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**THE PRINCIPLES OF
EXPORT-LED GROWTH**

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SUMMARY

This paper proposes that singular improvements in productivity and growth are a results of increased exports and imports, especially in the manufacturing sector, but that sustainable growth also requires industrial diversification. Trade liberalizations between Canada and the United States have caused a narrowing of manufacturing productivity differentials, a predominance of intraindustry trade, and a positive Canadian trade balance for manufactured end products and fabricated materials. Sustained growth, however, relies more on the diversification of the industrial structure. Toward this end, Canadian trade policies should :

(1)   concentrate production in the exportable sectors;
(2)   rationalize and specialize output between industries;
(3)   encourage two-way trade in each industry;
(4)   liberalize trade gradually to avoid interindustry disruptions, and;
(5)   redirect job-reallocation funds toward worker retraining and firm-specific modernization programs.

Key-words : productivity, growth, exports, rationalization, specialization.

RÉSUMÉ

Ce cahier avance la proposition que des gains de productivité et de croissance économique découlent d'une expansion des exportations et des importations, mais qu'une croissance soutenue exige aussi un certain degré de diversification industrielle.

L'exemple de la libéralisation des échanges entre le Canada et les États-Unis s'est traduit pas un rétrécissement des écarts de productivité et par une intensification des échanges intraindustriels, de même que par une balance commerciale positive pour les produits finis manufacturés et les produits fabriqués.

En vue d'assurer une croissance économique soutenue avec une structure industrielle diversifiée, les recommandations suivantes sont formulées :

(1)   concentration accrue de la production dans les biens exportables;
(2)   rationalisation et spécialisation de la production entre les industries;
(3)   encouragement aux échanges industriels dans les deux directions;
(4)   poursuite de la libéralisation graduelle des échanges;
(5)   orienter les fonds d'ajustement vers le recyclage de la main-d'oeuvre et les programmes spécifiques de modernisation des entreprises.

Mots-clé : productivité, croissance, exportations, rationalisation, spécialisation.

The Principles of Export-Led Growth

This paper proposes that a one-time improvement in productivity and growth is a direct and indirect results of increased exports and imports, especially in the manufacturing sector, but that sustainable increased growth requires industrial diversification. In other words, the "export-import effect" and the "balance-of-payments effect" must both be realized to assure a sustainable rate of economic growth.

First, the Canadian growth process will be analyzed along these lines within the general framework of an intraindustry trade model. Data will be offered showing that past trade liberalizations have pushed Canadian industry toward intraindustry specialization. The second and third parts of this paper will investigate static and dynamic economies of scale derived from trade and specialization, from both a supply and a structural-demand approach. I will show that during the 1966-1983 period, in nineteen countries of the Organization for Economic Cooperation and Development (OECD), export growth stimulated the overall rate of economic growth by as much as the rate of capital accumulation. Moreover, the impact of manufactured exports was twice that of total exports. When the importance of exports in this growth process is analyzed within a balance-of-payments constraint model, the actual growth rates of all but two of the countries analyzed remained within this constraint.

These results indicate that intraindustry trade adjustments and two-way trade may be desirable for policymakers.

The Significance of Export-Led Growth in Canada's Economy Relatively small, resource-based, open economies such as Canada have tended to promote economic development with two distinct trade policies--that is, the "international market" for their primary products and the "domestic (protected) market" for their import-substituted indigenous manufacturing sector. These two areas of economic development may be pursued sequentially or simultaneously.[1] A third stage of economic development usually follows, which involves consolidating the domestic market

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[1]"Homespun" growth or import substitution can lead to improved productivity according to Verdoorn's law. If the home market is large enough, this improved productivity can lead in turn to greater export competitiveness. Verdoorn's law reflects the static and dynamic economies of scale in manufacturing industries and the high degree of association between rapid output growth and productivity growth in industrial sectors. Because output growth can be related to the growth of markets, trade liberalization may be one way to reap the results from the working of Verdoorn's law.

by rapidly increasing public investment in infrastructure and human capital--a process often accompanied by an increase in net foreign indebtedness.

