

Real Exchange Rate Indexes for the Canadian Dollar

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- Real exchange rate (RER) indexes for Canada measure the movement of Canadian prices against foreign prices, expressed in a common currency.
- Two key elements in calculating an RER index are the weights employed and the price or cost indicators selected. In principle, the best weighting systems are those that take account both of bilateral trade between countries and of the competition that their businesses give each other in third markets.
- Because one partner—the United States—weighs so heavily in Canada's trade, the weighting system generally makes little difference in calculating Canadian RER indexes. When exchange rates for some of our other trading partners are fluctuating sharply, however, it is useful to keep an eye on indexes that cover several countries.
- In practice, the most important choice to make is the price or cost indicator on which to build the RER index. Theory and empirical evidence alike favour RER indexes calculated on the basis of unit labour costs (ULC). Yet ULC data are published infrequently and late, and they typically cover only the manufacturing sector. Economic policy-makers should, therefore, consider RER indexes constructed with other indicators as well.

With the Canadian economy becoming increasingly open to foreign markets, interest has been growing, for some years, in the competitiveness of Canadian businesses. Because competitiveness cannot be measured directly, it has been necessary to find ways to monitor its performance indirectly. A favourite method used by researchers and by various national and international agencies has been to devise real exchange rate (RER) indexes. This article offers both a theoretical and a practical analysis of the merits and shortcomings of the different weighting systems and price indicators used in preparing RER indexes and compares various RER indexes that have been calculated for the Canadian economy.¹

Definition and Meaning

RER indexes are measures of how domestic prices (costs) move against foreign prices (costs), when they are expressed in a common currency. They can be written in the following manner:

$$RER = P / ((P_1 E_1)^{w_1} \cdot (P_2 E_2)^{w_2} \cdot \dots \cdot (P_n E_n)^{w_n})$$

where P represents an index of domestic prices (costs) in Canadian dollars; $P_1 \dots P_n$, represent price (cost) indicators for countries whose businesses compete with Canadian firms; $E_1 \dots E_n$, represent bilateral exchange rates of the Canadian dollar against the currencies of those countries; and $w_1 \dots w_n$, are the relative

1. Some of the ideas expressed in this article can be found in Lafrance et al. (1998). Lafrance (1988) also deals with this subject.

weights of those countries in the index.² The choice of weights and that of price indicators are key elements in preparing RER indexes.³

The sharp depreciation in the currencies of several emerging-market countries in 1997 and 1998 has highlighted the importance of the weights used in constructing RER indexes. While most of these countries account for only a modest share of Canada's foreign trade, their businesses often compete with Canadian firms on world markets, especially in the United States. Failure to take this element into account, in a situation such as that of 1997–98, could lead to a faulty assessment of Canadian competitiveness.

The price indicators used in constructing RER indexes reflect changes in product prices or in unit costs for certain inputs (e.g., labour). The most useful price indicators for determining a country's competitiveness are those based on costs. Several relative price indicators for Canada and the United States had divergent profiles in recent years, which may give rise to different interpretations of the Canadian economy's competitive performance. The choice of a price indicator for the RER index is, thus, especially critical.

The importance that monetary authorities attach to RER indexes stems from macroeconomic theory, which states that a fall (rise) in the real exchange rate will tend, *other things being equal*, to promote an increase (reduction) in net exports (exports less imports) of goods and services, and to stimulate (dampen) growth in aggregate demand.

It must be remembered here that the proviso "other things being equal" is a restrictive condition. Many factors can influence the real exchange rate, and most of them can also affect net exports.⁴ For example, if world demand for Canada's raw materials rises, this can contribute both to an increase in Canadian exports

and to an appreciation of the Canadian dollar. A higher real exchange rate, then, does not necessarily mean that our volume of exports is about to shrink: it may, indeed, reflect factors favourable to exports. It does mean, however, that the volume of exports will be lower than it would have been under the same circumstances if the real exchange rate had not risen.

Choosing a Weighting System and a Price Indicator

Weighting system

The first step in calculating weights for an RER index is to determine the categories of goods and services to be included. This is an important step since the choice of weights is influenced by the nature of the goods and services in question. For example, the weight of a country with a large oil-exporting sector will be much weaker in a Canadian RER index if that index considers only trade in manufactured goods. Conversely, it will be much higher if the index takes raw materials into account.

Most agencies that calculate RER indexes recommend using data that relate to all goods and services exposed to international competition—those known in the economic literature as "tradable goods and services."

