

Exports, GDP and jobs

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The share of exports in aggregate demand began rising in the 1970s, after hovering around 20% during the 1950s and 1960s. However, the increase in the share of exports in GDP has been exceptionally high in the 1990s; after averaging about 25% in the five years leading up to the Canada-U.S. Free Trade Agreement, exports as a proportion of nominal GDP (that is, unadjusted for price changes) soared above 40% by 1998, the highest of any G7 nation.¹ Imports have mirrored the trend in exports, with trade across the U.S. border being the driving force for both.

This article attempts to explore the issue of goods moving back and forth across the border at various stages of processing. If this has increased in recent years, it will have increased the measured rate of export growth without a corresponding full increase in the economic effects of those exports. Since the Auto Pact of 1965, much of the increased flow of auto goods across the border can be attributed to parts used in assembly and then re-exported. With free trade and globalization, is this type of production process spreading to other industries and inflating trade flows relative to their actual contribution to the economy? And if imports are rising almost as fast as exports, what is the net benefit of trade to Canada?

This paper uses Statistics Canada's Input-Output tables to examine various aspects of imports and employment embodied in exports over the 1986-to-1995 period. It determines the value added to GDP embedded in the exports of over 550 specific commodities. Value added is the net contribution to output by an industry, after all the intermediate inputs from other industries are subtracted from its gross output. Because all inputs are tracked to their origin,

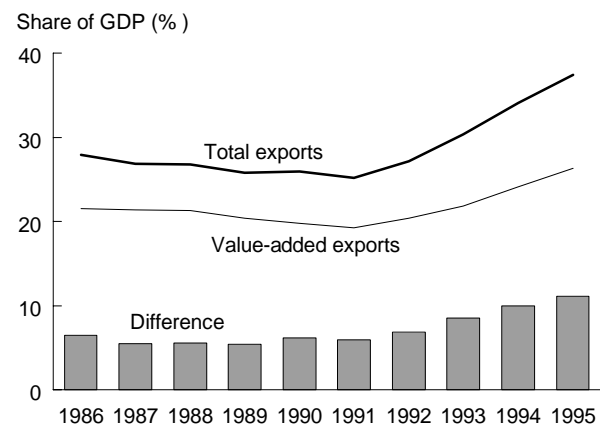
Adapted from an article in Canadian Economic Observer (Statistics Canada, Catalogue no. 11-010-XPB) 12, no. 11 (November 1999). Grant Cameron is with the Input-Output Division. He can be reached at (613) 951-3764 or camegra@statcan.ca.

the tables capture the direct and indirect contributions of various industries to exports. The value of the imports in these exports is the difference between the total value of the exports and the domestic GDP content. The GDP in exports can then be compared with total GDP to determine the degree to which Canadian incomes are dependent on foreign markets.

Consider automotive exports. The total GDP embodied in these trade flows includes the incomes earned in the automobile industry as a result of its exports (direct) plus the incomes earned in all other industries to the degree that their outputs support the production of automobiles destined abroad (indirect). The indirect effect includes all upstream activities; for example, it captures the incomes earned in mining the iron ore that ultimately finds its way into the chassis of exported cars.

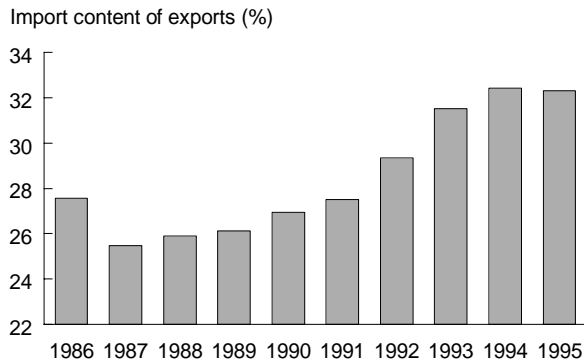
In the first half of this decade, the share of exports in GDP rose from 25% to 38%. However, over one-third of this increase reflects the rising import content

Chart A: The share of GDP earned from exports rose steadily in the early 1990s.



Source: Input-Output Division

Chart B: Imports comprised almost one-third of the total value of exports in 1995.



Source: Input-Output Division

assembled computers) and electronic equipment (largely computer parts). These goods, with an import content averaging nearly 50%, accounted for 10% of all exports in 1995, up from 7% in 1986. The import content of the computer-driven components was especially large, up 20 percentage points in less than a decade. This reflects the adoption of new production processes, especially the use of imported parts in plants that have a mandate for global production for certain product lines from their parent company.

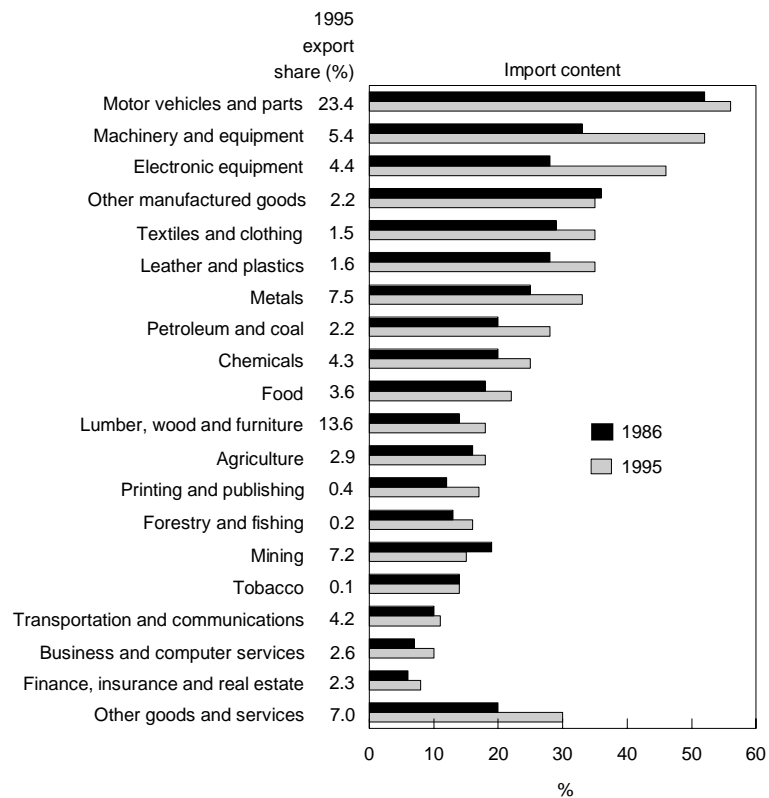
The specialization of labour implicit in these trade flows is also a key to understanding the role of exports in generating economic growth. Over the long run, export and import flows tend to track each other closely, leaving the share of net exports in GDP hovering around zero (Chart D). In fact, net exports have usually been noticeably greater than zero only in times of economic distress, such as the 1930s and the

