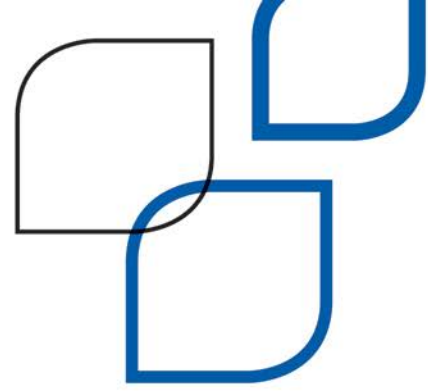




MUNICIPAL
PROPERTY
ASSESSMENT
CORPORATION



Analysis of Economic Obsolescence

Steel Manufacturing Industry in Ontario

2016 BASE YEAR

October 30, 2015

**ANALYSIS OF ECONOMIC OBSOLESCENCE IN
THE ONTARIO STEEL MANUFACTURING INDUSTRY
AS AT JANUARY 1, 2016**

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EXECUTIVE SUMMARY

1. Earlier this year, in August, MPAC shared its preliminary Market Valuation Report (“MVR”) that illustrated the parameters it intended to rely upon when arriving at the 2016 Current Value Assessments for steel manufacturing properties in Ontario.
2. One of the parameters addressed in the MVR was external obsolescence (“EO”).
3. All of the analysis undertaken in connection with EO was reflective of the information that was available at the time. The reports were composed in May and June and much of the data analyzed reflected the circumstances facing steel manufacturing companies in the latter portion of 2014.
4. The steel manufacturing sector (the “Industry”) has realized significant changes since the latter portion of 2014 and since the reports were authored.
5. The purpose of this report is to reflect the recent changes realized by the steel manufacturing companies and to state how those changes have impacted MPAC’s view of the EO impacting the current values of the steel manufacturing properties.
6. This report should be read in conjunction with the previously released EO report that was shared in August.
7. It is important to note that this estimate of EO as at the effective date (i.e. January 1, 2016) reflects analysis and assumptions based on the most recently publicly disclosed financial results of guideline public companies, current economic data, and expectations regarding future economic events and financial trends that are anticipated to impact the Industry as at the date of this report.

Summary of Conclusion on Economic Obsolescence

8. Based on the scope of review, research, and analysis carried out, and subject to the restrictions as set out herein, **the rate of EO present in the Industry as at January 1, 2016 is estimated to be 61.0% (see Schedule 1).**

ECONOMIC OBSOLESCENCE

9. EO can be described as a form of depreciation or an incurable loss in value that occurs when influences external to an asset itself reduce the value of the asset.
10. In industry, EO exists when external influences occurring in an industry have an adverse impact on profits, thereby preventing industry participants from earning an optimal return on their asset investment. Consequently, the current value of the industry's assets is less than what it would be if the profits derived from the operation of those assets were optimal.
11. EO is most often present when external influences prompt a change in the supply and/or demand of an industry's products and/or cause a change in competition, leading to a decline in operating profits. Some examples of external influences that adversely impact operating profits, giving rise to EO, include (but are not limited to):
 - changes in industry economics, such as reduced demand or excess supply, which can put downward pressure on prices, thereby negatively impacting sales revenue and weakening profitability;
 - an increase in direct costs such as raw materials and labour without a corresponding increase in sales price due to adverse market conditions, thereby weakening profitability. Such a scenario results from declining demand for an industry's products and/or increased competition leading to excess supply and price pressure;
 - increased domestic and/or foreign competition, which puts downward pressure on prices and negatively impacts sales revenue and profits;
 - government legislation and/or changes in regulations, which can negatively impact sales revenue and weaken profitability;
 - economic factors over which an industry has no control, including changes in inflation, interest rates, foreign currency rates, all of which can negatively impact sales revenue and profitability; and,
 - adverse global economic conditions.