Most agencies that calculate RER indexes recommend using data that relate to all goods and services exposed to international competition—those known in the economic literature as "tradable goods and services." This choice reflects the fact that changes in the real exchange rate influence economic activity primarily through their impact on competitiveness in the tradable goods and services sector.⁵

2. The RER index is most often an index with geometric weights. This type of weighting has at least two advantages: the measure of percentage variations that the index records is independent of the period used for calculating the weights, and the method of weighting takes account of substitution effects induced by shifts in relative prices for the different countries included in the index.

3. In this article, RER indexes are expressed as ratios of Canadian prices to foreign prices. An increase in the index over a certain period therefore implies a real appreciation of the Canadian dollar. Since a measure of this kind relates to a certain period, it cannot tell us whether our prices or costs are higher or lower than those of other countries, in absolute terms. It is possible to produce absolute RER indexes, however, using data on purchasing power parity, such as those published by Statistics Canada and the OECD.

4. For a more detailed discussion of factors that can influence the exchange rate, see Lafrance and van Norden (1995).

5. Exchange rate shifts can influence economic activity through their effect both on relative prices for tradable goods and services and on those for non-tradable goods and services. However, this influence is indirect and its importance, from an empirical standpoint is uncertain.

Once the categories of goods and services have been selected, the next issue is what weight to give various countries. In principle, no country should be given a zero weighting if its firms compete with Canadian producers. In practice, however, limitations in data availability and quality will restrict the number of countries that can be included. Moreover, it is hardly worthwhile to produce indexes that cover many countries, if comparable results can be obtained with more restricted indexes. In the case of Canada, the dominance of the United States as a trading partner (Chart 1) suggests that the number of countries makes little difference to the RER index. This assumption is generally verified.

There are several methods of calculating real exchange rates using international trade data. An import-competitiveness indicator measures a country's competitive position in its home market, while an export-competitiveness indicator measures its competitive position in its export markets. Generally speaking, policy-makers and analysts are interested in an economy's worldwide competitiveness. Measures of the real exchange rate must, therefore, take into account both the domestic market and export markets.

Calculating relative weights for imports is a simple matter of measuring the share of imports coming from various countries. A country from which Canada imports a great deal will thus have a sizable weight-

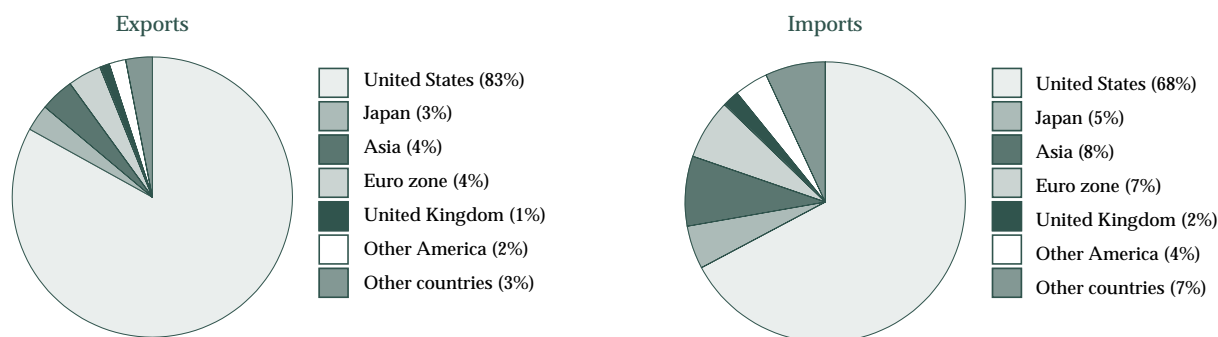
ing. The data in Chart 1 show that the United States holds the predominant position in Canadian imports. When it comes to export weights, these can be determined either from a bilateral viewpoint, or by using the double-weighting approach.⁶

Under the bilateral approach, weights are calculated on the basis of trade between Canada and each of its partners. The drawback of this approach is that it does not take account of competition between two countries' firms in third markets and so tends to understate the degree of competition facing Canadian producers in foreign markets. For example, Canadian firms do not export much to Scandinavia, but they must compete with Scandinavian paper producers in the European and U.S. markets. In principle, this element should be considered in the calculations if the intention is to produce an index that reflects an economy's competitiveness.

