPC status in order to be entitled to high rate refundable credits should be eliminated.

Appendix 2

One of the crucial factors for R&D intensive companies is cash flow. For many companies growing from the start-up stage lose their CCPC status when raising funds by:

- Listing, directly or indirectly via a reverse takeover, on a public exchange such as the TSX-Venture exchange.
- Raising equity from investors, such that after the transaction, less than 50% of the shares are held by a combination of CCPCs and Canadian individuals.
- Raising equity from a foreign investor that requires, as a condition of investment, that the parent holding company be incorporated in a foreign jurisdiction such as Delaware.

None of these events makes the quality of the R&D undertaken in Canada any less valuable to the Canadian economy. It is noteworthy that other Government programs – such as IRAP and TPC – do not distinguish between private and public companies in the assessment of eligibility for funding.

The government has recognized that the loss of the CCPC status can create difficulties for SMEs and has introduced over a number of years measures to soften the blow of the loss of CCPC status. These include the 2006 draft legislation to create a deemed year end when shareholders sign an offer to sell sufficient to shares so that the company will lose its CCPC status. However, these measures although of a relieving nature fail to deal with underlying problems and add additional complexity to the system. One of the basic underlying problems is that the CCPC status is all or nothing.

Other countries recognize the benefits of providing additional support to small companies and have no ownership restriction. For example:

- The United Kingdom has also has a 2 tier system of R&D tax incentives to encourage innovation. The R&D incentives in the UK are proposed to be increased to the following:
  - for small companies, a tax deduction of 175% of their qualifying spend on R&D with an option for loss making companies of receiving cash refunds of up to 24% of their qualifying spend
  - for large companies, a tax deduction of 130% of their qualifying spend with no cash option

  The definition of a small corporation in the UK is vastly different from the Canadian definition. There are no ownership restrictions and the size tests for an SME is less than 250 employees and either sales of under €50 million or gross assets not exceeding €43 million. These limits are due to increase to 500 employees and sales of €100 million and assets of €86 million. In considering if a company meets these limits, similar to the Canadian associated company rules, one needs to consider 100% of the figures for any companies with a greater than 50% ownership link and the relevant percentages of companies with an ownership link between 25% and 50%. There are exemptions for venture capital or institutional investors with more than 25% but less than 50% ownership. There is no need to include any figures for companies with an ownership link of less than 25%.
- In the Australian system, all small firms (without ownership restriction) can claim a refundable credit which is net of any other tax owing before it is refunded. This offset supports small companies including those in a tax loss situation who are unable to get immediate access to the incentives.
- In Austria, all companies can forgo the additional deduction from their R&D tax allowance and receive cash instead. The cash is computed as 8% of the qualifying expenditures. There is no restriction on ownership or size.

Of the $3 billion in support to business through the SR&ED program in 2006, over $1 billion represents tax credits earned in previous years but claimed in 2006. Therefore, part of the cost of this recommendation is a timing issue with taxpayers receiving their incentives on a current basis rather than at unspecified time in the future.

We recommend that the government consider opening up access to the high rate refundable credits to all companies without limits except a size test based on the number of employees and sales.

Appendix 2

Other Canadian corporations-refundability

When other Canadian Corporations plan their R&D investment, they take into account a number of factors:

- Can they access the SR&ED tax incentives on a current basis? Companies in a loss position will severely discount the value of the incentives in planning their R&D investment. Currently, the Department of Finance estimates that the manufacturing sector earns slightly less than 50% of all SR&ED ITCs. Clearly, the rapid rise in the Canadian dollar has negatively impacted the profits in this sector and therefore, companies' ability to access the ITCs. This is at time when companies will ever more need to innovate to survive and prosper.

- For companies, either Canadian owned or foreign owned, or operating in a loss position are refundable R&D incentives available in the countries in which they operate? For example, in France, unused credits are refundable to a maximum of €16 million a year, are refundable after three years, and can even be sold to a bank on a discounted basis. Other jurisdictions such as Austria offer unlimited cash back at a rate of 8% of qualifying R&D expenditures in lieu of the super deductions offered on such expenditures.

- For foreign owned companies, will the SR&ED incentives actually lower the group's effective tax rate? Foreign parent companies are generally able to reduce the Canadian corporate income tax payable by the Canadian company, in the form of a foreign investment tax credit against tax otherwise payable on the distributed earnings of the Canadian subsidiary. This recovery is generally allowable to the extent that the Canadian taxes payable don't exceed the foreign investor's local income tax. As the SR&ED ITCs reduce the Canadian corporate taxes payable, this in turn reduces the foreign tax credits generally available to the foreign investor. Thus for some companies, Canadian SR&ED ITC's have no overall benefit to the corporate group.

- For foreign owned companies, where should they locate their R&D on a cost effective basis? One factor in this consideration is what R&D incentives are available in other jurisdictions. There are now over 30 countries with established R&D tax incentive regimes. South Africa and New Zealand have recently implemented R&D tax incentive regimes. Other countries such as China and the United States have recently enhanced their programs and France has announced further enhancements. As noted by the Department of Finance, Canada's federal system of R&D tax incentives is among the most advantageous in the world and Canada would rank in the top five if provincial measures were included in the OECD indicator. However, there is increased foreign tax competition which has diminished our advantage to the point where in many cases; our advantage may be insufficient to sway R&D investment to Canada.

One of the stated objectives of the SR&ED program is to provide incentives that are, as much as possible, of immediate benefit. Currently, for many companies, the R&D tax incentives aren't providing an immediate benefit. While one option would be to allow full refundability on all future ITCs earned, we recognize that full refundability is not possible at this time. Therefore, Deloitte recommends that the government consider implementing refundability of SR&ED ITCs within limits to all corporations.

This recommendation would have a number of benefits:

- Provide companies with immediate access to cash to fund additional R&D investment in Canada;

- Put the Canadian regime on a par with other regimes such as France which offer refundable incentives within limits;

- Remove the foreign tax credit issue at least for U.S. corporations. Under a U.S. Letter Ruling, refundable credits don't reduce the quantum of foreign taxes credited in the United States to earnings repatriated to the United States. Therefore, the group's overall taxes are reduced and therefore, the Canadian incentives will have value to the group;

- It would partially eliminate the overhang of unused credits that will accumulate if the system remains unchanged.

A number of alternatives on how to design refundability for other Canadian corporations have been proposed including:

- Introduce refundable SR&ED ITCs up to a limit, such as the employer's portion of Employment Insurance premiums. The employer's portion of Employment Insurance premiums is only used as a limit and we are not recommending an offset against the Employment Insurance fund.
- Introduce a cap on refundability such as France (€16 million a year).
- Allow companies to choose between a refundable wage credit (similar to the one in effect in Quebec today) and a non-refundable SR&ED credit as it now exists. The choice could be made in each taxation year. As noted below, we don't favour this alternative.

Introducing additional refundability would allow companies immediate access to the SR&ED tax incentives and would spur additional R&D investment in this country at a time that is sorely required.

Other legislative changes

1. Proposed Section 220(2.2) of the Income Tax Act

Currently, taxpayers must file their R & D claims by 12 months after the taxpayer's filing due date for the year.[6] In order for a claim to be complete, taxpayers must file all of the prescribed information on prescribed forms (T661) and Schedule 31. The quantum of the prescribed information has increased markedly since the deadline was introduced in 1994. It is important to note that this is an all or nothing requirement; if a taxpayer has missed filing one piece of prescribed information by the 18 month deadline, all rights to claim the SR & ED tax incentives (deductions and investment tax credits) are lost forever. Partly, it is complexity of these filing requirements that has led to the issues of late filings.

However, until the introduction of the new proposed section 220(2.2) of the Income Tax Act, taxpayers missing the filing deadline could request, under the fairness provisions, that the minister waive the timely filed provisions of the filing requirement.[7] However, the information still had to be provided. If the minister failed to grant the waiver, then the taxpayers could appeal to the courts. The all or nothing filing deadline, coupled with the minister's ability to waive the deadline, lead to a number of court cases related to late-filed SR & ED claims.

The government responded to "the increasing pressure as taxpayers have sought to file additional claims"[8] by introducing proposed legislation to ensure that there will be no exceptions to the filing deadline for SR & ED claims for both the deduction and investment tax credit purposes.[9]

What is interesting about this issue is that there are numerous deadlines contained in the Act. All of them contain provisions for late filing, some of them with penalties and some without. It is unclear why the SR & ED program has been singled out for this treatment or what recourse is available if, for example, an SR & ED claim was filed in a timely manner but one piece of the prescribed information was misplaced by the CRA leading to the denial of a claim. We understand that while the retrospective filing of claims needs to be discouraged to promote the influence of credits as investment incentives, the proposed legislation is overly punitive. We recommend that the proposed legislation be modified to allow late filing with a penalty.

2. Contract payments

The contract payment rules were introduced in 1986 to ensure that only the payer or the performer of subcontracted SR&ED can claim the incentives on SR&ED work performed in Canada under contract. CRA has issued guidance in this area to assist taxpayers in understanding which party may claim. These rules don't apply to taxpayers dealing at non-arms length. There is a very complex set of rules dealing with this issue.

Unfortunately, most contracts are written to deal with the commercial issues and aren't clear as to how much of the work is SR&ED and who is entitled to claim the credits. Despite the CRA guidance, the task of determining who claims the incentives is often very onerous to taxpayers, their advisers and to the CRA when reviewing claims.

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[6] Subsection 37(11)
[7] Subsection 220(2.1)
[8] Kenneth J. Murray, "CRA on Alcatel" (August 2005), Volume 13, Number 8 *Canadian Tax Highlights,* 9
[9] Subsection 220(2.2)

The United Kingdom has dealt with this issue by legislating that as a general rule the performer claims the incentives. There are exceptions for personnel hired on contract who work in-house and for SMEs hired by non-SMEs. Our experience has shown that while this is a simplistic fix to the issue, it penalizes R&D performers who outsource a significant portion of their R&D investment. Also, often, the ability to claim SR&ED is lost when for example, an R&D performer outsources specialized testing which would be R&D for it but is routine work for the performer.

Our recommendation is that the Department of Finance amend the legislation to permit, on an *elective* basis, those non-related parties to a contract to formally designate which of the parties to a contract has the right to claim the SR&ED associated with that contract.

The result of this legislative change will not only clearly specify which party to the SR&ED contract is entitled to claim the SR&ED incentives but will also simplify the administration of the program and interpretation differences and inconsistencies in application that are currently being experienced will be minimized.

3. The definition of SR&ED

Currently, a number of taxpayers are experiencing interpretative problems with CRA on the definition of SR&D. The legislation reads as follows:

"scientific research and experimental development **"** means systematic investigation or search that is carried out in a field of science or technology by means of experiment or analysis and that is

a. basic research , namely, work undertaken for the advancement of scientific knowledge without a specific practical application in view,

b. applied research , namely, work undertaken for the advancement of scientific knowledge with a specific practical application in view, or

c. experimental development , namely, work undertaken for the purpose of achieving technological advancement for the purpose of creating new, or improving existing, materials, devices, products or processes, including incremental improvements thereto,

and , in applying this definition in respect of a, includes

d. work undertaken by or on behalf of the taxpayer with respect to engineering, design, operations research , mathematical analysis, computer programming, data collection, testing or psychological research , where the work is commensurate with the needs, and directly in support, of work described in paragraph (a), (b), or (c) that is undertaken in Canada by or on behalf of the taxpayer,

but does not include work with respect to

e. market research or sales promotion,

f. quality control or routine testing of materials, devices, products or processes,

g. research in the social sciences or the humanities,

h. prospecting, exploring or drilling for, or producing, minerals, petroleum or natural gas,

i. the commercial production of a new or improved material, device or product or the commercial use of a new or improved process,

j. style changes, or

k. routine data collection;

The definition sets out what work is eligible in paragraphs (a) through (d) and excludes work in the field of social sciences and humanities in paragraph (g) and routine work that by itself is not SR&ED in paragraphs (e) and (f) and (h) through (k). For example, testing that is in support of SR&ED although routine in of itself is eligible work under paragraph (d) but routine testing that is not support of SR&ED is ineligible under paragraph (f). Another example would be the exclusion under paragraph (i) of the commercial production of a new or improved product or device. There is extensive CRA guidance on how to differentiate between experimental production and commercial production. CRA policy

recognizes that experimental production may be sold and yet the work to produce the experimental production is still eligible and not subject to the exclusion under (i).

However, taxpayers are experiencing situations where CRA personnel are denying work that is in support of eligible SR&ED such as testing or experimental production because of the exclusions in (f) and (i).

One solution to this issue is to clarify the legislation to ensure that valid support work can be claimed and that paragraphs (e) and (f) and (h) through (k) are meant only to deny eligibility on work listed therein if it is not in support of eligible SR&ED.

4. The partnership rules

The government has passed legislation to allow the allocation of unallocated partnership ITCs. This legislation is welcome as it removes one of the differences to the SR&ED incentive program between operating as a partnership and in corporate form. However, we feel that there are still aspects of the current rules that discourage R&D investment by those who carry on business in the partnership form. Many companies house their operations in a partnership form for valid business reasons. This is particularly true in the oil and gas industry.

We recognize the history of the differences which arose because of the abuses that occurred in the 1980's. However, at this point, given the current legislative protections and a number of decisions favourable to the government in court cases on SR&ED and partnerships, we feel that it is time to equalize the playing field. Five areas to change are as follows:

- Corporations SR&ED expenditures are placed in a pool and can be deducted currently or deferred until future years only subject to the corporation carrying on the same or similar business restrictions. SR&ED in a partnership must be deducted on a current basis by the partners with no ability by the partners to defer their SR&ED deduction to future years. We recommend that corporate partners be allowed to place SR&ED expenditures allocated to them into their SR&ED pool.

- ITC's allocated from partnerships to CCPCs are earned at the rate of 20% rather than at the 35% rate and are not refundable. This penalizes CCPCs that operate in a partnership form and we see no rationale for such a penalty.

- ITC's refunded to corporations or utilized to offset corporate taxes payable are included in taxable income in the year following the year that they are refunded or utilized. ITCs allocated to partners are included in the calculation of the partnerships income or loss in the year they are earned. We fail to understand the rationale of the difference in the timing of taxation of the ITC's. In some cases, there could be a 21 year difference between ITCs earned in a partnership and taxed currently and ITCs earned in a corporation and not claimed for 20 years. We recommend that corporate partners be allowed to defer taxability of the credits to the year after the year that they are refunded or utilized to offset taxes payable.

- Although the recent legislation allowed a limited partner's share of SR&ED ITC's to be allocated to non-specified members of the partnership, any partnership loss resulting from the deduction of SR&ED expenditures is lost. We believe that the either the loss should be allocated to the limited partner or alternately be allowed to allocated to non-specified members of the partnership.

- The recent legislation allowing a limited partner's share of ITCs to be allocated to non-specified members of the partnership is welcome but only is of value if the non-specified members of the partnership have sufficient federal taxes payable to be able to utilize the ITCs. We recommend that the government consider eliminating the distinction in the legislation between partnerships and limited partnerships in respect of SR&ED allocations of expenditures and ITCs.

Other alternatives

We recognize that these other alternatives will require further study and consultation but are offered as alternatives to be considered:

1. Use of a flow through share mechanism

Appendix 2

As discussed above, one of the themes of our submission is to increase immediate access by SR&ED performers to the tax incentives. As noted above, there are many taxpayers who are unable to access the credits on an immediate basis and therefore discount their value severely in planning their R&D investment.

One method to increase immediate access to the SR&ED incentives would be to introduce a flow through share mechanism which would be to allow some or all of the benefits of existing SR&ED tax incentives to be transferred to new equity investors. It would help companies that are not currently tax-paying to raise new equity. The model of flow through shares currently used by various oil and gas, mining and certain renewable energy companies is viewed as a possible example for the flow through of SR&ED incentives. Flow through shares have been used successfully for many years in the non-renewable resource sectors as a means to raise risk capital to carry out mineral and oil and gas exploration. Investors are also now showing more interest in various flow through share issues being used to finance wind energy and small hydro projects.

It is recognized that flow through shares were used from 1983 to 1985 with disastrous results. However, the program at the time allowed credits to flow through to investors prior to the actual work being done. This feature allowed some taxpayers to abuse the system by passing through the incentives to investors without performing the work. We are proposing that a flow through share program be considered with legislative safe guards instituted such that the abuses of the 1980's could not be repeated.

It should be noted the flow through share mechanism is less valuable than that which could be obtained through some form of refundability. The value received by the issuer depends on the circumstances of the issuing corporation and the willingness of new investors to pay a premium value for the shares to recognize the value of the tax incentives received. Historically, this premium has been less than a dollar for dollar increase in the value paid for the shares. However, for firms that are unable to access the tax incentives currently, there is clear value in introducing a flow through share mechanism.

2. Innovation account

SR&ED is not necessarily incurred in a linear fashion. A number of companies undertake large capital projects which have intensive phases of SR&ED. One alternate system would be to allow companies to contribute cash to an Innovation Account within limits. The company would receive a tax deduction for the contribution provided that the funds were disbursed for projects focused on undertaking SR&ED within a specified time limit. Such a regime would assist companies in planning for and funding their large innovation projects.

There are other examples of such an account in the *Income Tax Act*. For example, corporations can make contributions to a "mining reclamation trust" (recently replaced by the broader reference "qualifying environmental trust") of which the taxpayer is a beneficiary. The contributions are deducted in the year in which they are made. Likewise, the cost of the acquisition of an interest in a mining reclamation trust is deductible in the year of acquisition. These investments are typically in support of large capital intensive projects and the immediate write-off is an incentive for investors to contribute to the development of this industry.

3. Refundable wage tax credit

Another alternative design to enable immediate access to the incentives would be to allow companies to choose between a refundable wage credit (similar to the one in effect in Quebec today) and the current system. The choice could be made in each taxation year. The wage tax credit could be set at a discounted level which gives taxpayers the choice of a smaller amount of cash today versus a large tax credit in future years.

This alternative would benefit companies in a loss position with significant R&D labour in Canada. We don't favour such an alternative as it penalizes companies undertaking SR&ED in the process industries where a significant portion of their claims are for materials consumed or transformed in trials.

Conclusion

Deloitte is pleased to make these recommendations on the SR&ED program. We believe that by enhancing access to high rate refundable credits; making a portion of low rate credits refundable; and introducing changes to the legislation to deal with some of the current issues will make Canada more globally competitive.

Appendix 2

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Deloitte, one of Canada's leading professional services firms, provides audit, tax, consulting, and financial advisory services through more than 7,600 people in 56 offices. Deloitte operates in Québec as Samson Bélair/Deloitte & Touche s.e.n.c.r.l. The firm is dedicated to helping its clients and its people excel. Deloitte is the Canadian member firm of Deloitte Touche Tohmatsu.

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Appendix 3

Deloitte's comments: Budget 2011 – Tax policy issues for consideration

Letter to the Department of Finance
http://www.deloitte.com/view/en_CA/ca/services/tax/dc23a74b1d4eb210VgnVCM2000001b56f00aRCRD.htm

October 22, 2010

The Honourable James Flaherty
Minister of Finance
Department of Finance Canada
140 O'Connor Street
Ottawa, Ontario K1A 0G5
Canada

Dear Minister Flaherty:

Budget 2011 –Tax policy issues for consideration

As the nation's largest tax practice, Deloitte is committed to helping shape the tax policy that will create a globally competitive and innovation-friendly economy. We see first-hand the impact of tax policy on our nation's most mobile resource: high-calibre professionals and entrepreneurs. We strongly feel that the tax system must be globally competitive for both companies and individuals. Our Future of Tax initiative is our vehicle for developing our tax policy vision and communicating this vision with our clients and the Canadian community at large.

We are writing to outline our recommendations for you to consider in your upcoming 2011 federal budget. We would appreciate the opportunity to discuss any of these elements with you personally or with anyone that you suggest from the Ministry of Finance.

Canada has weathered the economic storm of the past two years better than most G20 countries. We commend the Government of Canada for its leadership and willingness to maintain its efforts to create a competitive climate for businesses operating in Canada, despite the economic headwinds it has faced. We understand too that the strength and sustainability of the recovery remain uncertain and the current level of the deficit leaves the government with continuing fiscal challenges.

We recognize that the objectives driving tax policy can sometimes conflict. However, our view is that in the long term, creating a competitive environment for business and highly mobile professionals and entrepreneurs will have the greatest positive impact on Canada's fiscal health.

Each of the following measures has strengthened the competitiveness of Canadian companies and, in doing so, the long term stability of Canada's economy:

- the gradual reduction in the corporate tax rate that is in progress;
- the repeal of the interest deductibility restrictions related to foreign investments;
- the change in the definition of "taxable Canadian property" which encourages and facilitates foreign investment in Canada;
- the significant modifications to proposed offshore fund legislation;
- the announced intent to explore consolidated reporting for tax purposes; and
- the implementation of the harmonized sales tax (HST) in British Columbia and Ontario.

In shaping our recommendations, we observe that Canada has a truly diverse and welcoming culture, a great work ethic, and a supportive, nurturing environment for individuals and for business. Canada also faces an aging population and productivity growth more reliant on hours worked than innovation. As well, shifting global trading patterns suggest that many countries will outgrow our major trading partner to the south.

In response, we see the need to attract and retain the most highly productive and innovative individuals, who are also the most globally mobile, and to stimulate businesses and individuals to invest more in innovation than they do today. These priorities, which will ensure Canada's global competitiveness, have also been identified by the Coalition for Action on Innovation in Canada in its recent report, *An Action Plan For Prosperity*.

Recommendations for Budget 2011 and beyond

1. Take steps to make the personal tax system more globally competitive

While the moves to increase the competitiveness of Canadian business are a major step in the right direction and should continue, we believe that the time has come to focus on enhancing the competitiveness of the personal tax regime. As the speed of change in business continues to increase, attracting and retaining the individuals most likely to drive innovation in the economy must be a key focus.

We recognize that attracting and retaining globally mobile and highly productive individuals depends upon many factors, not just economic drivers. Canada is a wonderful place to live and a stable environment in which to raise a family. These factors are already a powerful source of attraction to Canada. We believe, however, that more individuals would stay in Canada or move to Canada if it lowered personal tax rates, starting with an increase to the threshold at which the top rate of tax begins and also reducing the top rate of tax.

We would suggest that personal tax measures to raise the income threshold at which the top rate applies and to reduce the top marginal tax rate can be scheduled over the next four to six years, in much the same manner as the reductions to corporate tax rates were phased in over a number of years. The benefit of the lower rate drove corporate behaviour before those reductions were complete and we believe that this same effect will apply to individual behaviour, attracting and retaining the most productive, innovative and mobile individuals to Canada.

We believe that reducing the tax rate in this way, combined with a focused and targeted immigration strategy (discussed below), should increase the total amount of personal tax collected. However, if the government believes that it must offset these reductions with increases elsewhere in the tax system, we believe that there is room to do so with consumption taxes, which are low by global standards.

2. Focused immigration – meeting Canada's future needs

The future of Canada's competitiveness is intrinsically tied to individuals with the vision, drive and qualifications to contribute to the growth of new economies. Not only does half of Canada's tax revenue come from personal tax, which is a high reliance compared to most other countries, but business growth and productivity are closely linked to attracting and retaining highly educated and entrepreneurial individuals in Canada. Especially in light of Canada's aging population, Canada's human capital needs should be articulated in a reasoned and practical multi-year plan aimed at increasing immigration to fill gaps in the Canadian workforce and to support a sound knowledge base.

