CAPI
THE CANADIAN AGRI-FOOD POLICY INSTITUTE

PROCESSED FOOD SECTOR RESEARCH PROGRAM

PROJECT 6a:
INNOVATION INSIGHTS

Capital Investment in Canadian Food Processing

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and CAPI

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About the CAPI Processed Food Research Program

Food and beverage processing is one of the country's largest manufacturing sectors and an essential channel for Canadian agricultural products. Companies are succeeding yet the sector has been facing challenges, including record trade deficits in secondary processing. Working closely with a variety of partners, CAPI's research is focused on better understanding the issues and opportunities facing this sector and their implications for policy and strategy, and to generate a dialogue on ways to support the sector's future growth and competitiveness.

Project 6a: *Capital Investment in Canadian Food Processing:* Being competitive and supporting the drive to be innovative requires investment. This report examines the trends and nature of investment taking place in food processing, both the positive and negative shifts taking place and from the perspective of foreign direct investment here and Canadian direct investment abroad. The report also comments on the implications of the changes in terms of the changing trade balance in secondary processed food.

PHASE 1 Diagnosis	PHASE 2 Inspiring practices	PHASE 3 Competitive advantage
1a. Diagnosing the trade deficit	4a. Case studies on company success	7. Conclusions
1b. Reasons for the trade deficit	4b. Cross-case study analysis	8. Implications for policy & strategy
2. Explaining the trade deficit	5. Consumers and markets	9. Dialogues on outcomes
3a. Food manufacturing performance	**6a. Capital investment**	
3b. Plant openings, closings & investments	6b. Talent, skills and people	
	6c. Innovation and off-grade food	

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Canada

Introduction

In late 2012, CAPI released a paper showing the deterioration of the trade deficit in Canada's processed food trade.[1] The trade balance in processed food was reasonably stable at about a $1 billion deficit from 1990 to 2004, and then it dropped rapidly to a $6.8 billion deficit by the end of 2013.

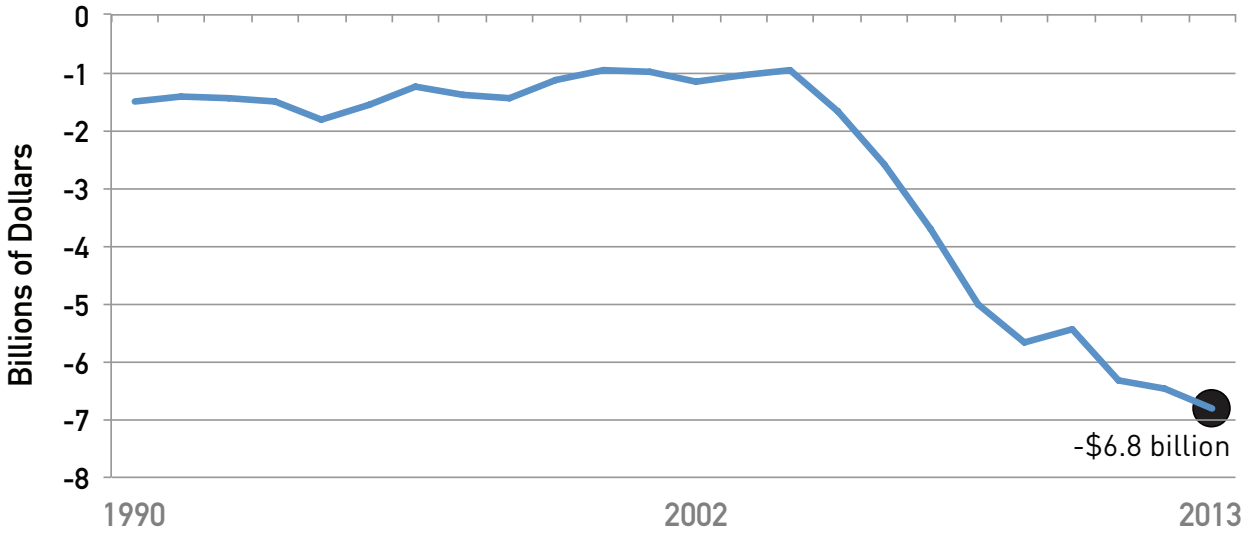

Figure 1. Canada's deteriorating trade balance in secondary processed food and beverages.

Five hypotheses were offered in the paper as possible causes of the sharp fall in the trade balance. One was the decline in capital investment and capital stock over the past several years. This paper outlines in greater detail the changes in capital stock and investment, as well as Foreign Direct Investment (FDI) in Canada and the Canadian Direct Investment (CDI) abroad.[2]

By comparing the trade balances with the pattern of net investment, the stable deficit in processed food products of about $1 billion matches the period of positive net investment (investment minus depreciation) in machinery and equipment (M&E). The subsequent decline in the trade balance is reflected in the negative net investment in M&E for 10 years. The positive net investment in M&E over the latest three years offers the possibility of stabilizing the trade deficit. Nonetheless, the steady deterioration in net investment in buildings may offset this possibility. Net investment in buildings from 1992 to 2012 has been increasingly negative for all but two years.

1. *The State of Canada's Processed Food Sector: Trade Balance*, D. Hedley and CAPI, 2012.
2. The Appendix contains more detailed graphs and interpretation of FDI, CDI, capital investment, capital stock and depreciation.

