– EE & CJ RESEARCH –

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US RESIDENTIAL REIT

– Essex Property Trust, Inc.

A Bright Future

Our view of Essex Property Trust (ESS), Inc. is that the company's equity is currently **undervalued**. The market value of $**14.78bn** is currently **trading at a discount of 17.15%** to our **DCF** value of **$17.31bn.** We therefore **recommend a BUY.**

ESS is the **third largest** U.S. Residential REITs Company and has had great performance in recent years with the recovery of the whole industry. Moreover, its "**West Coast Investment Strategy**" brings great revenue growth.

- **Great payoffs from its core markets** support a predicted 6.82% long-term revenue growth rates**.** ESS is predominately located in Southern California (47%), Northern California (31%) and Seattle Metro (21%). Strong job market, high personal income and insufficient new house construction means that demands in these areas exceed supply.

- **Successful merger with BRE Properties, Inc.** brings in a good amount of revenue in the short-term period as the legacy of the merger. Since the completion of the merger with BRE on April 1, 2015, the total return of ESS stock is now over 37.1%. This trend offers strong confidence to investors on who are looking to invest in ESS. Being admitted to the S&P 500 index after the merger also rich the source of investments.

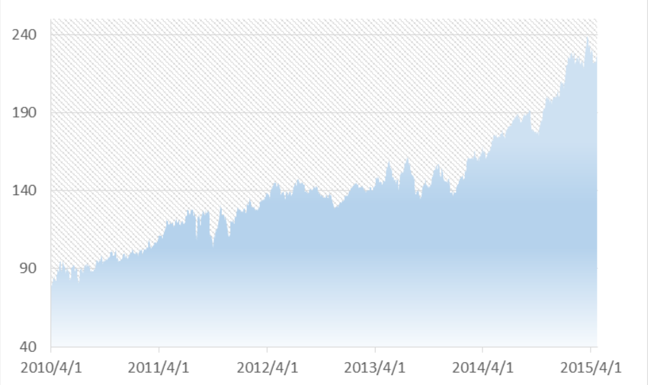
- **Risks are to be concerned.** The possibility of an increase in interest rate is a risk for the whole industry. For ESS specifically, highly geographic concentration of its market may result in less flexibility to changes in local environments.

Company Report

Sym.: ESS - NYSE
Industry: U.S. REIT

Rating: Strong BUY

Share price (Past 60 months)



Source: Yahoo Finance

Key Statistics:

Current Price:	$227.01
Market Cap.:	$14.78B
Div & Yield:	$5.76 (2.50%)
Beta:	0.80
Target Price:	265.94
Target Market Cap.:	$17.31B
Undervalued:	17.15%

Please see the disclaimer at back of this report for important information.

Company Profile[1]

Essex Property Trust, Inc. (hereafter **ESS** for short) is a self-administered and self-managed REIT that acquires, develops, redevelops and manages apartment communities in selected residential areas located primarily in the West Coast of the United States. ESS is **the third largest** U.S. REIT Residential Company**,** according to their market capitalization on April 24, 2015, and has since April 1, 2014 become a member of the **S&P 500 index**.

Company Positioning

ESS owns all of its interests in its real estate investments, directly or indirectly, through the Operating Partnership (ESSOP). ESS is the sole general partner of the Operating Partnership and, as of December 31, 2014, had an approximately 96.7% general partner interest in the Operating Partnership. As of December 31, 2014, it had ownership interests in 239 communities, comprising 57,455 apartment units, predominately (over 99%) located in the following major regions:

- **Southern California** (Los Angeles, Orange, Riverside, San Diego, Santa Barbara, and Ventura counties), about 47% of the community portfolio;
- **Northern California** (the San Francisco Bay Area), about 31%;
- **Seattle Metro** (Seattle metropolitan area), about 21%.

All apartments of ESS are available online at http://www.essexapartmenthomes.com/ and customers can also contact the company through a number of regional offices.

As of December 31, 2014, the Company's development pipeline was comprised of two consolidated projects under development, ten unconsolidated joint venture projects under development and various consolidated predevelopment projects aggregating 2,920 units with total incurred costs of $1.1 billion. There is also an estimated remaining project costs of approximately $0.4 billion for total estimated project costs of $1.5 billion.

Business Activity: Merger with BRE Properties, Inc.

On April 1, 2014, ESS completed **the merger with BRE** Properties, Inc. (hereafter "BRE"), forming a combined company with equity market capitalization of approximately **$11.1 billion** and a total market capitalization of approximately $16.2 billion. This is as a result of ESS being **admitted to the S&P 500** on the same date as the closing of the merger (April 1, 2014). ESS's common stock price experienced significantly higher than usual trading volume and the closing price of $174 per share was significantly higher than its volume-weighted average trading price for the days before and after April 1, 2014.

BRE was a self-administered equity REIT company which focused on the ownership, development, acquisition and management of multifamily apartment communities. As of December 31, 2013, its multifamily portfolio had real estate assets with a net book value of approximately $3.5 billion which included: 73 wholly or majority owned stabilized multifamily communities, aggregating 20,724 homes primarily located in California and Washington. Its operating and investment activities are primarily focused on the major metropolitan markets within the state of California, and in the metropolitan area of Seattle, Washington. These are in sync with the strategy of ESS and have significantly increased the **revenue and expenses** of ESS.

