

**AMORTIZATION STUDY OF MARTIN MARIETTA
READY-MIX BATCH PLANT
LOCATED AT 2005 SOUTH McDONALD STREET,
MCKINNEY, TEXAS 75069
AS OF
JUNE 30, 2020**

Prepared for:

City of McKinney, Texas
Pursuant to a Personal Services Contract dated
March 17, 2020



Amortization Study of Martin Marietta Ready-Mix Batch Plant Located at 2005 South McDonald Street, McKinney, Texas 75069

1. I have been requested by the City of McKinney, Texas, to perform an Amortization analysis for the Martin Marietta (TXI Operations) Concrete Batch Plant located at 2005 South McDonald Street, McKinney Texas 75069 [Martin Marietta Amortization Study].
2. The purpose of such a study is to provide an indication of the time required to “amortize” the remaining net investment in the improvements on the site pursuant to a rezoning, which rendered the current use on this property nonconforming. An amortization study considers the historical investments made on the site, the portion of such expenses that cannot be recovered through the sale of the real property or salvage of the improvements, the amounts recovered historically, and the expected amount of time required to recover such remaining investments.
3. Ready-mix concrete batch plants involve the storing and mixing of Portland cement, aggregates (various sizes of crushed stone, sand, or gravel), and other constituents (such as fly ash) for purposes of making ready-mix concrete for use in construction. Batch plants are considered substantially more efficient for producing larger volumes of ready-mix cement than hand mixing or on-site mixing of materials using smaller portable mixing equipment. Cement and certain other constituents (fly ash) that are finer particles are typically stored in silos and the aggregates are typically stored in bins, pits, or in open piles and then conveyed or released for dry mixing (dry). The dry mix is then typically mixed in a mixer with water on site (wet) or in dry form (dry) and then poured into a mixer on a cement mixer truck which then further rotates and mixes the materials with water on the way to the customer site for pouring into molds. The concrete curing and drying process means that most batch plants are located within 25 miles of the customer site

where the concrete is poured from the truck for use.¹ The “dry” process is favored for mixing in the batch plant because it delays the curing and mixing with water to allow for more time to travel to the customer site and wait before pouring. The dry process also prevents the plant mixing unit from requiring as much cleaning. Given the amount of concrete construction in the United States and the limited distances for travel there are many ready-mix concrete batch plants in the United States and in most counties.

4. The Martin Marietta site has been subject to complaints for noise, light, and dust due to its proximity to residential properties. Martin Marietta was cited by the TCEQ (Texas Commission on Environmental Quality) in 2018 (specifically related to an April 2018 investigation) for “failure to achieve maximum control of dust emissions from stockpiles and vehicle traffic areas.”² Martin Marietta reportedly proposed a major upgrade and expansion of the subject batch plant in 2018 for an estimated amount of \$5.5 million.³ The proposed upgrade and expansion faced significant local opposition to the proposed upgrade and expansion in June and July 2018.

5. Counsel for Martin Marietta was notified on May 23, 2019, the decision to rezone the site (and the sites in the vicinity) to commercial office and similar uses which rendered the current use for ready-mix concrete batch plant operations non-conforming.

6. On July 18-19, 2019, there was an unplanned release of reportedly 8,000 pounds of cement dust. This was reportedly due to equipment malfunction when filling a silo with cement combined

¹ Limits on transport distance typically are in the range of 80 kilometers or 50 miles but for scheduling and practical purposes, the vast majority of deliveries occur within 25 miles of the plant.

² See “In McKinney, dust and tension in the air in battle between low-income neighbors, concrete plants,” *Dallas Morning News*, July 20, 2018.

³ Ibid. The proposed upgrade and expansion cost of \$5.5 million is indicative of the likely profitability and profit potential of the given location. It also suggests that the existing batch plant is obsolete or undersized and would need to be replaced anyway.

with insufficient active presence monitoring the operations. The batch plant has apparently remained closed since that incident.

7. An appraisal report was issued by JLL (Jones Lang Lasalle) evaluating the Martin Marietta “Redi-Mix Property” as of November 28, 2018 (“JLL Appraisal”). I spoke with two of the principal appraisers regarding this appraisal. They did not have direct access to any plans or cost information and did not have the ability to perform a site visit with close inspection but did observe the site from the right-of-way access road on November 28, 2018. I also visited the subject site on June 7, 2020. There were no personnel, security, or fencing to secure the site, which allowed for observation of the batch plant and the site. The batch plant has reportedly not been in operation since July 2019.

8. The JLL appraisal covered 10.4585 acres of land (455,574 square feet) and property improvements for a total value of \$2,410,000. Of this value, \$2,209,534 was assigned to the value of the land and \$201,692 to the improvements. The improvements consisted of an “office building” (metal for drivers and operators break space) with approximately 1,200 square feet of space for \$24,120, concrete paving for \$81,608, gravel paving (\$74,542), concrete bollard (\$2,385), and retaining wall at \$19,037. The costs were all based on Marshall & Swift estimates at retail replacement cost values, which would tend to overstate the actual costs invested in the improvements for a company engaged in the sale of cement, aggregates, and concrete. The appraisal estimated the replacement cost as new to be: \$80,400 for the building, \$136,013 for the concrete paving, \$7,650 for the concrete bollard, \$248,472 for the gravel paving, and \$63,456 for the retaining wall, all of which seem high relative to likely actual costs. The building, bollard, retaining wall, and gravel paving were all assumed to be 70% depreciated from an economic perspective (physical and functional obsolescence) and the concrete paving to be 40% depreciated.

The condition would suggest heavy usage and wear consistent with the ready-mix cement operations and a need for replacement or significant repair relatively soon for the paving given the heavy truck use. JLL concludes a value of 65% to 75% of the improvements would be recoverable with the sale of the property (JLL Appraisal, p. 54).

9. At the time of the appraisal, the land was valued for tax assessment purposes at \$1,284,682 and the improvements at \$36,122 in 2018. The 2019 tax appraisals are \$1,423,622 for the land and \$35,772 for the “office building.”

10. No information or site visit requested was received from Martin Marietta despite assurances that formal requests were made through counsel to Martin Marietta.