When budgetary and balance-of-payments constraints inevitably force a slowdown in public investments, the country can enter a fourth stage of economic development by rationalizing its indigenous manufacturing sector and its tradable services sector for export markets. Participation in a regional free trade arrangement with neighboring economies, such as the European Economic Community (EEC) or the 1989 Canada-U.S. Free Trade Agreement (FTA), becomes, along with the trade liberalization rounds of the General Agreement on Tariffs and Trade (GATT), an effective channel to expand exports of manufactured goods. Indeed, over the past twenty-five years, international trade in manufactured goods has tended to grow more rapidly than both manufacturing production and total trade in most industrialized countries.

Two obvious questions arise in regard to these often-observed shifts in the sources of economic growth for many small open economies. First, is the inward-looking, import-substitution stage of manufacturing production a prerequisite for industrialization and growth? Second, is export-led growth ultimately necessary to sustain a high rate of economic growth?[2]

The "infant industry" argument of Mill, Bastable, Hamilton, and List offers a partial answer to the first question. Certain industries are presumed to have sufficient internal and external externalities that more than compensate for temporary excess costs of protection with subsequent cost reductions in the protected industries and in the general economy. If a production subsidy is necessary to reap the alleged economy-wide or industry-wide externalities, a Pareto-efficient combination of taxes and subsidies can be devised to achieve correct relative prices (Bhagwati 1971, 69-90). Such a combination may not be politically possible, however. Similarly, according to the dynamic Ricardian trade model--in which increased productivity accrues only to landowners and capitalists, not to workers (paid the natural wage)--international trade and specialization in resource-rich countries may reduce the growth rate, since the rise in rents is absorbed in luxury consumption while the fall in the profit rate reduces accumulation (Findlay 1984).

[2]Growth involves either an increase in the aggregate levels of factor supplies (labor, capital, or resources) or an increase in the productivity of the factors of production (which means more of everything) whereas development implies that the economy undergoes some qualitative transformation or structural shift. With increased productivity or improved economic structure, welfare increases if the deterioration in the terms of trade does not nullify the gains in productivity.

Some empirical studies confirm that the positive relationship between trade and growth does not hold in all cases, but rather, "growth is affected by export performance only once countries achieve some minimum level of development" (Michaely 1977, 49-53). Michaely has found, by estimating the per-capita gross national product (GNP) and the export/GNP ratio for 41 countries, that the positive relationship exists for 23 developed economies but is not significant for 18 developing economies. When the relationship is expressed in growth rates instead of levels, however, a significant positive relationship for developing economies appears between the economic and export growth rates. Balassa 1978, 181-89; Balassa 1985, 23-35; Heller and Porter 1978, 191-93). These results indicate that economic growth is influenced not as much by the degree of the economy's openness as by the rate at which external demand expands. It is therefore still possible that (1) an import-substitution stage, providing "learning by doing" in the manner Arrow (1962) suggests, is prerequisite for growth, and (2) countries can best profit from new export opportunities when export demand, resulting from a more export-oriented trade policy, adds to preexisting domestic demand.

Since Canada has already undergone the first three stages--growth from export demand for staple products (wheat, furs, fish, lumber, oil and gas), growth from domestic demand originating from import substitution of secondary manufactured goods (steel, transport equipment, textiles, clothing, chemical products), and growth from expanding real public demand--the second question, regarding the contribution to economic growth of exports of main manufacturing goods, seems the more pertinent.

To establish this contribution, however, Canadian growth must be assumed to be constrained not only by supplies of input factors, but also by the productivity of these factors and the insufficiency of real demand. For a small open economy like Canada's, which is integrated economically with the rest of the world and especially with the U.S. economy, the supply of production factors is not itself to constrain economic growth, nor are factor prices (except for unskilled labor) likely to differ much between countries. Moreover, both the unemployed labor force and controllable migration flows and the unimpeded direct and portfolio capital movements

indicate that the sheer supply of labor or capital doest not limit economic growth.[3] However, the capacity to expand autonomous, domestic real demand is sooner or later constrained by the country's balance of payments. If the demand source is domestic, slowed exports and high imports can be maintained only by ever-increasing net capital inflows. Eventually, the net foreign debt service changes must be transferred through a positive trade balance.[4] At this point, two factors become important to sustain growth--namely, the degree of economic diversification extant (which determines the income elasticity of import demand) and, more important, the rate of increase of demand for the country's exports.

