The Canadian Steel Sector: Ten Questions

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Introduction

It is a very curious time in the on-going saga of the steel industry. The past year and next have seen significant growth. Prices have increased significantly, first in 2002 then again in 2003. After decades of chronic global overcapacity, many commentators are actually speculating about a global steel shortage. At the same time, I am going to argue that the Canadian steel industry is facing shake out conditions?

Steel Production Forecast			
Region (mil tonnes)	**2003**	**2004**	**% Change**
EU	159.9	161.0	0.7
C & E Europe	29.9	30.5	2.0
Former USSR	106.3	108.0	1.6
NAFTA	123	127	3.3
S. America	42.9	44.0	2.6
China	219.7	245.0	11.0
Japan	110.5	110.0	-0.5
Other Asia	108.3	112.0	3.4
Total	960.0	1,000.0	4.2

Source: MEPS World Steel Outlook, Q4 2003

Companies across North America are coming off major recovery years since the desperate days of 2000-01.

Financial Results for Steel Producers			
US Integrateds	**2001**	**2002**	**% Change**
Shipments 000 tons	32,755	33,612	2.6
Sales ($/ton)	15,029	16,693	11.1
Oper. Cost ($/ton)	512	516	0.8
Oper. Income ($/ton)	(53)	(15)	71.7

Can Integrateds	2001	2002	% Change
Shipments 000 tons	10,990	11,449	4.2
Sales ($/ton)	6,435	7,399	15.0
Oper. Cost ($/ton)	603	602	-0.2
Oper. Income ($/ton)	(18)	44	344.4

NA Minimills	2001	2002	% Change
Shipments 000 tones	21,668	24,537	13.2
Sales ($/ton)	7,654	8,736	14.1
Oper. Cost ($/ton)	338	334	-1.2
Oper. Income ($/ton)	15	22	46.7

Source: Locker Associates, Steel Industry Update 176, June 2003

Financial pressure in the last year has of course come from an unanticipated surge in input costs, largely driven by expansion of the Chinese steel industry

Price Trends in Raw Materials		
($/metric tonne)	**Recent Price**	**Previous Price**
Coke	180	60 (early 2002)
Iron Ore	95	27 (2001)
Pig Iron	240	115 (late 2001)
Scrap	215	110 (2001)
Slab	270	145 (late 2001)
HR Band	350	175 (late 2001)

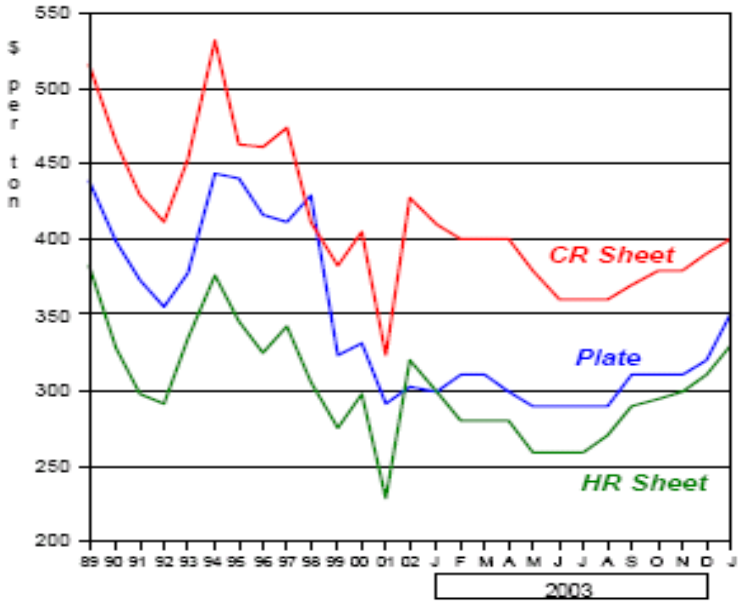
Source: Locker Associates, Steel Industry Update 182, December 2003

How did this curious state of affairs come about and what does it add up to? I will try to address that by posing ten questions.

1. The 1998 Asia-Russian financial crisis was a Tipping point for the global steel industry. Will the fault line of the hot ends implode the re-constituted mills?

