



Micro

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Getting the Straight Goods

Good empirical analysis is essential to laying down the foundations for well designed policy. With that in mind, this issue features three empirical pieces which offer useful insights into a range of current policy issues. Of particular note is a profile of Aboriginal businesses in Canada, prepared by David Caldwell and Pamela Hunt. It seeks to deepen our understanding of privately owned Aboriginal businesses and their prospects for success and failure by exploring their goals and strategies, and factors contributing to their growth. This study will interest anyone concerned with fostering the development of Aboriginal business.

In addition, this issue presents an analysis of the role of foreign multinationals in Canada's trade, by Richard Cameron, as well as an empirical assessment of the demand for skill levels in Canadian industry, by Surendra Gera, Wulong Gu and Zhengxi Lin.

We also report on talks given by Professor John McMillan on using auctions to allocate the electromagnetic spectrum; by Professor Dani Rodrik on making the open economy work for developing countries; and by Professor Dale Jorgenson on the slowdown in productivity growth. All three presentations were made under the auspices of Industry Canada's Distinguished Speakers in Economics Program.

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Aboriginal Businesses in Profile

Fostering the growth of Aboriginal businesses is an important goal of governments in Canada, and various federal departments offer an array of support programs to Aboriginal entrepreneurs. An understanding of the characteristics of Aboriginal businesses is essential to the successful design and implementation of such initiatives.

David Caldwell and Pamela Hunt have undertaken the task of providing a description of Aboriginal businesses in *Aboriginal Businesses: Characteristics and Strategies for Growth*. Their report explores the goals and strategies of Aboriginal businesses, and the factors contributing to their development.

Like most other businesses in the Canadian economy, entrepreneurial Aboriginal businesses tend to be small. As well, only about half of Aboriginal businesses see growth as an important pursuit. The main goals of Aboriginal businesses include stability, profitability and personal/family employment. Most firm owners believe that management is the most important factor in achieving the firm's objectives. In general, these findings are consistent with that of other studies on small firm behaviour, leading the authors to conclude that private Aboriginal businesses have many similarities to other small Canadian enterprises.

At the same time, there is evidence that private Aboriginal businesses are somewhat behind on the development curve. Forward-looking business practices (e.g. training, computerization) are less prevalent.

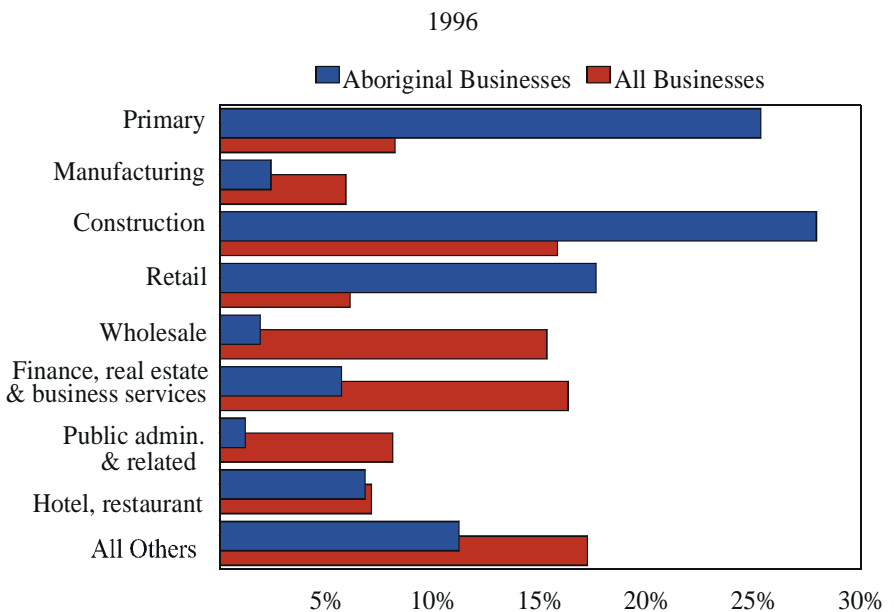
Excluding agriculture, only 21% of Aboriginal firms with more than one employee offer formal training compared to 42% of all Canadian firms. Only 33% of Aboriginal businesses use a computer, compared to 84% of the members of the Canadian Federation of Independent Business (CFIB).

areas that tend to be labour-intensive and less knowledge-intensive.

