I. The Empire State Building vs. Kingston and Clark

1. Clark and Kingston

Data for the Clark and Kingston skyscraper can be found in Clark and Kingston (1930), and their key table is given here.

Note the following:

- For simplicity, we compare the original ESB design of 80-stories to the highest-profit building of 63 stories.
- CK assume that total revenue is based on 100% occupancy.
- There are no additional financing costs beyond during construction (and for which are common for all buildings).
- Their key measure of return on investment (ROI) is the annual net operating income for one year (total revenue from 100% occupancy minus operating costs divided by the total cost to buy the land and erect the structure). The inverse of this ROI is the number of years it would take to earn back the total costs (without discounting).
- Line (H) shows the 63-story building has an ROI of 10.25% and the 75-story one has an ROI of 10.06%.

2. The Empire State Building

Data for the estimates from the Empire State Building is primarily from the summary cost and income sheet produced by the ESB developers and from other publicly available sources. Their estimates are reproduced here, and is take from Willis (1995).

![Figure 1: original costing sheet for the Empire State Building. Source: Willis (1995).](image)

Note that the original plans for the ESB called for an 80-story building with 2.08 million square feet of rentable space. By early January 1930, this changed to a building with 85 stories of offices, two observation decks (one on the 86th floor, and one in the mooring mast on floor 102). The total rentable office space stayed about the same.

Also note that similar to Clark and Kington, the taller of the two buildings that they priced out was more profitable (e.g., \((5.12-2.36)/45=0.0613\) vs. \((6.3-2.73)/50 = 0.0714\)).
Smith and Raskob estimated a total construction cost of $34 million. The actual cost was substantially lower at $24.7 million (Emporis entry for ESB). If the original cost was used it would have reduced the ROI to 7.9%. Furthermore, their costing sheet did not include land carrying charges. To make their land costs comparable to those of CK—item (C)—we calculated the fraction of CK’s total cost assignable to the item (C) (10%). We then increased the ESB’s last cost by this amount. For revenues, we assume the maximum amount of $7 million and used their operating expenses given in the table.

II. Empire State Building Market Value Sources

1931: Total construction cost of $41 million. Discussed above. ($16 million + $25 million)

1934, 1935, 1937, 1940, 1945, 1946: Market values taken as assessed values from NYC. Sources: Values reported in respective years in The New York Times. Before WWII, assessed values were close to a 100% of market values.


1961: Building sale price of $65 and land sale price of $17 million from Ennis (1961)


2001: Average of NOI for 1999-2001 divided by cap rate of .05.

<table>
<thead>
<tr>
<th>Year</th>
<th>NOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>16,164,218</td>
</tr>
<tr>
<td>2000</td>
<td>30,167,523</td>
</tr>
<tr>
<td>2001</td>
<td>53,145,005</td>
</tr>
<tr>
<td>Avg.</td>
<td>$33,158,915</td>
</tr>
<tr>
<td>Market Value (5% cap rate)</td>
<td>$663,178,306.67</td>
</tr>
</tbody>
</table>


2013: Estimated market value of $2 billion from several sources:

- First is from Samtani and Pincus (2013). Given the argument among parties, there were several estimates about the ESB’s market value.
  - $1.89 billion value by the REIT itself.
  - $2.2 billion offer from outside investors

  Taking the average gives about $2 billion.

- Additionally, if we use a three-year moving average (2011, 2012, 2013) of net income that was submitted for the ESB to the NYC Department of Finance we get the following (assuming a 5% cap rate, which is typical for New York Real Estate (based on an email correspondence with Adam Pincus, of PincusCo Media).
### NOI and Market Value

<table>
<thead>
<tr>
<th>Year</th>
<th>NOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>$96,961,280</td>
</tr>
<tr>
<td>2012</td>
<td>$99,356,204</td>
</tr>
<tr>
<td>2013</td>
<td>$106,528,619</td>
</tr>
<tr>
<td>Avg.</td>
<td>$100,948,701</td>
</tr>
</tbody>
</table>

**Market Value (5% cap rate)**  
$2,018,974,020

2019: Average of NOI from [NYC DOF](https://www.nyc.gov) for 2017-2019 divided by cap rate of 0.05.

<table>
<thead>
<tr>
<th>Year</th>
<th>NOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>$107,119,619</td>
</tr>
<tr>
<td>2018</td>
<td>$115,179,324</td>
</tr>
<tr>
<td>2019</td>
<td>$124,178,467</td>
</tr>
<tr>
<td>Avg.</td>
<td>$115,492,470</td>
</tr>
</tbody>
</table>

**Market Value (5% cap rate)**  
$2,309,849,400

### Notes

Figure 1 Sources: Left image is from Willis (1995). Center image is from [Wikipedia entry](https://en.wikipedia.org) for the ESB. Right image is from Clark and Kingston (1930).

Note that land values of $175-200 per square foot, while high, were certainly not excessive for the times. For example, in 1928, the southeast corner of Broadway and 43rd Street sold for $278 per square foot. Closer to Grand Central, a lot at 5th Avenue and 43rd Street sold for $376 per square foot ([NY Times](https://www.nytimes.com), 1928). Similarly, average rents of less than $4.00 per square foot were not excessive given that the *Wall Street Journal* reported in 1936 about the Grand Central district, “Rents on average declined about 60% from the 1928-29, when floor space in the better buildings was renting at around $5 to $7 a square foot.” Having said that, on average, land values in 1929 were likely above a sustainable level. We should not, however, judge land values in the Roaring Twenties by the events of the Great Depression, which was utterly unpredictable and novel.

While the economics of skyscrapers in 1929 favored a tall building on the site, even for 1929 standards the Empire State Building was likely economically too tall. The first design by Bethlehem Engineering—the 50-story showroom, loft, and office building (with two million square feet (185,806 m²) of office space)—better reflected the economic characteristics of the neighborhood and the rents that were possible. Smith and Raskob were gambling that they could improve the character of the neighborhood with their iconic structure. Whether their gamble would have paid off or not if the Great Depression never occurred is debatable.

Quote that the ESB “was said to be the highest price ever paid for an office building” is from Ennis (1961).
Quote: “The structure…is now reported to be one of the most profitable single building operations in the world” is from *NY Times* (1951).

Quote: “If it could be sold outright, unencumbered by the leases, the building would have a value of $600 million to $800 million in today’s real estate market” is from Hylton (1991).

The foreign investors he represented lost money on the gamble, and Trump walked away with substantial brokerage fees is from Bagli (2002).

The value of the S&P Stock Index is from [https://www.measuringworth.com/](https://www.measuringworth.com/), “The Annual Standard and Poor's Composite Stock Index, the Yield, and the Accumulated Index of "Portfolio" with Dividends Reinvested -- 1871 to Present.” We just used the Composite Index from 1931 to 2019, normalized with a starting value of 41, the same value as the cost of the Empire State Building (in millions).

Figures for observation deck attendance and revenues is from the Annual Reports of the Empire State Realty Trust.

**References**