11. Annual filings with the US Securities and Exchange Commission for Texas Industries Inc. (“TXI”) from 2000 through 2013 and for Martin Marietta from year-end 2013 onward were obtained. The limited information on the revenues and margins for the ready-mix concrete segment were considered but are not considered reliable due to consolidated operations with the production of cement and aggregates used in the ready-mix concrete operations.⁴ I relied on information from the Risk Management Association (“RMA”) Annual Statement Studies for information on the standard profitability and return on ready-mix operations.

12. I conducted extensive online searches and research on ready-mix batch plant operations and the expected lives of ready-mix batch plants. Most sources indicated an average life of 20 years for modular stationary ready-mix batch plants at which time such plants often still have some saleable value for use by other operators at between 10% and 20% of the original cost. Many counties in the United States provide for 15 year lives on concrete batch plants and others provide for 20 year lives for such plants. Collin County provides for a 20-year average life and a 33% of

⁴ Consolidated companies tend to understate gross profit and operating profit margins for the ready-mix concrete segment as compared with the cement and aggregates business.

original cost (indexed for inflation) for a plant constructed/purchased in 2000 in its 2020 business personal property tax schedule. Some of the conveyers and mixing components and other moving parts can have effective lives, depending on usage and the hardness of aggregates and materials, of 7 (6 to 7 years for truck-mounted mixers is common) to 10 to 12 years for such plants and frequent maintenance and replacement of many parts and components is required.

13. Ready-mix batch plants can cost \$150,000 to setup a new dry stationary plant of the approximate size indicated. Taking down and relocating a plant 10 to 20 miles away from the original site can cost \$120,000.⁵

14. The subject ready-mix batch plant appeared to be a Vince Hagan modular stationary (dry) plant and in a condition consistent with a plant in operation and heavy use since 2000. There were three silos (one listed for fly ash): one old (possibly the original silo) and two that appeared to be newer or refurbished. Relative to pictures obtained from JLL in 2018, it appears that some assets may have been moved from the site and no vehicles remained on the site. The condition of the core plant appeared to be consistent with a 20-year age and close to its expected end-of-life from an efficiency standpoint. This is consistent with the proposal in 2018 by Martin Marietta to upgrade and expand the facility. The operations of older batch plants are typically less efficient and subject to more repair and maintenance at some point.

15. The Business Personal Property Tax page for this site shows an appraised value of \$608,542 as of 2019. No breakdown or method of calculation or “rendition” provided by Martin Marietta (TXI Operations) was provided due to confidentiality concerns. The property appraisal was \$452,698 in 2018, \$545,121 in 2017, \$659,212 in 2016, and \$492,183 in 2015. The reason

⁵ Rough indications provided by Ron Wilson of Colorado, who specializes in setting up and moving stationary batch plants and was recommended by the Vince Hagan dealer in Texas. Actual costs depend on labor rates and crane and truck rental rates to move the equipment.

for the increase in 2019 was not provided and I did not see newer assets that might explain the increase. It is likely that some of these assets have been removed from the location such as motor vehicles, furniture and equipment, tools, machinery, copiers, and inventory (raw materials, goods in process, and finished goods). Vehicles and equipment that are movable constitute a substantial portion of the business personal property of a concrete batch plant operation and significant inventory (cement, fly ash, and aggregates) contributes to the estimated and reported business personal property. A single truck with a mixer can cost \$250,000 to \$300,000 when new and motor vehicles and mobile equipment for an active site can account for 70% to 80% of the cost of a new operation with all new equipment.

16. It is expected that the subject plant facility had at least \$10 million in sales annually in recent years and as much as \$20 million (at least prior to the opening of operations at the Cowtown Redi-Mix facility on the adjacent property). See Schedule A for RMA schedules. The operating profit for a ready-mix concrete operation with revenues of \$10 to \$25 million per annum is approximately 4.5% per annum, after depreciation. However, as part of a larger operation, profits were 6.1% of revenues in the most recent year reported (end of 2018 on average in the 20119-2020 RMA study). Revenues are typically 3.5 times the amount of net fixed assets (which represents usually a younger age of equipment than in this case). For a facility with older assets and greater efficiency, the revenues are closer to 7.1 times net fixed assets for mid-sized operations and 5.4 times net fixed assets for larger operations. Given the appraised values of assets in this instance, the facility was closer to a 5 to 7 multiple of revenues to fixed assets on an economic value basis. The return on fixed assets can, therefore, be approximately 15.75% to 21.35% on average and as much as 31.95% to 32.94% for the Martin Marietta batch plant. Operating profits for ready-mix

concrete operations have averaged 5.8% from 2014 to 2017 as compared with 4.8% in 2018, suggesting that profitability was greater on average in prior periods.

17. The Moody's Long-Term Corporate Bond rate for Baa rated bonds is currently 3.57% and has averaged 4.43% over the past three years. The 10-Year Generic US Treasury Interest Rate is currently 0.70% and has averaged 2.25% over the past three years.

18. Schedule B provides an estimated cost of capital for Martin Marietta on a normalized basis. This is a fairly standard cost of capital calculation. For Martin Marietta, we used a greater-than-normal cost of equity risk premium to account for the relatively low current market interest rates. The lower debt-to-equity ratio produces a greater estimate of the cost of capital than optimal at 6.7% currently. This reflects the Company's relative stability and profitability and the fact that interest rates have generally trended downward over time.

19. Returns on net fixed assets typically require less than the returns on the overall capital of the business. In addition, some net return on working capital is required. Required working capital is about 30% of net fixed assets on average for an average business and about 5.0% to 6.0% of revenues. Returns on working capital are typically low, perhaps 1.0% over the long-term government bond rate, or about 3.25%. That means the returns on revenues sufficient to cover working capital would be only 0.17% of revenues on average. For this business, with the older assets, required returns on fixed assets (based on revenues being 5 to 7 times net fixed assets) would be 0.96% on the low end and 1.34% on the high end. This would suggest a range of total required return on sales in the range of 1.15% to 1.50% for returns on assets. The remaining profit as a percentage of sales would cover intangible returns and allow for faster economic return (amortization) on net fixed assets.