However, the authors qualify their conclusions by cautioning that the off-reserve segment of the private Aboriginal business population differs significantly, in a number of ways, from the on-reserve segment

Aboriginal businesses are concentrated in traditional sectors that tend to be less knowledge-intensive.

Industrial Distribution of Aboriginal Businesses



Source: Caldwell and Hunt. (1998)

A contributing factor may be the fact that more than 70% of Aboriginal businesses are found in the resource, construction, and retail sectors, compared to only 30% of all businesses. As a consequence, they are concentrated in traditional niche

and that these differences require further study. Notwithstanding this caveat, Caldwell and Hunt's study provides a useful insight into the state of Aboriginal businesses in Canada.

Foreign Multinationals and Canada's International Trade

In almost every year over the past four decades the volume of international trade has grown faster than the volume of world production. As a consequence, the degree of interdependence in the world economy has risen markedly. A large share of this rapid growth in international trade has been

of Canada's total imports and a little less than half of total exports.

Cameron also finds that these foreign subsidiaries show broad similarities in their trade patterns. Those present in the high-technology sectors have high levels of intrafirm imports.

Canadian subsidiaries of foreign multinationals are responsible for roughly half of Canada's imports and exports.

achieved under the control of multinational enterprises (MNEs), and a significant portion of exports and imports by these firms consists of intrafirm or intracorporate trade.

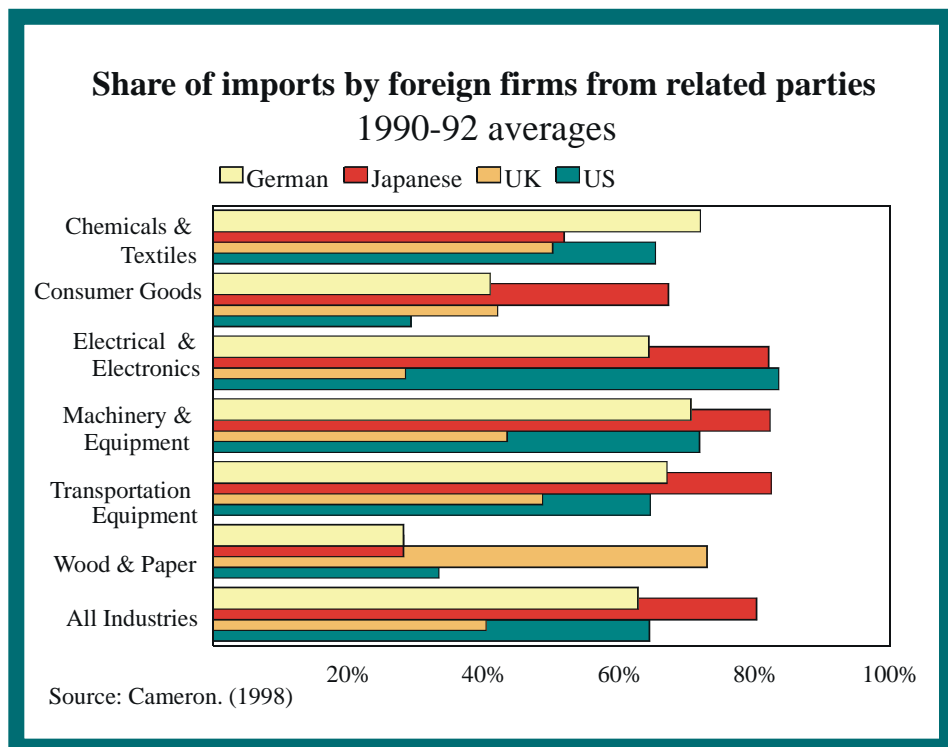
Despite the importance of trade as a mechanism for promoting economic growth in Canada, and the significant role played by intrafirm trade, Canada has no regular official statistics on related party trade. In an effort to fill this analytical gap, Richard Cameron has taken a detailed look at intrafirm trade in his study *Intrafirm Trade of Canadian-Based Foreign Transnational Companies*. He examines the importance of Canadian-based subsidiaries of foreign MNEs in the overall trade picture and identifies some key characteristics of their trading behaviour, with special consideration given to intrafirm trade.

