
MICRO

The Micro-Economic Research Bulletin

INDUSTRY, SCIENCE AND
TECHNOLOGY CANADA
LIBRARY

NOV - 7 1996

Vol. 3, No. 2
Summer 1996

BIBLIOTHÈQUE
INDUSTRIE, SCIENCE ET
TECHNOLOGIE

Industry Canada's research publications are now available on the Internet

Good news for readers of *MICRO* and other Industry Canada research publications. Access is now as close as your computer keyboard, via *Strategis*, the department's Internet site at

<http://strategis.ic.gc.ca>.

In addition to *MICRO*, the family of publications now Internet-available comprises:

Research Volumes: summaries of collections of authored papers, each related to a micro-economic theme. Each volume covers the proceedings of a major conference, in which the authors submit to public peer review. Internet status: available on-line now.

In this issue

Industry Canada's research publications are now available on the Internet.....1

Capital markets and Canadian competitiveness: understanding the connections.....2

Knowledge-based growth and micro-economic policy.....4

John Whalley on taxes and international competitiveness.....5

It's time for the social contract to catch up: Judith Maxwell.....7

James Brander: sustainable development and the Easter Island scenario.....7

Working Papers: a series of analytical papers with micro-economic themes, using new micro-databases that address broad, horizontal issues with wide appeal and relevance to public policy debate. Internet status: summaries available now; downloads will be available later.

Occasional Papers: papers of a specialized or descriptive nature, or literature surveys, many of which provide direction for follow-up empirical analysis. Internet status: summaries available now; downloads will be available later.

Discussion Papers: policy syntheses and general policy papers, less rigorous and empirical than other research studies, but focused on approaches to strategic micro-economic, public policy issues. Internet status: summaries available now; downloads will be available later.

Reports on Business Environment: comprehensive reports on changing business conditions, primers on institutional frameworks affecting business performance, and surveys of business attitudes and perceptions. Internet status: summaries available now; downloads will be available later.

Monthly Economic Indicators: a report on current happenings in the Canadian economy in a convenient, easy-to-read form. Each issue provides in-depth coverage of a major economic issue. Internet access: available now.

Micro-Economic Monitor: quarterly analyses of economic conditions. Here too, each issue provides in-depth coverage of a major economic issue. Internet access: available now.

This publication is printed quarterly. Information on all publications can be obtained by phone (613) 952-5704 or by facsimile at (613) 991-1261. Specific purchasing information can be found on the last page of this publication.

© Minister of Supply and Services Canada
ISSN 1198-3558



Industry Canada Industrie Canada

Canada

Provincial Industrial Overviews: information gathered in discussions with representatives of individual firms, compiled to give you advance warning of changing patterns and developing trends. Internet access: available now.

Availability of these publications on the Internet means that you can now access our information services as soon as you decide you need them. The *Strategis* system incorporates a user-friendly process that lets you conduct focussed information searches of our research products. That done, you simply download the information you need - no hunting for addresses or phone numbers, no orders to place, no forms to fill out. Try us today. Strategis is located at:

<http://strategis.ic.gc.ca>

Capital markets and Canadian competitiveness: understanding the connections

In terms of business investment and competitiveness, a critical factor in making firms and economies succeed is access to capital. As we move further and further toward globalization, capital market issues become more complex and crucial.

To examine these issues from a Canadian perspective, Industry Canada joined with the Financial Research Foundation of Canada last winter in staging a conference on capital markets.

Approximately 115 people registered for the Toronto gathering at which experts from Canada, the United States and Europe presented research papers.

In opening remarks, Denis Gauthier, Director General of Industry Canada's Micro-Economic Policy Analysis Branch, underlined the connection between capital markets and achievement of

Canada's economic growth targets. He reminded the audience that public policies aimed at fostering a climate conducive to business competitiveness in Canada must stand on the bedrock of a solid understanding of capital markets in this country.

Over the next two days, experts from Canada, the United States and Europe presented 13 research papers for peer review, on topics ranging from the cost of capital in Canada to recent innovations in financing.

Main findings

Two general findings emerged on the linkage between capital markets and investment in Canada:

- As the cost of capital rises, the level of investments in capital falls.
- There tends to be a direct and positive relationship between a firm's cash flow and its level of investment.