[1] According to Essex Property Trust, Inc. Investor Relationship web page and its Annual Reports

Company Fundamental Analyses

ESS's current strategy can be summarized as a "**West Coast Investment Strategy**" motivated by strong west coast fundamentals such as strong job growth rate and personal income growth rate, relatively limited supply but high demand, and high-level rent price.

In the past five years since 2009, ESS's consolidated apartment communities are shown in Table 1 as follows:

	End 2014		End 2013		End 2012		End 2011		End 2010	
	Units	%	Units	%	Units	%	Units	%	Units	%
Southern Califonia	22,168	47%	13,855	46%	13,656	47%	13,205	48%	13,076	49%
Northern Califonia	14,789	31%	9,431	32%	8,987	31%	8,106	30%	7,696	29%
Seattle Metro	10,216	21%	6,703	22%	6,598	22%	6,108	22%	5,980	22%
Other real estate assets*	552	1%	-	0%	-	0%	-	0%	-	0%
Total	47,752	100%	29,989	100%	29,241	100%	27,419	100%	26,752	100%

Table 1): ESS's consolidated apartment communities, 2010-2014. Source: ESS Annual Reports.

** Include one community in Arizona. ESS exited into Arizona apartment market since January, 2014.*

Table 1 indicates that ESS's market strategy is very stable. Southern California, Northern California and Seattle Metro account for approximately 50%, 30% and 20%. We expect that in near future, this market distribution will be consistent.

Table 2 shows that the revenues of ESS are monotonically increasing in the past ten years, as well as total expenses. Revenue and expenses, which are main inputs in valuing the company, are highly correlated with a correlation coefficient of 0.973. The ratio of net income relative to the total revenue is also in a band of 13% to 28%. We will therefore focus on analyzing the revenue growth of ESS and regard that as proxy for other main inputs.

	Total Revenue	Net Income (% of revenue)		Total Expense (% of revenue)	
Dec-05	**314.2**	79.7	25.37%	282.3	89.84%
Dec-06	**339.8**	62.7	18.45%	297.6	87.57%
Dec-07	**379.0**	115.6	30.50%	243.9	64.36%
Dec-08	**408.4**	62.1	15.21%	268.8	65.81%
Dec-09	**411.4**	37.1	9.02%	297.1	72.23%
Dec-10	**404.7**	35.9	8.87%	299.6	74.03%
Dec-11	**467.1**	47.1	10.08%	332.8	71.25%
Dec-12	**535.2**	125.3	23.41%	368.1	68.78%
Dec-13	**609.3**	156.3	25.65%	420.6	69.03%
Dec-14	**969.3**	122.2	12.61%	767.8	79.21%

Table 2): Historical Summary of ESS's Revenue, Net Income and Expense, 2005-2014 in Million Dollar. Source: ESS Annual Reports.

ESS Core Markets' Environment

Analyzing ESS core markets is, therefore, key for valuing its equity.

- First, healthy job market in these areas guarantee the **demand** for apartments. Figure 1 illustrates the year over year (YoY) job growth rates for 2014, suggesting that the average rate in ESS markets is higher than the U.S. average by **0.7% (2.8% to 2.1%)**.

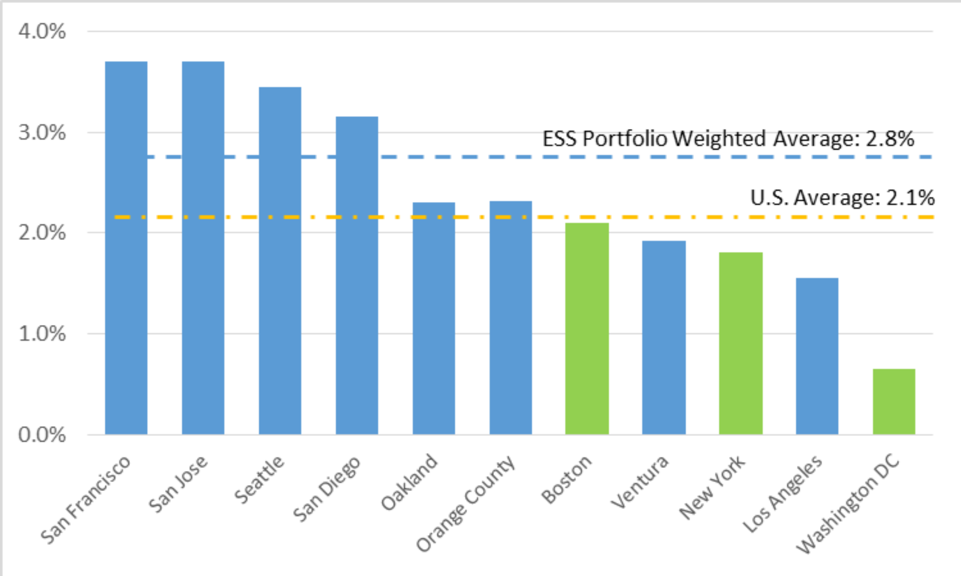


Figure 1): Job growth rates in ESS Markets v.s. other major cities, YoY as of December 2014. Source: U.S. BLS release; ESS Annual Report & Investor Presentation.

