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WHAT'S BEHIND THE CANADIAN MANUFACTURING SECTOR RECESSION?

Not long ago it was a widely held view that the Canadian manufacturing sector would suffer a death-blow from the joint assault of a rapidly appreciating domestic currency and the growing competition from emerging economies such as China. However, notwithstanding the painful adjustments that have invariably occurred along the way, the Canadian manufacturing sector has survived the massive rally in the loonie and the relentless march of the Chinese export juggernaut[1] – though it has the cuts and bruises to show for the effort. In this piece we take a closer look at the painful adjustment process that has contributed to the survival of the Canadian manufacturing sector[2] and offer some insights on where we see the sector heading in the short to medium term.

We identify three[3] key contributory factors to this survival, namely the above (economy-wide) average productivity gains in the sector, favourable domestic economic conditions, and supportive labour market dynamics. Taken together, these factors have played an important role in ensuring that the adjustments in the Canadian manufacturing sector have been both orderly and appropriate, and have (to some extent) secured the future survival of the sector in Canada. Of course, there are enormous challenges ahead for the sector. Not least among them will be dealing with the vast disparity in labour productivity between Canadian and U.S. manufacturers.

Deindustrialisation of the industrialised world

After reaching a recent peak of 15.3% in 1999, the Canadian manufacturing sector's share of total employment has steadily declined to a historic low mark – standing at 11.7% by the end of 2007. During the same period there has been the concomitant steady increase in the

HIGHLIGHTS

- Despite the recent painful adjustments, the Canadian manufacturing sector remains an important source of economic activity and employment in Canada.
- Over the span thirty years, the sector's share of total employment has fallen from 19.1% in 1976 to 11.7% at the end of 2007, while its share of total output has fallen from 16.9% to 14.4% over the same period.
- The decline in the manufacturing sector is in no way unique to Canada. In fact, across the industrialised world there have been similar long-term trends of downward shifts in the size and importance of the manufacturing sector.
- The recent accelerated decline in the manufacturing sector over the past five years is perhaps to some extent the unwinding of the cost-advantages enjoyed by the sector between 1994 and 2002 when the Canadian dollar was massively undervalued.
- Despite the massive declines recently, the Canadian manufacturing sector employs more people today than it did before 1994.
- However, given the considerable time lag between movements in the exchange rate and adjustments in the manufacturing sector, and the secular downward trend in manufacturing sector activity, the rationalization in the sector is likely to continue into the medium term.
- The combination of declining global market share and productivity inertia will continue to place downward pressure on manufacturing sector wages.

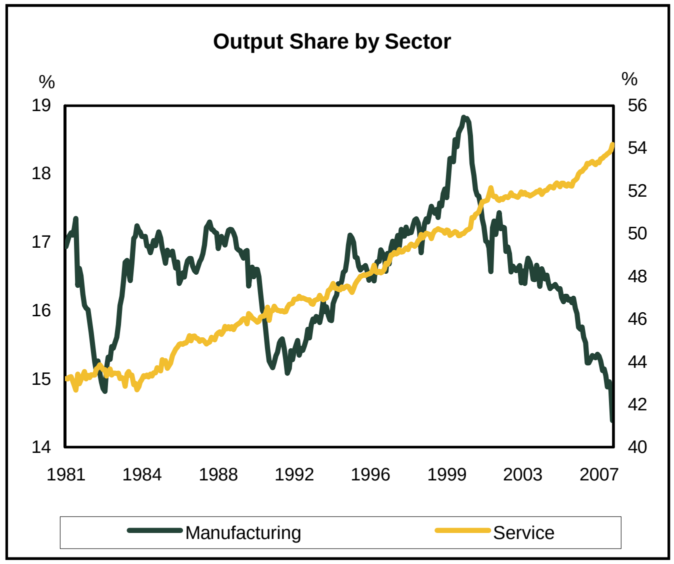
employment share for the service sector, which has increased from 74% in 1999 to a more profound 76.7% by the end of 2007. The divergent paths for these two sectors have come to epitomize the reorientation of economic activity in Canada to a more service oriented structure – in line with the other industrialised countries.

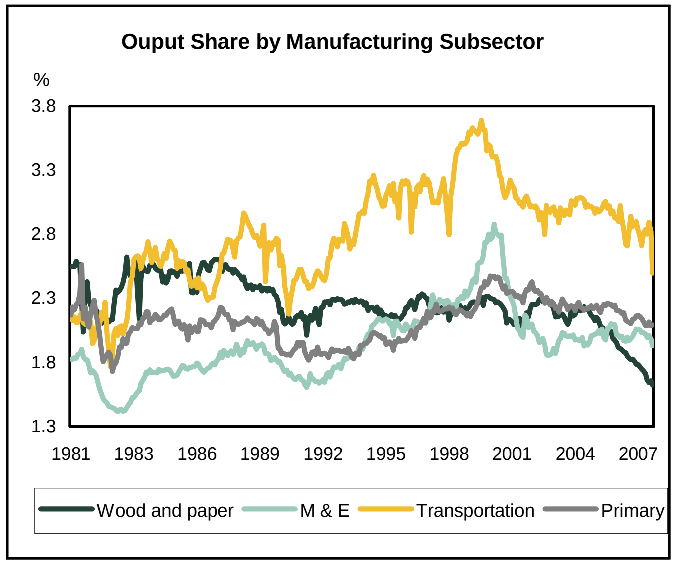
To put this in historical perspective, the recent decline in the employment share of the manufacturing sector turns out to be yet another leg of an ongoing adjustment process – briefly interrupted between 1994 and 2002 – which has been a feature of this sector over the past 30 years. In fact, the employment share of the manufacturing sector has declined from a high of 19.1% in 1976 to 11.7% in 2007.

