MUNICIPAL
PROPERTY
ASSESSMENT
CORPORATION

ANALYSIS OF ECONOMIC OBSOLESCENCE

FOR THE

SAWMILL INDUSTRY IN ONTARIO

ON JANUARY 1, 2016

Table of Contents

Executive Summary

1. This report details the results of an analysis undertaken to determine the extent of economic obsolescence (EO) present within Ontario's sawmill industry ("the industry"), or lack thereof, as at January 1, 2016 (the "effective date").

2. This report should be read in conjunction with the attached schedules, which are integral to the analysis and report commentary.

3. It is important to note that this estimate of EO, as at the effective date, reflects analysis and assumptions as at the date of this report (the "report date") based on the financial and operating performance results of various sawmills operating within the industry (i.e., the Guideline Ontario Sawmills), as well as certain market data and economic indicators key to the industry.

Summary of Conclusion on Economic Obsolescence

4. 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 41%. (See Schedule 1.)**

Economic Obsolescence

5. 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.

6. In industry terms, 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.

7. 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, changes in regulations and/or adverse trade restrictions, which (among other things) can negatively impact raw material supply/sales revenue and increase costs/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.

Scope of Review

8. In preparing these comments and calculations, the following has been reviewed, considered and relied upon, inter alia:

    - internal financial and operating performance results of the Guideline Ontario Sawmills for fiscal 2004 to 2015, as prepared by their management;
    - lumber sales pricing data of the Guideline Ontario Sawmills for fiscal 2004 to 2015, as provided by their management; and,
    - Canadian and U.S. housing starts data for 2004 to 2015 as retrieved from the Thomson Reuters Eikon database.

General Discussion of the Approach to Quantifying Economic Obsolescence

9. A quantitative analysis of the financial and operating performance results of the Guideline Ontario Sawmills, as well as certain market data and economic indicators key to the industry, was completed as a method of quantifying the level of EO present in the industry, or lack thereof, on a broad level.

10. The specific information analyzed (and explained in greater detail further below) is as follows:

    - gross profit margin percentage;
    - earnings before interest, taxes, depreciation and amortization (EBITDA) profit margin percentage;
    - annual sawmill shipments;
    - annual sawmill production;
    - sawmill capacity utilization rates;
    - lumber sales prices; and,
    - Canadian and U.S. housing starts.

11. The various financial and operating performance results as well as the market and economic data was analyzed over a ten-year period in order to derive historical performance benchmarks. The most current data, from 2015, was then compared against the historical benchmarks.

12. If there is a percentage decline in the most current data as measured against the historical performance benchmarks, this serves as the basis for an overall benchmark of the rate of EO present in the industry.

13. A discussion of the analysis undertaken to quantify EO follows below.

Quantifying Economic Obsolescence

14. A description of the financial and operating results, market data and key economic indicators reviewed is outlined below.

Gross Profit Margin (%) Analysis

15. 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 (COGS).

16. 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 is 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.

17. Gross profit margin percentage is calculated as follows:

Gross Profit Margin (%) = (Sales Revenue – COGS / Sales Revenue) x 100

18. 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 and the COGS remains constant or increases, as less gross margin dollars are being generated per unit sold.

19. 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.

20. 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 an industry's ability to earn an economic return on its assets.

21. In addition, when the COGS increases and 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 therefore decline, negatively impacting industry returns.

22. The historical gross profit margin percentages from 2004 to 2014 of the Guideline Ontario Sawmills were analyzed to derive historical benchmarks. The historical benchmarks were based on the median gross profit margin percentage realized from 2004 to 2006, assuming that this represents a period of optimal gross profit for the industry.

23. The historical benchmarks were then compared against the gross profit margin percentages in 2015 to gauge if the most current gross margin percentages are consistent with historical benchmarks.

24. The majority of the Guideline Ontario Sawmills realized a significant decline in their 2015 gross profit margin percentage when compared to their historical benchmarks. Consequently, there is a strong indication that the industry has experienced a substantial decline in gross profit margin percentage based on the analysis of the gross profit margin percentages of the Guideline Ontario Sawmills.

25. The overall rate of indicated EO chosen was based on the median of the range of indicated EO values of the Guideline Ontario Sawmills. The calculation of the rate of indicated EO based on the gross profit margin percentage analysis of the Guideline Ontario Sawmills is presented on **Schedule 1.1**.

EBITDA Profit Margin (%) Analysis

26. Earnings before interest, taxes, depreciation and amortization (EBITDA) is an accounting measure of profitability calculated using a company's net income with interest, taxes, depreciation and amortization added back to it. The EBITDA profit margin is an indicator of a company's underlying operating profitability. A negative EBITDA profit margin signals that a business has a fundamental problem with its underlying operating performance, profitability and cash flow.