Increased immigration to Canada by individuals who are educated, productive and innovative will not only enhance Canada's ability to compete globally by ensuring the success of Canadian enterprises, but will also enhance government revenues from corporate and personal taxation. A larger population of well paid, skilled individuals will contribute significantly to an increase in the overall amount of personal taxes collected, even with recommended personal tax rate reductions.

We therefore support the development of an immigration vision with a long term perspective. In addition to increasing overall targets, we believe there is room to sharpen existing programs. For example, the federal skilled worker program should be refined to target desired immigrants – appropriate attention must be given to all sectors including blue collar workers who build Canada's infrastructure. Provinces could be further encouraged to also seek these same immigrants, within a local and regional process which complements the federal skilled worker program.

3. R&D incentives – key to innovation, job creation in Canada

Canada has historically led the way in tax policies that encourage innovation, primarily through its research and development (R&D) incentive regime. The concept of these incentives is well founded and sophisticated, and can be seen as an efficiently targeted government expenditure. It is recognized as a role model upon which new regimes have been based in many countries.

The Minister has repeatedly acknowledged the importance of innovation for the Canadian economy, as a driver of productivity and ultimately employment and business success. The 2010 federal budget announced a broad based review of SR&ED. In our view, the current framework has served Canada and Canadian taxpayers well and we recommend that the current SR&ED framework be retained.

However, we applaud the government for looking for ways to stimulate innovation further. In the last few years, the competition for attracting global businesses to focus their research efforts in any particular country has intensified. The number of countries providing incentives for R&D has doubled during that period. Countries such as France and Brazil have increased their incentives for research efforts dramatically.

For Canada to stay competitive and maintain existing and create new quality employment opportunities for an educated work force, it is essential that we enhance the delivery of our SR&ED incentives. For one, we would like to see the investment tax credit become partially refundable as it is in many countries. Refundability, for many US-based multinationals, means the difference between the incentive being a permanent tax savings or a tax deferral, which can be a powerful distinction in perceived value.

Currently, only Canadian-controlled private corporations (whose income does not exceed the specified limit) may claim a refundable credit. Expanding the refundable credit to all corporations would appropriately reward the risks inherent in carrying out SR&ED in Canada. This would send a strong message to foreign companies seeking new investment opportunities.

Global organizations value stability in making long-term investment decisions. The more predictably and consistently our SR&ED program is administered, the higher its value is to any large organization choosing between jurisdictions in which to invest. We encourage working with industry groups to identify points of anxiety and uncertainty to provide a more stable planning horizon for organizations considering Canada as a place in which to invest.

4. Fostering investment in innovation

Budget 2011 should contain measures to support an innovation-friendly industry strategy. Knowledge-based industries will contribute significantly to Canada's economic growth. This sector will develop exponentially in the near future as well as in the long term and Canada has an opportunity to claim global leadership in industries such as life sciences, alternate energy, clean technology, digital media, and other areas of technology and innovation.

The tax system can play an important role in securing Canada's leadership in these fields. In addition to tax incentives for specific activities (including the SR&ED incentives noted above), support for financing is essential. In particular, consideration should be give to targeted credits, specifically for venture capital investors: an angel tax credit to support early stages of innovation industry development, when risks are higher, and a later stage credit for corporate venture investors. We recommend that priority be given to an angel tax credit as it is the logical starting point for the renewal of Canada's innovation initiative and it is the incentive that can have the greatest impact on growing our economy.

In addition to tax incentives, the government should consider other ways to finance ventures in innovation, including direct investment or matching grants.

5. The GST as a source of Government revenue

While we do not advocate increasing Canada's goods and services tax (GST) rate, we note that this rate is low compared to that of other value added tax jurisdictions; therefore, the GST rate provides the most fertile ground for a potential rate increase, perhaps with a deferred implementation date, in order to accelerate spending decisions in the interim.

We support the Government's plan to conduct a comprehensive review of the application of the GST/HST to financial services. We encourage consultation with financial services industry representatives and their advisors, with a view towards ensuring that Canada's financial service providers are able to compete in the global market. In this regard, we urge the Government to reconsider the definition of financial service. Notwithstanding the Government's reliance on the Explanatory Notes and administrative policy of the Canada Revenue Agency, the current legal definition is, in our view, potentially much broader than intended and may ultimately encompass activities that the Department of Finance has already agreed should be excluded. Similarly, in the event that the GST rate is increased, we encourage relieving measures to the financial services industry so as not to burden that industry disproportionately with the resulting change in tax mix.

6. Retirement savings – planning for tomorrow's economy

The Government has recently recognized the importance of encouraging retirement savings today in order to forestall an economic crisis in the future. Statistics indicate that current tax policy initiatives have not adequately effected the desired level of savings among Canadians. As noted by Andrew Dunn and others before the Standing Senate Committee on Banking Trade and Commerce, creative strategies are required. Strategies to encourage savings could include an enhanced up-front income deduction, higher savings plan thresholds, reduced taxation when savings are withdrawn from plans and an increase in the pension credit. A specific proposal that we put forward to the Committee for consideration was a flow-through of the tax benefit of certain forms of income (e.g., dividends paid by Canadian corporations) when withdrawn from Canadian retirement vehicles. The Final Report of the Standing Senate Committee on Banking, Trade and Commerce, *Canadians Saving for their Future: A Secure Retirement*, contained good recommendations to enhance savings by Canadians. We strongly encourage the Government to introduce measures in order to ensure that appropriate incentives are in place to encourage savings.

7. Enhancing certainty

We commend the Department of Finance for the progress made in advancing outstanding pending tax legislation, following the comments made by the Auditor General in her Fall Report to Parliament in November 2009. Certainty in tax law is in the best interest of the tax community as a whole – revenue authorities, taxpayers and tax advisors all benefit from a clear understanding of the law at any point in time. In furtherance of this important tax policy objective, we respectfully offer a number of recommendations:

- Comfort letters are welcome. Their issuance by the Department of Finance is an effective and efficient stop-gap measure when unintended tax results are identified. However, as noted by the Auditor General in her Fall Report, a significant number of comfort letters have not yet resulted in corresponding legislative amendments. This has created uncertainty on two fronts. First, while taxpayers can and do arrange their tax affairs in accordance with information contained in comfort letters, the letters are administrative in nature and are not law – this is cause for concern. Second, for financial reporting purposes, comfort letters are not treated as statutory proposals and, as such, cannot be considered in the preparation of audited financial statements. Thus, transactions are at times deferred or executed in a less than optimal manner under existing enacted legislation. This results in increased cost and complexity which impacts the competitiveness of Canadian companies. We therefore encourage the timely enactment of legislation in support of amendments approved in comfort letters.

- Tax proposals should be introduced and advanced through the legislative process within a reasonable timeline, having due regard for the need to consult with the public on many matters, particularly those that involve a significant policy shift, before finalizing legislative amendments. Detailed explanatory notes should accompany proposals at the earliest opportunity in order to ensure that the pending changes are well understood. Explanatory notes provide the Department of Finance with a unique opportunity to set out the context and purpose of legislative amendments. They are most helpful to the public when they go beyond a mere summary or repetition of the text of the legislation.

- Legislative amendments should be prospective unless they are merely corrections or clarifications of existing law. Retroactive or retrospective legislation that negatively alters the consequences of tax

planning or reporting that has already taken place causes confusion and inefficiency and may also be costly and unfair to taxpayers. One recent example of a retrospective amendment viewed by many to have had unfair results is the proposed change without grandfathering in respect of the tax deductibility of so-called stock option "cash outs". While we fully appreciate the need, at times, to act swiftly to close down an unintended "loophole", where a particular tax policy is well known and understood, appropriate grandfathering is warranted. Taxpayers must be able to make business decisions with confidence and certainty as to the tax consequences.

8. Consultation – a best practice for complex proposals

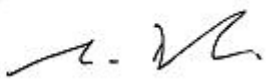
There are a number of examples where the Department of Finance has sought outside advice regarding pending legislative changes. We would encourage this consultative approach for any significant changes to complex legislation. At a minimum, this assists in identifying unintended consequences of the proposals. For example, we understand that the Department of Finance is currently considering the issue of "debt-dumping", as discussed by the Advisory Panel on Canada's System of International Taxation in its final report issued in December 2008. We encourage the Department of Finance to follow the Advisory Panel's recommendation "that further study and consultation should be undertaken to assess the effectiveness of potential options for addressing the objectionable debt-dumping situations". As such, we would strongly encourage the formation of an advisory panel to review any proposed legislative changes in this area before any amendments are released.

While, as noted above, much progress has been made in terms of clearing the backlog of draft legislation, certain international tax proposals are still outstanding. We encourage the Department of Finance to move forward in issuing the draft legislation. Due to the complexity of the international tax regime, we recommend strongly that the proposals be released for consultation before they are tabled for first reading in the House of Commons.

We sincerely hope that you will consider the issues raised in this letter as you move forward with Budget 2011. We would be happy to meet with you to discuss any of these matters further.

Yours truly,

Deloitte & Touche LLP



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Appendix 4

CICA Tax Policy Committee – Background Paper

TITLE **SR&ED incentives – key to innovation, job creation, productivity**

EXECUTIVE SUMMARY

For Canada to stay competitive and maintain and create quality employment opportunities for an educated work force, it is essential that we enhance the economic impact of our SR&ED incentives. We recommend that the investment tax credit become partially refundable as it is in many countries and in certain provinces of Canada. Currently, only Canadian-controlled private corporations (whose income does not exceed the specified limit) may claim a refundable credit. Expanding the refundable credit to all businesses would appropriately reward the risks inherent in carrying out SR&ED in Canada. This would send a strong message to foreign companies seeking appropriate sites for new investment opportunities.

Refundability enhances predictability in that companies investing in SR&ED can determine with certainty if and when they will benefit from the incentive. This will have positive impact on investment decisions as investors can clearly see the matching of risk and reward. This is particularly relevant to US-based multinational enterprises for which the interplay of the Canadian and US tax regimes makes a non-refundable credit less relevant, if at all. From an accounting perspective, a refundable credit is preferable as it is considered an increase in EBIT (reduction in cost). In terms of the timing of refundability and the amount of refund, different models may be considered. For example, a claim would be subject to audit or the expiration of a certain time period before a refund is made to the taxpayer.

An innovation-friendly industry strategy can be further supported through tax incentives relating to financing such endeavours. We recommend that priority be given to an angel tax credit as it is the logical starting point for the renewal of Canada's innovation initiative and it is the incentive that can have the greatest impact on growing our economy.

BACKGROUND OF ISSUE

1. Description of issue

   - Canada has historically led the way in tax policies that encourage innovation, primarily through its R&D incentive regime. However, the world is catching up and the competition for international investment is fierce. Over the past few years, the number of countries providing incentives for R&D has doubled and a number of countries, such as France and Brazil, have increased their incentives for research efforts dramatically. Canada is at risk of losing vital investment in a field that will enhance productivity and competitiveness in the world arena.

   - Investment in R&D in Canada lags behind such investment in other countries. This will inevitably lead to productivity challenges which will, in turn, affect competitiveness, prosperity and employment.

2. Desired policy position

   - The SR&ED Investment Tax Credit should be modified to make it partially refundable for all businesses.

   - An angel tax credit to support early stages of innovation industry development should be created.

3. Consequences (current situation)

   - Under the current situation, business may not be able to meet their growth potential due to the lack of investment. This will lead to a decline in innovation and productivity and will ultimately lead to job losses.

   - Canada is unable to attract adequate international investment. This will have an adverse effect on its global position. This competitiveness deficit will affect employment and productivity.

4. Supporting studies

   a. domestic and international think tanks & organizations

   b. provincial/federal governments/committees - Canada/international governments

   The R&D regime was identified as requiring review by the Minister of Finance in the 2010 budget.

5. Canada - legislative review/change

   - An amendment to section 127.1 of the Income Tax Act would be required once the appropriate level of refundability is determined. Specifically, the definitions of "qualifying corporation" and "qualifying income limit" would require reconsideration, as would the definition of "refundable investment tax credit".

   - The Income Tax Act would require the addition of a provision allowing for an angel tax credit. Consideration could be given to specifically identifying which innovation industries would qualify for the new credit.

RECOMMENDATIONS

1. Expand the availability of the refundable investment tax credit.

2. Introduce an angel tax credit to foster investment in innovation industries.

DEVELOPED BY: Andrew Dunn, Managing Partner, Tax, Deloitte & Touche LLP

Albert Baker, Tax Policy Leader, Deloitte & Touche LLP

Natan Aronshtam, Global Managing Director, R&D and Government Incentives,

Deloitte & Touche LLP, Date: February 7, 2011

Appendix 5

INNOVATION AND THE SR&ED PROGRAM

Natan Aronshtam, Partner and Global Managing Director, R&D and Government Incentives, Deloitte & Touche LLP
Joanne Hausch, Associate Partner, R&D and Government Incentives, Deloitte & Touche LLP

February, 2011

Abstract

The federal government has recently formed an expert panel to review its direct and indirect support to business R&D. The rationale for the formation of the panel is Canada's lagging growth in innovation and productivity. One of the programs under review is the SR&ED program which is the federal government's largest support program for business R&D.

This paper will examine how R&D contributes to innovation and productivity; how Canadian business R&D is performing when measured against global competition; and the federal government's support for business R&D. It will consider the impact of the demise of Nortel on the Canadian business R&D performance as well as the question as to why Quebec outperforms its provincial counterparts in stimulating business R&D. We will outline the reasons that government supports business R&D; the key issues for business in making their R&D investment decisions; and the global competition for R&D investment.

The paper concludes with an examination of the effectiveness of the SR&ED program in stimulating additional business R&D; suggested improvements to the program to make it more effective and the economic impact of these recommendations.

Appendix 5

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Introduction[1]

There is strong economic evidence supporting the fact that government support is necessary to attract private sector R&D and that investment in R&D produces positive economic benefits that spill over into the economy. R&D is one of the key drivers of innovation which in turn drives productivity, leading to increased GDP per capita. Although Canada's economy is very successful, ranking fourth among countries with populations of greater than 10 million[2], our GDP per capita trails that of the U.S. and the gap is widening.

The Canadian federal government invests over $11 billion every year on research and development directly and an additional $3.5 billion indirectly as support through the tax system. The goal of this support is to promote innovation and stimulate productivity. However, recent studies conducted by the OECD and other organizations indicated that Canada is lagging behind most other industrialized nations in innovation. Canada's business spending on R&D (BERD), innovation and productivity per capita have not increased at a competitive level and as a result, Canada's position in the global economy is at risk. In response to these reports, the federal government announced on October 14th, 2010 that it would engage an independent panel to undertake a review of its programs that support commercially oriented research in the education, private and non-profit sectors.

This paper will explore the current data showing Canada's R&D spending and economic performance, the reasons for Canada's lagging performance, factors that influence global competition for R&D resources and the role of government funding in attracting and supporting R&D and innovation. Canada's federal scientific research and development (SR&ED) program is one of the most generous R&D tax incentive programs in the world. Is it achieving its goals to attract R&D investment to this country? What is the role of program delivery and administration in achieving these goals? What changes can be made to the SR&ED program to stimulate additional R&D spending in Canada along with additional employment that follows?

In addition, we will examine some of the regional differences in the levels of R&D spending and potential reasons for these differences. For example, why is Quebec outperforming the other provinces in innovation? We will demonstrate that the Canadian government support for R&D needs to be improved in order to stimulate further R&D spending in Canada and to boost innovation.

Review of R&D Spending

Canada's science policy has been under review for some time. In May 2009, Industry Minister Clement attended a dinner with 15 chief executives from Canada's largest technology companies where he announced that he would produce a plan for the high-

[1] The authors acknowledge the significant contribution of Kenneth J. Murray, a retired partner of Deloitte & Touche LLP, in the preparation of this paper.
[2] Institute for Competitiveness and Prosperity, June 2010

tech industry that would make it the world's leading digital economy. One part of that plan is to review the federal SR&ED program to determine how best to deliver tax benefits to research oriented firms.[3]

This was followed by a statement in the May, 2010 Budget, in which the government stated that it would "conduct a comprehensive review of all federal support for R&D to improve its contribution to innovation and to economic opportunities for business. This review will inform future decisions regarding federal support for R&D. The Government is currently developing the terms of reference for the review."[4]

The government's announcement of a comprehensive review of all existing federal support for business R&D was therefore not a surprise. The catalyst for the current review is Canada's innovation and productivity challenges as evidenced by reports published by the Science, Technology and Innovation Council[5] and the Council for Canadian Academies[6]. Both reports highlight Canada's low spending on R&D, innovation and commercialization when compared to other major industrialized countries. The review will encompass "all existing federal support for business R&D to see how this support could be enhanced to make sure federal investments are effective and delivering maximum results for Canadians."[7]

The review encompasses about $4 billion in direct federal support for post graduate researchers and other researchers in the public and non-profit sectors excluding funding for basic research at universities[8]. Also, the review encompasses a review of the $3.5 billion in indirect federal funding through tax incentives for corporations undertaking eligible scientific research and development activities ("SR&ED")[9].

The review is being undertaken by an independent expert panel. The chair of the panel is Mr. Thomas Jenkins, the Executive Chairman and Chief Strategy Officer at Open Text. There are five other panel members from industry and academia[10]. The panel is due to

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[3] Shawn McCarthy "Canada's Race for a High-Tech Strategy-Industry Awaits Ottawa's High-Tech Plan", The Globe and Mail, Report on Business, Saturday, August 1, 2009

[4] The Budget 2010, page 87

[5] *State of the Nation 2008, Canada's Science and Technology and Innovation System*. Copies of this paper are available at www.stic-csti.ca.

[6] *Innovation and Business Strategy: Why Canada Falls Short,* Report of the Expert Panel on Business Innovation. Copies of this paper are available at www.scienceadvice.ca.

[7] *Office of the Honourable Gary Goodyear, Minister of States (Science and Technology),* "Harper Government Takes Action to Better Support Business Research and Development", October 14, 2010.

[8] Based on Statistics Canada reports this support includes $2 billion in university research, $500 million direct grants to business, $400 million in procurement, $470 million to non-profits, $560 million to foreign researchers.

[9] The definition of "scientific research and development and experimental development" is contained in subsection 248(1) of the Income Tax Act, RSC 1985, c.1 (5th Supp.) as amended (herein referred to as 'the Act). Unless otherwise stated, statutory references in this Article are to the Act.

[10] The Expert Panel includes Dr. Bev Dahlby of the University of Alberta, Dr. Arvind Gupta of the University of British Columbia, Mrs. Monique F. Leroux of the Desjardins Group, Dr. David Naylor of the University of Toronto, and Mrs. Nobina Robinson of Polytechnics Canada.

report to the government in one year from its inception with recommendations to enhance Canadian business innovation.

In December, 2010 the Panel released a consultation paper[11]. The paper provides some background information for the review and lists 15 questions to which it is seeking input from the community. At time of writing, many industry associations and corporations were preparing submissions to the panel.

Government Spending on R&D

The federal government undertakes R&D itself ("intramural R&D") as well as providing direct support in the form of grants to business and university R&D and indirect support to business through the income tax system.

Statistics Canada[12] has provided summaries of Canada's Federal expenditures on science and technology in its 2009/2010 fiscal year. The total expenditure was over $11 billion, broken down by performer as follows:

Performer	Amount ($000's)
Intramural	$5,582
Business Enterprise	1,019
Higher Education	3,078
Canadian Non-Profit Institutions	485
Provincial Governments	486
Foreign Performers	681
Other Canadian Performers	54
Total	$11,285

The Expert Panel Consultation Paper[13] provides a list of some 44 programs that are under consideration for review including the SR&ED program. The paper indicates that the panel may not examine all 44 programs and may add others to its review. Major programs listed include The Industrial Research Assistance Program, The Atlantic Innovation Fund, The Centres of Excellence for Commercialization and Research, The Industrial Postgraduate Scholarship Program and The Space Technologies Development Program.

The review covers only external R&D spending and therefore, the $5.5 billion of intramural spending is not being considered. The difference between the $4 billion of spending under review by the panel and the total federal external funding of R&D of $6.7 billion may be explained by the statement that "the review will not cover "basic science"

[11] *Review of Federal Support to Research and Development*, Expert Panel Consultation Paper. Copies of this paper are available at www.rdreview-examenrd.ca.
[12] Statistics Canada, *Federal Science Activities 2010/2011*, page 17 (Ottawa, Statistics Canada, October 2010)
[13] Supra note 11

research at universities and colleges, according to a source, who spoke on condition of anonymity"[14].

The federal government provides indirect support to R&D through the tax system (the SR&ED program). The tax relief includes the immediate deduction of qualifying current and capital SR&ED expenditures in calculating taxable income, the ability to place the SR&ED expenditures in a pool and to deduct any balance in the pool in the year or when so desired within certain limitations and the ability to earn investment tax credits ("ITC's") which can offset federal taxes payable on a dollar for dollar basis. For certain qualifying corporations these ITC's are refundable, after first applying them to the corporation's taxes payable for the year, if any. Federal ITC's are taxable in the year after the year in which they are refunded or used to offset taxes payable.

The federal government measures the cost of its tax support to R&D through the cost of the ITC's utilized in a year. Most statistics do not factor in the taxation of the ITC. Furthermore, they do not measure the tax credits that are earned but not claimed because the corporation is unable to use non-refundable credits.

The projected cost[15] of the ITC's for 2010 is shown in the chart below:

Tax Credits earned and claimed in the year	$2,450
Tax credits claimed in the year but earned in prior years	$ 910
Tax credits earned in the year but carried back	$ 110
Total expenditure	$3,470

In addition to the federal support, the Yukon Territory and all provinces except Prince Edward Island provide additional indirect support to R&D through their taxation systems. This assistance is estimated to be approximately $1.25 billion.[16] This assistance is for the most part modeled on the federal SR&ED program. Therefore any changes recommended by the panel to the federal SR&ED program and implemented will have a corresponding impact on the various provincial and territorial R&D tax assistance programs.

[14] Andrew Mayeda "Lagging Innovation leads feds to launch review into R&D" Postmedia News, October 13, 2010.
[15] Department of Finance Canada, *Tax Expenditures and Evaluations 2010,* page 21 (Ottawa, Department of Finance Canada, January, 2011)
[16] Joanne Hausch and Eric Shum "*Scientific Research and Experimental Development, The Evolution of the SR&ED Programme*", to be published in the Report of the Proceedings of the 2010 British Columbia Tax Foundation

Canada's Lagging Productivity

A number of factors influence productivity[17] including:

- Innovation
- Venture Capital Support
- Foreign Direct Investment
- Trade
- Interprovincial Trade Barriers
- Investment in Machinery and Equipment
- Investment in Information, Communications and Technology
- Investment in Public Infrastructure
- Military Defence Spending
- Education Attainment

In this paper, we will focus on innovation[18].

The Report on the Expert Panel on Business Innovation states that "long term analysis by Statistics Canada and the OECD show that Canada's relatively poor productivity growth is due mainly to weak growth of multifactor productivity or MFP. (MFP broadly reflects the effectiveness with which labour and capital are combined in the economy)."[19] The report concludes that "Canada's weak growth in MFP indicates that the country's lagging productivity growth is largely due to weak business innovation".[20]

Business innovation is vitally important as it leads to increased productivity and hence a higher standard of living. In the future, innovation will become increasing important as Canada faces:

- Increased global competition especially from newly emerging economic powers in Brazil, China, India and Russia. Witness the growth of R&D in China. Its real expenditures on R&D have risen from around 5% of the OECD total in 2001 to 13% in 2008;
- The challenges of reducing the environmentally damaging methods of production for our resource industries;
- The aging of our population and a declining work force;
- The continuing rapid development of technology in the information and communications (ICT) sector, a sector in which Canada has fallen behind.