With the double-weighting approach, the competitiveness of country A's exports compared with those of country B is derived from a combination of two components: the weight of B in A's exports, which reflects direct competition between exporters and domestic

6. The International Monetary Fund calculated country weights with a multilateral exchange rate model (MERM). That model had limited country coverage, however, and is now dated. The IMF has not published MERM-based exchange rate indexes for several years. On this point, see Artus and McGuirk (1981).

Chart 1
Shares of Selected Countries in Canada's Foreign Trade
 As a percentage of total imports and exports*



* "Euro zone" covers member countries of the European Economic and Monetary Union; "Asia" covers continental Asia but excludes Japan; "Other America" covers all western hemisphere countries except the United States and Canada. Based on 1997 data. Because of rounding, figures do not necessarily add to 100.

producers in a given export market for goods and services, and the weight of B as a competitor of A in third markets, which reflects competition between both countries' exporters in a third country's market. This approach is certainly more satisfying from the conceptual viewpoint, but it is more difficult to apply. The technical aspects of calculating weights for a given index are explained in the box on page 23.

It is desirable to use sector-specific data in calculating double-weighted indexes. It may be, for example, that two countries sell exports to a third country but that their exports are not mutual substitutes. Thus, firms from these countries may not really be competing with each other in that particular market, a situation that will not be revealed by aggregate trade data. Yet sector data are rarely used, because they complicate things considerably, and in many cases they are simply not available. Before discussing the actual impact of choosing a weighting system for Canada, some conceptual considerations about the choice of a price or cost indicator should be addressed.

Price or cost indicators

Two questions arise in choosing the indicators to use in developing an RER index: What kinds of goods and services should be considered? And should a price or a cost indicator be used?

One approach to the first question is to choose an indicator that represents a basket of tradable goods and services that are comparable across countries. It is the tradable-goods sector, after all, that is most directly affected by shifts in the real exchange rate. It is best to exclude raw materials when comparing price indicators, however, because their prices cannot diverge significantly from one country to another, even if firms' underlying competitiveness changes.

Costs are . . . a better indicator of competitiveness than prices.

In choosing between price and cost indicators, the preference will normally fall on costs. Costs are, in fact, a better indicator of competitiveness than prices, because firms can compress their profit margins or reduce their prices to reflect current economic conditions in order to preserve their market share. Since

there is no global measure of costs, however, one must use either partial measures or price indexes.

Among the price and cost indicators used in constructing RER indexes are those for export prices, consumer prices (CPI), wholesale prices (WPI), and producer prices (PPI) as well as the GDP deflator (or index) and unit labour costs (ULC). Each of these measures has its strengths and weaknesses.

Export prices, or prices for Canada's exports relative to those of our competitors, are the most direct measure of prices for goods that are actually traded internationally. However, the type of goods included may differ substantially from one country to another, and many countries do not produce the necessary statistics. Moreover, export-based price indexes can be disproportionately influenced by commodity prices, which are determined by world markets. This is a particular problem for Canada, where commodities have a considerable weight in overall exports. Thus, a drop in commodity prices will lower any Canadian RER index based on export prices, but such a drop does not mean that the country's international competitiveness has improved (Lafrance 1988).

Because they apply to all sales, and not just to exports, producer price indexes (PPIs) reflect the behaviour of prices in the tradable-goods sector, rather than that of export prices. They still have many of the disadvantages of export price indexes, however. Their composition varies considerably across countries, which makes them difficult to compare. Moreover, they may include goods that are not traded internationally. Finally, prices of goods for export are generally quoted in foreign currency, normally the U.S. dollar, which means that the PPI will be directly affected by changes in the exchange rate. According to Statistics Canada, this effect is about 27 per cent in Canada, i.e., a 1 per cent rise in the Canadian dollar against the U.S. dollar will produce a drop of about 0.27 per cent in the PPI. This effect is felt particularly in the automobile, wood, paper, base metals, and alcoholic beverages industries.

Since consumer price indexes are published at more regular intervals, they are frequently used to track recent movements in the real exchange rate. Yet they too have a number of drawbacks as indicators of international competitiveness: they may include a sizable proportion of imported goods, which means that they will understate an improvement in competitiveness in the wake of a domestic currency devaluation; they are

Calculating Double-Weighted Indexes

The purpose of a double-weighted index is to take account not only of bilateral trade between Canada and other countries, but also of competition between Canadian and foreign producers in third markets (e.g., between Canadian and U.S. producers in France). Such an index can be represented by the following equations:

