

Economic Value Added "EVA"

Economic Value Added or EVA is a tool for gauging the real economic performance of a business and its ability to create shareholder value. EVA provides a means for coupling the two fundamental drivers of economic or share holder value– operating earnings and capital efficiency.

The **EVA Example worksheet** details the calculation of EVA over five years for a middle-market manufacturing company operating in a capital intensive industry.

The **EVA Template worksheet** provides a simple template for the calculation of EVA from annual financial statement inputs provided by the user.

Economic Value Added Example

Subject Company: XYZ Consolidated

XYZ Consolidated is an example of a manufacturing company operating in a capital intensive industry. Over five years, revenue grew at a compound annual growth rate (CAGR) of 9.6%. At the same time, operating earnings expanded at a CAGR of 9.0%. The company also invested approximately 86¢ in new fixed assets for each \$1.00 of incremental sales.

From an income statement perspective, this company is a successful middle-market business, even though the company's EVA was negative in two of the five years. On a cumulative present value basis, the firm generated positive EVA over the full period and, therefore, built economic or shareholder value in excess of the required return on invested capital. The economic value calculation is based upon the company's historical annual Profit & Loss Statements and Balance Sheets summarized on pages 2 & 3. Net operating profit after tax ("NOPAT"), on page 4, is determined by adjusting GAAP operating earnings to reflect any difference between book and economic depreciation, the recognition of R&D expenditures over the period that they are expected to benefit the business, and the capitalization of operating lease obligations. Total capital employed in the business, on page 5, is determined by adjusting book value of interest bearing debt and equity to include capitalized R&D expenditures, any excess book depreciation in prior periods, all previously amortized goodwill, and the present value of future operating lease obligations. Different or additional adjustments may be appropriate depending on the circumstances of the subject business.

The conclusions regarding the company's ability to generate economic value added are presented on page 6.

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Summary Profit and Loss Statement

Year	1	2	3	4	5
Sales	130,984	124,530	134,801	152,327	181,173
<i>Sales Growth</i>	14.4%	-4.9%	8.2%	13.0%	10.0%
Cost of Sales	95,749	93,425	100,293	111,953	137,567
Gross Profit	35,235	31,105	34,509	40,374	43,606
<i>Gross Margin</i>	26.9%	25.0%	25.6%	26.5%	24.1%
S, G & A	15,256	16,258	16,173	17,487	19,291
Depreciation & Amortization	9,602	9,225	9,016	8,995	8,322
Operating Profit	10,377	5,622	9,320	13,892	15,993
<i>Operating Margin</i>	7.9%	4.5%	6.9%	9.1%	8.8%
Interest Expense	1,813	1,823	1,802	1,869	2,064
Other (Income) Expense	150	(65)	(39)	215	1,395
Pre-tax Profit	8,414	3,863	7,557	11,808	12,534
Tax Expense	2,861	1,314	2,569	4,015	4,262
Net Profit	5,554	2,550	4,988	7,794	8,272
<i>Net Profit Margin</i>	4.2%	2.0%	3.7%	5.1%	4.6%
EBITDA	19,830	14,912	18,375	22,672	22,920
<i>EBITDA Margin</i>	15.1%	12.0%	13.6%	14.9%	12.7%

XYZ Consolidated
Unadjusted Annual Balance Sheet
(\$ in Thousands)