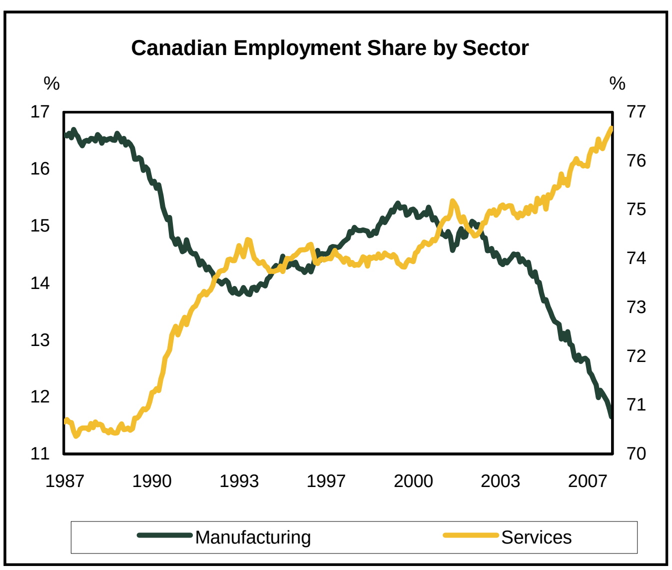
In terms of output share, a similar picture emerges. Here, the contribution of the manufacturing sector to domestic output has fallen from a record peak of 18.8% in 2000, to a low of 14.4% in December 2007. Again, this was the mirror image of the experience in the service sector, where the share of domestic output actually increased from 50% in 2000 to 53.9% by the end of 2007. Here again, the evidence suggests a dramatic decline in the importance of the manufacturing sector to Canadian economic activity, while the importance of the service sector has risen appreciably during the same period.

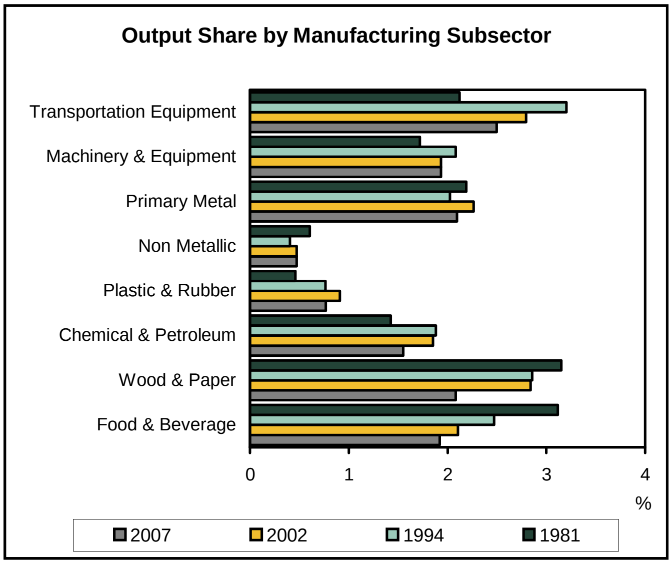
At a sub-sectoral level, the decline in output shares has generally been broadly based, though the decline in wood and paper products, and food and beverage sub-sectors since 1981 has been particularly pronounced. Between 1994 and 2007, however, the largest drop in output share has been in the transportation equipment manufacturing sub-sector, which has fallen from a high of 3.2% in 1994 to 2.5% by the end of 2007 – slightly higher than the 2.1% recorded in 1981.

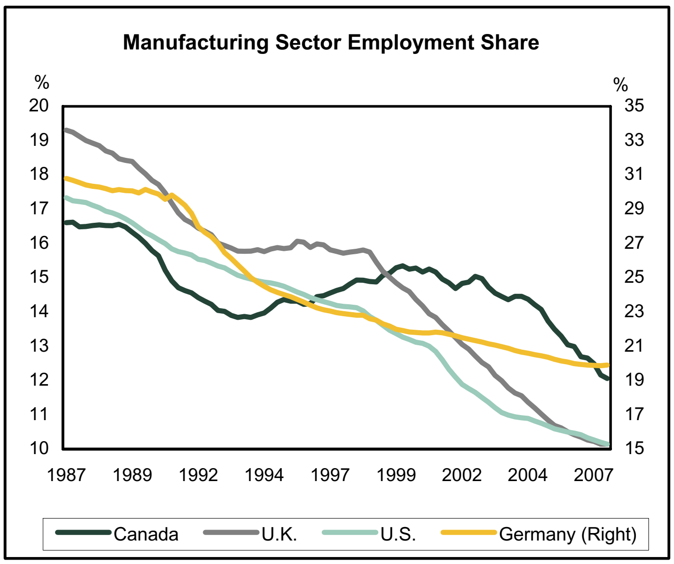
The decline in the manufacturing sector is in no way unique to Canada. In fact, across the industrialised world there have been similar long-term trends of downward shifts in the size and importance of the manufacturing sector over the past three decades. In most cases, the employment share of the manufacturing sector in these economies has remained on a long-term downward trajectory, and has remained below 20% over the entire period. In the case of Germany, for example, the decline is more dramatic, with the employment share falling from 30.7% in 1987 to 19.9%











in 2007. At the same time there has been a consistent uptick in the size and importance of the service sector in these countries, as has been the experience in Canada.