In many ways, the industry, atleast the integrated part of the industry, is still reacting to the earthquake event/implosion of the Asian-Russian financial crisis of 1998. Some of the most productive integrated mills on the planet, especially in Korea but also India, and the former Soviet Union, had their currencies devalued by 50-70%. This took the floor out from under global prices for flat products and also let lose a flood of cheap and/or dumped imports into the North American steel market.

Flat-Rolled Prices 1989-2003



Source: Locker Associates, Steel Industry Update 183, Jan 2004

It set in motion three structural changes to the industry that still surround us.

First, the plunge in prices and surge of imports, hitting nearly 50% in Canada and 30%+ in the USA, directly led to the US Steel Trade Cases of 2000-01. Safeguard action was the white flag of surrender for the US integrated producers, particularly those 're-constituted' under Chapter 11 bankruptcy protection and New Bargaining Program contracts with the USWA in the late 1980s and 1990s.

Second, this shock wave led to an unprecedented level of consolidation, part of it led by the implosion of older integrated mills but also the cumulative effects of the reduction of public ownership in global steel. The combined effect was to transform global steel production into a transnational enterprise for the first time. The puny

place of North American producers is noticeable in the official ranking of global steel companies by the IISI.

The Largest Steel Producing Companies (2002)		
Rank	**Company**	**Capacity (mil tonnes)**
1	Arcelor	44.0
2	LNM Group	34.8
3	Nippon Steel	29.8
4	POSCO	28.1
5	Shanghai Baosteel	19.5
6	Corus	16.8
7	Thyssen Krupp	16.4
8	NKK	15.2
9	Riva	15.0
10	US Steel	14.4
46	Stelco	4.7
51	Dofasco	4.4
?	Algoma	2.5

Source: IISI, Annual Report 2003

For the integrated industry, the fault line as and still is, running across their hot end (coke ovens and blast furnaces). Not withstanding the heroic efforts of Wilbur Ross and Leo Gerard, the shadow of the hot end fault line still hangs over ISG, specifically around the exposure of their coke oven requirements.

It would be strange in deed if the global trend in consolidation in the industry gave an exemption for Canadian integrated producers. In fact, we have already seen the foreign takeover/bankruptcy of many of the Canadian minimill producers: Ivaco, Co-Steel, Sidbec-Dosco, MRM, Courtice Steel, Atlas, Slater Steel, Sysco. The one minimill going in the other direction has been Ipsco, which embarked on the most aggressive continental expansion of capacity.

2. Innovation in North American steel is driven by the auto industry. How can the steel industry innovate for the future?

In the last two decades, consolidating a trend that was active before, the auto industry has became the driver of innovation in the steel industry. In part this was because high grade flat rolled products are the most profitable product line for integrated steel producers. The lower grades of bar, angle, wire, the 'long products', were taken over by the minimills. The minimills, led by Nucor, have more recently moved into the lower end of the flat rolled market.

Two themes are central to innovation in steel, the technical centres of excellence in Europe and Japan, and industry consortia among steel producers, auto makers and suppliers.

The two poles of technical innovation in global steel are centred in Nippon Steel and Arcelor (particularly the auto division of the former Usinor). This is where most of the deep metallurgy R & D is being developed. Since abandoning most of their internal technical capacity, the Canadian steel companies have tended to ally with one of these global leaders or the other. Dofasco's alliance is primarily with Arcelor. Stelco is associated with Nippon.

The second critical network of innovation is a series in industry consortia. Steel innovation for auto principally involves the Ultra Light Steel Auto Body (ULSAB). Thirty-four global steel and auto companies sponsor pre-competitive research on materials and future auto design. The enormous leap forward that Dofasco has taken in hydro-forming, came out of the generis technology developments of the ULSAB. The Auto-Steel Partnership (ASP), by contrast focuses further downstream on issues of steel processing, forming, welded in the auto supply chain.

Both Stelco and Dofasco are active participants in both networks, however as we will see below, they produce differential results. Algoma is not a player in either network.

3. Dofasco has become the most profitable steel company in North America. How does it do this with such low levels of R &D spending?

Dofasco has become the most profitable integrated steelmaker in North America. What are some of the keys to its success?