[17] In this context productivity refers to labour productivity, or output per hour worked.
[18] The Canadian Council of Academics defines innovation as *new or better ways of doing valued things*, and includes new products, improved processes and new business models.
[19] Supra note 10, page 3.
[20] Ibid.

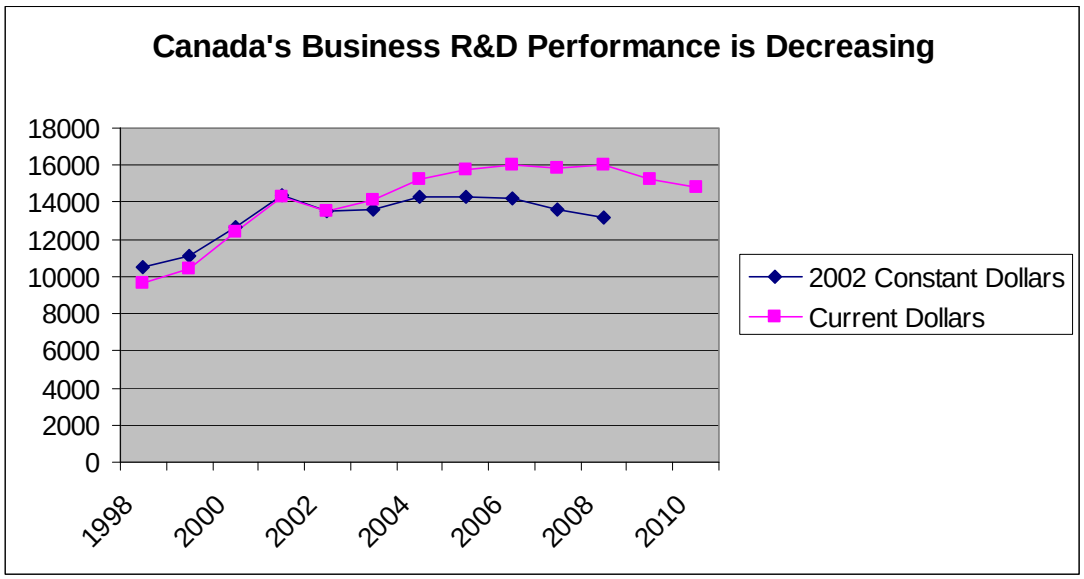
The Report on the Expert Panel on Business Innovation looks at a number of factors that impact on productivity and concludes that:

- Canada has the necessary talent;
- Capital investment is adequate except in the ICT sector and in the purchasing of advanced hardware and software; however
- The weakness in productivity reflects the poor contribution of business innovation in Canada.

Business Enterprise R&D (BERD) Spending

BERD in Canada

One of the important indicators of private-sector innovation is business enterprise expenditure on R&D ("BERD"). Historically, Canada enjoyed a rapid increase in BERD from 1998 to 2001. This corresponded with the high tech boom which peaked in 2001. From 2001 through to 2007, BERD remained flat on a current dollar basis. However, as measured on a constant dollar basis, R&D spending actually decreased over that period. From 2008 to 2010, R&D spending fell in each of these years from $15.9 billion in 2008 to an estimated $14.8 billion in 2010.



This flat performance can be explained by a number of factors including:

- The growth of the Canadian dollar. Between 2002 and 2008, the Canadian dollar rose 58% against the U.S. dollar. This has eliminated Canada's cost advantage and made Canada a high cost R&D performer.
- The rise of talent in low cost jurisdictions such as China, Eastern Europe and India. Many companies have a choice as to where to perform their R&D and

assuming equal talent and a lower cost regime, they will choose to perform their R&D offshore. One major drawback to performing R&D in some of these countries is their weak protection of intellectual property rights. If measures are implemented to raise their level of intellectual property protection, we can expect to see more R&D being performed offshore.

BERD in Other Countries

How does Canada perform on the world stage? As shown in the chart[21] below which illustrates BERD divided by GDP, a measure of investment in R&D, Canada's performance in 2008 was subpar as compared to with other major industrialized countries. From 1998 to 2008, Israel has shown a dramatic increase in BERD/GDP from 2.08% to 3.93%. Other countries with large increases include Korea (1.58% to 2.54%) and Germany (1.54% to 1.85%). while the average of the EU27 has increased from 1.04% to 1.15%. The U.S. has had a similar small increase from 1.91% to 2.01%. Over the same time period, Canada has declined from 1.06% to 1.00%.

In 2009, the OECD ranked South Korea as 5th in terms of BERD/GDP as compared to Canada which ranked 22nd among industrialized nations. In the 2009 R&D Scoreboard[22] which ranked the top companies in the world according to their level of R&D investment, South Korea had 21 companies ranked in the top 1,000 while Canada had only 8 in that category. (One of these top spenders was Nortel which is now being wound up.)

The reasons for Korea's success include:

- A focus on three highly specialized industries, pharmaceuticals and biotechnology, electronic and electrical equipment and automotive parts;
- A high degree of government funding. (2nd in both 2004 and 2007 only to the U.S. when measured on the basis of government appropriations to total government outlays);
- A strong venture capital industry;
- A highly educated population. South Korea has the highest percentage of population with tertiary education in the 25-34 year old age group as measured by the OECD.

According to this measure, Germany is another success story with 70 companies ranked in the top 1,000 by R&D investment. In Germany, R&D investment is supported by

[21] OECD, Main Science and Technology Indicators Database, March 2010

[22] *The 2009 R&D Scoreboard, The Top 1000 UK and 1000 Global Companies by R&D Investment, Company Data"* Department of Business Skills and Innovation (United Kingdom, 2010).

Business enterprise expenditure on R&D, 2008

As a percentage of GDP

Source: OECD, Main Science and Technology Indicators Database, March 2010. See chapter notes.

StatLink http://dx.doi.org/10.1787/835805814452

direct support at three levels: EU, Federal and State. Examples of some of the larger programs available in Germany include:

- EU Funding
  - The Seventh Framework Program (FP7). This program is the main EU funding program for research and technological development activities. Total funding is €53.3 from 2007-2013.
  - The Competitiveness and Innovation Framework Program (CIP) which focuses primarily on innovation and research processes. Total funding is €3.6 billion from 2007-2013.
- Federal Funding
  - Federal Ministry for Education and Research funded R&D totalling €3.4 billion in 2009.
  - Federal Ministry for Economy and Technology funded R&D totalling €5.3 billion in 2010.

This high level of direct funding far exceeds Canada's support for R&D.

The Nortel Effect

When looking at the R&D spending of Canadian business over the past 10 years, the number of companies spending more than $100 million per year has increased[23], as has total R&D spending. However the increase has not kept pace with overall growth in the economy. In examining the pattern of R&D spending, one has to consider the impact of the failure of Nortel Networks Corporation ("Nortel").

In 1999, Nortel dominated Canadian R&D. It performed over $4.5 billion of R&D worldwide with a significant portion of that performed in Canada. At its height, Nortel employed 25,900 personnel in Canada out of a total world-wide workforce of 94,500 and had major R&D development centres in this country. By 2009, Nortel's worldwide R&D had decreased to $864 million and the company was in bankruptcy protection with all of its assets being sold off.

Over that period of time, measured in 2002 constant dollars, Canadian business R&D had increased from a 1998 level of $10.5 billion to a 2008 level of $13.2 billion despite the massive decrease in Nortel's R&D spending in Canada.

Beyond the direct decrease in Canadian R&D spending, there was an indirect fall out as Nortel served as a catalyst for Canadian technology community. It spun out dozens of high-tech companies and thousands of high paying jobs and formed the nucleus of a high tech cluster in Kanata, Ontario. It is impossible to measure the precise direct and indirect impacts of Nortel's failure on Canada's R&D spending.

[23] Research InfoSource Inc, *Decade in Review, Industrial Research in Canada*, November 4, 2010. This publication can be found at: www.researchinfosource.com Top 100 R&D Performers: The number of companies spending over $100 million per year on R&D increased from 11 in 1999 to 22 in 2009.

However, in evaluating Canada's business R&D spending over the past decade, one must take the demise of Nortel into account and the impact this one company may have had on Canada's performance in BERD.

Canada's Regional Variances

As illustrated by the chart[24] below, the bulk of Canada's business R&D is performed in Ontario and Quebec.

Province	Amount	Percentage
Atlantic Provinces	317	2.0
Quebec	4,595	29.1
Ontario	7,654	47.9
Manitoba	160	1.0
Saskatchewan	132	0.8
Alberta	1,479	9.4
British Columbia	1,545	9.8
Total Canada	15,792	

What is notable about the data[25] is the disproportionate amount of R&D carried out in Quebec, measured either as a percentage of R&D to GDP or by person.

Province	R&D/GDP	Per Person
Atlantic Provinces	.32	136
Quebec	1.52	593
Ontario	1.29	585
Manitoba	.31	133
Saskatchewan	.20	130
Alberta	.51	412
British Columbia	.75	344
Total Canada	.99	474

When measured globally, Quebec's percentage of R&D to GDP in 2007 (1.59) exceeds that of EU-15 (1.22), EU-25 (1.14), and the EU-27 (1.12). Canada at 1.04 trails all of the three EU groupings of countries.

What accounts for Quebec's success? One reason is the high level of indirect funding that is available from the Quebec government through its provincial taxation system. The Quebec provincial tax incentives for R&D include:

[24] Statistics Canada, *Science Statistics, Industrial Research and Development Statistics, 2006 to 2010,* December 2010, page 11

[25] Institut de la statistique, Québec, http://www.stat.gouv.ca/savoir/indicteurs/rd/dirde/dirde_hab_cour.htm

- A fully refundable tax credit[26] on salaries and wages of personnel performing SR&ED in the Province of Quebec. The rate of the credit ranges from 17.5% for all corporations up to a maximum of 37.5% for Canadian controlled corporations on the first $3 million of annual expenditures on SR&ED salary and wages. Eligible expenditures include 50% of payments made to arms-length subcontractors. The tax credit is reduced from the maximum rate of 37.5% to the minimum rate of 17.5% based on the size of the corporation. Size is based on the dollar amount of worldwide assets in the corporation or in the associated group to which it belongs;
- A fully refundable tax credit for SR&ED paid pursuant to a university research contract;
- A fully refundable tax credit paid for payments made for pre-competitive research; and
- A fully refundable tax credit on dues and fees paid to a research consortium.

In addition to the credits listed above, the Quebec government offers tax assistance to the "New Economy". These credits include credits such as the Production of Multimedia Titles, the E-Commerce Place and the e-Business tax credit.

The total cost of these credits for 2010 is projected to be $1.149 billion. The cost of the SR&ED wage tax credit is estimated to be $776 million and the remainder is made up of the "New Economy" measures.

To put Quebec's assistance into perspective, total SR&ED tax assistance from the provinces is estimated to be $1.247 billion with Quebec representing 62.1% of that assistance. In comparison, Ontario ($215 million) represents 17.2% of the total and British Columbia ($133 million) represents 10.7% of the total.

The question is whether these tax incentives account in whole or in part for Quebec's level of innovation? The Insitut de la Statistique du Quebec has recently published a study[27] measuring the rate of innovation and comparing that to the rate of R&D incentives. The study covered 3,297 companies in Quebec from 1999 to 2005.

The study makes a number of interesting findings including a strong correlation between the rate of innovation in a firm and the incentives received. The report concludes that firms that receive R&D incentives have much higher innovation rates than firms that do not. The report does not conclude that this is a direct cause and effect but rather a correlation between innovation and incentives. The report also shows a correlation between the amount of incentives and innovation: the greater the R&D incentives received the greater the propensity of a firm to innovate.

[26] The credits are not taxable provincially and are effectively taxable federally as they reduce the pool of eligible SR&ED expenditures available for deduction against taxes payable and in calculation the investment tax credits earned in a year.

[27] Insitut de la statistique du Québec, *Les mesures d'aide fiscale à las R-D et l'innovation des entreprises au Québec*, March, 2010

Government Funding for R&D

Government funding for R&D supports the economy, not just the performers. This was examined by the Department of Finance in 1997:

> "The economic rationale for governments to assist R&D is that the benefits of R&D spill over, or extend beyond the performers themselves, to other firms and sectors of the economy and the value of these benefits is not fully appropriable by the R&D performer. These "spillover benefits" mean that, in the absence of government support, firms would perform less R&D than is desirable from the economy's point of view. Markets fail to allocate an efficient or socially optimal quantity of resources to the performance of R&D.
>
> The empirical evidence shows that R&D spillovers exist among projects, firms, industries and countries and that the social rates of return to R&D investments can be significantly higher than private rates of return. This confirms the non-excludability of technological progress and the failure of the market to allocate an efficient quantity of resources to R&D investment. From a policy perspective, the need for R&D incentives is clear; the issue for policy makers is to determine their magnitudes and forms."[28]

There have been a number of economic studies that estimate the quantum of the spill over effects. The most recent Canadian estimate of the spill over effects is contained in a Department of Finance working paper[29] which provides an economic evaluation of the Canadian R&D tax incentive program (SR&ED). The study shows using a range of assumptions "that the positive economic benefits associated with the SR&ED tax credit are derived from the spillovers that occur when the benefits of SR&ED extend beyond the performers themselves to other firms and sectors of the economy. These spillovers amount to about 46 cents per dollar of tax expenditure and more than offset the costs of the credit, estimated to be 36 cents per dollar of tax expenditure."[30] Therefore the SR&ED program provides a net economic benefit.

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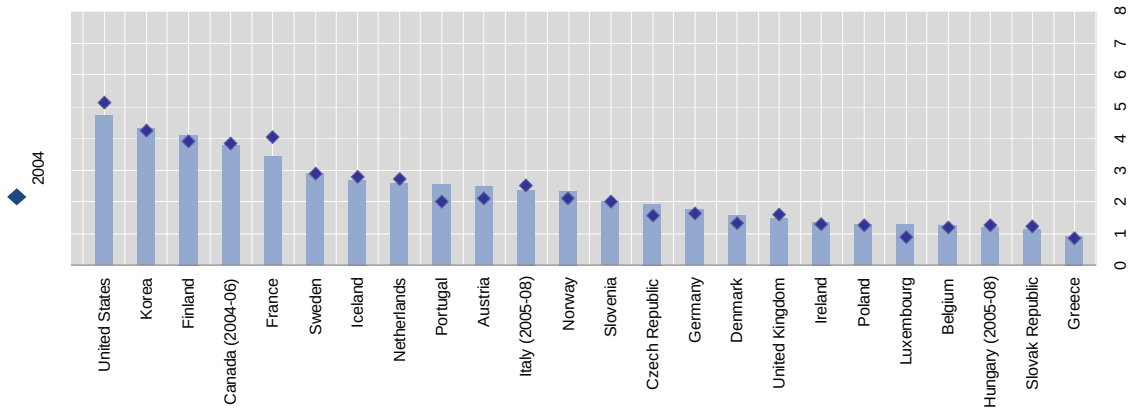
[28] *"Why and How Governments Support Research and Development"* Finance Canada (Ottawa, 1997)
[29] M. Parsons and N. Phillips (2007), *"An Evaluation of the Federal Tax Credit for Scientific Research and Experimental Development,"* Department of Finance, Working Paper 2007-08. Copies of Department of Finance working papers can be requested at www.fin.gc.ca/access/wpliste.html.
[30] Ibid. page 8

Canadian Government Support for R&D

Government funding for R&D includes transfers to businesses, tax incentives as well as publicly funded research in government labs and universities. The chart[31] below measures government outlays or budgets for R&D as a percentage of total government outlays. Under this methodology, the Canadian government provides significant support for R&D when compared to many of the major industrialized countries.

Government Appropriations or Outlays for 2007 as a Percentage of Total Government Outlays



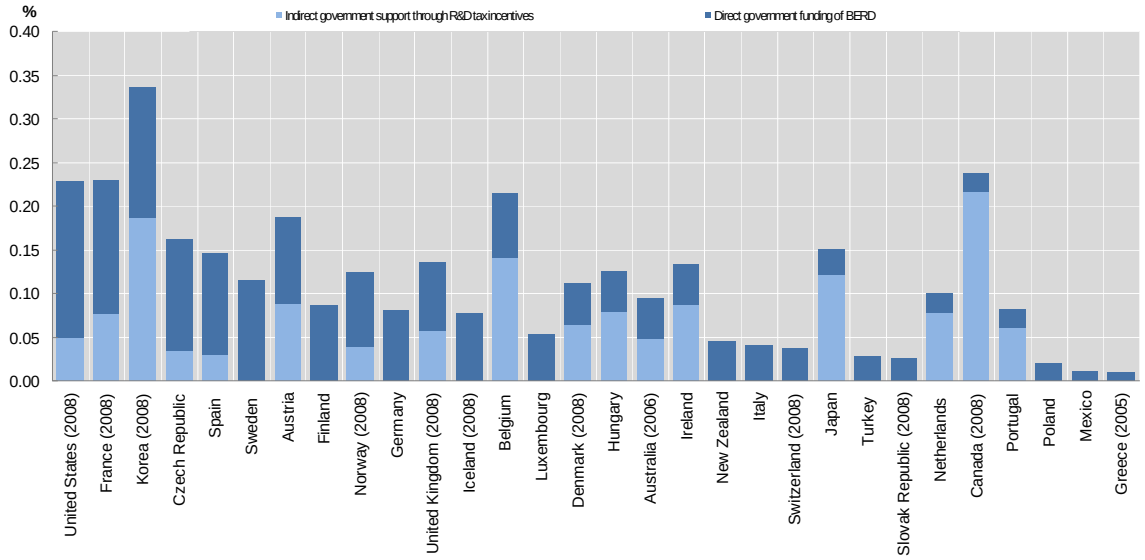
It is important to note that the data in this chart is based on central government outlays and does not include provincial or state support. In Canada, provincial support for R&D would increase the total government outlays by an estimated $1.25 billion. However, a similar increase would be seen in other countries. For example, the U.S. number would also increase as a number of U.S. states offer R&D incentives.

Direct or Indirect Funding

Governments can choose to fund R&D either directly through grants and other incentives or government sponsored R&D labs or indirectly through the tax system. What is the appropriate mix of these incentives? The chart[32] below shows that Canada is unusual in that its support for business R&D is primarily through the tax system. (The ratio of support through the tax system to direct support is 11 to 1.) This underscores the importance of the SR&ED tax incentive program to the Canadian economy.

[31] Measuring Innovation: A New Perspective-OECD©2010
[32]Ibid.

Direct and Indirect Government Funding of Business R&D and Tax Incentives, 2007 as a Percentage of GDP



Global Competition for R&D Investment

One of the ways that countries compete for R&D investment is through the indirect support that they provide through the tax system. The increasing competition in this area can be demonstrated through the recent growth in the number of countries with R&D tax incentive systems:

- In 1996, only 12 OECD countries had R&D tax incentives;
- In 2008, this had increased to 21;
- Currently, there are 35 countries offering tax incentives (including those outside of the OECD).
- In addition, other countries such as Germany and Sweden are considering adding R&D tax incentive regimes.

In addition to Canada, a number of countries with established regimes are reviewing their programs with a view to increasing their effectiveness:

Australia

Australia has just completed a lengthy process in reviewing its R&D tax incentives including two re-drafts of the legislation. The new legislation is slated to take effect on July 1, 2010. The new legislation will severely reduce the incentive for large firms. Estimates presented to the Senate Inquiry showed that 90% of claimants in the mining sector will see their claims reduced by at least 80% and approximately 10% of existing claimants will be unable to access any tax credits. However these changes were deemed necessary to preserve the program.

The Bills implementing the changes passed the Australian House of Representatives on November 22, 2010. The Bills were introduced into the Senate, read for the first time on November 23, 2010 and a second reading was moved. The Bills are listed for debate in the Senate in the autumn 2011 sitting period.

United States

Once again, the U.S. research credit expired as of January 1, 2010. Over the past 27 years, there have been 13 extensions of the program, including 5 that were retroactive, including the most recent extension. There is no reason to believe that the research credit will not be extended again retroactive to January 1, 2010. However, until the legislation is passed, taxpayers will not be allowed to book the benefit of the research credits for accounting purposes. This diminishes the value of the credit and reduces its ability to act as a stimulus for additional R&D.

In November 2009, the United States Government Accountability Office published a report[33] on its findings of a review of the U.S. R&D tax incentive program. Some of the key findings included:

- The cost of the program is estimated to $5.6 billion for the fiscal year 2009
- In 2005, the credit reduced the after-tax price of additional qualified research by an estimated 6.4 to 7.3 percent.
- A small number of large corporations (549) each with revenue over $1 billion, claimed over half of the credit in the 2005 taxation year
- Credit claims have been contentious between the IRS and taxpayers.
- In a number of areas there is insufficient guidance for taxpayers on issues.
- There are design issues of the credit system that need to be addressed including the use of a base for the regular credit that dates back to the 1980's and of the Alternative Simplified Credit. These issues have created windfalls for taxpayers, providing support to R&D they would do anyway rather than support additional R&D spending.

France

French companies that incur R&D expenses in France can take advantage of a tax credit ranging from 30% to 50% of the expense incurred. If the credit is not fully offset against corporate taxes within a three-year period following the year in which the credit is earned, the unused credit is reimbursed by the French tax authorities as a cash refund. Any unused credits can be carried forward to apply against future taxes payable. Prior to 2010, the R&D tax credit was non-refundable. However in 2009, the French government allowed companies to convert unused R&D credits earned in taxation years 2005 to 2007 into refunds. These refunds were available to all companies, regardless of industry. The

[33] *"Tax Policy, The Research Tax Credit's Design and Administration Can Be Improved"*, United States Government Accountability Office, November, 2009.

French government extended this treatment to allow companies to file for refunds equal to the estimated R&D tax credit as of January 1, 2009 less the 2008 corporate tax. This treatment was further extended to cover 2009 tax credits.

In practice, these measures provided R&D benefits to companies that are in loss positions and companies with insufficient corporate tax liability to absorb the credits they earn.

New Zealand

The New Zealand government has repealed the 15% research and development tax credit, effective from the 2009-10 fiscal years. The tax credit remains in place for the 2008-09 income year.

United Kingdom

In the June 22, 2010 Emergency Budget, the U.K. government announced that it would consult business on a long term approach to the taxation of R&D based on the proposals contained in the James Dyson's report, titled "Ingenious Britain"[34] which was issued in March 2010. This report states that R&D credits "should refocus on high tech companies, small business and new start-ups in order to stimulate a new wave of technology"[35]. The government has recently released its consultation document "Part 11B, The taxation of innovation and intellectual property". The document poses a number of questions relating to the design and the administration of the U.K. R&D relief.

Other Countries

At time of writing, both Germany and Sweden are considering the introduction of R&D tax incentive programs.

What Attracts R&D Investment?

Large corporations have a major impact on R&D spending in Canada. Companies that are ineligible for refundable credits earn 68% of total ITC's[36]. A recent Canadian study showed that for multi-national companies, the two overriding factors in attracting R&D investment to this country are cost and talent. [37] These factors are not new and are not unique to Canada. A 2010 study prepared by Deloitte LLP[38] in the United Kingdom showed similar results.

