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The Poor and the Rich: Sources of Growth

Understanding the process of economic growth is one of the key imperatives of public policy and a major concern of economics. Across the globe, many poorer countries are struggling to catch up with richer ones; the surest remedy for under-development is economic growth. While it is true that growth can create problems of its own – pollution and excessive urbanization, for example – such ills pale in comparison with the harm done by the economic backwardness of poor countries. The cost of this backwardness, in the form of poor living standards and needless suffering, is staggering.



The study of growth need not be pursued only in the global context. Within an individual nation, firms struggle with growth, trying to catch up with larger, more successful ones. Even within the microcosm that is the firm, individuals grapple with their own relative placement, measured in terms of remuneration and job security.



All of the articles in this issue deal with the theme of growth in one way or another. Winnie Lam considers China's growth prospects in light of a series of foreign-investment and trade-liberalization initiatives. Gilles McDougall and David Swimmer explore the factors that contribute to a firm's growth while Surendra Gera and Kurt Mang examine the role played by the "new economy" industries in the growth and restructuring of the Canadian economy. The presentation by Monty Graham, in the wake of the Singapore WTO ministerial meeting of December last year, deals with the growth opportunities arising from the opening of international markets to new entrants. Jagdish Bhagwati decries the proliferation of preferential trading arrangements in favour of multilateral trade negotiations and emphasizes the increased growth opportunities that result from reducing impediments to worldwide trade. And Dale Jorgenson examines the major sources of growth in OECD countries as well as in the newly industrializing economies of Asia and Latin America.

INDUSTRY CANADA RESEARCH AND PUBLICATIONS PROGRAM

RECENT RELEASES

WORKING PAPER SERIES

No. 16: *Business Strategies of SMEs and Large Firms in Canada*, Gilles McDougall and David Swimmer.

This research, using survey information of individual firms, investigates whether the strategies for growth and competitiveness pursued by large firms are different from those of SMEs.

No. 17: *Impact of China's Trade and Foreign Investment Reforms on the World Economy*, Winnie Lam.

This study investigates the scenario in which China totally removes all its trade and foreign investment restrictions. The implications for China as well as for other trading nations are studied using the computational general equilibrium technique.

FORTHCOMING

WORKING PAPER SERIES

No. 18: *Regional Disparities in Canada: Characterization, Trends and Lessons for Economic Policy*, Serge Coulombe.

FORTHCOMING

OCCASIONAL PAPER SERIES

No. 16: *Sustainable Development: Concepts, Measures, Market and Policy Failures at the Open Economy, Industry and Firm Levels*, Philippe Crabbé.

No. 17: *Measuring Sustainable Development: A Review of Current Practice*, Peter Hardi, Stephan Barg, and Tony Hodge.

No. 18: *Reducing Regulatory Barriers to Trade: Lessons for Canada from the European Experience*, Ramesh Chaitoo and Michael Hart.

DISCUSSION PAPER SERIES

No. 5: *Industry Canada's Foreign Investment Research: Messages and Policy Implications*, Ron Hirshhorn.

ANNOUNCEMENTS

DISTINGUISHED SPEAKERS IN ECONOMICS PROGRAM

Please see page 14 for the 1997-98 lecture program.

FORTHCOMING INDUSTRY CANADA RESEARCH VOLUME

The research volume *Financing Growth in Canada* will be officially released at a book launch in Vancouver, on November 18, 1997.

MICRO is a quarterly newsletter highlighting micro-economic research findings, published by the Micro-Economic Policy Analysis Branch of Industry Canada. Abstracts of Industry Canada research volumes, and the full text of working papers, occasional papers, discussion papers, and *MICRO* can be accessed via STRATEGIS, the Department's online business information site, at <http://strategis.ic.gc.ca>. For more information about our research publications, or to place an order, contact the Micro-Economic Policy Analysis Branch, Industry Canada, 5th Floor, West Tower, 235 Queen Street, Ottawa, ON, K1A 0H5. Telephone: (613) 952-5704; facsimile: (613) 991-1261. ISSN 1198-3558.

Contemporary China is a complex economy that combines the legacy of a rigid, centrally planned regime with features of a less-developed economy.



FEATURED RESEARCH

WHEN SLEEPING GIANTS AWAKE

Liberalization of the trade and investment regimes of a country will benefit the country concerned as well as its trading partners. By specializing in products that best utilize each country's endowments of technology and human, natural and physical capital, all the countries involved will have a higher income than in the absence of liberalization. These gains will be considerable if the country in question has a large number of barriers to trade and investment and has a large population base with enormous potential for expansion.

When a large country such as China lowers its barriers to trade and investment, repercussions will be felt not only at home but abroad too. This is because China has a considerable distance to "catch-up" developmentally speaking, and there is considerable scope for trade adjustment. These are the issues examined by Winnie Lam in a recent study* in which she considers the significance of China's initiative to rejoin the global trading system and the potential impacts on Sino-Canadian trade and investment opportunities.