(a) Import weights: $wm_j^i = \frac{m_j^i}{m_j}$

(b) Export weights: $wx_j^i = \left(\frac{x_j^i}{x_j} \right) \left(\frac{y_i}{y_i + \sum_{s \neq i, j} x_s^i} \right) + \sum_{k \neq i, j} \left(\frac{x_j^k}{x_j} \right) \left(\frac{x_i^k}{y_k + \sum_{s \neq k, j} x_s^k} \right)$

(c) Total weights:

$$w_i = \left(\frac{m_j}{x_j + m_j} \right) wm_j^i + \left(\frac{x_j}{x_j + m_j} \right) wx_j^i$$

where:

$x_j^i(m_j^i)$ = exports (imports) of country j to (from) country i ;

$x_j(m_j)$ = total exports (imports) of country j ;

y_i = output of country i for domestic market;

N = all countries considered in calculating the index;

s = businesses of countries other than i and j .

Equation (a), for example, can be used to calculate the weight of the United States (i) in Canadian bilateral imports (j). In (b), the weights calculated could take account of the share of Canadian exports to the United States and the importance of U.S. companies as competitors of Canadian firms in third markets (k). When calculating U.S. weights, one must take account of the share of U.S. firms in the U.S. domestic market and the share of U.S. firms in third markets. Finally, equation (c) would be used to calculate the total weight of the United States in the Canadian RER index.

limited to prices for consumer goods, but include items that are not traded internationally, such as housing and services; and finally, they include the effect of consumption taxes and subsidies, which are not taken into account in comparisons of competitiveness.

Measures based on GDP deflators or GDP indexes are not limited to consumer goods. They include capital goods and export products. They also have the advantage of excluding imports. On the other hand, they cover sectors not engaged in international trade, such as construction, household services, and the government. It should be noted that several sources of information are included in Canada's national accounts, including the CPI, salaries in the government sector, and the PPI. Consequently, our GDP price deflator is

implicitly affected by problems associated with these price indexes.

Relative unit labour costs, expressed in a common currency, are often used as indicators of international competitiveness. ULCs represent average expenditure on wages and fringe benefits per unit of the good or service produced. Ideally, a competitiveness measure should also take into account other costs such as the cost of capital. Lack of data, however, usually dictates reliance on ULCs.

Inter-country ULCs in manufacturing are usually compared, as representative of the tradable-goods sector (Table 1). One problem with this approach is that it does not take account of the cost of services that manufacturers must purchase. It has become increasingly

Table 1
Characteristics of Selected Real Exchange Rate Indexes

| | Country coverage | Weighting scheme | Price and cost measures |
|--------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| BIS | 21 industrialized countries and 5 emerging-market countries | Double weights for exports of manufactured goods in 1990 | CPI, PPIs (export unit values), and unit labour costs in manufacturing |
| IMF | 21 industrialized countries for ULC indexes, broad group of countries or regions for CPIs ^a | Double weights for exports of manufactured goods in 1989–91 in index based on ULC Double weights for manufactured goods, primary products, and tourism services ^b in 1988–90 | Normalized ULC index, and CPI ^c |
| OECD | 28 OECD countries and 16 emerging-market countries or regions | Double weights for exports of manufactured goods; weights are revised each year (chain index) | CPI, ULC in manufacturing, export unit values of manufactured goods |
| J. P. Morgan | 22 OECD countries and 23 emerging-market countries | Bilateral trade based on trade in manufactured goods | Producer price indexes |
| BoC | 16 industrialized countries | Double weights for merchandise exports in 1994–96. The 11 countries of the euro zone are taken as a group. | CPI, GDP deflators, and ULC index in manufacturing |

a. Country coverage varies because competitor countries are excluded if their weight is less than 1 per cent. The weight of the remaining countries is then scaled back to add to unity.

b. For 46 countries where tourism accounts for more than 20 per cent of GDP. However, bilateral trade weights are used for an additional 35 countries because of data limitations.

c. Unit labour cost series are filtered to remove changes during the business cycle. The IMF also reports, on a quarterly basis, RER measures based on relative unit labour costs, relative value-added deflators in manufacturing (adjusted for indirect taxes), relative wholesale prices, and relative export unit values for 21 industrialized countries.

common in recent years for manufacturers to subcontract for some of the administrative and other services that were previously performed in-house. Productivity is, of course, difficult to measure, and it is probably understated in the services sector. As Maclean (1996) has pointed out, underestimating productivity growth in the services sector will produce a concomitant overestimation of productivity gains in the goods sector. If this phenomenon of understatement progresses at a different pace in Canada and abroad, then a comparison of ULCs in the manufacturing sector may well distort underlying trends in competitiveness. It might, therefore, be useful to extend ULC comparisons to the entire economy, to take account of services. On the other hand, such a comparison will bring in sectors that are not exposed to international competition.