APPROACH TO QUALIFYING ECONOMIC OBSOLESCENCE

12. Prior to undertaking a quantitative analysis of EO it is best to review the economic circumstances facing the Industry and carry out a qualitative analysis.
13. A qualitative analysis will ensure that the financial ratios analyzed are viewed in the appropriate context. If the market sentiment and the ratios are corresponding, it provides greater credibility to the quantitative analysis. Conversely, if the results are incongruent, greater analysis may be required.
14. A review of the Management Discussion and Analysis (“MD&A”) published by a section of the guideline companies was undertaken.
15. Common trends uncovered in the MD&A are listed in the following paragraphs:
16. “The steel industry, and the iron ore and coal mining industries, which provide its principal raw materials, have historically been highly cyclical. They are significantly affected by general economic conditions, as well as worldwide production capacity and fluctuations in international steel trade and tariffs. In particular, this is due to the cyclical nature of the automotive, construction, machinery and equipment and transportation industries that are the principal consumers of steel.”¹
17. “ArcelorMittal forecasts global steel demand to broadly stagnate in 2015 due to weaker growth in developed markets, Brazil and the CIS, while growth in other developing markets is expected to pick up.”²
18. “Despite decreasing raw material prices over the first half of 2015, with both iron ore and coking coal falling to record lows, steel prices also dipped significantly as supply continued to outstrip demand. Average steel selling prices decreased by 18% for the six months ended June 30, 2015 as compared to the six months ended June 30, 2014”.³
19. “Second quarter results for our Tubular/Flat Rolled segment decreased significantly as compared to the first quarter primarily due to considerably lower shipments. Shipments continue to be adversely impacted by reduced drilling activity caused by low crude oil prices and the near record levels of tubular imports. These changes were partially offset by lower repairs and maintenance and other operating costs, lower raw materials costs, lower costs for profit-based payments and lower energy costs.”⁴

⁴ <http://www.ussteel.com/uss/portal/home/investors/financialresults/Q2-2015>

20. A common trend/theme for the North American steel industry has been a large increase of oversea imports. This is due to a global oversupply of steel. This trend has a negative effect on local manufacturers as they have to compete on price. Their margins are shrinking from both lower realized selling prices and increased costs from lower volumes manufactured.⁵
21. Reference was also made to a leading publication that commented on the state of the sector.
22. PWC Canada published its 2015 Metals Deals: Forging Ahead 2015 outlook and 2014 review⁶. Selected excerpts follow:
 - the drop in oil prices at the beginning of 2015 is causing lower capital expenditures (and rig counts) in the energy industry. This in turn is putting a downward pressure on the steel demand in Canada and the United States. In the long run the drop in oil prices will benefit steel manufacturers that supply consumer markets (automotive & non-oil infrastructure).
23. The comments in the MD&A point to an industry that is struggling as a result of recent demand volatility and current oversupply. The overriding message outlined throughout the MD&A's is not optimistic.
24. The qualitative analysis suggests that the sector is underachieving. This indicates the presence of EO is likely.

⁵ <http://www.ussteel.com/uss/portal/home/investors/financialresults/Q2-2015>

⁶ <https://www.pwc.com/gx/en/metals/mergers-acquisitions/pdf/pwc-forging-ahead-metals-2015.pdf>

