

Macroeconomic Overview

U.S. Markets

Index	Weekly % Change	YTD % Change
S&P 500	-3.63%	-1.74%
Dow Jones Industrial	-3.71%	-3.24%
NASDAQ Composite	-4.26%	+4.05%
Russell 2000	-4.43%	-4.83%
VIX	+40.13%	+4.58%

Investors took some profits off the table, causing the S&P 500 to dip back into negative year-to-date territory, as did the other major indices apart from the NASDAQ Composite. The benchmark lost 3.63%, recording only one positive close over the past five trading days. Similarly, the DJIA lost more than 600 points to close at 17,245.24, a decrease of 3.71%. Small caps suffered even heavier losses, with the Russell 2000 falling



S&P 500, DJIA, NASDAQ Composite, Russell 2000 5-day chart.

U.S stocks finally broke their positive momentum, and had their worst week since the August selloff. All major indices recorded hefty losses last week as disappointing economic data added to uncertainty about the imminent interest rate increase.

4.43%, while the NASDAQ Composite lost 4.26% to settle below 5,000 for the first time in November. The decline was mostly caused by disappointing economic data from the rest of the world, which provided further evidence that global economic growth is slowing down. On Thursday, initial jobless claims for the previous week were released, and were unchanged at

276,000. Later during the day, the JOLTS report was published, showing 5.526 million job openings for September, up from 5.377 million in the previous month. The next day, U.S retail sales for October came in below expectations, rising just 0.1% and falling short of the analyst consensus of 0.3%.. The stock selloff caused volatility to increase sharply, with the VIX jumping over 40% from 15 to 20. The decline in U.S stocks was not sufficient to move gold up, which lost less than a percentage point to settle at \$1,083.91/oz., while silver finished the week 3.49% lower at \$14.26. Crude oil production increased again in the previous week, with inventories rising 4.2 million barrels according to the EIA. The report sent Brent below \$45 again, to finish the week down 8.03% at \$43.61, while WTI crude lost 8.02% to settle at \$40.74. Earnings season is coming to an end, as over 90% of S&P 500 companies have already reported their third quarter, including 18 last week. The quarter has been fairly disappointing in terms of sales figures, with less than half the S&P 500 reporting sales above mean analyst estimates, while 74% of companies beat earnings per share estimates. In other corporate news, rating agency Fitch cut Volkswagen's (VLKAY) credit rating two notches to BBB+ in reaction to the emissions cheating scandal, while the board of directors of SABMiller (SAB.LN) announced its approval of ABInbev's \$105.5 billion takeover offer. Next week, investors will be expecting the October industrial production report on Tuesday, which is expected to show a modest 0.1% increase after two months of consecutive declines. On Tuesday, investors will be eyeing the October CPI report, with prices expected to increase 0.2% over September. On Wednesday, October housing starts will be published, and analysts expect the pace to slow down slightly to 1.16 million from 1.2 million in September. The weekly petroleum status report is due on Wednesday, and the jobless claims report for last week will be published on Thursday.

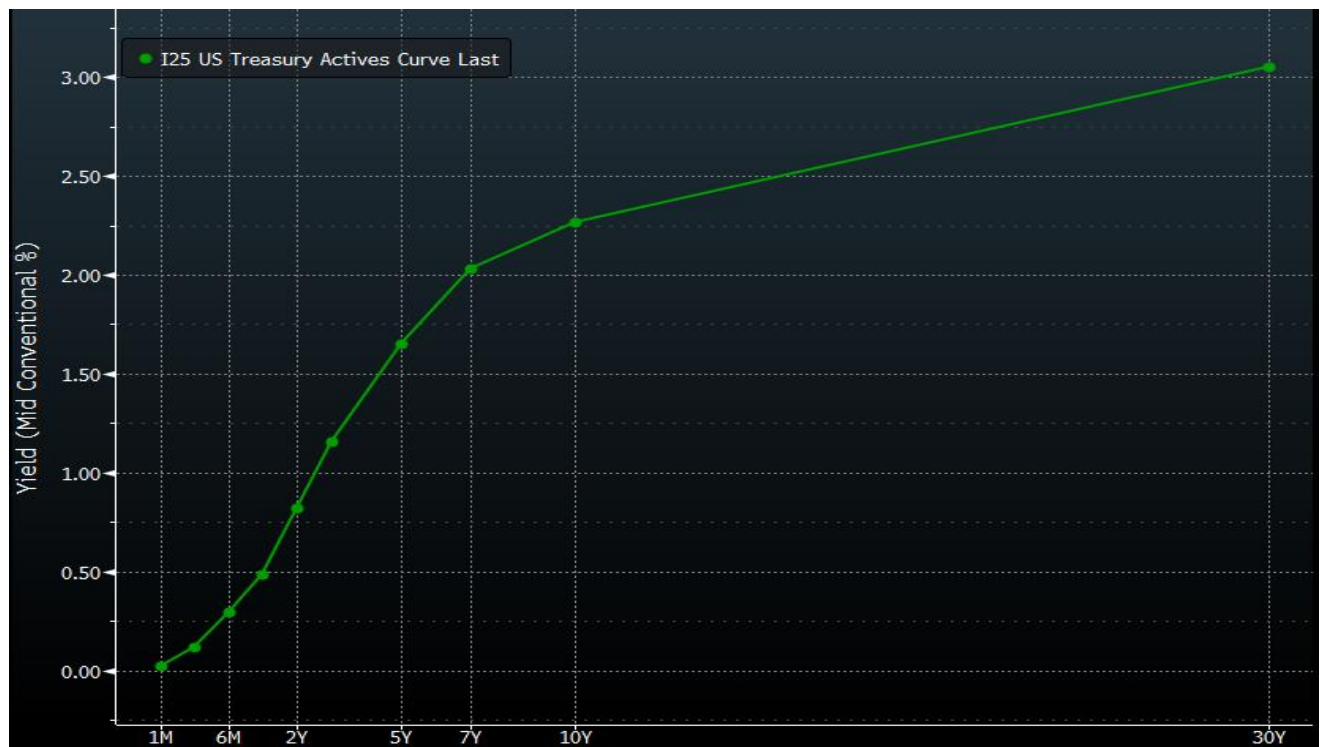
International Markets

International equity markets had a slightly better week than American markets last week, even though most international benchmarks also posted losses. France's CAC 40 lost 1.13%, while Germany's DAX finished the week 1.81% lower after the country's industrial output decreased 1.2% in September. Broader benchmarks such as the Bloomberg European 500 and the Stoxx Europe 600 lost 2.62% and 2.74% respectively, while the MSCI EAFE posted a decrease of 1.83%. In Asia, Chinese equity markets slowed down last week, as exports and imports decreased, while industrial output for October grew at the slowest pace in seven years. As a result, the Shanghai Composite lost 0.26%, while the Shenzhen Composite index only gained 2.47%. Several key economic reports are expected next week, such as the Eurozone and U.K CPI on Monday and Tuesday, Japanese exports and trade balance on Wednesday, and U.K October retail sales on Thursday.

Bond Report

The US Treasury yields continue to dimmed last Monday for the sixth straight session reaching their highest level in almost four months. This was the consequences of both the stronger than expected economic data released last week, especially the astonish job reports, and the comments made by the FED officials which drove investors to believe of a rate hike by the end of the year. On Thursday, short-term treasury yields were traded nearby their highest level in five year as some FED officials said that it could be prudent to raise rates in December. However, Treasury yields finished the week lower marking their biggest weekly dedines since mid-October. Indeed, on Friday, we observed weaker than expected economic data, a drop in both stocks and oil prices that led investors to buy government debt instead or riskier asset dasses. Sales at US retailers increased by only 0.1% from September while wholesale inflation unexpectedly decreased by 0.4%. This low inflation trends led investors to finally doubt the fact that the FED will increase its rate by the end of the year. The yield of the 10-year bond lost 5.2 bps on the week, 3.9 bps only on Friday to finish at a level of 2.28%, its lowest level since November 5th. The yield of the 30-year Treasury lost 3.5 bps and finished the week at 3.06%. Among shorter maturities, the yield of the two-year Treasury dropped by 3.1% in the week and reached a level of 0.85%.





What's next and key earnings

On Monday November 16th, the Empire State Mfg Survey will be released. This report offers signals on the breakdown underway in the factory sector. It is expected to see a consensus of minus 5.00 for the month of November from a minus 11.36 for the month of September. Manufacturers have difficulties to keep production up as unfilled orders have been in deep contraction.

On Tuesday November 17th, the Consumer Price Index will be released. It is expected to see an increase of 0.2% for the month of October. Shelter prices faced some pressure and pushed the core rate up which is also expected to increase by 0.2%. The Industrial Production report will also be released. It has been declining for two consecutive month but is expected to increase by 0.1% for the month of October. The manufacturing component is expected to increase by 0.3% which is in line with a gain in manufacturing hours. The vehicle production component should show the most strength in this report. Later this day, the Housing Market Index will be released. It is supposed to keep increasing for the month of November with an increase in expected future sales.

On Wednesday November 18th, the Housing Starts will be released. It is expected to decrease by 1.2% for the month of October, reflecting weakness in permits while housing permits are expected to slightly increase by 1.1%. Later that day, the FOMC Minutes will be available.

On Friday November 19th, the Philadelphia Fed Business Outlook Survey will be released. The manufactured report is expected to come at a neutral level in November from minus 4.5 in October. New orders dropped by 20 points in October and finish at minus 10.6. Unfilled orders have been in contraction as well which led unemployment into the negative for the month of October. Noticed that this report will be released at 8:30 am ET instead of 10:00 am which could influence the U.S. equity markets.

AAC Holdings, Inc.

NYSE:AAC

Analyst: Andrew Varone

Sector: Healthcare

BUY

Price Target: \$30.80

Key Statistics as of 11/12/2015

Market Price:	\$22.50
Industry:	Specialized Health Services
Market Cap:	\$503.21M
52-Week Range:	\$15.09-46.60
Beta:	1.19

Thesis Points:

- High Grow Potential Through Macroeconomics
- Stock Undervalued Due to Pending Lawsuit
- Growth Stock Evident By Financial Growth

Company Description:

AAC Holdings, Inc. provides inpatient substance abuse treatment services for individuals with drug and alcohol addiction. The Company's staff deploys research-based treatment programs for detoxification, residential treatment, partial hospitalization, and outpatient care. AAC Holdings operates substance abuse treatment facilities throughout the United States.



Thesis

AAC Holdings is a BUY as it is positioned to gain market share in a \$35B industry that is currently highly fragmented. As the only publicly traded company, they are positioned the raise capitals that privately traded companies are unable to do. This access to new capital has allowed them to have tremendous growth in the past twelve months since they released their IPO last fall. This growth is then fueled by the macroeconomics due to political change being needed. The high amount of incarceration makes the need for alternatives. The stock has recently seen a loss due a pending lawsuit the company has. The huge dip in stock price the company saw means an entry for new investors. Despite the potential distractions from this lawsuit, the company has still beat expectations in revenues and EPS and has the source of capital needed to continue their growth through pipeline beds in their inpatient facility and through acquisitions and startups. The target price of \$30.80 will give the company an upside potential of 37%.

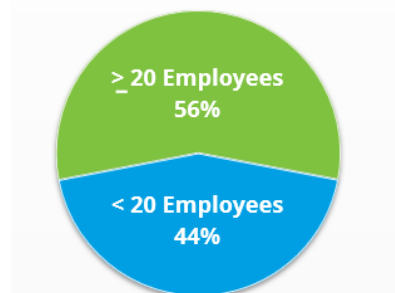
Industry Outlook

The U.S. addiction rehab industry is a \$35B industry where twenty-three million people will fall victim to the chronic disease of addiction. Despite the high demand, only 2.5 million persons received treatment. This is due to many facilities being filled to capacity, insurance coverage for addiction rehab is limited and very little understanding is present from an entire society. Currently, the industry is highly fragmented with over 16,700 clinics and centers operated. The largest treatment advisors in this industry only have 1.4% of market share.

AAC's competitive advantage comes from the makeup of the enterprises instead of this industry. Out of the 8,100 enterprises in the United States, 67% are not-for-profits. AAC is also an inpatient center where only 26% of the industry in inpatient. Lastly with more than 1,500 employees, AAC is part of the 56% of the industry that

have more than twenty employees.