27. The EBITDA profit margin is calculated as follows:

(EBITDA / Total Revenue) x 100

28. The EBITDA profit margin (%) is informative when tracked on a trend line annually, as it will indicate long-term changes in the underlying operating performance of a company. A decline in the EBITDA profit margin (%) signals that external influences occurring in the marketplace may be negatively impacting operating profits, giving rise to EO.

29. Any or all of the following external influences can negatively impact the EBITDA profit

margin, giving rise to EO, and can impede the ability of an industry to realize an economic rate of profitability:

- 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.

30. The historical rates of EBITDA profit margin (%) of the Guideline Ontario Sawmills from 2004 to 2014 were analyzed to derive historical benchmarks. The historical benchmarks were based on the median EBITDA profit margin (%) realized from 2004 to 2006, assuming that this represents a period of optimal operating profits for the industry.

31. The historical benchmarks were then compared against the rates of EBITDA profit margin (%) in 2015 to gauge if the most current rates are consistent with historical benchmarks.

32. The majority of the Guideline Ontario Sawmills realized a significant decline in their 2015 EBITDA profit margin percentage when compared to their historical benchmarks. Consequently, there is a strong indication that the industry has experienced a substantial decline in their EBITDA profit margin percentage based on the analysis of the EBITDA profit margin percentages of the Guideline Ontario Sawmills.

33. The overall rate of indicated EO chosen was based on the median of the range of indicated EO values of the Guideline Ontario Sawmills. The calculation of the rate of indicated EO based on the EBITDA profit margin percentage analysis of the Guideline Ontario Sawmills is presented on **Schedule 1.2**.

Annual Lumber Shipments (Units) Analysis

34. Annual lumber shipments represent the number of units of production sold. Generally, a higher level of units shipped implies a stronger demand for an industry's products. In contrast, a decline in the level of shipments is generally indicative of excess production capacity and/or excess supply and can signal that external influences occurring in the marketplace are causing a decline in demand for an industry's products.

35. Annual lumber shipments (in units) of the Guideline Ontario Sawmills from 2004 to 2014 were analyzed to derive historical benchmarks. The historical benchmarks were based on the median value from 2004 to 2006, assuming that this represents a period of optimal sales levels for the industry.

36. The historical benchmarks were then compared against annual lumber shipments in 2015 to gauge if the most current level of shipments is consistent with the historical benchmarks.

37. The majority of the Guideline Ontario Sawmills realized a significant decline in lumber shipments when compared to their historical benchmarks. Consequently, there is evidence that the industry has experienced a decline in demand for lumber production based on the analysis of annual lumber shipments of the Guideline Ontario Sawmills.

38. The overall rate of indicated EO chosen was based on the median of the range of indicated EO values of the Guideline Ontario Sawmills. The calculation of the rate of indicated EO based on the analysis of annual lumber shipments of the Guideline Ontario Sawmills is presented on **Schedule 1.3**.

Annual Sawmill Production (Units) Analysis

39. Annual sawmill production represents the number of units of inventory produced for sale. Generally, a higher level of units produced implies a stronger demand for an industry's products. In contrast, a decline in the level of production is generally indicative of excess production capacity and can signal that external influences occurring in the marketplace are causing a decline in demand for an industry's products.

40. Annual sawmill production (in units) of the Guideline Ontario Sawmills from 2004 to 2014 were analyzed to derive historical benchmarks. The historical benchmarks were based on the median value from 2004 to 2006, assuming that this represents a period of optimal production levels for the industry.

41. The historical benchmarks were then compared against the annual production levels in 2015 to gauge if the most current levels are consistent with the historical benchmarks.

42. The majority of the Guideline Ontario Sawmills realized some decline in their level of production when compared to their historical benchmarks. The level of the decline ranged from nominal to significant. Consequently, there is evidence that the industry has experienced a decline in demand for lumber production based on the analysis of annual lumber production levels of the Guideline Ontario Sawmills.

43. The overall rate of indicated EO chosen was based on the median of the range of indicated EO values of the Guideline Ontario Sawmills. The calculation of the rate of indicated EO based on the analysis of annual lumber production levels of the Guideline Ontario Sawmills is presented on **Schedule 1.4**.

Sawmill Capacity Utilization Analysis

44. The capacity utilization rate indicates the rate of production capacity that is actually being utilized in comparison to the maximum production capacity available.

45. A decline in the utilization rate when compared to the historical norm 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.

46. 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 may still be below an economic level.

47. The historical rates of capacity utilization of the Guideline Ontario Sawmills from 2004 to 2014 were analyzed to derive historical benchmarks. The historical benchmarks were based on the median capacity utilization rate realized from 2004 to 2006, assuming that this represents a period of optimal capacity utilization rates for the industry.