APPROACH TO QUANTIFYING ECONOMIC OBSOLESCENCE

25. In addition to a review of the qualitative factors associated with EO as discussed above, a quantitative analysis of key profitability and efficiency ratios of guideline public companies operating in the Industry was completed as a method of quantifying the level of EO present in the Industry, or lack thereof, on a broad level.
26. Of the guideline public companies considered appropriate for this analysis, two have operations in Canada which ensures the analysis undertaken reflects the conditions facing the subject properties based on the best information available. It must be noted that the public financial information analyzed will often reflect the circumstances of the companies' operations beyond Canada as well – absent site specific information this is the best data available for review.
27. The companies selected were as follows: Nippon Steel & Sumitomo Metal Corp, POSCO, ArcelorMittal, AK Steel Holding Corp., Commercial Metals Company, Gerdau, Nucor Corp., Steel Dynamics Inc., and United States Steel Corp. The selected guideline public companies are collectively referred to hereafter as the "Guideline Companies".
28. The specific profitability and efficiency ratios analyzed (and explained in greater detail further below) are as follows:
 - return on invested capital;
 - gross profit margin percentage;
 - price to book ratio; and,
 - industrial capacity utilization rates.
29. The key profitability and efficiency ratios reviewed were analyzed over a ten year period from 2005 to 2014 in order to derive historical industry performance benchmarks. The current profitability and efficiency ratios of the Guideline Companies based on the trailing twelve months ended June 30, 2015 ("TTM") were then compared against the historical benchmarks.
30. If the current performance ratios of the Guideline Companies are trending below their historical performance benchmarks by a material amount, on a collective basis, this can signal that EO is present in the Industry.
31. The percentage decline in the current ratios from their historical performance benchmarks, as measured on a collective basis based on the results of the Guideline Companies, can be

used as an overall benchmark for the rate of EO present in an industry, on a broad level.

QUANTIFYING ECONOMIC OBSOLESCENCE

32. A description of the key profitability and efficiency ratios reviewed as well as a discussion of the analysis undertaken to quantify EO follows below.

Return on Invested Capital Analysis

33. Return on invested capital (“ROIC”) is a profitability ratio that measures how efficiently a company generates income from capital invested by comparing net operating profit to capital invested. The ROIC is a better measurement than return on equity as it measures how well a company is using both its equity and debt to generate profits. A low ROIC indicates that a company is making poor use of its capital resources.

34. The return on invested capital is calculated as follows:

$$\text{Return} = (\text{Net Operating Profit after Taxes})$$

divided by

$$\text{Invested Capital} = (\text{Interest-bearing Debt} + \text{Equity})$$

35. The ROIC is informative when tracked on a trend line annually as it will indicate long-term changes in the operating performance of a company. A decline in operating profits while invested capital remains constant or increases will cause the ROIC to decline.

36. A decline in the ROIC can signal that external influences occurring in the marketplace are negatively impacting profitability, giving rise to EO.

37. Any or all of the following external influences can negatively impact operating profits and the ROIC, giving rise to EO: a declining demand for an industry’s products; increased competition creating excess supply and price pressure; and, government regulations requiring increased investment and/or price caps. All of these factors can impede the ability of an industry to earn an economic rate of return on its assets.

38. The historical rates of ROIC of the Guideline Companies from 2005 to 2014 were analyzed to derive historical benchmarks. The historical benchmarks were based on the median ROIC realized over this period under the assumption that this benchmark is the best measure of an economic rate of return for the Industry.

39. The historical benchmarks were then compared against the current rates of ROIC based on

the TTM to gauge if current rates of ROIC are consistent with historical benchmarks.

40. The majority of the Guideline Companies realized a significant decline in their rate of ROIC for the TTM when compared to their historical benchmark. Consequently, there is a strong indication that, on an industry wide level, manufacturers operating in this sector have experienced a substantial decline in their rate of ROIC based on the analysis of the rates of ROIC of the Guideline Companies.
41. The overall rate of indicated EO chosen was based on the median of the range of indicated EO values of the Guideline Companies. The calculation of the rate of indicated EO based on the ROIC analysis is presented on **Schedule 2**.