Yet specialization, or what economists call comparative-advantage theory, falls short of explaining the broad pattern of trade in the world if it is not combined with other theories: it cannot account for the fact that an important share of world trade is two-way trade in the "same" product – what economists call intra-industry trade. Two-way trade is quite prevalent between developed countries. One explanation for intra-industry trade is that the products, although within the same category but originating in different nations, are imperfect substitutes.

Modelling the effects of trade initiatives is certainly not a new phenomenon. What is new is the increasing complexity of the models. Quantifying the gains from any trade liberalization is a difficult task, but it is especially complex in the case of more recent trade initiatives because of the wide scope of these initiatives, because

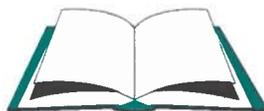
they encompass new economic sectors, and because key institutional aspects, such as rules, definitions, and enforcement mechanisms, must also be quantified.

Nowadays, estimates are derived from computable general-equilibrium (CGE) models that link industries together in value-added chains. CGE models also allow for linkages between different national economies, so that changes in one country can have impacts in the markets of its trading partners.

Today's China is a complex economy. It combines the legacy of a rigid, centrally planned regime with features of a less-developed economy. Economic efficiency and growth prospects are distorted by a two-tier planned/market price system, a dual exchange-rate regime, and an administered trade plan. Nonetheless, China embarked on a series of foreign investment and trade liberalization initiatives beginning in 1978. While these actions make for an auspicious beginning, they remain a far cry from the removal of all trade and foreign investment restrictions.

Ms. Lam has constructed a multi-country CGE model that incorporates the main characteristics of the Chinese trade, foreign investment, and production structures. Within the past two decades, China has evolved from an almost closed economy into one in which foreign trade and foreign investment play important roles. Nowhere is this more evident than in merchandise trade, which rose from 12.4 per cent of China's GDP in 1980 to 50.0 per cent in 1994. Total Chinese exports grew an outstanding 5.2 times over this period, while total imports advanced an equally remarkable 6.2 times. At the same time, China has been very successful at attracting foreign direct investment (FDI). In the early 1980s, it was the recipient of about 1.8 per cent of total world FDI. By 1992, that share had risen to 6.8 per cent. What this implies is that the rest of the world is beginning to take notice that trade and investment opportunities abound in this dynamic and enormous economy.

China's trade reforms lead to countries trading more in line with their respective comparative advantages.



Despite the obvious success of partially liberalizing its trade and investment sectors, China maintains a host of investment and sectoral trade restrictions as well as its two-tier pricing system. These market and price distortions represent an efficiency wedge in the allocation of resources. Couldn't China do better?

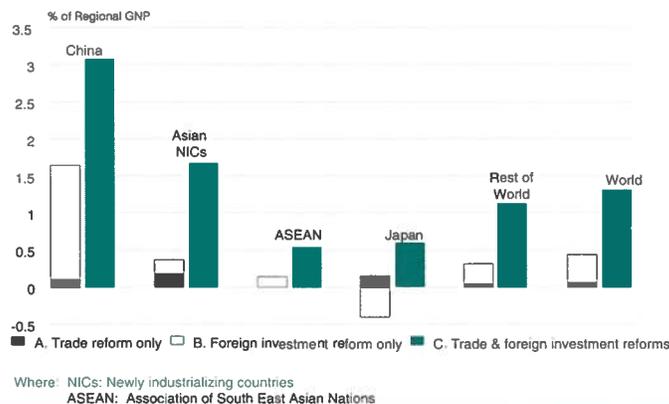
To answer this question, Ms. Lam investigates the welfare effects that the complete removal of Chinese trade and foreign investment policy constraints would have on China and other regions. The approach taken is methodical and deliberate. First, the case of only abolishing China's trade restraints, but keeping other distortions intact, is studied. Next, the effects of removing only the foreign investment restrictions are examined. Finally, the joint impact of foreign investment liberalization and trade reform is investigated.

Not surprisingly, the results indicate that the interactive effects of trade and foreign investment reform are mutually enhancing. With trade liberalization only, efficiency gains are expected for all regions. The effect of the trade distortion is to drive a wedge between the Chinese domestic price and the international price, resulting in inefficiencies for all regions. Regional efficiency gains are realized as these price differences are eliminated, resulting in a more efficient global allocation of commodities. However, welfare gains are relatively small for all regions. At the same time, Chinese trade reform needs to be accompanied by price reform for many basic commodities, in order to reduce distortions to a minimum.

While removing only foreign investment restrictions is of greatest benefit to the Chinese economy, the other regions also gain from improved efficiency in the world capital market. Foreign-capital inflows pouring into China would tend to depress the Chinese rate of return on investment and raise the world rate of return, thus equalizing the rates of return across all regions and increasing welfare for all regions.

However, removing foreign-investment restrictions while maintaining trade restrictions can actually increase

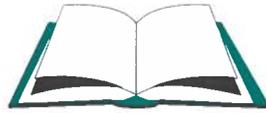
Estimated Welfare Effects of Trade and Foreign Investment Reforms in China



the inefficiencies of the latter – and thus dampen some of the welfare gains arising from foreign investment liberalization. Efficiency gains are enhanced when investment liberalization is accompanied by trade reform. Gains are magnified so that they are at least double the sum of the welfare gains from investment reform and from trade liberalization.

