Medical Equipment and Supplies Industry Report: A Buy Side Perspective

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INDUSTRY BASICS

This report defines the medical equipment and supplies industry as composed of "companies that develop, manufacture, and market medical and dental instruments or surgical equipment, including syringes, respiratory care equipment, wheelchairs, X-ray equipment, laser systems, hospital clothes, and related supplies."[1] Their primary customers are hospitals that purchase these supplies as to provide care to the ultimate end users, patients.

COMPETITVE LANDSCAPE

Patent protection along with the high rate and development of new technologies has sometimes led to abnormally high pricing for medical equipment products. This industry exhibits some oligopolistic behavior namely because it is dominated by well-entrenched companies with the experience and economies of scale to manufacture a myriad of healthcare equipment and supplies. There are huge barriers to entry, namely the high cost of product development. Combined with the tendency for companies to specialize in niche markets, products are priced higher that what would be expected in a more efficient market.[2] Growth within this industry tends to be characterized by mergers and acquisitions of much smaller companies or other competitors' lines of products to complement the companies' own portfolio of medical supply and equipment products.

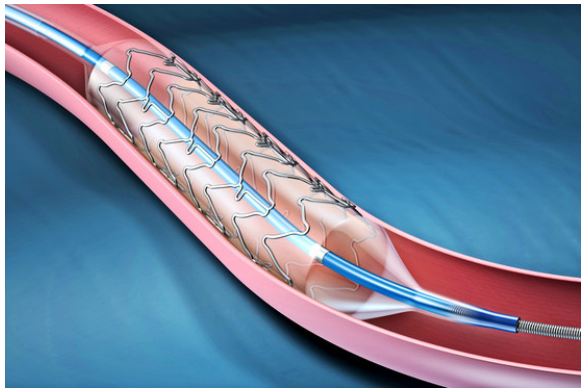

Figure 1 Drug Stent - Image from Wall Street Journal

Medium-sized companies have a majority presence in this market from CR Bard that specializes in manufacturing vascular, urology, oncology, and surgical equipment with sales of $2.5 billion USD to Medtronic with $14.6 billon USD and specializes in manufacturing medical implants like neurostimulation devices and pacemakers. It should be noted though that conglomerates such as Johnson and Johnson, 3M, and General Electric (GE) have major medical equipment subsidiarieswith large sales. GE of particular note, produces medical equipment such as x ray and magnetic resonance machines, large big ticket items, where the competitive landscape is relatively parse. However, due the lack of transparency within conglomerates concerning the individual financial performance of their subsidiaries, this report will leave them out due to the lack of available data. In addition, in the attempt to sharpen the focus of this report, companies that provide direct health care services we well as pharmaceuticals are left out. The complexity, operational, and regulatory differences of those companies are markedly different from health care medical supplies and equipment. For this reason, companies like Fresenius Medical Care, Boston Scientific, and Pfizer are not included in this report. Investors should understand that the scope of this report is purposely limited in order to give the most relevant analysis on a specific slice of the medical industry.

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[1] "Medical Equipment and Supplies Overview" Hoovers, http://industries.hoovers.com/health-care/health-care-products/medical-equipment-and-supplies

[2] "Medical Equipment Industry Report" August 15th, 2003, US Business Reporter

DEMOGRAPHICS

The demand for medical equipment and supplies is growth orientated because as long as the population keeps on growing, there will be more and more people who will need medical care. The aging baby boomer population presents a tremendous opportunity for those in the healthcare industry as the older generation demands more health care services and products than younger generations. However, this is an opportunity fraught with political and regulatory risk.

Average life expectancy has increased due toadvances in medical science in treatments, drugs, exercise, and healthier eating. With people living longer, the medical system in the United States will have to cope with more patients, without the necessary increase in funding from governments to offset. The bottom line of hospitals are often most vulnerable to patient covered by government insurance programs, namely Medicare, because it does not cover the full cost of health care. President Obama's recent overhaul of health care reform has yet to be full implemented and realized. Many analysts believe that hospitals will not be able to see the benefits of the newly insured for 4 yearsbut will immediately start realizing rising costs due to healthcare reform.[3] Whatever the case, there will be more volatility in the medical business for all companies operating in the United States over the next few years. This can be a boon to hedge funds and other speculators who want to speculate.

However, once increased insurance coverage kicks in, the demand for healthcare and its complimentary industries will sky-rocket. Currently there is a small window healthcare reform before all people are required by law to have medical insurance. Below is a graphical breakdown by state, of people who do not have insurance.

People Without Health Insurance Coverage, 2004 to 2006 (%)			
Region	Total	Region	Total
Texas	24.1	Tennessee	13.4
New Mexico	21.0	Virginia	13.2
Florida	20.3	New York	13.2
Arizona	19.0	Indiana	13.1
Oklahoma	18.7	Delaware	12.5
California	18.5	Washington	12.5
Louisiana	18.5	District of Columbia	12.4
Nevada	18.3	Missouri	12.3
Mississippi	18.1	South Dakota	11.6

Figure 2 Image from Standupforamerica.com

[3] Chambers, Heather, "Hospitals Uncertain How Health Care Reform Impacts Bottom Line" *San Diego Business Journal*, April 5th, 2010, http://www.sdbj.com/news/2010/apr/05/hospitals-uncertain-how-health-care-reform-impacts/

Georgia	17.6	North Dakota	11.1
Arkansas	17.5	Nebraska	11.1
Montana	17.0	Kansas	11.1
Alaska	16.7	Vermont	10.8
Colorado	16.6	Ohio	10.7
Oregon	16.6	Michigan	10.6
North Carolina	16.0	New Hampshire	10.4
South Carolina	16.0	Connecticut	10.4
Utah	15.7	Massachusetts	10.3
West Virginia	15.5	Pennsylvania	10.2
Idaho	14.9	Rhode Island	10.2
New Jersey	14.6	Maine	9.5
Alabama	14.1	Wisconsin	9.4
Wyoming	14.0	Iowa	9.3
Kentucky	13.8	Hawaii	8.6
Illinois	13.6	Minnesota	8.5
Maryland	13.5		

Source: US Census Bureau 2005-2007, via the Population Reference Bureau

As the US population gets older, and the economy is still weak, there is less and less money being put into distributive programs like Social Security and Medicare. In order to keep up with increasing demand whilst dealing with decreasing supply, the political ticker in the US is leaning on cutting Medicare benefits to people. This means that doctors will receive less reimbursements for their Medicare insured patients. This would lead to lower funds available to hospitals and therefore "represents significant risk to all healthcare companies including medical equipment and supply firms."[4]

The sweet spot for healthcare supplies and equipment makers as well as investors is to accurately forecast the timing of the "break even point" hospital's cost pressures will be offset by increased insurance coverage and baby boomer demand for healthcare.

