

Return on Income (ROI) and Return on Equity (ROE) Analysis for Construction of Hypothetical Superslim Condo Skyscraper on Billionaire's Row in Manhattan

By Jason M. Barr, November 21, 2017

The analysis is based on several recently completed skyscrapers. While every building has a unique set of characteristics, I have tried to use average or typical values. Table 1 gives the basic information about the buildings I've used as models. Sources for assumptions and estimates are given below.

Table 1: Statistics for Recent Projects

Variable	432 Park Ave	One57	220 Central Park S.	Source
Year Completed	2015	2014	2020 (est).	Skyscraper Center
Gross Building Area	705,004	702,619	415,513	NYC Map Portal/Skyscraper Center
Lot Area (ft ²).	34,470	23,808	17,578	NYC Map Portal
Gross Floor Area Ratio (FAR)	20.45	29.51	23.64	GBA/LOT Area
Floors (above ground)	85	77	66	Skyscraper Center
Offering Plan Square feet	412,637	411,002	333,395	Offering plans
Total Sales Offering Plan	\$2,844,648,000	\$2,004,823,000	\$2,773,050,000.0	Offering plans
Avg. Condo Price (per ft ²)	\$6,894	\$4,878	\$8,318	Offering plans
Offering Plan Info.	here	here	here	Offering plans

Assumptions

Lot size:	30,000 ft ²
Gross Building Area (GBA):	700,000 ft ²
Net Sellable Condo Floor Area (70% of GBA):	490,000 ft ²
Gross FAR of Project:	23.3
As of Right FAR: 10+2=12:	12.0
Net Floor Area from FAR of 12:	360,000 ft ²
Air Rights Purchased Floor Area:	130,000 ft ²
Net FAR of Project:	16.3

Land and Constructions Costs

Land Costs (per buildable ft ²):	\$1500 ft ²
Total Land Costs (\$1500*12*30,000):	\$540,000,000
Air Rights (assumed half of land prices):	\$750 ft ²
Total Air Rights Cost (\$750*130,000):	\$97,500,000
Total Cost of Construction/Hard Cost (assumed \$1000 ft ² * GBA):	\$700,000,000
Soft Costs without financing (assumed 20% of hard costs):	\$140,000,000
Financing Cost (2 years at 6% interest 75% soft + hard costs)	\$ 124,110,000

Total Cost of Project:	\$1,601,610,000
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Total Revenue (Condo Floor Area * \$6,000) less 6% for marketing:	\$2,763,600,000
Total Profits (Revs – Costs):	\$1,161,990,000
Return on Investment (Profit / Cost):	72.6%
Average Annul ROI (assume 5 year project; $\ln(1.726)/5$):	10.9%
Return on Equity (assume 30.81% equity investment):	129%
Average Annul ROE (assume 5 year project; $\ln(2.29)/5$):	16.56%

Sources

Lot Area & GBA: I assume 30,000 square feet and 700,000 gross square feet because this was the rounded number closest to 432 Park Avenue (which was an as-of-right development). From this, I obtained a gross FAR of 23.3.

Net Saleable Area: I assumed a 70% of the GBA for net efficiency. See [Sev and Özgen \(2009\)](#) for estimates of tall building efficiencies.

Air Rights: Given the law would allow a FAR of 12, I assumed the purchase of air rights to get the rest of the net FAR needed. I assumed air rights cost half of land values, based on: <http://www.nytimes.com/2013/02/24/realestate/the-great-race-for-manhattan-air-rights.html>, although they could go as [high at 60%](#). Given my land value estimate were on the high end this seemed reasonable.

Land Values: There is no definitive source for land values since prices vary so much from block to block and lot to lot. I assumed \$1500 per buildable square foot, based first on my conversation with a real estate industry professional who is intimately involved with the Manhattan real estate market and also based on a few published sources, such as “[Ranking new condos — from Barnett’s One57 to Rudin’s Greenwich Lane — by per-square-foot prices](#)” and <https://therealdeal.com/2015/11/03/vornado-paying-5000-a-foot-to-build-220cps/> on theRealDeal.com.

Cost of Construction (Hard Costs): Data in my [recent blog post](#) would give average costs around \$800 per square foot of gross building area, but my discussions with the real estate professional indicate that \$1000 per square foot is more reasonable for these types of projects

Soft Costs: Generally, soft costs are [around 30% of hard costs](#). (Also see [Rivest, 2011](#), who estimates about 36% for a Manhattan project). I assumed non-financing related soft costs of 20% and the financing costs came in around 17.7% of hard costs, for a total soft cost assumption of 37.7% of hard costs. For the loan, I assumed 75% of the total hard and soft costs would come in the form of a two-year construction loan at [6% interest](#). Furthermore, I assume no EB-5 funds.

Revenues: The three projects describe above have an average per square foot selling price of \$6700. Based on the industry professional I spoke with, \$6,000 seemed a more realistic number in today’s market, and less 6% for marketing and closing costs is the typical assumption for condo projects (again, this info. came from the talking with my source).