Gross Profit Margin (%) Analysis

42. Gross profit margin percentage is a profitability ratio that measures the percentage by which sales revenue exceeds the expenses required to manufacture a product, known as the cost of goods sold (the "COGS").
43. The COGS includes the cost of the raw materials, direct labour and production overheads that go into producing the goods sold and is included on a company's income statement where it is deducted from revenue in order to calculate the company's gross margin dollars. The gross margin dollars reflect the amount of dollars earned from the sale of products and services before consideration of non-production costs such as selling and administrative costs.
44. Gross profit margin percentage is calculated as follows:

$$\text{Gross Profit Margin (\%)} = (\text{Sales Revenue} - \text{COGS} / \text{Sales Revenue}) \times 100$$

45. The gross profit margin percentage when tracked on a trend line indicates if any significant changes in sales and/or the COGS have occurred over a period of time. The gross profit margin percentage declines when sales revenue decreases however, the COGS remains constant or increases, as less gross margin dollars are being generated per unit sold.
46. A decline in the gross profit margin percentage can be an indication that external influences occurring in the marketplace are negatively impacting sales and/or the COGS, thereby giving rise to EO.

47. Similar to the ROIC, external influences that cause declining demand for an industry's products and/or increased competition leading to excess supply put downward pressure on prices and can negatively impact an industry's gross profit, thereby impeding the ability of an industry to earn an economic return on its assets.
48. In addition, when the COGS increases however, the increase cannot be passed on to the consumer through a price increase due to adverse market conditions such as government price caps and/or price pressure due to increased competition, the additional costs must be absorbed by the manufacturer and gross profits decline, negatively impacting industry returns.
49. The historical gross profit margin percentages of the Guideline Companies from 2005 to 2014 were analyzed to derive historical benchmarks. The historical benchmarks were based on the maximum gross profit margin percentage realized over this period under the assumption that this benchmark is the best measurement of optimal profitability for the Industry.
50. The historical benchmarks were then compared against the current gross profit margin percentages based on the TTM to gauge if current gross margin percentages are consistent with historical benchmarks.
51. The majority of the Guideline Companies realized a significant decline in their gross profit margin percentage when compared to their historical benchmark. Consequently, there is a strong indication that, on an industry wide level, manufacturers operating in this sector have experienced a substantial decline in their gross profitability based on the analysis of the gross profit margin percentages of the Guideline Companies.
52. The overall rate of indicated EO chosen was based on the median of the range of indicated EO values of the Guideline Companies. The calculation of the rate of indicated EO based on the gross profit margin percentage analysis is presented on **Schedule 3**.

Price to Book Ratio Analysis

53. The price-to-book ratio ("PBR") measures the market price of a company's net assets in relation to their book value. The ratio denotes how much equity investors are paying for each dollar in net assets.
54. A company's market price is the market value of a company's outstanding shares, also known as its market capitalization. Book value is the value of a company's net assets according to its balance sheet. Traditionally, a company's book value is its total assets based on original cost less any depreciation, amortization or impairment costs minus liabilities.

55. A company's PBR is impacted by external factors related to investor sentiment regarding the current economic state of the industry that the company operates in; i.e., demand for industry products, competitive landscape, etc. If the market price of the company declines significantly or drops below its book value, this may be an indication that investors are becoming wary of the company and/or the industry that the company operates in and can signal that EO may be present.
56. The PBR of the Dow Jones Industrial Average ("DJIA") index can be used as a benchmark to gauge investor-perception of the value of the net assets of a particular industry in comparison to the weighted average value of the net assets of all other industries included in the index.
57. The PBR of the DJIA index around the Report Date was compared against the median PBR of the Guideline Companies approximate to the Report Date. The median PBR of the Guideline Companies of 0.4 is substantially below the PBR of the DJIA index of 3.1. Consequently, the market values the net assets of the Guideline Companies substantially lower when compared to the weighted average value of the net assets of all industries combined based on the composition of companies listed on the DJIA index.
58. It is important to note that the PBR measure is not considered a reliable indicator of EO given that the PBR can be impacted by other variables not related to EO such as a company's capital structure, the extent of analyst coverage and dividend policy, among other things. Notwithstanding this, the results of the analysis are presented on **Schedule 4** for information purposes.

