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The Soaring Loonie and Prices: Lower Inflation for Consumers?

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The Soaring Loonie and Prices: Lower Inflation for Consumers?

Radu Chiru
Prices Division

Summary

For Canada, the major economic event in 2003 was the turnaround in the Canadian dollar against the US greenback.

On November 18, 2003, the 21.7% increase from 63.39 cents US to 77.13 became the largest 12-month movement up or down in Canada's history.

At the same time, Canada's inflation rate, as measured by the Consumer Price Index, slowed considerably. In January 2003, prices were 4.5% higher than they were a year earlier. By January 2004, this year-over-year rate of growth had been cut to only 1.2%.

At the outset of 2003, Canadian consumers were experiencing larger overall price increases than their American counterparts. But in the spring, the gap started to narrow as inflation in Canada slowed. By September, prices were rising faster in the United States than they were in Canada for the first time in over a year.

The question is, how much of the slowing consumer inflation in Canada related to the soaring Canadian dollar? To what extent were Canadian consumers paying less for certain imported goods and services because the exchange rate meant they were costing less?

There is evidence that some Canadian consumers did benefit somewhat from a stronger dollar. Prices of some goods with a high import content, such as oil-based products, automobiles and computers, either fell or slowed considerably. Of course, crude oil prices fell worldwide during this time, quite apart from the impact of the weaker US dollar. Low interest rates also worked to slow down consumer inflation in Canada. Furthermore, the stronger dollar did not have a direct impact on the prices of many items in the CPI. Overall, at least half of the slowdown does not appear to be directly linked to the exchange rate.

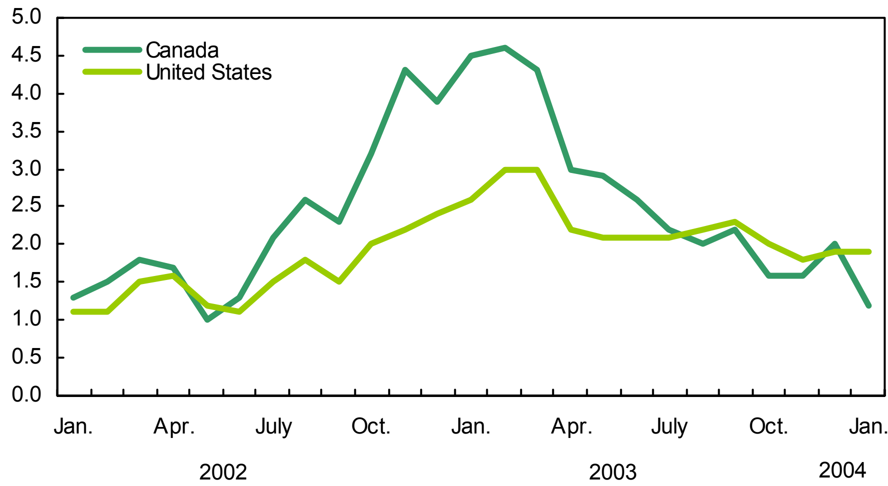
However, it is difficult to estimate the true impact of the exchange rate on inflation. It would be hard to determine what prices would have been without the appreciation of the Canadian dollar. In addition, the relationship between the exchange rate and Canadian prices is very complex. Many players' decisions are reflected in the final price of goods and services: importers, wholesalers and retailers all make their own pricing decisions based on considerations such as current and forecasted market conditions. The exchange rate is just one of many factors in these decisions.

This paper studies the recent slowdown in Canadian consumer inflation, with a special focus on the impact of the appreciation of the Canadian dollar. It approaches this issue by analyzing the contribution of goods and services to the deceleration in the CPI, and by comparing Canadian and US price movements for similar items.

Major deceleration in Canadian consumer prices in 2003

Canadians were experiencing larger overall price increases than US residents at the beginning of 2003. By spring however, the gap began to narrow as Canadian consumer prices slowed down. In August 2003, increases in Canada's CPI fell below those in the United States for the first time in over a year.

Canadian consumer inflation closed the gap with the United States



Sources: Statistics Canada, Prices Division and U.S. Bureau of Labor Statistics.

