

REIT Valuation Case Study – AvalonBay – 1 Week or 4 Hours



SITUATION OVERVIEW:

AvalonBay Communities, Inc. [NYSE:AVB] is a leading U.S.-based real estate investment trust (REIT) focused on the multifamily (apartment) sector.

The Company acquires, develops, redevelops, owns, and operates properties primarily in areas of “higher costs of homeownership” on the East and West Coasts of the U.S.

Approximately 52% of AVB’s same-store rental income comes from New England,

the metro New York/New Jersey area, and the Mid-Atlantic; the remainder is from Northern and Southern California and the Pacific Northwest.

In its most recent fiscal year, the Company generated \$2.2 billion of revenue, \$1.3 billion of EBITDA, and Funds from Operations (FFO) of \$1.2 billion. Its current Market Cap is \$22.8 billion, and its Enterprise Value is \$29.8 billion (LTM EV / EBITDA of 22.1x and P / FFO of 19.6x).

The Company’s share price has declined by 10-15% in the past twelve months, driven by fears of rising interest rates, a slow-down in the residential housing market, and a downturn in the technology industry.

Previously, its share price increased from ~\$130 in early 2013 to ~180 by early 2017, driven by a recovery in the housing market, strong rental growth, and development yields well above local Cap Rates.

Unlike many other apartment REITs, AvalonBay focuses on Developments rather than Acquisitions, with a current Development Pipeline of ~\$3.0 billion, or 14% of its Gross Real Estate Assets; the median for peer companies is only 7%.

However, almost 75% of AvalonBay’s property-level revenue comes from its “Established Communities,” (i.e., Same-Store Properties) so its long-term success will depend on its ability to raise rents and increase margins in that segment.



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You will forecast the Company's financial statements over the next five years based on its activities in the Established Communities and Other Stabilized Communities segments, and its Acquisition, Development, Redevelopment, and Disposition spending.

Your job in this case study is to assess whether or not the Company's recent stock-price decline is justified, given the possible operational scenarios in AvalonBay's markets.

To do that, you will create Base, Upside, and Downside Cases. The Upside Case will feature the highest rental growth, margins, and development yields, the Downside Case will contain the lowest figures, and the Base Case will be in between those, in-line with Company guidance.

You have **one (1) week** to review the provided information and value AvalonBay with a NAV model, DCF analysis, comparable public companies, and precedent transactions.

You may use any resources at your disposal to complete this exercise, including paid databases such as Capital IQ and FactSet.

You will then draft a **3-page stock pitch** where you make a Long or Short recommendation based on your findings.

Finally, you will present your stock pitch to the firm's Partners and defend your views in 30 minutes of follow-up questions and answers.

NOTE: If you do **not** complete the stock pitch and data gathering in the valuation, you should consider this case study a 4-hour modeling test; if you **do** complete them, you should consider this case study a 1-week test.

Operational Assumptions

The majority of AvalonBay's Revenue and NOI, even five years into the future, will come from its existing properties ("Established Communities").

The Company also plans to spend a moderate amount on Acquisitions and Redevelopments, and a significant amount on Developments (\$1 billion+ per year in some cases). It will also continue to divest at least a few properties each year.

Finally, you also need to consider the Company's Equity Investments, or "Unconsolidated Real Estate" – properties where it owns less than a 50% stake.



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The pro-rata Net Income from this segment will contribute to AVB's Net Income, a portion of the Assets will appear on AvalonBay's Balance Sheet, and the fair market value of these Assets and Liabilities will factor into the NAV Model.