Industrial Capacity Utilization Rate Analysis

59. The capacity utilization rate indicates the rate of production capacity which is actually being utilized in comparison to the maximum production capacity available.
60. A decline in the utilization rate when compared to historical industry norms indicates that current production is below the supply capacity available and may be a signal that external factors occurring in the marketplace are causing a decline in demand for an industry's products, which can negatively impact an industry's economic return, giving rise to EO.
61. The capacity utilization rate can be calculated as follows:

Capacity Utilization Rate =

$$[(Actual\ Output - Potential\ Output) / Potential\ Output]^{\text{scale factor}}$$

62. Data on the industrial capacity utilization rates of the Canadian Primary Metal Manufacturing sector were analyzed from 2005 to 2014 to gauge if current production levels are consistent with historical levels.
63. The current capacity utilization rate for the Canadian Primary Metal Manufacturing sector based on the average capacity utilization rate for 2015 is below the median rate over the past ten years.
64. Accordingly, it appears that the current productivity rate of the Canadian Primary Metal Manufacturing sector is inconsistent with historical levels.
65. It is important to note that EO can exist even when an asset's capacity utilization rate is at maximum and/or at the industry norm because, although the asset may be operating at its normal/maximum capacity utilization rate, the return being generated by the asset(s) may still be below an economic level.
66. The results of the analysis of industrial capacity utilization rates for the Canadian Primary Metal Manufacturing industry have not been factored into the conclusion on the rate of EO present in the Industry because of the limitations regarding the analysis as detailed above however, the calculations are presented on **Schedule 5** for information purposes.

CONCLUSION

67. Based on the scope of review, research, and analysis carried out, and subject to the restrictions as set out herein, the rate of EO present in the Industry as at January 1, 2016 is estimated to be as follows (see **Schedule 1**):

Guideline Company Ratio Analysis	Schedule	Indicated EO	Assigned Weight	Weighted Average
Return on Invested Capital	2	65.0%	1	65.0%
Gross Profit Margin (%)	3	57.8%	1	57.8%
Price to Book Ratio	4	87.1%	0	0.0%
Capacity Utilization	5	10.3%	0	0.0%
			2	122.8%
Divide by total assigned weight				2
Estimated Rate of EO as at January 1, 2016 (rounded)				61.0%

68. In concluding on the rate of EO, the greatest weight was assigned to the EO indicated by the ROIC and gross profit margin (%) analyses given that these analyses best reflect financial/economic performance as they directly measure changes in profitability and overall return on total assets.
69. A weighting of zero was assigned to the PBR analysis given that it is not a reliable measure of EO as it can be impacted by other variables unrelated to a change in the economic return on an investment. Accordingly, this analysis is presented for information purposes only.
70. A weighting of zero was also assigned to the industrial capacity utilization analysis as sector because of the limitations regarding the analysis as described previously. Accordingly, this analysis is presented for information purposes only.

ASSUMPTIONS AND RESTRICTIONS

71. The financial and operating results of the Guideline Companies, as sourced from the Thompson Reuters Eikon database (“Reuters”) and Morningstar, Inc. database (“Morningstar”), are fairly stated and free of material errors. If the financial and operating results of the Guideline Companies, as sourced from Reuters and Morningstar, are not free of material errors, such errors could have a material impact on the conclusion(s) stated herein.
72. There will be no significant change in the operating and financial results of the Guideline Companies from TTM to the Effective Date. If a significant change in the operating and financial results of the Guideline Companies does occur during this period, such changes may cause the conclusion(s) stated herein to be materially different at the Effective Date.
73. There will be no significant changes in market conditions and/or Canadian/global economic conditions from the Report Date to the Effective Date. If any significant changes in market conditions and/or Canadian/global economic conditions do occur from the Report Date to the Effective Date, such changes may cause the conclusion(s) stated herein to be materially different at the Effective Date.
74. This report is not intended for general circulation or publication, nor is it to be reproduced or used for any purpose other than that outlined above without prior written consent in each specific instance. No responsibility or liability is assumed for losses resulting from the circulation, publication, reproduction or use of this report contrary to the provisions of this paragraph.