At the sectoral level, China's trade reform leads to a more efficient global allocation of resources, resulting in countries trading more in line with their respective comparative advantages. China would see significant declines in its exports of capital-intensive products while Chinese imports of these goods from other regions would rise. Similarly, Chinese exports of labour-intensive goods would grow dramatically.

Ms. Lam's findings depend heavily on a hypothetical state in which China fully liberalizes its trade and foreign investment structures and all other global competitors remain stationary. However, since imitation is the most serious form of flattery, it stands to reason that many other populous, low-wage, labour-intensive competitors would not stand by idly and watch China benefit at their expense. This would dampen somewhat the results noted above. Nonetheless, her broad conclusions seem fair. Trade and investment liberalization not only increases the welfare of the liberator, but it may have sufficient efficiency



SMEs and large firms feel superior to their competition, particularly with respect to product quality, customer services, flexibility, and range of products.

spillovers to benefit others.

So if trade and foreign investment reform in China is so economically beneficial to the world, why aren't nations clamoring to admit China to the World Trade Organization (WTO)? Economics is but one part of the equation: power, politics, and human rights are other components of this complex and delicate question. But Ms. Lam has at least provided ammunition to buttress the side of those who favour China's accession to the WTO.

** Impact of China's Trade and Foreign Investment Reforms on the World Economy
Working Paper Series #17
by Winnie Lam*

WHAT IS IMPORTANT TO A FIRM'S GROWTH?

In business, the name of the game is seeking and securing a competitive advantage – and leaving competitors behind at all turns in the pursuit of profit and growth. For those who are familiar with the business literature, the need for firms to "cluster" in congenial environments, to understand their "competitive forces," and to pursue "competitive strategies" – all of them adjusted for the specific and unique circumstances that face each individual firm – is old hat. Like the "Do It Yourself" books for the everyday handyman, the business literature abounds with "Do It Yourself" books aimed at the everyday businessman.

In all this, little is said about the size of the firm, but the implicit assumption is that the firm is large enough to afford market intelligence and to have the funds available to expand. That generally precludes most small businesses and many medium-sized firms too. But what influence, if any, does the size of the firm have on the strategies it sees as most important?

Small and medium-sized enterprises (SMEs) play a crucial role in the Canadian economy, and it is important to encourage them for the well-balanced growth and devel-

opment of the economy. Deepening industrialization, changes in consumer preferences, and the greater division of labour in industries have given rise to the need for more specialized and customized products. The resulting niche markets have provided opportunities for firms that are flexible and able to make the quick adjustments necessary to meet shifting consumer preferences and needs. Small and, to a lesser extent, medium-sized enterprises are the ideal vehicles for serving these niches.

SMEs represent over 95 per cent of all enterprises in Canada. There is a large turnover in this sector of the economy, and every year many of these smaller firms go out of business. Of those that continue operating, some grow rapidly while others trail behind. Though there is a considerable literature on the causes of failure of small firms, investigations into the factors contributing to their success or growth are sparse. In a recent study,* economists Gilles McDougall and David Swimmer seek to determine whether the strategies for growth and competitiveness of large firms differ from those of small and medium-sized enterprises.

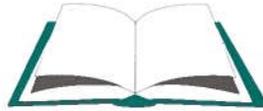
The study is important for two reasons. First, it adds to our understanding of both SMEs and large firms by using a broader sample than is usually the case. This allows for a more solid basis from which to make observations and draw conclusions.

More importantly, the authors' approach provides for a reliable comparison between SMEs and large firms. Rather than draw on a variety of research questionnaires and responses, each with its own separate objectives and different wording of questions, this report is based on a single survey in which the same interviewers asked the same questions of both SMEs and large firms. This approach minimizes biases and enhances the credibility of the results.

Messrs McDougall and Swimmer have found that individually, SMEs and large firms share the trait of feeling superior to their competition, particularly with respect to product quality, customer services, flexibility, and range of

Micro

Large firms focus more on the importance of employees, are more likely to form linkages with other firms, license intellectual property more often, and rely less heavily on government than do SMEs.



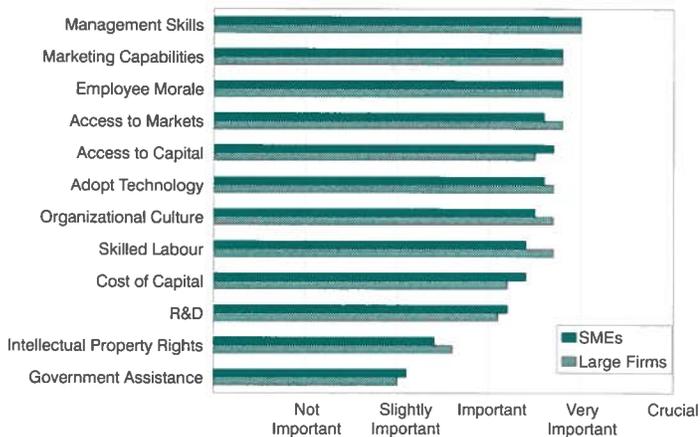
products. Perhaps betraying their role as niche market producers, SMEs perceive themselves a little higher than do larger firms in each of these four categories. On the other hand, SMEs view pricing, production costs, and the labour climate as less important.