Comparison of capital markets in Canada and the United States revealed some interesting differences. From 1976 to 1994, for example, Canada's pre-tax cost of capital was two percentage points higher than that of the U.S. The main contributor to that spread was the premium that lenders charged for what they perceived to be a higher country risk inherent in Canada's investment environment. Another finding was that Canadian firms, on average, had a higher debt-to-equity ratio than their American counterparts.

Corporate Taxes and Competitiveness

The marginal effective tax rates that Canadian firms face vary widely by sector and province. This variation may cause lower levels of investment and growth within Canada compared with countries in which corporate taxes are more harmonized.

Having said that, the research indicates that Canada's corporate tax system cannot be held responsible for the relatively high cost of capital in this country and, in fact compares favourably with other industrialized nations.

MICRO

In 1995, for example, compared with other G7 countries, Mexico and Hong Kong, Canada had the second lowest marginal effective tax rates for both manufacturing and services. In part, this reflects generous capital cost allowances and low inflation expectations in Canada.

Venture Capital

Access to venture capital (equity and so-called "mixed financing" for young privately-held firms) is a crucial requirement for the entrepreneurial sector. Conference findings on this issue included the following:

- The geographical pattern of venture capital activity in Canada does not match the geographical pattern of economic activity. The level of venture capital is relatively high in Quebec and relatively low in Ontario and in Atlantic Canada.
- "High tech" industries make up a disproportionately large share of venture capital investments. But spending on research and development by firms funded by venture capital is no higher than the Canadian industrial average - approximately 3% of revenues.
- Generally speaking, although a small number of venture capital investments do very well, the rate of return on most is lower than the alternative risk-free rate.
- Investors in venture capital funds tend to put their money into the development rather than the start-up of firms.
- The pattern of exits from venture capital financing is dominated by insider (management or corporate) buyouts with 37% of exits characterized by insiders buying out the venture capitalist.
- Write-offs are more likely in Canada than in the U.S., with mortality rates of 32% and 21%, respectively.

Equity Markets

For young, growing firms, equity rather than debt has become the financial instrument of choice.

This change has particularly important implications

for capital markets in Canada, in a time when the national economy is moving from traditional resource and manufacturing to services and knowledge-based industry. Firms in these latter sectors derive value from commercial ideas, patents and other intangible assets that are difficult to appraise and, in the event of trouble, virtually impossible to salvage. Consequently, traditional lenders such as banks or bondholders tend to be risk-shy of financing knowledge-based enterprises. In this situation, the development of a strong initial public offering (IPO) market is a necessary pre-condition for the shift to a knowledge-based economy.

In reviewing Canadian responses to this problem, the Conference took note of the success of the Alberta Stock Exchange Junior Capital Pool in enabling small and medium-sized enterprises (SMEs) to raise equity through IPOs and secondary financing.

Miscellaneous findings

- In an international comparison of small business loan guarantee programs, Canada's arrangements emerged in the first rank, with low default rates, reasonable guarantee rates and reasonable fees.
- Financing choices by large firms are sensitive to corporate earnings, growth and economic conditions but, apparently, not to tax changes.
- Experience in Quebec indicated that labour-sponsored venture capital funds have had little impact on employment.
- An assessment of the Quebec Stock Savings Plan showed that the program did not achieve its goal of helping small businesses to access capital but that it did assist medium and large size corporations in financing equity capital. There was little positive impact on job creation within Quebec.

Conclusions

In summary, the authors agree that a full understanding of capital market and financial issues facing Canadian firms is imperative to the long-run

success of a growth strategy.

They also make the point that if financial and capital markets are operating competitively and efficiently, government has a limited part to play in these markets. One role for the public sector is to create the right financial environment for the expansion of firms and the stimulation of investment and economic growth in Canada. To this end governments should work to reduce interprovincial differences in corporate tax structures and tax expenditures. To stimulate investment spending, they should target their policies to a reduction of the cost of capital to Canadian firms where market failure is involved.

Some of the authors said that it might be necessary to examine the efficacy of tax-assisted venture capital programs in terms of the goals of job creation and economic growth. Governments should avoid subsidizing equity investment and should instead direct their policies to the encouragement of real investment activity.