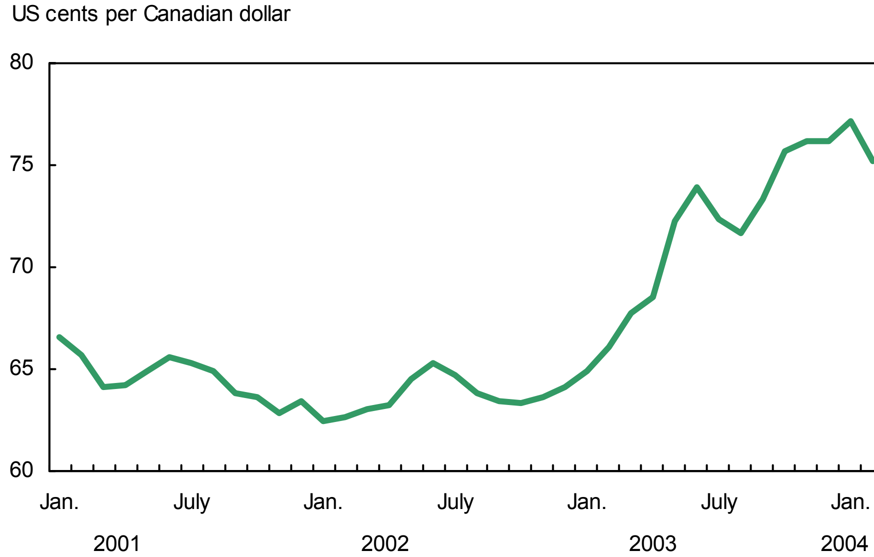
Canadian consumer prices in January 2003 were 4.5% higher than they had been in January 2002. By January 2004, this 12-month increase had fallen to 1.2%. This led to speculation about how much of this deceleration was due to the Canadian dollar (CAD) strengthening versus the US dollar (USD).

Stronger Canadian dollar can potentially benefit consumers

For Canada, the major economic event in 2003 was the turnaround in the Canadian dollar against the US dollar.[1]

1. See P. Cross, "The economy: Year-end review", *Canadian Economic Observer*, Statistics Canada catalogue no. 11-010-XIB, April 2004.

On November 18, 2003, the 21.7% increase from 63.39 cents US to 77.13 became the largest 12-month movement up or down in Canada's history.



One would expect a stronger CAD versus the USD to have a positive impact on consumer prices in Canada.

Because Canada's imports come in large part from the United States, the stronger CAD is expected to push down prices paid by Canadians for certain items, particularly goods which are largely imported from the United States. Since over the last year the Canadian dollar remained relatively stable against the Euro and because the Mexican peso is used in a very small share of import transactions, the effect of these two currencies on the Canadian CPI is thought to be insignificant, and is not discussed further.

Most people do not expect the local barbershop to change its prices in tune with the exchange rate. However, we might expect to pay less for imported items like oranges or washing machines when the CAD gains strength. This is because a large portion of their retail value (half for washing machines) relies on the USD.

In this study, reliance on USD means that it is imported from the United States or China, since the Chinese yuan is pegged to the USD.[2]

When the CAD gains strength against the USD, the costs of imports for retailers or wholesalers become lower, and competition in the market should also lead to lower prices for consumers.

By the time the consumer buys the final product however, there have also been transportation, wholesaling and retailing margins incorporated into the price as well as consumption taxes. This value added is really Canadian in origin and not directly tied to the exchange rate.

2. Finished goods imports from other countries are known to be sometimes bought in USD and therefore would rely on the USD, and not the currency used in the origin country. However, this relationship is not included in this study.

Even if cheaper imports tied to the USD could potentially have a direct impact on consumer prices in Canada, there are many other factors influencing prices between the Canadian border and the store shelves. One such factor could be the time and cost to update price listings and catalogues. Also, import contracts are often signed weeks or months ahead of the product's arrival on store shelves. Another factor is the observed tendency of retailers and wholesalers to absorb profits or losses due to changes in the exchange rate.[3] For this reason, the fact that cheaper consumer goods are arriving from the United States or China does not mean their price will automatically fall for Canadian shoppers.

The relationship between a stronger dollar and consumer prices becomes even more complex, considering that Canadian producers also rely on imports to produce goods sold to Canadians. This indirect impact of a stronger CAD involves more players and is likely to take longer to reach consumers.

It is impossible to know precisely the exchange rate's recent impact on consumer prices, because we do not have a measure of what the prices would have been without the strengthening of the CAD. This paper looks at the goods and services that had the largest contributions to the recent slowdown of consumer inflation. Here, empirical evidence is gathered to assess what the exchange rate's impact may have been.

Higher the USD content, larger the slowdown in inflation

A higher USD content appears to be linked to the slowing down of consumer inflation. The USD content represents the proportion of US and Chinese imports in the retail value of goods and services. It appears that the higher the USD content, the larger the slowdown in prices.

