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The Direct Effect of China on Canadian Consumer Prices: An Empirical Assessment

by Louis Morel

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Abstract

The author investigates the direct effect of Chinese imported goods on consumer prices in Canada. On average, over the 2001–06 period, the direct effect of consumer goods imported from China is estimated to have reduced the inflation rate by about 0.1 percentage points per year. This disinflationary effect is due to two causes: first, the Chinese share of Canadian imports of consumer goods has been increasing rapidly in recent years, and second, the price of these goods is much lower in China than it is among Canada's other import sources, as well as domestic producers. Chinese goods will continue to have a disinflationary impact on Canadian prices as long as the price of these goods remains lower than what can be produced in Canada, or by other trading partners, and as long as the Chinese share of Canadian imports continues to increase.

JEL classification: E31

Bank classification: Inflation and prices

Résumé

L'auteur examine l'effet direct qu'ont les biens importés de la Chine sur les prix à la consommation au Canada. En moyenne, au cours de la période 2001-2006, on estime que les importations de biens de consommation chinois ont eu pour effet direct de réduire le taux d'inflation d'environ 0,1 point de pourcentage par année. Deux facteurs sont à l'origine de cet effet désinflationniste : premièrement, la part de la Chine dans les importations canadiennes de biens de consommation a progressé rapidement au cours des dernières années; deuxièmement, les prix de ces biens sont beaucoup plus faibles en Chine que dans les autres pays d'où proviennent les importations du Canada ou qu'ici même au pays. Les biens chinois continueront d'avoir un effet désinflationniste sur les prix canadiens tant que les prix de ces biens demeureront en deçà de ce qu'il en coûte pour les fabriquer ici ou dans les autres pays partenaires commerciaux du Canada, et que la part de la Chine dans les importations canadiennes augmentera.

Classification JEL : E31

Classification de la Banque : Inflation et prix

1 Introduction

In Canada, over recent years, the consumer price index (CPI) for semi-durable goods and durable goods excluding automotive products declined steadily, contributing to reducing Canadian overall inflation. Some analysts attribute part of these declines to the growing presence in Canada of imported goods from China.

This paper contributes to the discussion in many ways. First, we derive an estimate of China's weight in the Canadian total CPI (from 2000 to 2006). Second, we use these weights to calculate the direct impact that China has had on Canadian inflation from 2001 to 2006. Third, we discuss the likely implications for Canadian future inflation, and the sensitivity of estimates to the import share. Finally, this study stresses the importance of considering not only the foreign import share in the CPI, but also the movement in relative prices of imported goods from low-cost countries – rather than absolute price movements – in assessing inflationary pressures from imported goods.

Chinese imported goods have both a direct and an indirect effect on Canadian consumer prices. The direct effect stems from the fact that the price of imported goods from China enters directly into the CPI. The indirect effect is the change in final prices of other suppliers, including domestic ones, caused by increased competition from Chinese producers. Although we recognize that indirect effects are non-negligible, this study focuses exclusively on direct supply-side effects.

Our main results are as follows:

- Based on our calculations, the supply-side direct effect of China on Canadian prices has been disinflationary during the 2001–06 period, reducing the annual total inflation rate by about 0.1 percentage points, on average.¹
- This disinflationary effect is due to two causes: first, the share of China in Canadian imports of consumer goods has been increasing rapidly in recent years, and second, the price of these goods is much lower in China than it is among Canada's other import sources, as well as domestic producers.

1. The import of inexpensive goods from China will have only a temporary effect on the Canadian inflation rate, since it affects relative prices rather than absolute prices in Canada. Indeed, the Bank of Canada aims to keep inflation at the 2 per cent target midpoint of a 1 to 3 per cent range.

- For the goods that Canada already imports from China, the evolution of Chinese export prices, rather than the price level, matters; conversely, for goods newly imported from China, the relative price level of Chinese goods will be more important for the Canadian CPI.
- Over the coming years, if the share of China in Canadian imports of consumer goods progresses at a similar pace as over the 2001–06 period (assuming unchanged relative prices), the direct effect should continue to be about -0.1 percentage points per year. If the Chinese import share levels off, then the disinflationary impact would gradually diminish towards zero.² However, as an extreme example, if the Chinese import share reaches 100 per cent over the next ten years, the direct effect could be as large as -0.6 percentage points per year. This should be viewed as the upper bound of the direct effect; it is unlikely to occur.

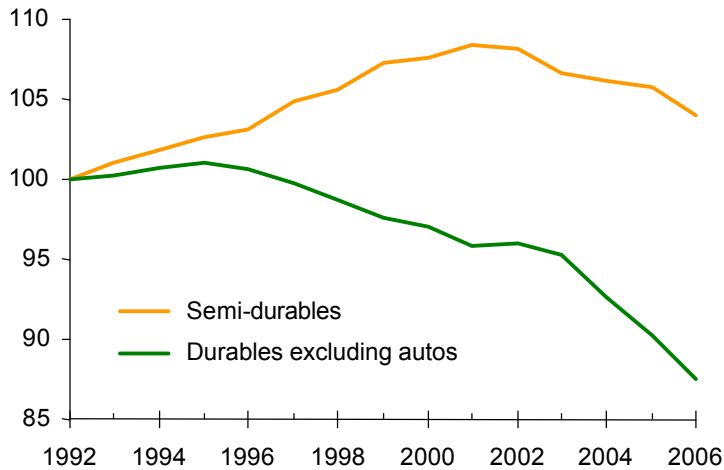
The remainder of this paper is organized as follows. Section 2 describes the evolution of Canadian prices. Section 3 assesses the weight of China in the Canadian total CPI. Section 4 discusses the impact of both the evolution and the level of Chinese prices on Canadian inflation. Section 5 offers some conclusions.