A strong IPO market is a necessary financial market condition for industrial shift toward a knowledge-based economy. Specifically, Canada needs more stock exchange programs which allow SMEs to raise equity through an initial public offering (IPO), and through secondary financing. These programs should be regionally based with close monitoring by regulatory authorities.

A common theme in all papers and discussions was the need for a better understanding of failures in capital markets and of ways to deal with them. Indeed, the general view of the conference was that correction of market failures in financial and capital markets should be the primary objective of government policies in this area. Any policies that impact on financial and capital markets should be designed to minimize inefficiencies.

Government also needs to review regulatory and tax policies with a view to determining which policies impede the efficiency of financial and

capital markets. In this process, governments should also identify those that could be eliminated or modified.

Industry Canada will publish the final documents from the conference in a major research volume scheduled for release in the winter of 1996/1997. Professor Paul Halpern, of the University of Toronto, is the General Editor.

Knowledge-based growth and micro-economic policy

One of the most recent additions to Industry Canada's bookshelf of research volumes is "The Implications of Knowledge-Based Growth for Micro-Economic Policies," which was officially released in April. A month before that, the Department organized a panel discussion on its contents for approximately 50 representatives of the business community, government and academics from the National Capital area.

The discussions centred around presentations by four guest speakers:

- Professor Peter Howitt - General Editor of the research volume, who summarized its contents and related them to Canadian public policy;
- Peter Nicholson, who discussed the implications of knowledge-based growth for Canadian businesses;
- Daniel Keating, who built his presentation around the theme of a learning society in Canada; and
- David Crane, who focused on the role of government in the new economy.

In their presentations, the speakers suggested that the presence of increasing returns and externalities inherent in R&D activities argue for some form of government involvement. And, based on the findings of the research volume, they highlighted the following prescriptions:

- Instead of playing the game of targeting sectors

MICRO

and trying to pick winners, governments should make it their business to foster the kind of flexibility in the economy that would get rid of losers quickly.

- Governments should avoid spending splurges in support of great technological leaps forward. They would accomplish more by backing less dramatic but steadier progress, including "catch-up" and "crawl-ahead" innovation.
- Policies for economic growth must support both "open science" and "proprietary science". Accordingly, governments should assign a high priority to the establishment of an intellectual property regime that provides incentives for innovation while also fostering diffusion of knowledge.
- Government policy should reflect the reality that innovation and the development of human capital are complementary. Policies that achieve this kind of integration will do a better job of stimulating innovation than those with a narrow focus.
- Business managers are focussed on the short term bottom line in order to maintain their share of institutional investors. Long term strategies, therefore, suffer. There have been relatively few major science and engineering breakthroughs over the last 20 or so years, and we have been living off past discoveries. Only government can afford to invest in the long term and concentrate on basic science.
- But the discovery of new knowledge is not defined by Canadian policy only; it is set by other large industrialized countries, and Canada only plays a small role in generating new ideas.
- Not only is a strong economy essential to a strong society, but the reverse is also true. Because of the interdependence of social and technological innovation, the development of human resources is crucial to launching Canada into the global economy. Here, the government can play a central role in balancing and sustaining both economic prosperity and the social environment.
- Government involvement in the economy can be justified in two critical areas: mismatches

and spillovers. Mismatches occur in the financial sector, between financial institutions and new businesses. They happen in the labour market, between employers and new graduates, and in the education sector, between curriculum and required job market skills. Government can potentially reduce these mismatches and increase private sector efficiency.

- Spillovers from basic research may signal under-investment in this activity. Here government can help by supplying researchers, fostering industry-university linkages, and encouraging risk-sharing in the development of new knowledge. As examples of this policy, the S&T Review, and Technology Partnerships Canada were mentioned. A central role for government is to gather, analyze and disseminate information.

The overall conclusion of the discussion was that laissez-faire is not necessarily an optimal policy when it comes to science and technology. Many countries intervene heavily in influencing technological change, including the U.S. However, government involvement should not replace market forces, but harness them in order to facilitate the necessary adjustments that are required in the new economy. In this respect, the economy needs a central agency that can coordinate interdependent goals of Canadians and provide a vision for the country's future. Thus, the federal government still has a critical role to play in building a more innovative, knowledge-based economy.

John Whalley on taxes and international competitiveness

Do high taxes really hurt national competitiveness? Put another way: does it make sense for governments to cut taxes to improve the competitive odds on world markets?