**Substance Abuse Enterprises
by Number of Employees⁽¹⁾**



Organic Growth

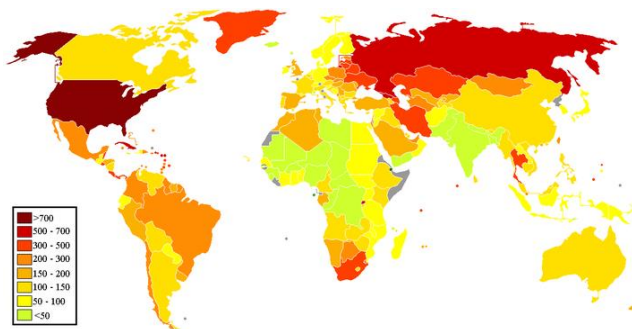
Currently, AAC operates nineteen substance abuse treatment facilities and one mental health facility specializing in binge eating disorders. They currently have 915 beds for inpatient treatment addictions and operate the following states for inpatient and outpatient addiction rehabilitation: Nevada, Texas, California, Florida, Tennessee, Mississippi, and New Jersey. Looking forward, AAC has 300 beds in their pipeline in increase their capacity and capture the excess demand that is available in the industry. They are planning to add 150 beds in 2016 which includes opening a new inpatient facility in California that will house 84 beds. The other 150 beds that are in the pipeline will be in used in 2017 with another facility that is opening up in New Jersey. Both of these facilities are owned by AAC and are both de novo startups. In the past twelve months, AAC has almost tripled the amount of bed in their pipeline. Being able to continue this growth will allow them to capture greater marketshare.



Mass Incarceration

The United States have a major economic issue in mass incarceration. Currently, the United States has roughly 5% of the population but, has 25% of its

inmates.



With over 1.2 million locked up in state prisons, 750,000 in local jails and 200,000 in federal facilities, a total of 2.2 million are locked up. Mass incarceration has been gaining national attention not only because the United States outranks everywhere, the cost to house these inmates and run these penitentiaries is extravagant. It is estimated that local, state and federal governments spend anywhere from \$20,000 to \$50,000 for each inmate that is kept in these facilities. This translates to \$80B that the U.S. spends every year on incarceration.

The American Civil Liberties Union, a program started to reduce the use of the criminal justice system to addresses social issues, believes that by 2020 the number of those incarcerated will be cut in half. This will have a ripple affect into the addiction rehabilitation industry. Drug arrest account for a quarter of the people that are locked in America. This has been a part of ineffective War on Drugs which has spent trillions of dollars over the past forty years without impacting usage as drug usage rates remain steady.

Changing Political Opinions

The Democratic Party has had views that will hurt healthcare revenues due to putting a cap on prescription drugs. This has caused many healthcare stocks to see a decline in their prices. Addiction rehabilitation is not following the same trend as they believe the War on Drugs is inefficient. The Democratic Party has been known for funding social programs which will include addiction rehabilitation. There has been a social push because of the high rate of incarceration. It is believed that instead of throwing in jails those who suffer from addiction, it will be better served having those suffering attend addiction rehab.

What has been big news in the past few weeks is Republican candidate, Chris Christie, speaking out on this issue of drugs. His entire argument can be summed up in one statement, there has been the surgeon general's statement on cigarettes increasing one's risk for

Siena Market Line
3rd week of November 2015

cancer. If those who do not listen to the warning and continue to smoke and happen to develop cancer, society does not say that individual got what they deserve. Instead, they are offered all different treatments to help suppress and cure the cancer. This means that those struggling with addiction should not be blamed for gaining their addiction and throw into jail. They should receive help to help fight the addiction that they currently face.

Despite Chris Christie only bringing in 2% in the polls, the fact a Republican Candidate has this view on drug addiction shows the changing of society. Drugs will be a major point of emphasis of this upcoming presidential debate. Changing governmental spending from incarnating to rehabbing could cost government cost by two-thirds. This transition from incarnating to rehabbing will also increase demand of such facilities and offer a form of payment through government spending.

Undervaluation

Since its IPO in fall 2014, AAC has been steadily climbing up until it reached its peak of around \$40 this July. At the end of July, it surfaced that there was deaths in the facility and members of the company including CEO, Jerrod Menz, faced second-degree murder charges. This caused the stock price to go down by 50% in the following days. Another lawsuit was filed later by a stakeholder that purchased shares earlier in August. The stock market did not react as much to this because the company argued of the lack of merit that the shareholder had. The shareholder purchased shares of the stock after the incident made news. The company is currently undervalued due to estimation that the lawsuit causing financial loss and impeding further growth.

The CEO has stepped down but still works for the company. He has been replaced by Michael Cartwright who has been on the board since 2011. Michael Cartwright has 20 years of industry experience as well as publishing a book titled "Believable Hope". Since Jerrod Menz stepped down, this gives him an opportunity to deal with the upcoming lawsuits while also lessening the distraction caused to the company.

The Lawsuit

The Lawsuit stems from an incident that occurred in 2010 where a patient died in their Californian Facility. There was accusation that the patient died due to mishandling and abuse but, the autopsy show that the patient died of natural causes. There was also a civil settlement that was finalized in 2014 with the widow of the patient. The arraignment was set for October 1st for the criminal charges but has been later pushed back to December 1st.

Despite the negativity surrounding the case, there is a positive outlook to be had. The first being is the nature of the business. The people that check into these facilities have thrown their lives away to get their fix from their addiction. They will go to any measure necessary if it means receiving that fix. There is going to be deaths within these facilities as it is the nature of the business. If the deaths were not caused from neglect or mishandling of controlled substances, not legal charges should be brought upon the facilities. Also, the facility named in the incident has had to renew six of their detox beds. On September 1st, all six were renewed for two years by California's Department of Health Services.

Pressure from Investors

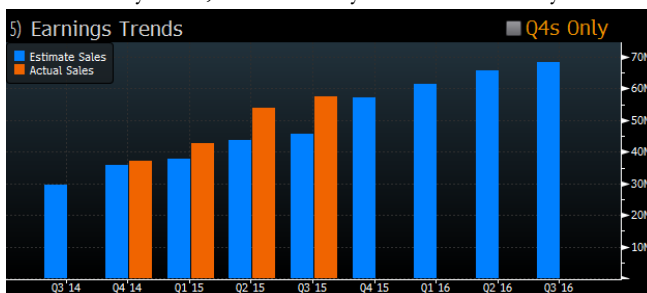
The last reason for undervaluation is pressure for short sellers on the stock. Being a small cap stock, there is little coverage from analysts. This continues to holds true on popular stock blog sites where users can submit their research on any stock. The small cap stocks will continue to have little interest on these sites. What is interesting with AAC stock is that despite being small cap, there has been high coverage over a six month period. Over six months, there was three articles submitted that said to short AAC due to different allegations raised in the articles. The first two articles did not reflect what was going to happen as the stock increased instead of decreasing. The last article written was based on the pending lawsuit and was a catalyst for the stock price dropping 50%. What makes this situation even more interesting is that the individual writing these articles about shorting AAC had already shorted AAC. Because of this, the market was over influenced causing the stock price to go lower than what it is actually worth.

Deerfield Partnership

AAC has entered into a \$50M capital commitment with Deerfield. Deerfield is AAC largest institutional shareholder and leads healthcare specific investors with \$6B under management. This capital is going to be used for AAC to help fund beds in their pipeline, mergers and acquisitions and for other de novo startups. \$25M is convertible debt which will mature in 6 years and bears 2.5% interest rates. Also, it will have the convertible feature at \$30 per share conversion price. Another \$25M is available to the company through October 1st of next year. This will have a 5 year maturity and bears 12% interest rate. Lastly, there will be no prepayment penalty through 10/1/2017.

Financials

Despite the lawsuit surrounding the company, the company continues to operate and outperform analyst expectations. For this last quarter, they outperformed revenues by 23%, EBITDA by 15% and EPS by 50%.



They have also surpassed the sales for every quarter that they have been in business. With the growth of more beds, they should continue to surpass the estimated amount of sales from analysts. They have had a growth in debt due to the increase in their acquisitions and purchasing of beds in the pipeline. They also have had positive cash flows which will give them the choice to repay or refinance the majority of their debt when they come due in 2020.

AAC has a specific target market that focuses on higher pay. They can receive this higher pay for inpatient care because of the amenities that are offered in their facility. They do not focus on public or Medicaid/Medicare types of pay. This have no low marketing cost associated with them but, they have lower margins. They focus on in network, out of network and private pay for their services. These type of services require a higher marketing cost but they receive a higher margin for the services that are given.

The threat of new entrants is low. To open a new inpatient facility, there is significant capital cost required. This is due to the high expenses with regards to the buildings and the equipment needed. There are also barriers of entry with running the business. To have detox beds for inpatient facility, they need to be approved by the state's department of health.

The threat of substitution is low-neutral. This is due to the drugs themselves. For a drug such as tobacco, there are multiple substitutes that people can do instead of going to rehab. These include the patches, gums and any other kind of methods for getting rid of the addiction. For drugs that are not controlled, there are not as many resources for them to beat their addiction. Because of this, there is very little threat for new entrants in this industry. Bargaining power of buyers is low-neutral. This industry is fueled by people getting addicted to drugs. Since addiction is partially hereditary, there are people who become addicted to drugs after one use. On the other side, there are people who have been using certain drugs for life and have yet to become addicted.

The bargaining power of suppliers is neutral. Since they do not have deal with government insurances, they are not locked into the rates that they are charging. Since they deal with the patient themselves or their company, they are not susceptible to the rates that the government wants to charge. The only way for them to be affected by rates would be for the government to set a cap like has been proposed for prescription drugs.

The threat of rivalry is high. The industry is highly fragmented with many company's owning little market share. Despite AAC being positioned well in the industry, there are going to be patient's that only go to these competitors. They also have capacity to the amount of customers they can see until more beds are added. This allows rivals to enter the market.

Summary

AAC is considered a BUY because of the upside that the company's has. They are in a highly fragmented industry where they have seen growth with the capacity of their facilities over the past year. The changing views of drugs and those struggling with addiction will fuel an increase of those that needed inpatient rehab. AAC is also considered a BUY as the price has taken a huge hit due to the incoming lawsuit. This has not affected the

company's ability to grow as they have continued to beat analyst's predictions.