Contribution to the CPI deceleration, Canada, by USD direct import content, from January 2003 to January 2004

% USD direct import content	CPI weight[1]	12-month % change		Deceleration[2]	Contribution to deceleration	% contribution to deceleration
		Jan. 2003	Jan. 2004	Jan. 2003 to Jan. 2004		
	%			% point		%
0%	51.2	3.8	2.5	-1.2	-0.63	24.6
0 to 10%	16.9	2.5	2.2	-0.3	-0.06	2.2
10 to 20%	8.4	0.5	-0.2	-0.7	-0.05	2.2
20 to 30%	5.8	0.2	-0.6	-0.8	-0.05	1.8
30 to 40%	13.1	1.5	-2.0	-3.5	-0.45	17.8
40% and above	4.6	25.2	-3.5	-28.7	-1.31	51.4
All CPI Items	**100.0**	**3.7**	**1.2**	**-2.6**	**-2.55**	**100.0**

Notes:
Some components may not add up precisely due to rounding.
These estimates are based on centred 3-month moving averages.
1. These weights are based on the 2001 Canadian consumer expenditure patterns. They are applied to the whole period even if there was a change in basket in January 2003. This avoids weight shift influences on the estimates but totals are not exactly identical to those published.
2. Twelve-month % change for January 2004 minus 12-month % change for January 2003.
Sources: Statistics Canada, Prices Division and Input-Output Division.

3. See J. Bailliu and H. Bouakez, "Exchange Rate Pass-Through in Industrialized Countries", *Bank of Canada Review,* Spring 2004.

Goods with a high reliance on the United States dollar—that is, higher than 30%—accounted for more than two-thirds (69%) of the slowdown in consumer inflation between January 2003 and January 2004.

Goods and services with a USD content of between 0% and 30% accounted for almost one-third of the CPI basket. But they contributed only 6% to the overall slowdown. Those with a 0% direct reliance on the USD accounted for almost a quarter.

However, the exchange rate is only one factor contributing to the drop in the price of goods with a high USD content.

Most of the slowdown not directly linked to the soaring loonie

A closer look at the types of expenditure items that contributed to the slowdown reveals that over half of the deceleration does not appear directly linked to the exchange rate.

There are two types of contributing factors to this: the falling price increases for services that have no direct import content, and lower world oil prices up to January 2004. Together, these accounted for over half of the overall slowdown. World crude oil prices accounted for at least a third (see next section for further details) and services accounted for nearly another quarter.

The prices of some expenditure items with a zero direct reliance on the US dollar decelerated over the year. These were mostly services that are not influenced directly by the exchange rate. These represented more than one-half of the average consumer's CPI basket and accounted for almost a quarter of the overall deceleration in the CPI last year.

Mortgage interest costs are the most important contributor to the slowdown within the category with zero import content. Their year over year price increases went from 2.7% in January 2003 to 0.4% in January 2004. This reflects mostly lower interest rates.

Private and public insurance premiums also contributed significantly to the CPI slowdown, as price increases went from 13.3% in January 2003 to 5.8% in January 2004.

Prices also fell between January 2003 to January 2004 for several other services such as air transportation, travel tours, traveller accommodation and leasing of automotive vehicles. Some of these prices could certainly have been indirectly affected by the exchange rate. For example, the price of leasing automobiles is closely linked to the price of new automobiles, as well as interest rates. In this study, the direct USD content is zero, since automobile leasing is a service. This item's impact was 3% of the overall slowdown, but how much of it can be attributed to the stronger CAD is unknown.

Gasoline was the most important factor in the CPI slowdown

Goods with a very high USD reliance, that is 40% or more, were responsible for more than one-half (51.4%) of the CPI deceleration during 2003. Oil-based products explained almost all of this contribution, gasoline in particular.

Based on the Input/Output tables of the Canadian economy, half of the value of gasoline at the pump is added within Canada in the form of transportation, refining and retail margins. For the crude oil portion of gasoline prices at the pump, much of this is also Canadian-produced and very little is imported. However, it is widely known that prices of Canadian crude oil closely follow world

prices, which are negotiated in USD. This happens regardless of how much of its crude oil needs Canada meets with imports in any particular year. For this reason, this study assumes that the crude oil content of oil-based consumer products relies directly on the USD.