RELATIONSHIP TO OVERALL US ECONOMY

Below is the Vanguard HealthCare Index's performance over the past 3 years. As you can see the healthcare industry suffered a

[4] US Business Reporter

severe downward spike in the first quarter of 2009, this can be attributed to the Obama Administration announcing plans to tax healthcare benefits.[5] However, after the bitter passage of healthcare reform in the end of March of this year there has been a general upward trend of the entire healthcare sector, supplies and equipment included.[6] Since healthcare in the United States makes up such a large percentage of GDP, it comes to no surprise that there is an extremely high correlation between returns on the healthcare industry as a whole and the S&P 500.

[5] Calmes, Jackie and Robert Pear, "Administration is open to taxing health care benefits," *New York Times,* March 14th, 2009, http://www.nytimes.com/2009/03/15/us/politics/15health.html

[6] Herszenhorn, David M., "A Grand Achievement or a Lost Opportunity?' *Washington Post,* March 24th, 2010, http://www.nytimes.com/2010/03/25/health/policy/25memo.html

REGULATION

The Food and Drug Administration regulate medical equipment and supplies. Thankfully, this industry does not have to run through the gauntlet of intense scrutiny and lengthy bureaucratic review like pharmaceutical drug companies. In fact, under the FDA's 2002 Medical Device User Fee and Modernization ACT (MDUFMA), the FDA committed itself to reducing the cumulative review time that the agency requires to approve expedite reviews of medical equipment and supplies.

However, that does not mean that this industry is free of regulatory pressures. In the past St. Jude has faced regulatory and safety scrutiny about its heart implant devices as well as CR Bard having to recall many of its hernia repair patches. The logistics of doing recalls with products implanted in patients as well as the ethical and public relations nightmare can increase the volatility of stock prices of these companies. In addition, any lack of oversight on the safety of medical supplies and equipment can cause companies in question to pay huge fines to the FDA. With simple durable goods like cars, a company like Toyota can issue a simple recall of both sold and unsold products. However, if a prosthesis or heart valve is found to have some safety defect after being placed inside patients, the damage to that company may be very dire and long lasting with both end-users as well as the hospitals that purchase said products from companies.

INDUSTRY OUTLOOK

In the long run, medical equipment industry prospects appear bright when considering changing demographic trends. As baby boomers age, the increased need for medical products such drug-eluting stents and angioplasty products become even more lucrative for manufacturers. Industry analysts remain optimistic that the implementation of healthcare reform will not limit pricing abilities for medical equipment and supply providers. Most of the healthcare reform has been focused on service providers as well as insurance regulation. In the move to cut costs, increase coverage, and increase efficiency of healthcare in the US, there could be cost pressures from theMedicare program that could impact pricing decisions of customers. This may slowly break up the oligopolistic nature of this industry by lowering profits.

The key to gauging the pulse of the cost structure and demand incentives of the healthcare industry is to see where the increased pressures to cut costs within the healthcare industry is offset by the increase in patients, the ultimate end-users of this industry's products, and their demand.

MACRO ECONOMIC HISTORICAL DATA AND FORECASTS

						Projected*	Projected*	Projected*	Projected*	Projecte
Item	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
National Health Expenditures (billions)	$1,855.40	$1,982.50	$2,112.50	$2,239.70	$2,338.70	$2,472.20	$2,569.60	$2,702.90	$2,850.20	$3,024.7

National Health Expenditures as a Percent of Gross Domestic Product	15.60%	15.70%	15.80%	15.90%	16.20%	17.30%	17.30%	17.30%	17.20%	17.30%
National Health Expenditures Per Capita	$6,327.50	$6,701.30	$7,071.10	$7,423.10	$7,680.70	$8,046.70	$8,289.90	$8,643.40	$9,035.20	$9,505.1
Gross Domestic Product (billions)	$11,867.80	$12,638.40	$13,398.90	$14,077.60	$14,441.40	$14,282.50	$14,853.80	$15,611.40	$16,563.70	$17,524
U.S. Population (millions)	293.2	295.8	298.8	301.7	304.5	307.2	310	312.7	315.5	318.2
Population age less than 65 years (millions)	257.3	259.5	261.8	264	265.8	267.9	270	271.9	273.5	274.9
Population age 65 years and older (millions)	36	36.3	37	37.7	38.7	39.3	40	40.8	42	43.3
Private Health Insurance - National Healthcare Expenditures (billions)	$646.10	$691.00	$727.60	$759.70	$783.20	$808.70	$829.30	$862.30	$894.30	$942.20
Private Health Insurance - Primary Health Care (billions)	560.3	599.8	634.6	665.1	691.2	718.5	732.9	753.9	782.7	824.4

**Projections based on moving average of historical data*
Source: US Department of Health and Human Services

In the United States, health care expenditures have grown an average of 5.96% between 2004 and 2008 with a 5 year forward projection of an average 5.28% growth in US dollar spending on healthcare. However, there is slowing growth of national health expenditures as well as health expenditures per capita. This can be due to a variety of macro economic factors such as age distributions, insurance coverage, advances in healthcare, and growth of global medical outsourcing.