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[34] *"Ingenious Britain, Making the U.K. the leading high tech exporter in Europe, A report by James Dyson, March 2010"*

[35] Ibid. page 5

[36] *"Tax Incentives for Scientific Research and Experimental Development, Consultation Paper"*, Department of Finance, October, 2007, page 8

[37] Montreal International and Toronto Region Research Alliance *"The View From Here, Global R&D leaders Speak Out on Canada's Scientific Research and Experimental Development Programme"*. The report was not made public.

[38] Deloitte LLP, *"A Long Way to Go, Global R&D leaders speak out on the United Kingdom's R&D tax incentive programme"*, 2010

Canada is now a high cost country in which to perform R&D. The rapid rise in the Canadian dollar against its US counterpart has eliminated any cost advantage that Canada once held. In the past 10 years, the dollar has risen over 52% against the U.S. dollar. Also, there is more global competition for multi-national R&D investment, coming particularly from China, India and some of the eastern European nations.

On the talent front, an OECD study[39] shows that Canada has a talent advantage over most other countries. Over 50% of the Canadian population aged 25 to 34 has tertiary education; in this measure Canada is second only to South Korea. However, other studies warn of the potential negative impact of Canada's aging population and the relatively low level of education in business-related fields when compared to other countries.

In addition to cost and talent, other issues impact R&D investment decisions. These issues are far less pervasive than cost and talent but are still considerations for some companies:

- Business Environment: For some companies, a strong business environment means a cluster of similar of companies; for others it means proximity to their customers.
- Industry Specific Challenges: Certain industries focus on particular business issues. For example, the pharmaceutical industry considers government policy on intellectual property, pricing of their product and patent protection as very important.
- Internal Politics: In large multi-national organizations, there is often extreme competition for R&D investment funding. Often the home country has a major advantage, as it is easier to allocate funding to the home country where the decision-makers are mostly located.
- Direct Government Support: The availability of direct government support such as grants or subsidies is often an important deciding factor when determining where to locate a new facility or undertake major long-term R&D intensive project.

When considering how to attract R&D investment to Canada, all aspects of the business environment must be evaluated, in addition to direct and indirect support to incentives.

[39] OECD, Table 1.3a. See annex 3 for notes (www.oecd.org/edu/eag2010)

The SR&ED Program

The SR&ED program is the tax based incentive program for encouraging R&D in Canada. The program has been in existence in its current form since 1985. The latest statistics available show that in 2004 over 19,000 taxpayers claimed SR&ED credits. Today, taxpayers are claiming approximately $3.47 billion annually in federal investment tax credits and approximately $1.25 billion annually in corresponding provincial tax incentives.

The policy principles underlying the current system of income tax incentives for SR&ED were first set out in a 1983 budget document[40] and continue to remain in effect. As stated in that document, these principles are:

> "The private sector is in the best position to determine the amount and type of industrial research and development that it should undertake. Any firm's research and development projects have to make business sense; the results need to be marketable, and the project should be profitable. Thus, the incentive structure for research and development should continue to contain general measures, such as broad-based tax incentives, that leave day-to-day decisions on research and development projects in the hands of the private sector. While there will also continue to be a role for grant programs targeted to research and development in industry, the tax system is best suited to delivering general incentives.
>
> The goal of research and development policy is not to create research and development solely for its own sake. To be effective, the results of research and development have to be used – to create jobs, to improve productivity and competitiveness, to develop new products that Canadians can sell to other Canadians and to the world. To a large extent, the responsibility for this must rest with the private sector."

The objectives of the policy are to:[41]

- encourage SR&ED to be performed in Canada by the private sector through broadly based support;
- assist small businesses to perform SR&ED;
- provide incentives that are, as much as possible, of immediate benefit;
- provide incentives that are as simple to understand and comply with and as certain in application as possible; and
- promote SR&ED that conforms to sound business practices.

The indirect funding structure allows all taxpayers to access the program and to choose where to invest their R&D dollars. This universality of access is one of the key characteristics of the SR&ED program. Furthermore, it is the undertaking of SR&ED that matters. Success or failure of the work undertaken is not a criterion. This allows

[40] Department of Finance Canada (1983) *Research and Development Tax Policies: A Paper for Consultation.* April 19.
[41] Department of Finance Canada and Revenue Canada, *The Federal System of Income Tax Incentives for Scientific Research and Experimental Development: Evaluation Report.* December 1997.

companies the freedom to take risks on new unproven technologies and encourages innovation. Both of these features recommend the SR&ED program over direct grants and incentives that are targeted to specific industries or technologies and require applicants to demonstrate economic benefits.

Overview of SR&ED Benefits

The SR&ED program offers tax incentives in the form of:

- Investment tax credits (ITCs) which are earned on qualified SR&ED expenditures related to SR&ED carried on in Canada. The basic rate of the ITC is 20%. These ITCs can be utilized to offset federal taxes payable on a dollar for dollar basis. In addition, Canadian controlled private corporations are entitled to an extra 15% tax credit within limits. The full 35% is refundable to the extent that it relates to current expenditures. A portion (40%) of the 35% is refundable if the expenditure is a capital expenditure. Refundable ITCs are applied first to offset taxes payable in the year; any balance is refundable in cash.
- Federal ITCs are taxable as income in the year following the year that are refunded or utilized to offset federal taxes payable.
- A 100% write-off of both eligible current and capital SR&ED expenditures. Alternately the expenditures may be placed in a pool and carried back three years or carried forward to be written off in a future year.
- Similar tax incentives are available in most provinces, at varying ITC rates. The provincial tax credits are taxable at the federal level in the year that they are earned.

The definition of SR&ED is consistent with the definition contained in the Frascati Manual[42] and the definitions used in most of the R&D tax incentive regimes around the world. CRA has published extensive documentation to assist taxpayers in understanding the interpretation of the SR&ED legislation and policies within their industry sectors. Much of this documentation was developed by the CRA with the assistance of industry.

Eligible expenditures include both current and capital expenditures in respect of SR&ED carried on in Canada[43] and performed by the taxpayer or undertaken on its behalf and related to the taxpayers business or a possible extension thereof. Again, the CRA has published guidelines on what expenditures are eligible.

Claims for the SR&ED tax incentives must be filed on prescribed forms that contain all the prescribed information and must be filed within certain time limits. All rights to the claim are lost if the taxpayer fails to file its claim within the prescribed limits.

[42] Organisation for Economic Cooperation and Development: *Frascati Manual 2002* (Paris, OECD,2002)
[43] Support work outside of Canada related to SR&ED carried out in Canada is allowed, within limits.

Effectiveness of the SR&ED Program

There is evidence that the program is achieving its goals. Over the years, the Department of Finance has conducted economic evaluations with positive results. A 1997 report found that:

> "The study shows that the positive economic benefits associated with the SR&ED tax credit are derived from the spillovers that occur when the benefits of SR&ED extend beyond the performers themselves to other firms and sectors of the economy. These spillovers amount to about 46 cents per dollar of tax expenditure and more than offset the costs of the credit, estimated to be 36 cents per dollar of tax expenditure. Thus the SR&ED tax credit is estimated to create a gross economic gain of $1.11 for every dollar spent on it, and a net economic gain of 11 cents per dollar. These estimates are sensitive to the underlying assumptions used in the working paper, but the study shows that the SR&ED tax credit generates positive net economic benefits under a range of reasonable assumptions.[44]"

Further evidence of the effectiveness of the Canadian program exists in a 2007 survey conducted under the auspices of Montreal International and the Toronto Region Research Alliance. These two organizations engaged Deloitte & Touche LLP to assist with the development of a survey questionnaire and methodology and then to undertake a survey based on that questionnaire and methodology of a number of the leading R&D investors worldwide.

The purpose of the survey was to:

- better understand the factors that influence R&D investment decisions for large multi-nationals;
- their intentions for future R&D spending in Canada; and
- the impact of the SR&ED program on their Canadian R&D investment decisions.[45]

The survey was significant in that it covered forty-three companies in Ontario and Quebec in the advanced manufacturing, information communication technology and pharmaceutical sectors. The companies surveyed are estimated to be responsible for 25% of all R&D expenditures in Canada and 15% of all R&D personnel in Canada. The employment number includes only direct employment and the percentage would be higher if subcontractors to these entities were included. Seventeen of the companies interviewed are ranked in the top 50 Global companies by R&D investment. *The survey found that 58% of the companies interviewed factor the SR&ED incentives in making their investment decisions.*

This result can be contrasted with the results of a recent Deloitte LLP study[46] in the United Kingdom of large R&D performers which found that only a small number of the

[44] Supra note 40
[45] Supra note 37

companies interviewed directly considered the R&D incentive as a significant factor when making their investment decisions. Deloitte LLP concluded that the differing results were caused by the difference in the size of the two incentive programs. (Canada's federal incentives are worth 16.4% after tax (plus the provincial incentives) as compared with 8.5% in the U.K. In addition, the Canada credit is calculated on a much broader base of costs.).

In the United States, the General Accounting Office conducted a review of the U.S. R&D tax credit and found that "in 2005, the credit reduced the after-tax price of additional qualified research by an estimated 6.4 to 7.3 percent. This percentage measures the incentive intended to stimulate additional research. It also noted that the current U.S. R&D tax credit has a number of design issues which could improve the effectiveness of the credit."

How Does the Canadian SR&ED Program Rate Internationally?

As a part of the *Tax Expenditures and Evaluations 2009*[47], the Department of Finance released a Research Report Entitled "*An International Comparison of Tax Assistance for Investment in Research and Development"*. This report uses a marginal effective tax rate or METR to measure R&D tax assistance. It should be noted that this methodology differs from the B-index methodology used by the OECD in its international comparison of tax assistance for R&D. Canada's world ranking does not change under either methodology.

The key findings are as follows:

- Canada's federal and provincial tax incentives combined are the highest R&D incentive offered in both absolute terms and relative to the credit for small firms.
- For large firms, Canada's incentive rate is third behind France and Spain. Canada's incentives combined for both small and large firms ranks fifth behind France, Spain, India and Brazil.

It should be noted that the METR methodology assumes that the taxpayer can fully access the R&D incentives either by offsetting taxable income or a refund provision such as exists in France for all corporations. The inability of taxpayers to count on access to the incentives either because they are in a loss position or in a cyclical industry reduces the value of the incentives to these firms and therefore, distorts the results of the study.

Suggested Improvements to the SR&ED Program

We believe that the effectiveness of the SR&ED program can be improved by making improvements in two areas: legislation and administration. In the legislative area, we recommend that the tax credits should be fully refundable. On the administrative side,

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[46] Supra note 38

[47] Department of Finance Canada, *Tax Expenditures and Evaluations 2009,* (Ottawa, Department of Finance Canada, December 2009)

changes need to be made to allow the program to operate on a more predictable and consistent basis. This is a challenge that the Canadian government has previously identified. However there are still problems.

Refundability

Over the years, there have been calls for refundability of SR&ED ITC's by various industry groups. The most recent include:

- The Canadian Advanced Technology Association in its publication 'Innovation Nation" published in January, 2009 called for the elimination of the distinction between qualifying CCPC's eligible for refundable SR&ED ITC's and other corporations.
- In October 2010, the Canadian Manufacturers and Exporters Association in its publication entitled "Invest to Grow: Technology, Innovation; and Canada's Productivity Challenge called for the government to implement full refundability for SR&ED ITC's
- Also in October 2010, the Collation for Action on Innovation in Canada in its publication entitled "An Action Plan for Prosperity" called for the replacement of non-refundable SR&ED ITC"s with a refundable credit based on the wages of R&D workers.

The current SR&ED program is designed to influence companies to make additional R&D investments by lowering the cost to the R&D performer. However, the current program is only partially successful. There are 2 groups that the program is not influencing: companies that are filing claims but do not factor the ITC's into their R&D investment decisions and companies that are performing R&D but not filing claims at all. We know that the size of the first group is substantial, based on the findings of the Deloitte survey of multi-national R&D performers which showed that, of the participating companies that were filing claims, 42 % did not take the SR&ED incentives into account when making their R&D investment decisions.

What were the reasons that caused companies not to factor the SR&ED incentives into their R&D investment decisions? For many of these companies, there were multiple reasons, including:

- Performance Measurement; Most companies treat non-refundable tax incentives as a reduction of taxes payable and not a reduction in cost. Companies that have a policy where cost and compensation are measured on a pre-tax basis often don't consider the SR&ED tax incentives in their R&D investment decision process. Companies that wish to consider the SR&ED incentives have to introduce an "off the books" allocation of the tax incentives to the R&D performers to allow them to be considered in their R&D investment decisions;

- Adverse U.S Tax Consequences; Although the Canadian SR&ED tax incentives reduce their Canadian taxes payable, ultimately, the companies' U.S. tax increases

when funds are repatriated from Canada to the United States. This is a major issue. Statistics Canada reports that 26 per cent of corporate profits and 30 per cent of revenues in Canada were earned by foreign companies in 2007. Roughly, 50% of those foreign companies are American owned. Appendix 2 sets out an example of these adverse U.S. tax consequences;

- Immediacy of the Incentives; the SR&ED ITC's can only be used by large companies to offset current taxes payable. Although, Canada has generous carry forward and carry back rules (20 years and 3 years respectively), many companies only consider the benefit of the incentives if they are available on a current basis or if they can be recognized for accounting purposes. R&D investment decisions are often made on a long-term multi-year basis. It is difficult for companies in cyclical industries to recognize the benefit of the SR&ED incentives at times when they are experiencing losses or are anticipating losses in the near future.

Why Refundability?

We have identified 3 reasons that the tax credits should be refundable:

1. For the R&D incentive to be effective, it needs to be visible to the actual R&D performers such that they will take the tax benefits into account in their R&D investment decisions. This can be accomplished by changing the form of the credit for large corporations.

   Currently the non-refundable credits are treated as reduction of taxes payable and not as a reduction of R&D costs. If the credits were accounted for as a reduction in cost, then they would be reflected in the financial results of the R&D performers and allocated to their annual budgets.

   One alternative is to turn the current non-refundable ITC's into refundable ITC's. Under International Financial Reporting Standards (IFRS), a refundable ITC (not linked to profits) would be treated on the same basis as a government grant; the ITC would be recorded as a reduction of the costs to which the credit relates. This would provide clear visibility of the tax incentive to the technical people that make the decisions on R&D investments, encouraging them to invest in additional R&D.

   An alternative to providing the ITC as a cash refund would be to allow companies to offset the credit against payroll taxes payable. This would have a number of advantages, including:
   - The credit would be accounted for above the line and would visible to R&D budget holders and decision makers;
   - This offset would reduce the direct cost of Canadian researchers;
   - The benefits would be tied to Canadian salaries and wages for jobs in Canada; and
   - It would provide immediate relief to companies that are not profitable.

One issue for some governments is that the legislation governing the payroll and social security taxes is separate from the income tax legislation, making it difficult to implement such a scheme. A solution is to make the R&D incentive refundable under the income tax legislation but to cap the refund to an amount that is tied to the calculation of payroll taxes and social security taxes payable.

2. Refundability eliminates the adverse U.S. tax consequences faced by Canadian R&D performers with U.S. parent companies. U.S. Letter Ruling 200146001 (April 2, 2001) states that foreign tax credits that are refundable within a reasonable period of time are not a "credit" within the meaning of Treasury Reg. § 1.901-2(e)(2)(i). As result, if the taxes are refundable, there is no erosion of the credit in the US for foreign (Canadian) taxes paid. See Appendix 2.

3. Refundability provides immediate cash to the R&D performer regardless of their tax position. It provides an immediate measurable benefit to companies in loss positions or those in cyclical industries.

What is The Economic Impact of Refundability?

In this section, we have attempted to measure the economic impact of refundability. Economic impacts are generally defined as changes to an economy as a result of a development, undertaking or activity. As such, economic impacts measure changes in the size and structure of a jurisdiction's economy when goods and services are purchased, good are produced, or as the result of the infusion of capital for construction of a new facility or service. Almost all activities can generate economic impact.

Generally, areas of economic impact can be summarized in the following areas:

- Direct Impacts. These measure total expenditures on goods and services, including wages and salaries, to operate a business, construct a project, operate a system or service, stage an event, etc.;
- Indirect Impacts. These refer to the purchase of goods and services needed to then produce the goods that are directly purchased in support of the business operations, the construction of a facility, the operation of that facility, or the service of the staging of an event, etc. Indirect impacts, therefore measure the magnitude of the interactions with other businesses which supply the necessary materials and services and lead to indirect demand for goods and services from other industries;
- Induced Impacts. These refer to the impact of personal expenditures by people who have been paid wages and salaries, whether in support of business operations, for the construction of a facility, the operations of a facility or services, or the staging of an event, etc. and the production of indirect goods and services.

We evaluated the following impacts:

- Spending Impacts - These measure the sum of gross sales in the economy, including the value of purchased goods and services needed to sustain the operations of the industry as well as "value added GDP";
- Impacts on GDP - GDP captures the value the industry provides to the overall economy through the application of labour and capital, and represents the sum of the value added by firms in an industry;
- Employment Impacts - This identifies the total employment impact, measured in full time equivalents (FTEs).

By introducing full refundability of ITC's, we believe that there will be 2 positive impacts to the economy:

- Companies that are currently filing SR&ED claims but not using the SR&ED incentives in making their R&D investment decisions will begin to do so.
- Companies that are not currently filing SR&ED claims will begin to do so and will use the SR&ED incentives in making their R&D investment decisions.

We have modeled the potential economic impact on the group of companies (non CCPC's) that are currently filing but not using the SR&ED incentives in making their R&D investment decisions as follows:

- Fully refundability based on the assumptions set out in Appendix 1 will generate $521.4 million in additional expenditures in research and development.
- This additional spending is projected to give rise to:
    - $1.141 billion in total spending (direct, indirect and induced) across the broader economy
    - Total positive GDP impact of almost $650 million
    - A total employment impact of almost 9,400 FTE's including employment within the R&D sector, within feeder industries and in the broader economy

	Spending Impact	GDP Impact	Employment Impact
General Impact within the Canadian Economy	$1.141.4 billion	$649.4 million	9,366 FTE's

It should be noted that the cost to the government of this change for the segment (companies currently claiming but not utilizing the credits in their investment decisions) is minimal. These companies are already claiming the credits on current basis and, with the exception of those with loss carry-forwards, are utilizing the credits on a current basis. For most companies with loss carry-forwards, the cost to the government would be a timing difference, paying for the ITC's today as opposed to at some point in the future.

We were unable to model the impact of the second group: companies that are not currently filing SR&ED claims but would begin to do so if full refundability were introduced. However, in general, the following chart demonstrates the economic impact for each additional $1.0 billion of additional R&D spending undertaken in Canada:

	Spending Impact	GDP Impact	Employment Impact
General Impact within the Canadian Economy	$2.189 billion	$1.245 billion	17,965 FTE's

Administration

In October 2007, the government issued a "Consultation Paper, Tax Incentives for Scientific Research and Experimental Development"[48]. As a part of the consultation process, the government held meetings with stakeholders in the SR&ED program across Canada and invited written submissions. The government was represented by officials from the Department of Finance and the Canada Revenue Agency ("CRA").

In the Deloitte survey, 19 of the 43 companies surveyed spoke of problems with the administration of the program. In fact, one of the companies interviewed is no longer filing SR&ED claims as a result of the treatment of their claim. These problems mirrored the ones raised during the 2007 consultation process discussed above and included unpredictability and inconsistency. In addition, many of the companies believed that the CRA's overall documentation requirements were excessive and did not reflect business practices.

Following the consultation process, the concerns raised by stakeholders were acknowledged by the government in its 2008 Budget document, noting that "the key administrative challenges identified by stakeholders were in the areas of accessibility, predictability and consistency."[49] The government is to provide an additional $10 million annually to CRA to implement improvements to deal with the concerns raised during the consultation process. This additional budget is now in place; however, industry associations and taxpayers continued to raise issues with the administration of the program.

[48] Tax Incentives for Scientific Research and Experimental Development, Consultation Paper, Department of Finance, October, 2007

[49] The 2008 Budget Plan, page 86

In September, 2009, the Office of the Taxpayer's Ombudsman, announced that is it was undertaking a review of the SR&ED tax credit program to investigate issues raised by claimants:

> "The preliminary objectives of the enquiry are to determine whether the CRA is administering the SR&ED program fairly with respect to:
>
> - The recent changes to the application forms and procedures for the SR&ED program-were they communicated appropriately to taxpayers?
> - The options for a taxpayer or authorized representative to receive a second opinion on the technical aspects of their SR&ED submissions."[50]

In December, 2009, the Ombudsman's office announced that consultations were closed and the review was in the evaluation stage. To date no report has been made public. It will be interesting to see what the Ombudsman will report about the program, in particular the recent process of making the changes to the application forms and filing procedures.

Conclusion

The government is looking for ways to deal with Canada's lagging productivity growth. According to the recent literature, the key cause of this lagging productivity growth is the lack of "business innovation". One key component of "business innovation is R&D".

There is global competition for R&D investment dollars and many countries including Canada subsidize directly and indirectly business R&D as there is strong economic evidence that government support is necessary to stimulate additional R&D spending. Canada's largest program to stimulate industrial R&D is the SR&ED program.

We believe that the SR&ED program is successful in stimulating additional R&D in smaller performers eligible for the refundable incentives. However, the program is only partial successful in achieving its goals with larger companies and improvements can be made to the program which would have a major positive impact on the effectiveness of the program. These improvements include the introduction of full refundability of SR&ED related investment tax credits and changes to the administration of the program. We provide an estimate in this paper of the positive impact on the economy of the introduction of full refundability.

[50] CRA website www.cra-arc.gc.ca

Appendix 1

Assumptions for the Economic Impact of Full Refundability

1. The projected cost[51] of the ITC's for 2009 is shown in the chart below:

Tax Credits earned and claimed in the year	$2,225
Tax Credits claimed in the year but earned in prior years	$ 975
Tax Credits earned in the year but carried back	$ 96
Total Tax Expenditure	$3,295

2. We calculated the split between ITC's earned by qualifying CCPC's versus those earned by large corporations based on the following data. "The enhanced ITC's earned by smaller CCPC's earned at the rate of 35 per cent made up about 32 per cent of total credits earned, while refunds of ITC's to these performers accounted for 29 per cent of the total tax credits earned in 2004."[52] It would be expected that all things being equal these percentages would increase slightly as the expenditure limit for earning ITC's for CCPC's as well as the taxable income limits have been raised over the years since 2004. However, for purposes of this analysis, we have assumed the percentages have remained constant.

3. We based our calculations of the additional R&D generated by introducing fully refundable ITC's on companies currently filing but not utilizing the incentives in their R&D investment decisions based on a 2007 survey of large R&D performers. In the fall of 2007, Montreal International and the Toronto Region Research Alliance engaged Deloitte & Touche LLP to assist with the development of a survey and to conduct a survey of a number of the leading R&D investors worldwide. The purpose of the survey was to better understand the factors that influence R&D investment decisions for large multi-nationals, their intentions for future R&D spending in Canada and the impact of the SR&ED program on the their Canadian investment decisions. [53] The survey was significant in that it covered forty-three companies in Ontario and Quebec in the advanced manufacturing, information communication technology and pharmaceutical sectors. These companies are estimated to be responsible for 25% of all R&D expenditures in Canada and 15% of all R&D personnel in Canada. The employment number includes only direct employment and the percentage would be higher if subcontractors to these entities were included. Seventeen of the companies interviewed are ranked in the top 50 Global companies by R&D investment.