20. In the context of this plant location, the analysis would indicate an excess or economic profit (for purposes of cost recovery) of at least 3.0% of revenues at the low end to more than 4.5% of revenues at the high end. Given a minimum revenue level of even \$10 million per annum, that would translate into \$300,000 to \$450,000 per year in annual “excess” earnings. At a revenue level of \$20 million, the annual “excess” earnings would range from \$600,000 to \$900,000 per annum (and could be greater on a consolidated basis for Martin Marietta given vertical integration with the cement and aggregates businesses).

21. The proportion of assets that would be “stranded” by relocation and might be compromised would be \$50,400 to \$70,600 according to the JLL appraisal. Costs of relocation of the batch plant would be another \$120,000. Even with selling and other costs, Martin Marietta would be able to recover the portion of the value of the “stranded” capital improvements and relocation expenses in four to six months and at most in one year. The calculation is shown in Schedule C.

22. Moreover, the operations conducted on the existing site since 2000 have likely resulted in a recovery of historic costs and site improvements and capital investments many times over. If the “stranded” investments and expenses total \$312,508 inclusive of selling costs, then Martin Marietta has recovered at least 9.60 times that amount in operations from 2014 to 2018 if it has been operating consistent with a normal ready-mix batch plant operation in a mid-sized or larger company. This calculation is also summarized in Schedule C.

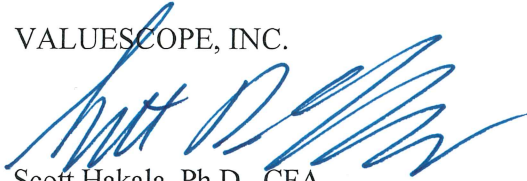
23. There are a number of assumptions made in this analysis that are favorable to Martin Marietta. These include: assumption of no remaining depreciation of the tangible assets; the batch plant has a remaining life of at least 5 years before replacement; and relatively high selling costs for the property. Relaxing these assumptions would reduce the time required to recover the “stranded” costs and expenses and increase the historic recovery of such costs from 2014 to 2018.

Additionally, given the growth and construction activity in the McKinney regional market, the revenues and profitability of the Martin Marietta ready-mix concrete operations should have yielded and should yield increased profits.

24. I am independent of the parties in this matter. To the extent additional discovery or testimony would alter the facts, assumptions, or analyses, I may update or substantially revise these opinions upon the receipt of such additional discovery and information.

Executed this 10th day of July 2020, in Southlake, Texas.

VALUESCOPE, INC.



Scott Hakala, Ph.D., CFA
Principal

Schedule A-1 RMA Financial Statement Summaries

32732Y - Ready-Mix Concrete Manufacturing (Cost of Sales)