CENTER FOR GLOBAL FINANCIAL STUDIES

AAC Holdings, Inc.	AAC	Analyst Andrew Varone	Current Price \$22.56	Intrinsic Value \$30.80	Target Value \$33.81	Divident Yield 0%	1-y Return: 49.86%	BULLISH	
General Info		Peers	Market Cap.	Management					
Sector	Healthcare	Acadia Healthcare Company, Inc.	\$4,932.17	Professional	Title	Comp. FY2012	Comp. FY2013	Comp. FY2014	
Industry	Healthcare Providers and Services	HCA Holdings, Inc.	\$27,582.80	Cartwright, Michael	Chairman and Chief Executive Officer	\$0	\$1,928,177	\$1,852,986	
Last Guidance	October 27, 2015			Phillips, Kathryn	General Counsel and Secretary	\$0	\$0	\$1,679,646	
Next earnings date	February 24, 2016			Manz, Kirk	Chief Financial Officer	\$0	\$0	\$0	
Market Data		AmSurg Corp.	\$3,912.56	Henderson-Grice, Candance	Chief Operating Officer	\$0	\$912,030	\$0	
Enterprise value	\$616.72	Universal Health Services Inc.	\$11,896.90	McWilliams, Andrew	Chief Accounting Officer	\$0	\$0	\$0	
Market Capitalization	\$4,449.48			Stetler, Michael	Chief Technology Officer	\$0	\$0	\$0	
Daily volume	0.22			Past Earning Surprises					
Shares outstanding	22.41	Community Health Systems, Inc.	\$3,323.31		Revenue	EBITDA	Norm. EPS	Standard Error of "Surprise"	
Diluted shares outstanding	21.42			Last Quarter	23.01%	15.33%	50.00%	10.51%	
% shares held by institutions	26.01%	Current Capital Structure		Last Quarter-1	19.88%	56.54%	106.25%	25.03%	
% shares held by insiders	61.37%	Total debt/Common Equity (LTM)	0.29	Last Quarter -2	10.28%	30.37%	50.00%	11.47%	
Short interest	25.45%	Cost of Borrowing (LTM)	3.18%	Last Quarter -3	4.03%	17.56%	77.78%	22.67%	
Days to cover short interest	14.24	Estimated Cost of new Borrowing	6.36%	Last Quarter -4	20.20%	63.02%	114.29%	27.20%	
52 week high	\$46.60	Altman's Z	NA	Standard error	3.6%	9.9%	13.5%	8.88%	
52-week low	\$15.09	Estimated Debt Rating	CCC	Standard Error of Revenues prediction	3.6%	Industry Outlook (Porter's Five Forces)			
5y Beta	0.00	Current levered Beta	1.19	Imputed Standard Error of Op. Cost prediction	9.2%	Bargaining Power of Suppliers (88th Percentile), Bargaining Power of Customers (71th Percentile), Intensity of Existing Rivalry (50th Percentile), Threat of Substitutes (100th Percentile), Threat of New Competition (58th Percentile), and Overall (86th Percentile).			
6-month volatility	98.91%	LTM WACC	10.56%	Imputed Standard Error of Non Op. Cost prediction	9.3%				
Proforma Assumptions									
Convergence Assumptions		General Assumptions		Items' Forecast Assumptions			Other Assumptions		
	Money market rate (as of today)	0.37%		Base year (LTM)	Convergence period (Sub-industry)	Adjustment per year	Tobin's Q	80%	
All base year ratios linearly converge towards the Sub-industry ratios over an explicit period of 10 years	Risk-Free rate (long term estimate)	2.93%	Operating Cash/Rev.	0.00%	0.00%	0.0%	Excess cash reinvestment	Money market rate	
	Annual increase (decrease) in interest rates	0.1%	NWV/Rev.	22.07%	8.58%	-1.3%	Other claims on the firm's assets	\$0.00	
	Marginal Tax Rate	37.5%	NPPE/Rev.	55.35%	34.29%	-2.1%	Capitalization		
	Country Risk Premium	7.0%	Dpt/ NPPE	6.35%	14.43%	0.8%	100% of all rent expenses are capitalized and amortized 'straightline' over 10 years		
Forecast Year	Revenue Growth Forecast	Revenue (\$)	Forecast	NOPAT MARGIN	12.08%	9.18%	-0.3%	R&D expenses are not capitalized	
LTM		\$175.30		Op. Exp./Rev.	78.92%	79.00%	0.0%	E&P expenses are not capitalized	
FY2015	20.3%	\$210.80		SBC/Rev.	2.53%	0.54%	-0.2%	SG&A expenses are not capitalized	
FY2016	25.8%	\$265.20		Rent Exp./Rev.	1.20%	0.00%	-0.1%	Valuation Focus	
FY2017	22.0%	\$323.56		R&D/Rev.	0.00%	0.39%	0.0%	DCF Valuation	100%
FY2018	18.8%	\$384.52		E&D/Rev.	0.00%	0.00%	0.0%	Relative valuation	0%
FY2019	16.2%	\$446.80		SG&A/Rev.	18.52%	11.03%	-0.7%	Distress Valuation	0%
FY2020	14.0%	\$509.35		ROIC	50%	20.28%	-2.96%	Monte Carlo Simulation Assumptions	
FY2021	11.8%	\$569.45		EV/Rev.	3.00x	2.04x	-0.10x	Revenue Growth deviation	Normal (0%, 1%)
FY2022	9.6%	\$624.11		EV/EBITDA	16.87x	13.87x	-0.30x	Operating expense deviation	Normal (0%, 1%)
FY2023	7.4%	\$670.30		Debt/Equity	29%	183%	15.4%	Continuing Period growth	Triangular (6.79%, 7%, 7.21%)
FY2024	5.2%	\$705.15		Unlevered beta	1.01	0.41	-0.06	Country risk premium	Triangular (2.91%, 3%, 3.09%)
Continuing Period	3.0%	\$726.30		Dividends/REV	0%	1%	0.0%	Intrinsic value o(s)	\$0.09
								1-year target price o(s)	\$0.10
Valuation									
Forecast Year	ROIC	WACC	Invested Capital	Implied Enterprise Value	Net Claims on Assets and Dilution Costs	Shares Outstanding	Price per Share	Monte Carlo Simulation Results	
LTM	49.9%	10.6%	\$155.20	\$738.23	\$133.61	22.41	\$30.44	The 3o(s)-adjusted intrinsic value is \$30.8; the 3o(s)-adjusted target price is \$33.81; and the analysts' median target price is \$30.88	
FY2015	33.1%	10.2%	\$176.79	\$783.44	\$125.68	22.41	\$33.50		
FY2016	19.3%	8.7%	\$210.02	\$850.87	\$134.69	22.41	\$36.10		
FY2017	19.3%	8.6%	\$241.37	\$914.74	\$135.98	22.41	\$38.97		
FY2018	19.4%	8.4%	\$269.36	\$972.59	\$128.02	22.41	\$42.14	Sensitivity Analysis	
FY2019	19.7%	8.1%	\$292.83	\$1,022.30	\$109.59	22.41	\$45.59		
FY2020	20.1%	7.9%	\$310.96	\$1,062.15	\$79.90	22.41	\$49.34		
FY2021	20.6%	7.6%	\$322.19	\$1,089.94	\$37.59	22.41	\$53.40		
FY2022	21.3%	7.3%	\$325.30	\$1,104.03	-\$18.10	22.41	\$57.80	Revenue growth variations account for 95.9% of total variance	
FY2023	22.2%	7.0%	\$319.57	\$1,103.55	-\$87.19	22.41	\$62.55	Risk premium's variations account for 2.5% of total variance	
FY2024	23.3%	6.7%	\$304.91	\$1,088.55	-\$168.78	22.41	\$66.85	Operating expenses' variations account for 1.4% of total variance	
Continuing Period	17.0%	6.8%	\$286.51					Continuing period growth variations account for 0.2% of total variance	

Energy Focus, Inc.

EFOI: Nasdaq

Analyst: Mark Papuzza

Sector: Industrials

BUY

Price Target: \$25.80

Key Statistics as of 11/11/15

Market Price:	\$14.10
Industry:	Electrical Components
Market Cap:	\$179.8 M
52-Week Range:	\$3.95-29.20
Beta:	-.27

Thesis Points:

- The lighting industry is booming, and expected to continue growing
- Partnership with U.S. Navy, and the targeting of new markets
- Financials – Value creation, negative net debt

Company Description:

Energy Focus, Inc. designs, develops, manufactures, markets, and installs energy-efficient lighting systems and solutions in the United States and internationally. The company offers commercial, industrial, government, and military and maritime energy-efficient light-emitting diode (LED) lighting offerings, and also engages in the design and development of lighting retrofit solutions. The company was formerly known as Fiberstars, Inc. and changed its name to Energy Focus, Inc. in May 2007. Energy Focus, Inc. was founded in 1985 and is headquartered in Solon, Ohio.



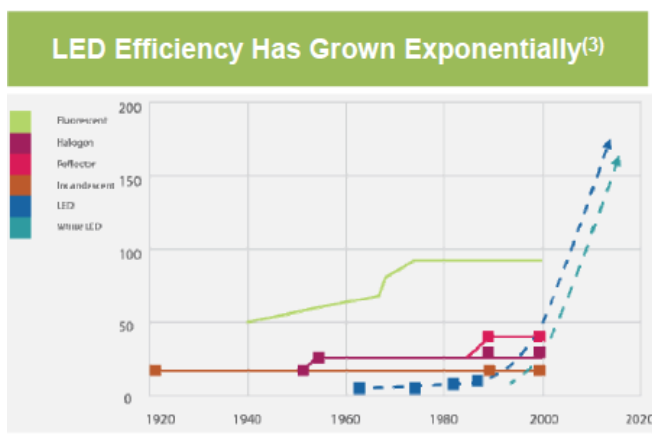
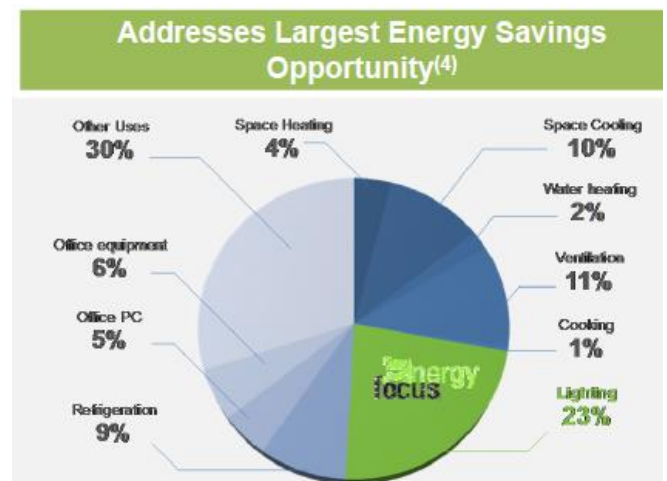
Thesis

Energy Focus, Inc. engages in the designing, development, manufacturing, marketing and installation of energy-efficient lighting systems and solutions. The lighting industry continues to grow, and has a strong outlook for years to come. With the popularity of LED lighting growing at the rate it is, combined with the company's relationship building with big name customers, Energy Focus will continue to create value and increase the price of their stock.

Industry Outlook

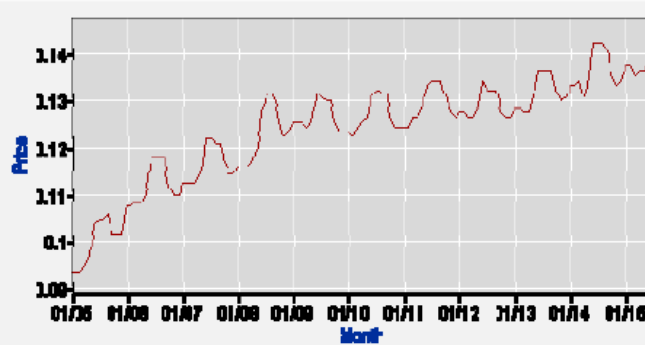
LED stands for light emitting diodes, and they are light bulbs that are much more energy efficient than the common incandescent bulbs. Compared to the traditional incandescent bulbs, LED bulbs last between three to ten times longer thus extending the amount of time between lighting replacement, are much more durable and can sustain tougher conditions as a result of not possessing a filament, develop 90% lesser heat-build up, are mercury-free, and are more cost-effective as a result of consuming less power. It is estimated that LED bulbs consume 50-85% less electricity than traditional bulbs. The LED lighting industry is projected to continue booming at the rate it has in the past few years. The demand for cost effective lighting continues to rise, especially with the initial expense of LED lights decreasing.

In a report completed by the International Energy Agency, they reported that 19% of global electricity use can be credited to lighting. In a study completed by Philips Market Intelligence, the U.S. would save \$53 billion each year in energy costs if there were to be a 40% reduction in electricity lighting. In a report completed by ResearchMoz, they reported that from 2012 to 2019 the LED lighting industry will have a CAGR of 45%, expanding from a \$4.8 billion dollar industry to a \$42 billion dollar industry. Energy Focus is in the midst of this exploding industry, and are looking to capitalize the best they can. The company's strategy is to penetrate existing markets that would benefit greatly from energy efficient lighting, such as schools, hospitals, supermarkets, retail chains, manufacturing facilities. The goal is to bring awareness to these markets of the superior savings the company can offer them in energy costs savings.



LED efficiency continues to increase exponentially and has now exceeded all other sources of light. The payback period for LED lights is now less than three years in the majority of the U.S., Asia, and Europe. Electricity costs have risen every year since 2005, and this trend is expected to continue into the future; thus again highlighting the importance of the cost savings feature of LED lighting.

**Record High Electricity Prices
Every Year Since 2005⁽¹⁾**



Porter's Five Forces

To further assess this industry, let's take a look at Porter's Five Forces of competition, threat of new entrants, threat of substitutes, buyer power, and supplier power.

