



Finance
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FY 2015 Additional Statistical Distributions and Capitalization Rate Methodology

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Guideline Income, Expense, and Cap Rate Distributions

Major Building Categories	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
INDUSTRIAL	Income	\$8.79	\$10.78	\$13.62	\$11.77
	Expense	\$1.33	\$1.71	\$2.37	\$1.95
	Cap Rate	15.22%	15.22%	15.27%	15.18%
LOFTS	Income	\$30.30	\$32.91	\$35.48	\$31.38
	Expense	\$7.93	\$8.82	\$9.35	\$8.22
	Cap Rate	13.47%	13.52%	13.86%	14.38%
OFFICE	Income	\$18.17	\$26.53	\$40.39	\$31.67
	Expense	\$4.05	\$6.43	\$10.56	\$8.14
	Cap Rate	15.22%	16.22%	16.77%	15.87%
RENTAL APARTMENTS	Income	\$13.00	\$16.04	\$29.01	\$21.86
	Expense	\$6.31	\$7.75	\$10.31	\$8.49
	Cap Rate	13.35%	14.48%	15.50%	14.64%
RETAIL	Income	\$20.77	\$26.63	\$37.03	\$33.79
	Expense	\$3.70	\$4.43	\$5.95	\$5.41
	Cap Rate	16.35%	16.44%	16.85%	15.96%

Notes:

Income = Income per square foot

Expense = Total Expense per square foot

RPIE 2012

Income, Expense, and Year-Year Change Distribution-Citywide

Major Building Categories	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
INDUSTRIAL	3,142	Income	\$7.54	\$10.78	\$14.30	\$12.37
		Income % Change	-2.66%	1.30%	8.18%	2.08%
		Expense	\$1.14	\$2.14	\$3.74	\$2.95
		Expense % change	-24.41%	0.00%	20.76%	2.41%
LOFTS	597	Income	\$18.08	\$27.36	\$35.47	\$29.32
		Income % Change	-1.18%	3.81%	9.50%	2.67%
		Expense	\$5.40	\$9.17	\$13.03	\$9.98
		Expense % change	-13.96%	0.37%	14.89%	1.30%
OFFICE	2,685	Income	\$19.22	\$30.14	\$45.64	\$35.55
		Income % Change	-3.22%	1.62%	7.10%	0.10%
		Expense	\$4.58	\$9.43	\$15.97	\$11.19
		Expense % change	-14.75%	-0.37%	10.28%	-2.23%
RENTAL APARTMENTS	16,778	Income	\$12.02	\$15.91	\$27.72	\$21.93
		Income % Change	0.64%	3.77%	7.26%	3.28%
		Expense	\$6.27	\$8.07	\$10.86	\$9.32
		Expense % change	-9.05%	0.59%	9.55%	-0.22%
RETAIL	8,689	Income	\$16.55	\$25.93	\$40.91	\$35.87
		Income % Change	-3.61%	1.28%	7.64%	0.78%
		Expense	\$2.94	\$5.51	\$9.48	\$7.80
		Expense % change	-21.49%	0.00%	17.32%	-0.22%

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

Income and Expense % changes based on information filed in RPIE 2012 and RPIE 2011