SMEs and large firms also hold similar perceptions about the key factors contributing to the growth of the firm. For both groups, the top three factors are management skills, marketing capabilities, and employee morale. Access to markets and capital, the ability to adopt technology, and organizational culture are also important elements contributing to growth. Large firms view access to markets to be more important – and access to capital, less important – than do SMEs. For both groups, R&D capability also ranks high, but less so than most other factors. And for both, the least important factors are intellectual property rights and government assistance.

egy. For example, approaches that focus on human resources and on markets and products are the two most important strategies in the overall business plan; and within each, continuous staff training and maintaining market share are considered very important factors by both SMEs and large firms.

Notwithstanding the many similarities between SMEs and large firms, important differences also emerge. For example, the authors find that the overall business strategy of large firms focuses more on the importance of employees: they perceive skilled labour as a more important growth factor, and they offer employees more formal training, than do SMEs. Large firms are also more likely to form linkages with other firms than are SMEs. The most common forms of linkages include strategic alliances, joint ventures, and strategic partnerships. Similarly, the licensing of intellectual property is seen as a more important source of both product and process innovation for large firms than for smaller ones. Additionally, SMEs use government programs more heavily than do large firms.

Perceived Growth Factors:
Average Score by Size of Firm



Firms map out strategies to achieve particular objectives. In their survey, Messrs Mcdougall and Swimmer asked firms to rate the importance of specific categories of strategies to their overall business strategy. Again, SMEs and large firms held similar views on both the most important strategies and the components within each strat-

According to Messrs Mcdougall and Swimmer, the primary focus of government policy should be to facilitate the development of the right business climate. The similarities between SMEs and large firms suggest that such policies are right for all firms. However, governments can also help SMEs more specifically by targeting specific aspects of their business strategy that appear to be underplayed – training and strategic partnering, in particular. These are important elements of a knowledge-based business strategy, and SMEs would benefit from government facilitation in those areas.

* *Business Strategies of SMEs and Large Firms in Canada*
Working Paper Series #16
by Gilles Mcdougall and David Swimmer



Manufacturing muscle is giving way to industries whose success is based on knowledge, technological intensity, and innovation.

WHITHER THE ECONOMY?

Does the sector where you are employed have a future? Should you be concerned? The times they are a-changing, and the economy is a-changing too!

Over the past couple of decades, advances in communications and computer technologies, along with relaxed restrictions on foreign ownership, have led to a greater integration of production and organizational facilities across nations. Huge parnational corporations now dominate the world economy. Corporations are seeking ways to exploit the potential of new, sophisticated technologies, and the progress and diffusion of these technologies are creating economic changes. We now live in an age of "the global economy" and "the innovative economy" – what economists refer to as the "new economy."

Canada has not been sequestered from these developments. Structural changes in the economies of our trading partners are causing shifts in our own industrial structure. But to what extent? In which sectors? And how fast? The role played by the "new economy" industries in the growth and restructuring of the Canadian economy has been investigated in a recent study* by Surendra Gera and Kurt Mang that focuses on developments in the 1970s and 1980s.

When talking of the "new economy," economists are quite clear on the concept though murky on the definition. Definitions abound, and no single criterion quite captures the "new economy." Sectors may be equally classified as "knowledge-based," "technology-intensive," "skilled," or "high-wage." These classifications are not always interchangeable, nor are they mutually exclusive.

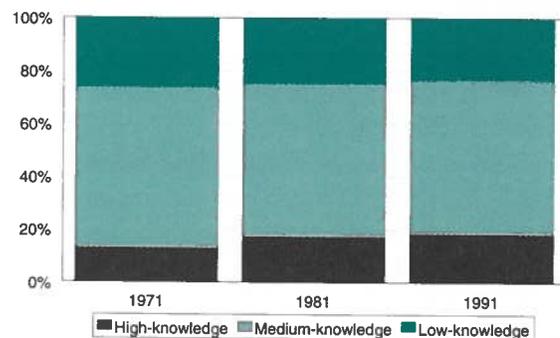
When we think of the economy and its output, we tend to think of goods and manufactures. In 1971, this was true: manufacturing was the single largest sector, at 41 per cent of total real gross output. Two decades later, however, manufacturing had been overtaken by services, which had become the largest major sector, at 45 per cent of total real gross output. Messrs Gera and Mang have

found a strong correlation between high-growth industries and services and between low-growth industries and manufacturing. Five of the twelve leading growth industries over 1971-91 were in the services sector, while those industries experiencing below-average growth were almost all manufacturing-based.

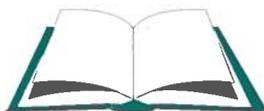
Economists and policymakers generally believe that in the new global economy, innovation in the uses of people (skills), capital (technology), and ideas (knowledge) is the key to competitive advantage and long-term economic growth. Corporations that develop and implement profitable ideas grow faster than those that do not, even when they have identical capital and labour growth: capital and labour in firms with ideas earn more because they are capable of producing more with the same set of inputs. Is there any evidence, then, that industries with "ideas" are faster-growing industries than those which are less knowledge-intensive?