The obvious conclusion that emerges from this evidence is that the economies of these industrialised countries have increasingly reoriented themselves towards the service sector as the importance of their industrial bases continues to diminish over time, and as they move up the technology and value-added chains. Moreover, the evidence also suggests that while the case can be made that the recent rapid appreciation of the Canadian dollar has contributed significantly to the recent dramatic decline in the Canadian manufacturing sector, as we shall show shortly, it must be seen in the context of the general rebalancing in economic activity in Canada.

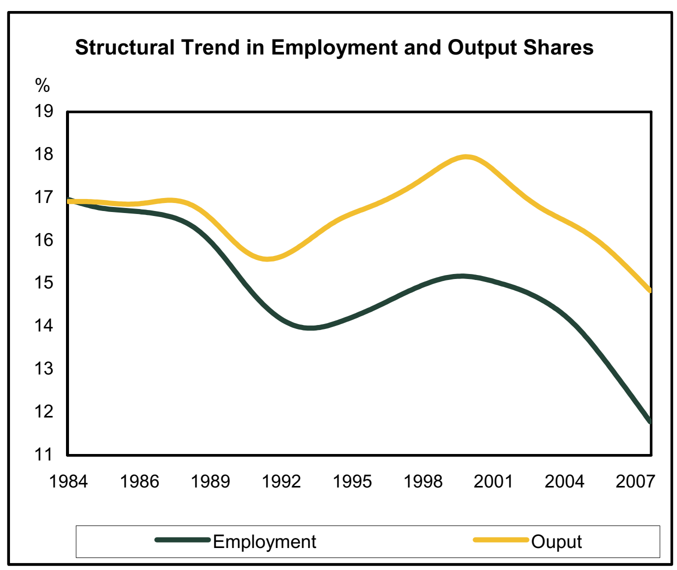
The long term trend

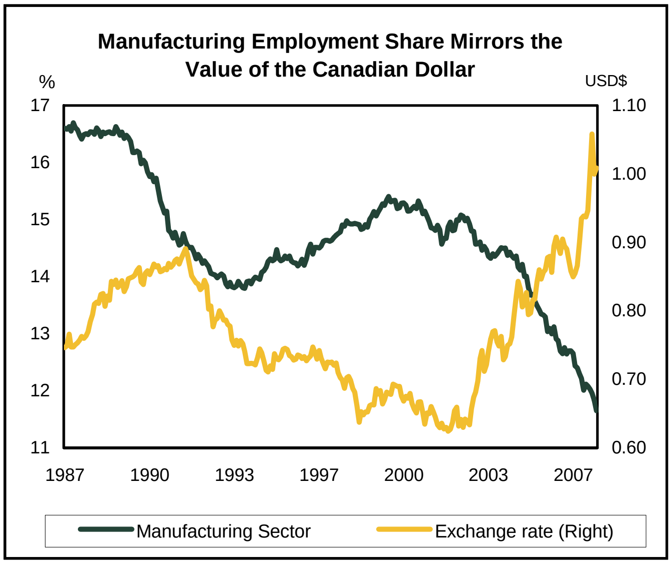
In fact, looking at the long-term (structural) trend, the evidence on the downward trajectory for the Canadian manufacturing sector is more acute. To extract the structural pattern in the series, we apply the Hodrick-Prescott (HP) filter to the data. Using this decomposition, it becomes unequivocally clear that the long-term trajectory for the manufacturing sector employment and output shares in Canada are decidedly downwards. This has been the case with the noticeable exception of the 1994 to 2000 period when the trend was heading upwards. Despite this somewhat unsurprising observation, there is one interesting and perhaps hopeful observation that is worth mentioning.

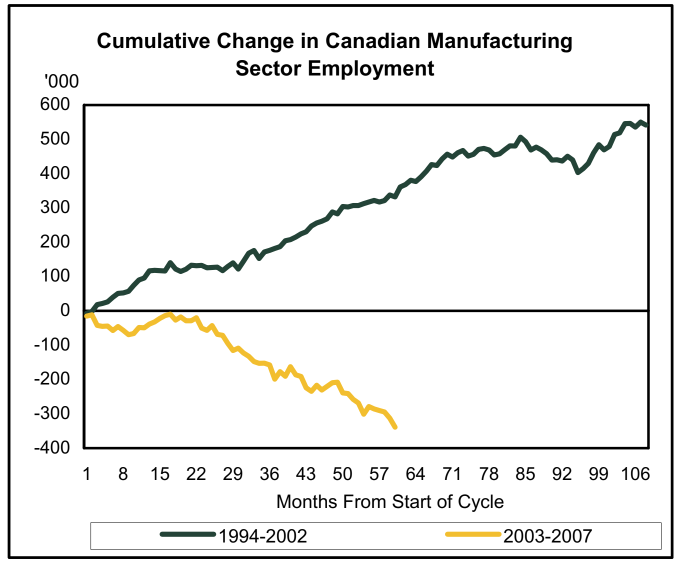
That is, in spite of the profound drop that is evident in the employment share, the decline in the output share is much less pronounced – though it too is on a downward path. And despite starting at about the same level in 1984, the drop in the output share is almost 3 percentage points less than that for the employment share. The reason for this is quite simple. The Canadian manufacturing sector has been able to eke out some productivity gains over the period to blunt the drop in output.