San Francisco, San Jose, Seattle and San Diego have the **highest job growth rates** in 2014 (over 3%), and are also four of the largest single markets in ESS portfolio (account for approximately 76%). Although the recent job report of the U.S. in March, 2015 did not meet expectation, those growth rates in ESS core markets are still **very positive**. For example, according to U.S. Congress, California (38,900) and Washington (10,000) are among the five states which had the **largest private-sector gains.** Moreover, the largest two increases of professional and business services employment were posted in California (16,900) and Washington (4,700), which offers **favorable demographics** for potential renters for ESS.

Bottom-line: We expect job growth rates in 2015 in Southern California, Northern California, and Seattle Metro of 2.1%, 2.9% and 2.8%, respectively. This links our projections by suggesting that the new household formations in ESS core markets will be at least **1.1%, 1.5% and 1.4%** in 2015, given that on average 2 new jobs create 1 new family. In the following 4 years after 2015, we look forward to seeing a stable 2% job growth rates on average in these three Western Coastal areas, and thus about 1% growth rates of new household formation from 2016 to 2019.

- Second, strong **personal income growth** will support rent growth. Washington (4.4 percent) had the third largest gain for the average weekly earnings in past year. Indeed Washington ($1,028) and California ($980) are two out of the five states which had the highest average weekly earnings in March. Figure 2 show that the averaged personal income growth in ESS portfolio is also **0.7% higher** than the U.S. average (5.4% to 4.7%). Moreover, in all 8 markets listed, the growth rates are expected to be even higher in 2015.

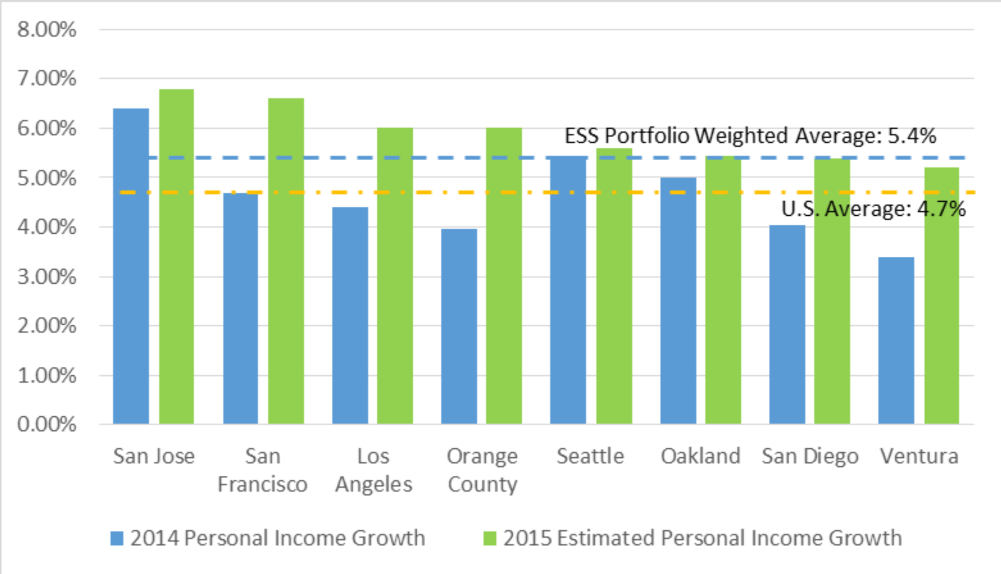


Figure 2): Personal Income Growth rates in ESS Markets v.s. other major cities, 2014 and 2015(e). Source: U.S. BAE; ESS Annual Report & Investor Presentation.

ESS will benefit from the high-level rental prices and fast growth in its core markets. Over 60% of ESS revenues are in the top projected markets by rent growth for the next 5 years. On average, ESS is estimated to have about 21.5% cumulative rent growth rates in five years from 2015 to 2019, which indicates an approximately 4% annual growth rate.

Rank	Markets	2015-2019 Cumulative Growth	% of ESS Revenue as of Q4 2014
1	**San Jose, CA**	**22.8%**	**14.9%**
2	**San Francisco, CA**	**21.9%**	**7.9%**
3	**Oakland, CA**	**21.7%**	**7.3%**
4	Danver, CL	21.0%	
5	**Los Angeles, CA**	**20.9%**	**17.2%**
6	**Seattle, wa**	**20.9%**	**17.4%**
7	Houston, TX	20.9%	
8	Odessa, TX	20.6%	
9	Boston, MA	20.4%	
10	Austin, TX	20.3%	
	National Average	17.8%	

Table 3): Top Projected Rent Growth Markets, 2015-2019(e). Source: Axiometrics as of Nov., 2014.

Combined with the facts documented in Figure 2 and Table 3, we believe that the rental prices in ESS core markets will keep increasing and the customers should be able to **afford the rent**. In 2014, the scheduled rents increased in all regions by 5.2%, 9.5%, and 7.4% in Southern California, Northern California, and Seattle Metro, respectively.