2 The Evolution of Canadian Prices of Tradable Goods

Chart 1 shows the evolution of Canadian prices of semi-durable goods and durable goods excluding automotive products.³ As early as 1995, prices of durables excluding autos started to decline on an annual basis. By 2006, prices in this category were 13.4 per cent lower than in 1995. The price level of semi-durables peaked in 2001 and then retreated, on average, by 0.8 per cent per subsequent year. In 2006, the decline in the price of semi-durables and durables excluding autos contributed to reducing the Canadian total inflation rate by 0.3 percentage points (Chart 2).

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2. China can be considered a proxy for imports from low-cost countries. For example, it is likely that if the relative price of Chinese exports rises substantially, Canadian firms would import more consumer goods from other low-cost Asian countries, such as Bangladesh, India, Vietnam, Cambodia, or Indonesia (each of which currently has a relative price level similar to that of China). In this case, despite the levelling off of China's import share, disinflationary direct effects could still stem from these other low-cost countries.
 3. The semi-durables category contains goods such as household textiles, kitchen utensils, clothing, footwear, jewellery, fabrics, photographic equipment, and toys and games (including electronic ones). The category "durables excluding autos" contains goods such as furniture, appliances, tools, watches and clocks, bicycles, musical instruments, computers, reading material, televisions and radios, compact discs (CDs), and recreational vehicles.

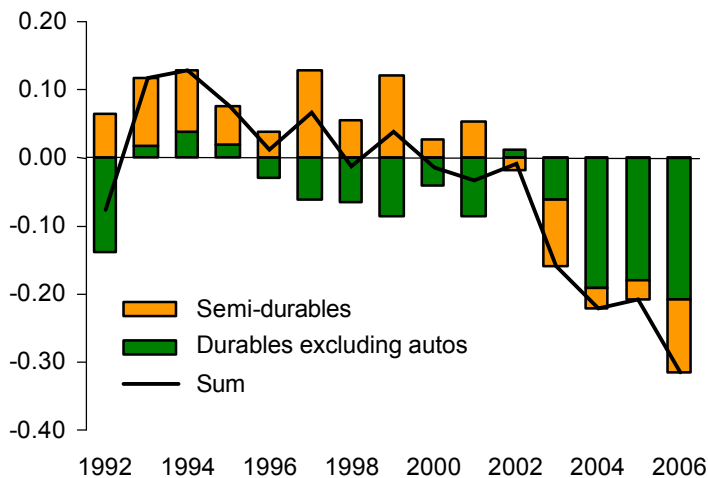
Chart 1
Evolution of the Canadian Prices of Semi-Durables and Durables Excluding Automotive Products (1992=100)



Source: Consumer price index, Statistics Canada

There are many factors behind the decline of these prices, such as important technological improvements and the increased presence of warehouse and discount retailers. In addition, many observers have highlighted the importance of growing import shares from low-cost countries such as China. By focusing on specific goods within these categories, the next section examines whether China has acquired a larger weight in the Canadian total CPI in recent years.

Chart 2
Contribution to Canada's Total CPI Annual Growth, Semi-Durables and Durables Excluding Autos (in percentage points)



Source: Consumer price index, Statistics Canada

3 The Weight of China in the Canadian Total CPI

To determine empirically the weight of China in the Canadian total CPI, we must compute three statistics. First, for a specific good, we need to determine the share of Canadian demand that is imported; second, out of these imports, we must establish the proportion from China; finally, we need to know the basket weight of these specific commodities in the total CPI.

Canadian CPI data are derived from a monthly price survey of about 182 basic classes of goods and services. Categories such as semi-durables or durables excluding automotive products are explicitly defined in the CPI survey. However, other sources required to measure China's weight in the CPI do not report data based on these categories. The calculation thus requires manually assembling data for each of the 182 components of the CPI from these other sources. Moreover, not all the data are publicly available.

One way to circumvent these problems is to select specific components of the CPI that are likely to be representative of the broad categories of interest. A natural candidate for semi-durables is clothing. Clothing had a weight of 3.53 per cent in the 2001 total CPI basket and was about 53 per cent of semi-durables.⁴

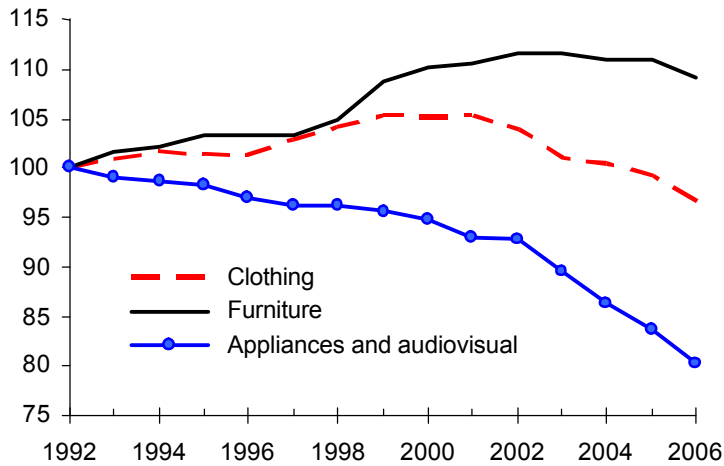
For durables excluding autos, we select two groups of products: (i) furniture, and (ii) household appliances and audiovisual equipment. These categories had respective weights of 1.491 and 1.525 per cent in the 2001 CPI basket. These two groups represent 44 per cent of all durable goods excluding automotive products.⁵

Chart 3 shows the CPI level (1992=100) for clothing, furniture, and household appliances and audiovisual equipment. Since 2001, clothing prices follow the same dynamics as the prices of semi-durables, which increased from 1992 to 2001 and decreased thereafter. Household appliances and audiovisual equipment prices declined throughout the 1992–2006 period, although the diminution has been sharper on an annual basis since 2002. Furniture prices remained flat from 2001 to 2006, despite very strong demand from the robust housing market (consumption expenditures of furniture have been growing, on average, by 7.6 per cent per year since 2001).