2015-16 Annual Statement Studies

National - All Regions

	0-1MM	1-3MM	3-5MM	5-10MM	10-25MM	25MM and Over	All
Type of Statement							
Unqualified					8	21	29
Reviewed		1	5	5	18	19	48
Compiled	2	4	5	5	5	10	31
Tax Returns		4	4	10	3	1	22
Other	2	4	6	19	17	43	91
							21 (4/1-9/30/14)
Number of Statements	4	13	20	39	51	94	221
ASSETS							
Cash & Equivalents		12.1	14.0	11.3	11.1	8.6	10.2
Trade Receivables - (net)		30.5	21.8	28.4	26.7	21.5	24.4
Inventory		10.9	10.6	5.8	6.9	9.2	8.3
All Other Current Assets		3.0	1.7	3.1	2.9	2.9	2.8
Total Current Assets		56.5	48.0	48.6	47.5	42.2	45.7
Fixed Assets (net)		35.1	37.2	39.1	40.9	45.7	42.3
Intangibles (net)		7.0	6.9	4.5	3.6	5.0	4.9
All Other Non-Current Assets		1.4	7.8	7.7	8.0	7.1	7.1
Total Assets		100.0	100.0	100.0	100.0	100.0	100.0
LIABILITIES							
Notes Payable-Short Term		3.5	4.5	4.8	4.4	3.6	4.3
Cur. Mat.-L/T/D		4.9	5.0	4.1	4.4	4.4	4.4
Trade Payables		14.0	16.1	16.2	13.6	10.9	13.0
Income Taxes Payable		.0	.2	.0	.1	.3	.2
All Other Current Liabilities		3.4	12.6	12.2	5.8	6.7	7.7
Total Current Liabilities		25.8	38.4	37.3	28.4	26.0	29.6
Long Term Debt		26.8	19.6	22.6	21.7	18.8	20.7
Deferred Taxes		.0	.3	.3	.7	.9	.6
All Other Non-Current Liabilities		15.5	9.9	5.6	4.6	4.5	6.2
Net Worth		32.0	31.8	34.2	44.6	49.7	42.9
Total Liabilities & Net Worth		100.0	100.0	100.0	100.0	100.0	100.0
INCOME DATA							
Net Sales		100.0	100.0	100.0	100.0	100.0	100.0
Gross Profit		29.7	35.7	32.5	28.3	20.4	27.0
Operating Expenses		31.6	30.2	28.0	25.2	16.4	23.2
Operating Profit		-1.9	5.5	4.5	3.1	4.1	3.8
All Other Expenses (net)		.7	.3	-.4	-.1	-.4	-.2
Profit Before Taxes		-2.5	5.3	4.8	3.2	4.4	3.9
RATIOS							
Current - upper		5.5	2.9	3.0	2.4	2.4	2.6
Current - median		1.9	2.1	1.7	1.7	1.7	1.7
Current - lower		1.2	.8	1.1	1.2	1.2	1.2
Quick - upper		4.9	2.5	2.4	2.2	1.7	2.0
Quick - median		1.2	1.3	1.3	1.4	1.1	1.2
Quick - lower		1.0	.5	.8	.6	.8	.8
Sales / Receivables - upper	[24]	15.3	[20] 18.2	[33] 11.0	[30] 12.0	[34] 10.7	[32] 11.4
Sales / Receivables - median	[48]	7.6	[38] 9.5	[40] 9.2	[42] 8.7	[45] 8.1	[42] 8.6
Sales / Receivables - lower	[99]	3.7	[46] 7.9	[59] 6.2	[54] 6.7	[55] 6.6	[55] 6.6
Cost of Sales / Inventory - upper	[7]	51.7	[6] 61.1	[2] 232.6	[5] 70.3	[9] 39.4	[6] 62.6
Cost of Sales / Inventory - median	[18]	20.2	[13] 27.7	[11] 34.3	[13] 28.7	[20] 18.0	[15] 23.8
Cost of Sales / Inventory - lower	[34]	10.8	[30] 12.0	[33] 11.0	[29] 12.6	[45] 8.2	[36] 10.1
Cost of Sales / Payables - upper	[9]	40.2	[19] 19.6	[24] 15.0	[20] 18.5	[18] 19.9	[19] 19.1
Cost of Sales / Payables - median	[24]	14.9	[32] 11.3	[34] 10.7	[27] 13.4	[23] 15.9	[28] 13.1
Cost of Sales / Payables - lower	[62]	5.9	[53] 6.9	[55] 6.6	[45] 8.1	[36] 10.0	[43] 8.5
Sales / Working Capital - upper		5.4	4.6	5.3	6.8	6.5	5.9
Sales / Working Capital - median		6.1	10.9	10.0	13.4	10.5	10.8
Sales / Working Capital - lower		31.7	-36.3	42.7	47.7	23.8	30.0
EBIT / Interest - upper		19.3	12.6	47.9	15.6	14.1	15.8
EBIT / Interest - median	(11)	2.4	(17) 5.7	(38) 10.7	(49) 4.7	(86) 5.2	(203) 5.7
EBIT / Interest - lower		-1.8	1.3	1.1	1.3	2.2	1.5
Net Profit + DDA / Curr Mat LTD - upper					4.0	5.0	4.3
Net Profit + DDA / Curr Mat LTD - median					(16) 2.1	(26) 2.6	(48) 2.4
Net Profit + DDA / Curr Mat LTD - lower					1.7	1.8	1.7
Fixed / Worth - upper		.3	.6	.5	.6	.7	.6
Fixed / Worth - median		1.1	2.1	.8	1.1	1.1	1.1
Fixed / Worth - lower		-3.6	-122.0	7.9	1.9	1.6	2.1
Debt / Worth - upper		.4	.7	.3	.6	.6	.6
Debt / Worth - median		1.6	2.0	1.3	1.1	1.1	1.2
Debt / Worth - lower		-7.3	-534.0	20.3	2.5	2.5	3.1
% Profit before Taxes / Tangible Net Worth - upper			52.6	41.7	28.7	30.6	33.3
% Profit before Taxes / Tangible Net Worth - median			(14) 21.4	(31) 17.2	(45) 12.0	(92) 15.0	(195) 15.0
% Profit before Taxes / Tangible Net Worth - lower			5.3	7.4	1.2	4.9	4.4
% Profit before Taxes / Total Assets - upper		13.2	17.7	20.9	12.5	11.8	13.2
% Profit before Taxes / Total Assets - median		2.4	8.5	8.5	4.9	6.2	5.8
% Profit before Taxes / Total Assets - lower		-15.5	.9	.3	.4	2.1	1.0
Sales / Net Fixed Assets - upper		20.1	13.3	8.7	10.1	5.6	8.3
Sales / Net Fixed Assets - median		8.4	7.1	5.9	5.9	3.4	4.6
Sales / Net Fixed Assets - lower		4.0	4.3	3.6	3.6	2.3	2.5
Sales / Total Assets - upper		4.1	3.0	2.9	3.3	2.1	2.5
Sales / Total Assets - median		3.0	2.1	2.1	2.2	1.6	1.8
Sales / Total Assets - lower		1.6	1.8	1.4	1.4	1.2	1.3
% Depr, Depl, Amort / Sales - upper			1.4	2.3	2.4	2.7	2.4
% Depr, Depl, Amort / Sales - median			(18) 3.3	(33) 3.0	(50) 3.4	(85) 4.0	(196) 3.7
% Depr, Depl, Amort / Sales - lower			5.2	6.5	5.2	5.3	5.5
% Officers', Directors', Owners' Comp / Sales - upper				1.1	1.6		1.3
% Officers', Directors', Owners' Comp / Sales - median				(18) 1.8	(19) 2.4		(56) 2.1
% Officers', Directors', Owners' Comp / Sales - lower				2.6	5.1		3.7
Net Sales (\$)	1686M	23844M	77792M	291226M	846199M	7556205M	8796952M
Total Assets (\$)	3421M	12100M	43333M	165426M	450966M	5399047M	6074293M

Schedule A-2 RMA Historical Data

32732Y - Ready-Mix Concrete Manufacturing (Cost of Sales)
2015-16 Annual Statement Studies
National - All Regions