Bottom-line: we expect that the rental growth rates in 2015 in Southern California, Northern California, and Seattle Metro are all over 5.0% but a little bit less than those in 2014, with **5.0%, 9.0% and 7.2%**, respectively. In the following 4 years after 2015, we forecast 2%, 4%, and 3.5% for Southern California, Northern California, and Seattle Metro to meet the approximately 21.5% cumulative growth by 2019.

- Third, the **housing supply** in ESS core markets, as a percentage of total stock, has historically been below 1% and remains as such till date as shown in Figure 3.

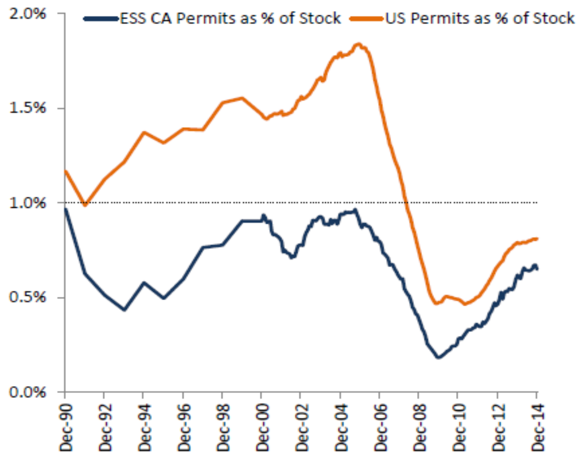


Figure 3): Total New House Permits as a % of Total Home Stock, 2009-2014. Source: U.S. Census; ESS Annual Report & Investor Presentation.

The regional breakdown of ESS financial occupancy for the five years are as follows:

	Years ended December 31				
	2014	2013	2012	2011	2010
Southern Califonia	96.3%	96.1%	96.1%	96.1%	96.8%
Northern Califonia	96.3%	96.1%	96.7%	96.7%	97.3%
Seattle Metro	96.0%	96.1%	96.1%	96.1%	96.9%
Average	96.2%	96.1%	96.3%	96.3%	97.0%

Table 4): ESS's regional breakdown of financial occupancy, 2010 - 2014. Source: ESS Annual Reports.

Since 2005, the ratio of construction permits to the total stock has declined dramatically. Although supply seems to have recovered following the recession, the rates are still **far from 1%**, which is much less than the job growth rate (2.8% on average as shown in Figure 1). Assuming every 2 jobs additions lead to at least one new household formation, then in ESS' supply-constrained markets, **demand is expected to exceed supply** relative to other major metros given higher job growth rates but lower permitted supply. In 2010, the **occupancy rate** was the highest in the past five years since supply permits in 2009 and 2010 were the lowest. From 2011, the occupancy rates were **very stable** with only 10 basis change.

Bottom-line: given the fact that demand still exceeds supply, we expect that in 2015 the average occupancy rates will have 10 basis points up for all three core markets. Considering the constructions of new home completed, we forecast that the multifamily supply will be about **0.8%, 1.3% and 1.5%** for Southern California, Northern California, and Seattle Metro. However, since 2016, we forecast that the supply may be much stronger. We will use the multifamily supply at 2% and occupancy rate at 95.8% on average.

ESS Revenue Growth

The following table (Table 3) provides a breakdown of revenue amounts, including the revenues attributable to 2014/2013 **Same-Properties** and **Non-Same Portfolio**.

Property Revenues ($ in thousands)	Number of Properties	Years Ended December 31, 2014	Years Ended December 31, 2013	Dollar Change	Percentage Change
2014/2013 Same-Properties:					
Southern California	58	$ 266,917	$ 253,007	$ 13,910	5.5%
Northern California	35	218,014	198,832	$ 19,182	9.6%
Seattle Metro	29	114,962	106,982	7,980	7.5%
Total 2014/2013 Same-Property revenues	122	599,893	558,821	41,072	7.3%
2014/2013 Non-Same Property Revenues (1)		79,978	43,182	36,796	85.2%
2014 BRE Legacy Property Revenues (2)		280,087	—	280,087	
Total property revenues		$ 959,958	$ 602,003	$ 357,955	59.5%

Table 5): ESS's breakdown of revenue amounts, 2013 and 2014. Source: ESS Annual Reports.

(1) Includes eleven communities acquired after January 1, 2013, three sold communities and one redevelopment community.

(2) Includes 55 stabilized properties acquired in connect with the BRE merger on April 1, 2014, and two development communities in lease-up.

Thus, ESS's revenue growth forecast will mainly be in **two parts**: same-property revenue growth and non-same property revenue growth. The former one is based on the predictions of occupancy rates and rental prices, while the later one is based on the plan for acquirements, dispositions and redevelopments. We will also consider the legacy of BRE Merger.

Our forecast for each part is **majorly based on 2015**, considering the availability and accuracy of data and information. Then, we combine the revenues of same-property, non-same property and the merger legacy as the total revenue for 2015 and calculate the growth rate. For the **longer term growth rate** (2016 to 2019), we will use the predicted Same-property revenue growth in 2015 as the total growth rates. This is reasonable, since the same-property revenues are **stable and sustainable**.

