**Merit Medical Systems[[1]](#footnote-1)  
In-Class Firm Study[[2]](#footnote-2)**

Merit Medical Systems is a dynamic medical device manufacturer with corporate offices in South Jordan, Utah and production, distribution, and sales centers globally. The firm has grown rapidly in recent decades and has many of the hallmarks of a high growth technology firm.

Suppose you are the firm’s CFO charged with preparing a forward valuation for the firm in preparation for a meeting of the board of directors. The firm’s senior management has actively and successfully promoted the firm’s common stock in the investment markets in an effort to move its share price. You’d like to see how this activity has moved the firm’s enterprise value and compare that to potential valuations resulting from the firm’s underlying financial performance.

1. Consider the firm’s long-run growth as a function of ***g*** = **IR x ROIC** and compare it to some prudent level of ***g*** that might otherwise be used in a valuation forecast. Which ***g*** will you choose to use and why?
2. Compare the firm’s observed EV/EBIT multiple at the end of 2016 with a KVD style EV/EBIT multiple for the same period.  *What issues do you see with using either in a valuation calculation? Be specific here, identify each multiple vale (show your work), and indicate which appears to have greater credibility.*
3. Construct a valuation for Merit Medical based on the forward estimates provided. *You’ll want to construct multiple versions of your valuation model here: 1) DCFFCF, 2) DCFFCF/FMM using an observed multiple, 3) DCFFCF/FMM using a target multiple, 4) DCDFCF/FMM using a KVD style multiple. From these you can see some differences and make a reasoned determination as to which value to use.*
4. Given the data provided, at what valuation might an investment in Merit Medical be attractive?
5. Based on your answer to question 4, above, what would the firm’s EV/EBIT multiple need to have been at the end of 2016 to justify valuation you’ve indicated, and why might the firm warrant such a multiple (valuation)?

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Merit Medical Systems, Inc.** | | | | | | | | | | | | |
| **MMSI 589889104 2580555 NASDAQ Common stock** | | | | | | | | | | | | |
| **Income Statement (Industrial)** | | | | | | | | | | | | |
| **Source : FactSet Fundamentals** | | | | | | | | | | | | |
| **All figures in millions of U.S. Dollar, except per share items** | | | | | | | | | | | | |
| **Year/Year growth** | | | | | | | | | | | | |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | **Dec '16** | **Dec '15** | **Dec '14** | **Dec '13** | **Dec '12** | **Dec '11** | **Dec '10** | **Dec '09** | **Dec '08** | **Dec '07** |
|  |  |  | LTM | 365 DAYS | 365 DAYS | 365 DAYS | 366 DAYS | 365 DAYS | 365 DAYS | 365 DAYS | 366 DAYS | 365 DAYS |