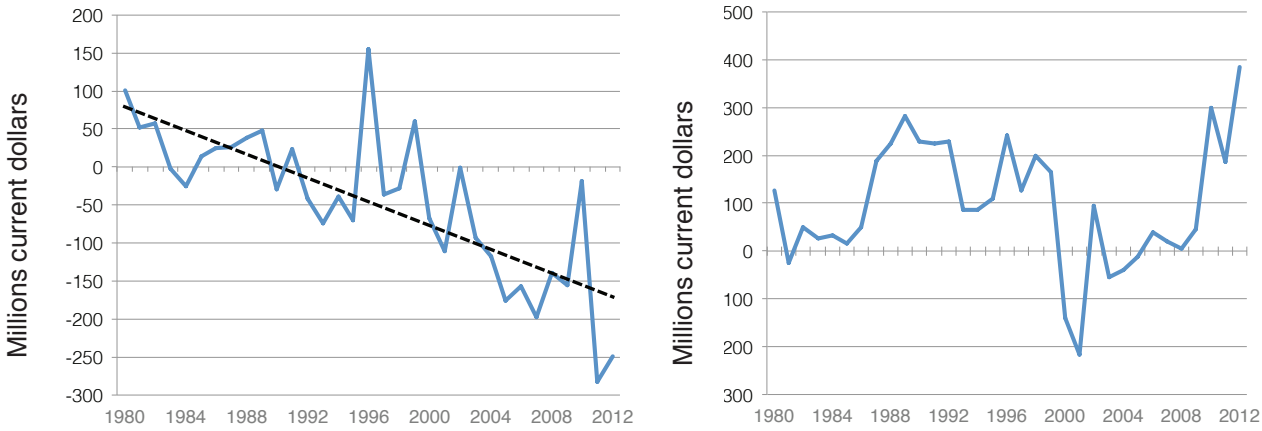

Figure 2. a) Net investment in buildings; b) Net investment in M&E

Overall, one can hypothesize about the implications of the investment patterns and the FDI/CDI. As a starting point, these data collectively suggest that small and large firms in Canada are being purchased with FDI, resulting in upgrades to the M&E and technology in the plants. Canadian firms are investing abroad, rather than using Canada as an export platform, to serve distant markets. Greenfield expansion in Canada appears to be at a standstill both with FDI and by Canadian firms.

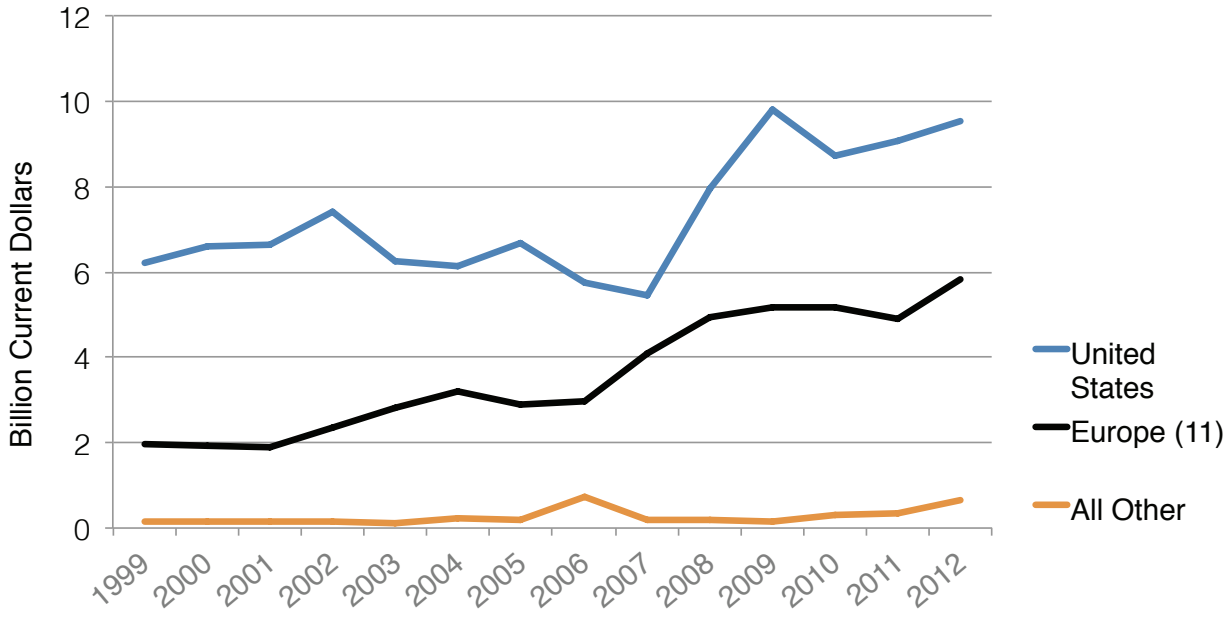

Figure 3. Foreign direct investment in Canada's food manufacturing industry

There is $16 billion in FDI in Canada's food manufacturing industry, with the U.S. and Europe by far the largest players. Given the lack of growth in the capital stock in the industry, it suggests that an increasing proportion of Canada's industry is owned or controlled by international firms based outside of Canada.