➢ **Same-Property Revenue in 2015**

2014/2013 Same-Property Revenues increased by $41.1 million or 7.3% to $599.9 million for 2014 compared to $558.8 million in 2013. The increase was primarily attributable to an increase in scheduled rents of $39.1 million as reflected in an increase of 7.1% in average rental rates from $1,619 per unit for 2013 to $1,734 per unit for 2014. Rents increased in by 5.2%, 9.5%, and 7.4% in Southern California, Northern California, and Seattle Metro, respectively. Income from utility billings and other income increased by $2.2 million and $1.1 million, respectively in 2014 compared to 2013. Occupancy increased 10 basis points in 2014 to 96.2% compared to 96.1% in 2013.

✓ ***Southern California Region:*** As of December 31, 2014, this region represented 47% of ESS's consolidated apartment units. During the year ended December 31, 2014, revenues for "2014/2013 Same-Properties revenues," increased 5.5% in 2014 as compared to 2013. In 2015, U.S. Census (Figure 3 only shows the average) indicates a total new multifamily supply of 0.8% of total housing stock. This region is assumed an increase of 150,400 jobs or 2.1%. We expect that the occupancy rates to increase by 10 basis points to 96.4%, and the rental price will increase by 5.0%. Thus, we forecast an increase in same-property revenues approximately 5.1% in 2015 for Southern California Region.

- ✓ ***Northern California Region:*** As of December 31, 2014, this region represented 47% of ESS's consolidated apartment units. During the year ended December 31, 2014, revenues for "2014/2013 Same-Properties revenues," increased 9.6% in 2014 as compared to 2013. In 2015, U.S. Census indicates a total new multifamily supply of 1.3% of total housing stock. This region is assumed an increase of 90,200 jobs or 2.9%. We expect that the occupancy rates will have another 10 basis points increased to 96.4%, and the rental price will increase about 9.0%. Thus, we forecast an increase in same-property revenues of approximately 9.1% in 2015 for Northern California Region.

- ✓ ***Seattle Metro Region:*** As of December 31, 2014, this region represented 21% of ESS's consolidated apartment units. During the year ended December 31, 2014, revenues for "2014/2013 Same-Properties revenues," increased 7.5% in 2014 as compared to 2013. In 2015, U.S. Census (Figure 3) indicates a total new multifamily supply of 1.5% of total housing stock. This region is assumed an increase of 43,300 jobs or 2.8%. We expect that the occupancy rates will have another 10 basis points increased to 96.1%, and the rental price will increase about 7.2%. Thus, we forecast an increase in same-property revenues of approximately 7.3% in 2015 for Seattle Metro Region.

Assuming the other markets (less than 1% in Arizona Market) maintain the level as in 2014 and all weights of the ESS portfolio keep similar, we predict the **Same-property revenue growth as 6.82% in 2015.**

- ➢ **Non-Same Property Revenue in 2015**

Non-Same property Revenue of ESS is harder to forecast. It has two main characteristics. First, the growth rate is usually very large. "2014/2013 Non-Same Property Revenues" increased by $36.8 million or 85.2% to $80.0 million in 2014 compared to $43.2 million to 2013. "2013/2012 Non-Same Property Revenues" increased by $44.9 million or 102% to $89.1 million in 2013 compared to $44.2 million to 2012. Second, the dollar growth is actually much smaller than the Same-portfolio revenue and relatively stable ($36.8 million in 2014, $43.2milliom in 2013, and $44.2 million in 2012).

Therefore, we expect that the dollar change will be similar as those in previous three years at **$41.4 million** or **93.6% Non-same portfolio revenue growth** in 2015.

- ➢ **BRE Legacy Property Revenue in 2015**

ESS completed the merger with BRE on April 1, 2014, and its property revenue has benefited from this merger by an amount of $280.1 million. According to the annual reports, there are more than 10 communities out of the BRE's original portfolio redeveloping. We forecast another **$50 million revenue growth** in 2015 because of the merger.

Overall, we see an increase of **$132.31** million in revenue or **13.64% revenue growth** for ESS in 2015. However, beyond 2015 onwards, we believe that the same-property revenue of **6.8% will be guaranteed.**

	Years Ended December 31		Dollar Change	Percentage Change	Years Ended December 31			
	2014	2015			2016	2017	2018	2019
Property Revenues ($ in thousand)	$ 969,305	1,101,518	132,210	13.6%	1,176,642	1,256,889	1,342,609	1,434,174
Same-property Revenue:								
Southern Califonia	$ 266,917	280,530	13,613	5.1%				
Northern Califonia	218,014	237,635	19,621	9.0%				
Seattle Metro	114,962	123,354	8,392	7.3%				
Total Same-property Revenue	599,893	641,519	41,626	6.8%				
Non-same Property Revenue			41,400					
BRE Legacy Property Revenue			50,000					

Table 5): Estimates of ESS's breakdown of revenue amounts, 2014 – 2019 (e). Source: ESS Annual Reports.

Capital Expenditure and Depreciation

Apart from revenue and net income growth rates, other inputs that are relevant for valuation are the capital expenditure (CapEx) and depreciation. We forecast the relevant growth rates as follows:

Operating expenses of the company also grew by 103.46% in 2014 compared to 14.59%. CapEx which is a component of operating expenses grew by 48.83% in 2014 compared to -8.59% in 2013. As already mentioned, these growth rates were primarily driven by acquisition of BRE and six other communities in 2014.