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4. Clothing includes fur apparel, but excludes footwear, handbags, wallets, jewellery, and fabrics.
 5. The household appliances and audiovisual equipment category contains commodities such as cooking appliances, refrigeration and air conditioning appliances, laundry and dishwashing appliances, stereo equipment (CD players), televisions, and videocassette recorders. Note that this category excludes personal computers and related accessories.

Chart 3

Evolution of Canadian Prices of Clothing, Furniture, and Household Appliances and Audiovisual Equipment (1992=100)



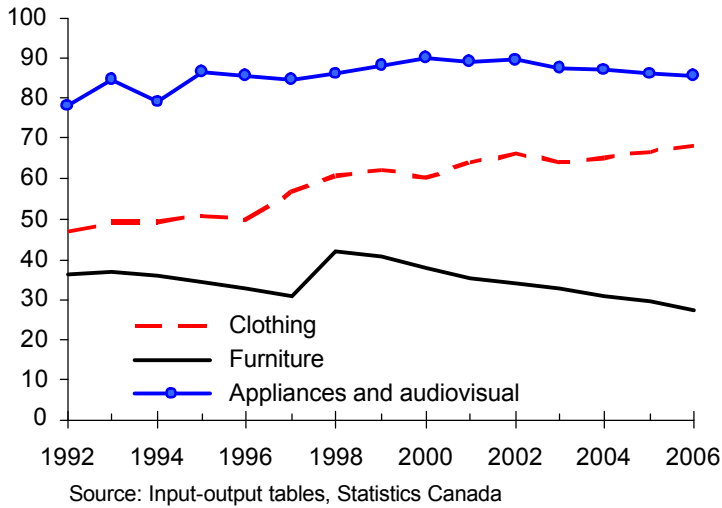
Source: Consumer price index, Statistics Canada

3.1 Canada's imports as a share of total demand

The first step in deriving the weight of Chinese imported goods in the Canadian total CPI is to examine Canada's imports as a share of its total demand.⁶ Chart 4 shows this share for clothing, furniture, and household appliances and audiovisual equipment. Imports represent a particularly large share of the total demand for household appliances and audiovisual equipment: 88 per cent in 2003, up from 78 per cent in 1992. Clothing imports represented 64 per cent of total demand in 2003. This share increased noticeably from 1992 (47 per cent), and the pattern observed during the 2000–03 period suggests a share of about 68 per cent in 2006. By contrast, there was a slight decrease in the import share of furniture, from 36 per cent in 1992 to 33 per cent in 2003. The trend from 2000 to 2003 suggests a further decline to about 28 per cent in 2006.

6. See Appendix A for a description of the data sources.

Chart 4
Canada's Imports as a Share of Total Demand (per cent, 2004 to 2006 shares, assuming the same trend as 2000–03)

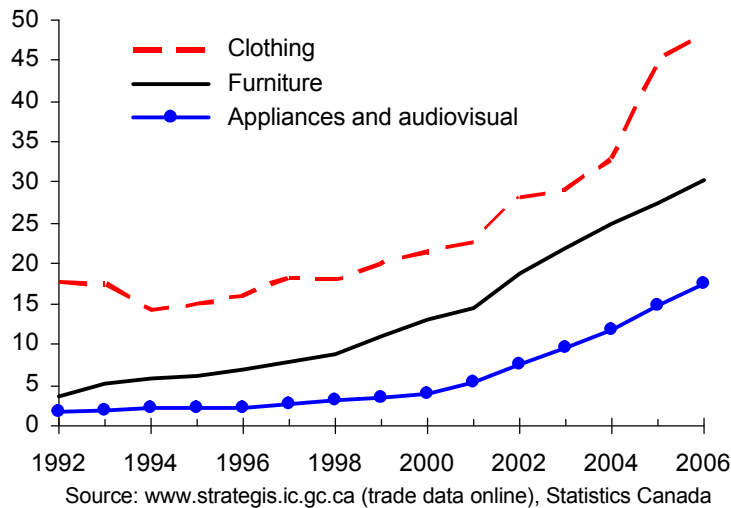


3.2 Canada's imports from China as a share of total imports

The next step is to determine how many of these imports are from China rather than from other countries.⁷ Chart 5 shows the share of Canada's imports from China for all three groups of commodities. This chart shows the upward trend discussed by Wyman (2006) related to Canadian imports of clothing from China. In 2006, close to 50 per cent of our imports of clothing came from China, while, in 1992, these imports represented only 18 per cent. Chinese goods also became more prevalent in Canada in the furniture category, and in the household appliances and audiovisual equipment category. In 1992, China supplied only 4 per cent of Canada's imports of furniture, while, in 2006, this figure reached 30 per cent. With respect to household appliances and audiovisual equipment, the rise was more modest, moving from 2 to 17 per cent during the 1992–2006 period. Not surprisingly, for all three groups of commodities, the growing importance of China as a major import source for Canada accelerated after 2001, when China joined the World Trade Organization.