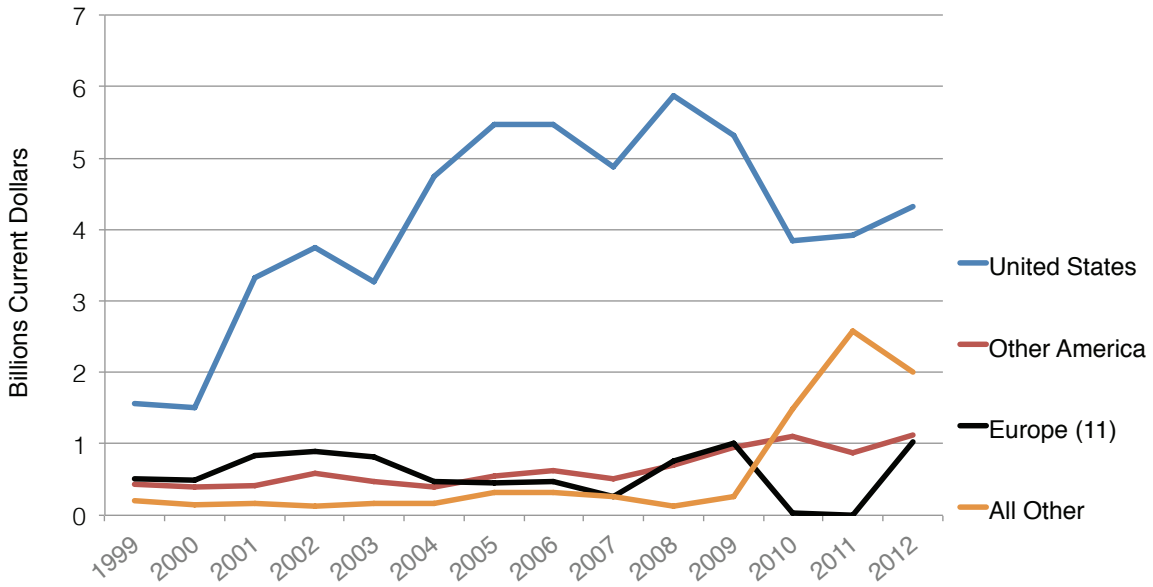

Figure 4. Canadian direct investment abroad, food manufacturing

Canada's direct investment abroad in food processing has risen from less than $3 billion to over $8 billion from 1999 to 2012. While the U.S. is the largest destination for CDI, its share of CDI has been falling since 2009, with growth occuring in Other America and All Other countries.

In comparing the volumes of FDI and capital stock in Canada, a growing portion of the Canadian industry assets is owned or controlled by foreign firms. Considering the M&E and buildings investment data, one can conclude that, on balance, Canadian plants are being purchased and upgraded (rather than seeing new greenfield investments), with technology embedded in the FDI capital owned by the foreign firms. Similarly, Canadian firms are investing abroad in a growing way beyond the U.S., with their own technology embedded in the capital.

Annual capital investment in M&E was flat from 2003 to 2008, and, with some variation, changed little from the late 1990s to 2008. After 2008, it began to grow. The depreciated capital stock in M&E fell from 1999 until 2007, even though it demonstrated an unbroken, strong upward trend for the two decades before 1999. By 2008, a slow recovery in M&E net capital stock began, although its growth rate has not yet matched the growth rate for the two decades before 1999. If industry can sustain and build on its growth in net capital stock of M&E in the years ahead and halt the decline in buildings net capital stock, it would provide the foundation for a turnaround in the growing trade deficit.

Based on the potential for expanded investment in this industry, the open-for-business policy environment of the federal government can be employed to support increased investment to reposition this industry for greater growth and competitiveness. The Agri-Innovation Program can provide encouragement and assistance for new and renewed investment by Canadian firms. Equally important would be maintaining the Accelerated Capital Cost Allowance to assure a continuing positive business environment for the sector in the years ahead.

Greater detail on trends and data are provided in the Appendix.

Some Observations

By comparing the trade balances with the pattern of net investment, the stable deficit in processed food products of about $1 billion coincides with the period of positive net investment in M&E. Net investment in M&E began to fall off in the late 1990s, and with a lag of a few years, the trade deficit began to grow in 2004. The decline in the trade balance was likely reflecting the negative net investment in M&E for 10 years. The positive net investment in M&E in the latest three years offers the possibility of stabilizing the trade deficit after a few years lag, although the deterioration in net investment in buildings may offset this possibility.

Overall, one can only hypothesize about the implications of the investment patterns and the FDI/CDI. As a starting point, these data collectively suggest that firms in Canada are being purchased with FDI, resulting in upgrades to the M&E and technology in the plants. Canadian firms are investing abroad, rather than using Canada as an export platform, to serve distant markets. Also, Canadian firms are diversifying investments abroad, with lower accumulations in the U.S. in recent years than previously shown, and more into other regions. Greenfield expansion in Canada appears to be at a standstill both with FDI and by Canadian firms, demonstrated by the decline in depreciated net capital stock in buildings.

Comparing the volumes of FDI and capital stock in Canada, a growing portion of the Canadian industry assets are owned or controlled by foreign firms. When that trend is combined with the M&E and buildings investment data, one can conclude that, on balance, Canadian plants are being purchased and upgraded (rather than seeing new greenfield investments), with technology embedded in the FDI capital owned by the foreign firms. Similarly, Canadian firms are investing abroad in a growing way beyond the U.S., with their own technology embedded in the capital.

By comparing figures A14, A16 and A17, we can see that the annual capital investment in M&E was flat from 2003 to 2008, and, with some annual variation, changed little from the late 1990s to 2008. After 2008, it began to grow in subsequent years. The depreciated capital stock in M&E fell from 1999 until 2007, even though it demonstrated an unbroken, strong upward trend for two decades before 1999. By 2008, a slow recovery in M&E net capital stock began, although its growth rate has not yet matched the growth rate for the two decades before 1999. If industry can sustain and build on its growth in net capital stock of M&E in the years ahead and halt the decline in buildings net capital stock, these elements would provide the foundation for a turnaround in the growing trade deficit.

Appendix

Capital Investment in Canadian Food Processing: Detailed Observations

These notes provide greater detail on trends in Foreign Direct Investment (FDI) and Canadian Direct Investment abroad (CDI) for the Canadian food processing industry. As well, the investment, capital stock and depreciation in the food processing industry in Canada are detailed.

1. Canadian Direct Investment Abroad (CDI)

From 1999 to 2012, total CDI in food manufacturing climbed steadily from $2.7 billion to $8.5 billion, shown in Figure A1. Slightly over half of the CDI ($4.3 billion) was in the U.S. in 2012, down from a peak in 2008 of $5.9 billion shown in Figure A2. In general, CDI in the U.S. grew substantially from 1999 to 2008 from $1.6 billion to $5.9 billion, and has declined somewhat more recently. The second largest destination for CDI is Other America, growing steadily from about $0.5 billion to over $1 billion for the period 1999 to 2012. Europe is the other destination for CDI, varying between $0.5 billion to $1 billion in 2012. Due to Canadian confidentiality rules, we are not able to publish the data for Europe for 2011. Figure A2 puts the 2011 number at $1 and includes the actual figure for 2012.