Summary Balance Sheet

Year	1	2	3	4	5
Cash	7,084	9,208	10,071	14,428	5,190
Trading Assets	14,072	12,472	13,262	18,028	19,358
Total Current Assets	21,156	21,681	23,333	32,457	24,548
Property & Equipment	95,430	103,596	113,045	122,537	136,762
Less: Accumulated Depreciation	(45,169)	(54,180)	(60,283)	(68,120)	(72,286)
Net Property & Equipment	50,261	49,416	52,763	54,417	64,476
Deposits an Other Assets	1,074	1,964	1,472	1,398	3,623
Goodwill	-	-	-	-	-
Total Assets	72,491	73,061	77,568	88,272	92,647
Bank Credit Line	-	-	-	-	-
Accounts Payable	3,892	3,574	3,846	5,950	4,759
Other Accrued Liabilities	11,195	12,093	12,805	19,056	14,706
Current Portion of Long-term Debt	1,177	1,198	62	3,679	3,638
Total Current Liabilities	16,263	16,865	16,713	28,685	23,103
Long Term Debt, less current portion	34,072	33,215	33,077	29,395	25,408
Other LT Liabilities	724	929	1,065	1,522	1,865
Net Worth	21,432	22,052	26,712	28,670	42,270
Total Liabilities & Net Worth	72,491	73,061	77,568	88,272	92,647

XYZ Consolidated
Annual EVA Summary
(\$ in Thousands)

Assumptions in red bold

Net Operating Profit After Taxes

Year	1	2	3	4	5	Comments
Operating Profit	10,377	5,622	9,320	13,892	15,993	Net of depreciation and amortization
Adjustments:						
Depreciation	-	-	-	-	-	No adjustment made - book and economic depreciation are reasonably equivalent
Other Expense	(150)	65	39	(215)	(1,395)	
LIFO Adjustment	-	-	-	1,041	(376)	Change in the LIFO Reserve
Research & Development	335	(150)	(89)	18	(80)	Difference between expensing all R&D and capitalizing and amortizing over 5 years
Operating Lease Expense	3,257	3,224	3,412	3,471	3,218	Add back annual rents and operating lease
Miscellaneous	-	-	-	-	-	
Taxes	(4,699)	(2,979)	(4,312)	(6,190)	(5,902)	Taxes payable on adjusted operating profits excluding the tax shield from interest
NOPAT	9,121	5,782	8,370	12,017	11,458	

Total Invested Capital and Cost of Capital

Year	1	2	3	4	5	Comments
Capital Employed:						
Debt	35,249	34,413	33,139	33,074	29,046	All interest bearing debt
Equity	21,432	22,052	26,712	28,670	36,942	Book value of equity
Book Value of Capital	56,681	56,465	59,851	61,744	65,989	
Adjustments:						
Capitalized R&D	6,901	6,751	6,662	6,680	6,600	Total R&D expenditures, net of amortization
Depreciation	-	-	-	-	-	No adjustment necessary
Goodwill	-	-	-	-	-	Add back all cumulative goodwill amortization
Present Value of Operating Leases	10,558	12,645	11,678	9,700	7,400	Add present value of operating leases discounted at Kd.
Total Adjusted Capital	74,140	75,860	78,191	78,123	79,988	
Cost of Capital:						
	<u>Pre-Tax</u>	<u>After-Tax</u>	<u>Weighting</u>			
Debt (Kd)	6.5%	4.3%	55%	Average over 5 years, should be based on the capitalization norm within the industry		
Equity	20.0%	20.0%	45%			
Weighted Average (Kw)	12.6%	11.4%				
Tax Rate	34.0%					

XYZ Consolidated
Annual EVA Summary
(\$ in Thousands)

Economic Value Added

Year	1	2	3	4	5
NOPAT	9,121	5,782	8,370	12,017	11,458
Capital Cost	8,441	8,636	8,902	8,894	9,106
Annual EVA	681	(2,854)	(532)	3,123	2,351
Current Value of Cumulative EVA	442	(1,623)	(2,052)	751	3,103
NOPAT Return on Adjusted Capital	12.3%	7.6%	10.7%	15.4%	14.3%
Return Hurdle (cost of capital)	11.4%	11.4%	11.4%	11.4%	11.4%
Value Added / -Shortfall	0.9%	-3.8%	-0.7%	4.0%	2.9%
Other Performance Measures					
EBIT	10,228	5,687	9,359	13,677	14,598
EBITDA	19,979	14,847	18,336	22,887	24,315
Sales Growth	14.4%	-4.9%	8.2%	13.0%	18.9%
Operating Earnings Growth	50.3%	-45.8%	65.8%	49.1%	15.1%
Net Profit Growth	-21.4%	-54.1%	95.6%	56.3%	6.1%
Operating Margin	7.9%	4.5%	6.9%	9.1%	8.8%
Net Profit Margin	4.2%	2.0%	3.7%	5.1%	4.6%
EBITDA Margin	15.1%	12.0%	13.6%	14.9%	12.7%
Return on Equity(ROE)	25.9%	11.6%	18.7%	27.2%	19.6%
Return on Net Assets (RONA)	9.7%	4.4%	8.2%	12.3%	11.3%
Sales / Gross Fixed Assets	1.4	1.2	1.2	1.2	1.3