The Ricardian model implies cost competitiveness and export demand, and it relies on differences in commodities' relative prices caused by production conditions and labor productivities in various countries; it thus fits our demand-supply approach to trade and development. The basic Ricardian model and its modern version, the intraindustry or industrial organization model (IO), may explain more correctly exports of manufactured goods for industrial countries such as Canada than the exclusively supply-oriented Heckscher-Ohlin endowment (HO). Indeed, some HO assumptions--constant returns to scale, identical cross-country production functions (no possibility of productivity improvements), identical products, and no factor mobility between countries--do not seem general and flexible enough to reflect the economic situations of even most industrialized economies. The model is particularly inadequate for analyzing the dynamic impact of trade liberalization between adjacent economies, which is bound to stimulate adoption of similar efficient production techniques, encourage production of differentiated manufactured goods, and boost two-way in manufactured products.

For production and trade in manufactured goods, at least, relative availability and relative prices of factor inputs appear less important than the different productivities of these factor inputs when production conditions differ within the firms and industries of two countries. In fact, especially in the manufacturing sector, comparative advantages in technology, marketing, or

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[3]With international mobility of capital and labor, factor prices tend to be similar in neighboring countries, although relative factor prices can diverge in absence of trade if the endowments of resources differ. In other words, the Heckscher-Ohlin-Samuelson endowment model (HOS) still explains some trade between two countries, especially the trade in primary products, because there are differences in relative prices for inputs and in the relative prices of commodities.

[4]One may say that Canada has reached this point with a trade surplus that covers its large outflows of service payments.

management tend to be firm-specific rather than industry-specific. When a firm has access to sufficiently large markets, it can increase the scale and specialization of its production by contracting out minor product lines and intermediate goods. Because larger markets and increased scale and specialization by firms increase the international two-way flow of similar goods (intraindustry trade) of both exports and imports, the Ricardian-like IO model can explain trade of manufactured goods better than the HO model. I therefore retain the proposition that an economy can grow by simultaneously increasing both exports and (1) manufactured goods, when its exporting firms become more product-specialized and cost-competitive, or (2) low-cost imports, provided its industrial structure is diversified enough to avoid the balance-of-payments difficulties that may accompany growth.

This study, therefore, attempts to analyze the contribution of expanding exports, especially manufactured exports, to the growth of the OECD developed countries, with a special emphasis on Canada. In the first section, I will emphasize the causes of productivity growth and investigate the contributions to productivity growth of total exports and exports of manufactured products for nineteen OECD countries. Both demand and supply considerations related to export-led growth will be examined. A predominantly demand model like Thirlwall's (1979) will be tested to see if the characteristics of goods and services exported and imported by Canada and seventeen other OECD countries have played a role in economic growth. The second section will distinguish between definitive and continuous productivity increases. Finally, I will discuss how trade policy and economic development are linked when one adopts a firm-specific trade model rather than the traditional industry-specific model.

The Contribution of Exports to Growth : Testing a "Supply-Side" Model The "supply-side" model attempts to isolate the effects of capital accumulation from the effects that market expansion has on the growth rate of industrialized countries. New investments bring technological progress. Increased exports encourage factors of production to move from low- to high-productivity sectors and raise total factor productivity. Similarly, if there is no excess of labor, an increase in the labor force could remove another constraint to growth.

One way to isolate the contribution of exports to growth is to use a production-function type of framework, in which exports are included with capital and labor. Studies have shown that exports significantly contribute to the rate of economic growth in an intercountry relationship, either through their direct and induced multiplier effects on demand and/or through the

externalities generated by exports. Balassa (1978, 81-89; 1985, 23-35) and Tyler (1981) have each introduced exports in cross-sectional equations to explain intercountry differences in economic growth rates. Feder has used a slightly different procedure to separate the factor productivity differentials in exporting industries from those in nonexporting industries and from the externalities generated by exports.[5]

Most of these studies, however, have been carried out either for developing countries or for a sample that includes both developing and industrialized countries. They often consider only periods prior to the external shocks of the 1973-1974 watershed. The present investigation deals exclusively with nineteen OECD countries, and is thus more compatible with the assumption of identical production functions. The period covered (1966-1983) is sufficiently long to avoid the random effects of annual data.