Rental Apartments with greater than 10 units

Does not include outlier filers and or partial year filers

RPIE 2012

Income, Expenses, and Year-Year Change Distribution by Borough-Industrial

Major Building Category	Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
INDUSTRIAL	Manhattan	37	Income	\$9.14	\$17.07	\$28.53	\$20.31
			Income % Change	-5.07%	0.31%	8.39%	1.99%
			Expense	\$0.63	\$2.16	\$5.07	\$2.79
			Expense % change	-20.66%	1.16%	15.07%	-6.99%
	Bronx	363	Income	\$5.99	\$9.21	\$12.18	\$11.18
			Income % Change	-4.64%	0.91%	6.81%	-0.95%
			Expense	\$0.96	\$1.92	\$3.05	\$2.48
			Expense % change	-29.79%	-1.67%	18.50%	-0.60%
	Brooklyn	1,363	Income	\$7.23	\$10.28	\$13.52	\$11.21
			Income % Change	-2.24%	0.76%	8.43%	2.12%
			Expense	\$1.21	\$2.17	\$3.70	\$2.85
			Expense % change	-21.53%	0.70%	23.32%	4.25%
	Queens	1,289	Income	\$8.49	\$11.75	\$15.54	\$13.61
			Income % Change	-2.25%	1.97%	8.31%	3.22%
			Expense	\$1.19	\$2.19	\$4.15	\$3.20
			Expense % change	-25.59%	-0.59%	18.93%	1.36%
	Staten Island	90	Income	\$5.15	\$7.83	\$14.29	\$13.78
			Income % Change	-10.60%	0.00%	6.89%	-2.55%
			Expense	\$0.88	\$1.88	\$3.16	\$2.90
			Expense % change	-20.67%	-0.06%	20.26%	5.52%

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

Income and Expense % changes based on information filed in RPIE 2012 and RPIE 2011

Does not include outlier filers and or partial year filers

RPIE 2012

Income, Expense, and Year-Year Change Distribution by Borough-Lofts

Major Building Category	Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
LOFTS	Manhattan	548	Income	\$20.51	\$28.55	\$36.17	\$30.73
			Income % Change	-1.22%	3.97%	9.54%	2.83%
			Expense	\$5.87	\$9.66	\$13.44	\$10.37
			Expense % change	-14.66%	0.17%	14.67%	0.84%
	Bronx	3	Income	\$7.92	\$8.55	\$11.75	\$9.40
			Income % Change	0.00%	0.00%	30.97%	10.32%
			Expense	\$0.50	\$3.64	\$5.38	\$3.17
			Expense % change	3.03%	18.82%	74.36%	32.07%
	Brooklyn	40	Income	\$9.04	\$12.70	\$18.48	\$14.12
			Income % Change	-0.59%	2.79%	8.11%	0.71%
			Expense	\$3.38	\$4.91	\$7.97	\$6.04
			Expense % change	-9.09%	4.88%	21.43%	8.48%
	Queens	6	Income	\$7.79	\$9.44	\$16.48	\$11.24
			Income % Change	-8.09%	-3.27%	5.52%	-3.41%
			Expense	\$4.20	\$4.53	\$4.95	\$4.17
			Expense % change	-15.85%	-3.80%	-0.74%	-19.49%

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

Income and Expense % changes based on information filed in RPIE 2012 and RPIE 2011

Does not include outlier filers and or partial year filers

RPIE 2012

Income, Expenses, and Year-Year Change Distribution by Borough-Office

Major Building Category	Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
OFFICE	Manhattan	1,314	Income	\$31.66	\$43.41	\$57.69	\$47.35
			Income % Change	-1.95%	2.95%	8.20%	1.70%
			Expense	\$10.09	\$14.95	\$20.76	\$15.77
			Expense % change	-10.77%	-0.29%	7.64%	-1.72%
	Bronx	200	Income	\$14.78	\$21.84	\$29.49	\$24.85
			Income % Change	-6.87%	0.19%	5.88%	-1.94%
			Expense	\$2.70	\$4.62	\$8.49	\$6.58
			Expense % change	-26.38%	-3.37%	12.90%	-5.68%
	Brooklyn	482	Income	\$14.15	\$20.01	\$28.95	\$23.37
			Income % Change	-5.02%	0.34%	5.71%	-1.95%
			Expense	\$2.86	\$5.33	\$8.53	\$6.60
			Expense % change	-19.14%	0.00%	16.16%	-1.31%
	Queens	476	Income	\$15.39	\$22.12	\$30.98	\$25.15
			Income % Change	-5.16%	0.71%	5.52%	-1.10%
			Expense	\$3.36	\$6.03	\$10.19	\$7.26
			Expense % change	-18.60%	0.13%	14.66%	-2.14%
	Staten Island	213	Income	\$13.66	\$20.03	\$29.00	\$23.63
			Income % Change	-3.28%	0.00%	6.90%	-0.52%
			Expense	\$2.90	\$5.38	\$8.52	\$6.37
			Expense % change	-22.17%	-2.11%	11.16%	-4.39%