[51] Supra note 39, page 24
[52] Supra note 39, page 8
[53] Supra note 37

This survey found that 33% of the companies interviewed were claiming ITC's but these ITC's had no impact on their R&D investment decisions. The companies also indicated that if the credits were refundable, they would utilize the ITC's in their R&D investment decisions.

4. We assumed that for every dollar of R&D incentive received companies would increase their R&D investment by a dollar. This was based on two findings. The first is the statement that "studies have shown that they can increase spending at least equal to the loss of tax revenue[54]". Secondly the finding in the Deloitte survey that the companies interviewed also unanimously stated that they would increase their R&D investment in Canada by one dollar for every one dollar of refundable ITC's received.

Analysis

As demonstrated in the chart and based on the above assumptions, the potential additional R&D generated by making the ITC's fully refundable to taxpayers that are already filing would be $521.4 and this would be achieved at minimal cost to the government.

	Total	Non-CCPC's	CCPC's
Tax Credits earned and claimed in the year	$2,225	$1,515	$710
Tax Credits earned in the year but carried back	$96	$65	$30
Total Tax Expenditure	$3,295	$1,580	$740
% with no influence		33%	
Potential Additional R&D		$521.4	

Millions of Dollars

[54] Bloom, Griffin and Van Reenen, *"Do R&D credits work? Evidence from an international panel of countries 1979-1994"* IFS Working paper 99/8, 1999.

Appendix 2

Interaction of the Canadian SR&ED Incentives and the U.S. Foreign Tax Credit System

Canadian subsidiaries with a U.S. parent company face the erosion of any ITC's earned through increased U.S. taxes when dividends are paid to their U.S. parent. This erosion decreases or eliminates the value of the ITC's earned. This happens as the result of the interaction of the Canadian and U.S. tax systems.

The U.S. taxes income earned abroad by its residents which include foreign corporations owned by U.S. parents. For corporations, the U.S. tax is due at the time that dividends are paid to its U.S. parent. As the income as generally been taxed in the country where it was earned, to avoid double taxation, a credit is given in the U.S. for foreign income taxes paid. In the case of Canada, both federal and provincial taxes paid are eligible for the credit.

In the following example, there are 2 scenarios, one where a Canadian subsidiary of a U.S. parent conducts no R&D and pays a dividend to its U.S. parent and the second where the company does perform SR&ED and utilizes ITC's to offset its Canadian taxes payable. In the "No R&D" scenario, there are no additional taxes in the U.S. as the credit for Canadian taxes paid offsets the U.S. taxes on the dividend paid. In the "R&D" scenario, the company loses the benefit of the ITC's utilized to offset Canadian taxes payable. Therefore, in the second scenario, the only benefit is time value of money on the ITC's earned between the times that the funds are earned at a reduced and when they are repatriated to the U.S.

		No R&D	**R&D**
Revenue		$1,400	$1,400
Expenses		-$1,000	-$1,000
Net profit		$400	$400
Canadian taxes	35%	-$140	-$175
Non-refundable ITCs		$0	$100
Net Canadian taxes		-$140	-$75
After tax profit (Canada)		$260	$325
Funds repatriated to the US	A	$260	$325
Gross up for underlying Canadian taxes (net of credits)		$140	$75
Taxable income to the U.S.		$400	$400
US Taxes on funds repatriated	35%	$140	$140
Less credit for Canadian taxes		-$140	-$75
Net Additional US taxes	B	$0	$65
After tax funds repatriated to the US	A - B	$260	$260

However, there is a much different result if the ITC's are refundable. Under a U.S. Letter Ruling 200146001 (April 2, 2001) foreign tax credits that are refundable within a

reasonable period of time are not a credit within the meaning of Treasury Reg. § 1.901-2(e)(2)(i). As result, if the taxes are refundable, there is no erosion of the credit for foreign taxes paid as was the case in the above example.

The following scenario compares the No R&D scenario with one where the ITC's are refundable. It shows that the Canadian subsidiary and its parent are better off by $65. (The ITC's earned of $100 less the Canadian taxes payable on the ITC's of $35 in the taxation year following the year in which they are utilized to offset federal taxes payable).

		No R&D	**R&D**
Revenue		$1,200	$1,200
Expenses		-$800	-$800
Refundable Credits		$0	$100
Net profit		$400	$500
Canadian taxes	35%	-$140	-$175
After tax profits (Canada)		$260	$325
Funds repatriated to the US	A	$260	$325
Gross up for underlying Canadian taxes		$140	$175
Taxable income to the U.S.		$400	$500
US Taxes on funds repatriated	35%	$140	$175
Less credit for Canadian taxes		-$140	-$175
Net Additional US taxes	B	$0	$0
After tax funds repatriated to the US	A - B	$260	$325

The bottom line is that by making the Canadian SR&ED ITC's refundable more Canadian companies would benefit from the SR&ED incentives. In turn, this would lead to more R&D investment in Canada.

Appendix 6

Deloitte.

2009 Global Survey of R&D Tax Incentives

Contents

Many countries offer tax incentives to encourage research and development efforts leading to increased domestic business growth.

Preface

A significant number of countries now offer the critical operational pre-requisites for conducting research and development (R&D), i.e., access to growing markets/customer base, access to talent, intellectual property protection, stable economy/government and information technology infra-structure. This has led many countries to promote re-location of R&D operations to their country as part of their innovation-led economic development strategies. R&D tax incentives are an important component of these strategies.

Countries offering R&D tax incentives are regarded as a more suitable location for internationally-mobile R&D. When efficiently allocated, companies effectively leverage their global R&D infrastructure resulting in the development of valuable intellectual properties.

R&D incentives vary by country with regard to the following "key" considerations:

- Computational mechanics;
- The levels of benefits available; and
- The certainty of realizing an economic benefit from the tax incentive.

Although the basic definition of "research and development" is similar across many countries, distinctions exist within sovereign laws. Some countries offer particularly lucrative incentives, subject to few restrictions on the location of the qualified research activity, funding of R&D, ownership of IP, etc.; while others offer basic incentives with significant limitations, including eligible industries, qualified costs, and applications procedures. Most research incentives are designed to encourage companies to maintain a level of R&D, with additional incentives for increased research spending. A few regimes offer tax benefits for capital investments in R&D, while most offer incentives for operational costs, i.e., wages, supplies, and contractor fees. Moreover, many countries offer enhanced tax incentives for start-up companies.

The following analysis summarizes and compares R&D tax incentives in the countries typically considered as viable locations for conducting R&D.

Analysis of National R&D Incentives

Australia

Background

Australia's corporate tax rate is 30%. Australia offers R&D incentives in the form of deductions and refunds (in certain circumstances). A new two-tier R&D credit is proposed to replace the existing regime for tax years commencing after July 1, 2010. The proposed rules include a refundable credit equal to 45% of the current R&D expenditures for companies with gross receipts of less than $20M and a 40% nonrefundable credit for other companies. The following discusses the currently available incentives as of January 1, 2010.

Nature of Incentives

- *125% Super Deduction*: Tax deduction equal to 125% of R&D expenditures.
- *175% Incremental Super Deduction (Domestic):* The 175% super deduction applies to the increment of R&D spending exceeding the company's average R&D spending in the 3 prior years, as long as the company claimed the 125% super deduction in the 3 previous years (special rules apply for control groups, i.e., where the taxpayer meets the 50% ownership/control test or associates).
- *175% Incremental Super Deduction (International Concession):* R&D undertaken in Australia on behalf of a foreign-related company located in a country with which Australia has a Double Taxation Agreement (DTA) can also claim the 175% super deduction (special rules apply for "grouped" companies, i.e., where the taxpayer meets the 50% ownership/control test or associates).
- *Refundable Tax Incentives*: R&D Tax Offset (potentially refundable) for small companies with less than $5M in gross receipts and grouped expenditures of no greater than $2M for the year. The Tax Offset may be used when the taxpayer utilizes the 125% super deduction or the domestic 175% R&D incremental super deduction. If the taxpayer meets the applicable tests, either deduction may be converted into a tax credit/offset.

A new R&D tax credit is proposed to replace the existing super deduction for tax years commencing after July 1, 2010.

Eligible Industries & Qualifying Costs

R&D includes both core R&D activities and directly related activities. Eligibility is broad and is not limited to particular industries. Companies in the following industries typically seek tax benefits:

- Pharmaceuticals
- Software Development, where software development is the primary purpose of the project
- Design Centers
- Automotives
- Energy & Utilities
- Mining & Natural Resources
- Financial Services

Qualifying expenditures include: staff costs, direct costs, overhead, supplies, and capital expenditures. Capital expenditures for core technology development are afforded special treatment.

IP & Jurisdictional Restrictions

Up to 10% of the activities qualifying for the super deduction can be carried on outside Australia.

Intellectual property rights must generally be retained in Australia. This requirement does not apply, however, with respect to IP developed through activities that qualify for the 175% Incremental Concession (International). If there is no DTA, the Incremental Concession (International) is available to the extent such expenses were incurred in Australia.

Other Concerns

Taxpayers must file the Application for Registration of R&D Activities within 10 months of the tax year end. All incentives are claimed on the taxpayer's annual tax return.

Austria

Background

Austria's corporate tax rate is 25%. Austria provides:

- Super deduction;
- Cash-back incentive; and,
- Additional super deduction for incremental increases in qualified expenses.

Nature of Incentives

The incentives available for R&D intensive entities include (not subject to cap):

- Super Deduction: Tax deduction equals to 125% of all qualifying R&D expenditures;
- Incremental Super Deduction: Incremental deduction equal to 135% of qualifying expenditures exceeding the average of the prior 3 years; as long as the R&D activity results in a patent or a certificate issued by the Austrian Ministry of Economic Affairs which evidences the economic value of the aspiring or completed invention; and,
- 8% Volume-based Credit: A cash-back premium on all qualifying R&D-related expenditures (refundable benefit to the extent that the credit exceeds the amount of the tax liability).

The taxpayer must elect the super deduction or the cash-back premium (which is generally more favorable). The taxpayer makes the election in the tax return (may do so until the assessment becomes final).

A carryforward for the super deduction and incremental super deduction is available when the taxpayer is in a loss position. Loss position deductions may be carried forward indefinitely.

Eligible Industries & Qualifying Costs

Only the following industries are eligible for the incentives:

- Pharmaceuticals
- Software Services
- Software Development (only if the purpose of R&D is to review and abolish scientific or technological uncertainties)
- Design Centers
- Automotives
- Energy & Utilities
- Mining & Natural Resources
- Financial Services

Companies must elect a super deduction or a refundable tax credit.

Qualifying activities must be conducted with the purpose of increasing knowledge and developing new applications. The definition of research includes basic and applied research, as well as experimental development within the meaning of the OECD Frascati Manual.

Qualifying expenditures include: capital investment, finance costs, staff costs, overhead, leasing costs, and subcontractor fees (see below). The definition of qualified expenditures varies according to the incentive. Generally, the cost base for the 125% super deduction or the 8% cash refund is broader, including capital expenditures.

When subcontracted R&D is performed, generally only the person paying for the subcontracted R&D can claim it (not the party conducting the research). The party funding the research must inform the subcontractor that they intend to claim either the super deduction or cash back premium. If the funding entity does not inform the subcontractor, then the subcontractor, if at risk, can claim the costs under either incentive.

IP & Jurisdictional Restrictions

Activities may occur outside of Austria in a branch or a plant within EU/EEA; however, the Austrian entity must fund the research endeavor.

No restrictions are imposed upon the location of the IP.

Other Concerns

For the super deduction and 8% cash-back premium, no pre-approvals are required.

Each incentive is claimed via the annual tax return.

The taxpayer may claim the super deductions within one month after the date the tax assessment becomes final when such expenditures were recorded on the balance sheet for the applicable year.

Belgium

Background

Belgium's general corporate tax rate is 33.99%.

Nature of Incentives

R&D Tax Incentives:

Investment Deduction: Taxpayer may elect a 15.5% one-time deduction of all R&D Investments recorded on the balance sheet (tangible and intangible) or 22.5% of the total depreciation amount for the same R&D Investments (i.e., taxpayer computes the depreciation amount and multiplies this amount by 22.5%). This is in addition to the standard depreciation deduction for such expenses; resulting in a super deduction of 122.5% of the amount of depreciation deductions for capital assets, etc. used in research. Excess deductions may be carried forward indefinitely or converted into a tax credit refundable after 5 years.

Patent Income Deduction (PID): Allows taxpayers to deduct 80% of their qualifying patent income from their taxable base (resulting in a 6.8% maximum effective tax rate).

Partial Withholding Tax Exemption: 75% withholding exemption granted to the business for wages paid to qualifying researchers working on R&D projects (results in an average per employee salary cost reduction of 20% to 25%).

Additionally, companies may be granted temporary "innovation premiums" for their employees, thereby eliminating tax and social security withholding requirements.

Several incentives are offered including super deductions, patent income deductions, and withholding tax exemptions.

Eligible Industries & Qualifying Costs

Eligibility is broad and is not limited to particular industries. Companies in the following industries typically seek tax benefits:

- Pharmaceuticals
- Software Development
- Automobile Development
- Energy & Utilities
- Financial Services

In order to receive the deduction or claim the credit, the taxpayer must certify that the R&D investments are made in order to develop products / services that are:

- Innovative in the Belgian market; and,
- have no negative environmental impact (or, if there is an environmental impact, the taxpayer has taken the steps necessary to mitigate such impact).

Qualifying costs include: salaries and wages, direct costs, subcontracting costs, overhead, and depreciation.

IP & Jurisdictional Restrictions

The deduction and credit may be claimed for R&D work performed outside Belgium, though the claimant must retain any associated IP in Belgium to receive the tax benefit.

Other Concerns

Taxpayer must file a claim for environmental certification though the regional authorities by March 31st. In order to claim either benefit, the claimant must receive a certificate from the region in which the qualified activity occurs.

Brazil

Background

Brazil's general corporate tax rate is 34%. All incentives are available for companies that operate under the Lucro Real tax regime.

Nature of Incentives

- *R&D Tax Super Deduction*: Super deduction equal to 160% of the total R&D expenditures.
- *Enhanced R&D Tax Super Deduction*: If the entity increases the amount of researchers by up to 5% in a given year, super deduction increases to 170%; and if it increases more than 5% in a given year, the super deduction increases to 180% of the qualified expenses.
- *Enhanced R&D Tax Super Deduction for Patents:* An extra 20% deduction is allowed for the qualifying costs incurred in developing a patent, but the super deduction is only allowed when a patent is registered. Since the super deduction is delayed until the patent is registered, few taxpayers take advantage of this provision.

Unused deductions may not be carried forward or carried back.

Only expenditures incurred within the borders of Brazil are eligible for the incentives.

Eligible Industries & Qualifying Costs

Eligibility is broad and is not limited to particular industries.

Activities undertaken to achieve technological innovation qualify for the R&D tax incentives. This includes designing new products or processes, as well as aggregation of new functionalities or characteristics to a product or process, which results in incremental improvements and effective gain in quality or productivity, granting greater competitiveness in the market. Software development qualifies as an R&D activity.

R&D expenditures include wages, salaries, and certain payments to third parties (e.g., staff augmentation, laboratory maintenance, etc.), directly attributable to the conduct of qualified R&D activities. Companies performing research for other companies for a fee can take the super deduction, i.e., the super deduction is available only to the company that performs the research.

IP & Jurisdictional Restrictions

Only expenditures incurred within the borders of Brazil are eligible for the incentives (except for IPI reduction benefit, see below). The resulting IP does not have to be held within Brazil.

Other Concerns

Companies must have a tax clearance certificate ("CND") to qualify for the super deduction. Specific accounting controls are also required**.**

Brazil also provides the following incentives that may be useful for R&D intensive companies:

- Equipment, machinery, and tools exclusively dedicated to R&D can be deducted when the expense is paid or incurred.
- Equipment, machinery, and tools acquired exclusively for R&D by IT companies, as well as companies with automation activities, that benefit from specific IPI Reduction (see below), can take a super deduction on the cost of such equipment.
- *IPI Reduction (federal excise tax):* Equipment, machinery, and tools dedicated to R&D, acquired in Brazil or imported, receive a 50% reduction of the IPI due. This incentive must be claimed upfront, on the acquisition request.
- *Withholding Tax Benefits*: 10% tax credit on the withholding tax for royalties paid abroad up to calendar year 2013, under technology transfer agreements approved by the Federal Intellectual Property Agency.

Canada

Background

Federal and provincial corporate tax rate (combined) is between 12% and 34% (rate is dependent upon the size of the corporation, ownership, and provincial jurisdiction).

Nature of Incentives

- *Deductions*: Immediate deduction for all qualified expenses (no super deduction).
- *Credit*: 20% federal tax credit for all qualifying R&D costs. The credit rate is 35% for small Canadian-controlled private corporations (on expenditures up to $3M per year). The 35% credit is fully refundable.
- *Provincial R&D Incentives*: From 4.5% to 37.5% depending upon the provincial jurisdiction. Some provincial credits are refundable.
- Special Tax Credits for specified industries, including: IT, media, video games, and film.
- Enhanced tax credits exist for research conducted by universities, research centers, and research consortia.

There is no cap on the amount of benefits conferred through R&D incentives.

All R&D expenditures that cannot be currently deducted may be carried back 3 years or carried forward indefinitely. Unused tax credits may be carried back 3 years and carried forward 20 years.

Federal credits are refundable if earned by small Canadian-controlled private corporations (business must not have more than $800K of taxable income and $50M in taxable capital in prior year to be eligible). Federal refunds are not available for foreign controlled or public corporations.

20% volume-based tax credit may be carried back 3 years and carried forward 20 years.

Eligible Industries & Qualifying Costs

Eligibility is broad and is not limited to particular industries.

To qualify for R&D incentives, work must advance the understanding of scientific relations or technologies, address scientific or technological uncertainty, and incorporate a systematic investigation by qualified personnel. Work that qualifies includes:

- Experimental development to achieve technological advancement to create new materials, devices, products, or processes, or to improve existing ones;
- Applied research to advance scientific knowledge with a specific practical application in view; and,
- Basic research to advance scientific knowledge without a special practical application in view.

Eligible R&D expenses include: wages, materials (consumed or transformed), 100% of subcontracted R&D, overhead, lease payments, payments to universities, colleges, and consortia, and certain capital investments.

IP & Jurisdictional Restrictions

Qualified research must occur in Canada. After February 25, 2008, up to 10% of eligible wages incurred outside of Canada may be claimed for R&D incentives. There are no restrictions on the location of IP.

Other Concerns

For tax years beginning after 2009, taxpayers must submit extremely detailed information on Form T661 in order to claim the R&D credit. The form requests detailed information for each eligible project (though pre-approval is not required).

Companies may elect to participate in the Account Executive Program, whereby an Account Executive from Canadian tax authorities is assigned to the taxpayer to provide assistance in preparing R&D tax credit submissions. The stated purpose of this program is to “help make sure you get maximum benefits from the tax incentives available.”

China

Background

China offers a host of tax and other incentives. The standard corporate tax rate is 25%. The R&D incentives are offered in the form of income tax deductions and reductions in enterprise income tax rates.

Nature of Incentives

- *Super deduction:* Tax deduction equal to 150% of the qualifying R&D expenses.
- *Rate Reduction:* Reduced 15% corporate tax rate for companies granted High and New Technology Enterprise (HNTE) status. HNTE status must be applied for and renewed every 3 years.
- *Tax Exemption:* Business Tax Exemption for the transfer of qualified technology.

The first RMB[1] 5M of income from qualified technology transfers are exempt from the Enterprise Income Tax (EIT) and any income in excess of RMB 5M is taxed at a 50% reduced EIT rate.

Newly established Software/IC companies enjoy a tax holiday. Also newly established HNTEs in certain provinces may receive tax holidays.

Tax losses attributable to R&D super deduction claims can be carried forward up to 5 years.

Eligible Industries & Qualifying Costs

Development of new technology, new products, and new production techniques are R&D activities considered for purposes of the super deduction. The Chinese government provides the following list of eight state encouraged industries that are considered in awarding HNTE status:

- Electronic Information Technology
- Biological & New Medical Technology
- Aviation & Space Technology
- New Materials Technology
- New Energy & Energy Conservation Technology
- High Technology Service Industry
- Resources & Environmental Technology
- Transformation of Traditional Industries through High-New Technology

Qualifying expenditures include: staff costs, direct costs, supplies, depreciation and amortization, design costs, equipment installation costs, intangible asset amortization, and contracted R&D costs.

IP & Jurisdictional Restrictions

Less than 40% of the activity qualifying for the HNTE incentive may occur outside China. The IP must be located in China.

Approval authorities often consider whether IP will be retained in China in granting approval to take super deductions, but this is not required by law.

Other Concerns

Government approval is required to take advantage of the tax incentives. The taxpayer must register with the Science & Technology Bureau and the tax authority.

150% Super deduction for eligible R&D expenditures.

[1] RMB refers to Renminbi – which is China's official currency.

France

Background

General corporate tax rate is 34.43%.

France offers an R&D tax credit that is volume-based. The credit offsets corporate tax liability for the current year and the subsequent 3 years. Prior to 2009, if the credit remains unused after 3 years, the taxpayer receives a refund. In 2009, a temporary measure was enacted in the Finance Law applicable to the 2008 and 2009 years allowing full refunds of unutilized research credits for the time-period 2005-2007. The refund provision has not been extended to 2010.

Nature of Incentives

R&D expenses are deductible in the year in which they were incurred (no super deduction). Additionally, France offers an R&D credit.

Beginning in 2008, the credit equals:

- 30% of the first €100M of qualified R&D expenditures incurred during the tax year; plus, 5% of any amount in excess of the €100M threshold.
- Increased credits are available for new credit applicants (50% for the first year of application (subject to limitation), 40% for the second year (subject to limitation), and 30% thereafter).

A 2009 OECD Study concluded that France offers the most generous R&D tax incentives among the 30 member countries of the OECD.

Eligible Industries & Qualifying Costs

There is no restriction on the types of entities that may qualify for the aforementioned incentives. Qualified activities include basic research, applied research, and development activities. The definition of qualifying R&D is from the OECD Frascati Manual; providing generally that qualified R&D activities:

- Present a significant technological advancement when compared to the then current state of the art;
- Utilize the combined efforts of researchers, scientists, and technologists;
- Is uncertain with regard to the anticipated outcome and includes complexity concerning the methodology itself; and,
- Require the usage of scientific methods/ protocols to achieve results.

Generally, eligible expenses include the following: R&D staff expenses, general and administrative expenses equal to 75% of all R&D staff expenses, depreciation allowances for assets used for R&D activity in France, patent costs, contract costs (subject to limitation), and costs of technological monitoring. Materials consumed in the research process do not qualify. Companies can claim research credits for research performed for the customers.

IP & Jurisdictional Restrictions

100% of the qualified activity must occur within the EU (as long as the expenditure is part of the company's tax base). There is no restriction on the location of any resulting IP.

Other Concerns

The taxpayer is not required to seek governmental pre-approval in order to benefit from any of these incentives.

France offers a host of other incentives aimed at encouraging the growth of R&D-intensive businesses including innovation grants and acceleration of depreciation deductions for fixed assets used in R&D activities.

Germany

Background

Germany's tax rate is 30% (corporate plus trade tax rates) and offers incentives in the form of cash grants.

