



Department of Finance

FY 2019

RPIE 2016 Income and Expense Distributions

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Special Thanks to the Property Modeling and Research Group

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RPIE 2016

Citywide by Property Type

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

1

	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
INDUSTRIAL	2,591	Income	\$9.35	\$13.01	\$17.12	\$15.58
		Income % change	-0.41%	2.59%	10.00%	3.76%
		Expense	\$1.44	\$2.59	\$4.48	\$3.78
		Expense % change	-19.08%	0.01%	21.83%	6.25%
LOFTS	254	Income	\$20.99	\$31.80	\$44.91	\$36.36
		Income % change	-1.97%	3.27%	10.00%	1.85%
		Expense	\$5.70	\$9.51	\$14.21	\$11.14
		Expense % change	-17.28%	-0.80%	14.76%	1.83%
OFFICE	2,502	Income	\$20.48	\$33.46	\$55.29	\$51.74
		Income % change	-2.14%	2.00%	8.03%	1.74%
		Expense	\$4.31	\$8.78	\$16.65	\$14.94
		Expense % change	-14.34%	0.00%	12.57%	0.97%
RENTAL APARTMENTS	13,202	Income	\$13.94	\$18.60	\$32.96	\$25.92
		Income % change	0.00%	2.48%	5.41%	1.93%
		Expense	\$6.57	\$8.56	\$11.81	\$10.12
		Expense % change	-10.13%	-0.63%	7.69%	-1.38%
RETAIL	8,600	Income	\$20.18	\$32.10	\$53.25	\$53.64
		Income % change	-1.09%	2.40%	7.88%	2.05%
		Expense	\$3.49	\$6.64	\$12.25	\$11.49
		Expense % change	-15.75%	0.79%	17.59%	2.93%

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

Income and Expense % changes based on information filed in RPIE 2016 and RPIE 2015

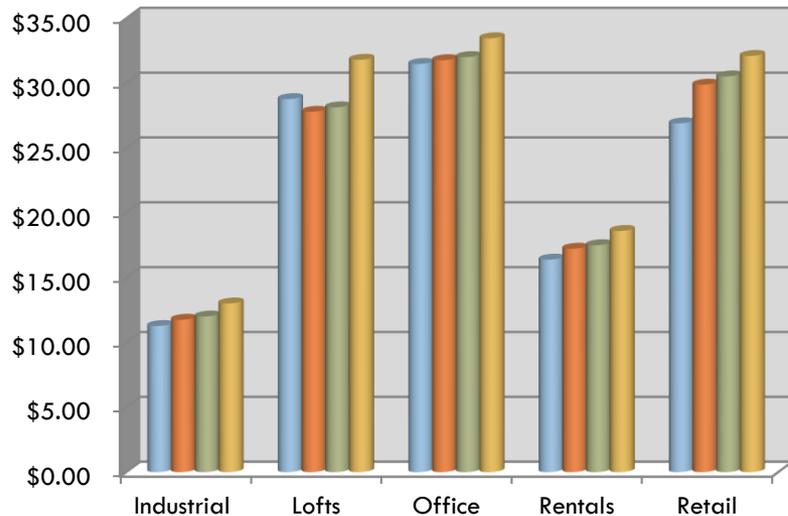
Rental Apartments with greater than 10 units