Of considerable interest is the All Other countries CDI, calculated as the Total All Regions less the levels in U.S., Europe and Other America, moving from very low levels until 2009, and rising to $2 billion by 2012.[3] Clearly, Canadian firms are shifting investment to new areas, and allocating less to the U.S.

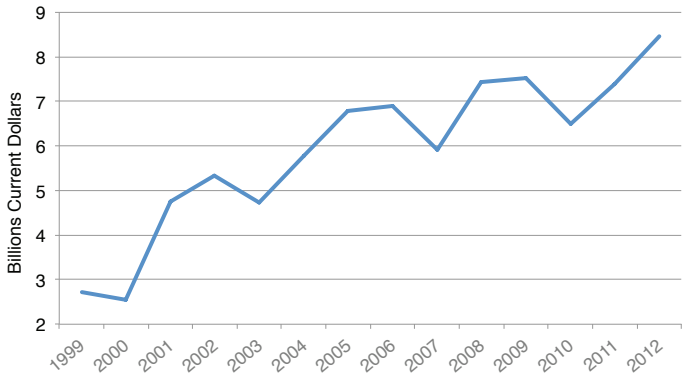

Figure A1. Canadian direct investment abroad, food manufacturing, all countries (NAICS 311).

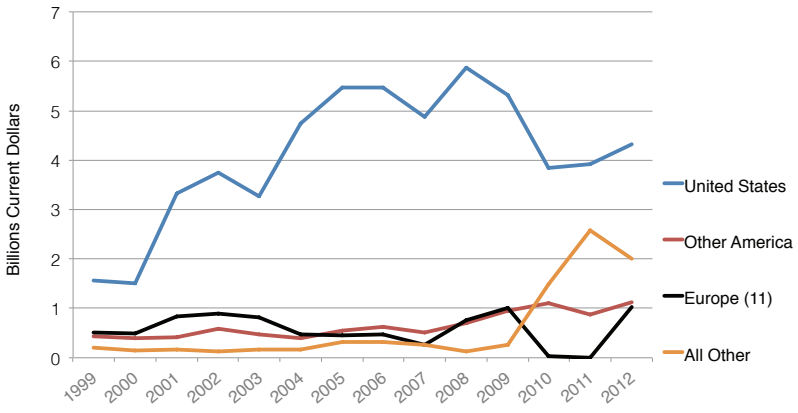

Figure A2. Canadian direct investment abroad, by region, food manufacturing (NAICS 311).

3. The All Other line for Figure A2 includes the amount for Europe for 2011, although it does not include Europe for 2012. Even allowing $1 billion for Europe in 2011, the rapid shift in CDI to All Other regions in the last few years is remarkable.

Figure A3 shows the share of CDI in food manufacturing compared with CDI for all manufacturing and CDI for all industries. The share of CDI in food manufacturing compared to CDI in all manufacturing has risen dramatically from less than 3% to over 12% over the 14-year period. However, food manufacturing CDI has remained constant at about 1% of CDI for all industries.

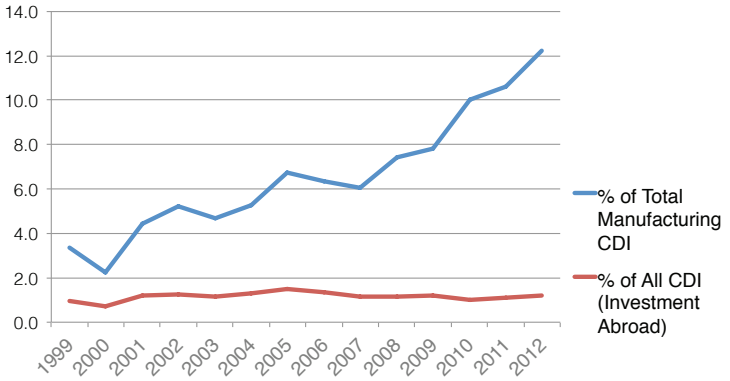

Figure A3. Percent of CDI food manufacturing as a share of CDI total manufacturing and CDI for all industries.

2. Foreign Direct Investment (FDI) in Canada

FDI in food manufacturing was $8.4 billion in 1999, rising slowly to $9.8 billion in 2007, and then rising sharply to the $14 to $16 billion level for the period 2009 to 2012 (Figure A4). The vast majority of CDI came from the U.S. and Europe. All other countries represented less than $0.6 billion throughout the period.

The sharpest rise in FDI in food manufacturing came from the U.S. (Figure A5). Stable at about $6 billion for the years 1999 to 2007, FDI from the U.S. rose sharply to the $8 to $10 billion level after 2008 and remained stable at that level. Europe also increased FDI in Canada, growing steadily from the $2 billion level at the beginning of the period to nearly $6 billion by 2012.

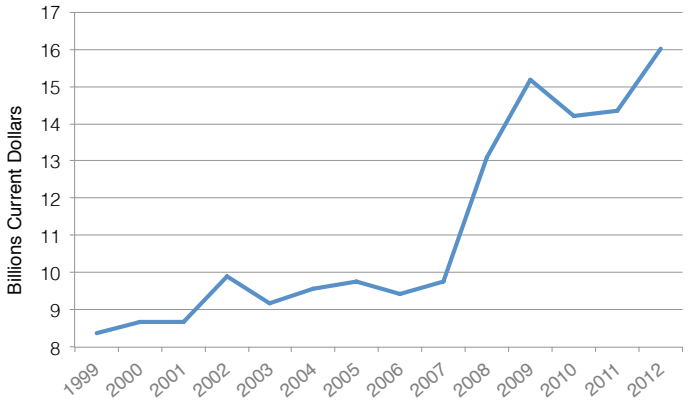

Figure A4. Foreign direct investment, food manufacturing, all countries (NAICS 311).