48. The historical benchmarks were then compared against the rates of capacity utilization in 2015 to gauge if the most current rates are consistent with historical benchmarks.

49. The majority of the Guideline Ontario Sawmills realized some decline in their 2015 capacity utilization rates when compared to their historical benchmarks. Consequently, it appears that the current industrial capacity utilization rate of the industry is below historical levels based on the industrial capacity utilization rate analysis of the Guideline Ontario Sawmills.

50. The overall rate of indicated EO chosen was based on the median of the range of indicated EO values of the Guideline Ontario Sawmills. The calculation of the rate of indicated EO based on the industrial capacity utilization rate analysis of the Guideline Ontario Sawmills is presented on **Schedule 1.5**.

Lumber Sales Price (CAD) Analysis

51. The lumber sales price represents the average asking price for a unit of production by the Guideline Ontario Sawmills. Generally, a higher sales price level implies a stronger demand for an industry's product(s). In contrast, a decline in the price level can signal that external influences occurring in the marketplace are weakening demand for an industry's product(s).

52. The average annual sales prices of certain lumber products (i.e., “2x4x8”, “2x4x10” and “2x4 #2 & BTR”) produced by the Guideline Ontario Sawmills were analyzed from 2004 to 2014 to derive historical benchmarks. The historical benchmarks were based on the median price from 2004 to 2006, assuming that this represents a period of optimal pricing levels for the industry.

53. The historical benchmarks were then compared against the annual average sales price in 2015 to gauge if the most current price levels are consistent with the historical benchmarks.

54. All three of the product lines realized a decline in their current pricing level when compared to their historical benchmarks. Consequently, there is evidence that the industry has experienced a material decline in pricing levels based on the analysis of average annual lumber sales prices realized by the Guideline Ontario Sawmills.

55. The overall rate of indicated EO chosen was based on the median of the range of indicated EO values. The calculation of the rate of indicated EO based on the analysis of average annual sales prices of the Guideline Ontario Sawmills is presented on **Schedule 1.6**.

Canada and U.S. Housing Starts

56. Canadian and U.S. housing starts are a measure of the number of new residential housing construction projects started during a particular period. The measure is considered a key indicator for assessing the state of the economy and is closely tied to the strength of the industry.

57. The average annual numbers of Canadian and U.S. housing starts were analyzed from 2004 to 2014 to derive historical benchmarks. The historical benchmarks were based on the median value from 2004 to 2006, assuming that this period represents an optimal level of residential housing construction starts.

58. The historical benchmarks were then compared against the average annual number of housing starts in 2015 to gauge if the most current level is consistent with the historical benchmarks.

59. Housing starts in both Canada and U.S. were down significantly in 2015 when compared to their historical benchmarks. Consequently, there is evidence to indicate that the industry is experiencing a decline in demand for production and optimal returns given its high economic dependence on the residential construction markets in Canada and the U.S.

60. The calculation of the rate of indicated EO based on Canadian and U.S. housing starts is presented on **Schedules 1.7 and 1.8**, respectively.

Conclusion

61. 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:

THE SAWMILL INDUSTRY IN ONTARIO

Guideline Company Ratio Analysis	Indicated EO	Assigned Weight	Weighted Average
Gross Profit Margin (%) Analysis	79.6%	2	159.2%
EBITDA Profit Margin (%) Analysis	77.5%	2	155.0%
Annual Lumber Shipments Analysis	12.4%	1	12.4%
Annual Sawmill Production Analysis	10.4%	1	10.4%
Sawmill Capacity Utilization Analysis	3.0%	1	3.0%
Lumber Sales Price (CAD) Analysis	12.5%	1	12.5%
Canadian Housing Starts Analysis	14.4%	1	14.4%
US Housing Starts Analysis	43.7%	1	43.7%
		10	410.6%
		divide by total assigned weight	*10*
Estimated Rate of EO as at January 1, 2016			**41.0%**

62. In concluding on the rate of EO, the greatest weight was assigned to the EO indicated by the gross profit margin percentage and the EBITDA profit margin percentage analyses, as they provide the most meaningful measurement of actual economic losses, which gives rise to EO. A lesser weight was assigned to the remaining indicators given that they do not directly measure declines in the industry's optimal level of profitability; however, they are important indicators of operating performance and the strength of the economy.

Assumptions and Restrictions

63. The financial and operating performance results of the Guideline Ontario Sawmills, as disclosed by their management, are fairly stated and free of material errors. If the financial and operating performance results of the Guideline Ontario Sawmills are not free of material errors, such errors could have a material impact on the conclusion(s) stated herein.

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