Contribution to the CPI deceleration from goods with a USD direct import content of 40% and more, Canada

Goods	USD direct import share	CPI weight[1]	12-month % change Jan. 2003	12-month % change Jan. 2004	Deceleration[2] Jan. 2003 to Jan. 2004	Contribution to deceleration	% contribution to deceleration
	%				% point		%
Gasoline and other fuels	50.2	3.8	26.0	-3.5	-29.6	-1.11	43.5
Fuel oil and other fuel	43.8	0.4	31.9	-5.1	-37.0	-0.16	6.3
Fuel, parts and accessories for recreational vehicles	45.0	0.2	14.3	-0.6	-14.9	-0.03	1.2
Laundry and dish-washing appliances	47.9	0.2	2.5	-2.3	-4.8	-0.01	0.3
Sub-total	**49.3**	**4.6**	**25.2**	**-3.5**	**-28.7**	**-1.31**	**51.4**
All CPI Items	**10.6**	**100.0**	**3.7**	**1.2**	**-2.6**	**-2.55**	**100.0**

Notes:
Some components may not add up precisely due to rounding.
These estimates are based on centred 3-month moving averages.
1. These weights are based on the 2001 Canadian consumer expenditure patterns. They are applied to the whole period even if there was a change in basket in January 2003. This avoids weight shift influences on the estimates but totals are not exactly identical to those published.
2. Twelve-month % change for January 2004 minus 12-month % change for January 2003.
Sources: Statistics Canada, Prices Division and Input-Output Division.

Stronger loonie responsible for portion of lower pump prices

Fuel oil and gasoline pump prices in Canada and the United States appear to follow world crude prices, which seem to explain most of the variation. The exchange rate is also seen driving relatively lower price increases in Canada starting in late 2002, when the CAD began to strengthen.

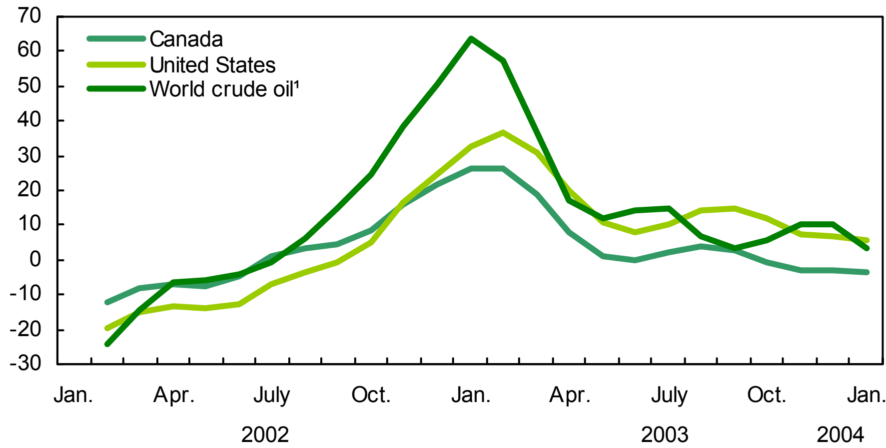
In the 12 months ending January 2004, gasoline prices in Canada fell by an additional nine percentage points compared to the United States. This is consistent with the assumption that about half of the CAD/USD exchange rate's movement (17% over the previous January) would be reflected in lower pump prices in Canada.

Although the impact of different tax regimes in the two countries complicates the picture, at least two thirds of this deceleration was probably due to world crude prices and not the exchange rate.[4]

4. Assuming that the twelve-month price increases in January 2004 in Canada would have been the same as in the United States if the two currencies had stayed constant, the deceleration would have been 21.6 percentage points instead of 29.6. Under this assumption, world crude prices explain about two thirds of the slowdown in fuel prices. If we assume that only the difference in January 2003 to January 2004 price deceleration between the two countries is due to the exchange rate, then world crude prices contributed to 90% of the overall Canadian slowdown in fuel prices, because Canada's price changes only slowed by an additional 2.6 percentage points compared to the United States during these 12 months.

Major swings in gasoline and crude oil prices

12-month % change, gasoline and crude oil prices, centered 3-month moving averages



1. *West Texas Intermediate.*

Sources: Statistics Canada, Prices Division, U.S. Bureau of Labor Statistics and New York Mercantile Exchange.

Prices of new cars and computers dropped

The prices of goods with a high USD direct import share, of 30% to 40%, contributed 17.8% of the consumer price slowdown in 2003. These prices dropped by 2.0% on average between January 2003 and January 2004 after a 1.5% increase during the preceding 12 months. Twelve out of the 18 expenditure items in this category recorded lower prices in January 2004 compared with January 2003.