	4/1/10	3/31/11	4/1/11	3/31/12	4/1/12	3/31/13	4/1/13	3/31/14	4/1/14	3/31/15
Type of Statement										
Unqualified		38		37		31		28		29
Reviewed		40		47		35		41		48
Compiled		27		33		29		20		31
Tax Returns		30		38		34		25		22
Other		95		58		69		58		91
									21 (4/1-9/30/14)	
Number of Statements		230		213		198		172		221
ASSETS										
Cash & Equivalents		9.8		8.6		9.6		10.1		10.2
Trade Receivables - (net)		21.6		24.1		25.3		23.7		24.4
Inventory		8.3		9.0		8.2		9.1		8.3
All Other Current Assets		3.1		3.2		2.5		2.5		2.8
Total Current Assets		42.7		44.9		45.6		45.3		45.7
Fixed Assets (net)		45.6		43.5		43.0		42.6		42.3
Intangibles (net)		3.6		4.3		4.3		4.7		4.9
All Other Non-Current Assets		8.1		7.3		7.1		7.3		7.1
Total Assets		100.0		100.0		100.0		100.0		100.0
LIABILITIES										
Notes Payable-Short Term		7.3		5.8		7.0		6.1		4.3
Cur. Mat.-L/T/D		5.9		6.1		5.4		4.9		4.4
Trade Payables		12.6		14.0		14.7		14.0		13.0
Income Taxes Payable		.2		.1		.2		.1		.2
All Other Current Liabilities		8.0		8.5		12.1		8.4		7.7
Total Current Liabilities		33.9		34.5		39.5		33.5		29.6
Long Term Debt		23.9		23.8		23.1		20.5		20.7
Deferred Taxes		.8		.4		.8		.9		.6
All Other Non-Current Liabilities		5.4		6.5		7.9		6.2		6.2
Net Worth		35.9		34.8		28.8		38.8		42.9
Total Liabilities & Net Worth		100.0		100.0		100.0		100.0		100.0
INCOME DATA										
Net Sales		100.0		100.0		100.0		100.0		100.0
Gross Profit		26.2		25.2		26.4		25.9		27.0
Operating Expenses		26.0		25.6		24.6		24.0		23.2
Operating Profit		.2		-.4		1.7		1.8		3.8
All Other Expenses (net)		1.0		.2		.2		-.3		-.2
Profit Before Taxes		-.7		-.5		1.6		2.1		3.9
RATIOS										
Current - upper		2.8		2.5		2.2		2.2		2.6
Current - median		1.4		1.4		1.5		1.5		1.7
Current - lower		.9		1.0		.9		1.0		1.2
Quick - upper		2.0		1.8		1.7		1.8		2.0
Quick - median		1.0		1.0		1.0		1.0		1.2
Quick - lower		.6		.6		.6		.7		.8
Sales / Receivables - upper	[30]	12.2	[34]	10.8	[33]	11.1	[34]	10.8	[32]	11.4
Sales / Receivables - median	[42]	8.6	[45]	8.1	[44]	8.3	[43]	8.5	[42]	8.6
Sales / Receivables - lower	[58]	6.3	[60]	6.1	[59]	6.2	[56]	6.5	[55]	6.6
Cost of Sales / Inventory - upper	[7]	49.1	[9]	42.4	[8]	44.9	[9]	39.2	[6]	62.6
Cost of Sales / Inventory - median	[17]	21.9	[18]	20.1	[16]	22.2	[18]	20.2	[15]	23.8
Cost of Sales / Inventory - lower	[35]	10.3	[43]	8.5	[34]	10.6	[38]	9.7	[36]	10.1
Cost of Sales / Payables - upper	[15]	24.4	[18]	20.2	[20]	18.5	[21]	17.3	[19]	19.1
Cost of Sales / Payables - median	[29]	12.7	[31]	11.9	[30]	12.2	[30]	12.2	[28]	13.1
Cost of Sales / Payables - lower	[53]	6.9	[56]	6.5	[54]	6.8	[47]	7.7	[43]	8.5
Sales / Working Capital - upper		5.7		6.8		7.0		7.0		5.9
Sales / Working Capital - median		16.5		12.5		13.2		13.3		10.8
Sales / Working Capital - lower		-33.7		-207.6		-39.5		181.6		30.0
EBIT / Interest - upper		5.1		5.5		9.0		10.4		15.8
EBIT / Interest - median	(212)	1.4	(195)	1.9	(185)	3.1	(154)	3.4	(203)	5.7
EBIT / Interest - lower		-2.1		-1.3		.1		.7		1.5
Net Profit + DDA / Curr Mat LTD - upper		2.4		1.9		3.4		2.6		4.3
Net Profit + DDA / Curr Mat LTD - median	(51)	1.2	(38)	1.4	(41)	1.8	(46)	1.7	(48)	2.4
Net Profit + DDA / Curr Mat LTD - lower		.4		.4		1.1		.9		1.7
Fixed / Worth - upper		.6		.6		.7		.6		.6
Fixed / Worth - median		1.2		1.1		1.2		1.1		1.1
Fixed / Worth - lower		3.6		4.1		5.6		2.6		2.1
Debt / Worth - upper		.6		.6		.6		.6		.6
Debt / Worth - median		1.4		1.4		1.5		1.3		1.2
Debt / Worth - lower		5.4		7.3		11.1		3.9		3.1
% Profit before Taxes / Tangible Net Worth - upper		23.9		18.0		27.0		21.9		33.3
% Profit before Taxes / Tangible Net Worth - median	(191)	3.8	(179)	4.7	(160)	9.4	(149)	7.3	(195)	15.0
% Profit before Taxes / Tangible Net Worth - lower		-8.2		-8.1		.8		.0		4.4
% Profit before Taxes / Total Assets - upper		8.0		7.2		9.6		8.5		13.2
% Profit before Taxes / Total Assets - median		1.3		1.5		3.9		3.1		5.8
% Profit before Taxes / Total Assets - lower		-5.9		-5.2		-1.3		-1.1		1.0
Sales / Net Fixed Assets - upper		7.2		7.6		8.0		7.5		8.3
Sales / Net Fixed Assets - median		3.7		4.0		4.7		4.8		4.6
Sales / Net Fixed Assets - lower		2.0		2.3		2.8		2.6		2.5
Sales / Total Assets - upper		2.2		2.4		2.6		2.4		2.5
Sales / Total Assets - median		1.5		1.7		1.8		1.8		1.8
Sales / Total Assets - lower		1.1		1.2		1.3		1.3		1.3
% Depr, Depl, Amort / Sales - upper		3.6		3.0		2.7		2.7		2.4
% Depr, Depl, Amort / Sales - median	(212)	5.9	(193)	5.1	(178)	4.3	(161)	3.6	(196)	3.7
% Depr, Depl, Amort / Sales - lower		8.3		7.5		6.1		5.7		5.5
% Officers', Directors', Owners' Comp / Sales - upper		1.4		1.3		1.4		1.4		1.3
% Officers', Directors', Owners' Comp / Sales - median	(70)	2.6	(70)	2.5	(68)	2.9	(62)	2.7	(56)	2.1
% Officers', Directors', Owners' Comp / Sales - lower		5.6		5.0		5.6		4.7		3.7
Net Sales (\$)		6252213M		6467927M		6557853M		5530575M		8796952M
Total Assets (\$)		4996099M		4906741M		4523725M		4030917M		6074293M

Weighted Average Cost of Capital

(Dollar figures in thousands, except for per share figures)