7. See Appendix B for a description of the data sources.

Chart 5
Canada's Imports from China as a Share of Total Imports
(per cent)



3.3 Estimating the overall weight of China in the Canadian total CPI

So far, we have shown that imports, over time, make up a larger share of total demand for clothing, and for household appliances and audiovisual equipment. For furniture, by contrast, total demand has been met through fewer imports, although the change has been modest. Also, we have shown that, for all three groups of commodities, Canadian imports from China have increased markedly relative to those of other countries.

As Table 1 shows, by multiplying the share of imports in total demand (Chart 4) by the share of imports from China (Chart 5), we can derive the share of Canadian demand satisfied by imports from China. For furniture, the importance of the increased import share from China greatly outweighs the slight decrease observed over time in the share of imports in total demand. For the other two groups, since both components trend upwards over time, the resulting share also increases from 1990 onwards. Overall, imports from China have been meeting a much larger share of Canadian total demand for clothing, furniture, and household appliances and audiovisual equipment. For instance, in 2006, about one-third of Canadian demand for clothing was imported from China; this share was only about 13 per cent in 2000.

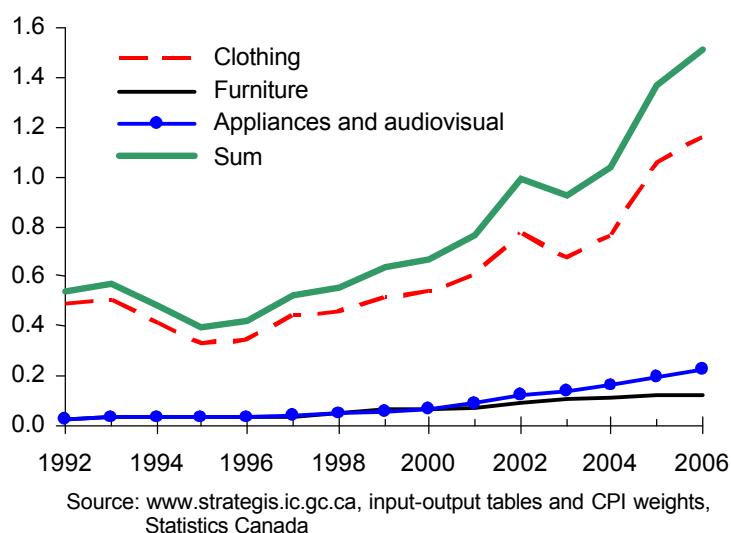
Table 1
Canada's Imports from China as a Share of Total Demand (per cent)

	Clothing	Furniture	Appliances & audiovisual
1990	4.2	0.4	0.6
1995	7.6	2.1	1.9
2000	12.8	4.9	3.6
2005	29.9	8.0	12.8
2006	32.8	8.3	14.9

Chart 6 shows the weight of China in the Canadian total CPI for each of the three groups of commodities. Such approximations are obtained by multiplying the shares shown in Table 1 with the respective weight of each group in the total CPI.⁸ Therefore, our calculations show that, in 2006, clothing articles imported from China had a weight of 1.16 per cent in the total CPI. Altogether, imports of Chinese clothing, furniture, and household appliances and audiovisual equipment accounted for 1.51 per cent of the total CPI in 2006. This is more than twice as much as in 2000 (0.67 per cent). When considering our alternative scenario – in which imports as a share of total demand remain at their 2003 levels – the weight of Chinese imports in the total CPI is similar (1.47 per cent).

8. To ensure that only pure price movements are observed over time, Statistics Canada has designed its CPI survey to allow control over a variety of defined characteristics. For instance, the survey might require that men's shirts be 100 per cent cotton, have long sleeves, one pocket, etc. Statistics Canada's list of characteristics does not, however, include the country of origin. If there were 10 per cent more products from China on retailers' shelves than a year ago, the likelihood that a commodity produced in China would be selected in the CPI survey should, everything else being equal, be 10 per cent higher than it was last year.

Chart 6
Weight of China in Canadian Total CPI, Derived from
Clothing, Furniture, and Appliances and Audiovisual (%)



Based on calculations from Statistics Canada, China’s overall weight in the Canadian total CPI is estimated to have been 0.85 per cent in 2000.⁹ Our exercise, however, shows that Chinese imports for our three groups of commodities had a weight of 0.67 per cent in the total CPI in 2000. This implies that the remaining goods (half of semi-durables and durables excluding autos) had a weight of 0.18 per cent. If we assume that this weight remained the same, then the overall weight of China in the total CPI is estimated to have been 1.7 per cent in 2006. If, instead, we assume that the weight of these other tradable goods doubled from 2000 to 2006 (as for the three groups of commodities), then the weight of China in the total CPI in 2006 was 1.9 per cent.

4 The Impact of Both the Evolution and the Level of Chinese Prices on Canadian Inflation

In order to assess fully the direct impact of China on Canadian prices over recent years, we must analyze Chinese prices themselves. They have an impact on the Canadian total CPI to the extent that Canada imports some relatively inexpensive Chinese goods.¹⁰ This section therefore discusses both the evolution and the level of Chinese prices, and tries to assess their quantitative impact on the total CPI.

9. Statistics Canada’s methodology is reported in Chiru (2004), and used in this study.

10. Prices in China also matter because they have a competition effect on domestic prices and third-countries’ prices. However, analyzing these indirect supply-side effects are beyond the scope of this study.