The US population has grown between 2004 and 2008 for an average of 0.95%, with growth rates declining each year. The forecast for the next 5 years will be a lower average growth rate of 0.88%. Although a growing population will keep priming the demand for medical supplies and equipment due to healthcare demands, the US is facing slower population growth. This is good

for the environment but bad for business. Luckily, as baby boomers hit retirement age, there is a growing population of seniors which much higher demand for medical care and therefore higher demand of complimentary industries' products. Growth rates in the population he US of senior citizens peaked in 2007. With the average life expectancy of the US person being 78 years, senior citizen demand intensive industries such as medical healthcare providers and suppliers will enjoy about a 12 year intensive demand in their services from baby boomers alone.

The size of the market for healthcare services, drugs, hospitals, supplies, and equipment in the United States is enormous, dwarfing the GDP's of many countries. In 2008 $783 billion was spent on healthcare, with 88% of that number going to primary health care services. Total health care expenditure grew a historic average of 4.94% and primary health care growing a historic average of 5.4%. Again, like GDP as well as population growth, the growth rates of demand is slowing down.

						Projected*	Projected*	Projected*	Projected*	Projected*
(in billions USD)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
National Health Expenditures	$1,855.40	$1,982.50	$2,112.50	$2,239.70	$2,338.70	$2,472.20	$2,569.60	$2,702.90	$2,850.20	$3,024.70
Health Services and Supplies	1733.6	1851.9	1975.4	2089.7	2181.3	2306.2	2395	2518.7	2655.5	2817.3
Personal Health Care	1549.9	1655.2	1762.9	1866.4	1952.3	2068.3	2141.7	2244.6	2368	2512.1
Hospital Care	566.5	607.5	649.4	687.6	718.4	760.6	788.9	827.3	875.8	932.4
Professional Services	581.2	621.5	658.4	697.5	731.2	777.3	797.2	832.8	877.9	930.4
Physician and Clinical Services	393.6	422.4	446.5	472.6	496.2	527.6	535.8	556.1	582.3	612.3
Other Professional Services	52.9	55.9	58.4	62.2	65.7	69.6	71.4	74.6	79.3	84.3
Dental Services	81.5	86.3	90.7	96.4	101.2	104.4	107.9	111.8	118.1	126.5
Other	53.3	56.9	62.7	66.3	68.1	75.7	82.2	90.3	98.2	107.2

Personal Health Care										
Nursing Home and Home Health	157.9	168.8	178.1	191.7	203.1	216.3	226.4	239	252.8	268.8
Home Health Care	42.7	48.1	53	59.3	64.7	72.2	77.1	82.8	89.1	96.2
Nursing Home Care	115.2	120.7	125.1	132.4	138.4	144.1	149.3	156.2	163.7	172.6
Retail Outlet Sales of Medical Products	244.3	257.4	277	289.7	299.6	314.1	329.1	345.4	361.4	380.5
Prescription Drugs	188.8	199.7	217	226.8	234.1	246.3	260.1	274.5	287.5	302.9
Other Medical Products	55.5	57.7	60	62.9	65.5	67.8	69.1	70.9	73.9	77.6
Durable Medical Equipment	22.8	23.8	24.7	25.5	26.6	27	27.4	28.1	29.2	30.7
Other Non-Durable Medical Products	32.7	34	35.3	37.4	39	40.8	41.6	42.8	44.7	46.9

**Projections based on moving average of historical data*
Source: US Department of Health and Human Services

Medical supplies and equipment represent a small but important and steadfast component of total health care expenditures. Medical products, supplies, and equipment represent about a 6% stake in the $2.8 trillion US healthcare pie. The medical supplies and equipment industry has faced an average growth of 3.7% to 4.3% per year. The future projected growth for the industry is hovering at slightly lower 3.5%.

An interesting thing to note is that investments in durable medical equipment has faced increasing growth despite downward trends in growth in healthcare as well as the recent economic recession. It seems that healthcare providers are choosing to

increase their investments in such capital-intensive goods in hopes of increasing the productivity and efficiency of their facilities and services. Companies that do not have durable medical equipment as part of their product line may do well to invest in such products or acquire other companies that have such equipment in order to keep pace with the growth rate of their competitors.

INDUSTRY FINANCIAL STATEMENTS

The following exhibits are price-weighted financial statements aggregated from 14 companies compromising the core representation of businesses in this industry. Note that all units are in millions of USD. In addition there are 4 foreign companies that reported their statements in their respective currencies, the financial statements were converted to USD by the average exchange rate of the day of the filing of the financial reports. All financial statements were acquired using the Thomson One platform

Balance Sheet

ASSETS						
		2009	**2008**	**2007**	**2006**	**2005**
Cash And ST Investments		18,837.1848	16,044.8675	17,374.3143	16,540.2595	13,204.7459
Receivables (Net)		16,320.5437	16,532.6659	17,320.4018	13,298.4748	11,646.7699
Total Inventories		11,386.1029	11,126.0959	10,133.0299	8,821.1446	7,581.8428
Other Current Assets		6,272.5215	7,061.2010	8,035.1636	4,710.9347	5,186.2557
Current Assets - Total		52,989.5736	50,956.3532	53,175.1900	43,596.8972	37,981.5032
Property Plant & Equipment - Net		19,748.7462	19,001.4845	18,153.2296	16,142.9000	14,328.5294
Total Investments		0.0000	0.0000	0.0000	0.0000	0.0000
Other Assets		61,449.3868	60,165.7185	56,014.5853	50,946.5497	29,126.0194
Total Assets		**140,013.9111**	**136,853.6944**	**134,601.0033**	**115,054.2919**	**85,803.5876**