Nature of Incentives

R&D intensive entities may receive cash grants from the government. Programs are dependent upon the degree and field of the project.

R&D intensive entities may receive cash grants from the government.

Eligible Industries & Qualifying Costs

Eligibility is broad and is not limited to particular industries. Companies in the following industries typically seek cash grants:

- Pharmaceuticals
- Software Development
- Design Centers
- Automotives
- Energy & Utilities

Qualifying expenditures include: staff costs, materials, overhead, subcontracts, amortization, and travel costs. Cash grants are generally issued to reimburse the business for costs already incurred.

Qualified activities include: fundamental research, industrial research, experimental research, and demonstration activities.

IP & Jurisdictional Restrictions

R&D activities and costs must be incurred within Germany. The exploitation of project results must take place in Germany.

Other Concerns

Attractive grant programs exist for projects related to energy efficiency, CO2 reduction, and renewables (including renewable energy). However, funding is not restricted solely to this sector.

Large projects require EU notification (generally above €7.5M).

Hungary

Background

Hungary's corporate tax rate is 19%.

Nature of Incentives

- *Super Deduction:* 200% super deduction for qualifying expenditures from the corporate income tax base.
- *Special Salary Deduction:* Taxpayers may be entitled to an additional deduction of 10% of the salary costs related to R&D activities (up to 70% of the corporate income tax payable). This special deduction can be utilized in four equal installments (current year and subsequent three years). Unused deductions may be carried forward for four years.
- *"Patent Box":* If IP is created as a result of the R&D, 50% of the gross amount of the royalty received (up to 50% of the profit before tax) may be deducted from the corporate income tax base upon the taxpayer's election. (Example: If profit before tax is 80 and the royalties received are 100, the deduction is 50% of the royalty received limited to 50% of the profits before tax, i.e., the deduction is 40. If the profit before tax is 120, the deduction is limited to 50% of the royalty received, or 50).
- *Reduced Innovation Contribution:* An innovation contribution is collected by the government to generate funds for corporate R&D. The contribution assessed equals 0.3% of the local business tax base (i.e., annual operating revenue less cost of goods sold, materials cost, and mediated services). Corporate taxpayers may deduct the direct costs of their own R&D activities (or the costs of subcontracted R&D purchased from certain non-profit organizations) from the amount of the innovation contribution (this is over and above the 200% super deduction).

Refunds of R&D incentives are not available.

Hungry provides a 200% super deduction for qualified expenditures

Eligible Industries & Qualifying Costs

Eligibility is broad and is not limited to particular industries. Companies in the following industries typically seek tax benefits:

- Pharmaceuticals
- Software Services
- Software Development
- Design Centers
- Automotives
- Energy & Utilities
- Mining & Natural Resources
- Financial Services
- Agriculture

Qualifying expenditures are defined broadly and include all direct costs incurred in R&D.

IP & Jurisdictional Restrictions

There is no restriction on the location of IP.

Incentives are available to foreign entities without Permanent Establishment (PE) subcontracts in Hungary. Tax incentives can be claimed by Hungarian companies providing R&D services to a related foreign party.

Other Concerns

No prior governmental approval is required to claim R&D incentives.

Additionally, a 200% super deduction for qualifying expenditures from the local business tax base is available as of January 1, 2010.

India

Background

Corporate tax rate is 33.99%. Incentives include a 150% super deduction for most qualifying expenses.

Nature of Incentives

As of April 1, 2009 the incentives for conducting R&D include:

- *Super Deduction:* A 150% tax deduction for in-house R&D expenditures, including capital expenditures (other than land and buildings). The super deduction is limited to taxpayers in the business of manufacturing and producing products. R&D undertaken to develop certain specified products, such as tobacco products, beer, wine, cosmetics, and others, is ineligible for the super-deduction. The ineligible products are specified on a "negative list." The R&D facility must be approved by the Department of Scientific and Industrial Research (DSIR) in order to qualify for super deductions. The super deduction is reduced to 125% for payments made to prescribed entities carrying out research and development in India.
- 100% deduction for R&D expenses that do not otherwise qualify for the 150% or 125% super deductions – which includes capital expenditures (other than land).

There is no cap on the R&D benefits available in India.

The approval of expenditures for in-house research and development by a company for purposes of the 150% super deduction shall be subject to the following conditions:

- If an R&D expense qualifies for the super deduction, this same expenditure cannot be deducted under any other provision of the tax code;
- No deduction shall be allowed with respect to expenditures incurred after March 31, 2012;
- The facility cannot qualify if it is used exclusively for market research, sales promotion, quality control, testing, commercial production, style changes, routine data collection, or activities of like nature;
- The company must maintain a separate account for each approved facility which shall be audited annually and a copy thereof shall be furnished to the Secretary of the DSIR by October 31st of each succeeding year; and,
- Assets acquired with respect to development of scientific research and development facilities shall not be disposed of without the approval of the Secretary of the DSIR.

Eligible Industries & Qualifying Costs

As of April 1, 2009 all companies manufacturing and producing products (except products on the "negative list," e.g., tobacco products, beer, wine, etc.) are eligible to apply for the 150% super deduction. Prior to this date, the super deduction was limited to the following industries:

- Bio-technology
- Manufacturing or Production of Any Drugs
- Pharmaceuticals
- Electronic Equipment
- Computers
- Telecommunication Equipment
- Chemicals
- Computer software
- Automobile

While specific industry-based eligibility requirements do not apply as of April 1, 2009, the DSIR must nonetheless approve companies before they can qualify for R&D tax incentives.

Qualifying expenditures include: wages, supplies, utilities, and other expenses directly related to R&D. Specifically excluded expenses include: general and administrative costs, depreciation, overheads, and allocated expenditures.

IP & jurisdictional Restrictions

R&D activities must be conducted in India. There is no location restriction with respect to IP.

Other Concerns

If the taxpayer is in a loss situation, unused benefits may be carried forward for the next eight years, but cannot be carried back.

As of April 1, 2009, the 150% super deduction is no longer limited to certain industries.

Ireland

Background

Ireland's general corporate tax rate is 12.5%

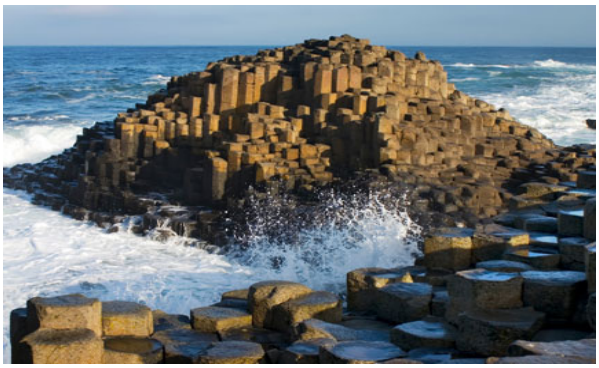
Ireland introduced significant modifications to its R&D tax credit regime effective for accounting periods beginning on or after January 1, 2009. All credits are computed on a group basis.

Nature of Incentives

- *Deduction:* Generally, R&D expenses are currently deductible in the year incurred.
- *Incremental Credit:* 25% incremental credit for all expenditures exceeding the "base amount." The base amount equals the total qualified expenditures incurred during 2003. If the company did not exist in 2003 or it incurred no qualified expenditures in the first 12 month accounting period ending after January 1, 2003, the base amount is zero and the credit is available for all expenditures.
- *R&D Facilities Credit:* 25% credit for expenditures incurred for buildings or structures used in the conduct of qualified R&D activities (provided at least 35% of the building is used for qualified R&D over a 4 year period). There is no base calculation for the buildings credit.
- Other incentives include: capital grants, interest subsidies, loan guarantees, and R&D grants.

Unused credits may be carried back to reduce the tax liability of the preceding accounting period (and carried forward indefinitely). If the credit is not fully utilized in the current and preceding tax period, the excess may be carried forward or refunded to the taxpayer through payments from the Revenue Commissioner (payments made over 3 years).

Credit refunds are subject to limitation. Refunds are limited to the greater of the total corporation tax paid by the company for the 10 years prior to the period for which the company is making the claim or the payroll tax liabilities for the specific period in which the expenditures were incurred.



Eligible Industries & Qualifying Costs

Eligibility is broad and is not limited to particular industries.

R&D activities mean systematic, investigative, or experimental activities in a field of science or technology, including: basic research, applied research, and experimental development. Generally, four categories of activity qualify for the credit:

- Natural Sciences;
- Engineering & Technology;
- Medical Science: basic medicine, clinical medicine, or health sciences; and,
- Agricultural Sciences.

Qualifying expenditures include: royalties, expenses deductible for trading purposes (wages and supplies), plant and machinery entitled to capital allowances, revenue and capital expenditures on scientific research, and buildings subject to capital allowances. Contracted research costs qualify under the tax credit scheme up to a limit of 10% of total qualifying expenditures on research and development activities of the company in any one year. This applies where the subcontractor carrying out the research and development is unrelated to the company who paid for the research and does not claim a tax credit in respect to the research it performed. Where the R&D activities are contracted to a university or institute, the limit is 5% of the company's R&D expenditures in the period. If an Irish company performs research for other unrelated companies for a fee, the company performing the research is permitted to claim the credit, as long as the company providing the funding is not claiming the credit.

IP & Jurisdictional Restrictions

R&D activities must occur within Ireland or the European Economic Area (EEA). The credit is denied when the activities occur in an EEA nation where a corresponding tax deduction for such expenditures is permitted.

The resulting IP does not have to reside within Ireland.

Other Concerns

No governmental pre-approval is required.

Credit must be claimed within 12 months after the end of the accounting period in which the expenditure was incurred.

Credits may be refunded for qualifying R&D undertaken in 2009.

Israel

Background

Israel's corporate tax rate is 27% of business income. The Office of the Chief Scientist (OCS) of the Ministry of Industry Trade and Labor implements the government's policy encouraging and supporting industrial research and development. They are responsible for promoting industrial R&D that is likely to lead to new export products. The following incentives are available only if approved by the OSC applying the following criteria: proven technological skill of the applicant, plan to implement the project in Israel (unless exempted by the research committee of the OCS), and a need for improvements to an existing product.

Nature of Incentives

Alternative Tax Program:

- Company must waive the project's rights to qualify for grants in order to receive complete exemption from corporate tax on its undistributed income.
- The term of the exemption depends upon which Priority Area the business is located in: Priority Area A (10 years complete tax exemption); Priority Area B (6 years complete tax exemption and 1 year of tax benefits, which increases to 4 years of tax benefits for foreign investors); Priority Area C/Central Israel (2 years complete tax exemption and 5 years of tax benefits, 8 years of tax benefits for foreign investors).
- If the company pays dividends during a tax year in which the complete exemption is effective, the dividends are taxed at 15% and any exempted taxes become immediately payable.

Strategic Program:

- The program is intended for large multi-national companies whose annual gross receipts exceed 13B NIS[2] and invest a minimum of 600M NIS in the project itself.
- The R&D investment must be located in Priority Area A to qualify.
- If the investment qualifies, the company receives complete exemption from the corporate tax (including taxes on dividends) for 10 years.

Priority Tax Program:

- Preferred locations for investments in R&D include Galilee, Jordan Valley, Negev, and Jerusalem.
- Companies investing in R&D in Priority Area A receive a reduced corporate tax rate of 11.5% and reduced dividend tax rate of 15%.
- If the business is a foreign investor, the dividend tax rate decreases to 4% (the corporate tax rate remains the same).
- The benefit period is 7 years, unless at least 25% of the company is foreign owned, then the benefit period is 10 years.

The Office of the Chief Scientist's main program, the R&D Fund, supports R&D projects in Israel by offering conditional grants of up to 50% of the approved R&D expenditure. If the R&D project is successful, the company must repay the grant through royalty payments.

Israel also offers the following:

- Bi-national funds for competitive R&D which enable joint R&D programs with foreign counterparts, including: US, Canada, Singapore, Britain, Korea, and Australia.
- Technological Incubators that provide grants of up to 85% of approved expenses for nascent companies to develop innovative technologies.
- The Heznek-Seed Fund through which the government matches an investor's investment in the share capital of a seed company, later giving the investors an option to purchase the government shares. Grants are up to 50% of the approved work program.
- The Tnufa Program is designed to encourage and support an individual entrepreneur in his initial efforts to build a prototype, register a patent, design a business plan etc. Grants are up to 85% of the approved expenses for a maximum of $50,000 NIS for each project.

[2] NIS is the abbreviation for the Israeli currency called the Shekel.

Eligible Industries & Qualifying Costs

Companies engaging in qualified R&D activities in the following industries are generally eligible for R&D incentives:

- Pharmaceuticals
- Software Development
- Automotives
- Energy & Utilities

Note: differences exist between the business income incentives and grants programs.

Qualifying expenditures generally include: in-house labor costs, capital investments, supplies, overhead, and contract costs.

IP & Jurisdictional Restrictions

Restrictions are unique to each grant program as reviewed above.

R&D activities must occur in Israel. The Israeli company must incur the R&D related expenditures.

The resulting IP does not have to reside within Israel, though location is considered in the grants process.

Other Concerns

Generally, R&D expenses are deducted in the year in incurred, but some are deducted in installments over 3 years.

Companies must apply to the Office of the Chief Scientist of the Ministry of Industry Trade and Labor for tax exemptions, reduced tax rates and cash grants

Japan

Background

Japan's general national corporate tax rate is 30% (other local corporate tax rates apply when calculating the total corporate tax liability of a company. The total corporate tax rate is approximately 41%). The Japanese R&D tax incentives are incremental and volume-based. A special non-refundable tax credit is extended to companies that have increased their research and development expenses.

Nature of Incentives

Entity	R&D Tax Credits
Small-and-Medium-Enterprises (SME): SME (Companies whose capital does not exceed JPY 100M, excluding a SME held by a large company/companies, whose capital exceeds JPY 100M)	12% of total R&D expenditures. The tax credit is limited to 30% of the company's national corporate income tax liability before the credit is applied. The 30% limitation is specifically applied for the fiscal years beginning on or after April 1, 2009 until March 31, 2011. After March 31, 2011, the rate reverts to 20%.
Large Companies	8% to 10% of total R&D expenditures. The tax credit limitation is the same as for SMEs as outlined above.
Additional (for both SME & Large Companies)	Either: 1) Where the current period R&D expenditures exceed: (i) the annual average of the R&D expenditures for the 3 preceding fiscal years; and, (ii) the highest annual R&D expenditure for the previous 2 fiscal years, then the company may claim 5% of the incremental R&D expenditures (i.e., the current year expenditure less the amount in (i)); or 2) where the current period R&D expenditure exceeds 10% of the average annual sales for the 4 most recent preceding fiscal years (including the current year), the company is eligible for a credit calculated using the following formula: (R&D expenditure less [Average Annual Sales x 10%]) multiplied by the R&D ratio (reduced by 10%), multiplied by 20%. The R&D Ratio is the amount of current year R&D expenses divided by average annual sales for the 4 most recent preceding fiscal years (including the current tax year). The tax credit is limited to 10% of the company's national corporate income tax liability before the credit is applied.

An additional R&D credit system is applicable for a company conducting R&D jointly with a qualified R&D institution (e.g., designated universities).

The R&D tax credit is available to blue tax return filers. Blue form tax return status is obtained by submitting an application form to the appropriate tax office. Record keeping substantiation requirements are enforced under the corporate tax law.

Generally, unused R&D tax credits may be carried forward 1 year. The unused R&D tax credits incurred for the fiscal years beginning on or after April 1, 2009 through March 31, 2010 may be carried forward up to 3 years. Unused tax, credits incurred for fiscal years beginning on or after April 1, 2010 through March 31, 2011 may be carried forward 2 years.

Eligible Industries & Qualifying Costs

Research credits are not limited to any specific industry, though the activity must be technological/scientific in nature. Non-technical fields may have a difficult time qualifying for the credit.

To qualify for the credit, the expenses must be incurred in order to manufacture products, or to improve, design, formulate, or invent techniques.

Eligibility is broad and is not limited to particular industries. Companies in the following industries typically seek tax benefits:

- Pharmaceuticals
- Software Services
- Software Development
- Design Centers
- Automotives
- Energy & Utilities

Qualifying expenditures include: in-house labor costs, supplies, overhead, depreciation on fixed assets, and contract costs. Generally, salaries mean the amount paid to employees who devote 100% of their time to R&D, though recent interpretations permit segregation of activities if clearly documented. In 2003, the National Tax Authority officially announced that labor costs relating to performing qualifying activities may be allowable for R&D credit purposes, to the extent that details of the activities are clearly documented. Documentation should state information including the time spent by each employee on what qualifying R&D activities, with details of appropriate calculations for the labor cost. The legislation is silent as to how to determine the applicable labor costs.

IP & Jurisdictional Restrictions

No provision of the Japanese law addresses where IP ownership should be retained. However, only tax deductible R&D expenses borne by the Japanese entity are eligible for the credit; thus, the general view is that the IP should be located in Japan. There is no location restriction on where the qualified activity occurs, though the Japanese company must bear the expenses.

Other Concerns

No prior approvals from government/regulatory agencies are required.

Credit must be claimed on the tax return for the relevant period. Claims on amended tax returns are not accepted.

Japan offers separate credits for Small-and-Medium Enterprises and Large Companies, as well as an additional credit for entities of all sizes.

Malaysia

Background

Malaysia's general corporate tax rate is 25%.

R&D incentives include:

- Investment Tax Allowance (ITA);
- Super Deductions; and,
- Enhanced benefits for Pioneer Status (PS)

Nature of Incentives

Investment Tax Allowance (ITA): Companies performing in-house R&D may qualify for an ITA of 50% of the qualifying capital expenditure incurred within ten years.

- The company can offset the investment tax allowance against 70% of its statutory income for each year of assessment.
- Any unutilized allowances can be carried forward to subsequent years until fully utilized.
- Generally, R&D Service providers, which include companies deriving a substantial portion of their income from performing R&D for other companies, are provided an ITA of 100% of the qualifying capital expenditures incurred within 10 years. If an R&D company does not claim the benefit for services provided to related companies, the related companies can receive a 200% super deduction for payments made to the R&D Company for services rendered.
- This benefit is available only to companies that are certified by the Malaysian Industrial Development Authority (MIDA).

200% Super Deductions: 200% super deductions are allowed for non-capital expenditures incurred in qualifying R&D, if approved by the Minister of Finance.

- 200% super deductions can also be claimed for cash contributions or donations to approved research institutes, and payments for the use of the services of approved research institutes, approved research companies, R&D companies, or contract R&D companies.
- Expenditures on R&D activities undertaken outside of Malaysia, including the training of Malaysian staff, will be considered for 200% super deductions on a case-by-case basis.
- Claims are submitted and reviewed by the Inland Review Board (IRB).
- Approved R&D expenditures incurred during the tax relief period for companies granted Pioneer Status can be accumulated and deducted after the tax relief period.
- Generally, companies qualifying for the 200% super deductions cannot utilize the ITA.

Enhanced Benefits for Pioneer Status: The Minister of Finance is granted the authority to provide "pioneer status" to companies deriving income from certain activities and products that benefit the Malaysian economy. Promoted "activities" and "products" are determined by the Minister of Finance and published in the Government Gazette. R&D companies, high tech companies, software development companies, and manufacturing companies capable of producing world-class products are typically granted Pioneer Status. Statutory income earned by an R&D company provided Pioneer Status is exempt from tax for a period of 5 years. Pioneer Status, with government approval, can be extended for another 5 years.

Eligible Industries & Qualifying Costs

Eligibility is broad and is not limited to particular industries.

Qualified research, in general, is any systematic or intensive study undertaken in the field of science or technology with the objective of using the results of the study for the production or improvement of materials, devices, products, or processes.

Qualifying expenditures for the in-house research incentive include: wages, supplies, technical services, technical costs, transportation costs, maintenance costs, rents, and other expenditures incurred directly for the conduct of qualified research.

IP & Jurisdictional Restrictions

The resulting IP does not have to reside within Malaysia.

The R&D activities must generally be performed within Malaysia.

Payments for technical services performed outside of Malaysia may qualify for the 200% super deduction when the amount expended is less than 70% of the total allowable expenditure for the super deduction.

Other Concerns

Current in-house research projects must be pre-approved before the double deduction is permitted.

200% super deduction is available for companies approved by the Minister of Finance

Mexico

Background

Mexico's general corporate income tax rate is 30%.

While R&D incentives were eliminated as part of 2010 Tax Reform legislation, funds were subsequently allocated by the legislature to extend R&D grant programs to provide direct cash subsidies for qualified research through 2010. Consequently, it appears that grants will be available for qualifying R&D projects undertaken in 2010.

The National Council for Science and Technology assesses and grants the incentive.

Nature of Incentives

The R&D incentives are provided in cash grants through the following three programs:

- *High Added Value Technological Innovation for Technological Research, Development, and Innovation*: Granting economic support to micro, small, and medium-sized enterprises (MIPYMES) for activities preferably performed in conjunction with higher education institutions or research centers. Applications due by March 5, 2010.
- *Development and Innovation of Precursor Technologies for Technological Research, Development, and Innovation:* Granting economic support to MIPYMES and large companies. Proposals are required to be presented on a network basis and must involve collaborative research with another entity and one research center/higher education institution. Applications due by March 30, 2010.
- *Technological Innovation to Enhance Competitiveness for Technological Research, Development, and Innovation:* Granting economic support to large companies. Priority is given to collaborative proposals involving research centers or higher education institutions. Applications due by January 29, 2010.

The grants provided by the above programs range from 22% to 90% of eligible R&D expenses paid by the Mexican company. The largest grants are generally awarded for collaborative research conducted with a research center or higher educational institution.

R&D costs, such as wages, supplies, and contractor fees are deductible when paid or incurred for income and flat tax purposes. Generally, buildings and capital equipment used in research must be depreciated, but some expenses can be deducted if certain requirements are met.

Eligible Industries & Qualifying Costs

The R&D grants are not limited to specific industries. Eligible companies engaged in activities related to technological investigation, development, or innovation may qualify – particularly if the proposal includes collaborative research.

The grants offered above will typically cover the related operating expenses for research centers or higher education institutes, project salaries, personnel travel expenses, expenses incurred to register intellectual property rights, technological studies, analyses, etc., certain scholarships, infrastructure creation expenses, and prototypes, pilot models, and their evaluation.

IP & Jurisdictional Restrictions

The qualified R&D activity must occur within Mexico. While intellectual property does not have to be retained in Mexico, this factor may be considered by the granting authorities in deciding whether to fund the R&D project.

Other Concerns

Annual application requirements mandate submission of documentation detailing the nature of the qualifying projects.

Mexico offers grants to fund R&D projects undertaken in Mexico.

Netherlands

Background

The Netherlands corporate tax rate ranges from 20% to 25.5%. The nation offers two incentives to taxpayers engaged in qualified research:

- The WBSO (Incentive for Research and Development Costs) is available to all taxpayers who undertake research into technological innovation regardless of business sector (Wage Tax Credit).
- Innovation Box (formerly the Patent Box).

Nature of Incentives

If a taxpayer is eligible for the WBSO, they will receive a contribution towards the wage costs of employees carrying out R&D. The benefit is a reduction in the wage tax and social security contributions paid for R&D employees. In 2010, the R&D deduction is 50% (up to 60% for start-up companies) of the first €220K in R&D wage costs and 18% for the remaining wage costs with a maximum reduction of €14M per taxpayer. To receive the WBSO tax credit, the taxpayer must receive certification from the Dutch Government in advance.