Most of the slowdown in this category (10% of the overall deceleration) was because of lower car prices, which have a strong (38%) USD content. So, was this due to the exchange rate?

A few months after the CAD began to strengthen against the USD, car prices in Canada slowed down, converging with the trend in the United States.

Contribution to the deceleration in CPI increases from goods with a USD direct import content between 30 and 40%, Canada

Goods	USD direct import share	CPI weight[1]	12-month % change		Deceleration[2]	Contribution to deceleration	% contribution to deceleration
			Jan. 2003	Jan. 2004	Jan. 2003 to Jan. 2004		
	%				% point		%
Purchase of automotive vehicles	37.8	7.1	1.8	-1.9	-3.7	-0.26	10.4
Computer equipment & supplies	37.4	0.8	-7.1	-16.9	-9.8	-0.08	3.1
Tomatoes	32.1	0.1	21.3	-18.4	-39.7	-0.05	1.9
Toys, games & hobby supplies	37.2	0.5	6.1	-2.5	-8.5	-0.04	1.6
Household tools	32.5	0.5	4.4	-0.8	-5.2	-0.02	0.9
Purchase of recreational vehicles and outboard motors	36.2	0.8	3.7	1.2	-2.5	-0.02	0.8
Other food products	33.0	0.6	5.8	3.1	-2.7	-0.01	0.6
Other household equipment	32.5	0.3	4.5	-0.7	-5.3	-0.01	0.5
Kitchen utensils	34.4	0.1	0.4	-4.4	-4.8	-0.00	0.2
Room-size and area rugs & mats	30.9	0.1	6.3	3.1	-3.2	-0.00	0.1
Sporting & athletic equipment	32.6	0.4	-1.6	-2.1	-0.5	-0.00	0.1
Tableware and flatware	34.4	0.1	0.9	-3.1	-4.0	-0.00	0.1
Men's wallet	39.7	0.1	-2.1	-1.8	0.3	0.00	-0.0
Pet food and supplies	31.3	0.5	1.1	1.4	0.3	0.00	-0.1
Refrigeration & air conditioning appliances	37.3	0.2	-2.2	-0.5	1.6	0.00	-0.1
Pre-cooked frozen food preparations	33.0	0.4	5.1	6.2	1.1	0.00	-0.2
Other fresh vegetables	32.1	0.6	-2.9	-0.3	2.6	0.01	-0.6
Lettuce	32.1	0.1	-27.8	23.5	51.3	0.04	-1.6
Sub-total	**36.2**	**13.1**	**1.5**	**-2.0**	**-3.5**	**-0.45**	**17.8**
All CPI Items	**10.6**	**100.0**	**3.7**	**1.2**	**-2.55**	**-2.55**	**100.0**

Notes:
Some components may not add up precisely due to rounding.
These estimates are based on centred 3-month moving averages.
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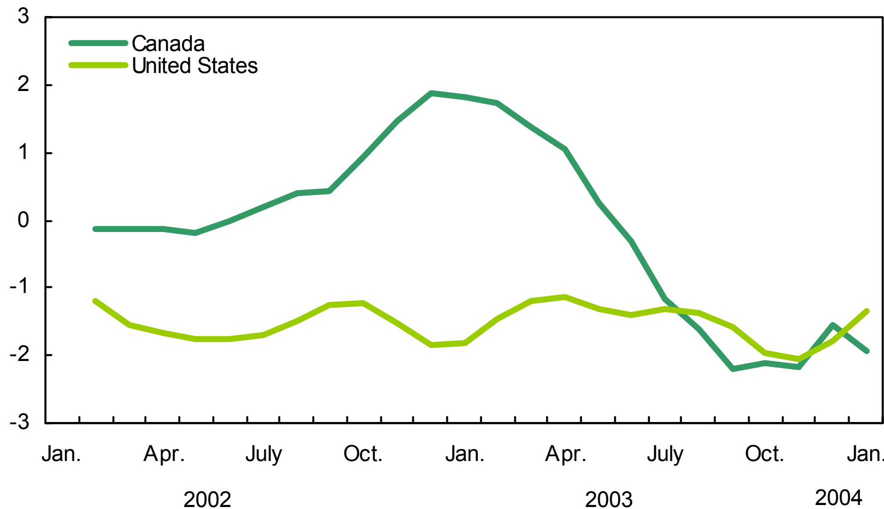
2. Twelve-month % change for January 2004 minus 12-month % change for January 2003.
Sources: Statistics Canada, Prices Division and Input-Output Division.