For the goods that Canada already imports from China, the evolution of Chinese export prices, rather than the price level, matters. Since these goods are most likely already included in the CPI basket, a change in their export prices is likely to be reflected in the CPI.¹¹ Conversely, if Canada imports Chinese goods that were previously supplied by another country, the relative price level of Chinese goods will be more important for the Canadian CPI, because substituting away from a high-price country to a low-price country reduces the price of the CPI basket and, therefore, consumer prices in Canada. Further distinction is made between price changes and the price level in this section.

4.1 The evolution of Chinese prices

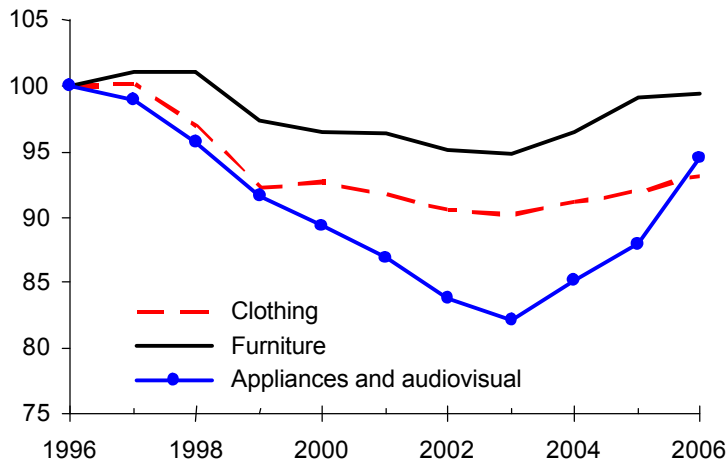
As in Canada, Chinese consumer prices are affected by many factors, including domestic demand, pricing-to-market behaviour, and direct/indirect effects of goods imported from China's trading partners. Moreover, as mentioned by the Norges Bank (2005), Chinese consumer prices include a markup for domestic distribution costs and tend to be slower to react to external price impulses than export prices. For these reasons, it is preferable to analyze Chinese export prices rather than Chinese consumer prices for the purpose of our current exercise. However, since Chinese export prices are not available on a disaggregated basis, we must analyze producer prices instead.

Chart 7 shows the evolution of Chinese producer prices of clothing, furniture, and household appliances and audiovisual equipment from 1996 to 2006.¹² The three series declined from 1996 to about 2003 (to different extents) and increased from 2004 to 2006. The average annual growth rates during the latter period were, respectively, 1.0, 1.6, and 4.8 per cent.

11. To the extent that there is full pass-through of these prices.

12. The exact series are: factory price index – non-durable consumer goods – clothing; factory price index – manufacturing – furniture; factory price index – manufacturing – communications and electronics equipment. All data were obtained through Datastream.

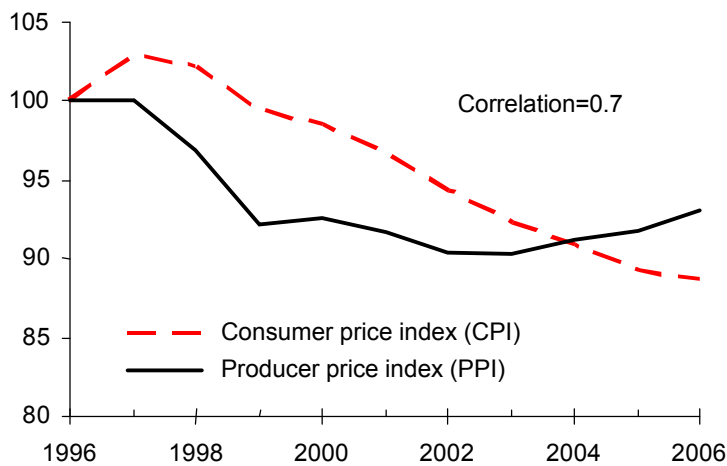
Chart 7
Evolution of Chinese Producer Prices
(1996=100)



Source: Datastream, China Statistical Information and Consultancy Service Centre

Chart 8 compares the Chinese CPI with the Chinese producer price index (PPI) for the clothing category.¹³ Unlike the PPI, the Chinese CPI for clothing declined steadily throughout the 1997–2006 period. In the first few months of 2007, the Chinese CPI for clothing started to show some minor signs of firming; a year-over-year increase (of 0.5 per cent) was observed in January 2007 for the first time in about nine years.

Chart 8
Clothing Prices in China: Consumer versus Producer
Prices (1996=100)

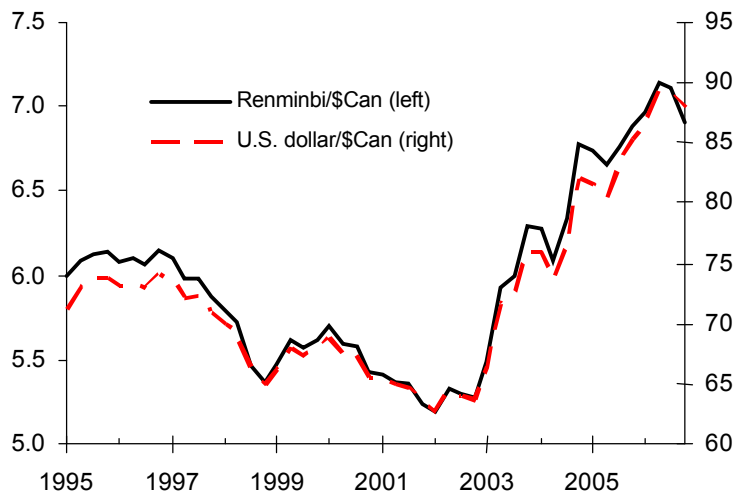


Source: Datastream, China Statistical Information and Consultancy Service Centre

13. Only the Chinese CPI for clothing is available to match one of our three groups of commodities.

Most goods imported from China are traded in U.S. dollars. This is facilitated by the fact that the Chinese renminbi is pegged to the U.S. dollar.¹⁴ Consequently, the rise of Chinese export prices (expressed in the Chinese currency) in recent years has been more than offset by the large appreciation of the Canadian dollar. The appreciation of the Canadian dollar against the Chinese renminbi amounts to 33 per cent over the 2002–06 period (Chart 9).