EVA Template

Subject Company:

This worksheet is intended as a simple template for calculating economic value added (EVA) from annual financial statement inputs provided by the user. Depending on the circumstances of the subject company, it may not provide all of the adjustments that would be appropriate for a technically precise EVA calculation. A more detailed explanation of the calculation of EVA and the underlying financial theory can be found in "The Quest for Value" by G. Bennett Stewart III, published by HarperBusiness.

EVA is a trademark of Stern Stewart & Co.

Unadjusted Annual Performance Data

(\$ in Thousands)

Insert assumptions

Summary Profit and Loss Statement

Year	1	2	3	4	5
Sales	100,000	110,000	121,000	133,100	146,410
Sales Growth	-12.7%	10.0%	10.0%	10.0%	10.0%
Cost of Sales	75,000	82,500	90,750	99,825	109,808
Gross Profit	25,000	27,500	30,250	33,275	36,603
Gross Margin	25.0%	25.0%	25.0%	25.0%	25.0%
S, G & A	12,000	13,200	14,520	15,972	17,569
Depreciation & Amortization	8,500	9,000	9,000	9,000	9,000
Operating Profit	4,500	5,300	6,730	8,303	10,033
Operating Margin	4.5%	4.8%	5.6%	6.2%	6.9%
Interest Expense	1,813	1,823	1,802	1,869	2,064
Other (Income) Expense	150	(65)	(39)	215	1,395
Pre-tax Profit	2,537	3,541	4,967	6,219	6,574
Tax Expense	863	1,204	1,689	2,114	2,235
Net Profit	1,674	2,337	3,278	4,105	4,339
Net Profit Margin	1.7%	2.1%	2.7%	3.1%	3.0%
EBITDA	12,850	14,365	15,769	17,088	17,638
EBITDA Margin	12.9%	13.1%	13.0%	12.8%	12.0%

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Insert assumptions

Unadjusted Annual Balance Sheet
(\$ in Thousands)

Summary Financial Position

Year	1	2	3	4	5
Cash	7,300	9,000	10,100	14,700	5,400
Trading Assets	14,000	12,500	13,000	18,000	19,300
Total Current Assets	21,300	21,500	23,100	32,700	24,700
Property & Equipment	95,000	103,500	113,000	122,000	136,700
Less: Accumulated Depreciation	(45,200)	(54,200)	(60,300)	(68,100)	(72,300)
Net Property & Equipment	49,800	49,300	52,700	53,900	64,400
Deposits and Other Assets	1,000	2,000	1,500	1,400	3,600
Goodwill	-	-	-	-	-
Total Assets	72,100	72,800	77,300	88,000	92,700
Bank Credit Line	-	-	-	-	-
Accounts Payable	3,900	3,700	3,800	5,950	4,750
Other Accrued Liabilities	11,200	12,100	12,800	19,000	14,700
Current Portion of Long-term Debt	1,200	1,200	50	3,700	3,600
Total Current Liabilities	16,300	17,000	16,650	28,650	23,050
Long Term Debt, less current portion	34,100	32,900	32,850	29,150	25,550
Other LT Liabilities	700	900	1,100	1,500	1,900
Net Worth	21,000	22,000	26,700	28,700	42,200
Total Liabilities & Net Worth	72,100	72,800	77,300	88,000	92,700

Annual EVA Summary

(\$ in Thousands)