At one level, nothing has changed, it still has the 50-60 metallurgical engineers that it always did. At another level, everything has changed. As John Mayberry was fond of saying, they may have only 60 metallurgical engineers but they have 1500 people working on innovation.

First, what is clear is that they were already in the auto industry, the sweet spot for integrated steel.

Second, from the days of the Sherman, Dofasco management had a vision that they weren't just a steel company. On John Mayberry's watch they formalized that into a vision: "Solutions in Steel" of a learning organization and being a value-added service provider was key to the future of the company and the industry. It should not be under-estimated that this did not come easily. Mayberry staged the overthrow of an established management and culture in Dofasco.

Dofasco, like Stelco and other major steel producers in North America, virtually eliminated their in-house R & D capacities in the last twenty years. Stelco Engineering (later Steltech) for instance used to be, on Len MacLean's watch, was the technical leader for the whole Canadian steel industry. US Steel also cast this capability off. However, it wasn't replaced with anything.

As technology licensing and generic research consortia became the norm, Dofasco simply proved more adept in processing and implementing solutions from these networks. The howl hydro forming development was not invented at Dofasco but they certainly seized on it and implemented it before anyone else. They have now built it into a considerable competitive advantage even though the information was originally available to everybody.

Academics studying industrial innovation refer to this as the 'absorptive capacity' of firms. In the new world of rapid, globalized technology transfer, a differential absorptive capacity is a critical explanatory variable in examining the relative fortunes of Stelco and Dofasco.

It is not that something like hydroforming is without difficulties, witness the recent troubles at Budd in Kitchener. However, Dofasco seems inherently better at the complex tacit knowledge of working out solutions in steel.

4. Steel trade wars and protectionism dominated the industry from the 1970s to the 1980s, but the WTO has ruled out traditional US trade protectionism. What happens now that the 'stealth protectionism' of bankruptcy procedures (USA) and the low dollar (Canada) have been removed?

Throughout the 1970s and 80s, the steel industry, along with agriculture, was the most litigious industry in the global trading system. The Canadian industry's enduring nightmare was their exposure to arbitrary US trade remedies at the very time the steel market was being increasingly continentalized. The presumed guaranteed access under the FTA/NAFTA was never fulfilled, leading to incremental investments in capacity being made in the US by Dofasco, Co-Steel, Ipsco, Ivaco, etc. was a way to sidestep perpetual trade harassment.

Again, this is another way in which the 2001Trade Cases mark a turning point. Canada, the USA and Mexico all agreed that they would pursue cases against offshore dumping but not against each other. At the same time, Canada for political reasons decided not to pursue safe guard actions in the face of the import surge, unlike the USA, Europe, Japan and even China. Subsequently of course there has been the WTO ruling rolling back much of the US action.

As a result and in the light of the re-defined subsidy code under the WTO, steel may have become a relatively more level playing field in terms of trade remedies being used for competitive advantage. Going forward, with reasonable confidence, we can say that traditional steel protectionism will not be the strategic variable that it has been over the course of the past 30 years.

However, we have also had the stealth protectionism of two other variables. In the US, Chapter 11 bankruptcy proceedings have been used, intentionally or not, to keep large amounts of relatively obsolete capacity in the industry. I doubt that the legislative authors of Chapter 11 intended that companies would continue to operate for decades under that shelter. On the Canadian side, steel companies and manufacturing in general, have had a competitive advantage provided indirectly through socialized medicine to the tune of about $7.95 per hour (comparing a US and Canadian steel companies cost for full family coverage for a family of four). This is not a trade subsidy because there is no discrimination by country of national origin. However, the advantage has also been erased by the surge in the Canadian dollar.

5. Steel is no longer an industrial island to itself, it is a strategic part of the materials sector of the new economy. How are steel supply chains to the auto industry functioning?

The core of the steel industry in Ontario is its link to the auto industry. That may be one of the critical lessons of the post-NAFTA Canadian industry. At the same time the interface between steel and auto has been changing dramatically.

As the supply chains in auto have stretched out, the traditional interface between big steel and the OEM's has atleast been equaled in importance by the interface with independent parts manufacturers and their sub-contractors. Magna, Ventra were invisible twenty years ago and are now major players. In addition, steel service centres, the traditional distributors of the largest single proportion of steel products, have had their roll dramatically change.