Exports and Economic Growth In OECD Countries

If a Cobb-Douglas type of function with three factors of production is retained, a reduced-form equation can be tested to see if differences in gross domestic product (GDP) growth between countries can be explained by growth in either capital, labor force, or exports :

(1) $$Y = AK^a L^b X^c$$

where Y is the GDP; A is a technological coefficient; K is the stock of capital; L is the labor force; and X represents exports and also reflects economies of scale and output externalities.

Assuming that the exogenous variables are independent form the residual, we can estimate the following reduced-form equation :

(2) $$\frac{\dot{Y}_i}{Y_i} = \left(\frac{\dot{A}}{A}\right) + a\left(\frac{\dot{K}_i}{K_i}\right) + b\left(\frac{\dot{L}_i}{L_i}\right) + c\left(\frac{\dot{X}_i}{X_i}\right)$$

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[5]Following Chenery (1970), G. Feder (1982) represents export performance by export growth multiplied by export share. This alternative, however, raises the possibility of multicollinearity.

The results appear in Table 1. The export variable is statistically significant at the 5 percent level in a one-tail test. Together with the capital (investment) variable, the export variable explains 62 percent of the variance in the GDP growth rates for nineteen OECD countries.[6]

The results associate a 1 percent increase in the rate of growth of total exports in the OECD countries with a 0.15 percent increase in the rate of growth of GDP (Eq. 3). These results are in the same range as those obtained by Balassa for a group of forty-three developing countries in which an increase of 1 percent in the rate of growth of export was associated with a 0.15-0.22 percent increase in the rate of growth of GNP (Tyler 1981).

However, introducing population growth to Equation 1 doest not increase its explanatory power. As a proxy for labor force growth, population growth has a positive coefficient but a t-value that does not provide statistically significant results. Labor force or employment data could conceivably be more reliable, but labor supply is an unlikely dominant constraint to growth when unemployment exists or when labor migration is possible. The very low population growth coefficient could also indicate that technical progress in the OECD countries is biased toward saving labor--that is, increased competition forces adoption of labor-saving, rather than capital-saving, devices.

Interjecting the manufactured exports variable in Equation 4 increases the value of the coefficient. In addition, the results are still statistically significant at the 5 percent level : a 1 percent increase in exports of manufactured goods raises the growth rate of GDP by slightly less than 0.3 percent. The regression coefficient of manufactured exports is double that of total exports, perhaps indicating that the externalities effect that Feder (1982) attempted to isolate is best rendered by exports of manufactured products. Marginal factor productivities are higher in the export sector than in nonexport sectors, and higher still for manufactured exports, which seem to encourage such externalities as adoption of international management and production techniques, training of skilled labor, and importing of technologically advanced inputs that benefit other sectors of the economy. Such beneficial effects are external because they are not reflected by market prices. The sources-of-growth equation (Eq. 4) confirms that capital accumulation contributes to growth, but the productivity gained by shifting resources toward high-productivity

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[6]West Germany, Belgium, Canada, Denmark, Spain, the United States, Finland, France, Greece, Ireland, Italy, Japan, Norway, New Zealand, Holland, the United Kingdom, Sweden, Switzerland, and Austria.

sectors furthers growth even more. For manufacturing exports, the effect of shifting resources is twice as large.

This section has documented how differences in the growth of factor supplies and productivity influence overall growth. The next section analyzes how different pressures on the balance of payments during the growth process can explain why the growth of factor supplies and productivity can differ between countries.

Testing a "Demand-Determined" Model

Growth involves an increase in productivity, but the source of real demand that sustains it may come from either domestic sources or external markets. On a macroeconomic level, therefore, it is important to know if growth can be sustained without inflation or balance-of-payments difficulties. Import substitution, for example, may reduce import propensities but will also reduce export propensities. Conversely, export promotion will increase export propensities but will probably also increase import propensities.