Competition: High

The competitiveness in the lighting industry is high, as several big players are fighting for a higher market share. It is critical that a company fighting for this has a competitive advantage, and Energy Focus has several. First, they are the only providers of LED fluorescent replacement lamps for the U.S. Navy. Next, the company has a strong business relationship with the U.S. federal government that currently accounts for more than \$53 million in contracts. Thirdly, Energy Focus has over 28 years of experience in the industry, exemplifying their vast knowledge of the industry and the lighting technology. The company implements these advantages to the best of their ability, and will continue to depend on the performance and lower lifecycle cost of their products and services to separate themselves from the pack of competitors.

Threat of Entry: Medium

The LED lighting industry is on track to account for 80% of the lighting industry by 2020. As a result, many businesses would love to jump on this LED wave that is taking over the industry. With improved technology, it is possible for these businesses to make a play to become part of the LED movement. However, with

research and development costs being so high combined with the importance of trusting relationships between the buyers and suppliers, it is still difficult to compete with the already established LED lighting companies.

Threat of Substitutes: Medium

There are many ways people use light to see in the world. The easiest way is using natural light from the sun. Having windows and open blinds will always provide lighting for people (during the day time of course). As for when the sun goes down, people can use candles or fire to light up an area. None of these, however, truly compare to the power of light bulbs and so there is a lack of practical substitutes.

Power of Buyers: Low/medium

The two key segments that must be served in this industry are businesses and homeowners. Both segments have a large demand, resulting in steady consumer purchases. While buyers have a few substitutes they could use, as stated before the substitutes are not too practical and so the demand for light bulbs will always be there.

Power of Suppliers: High

The suppliers of the raw materials in this industry have a decent amount of power. With this industry growing the way it is, the suppliers are constantly producing and constantly needed.

Partnership with Navy, and Targeting of New Markets

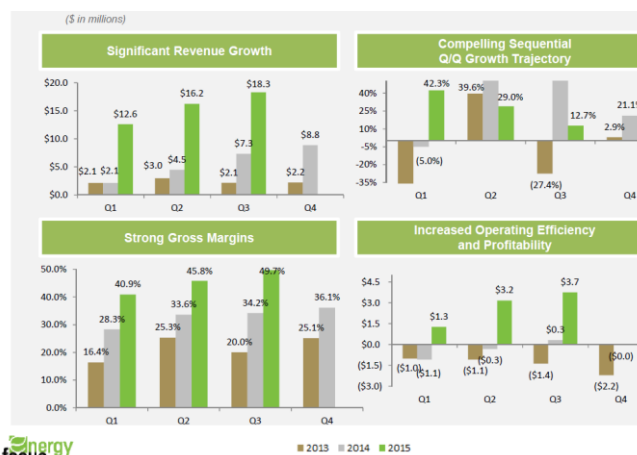
One of Energy Focus' top products is the Intellitube tubular LED (TLED). This patented product supports both "plug and play" and direct-fit operations, and is key in energy savings. Energy Focus is the only provider of TLED lamps to the U.S. Navy. The Intellitube TLEDs can save the Navy up to \$150 million per year in energy costs. Since 2002, the Navy has been under contract for approximately \$53 million with Energy Focus, and have never reported a failure

on the TLEDs. Energy Focus has penetrated 30% of the fleet potential, with 178 Navy ships using their products. As a result of the success the two have had working together, Energy Focus fully expects to keep this relationship going into the future, and looks to bring their products to the rest of the Navy ships. The company has also begun to enter the Military Sealift Command and Allied Foreign Navies markets this year. At the end of June this year, Energy Focus shipped a \$500,000 order of Intellitube LED tubes to the Royal Australian Navy. This sale marked the beginning of the company's strategic expansion plan into the foreign navies market. Energy Focus estimates that among the U.S. Navy, Military Sealift Command and Allied Foreign Navies markets there is a total addressable market of \$550 million.

As Energy Focus continues to expand themselves through these markets, the company has future plans to infiltrate several commercial and industrial markets that have great financial potential. First is the healthcare market, which possesses 3.7 billion square feet in over 151,000 hospital buildings. Energy Focus estimates this as a potential \$2.2 billion dollar market. This year, Energy Focus entered into a multi-million dollar contract with one of the largest healthcare institutions in the country in the state of Ohio. Next is the education market, which possesses 11.6 billion square feet in over 454,000 school buildings. The company estimates this as a potential \$4.6 billion dollar market. This year, Energy Focus announced a partnership with U.S. Green Building Council, which brought opportunities for over 3,000 K-12 schools for lighting retrofits. Third is the industrial and manufacturing market, which possesses 9.8 billion square feet of industrial floor space in 455,000 industrial buildings. The company estimates this as a potential \$5.9 billion dollar industry. Last is the retail floor space market, which possesses 13.2 billion square feet of retail floor space in 772,000 retail buildings. The company estimates this to be a \$7.9 billion dollar industry. If Energy Focus can capitalize on these opportunistic markets as they plan too, and as they have proven they can with the Navy market, the company's future will be brighter than their LED lights.

Financials

The latest quarter for Energy Focus broke many records for the company. The company posted record quarterly net sales of \$18.3 million, which represented a year over year growth of 151%. The company also posted a record quarterly gross margin of 49.8%, a record quarterly operating income of \$3.7 million, and a record quarterly net income of \$4.3 million.



Energy Focus' current ROIC/WACC ratio is 8.40. This extremely high value demonstrates that the company is creating value. Another notable aspect of Energy Focus is their negative net debt, which is currently (\$9,600,000). With more cash on hand than debt, this should look promising to investors.

Conclusion

I am recommending a buy on Energy Focus, Inc. because they are making all of the moves necessary to succeed in a booming industry. LED lights are the future, and Energy Focus will continue to penetrate various markets as a result of their competitive advantages. Coming off of a record performance quarter, the company should keep this momentum going and continue to create value, thus increasing the price of their stock for shareholders.

5

The Ensign Group, Inc.

NasdaqGS:ENSG

Analyst: Coralie Cornern

Sector: Healthcare

BUY

Price Target: \$54.26

Key Statistics as of 11/13/2015

Market Price:	\$46.46
Industry:	Long-Term Care Facilities
Market Cap:	\$52.60 M
52-Week Range:	\$28.24-\$54.08
Beta:	0.78

Thesis Points:

- Macro data forecast to increase demand for Long Term Care Facilities
- Continuous organic and inorganic growth
- Leading operator in each of the local community it is serving

Company Description:

The Ensign Group Inc., through its subsidiaries, provides skilled nursing and rehabilitative care services in the United States that provide a range of medical, nursing, rehabilitative, and pharmacy services, as well as routine services comprising daily dietary, social, and recreational services to Medicaid, private pay, managed care, and Medicare payers; and assisted and independent living facilities offer residential accommodations, activities, meals, security, housekeeping, and assistance in the activities of daily living to seniors who are independent or who require some support. The company's home health care services include nursing, speech, occupational and physical therapists, medical social workers, and certified home health aide services; and hospice care services, such as physical, spiritual, and psychosocial needs, including palliative and clinical care, education, and counseling for terminally ill individuals and their families. Its urgent care centers provide daily access to healthcare for minor injuries and illnesses, including X-ray and lab services; and mobile diagnostic services, including digital X-ray, ultrasound, electrocardiograms, ankle-brachial index, and phlebotomy services to people in their homes or at long-term care facilities. As of November 2, 2015, the company had 182 healthcare facilities, 14 hospice agencies, 15 home health agencies, 3 home care businesses, and 17 urgent care clinics all in the United States. The company was founded in 1999 and is based in Mission Viejo, California and went public in 2007.



Thesis

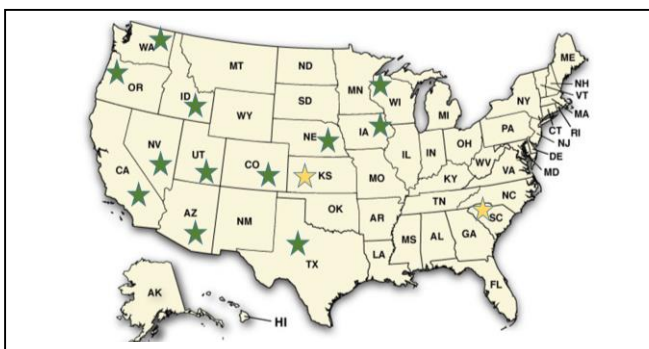
The Ensign Group Inc., has been showing continuous growth since it went public in 2007. The company is actively acquiring operating subsidiaries each quarters. The business is showing that it is creating shareholders value by raising its dividends continuously since its IPO, with a dividend growth rate of 8.45%. Operating subsidiaries are proven to be leaders in each of the area in which they are present. Executive management is committed to empower its local leaders and workforce by providing training but also by incentivizing them with bonuses. The Ensign Group's workforce is a catalyst for organic growth. The growing elderly population characterized by the aging of the baby boomers will support the Ensign Group revenue growth in the future.

The latest ROIC/WACC ratio was 1.81x which again shows that Ensign is creating value.

A buy of The Ensign Group, Inc. is therefore recommended with a one-year target price of \$54.26. Currently trading at \$46.46, it has an upside potential of 17.46%.

Product Portfolio/ mix

Ensign provides transitional, skilled and assisted living services as well as home health and hospice service. Those segment include skilled nursing and rehabilitative care services through the operation of 136 facilities, twelve home health and eleven hospice operations, one home care business, one transitional care management company, fourteen urgent care centers and a mobile x-ray and diagnostic company. Ensign operates in the United States only, as per shown in the below exhibit. The stars show the states where Ensign currently have operating subsidiaries.



The company announced during the first week of November 2015 that they were going into two new States: South Carolina and Kansas. It is important to note that the Ensign group is a company with no direct operating assets, employees or revenues. The Ensign group has wholly owned subsidiaries, which are operated by separate, independent entities, each of which has its own management. Ensign's portfolio includes 231 independent healthcare operations across 14 states. About 90% of the Ensign Group's facilities are leased, with an additional 2% of leases with a buy option. The remaining 8% of the facilities are owned by the group.

Growth initiatives and Strategy

The Ensign group's strategy is to rely heavily on local management. Executive management believes that local leaders, operating in each states are the only one able to put their facilities first in customer's mind and make it the best choice for patients. Each of the operating subsidiary of the firm has very skilled, dedicated and experienced employees. Christopher Christensen, co-founder and CEO of the group highlighted several times in the latest earnings call the importance of the leadership teams and their commitment to clinical excellence to pursue organic growth. The company capacity to empower and retain business and clinical leaders and to allow them the freedom to take decisions is key to their success in the healthcare facilities industry. Employees have incentive programs that are unique in the industry. Operational leaders and key employees get performance bonuses and stock options based on target clinical quality achievement and financial benchmark. Furthermore, the group set up the Ensign University aiming at continually training its staff. Training opportunities are offered on a monthly basis and include updates on Medicaid and Medicare billing requirements, leadership development, but also trainings purely for the clinical staff to increase their knowledge and expertise. The Ensign group corporate culture focuses on community. Each local leader needs to make sure that patients and their family members will receive individualized attention. This all contributes to the superior quality of the care provided to patients and resident and therefore to the reputation of the group. Within each community that the Ensign group serves, it achieved to build a certain brand awareness of high

quality and cost effective care facilities. All these strengths combined allow each operating subsidiary to be the operation of choice in its area but also to attract patients who require more intensive and complex care resulting in higher reimbursement than lower acuity patients.

The Ensign group build its competitive strengths around its strategy of continually acquiring, and improving existing facilities. As of December 2014, through long term leases and purchases the group acquired 136 facilities. The latest update concerning acquisitions stated that as of November 4, the group had 64 operations in its recently acquired group. In the third quarter of 2015 only, the group acquired 11 skilled nursing operations, 20 assisted living operations, one home health business and one hospice agency. The recent acquisitions made Ensign's subsidiary in Arizona one of the largest providers of post-acute healthcare service in the state.