Steel service centres are either having to re-think their business model and become value added steel processors i.e. like Nova Steel they become end users, basically exiting the distribution business in favour of hydro forming. Or, they re-construct the traditional distribution role to a new proactive intermediation between the mills and the end users i.e. Venture Steel.

6. The low dollar and socialized medicare gave Canadian manufacturing a 20-30% cost advantage. How do labour and management make up the gap?

   The labour and management parties in the steel industry have an advanced form of the challenge facing all high capital intensive, highly unionized industries in Canada. The surge in the dollar, with a plateau that it is not likely so settle back from, has removed the shelter of the cheap dollar plus medicare savings.

The postwar steel industry was an outstanding period of high Wagnerism. The labour and management parties pursued their competing self interests by negotiating complex collective agreements with multitudinous work rules. Both sides wanted it that way. Distributive bargaining and compliance-based employment relations were the norm of the day.

The results for steel Wagnerism were not exactly the same on both sides of the border. The USWA in the United States were more strongly positioned for industrywide bargaining because of the national level jurisdiction of the federal National Labor Relations Board. Along with more aggressive bargaining in general, the steelworkers in the States were able to achieve contracts with higher wages and denser work rule than their counterparts in Canada. In Canada, the USWA negotiated good contracts, some like Algoma with breakthrough provisions as in community health care, however they generally lagged the achievements by the American section of the union.

Bargaining in the Canadian steel industry has been dominated by the Stelco negotiations. The biggest change in the 80s was in the structure of bargaining, when Stelco decided that they were going to bargain with each local individually. Lu 8782 at LEW had a strategy. They focused on increases to the job class increment, then on training, multi-skilling and upgrading their people. A lot of JC 6 and below jobs were eliminated. By the 1990s they had virtually no Labourers and the average was JC 14. Lu 1005 at Hilton pursued the traditional approach, kept lots of labourers jobs and wound up with an average of JC 10 or lower. The LEW workforce has remained about level. The Hilton work force has fallen from 14,000 to 4,600. The major innovation at Hilton Works was the Z-Line, a Japanese co-venture, where work rules were simplified, there were fewer JCs and multi-skilling.

7. Steel industry wages and benefits are among the highest in the economy. What does the steel case tell us about how difficult is it to maintain high wage jobs in a gobalized economy?

With the ongoing restructuring in the steel industry, the USWA led a successful campaign to negotiate different kinds of collective agreements in the later 1980s. These included investment programs, justice and dignity clauses, training programmes, even defined ratios of supervisors and other "non-productive" labour to the number of bargaining unit steelworker members. Academic analysis of these developments suggest that most of the qualitative changes in new deals on the shop floor e.g. reduction of job classifications, simplifying work rules, multi-skilling, work teams, etc took place at a limited number of finishing facilities, particularly the galvanizing line co-ventures with Japanese steel companies. Developments at the Z-line at Stelco Hilton Works in Canada followed the same trend. Relatively little progress, however, was made in the integrated mills themselves. There were some exceptions such as the Great Lakes works of National Steel, but these were the exception that proved the rule. Academics forecast that it would be these Japanese producers that would ultimately change the North American steel industry by bringing Japanese production methods and philosophies to bear.

1980s Stelco Bargaining

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The Canadian section of the USWA had its most dramatic experiment with the worker buyout of bankrupt Algoma Steel in Sault Ste. Marie. This represented a more dramatic change than what had taken place at the troubled US mills to that date. It represented the wholesale take over of the plant, with major contract changes, an explicit role for the union in investment, technology choices as well as on the shop floor in joint committees. It may be viewed as along the same continuum as the new deals negotiated in the US, but at the extreme left end of that spectrum. The deal however, would not have been possible without the support of a sitting NDP government, willing to underwrite generous loan guarantees, pressure the financial institutions and deploy other kinds of government programmes and policies. At the Lake Erie Works of Stelco, the union also

mounted a significant change programme, not as ambitious as Algoma at the ownership level, but as aggressive in pursuing work rule changes, work teams and a role of the union in non-traditional initiatives on the shop floor.