Statistical measures of labour productivity show significant fluctuations over the various phases of the business cycle, reflecting in particular the tendency of

firms to hold on to their workers (“labour hoarding”) if they think a downturn will be short-lived. It would be better in theory, then, to use a cyclically adjusted ULC index. Unfortunately, there is no consensus among economists on the best method of adjusting for these fluctuations.

Comparing Alternative RER Indexes for Canada

The following is an examination of how Canadian RER indexes perform, in light of the weighting systems and price indicators used in each case.

Weighting systems

Table 1 describes several RER indexes calculated by various agencies, including the Bank of Canada. Weights are shown in Table 2. From Table 1, it is clear that the preferred approach is to use a double export-weighting system, which is usually based on trade in manufactured goods.

It should be noted that, while the weight of the United States varies depending on the indicator used, it nevertheless predominates in all cases. Chart 2 compares different measures of Canada’s real exchange rate with a bilateral Canada-United States index. For ease of comparison, consumer prices have been used in

Table 2
Country Weights in Selected Indexes (percentage)

| Country | IMF (ULC) | IMF (CPI) | OECD | J.P. Morgan | BIS | BoC (C-6) |
|----------------------------------|-----------|--------------------|-------------------|-------------------|------------------|-----------|
| United States | 82.39 | 56.22 | 75.80 | 68.60 | 69.90 | 85.84 |
| Euro zone | 7.66 | 15.15 ^a | 8.20 ^b | 9.50 | 8.80 | 5.94 |
| United Kingdom | 2.45 | 3.94 | 8.20 ^b | 2.40 | 2.50 | 2.17 |
| Other Europe ^c | 1.33 | 1.37 | 0.50 | 1.90 | 2.60 | 0.78 |
| Japan | 5.95 | 11.83 | 5.00 | 8.30 | 8.70 | 5.27 |
| China and Hong Kong | - | 2.77 | 2.40 | 0.90 ^d | 7.0 ^e | - |
| Other Asia ^c | - | 5.50 | 4.70 | 5.60 | 7.0 ^e | - |
| Mexico | - | 2.01 | 2.00 | 1.50 | 7.0 ^e | - |
| Other Latin America ^c | - | 1.20 | 0.50 | 0.80 | - | - |
| Other | 0.22 | - | 0.80 | 0.50 | 0.40 | - |

a. Excludes Austria, Finland, Ireland, Spain, and Portugal

b. The OECD reports a weight of 15 for the European Union.

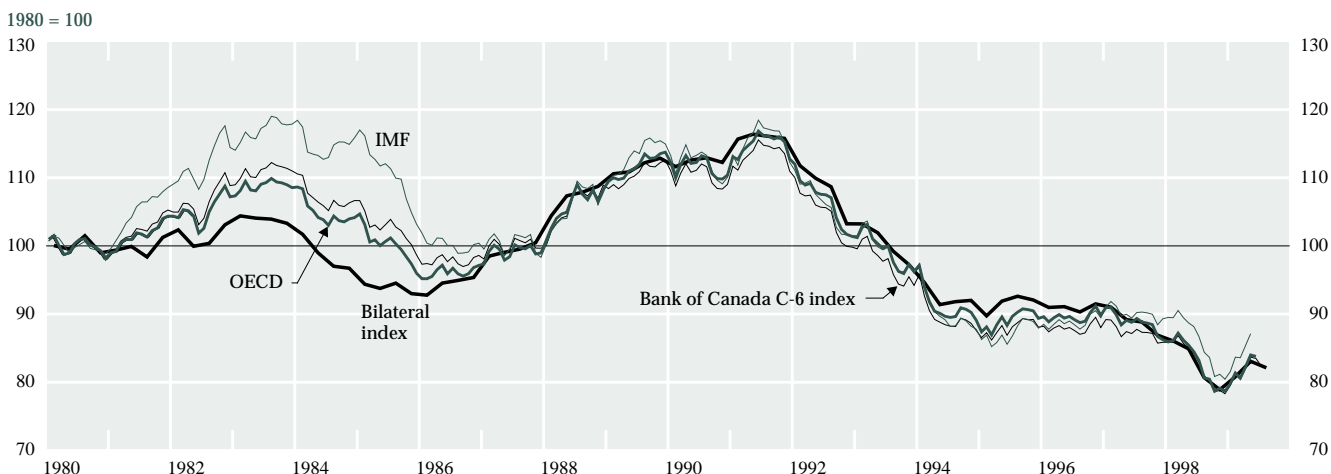
c. Other Europe, other Asia, and other Latin America may cover different sets of countries for the various indexes. These categories do not, however, include all the countries in these regions.

d. Hong Kong not included

e. Taiwan, Hong Kong, South Korea, Singapore, and Mexico have a combined weight of 7.0.