You will consider **three (3) operational scenarios in these projections:**

- **Upside Case:** Rents increase at higher-than-expected rates, NOI margins increase slightly, and the Company spends significantly on Developments, with a good amount of Disposition and Redevelopment activity as well. Acquisitions are muted due to high prices. NOI margins will initially be 0.1% above baseline estimates, rising to a 0.5% premium by the end.
- **Base Case:** Rents increase in-line with the Company's forecasts, NOI margins stay about the same, and the Company is less active in Developments, Dispositions, and Redevelopments, but is slightly more active with its Acquisitions. Actual NOI margins will be the same as the baseline estimates in each segment.
- **Downside Case:** There is a 2-year recession followed by a recovery, so rents, yields, and margins decline in the first two projected years and then recover. Development, Redevelopment, and Disposition activity all fall significantly in the first few years, while Acquisitions rise; each segment normalizes by the end. NOI margins will initially be below baseline estimates by 2.0% and 1.0% but will recover, exceeding baseline estimates by 1.0% and 0.5%, and then matching them in the final year.

Existing Properties (Established Communities)

Use the following assumptions for the "Established Communities" segment:

- **New England – Revenue Growth:** 3.5% declining to 3.1% in the Upside Case; 2.5% to 2.1% in the Base Case; and (1.0%), (0.5%), and then 2.5% to 1.5% in the Downside Case.
- **Metro NY/NJ – Revenue Growth:** 3.0% declining to 2.6% in the Upside Case; 2.4% to 2.0% in the Base Case; and (1.5%), (1.0%), and then 2.5% to 1.5% in the Downside Case.
- **Mid-Atlantic – Revenue Growth:** 2.7% declining to 2.3% in the Upside Case; 2.0% to 1.6% in the Base Case; and (2.0%), (1.0%), and then 2.5% to 1.4% in the Downside Case.



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- **Pacific Northwest – Revenue Growth:** 5.5% declining to 4.5% in the Upside Case; 4.0% to 3.4% in the Base Case; and (1.0%), (0.5%), and then 4.0% to 2.0% in the Downside Case.
- **Northern California – Revenue Growth:** 3.7% declining to 3.3% in the Upside Case; 2.6% to 2.2% in the Base Case; and (1.0%), (0.5%), and then 3.0% to 1.5% in the Downside Case.
- **Southern California – Revenue Growth:** 5.5% declining to 5.1% in the Upside Case; 4.5% to 3.7% in the Base Case; and (0.5%), (0.0%), and then 4.5% to 2.5% in the Downside Case.

For the NOI margins for each segment, assume slight increases or decreases in-line with historical trends; none of these should change by more than ~1%.

Make sure that your model supports slight discounts or premiums to the baseline NOI margin based on the selected scenario.

Acquisitions

Assume that Acquisition spending starts at \$350 million in the Downside Case and declines to \$200 million over time; it will be \$150 million to \$190 million in the Base Case and \$50 million to \$175 million in the Upside Case.

Cap Rates will fall to 4.0% over the first two years in the Upside Case and then rise to 5.1%; in the Base Case, they will rise to 5.3%, and in the Downside Case, they'll start at 6.5% and decline to 5.6% by the end.

These numbers come from the Yields and Cap Rates disclosed in prior investor presentations. The NOI margin should equal the Established Communities NOI margin from the Base Case.

Dispositions

Assume \$500 million of Dispositions initially in the Upside Case, falling to \$400 million by the end; the Base Case will be \$350 million rising to \$390 million, and the Downside Case will be \$150 million rising to \$350 million.

Cap Rates will start at 4.3% and rise to 5.0% in the Upside Case, fall from 5.2% to 5.0% in the Base Case, and start at 6.5% and fall to 5.0% in the Downside Case.



Use historical averages for the Gain/Loss percentage and the NOI margin.

Developments

Assume that Development Starts in a given year will take, on average, three (3) years to complete and that costs will be amortized evenly over that period.

Development Spending will be \$1.3 billion in the Upside Case, falling to \$1.1 billion by the end; \$950 million declining to \$910 million in the Base Case; and \$500 million rising to \$850 million in the Downside Case.

Pre-Stabilized Yields will fall from 6.5% to 5.5% in the Upside Case, increase from 5.0% to 5.3% in the Base Case, and increase from 4.0% to 5.0% in the Downside Case.