MICRO

Not necessarily, says John Whalley of the University of Western Ontario, who maintains that policy assumptions about the linkages between taxes and international competitiveness are "more fragile than claimed".

Addressing Industry Canada staff last January in a lecture in the Distinguished Speakers in Economics Series, Professor Whalley reviewed what, in his view, are some major misconceptions, fallacies and pitfalls about the taxation/competitiveness connection.

Quoting from Paul Krugman, on what he considers to be the most basic misconception of all, Whalley said "it is crazy to talk about competitiveness in this way since nations do not compete - firms do".

Whalley criticized the line of reasoning that begins by assuming that taxes represent a cost of doing business and goes on to conclude that high taxes mean high costs. Following this logical chain, the resulting high costs undermine competitiveness on international markets, impair trade performance and cause economic ill-effects.

But the evidence does not support the charge, argues Whalley. On the contrary, studies have found that taxes have considerably less effect on trade than direct trade-oriented instruments such as trade related investment measures (TRIMs). And he points out that taxation levels do not seem to have affected growth performance in high tax countries, such as Sweden and Germany in the 1970's and 80's.

Taxes and Canadian competitiveness

How does all this apply to Canada? As Whalley sees it, raising taxes here would have little effect, one way or the other, on competitiveness - and he marshals three main arguments to support this conclusion.

First, on the evidence of empirical trade modelling, taxes are borne by fixed factors, such as resources and human capital. Since, internationally speaking,

these are relatively immobile, the only effect of raising taxes is to diminish the rents or profits from these fixed factors.

Second, an increase in corporate taxes may well have only limited, marginal effects on the taxed entity. If a company can deduct the financing costs on its debt, the tax system will have only a small effect on marginal investment decisions.

Third, because of the international mobility of financial capital, raising taxes in Canada would only raise the level of debt financing and erode the tax base, but would have no real impact on competitiveness.

Tax neutrality

Whalley also looks at the issue of the neutrality of taxes with respect to trade. By moving taxes from an origin to a destination basis (with rebates for exports), one shifts, in effect, from a production to a consumption tax - which is neutral with respect to trade.

Whalley is not absolutist in this argument, conceding that "of course taxes can have some competitiveness effects." He concedes that, given the co-existence of high taxes on labour income and some elasticity of labour supply, the final effect of tax hikes would be to increase the gross wage and decrease the net wage. This would make the price of labour-intensive goods relatively more expensive and would affect the pattern of trade. Tax breaks (or the absence of taxes) may also affect trade by shifting resources to the tax-free sector.

Nevertheless, he concludes, neither the record nor existing business practices support the assumption that high taxes inevitably debilitate economic growth: the evidence is not there.

It's time for the social contract to catch up: Judith Maxwell

In the harsh economic environment of our times, Canadian society is at the cross-roads - we can either rewrite the social contract or risk polarization of our society. Assuming we go the first route, we must begin by breaking down some of the conceptual walls that now compartmentalize social and economic policy.

This was the central theme of a presentation by Judith Maxwell, President of Canadian Policy Research Networks Inc. (CPRN), in Industry Canada's Distinguished Speakers in Economics series.

In Maxwell's view, a "regime shift" in economic policy has taken place since the late 1980s. This adjustment began with the reorientation of monetary policy to the goal of dampening inflationary expectations and gathered momentum with the signing of the Canada-U.S. Free Trade Agreement. Liberalization of trade in North America, says Maxwell, has remoulded economic policy in two significant ways. By opening the door to increased competition from imports, it signalled the twilight of policies geared towards tariff and subsidy protection. Meanwhile, on the export front, free trade shifted policy goals in the direction of an aggressive pursuit of new export markets. Another new factor was concerted action by governments to bring deficits down.

And now it is time for a second regime shift, Maxwell contends - this time in social policy. The existing safety net, based on outdated perceptions of the labour market and family structure, is no longer resilient enough to meet the demands of the 1990's and has to be fixed. Failure to make these repairs and to re-write the social contract will lead to a polarization of society.

According to Maxwell, we need changes at two levels:

- Governments must no longer base economic

policy on the short-run view that competitiveness and cost-minimization are synonymous.

- Social policy must shift away from a total dependence on the state.