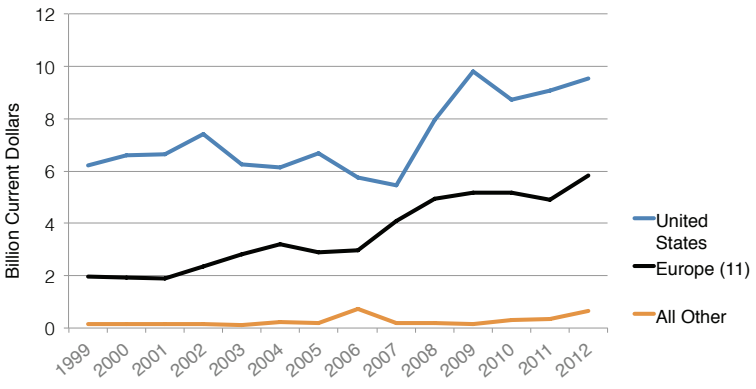

Figure A5. Foreign direct investment, food manufacturing (NAICS 311).

Figure A6 shows the share of FDI in food manufacturing compared to FDI in all manufacturing industries and to FDI in all industries. Food manufacturing FDI has remained stable throughout the period at about 8% of FDI in all manufacturing. Similarly, food manufacturing FDI was at 2-3% of FDI for all industries, and showing a slow decline over the period.

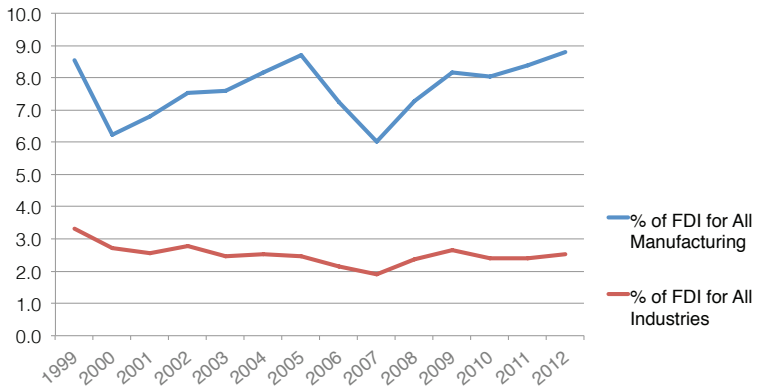

Figure A6. Percent of FDI in food manufacturing as a share of FDI manufacturing, and FDI for all industries.

3. Net Investment

From the preceding graphs, it is possible to show the net investment levels, that is, FDI minus CDI. In Figure A7, net investment in Canada was positive but declining in the period 1999 to 2006 from about the $6 billion level to less than $3 billion. Thereafter, net investment increased rapidly to the $7-$8 billion level for 2009 to 2012.

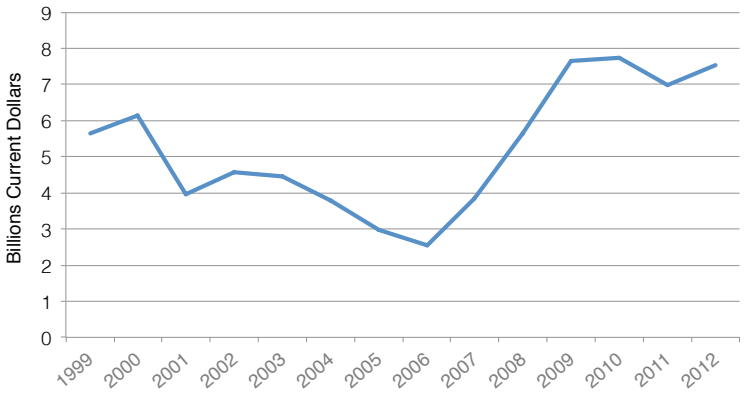

Figure A7. FDI minus CDI, food manufacturing, all countries (NAICS 311).

From Figure A8, the decline in the early years was largely due to the decrease in the U.S. FDI in Canada, followed by a sharp rise in net investment from the U.S. after 2006. For Europe, there was a steady rise in net investment from the $1 to $1.5 billion range in 1999 to about $5 billion for the years 2010 to 2012.

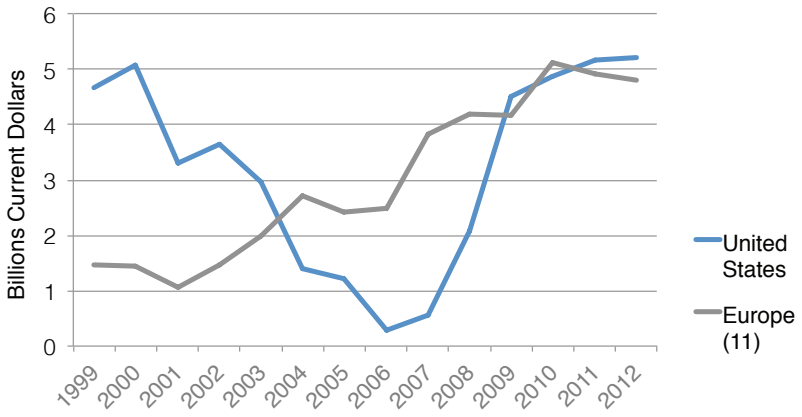

Figure A8. FDI minus CDI food manufacturing, by region.

Figure A9 shows the steady increase in both FDI and CDI, with FDI roughly double the CDI levels across the period.

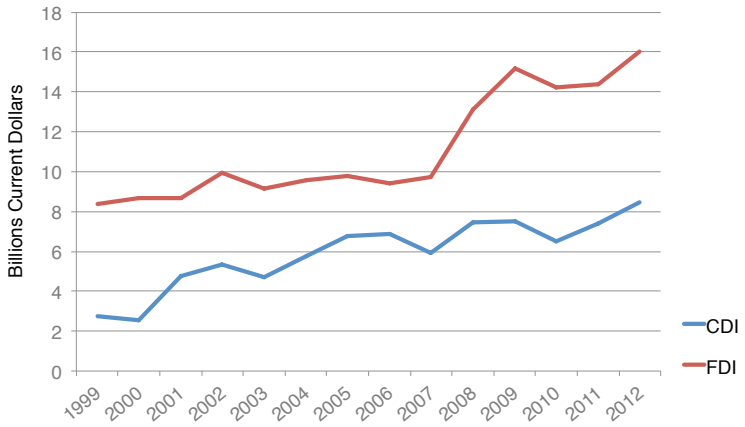

Figure A9. FDI and CDI, food manufacturing, all countries.