Does not include outlier filers and /or partial year filers

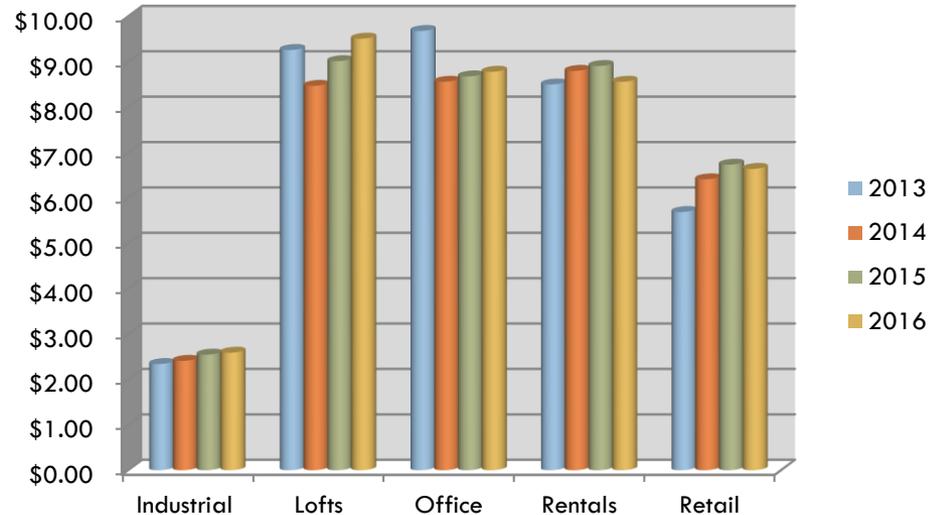
RPIE 2013 - 2016

Citywide by Property Type

Median Income Per Square Foot



Median Expense Per Square Foot



Number of Filings

	2013	2014	2015	2016
Industrial	2,452	2,692	2,689	2,591
Lofts	437	288	281	254
Office	2,043	2,390	2,498	2,502
Rentals	12,591	12,966	13,073	13,202
Retail	6,519	8,188	8,661	8,600

Does not include outlier filers and /or partial year filers

RPIE 2016

Citywide by Borough

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

	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
MANHATTAN	8,599	Income	\$25.81	\$41.28	\$58.22	\$59.50
		Income % change	-0.39%	2.85%	6.76%	2.13%
		Expense	\$8.89	\$12.39	\$17.77	\$16.94
		Expense % change	-11.73%	0.00%	10.71%	-0.01%
BRONX	4,332	Income	\$11.66	\$14.22	\$19.82	\$19.95
		Income % change	-0.20%	2.18%	5.69%	2.16%
		Expense	\$5.36	\$7.10	\$9.08	\$7.95
		Expense % change	-11.14%	-0.43%	8.54%	0.26%
BROOKLYN	7,366	Income	\$12.82	\$17.00	\$26.33	\$23.85
		Income % change	-0.19%	2.22%	6.29%	1.99%
		Expense	\$3.84	\$6.19	\$8.80	\$7.51
		Expense % change	-12.76%	0.04%	12.05%	1.33%
QUEENS	5,979	Income	\$15.34	\$20.73	\$31.57	\$32.32
		Income % change	-0.19%	2.40%	6.59%	2.38%
		Expense	\$3.53	\$6.35	\$9.61	\$10.31
		Expense % change	-13.73%	0.00%	13.63%	2.20%
STATEN ISLAND	873	Income	\$12.71	\$19.42	\$29.70	\$26.30
		Income % change	-1.93%	1.35%	6.61%	1.23%
		Expense	\$2.89	\$5.32	\$8.57	\$7.82
		Expense % change	-18.13%	0.00%	17.75%	2.47%

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

Income and Expense % changes based on information filed in RPIE 2016 and RPIE 2015