He finds that foreign MNEs in Canada are concentrated in high value-added manufacturing and resource-based industries, and that they are much more trade-oriented than their domestic counterparts. The relatively compact group of foreign subsidiaries is responsible for a little more than half

of Canada's total imports and a little less than half of total exports. But those found in service sectors generally have low levels of intrafirm imports. Intrafirm imports are highest from the parent country, followed by imports from US-based affiliates, such

With respect to intercorporate trade, the evidence suggests that nearly two-thirds of imports by foreign-controlled MNEs in Canada are intrafirm imports, while just over two-thirds of the subsidiaries' exports to the United States are to related parties. As might be expected, differences occur between countries of control. Japanese-controlled firms source nearly four-fifths of their imports from related parties, much of this from related parties located in Japan. German- and American-controlled subsidiaries fall near the average for intrafirm imports, while British subsidiaries rely the least on non-arm's length imports. Exports to the United States by foreign MNEs show similar patterns.

These results highlight the contribution of foreign multinationals to Canada's trade performance and the consequent importance of foreign



that the parent country and the United States provide the bulk of intrafirm imports.

direct investment to Canada's economic performance.

Technology and the Demand for Skills

During the past decade, there has been a considerable amount of research on the impact of technological change on skill differentials in US labour markets. While the increase in skill intensity has been well documented, there is no consensus on its explanation. Technological change that is "biased" toward the use of more-skilled workers has emerged as the preferred explanation for this relative employment shift. Alternative explanations have pointed to international trade or immigration as the source of these employment shifts, albeit with less convincing results.

What can be said about the demand for skills in Canada? In *Technology and the Demand for Skills: An Industry-Level Analysis*, Surendra Gera, Wulong Gu and Zhengxi Lin examine the effect of technological change on the relative demand for skilled workers across Canadian industries. The authors examine two questions: First, has skill intensity risen across Canadian industries over the 1981-94 period? Second, is biased technological change the main cause for the shift in demand toward skilled workers? The answer to this question is yes.

Indeed, one noteworthy feature of the 1981-94 period is the rise in skill intensity that occurred in almost every sector of Canadian industry. The rise in skill intensity is most notable in scale-based manufacturing industries such as printing, publishing and allied activities, and machinery. As well, most service industries experienced an above-average increase in skill intensity.

The authors consider two possible explanations for this increase in skill

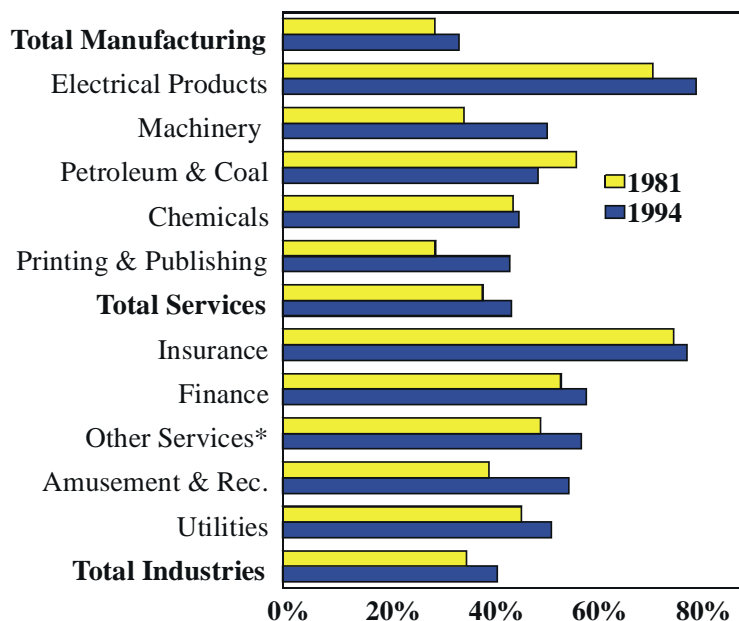
intensity: skill-biased technological change, and increased trade with developing countries that has caused a shift in production from less-skilled, import-sensitive sectors to more-skilled, export-sensitive sectors. They conclude that growth in demand for skills during the 1980s and early 1990s in both manufacturing and service industries is entirely explained by "within-industry" skill upgrading rather than "between-industry" employment shifts. This suggests that biased technological change has played a dominant role in