Figure A10 shows the same information for the U.S. only, again demonstrating the recent rise in U.S. FDI in Canada, as well as the move away from increases in CDI to the U.S. This indicates the increasing diversity of CDI abroad and the decline in recent years of CDI to the U.S.

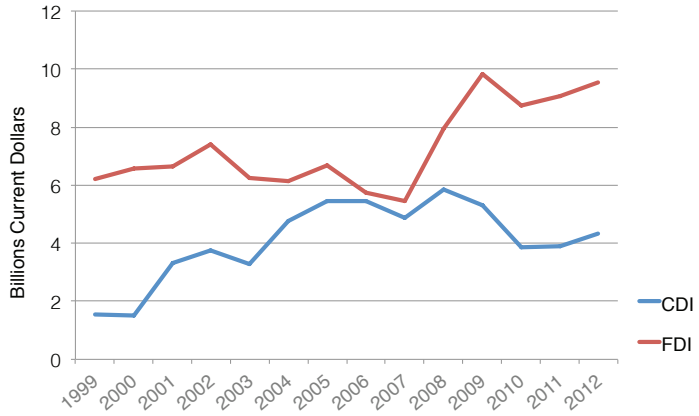

Figure A10. FDI and CDI, food manufacturing, U.S.

Figure A11 indicates that FDI from Europe in food manufacturing has been rising rapidly, particularly since 2006. Canadian direct investment in Europe, however, has been stagnant at $1 billion or less for several years. Clearly, Canadian companies have not yet shifted their investment decisions in anticipation of the conclusion of the Canada-EU trade agreement.

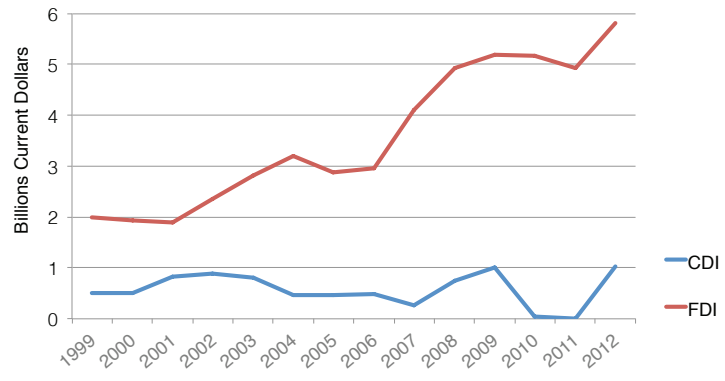

Figure A11. FDI and CDI, food manufacturing, Europe.

While detailed graphics of the beverages and tobacco data are not provided, the aggregate graph of FDI minus CDI for beverages and tobacco is shown in Figure A12. Although net investment was high in the period 2000 to 2002, the net investment declined rapidly from the $16 billion range in 2002 to the $2 to $4 billion range for 2006 to 2012.

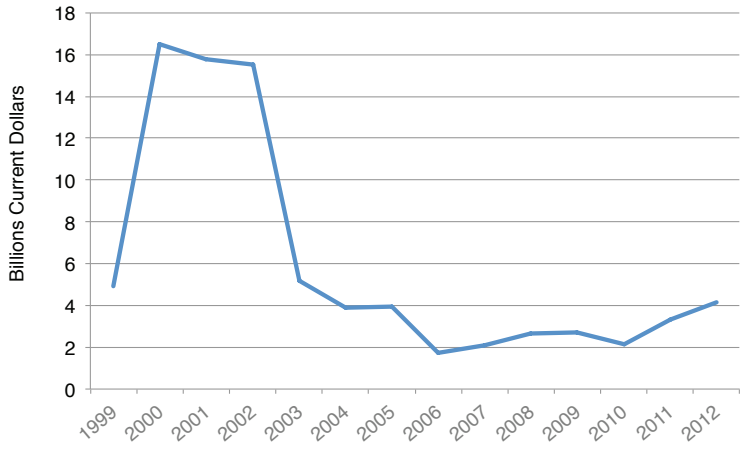

Figure A12. FDI and CDI, beverage and tobacco, all countries.

4. Investment

This section explores the annual investment in food manufacturing in Canada, as well as the stocks of capital held in Canada. The investments are annual data, while the capital stocks represent the cumulative value of investments over time. Annual investment in Canadian food manufacturing has grown from about $700 million to about $2 billion over the period 1980 to 2012, shown in Figure A13. There is some variability year-to-year, with two periods of little change year over year: mid-1980s to mid-1990s and again 2003 to 2007.

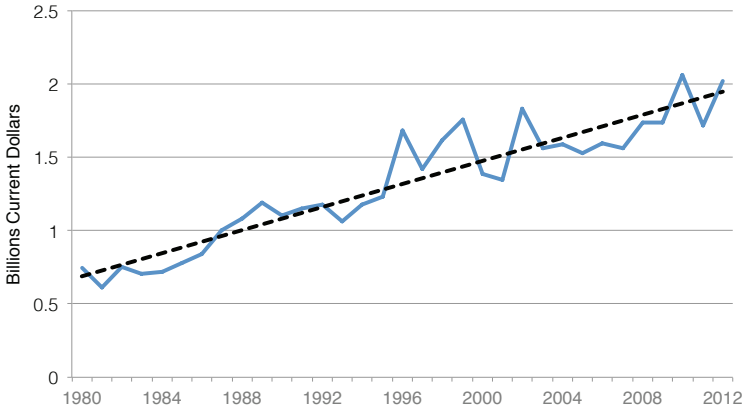

Figure A13. Total capital investment in food manufacturing.