A recovery of sorts

Between 1994 and 2002, there was a strong upswing in the Canadian manufacturing sector activity as the softening Canadian dollar and the implementation of NAFTA during that period resuscitated the sector briefly. To put this in context, during January 1994 and December 2002, the Canadian dollar depreciated by a total of 15% and when







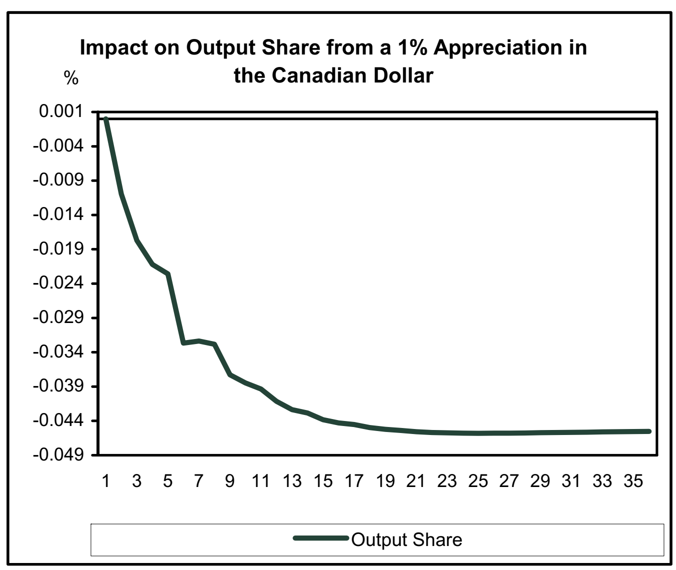
combined with the increased access to the U.S. markets, engendered by the NAFTA Agreement, the manufacturing sector's payroll increased by a whopping 541 500 (representing an increase of 31%) as the output of the sector soared.

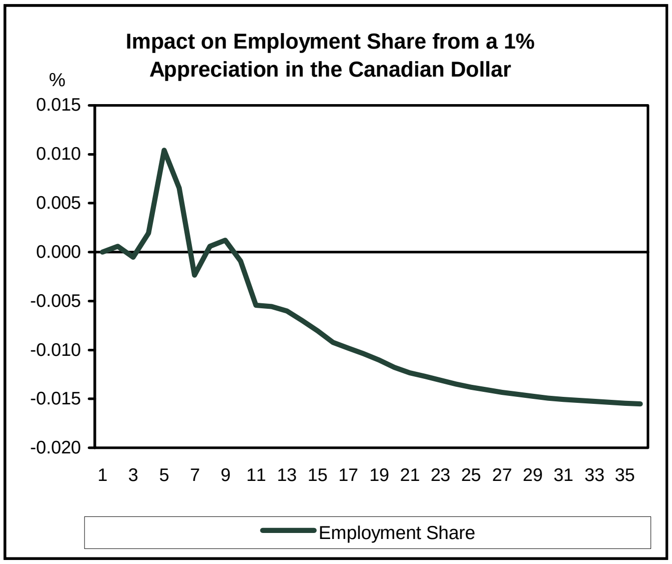
This recovery, however, was short-lived as the 60% appreciation in the Canadian dollar since 2003 has resulted in the unwinding of some of these gains in the sector. In fact, since 2003, the cumulative employment loss in the manufacturing sector amounted to 338 800 – representing a decline of 15% during the period. Despite this, since 1994 there has been a net addition of over 200 000 manufacturing jobs in Canada. This is in contrast to the other OECD countries where the sector actually shed jobs over that period. This is not to say that the loss of jobs in the manufacturing sector does not have its associated adverse impact on the economy. However, the current downturn in the sector must be seen as part of a broader downward trajectory for the sector that has been commonplace in the industrialised world, and despite the downturn, employment in the sector remains above the pre-1994 levels, though its share of employment has fallen.

Indeed, despite this downward trend, we do not expect the long-run impact on the Canadian economy to be significant. This is because the swing in the structure of economic activity has been driven in large part by the shifts in consumer preferences from goods to services as income increases. Therefore, the rebalancing in employment and production is the natural response of the economy to this shift in demand. This, in fact, is a good thing. It suggests that the Canadian economy has been responsive to the changing nature of consumer demand, and that the labour market is sufficiently flexible that it too responds appropriately to signals. This, however, is not to say that the recent surge in the Canadian dollar has not been a major player in the realignment in the sector.

Assessing the impact of the dollar

Notwithstanding the evidence on the long-term secular decline in manufacturing sector activity across the industrialised world (including Canada), the relationship between the fortunes in the export-oriented manufacturing sector and movements in the exchange rate cannot be ignored. In fact, the recent surge in the value of the dollar has added another important dimension to the dynamics in the Canadian manufacturing sector, and may have conceivably ac-





celerated this decline. It has also reignited the debate about the Canadian manufacturing sector falling victim to Dutch disease. Here, we document that while the impact of the rising loonie on the manufacturing sector has been generally overstated, there is evidence to show that it is nonetheless significant.

To assess the impact of the rising loonie on the sector we use a simple vector autoregression (VAR) econometric technique. The variables included in the analysis are the manufacturing sector output and employment share (separately), short-term corporate bond rate, and a measure of consumer price inflation.

The estimates of the model suggest a moderate inverse relationship between movements in the bilateral Canada-U.S. exchange rate and the manufacturing sector output share, with a 1% appreciation in the Canadian dollar being associated with a 0.045 percentage points decline in output share over the long-run. In terms of employment share, the impact is less, with a 1% appreciation resulting in a 0.016 percentage points drop in employment share. Overall, the empirical analysis demonstrates that while the role of the Canadian dollar on the manufacturing sector cannot be ignored, the current travails in the sector go beyond the surge in the value of the Canadian dollar over the past five years.