Overall, there needs to be more emphasis on self-reliance and on affordability. This prescription would require government to play a continued active role in the economy. However, it must do so in a policy environment that places a much stronger emphasis than now exists, on individual, family and employer responsibility.

Maxwell believes that these policy objectives are reconcilable in the nexus where economic and social policies meet; and particularly in areas where society divides responsibilities between individuals, families, employers, and the state.

As Maxwell sees it, conditions are ripe for this reorientation not only in terms of economic circumstances but public attitudes. According to CPRN research, Canadians want efficient and affordable government, have a strong commitment to collective action, and place responsibility to the next generation high in their priorities. They are also clear-eyed about deficiencies in the status quo. They understand the need to wring inefficiencies out of existing programs, to get the incentives right, and to concentrate support for people where it is most needed. In short, they are ready to rewrite the social contract between the citizen and the state.

James Brander: sustainable development and the Easter Island scenario

Are current rates of resource exploitation, coupled with environmental degradation, sowing the seeds of a future decline in living standards and worse? The question has preoccupied a succession of futurists throughout the centuries, including the Club of Rome in the early 70s. And it was posed

MICRO

again by Professor James Brander of the University of British Columbia in a lecture he presented recently in Industry Canada's Distinguished Speakers in Economics series.

In effect, Brander has been attempting to integrate resource modelling into growth modelling so as to clarify relationships between resource use and growth interaction in modern economies.

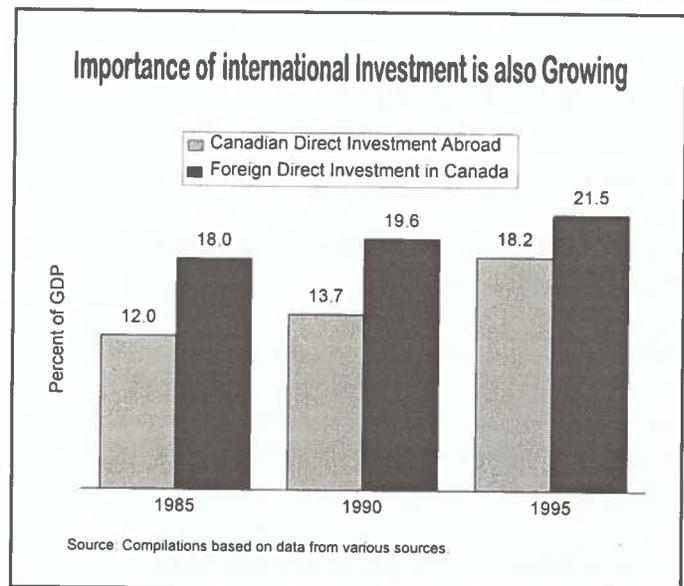
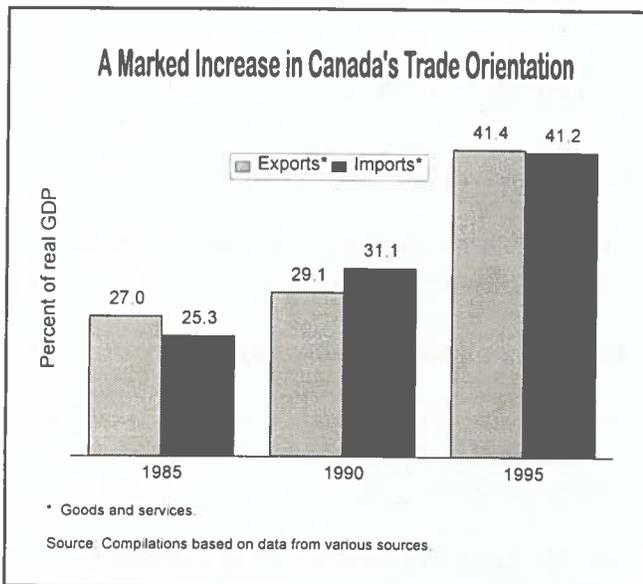
As a model to corroborate his theory, Brander reached out to Easter Island, one of the most isolated and remote places on the planet. In that compact setting, he says, a deadly sequence of events that has bedevilled humanity through the ages was played out long ago on a miniature scale. A once-renewable resource was overused until, eventually, living standards began to deteriorate and the population to decline. In the end, Easter Island's civilization itself disintegrated.