The firm still has \$93 Million of availability on its \$150 million revolving line of credit and is planning on additional acquisitions in 2016. The CEO highlighted a week ago that the Ensign group was committed to keep its cash flow strong and their debt relatively low in the future. The constant inorganic growth of the Ensign group is closely linked to the organic growth as management is committed to a disciplined approach to growth that permits the group to acquire an operation only when they believed that they will have qualified leadership for that operation. Despite the high volume of acquisition, the company executive vice president Chad Keetch stated that he and the executive management were "picky buyers" remaining true to their "locally driven approach".

Porter's Five Forces

The bargaining power of suppliers can be classified as relatively low. The raw material used by the Ensign Group would be essential products such as needles or sterile gauze compresses. It is in this case very easy to switch suppliers.

The bargaining power of customers is medium low. Customer have quite a large choice when selecting a long term care provider or assisting living services. Still the bargaining power of customer is still rather low as patients are not really sensitive to prices. The services offered by the Ensign Group's subsidiaries are mostly

supported by Medicaid and Medicare. The demand for acute care or skilled nursing is inelastic. Moreover, there are a large number of customers that will be growing in the following years due to the aging population.

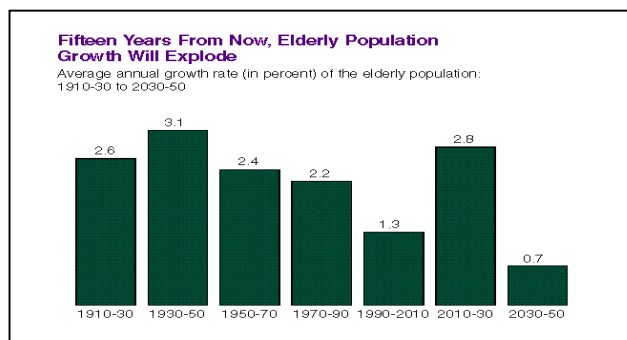
The intensity of existing rivalry is high. The industry is characterized by a large number of local and regional healthcare providers. The Ensign group is also competing with inpatient rehabilitation facilities and long term acute care hospitals. But the long-term care industry and especially the skilled nursing segment is large and will grow in the future which allows multiple firms to prosper.

The threat of substitutes is low as customers cannot easily find other products that would meet their need. People who need to enter assisted living facilities or who need assistance have no other solution.

The threat of new competitors is low. The barriers to entry are high. First, a new entrant in the long-term care facilities industry would need an intense capital to acquire facilities and develop the business. Moreover, many American states require healthcare providers to obtain certificate of need before being able to create or acquire facilities. In addition to this, competitors would need to get Medicaid certification. In addition, there is already a large number of long-term care facilities in the US, existing competitors are already flooding the market. The Ensign Group's subsidiaries are leaders where they are implemented and it would be hard for other healthcare provider to compete.

Macro Environment

According to the US Census Bureau, one in five Americans could be elderly (65 years old or over). Most of this growth is occurring now as the baby boom generation is aging. The below graph shows that the number of elderly will grow by an average of 2.8% annually.



Additionally, and luckily for Ensign, California has the largest number of elderly and other states such as Nebraska, or Idaho where the company is currently operating have 14% or more elderly population. Furthermore, according to alz.com, the number of people age 65 and older with Alzheimer's disease is estimated to reach 7.1 million by 2025 and might again double by 2050. This should benefit Ensign as the primary market demographic for skilled nursing services is people age 75 or older, two third of them with Alzheimer's disease.

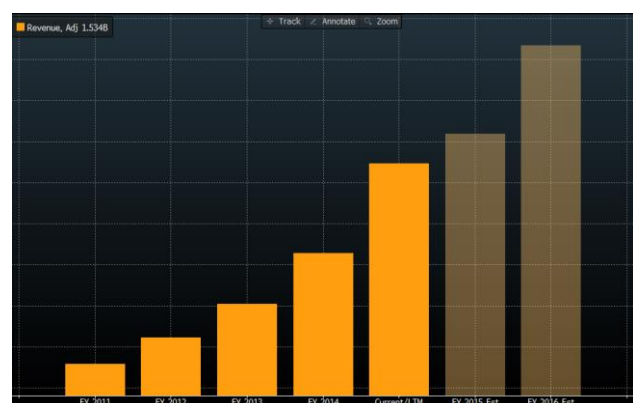
This predicted growth of the elderly population will probably raise faster than the government funds available for healthcare programs. The Federal and state governments will therefore be likely to encourage more cost effective solutions for those in need of assistance. Patients will therefore naturally chose skilled nursing facilities rather than acute care hospitals, inpatient rehabilitation facilities and other post-acute care settings as it is a significantly cheaper option. Moreover, Medicare currently covers all skilled nursing care provided in a skilled nursing facility. These macro data and the potential healthcare coverage improvement in the US will lead Ensign to raise its facilities' occupancy rates from 79% at the end of 2014 to potentially 100% in a near future. Ensign will also be able to eventually grow its revenue as the mix of high acuity (or medically more complex) patients will increase generating higher reimbursement rates.

Financials

FY 2014

2014 was one of the most important year for the group so far as it was one of the most active acquisitions year and as the group completed a significant spin off of Care Trust REIT. In June, the real estate business was separated into an independent publicly traded company through the distribution of the outstanding shares of CareTrust to Ensign Stockholder on a pro rata basis. The major impact of the Spin-off is in the fact that former properties own by the group are now leased by CareTrust to Ensign. Ensign leased back property associated with 94 affiliated skilled nursing facilities on a triple net basis. The separation resulted in "two very healthy platforms for growth" as mentioned by Mr. Christensen.

The Ensign Group has been growing constantly since its debut with revenue reaching \$1.03 Billion in 2014, a 13.2% increase year on year. The below graph shows the group historic revenue growth and forecast for the end of the year and next year.

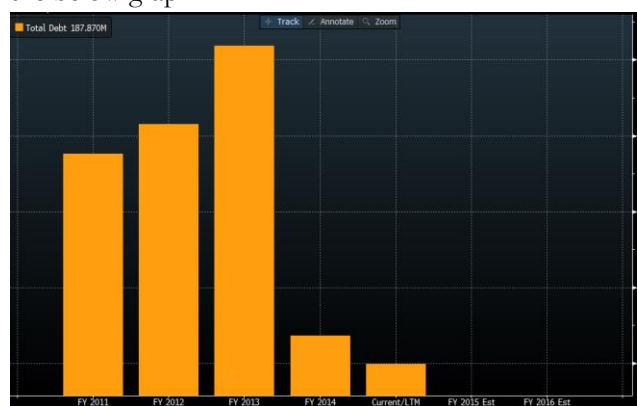


LTM revenues already are at \$1.25 billion. The main catalysts for the revenue growth are both acquisition and strong employee performance throughout the year.

In the same period, Ensign group managed to increase its Net income by 30% even with the 59% jump in Selling General and Administrative due to costs related to the Spin off. This has been made possible thanks to the \$9 million that Ensign received from CareTrust. The overall increase in operating cost by 48% year on year led to a slightly decreasing EBITDA margin in 2014 from 10.16% to 9.67%.

The company free cash flow in 2014 was \$31.2 million, which highlights the group's ability to generate profits. Their free cash flow added to the \$93 million available in their line of credit shows the ability of the company to create value for shareholder, and more particularly to continue its acquisition activities and dividend payments. Suzanne Snapper, Ensign Group's CFO declared that she will remain "committed to keeping our cash flow strong".

The LTM Debt to Equity ratio is about 42%. The total LTM debt for Ensign is \$49.5 million. Looking in the future, the company wants the debt to remain relatively low. The group managed to decrease the amount of debt since 2011 quite significantly as per the below graph.



Debt was high in 2013 due Ensign's decision to extend the maturity date on its \$75 million term loan.

This shows how healthy the balance sheet is, as the company managed to decrease their total debt while pursuing its strategy of inorganic growth.

The NOPLAT margin is forecasted to attain 5.4% at the end of the year, but it likely to slightly decrease to 5.3% in 2016 due to an increase in depreciation that goes with acquisitions. The Net margin of 5.11% is above peer, sub industry and industry average 2 to 3 percentage points.

as the industry is pretty stable. The intrinsic value of the firm is quite sensitive to the risk premium. A 2% premium has been added to the United States' risk premium of 5.5%. The risk in the Health care facilities' industry is linked to political pressure and potential health care reform. There is also a high risk of medical malpractice in the industry that can lead to costly lawsuits.

The revenue growth rates for FY 2015 and FY 2016 are analysts' median estimates of 6.3% and 18.1% respectively. In the following years revenue growth has been set to decline year-over-year to reach a revenue growth for the long-term of 3% which is assuming revenue growth to follow long-term GDP growth.

The following financial metrics are used to attain a valuation of the company converging to sub-industry averages through the continuing period. A conservative approach has been utilized in valuing the Ensign Group. The LTM operating cost to Revenue ratio is 91%, and it is unlikely that by following its acquisition activity the company will manage to decrease operating costs. Therefore, the assumption of stable operating costs of 91% in the long term has been used. The rent to revenue ratio of 3.9% has also been set to stay the same in the continuing period.

According to the proforma, Ensign is currently creating value as per their latest ROIC/WACC ratio of 1.81.

Furthermore, Ensign group's P/E ratio has decreased over year and is now 32.5% lower than the sub industry average, which implies the undervaluation of the stock. Additionally, Ensign's CFO announced during the last earnings call on November 4th a share repurchase program. Details were not given concerning the amount of shares to be bought back but Suzanne Snapper stated that the group's "strong balance sheet, cash flow and existing credit facility provides the flexibility to repurchase Ensign shares while continuing to acquire well performing and struggling operations."

All assumptions utilized in the valuation are very conservative. Nevertheless, an upside potential of 17.46% with a one year target of \$54.26 are expected.

Valuation

The valuation of The Ensign Group is based on a proforma that values the company with a discounted cash flow model and focus on the company's return on Equity. A summary of the outputs of the valuation is attached to this report and can be found on the last page. When valuing the Ensign Group, a slow decay growth rate has been utilized to determine the speed of reversion toward long term stability. A constant Debt-to-Equity ratio has been chosen for future assumption

Summary

Management is very confident in the firm's ability to further grow organically and inorganically and is committed to value creation. Ensign's strategy of excellence makes it a leader in each of the community it is serving. It proves to be a good investment opportunity since the company has a healthy balance sheet and capital available in order to pursue its strategy. Lastly, the announcement of a share repurchase program confirms the current undervaluation of the stock.

Sources:

- Ensign Group , 10-K
- Capital IQ
- Bloomberg
- www.census.gov
- www.medicare.gov