Chart 9
Canadian Exchange Rate (an increase represents an appreciation of the Canadian dollar)



4.2 The level of Chinese prices

The trends shown in section 3 reveal that Canada has been importing more and more consumption goods from China over the past few years. What is the source of these trends? For how long will they continue? We will find answers to these questions by looking at Chinese price levels, rather than Chinese price movements. As long as Chinese export prices are lower than export prices elsewhere (after accounting for exchange rate differences), Canadian retailers would benefit from supplying more of these less expensive goods (for a given quality), in order to increase their market share. If competition is sufficiently vigorous, market shares do not change but retail prices fall, and consumers are better off.

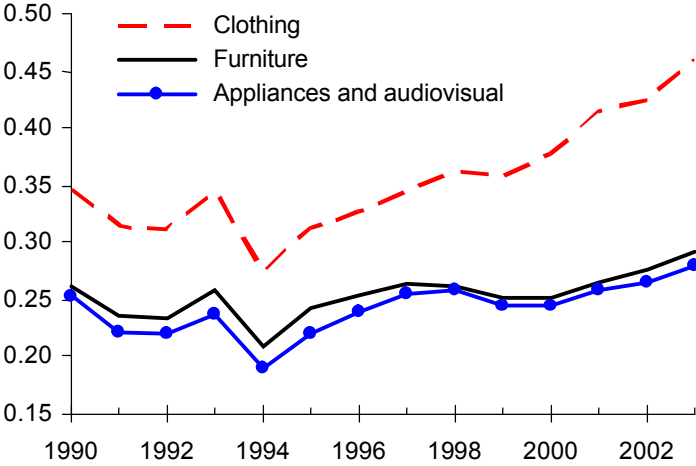
A useful concept that relates to international price-level comparisons is the concept of absolute purchasing power parity (PPP). The Penn World Table (PWT) (Heston, Summers, and Aten 2006) provides estimates of the price level of consumption in 188 countries based on the concept

14. From July 2005 to July 2007, the Chinese renminbi gradually appreciated by about 8.5 per cent.

of PPP. For instance, when normalizing Canada to 1.00, the price level of consumption in China is about 0.25; in other words, the level of consumer prices in Canada is four times higher than that in China.

Although the PWT data relate to total consumption, they are used in this paper to approximate the level of export prices of clothing, furniture, and household appliances and audiovisual equipment in China relative to those in Canada’s other import sources. Chart 10 shows this information graphically. The line “furniture,” for example, is the ratio between the PWT price level of consumption in China and the price level of consumption in other countries from which Canada imports furniture. The latter is obtained by averaging the PWT price level of consumption in all countries but China. The weight of each country is determined by its share in Canada’s imports of furniture.

Chart 10
Relative Price in China Compared with Canada's Other
Trading Partners (other trading partners=1.0)



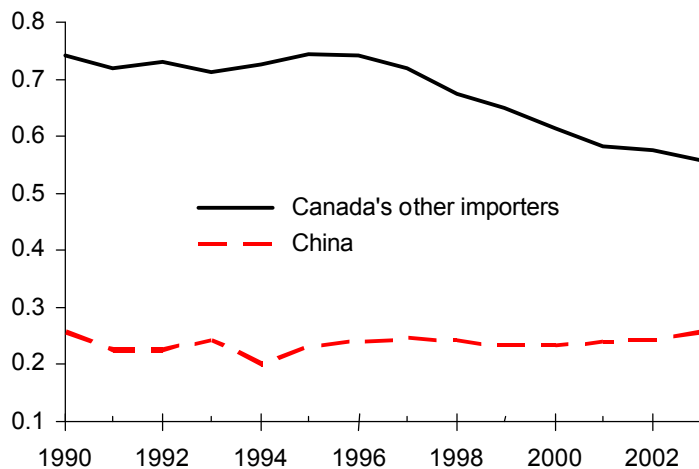
Source: Strategis, Penn World Table (price level of consumption)

Chart 10 suggests that the (export) price level of clothing in China in 2003 was less than half of that among Canada’s other import sources of clothing. Also in China in 2003, the price level of furniture and of household appliances and audiovisual equipment was about one-third of that among Canada’s other import sources. Although these figures are approximate and subject to many caveats, they are consistent with China’s growing share of Canada’s imports due to

relatively lower export prices.¹⁵ It is likely that Canada will continue to import more and more goods from China over the next few years, as long as they are less expensive than elsewhere. The period of increasing Chinese import shares may last for some time, given the supply adjustment costs and production constraints that Chinese producers face.