Rental Apartments with greater than 10 units

Does not include outlier filers and /or partial year filers

RPIE 2016

Industrial Properties by Borough

Income, Expenses, and Year-to-Year Change Distribution

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Major Building Category	Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
INDUSTRIAL	Manhattan	35	Income	\$20.50	\$25.28	\$41.64	\$43.42
			Income % Change	0.00%	3.95%	15.96%	6.73%
			Expense	\$2.12	\$5.13	\$11.14	\$8.01
			Expense % change	-11.69%	1.58%	24.21%	9.29%
	Bronx	333	Income	\$7.79	\$10.65	\$13.72	\$14.07
			Income % Change	-1.47%	3.00%	10.64%	4.13%
			Expense	\$1.57	\$2.54	\$4.08	\$3.63
			Expense % change	-20.26%	0.00%	16.40%	1.48%
	Brooklyn	1096	Income	\$9.36	\$12.51	\$16.61	\$14.28
			Income % Change	0.00%	2.25%	9.41%	3.30%
			Expense	\$1.52	\$2.78	\$4.80	\$3.75
			Expense % change	-18.79%	0.16%	22.00%	5.96%
	Queens	1036	Income	\$10.14	\$13.52	\$17.10	\$15.73
			Income % Change	-0.52%	2.83%	10.03%	4.04%
			Expense	\$1.51	\$2.63	\$4.50	\$3.94
			Expense % change	-19.05%	0.70%	23.71%	8.07%
Staten Island	91	Income	\$6.54	\$9.93	\$12.95	\$12.02	
		Income % Change	-4.29%	0.58%	10.37%	3.68%	
		Expense	\$1.14	\$2.31	\$3.95	\$3.25	
		Expense % change	-22.26%	-0.18%	11.73%	5.19%	

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

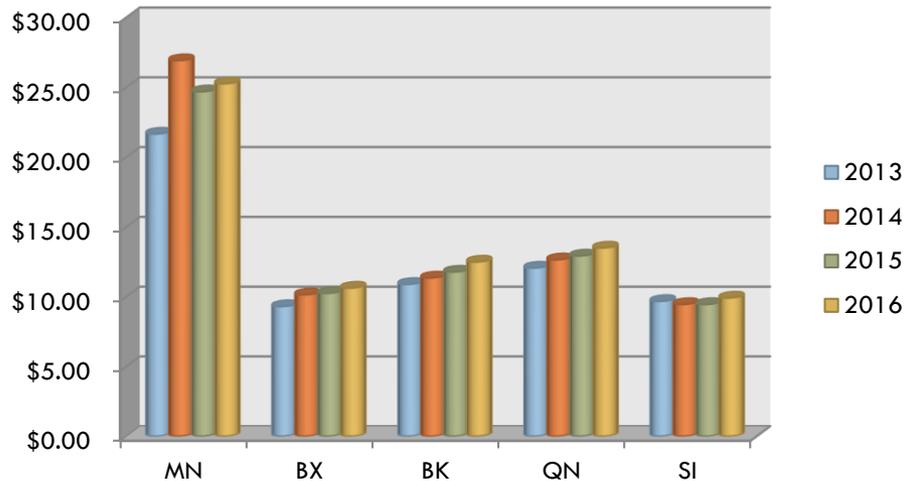
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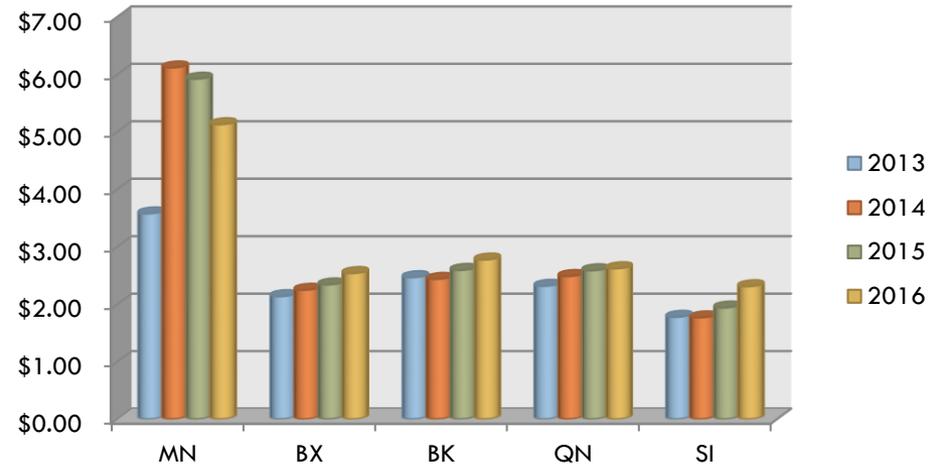
RPIE 2013 - 2016