LIABILITIES & SHAREHOLDERS' EQUITY						

Accounts Payable		3,659.4581	4,009.1759	3,910.2711	3,512.3532	3,451.8879
ST Debt & Current Portion of LT Debt		3,655.9635	7,355.4307	6,522.3443	10,382.9161	5,971.8883
Income Taxes Payable		877.3323	1,054.7337	1,466.7603	2,161.8589	2,237.0023
Other Current Liabilities		10,371.1078	10,580.4011	11,919.7770	6,610.1366	7,302.8722
Current Liabilities - Total		22,300.8219	26,503.3560	27,163.4139	25,572.9701	21,388.5268
Long Term Debt		28,988.0275	25,126.4342	25,688.7170	20,576.4637	11,036.5118
Other Liabilities		8,588.3259	7,625.1836	6,701.4662	3,814.6661	2,671.2415
Total Liabilities		**64,378.7290**	**63,967.6351**	**64,223.5723**	**54,456.4882**	**37,226.3026**
Shareholders' Equity						
Minority Interest		89.6593	123.8513	117.1488	102.6901	139.6339
Preferred Stock		0.0000	0.0000	0.0000	0.0000	0.0000
Common Equity		75,545.5228	72,762.2080	70,260.2822	60,495.1136	48,437.6511
Retained Earnings		43,876.9237	39,960.2602	37,015.3376	33,033.2727	33,563.2051
Total Liabilities & Shareholders' Equity		**140,013.9111**	**136,853.6944**	**134,601.0033**	**115,054.2919**	**85,803.5876**

Income Statement

		2009	2008	2007	2006	2005
Net Sales or Revenues		90983.50571	89711.24085	82988.55487	72378.41129	66225.6767
Cost of Goods Sold		31379.58575	32702.50472	31218.67979	27865.71504	25686.55248
Depreciation, Depletion & Amortization		5672.484369	4401.536979	4074.234799	3586.328569	3342.521451
Gross Income		53931.43559	52607.19915	47695.64028	40926.36769	37196.60276
Selling, General & Admin Expenses		33649.35392	32593.15405	29466.55386	24812.67486	22807.29607
Operating Expenses - Total		70707.10514	69702.87685	64759.07664	56264.52257	51836.37
Operating Income		20276.40057	20008.36399	18229.47822	16113.88872	14389.3067
Non-Operating Interest Income		420.5926083	522.9001537	791.2993308	#N/A	346.4547198
Earnings Before Interest And Taxes		16994.3055	18773.42071	14859.81174	13979.92088	12646.97299
Interest Expense On Debt		991.7585571	1157.753384	1080.660149	823.6368258	704.7923881
Pretax Income		16041.34694	17642.66732	14925.7516	14346.61606	11961.2806
IncomeTaxes		4360.790777	3972.418909	3992.344001	3453.416008	3781.217257
Minority Interest		-13.91818275	-0.004512283	-2.223207822	-1.318695539	-0.373324884
Equity In Earnings		-7.458	-25	-27	-23	-15

Net Income Before Extra Items/Preferred Div		11705.56535	13645.25293	10913.6308	10867.20775	8037.41667
Extraordinary Items & Gain(Loss) Sale of Assets		5	-82.922	146.2472	19.9818	-2
Net Income Before Preferred Dividends		11710.56535	13562.33093	11059.878	10887.18955	8035.41667
Preferred Dividend Requirements		0	0	0	0	0.367
Net Income Available to Common		**11710.56535**	**14181.25293**	**10913.6308**	**10867.20775**	**8035.32567**

Statement of Cash Flows

		2009	2008	2007	2006	2005
Operating Activities						
Income Before Extraordinary Items		12671.64453	14718.80393	11863.39047	11740.03358	8964.270743
Depreciation, Depletion & Amortization		5765.984369	4480.680241	4154.234799	3661.228569	3406.321451
Deferred Taxes		-40.48966501	135.6267684	-548.8783674	109.7034209	172.2550137
Other Cash Flow		2017.712544	2269.777994	3347.570367	1504.075106	2118.760479
Funds From Operations		19956.26761	21155.9593	18527.93393	16506.08655	14379.45693
Extraordinary Items		0	0	0	0	0
Funds From/For Other Operating Activities		33.86086303	-3526.230179	-1097.624535	-3656.305758	-275.0106382
Net Cash Flow From Operating Activities		**19990.12847**	**17629.72912**	**17430.3094**	**12849.78079**	**14104.44629**
Investing Activities						
Capital Expenditures		4651.10078	5003.530699	4421.44079	3427.822815	3134.653516
Net Assets From Acquisitions		3909.606394	8568.627654	4607.376156	2302.126345	2262.849861
Decrease In Investments		9269.975369	27789.20405	25015.18817	16052.84541	3261.068741
Disposal of Fixed Assets		141.0038353	319.9760184	188.9472183	124.896785	337.709316
Other Use/(Source) - Investing		241.2560989	1831.188035	2178.419122	1230.573045	239.59054
Net Cash Flow From Investing Activities		**9691.140179**	**10205.47415**	**12238.64016**	**8079.557419**	**7171.809791**
Financing Activities						
Common/Preferred Stock Purchased,Retired,Converted,Redeemed		5321.119454	6740.598313	7100.221213	9031.48641	1752.957855
Long Term Borrowings		18403.26131	5684.512975	18286.5796	12617.09476	6487.389288
Inc(Dec) In ST Borrowings		-3730.574914	1959.147992	581.5179961	-206.9531672	432.7383775
Reduction In Long Term Debt		12817.42421	6491.402351	16677.60592	8046.973513	8209.657244
Cash Dividends Paid - Total		3782.23952	3004.466737	2522.105389	1798.828567	1529.581385

Other Source/(Use) - Financing		535.4880965	560.3977672	1705.586805	2264.009958	740.1384372
Net Cash Flow From Financing Activities		**-6405.718525**	**-6729.954761**	**-4674.981959**	**-3383.712249**	**-3922.999011**
		0	0	0	0	0
Exchange Rate Effect		-210.3747396	-210.4072401	149.0090303	134.4752779	-219.4295677
Cash & Cash Equivalents - Inc(Dec)		3682.895029	483.892962	665.6963088	1520.986405	2790.207918
		0	0	0	0	0
Common/Preferred Stock Purchased, Retired, Converted, Redeemed		5321.119454	6740.598313	7100.221213	9031.48641	1752.957855
Long Term Borrowings		18403.26131	5684.512975	18286.5796	12617.09476	6487.389288
Inc./Dec. In S.T. Borrowings		-3730.574914	1959.147992	581.5179961	-206.9531672	432.7383775
Reduction In L.T. Debt		12817.42421	6491.402351	16677.60592	8046.973513	8209.657244
Cash Dividends Paid - Total		3782.23952	3004.466737	2522.105389	1798.828567	1529.581385
Other Source/(Use) - Financing		535.4880965	560.3977672	1705.586805	2264.009958	740.1384372
Net Cash Flow - Financing Activities		-6405.718525	-6729.954761	-4674.981959	-3383.712249	-3922.999011
Exchange Rate Effect		-210.3747396	-210.4072401	149.0090303	134.4752779	-219.4295677
Cash & Cash Equivalents – Including Dep.		**3682.895029**	**483.892962**	**665.6963088**	**1520.986405**	**2790.207918**