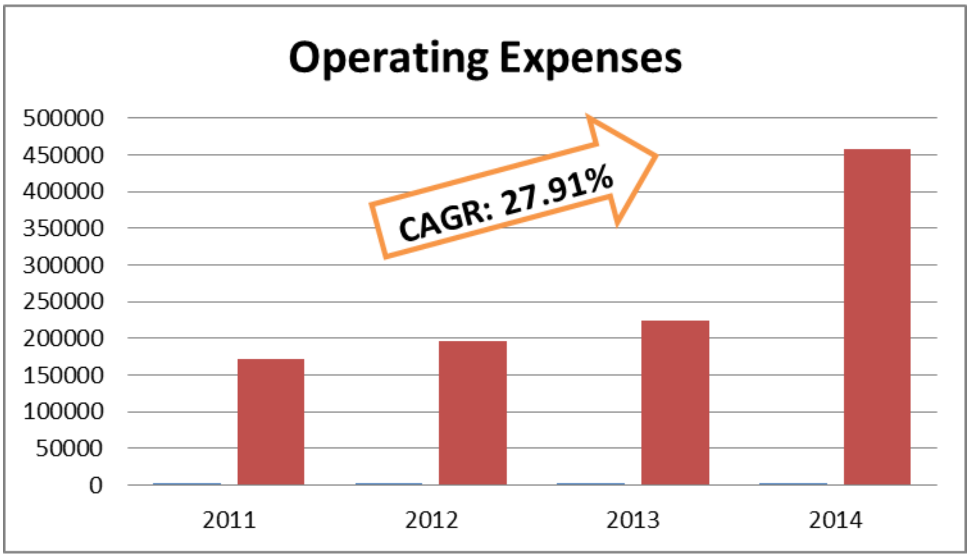


Figure 6. Historical Operating Expenses for ESS. Source: the CRSP; Damodaran Dataset[8]; EECJ Research.

Depreciation and Amortization, which has stayed pretty constant in the 9%-18% band over the last five years until 2014, increased by 86.34% compared to 11.89% and 13.38% in 2012 and 2013 respectively. Moreover, to a REIT company, its depreciation is highly related to the number of total units and their conditions, which are also reflected in the revenue. As shown in Table 6, the Depreciation/Revenue ratios in past five years are constantly around 32% except a jump to 37.20% in 2014 after the merger. Therefore, we expect that this ratio remain at 37.20% and thus, growth rates of depreciation will be similar to the revenue growth.

Obviously, the growth in CapEx has been quite stable in the last few years and we are of the belief that such a trend will continue. As a result, and considering that the 2014 merger of BRE by ESS which comes with various costs, we set the growth rate in CapEx to the compounded annual growth rate in the last five years of 10.81%. We have also looked at the percentage of CapEx and depreciation to Revenue over the last five years. This was done to get a sense of the numbers and also to serve as a check on the assumed growth rates.

To conclude, we forecast Depreciation growth of 13.64% for 2015 and 6.82% from 2016 onwards. For CapEx, we forecast a growth a rate of 10.81% from 2015 onwards.

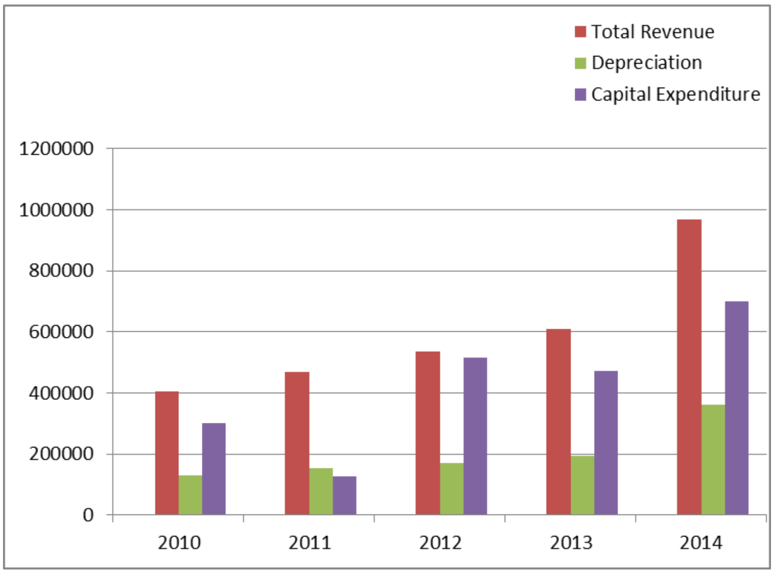


Figure 6. Historical Total Revenue, Depreciation and Capital Expenditure for ESS. Source: the CRSP; EECJ Research.

Variable	Historical					Projection				
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
CapEx	301,625	126,670	514,982	470,739	700,606	776,342	860,264	953,259	1,056,306	1,170,492
YoY Capex Growth	-	-58.00%	306.55%	-8.59%	48.83%	10.81%	10.81%	10.81%	10.81%	10.81%
Depreciation	129,711	152,543	170,686	193,518	360,592	409,777	437,724	467,576	499,465	533,528
YoY Depreciation Growth	-	17.60%	11.89%	13.38%	86.34%	13.64%	6.82%	6.82%	6.82%	6.82%
CapEx/Revenue (%)	74.53%	27.12%	96.23%	77.26%	72.28%	70.48%	73.11%	75.84%	78.68%	81.61%
Depreciation/Revenue (%)	32.05%	32.66%	31.89%	31.76%	37.20%	37.20%	37.20%	37.20%	37.20%	37.20%

Table 6. Historical and Predicted Depreciation and Capital Expenditure for ESS. Source: the CRSP; EECJ Research.