Thirlwall (1979) has found that the demand and supply characteristics of both exports and imports are relevant when studying the contribution of trade to a country's growth. If a country's exports are price competitive and face price-elastic demands, its rate of growth will be stimulated through the multiplier effect by the rise in autonomous demand. However, if the structure of the economy is such that the income elasticity of import demand is high, then the domestic growth rate may face a balance-of-payments constraint and may have to be slowed by deflationary measures. An autonomous demand expansion that stimulates imports without increasing export capabilities will not likely be sustainable. For export-import growth to translate into overall growth, the domestic economy must be sufficiently diversified to maintain a low income elasticity of demand for imports, even though imports must expand with exports.

To test the hypothesis that the rate of output growth is highest when the rate of exports growth is high and the income elasticity of demand for imports is low (assuming a high degree of substitution between imports and exports), Thirlwall's balance-of-payments equilibrium growth

rates have been calculated for Canada and seventeen other OECD countries.[7] The long-run balance-of-payments constraint is as follows :

(3)
$$\eta_{im}(Y_{it}) = \epsilon_{it}(Y_w)$$

Accordingly, the growth rates consistent with a balance-of-payments equilibrium may be calculated thus :

(4)
$$\dot{Y}_{it} = \frac{\dot{X}_{it}}{\eta_{im}}$$

where $\dot{Y}_{it}$ is the country's balance-of-payments equilibrium growth rate; $\dot{X}_{it}$ is the rate of exports growth, equal to the product of the income elasticity of demand for exports and world demand ($\epsilon_{it}X_{it}$); and η_{im} is the domestic income elasticity of the demand for imports.

To be valid, this reduced form requires that the price elasticities satisfy the Marshall-Lerner condition and, more important, that imports and exports are perfect substitutes. This rate equation also requires that international relative prices measured in a common currency should not vary much over the long run because of the law of one price and the parity of purchasing power.

Nevertheless, Equation 4 can be used to approximate feasible, actual growth rates when the balance of payments is an assumed constraint. Balance-of-payments equilibrium growth rates and actual growth rates are expected to differ between countries according to the characteristics of export and import goods.

The income elasticity of demand for imports has been estimated according to the log-linear equation used by Houthakker and Maggee (1969) :

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[7]Austria has been excluded from this list because of unreliable data.

$$(5) \qquad \log M_{it} = A_{0i} + A_{1i} \log Y_{it} + A_{2i} \log \left(\frac{PM_{it}}{PG_{it}} \right) + u_{it}$$

where M_{it} represents imports of goods for country i during year t in 1980 dollars;

Y_{it} is a GNP index of country i;

PM_{it} is a import prices index for country i;

PG_{it} is a wholesale price index for country i;

A_{1i} is the income elasticity of demand for imports;

A_{2i} is the price elasticity of demand for imports.

Actual and Predicted Growth Rates In OECD Countries

Table 2 gives the results for the 1966-1983 period and compares the actual rates with the predicted growth rates given a balance-of-payments equilibrium. In general, the actual growth rates of developed economies were lower than those predicted under a balance-of-payments equilibrium. On average, for the eighteen countries considered, the actual growth rate over the period was 3.36 percent, whereas the predicted growth rate under a balance-of-payments equilibrium could have reached 4.60 percent. Only Finland and Italy had actual growth rates higher than those predicted by the hypothesis that the balance of payments constrained the growth of autonomous real demand. For the sample of Table 2 countries, the Spearman rank correlation is 0.759.

Thus, actual growth may be restrained either by the absence of sufficient domestic autonomous demand (sufficient relative to the existing productive capacity) or by a country's decision to build up its payments surplus. Of course, these results depend on the assumed income elasticity of demand for imports, which, if underestimated, would cause the balance-of-payments equilibrium growth rates to be overestimated.

For Canada in particular, the actual growth rate (3.59 percent) is fairly close to the limit established by the balance-of-payments constraint (3.74 percent). The same is true in the United States (2.75 percent versus 2,85 percent), the United Kingdom (2.17 percent versus 2.78 percent)

and Switzerland (2.27 percent versus 2.43 percent). For these countries, either their rate of export growth was too low or their income elasticity of demand for imports too high.