RATIO ANALYSES

Industry Level – Historical till Present

Liquidity/Activity Ratios	**2009**	**2008**	**2007**	**2006**	**2005**
Current Ratio	2.3761	1.9226	1.9576	1.7048	1.7758
Acid Test (Quick Ratio)	1.8656	1.5028	1.5846	1.3599	1.4213
Cash Ratio	0.8447	0.6054	0.6396	0.6468	0.6174
Liquidity Index	50.1493	54.0943	56.7274	48.5211	47.8248
Accounts Receivable Turnover	5.5748	5.4263	4.7914	5.4426	5.6862
Average Collection Period	65.4734	67.2650	76.1785	67.0634	64.1907
Inventory Turnover	7.9908	8.0631	8.1899	8.2051	8.7348

Days to Sell Inventory	45.6778	45.2677	44.5671	44.4845	41.7870
Conversion Period	111.1512	112.5327	120.7456	111.5479	105.9777
Long-term Solvency Ratios					
Total Debt to Total Assets	0.4598	0.4674	0.4771	0.4733	0.4339
Total Debt/Total Equity	0.8512	0.8776	0.9126	0.8987	0.7663
Long-term Debt Ratio	0.3833	0.3447	0.3650	0.3396	0.2272
Times Interest Earned (x)	17.1355	16.2154	13.7507	16.9734	17.9443
Profitability Ratios					
Return on Total Assets	0.0836	0.1036	0.0811	0.0945	0.0936
Return on Equity	0.1548	0.1946	0.1551	0.1793	0.1654
Operating Cash/Debt	0.3105	0.2756	0.2714	0.2360	0.3789
Limited Dupont Analysis					
ROE	0.1548	0.1946	0.1551	0.1793	0.1654
Profit Margin	0.1287	0.1581	0.1315	0.1501	0.1213
Asset Turnover	0.6498	0.6555	0.6166	0.6291	0.7718
Equity Multiplier	1.8512	1.8776	1.9126	1.8987	1.7663

From a creditor's risk perspective it is positive sign that liquidity ratios such as the current ratio and cash ratio have been increasing, indicating a decrease in risky financing activities. The accounts receivable turnover and average collection period has decreased significant between 2008 and 2009 indicating that this industry is feeling the effects of the credit crunch just like everybody else and is tightening its credit terms. Though looking the industry balance sheets, short term financing has dropped significantly, but long term financing has increased with long-term liabilities making up a larger section of the balance sheet.

It the context of long term solvency, creditors will find it reassuring that though the long term debt ratio in this industry has increased, the total debt to total assets ratio has decreased as well as the price-weighted average TIE ratio increasing despite the financial recession.

Across this sector return on assets and equity have dropped. Doing a simple Dupont analysis, the drop in ROE can be attributed to decreases in both profit margin and asset turnover ratios. However, this industry does have some hope because its operating cash to debt ratio has increased substantially from 0.2756 in 2008 to 0.3105 in 2009. This indicates a tendency to lower debt and increase operating cash flow, thereby revitalizing the business as well as putting some shine on the financial statements.

Individual Companies – 2009 fiscal year only

Liquidity/Activity Ratios	STJ	BAX	BDX	ZMH	HSP	SYK	COLO	CFN	OCPNY	ACL	TO	MDT	COV	BCR
Current Ratio	2.40	1.85	2.61	3.96	2.86	4.06	1.69	3.14	1.39	2.95	2.07	2.37	2.44	5.3
Acid Test (Quick Ratio)	1.78	1.28	1.96	2.64	2.01	3.41	1.20	2.40	1.11	2.64	1.48	1.92	1.84	4.2
Cash Ratio	0.40	0.63	1.09	1.13	1.08	2.06	0.32	1.54	0.40	1.77	0.61	0.53	0.66	2.4
Liquidity Index	89.14	66.99	49.59	75.96	52.84	35.31	68.10	33.01	46.48	32.75	74.34	65.23	57.12	42.0
Accounts Receivable Turnover	4.00	5.45	5.96	5.45	7.27	5.86	5.28	8.16	6.29	4.70	4.58	4.67	5.68	5.7
Average Collection Period	91.27	66.91	61.24	66.97	50.21	62.28	69.11	44.75	58.00	77.70	79.73	78.08	64.27	63.6
Inventory Turnover	7.09	4.91	6.10	4.48	5.14	7.13	8.95	8.00	10.16	10.84	5.55	10.24	8.00	8.5
Days to Sell Inventory	51.46	74.33	59.84	81.39	71.07	51.20	40.80	45.65	35.91	33.69	65.82	35.65	45.60	42.5
Conversion Period	142.73	141.24	121.08	148.36	121.28	113.47	109.91	90.40	93.91	111.39	145.55	113.73	109.87	106.1
Long-term Solvency Ratios														
Total Debt to Total Assets	0.48	0.54	0.44	0.28	0.52	0.25	0.64	0.35	0.85	0.29	0.24	0.46	0.53	0.2
Total Debt/Total Equity	0.93	1.19	0.78	0.38	1.08	0.34	1.74	0.53	5.46	0.40	0.32	0.84	1.13	0.2
Long-term Debt Ratio	0.48	0.46	0.29	0.20	0.65	0.00	0.79	0.21	3.23	0.01	0.00	0.53	0.37	0.0
Times Interest Earned (x)	24.19	44.84	43.41	49.46	4.49	177.51	8.57	8.82	-4.64	145.56	226.66	12.66	11.58	57.9
Profitability Ratios														
Return on Total Assets	0.12	0.14	0.13	0.09	0.07	0.13	0.11	0.07	-0.11	0.25	0.10	0.09	0.05	0.1
Return on Equity	0.23	0.30	0.24	0.13	0.15	0.17	0.31	0.10	-0.68	0.35	0.13	0.17	0.11	0.2
Operating Cash/Debt	0.28	0.33	0.42	0.52	0.33	0.66	0.37	0.28	0.05	1.06	0.35	0.36	0.21	1.0
Limited Dupont														