Before 2003, Canadian car prices were increasing compared with the same period in the previous year, whereas US prices were steadily decreasing. However, in early 2003, Canadian car prices actually began to close the gap. Then, they steadily dropped in tandem with prices in the United States.

Variations in Canadian car prices dropped to US level



Sources: Statistics Canada, Prices Division and U.S. Bureau of Labor Statistics.

This coincidence does not prove that this convergence is due the exchange rate. It could be due to the different markets for new automobiles in Canada and the United States, which tend to follow rather different trends. Because of this, price incentives are often offered in one market and not the other.[5] The effects of different discounts offered in the two markets (in response to sales trends) work to complicate the picture. In fact, car prices prior to the turnaround of the CAD were increasing in Canada and falling in the United States. However this gradual drop of Canadian car prices to US levels is consistent with what the effect of the exchange rate should be.

Computer equipment and supplies accounted for another important share (3.1%) of the deceleration of the CPI in 2003, as prices dropped faster in 2003 than in 2002. In January 2004, prices of computer hardware were 16.9% lower than in January 2003. In January 2003, they had been only 7.1% lower than in January 2002.

As with car prices, it is difficult to pin this decline on the exchange rate rather than on other factors. Computer prices in the two countries did not follow the same trend prior to the CAD appreciation, which raises the possibility that computers are peculiar in this regard and that what some economists call pricing-to-market may be taking place.

Prices of some goods increased in spite of a stronger dollar

The other goods that rely on the USD for 30% to 40% of their costs did not have much of an impact on the overall CPI slowdown. Some of them actually “accelerated” (higher price increases—or lower price declines—in January 2004 relative to January 2003).

5. For more information and statistics, see *Canadian Auto Report* from Scotiabank, available at www.scotiabank.com, and the US Bureau of Transportation Statistics at www.bts.gov for US market figures.

For example, lettuce prices had increased by 23.5% as of January 2004 after a 27.8% drop on year earlier. Prices of pre-cooked frozen food preparations accelerated from a 5.1% increase in January 2003 to 6.2% twelve months later.

Price increases in Canada relative to the United States (the opposite to what the exchange-rate effect should be) were also seen for goods like furniture and audio equipment.

Price increases for household furniture, an item with a USD share of just over 15% actually accelerated slightly in Canada (increasing by 0.2% in January 2004), while dropping by 1% in the United States during this period.

Prices of audio equipment (with a 22% USD share) fell in both countries, but US price decreases outpaced Canada's 5.6% to 3.4% over the year.

Evidently, other factors besides the exchange rate are impacting prices in the two countries. Most items with a strong USD share decelerated in price as would have been expected. However, phenomena like changes in world crude oil prices or different paces in the Canada and US markets have larger impacts which tend to overwhelm the effects of the exchange rate.

Calculating the USD direct import content

In the monthly CPI, Statistics Canada tracks the retail price of an average household's shopping basket, in such categories as food, housing, transportation, furniture, clothing and recreation. The one currently used is the 2001 Consumer Basket, which is the same used by this study. While there are other ways to measure price changes, the CPI is the most important indicator because of its widespread use.

In this paper, 170 expenditure items that form the most recent CPI basket are classed according to the portion of their final market value brought into Canada from the US or China. They were then ranked into five ranges of "USD content", to see whether goods with a high USD portion contributed more to the slowdown than items with a mostly domestic (Canadian) content.

To calculate overall direct import content, the 2000 Input/Output (I/O) tables from Statistics Canada's Input-Output Division were used, and the results were mapped on to the 170 expenditure items in the 2001 consumer basket used by Prices Division. Direct import content of any good or service is the proportion out of total Personal Expenditures in the I/O tables imported at producer prices plus the corresponding duties and consumption taxes. This is divided by overall personal expenditures for this item in purchaser prices, which also includes costs from the Canadian border to the final buyer such as transportation, storage, wholesale and retail margins and corresponding taxes.

An exception was made in the case of gasoline, fuel oil and other fuels. For the crude oil portion of these prices, much of it is also Canadian-produced and very little is imported. However, it is widely known that prices of Canadian crude oil closely follow world prices, which are negotiated in USD. This happens regardless of how much of its crude oil needs Canada imported in any particular year. For this reason, the entire crude oil portion of these goods is considered USD content.

To get the US and China portion of all imports and separate it from the rest of the world, merchandise trade data by import country were used. These data are produced by Statistics Canada's International Trade Division and accessed in May 2004 on Industry Canada's website: strategis.ic.gc.ca.