Company Name	Ticker Symbol	Historical Beta [1]	Shares Out	Share Price	Market Cap	Debt, Pref. & Min Int.	Avg. Debt / Equity [2]	Debt / Total Cap	Effective Tax Rate [3]	Unlevered Beta
U.S. Concrete, Inc.	USCR	1.26	16,491	\$26.84	\$442,627	\$786,100	81.3%	44.8%	31.8%	0.81
Vulcan Materials Company	VMC	0.94	132,395	\$120.26	\$15,921,790	\$3,202,353	17.3%	14.8%	23.4%	0.83
Eagle Materials Inc.	EXP	1.04	41,644	\$78.93	\$3,286,959	\$993,134	16.4%	14.1%	24.3%	0.93
Summit Materials, Inc.	SUM	1.29	113,311	\$19.54	\$2,214,104	\$1,966,590			21.0%	
Forterra, Inc.	FRTA	1.37	64,853	\$13.54	\$878,110	\$1,315,405			4.4%	
CRH plc	ISE:CRG	0.91	784,287	\$30.47	\$23,897,213	\$12,437,437	45.2%	31.1%	19.4%	0.67
MDU Resources Group, Inc.	MDU	0.87	200,390	\$27.73	\$5,556,807	\$2,358,513	42.7%	29.9%	25.5%	0.66
LafargeHolcim Ltd	LHN	1.06	613,694	\$44.71	\$27,438,240	\$17,784,386	72.4%	42.0%	28.8%	0.70
Martin Marietta Materials, Inc.	MLM	0.87	62,199	\$227.53	\$14,152,109	\$3,271,400	20.0%	16.6%	24.6%	0.75

Capital Asset Pricing Model (CAPM) Inputs

[4] Effective tax rate	21.00%
[5] Risk-free rate (Rf)	1.10%
[6] Equity Risk Premium (ERP)	7.14%
[7] Unlevered beta	0.75
[8] Target debt/equity	20.00%
[9] Pretax cost of debt	4.51%
[10] Small Stock Risk Premium (SSRP)	0.00%
[11] Unsystematic Risk Premium (USRP)	0.00%

Notes:

- [1] Primary Beta: Bloomberg Adj Beta 5-Year (Weekly)
[2] Average D/E ratio for prior 5 years + Valuation Date
[3] Average effective tax rate for LTM + prior 10 years excluding negative rate or rates greater than 100%
[4] Reflects a C Corporation status for valuation purposes
[5] 20-Year United States Treasury rate as of February 29, 2020
[6] Duff & Phelps 2019 Cost of Capital Navigator, long-term supply side ERP+1.0% for low interest rates
[7] Unlevered and relevered using Hamada method
[8] Based on Martin Marietta levels
[9] Yield on Moody's Baa-rated corporate bonds as of February 29, 2020
[10] Omitted due to being a large company
[11] Unsystematic, company-specific risk premium

High	81.3%	44.8%	31.8%	0.93
Mean	42.2%	27.6%	22.6%	0.76
Median	42.7%	29.9%	24.3%	0.75
CV	0.63	0.46	0.34	0.13

Capital Asset Pricing Model (CAPM) Calculations

Relevered beta	0.87
Ke = Rf + (Levered Beta x ERP) + SSRP + USRP	
CAPM Cost of Equity (k_e)	7.3%
After-tax cost of debt	3.6%
Debt/capital ratio	16.7%
Weighted Average Cost of Capital (WACC)	6.7%

Schedule C Estimate to Amortize Stranded Improvements and Expenses

Improvements

Office Building	\$ 24,120	JLL Estimate
Concrete paving	\$ 81,608	JLL Estimate
Gravel paving	\$ 74,542	JLL Estimate
Concrete Bollard	\$ 2,385	JLL Estimate
Retaining Wall	\$ 19,037	JLL Estimate
Total Improvements	\$ 201,692	JLL Estimate

times

Minimum % Unrecoverable	25.00%	JLL Estimate
Maximum % Unrecoverable	35.00%	JLL Estimate
Min Loss of improvements	\$ 50,423	
Max Loss of improvements	\$ 70,592	

Costs of relocation of batch plant \$120,000

Rough estimate, assumes batch plant does not require replacement in next five years; even though replacement is likely anyway

Max cost of selling property at \$2.2 \$ 132,000 6.00% Absolute max for property, often 2.5% to 3.5%

Average expected loss \$ 312,508 High end assumption

Lower End of Economic Recovery per year \$ 300,000 Assumes no depreciation remaining

Upper Estimate of the Economic Recovery per year \$ 900,000 Assumes no depreciation remaining

Minimum time to recovery (years) 0.35 avg. loss/Upper estimate of recovery per year

Expected time to recovery (years) 0.52 avg. loss/\$600,000 avg. annual recovery

Maximum time to recovery (years) 1.04 avg. loss/Lower estimate of recovery per year

Recovery percentage over five years (2014 to 2018) 960% 5 years*\$600,000 for avg. annual recovery/avg. loss

VITAE OF SCOTT D. HAKALA, PH.D., CFA

SCOTT D. HAKALA, PH.D., CFA
VALUESCOPE, INC. *PRINCIPAL*
shakala@valuescopeinc.com, 817-481-6347

Dr. Hakala has more than 25 years of business consulting and business valuation experience, concentrating on complex financial analyses. He provides business valuation and financial consulting services to companies in a broad range of industries. Working with domestic and international clients, Dr. Hakala has performed more than a thousand business valuations involving closely held common stock, preferred stock, options, intellectual property and other tangible and intangible assets. His work has involved advising numerous clients on prospective transactions involving business and business related assets, including providing fairness opinions, solvency opinions and financial accounting analysis. As an expert witness, Dr. Hakala has provided deposition and courtroom testimony in matters relating to shareholder values, tax valuations, bankruptcy and economic damages.