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

Income and Expense % changes based on information filed in RPIE 2012 and RPIE 2011

Does not include outlier filers and or partial year filers

RPIE 2012

Income, Expense, and Year-Year Change Distribution by Borough-Rental Apartments

Major Building Category	Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
RENTAL APARTMENTS	Manhattan	6,963	Income	\$17.94	\$30.57	\$41.30	\$32.11
			Income % Change	1.13%	4.46%	8.20%	3.74%
			Expense	\$8.13	\$10.60	\$13.88	\$11.78
			Expense % change	-10.41%	0.31%	10.02%	-0.90%
	Bronx	3,421	Income	\$10.15	\$11.81	\$13.86	\$12.66
			Income % Change	-0.30%	2.95%	6.44%	2.32%
			Expense	\$5.96	\$7.14	\$8.54	\$7.63
			Expense % change	-6.92%	1.39%	9.00%	0.72%
	Brooklyn	4,144	Income	\$10.89	\$13.26	\$16.63	\$15.23
			Income % Change	0.54%	3.41%	6.91%	3.35%
			Expense	\$5.31	\$6.61	\$8.32	\$7.40
			Expense % change	-8.90%	0.44%	9.47%	0.18%
	Queens	2,118	Income	\$13.71	\$16.37	\$19.09	\$17.06
			Income % Change	1.09%	3.40%	6.09%	3.22%
			Expense	\$5.86	\$7.40	\$9.19	\$7.88
			Expense % change	-9.06%	0.45%	8.90%	-0.24%
	Staten Island	132	Income	\$11.52	\$13.72	\$16.12	\$14.25
			Income % Change	-0.07%	2.32%	5.59%	2.58%
			Expense	\$5.11	\$6.79	\$8.27	\$6.82
			Expense % change	-10.34%	-0.24%	8.42%	-1.36%

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

Income and Expense % changes based on information filed in RPIE 2012 and RPIE 2011

Rental Apartments with greater than 10 units

Does not include outlier filers and or partial year filers

RPIE 2012

Income, Expenses, and Year-Year Change Distribution by Borough-Retail

Major Building Category	Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
RETAIL	Manhattan	1,366	Income	\$28.12	\$47.84	\$80.98	\$68.20
			Income % Change	-2.60%	2.94%	9.04%	1.99%
			Expense	\$4.84	\$8.92	\$15.99	\$12.80
			Expense % change	-19.39%	-0.11%	17.08%	-0.14%
	Bronx	1,382	Income	\$15.66	\$22.94	\$34.10	\$28.51
			Income % Change	-3.98%	1.90%	9.30%	1.49%
			Expense	\$3.15	\$5.59	\$9.25	\$7.26
			Expense % change	-21.25%	0.00%	18.71%	0.12%
	Brooklyn	2,489	Income	\$14.55	\$22.25	\$32.82	\$26.63
			Income % Change	-3.61%	0.65%	6.59%	0.17%
			Expense	\$2.36	\$4.57	\$7.64	\$6.04
			Expense % change	-21.70%	0.53%	18.68%	0.89%
	Queens	2,909	Income	\$17.14	\$26.38	\$40.38	\$33.82
			Income % Change	-3.68%	0.87%	7.30%	0.60%
			Expense	\$2.94	\$5.40	\$9.03	\$7.36
			Expense % change	-22.57%	-0.66%	15.83%	-1.41%
	Staten Island	543	Income	\$14.65	\$21.62	\$31.55	\$26.67
			Income % Change	-5.79%	0.48%	5.68%	-0.26%
			Expense	\$2.85	\$4.87	\$8.39	\$7.11
			Expense % change	-20.58%	0.25%	16.43%	0.05%

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

Income and Expense % changes based on information filed in RPIE 2012 and RPIE 2011

Does not include outlier filers and or partial year filers

FY15 Capitalization Rate Methodology Tax Class 2

- Capitalization Rate based on Ellwood formula

$$R_o = Y_o - \Delta_n^{(a_n)}$$

↓

Fallout Capitalization Rate = return *on* capital (dividend yield) - return *of* capital (capital gain/loss)