skill upgrading. In this context, skill upgrading has occurred both in industries that invested heavily in new capital during the 1980s and in those that are R&D capital-intensive.

Overall, this paper indicates that the rise in skill intensity has been a pervasive feature of Canadian industry for the period under consideration, and that the demand for skills has been driven by technological change that is biased toward such higher skills.

Skill intensity has increased in almost all sectors of Canadian industry.

Skill Intensity*: 1981 and 1994



* Skill intensity is defined as the share of skilled workers (managers, professional and technical skilled) in total hours worked. Other services include services to business.

Source: Gera, Gu and Lin. (1999).



DISTINGUISHED SPEAKERS SERIES



Why Auction the Spectrum?

John McMillan

As part of a sweeping reform of telecommunications regulation, the 1990s are witnessing a worldwide trend toward using auctions to allocate licences to exploit the electromagnetic spectrum. But

Compared to other methods of allocating the spectrum, auctions are better from an administrative standpoint. They work much more quickly than regulatory hearings, and it can be shown that they will

McMillan described the spectrum auctions begun in the United States in 1993. These have been very successful, raising \$23 billion in revenues, more than twice the amount predicted. The government was also able to serve other public policy goals. For example, spectrum caps were established up front to limit the possible development of monopolies. Set-asides and bidding discounts were also employed to achieve affirmative action objectives.

Auctions are fundamentally devices to reveal information about valuations.

what are the benefits of auctioning the spectrum? John McMillan explored this question in his November 1998 address entitled *Auctioning the Airwaves*.

Auctions are useful under conditions of uncertainty, particularly when the seller does not know the value of the item being sold. If you knew what telecommunications firms were willing to pay for spectrum licenses and which firms would put the spectrum to best use, you would not have to go through the complicated machinery of organizing an auction. Thus, auctions are fundamentally devices to reveal information about valuations.

raise more revenue. They also achieve an efficient outcome in economic terms because the auc-

- *Auctions bring in more revenue than administrative allocation does.*
- *They also achieve a more efficient outcome in economic terms.*
- *Auctions can serve other public policy goals in addition to raising revenue.*
- *Auctions have become an important public sector tool in the 1990s.*

tioned goods are then put in the hands of agents who give them the highest value and who can put them to their best use.

Auctions have since demonstrated their usefulness in several countries, including Canada, in allocating the electromagnetic spectrum very effectively. As well, they have been used in some countries to sell the rights to build infrastructure, such as toll roads, to allocate import quotas or to privatize government-owned firms. Auctions are currently being used in the United States in the context of initiatives aimed at providing electricity through the market rather than through a public utility. In short, auctions have become an important public sector tool in the 1990s.



Making Openness Work

Dani Rodrik

Many developing countries followed closed economy policies over the 1950s to 1970s.

Increasingly, however, the policy prescription has shifted to openness, with particular emphasis on exports and foreign direct investment. But is this emphasis justified?

antees that openness would necessarily make a country grow faster.

Countries that achieve what Rodrik calls an investment transition, those that raise their investment rate by five percentage points of GDP or more, do in fact experience signifi-

A second important factor is macroeconomic stability. Economic mismanagement will slow growth, and there is a strong relationship between macroeconomic stability and growth. More importantly, an adequate set of conflict-management institutions increases the likelihood

of macroeconomic stability by bridging latent social cleavages and making adjustment to external shocks more palatable. In Rodrik's view, a func-

tioning liberal democracy is the most effective conflict-management institution. This is entirely in line with conventional wisdom, which stresses macroeconomic stability, but contrary

to suggestions that autocratic governments find it easier to implement macroeconomic adjustments.