To examine this possibility, Messrs Gera and Mang adopt several measures that attempt to address this issue. First, they use an approach that measures industrial knowledge intensity by combining several indicators based on R&D activity and human-capital content. Industries are then classified as high-, medium-, or low-knowledge. Not surprisingly, the authors find that the high-knowledge industries identified by this procedure tend to be among the past decade's fastest-growing industries.

The Knowledge-based Economy:
Shifts in Industrial Output



The rationale for freer trade is international market contestability.



Next, they measure the technology intensity of industries. High-technology industries are usually identified as those displaying a strong R&D effort, those with a relatively high proportion of engineers and scientists, or both. By making large investments in knowledge creation, these industries provide high-skill, high-wage employment. Though restricted to manufacturing, high-tech industries are the only ones that consistently register growth and share gains over the 1970s and 1980s.

Similar findings for manufacturing are reported for skilled and high-wage industries. Except that in those cases, because of the general decline in manufacturing noted above, skilled and high-wage groups experienced falling relative shares of total manufacturing output, but at rates considerably lower than those for unskilled or lower-wage groups.



DISTINGUISHED SPEAKERS SERIES

MONTY GRAHAM DISCUSSES THE WTO SINGAPORE MEETING



In a recent Distinguished Speakers in Economics presentation, Dr. Edward M. (Monty) Graham, Senior Fellow at the Institute for International Economics, gave Industry Canada staff a debriefing on the trade and competition, and trade and investment issues at the World Trade

Organization (WTO) in the aftermath of the ministerial meeting held in Singapore in December 1996. He also provided a "learned observers" overview of pitfalls and obstacles likely to be encountered as these issues make their way through the WTO.

Of considerable interest is the finding that the pace of change in the economy does not appear to be accelerating, although the factors underpinning structural change seem to have shifted. Trade-related factors have become increasingly important to the growth or decline of Canadian industries, replacing domestic demand as the chief contributor to structural change.

In sum, manufacturing is slowly diminishing in importance, giving way to the rising service sector. Manufacturing muscle is giving way to industries whose success is based on knowledge, technological intensity, and innovation. Learning, knowledge accumulation, and restructuring are going on throughout the economy, and all economic agents are being affected by these adjustments.

* *The Knowledge-based Economy: Shifts in Industrial Output Working Paper Series # 15*
by Surendra Gera and Kurt Mang



The rationale for freer-trade policy is international market contestability, says Dr. Graham. A contestable market is one in which the barriers to new entry are sufficiently low that incumbent firms must behave competitively towards new entrants and rival firms.

Much work has already been done towards the removal of tariff and non-tariff barriers to trade. However, according to Dr. Graham, as one gets closer to realizing the goal of removing these more obvious obstacles to trade, it becomes more evident that these are just the first layer of impediments. Next in line are a host of private practices, some of them necessitated by government regulations, that must be addressed. And competition policy is a handy framework in which to address the trade concerns raised by these private practices, argues Dr. Graham.



The majority of WTO members do not have a domestic competition policy, making an international agreement on competition policy unlikely.

Why should markets be contestable? Market contestability leads to competitive pricing and to an efficient allocation of resources. It is also congruent with gains from trade and, in the opinion of Dr. Graham, is not inconsistent with the maintenance of high rates of technological improvement. Despite the arguments for market contestability, Graham foresees this as a contentious issue at the WTO level, as countries will split into two camps – one advocating an industrial-policy approach and the other arguing for open markets.

Apart from the natural antagonism between these diverging approaches, another key barrier to achieving an agreement on market contestability is opposition from the constituency that currently benefits from industrial policies. This group is most unlikely to be in favour of contestable markets, suggests Graham.

However, the chief barrier to securing an agreement on competition policy at the WTO is the simple fact that somewhat fewer than half of its members have, or are contemplating having, a domestic competition policy. This makes it highly improbable that many WTO member countries will undertake international negotiations before addressing the issue at the domestic level. And even then, Graham cautions, the existence of significant differences with respect to both substantive and procedural standards among countries with existing competition policies makes it unlikely that a comprehensive competition policy instrument can be negotiated.

On investment issues, Graham made much of the fact that a parallel initiative – the Multilateral Agreement on Investment – is being negotiated within the Organisation for Economic Co-operation and Development (OECD). Nonetheless, he suggests that a case can be made for negotiating an agreement on investment issues at the WTO. First, he argues, there is a natural complementarity between the goals of market contestability and those of trade and investment policy. This is evident, says Graham, in that investment policy must deal with the conditions of entry of multinational firms, or foreign direct investment (FDI). If markets are open to FDI – i.e., if foreign entry is easy – then markets will be more contestable. Second, more countries are represented in the WTO than in the OECD. And third, an agreement at the WTO level will avoid a technical issue involving the incompatibility of most-favoured-nation obligations within existing WTO instruments and the OECD investment accord.