Finally, Chart 11 shows the PWT-imputed export price levels of clothing in China and other countries; i.e., the numerator and denominator used to create the dashed line in Chart 10.¹⁶ The upward trend in the relative price of clothing in China from 1995 to 2003 is due to the denominator (the price level of other import sources) falling, rather than to the numerator (the price level in China) increasing. In other words, despite the fact that China supplied a larger share of Canada's imports of clothing over time, the shift of import shares from high-cost countries (such as the United States) to other low-cost countries contributed to reducing the price gap between China and other foreign suppliers of clothing in Canada.^{17,18}

Chart 11
Clothing Prices: China and Other Trading Partners
(Canada=1.0)



Source: Datastream, China Statistical Information and Consultancy Service Centre

15. One of the caveats regarding absolute PPP is that it holds only for highly traded goods. Since a consumption basket contains a large share of services, it is possible that the PPP measures used in this paper do not capture international price differences properly. Also, as mentioned earlier, consumer prices could differ from producer prices owing to distribution costs, profit margins, etc.
16. We provide only the price level of clothing, but the same analysis (to a different extent) applies to the price level of furniture, and to that of household appliances and audiovisual equipment.
17. Wyman (2006) documents some of these recent import trends.
18. Results from a shift-share analysis show that the decrease in the (clothing) price level of other import sources is due to a change in shares, rather than to a change in the price level in each source country.

4.3 Growth/level of Chinese prices: which one matters the most for Canadian inflation?

Table 2 shows the direct impact of fluctuations in Chinese export prices and the exchange rate on the Canadian inflation rate from 2001 to 2006. According to this table, Chinese export prices of clothing, furniture, and household appliances and audiovisual equipment, when expressed in Canadian dollars, decreased, on average, between 4 and 5 per cent per year during this period. Given their respective CPI weights, the combined evolution of Chinese export prices and the Canadian exchange rate implies a direct impact of -0.05 percentage points per year on the Canadian total inflation rate. Note that this calculation assumes 100 per cent pass-through from Chinese export prices to Canadian consumer prices. For any other pass-through assumption below 100 per cent, the impact of the growth of Chinese prices on the Canadian inflation rate becomes, essentially, zero.

Table 2
Estimating the Direct Impact on the Canadian Total CPI Annual Growth Stemming from Variations in Chinese Producer Prices and the Exchange Rate over the 2001–06 Period (all numbers are percentages)

	Δ Chinese PPI	US/Can exch. rate depreciation ¹	Δ Chinese import prices, expressed in Can dollars	Change per year	Average weight in total CPI (China only, 2001–06)
Clothing	1.5	-26.8	-25.7	-5.1	0.84%
Furniture	3.3	-26.8	-24.4	-4.9	0.10%
Appliances & audiovisual	8.6	-26.8	-20.4	-4.1	0.16%
Impact on CPI annual growth, 2001–06, assuming 100% exchange rate pass-through					-0.05 pp

1. We use the U.S. dollar, based on the assumption that it is used in most transactions between Canada and China. If the Chinese renminbi is used instead of the U.S. dollar, the impact on the annual inflation rate in Canada remains the same.

Put differently, given that China's weight in the total CPI is less than 2 per cent and the pass-through is generally very low in Canada, a significant movement in Chinese prices (or the exchange rate) is required before we can observe a substantial impact on Canadian prices.

Table 3 quantifies the impact on Canadian prices that stems exclusively from changes in Canada's trade patterns between 2001 and 2006, given the relatively low export price level that prevailed in China relative to the rest of the world. First, we attribute a price level to Canada, China, and Canada's other import countries, based on PWT data. We then calculate a weighted

average consumer price level in Canada for 2001 and 2006, based on the percentage of demand supplied by each source.

Table 3
Estimating the Direct Impact on the Canadian Total CPI Annual Growth Stemming from Increasing Import Shares from China over the 2001–06 Period (given a fixed level of relative prices)

Clothing	Relative price level	% total demand	
		2001	2006
China	25	14.5	32.8
Other countries	50	49.6	35.1
Canada	100	35.9	32.1
Average price		64.325	57.85
Change from 2001 to 2006			-10.1%
Change per year			-2.1%
Average weight in total CPI 2001–06			3.762%
<hr/>			
Furniture	Relative price level	% total demand	
		2001	2006
China	25	5.1	8.3
Other countries	90	30.0	19.2
Canada	100	64.9	72.5
Average price		93.175	91.855
Change from 2001 to 2006			-1.4%
Change per year			-0.3%
Average weight in total CPI 2001–06			1.453%
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Household appliances and audiovisual equipment	Relative price level	% total demand	
		2001	2006
China	25	4.8	14.9
Other countries	90	84.5	72.8
Canada	100	10.7	2.3
Average price		87.95	81.545
Change from 2001 to 2006			-7.3%
Change per year			-1.5%
Average weight in total CPI 2001–06			1.652%
Impact on CPI annual growth 2001–06			-0.10 pp

Given the annual change in this measured price level and the weight of each of the three groups of commodities in the total CPI, we can conclude that the greater import share from China is estimated to have reduced the Canadian total inflation rate by about 0.1 percentage points per year during this period. Using our alternative scenario, in which we set imports as a share of total demand in 2004–06 equal to its 2003 share, the direct impact remains -0.1 percentage points per year. This impact derives only from these three groups of commodities; the impact is likely to be marginally larger if the weight of China in other semi-durables and durables excluding autos in the total CPI also increased in recent years.

Suppose the totality of Canadian demand for clothing, furniture, and household appliances and audiovisual equipment were to be satisfied via imports from China (at a relative price level of 0.25) at the end of a 10-year period. In this extreme case, which is unlikely to occur, there would be a maximum direct impact on the total CPI growth of -0.6 percentage points per year.