Although outright extinction is a possible outcome of this simple model, Brander does not suggest that it is humanity's inevitable fate. However, he does point out that resource overuse is a more common pattern than previously recognized and that its victims litter history. For example, Brander attributes the decline of the Mesopotamians and the Aztecs to a downward spiral in which resource degradation led to population decline followed by civilization decline. He raises the question of whether contemporary Canada may not be in the very early stages of the Easter Island trajectory - specifically, could the dramatic decline of fish stocks off our coasts be a precursor of much worse trouble for our society?

Brander notes that dire predictions of the outcome of resource overuse and environmental degradation have been proved wrong in the past. The bleak forecasts of the Club of Rome, for example, have so far remained unfulfilled, largely because improved understanding and technical advances have allowed humans to use resources more efficiently.

In his lecture, Brander also examined the influence of trade liberalization on the Easter Island outcome. Based on previous work he has done in this field, he suggests that trade in renewable resources could lead to a decline in the long-run real income of the resource-based country, because of market incentives to over-harvest the resource. He concludes that there is a strong case to be made for the linking of resource-based management practices to trade policies.

FROM THE COMPETITIVENESS NOTEBOOK



GROWING OUTWARD ORIENTATION IN BOTH TRADE AND INVESTMENT

- The share of exports of goods and services in real GDP rose sharply from 29 percent in 1990 to over 41 percent in 1995.
- The import penetration ratio also increased markedly in the 1990s.
- Trade orientation increased in all provinces.
- The complementarity between trade and FDI is supported by the high degree of intra-company trade by foreign subsidiaries in Canada.
- The importance of both inward and outward foreign direct investment (FDI) in the Canadian economy increased significantly in the 1990s.
- The stocks of Canadian direct investment abroad and FDI in Canada increased from about 33 percent of GDP in 1990 to nearly 40 percent in 1995.
- The sources of FDI into Canada are diversifying - the U.S. share of the Canadian FDI stock declined by almost 8 percentage points from 75 percent in 1985 to 67 percent in 1995, while that of all other countries and regions, notably the E.U., increased.
- This dramatic rise in Canada's outward orientation is a sign of increased specialization in the Canadian economy.
- These trends bode well for the future competitiveness and dynamism of the Canadian economy.

PUBLICATIONS

RECENT RELEASES

Industry Canada Research Volumes

The Implications of Knowledge-Based Growth for Micro-Economic Policies.

Industry Canada Working Paper Series

No. 7 - *Governance Structure, Corporate Decision-Making and Firm Performance in North America*, P. Someshwar Rao and Clifton R. Lee-Sing.

No. 8 - *Foreign Direct Investment and APEC Economic Integration*, Ashfaq Ahmad, Someshwar Rao and Colleen Barnes.

No. 9 - *World Mandates Strategies for Canadian Subsidiaries*, Julian Birkinshaw.

Industry Canada Discussion Paper Series

No. 2 - *Technological Change and International Economic Institutions*, Sylvia Ostry.

No. 3 - *Canadian Corporate Governance: Policy Options*, Ronald Daniels and Randall Morck.

Industry Canada Occasional Papers

No. 12 - *Technology and the Economy: A Review of Some Critical Relationships*, Michael Gibbons.

No. 13 - *Management Skills Development in Canada*, Keith Newton.

FORTHCOMING

Industry Canada Research Volumes

The Asia Pacific Region in the Global Economy: A Canadian Perspective.

Industry Canada Working Paper Series

No. 10 - *R&D Productivity Growth in Canadian Communication Equipment and Manufacturing*, Jeffrey Bernstein.

No. 11 - *Long-Run Perspective on Canadian Regional Convergence*, Serge Coulombe and Frank C. Lee.

Industry Canada Discussion Paper Series

No. 4 - *FDI and Market Framework Policies in APEC Member Economies*, Ronald Hirshorn.

A complete list of Industry Canada research publications and information on all publications mentioned above can be obtained from the Micro-Economic Policy Analysis Branch, Industry Canada, 5th Floor, West Tower, 235 Queen Street, Ottawa, Ontario, K1A 0H5
Telephone: (613) 952-5704
Fax: (613) 991-1261.

Research Volumes can be purchased from the University of British Columbia Press,
Telephone: (604) 822-5959
Fax: 1-800-668-0821.