- *The rationale for freer-trade policy is international market contestability.*
- *Market contestability is congruent with gains from trade and the maintenance of high rates of technological improvement.*
- *Countries will split into two camps – one that advocates an industrial-policy approach and one that argues in favour of open markets.*
- *There is a natural complementarity between the goals of market contestability and freer trade.*

Finally, looking towards the future, Dr. Graham argues for a less comprehensive approach towards contestable markets. Instead of an all-or-nothing approach, he promotes a strategy aimed at identifying a subset of challenges where agreement can be obtained and a set of rules can be negotiated. He calls for a coordinated and effective action plan to minimize: the adverse consequences of cartels with boycotts; vertical arrangements that tend to foreclose outside vendors or block established channels of distribution to new entrants; and, of monopolistic discrimination and exclusions on competition and market contestability worldwide.

Trade is politics.



JAGDISH BHAGWATI COOKS IN THE WORLD TRADE KITCHEN



"Trade is politics," says Jagdish Bhagwati, the Arthur Lehman Professor of Economics and Political Science at Columbia University. In a March 1997 Distinguished Speakers in Economics presentation, Professor Bhagwati argued that political considerations often take precedence over economic concerns when it comes to free-trade areas. In addition, he suggested, "the public equates free-trade areas with free trade, which they are not." Rather, they are discriminatory trade pacts.

According to Professor Bhagwati, the proliferation of preferential trade agreements (PTAs), or regional or free-trade agreements as they are often called, is one of the biggest issues confronting the world trading system. Moreover, the proliferation of PTAs is giving rise to a systematic effect that is augmenting the dimension of the PTA phenomenon. These observations led Professor Bhagwati to raise two questions that formed the basis of his lecture. First, why have PTAs proliferated? And second, are they desirable?

A host of theories have been invoked to explain the mushrooming of PTAs, submits Bhagwati. At the most basic level, trade policy is foreign policy. That is why, he points out, foreign-policy-

type arguments often accompany the announcement of a PTA. For example, "peace" is a major reason attached to the MERCOSUR initiative, while "detente" is cited as a major consideration in PTAs with the Middle East.

Then there is the competitive proliferation of PTAs, whereby smaller nations band together in order to create an offsetting effect against larger PTAs. Another theory sees the formation of PTAs as motivated by the desire to give advantages to your allies. In this view, politicians think of reductions in trade barriers as something that is given away and not as something they do for themselves. Thus they are more likely to "give" away import concessions, market-access concessions, and the like to allies than to enemies or to countries with which they have arm's length relations.

- *The proliferation of PTAs is one of the biggest issues confronting the world trading system.*
- *All moves towards free-trade areas cannot be equated with moves towards free trade because of the trade-diversion effects of PTAs.*
- *A host of reasons have been invoked to explain why PTAs have multiplied, including foreign-policy considerations, competitive proliferation, the granting of advantages to allies, CNN photo opportunities, and "monkey see-monkey do" behaviour.*
- *The spread of PTAs leads to a "spaghetti-bowl" effect of criss-crossing preferences, rules of origin, and applicable tariffs.*
- *The prescription for reducing the negative impacts of PTAs is to reduce barriers on a most-favoured-nation basis, adopt worldwide targets, and gradually lower trade barriers towards the target.*

Another possible explanation is the CNN photo-op theory. The logic behind this theory, says Bhagwati, is the following: a group of small countries will band together and form a regional PTA because that gives them a better chance of being covered by the CNN broadcasting service. If they went the multilateral route, the leaders of the larger countries would monopolize the major press coverage and the photo opportunities would be lost to the leaders of the smaller countries.

Finally, there is the diffusion, or "monkey see-monkey do", effect of PTAs. Countries see others entering into PTAs and think, Gosh, there must be some-



Moves towards free-trade areas are not as good as moves towards free trade itself.

thing good going on and we had better jump on the bandwagon or else we will be left behind. So they start their own regional PTA.

The downside of PTAs was exposed in the seminal contributions of Jacob Viner to the customs union debate some 50 years ago. Viner's work attacked the intuition that "any trade liberalization is good." The essence of that argument, Professor Bhagwati reminded the audience, is that moves towards free-trade areas are not as good as moves towards free trade itself, because a uniform movement towards free trade rules out perverse outcomes such as terms-of-trade loss, whereby trade is diverted from efficient suppliers outside a PTA to inefficient ones within it.

Bhagwati has been arguing the case against PTAs for quite some time now. And while he is ever mindful of the weaknesses of economic models, he points out that the empirical evidence is mounting that PTAs and trade diversion are moving hand in hand.

PTAs also have other system effects. Today, protection includes not only trade barriers but also administrative measures such as anti-dumping, quotas, and voluntary export restraints. These again, suggests Bhagwati, may contribute to trade diversion under certain circumstances. He cited the case of Mexico, which raised tariffs on 503 items during the peso crisis. The items were carefully chosen so that they would not affect trade with the United States, with which Mexico is joined by a PTA – the North American Free Trade Agreement (NAFTA), which also includes Canada.