In Rodrik's opinion, therefore, openness to trade and capital flows will not, on its own, result in growth. To really make openness work, developing countries need two key elements: a coherent investment strategy, and adequate institutions of conflict management which work to support macroeconomic stability.

Has openness to trade and capital flows by developing countries become the new dogma?

Dani Rodrik, in his March 1999 lecture entitled, *Making Openness Work*, argued that openness as a driver of good economic performance has achieved the status of a dogma among policy makers in recent years. In his view, however, many of the claims made for openness as a source of good economic performance go beyond what economists can support with empirical evidence.

Despite statements that an abundance of empirical work shows a tight relationship between economic openness and economic growth, Rodrik argued that empirical evidence based on tariffs, non-tariff barriers and capital account variability contradict many claims made in the literature. He hastened to emphasize that he was not arguing that a closed economy would grow faster. Rather, his point was that there was no guar-

antee that openness would necessarily make a country grow faster. More surprisingly, countries that undergo these investment transitions experience a sustained increase in their export to GDP ratio, and even-

- *Openness as a good economic policy for developing countries has achieved the status of a dogma.*
- *This goes beyond what economists can support with empirical evidence.*
- *The evidence shows that investment and macroeconomic stability are what really promote growth.*
- *Conflict resolution mechanisms, such as exist in a liberal democracy, are an important element of support for macroeconomic stability and growth.*

usually become more successful exporters. But to do that, they need a coherent investment strategy.



Whatever Happened to Productivity Growth?

Dale Jorgenson

In his November 1998 lecture entitled *Whatever Happened to Productivity Growth?* Dale Jorgenson examined the question of productivity growth in an international context. Since 1989, productivity growth has

the other G7 countries. In fact, France is now the leader in terms of productivity levels, although other countries such as the United States can achieve higher levels of output per capita by using higher levels of

negative, to the extent that Canada's rate of productivity growth, as Jorgenson defines it, was effectively zero from 1973 to 1995. But Canada's experience is not unique. Italy has shown no productivity growth for about 20 years, and the United Kingdom none since 1978. The United States and Japan have shown some positive productivity growth, but at very low levels.

Canada's rate of productivity growth from 1973 to 1995 was effectively zero.

almost disappeared as a source of economic growth in the G7 countries. This is a disturbing development for economists because productivity growth is the well-spring of economic expansion and of our future well-being.

While labour productivity per hour continues to grow in many G7 countries, including Canada, Jorgenson found that when input is defined more completely to include both capital and labour, differentiated by quality and type, productivity growth has largely vanished. He argued that this more refined concept of productivity growth is one of the engines of economic growth, and that we should regard its disappearance with some concern.

He also noted that although Germany and Japan have had dramatic productivity growth rates, particularly in earlier decades, their productivity levels never surpassed those of

input in the form of longer hours worked and more capital investment.

- *Since 1989 productivity growth has almost disappeared as a source of economic growth in the G7 countries.*
- *This is a disturbing development because productivity growth is the wellspring of economic expansion and of our future well-being.*
- *Investment in both tangible assets and human capital accounts for an overwhelming proportion of economic growth in the G7 countries.*
- *The central issue for economic policy is how to ensure that incentives exist to encourage such investments.*

Canada's productivity growth paralleled that of the United States until the late 1980s. At that point, Canada's rate of productivity growth declined sharply and even turned

Jorgenson argued that, in their study of productivity, economists have come to focus on spillovers or intangibles that cannot be appropriated, to the exclusion of everything else. In his view, this is not consistent with economic realities, and economists should be focusing on investments in human capital and tangible assets such as new plant and equipment that will yield future returns.

Jorgenson concluded that it is essential to ensure that incentives for such investments in tangible and human assets are firmly in place. Policy makers have to think about investments that are likely to take place and how to enhance their contribution to economic growth. This has implications for a wide range of policies, ranging from education policy to tax policy.

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