| **Income Statement** | | | | | | | | | | | | |
| Sales |  |  | 603.80 | 542.15 | 509.69 | 449.05 | 394.29 | 359.45 | 296.76 | 257.46 | 227.14 | 207.77 |
|  | COGS excluding D&A | | 295.03 | 268.94 | 248.54 | 222.14 | 189.76 | 174.79 | 153.40 | 136.39 | 123.63 | 118.53 |
|  | Depreciation | | 24.46 | 22.63 | 21.03 | 18.34 | 15.00 | 13.20 | 11.31 | 9.93 | 9.28 | 8.64 |
|  | Amortization of Intangibles | | 19.30 | 14.80 | 14.90 | 14.20 | 7.53 | 5.99 | 3.55 | 2.34 | 0.97 | 0.81 |
| **Gross Income** | |  | **265.01** | **235.78** | **225.22** | **194.37** | **181.99** | **165.47** | **128.50** | **108.80** | **93.27** | **79.79** |
|  | Research & Development | | 45.23 | 40.81 | 36.63 | 33.89 | 27.80 | 21.94 | 15.34 | 11.17 | 9.16 | 8.69 |
|  | Other SG&A | | 182.80 | 156.35 | 147.89 | 128.64 | 121.85 | 104.50 | 87.62 | 64.79 | 52.53 | 48.13 |
| **EBIT (Operating Income)** | | | **36.98** | **38.62** | **40.70** | **31.84** | **32.35** | **39.03** | **25.55** | **32.85** | **31.58** | **22.97** |
|  | Nonoperating Income - Net | | -0.01 | -0.11 | 0.24 | 0.04 | -1.42 | 0.25 | 0.05 | 0.43 | 0.88 | 0.43 |
|  | Gross Interest Expense | | 9.52 | 6.23 | 8.83 | 8.04 | 1.06 | 1.16 | 0.60 | 0.03 | 0.02 | 0.00 |
|  | Interest Capitalized | | -- | -- | -- | -- | 0.46 | 0.30 | -- | -- | 0.00 | 0.00 |
|  | Unusual Expense - Net | | 2.05 | 1.08 | 0.53 | 4.00 | 2.71 | 5.54 | 8.22 | 0.15 | 0.59 | 0.00 |
| **Pretax Income** | | | **25.42** | **31.43** | **31.10** | **19.76** | **29.54** | **31.77** | **16.68** | **32.24** | **30.09** | **22.54** |
|  | Income Taxes | | 5.27 | 7.40 | 8.60 | 3.27 | 7.91 | 9.83 | 4.33 | 10.56 | 11.12 | 7.81 |
| **Net Income** | |  | **20.15** | **24.03** | **22.50** | **16.49** | **21.64** | **21.94** | **12.35** | **21.67** | **18.97** | **14.72** |
|  | | | | | | | | | | | | |
| EPS (recurring) | | | 0.48 | 0.55 | 0.54 | 0.45 | 0.51 | 0.68 | 0.51 | 0.63 | 0.59 | 0.44 |
| EPS (diluted) | |  | 0.45 | 0.53 | 0.53 | 0.39 | 0.46 | 0.58 | 0.34 | 0.63 | 0.58 | 0.44 |
| Diluted Shares Outstanding | | | 44.86 | 44.51 | 43.41 | 42.88 | 42.61 | 39.73 | 35.98 | 35.76 | 35.69 | 35.26 |
| Total Shares Outstanding | | | 44.65 | 44.27 | 43.61 | 42.85 | 42.49 | 42.01 | 35.50 | 35.23 | 35.12 | 34.27 |
| Earnings Persistence | | | -- | 92.05 | 95.37 | 88.09 | 65.94 | 78.57 | 70.66 | 72.23 | 85.41 | 90.40 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Merit Medical Systems, Inc.** | | | | | | | | | | | | |
| **MMSI 589889104 2580555 NASDAQ Common stock** | | | | | | | | | | | | |
| **Balance Sheet (Industrial)** | | | | | | | | | | | | |
| **Source : FactSet Fundamentals** | | | | | | | | | | | | |
| **All figures in millions of U.S. Dollar, except per share items** | | | | | | | | | | | | |
| **Year/Year growth** | | | | | | | | | | | | |