Analysis														
ROE	0.23	0.30	0.24	0.13	0.15	0.17	0.31	0.10	-0.68	0.35	0.13	0.17	0.11	0.2
Profit Margin	0.17	0.18	0.17	0.18	0.10	0.16	0.10	0.13	-0.12	0.31	0.12	0.15	0.08	0.1
Asset Turnover	0.73	0.77	0.77	0.53	0.71	0.76	1.13	0.54	0.90	0.82	0.82	0.62	0.63	0.9
Equity Multiplier	1.93	2.19	1.78	1.38	2.08	1.34	2.74	1.53	6.46	1.40	1.32	1.84	2.13	1.2

*Redindicates the worst performing and green indicates the best performing ratio.

Conducting this simple ratio analyses, Olympus Corporation is the laggard in this sector. Though more often known for their cameras than their surgical endoscopes, medical equipment makes up a significant percentage of Olympus's business. Their biggest issue is that they have too much debt on their balance sheets and they are not making enough income to cover their interest payments. Olympus cannot attempt to recover by adjusting its credit policy, because it's actually quite good compared to its industry competitors. However, there needs to be serious balance sheet cleansing if Olympus wants to have any chance of not being eaten up alive by its debts. Fortuitously, they decided to sell their diagnostics division and found a willing buyer, Beckman Coulter, for $800 million USD.[7] For this financing reason, many analysts have been forecasting a return to positive earnings per share as well as positive return on equity.

Alcon, a Swiss medical company is clearly best in class based on this ratio analysis. Not only are they highly liquid, they face low solvency risk as well as the highest return on equity, operating cash/debt ratio, and profit margin. Its asset turnover is also very strong as well. They have a strong portfolio of brands and products in eye equipment, surgical equipment, and surgical devices. For this reason, it is quite evident why super pharmaceutical giant Novartis wants to acquire a controlling stake in the world's largest eye care company. Novartis already owns 25% of Alcon, but wishes to increases its equity stake to 52%. Current negotiations are at a standstill due to a higher premium demanded by Alcon shareholders for this take over from Novartis. However, in Novartis's move to select company to diversity its product portfolio it did well to select the best in class in medical supplies and equipment, but for that quality of a company they will be expected to pay a heavy premium.[8]

VALUATION

The following section discusses the various valuation techniques and their usefulness for identifying the intrinsic values of companies in this industry. Prices are the settlement prices as of April 16th 2010.

[7] "Olympus acquisition boosts Beckman Coulter's Q4 sales," *Mass Device*, Feb. 12th, 2010, http://www.massdevice.com/news/olympus-acquisition-boosts-beckman-coulters-q4-sales

[8] Carey, Sargent and Kristen Hallam, "Novartis Profit Rises on Pandemic Flu Vaccine Sales" April 20th, 2010 Bloomberg Businessweek, http://www.businessweek.com/news/2010-04-20/novartis-profit-rises-on-h1n1-flu-vaccine-revenue-update1-.html

Price Multiples – Price to Earnings

Currency	**Company**	Symbol	EPS	Forward P/E	**Intrinsic Value**	**Price**	Shares outstanding
USD	St. Jude	STJ	2.43	15.09	**36.6687**	**40.81**	325430000
USD	Baxter	BAX	3.8	14.06	**53.428**	**58.97**	602670000
USD	Becton and Dickson	BDX	4.95	15.15	**74.9925**	**77.94**	235700000
USD	Zimmerholdings	ZMH	3.95	14.31	**56.5245**	**59.88**	202790000
USD	Hospira	HSP	3.11	17.24	**53.6164**	**57.125**	163850000
USD	Stryker	SYK	2.95	17.77	**52.4215**	**57.05**	398050000
(DNK)	Coloplasts AS	COLO	22.4	21.52	**482.048**	**618**	42937000
USD	Carefusion	CFN	1.46	18.39	**26.8494**	**26.97**	221640000
USD	Olympus ADR	OCPNY	1.88	14.31	**26.9028**	**31.69**	269970000
(CHE)	ALCON	ACL	6.81	21.33	**145.2573**	**159.3**	299550000
Yen	Terumo Corporation	TO	191.86	23.24	**4458.8264**	**4965**	189900000
USD	Medtronic	MDT	2.92	14.26	**41.6392**	**44.92**	1101532000
USD	Covidien	COV	2.84	15.24	**43.2816**	**51.18**	500216000
USD	CR Bard	BCR	5.09	15.57	**79.2513**	**85.24**	95942000

*Forward P/E estimates from Data Call via Thomson One Banker

It seems that using the price multiples method with P/E tends to indicate a slight over pricing of the securities. It's interesting that there is consistent under pricing across all the companies. Of course, the limitations of the price to earnings ratio is that it's usefulness is based on earnings per share, which are very susceptible to accounting manipulation. This forecasted forward price to earnings ratio compared to the price seems to indicate that there are high growth prospects and the market is quite excited for stocks in this sector, causing people to bid up the price in the market.