Net Operating Profit After Taxes

Year	1	2	3	4	5	Comments
Operating Profit	4,500	5,300	6,730	8,303	10,033	Net of depreciation and amortization
Adjustments:						
Depreciation	-	-	-	-	-	Adjust for the difference between book and economic depreciation
Other Expense (Income)	(150)	65	39	(215)	(1,395)	Deduct other expenses
LIFO Adjustment	-	-	-	1,041	(376)	Change in the LIFO Reserve
Research & Development	335	(150)	(89)	18	(80)	Add back difference between current period R&D expense and amortization of capitalized R&D
Operating Lease Expense	3,257	3,224	3,412	3,471	3,218	Add back annual rents and operating lease
Miscellaneous	-	-	-	-	-	
Taxes	(2,700)	(2,869)	(3,431)	(4,290)	(3,876)	Deduct taxes payable on adjusted operating profits excluding the tax shield from interest
NOPAT	5,242	5,569	6,660	8,328	7,524	

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Insert assumptions

Annual EVA Summary
(\$ in Thousands)

Total Invested Capital and Cost of Capital

Year	1	2	3	4	5	Comments
Capital Employed:						
Debt	35,300	34,100	32,900	32,850	29,150	All interest bearing debt
Equity	21,000	22,000	26,700	28,700	33,039	Book value of equity
Book Value of Capital	56,300	56,100	59,600	61,550	62,189	
Adjustments:						
Capitalized R&D	6,901	6,751	6,662	6,680	6,600	Add historical R&D expenditures, net of amortization. Amortize over period that value is expected to be derived
Depreciation	-	-	-	-	-	Add back excess book depreciation in prior
Goodwill	-	-	-	-	-	Add back all cumulative goodwill amortization
Present Value of Operating Leases	10,558	12,645	11,678	9,700	7,400	Add present value of operating leases discounted at Kd.
Total Adjusted Capital	73,759	75,495	77,940	77,929	76,188	

Cost of Capital:	<u>Pre-Tax</u>	<u>After-Tax</u>	<u>Weighting</u>
Debt (Kd)	6.5%	4.3%	55%
Equity	20.0%	20.0%	45%
Weighted Average (Kw)	12.6%	11.4%	
Tax Rate	34.0%		

Kw should be weighted based upon the capitalization norm for the industry

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Annual EVA Summary
(\$ in Thousands)

Economic Value Added

Year	1	2	3	4	5
NOPAT	5,242	5,569	6,660	8,328	7,524
Capital Cost	8,379	8,576	8,854	8,852	8,655
Annual EVA	(3,137)	(3,006)	(2,193)	(525)	(1,130)
Current Value of Cumulative EVA	(2,040)	(4,217)	(5,985)	(6,457)	(7,587)
NOPAT Return on Adjusted Capital	7.1%	7.4%	8.5%	10.7%	9.9%
Return Hurdle (cost of capital)	11.4%	11.4%	11.4%	11.4%	11.4%
Value Added (-Shortfall)	-4.3%	-4.0%	-2.8%	-0.7%	-1.5%
Other Performance Measures					
EBIT	4,350	5,365	6,769	8,088	8,638
EBITDA	13,000	14,300	15,730	17,303	19,033
Sales Growth	-12.7%	10.0%	10.0%	10.0%	10.0%
Operating Earnings Growth	-34.8%	17.8%	27.0%	23.4%	20.8%
Net Earnings Growth	-76.3%	39.6%	40.2%	25.2%	5.7%
Operating Margin	4.5%	4.8%	5.6%	6.2%	6.9%
Net Profit Margin	1.7%	2.1%	2.7%	3.1%	3.0%
EBITDA Margin	12.9%	13.1%	13.0%	12.8%	12.0%
Return on Equity (ROE)	8.0%	10.6%	12.3%	14.3%	10.3%
Return on Net Assets (RONA)	2.9%	4.1%	5.4%	6.5%	5.9%
Sales / Gross Fixed Assets	1.1	1.1	1.1	1.1	1.1