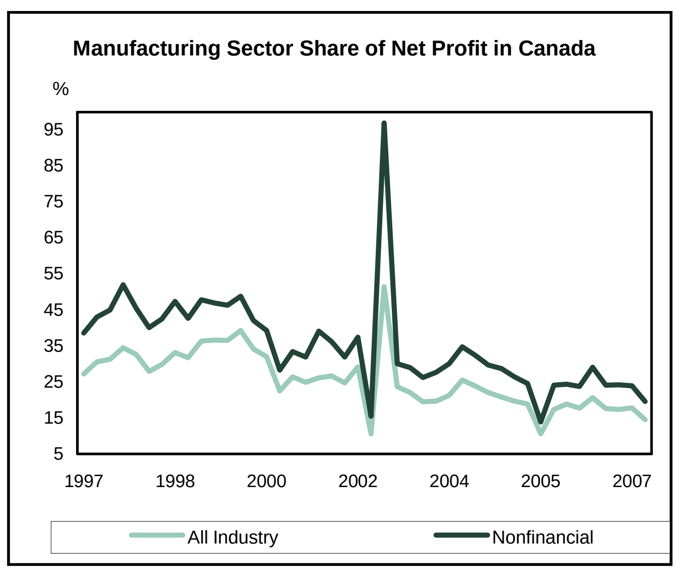
Additionally, the evidence suggests that it takes at least 3 years for the full impact of these movements in the exchange rate to show up in the manufacturing sector. This therefore points to the fact that the recent surge in the Canadian dollar will continue to weigh on the sector, and that further erosion in economic activity will likely carry into the coming years.

The current state of the manufacturing sector

Despite the generally gloomy assessments that have characterised the debate on the Canadian manufacturing sector, and the evidence that there have been a noticeable decline in its importance, there are indications that the financial position of the surviving manufacturing firms is not entirely dire. In fact, the rationalization of activity in the sector has served to increase efficiency in the remaining firms ensuring that the sector has remained profitable.

For example, the net profit of the sector continues to be relatively robust, though its share of sectoral profits has declined in line with its diminishing share of economic activity. By the end of 2007, for example, the manufacturing sector accounted for 14.5% of all reported profits in Canada (down from 27% in 1997), while its share of non-financial sector profit has fallen from 38.6% in 1997 to 19.6%. The only exception to this secular decline in profit shares was in 2003, when the massively undervalued Canadian dollar bolstered the bottom line of exporters.

Mind you, the improvements in the Canadian manufacturing sector were on account of the weak Canadian dollar between 1990 and 2003 and the implementation of NAFTA in 1994. This exchange rate advantage was at best tenuous, since any change in the direction in the value of the loonie would invariably result in the reversal of these gains for the sector. And as such, it should not be surprising that as this cost advantage receded during the post-2002 period that the sector returned to its long-run down-



ward adjustment path.

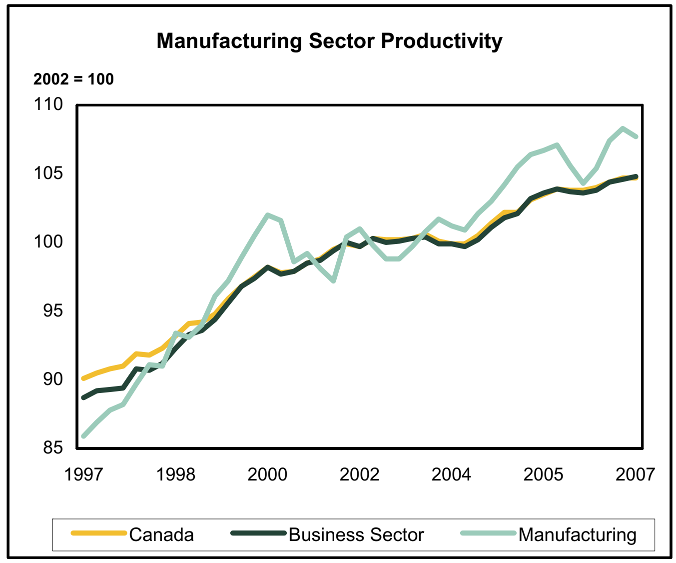
How does the sector stack up against the national average?

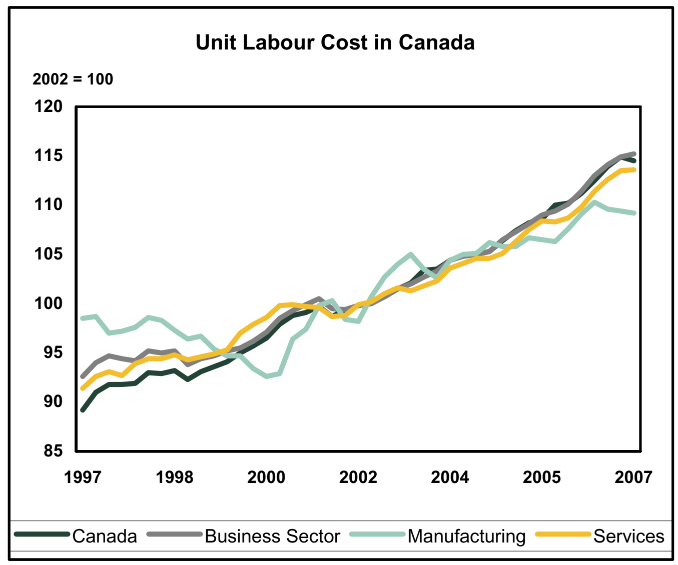
Despite its adverse impact on economic activity, the stronger loonie has provided the Canadian manufacturing sector with key opportunities. In the first place, with the lower costs of imported input, there is the opportunity for firms to invest in the relatively cheaper machinery and equipment that could conceivably contribute to boosting productivity and efficiency gains. And while there is evidence to suggest that the Canadian business community as a whole may not have fully exploited this opportunity, the performance of the manufacturing sector in this regard has been worse than the national average.