www.alz.org

CENTER FOR GLOBAL FINANCIAL STUDIES

The Ensign Group, Inc.	ENSG	Analyst Coralie Cornern	Current Price \$46.46	Intrinsic Value \$52.56	Target Value \$54.26	Dividend Yield 1%	1-y Return: 17.46%	NEUTRAL	
General Info		Peers	Market Cap.	Management					
Sector	Healthcare	Amedisys Inc.	\$1,348.31	Professional	Title	Comp. FY2012	Comp. FY2013	Comp. FY2014	
Industry	Healthcare Providers and Services	IPC Healthcare, Inc.	\$1,396.76	Christensen, Roy	Co-Founder and Chairman	\$101,236	\$101,236	\$102,472	
Last Guidance	November 4, 2015	HEALTHSOUTH Corp.	\$3,065.00	Christensen, Christopher	Co-Founder, Chief Executive Officer, President	\$1,417,939	\$897,602	\$3,627,811	
Next earnings date	February 9, 2016	Kindred Healthcare Inc.	\$996.35	Snapper, Suzanne	Chief Financial Officer	\$910,569	\$747,243	\$3,067,982	
Market Data		AmSurg Corp.	\$3,920.20	Wittekind, Beverly	General Counsel and Vice President	\$486,024	\$533,829	\$747,443	
Enterprise value	\$1,215.68	National Healthcare Corp.	\$969.34	Keerthi, Chad	Executive Vice President and Secretary	\$0	\$0	\$2,075,111	
Market Capitalization	\$1,191.83	Acadia Healthcare Company, Inc.	\$4,851.87	Port, Barry	Chief Operating Officer of Ensign Services, Inc.	\$1,326,303	\$1,920,808	\$2,231,012	
Daily volume	0.20	Current Capital Structure		Past Earning Surprises					
Shares outstanding	25.65	Brookdale Senior Living Inc.	\$4,236.51	Revenue		EBITDA	Norm. EPS	Standard Error of "Surprise"	
Diluted shares outstanding	25.29	Diversicare Healthcare Services Inc.	\$56.77	Last Quarter	5.52%	-0.84%	0.00%	2.00%	
% shares held by institutions	82.75%			Last Quarter-1	-1.84%	2.82%	5.26%	2.08%	
% shares held by insiders	6.34%	Total debt/Common Equity (LTM)	0.42	Last Quarter -2	4.49%	12.42%	8.47%	2.29%	
Short interest	3.61%	Cost of Borrowing (LTM)	6.88%	Last Quarter -3	2.15%	6.02%	0.00%	1.76%	
Days to cover short interest	5.60	Estimated Cost of new Borrowing	5.22%	Last Quarter -4	1.93%	-10.38%	-6.38%	3.63%	
52 week high	\$54.08	Altman's Z	5.19	Standard error	1.3%	3.8%	2.5%	1.47%	
52-week low	\$38.25	Estimated Debt Rating	BBB	Standard Error of Revenues prediction	1.3%	Industry Outlook (Porter's Five Forces)			
5y Beta	0.78	Current levered Beta	0.63	Imputed Standard Error of Op. Cost prediction	3.6%	Bargaining Power of Suppliers (100th Percentile), Bargaining Power of Customers (43th Percentile), Intensity of Existing Rivalry (33th Percentile), Threat of Substitutes (100th Percentile), Threat of New Competition (67th Percentile), and Overall (85th Percentile).			
6-month volatility	33.60%	LTM WACC	6.36%	Imputed Standard Error of Non Op. Cost prediction	NM				
Proforma Assumptions									
Convergence Assumptions			General Assumptions		Items' Forecast Assumptions			Other Assumptions	
All base year ratios linearly converge towards the Sub-industry ratios over an explicit period of 10 years	Money market rate (as of today)	0.39%		Base year (LTM)	Convergence period (Sub-industry)	Adjustment per year	Tobin's Q	80%	
	Risk-Free rate (long term estimate)	3.09%	Operating Cash/Rev.	0.00%	0.00%	0.0%	Excess cash reinvestment	Money market rate	
	Annual increase (decrease) in interest rates	0.1%	NWV/Rev.	5.16%	8.58%	0.3%	Other claims on the firm's assets	\$0.00	
	Marginal Tax Rate	37.5%	NPPE/Rev.	20.65%	34.29%	1.4%	Capitalization		
	Country Risk Premium	7.5%	Dpr/NPPE	8.58%	14.43%	0.6%	100% of all rent expenses are capitalized and amortized 'straightline' over 10 years		
Forecast Year	Revenue Growth Forecast	Revenue (\$)	Forecast	NET MARGIN	Op. Exp./Rev.	91.08%	3.81%	1.4%	
LTM		\$1,245.54		SBC/Rev.	0.51%	0.54%	0.0%	100% of all R&D expenses are capitalized and amortized 'straightline' over 10 years	
FY2015	6.3%	\$1,323.67		Rent Exp./Rev.	3.93%	3.93%	0.0%	100% of all E&P expenses are capitalized and amortized 'straightline' over 10 years	
FY2016	18.1%	\$1,563.91		R&D/Rev.	0.00%	0.39%	0.0%	SG&A expenses are not capitalized	
FY2017	4.0%	\$1,625.97		E&D/Rev.	0.00%	0.00%	0%	Valuation Focus	
FY2018	3.8%	\$1,688.52		SG&A/Rev.	5.48%	11.03%	0.6%	DCF Valuation	
FY2019	3.7%	\$1,751.43		ROE	31%	24.84%	-0.63%	Relative valuation	
FY2020	3.6%	\$1,814.57		P/E	17.11x	15.69x	-0.14x	Distress Valuation	
FY2021	3.5%	\$1,877.79		P/BV	3.54x	3.90x	0.04x	0%	
FY2022	3.4%	\$1,940.94		Debt/Equity	42%	42%	0.0%	0%	
FY2023	3.2%	\$2,003.87		Unlevered beta	0.50	0.50	0.00	Monte Carlo Simulation Assumptions	
FY2024	3.1%	\$2,066.41		Dividends/REV	1%	1%	0.0%	Revenue Growth deviation	
Continuing Period	3.0%	\$2,128.40						Operating expense deviation	
								Continuing Period growth	Normal (0%, 1%)
									Normal (0%, 1%)
									Triangular (7.275%, 7.5%, 7.725%)
									Triangular (2.91%, 3%, 3.09%)
									\$0.24
									\$0.25
Valuation									
Forecast Year	ROE	Ke	Common Equity	Implied Equity Value	Other Claims on Assets and Dilution Costs	Shares Outstanding	Price per Share	Monte Carlo Simulation Results	
LTM	31.1%	7.8%	\$307.95	\$1,635.39	\$7.91	25.65	\$52.37	The 3σ(e)-adjusted intrinsic value is \$52.56; the 3σ(e)-adjusted target price is \$54.26; and the analysts' median target price is \$56.8	
FY2015	36.9%	7.9%	\$327.02	\$1,669.85	\$8.46	25.65	\$53.94		
FY2016	22.6%	8.0%	\$384.01	\$1,786.22	\$10.05	25.65	\$56.55		
FY2017	19.1%	8.1%	\$439.30	\$1,912.84	\$10.52	25.65	\$59.42		
FY2018	16.6%	8.1%	\$493.39	\$2,048.98	\$10.99	25.65	\$62.49		
FY2019	14.7%	8.1%	\$546.07	\$2,195.92	\$11.47	25.65	\$65.80		
FY2020	13.1%	8.2%	\$597.02	\$2,354.98	\$11.96	25.65	\$69.38		
FY2021	11.7%	8.2%	\$645.52	\$2,527.55	\$12.45	25.65	\$73.27		
FY2022	10.5%	8.3%	\$690.88	\$2,715.39	\$12.95	25.65	\$77.52		
FY2023	9.3%	8.4%	\$732.40	\$2,920.37	\$0.00	25.65	\$82.16		
FY2024	8.3%	8.5%	\$769.24	\$3,144.57	\$0.00	25.65	\$87.31		
Continuing Period	24.8%	8.6%	\$786.91					Sensitivity Analysis	
								Revenue growth variations account for 95.9% of total variance	
								Risk premium's variations account for 2.5% of total variance	
								Operating expenses' variations account for 1.4% of total variance	
								Continuing period growth variations account for 0.2% of total variance	

U.S. Ecology, Inc.

NasdaqGS:ECOL

Analyst: Daniel Bacchi

Sector: Industrials

BUY

Price Target: \$44.73

Key Statistics as of 11/12/2015

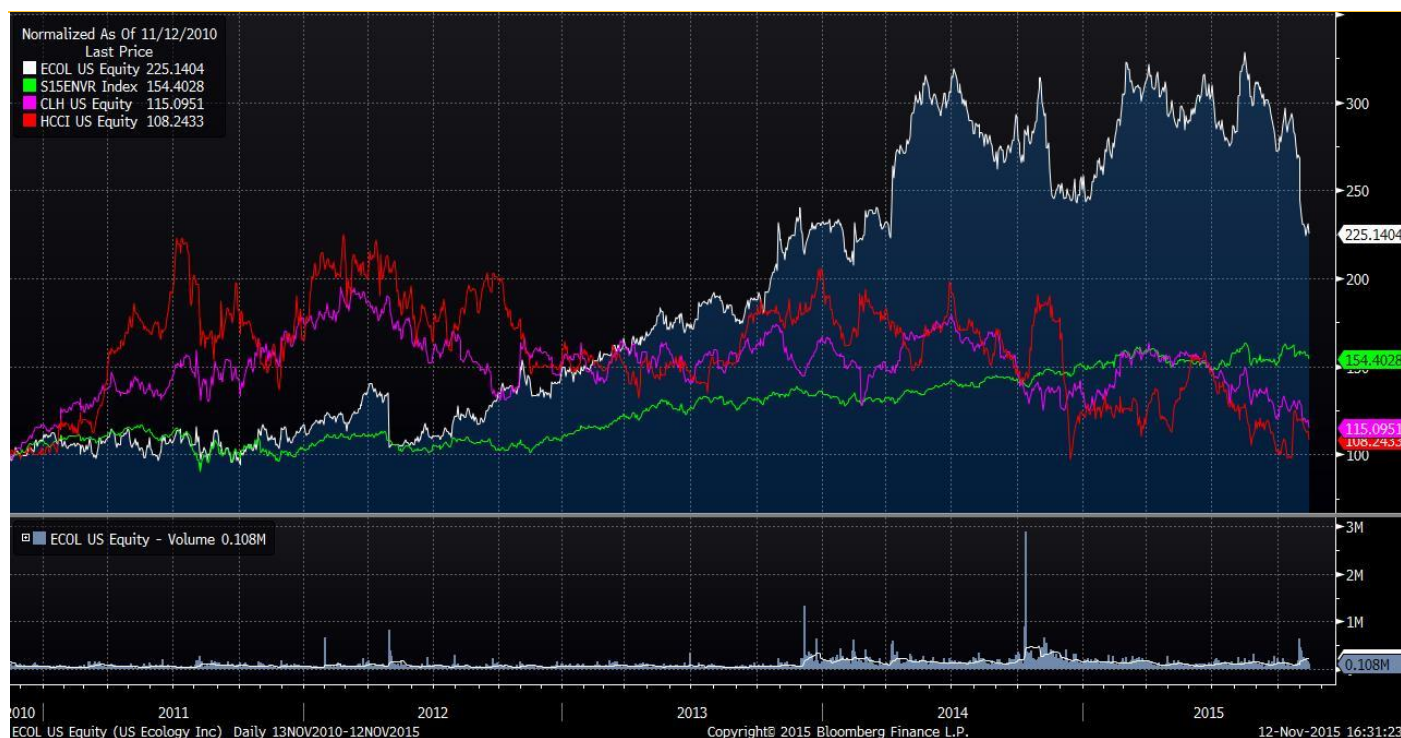
Market Price:	\$36.09
Industry:	Environmental & Facilities Services
Market Cap:	\$ 784.4M
52-Week Range:	\$32.76 – 52.99
Beta:	0.52

Thesis Points:

- Acquisition of EQ Holdings in 2014 allows for greater expansion in service and geographic location
- Shedding low margin businesses to create higher margins and create value
- Diversified customer base throughout the United States in a highly regulated and required industry

Company Description:

US Ecology, Inc. is a leading North American provider of environmental services to commercial and government entities. The Company addresses the complex waste management needs of its customers, offering treatment, disposal and recycling of hazardous, non-hazardous and radioactive waste, as well as a wide range of complementary field and industrial services. US Ecology's comprehensive knowledge of the waste business, its collection of waste management facilities combined and focus on safety, environmental compliance, and customer service enables us to effectively meet the needs of our customers and to build long-lasting relationships. Headquartered in Boise, Idaho, we are one of the oldest providers of such services in North America. US Ecology and its predecessor companies have been in business for more than 60 years. As of December 31, 2014, we employed approximately 1,800 people. (Form 10-K, December 31, 2014)



Thesis

U.S. Ecology, Inc. (ECOL) looks to “create the premier North American provider of environmental services,” and the recent acquisition illustrates management’s commitment to attaining the long term goal. In order to create value on their journey to the top, they are looking to streamline their operations by shedding non-core businesses. Already they have begun to show that are pushing for more geographic diversification within the United States with locations scattered on the map. Operating within a highly regulated industry provides revenue that generates a level of certainty of continued operations without much volatility; it is therefore a recommended buy; focusing on long term growth over the possibility of short term gains.

Industry Outlook

U.S Ecology, Inc. operates in the Environmental & Facilities Services Industry, their key market segments include: Aerospace and Defense, Industrial Manufacturing, Steel and Aluminum, Precious Metals, Oil Exploration & Production, Utilities, Consumer Products, Technology and Government.