The results are therefore compatible with the export-import-led growth hypothesis but do not automatically invalidate the concomitant need to diversify the import-competing sector. However, if the growth of productive capacity through improved productivity does not improve the balance of payments, the growth rate of demand will be insufficient, resulting in unemployment. If the characteristics of export and import goods are such that exports can increase faster than imports, then increased productivity in the export-goods sector will lead to higher overall growth rates without deteriorating the balance of payments. Presumably, this situation would prevail when increased productivity occurs in the manufacturing sector. On the other hand, productivity improvement in the import-competing sector would increase growth by more than would a similar improvement in the primary or nontradable goods sector, because of the import requirements associated with growth in this sector.

Once-for-All and Sustainable Productivity Improvements

The data of Table 2 may also help distinguish two interrelated questions : When does a move toward exports lead to a sudden increase in productivity and growth, accompanied by increased imports; and when does it lead to sustained and continuous changes in productivity and growth?

Trade liberalization and increased two-way trade are important factors in promoting growth. In the intraindustry trade model, the rate of an industry's export growth can be associated positively with a high rate of growth of imports for the same country. MacCharles (1984) has established this trend for the Canadian manufacturing sector.

The tendency of exports to increase with imports should result in a high correlation between the rate of growth of exports and the rate of increase of imports. Export-led growth relies on both export and import growth, because of the adjustment mechanism of the balance of payments.

Thus, while export and import growth may go hand in hand, the diversification of the economy remains an important growth factor. More generally, if export and import growth leads to intraindustry rationalization and specialization, the continuous growth capabilities of the economy are enhanced, and the income elasticity of demand for imports may remain relatively low. However, if export and import growth lead to interindustry specialization and the demise of too many industries, productivity will increase (once and for all) as predicted by the HO model, but the income elasticity of demand for imports may also increase, adjustment over interindustry adjustment. Whether to become productive in order to export, or to export in order to become productive, is moot : both are necessary.

Conclusions

The basic proposition of this paper is that one-time improvements in productivity and growth are a direct and indirect result of both increased exports and imports, especially in the manufacturing sector, but sustainable increased growth requires industrial diversification.

Such an export-import-led growth process seems to be in operation in Canada, as this country slowly abandons import substitution and public investments as engines of growth to boost productivity through trade liberalization and industrial reorganization. Increasingly, the Ricardian model's assumption of different production conditions and the removal of these production differentials through intraindustry specialization seem to be the pertinent framework for analyzing Canadian trade. Two-way trade in the same industries and the same firms seems to have progressed rapidly in Canada after the Canada-U.S. Auto Pact of 1965 and the two GATT rounds of tariff reductions.

A sources-of-growth equation, estimated for nineteen industrial countries, indicated that the rate of export growth substantially influenced the economic growth rate. The impact of total exports within the production-function type of framework is as important for growth as the rate of capital accumulation. The fact that manufactured exports within the OECD countries have stimulated economic growth by twice as much as total exports illustrates the importance of static and dynamic economies of scale to manufacturing output. Besides the products-, plant-, and company-specific economies of scale that manufactured exports generate, such exports are also associated with increased imports and beneficial intersectoral externalities. Enhances two-way trade in manufactured products seems to be the channel through which industrial reorganization is carried out and positive external economies are reaped, yielding a one-time jump in productivity and economic growth.

A second approach, more closely related to the composition of exports and to the diversification of the industrial structure, demonstrates why the growth generated by exports i more sustainable in some countries than in others. A structural demand-determined model, estimated for 1966-1983, shows that the growth rates of sixteen of eighteen industrialized countries have been contained within the limits established by balance of payments. Indeed, actual and predicted growth rates were positively correlated at 0.759. For some countries (Canada, the United States, the United Kingdom, and Switzerland), the actual growth rate has

been fairly close to those balance-of-payments limits. These countries would benefit from a faster rate of export growth.

The results of this second approach point to the importance of the characteristics of the produced and exported goods. In particular, the income elasticity of foreign demand for exports will influence the rate of export growth, whereas the income elasticity of import demand will reflect the relative diversification of the industrial sector. A relatively low income elasticity of demand for imports will alleviate the balance-of-payments pressures that could force a country to slow the growth process. The negative correlation between the rates of export growth and the imports' income elasticities of demand reinforces that economic diversification is also an important factor of growth.