Chart 2

Selected CPI-Based RERs



calculating the indexes.⁷ The various measures are strongly correlated among themselves, mainly because of the dominant weight of the United States. Yet differences of some significance can be observed at certain times. Between 1981 and 1983, for example, the real bilateral exchange rate did not appreciate as much as the other measures, essentially because the U. S. dollar was itself rising strongly against other major currencies over this period. Moreover, measures that include emerging markets, such as the RER index produced by the IMF, show a lesser depreciation of the Canadian dollar in 1997 and 1998, because it was rising against the currencies of those countries. There is a risk, however, in using very broad indicators that include developing countries, since the quality of the data base may be very uneven.

What then can one say about the empirical link between these various indexes and net Canadian exports or output? Lafrance et al. (1998) present the results of econometric tests of this link and conclude that there are no statistically significant differences between data produced with the various weighting systems. Nor is there any marked difference between bilateral indexes for Canada and the United States and those that cover several countries. This suggests that, in Canada's case, a relatively limited country coverage is sufficient to capture fluctuations in the real exchange rate.

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Price or cost indicators

If Canada's competitive performance is examined in light of various price or cost indicators, some fairly substantial differences are apparent. These can be seen in Chart 3, which shows several bilateral RER indexes for Canada and the United States to illustrate the impact of selecting price or cost indicators. Given the predominance of the United States, indexes with a broader country coverage still show the same performance profile. Chart 4 shows changes in relative price indexes, each expressed in national currency. It is clear that price indexes may diverge considerably. The GDP price deflator and the CPI, however, fluctuate less widely than the other indexes, reflecting the basically similar trend of inflation in the two countries. Note that the rate of inflation rose more rapidly in Canada than in the United States during the 1980s, but less strongly during the 1990s. Nevertheless, the PPI maintained its upward trend in Canada relative to its counterpart in the United States, partly reflecting the effect of the depreciation of the Canadian dollar on prices of tradable goods.

7. This measure was chosen because it is constructed similarly in many countries.

Chart 3

Canada-United States Bilateral RERs Based on Selected Indexes

(Based on data expressed in Canadian dollars)