Exhibit 1

Hazardous Waste is Generated by Diverse End Markets

Industry	Example Waste Streams
Aerospace / Defense	Paint Sludge / Radium
Industrial Manufacturing	Acids & Caustics, Heavy Metals
Steel & Aluminum	Emission Control, Dust, Spent Pot Liners
Precious Metals	Mercury, Crucible Waste, Unused Chemicals
Oil Exploration & Production	Spent Catalysts, Refinery Tank Bottoms, Drill Cuttings
Utilities	PCBs, Decommissioned Transformer Waste
Consumer Products	Unused Household Chemicals, Sludge from Battery Production, Heavy Metals from Pigments
Technology	Etching Solutions for Semiconductors
Government	PCBs, Radioactive

All of these markets provide a different source of revenue for U.S. Ecology, Inc. The diversification of revenue streams has reduced U.S. Ecology, Inc.’s risk regarding volatile revenue growth. Therefore it is reasonable to tie the future of U.S. Ecology, Inc.’s growth to the overall outlook of the industrials sector into 2016 and the future. The performance of the Industrials sector in the U.S. has been a catalyst for overall economic growth. Looking at the growth from 2010 to now for the S&P 500 Industrials Index is an

indication of the momentum that the sector has generated. Barring the dip caused by the Chinese stock market crash in August of 2015, the overall growth of the index has demonstrated the ability of Industrials to be the headwind for an economic recovery. The consensus on the momentum for the sector as a whole is positive with an average buy/sell ratio rating ratio of 1.4 to 1 for the industries within the sector. An indication that more companies, 294, have received a buy recommendation, compared to 213 companies receiving a sell recommendation. Demonstrating the market’s opinion that the sector, overall, is seeing positive momentum and in the long run we should see continued growth. An important contributor to the outlook for U.S. Ecology, Inc.

Exhibit 2



Porter’s Five Forces

There is an interesting relationship in the supply chain for the Environmental & Facilities Services industry. The suppliers are also customers, as they sell their waste and companies like U.S. Ecology, Inc. sells the recycled portions to other companies.

The bargaining power of suppliers is low, suppliers for this industry actually pay these businesses for removing waste. They may have a choice to switch service providers but there is a cost for switching from U.S. Ecology, Inc. as they provide a range of services that many companies require, the ability to use one service provider for a range of necessary services has a cost benefit compared to using multiple providers for multiple services. The suppliers that provide the industry with the equipment used do not have much bargaining power either, as volume is not critical and there is a large supply base for the majority of the equipment used.

The bargaining power of customers is low, the service that Environmental & Facilities Services businesses provide are within established guidelines and customers are required to conduct the disposal of waste in

accordance with regulations. Compared to other industries there are not a plethora of companies providing the services that U.S. Ecology has managed to. Most companies are only offering a portion of the services, therefore, the initiative to switch providers from U.S. Ecology would require selecting a number of providers. The products sold by environmental businesses are generally additional revenue and generally speaking there are a number of businesses looking to purchase recycled materials, indicating low power on that end of chain.

The intensity of existing rivalry is medium high, competitors battle for increased market share but loyalty is the reason why companies may not change their service provider. Bottom line the most important differentiation employed by an environmental service business is brand recognition. U.S. Ecology has realized this and brand recognition is among the reasons why they acquired The Environmental Quality Company (EQ) in early 2014.

The threat of substitutes is low, at this point in time no substitution is available for environmental services. The main threat is a reduction in waste that could cause a massive reduction in revenue for the entire industry.

The threat of new competition is low, the capital required to start an environmental service business is intense. Stiff regulations from the federal government, requiring operations that comply with established guidelines limit the ability for entrants to undertake a stake in environmental services.

Strategy and Initiatives

U.S. Ecology, Inc. employs a strategy that has multiple components that capitalizes on their “difficult-to-replicate combination of treatment and disposal assets and complementary service lines to provide a full service offering to customers and increase market share in the diverse markets they serve.” The components of their strategy that promise to enhance the overall strategy are:

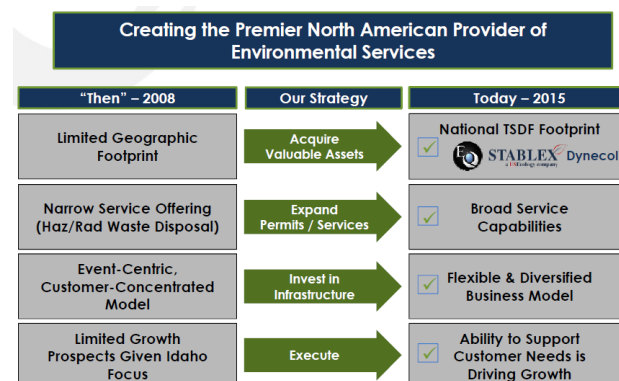
- Execute Best-in-Class Safety and Environmental Compliance Programs
- Leverage Regulatory Expertise to Expand Permit Capabilities and Broaden Cost-Effective Service Offerings
- Continue to Build on Our Robust Waste Handling Infrastructure to Increase Revenue from Existing Assets
- Execute on Marketing Initiatives to Grow Organically (from Form 10-K, December 31, 2014)

These components are the goals that drive U.S. Ecology to provide a customer service above and beyond competitors. They look to target waste streams that will provide high margins to create value. Expansion of current permits and other permits will allow U.S. Ecology to expand not only current markets but to other markets to increase revenue streams. Investing in infrastructure will result in lower operating costs due to increased efficiency from new technologies in waste management.

In addition to organic growth initiatives, U.S. Ecology, Inc. plans to grow inorganically, and the past has shown their commitment to this idea. They look to expand not only geographically but also into new segments of the Environmental & Facilities Services Industry. The acquisitions of competitors in segments that U.S. Ecology, Inc. operates in currently are to extend and complement the current operations, resulting in lower operating costs due to economies of scale.

Comparing the historical company to now has shown how effective the strategy has been and will be into the future.

Exhibit 3



Back in 2008, the company was a fraction of the current size, and operated in a limited scope as compared to today. In a little over 8 years they have become a leader for Environmental & Facilities Services in North America.

Exhibit 4



Exhibit 5

US Ecology 2013 Revenue by Service Type

Service Type	Percentage
Environmental Services	66%
Field & Industrial Services	34%

Legend: ■ = Services not offered by USE

US Ecology | Unequaled service. Solutions you can trust.

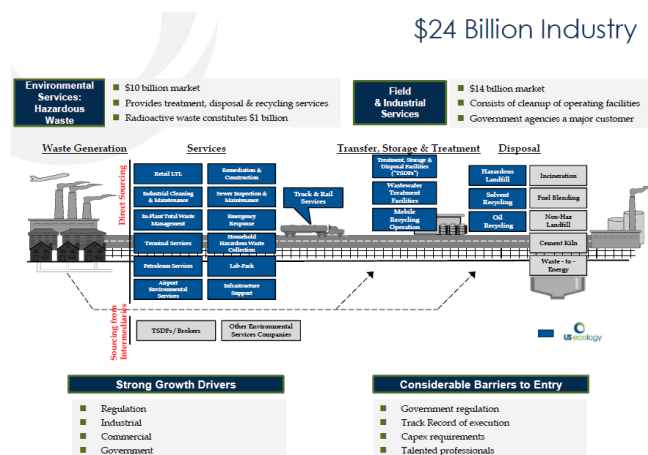
Due to the acquisition of EQ Holdings, Inc. in 2014 U.S. Ecology, Inc. increased their diversification into markets they previously had not occupied. Before EQ, U.S. Ecology, Inc. provided Environmental Services only. Providing only treatment, disposal and recycling of waste generated by corporations contributed to the high margins that, before 2014, U.S. Ecology has experienced. At this point in time they only served a niche market, collectively valued at \$10B, the growth of those markets was reliant on the growth of the industries contained in the market. The acquisition of EQ, Holdings, Inc. opened U.S. Ecology, Inc. to a new market, Field and Industrial Services, a \$14B market. Effectively doubling the rate at which they could grow. A bold move that on paper looks genius. The field and Industrial Services operations of U.S. Ecology, Inc. consists of:

- U.S. Ecology maintains a number of other operations related to the market, including refinery services, industrial cleaning and marine and terminal services.

In an effort to regain the margins that were seen in years prior, U.S. Ecology has decided to sell Allstate Power Vac. to a private investor. The business unit represented 11% of YTD revenue and 3% of YTD adjusted EBITDA (in September 2015). The divestiture of this unit reflects management's goal of shedding the units that are low margin and not contributing to the value creation of U.S. Ecology, Inc. as a whole.

The identification and sell off of businesses that do not and cannot produce high margins will be the catalyst to furthering value creation in the future.

Exhibit 6



Financials

The acquisition caused large changes within the finances of U.S. Ecology, Inc. Operating costs increased from 64.5% in 2013 to 77.5% in the LTM causing decreasing margins in the same period. The increase in operating costs were mainly attributable to the cost of revenue increase from 61% in 2013 to 70% in the LTM.

The acquisition of EQ Holdings, Inc. was a large endeavor for U.S. Ecology, Inc. as EQ was nearly twice as large as ECOL. It was necessary to finance the acquisition with debt causing the total debt balance to increase from zero in 2013 to \$397.79M in 2014. This dramatically increased the interest expense for the corporation but, based on the return that was generated from the acquisition, debt financing was a smart choice. The use of debt changed U.S. Ecology, Inc.'s capital structure, the WACC in 2013 was 8.35% and due to the lower cost of borrowing WACC in the LTM was 4.21%. The acquisition not only brought additional revenue but caused a decrease in WACC.

Acquisition of EQ Holdings, Inc.

The acquisition of EQ in 2014 was a bold move by U.S. Ecology, Inc. and as result they have received extra scrutiny from the market. On face value the acquisition was the wrong move, EQ Holding, Inc. was a lower margin Environmental & Facilities Services provider, resulting in dilution of earnings. The acquisition resulted in a massive increase to goodwill and intangibles. Operating margins decreased in the periods following the acquisition; in 2013 NOPLAT margin was at the firm's highest, 18%, after the acquisition the margin dropped to 14% in 2014 and in the LTM is at 12%. On the surface this situation has positioned U.S. Ecology for value destruction. There is no doubt that it hurt ECOL; Think of the acquisition as the big fish being eaten by a smaller fish, it will be a while before the smaller fish is ready to move on from the meal. In U.S. Ecology, Inc.'s case, time is necessary for the full integration to take place.

Other financial implications of the acquisition include:

- 189.4% growth in revenue from 2013 to the LTM
- Increase in cost of revenue from 61% in 2013 to 70% to the LTM
- Decrease in EBITDA from 36% to 23% from 2013 to the LTM

- Even through the acquisition, U.S. Ecology, Inc. managed to increase return on invested capital from 39% in 2013 to 49% in the LTM
- Reduced WACC from 8% in 2013 to 4% in the LTM

The face value of the acquisition looks like value destruction, but a deeper financial analysis paints a different picture: U.S. Ecology is still creating value, albeit at a decelerated rate, demonstrating the effectiveness of management; they identified a strategic acquisition that on the surface looked like value destruction, but instead has continued value creation. The historical financials of U.S. Ecology, Inc. shows they had the opportunity to take a decreased creation of value without destroying value. Management has seemed to hit the ball out of the park on this acquisition. As U.S. Ecology, Inc. sheds the segments that are low margin without any opportunity to increase they will build a lean high margin company with full diversification into the high margin segments of the overall industry. Recently U.S. Ecology divested Allstate Power Vac. business, a low margin service that didn't fit into the strategy and focus of U.S. Ecology, Inc. As the shedding continues we will begin to see margins rise back to the historical; returning to incomparable value creation in the industry. The success of the integration does not rely on the shedding of the low margin businesses but also on the integration of departments; economies of scale will have an impact on the overall contribution to increasing margins.