in exports: excluding this, the value-added contribution of exports to GDP still rose, but from its low of 19% in 1991 to 26% in 1995, compared with its previous high of 22% in 1986 (Chart A).

The difference reflects increasing specialization in many industries. For example, the auto industry has long used many plants on both sides of the border to produce parts, which are then shipped to one central plant for assembly, from which the finished vehicles are sent across North America. The import content of exports rose steadily between 1987 and 1995: from 25% to 32% (Chart B).²

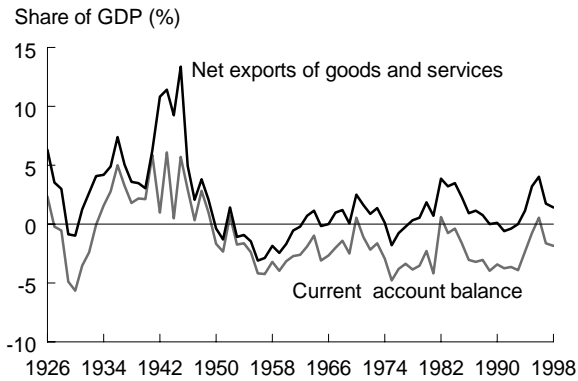
Increases in the import content of exports are evident for almost all export commodities. Seventeen of twenty export commodity groups saw their import content rise between 1986 and 1995—the only exceptions were mining, tobacco and other manufactured goods (Chart C). Moreover, the increase was strongest where export growth was strongest—machinery and equipment (mostly

Chart C: The top three export commodities had an import content around 50% in 1995.



Source: Input-Output Division

Chart D: The share of net exports in GDP hovers around zero.



Source: Input-Output Division

cyclical slowdowns in 1970 and 1982. Even then, the positive current account balance resulted from plunging domestic demand for imports, not from strength in exports.³

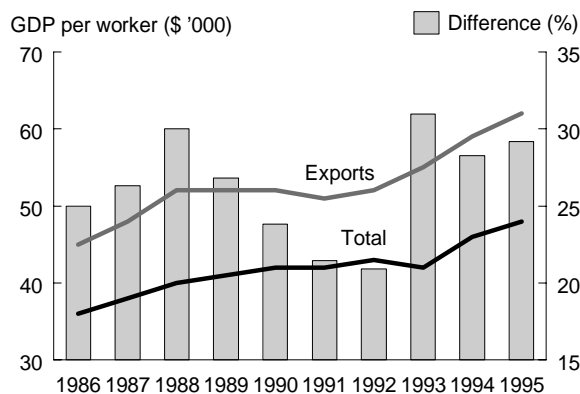
The importance of trade to the economy does not come from an excess of exports over imports; rather, it is from the productivity gains that accrue with increased specialization. In 1995, the value-added

output per worker was nearly one-third higher in the export sector than in the overall economy (Chart E). (The largest GDP per employee was in capital-intensive resources such as mining, chemicals, petroleum and lumber. With capital use factored in, however, their total multifactor productivity may not have been as high.) Moreover, this gap grew nearly 10 percentage points after 1991. As more resources are shifted to industries with above-average labour productivity (and incomes), overall GDP may rise. However, it is difficult to quantify this process, as the incremental changes to production occur at a highly detailed level, and because it is impossible to sort out other factors, notably technological change.

The total (direct plus indirect) number of jobs embodied in exports can be estimated in a similar fashion. It is derived by applying the industry-specific labour/output ratio (typically used in the calculation of labour productivity) to the direct and indirect levels of gross outputs in the corresponding industries.

Because of its high capital-intensity, output per employee is higher in the export sector, and its contribution to overall employment is less than to GDP. In 1995, 21% of all jobs, versus 26% of output, were directly or indirectly derived from exports. The gap between these shares had risen slightly since the start of the decade, reflecting the gains in output per employee in export industries.

Chart E: GDP per worker is nearly one-third higher in the export sector.



Source: Input-Output Division

Perspectives

Notes

1 The share analysis of aggregate demand is in current dollars so that relative price shifts do not distort the data. Computer prices, for example, plunged over 50% between 1992 and 1995, so their share of the economy in constant dollars will change radically the next time the National Accounts base year is updated, making any analysis based on 1992 much less meaningful.

2 It was unusually high at 28% in 1986, when the collapse in oil prices boosted auto sales to a record that still stands. This industry has the highest import content.

3 Furthermore, developments in the current account often trigger changes in the capital account that may offset some or all of the current account effects. This is because deficits have to be financed and surpluses recycled abroad. These mechanisms are beyond the scope of this article.