In 2007, the Netherlands introduced the "patent box," subsequently renamed the "innovation box" effective January 1, 2010. The innovation box applies to patented and non-patented innovations alike, provided that the development efforts qualify for the wage tax credit for innovation (WBSO).

There is no cap on the amount that can be allocated to the "innovation box."

Development costs and losses on the exploitation of IP that are allocated to the "innovation box" can be deducted against the standard 25.5% tax. Beginning in 2010, the effective tax rate for income attributable to qualifying inventions allocated to the "innovation box" is reduced to 5%.

The Wage Tax Credit is available for qualifying wages related to technical innovation.

Eligible Industries & Qualifying Costs

For purposes of the WBSO, R&D means:

- The development of technically new physical products, physical production processes, software, or components thereof;
- Technical-scientific research seeking to explain phenomena in fields, such as physics, chemistry, biotechnology, production technology, and information and communications technology;
- Analysis of the technical feasibility of an R&D project; and,
- Technical research aimed at enhancing physical production processes or software.

Qualifying costs include wages paid to eligible employees for the WBSO incentive and Wage Tax Credit.

IP & Jurisdictional Restrictions

IP is not required to reside in the Netherlands. To claim the WBSO incentive, the R&D activities must occur within the EU.

Since the incentive is related to the Dutch wage tax, it is primarily based on R&D performed within the Netherlands.

Other Concerns

As noted above, to receive the WBSO tax credit, the taxpayer must apply for and be granted certification from the Dutch Government.

The R&D must result in intangible assets which are self developed or developed for the risk and benefit of the taxpayer.

Marketing intangibles created by the taxpayer, such as brand names, logos, and assets alike, do not qualify for the Innovation Box regime.

Russia

Background

The Russian corporate tax rate is 20%. Russia offers tax incentives for profits tax and a value added tax (VAT) exemption.

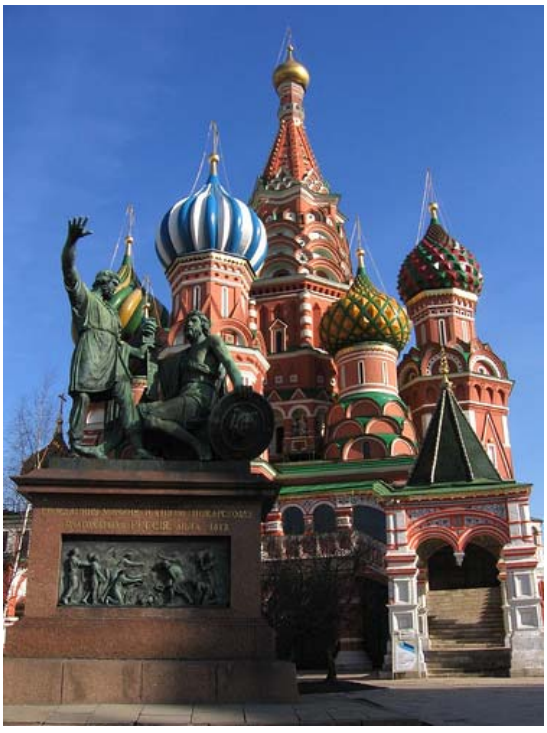
Nature of Incentives

VAT Tax Incentive: The sale/transfer of exclusive rights for inventions, utilities models, industrial designs, software, data bases, topographies of integral circuits, and know how (and any attendant rights for using the above) are exempt from taxation. Full VAT exemption applies to new products and technologies development or conceptual improvements of existing products and technologies.

Profits Tax Incentive: While Russia did not historically allow current deductions for R&D, such expenditures are now currently deductible provided that they involve the creation of new or improved products, commodities, works, or services.

Super Deduction: A 150% super deduction can be taken to reduce profits taxes for certain R&D expenses stipulated by the Russian government in the period they were incurred. The super deduction can be taken even if the R&D fails to result in a new product, service, etc. Losses for tax purposes resulting from super deductions can be carried forward for 10 years.

Additional incentives exist for property and land taxes (tax exemptions and reductions in tax rates). Regional authorities may also reduce the regional portion of the profits tax for R&D conducted in their region.



Eligible Industries & Qualifying Costs

For profits tax purposes, R&D expenditures must relate to the development of new products or improving production processes, as well as developing new services. Software development activities may qualify, as well.

There is no restriction on the industries which are eligible for R&D tax incentives.

IP & Jurisdictional Restrictions

Russia does not provide any specific restriction on whether the activities need to be carried out within the country or on IP holdings for the Profits Tax Incentive.

Other Concerns

Benefits granted by the Regional authorities require pre-approval and are subject to more stringent requirements.

Russia now offers a 150% super deduction for certain R&D expenditures.

Singapore

Background

The general corporate tax rate is 17% with partial tax exemption granted for the first S$300K[3] of otherwise taxable income.

Nature of Incentives

Incentives include:

- Section 14D R&D Deduction;
- Section 14DA R&D Super Deduction;
- Section 14E R&D Deduction;
- R&D Tax Allowance;
- R&D Incentives for Start-up businesses;
- Enhanced R&D Deductions for New Financial Activities; and,
- Write-down Allowances for Cost Sharing Arrangements.

Incentive	Description
Section 14D R&D Deduction	Section 14D provides an exception to the general rule that new product and process development costs must be amortized, by allowing current deductions for R&D expenditures incurred by a taxpayer in the conduct of its trade or business (including payments to R&D organizations). Eligible expenses include: wages and salaries, materials, and utilities incurred directly for R&D activity. Capital expenditures on plant, machinery, land, or buildings, or on alterations, additions, or extensions to buildings, or in the acquisition of rights arising in or arising out of R&D are specifically excluded. Unutilized R&D expenditures may be carried forward indefinitely.
Section 14DA Super Deduction – for payments to R&D organizations or expenses incurred by the entity.	Qualifying expenditures incurred during 2009 to 2013 may, in addition to qualifying for the Section 14D R&D deductions, qualify for an additional deduction of 30% to 50% of qualifying expenditures. Generally, an additional deduction of 30% is applicable to payments made by an entity to an R&D organization for undertaking R&D in Singapore on its behalf; whereas, an additional 50% deduction is applicable to qualifying expenditures incurred by the entity on R&D undertaken in Singapore directly by the entity. Qualifying expenditures have been defined to include only: staff costs, consumables, and any other expense prescribed by the Minister. This is a narrower definition of qualifying expenses than under section 14D. Consequently, a super deduction of 130% - 150% is available for expenses qualifying under sections 14D and 14DA.

[3] S refers to Singapore Dollars.

Section 14E R&D Super Deduction	This provision allows super deductions of up to 200% of certain specified qualified expenditures approved by the government. Unutilized R&D expenditures may be carried forward indefinitely. The combined total claims under Section 14E and Sections 14, 14D, and 14DA, with respect to the approved project, are capped at 200% of the taxpayer's actual expenditures.
R&D Tax Allowance	An R&D Tax Allowance applies to tax years 2009 – 2013 and may exempt income from taxation if qualified research spending increases over the 2008 tax period. The R&D allowance granted can be used to offset chargeable income for the next three years of assessment provided the qualifying conditions are met. The Tax Allowance is capped at 50% of the first S$300K; thus, the maximum exemption in any one year is S$150K. There is, however, a cumulative 3 year cap of S$450K, for unutilized allowances. Companies that cannot utilize the maximum exemption of S$450K within the 3 year period forgo the unutilized Tax Allowance.

Eligible Industries & Qualifying Costs

R&D means "any systematic investigative and experimental study that involves novelty or technical risk carried out in the field of science or technology with the object of acquiring new knowledge or using the results of the study for the production or improvement of materials, devices, products, or processes." Certain activities are specifically excluded from the definition of R&D. For example, internal-use software would generally be ineligible for research tax incentives.

Entities conducting R&D may claim the tax benefits described above regardless of their industry classification.

IP & Jurisdictional Restrictions

If the R&D payments are made by an entity to a R&D organization outside Singapore, a claim for deduction shall be allowed to such entity, provided that the expenditure incurred on the R&D is related to the entity's existing trade or business and that any benefit which arises from the R&D accrues to the entity itself.

Section 14D R&D Deduction: R&D may take place outside of Singapore. The entity does not need to hold the resulting IP in Singapore. No prior approval is required to claim the deduction.

Section 14DA Deduction: Only R&D activities undertaken in Singapore qualify for the Section 14DA super deduction. No prior approval is required to claim the super deduction.

Section 14E R&D Super Deduction: The R&D project must be carried out in Singapore and must receive special approval from the Minister (advance application with the Singapore Economic Development Board is required).

R&D Tax Allowance: Expenditures considered in determining the Tax Allowance must qualify under Section 14D and the R&D must be carried out in Singapore.

Other Concerns

When expenses exceed trade income, the excess thereof may be carried forward and set off against future taxable profits, provided the shareholders of the company are substantially (50% or more) the same on the last day (i.e. December 31st) of the year of loss and on the first day (i.e. January 1st) of the year of assessment in which the loss is to be set off.

Singapore offers super deductions and a tax allowance.

South Africa

Background

South Africa's general corporate tax rate is 28% (small business corporations pay taxes at 0% – 28%). South Africa enacted R&D incentives in November 2006.

Nature of Incentives

Super Deduction: South Africa provides a volume-based super deduction equal to 150% of the qualifying operational expenditures incurred directly for purposes of research and development.

Accelerated Depreciation: Capital expenditures incurred to develop/construct assets used in the conduct of qualifying R&D activities qualify for favorable accelerated depreciation:

- 50% in the year that the asset is brought into use for the first time by the taxpayer;
- 30% for year 2; and,
- 20% for year 3.

Apportionment is not available for partial years.

Eligible Industries & Qualifying Costs

Companies carrying on business in an ineligible industry do not qualify for the super deduction, but qualify for accelerated depreciation for capital assets used in R&D.

Industries that are eligible for the super deduction include:

- Pharmaceuticals
- Software Services
- Software Development
- Design Centers
- Automotive
- Energy & Utilities
- Mining & Natural Resources

For R&D expenses to qualify, the activity must be undertaken within South Africa and must be performed for the purposes of:

- Discovery of novel, practical, and non-obvious information; *or*
- Devising, developing, or creating any patentable invention, registerable design, or computer program in which copyright subsists; *or,*
- Knowledge essential to the use of such invention, design or computer program.

South Africa offers super deductions and accelerated depreciation of capital assets.

Further, these expenses must be:

- Of a scientific and technological nature; and,
- Intended to be used by the taxpayer in the production of their income.

Expenses incurred while conducting the following activities do not qualify as research and development expenditures:

- Exploration or prospecting;
- The management of internal business processes ;
- Trademarks;
- Social sciences or humanities; and,
- Market research, sales, or marketing promotion.

All non-capital costs, including supplies, in-house and contract labor, overhead, etc., are eligible for the super deduction.

IP & Jurisdictional Restrictions

Qualifying activities must occur in South Africa. IP must be created in South Africa, but it does not need to be held within South Africa.

Other Concerns

If the business is in a loss position, the benefit may be carried forward until utilized.

Where a research and development company receives funding from another person, the company does not generally qualify for the super deduction. If, however, the funding is from an entity outside of South Africa, the taxpayer can take the full 150% super deduction. The funding entity may deduct 150% of the amount paid to the company performing the research on its behalf. In cases where the research and development company assumes the financial risk of loss if the research fails, as well as controlling all critical aspects of the research, i.e., has the authority to stop performing the R&D or change the direction of the R&D, they will generally qualify for the 150% deduction.

If a government grant is received by the taxpayer to fund the R&D expenditure incurred, the 150% deduction is allowed only to the extent that the R&D expenditures exceed twice the amount of such grant.

No prior approval is required to utilize the tax incentive.

Background

The corporate tax rate in South Korea ranges from 11% to 24.2% (dependent upon the taxpayer's tax base). South Korea offers a general tax credit for R&D expenditures, plus an additional credit for expenses incurred for investments in R&D equipment.

Nature of Incentives

R&D tax credit for qualified expenditures:

Small and Medium Sized Enterprises (SME): The maximum of either:

- The credit equals the maximum of either: 1) 50% of the current R&D expenses exceeding the average of the 4 prior years R&D expenditures; or, 2) 25% of current R&D expenditures.
- 30% tax credit computed on current R&D expenditures if the company qualifies for the government's New Growth Engine Industry or Original Source Technology programs.

Large Companies (Non-SMEs):

- The credit equals the greater of: 1) 40% of current year R&D expenditures exceeding the average of the 4 prior years R&D expenditures; or, 2) If the R&D expenditure ratio (R&D expenditures for the fiscal year divided by revenue for the fiscal year) for the current year is greater than the R&D ratio of the prior year, the credit equals the R&D expenditures for the current year times 3% plus the "additional rate" – defined as R&D expenses divided by revenue times .50 (capped at 3%).
- 20% tax credit computed on current R&D expenditures if the company qualifies for the government's New Growth Engine Industry or Original Source Technology programs;
- For expenditures paid to a university/college or another SME, 50% of the current R&D expenditures exceeding the average of the 4 prior years R&D expenditures; and,
- Unused R&D credits for Qualified Expenditures may be carried forward 5 years (no refund).

Investment Tax Credit for R&D Equipment:

- Credit equals 10% of the total investment amount for certain R&D equipment;
- Includes the costs of machinery, facilities, tools, office machines, telecommunications instruments, testing machines, optical instruments, etc. used in the conduct of R&D activities; and,
- Unused credits may be carried forward 5 years.

Eligible Industries & Qualified Costs

R&D activities include research conducted by the certified R&D department of the company and/or qualifying bodies (i.e., universities, colleges, research institutes) to develop technology of the company, trademark design, and development, manpower training, and quality control.

Qualified R&D costs include: labor costs (salaries, wages, bonuses, etc.), materials costs (samples, parts, and raw materials used in the conduct of R&D), rent for R&D equipment, commissions paid to the qualifying body, training costs, and other costs (trademark development costs, design development costs, consulting fees, and quality guarantee costs).

IP & Jurisdictional Restrictions

All R&D expenditures directly related to the R&D activities of the company may be claimed in the tax credit computation regardless of the location of the R&D itself. Any resulting IP does not need to be held by the South Korean company. The R&D tax credits are not allowed for R&D service providers.

Other Concerns

Companies may file an amended return to claim the credit up to 3 years from the date the original tax return was due.

In addition to incremental and volume based credits, an investment tax credit is permitted for R&D equipment.

Spain

Background

The Spanish corporate tax rate is 30%. Spain applies different tax rates for small companies (25% - 30%), oil companies (35%), savings banks (25%), REITs (18%), and investment funds (1%). Spain offers immediate deduction of qualified R&D expenditures, as well as offering research tax credits for technological innovation.

Nature of the Incentives

Volume Credit: The volume based credit is equal to 25% of the R&D expenses incurred in the tax year.

Incremental Credit: The incremental credit equals 42% of the amount of the current year expenditures exceeding the average of such expenditures incurred in the preceding two tax years. If the taxpayer's current year spend exceeds the average of the prior two years, the taxpayer receives a credit equal to 25% of the current expenses plus 42% of the excess over the base.

Personnel Credit: A 17% credit for wages paid to qualified investigators dedicated exclusively to R&D.

R&D Equipment Credit: An 8% credit for amounts invested in tangible and intangible fixed assets, excluding real estate, used exclusively in the conduct of qualified R&D.

Credit Limitations: If the amount of qualified R&D expenses for the tax year exceeds 10% of the tax due (after reducing for tax credits), the tax credits may not offset greater than 50% of the gross tax due. If the amount of expenses does not exceed 10% of the gross tax due (after reducing for tax credits), the credits may offset up to 35% of the gross tax due.

Patent Box: 50% of the income from the assignment, etc. of patents is exempt from taxable income.

Unused credits may be carried forward for 15 years (no refund).

Spain provides generous research tax incentives.

Eligible Industries & Qualifying Costs

All industries are eligible for R&D tax credits for costs incurred in qualifying activities.

R&D activities include original planned investigation aimed at acquiring new knowledge and greater understanding in scientific or technological fields. Development is considered to be the application of the results of research or of any other kind of scientific knowledge for the manufacture of new materials or products or for the design of new production processes or methods, as well as substantial technological improvement of materials, products, processes, or previously existing methods (including software development).

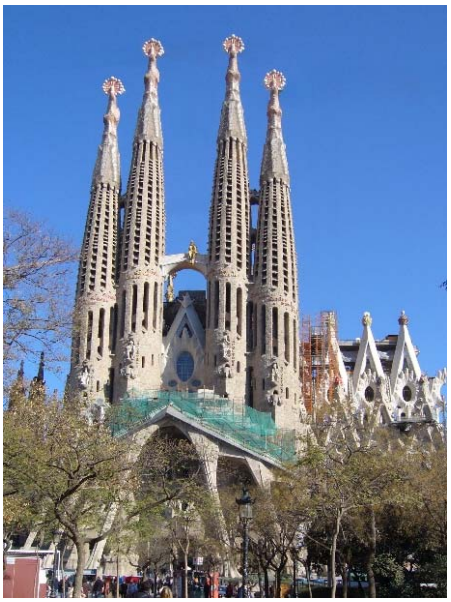
Qualifying R&D expenses include: wages paid to employees engaging in research, as well as the cost of investments in fixed assets that are exclusively dedicated to R&D activity. Supplies and indirect expenses are excluded.

IP & Jurisdictional Restrictions

In order to qualify for any credit, all qualified R&D must take place in Spain or a member state of the European Union or in the European Economic Area. IP ownership does not affect whether the taxpayer can claim the credit or not.

Other Concerns

Spain also offers an additional incentive in the form of a 40% reduction in social security contributions for certain research personnel.



United Kingdom

Background

The corporate tax rate ranges between 21-28%.

R&D occurs when a project seeks to achieve an advance in science or technology through the resolution of scientific or technological uncertainties. R&D also includes qualifying indirect activities that form part of a project.

Nature of Incentives

The United Kingdom offers two volume-based incentives; one that is available to companies falling within the definition of a Small-or-Medium-Sized-Enterprise (SME) and the other for companies that do not fall within that definition (Large Companies). Generally, an SME company must have fewer than 500 employees and *either* gross revenues of less than €100M *or* gross assets of less than €86M. Affiliated companies are generally considered in determining if a company qualifies as an SME.

- *Large Companies*: 130% super deduction;
- *SMEs*: 175% super deduction; and,
- *Cash Credits:* Cash credits are available for loss-making SMEs (up to 24.5% of the qualified expenditure).

Unused tax benefits may be carried forward for an indefinite period to offset against future profits of the same trade unless there is a change in ownership and a change in the nature of the trade within three years of each other.

Currently there are no caps on R&D deductions for Large Companies. However, there is a cap that restricts the amount of tax benefit available to SMEs, over and above the benefit that would have been available had the company not been an SME, to €7.5M per R&D project.

Capital expenditures are excluded from the super deduction, but a full deduction for capital property used in R&D can be claimed in the year the expenditure is incurred; rather than being amortized for tax purposes in accordance with the usual rules.

Eligible Industries & Qualifying Costs

The type of industry has no bearing on the availability of the incentive. Qualification is based solely upon the nature of the activities.

Companies may claim the incentive for their expenditures on the following cost categories as long as the total exceeds GBP 10,000 for the year:

- Employing staff directly and actively engaged in carrying out R&D;
- Paying a staff provider for the services of personnel who are directly and actively engaged in carrying out R&D (limited to 65% of the payment);
- Consumable or transformable materials used directly in carrying out R&D (broadly, physical materials which are consumed or transformed in the R&D);
- Power, water, fuel, and computer software used directly in carrying out R&D;
- SMEs can claim 65% of R&D related subcontract costs. Large Companies can only claim subcontract costs if they are paid to a university, health authority, charity, scientific research organization, individual, or a partnership of individuals while SMEs cannot claim for such costs; and,
- Payments to volunteers for participating in clinical trials

Expenditures on land and IP are specifically excluded.

Large Companies can claim the relief on costs associated with work that is contracted to them as long as it was contracted by another Large Company or any person not subject to UK tax, e.g., UK Large Company performs research for a US company that is not subject to UK tax. SMEs cannot claim the more advantageous relief on costs that are subsidized or relate to activities that were contracted to them, although they may be able to make a claim under the less generous Large Company relief (which means the SME would be unable to monetize losses into cash refunds).

IP & Jurisdictional Restrictions

There is no IP ownership requirement for Large Companies. Currently, SMEs have to own any resultant IP, but there are proposals to abolish this restriction for accounting periods ending on or after December 9, 2009. Large Companies are not subject to any location restriction concerning IP ownership. Additionally, taxpayers are not subject to any restriction with respect to the jurisdiction in which the qualified activity occurs. However, the related costs must be deductible in computing UK taxable profits in order to remain eligible.

There are no restrictions on the costs being incurred within the UK. However, the costs must be deductible in computing UK taxable profits.

Other Concerns

No pre-approval is required to take advantage of the applicable tax benefit.

Taxpayers may file new or amended claims up to the first anniversary of the filing deadline for the tax return. This generally equates to two years from the end of the accounting period.

The UK offers a 130% super deduction for Large Companies and a 175% super deduction for Small/ Medium-sized Companies.

United States

Background

Corporate taxable income is subject to graduated tax rates, ranging from 15% to 35%.

Tax credits are provided for qualified research expenses (both Federal and State). While the federal credit expired for qualifying expenses incurred after 2009, the credit is expected to be extended through 2010.

Nature of Incentives

The US provides two methods for computing the incremental credit for 2009:

- *20% Credit:* The "traditional credit" equal to 20% of the amount of the expenditures exceeding a "base amount" (complicated computation[4] estimating the amount of gross receipts a company would expect to spend on qualified research); or,
- *14% Credit:* The alternative simplified credit (ASC) equal to 14% of the excess of the qualified research expenditures over 50% of the average of the three prior year's expenditures.
- There are also special credits for basic research (e.g., research conducted in universities), payments to energy research consortium, and research relating to orphan drugs.

Computational adjustments: There are several computational adjustments that significantly reduce the true value of these R&D tax credits:

- While qualifying R&D expenses are currently deductible, taxpayers must reduce the current deduction by the amount of the tax credit. Alternatively, taxpayers' can elect *on a timely filed return* to take the credit at a reduced rate of 13% for the regular credit or 9.1% for the ASC.
- There is a minimum base amount applicable only to the traditional credit equal to 50% of current qualifying R&D expenditures. The cumulative affect of limiting deductions (or electing a reduced credit rate of 13%) and the minimum base amount, is that the maximum value of the traditional credit is 6.5% of current qualified R&D spending.
- There is no minimum base amount for the alternative simplified credit. If, however, there is no qualified research spending in any one of the 3 prior years, the credit is equal to 6% of qualified research spending in the current tax period.
- The cumulative effect of limiting deductions (or electing a reduced credit rate of 9.1%) for the ASC and the base calculation rules, is that the maximum value of the ASC is less than 9.1% of current qualified R&D spending.

The US offers tax credits to offset current, prior, and future income tax liability.

- Unused research credits can be carried back 1 year and carried forward 20 years;
- Credits are not subject to a cap;
- Generally, research credits are non-refundable; but in very limited circumstances taxpayers can get a refund for unutilized pre-2006 carryforward credits in lieu of taking bonus depreciation (2008 – 2009).

There is no cap on US research credits. Credits that cannot be utilized in the current period can be carried back 1 year and forward 20 years.