Price Multiples – Price to Cash Flow

Currency	**Company**	1000000	CF	Current P/CF	Forward P/CF	**Intrinsic Value**	**Price**
USD	St. Jude	STJ	116.1538462	12.2	13.74	**4.90**	**40.81**
USD	Baxter	BAX	3338.018018	10.8	11.48	**63.59**	**58.97**
USD	Becton and Dickson	BDX	2070.111111	9.4	10.06	**88.31**	**77.94**
USD	Zimmerholdings	ZMH	11991.98113	10.9	11.53	**681.61**	**59.88**

USD	Hospira	HSP	769.4029851	12.2	13.50	**63.40**	**57.125**
USD	Stryker	SYK	1809.009009	13	14.11	**64.10**	**57.05**
(DNK)	Coloplasts AS	COLO	2244.511278	12	12.94	**676.60**	**618**
USD	Carefusion	CFN	176	14.4	16.47	**13.08**	**26.97**
USD	Olympus ADR	OCPNY	66226.39785	8.2	8.65	**2122.11**	**31.69**
(CHE)	ALCON	ACL	1789.40239	20.2	21.53	**128.63**	**159.3**
Yen	Terumo Corporation	TO	61315.45455	17.5	18.77	**6059.44**	**4965**
USD	Medtronic	MDT	4832.434783	9.2	10.36	**45.45**	**44.92**
USD	Covidien	COV	1837.04698	14.4	14.82	**54.44**	**51.18**

*Current and Forward P/CF from Data Call via Thomson One Banker

Using Price to Cash Flows may seem like a good idea, as the P/E ratio seems to be providing a good proxy for the equilibrium stock prices of companies within this sector. However, as indicated by St. Jude, Terumo, and Olympus's pricing one can deduce that cash flow may alone may not be enough to indicate intrinsic value. With the Japanese companies Olympus and Terumo, there are obvious accounting differences that allow Japanese companies to report more cash flow than expected, and hence their financials must be adjusted accordingly for valuation purposes. There is absolutely no way companies like Olympus would have an intrinsic value so much grossly higher than its current stock price, due to the sorry state of its 2009 balance sheet, although it has somewhat been mended by a selling off its hard assets for cash.

Discounted Cash Flow

Currency	**Company**		**Cost of Equity**	**Equity Weight**	**Cost of Debt**	**Debt Weight**	**WACC**
USD	St. Jude	STJ	9.11%	86.13%	2.99%	13.87%	8.26%
USD	Baxter	BAX	7.76%	89.47%	3.26%	10.53%	7.28%
USD	Becton and Dickson	BDX	7.96%	91.65%	3.00%	8.35%	7.55%
USD	Zimmerholdings	ZMH	9.68%	91.46%	8.65%	3.47%	9.15%
USD	Hospira	HSP	9.34%	82.81%	4.44%	17.19%	8.50%
USD	Stryker	SYK	9.50%	91.00%	0.56%	0.09%	9.49%
(DNK)	Coloplasts AS	COLO	7.25%	89.91%	3.08%	10.09%	6.83%
USD	Carefusion	CFN	10.04%	79.92%	4.28%	20.08%	8.89%
Yen	Olympus	OCPNY	21.24%	39.00%	0.92%	61.00%	8.85%
(CHE)	ALCON	ACL	8.86%	98.67%	1.43%	1.33%	8.76%
Yen	Terumo	TO	16.68%	96.40%	0.14%	3.60%	16.17%

	Corporation						
USD	Medtronic	MDT	10.04%	62.48%	5.22%	13.31%	8.20%
USD	Covidien	COV	9.65%	89.16%	2.20%	10.84%	8.85%
USD	CR Bard	BCR	7.64%	98.03%	3.25%	1.91%	7.56%
	Industry Average		10.34%	84.72%	3.10%	12.55%	8.88%

*Cost of Equity, Cost of Debt, and WACC estimated via Bloomberg

Discounted Cash Flow – Gordon Growth

Risk Free Rate	4.58%
Market Return	8.10%

	in millions		CAPM				5yr ROE * (1-Pay out)	
Beta	Book value	Book Value Per share	Cost of Equity	Pay out ratio	Growth (Sales)	5 yr Average ROE	Growth	Most Recent Dividends
0.82	3,323.55	10.21	7.47%	0	12.61%	17.29%	17.29%	0
0.44	7,420.00	12.31	6.13%	0.2981	6.31%	26.25%	18.42%	1.1
0.55	5,142.712	21.82	6.52%	0.2645	6.97%	21.61%	15.89%	1.3
1.11	5,638.7	27.81	8.49%	0	5.75%	14.90%	14.90%	0
0.88	2,623.7	16.01	7.68%	0	10.67%	15.30%	15.30%	0
1.01	6,595.1	16.57	8.14%	0.0542	8.50%	19.16%	18.12%	0.2
0.42	2,850.00	66.38	6.06%	0.3333	7.86%	23.77%	15.85%	7
0.96	5,451.00	24.59	7.96%	0	14.35%	11.28%	11.28%	0
1.18	168,784.00	625.20	8.73%	-0.0863	5.50%	13.04%	14.17%	0.4
1.12	6,117.58	20.42	8.52%	0.3799	6.60%	42.19%	26.16%	2.8
0.825	278,166.00	1,464.80	7.48%	0.1668	7.24%	13.07%	10.89%	32
1	12,851.00	11.67	8.10%	0.3886	12.61%	21.23%	12.98%	0.8
0.87	8,001.00	16.00	7.64%	0.2238	2.94%	12.80%	9.93%	0.6
0.36	2,205.9	22.99	5.85%	0.1433	9.43%	20.33%	17.42%	0.67

Unfortunately, stocks within the medical supplies and equipment industry cannot be valued using discounted cash flows, residual income, free cash flow to the firm, or any other DCF valuation method. Even though most of the companies pay dividends, the problem is that this industry faces high growth and even conservative calculations for "G". Growth was estimated two ways, one was taking the 5 year historical average ROE and then multiplying it by the plowback ratio. The other way was taking the 5 year average growth rate in sales. 64% of the companies have growth rates (Sales-based) that are higher than the cost of equity as determined by CAPM, which makes it impossible to use the Gordon Growth model. Estimating growth based on average ROE and the plowback ratio gave an even more aggressive growth value for each company.