From a combination of the supply- and demand-side approaches, capital accumulation, export growth, and industrial diversification emerge as the strategic factors of economic growth. The policy implications are fairly obvious. First, increased productivity in the exportable sector is more conducive to growth than similar improvements in the import-competing sector or in the nontradable sector. Second, for trade liberalization to produce a permanently sustainable higher rate of economic growth, rather than a one-time jump in productivity levels, the bulk of rationalization and specialization must be done between rather than within industries and be firm-specific. If rationalization and specialization must be done between rather than within industries and be firm-specific. If rationalization and specialization are achieved, the rate of increase for both exports and imports could be raised while preserving a diverse output and a relatively low income elasticity of demand for imports. Third, two-way trade in each industry should be encouraged to promote improved productivity and economic growth. Since foreign-controlled subsidiaries already conduct close to 80 percent of their trade on an intrafirm basis, these subsidiaries are positioned to play a strategic role in the rationalization of Canadian industry. To lower costs, Canadian-controlled firms may have to increase the work contracted over border lines and increase imports. Fourth, in accordance with Adam Smith's quotation at the beginning of this chapter, trade liberalization must be gradual in order to avoid interindustry disruptions that could mortgage future growth. Indeed, if intraindustry rationalization is the goal of trade liberalization, special safeguards may have to be established to ensure this result. Finally, since intraindustry rationalization implies fewer job reallocations, the adjustment funds being established could be directed both toward worker retraining and firm-specific modernization programs.

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E R R A T U M

- Par erreur, les tableaux 1 et 2 ont été omis dans le cahier #9020.

- By mistake, tables 1 and 2 in paper #9020 have been omitted.

Table 1

Investments, labor, exports and economic Growth, 1966-1983

Equation	$\dot{A}/A$	$\dot{K}/K$	$\dot{L}/L$	$\dot{X}/X$	$\dot{F}/F$	R^2
(1)	1,0144* (1,777)	0,1378** (2,479)	0,0340 (0,130)	0,1518** (2,185)		0,6219
(2)	1,0226* (1,800)	0,1356** (2,427)	0,0662 (0,259)		0,2883** (2,215)	0,6244
(3)	1,0311* (1,913)	0,1355** (2,667)		0,1546** (2,419)		0,6214
(4)	1,0581* (1,977)	0,1311** (2,542)			0,2979**	0,6227

* Significant at 90%.

** Significant at 95%.

Sources : - IMF, International Financial Statistics, 1984.

   - Main Economic Indications of OECD, 1964-1983.

   Symbols : Dependent variable : average annual changes in GDP between 1966 and 1983 as percentages. Independent variables : $\dot{K}/K$ = average annual changes in gross fixed capital between 1966 and 1983 as percentage; $\dot{L}/L$ = average annual changes in total population between 1966 and 1983 as percentages; $\dot{X}/X$ = average annual changes in merchandise exports between 1966 and 1983 as percentages; $\dot{F}/F$ = average annual changes in manufactured exports between 1966 and 1983 as percentages.

   Figures in parentheses are t-statistics.

Table 2

Estimates of actual growth rates versus growth rates consistent with balance of payments equilibrium, 1966-1983

Country	% of change of real GNP	% of change of export volume	Income elasticity of demand for imports	Growth rates consistent with BOP equilibrium
Canada	3,59	5,99	1,60	3,74
United States	2,75	4,31	1,51	2,85
United Kingdom	2,17	4,20	1,51	2,78
Switzerland	2,27	4,62	1,90	2,43
West Germany	3,06	6,74	1,89	3,57
Belgium	2,76	6,63	1,94	3,42
Danemark	2,31	5,89	1,31	4,50
Spain	3,75	12,15	1,55	7,84
France	3,70	7,53	1,62	4,65
Greece	4,50	10,32	1,27	8,13
Ireland	3,73	9,24	1,50	6,16
Japan	5,52	11,80	1,23	9,60
Norway	3,80	8,16	1,40	5,83
New Zealand	2,40	4,31	1,24	3,48
Holland	3,17	7,19	1,82	3,95
Sweden	2,67	5,53	1,76	3,14
Italy	4,02	6,80	2,25	3,02
Finland	4,31	5,74	1,51	3,65