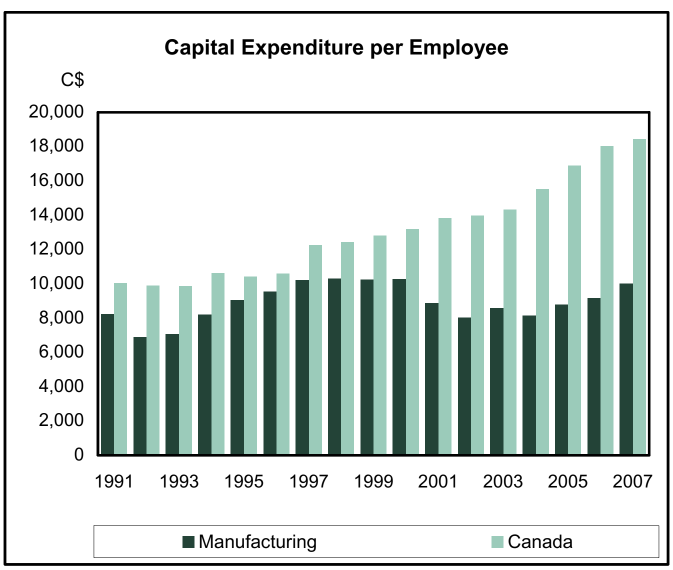
The stark disparity between the rate of capital expenditure between the manufacturing sector and the economy as a whole has grown particularly pronounced in the recent years. Indeed, after approaching the national rate of capital investment per worker, capital investment expenditure of the manufacturing sector has now fallen behind dramatically. In fact, by 2007 the rate of capital expenditure in the manufacturing sector stood at almost half the national average – at C$10K per worker, versus C$18K nationally. In total, the evidence demonstrates that the Canadian manufacturing sector has certainly not done enough in terms of capital investment expenditure to take advantage of the strength in the loonie.

Nevertheless, despite the sharp drop in capital investment between 1999 and 2001 in the sector (with its associated plunge in labour productivity) there has been a modest recovery of sorts, as labour productivity in the sector continues to outperform the national average. This, however, has been insufficient in bridging the growing gap in productivity with their U.S. counterpart – a more important benchmark for the sector.

An important by-product of this has been the associated drop in the unit labour cost for the sector. Here again the evidence suggests an above national average performance of the manufacturing sector in this regard. This observation appears to also be related to the improved profitability of the sector noted above. And in particular, it suggests that while the sector continues to face hardships, the requisite adjustments that have been undertaken by the industry have contributed to some efficiency and productivity gains in recent years, and consequently profitability.







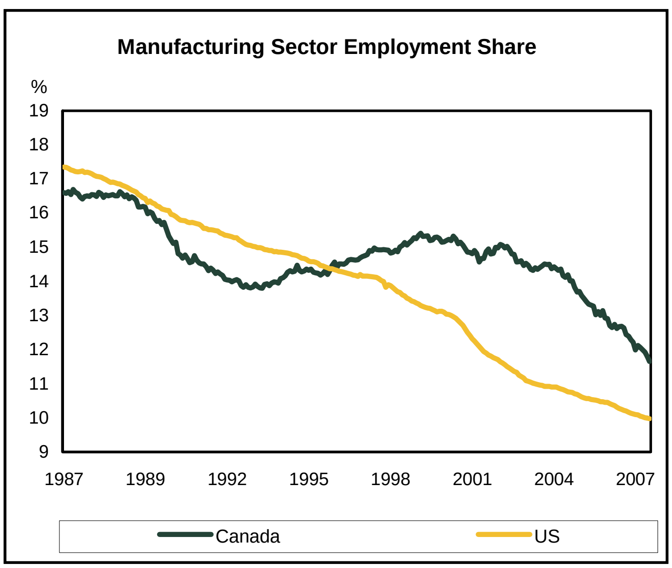
Domestic demand comes to the rescue

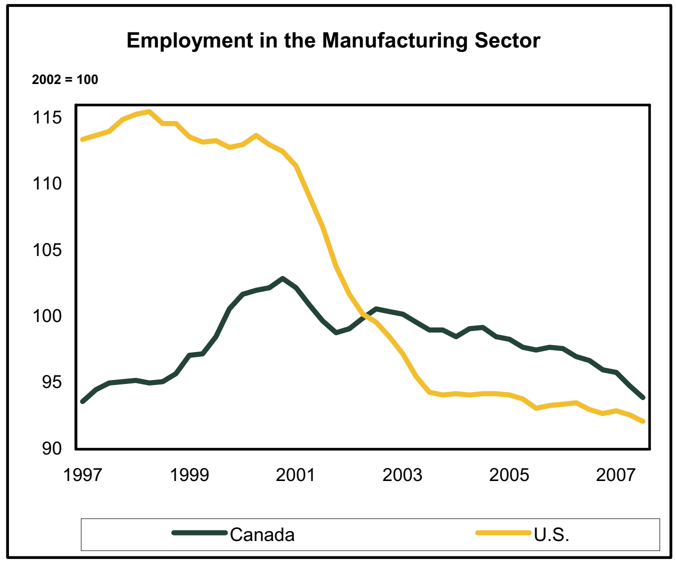
Despite the unfavourable global competitive landscape facing the Canadian manufacturing sector, the buoyant domestic economy has provided a favourable backstop for the industry. That is, with a relatively robust and growing Canadian economy, domestic sales have increasingly taken up some of the slack from the slowdown in exports arising from the less competitive global environment that Canadian manufacturing exporters face. This has meant that the extent of the impact from the slowing exports to the rest of the world – and in particular, the U.S. – has been mitigated by the growth in domestic absorptive capacity for these products as the Canadian economy grew.