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Schedule 1

MUNICIPAL PROPERTY ASSESSMENT CORPORATION ANALYSIS OF ECONOMIC OBSOLESCENCE STEEL MANUFACTURING INDUSTRY SUMMARY OF GUIDELINE COMPANIES RATIO ANALYSIS

Guideline Company Ratio Analysis

		Indicated EO	Assigned Weight (Note 1)	Weighted Average
Return on Invested Capital	Schedule 2	65.0%	1	65.0%
Gross Profit Margin (%)	Schedule 3	57.8%	1	57.8%
Price To Book Ratio	Schedule 4	87.1%	0	0.0%
Industrial Capacity Utilization	Schedule 5	10.3%	0	0.0%
			<hr/>	
			2	122.8%
Range of EO Indicators: 10% to 75%		divide by total assigned weight		2
Estimated Rate of EO (rounded) (Note 1)				<u>61.0%</u>

Note:

1 In concluding on the rate of EO, the greatest weight was assigned to the EO indicated by the ROIC and Gross Profit Margin (%) analysis given that these analyses best reflect financial/economic performance as they directly measure changes in profitability and overall return on total assets.

A weighting of zero was assigned to the PBR analysis given that it is not a reliable measure of EO as it can be impacted by other variables unrelated to a change in the economic return on an investment.

A weighting of zero was also assigned to the industrial capacity utilization analysis as sector specific rates for the steel manufacturing industry were not available.

Schedule 2

**MUNICIPAL PROPERTY ASSESSMENT CORPORATION ANALYSIS OF ECONOMIC
OBSOLESCENCE
STEEL MANUFACTURING INDUSTRY
RETURN ON INVESTED CAPITAL ANALYSIS**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2005 to 2014				TTM	Indicated EO	Stock Cap Size
											Max	Min	Mean	Median			
	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 2)	(Note 2)	(Note 2)	(Note 2)	(Note 1)	(Note 3,4)	(Note 5)
													(A)	(B)	(A-B)/(A)		
1 Nippon Steel & Sumitomo Metal Corp	10.2%	14.0%	12.7%	12.7%	5.8%	-0.2%	3.5%	2.2%	-2.9%	5.6%	14.0%	-2.9%	6.4%	5.7%	5.1%	10.5%	L
2 POSCO	20.0%	14.4%	13.3%	13.6%	8.5%	9.4%	7.0%	4.2%	2.3%	0.9%	20.0%	0.9%	9.4%	9.0%	1.5%	83.3%	L
3 ArcelorMittal	20.4%	11.5%	13.4%	10.5%	0.2%	3.4%	2.1%	-3.8%	-3.0%	-1.2%	20.4%	-3.8%	5.4%	2.8%	-2.3%	100.0%	L
4 AK Steel Holding Corp.	0.0%	0.3%	8.8%	0.1%	-2.1%	-3.8%	-4.8%	-33.3%	0.7%	-1.2%	8.8%	-33.3%	-3.5%	-0.6%	-9.6%	100.0%	S
5 Commercial Metals Company	22.3%	24.5%	18.2%	9.1%	0.0%	-3.6%	0.5%	8.4%	2.9%	3.7%	24.5%	-3.6%	8.6%	6.1%	7.3%	0.0%	S
6 Gerda	23.8%	22.8%	16.3%	12.9%	2.5%	6.7%	5.3%	3.5%	3.6%	2.9%	23.8%	2.5%	10.0%	6.0%	2.1%	65.0%	M
7 Nucor Corp	23.9%	28.9%	24.9%	21.8%	-2.1%	1.8%	7.1%	5.0%	4.7%	6.2%	28.9%	-2.1%	12.2%	6.7%	5.8%	13.4%	L
8 Steel Dynamics Inc.	14.6%	23.3%	14.5%	11.5%	-0.3%	2.7%	5.4%	2.9%	3.3%	1.6%	23.3%	-0.3%	8.0%	4.4%	0.3%	93.2%	M
9 United States Steel Corp	12.2%	18.8%	8.7%	16.8%	-10.9%	-3.9%	-0.4%	-1.0%	-14.9%	1.1%	18.8%	-14.9%	2.7%	0.4%	1.1%	0.0%	M
											Mean	20.3%	-6.4%	6.6%	4.5%	1.3%	51.7%
											Median	20.4%	-2.9%	8.0%	5.7%	1.5%	65.0%