Industrial Properties by Borough

Median Income Per Square Foot



Median Expense Per Square Foot



Number of Filings

	2013	2014	2015	2016
Manhattan	26	48	40	35
Bronx	302	308	331	333
Brooklyn	1,066	1,174	1,152	1096
Queens	987	1,065	1,067	1036
Staten Island	71	97	99	91

Does not include outlier filers and /or partial year filers

RPIE 2016

Loft Properties By Borough

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

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Major Building Category	Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
LOFT	Manhattan	219	Income	\$25.06	\$32.89	\$43.71	\$38.23
			Income % Change	-1.50%	3.33%	10.44%	1.83%
			Expense	\$6.13	\$11.10	\$15.50	\$12.02
			Expense % change	-17.28%	-0.83%	14.76%	1.44%
	Bronx	2	Income	\$9.44	\$11.62	\$13.80	\$11.62
			Income % Change	-7.90%	-7.39%	-6.89%	-7.39%
			Expense	\$1.02	\$2.87	\$4.73	\$2.87
			Expense % change	36.39%	37.60%	38.82%	37.60%
	Brooklyn	27	Income	\$12.26	\$16.64	\$22.99	\$22.19
			Income % Change	0.00%	3.28%	9.84%	3.70%
			Expense	\$2.68	\$5.73	\$10.71	\$8.07
			Expense % change	-13.72%	-0.40%	11.76%	3.53%
Queens	6	Income	\$10.50	\$13.52	\$17.80	\$14.33	
		Income % Change	-4.80%	-1.08%	2.31%	-2.95%	
		Expense	\$4.27	\$5.39	\$6.32	\$4.70	
		Expense % change	-19.49%	-10.36%	20.15%	-3.27%	

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

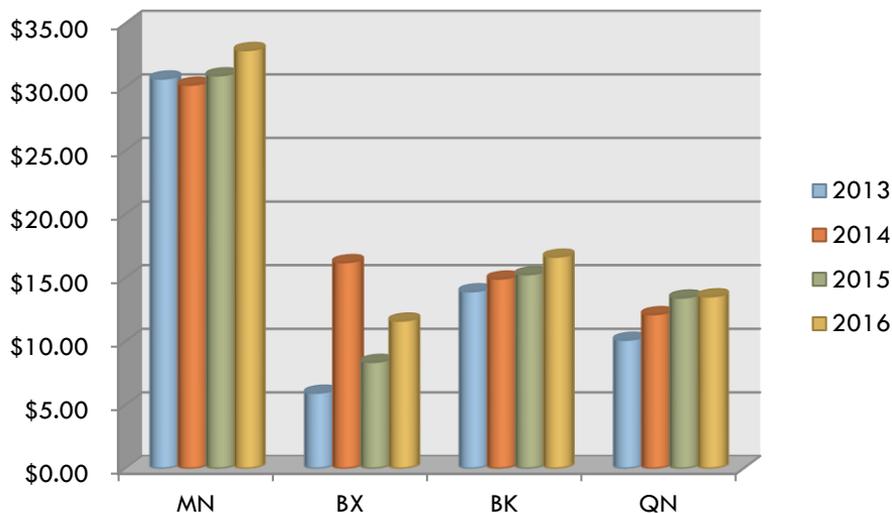
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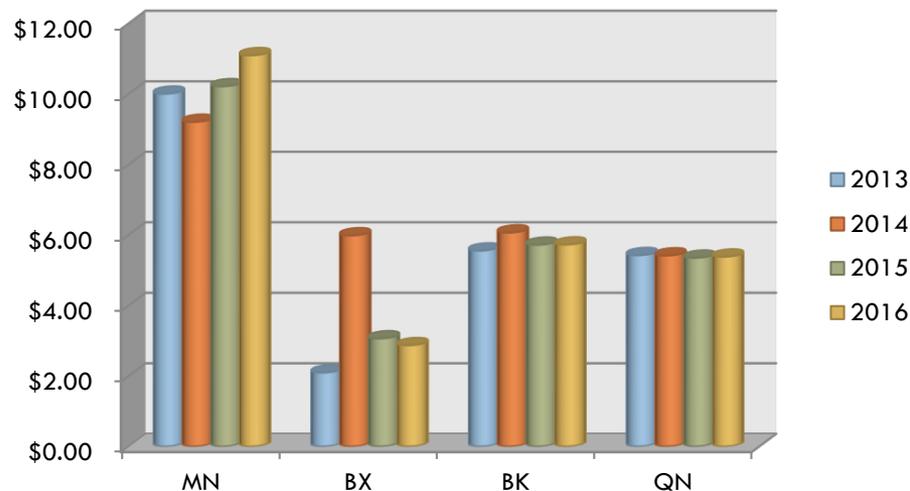
RPIE 2013 - 2016