↓

Capitalization Rate based on earnings

- Expected earnings at sale adjusted to maintain growth at 1*

- the higher the growth rate, the lower the fallout Capitalization Rate, the more valuable the property

*Guideline Cap rates will not reflect future property appreciation

FY15 Capitalization Rate Methodology Tax Class 2

- R_0 and $\Delta_n^{(an)}$ are *not* estimated for each property but are guideline curves that reflect median relationships with income
- R_0 is estimated by a median regression of market Capitalization Rate on income per square foot
- $\Delta_n^{(an)}$ is estimated by a median regression of annual sales growth of Class 2 rentals over a five-year period on income per square foot

FY15 Capitalization Rate Methodology Tax Class 2

- Guideline curves are applied on *rental filer* population and centered to reflect market rates

- For FY15: - the base Capitalization Rate R_0 is centered on 6%*

- the growth rate $\Delta_n^{(a)}$ is centered around 2.6% to keep the median growth rate of FY15 to FY14 stable at 1

Variable	Filer Count	Guideline Rates									Mean
		1st Pctl	5th Pctl	10th Pctl	25th Pctl	50th Pctl	75th Pctl	90th Pctl	95th Pctl	99th Pctl	
R_0	13473	1.57%	2.10%	2.36%	3.27%	5.98%	7.40%	8.76%	9.66%	12.11%	5.69%
$\Delta_n^{(a)}$	13473	1.25%	1.68%	1.87%	2.19%	2.60%	3.74%	4.36%	4.59%	5.14%	2.92%

- FY15 versus FY14 Capitalization Rate *

Variable	Filer Count	Minimum	1st Pctl	5th Pctl	10th Pctl	25th Pctl	Citywide					Maximum	Mean
							50th Pctl	75th Pctl	90th Pctl	95th Pctl	99th Pctl		
Cap Rate FY15	13473	7.20%	7.20%	7.20%	7.20%	7.20%	8.57%	9.59%	10.63%	11.34%	13.36%	13.36%	8.72%
Cap Rate FY14	13473	7.00%	7.20%	7.20%	7.20%	7.20%	8.51%	9.86%	11.00%	11.78%	12.05%	12.05%	8.76%
Cap Rate FY15/FY14	13473	0.66	0.92	0.95	0.96	0.98	1.00	1.00	1.02	1.04	1.12	1.33	1.00

*CBRE Spring 2013 average Value Added Capitalization rate for Multi-Housing in Manhattan

*Does not include effective tax rate portion of Capitalization Rate

FY15 Capitalization Rate Formulas and Example Tax Class 2

- Capitalization Rate used reflects earnings-based return

$$Y_o = R_o + \Delta_n^{(a_n)}$$

$$R_o = \exp(-1.0153 \cdot \ln(\text{income psf}))$$

$$\Delta_n^{(a_n)} = -.0276 + .0193 \cdot \ln(\text{income psf})$$

Example: income psf = **\$13.42***

$$R_o = \exp(-1.0153 \cdot \ln(13.42)) = 7.16\%$$

$$\Delta_n^{(a_n)} = -.0276 + .0193 \cdot \ln(13.42) = 2.25\%$$

$$Y_o = 7.16\% + 2.25\% = **9.41%**$$

* FY15 Guidelines Post-1973 Rental Elevator Building Outer Borough

FY15 Capitalization Rate Methodology Tax Class 4

	Cap Rate Adjustment to FY14
Loft, Garage, Factories	-0.030
Office Manhattan N 110th A/B	0.465
Office Manhattan S 110th A/B	0.083
Office Outer	0.465
Office Manhattan N 110th not A/B	0.465
Office Manhattan S 110 not A/B	0.465
Retail Outer	-0.498
Retail Manhattan	-3.040

- Capitalization Rate are given a flat rate adjustment from FY14
- Flat rate adjustments are determined from Co-Star 2013 second quarter year-over-year change