- Notes:
- 1 Source: Thomson Reuters Eikon database and Morningstar, Inc.
 - 2 The Max, Min, Mean and Median values are based on the historical rates of the Guideline Companies from 2005 to 2014.
 - 3 Indicated EO for each of the Guideline Companies was measured by calculating the differential in the historical return on invested capital ("ROIC") benchmark (based on the median rate from 2005 to 2014) and the current TTM ROIC based on Q2 2015 as follows: $((\text{Median ROIC} - \text{Current ROIC}) / (\text{Median ROIC}))$. If the current ROIC was higher than the benchmark, a differential of 0.0% was calculated as the indicated EO.
 - 4 The overall rate of EO chosen was based on the median of the range of indicted EO values of the Guideline Companies.
 - 5 Small Cap Stock = 300 million to 2 billion = S
Medium Cap Stock = 2 billion to 10 billion = M
Large Cap Stock = Greater than 10 billion = L

Schedule 3

**MUNICIPAL PROPERTY ASSESSMENT CORPORATION
ANALYSIS OF ECONOMIC OBSOLESCENCE
STEEL MANUFACTURING INDUSTRY
GROSS PROFIT MARGIN ANALYSIS**

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2005 to 2014				TTM	Indicated EO	Stock Cap Size
											Max	Min	Mean	Median			
	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 2)	(Note 2)	(Note 2)	(Note 2)	(Note 1)	(Note 3,4)	(Note 5)
											(A)			(B)	(A-B)/(A)		
1 Nippon Steel & Sumitomo Metal Corp	20.5%	21.6%	20.8%	18.1%	13.9%	9.5%	11.8%	10.1%	9.3%	13.7%	21.6%	9.3%	14.9%	13.8%	14.5%	32.9%	L
2 POSCO	28.6%	23.0%	21.2%	22.0%	15.8%	17.0%	13.2%	11.7%	11.1%	11.3%	28.6%	11.1%	17.5%	16.4%	11.6%	59.4%	L
3 ArcelorMittal	24.5%	24.7%	19.3%	15.6%	3.6%	8.9%	9.3%	0.8%	5.3%	7.6%	24.7%	0.8%	12.0%	9.1%	7.5%	69.6%	L
4 AK Steel Holding Corp.	11.5%	10.2%	15.5%	15.1%	8.6%	5.4%	6.7%	6.7%	8.3%	7.7%	15.5%	5.4%	9.6%	8.5%	8.4%	45.8%	S
5 Commercial Metals Company	14.1%	14.9%	13.9%	10.8%	10.9%	6.8%	8.1%	9.4%	9.6%	9.9%	14.9%	6.8%	10.8%	10.4%	12.6%	15.4%	S
6 Gerdau	27.0%	26.4%	24.4%	26.0%	16.0%	17.6%	14.4%	12.5%	12.9%	12.1%	27.0%	12.1%	18.9%	16.8%	11.4%	57.8%	M
7 Nucor Corp	20.4%	23.5%	18.9%	17.1%	1.4%	4.9%	9.4%	7.8%	7.4%	9.0%	23.5%	1.4%	12.0%	9.2%	9.2%	60.9%	L
8 Steel Dynamics Inc.	22.2%	25.6%	20.9%	15.2%	10.1%	10.7%	11.6%	9.9%	9.8%	11.0%	25.6%	9.8%	14.7%	11.3%	10.5%	59.0%	M
9 United States Steel Corp	17.1%	17.5%	13.3%	17.0%	-5.0%	6.4%	7.8%	8.8%	8.1%	11.7%	17.5%	-5.0%	10.3%	10.3%	11.10%	36.6%	M
											Mean	22.1%	5.7%	13.4%	11.8%	10.8%	48.6%
											Median	23.5%	6.8%	12.0%	10.4%	11.1%	57.8%