FINANCIAL AND TAX REPORTING AND TRANSACTION ADVISORY SERVICES

Dr. Hakala has performed a substantial amount of business valuation work for clients with a focus on companies in the middle market (\$5 million to \$500 million market value), private equity backed companies, venture capital and development stage companies, asset holding entities and asset-backed securitizations, and smaller capitalization public companies (including valuations and advice for companies preparing or considering public offerings or sale). Valuation services include:

- Determining fair market value appraisals of debt, preferred equity and common equity (including LLC, LP and partnership) determinations and discount studies for tax, financial planning, and advisory purposes
- Valuation/appraisals of Derivative Securities and Embedded Derivatives for tax and financial reporting and advisory (including fairness) purposes (incentive compensation awards; officer, director and employee stock options; commodity and currency options and swaps; interest rate options and swaps; warrants; convertible securities; carried interest valuations)
- Advisory valuations (fairness opinions, solvency opinions, prospective private placement or investment purposes, possible sale of business interests, securities held in private and public fund portfolios and holding entities)
- Gift and estate valuations for tax purposes
- Valuations of asset holding companies, partnerships and asset-backed securitizations (receivables, debt securities, mortgage securities, real estate trusts, credit card portfolios, subprime portfolios)
- Reasonable compensation studies including reasonable return to investor analyses for advisory, tax and fairness purposes
- Officer, director, and employee stock and incentive compensation for tax (IRC Section 83(b), IRC 409A), financial accounting, and advisory/fairness purposes
- Transfer pricing analyses for tax, financial reporting, and advisory (fairness) purposes (IRC Section 482)
- Allocation of Purchase Price and related Asset Impairment Studies
- Valuations and Discounts associated with Built-in Capital Gains and Deferred Taxes for tax, financial reporting, and advisory purposes (including S Corporation conversions)
- Valuation of Employee Stock Ownership Plans (ESOPs) for tax, financial reporting, and advisory purposes

VITAE OF SCOTT D. HAKALA, PH.D., CFA

INTELLECTUAL PROPERTY AND INTANGIBLE ASSET VALUATION

Dr. Hakala has extensive experience in valuing intellectual property and other types of intangible assets in business appraisals. Having analyzed and overseen the valuation of hundreds of businesses, Dr. Hakala has gained the technical background necessary to analyze complex intellectual property valuations including:

- Contract-related (e.g., favorable supplier or other product/service contracts)
- Customer-related (e.g., customer lists and customer relationships)
- Data processing-related (e.g., computer software, databases)
- Intellectual property-related (e.g., patents, trade secrets, copyrights, Internet domain names, and trademarks)
- Goodwill-related (e.g., going-concern value, tradename value)
- Human capital-related (e.g., employment agreements, a trained and assembled workforce, non-competition and non-solicitation agreements)
- Location-related (e.g., leasehold interests, certificates of need)

LITIGATION SUPPORT

A significant portion of Dr. Hakala's practice has involved expert testimony or consulting in litigation. This includes matters relating to general measures of economic loss. The areas Dr. Hakala has testified in include:

- Intellectual property (patent and copyright infringement damages)
- Breach of contract damages and breach of warranty claims (defective equipment)
- Investment and securities litigation (fraud in the inducement damages, restitution damages, market manipulation, loss causation and economic damages involving both unregistered and registered securities, ERISA and investment management damages relating to unsuitable investments and investment advice) including providing advisory services for administering claims and recoveries of funds by the SEC and FINRA
- Fraudulent conveyance (fairness opinions, solvency opinions, reasonably equivalent value opinions)
- Lost economic income (wrongful termination, personal injury; discrimination)
- Breach of fiduciary duties and related claims (shareholder oppression, fairness in merger and acquisition transactions, fairness involving related party transactions)
- Marital dissolution (valuation of business interests, valuation of pension benefits, valuation of personal goodwill, valuation of private investments) including work as a court appointed expert or jointly hired by the parties to determine values

Dr. Hakala has served as an expert in many of the most prominent securities fraud cases, including: Enron, Dynegy, Williams Companies, AOL Time Warner, Computer Associates, Mortgage-Backed Securities litigation, NYU v Ezra Merkin (Madoff-related litigation), and Parmalat. In connection with that work, Dr. Hakala co-authored a law review article in 2006 on the economics of loss causation which has been cited in significant court cases and in briefs before the US Supreme Court. In the vast majority of cases, courts have adopted, relied upon or otherwise given significant weight to Dr. Hakala's opinions.

VITAE OF SCOTT D. HAKALA, PH.D., CFA

EMPLOYMENT HISTORY

November 2014 to Current

ValueScope, Inc.Principal

As a financial economist and financial analyst, Dr. Hakala brings to the firm extensive practical knowledge of finance, economics and statistics. His expertise includes: the valuation or appraisal of securities and business interests (transactions, mergers, acquisitions, fairness opinions, business appraisal); the valuation of intangible assets (patents, trademarks); analysis of publicly traded securities (insider trading studies, trading analyses, event analyses, materiality, damages in securities litigation); economic loss analyses (commercial litigation); wage and compensation determination (reasonable compensation studies, lost personal income, wrongful termination); transfer pricing; valuation of derivative securities (options pricing and valuation); and antitrust and industry structure, strategic pricing, marketing and cost allocation analyses.

May 1992 to October 2014

CBIZ Valuation Group, LLC (f/k/a Business Valuation Services, Inc.).....
Managing Director (Senior Consultant 1992 to 1994; Dir./Principal 1995 to 2009)

Dr. Hakala managed engagements and advised clients on a large number of business valuation, economic and financial consulting, and litigation projects. His work included: the valuation of securities and business interests; the valuation of intangible assets; analysis of publicly traded securities; economic loss analyses; wage and compensation determination; intercompany and related party transfer pricing; analyses and valuation of derivative securities; and antitrust and industry structure, strategic pricing, marketing and cost allocation analyses. He frequently reviewed valuation reports for CBIZ's accounting affiliate and assisted in audits involving valuation and related issues.

Jan 1998 – March 1998

Laser BioTherapy, Inc.Consultant/Interim CEO

Dr. Hakala initially served as a consultant to the company. As interim CEO, his decision-making authority involved issues of marketing, employment, negotiating with investors, pricing, product planning, financial planning and all other corporate decisions related to a development stage company involved in seeking approval for a patented medical device with a variety of non-invasive therapeutic benefits.