Note that the FY 18 Cost of Completed Deliveries, \$700 million, and the \$52 million of NOI from them, have already been estimated by the Company, so the figures above apply to the *last four years* of these projections.

Use a historical average for the baseline NOI margin and assume that it takes properties an average of one (1) year to stabilize. Once they do, they should be reclassified to “Other Stabilized Properties.”

Redevelopments

Redevelopments take an average of 2.5 years to complete. Starts will be \$150 million rising to \$250 million in the Upside Case, \$100 million rising to \$200 million in the Base Case, and \$50 million rising to \$150 million in the Downside Case.

Pre-Stabilized Yields will start at 140% in the Upside Case, 110% in the Base Case, and 80% in the Downside Case, and each one will reach 120% by the end.

Use a historical average for the NOI margin. You do **NOT** need to re-classify Redevelopment properties to another segment because they correspond to existing Assets in the Established Communities and Other Stabilized segments.

Equity Investments (Unconsolidated Real Estate)

AvalonBay owns, on average, 25.1% of these unconsolidated entities (Total Assets of ~\$735 million as of the last fiscal year).



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Assume that \$80 million, rising to \$100 million over five years, of these assets are sold each year, and that \$50 million, falling to \$30 million, are purchased each year.

Then, use historical trends to project the Other Assets, Debt, Other Liabilities, Rent, Expenses, Gains and Losses, Interest, Depreciation, and Net Income for this segment.

The Net Income and Assets from this segment are minor, so they will **not** change in the different cases.

Consolidated Revenue and Expenses

Once you're done, roll up everything into the total Property-Level Revenue and Expenses, calculate the Gross Real Estate Assets each year, and make Maintenance CapEx a percentage of the prior year's Established and Other Stabilized Real Estate Assets.

Make sure the NOI margin differentials flow through the model correctly and insert CAGR calculations where they are appropriate.

3-Statement Projection Model

AvalonBay's simplified, consolidated financial statements have been provided to you. Please fill in the blank projection areas down to the Key Metrics and Ratios at the bottom.

Use historical trends and averages to fill in the line items on the Income Statement, Balance Sheet, and Cash Flow Statement, and use your judgment where necessary.

Note the following points:

- **Management Fees** should grow by 5-10% per year going forward.
- **Depreciation** as a percentage of Revenue should increase modestly over time.
- The **Weighted Average Interest Rate on Debt** should increase to 3.5% by the end due to rising interest rates and the fact that only a small portion of AVB's Debt is variable-rate.
- **Dividends** as a percentage of FFO should increase to 70% over time.

Assume that the Company's Minimum Cash Balance is 20% of its Cash Operating Expenses each year and that it will use 50% Debt and 50% Equity to meet its funding requirements.



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You do **not** need to factor in scheduled Debt maturities; assume the Company refinances them with new Debt, keeping the Total Debt the same when there's a maturity.

Mechanics of the NAV Model

Assume a 5% deduction for CapEx / Replacement Reserves, and use the following Economic Cap Rates for each region (these are based on data from Jones Lang LaSalle):

- **New England:** 5.0%
- **Metro NY/NJ:** 4.0%
- **Mid-Atlantic:** 5.3%
- **Pacific Northwest:** 4.3%
- **Northern California:** 4.5%
- **Southern California:** 4.2%

These Cap Rates are higher than the JLL figures because the Company does not own all Class-A properties; its portfolio is a mix of Class A and B, and many properties are in suburban areas rather than more expensive urban ones.

For the Other Stabilized, Acquired, and Disposed Properties segments, link the Cap Rates to the assumed Yields or Cap Rates in those segments.

Assume a 7% Cap Rate for the Development properties, 5% for Redevelopment, 5% for NOI from Equity Investments, and 12% for the Management Fees.

You do **not** need to account for the operational scenarios here because these Cap Rates are based on **today's** market.

Assume that the Construction-in-Progress is worth 10% more than book value and that Land Held for Development is worth 5% more than book value.