Valuation

We believe that Essex Property Trusts, Inc (ESS) is currently **undervalued**. The market value of $**14.78bn** is currently **trading at a discount of 17.15%** to our **DCF** value of **$17.31bn. We therefore recommend a buy.**

Our conclusions are based on a DCF analysis using both **1) Free Cash Flow to Equity (FCFE)** and **2) Dividends.** Our analysis used a two stage methods where we assumed that in the first 5 years the company will experience an extraordinary growth rate after which it will grow at a stable rate over several years.

➢ **DCF Valuation**

Since we are valuing the equity of the firm, we adopt the FCFE valuation. This choice was motivated by the fact that the balance sheets as well as leverage has consistently been relatively stable, with positive cash flow paid out to shareholders. The model is essentially an adjusted dividend discount valuation model with the main difference being that any cash build, the difference between FCFE and dividends, is reinvested at the cost of equity.

In order to arrive at the various conclusions, we aggregated the relevant information on the balance sheets, income statements, and cash flow statements, annual reports as well as information and data from other sources. Most of the inputs to our DCF analysis as well as the various assumption made have already been discussed in earlier parts of the report so we only discuss in this part only briefly the choice of overall growth rate of the company in both the high growth rate and stable growth period.

➢ Weighted Average Cost of Capital

Because we are using a FCFE model to value the company, the appropriate discount rate to use is the cost of equity. The asset pricing model that we utilized is the Capital Asset Pricing model. The model and the assumptions underpinning the model are described below:

➢ Cost of Equity Calculation

$$r_{AVB} = r_f + \beta(r_m - r_f)$$

where r_f = risk-free rate

β = the beta of the company

$(r_m - r_f)$ = market risk premium

➢ Risk-free Rate

In computing the return on an asset, the CAPM utilizes the rate of return on a riskless asset. In our analysis, we use the rate of return on the US 30-Year Treasury Bills as the return on a riskless asset. We consider our choice of a long term US Treasury security as realistic since we are valuing the company as a going-concern.

➢ Beta

In estimating beta, we regressed the monthly excess returns of the company on the excess returns of the market portfolio using a rolling window of 60 months. The company returns data and return on the market were sourced from CRSP and the website of Professor Kenneth French respectively. Figure 1 below show a plot of the rolling beta. We have used a company **Beta of 0.80**, a figure which reflect the current riskiness on the company compared to the overall market.

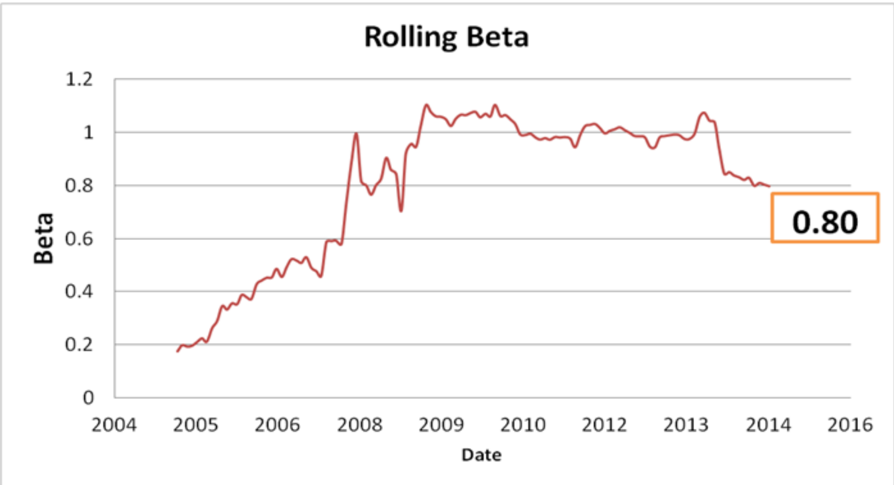


Figure 7. Rolling Beta for ESS. Source: the CRSP; Damodaran Dataset[8]; EECJ Research.

- **Equity Risk Premium**

We utilized a historical market **risk premium of 6.26%**. This implied risk premium reflects the markets expectation of today's equity spread and is also robust to estimation error since we used a geometric average instead of the commonly used arithmetic average. The choice of a geometric average over an arithmetic average is motivated by the fact that the arithmetic average is sensitive to the choice of sample size as shown in Table 7 below.

Sample period	Risk premium	Standard error
1927 - 2014	8.40%	2.2
1970 -2014	6.90%	2.72
2000 -2014	4.77%	5.39

Table 7): Average Historical Risk Premium. Source: the CRSP; Damodaran Dataset[2]; EECJ Research.

Conversely, it could also be argued that perhaps it will make sense to use a recent sample of the data since data collected going back several years have possibly been collected with errors. Putting it all together, the following table gives the **cost of equity of ESS as 7.70%.**

Riskfree rate	2.7%
Beta	0.80
Market Risk Premium	6.26%
Cost of Equity	7.70%

Table 8): Cost of Equity. Source: the CRSP; Damodaran Dataset; EECJ Research.