The steel crisis of 2001-02 has brought a new wave of restructuring to the steel industry. The most dramatic development has been the USWA agreeing to large scale consolidation of the industry, as well as new collective bargaining agreements with the new owners, particularly ISG. These new agreements are qualitatively different than their predecessors in the 1980s. They are not a further elaboration of the Japanese model, in fact many of the co-venture facilities are being closed. The new, new deals are instead a deal with the minimill management teams being brought in to now run the remaining integrated mills.

Even after all these efforts, with academics cheerleading high performance work organization, the lesson of the steel industry is that even these great efforts may not be enough. Who do you negotiated with when there is no institutional mechanism to negotiate a deal with “the industry”?

8. Pension costs at Stelco are cited as the major financial burden for the company's survival. Did pension bargaining in the last decade become a lazy man's option in union-management bargaining?

Stelco's current problems include but are not limited to the pension. It invites the old saw that the combinations of good intentions and stupidity are almost invincible at the bargaining table.

In the 2000 Stelco management bargained a dramatic new schedule of pension benefits with Local 8782 at Lake Erie. It raised the pension benefit schedule from $42 to $58. Everyone said that LEW was a license to print money, with much better productivity and besides it has a younger workforce.

That meant it was inevitable to any outside observer that come the 2002 bargaining at the Hilton Works and Local 1005, they would have to give the same deal. However, Hilton has much different economics and a much older work force. This brought us to where we are today.

Pensions are a perhaps too appealing item in labour management negotiations in heavy industry. There is a temptation to respond to a high union wage demand by tabling a counter proposal with a modest wage increase but a big move on the pension. It saves both sides of the table with having to struggle through the complex processes and sociology of high performance workplaces. It sells well with the union membership. And, it is appealing for the CEO because the costs are amortized over 15 years and he knows he isn't going to be around when the bill comes in.

There are two problems with this.

First, over time what happens is that the pension plan takes on the whole weight of the economic adjustment process. This is more than it can reasonably be expected to bear.

Secondly, the availability of the Pension Benefits Guarantee Fund (PBGF) becomes a moral hazard for management. In Ontario is already trying to manage the $350 million liability still on its books from Algoma Steel. If Stelco blows out the fund by offloading its obligations, then some one is going to ask the moral hazard question and employers may wind up being told to self-insure.

9. The vital synergies between the auto and steel industries are clear to all policy makers. How does Ontario's steel infrastructure stack up in the competition for the next wave of auto industry investment?

There is a strategic issue overhanging all the previous and intriguing steel industry and labour-management story. The most critical factor for the future, for all Ontarians, is how do we compete for the next wave of investment in the auto industry?

Meet the competition: It's the Crimson Tide, Alabama. It is critical to benchmark Ontario against the comparable steel infrastructure in the southern states.

Right now we have a clear advantage.

10. Summary: So What Does All This Add Up To?

In summary, where we wind up is where we began: the paradoxical situation where in the midst of a growing steel shortage world wide and escalating prices, the various segments of the Canadian industry face near shakeout conditions over the next 3-5 years.

The integrated sector of the Canadian steel industry will be dealing with restructuring and consolidation. There are good reasons to look at an overall rationalization of the industry but government doesn't appear to be up to it and most in management don't want it. Therefore, we will have an ad hoc process falling out of global trends. It would be surprising if transnational steel doesn't come to Canada if it is playing out in the rest of the world. The hot ends issue, particularly coke ovens, will arise as each of the Canadian producers as their battery life and/or furnace relines come due in the next 3-5 years. The innovation gap between North American and European/Asian producers should be on the radar screens of policy makers.

In the minimill sector, the potential foreign-based consolidation under transnational steel companies has already taken place. In the this case it has not been the threat of an American take over but the Brazilians and Dutch/Indonesians that have acquired or merged half a dozen producers. Also, while minimills in the first half of 2003 reached over 50% of North American raw steel production, the rapid rise in scrap and energy costs may cause the sector to slip back and consolidate before their next onslaught on the market niches of the integrateds.

The service centres seem destined to pursue two separate developmental paths. Either, value added processing led by the example of Nova Steel and its move into hydro forming. Or, rethinking the intermediation model led by the example of Venture Steel.

If you've found the last year in the steel industry intellectually stimulating, then you are going to love the next five years.