Use the fair market value of the Company's Debt based on its filings, use a Cap Rate of 8% for the Benefit of Tax-Exempt Bonds, and calculate the fair market value of the JV Debt based on its average interest rate vs. the average rate on AVB's Total Debt.

Finally, calculate the Nominal and Economic Cap Rates implied by AvalonBay's current share price and set up the appropriate sensitivity tables.



Mechanics of the DCF Analysis

Please make sure you reflect the following points in your DCF:

- **Forecast Period:** 10 years; no need for a Normalized Terminal Year.
- **Discount Rate:** Calculate this based on a Risk-Free Rate of 2.85%, an Equity Risk Premium of 5.08%, and your views on the Cost of Debt and Preferred Stock. Use the traditional method of un-levering and re-levering Beta to come up with a reasonable range for WACC.
- **Stub Period and Mid-Year Convention:** This valuation takes place before the end of Q1, so you do not need to include a stub period. Do use the mid-year convention.
- **Terminal Value:** Pick reasonable Terminal EBITDA Multiples and FCF Growth Rates based on the final year of the explicit forecast period, and use different numbers in each scenario.
- **Implied Share Price:** The calculation should be **circular** because the Company's diluted share count depends on its implied share price.
- **Sensitivities:** Sensitize based on appropriate ranges for WACC, the Terminal Multiple, and the Terminal Growth Rate.

The operating assumptions for Years 5 – 10 are up to you, but make sure the Company moves toward stabilization by the end and that you reflect the scenarios as appropriate.

Since AvalonBay plans to issue Equity and Debt continually to fund its operations, **you must factor in the additional shares created by those Equity issuances.**

To do that, you can discount all future Stock Issuances at the Cost of Equity to calculate their Present Value, assume that future Stock Issuances grow at the Terminal FCF Growth Rate beyond Year 10, and use the Company's current share price to estimate the total number of new shares today.



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Comparable Public Companies

Screen for U.S.-based “residential” (multifamily, single-family, and student housing) REITs with Gross Real Estate Assets above \$5 billion; this should produce a set of 5-10 companies.

To find this set, you can use tools such as Capital IQ or FactSet, or you can use free sources such as Google Finance or the Company’s 10-K filings where it lists its competitors.

Include all the metrics and multiples shown in the file. You can find almost all of these in each Company’s 10-K filing.

You do NOT have to “scrub” these financial figures for non-recurring charges or calculate anything manually.

In the video-based lessons in this case study, we do show you how to do that, but that is **ONLY** to teach you the concepts.

If you had an entire week (or more) to complete this case study, you could complete this step – but if not, stick with the provided numbers and automated methods.

Precedent Transactions

Screen for Precedent Transactions based on U.S.-based REIT sellers in any sector with Purchase Enterprise Values of at least \$3 billion over the past three years.

In addition to the standard multiples, such as LTM EV / EBITDA and P / FFO, also include **premiums paid** (1-day, 1-week, and 1-month or 30 days).

Again, you can use the provided numbers here; we do show you an example of how to find these figures in the filings, but that is not necessary for a time-pressured test.

Valuation Summary

Summarize your findings by creating a “football field” graph that shows the Company’s implied share price across each multiple and methodology, from the 25th to 75th percentile.



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Stock Pitch and Presentation

Based on your research and valuation, draft a **3-page stock pitch** that makes a clear LONG or SHORT recommendation.

Make sure that your pitch includes a summary, company background section, investment thesis, valuation summary, catalysts, and risk factors and mitigants.

If you have time, you can also draft a short PowerPoint presentation in addition to this written Word document, but the presentation is **not** necessary.

EXTRA CREDIT: If you have more time (unlikely), you can also draft a short **equity research report** and **investment banking pitch book**.

The equity research report will be similar to the stock pitch, but the tone should be “softer,” and you will need to assign price targets.

In the investment banking pitch book, you should outline the Company’s current valuation and explain whether it should raise Debt or Equity for the \$1 billion+ it plans to spend on new Developments each year going forward.