Notes:

- 1 Source: Thomson Reuters Eikon database and Morningstar, Inc.
- 2 The Max, Min, Mean and Median values are based on the historical rates of the Guideline Companies from 2005 to 2014.
- 3 Indicated EO for each of the Guideline Companies was measured by calculating the differential in the historical Gross Margin (%) benchmark (based on the maximum rate of return realized from 2005 to 2014) and the current TTM gross margin (%) based on Q2 2015 as follows: $((\text{Max GM\%} - \text{Current GM\%}) / (\text{Max GM\%}))$. If the current GM (%) was higher than the benchmark, a differential of 0.0% was calculated as the indicated EO.
- 4 The overall rate of EO chosen was based on the median of the range of indicted EO values of the Guideline Companies.
- 5 Small Cap Stock = 300 million to 2 billion = S
Medium Cap Stock = 2 billion to 10 billion = M
Large Cap Stock = Greater than 10 billion = L

Schedule 4

MUNICIPAL PROPERTY ASSESSMENT CORPORATION ANALYSIS OF ECONOMIC OBSOLESCENCE STEEL MANUFACTURING INDUSTRY PRICE TO BOOK RATIO ANALYSIS

Price to Book Value Ratio @ October 30, 2015

Note 1

1 Nippon Steel & Sumitomo Metal Corp	0.8
2 POSCO	0.4
3 ArcelorMittal	0.2
4 AK Steel Holding Corp.	0.0
5 Commercial Metals Company	1.3
6 Gerdau	0.3
7 Nucor Corp	1.7
8 Steel Dynamics Inc.	1.5
9 United States Steel Corp	0.4

Maximum	1.7
Minimum	0.0
Mean	0.7
Median	0.4
DJIA	3.1
Indicated EO (Note 2)	87.1%

Notes:

- 1 Source: Thomson Reuters Eikon database.
- 2 Indicated EO was measured by calculating the differential in the median of the range of price to book value ratios of the Guideline Companies and the weighted average price to book value ratio of the DJIA.

Schedule 5

**MUNICIPAL PROPERTY ASSESSMENT CORPORATION
ANALYSIS OF ECONOMIC OBSOLESCENCE
STEEL MANUFACTURING INDUSTRY
INDUSTRY CAPACITY UTILIZATION RATES - METAL MANUFACTURING**

Primary Metal Manufacturing Industry -

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 Q1	2015 Q2	2015 Avg
(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)	(Note 1)
91.5	91.9	92.1	89.0	76.0	78.5	85.1	83.0	83.2	82.8	75.6	75.4	75.5

Maximum 2005 to 2014	92.1
Minimum 2005 to 2014	76.0
Median 2005 - 2014	84.2
5 Year Average - 2010-2014	82.5
10 Year Average - 2004-2014	85.3
Q1/Q2 2015 Avg	75.5
Indicated EO (Note 2)	<u>10.3%</u>

Notes:

1 Source: Statistics Canada - CANSIM Table 028-0002

2 Indicated EO was measured by calculating the differential in the median capacity utilization rate from 2005 to 2014 and the current rate based on the average capacity utilization rate for 2015 Q1 and Q2. (Median 2005 to 2014 Capacity Utilization - 2015 Capacity Utilization)/(Median 2005 to 2014 Capacity Utilization).