Figure A14 breaks total investment down into the four components, building, engineering, machinery and equipment, and intellectual property products. Machinery and equipment represents between 65 and 75% of all investment. While initially small, the intellectual property products component shows a steady rise over the period from less than $50 million to $300 million. Engineering represents by far the smallest component of investment. Building investment remains essentially flat over the entire period at about $200 million per year. The implication is that annual investment is largely in upgrading or expanding machinery and equipment, with limited new buildings or greenfield investment.

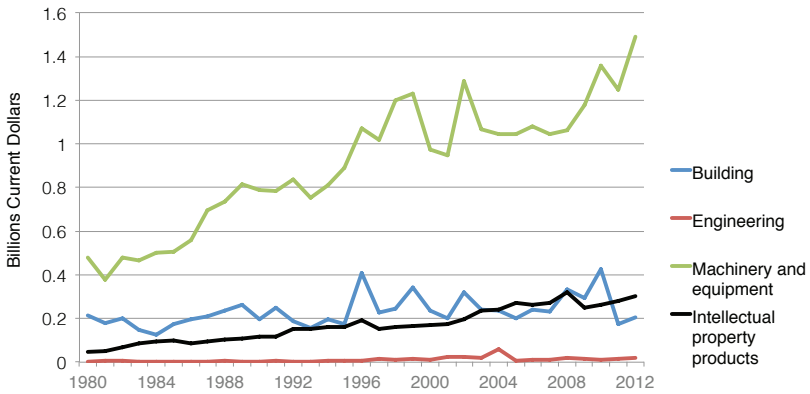

Figure A14. Capital investment in food manufacturing by type of investment.

5. Capital stocks

Cumulative capital stock in food manufacturing at current dollars and at book value or cost is shown in Figure A15. It shows a steady and nearly straight-line accumulation from 1980 to 2002. Thereafter, growth is flat and sporadic.

Figure A16 shows the breakdown among the components of the capital stock. Machinery and equipment (M&E), along with building are the two largest components. M&E grows steadily from $4.5 billion to $8 billion for 1980 to 1991, and then accelerates its growth to $16 billion by 2002. Thereafter, capital stock in M&E declines and flattens out at about $14 billion.

Capital stock in buildings grows from about $4 billion in 1980 to $13.5 billion in 2008. After 2008, building capital stock falls back to the $12.5 to $13 billion range.

Capital stock in engineering and intellectual property products, although very small components of the capital stock, show steady, nearly linear, growth throughout the period.

Figure A17 shows the net capital stock depreciated using straight-line depreciation. The patterns are roughly similar to the undepreciated capital stock. Total value of net capital stock has remained roughly constant at about $13 to $13.5 billion since 2002. This represents less than 50 percent of the original capital cost.

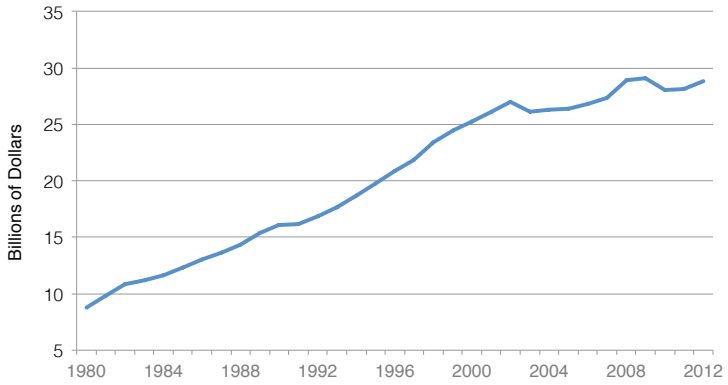

Figure A15. Year-end gross capital stock, food manufacturing.

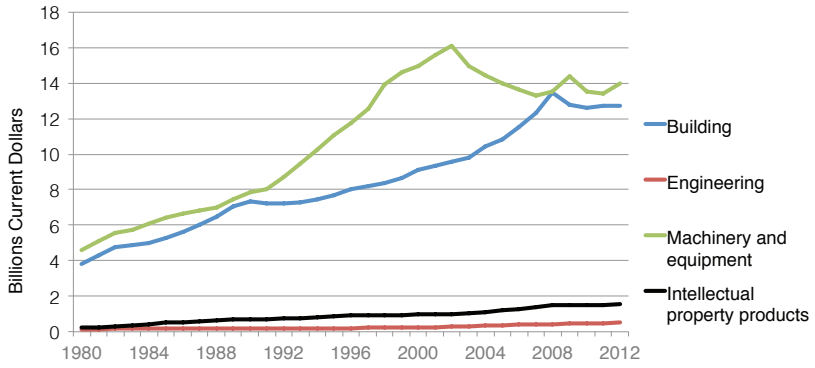

Figure A16. Capital investment in food manufacturing by type of investment.

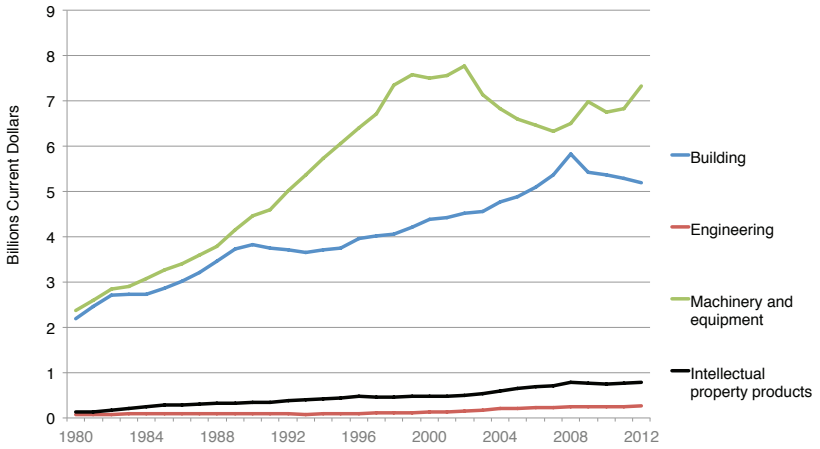

Figure A17. Straight-line end-of-year net depreciated capital stock, food manufacturing.