[4] The Traditional Base Amount is calculated by taking the ratio of Qualified Research Expenditures (QREs) to gross receipts in the tax years 1984-1988 and multiplying this ratio by the average gross receipts in the four taxable years prior to the credit year. Special "start-up company" rules apply in calculating the base amount if a company did not exist during some or all of the base years (1984 – 1988).

Eligible Industries & Qualifying Costs

The incentive is intended to benefit all industries conducting qualified research. Consequently, all industries are eligible for the research credit.

Qualifying costs include: wages for in-house labor, 65% of contract labor, and supplies used in the research process. Overhead and capital expenditures are excluded.

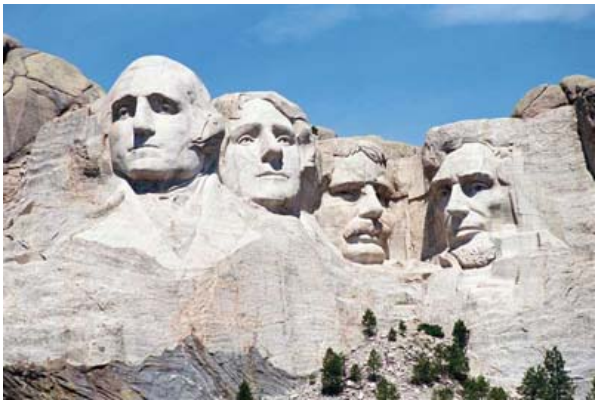
IP & Jurisdictional Restrictions

There is no restriction on the location of any resulting IP. Qualifying activities must be performed within the US and the related qualifying costs must be incurred by a US taxpayer (although such costs may be reimbursed by a foreign affiliate).

Other Concerns

Taxpayers may amend prior year returns to claim tax credits when the tax year is open for assessment of tax.

Prior approval of projects or activities is not required.



Summary of Key Criteria

Refundable Credits:

Country	Explanation
Australia	Small and Medium Sized Companies (SMEs) with less than $5M in gross receipts and $2M in grouped expenditures qualify for a refundable tax incentive. Beginning July 1, 2010, a refundable credit is offered to companies with less than $20M of gross receipts equal to 45% of the current R&D expenditures.
Austria	8% volume-based credit (cash-back premium) on all qualifying R&D-related expenditures (refundable benefit to the extent that the credit exceeds the amount of tax liability).
Belgium	Excess tax deductions may be converted into a tax credit refundable after 5 years.
Canada	Federal credits issued to small Canadian controlled private businesses are refundable. Some provincial R&D incentives are also refundable.
France	The law prior to 2009 provided that if the credit remains unused after 3 years, the taxpayer receives a refund for the unutilized credit. Current law provides that for 2008 and 2009, full refunds are available for current unutilized credits, as well as for unutilized research credits for the time-period 2005-2007. The refund provision has not been extended to 2010.
Ireland	If the credit is not fully utilized in the current and preceding tax period, the excess may be carried forward or refunded to the taxpayer through payments from the Revenue Commissioner (payments made over 3 years). Refunds are limited to the greater of the total corporation tax paid by the company for the 10 years prior to the period for which the company is making the claim or the payroll tax liabilities for the specific period in which the expenditures were incurred.
United Kingdom	Cash credits are available for SMEs in a loss position.

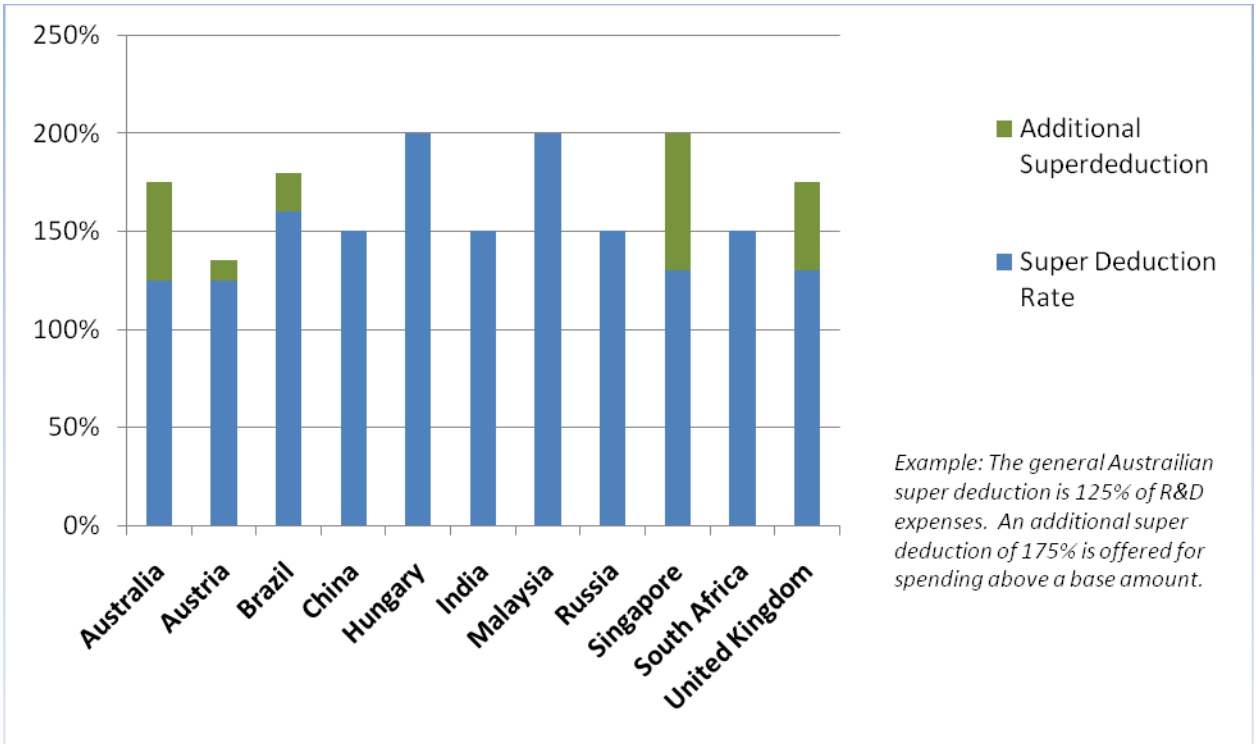
Ownership of Intellectual Property Restrictions:

Country	Explanation
Australia	Intellectual property rights must generally be retained in Australia. This requirement does not apply, however, with respect to IP developed through activities that qualify for the 175% Incremental Concession (International). If there is no DTA, the Incremental Concession (International) is available to the extent such expenses were incurred in Australia.
Belgium	Claimant must retain any associated IP in Belgium to receive the tax benefit.
China	In order to receive the tax rate reduction, any resulting IP rights must be located in China. Approval authorities often consider whether IP will be retained in China in granting approval to take super deductions, but this is not required by law.
Germany	The exploitation of project results must take place in Germany.
Japan	No provision of the Japanese law addresses where IP ownership should be retained. However, only tax deductible R&D expenses borne by the Japanese entity are eligible for the credit; thus, the general view is that the IP should be located in Japan.
South Africa	IP must be created in South Africa, though it is not required to be held there.
United Kingdom	Currently, SMEs have to own any resultant IP, but there are proposals to abolish this restriction for accounting periods ending on or after December 9, 2009. Large Companies are not subject to any location restriction concerning IP ownership.

Location of Qualified Research Activity Restrictions:

Country	Explanation
Australia	The activities must be performed within Australia to be eligible for benefits, though a maximum of 10% of such activities may be carried outside Australia.
Austria	Activities may occur outside of Austria in a branch or a plant within European Union/European Economic Area. However, the Austrian entity must fund the endeavor.
Brazil	Qualified activities must occur in Brazil, except for the IPI reduction which reduces federal excise taxes.
Canada	Qualified activities must be located in Canada with the exception of up to 10% of eligible wages which may be incurred outside of Canada and claimed for the R&D credit. Prior to February 25, 2008, only qualified activities having occurred within Canadian borders could be claimed for the R&D credit.
China	Qualified activities must occur within Chinese borders. However, less than 40% of the activity qualifying for the HNTE incentive may occur outside of China.
France	100% of the qualified activity must occur within the European Union (as long as the expenditure is part of the company's tax base).
Germany	R&D activities and costs must be incurred within Germany.
India	All R&D activities must be carried on inside India.
Ireland	R&D activities must occur within Ireland or the European Economic Area. The credit is denied when the activities occur in a European Economic Area where a corresponding tax deduction for such expenditures is permitted.
Israel	Grants are available for businesses conducting R&D activities within Israel.
Malaysia	R&D activities must be performed within Malaysia. Payments for technical services outside of Malaysia for approved in-house research projects qualify for the 200% Double Deduction when the amount expended is less than 70% of the total allowable expenditure for Double Deduction.
Mexico	The qualified R&D activity must occur within Mexico.
Netherlands	To claim the WBSO incentive, the R&D activities must occur within the European Union. Since the incentive is related to the Dutch wage tax, it is primarily based on R&D performed within the Netherlands.
Singapore	In order to claim the super deductions and the tax allowance, the qualified activity must occur in Singapore. If R&D payments are made by an entity to an R&D organization outside Singapore, a claim for deduction is allowed provided that the expenditure is related to the entity's existing trade or business and that any benefit arising from the R&D accrues to the entity itself.
South Africa	Qualified activities must occur in South Africa.
Spain	All qualified R&D must take place in Spain or a member state of the European Union or in the European Economic Area.
United States	Qualifying costs must be incurred and qualified activities must be performed within the US (though such costs may be reimbursed by an affiliate overseas).

Jurisdictions Offering Super Deductions:



Quick Reference Table

Country	Nature of Benefit Available	Income Tax Benefit Generally Available	Specific Pre-Approval Required from Government	Refundable / Carryforward	Cap / Limitations on Benefits
Australia	Super deductions	1) 125% immediate super deduction for expenses incurred; and, 2) 175% enhanced super deduction is offered for expenditures exceeding a 3-year rolling average.	No	Small companies with less than $5M in gross receipts and $2M in grouped expenditures qualify for a refundable tax incentive. Beginning July 1, 2010, a refundable credit is offered to companies with less than $20M of gross receipts equal to 45% of the current R&D expenditures.	No
Austria	Tax deductions and refunds	1) 125% super deduction of all qualifying R&D expenditures; 2) 135% incremental super deduction of all qualifying R&D expenditures exceeding the average of the prior 3 years; and, 3) 8% cash-back premium on all qualifying R&D related expenditures.	Yes, for the incremental super deduction.	Limited refunds available. Loss position deductions may be carried forward indefinitely.	No
Belgium	Special deduction	1) A one-time deduction of 15.5% of all R&D Investments or a current deduction of 122.5% of depreciation related to R&D assets; 2) Patent Income Exclusion; 3) Withholding Tax Exemption; and, 4) Elimination of tax and social security withholding requirements for certain companies granted temporary "innovation premiums".	Yes	Excess tax deductions may be carried forward indefinitely or converted into a tax credit refundable after 5 years.	No
Brazil	Super deduction	1) 160% super deduction of the total R&D expenditures; 2) The super deduction increases to 170% of the qualified expenses if the entity increases the amount of researchers by up to 5% in a given year; 3) The super deduction increases to 180% of the qualified expenses if the entity increases the amount of researchers (i.e. research employees) by more than 5% in a given year; 4) Enhanced R&D tax super deduction for patents is an extra 20% deduction when a patent is registered; and, 5) Other excise and withholding tax exemptions available.	Yes – Companies must have a tax clearance certificate to qualify for the super deduction.	Unused deductions may not be carried forward or carried back.	No

Country	R&D Activities Must Occur in Country	Costs Must be Incurred in Country	IP Must be Retained in Country	Industry Eligibility Restriction
Australia	The activities must be physically performed within Australia to be eligible for benefits, though a maximum of 10% of such activities may be carried outside Australia.	Yes	Yes, generally.	No
Austria	Qualified activities must occur inside the European Union or European Economic Area; however, the Austrian entity must fund the research endeavor.	Yes	No	Limited to the following industries: 1) Pharmaceuticals 2) Software Services 3) Software Development 4) Design Centers 5) Automotives 6) Energy & Utilities 7) Mining & Natural Resources 8) Financial Services
Belgium	No	No	Yes	No
Brazil	Yes	Yes	No	No

Country	Nature of Benefit Available	Income Tax Benefit Generally Available	Specific Pre-Approval Required from Government	Refundable / Carryforward	Cap / Limitations on Benefits
Canada	Tax Credits	20% federal tax credit for all qualifying R&D costs.	No	Unused credits may be carried back 3 years and forward 20. Federal credits for small Canadian-controlled private businesses are refundable (up to a capped amount). Some provincial R&D incentives are also refundable.	No
China	Super deductions and tax exemption	1) 150% super deduction of the qualifying R&D expenses 2) Business Tax Exemption for the transfer of qualified technology; 3) Corporate tax rate for companies granted High and New Technology Enterprise (HNTE) status is reduced from 25% to 15%; 4) Newly established Software/IC companies receive a tax holiday (and new established HNTEs in certain provinces may receive tax holidays); and, 5) Enterprise Income Tax exemptions for certain qualified technology transfers.	Yes	Tax losses attributable to R&D super deduction claims can be carried forward up to 5 years.	No
France	Tax credits, cash grants and accelerated depreciation	1) 30% tax credit for the first €100M of qualified R&D expenditures incurred during the tax year; plus an additional 5% of any amount in excess of the €100M threshold; 2) Increased credits are available for new credit applicants (50% for the first year of application (subject to limitation), 40% for the second year (subject to limitation), and 30% thereafter); and, 3) Cash grants for R&D and acceleration of depreciation deductions for fixed assets used in qualified research.	No	The law prior to 2009 provided that if the credit remains unused after 3 years, the taxpayer receives a refund for the unutilized credit. Current law provides that for 2008 and 2009, full refunds are available for current unutilized credits, as well as for unutilized research credits for the time-period 2005-2007. The refund provision has not been extended to 2010.	No
Germany	Cash grants	R&D intensive entities may receive cash grants from the government.	Yes	N/A	N/A

Country	R&D Activities Must Occur in Country	Costs Must be Incurred in Country	IP Must be Retained in Country	Industry Eligibility Restriction
Canada	Generally research must be undertaken in Canada; however, after February 25, 2008, up to 10% of eligible wages incurred outside of Canada may be claimed for the R&D tax credit.	Yes	No	No
China	Less than 40% of the activities qualifying for the High and New Technology Enterprise incentive may occur outside of China.	Yes	Yes, for tax rate reduction and IP location may be considered for the super deduction.	High and New Technology Enterprise fields: 1) Electronic Information Technology; 2) Biological & New Medical Technology; 3) Aviation & Space Technology; 4) New Materials Technology; 5) New Energy & Energy Conservation Technology; 6) High Technology Service Industry; 7) Resources & Environmental Technology; and, 8) Transformation of Traditional Industries through High-New Technology.
France	100% of the qualified activity must occur within the European Union (as long as the expenditure is part of the company's tax base).	Yes	No	No
Germany	R&D activities must occur within Germany.	Yes	Yes	No

Country	Nature of Benefit Available	Income Tax Benefit Generally Available	Specific Pre-Approval Required from Government	Refundable / Carryforward	Cap / Limitations on Benefits
Hungary	Super deductions	1) 200% corporate income tax base super deduction; 2) Salary cost deduction equal to 10% of the salary costs attributed to R&D (very limited benefit – see explanation above); 3) 50% royalty deduction when IP is created as a result of R&D; and, 4) Local business tax 200% super deduction as of January 1, 2010.	No	Unused salary costs deductions (see above for limitations) may be carried forward for 4 years.	Salary cost deduction is capped at 70% of the corporate income tax payable.
India	Super deductions	150% super deduction for in-house R&D expenditures.	Yes, for 150% super deduction.	R&D incentives may not be carried back. If the taxpayer is in a loss situation, unused benefits may be carried forward for 8 years.	No
Ireland	Tax credits	1) 25% incremental credit for all expenditures exceeding the "base amount;" 2) 25% credit for expenditures incurred for buildings or structures used in the conduct of qualified R&D activities; and, 3) Other incentives include: capital grants, interest subsidies, loan guarantees, and R&D grants.	No	Unused credits may be carried back 1 accounting period and carried forward indefinitely. If there are unutilized credits after the carryback, the taxpayer may apply for a refund (payable over 3 years), subject to certain caps.	No
Israel	Tax rate reductions and grants	1) Tax rate reductions though the Alternative Tax Program, Strategic Program, and Priority Tax Program; and, 2) Several grant programs are available.	Yes	N/A	No
Japan	Tax credits	1) The credit equals 8% to 10% of qualifying expenditures for large companies; 2) The credit equals 12% of qualifying expenditures for small and medium enterprises (SMEs); and, 3) Both SMEs and Large Companies are eligible for an Additional Incremental Credit.	Yes, the taxpayer must be a blue form tax return filer.	The carryforward period for unused credit varies from 1 to 3 years depending upon the tax period within in which they were earned.	The credit is limited to 30% of the company's national tax liability before credit is applied. Cap reverts to 20% after March 31, 2011. The Additional Incremental Credit is limited to 10% of the company's national income tax liability.

Country	R&D Activities Must Occur in Country	Costs Must be Incurred in Country	IP Must be Retained in Country	Industry Eligibility Restriction
Hungary	No for most incentives.	No for most incentives.	No for most incentives.	No
India	Yes	Yes	No	Prior to April 1, 2009 eligibility was limited to specified industries. Post April 1, 2009 no restriction exists.
Ireland	R&D activities must occur within Ireland or the European Economic Area. The credit is denied when the activities occur in an EEA nation where a corresponding tax deduction for such expenditures is permitted.	Yes – Costs must be incurred within the EEA (credit is denied when the activities occur in an EEA nation where a corresponding tax deduction for such expenditures is permitted).	No	No
Israel	Yes	Yes	No, but could be a factor in evaluating grant applications.	No, but could be a factor in evaluating grant applications.
Japan	No	Generally, yes.	While the law does not address whether IP ownership must be retained in Japan, the general view is that the IP should be located in Japan.	No

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Malaysia	Super deduction and allowances	1) Exemption from income; and, 2) 200% super deduction.	Yes, for each incentive.	Investment Tax Allowance: Any unutilized allowances can be carried forward to subsequent years until fully utilized.	Investment Tax Allowance is subject to limitations – see above.
Mexico	Grants	There are no tax benefits available, only grants.	Grant application process	N/A	N/A
Netherlands	Tax rate reduction and tax credits	1) Wage Tax Credit of 50% (can be as high as 60% for start-up companies) of the first €220K in R&D wage costs and 18% for the remaining wage costs; and, 2) Innovation Box reduced tax rate for revenue attributable to patents and innovation.	Yes, for the Wage Tax Credit.	No	Wage Tax Credit has a maximum reduction of €14M per taxpayer.
Russia	Exemption and super deduction	1) VAT Tax - Full VAT exemption for new products and technologies development or conceptual improvements of existing products and technologies; and, 2) 150% super deduction for certain R&D expenses.	Benefits granted by the regional authorities require pre-approval and are subject to more stringent requirements.	Losses for tax purposes resulting from super deductions can be carried forward for 10 years.	No

Country	R&D Activities Must Occur in Country	Costs Must be Incurred in Country	IP Must be Retained in Country	Industry Eligibility Restriction
Malaysia	Yes	Yes, with limited exception for the 200% super deduction.	No, but could be considered in government pre-approval process.	No
Mexico	R&D activities must occur within Mexico.	Yes	Factor considered in the grant issuance decision process.	No
Netherlands	Qualified activity must occur within the European Union to claim the Wage Tax Credit.	Yes	No	No
Russia	No, but could be considered in government pre-approval process.	No, but could be considered in government pre-approval process.	No, but could be considered in government pre-approval process.	No

Country	Nature of Benefit Available	Income Tax Benefit Generally Available	Specific Pre-Approval Required from Government	Refundable / Carryforward	Cap / Limitations on Benefits
Singapore	Super deductions and allowances	1) 130% to 150% super deduction for expenses incurred in Singapore; 2) 200% super deduction for certain expenses approved by government; and, 3) Entities with chargeable income are granted an R&D Tax Allowance for years 2009 and 2013.	Government approval needed for 200% super deduction.	Unused R&D expenditures may be carried forward indefinitely.	Combined total claims are capped at 200% of the taxpayer's actual expenditures in Singapore. R&D Tax Allowance is capped at 50% of first S$300K of chargeable income. Total income exempt from tax is capped at S$450K.
South Africa	Super deductions and accelerated depreciation	1) 150% volume-based super deduction; and, 2) Accelerated depreciation for R&D related capital expenditures.	No	Unlimited carryforward	Certain limitations apply to funded research – see above.
South Korea	Tax credits	1) Tax credits for SMEs and Large Companies; and, 2) Investment tax credits.	No	Unused credits may be carried forward 5 years.	Certain limitations apply to Large company tax credits – see above.

Country	R&D Activities Must Occur in Country	Costs Must be Incurred in Country	IP Must be Retained in Country	Industry Eligibility Restriction
Singapore	All R&D activities must occur within Singapore.	Yes - for super deductions and the tax allowance, though there are limited exceptions for payments to R&D organizations outside of Singapore.	No	No
South Africa	Yes	Yes	IP must be created in South Africa, but it does not need to be held within South Africa.	Eligible industries for the super deduction include: 1) Pharmaceuticals 2) Software Services 3) Software Development 4) Design Centers 5) Automotive 6) Energy & Utilities 7) Mining & Natural Resources
South Korea	No	No	No	The R&D tax credits are not allowed for R&D service providers.

Country	Nature of Benefit Available	Income Tax Benefit Generally Available	Specific Pre-Approval Required from Government	Refundable / Carryforward	Cap / Limitations on Benefits
Spain	Tax credits and tax rate reduction	1) Volume and incremental tax credits for qualified expenditures; 2) Credit for wages paid to qualified investigators; 3) R&D equipment credit used in qualified R&D; 4) Reduced social security contributions for researchers; and, 5) Patent Box reduces the tax rate for income attributable to patent.	No	Unused credits may be carried forward for 15 years.	If qualified R&D expenses exceed 10% of the tax due (after applying all credits), credits may not offset more than 50% of the gross tax. If the amount does not exceed 10% of the gross tax due (after applying all credits), credits may offset 35% of tax due.
United Kingdom	Super deduction	1) 130% volume-based super deduction for large companies; and, 2) 175% volume-based super deduction for small/medium sized companies (SMEs)	No	Unused deductions may be carried forward indefinitely, unless there is a change in ownership and a change in the nature of the trade within three years. Cash credits are available for loss-making SMEs (up to 24.5% of the qualified expenditures).	SMEs relief is capped at €7.5M in excess of what their deduction would have been had it been a large company.
United States	Tax credit	Taxpayer's must elect to apply one of 2 incremental tax credits.	No	Unused credits may be carried back 1 year and forward 20 years.	No

Country	R&D Activities Must Occur in Country	Costs Must be Incurred in Country	IP Must be Retained in Country	Industry Eligibility Restriction
Spain	All qualified R&D must occur in Spain or a member state of the European Union or European Economic Area.	Yes	No	No
United Kingdom	No	No, but the related costs must be deductible in computing UK taxable profits in order to remain eligible.	Only SMEs are required to retain IP in the UK; however, this rule is expected to be repealed for accounting periods ending on or after December 9, 2009.	No
United States	Yes	Yes	No	No