|  |  |  | **Dec '16** | **Dec '15** | **Dec '14** | **Dec '13** | **Dec '12** | **Dec '11** | **Dec '10** | **Dec '09** | **Dec '08** | **Dec '07** |
| **Balance Sheet** | | | | | | | | | | | | |
| **Assets** |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **Current Assets** | |  |  |  |  |  |  |  |  |  |  |
|  |  | Cash & Short-Term Investments | 19.17 | 4.18 | 7.36 | 7.46 | 9.72 | 10.13 | 3.74 | 6.13 | 34.03 | 17.57 |
|  |  | Short-Term Receivables | 86.59 | 78.21 | 80.55 | 64.09 | 57.32 | 45.25 | 41.23 | 32.22 | 29.30 | 28.20 |
|  |  | Inventories | 120.7 | 106.0 | 91.77 | 82.38 | 84.60 | 69.91 | 60.60 | 47.17 | 38.36 | 34.11 |
|  |  | Other Current Assets | 16.97 | 15.61 | 12.66 | 11.99 | 10.36 | 8.36 | 6.74 | 5.09 | 3.77 | 2.11 |
|  | **Total Current Assets** | | **243.4** | **204.0** | **192.3** | **165.9** | **162.0** | **133.65** | **112.30** | **90.61** | **105.46** | **81.99** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **Long-term (fixed) Assets** | |  |  |  |  |  |  |  |  |  |  |
|  |  | Buildings | 139.1 | 136.6 | 130.4 | 127.7 | 81.22 | 59.91 | 50.27 | 50.04 | 49.79 | 43.15 |
|  |  | Land & Improvements | 19.4 | 19.31 | 16.83 | 16.24 | 17.35 | 16.29 | 12.59 | 9.78 | 7.99 | 7.98 |
|  |  | Machinery & Equipment | 178.1 | 158.7 | 145.0 | 136.7 | 117.6 | 103.63 | 92.84 | 77.07 | 68.18 | 61.45 |
|  |  | Construction in Progress | 28.2 | 26.29 | 21.86 | 25.17 | 74.64 | 47.53 | 13.78 | 13.97 | 7.60 | 10.68 |
|  |  | Other Property, Plant & Equipment | 73.8 | 66.86 | 51.30 | 46.02 | 39.54 | 35.22 | 30.43 | 25.87 | 26.56 | 26.98 |
|  |  | Accumulated Depreciation | -160.2 | -140.0 | -121.2 | -108.6 | -95.55 | -83.43 | -71.85 | -62.07 | -56.19 | -50.54 |
|  |  | Total Investments and Advances | - | - | - | - | - | 7.60 | 4.30 | 3.30 | 2.37 | 3.04 |
|  |  | Intangible Assets | 394.6 | 293.8 | 294.7 | 304.4 | 293.2 | 117.81 | 115.86 | 59.90 | 19.96 | 15.69 |
|  |  | Deferred Tax Assets | 0.2 | 0.00 | 0.01 | 0.80 | 4.24 | 5.37 | -- | -- | -- | -- |
|  |  | Other Assets | 28 | 13.12 | 15.87 | 13.81 | 11.03 | 3.45 | 8.97 | 6.77 | 0.05 | 0.00 |
|  | **Total Long-Term (fixed) Assets** | | 701.2 | 574.7 | 554.8 | 562.3 | 543.3 | 313.37 | 257.18 | 184.62 | 126.32 | 118.43 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Total Assets** | |  | **944.6** | **778.7** | **747.1** | **728.2** | **705.3** | **447.02** | **369.48** | **275.23** | **231.77** | **200.42** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Liabilities & Shareholders' Equity** | | |  |  |  |  |  |  |  |  |  |  |
|  | **Total Current Liabilities** | |  |  |  |  |  |  |  |  |  |  |
|  |  | ST Debt & Curr. Portion LT Debt | 10 | 10.00 | 10.00 | 10.00 | 10.00 | 0.00 | 0.00 | 7.00 | 0.00 | 0.00 |
|  |  | Accounts Payable | 30.62 | 37.98 | 29.81 | 26.51 | 34.64 | 22.73 | 20.09 | 13.35 | 10.62 | 10.28 |