The spread of PTAs has one other effect of note, says Bhagwati. With so many preferential arrangements, the criss-crossing of preferences, rules of origin, and applicable tariffs becomes an issue. This is what Bhagwati terms the "spaghetti-bowl" effect. A country that belongs to several PTAs must exercise caution in determining which product comes from where before deciding which product is whose and what tariff should apply. This situation ultimately leads to arbitrary definitions of benefits and adds to the transactions costs to the economy in a global context.

There are only two cases where PTAs can be justified. The first – the deep integration model – is where the PTA leads to a common market, a common parliament, and a common foreign-policy approach, with full factor mobility. Even here, Bhagwati suggests that the PTA should also be judged by its trade-diversion and trade-creation aspects.

The second case for PTAs is the dynamic-path argument. Under this scenario, the path to worldwide free trade is blocked, so the only alternative available is to open up the regional route. The idea is to start with one partner, move to another, and then another, until all the players have joined the PTA. This, Bhagwati feels, is what happened in the early 1980s when Europe decided not to proceed with another negotiation round proposed by the Americans under the General Agreement on Tariffs and Trade (GATT). At that point, the United States for the first time began to back the idea of negotiating preferential free-trade pacts under Article XXIV of the Agreement. As a consequence, the United States and Canada proceeded with the Canada-United States Free Trade Agreement, which eventually expanded into NAFTA.

Finally, Professor Bhagwati turned his attention towards a prescription for PTAs under discussion or already in place. In the former case, he suggests that the so-called "big ticket" agreements be stopped or that the process be used to reduce trade and investment barriers on a most-favoured nation basis, as the Asia Pacific Economic Cooperation (APEC) forum is attempting to do.

For those agreements already in effect, he suggests a three-step program. First, bring external tariffs closer to internal tariffs in order to reduce the effects of trade diversion. Second, strengthen anti-dumping rules so that countries are unable to conduct trade in a preferential way that creates trade diversion and threatening devices are restrained. Third, kill worldwide trade barriers by adopting a worldwide trade target and gradually lowering trade barriers towards the target.

Investment and productivity are the fundamental points of contrast between the exogenous theory and the endogenous theory of economic growth.



DALE JORGENSON ON NEW CONCEPTS OF GROWTH



There is an important contrast between investment and productivity as sources of economic growth, says Dale Jorgenson, the Frederick Eaton Abbey Professor of Economics and Chairman of the Department of Economics at Harvard University. Investment – the commitment of current resources based on an expectation of future returns – can take a multiplicity of forms, such as tangible assets, human capital, or intellectual capital. The distinctive characteristic of investment as a source of economic growth is that the returns can be internalized by the investor.

The mechanism by which tangible investments are translated into economic growth is well understood. For example, an investor in a new industrial facility adds to the supply of assets and generates a stream of rental income. The investment and the income are linked through markets for capital assets and capital services. The income stream can be divided into the increase in capital input and the marginal product of capital or rental price. The increase in capital contributes to output growth in proportion to the marginal product.

Likewise, an individual who completes a course of education or training adds to the supply of people with higher qualifications or skills. The resulting income stream can be decomposed into a rise in labour input and the marginal product of labour or wage rate. The increase in labour contributes to output growth in proportion to the marginal product.

The defining characteristic of productivity as a source of economic growth is that the incomes generated by higher productivity are external to the economic activities that generate growth. These benefits "spill over" to income recipients not involved in those activities, thus severing the link between the creation of growth and the

incomes that result. Since the benefits of policies aimed at creating externalities cannot be appropriated, these policies typically involve government programs or activities supported by public subsidies. Publicly supported research and development programs and public investments in infrastructure are examples of policies seeking to stimulate productivity growth.

Thus began Professor Jorgenson when he gave a presentation last April on "International Productivity Comparisons" to Industry Canada staff under the aegis of the Distinguished Speakers in Economics program. And why the interest in the distinction between investment and productivity? The two concepts, explained Dr. Jorgenson, are fundamental points of contrast between the two major competing theories of economic growth.

One view, known as the theory of exogenous growth, states that economic growth results from productivity increases. In other words, it is due to spillovers. This was the point of view shared by all economists in the 1970s, says Jorgenson. The contemporary thinking of the day was that economic growth and international differences in the level of economic growth could be accounted for by productivity. This approach is associated with the point of view that there are no incentives and that everything is exogenous to the economic system, adds Professor Jorgenson.

The new view is that most growth is due to investment in the form of physical, human, and intellectual capital. That is not to say there are no spillovers: they do exist, but the predominant role is played by different forms of investment. This approach is known as the theory of endogenous growth, so called because any theory of economic growth must take into account the incentives of economic actors to undertake various types of investment, the Harvard academic explains.

The two approaches lead to vastly different conclusions about the source of growth, suggests Jorgenson. Using as an example the postwar experience in the United States, he points out that the traditional approach attributes much



The differences in the two approaches requires new concepts and new data to properly measure the components of gross domestic product.

of the growth to productivity improvements whereas endogenous growth theory puts much less emphasis on productivity. The difference, as Jorgenson sees it, is that the traditional approach attributes improvements in labour and capital quality to productivity rather than to investments in physical and human capital. This, he maintains, leads to the misleading conclusion that productivity is the most important source of growth. When improvements in labour and capital quality are properly accounted for, the role of productivity is far less significant than that played by capital stock and labour inputs.