And even though the domestic conditions are likely to remain somewhat supportive, the wildcard for the Canadian manufacturing sector is the prospect for the U.S. economy. And given that the U.S. has remained the number one destination for Canadian goods, any slowdown in economic activity there will do some damage to economic activity in the Canadian manufacturing sector. In fact, over the past twenty years, the biggest drops in manufacturing activity have occurred during periods of U.S. recession. And as such, a slowdown in economic activity will result in a further deceleration in manufacturing activity in Canada.

Comparisons to the U.S. manufacturing sector

Comparatively, the decline in the manufacturing sector employment has been much steeper in the U.S. than in Canada. In fact, despite starting at a higher level in 1987, the share of manufacturing sector employment in the U.S. has fallen well below the employment share in Canada.

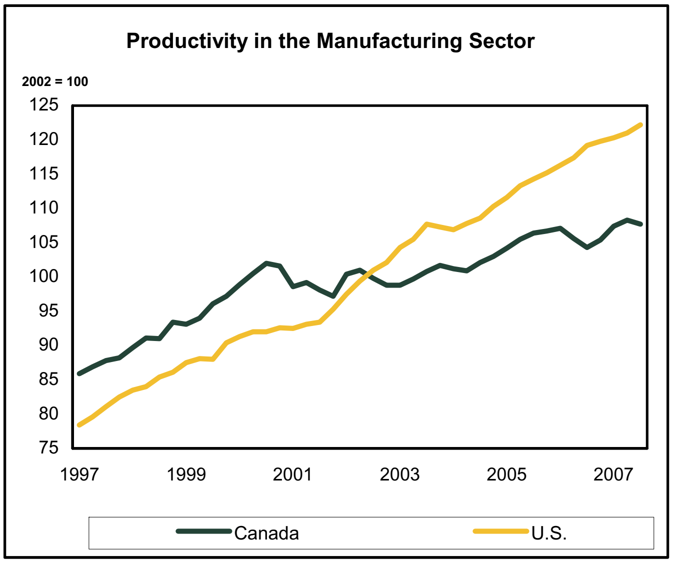


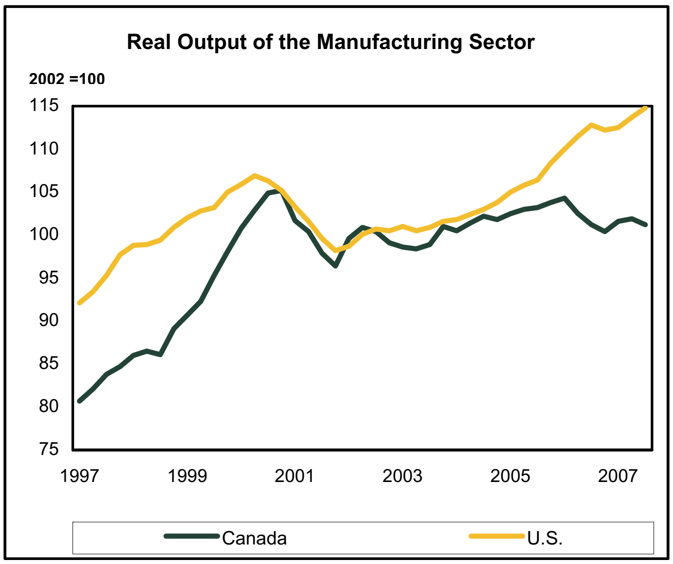


This is due in large part to the resurgence in the Canadian manufacturing sector during the 1994 to 2001 period. In addition to this, the post-2001 output share in the U.S has also remained below the level in Canada, though the accelerated decline in the output share in Canada in recent years has meant that the disparity between the two countries has dropped by half to about 1.5 percentage points.

Notwithstanding these observations, a closer look at the data indicates that despite the steep decline in the relative importance of the manufacturing sector in both countries, the Canadian manufacturing sector has been outperformed by its U.S. counterpart on the dimension that is most important for long-term survival. That is labour productivity. And while this is clearly the case for the entire Canadian economy as a whole[4], the problems that this will engender in the manufacturing sector which will be competing directly with U.S. manufacturers are certainly more acute.

Looking at productivity, it becomes quite clear that the long-term trend is tilted significantly in favour of U.S. firms. In fact, the evidence indicates that the level of productivity in the Canadian manufacturing sector has changed little as the rate of growth has almost stalled in the last five years. This is in stark contrast to the robust pace of growth that has been evident in the U.S. manufacturing sector. For example, since 1997, U.S. manufacturing labour productivity has grown by 55% compared to the meagre 25.4% in Canada. The disparity widens when comparison is done on recent performances. For example, since 2001 manufacturing sector productivity in the U.S. grew by 32.1%, while in Canada the growth rate was a more miserly 9.2%.





This goes to show that while the Canadian manufacturing sector has taken some advantage of the strong dollar to retool their plants, it has not been sufficient to counteract the massive disparity in productivity with their U.S. counterpart.