Figure A18 shows the capital investment in buildings less the straight-line depreciation for buildings. Although variable year over year, it shows a strong downward trend, and negative values starting in the mid-1990s. The implication is that depreciation has exceeded capital investment in building for several years, and that there is little if any new net investment in building assets.

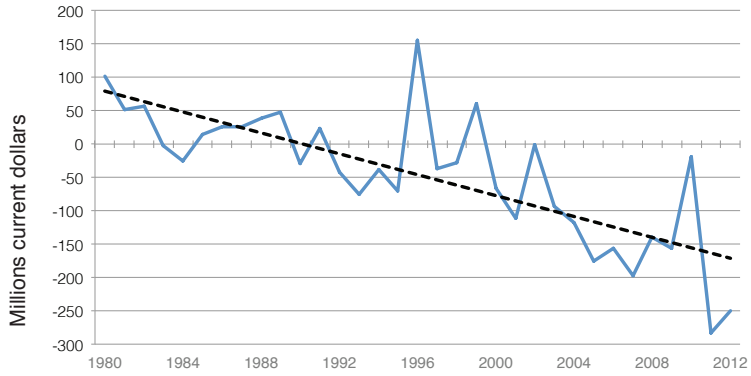

Figure A18. Capital investment minus SL depreciation, buildings, food processing.

Figure A19 shows capital investment in M&E minus straight-line depreciation. There are clearly four different periods throughout the years 1980 to 2012. From 1980 to 1986, values are negative, indicating negative investment in M&E, followed by net positive investment from 1987 to 2000. Another period of negative investment ensued for the years 2001 to 2009, followed again by a period of positive net investment thereafter.

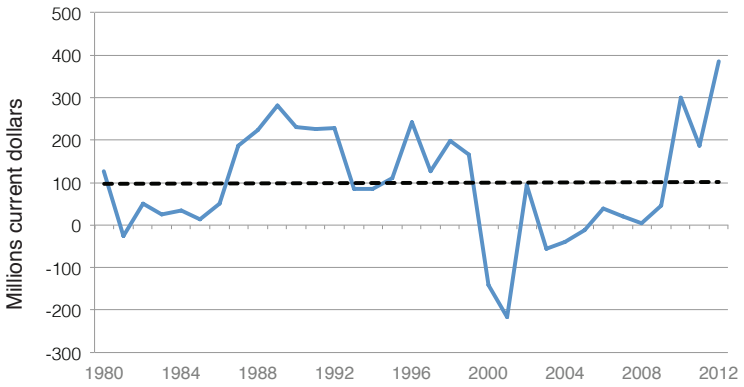

Figure A19. Capital investment minus SL depreciation, machinery and equipment, food processing.

Figure A20 shows the decline in net investment, starting about 2000.
The return to positive net investment in 2010 and 2012, almost entirely based on M&E, suggests that with sustained positive net investment, the decline in the trade deficit could be halted. The negative aspect is that net investment in buildings appears to be continuing its fall deeper into negative territory, possibly offsetting the recent gains in M&E.

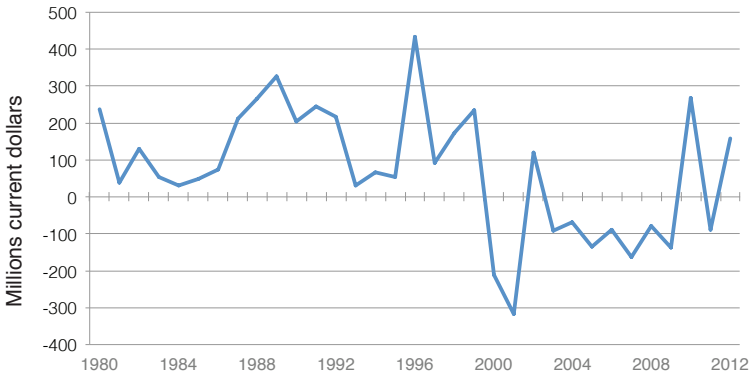

Figure A20. Capital investment minus depreciation, food processing.

Data Sources

The data for these notes are drawn from "Table 376-0052, International investment position, Canadian direct investment abroad and foreign direct investment in Canada, by North American Industry Classification System (NAICS) and region, annual (dollars x 1,000,000)" for the years 1999 to 2012 for the FDI and CDI analysis. Although the CANSIM tables include a breakdown of FDI and CDI by region of the world, in many cases the detail is not available for some regions on a consistent basis over all the years, because of data confidentiality.

As a result, only those regions that have sufficient data over the period are shown in the graphs. The five regions are: U.S., Other America, Asia and Oceania, Europe, and Other Countries. For CDI, only U.S., Europe, and Other America are available, while for FDI, only the U.S., Europe, and Asia and Oceania are included.

The investment, capital stock and depreciation information is drawn from "Table 031-0002, Flows and stocks of fixed non-residential capital, by North American Industry Classification System (NAICS) and asset, Canada, provinces and territories, annual (dollars x 1,000,000) for the years 1980 to 2012." These data were downloaded from the Statistics Canada CANSIM tables over the period 24 January 2014 through 10 February 2014. For these tables, the information is available for Investment, Year-end Gross Capital Stock, and depreciation calculated in three different ways: straight-line, hyperbolic (delayed) depreciation, and geometric (infinite) depreciation. In all of these data, the values are further broken down into Building, Engineering, Machinery and Equipment, and Intellectual Property Products.

For both of these data sets, food manufacturing uses the NAICS 311 category, and beverages NAICS 312.

For the trade balance, the source was Statistics Canada, Trade Data Online, accessed several times, the most recent being 31 March 2014. All data refer to HS IV (16-23), excluding Tobacco and Tobacco Products HS IV 24.