5 Conclusion

In Canada, in recent years, the price of traded goods, such as semi-durables and durables excluding automotive products, declined steadily, tempering growth of the Canadian total CPI. Some authors attribute part of these declines to the growing presence in Canada of imported goods from China. This study documents some of these trends, and assesses the direct effect of China on Canadian prices.

The direct impact of Chinese imported goods on Canadian consumer prices depends on two effects. First, because Canada already imports a certain share of its consumption basket from China, especially among semi-durables and durables excluding autos, changes in Chinese export prices and the Canadian exchange rate could potentially be transmitted to Canadian goods prices. Second, since the level of Chinese export prices is much lower than that of Canada's other importers, an increase in Canada's import share of consumer goods from China should decrease the average price level observed in Canada.

The effect on the CPI from the evolution of Chinese producer prices and the exchange rate is negligible. Despite the fact that the weight of Chinese imported goods in the Canadian total CPI doubled in recent years, from 0.85 per cent in 2000 to 1.7 to 1.9 per cent in 2006, this weight is still too low to allow some pass-through from either changes in Chinese prices or the exchange rate to affect Canadian prices.

Overall, China's increasing share of Canadian imports reduced the Canadian total inflation rate by about 0.1 percentage points per year during the 2001–06 period. An indirect effect, due to

higher competition for Canadian producers, probably also played a role in the price declines observed for semi-durables and durables excluding autos.¹⁹

Chinese export prices should continue gradually firming in the near future, given the current, low profit margins of Chinese manufacturers. In addition, should the renminbi be revalued or appreciate (against the U.S. dollar), Chinese imported goods would become more expensive for Canadian consumers. However, counterbalancing these inflationary sources is the disinflationary effect that results from importing more inexpensive goods from China. Our analysis shows that Chinese prices are at least half those of Canada's other import sources. This suggests that Canada will continue to import more consumer goods from China over the next few years.

In conclusion, over the coming years, Canada's increasing imports of inexpensive goods from China will continue to act as a disinflationary source on the Canadian total inflation rate. If the share of China in Canadian imports of consumer goods progresses at a similar pace as over the 2001–06 period, the direct effect should continue to be about -0.1 percentage points per year. However, if China's import share accelerates to reach, for example, 100 per cent in ten years (assuming unchanged relative prices), this direct effect could be as large as -0.6 percentage points per year. This scenario is, however, extreme and unlikely to occur. A more plausible scenario is to assume that China's share in Canadian imports of consumer goods will stabilize over time, as price levels converge, in which case the direct effect of China on Canadian prices would gradually fade away.

19. An attempt to quantify the indirect effect of China on the total CPI growth could be undertaken using data from Table 3. In this exercise, we hold constant the relative price level of each country. However, due to competitive pressures from Chinese producers, it is possible that relative prices around the world converge with those of China in the long run. Therefore, if we assume that the relative price level of Canadian and other countries' goods closes half the current gap that exists with China over a period of ten years, then the indirect effect on the total CPI growth is an additional -0.3 percentage points per year.

References

- Chiru, R. 2004. "The Soaring Loonie and Prices: Lower Inflation for Consumers?" Statistics Canada, Catalogue No. 11-621-MIE200414.
- Heston, A., R. Summers, and B. Aten. 2006. Penn World Table Version 6.2. Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania. September.
- Norges Bank. 2005. *Increased Imports from Low-Cost Countries*. Inflation Report 3/2005, pp. 49–50.
- Roy, F. 2004. "Canada's Trade with China." *Canadian Economic Observer*. Statistics Canada, Catalogue No. 11-010 (June).
- Wyman, D. 2006. "Trade Liberalization and the Canadian Clothing Market." *Canadian Economic Observer*. Statistics Canada, Catalogue No. 11-010 (December).

Appendix A: Imports as a Share of Total Demand

The data required to calculate the share of imports in total demand are available through Statistics Canada's input-output tables for the three groups of commodities described earlier¹:

$$\text{Imports as a share of total demand} = \frac{\text{Imports minus re-exports}}{\text{Consumption} + \Delta \text{ stocks (if } > 0) + \text{intermediary inputs}}$$

To obtain the share of imports in total demand, we subtract re-exports from international imports in the numerator and compute the denominator following the methodology described by Chiru (2004); i.e., by adding domestic demand (almost entirely consumption), investment in stocks (only if it is positive), and intermediary inputs from producers. Unfortunately, the data are available only up to 2003. For 2004 to 2006, as our base-case scenario, we assume that import shares are growing at the same average pace as that observed during the 2000–03 period. We will also consider the alternative scenario in which import shares are maintained at their 2003 levels.

1. The specific input-output tables' categories are: hosiery, clothing, and accessories (mnemonic code 15); furniture, mattresses, and lamps (17); and appliances and household equipment (58).

Appendix B: Imports from China as a Share of Imports

To compute the ratio of imports from China to total imports, we collect import data from Strategis, an online database made available by Industry Canada, based on data provided by Statistics Canada's International Trade Division. The import data are available by commodity and by country of origin since 1990.¹

As mentioned by Roy (2004), Canada's total imports from China have been increasing at a rapid and steady pace since the beginning of the 1990s. It is important not to consider aggregate imports from China, since they contain imported capital. Disaggregated data, such as that of Strategis, can better illustrate the importance of Chinese imported goods in the total CPI.

1. The commodities are classified under the harmonized system developed by the World Customs Organization. The exact commodities analyzed in this document are: articles of apparel and clothing accessories, knitted or crocheted (code 61); articles of apparel and clothing accessories, not knitted or crocheted (62); furskins and artificial fur, manufactures thereof (43); furniture (94); and electrical machinery and equipment and parts thereof, sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles (85).