|  |  | Income Tax Payable | 2.19 | 1.50 | 1.41 | 1.09 | 0.55 | 0.65 | 0.89 | 0.15 | 0.37 | 0.74 |
|  |  | Other Current Liabilities | 45.52 | 38.44 | 34.21 | 27.99 | 27.82 | 20.42 | 19.20 | 12.41 | 10.18 | 10.78 |
|  | **Total Current Liabilities** | | **88.33** | **87.91** | **75.43** | **65.59** | **73.00** | **43.80** | **40.18** | **32.91** | **21.17** | **21.79** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **Long Term Liabilities** | |  |  |  |  |  |  |  |  |  |  |
|  |  | Long-Term Debt | 314.4 | 197.5 | 214.4 | 238.8 | 227.5 | 30.74 | 81.54 | 0.00 | 0.00 | 0.00 |
|  |  | Provision for Risks & Charges | 0.4 | 1.54 | 2.16 | 9.86 | 8.89 | 3.49 | 3.53 | 2.95 | 0.00 | 0.00 |
|  |  | Deferred Tax Liabilities | 26 | 10.99 | 6.39 | 2.55 | 2.37 | 2.11 | 1.27 | 14.97 | 8.77 | 6.08 |
|  |  | Other Liabilities | 12.9 | 14.59 | 13.45 | 5.72 | 11.90 | 9.80 | 7.36 | 5.60 | 7.53 | 8.18 |
|  | **Total Long Term Liabilities** | | **353.7** | **224.7** | **311.9** | **322.5** | **323.7** | **89.93** | **133.87** | **56.42** | **37.47** | **36.05** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **Total Liabilities** | | **442.0** | **312.6** | **387.3** | **388.1** | **396.7** | **133.72** | **174.04** | **89.33** | **58.64** | **57.85** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **Shareholder Equity** | |  |  |  |  |  |  |  |  |  |  |
|  |  | Common Stock Par/Carry Value | 206.2 | 197.8 | 187.7 | 177.7 | 172.3 | 166.23 | 67.09 | 63.69 | 61.69 | 52.48 |
|  |  | Accumulated Retained Earnings | 293.9 | 273.7 | 249.9 | 226.9 | 210.4 | 190.71 | 167.66 | 155.20 | 132.67 | 111.95 |
|  |  | Cumulative Translation Adjustment/Unrealized For. Exch. Gain | 0 | -5.50 | -2.80 | 0.94 | -1.18 | 0.15 | 0.86 | -0.09 | -0.06 | -0.06 |
|  |  | Other Appropriated Reserves | (1.90) | 0.01 | 0.39 | -- | -- | -- | -- | -- | -- | -- |
|  | **Total Shareholder Equity** | | **498.2** | **466.1** | **435.2** | **405.7** | **381.5** | **357.09** | **235.62** | **218.81** | **194.31** | **164.37** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Total Liabilities & Shareholders' Equity** | | | **940.2** | **778.7** | **822.6** | **793.8** | **778.3** | **490.81** | **409.66** | **308.14** | **252.95** | **222.21** |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Ratios** |  |  |  |  |  |  |  |  |  |  |  |
|  | Book Value per Share | 111.16 | 10.53 | 9.98 | 9.47 | 8.98 | 8.50 | 6.64 | 6.21 | 5.53 | 4.80 |
|  | Tangible Book Value per Share | 2.32 | 3.89 | 3.22 | 2.36 | 2.08 | 5.70 | 3.37 | 4.51 | 4.96 | 4.34 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | Price / Sales | 1.97 | 1.53 | 1.48 | 1.50 | 1.50 | 1.48 | 1.54 | 2.14 | 2.25 | 1.89 |
|  | Price / Earnings | 58.89 | 35.08 | 32.70 | 40.36 | 30.22 | 23.07 | 36.81 | 24.35 | 24.56 | 25.27 |
|  | Price / Book Value | 2.37 | 1.77 | 1.74 | 1.66 | 1.55 | 1.57 | 1.91 | 2.48 | 2.59 | 2.32 |