1988 – 1992

Dept. of Economics, Southern Methodist University.....Assistant Professor

Dr. Hakala taught graduate and undergraduate courses in macroeconomics, monetary/financial economics, financial institution regulation and international financial management. He supervised dissertations on international money, commodity options and forward markets, and foreign exchange rates. His research interests included monetary policy, the causes of fluctuations in employment and output, capital stock estimation, aggregate production theory, foreign currency movements (futures, options and forward contracts), inflation, interest rate movements and the term structure of interest rates, asset pricing and consumption.

VITAE OF SCOTT D. HAKALA, PH.D., CFA

1983 – 1988

Dept. of Economics, University of Minnesota Lecturer

Dr. Hakala designed course materials and taught large classes in macroeconomics and international economics. He served on hiring committees and evaluated other instructors.

FORMAL EDUCATION

Doctor of Philosophy, Economics - 1989

University of Minnesota, Minneapolis, Minnesota

Graduate School Fellowship

(Graduate/dissertation advisor Edward Prescott was awarded the Nobel Prize in Economics in 2004.)

Bachelor of Arts, Economics - 1983

Minor in Business Administration and Pre-Law Emphasis

University of Minnesota, Duluth, Minnesota

Graduated Summa Cum Laude Whiteside Scholarship, full tuition and expenses

ACADEMIC HONORS

Distinguished Instructor, Department of Economics, University of Minnesota, 1987-1988

Earhart Foundation Award, Department of Economics, University of Minnesota, 1985

Graduate School Fellowship, 1983 and 1984

Cecil H. Meyers Outstanding Economics Student Award, 1982

Perfect Scores on Quantitative Analysis and Verbal Analysis sections of Graduate Record Examination (GRE), 1982

Alice Touhy Tweed Award, High School Valedictorian, 1979

Lee Krough Award (outstanding character), American Legion's Minnesota Boy's State, 1978, elected Lt. Governor and invited to represent state at other events

Centrum Award, 1979 (for outstanding character and contributions)

ORGANIZATIONS AND PROFESSIONAL ASSOCIATIONS

CFA Charter, The Institute of Chartered Financial Analysts, completed all tests and requirements for a CFA designation, 1998

American Society of Appraisers (ASA), Uniform Standards of Professional Appraisal Practice, Certification Course, December 2017, Member

VITAE OF SCOTT D. HAKALA, PH.D., CFA

PUBLICATIONS

"Lessons from Single-Company Event Studies: The Importance of Controlling for Company-Specific Events" (December 4, 2017). Available at SSRN: <https://ssrn.com/abstract=3083495>

"Valuing Complex Derivatives," ValueScope White Paper, March 2016, updated version December 14, 2017 at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3087998 (pending release)

"Lessons from Single Company Event Studies," Working Paper publicly available via BE Press, August 2, 2010.

"The Other Side of Kohler: IRS Expert Offers Insights," Business Valuation Update, January 2007.

Thorsen, Kaplan and Hakala, "Rediscovering the Economics of Loss Causation," Journal of Business and Security Law Acceptance, Vol. 6, No. 1 and 2, April 2006, pp. 93-125.

"Estimating and Applying Economic Value Added," Chapter 13E - Financial Valuation: Businesses and Business Interests - 1998 Update. Publisher: Warren, Gorham & Lamont

"Valuation for Smaller Capitalization Companies" (with Dr. Mukesh Bajaj), Chapter 12A – Financial Valuation: Businesses and Business Interests - 1998 Update. Publisher: Warren, Gorham & Lamont.

"Analysis and Valuation of Distressed Equity Securities" (with Mr. M. Travis Keath), Chapter 13F - Financial Valuation: Businesses and Business Interests - 1999 Update. Publisher: Warren, Gorham & Lamont.

"Analysis and Valuation of Distressed Equity Securities" (with Mr. M. Travis Keath), Valuation Strategies, September/October 1999, pp. 24-34. Publisher: Warren, Gorham & Lamont.

Contributing author in The Art of M&A Integration: A Guide to Merging Resources, Processes and Responsibilities. October 1997. Publisher: McGraw-Hill. Contributed on valuation of tangible and intangible assets (patents, trade secrets, customers, goodwill, employment agreements, non-competes, etc.), allocation of purchase price issues, accounting treatment of acquisitions, international valuation and transfer pricing and general valuation and due diligence issues. Assisted editor in commenting on and editing first half of text.

Provided live and taped interviews pertaining to economic issues for television, including lengthy interviews for CNN (July 1990), WFAA-TV (July 1990; July 1991; March 1992), and radio (Internet radio on November 9, 1999, discussing Microsoft anti-trust issues).

SELECTED LECTURES AND APPEARANCES

Reasonable Compensation –presentation to the Dallas CPA Society Member Appreciation CPE Series, September 23, 2014

The Knowledge Foundation, Brand Valuation of Intangible Assets: Hot Topics for 2014 and Beyond, Webinar Presentation February 12, 2014

VITAE OF SCOTT D. HAKALA, PH.D., CFA

New York City Bar Association, Securities Litigation Meeting– Discussion with Marcia Mayer Kramer regarding: “View from the trenches: How has Dura changed the way you analyze damages” – May 14, 2008

PLUS D&O Symposium – New York-Panel Discussion-Written presentation entitled “Current Economic Issues in Securities Litigation” and Panel Discussion - February 2, 2006

“Valuation of Options for Litigation Purposes” – New York University CLE Presentation-October 2000

“Valuation Issues-Family Limited Partnerships” – Professional Financial Service, LP’s Family Limited Partnership Alert and Update; Dallas/Fort Worth - February 2000

“PPOs for Sale: the Valuation of Managed Care Entities” - Caesars Palace; Las Vegas, Nevada - September 1992

“Equilibria in Continuous-Time Models of Money” - refereed paper presented to the Sixth World Congress of the Econometric Society; Barcelona, Spain - August 1990

“The Use and Holding of Currency” - Feature Presentation - Western Economic Association Meeting; San Diego, California - July 1990

“Values and Economics” - Dallas Philosophical Forum; Dallas, Texas - March 1990

“Ethics and the Role of Government” - ARCO Oil and Gas Research Center; Plano, Texas – October 1989

“Continuous-Time Models of Money: Policy Implications” - paper presented to the Division of Research and Statistics of the Board of Governors of the Federal Reserve; Washington DC – January 1988