1980 = 100

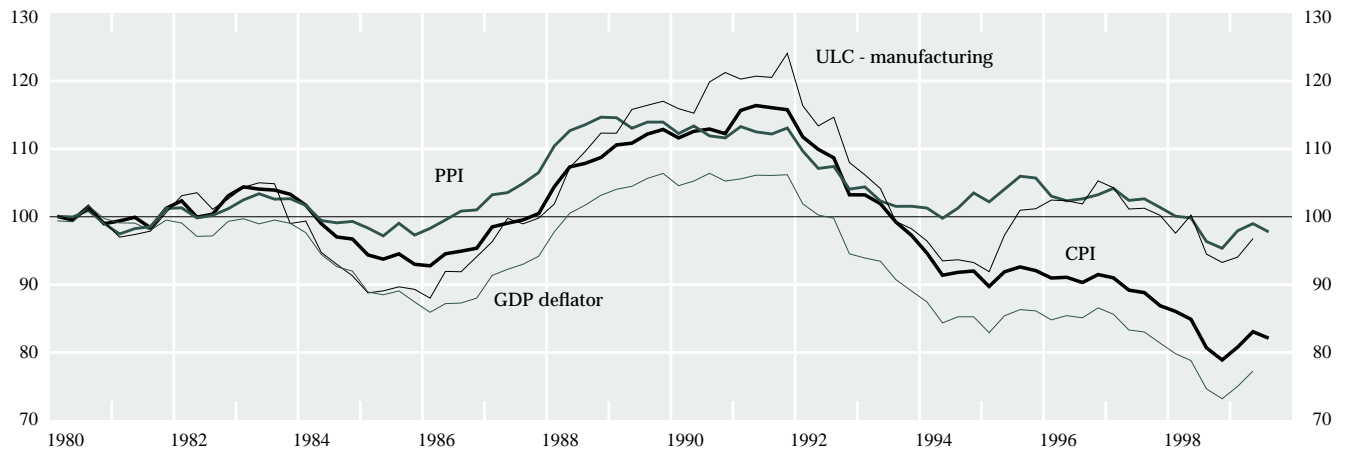
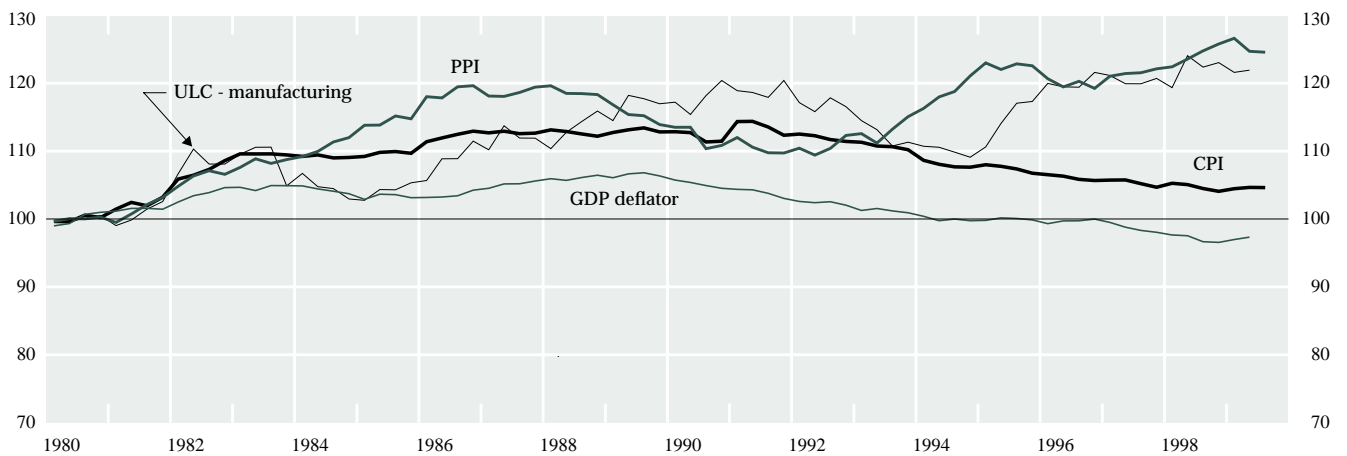


Chart 4

Ratio of Canada's Price and Cost Indexes and Their U.S. Counterparts

(Based on data expressed in national currencies)

1980 = 100

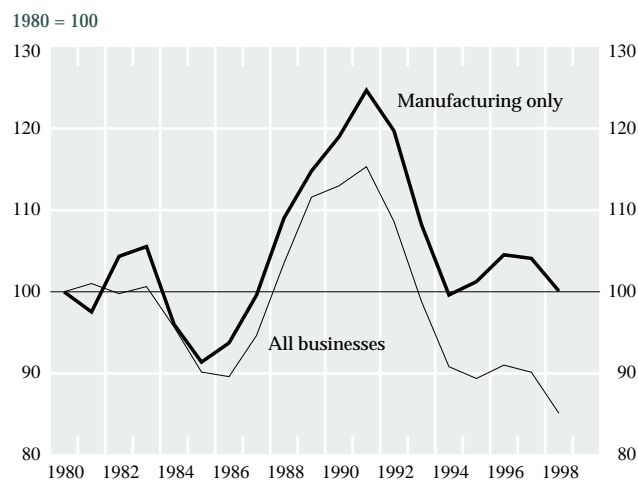


RER indexes . . . tend to cast Canada in a more favourable light when aggregate business sectors are compared, rather than manufacturing industries alone.

One point worth noting here is that RER indexes calculated with ULC data tend to cast Canada in a more favourable light when aggregate business sectors are compared, rather than manufacturing industries alone (Chart 5). The main reason for the difference in the levels of the two series is that, since the mid-1980s, measures of labour productivity growth in the manufacturing sector in Canada have not kept pace with those of the United States. On the other hand, for the business sector as a whole, productivity growth has been roughly similar in both countries. This issue was addressed a few years ago by Dion and Lafrance (1993). They found that a number of factors probably contributed to a weaker performance in Canada's manufacturing sector, including a deeper and longer recession here in the 1990s, more drastic industrial restructuring south of the border, and differences in the economic structures of the two countries.