|  | Price / Tangible Book Value | 11.42 | 4.78 | 5.38 | 6.66 | 6.69 | 2.35 | 3.75 | 3.41 | 2.89 | 2.56 |
|  | Price / Cash Flow | 22.18 | 11.91 | 14.11 | 13.14 | 12.62 | 15.63 | 13.11 | 18.30 | 18.30 | 12.21 |
|  | Price / Free Cash Flow | 57.26 | 44.73 | 39.30 | -- | -- | -- | 41.00 | 47.48 | 37.94 | 24.76 |
|  | Enterprise Value | 1,487.37 | 1,026.34 | 972.97 | 915.79 | 818.44 | 582.68 | 527.33 | 543.07 | 469.68 | 363.47 |
|  | Enterprise Value / EBIT | 40.22 | 26.57 | 23.91 | 28.76 | 25.30 | 14.93 | 20.64 | 16.53 | 14.87 | 15.82 |
|  | Enterprise Value / EBITDA | 18.43 | 13.50 | 12.70 | 14.22 | 14.91 | 10.01 | 13.05 | 12.04 | 11.23 | 11.21 |
|  | Enterprise Value / Sales | 2.46 | 1.89 | 1.91 | 2.04 | 2.08 | 1.62 | 1.78 | 2.11 | 2.07 | 1.75 |
|  | EBIT / Interest Expense (Int. Coverage) | 3.89 | 6.20 | 4.61 | 3.96 | 30.52 | 33.62 | 42.87 | 1,173.11 | 1,857.53 | 7,656.67 |

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Merit Medical Systems, Inc.** | | | | | | | |
| **MMSI 589889104 2580555 NASDAQ Common stock** | | | | | | | |
| **Analyst Consensus Estimates** | | | | | | | |
|  |  |  |  |  |  |  |  |
| **Earnings Per Share** |  |  |  |  |  |  |  |
|  | CY '15 | CY '16E | CY '17E | CY '18E | CY '19E | CY '20E | CY '21E |
|  | Dec '15 | Dec '16E | Dec '17E | Dec '18E | Dec '19E | Dec '20E | Dec '21E |
| EPS | 0.87 | 1.00 | 1.15 | 1.30 | 1.42 | 1.54 | 1.69 |
| EPS - GAAP | 0.53 | 0.44 | 0.88 | 1.06 | 1.21 | 1.33 | 1.69 |
| EPS - Non GAAP | 0.87 | 1.00 | 1.15 | 1.30 | 1.42 | 1.54 | 1.69 |
|  |  |  |  |  |  |  |  |
| **Product Segments (M)** |  |  |  |  |  |  |  |
| Sales | 542.1 | 607.8 | 660.5 | 704.0 | 723.0 | 765.3 | 920.3 |
| Stand-Alone Devices | -- | 180.6 | 200.8 | 220.8 | -- | -- | -- |
| Custom Kits & Procedure Trays | -- | 118.7 | 121.9 | 124.4 | -- | -- | -- |
| Inflation Devices | -- | 73.2 | 73.0 | 74.5 | -- | -- | -- |
| Catheters | -- | 111.0 | 123.3 | 133.2 | -- | -- | -- |
| BioSphere Embolization Devices | -- | 45.9 | 48.1 | 51.4 | -- | -- | -- |
| Endotek Endoscopy | -- | -- | -- | -- | -- | -- | -- |
| HeRO Graft | -- | -- | -- | -- | -- | -- | -- |
| Malvern Division and Other | -- | -- | -- | -- | -- | -- | -- |
|  |  |  |  |  |  |  |  |
| **Income Statement (M)** |  |  |  |  |  |  |  |
| Sales | 542.1 | 607.8 | 660.5 | 704.0 | 723.0 | 765.3 | 920.3 |
| Cost of Sales | 306.4 | 328.6 | 352.3 | 372.9 | 384.6 | 404.4 | 455.5 |
| Organic Growth (%) | -- | 8.0 | -- | -- | -- | -- | -- |
| Gross Income | 235.8 | 278.6 | 308.2 | 331.3 | 338.4 | 360.8 | 464.7 |
| SG&A Expense | 152.8 | 173.1 | 185.7 | 195.5 | 193.8 | 203.9 | -- |
| Research & Development | 40.8 | 45.5 | 49.2 | 51.7 | 53.5 | 56.6 | -- |
| EBITDA | 82.6 | 94.8 | 104.0 | 114.3 | -- | -- | 177.3 |
| EBITDA Non-GAAP | 84.3 | 97.1 | 102.3 | 112.4 | -- | -- |  |
| Depr. & Amort. | 37.4 | 42.8 | 45.0 | 46.5 | -- | -- | -- |