- **Free cash Flow to Equity calculation**
- ✓ **Long-term Growth Rate**

In computing the FCFE, the long term growth rate is set which will have an impact on the overall valuation, is the long term growth rate of the company. Several factors are important for arriving at a reasonable value particularly the quality of management, historical growth rate of the various firms in the industry, the quality of assets owned. We cap out terminal growth rate, which here represents the expected growth rate for the high growth period, at 3.0% slightly lower than the expected long-term US GDP growth of 3.5%. This cap was motivated by the fact that we do not expect the company to grow faster than the US economy. The growth rate in the stable period is set at 2.50% below the US current average US inflation rate of 3.3%.

- ✓ **Valuation**

Our base case valuation using the FCFE and Dividends generated the same equity valuation as shown in the table below. Here we make the assumption that in the event of any cash build, is invested inefficiently, and then the differences between the two valuations methods emerge with FCFE giving a much better and fair valuation than the dividend model. All estimates are shown in Table 9 as follow:

[2] Available at http://pages.stern.nyu.edu/~adamodar/.

	2015	2016	2017	2018	2019	Terminal Year
Net Income	$136,808	$145,016	$153,717	$162,941	$172,717	$167,551
less (CapEx-Depreciation)	$366,565	$448,810	$513,743	$586,816	$668,983	$4,704,984
less Change in Working Capital	($19,140)	($24,723)	($28,096)	($31,928)	($36,283)	($7,557)
plus Net Debt Cash flow	$4,024,649	$4,145,388	$4,269,750	$4,397,842	$4,529,778	$4,643,022
Free Cashflow to Equity	$3,814,032	$3,866,318	$3,937,819	$4,005,895	$4,069,794	$113,147
Dividends	$311,404	$330,088	$349,893	$370,887	$393,140	
PV of FCFE	$3,541,370	$3,333,278	$3,152,222	$2,977,471	$2,808,713	
PV of Dividends	$289,142	$284,579	$280,089	$275,670	$271,320	
Cash Build up (invested at cost of equity)	$3,502,628	$7,308,537	$11,459,172	$15,976,460	$20,883,195	$20,883,195

	FCFE	DDM
Growth Rate in Stable Phase =	2.50%	2.50%
FCFE (Dividends) in Stable Phase =	$113,147	$113,147
Cost of Equity in Stable Phase =	7.70%	7.70%
Price at the end of growth phase =	**$2,176,174**	**$2,176,174**
Additional cash build up over high growth period =		**$20,883,195**

	FCFE	DDM
Present Value of FCFE in high growth phase =	**$15,813,054**	$1,400,801
Present Value of Terminal Price =	**$1,501,857**	$1,501,857
Present Value of Cash build up in terminal year =		$14,412,254
Value of the stock =	**$17,314,911**	$17,314,911
Share price	**$265.94**	

Table 9): Summary Statistics of Our Valuation. Source: the CRSP; Damodaran Dataset; EECJ Research.

APPENDIX

Appendix 1

Comapny Variable	2010	2011	2012	2013	2014
Total Revenue	404,677	467,088	535,153	609,266	969,305
Total Expenses	299,649	332,823	368,128	420,561	767,791
EBIT		140,282	202,805	201,841	251,364
Net Operating Income	262,564	303,150	354,529	405,991	649,045
Rental Income	400,841	460,660	526,696	602,003	959,958
Operating Expenses		170,703	195,961	224,549	456,878
Net Income	35,934	47,070	125,284	156,283	122,150
Net Income to Shareholders	33,764	40,368	119,812	150,811	116,859
EBITDA	126,670	292,825	373,491	395,359	611,956
Depreciation	129,711	152,543	170,686	193,518	360,592
Capital Expenditure	301,625	126,670	514,982	470,739	700,606
Total Assets	3,732,900	4,036,964	4,847,233	5,186,839	11,562,874
Total Liabilities	2,582,900	2,599,437	3,078,070	3,297,871	5,516,946
Current Assets	218,500	216,200	256,900	270,400	348,100
Current Liabilities	90,200	94,400	115,300	345,300	507,600
Working Capital (WC)	128,300	121,800	141,600	- 74,900	- 159,500

Note: All values expressed in thousands.

Appendix 2

	2010	2011	2012	2013	2014
Shares oustanding Avg	29,700	32,629	35,032	37,249	56,547
Net Income to Common shareholders	33,764	40,368	119,812	150,811	116,859
EBITDA	267,400	304,600	410,200	463,100	659,600
FFO	171,368	200,172	250,850	299,731	464,942
Earnings per share	1.14	1.24	3.41	4.04	2.06
Earnings	135,008	150,126	239,541	257,406	298,989
Dividend per Share	4.13	4.16	4.4	4.84	5.11
Dividends Paid	298,090	318,231	172,941	199,156	278,039
Total Debt	2,258,745	2,360,858	2,818,683	3,033,524	5,109,817
Total Equity	1,149,900	1,437,527	1,764,804	1,884,619	6,022,672

Note: All values expressed in thousands except per share values.

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