Moreover, adds Professor Jorgenson, the difference in the two approaches requires new concepts and new data to properly measure the components of output or gross domestic product. Specifically, he believes, it requires better concepts for measuring labour and capital inputs. It also requires a new concept for output that includes new forms of investment. Such an approach would place a much greater emphasis on the role of investment and lessen the role of spillovers and productivity in the economic growth process.

The power of this new approach was illustrated by Professor Jorgenson in a comparison of growth performances among the G-7 countries. While he could not fully apply the expanded output and input concepts to

the G-7 comparison, he nonetheless was able to take into account the relevant concepts of labour and capital inputs and to take a first step towards comparisons that realize the ideas behind endogenous growth theory. Differences in levels of output were compared across the G-7 countries. These differences were decomposed into quality and stock differences in physical capital and labour inputs plus a residual – productivity.

- There is an important contrast between investment and productivity as sources of economic growth.*
- According to exogenous growth theory, economic growth and international differences in the level of economic growth are mainly accounted for by productivity, or spillovers.*
- Endogenous growth theory postulates that growth and differences in the levels of growth are largely due to investment and quality upgrades of physical, human, and intellectual capital.*
- Canada and the United States have comparable levels of productivity, and their labour inputs have moved in parallel; Canada has caught up in terms of capital stock per capita, although the quality of capital stock still lags behind U.S. levels.*
- Since the early 1980s, productivity convergence among the G-7 countries has stabilized. French productivity per capita levels are slightly higher, British and Italian levels are at parity, and Japanese and German levels are slightly lower than North American levels.*
- Productivity has been a small contributor to economic growth in other parts of the world. Labour and capital inputs have been the key drivers of growth in Latin America, Asia, and China.*

Canadian levels of productivity are found to be comparable to U.S. levels, However, output per capita is slightly lower in Canada due to a lower level of labour input (as measured by both hours worked and educational attainment). Canada's capital stock per capita is slightly greater than the U.S. measure although the mix of stock in Canada is more oriented towards land and resources relative to structures and equipment.

All of the other G-7 countries have lower levels of output per capita than Canada and the United States. The leading country in terms of productivity comparisons is France, which achieved productivity parity with the North American economies some time ago. However, output per capita in France is low on the international scale, due to extremely low labour inputs (as measured by both components) and under-investment in tangi-



The results on the sources of economic growth point to productivity as being a small part of the picture, with a greater role being played by labour and capital inputs.

ble assets. According to the theory of endogenous growth, therefore, France's low level of output per capita relative to its productivity potential is due to low investment overall.

While Japan's level of output per capita is high by European standards, Japan (along with Germany) is among the lowest in terms of productivity. Japan has a tremendous commitment of resources – huge numbers of hours worked, very high levels of labour quality, modest though high-quality capital stock – but its productivity performance is low by industrialized country standards.

Since the early 1980s, productivity in the G-7 countries has been moving in parallel and is no longer a source of differences in growth. All countries have experienced growth in capital inputs. Canada and the United States have moved in parallel in terms of labour inputs, whereas many of the European countries experienced a decline in that respect. In Japan, labour inputs grew at North American levels.

Reviewing the literature on the sources of economic growth in other areas of the world – Latin America, the newly industrialized economies of Asia, and China – the results, as interpreted by Professor Jorgenson, point to productivity as being a small part of the picture, with a greater role being played by labour and capital inputs.

The bottom line, summarized Jorgenson, is that the treatment of economic growth requires broader concepts of capital. The production of tangible assets is only one of many forms of capital that are relevant to economic growth. In particular, human capital is something that can be treated within the same framework. When this is done, adds Professor Jorgenson, we get a different picture of growth – one that makes human capital by far the single most important factor in the growth of a modern industrialized economy. And the second most important factor, from this broader perspective, is the growth in tangible assets.



ANNOUNCEMENTS

Industry Canada's Distinguished Speakers in Economics Program begins anew this Fall. Here is the schedule *:

November 21, 1997 -- W. Erwin Diewert, University of British Columbia, on *The Productivity Paradox*

December 5, 1997 -- David Aschauer, Bates College, on *Infrastructure and Economic Growth*

February 13, 1998 -- Peter B. Kenen, Princeton University, on *The Asian Currency Crisis*

February 27, 1998, Richard R. Nelson, Columbia University, on *The Changing Nature of University-Industry Interactions*

March 6, 1998, Peter Howitt, Ohio State University, on *Technological Progress and Long-run Growth Paths*

March 13, 1998, Elhanan Helpman, Harvard University, on *General Purpose Technologies and Economic Growth*

April 3, 1998, George A. Akerlof, University of California at Berkeley on *The Macroeconomics of Low Inflation*

May 1, 1998, Robert Summers, University of Pennsylvania, on *International Comparisons of Prices and Quantities*

May 8, 1998, Julian L. Simon, University of Maryland, on *The Economics of Population*

May 22, 1998, Edward E. Leamer, University of California at Los Angeles, on *Wage Inequality From Technological Change and Global Competition*

* confirmed at the time of publication