| Operating Income | 42.2 | 69.3 | 81.0 | 91.7 | 91.1 | 100.3 | 138.0 |
| Operating Income - Non GAAP | 42.2 | 64.9 | 75.6 | 82.0 | 91.1 | 100.3 | -- |
| Interest Expense | 6.4 | 3.8 | 3.1 | -1.4 | 8.8 | 8.4 | -- |
| Pretax Income | 35.8 | 61.1 | 72.5 | 83.4 | 82.3 | 91.9 | 131.0 |
| Pretax Income - Non GAAP | 32.3 | -- | -- | -- | -- | -- | -- |
| Tax Expense | 8.9 | 15.6 | 19.2 | 22.5 | 24.7 | 27.6 | 40.0 |
| Net Income | 23.8 | 19.8 | 38.8 | 47.8 | 57.6 | 64.3 | 91.1 |
| Net Income - Non GAAP | 38.5 | 44.7 | 52.2 | 59.8 | 67.6 | 74.3 | -- |
| Net Income - GAAP | 23.8 | 19.8 | 38.8 | 47.8 | 57.6 | 64.3 | -- |
|  |  |  |  |  |  |  |  |
| **Cash Flow (M)** |  |  |  |  |  |  |  |
| Capital Expenditures | 50.8 | 33.8 | 36.0 | 37.5 | 42.5 | 47.7 | 50.6 |
| Free Cash Flow | 0.4 | 16.2 | 38.2 | 46.9 | 59.7 | -- | -- |
| Cash Flow from Operations | -- | -- | -- | -- | -- | -- | -- |
| Cash Flow from Investing | 0 | -159.1 | -39.4 | -42.2 | -44.9 | -47.7 | -50.6 |
| Cash Flow from Financing | -- | 121.1 | 30.5 | -10.0 | -10.0 | -10.0 | -10.0 |
|  |  |  |  |  |  |  |  |
| **Per Share** |  |  |  |  |  |  |  |
| EPS | 0.87 | 1.00 | 1.15 | 1.30 | 1.42 | 1.56 | 1.69 |
| EPS - GAAP | 0.53 | 0.44 | 0.88 | 1.06 | 1.21 |  | -- |
| EPS - Non GAAP | 0.87 | 1.00 | 1.15 | 1.30 | 1.42 |  | -- |
|  |  |  |  |  |  |  |  |
| **Valuation** |  |  |  |  |  |  |  |
| Price/Earnings (x) | 21.4 | 26.2 | 25.5 | 22.3 | 20.5 | 18.4 | 17.0 |
| PEG Ratio (x) | -- | -- | -- | -- | -- | -- | -- |
| Price/Book Value (x) | -- | -- | -- | -- | -- | -- | -- |
| Price/Tangible Book Value (x) | -- | -- | -- | -- | -- | -- | -- |
| Price/Cash Flow (x) | -- | -- | -- | -- | -- | -- | -- |
| Price/Free Cash Flow (x) | -- | -- | -- | -- | -- | -- | -- |
| Price/Sales (x) | 1.5 | 2.0 | 2.0 | 1.9 | 1.7 | 1.6 | 1.6 |
| Enterprise Value/Sales (x) | -- | -- | -- | -- | -- | -- | -- |
| Enterprise Value/EBITDA (x) | -- | -- | -- | -- | -- | -- | -- |
| Enterprise Value/EBIT (x) | -- | -- | -- | -- | -- | -- | -- |
| Enterprise Value/FCF (x) | -- | -- | -- | -- | -- | -- | -- |
| Dividend Yield (%) | -- | -- | -- | -- | -- | -- | -- |
| Sales/Share (x) | 12.3 | 14.0 | 15.2 | 16.2 | 16.6 | 17.6 | 18.5 |

1. This problem set is for illustrative purposes only and in no way suggests or infers any relationship or association with Merit Medical Systems, a publically held domestic firm trading in the US capital markets. The data used in the problem set is culled from the Merit Medical Systems 2016 Annual Report, FactSet, and Bloomberg Systems Inc. [↑](#footnote-ref-1)
2. This problem set was prepared by Richard Haskell, PhD, Associate Professor of Finance, Gore School of Business, Westminster College, Salt Lake City, Utah, April 2017. [rhaskell@westminstercollege.edu](mailto:rhaskell@westminstercollege.edu) [↑](#footnote-ref-2)