With respect to this last factor, it will be recalled that the high technology sector—where productivity

Chart 5
RERs Based on Unit Labour Costs in Canada and the United States



growth has been especially rapid—is proportionately less developed in Canada than in the United States.⁸ Differences in industrial structure also have implications for interpreting PPI-based real exchange rates. Productivity gains in high-tech industries have generally led to declining prices for their products. The greater weight of this sector in the U.S. economy, compared with the Canadian, has helped to moderate PPI increases much more in the United States. Lower growth in overall manufacturing productivity reduces Canadian competitiveness only to the extent that Canadian and U.S. firms operate in the same or similar product markets.

The divergent movement of RER indexes during the 1990s underlines the importance of the choice of the price indicator on which to construct the RER index. While RER indexes based on the CPI or GDP deflator continued to decline after 1994, those based on ULCs or PPIs more or less stabilized.

The sharp price jumps for certain raw materials beginning in 1994 pushed the PPI higher towards the middle of the decade. When these prices later fell, under the impact of the Asian financial crisis, the effect could have been reversed, but it was partially offset by the depreciation of the Canadian dollar.

It should be noted that CPI- and ULC-based RER indexes often move in opposite directions. When foreign demand for Canadian products strengthens, prices tend to firm, while sales and output rise. The result is higher productivity, because businesses generally wait to make sure that demand is going to stay at the higher level before they hire new workers. This was apparent in both the early 1980s and the early 1990s, when the economy was just beginning to climb out of recession. Wages and employment do not start to rise until some time after prices and output recover. As a result, ULCs tend to remain high during recessions, when prices have already started to fall. This explains why, although producer prices dropped during the 1990–91 recession, relative ULCs rose in Canada (Chart 4). Changes in RER indexes must, therefore, be interpreted carefully before conclusions are drawn about their impact on competitiveness.

8. The superior U.S. labour productivity performance appears to be the result of large productivity gains in two specific industries: industrial machinery and equipment and electrical equipment, both of which represent a larger share of manufacturing output in the United States than in Canada. The gap disappears when these two industries are excluded from the calculations (Sharpe 1999 and Statistics Canada 1999).

One fact that must be borne in mind is that ULC indexes, especially in emerging-market countries, are often published with a lag of one or two years. Generally, the only timely data available are for the CPI. Since emerging markets have often experienced bouts of very high inflation, the problems associated with one price indicator or another are overshadowed by the general trend of inflation. Thus, distinctions about the merits of various price series are, in this instance, of secondary importance.

What can one say empirically about the link between RER indexes based on various prices or costs and net Canadian exports and output? Tests based on the relationship between various RER indexes and net exports or output show that manufacturing ULCs have the greatest forecasting ability, whether one looks at indexes limited to Canada and the United States, or at more broadly based ones (Lafrance et al. 1998). RER indexes based on the GDP deflator also produce useful results. On the other hand, CPI- and PPI-based indexes do not appear to be good leading indicators of Canadian export trends.

* * *

In short, there are several ways of calculating real exchange rate indexes for use as indicators of competitiveness. Those examined here have both advantages and drawbacks. The analysis suggests three main conclusions.

First, the high degree of concentration of Canada's international trade means that it is easy to capture the trend of the country's economic competitiveness

using real exchange rate measures that are limited to relatively few countries. This conclusion is all the more important in light of the availability and quality problems with data for emerging markets. Expanding the range of countries can be useful, however, when exceptional circumstances occur, such as the financial crisis that hit many emerging economies in 1997-98.

Second, to the extent that a competitiveness index seeks to capture a country's ability to sell its products abroad, it is better to focus on the cost components of tradable goods and services produced by the country in question, rather than on their selling prices. In this regard, relative ULCs seem to be the most appropriate, if imperfect, indicators of competitiveness. Manufacturing ULCs, when compared with ULCs for the overall business sector, have the advantage of being more directly linked to the tradable-goods sector and of being more readily available for a large number of countries. As other sectors of the Canadian economy become increasingly exposed to international trade, however, it would be wise to keep an eye on ULCs for the overall business sector.

Third, all competitiveness indicators show that, over the last 20 years, Canadian firms have maintained or improved their performance. On the other hand, that performance is due almost entirely to depreciation of the currency and, to a much lesser extent, to the lower inflation that Canada has experienced during the last decade, in comparison with the United States. Enhancing Canada's productivity is a challenge for the future, if the country is to maintain or strengthen its competitive position.

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