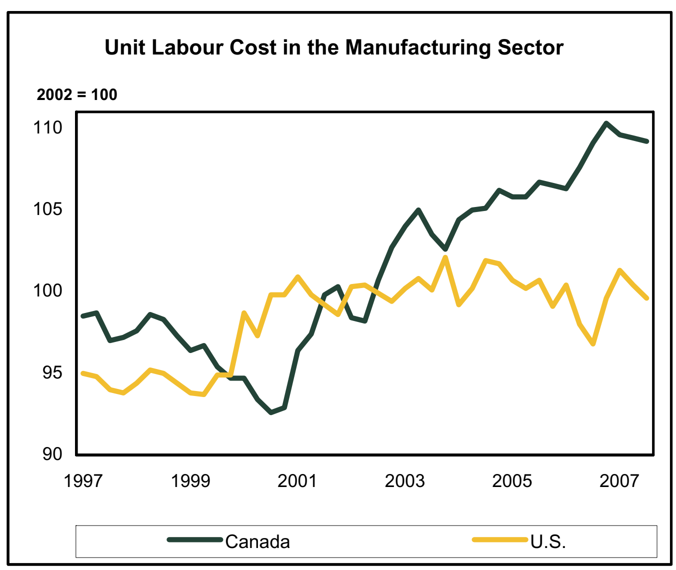
This observation is particularly important since it highlights the fact that the Canadian manufacturing sector will continue to be at a cost disadvantage compared to their U.S. counterpart. Nowhere has this been more evident than in the labour cost differentials. That is, since 2001, during which productivity virtually stalled in the Canadian manufacturing sector relative to the U.S., the unit labour cost difference has grown wider. During this period, unit labour costs remained relatively flat in the U.S. (declining by 0.01%), while in Canada unit labour costs increased by 13.4%.

Related to this divergent path in the unit labour cost is the disparity between the level of employment and output in the manufacturing sector of both countries. Here we see that while the level of manufacturing sector employment has fallen more significantly in the U.S. than in Canada since 2001, the level of output has grown much more in the U.S. than in Canada This goes to show that the lagging of the Canadian manufacturing sector behind the U.S. on the productivity front will continue to neutralise the other advantages such as the lower private health care costs that the Canadian manufacturers have enjoyed over the years.

The wage debate

Not surprisingly, the full impact of the productivity differences between the two countries continues to show up in the statistic that matters most for the workers employed in the manufacturing sector – wages. In the case of the U.S. manufacturing sector, the increased productivity has resulted in wages rising by 63% since 1997, while in Canada the rise was a more modest 39%. Moreover, since 2001, the increases were 30% and 24%, for the U.S. and Canada, respectively.

And in spite of the modest increases in nominal wages for the Canadian manufacturing sector workers over the past fifteen years, the real issue will be what impact the sluggish productivity gains in the Canada manufacturing sector will have on future wage negotiations. Here the outlook does not appear to be as favourable for workers as it has in the past when the sector was on the upswing. The

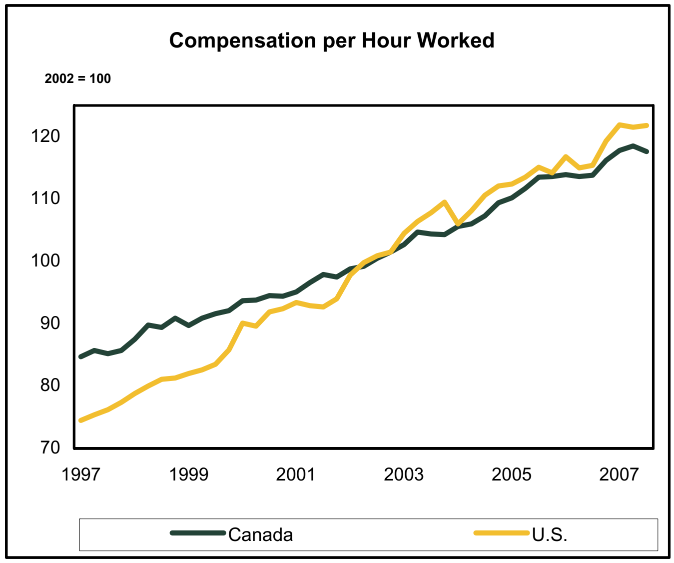


combination of declining global market share and productivity inertia will inevitably place enormous downward pressure on wages. And not surprisingly, this has increasingly become a thorny issue.

In fact, going forward, we expect future wage negotiated agreements between management and labour unions to reflect the reality of the lower productivity in the Canadian manufacturing sector. This suggests that workers too will bear some costs of this productivity difference, as the sector adjusts to the new global reality.

The bottom line

In the end, we expect the adjustments in the Canadian manufacturing sector to continue. However, given the recent slide in the value of the loonie since October 2007, there will likely be some respite to the manufacturing sector. But, the outlook will be one where the importance of the sector will continue to wane. The evidence presented demonstrates that the recent decline in the manufacturing sector was the reversal of the cost-advantage gained during the 1994-2002 period when the Canadian dollar declined by 15%.



Despite this recent drop in relative share, the absolute level of employment in the sector is still above the 1994 level. Moreover, the overall decline must be seen in the context of the general decline that we have seen in other industrialised countries.

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Endnotes

1 Since 2002 the Canadian dollar has appreciated by a massive 60%, while China has now overtaken Canada as the number one exporter to the U.S. – all within the space of six years.

2 See Burleton (2008) for a discussion on the woes of the Ontario and Québec manufacturing sector.

3 Another important factor, not discussed in this analysis is the close geographical proximity between the U.S. and Canada.

4 See Drummond et al. (2007) for a comprehensive discussion on the productivity differences between Canada and the U.S.

References

Burleton, Derek, 2008. "Ontario and Quebec's Manufacturing Woes." TD Economics Special Report, February, 2008.

Drummond, Don and Ritu Sapra, 2007. "Canadian Companies Not Taking Advantage of Investment Opportunities." TD Economics Special Report, August, 2007.