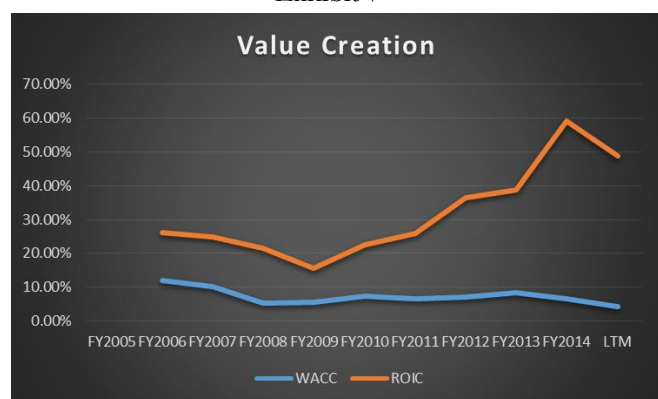
The timetable for the return to historical is muddy, it all depends on how fast management is able to determine the divestures and implement the overall integration of the different units. The stock is very close to the price that was seen in 2014 prior to the acquisition. If the integration process can produce a NOPLAT near 14% for the year end, the price at this time should be the bottom.

The Market is Undervaluing U.S. Ecology, Inc.

I believe the market has primarily looked at the decelerating value creation when valuing U.S. Ecology, Inc. and therefore has undervalued the equity of ECOL. Most of my assumption is based on quantitative data supported by qualitative data. Many analysts predict that revenue growth for the next two – three – years will be negative; based on the strategy to sell off units that do not produce favorable margins I believe the analysts are

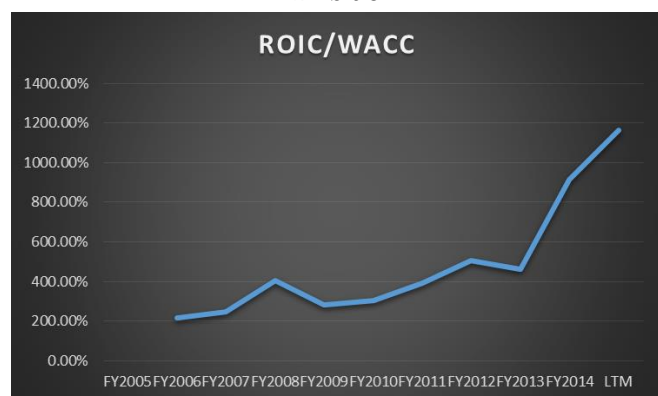
correct. But the sell offs will positively affect value creation. As the markets grow, U.S. Ecology, Inc. revenue will grow and as these less profitable unit are sold off, more value will be created. The brand recognition of EQ Holding, Inc. will allow for organic growth into the future and I don't believe the market recognizes the possible value that U.S. Ecology will generate. Before the acquisition they were creating value at a high rate, as shown in exhibit 7, after the acquisition a decrease in the level of value creation was seen, ROIC in FY 2014 was at a historical high when it reach 59%.

Exhibit 7



ROIC/WACC is still higher than most firms in the market and I think this demonstrates the ability of management to deliver on strategies and initiatives. The market doesn't see the potential that could be created from U.S. Ecology, Inc. and I believe that is why it is severely undervalued.

Exhibit 8



Valuation

The valuation of U.S. Ecology, Inc. is based on a valuation computed by a pro forma using a discounted cash flow model and a main focus on invested capital. At the end of the report is attached a brief overview of assumptions and results of the pro forma.

When valuing U.S. Ecology, Inc. an aggressive approach has been applied. Because of the acquisition a 10 year period to convergence was chosen. I took a rather aggressive approach taking into consideration a possibility for management to fully integrate EQ Holdings, Inc. and shed the non-core business units in 2 years.

Those two years will see negative revenue growth as business units with lower margins are sold off resulting in less revenue. Analysts' estimates on average see a revenue loss of -4.1% in FY2015 and a loss of -8.6% in FY2016. I rejected these estimates and estimated a loss of -4% in FY2015 and a loss of -2% in FY2016. The two years beyond that will experience no revenue growth. Starting in FY2019 revenue growth will be 1% a year until it reaches 3% in FY2021 and continues to the continuing period, these assumption were rather conservative in comparison to the first 2 years.

I assumed that all other forecast variables, such as operating costs, beta, capital structure, etc. will remain the same as the snapshot of the business today. Cash will not be reinvested into the business and will placed into an excess cash account where it will produce interest income.

The intrinsic value was computed as \$44.39 and the 1 year return will net \$44.73.

Summary

A qualitative and quantitative analysis has led me to believe that U.S. Ecology, Inc. is a cash cow. Value creation into the future is apparent, and the effectiveness of the management will play a large part in their ability to bring the business back to the historical. I recommend at BUY at the current price of \$36.54.

Sources:

- U.S. Ecology, Inc. , 10-K
- Capital IQ
- Bloomberg
- SEC
- www.usecology.com
- U.S. Ecology Investor Presentation

CENTER FOR GLOBAL FINANCIAL STUDIES

US Ecology, Inc.		ECOL	Analyst Daniel Bacchi	Current Price \$36.54	Intrinsic Value \$44.39	Target Value \$44.73	Divident Yield 2%	1-y Return: 24.36%	NEUTRAL	
General Info			Peers		Market Cap.		Management			
Sector	Industrials		Casella Waste Systems Inc.	\$249.08	Professional	Title	Comp. FY2012	Comp. FY2013	Comp. FY2014	
Industry	Commercial Services and Supplies		Clean Harbors, Inc.	\$2,457.86	Feeler, Jeffrey	Chief Executive Officer, President and Directo	\$520,996	\$1,350,902	\$787,092	
Last Guidance	October 29, 2015		Waste Management, Inc.	\$23,954.47	Gerratt, Eric	Chief Financial Officer, Executive Vice Preside	\$378,645	\$674,513	\$443,938	
Next earnings date	February 26, 2016		Waste Connections Inc.	\$6,754.77	Welling, Steven	Executive Vice President of Sales and Marketin	\$614,934	\$819,641	\$599,009	
Market Data			Covanta Holding Corporation	\$2,086.77	Bell, Simon	Executive Vice President of Operations - Env	\$495,615	\$784,372	\$458,688	
Enterprise value	\$1,137.23		Heritage-Crystal Clean, Inc	\$250.84	Romero, Mario	Executive Vice President of Operations, Field	\$0	\$0	\$298,784	
Market Capitalization	\$4,449.48		RepublicServices, Inc.	\$15,209.04	Ipsen, Wayne	Vice President, Compliance Officer, Corporat	\$0	\$0	\$0	
Daily volume	0.22				Past Earning Surprises					
Shares outstanding	21.73		Quest Resource Holding Corporation		\$88.30	Revenue	EBITDA	Norm. EPS	Standard Error of "Surprise"	
Diluted shares outstanding	21.71					Last Quarter	-3.32%	-11.18%	-16.67%	3.87%
% shares held by institutions	26.01%					Last Quarter-1	-4.97%	-4.87%	-18.37%	4.48%
% shares held by insiders	0.77%					Last Quarter-2	-0.98%	-11.96%	0.00%	3.83%
Short interest	3.95%					Last Quarter-3	5.27%	-1.20%	16.67%	5.22%
Days to cover short interest	5.83					Last Quarter-4	8.92%	19.04%	35.42%	7.72%
52 week high	\$52.99					Standard error	2.6%	5.6%	10.2%	3.74%
52-week low	\$32.76					Standard Error of Revenues prediction	2.6%	Industry Outlook (Porter's Five Forces)		
5y Beta	0.87					Imputed Standard Error of Op. Cost prediction	5.0%	Bargaining Power of Suppliers (100th Percentile), Bargaining Power of Customers (14th Percentile), Intensity of Existing Rivalry (33th Percentile), Threat of Substitutes (67th Percentile), Threat of New Competition (83th Percentile), and Overall (82th Percentile).		
6-month volatility	28.39%					Imputed Standard Error of Non Op. Cost prediction	8.5%			
Proforma Assumptions										
Convergence Assumptions		General Assumptions			Items' Forecast Assumptions				Other Assumptions	
All base year ratios linearly converge towards the Industry ratios over an explicit period of 10 years		Money market rate (as of today)	0.37%		Base year (LTM)		Convergence period (Industry)	Adjustment per year	Tobin's Q	80%
		Risk-Free rate (long term estimate)	2.93%	Operating Cash/Rev.	0.00%		0.00%	0.0%	Excess cash reinvestment	Money market rate
		Annual increase (decrease) in interest rates	0.1%	NWV/Rev.	18.41%		18.41%	0.0%	Other daims on the firm's assets	\$0.00
		Marginal Tax Rate	37.5%	NPPE/Rev.	35.12%		35.12%	0.0%	Capitalization	
		Country Risk Premium	6.0%	Dpr/NPPE	14.39%		14.39%	0.0%	100% of all rent expenses are capitalized and amortized 'straightline' over 10 years	
Forecast Year	Revenue Growth Forecast	Revenue (\$)	Forecast	Op. Exp./Rev.	77.48%		77.48%	0.0%	R&D expenses are not capitalized	
LTM			\$581.97	SBC/Rev.	0.36%		0.36%	0.0%	E&P expenses are not capitalized	
FY2015	-4.0%		\$558.69	Rent Exp./Rev.	0.67%		0.67%	0.0%	SG&A expenses are not capitalized	
FY2016	-2.0%		\$547.52	R&D/Rev.	0.00%		0.00%	0.0%	Valuation Focus	
FY2017	0.0%		\$547.52	E&D/Rev.	0.00%		0.00%	0.0%	DCF Valuation	100%
FY2018	0.0%		\$547.52	SG&A/Rev.	15.36%		15.36%	0.0%	Relative valuation	0%
FY2019	1.0%		\$552.99	ROIC	47%		47.18%	0.00%	Distress Valuation	0%
FY2020	2.0%		\$564.05	EV/Rev.	2.23x		1.75x	-0.05x	Monte Carlo Simulation Assumptions	
FY2021	3.0%		\$580.97	EV/EBITDA	10.83x		10.83x	-0.19x	Revenue Growth deviation	Normal (0%, 1%)
FY2022	3.0%		\$598.40	Debt/Equity	42%		40%	-0.2%	Operating expense deviation	Normal (0%, 1%)
FY2023	3.0%		\$616.36	Unlevered beta	0.26		0.72	0.05	Continuing Period growth	Triangular (5.82%, 6%, 6.18%)
FY2024	3.0%		\$634.85	Dividends/REV	3%		2%	-0.1%	Country risk premium	Triangular (2.91%, 2.96559686919401%, 3.09%)
Continuing Period	3.0%		\$653.67						Intrinsic value σ(e)	\$0.16
									1-year target price σ(e)	\$0.17
Valuation										
Forecast Year	ROIC	WACC	Invested Capital	Implied Enterprise Value	Net Claims on Assets and Dilution Costs	Shares Outstanding	Price per Share	Monte Carlo Simulation Results		
LTM	47.2%	4.2%	\$202.16	\$1,375.71	\$398.89	21.73	\$44.36	The 3σ(e)-adjusted intrinsic value is \$44.39; the 3σ(e)-adjusted target price is \$44.73; and the analysts' median target price is \$40.33		
FY2015	43.2%	5.0%	\$188.45	\$1,343.76	\$376.64	21.73	\$44.59			
FY2016	36.3%	5.4%	\$181.87	\$1,341.07	\$350.80	21.73	\$45.82			
FY2017	37.7%	5.7%	\$181.87	\$1,349.26	\$329.62	21.73	\$47.21			
FY2018	37.7%	6.0%	\$181.87	\$1,362.36	\$307.22	21.73	\$48.89	Sensitivity Analysis		
FY2019	38.0%	6.4%	\$185.09	\$1,383.36	\$286.74	21.73	\$50.80			
FY2020	38.0%	6.7%	\$191.61	\$1,412.30	\$267.94	21.73	\$52.94			
FY2021	37.7%	7.0%	\$201.57	\$1,449.38	\$250.50	21.73	\$55.30			
FY2022	36.8%	7.4%	\$211.84	\$1,492.17	\$226.42	21.73	\$58.10	Revenue growth variations account for 95.9% of total variance		
FY2023	36.0%	7.7%	\$222.41	\$1,541.31	\$206.29	21.73	\$61.13	Risk premium's variations account for 0.8% of total variance		
FY2024	35.3%	8.0%	\$233.30	\$1,597.54	\$184.40	21.73	\$64.53	Operating expenses' variations account for 2.7% of total variance		
Continuing Period	47.2%	8.0%	\$169.20					Continuing period growth variations account for 3% of total variance		