Loft Properties by Borough

Median Income Per Square Foot



Median Expense Per Square Foot



Number of Filings

	2013	2014	2015	2016
Manhattan (MN)	393	248	240	219
Bronx (BX)	4	1	2	2
Brooklyn (BK)	35	33	30	27
Queens (QN)	5	6	9	6

Does not include outlier filers and /or partial year filers

RPIE 2016

Office Properties by Borough

Income, Expenses, and Year-to-Year Change Distribution

Major Building Category	Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
OFFICE	Manhattan	973	Income	\$38.43	\$53.69	\$75.72	\$74.96
			Income % Change	-1.13%	3.02%	9.09%	3.08%
			Expense	\$9.85	\$16.45	\$23.94	\$22.87
			Expense % change	-8.08%	1.40%	11.27%	2.05%
	Bronx	186	Income	\$17.53	\$24.92	\$35.61	\$33.39
			Income % Change	-1.78%	1.36%	6.57%	1.10%
			Expense	\$3.53	\$5.92	\$8.95	\$9.56
			Expense % change	-21.05%	0.01%	18.93%	1.72%
	Brooklyn	587	Income	\$15.98	\$23.52	\$34.99	\$32.44
			Income % Change	-1.26%	1.69%	7.81%	1.71%
			Expense	\$3.19	\$5.97	\$9.57	\$9.44
			Expense % change	-20.57%	-0.80%	12.13%	-0.98%
Queens	572	Income	\$18.96	\$26.88	\$40.89	\$41.43	
		Income % Change	-3.95%	1.54%	8.19%	0.80%	
		Expense	\$4.00	\$7.19	\$12.07	\$11.95	
		Expense % change	-16.31%	-1.15%	12.73%	0.63%	
Staten Island	184	Income	\$15.06	\$22.76	\$32.35	\$26.58	
		Income % Change	-6.31%	0.00%	4.66%	-1.77%	
		Expense	\$3.17	\$5.82	\$9.72	\$7.50	
		Expense % change	-18.90%	0.00%	21.56%	1.72%	