The denominator in the DCF valuation equations till becomes negative because WACC and cost of equity are not sufficiently large enough. The risk free rate was assumed to be the 20-year equivalent yield on US treasuries while a market return of 8.1% was assumed, which is a good approximation for stock market returns over the long term. The following is a table showing intrinsic values calculated using the Gordon Growth Model and the Free Cash Flow to the Firm method. Any intrinsic value with a not applicable value (n/a) means that there was a negative value given by the model or the company does not pay dividends.

	Gordon Growth	**FCFF**	**Actual**
Company	**Intrinsic Value**	**Intrinsic Value**	**Price**
St. Jude	n/a	n/a	**40.81**
Baxter	80.43	216.9466275	**58.97**
Becton and Dickson	140.41	648.5721185	**77.94**
Zimmer holdings	n/a	1315.549296	**59.88**
Hospira	n/a	n/a	**57.125**
Stryker	21.71	337.677666	**57.05**
Coloplasts AS	n/a	n/a	**618**
Carefusion	n/a	n/a	**26.97**
Olympus	2.68	2990.321588	**31.69**
ALCON	132.03	160.2654949	**159.3**
Terumo Corporation	363.56	651.165435	**4965**
Medtronic	n/a	n/a	**44.92**
Covidien	9.21	70.73615272	**51.18**
CR Bard	n/a	n/a	**85.24**

As you can see discounted cash flow valuations are not that useful for this sector. Any gross under pricing or over pricing as implied by these models are much more an indication of model error and inappropriateness rather than market inefficiencies.

Valuation Conclusions

Traditional discount cash flows valuation methods will not work to value stocks of these companies. A price multiples approach will be more useful, but investors must be aware of the sensitivity of their forecasts to reported accounting items like earnings per share. In addition, things like price to cash flow are useful indicators of valuation, but one has to remember that not all companies are as equally rational or intelligent in allocating their cash to take on positive NPV projects.

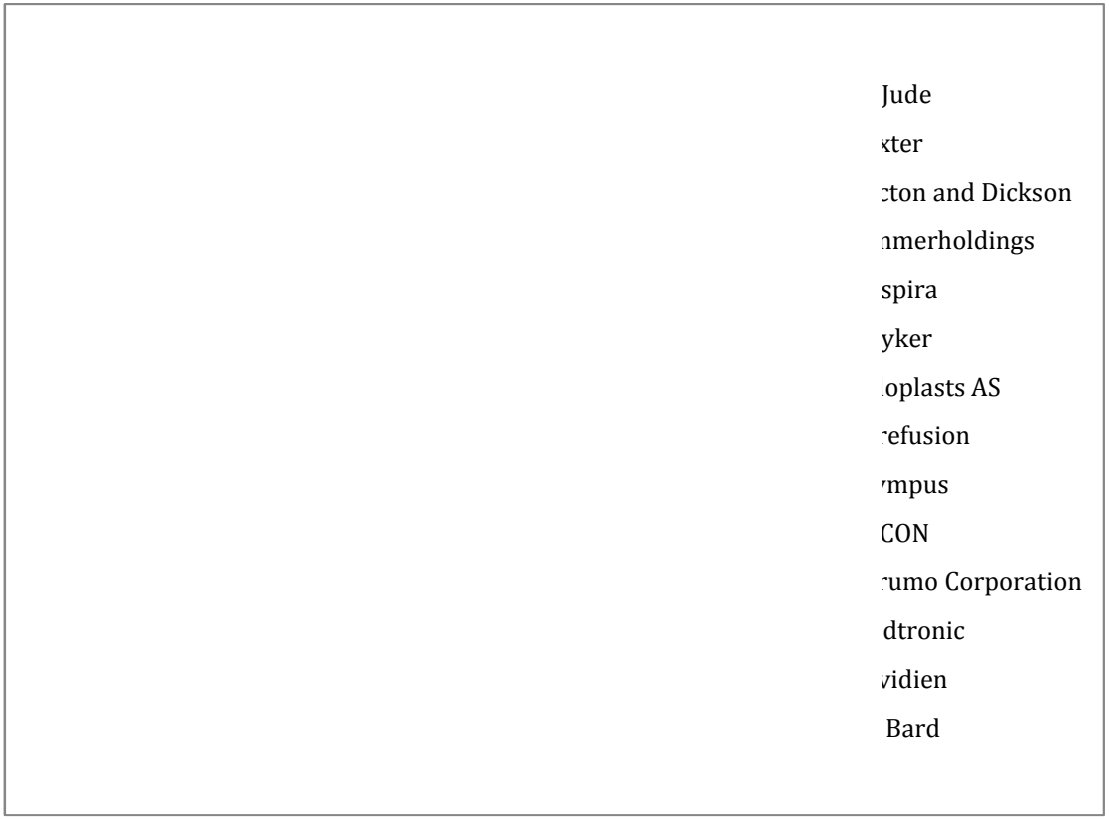
Multi-stage discounted cash flow valuations as well as aggregating many price multiples metrics together will help investors better pinpoint the intrinsic value of these equities and judge if they are over or undervalued.

AY Medical Supplies and Equipment Index

For the convenience of investors, this report has provided two indexes; one price weighted the other market weighted, should investors choose to gain exposure to this particular industry.

Price Weighted:

St. Jude	4.51%
Baxter	6.52%
Becton and Dickson	8.62%
Zimmerholdings	6.62%
Hospira	6.32%
Stryker	6.31%
Coloplasts AS	12.29%
Carefusion	2.98%
Olympus	3.50%
ALCON	16.43%
Terumo Corporation	5.84%
Medtronic	4.97%
Covidien	5.66%
CR Bard	9.43%



Index Beta: 0.79

Market Weighted:

Company	
St. Jude	4.95%
Baxter	13.24%
Becton and Dickson	6.84%
Zimmerholdings	4.52%
Hospira	3.49%
Stryker	8.46%
Coloplasts AS	1.78%
Carefusion	2.23%
Olympus	3.19%
ALCON	16.57%
Terumo Corporation	3.73%
Medtronic	18.43%
Covidien	9.54%
CR Bard	3.05%

Index Beta: 0.86