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

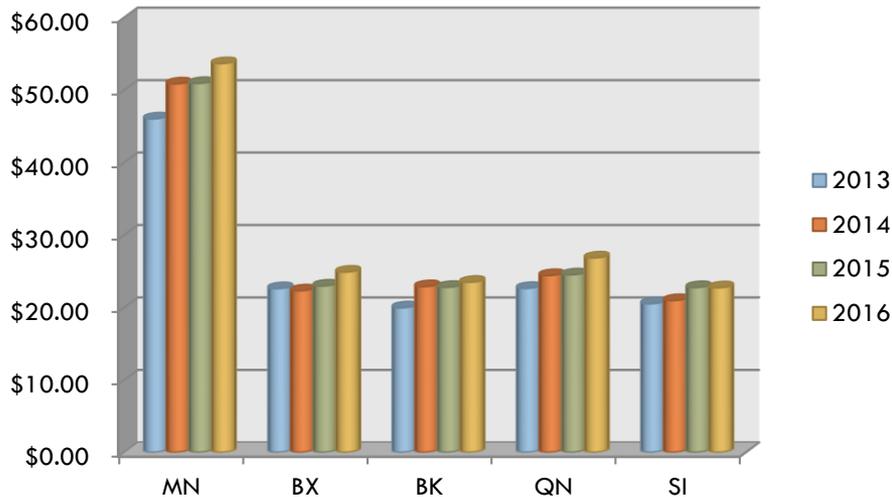
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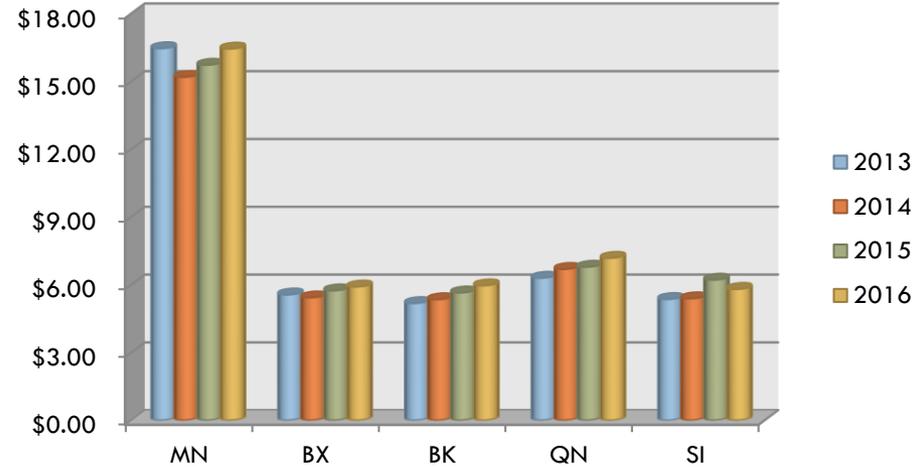
RPIE 2013 - 2016

Office Properties by Borough

Median Income Per Square Foot



Median Expense Per Square Foot



Number of Filings

	2013	2014	2015	2016
Manhattan (MN)	941	946	969	973
Bronx (BX)	151	171	182	186
Brooklyn (BK)	396	533	571	587
Queens (QN)	377	553	581	572
Staten Island (SI)	178	187	195	184

Does not include outlier filers and /or partial year filers

RPIE 2016

Rental Apartments By Borough

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

Major Building Category	Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
RENTAL APARTMENTS	Manhattan	5362	Income	\$20.86	\$35.98	\$48.24	\$38.59
			Income % Change	-0.07%	2.61%	5.83%	1.90%
			Expense	\$9.10	\$11.94	\$15.94	\$13.73
			Expense % change	-11.43%	-0.45%	8.97%	-1.56%
	Bronx	2675	Income	\$11.36	\$13.17	\$15.40	\$14.23
			Income % Change	0.00%	2.15%	4.92%	1.82%
			Expense	\$6.31	\$7.51	\$9.13	\$8.21
			Expense % change	-9.55%	-1.31%	6.00%	-1.72%
	Brooklyn	3288	Income	\$12.60	\$15.19	\$19.40	\$18.11
			Income % Change	0.00%	2.39%	5.35%	1.89%
			Expense	\$5.76	\$7.30	\$9.27	\$8.10
			Expense % change	-9.30%	-0.22%	8.27%	-0.63%
Queens	1773	Income	\$15.82	\$18.64	\$21.85	\$30.40	
		Income % Change	0.36%	2.65%	5.28%	2.28%	
		Expense	\$6.26	\$7.96	\$10.04	\$16.20	
		Expense % change	-9.52%	-0.68%	6.79%	-1.59%	
Staten Island	104	Income	\$13.16	\$15.49	\$18.65	\$29.69	
		Income % Change	0.20%	2.29%	4.76%	1.44%	
		Expense	\$5.50	\$7.19	\$9.37	\$15.95	
		Expense % change	-15.08%	-1.83%	9.73%	-3.36%	

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

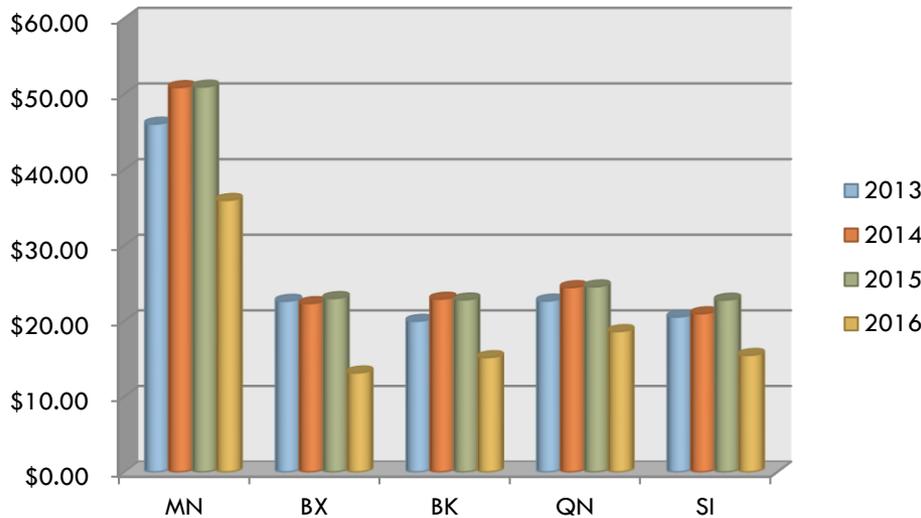
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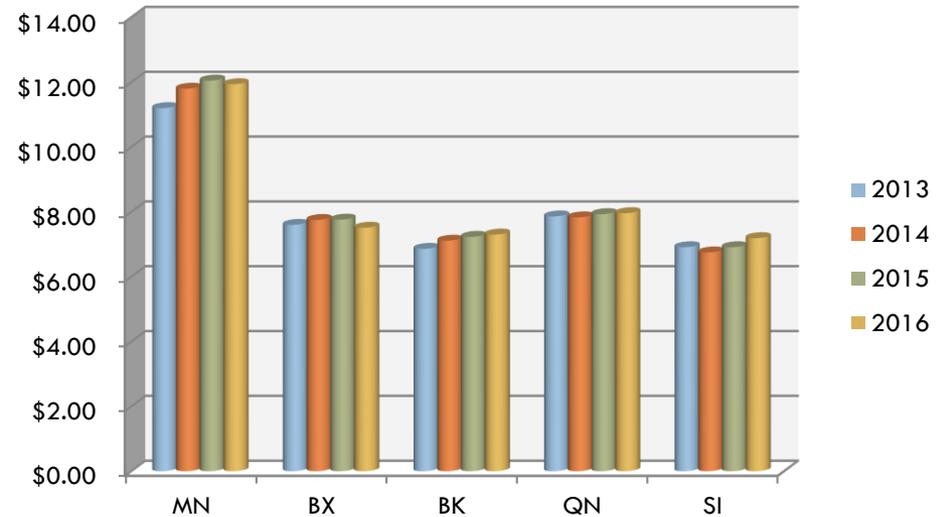
RPIE 2013 - 2016

Rental Properties by Borough

Median Income Per Square Foot



Median Expense Per Square Foot



Number of Filings

	2013	2014	2015	2016
Manhattan (MN)	5,128	5,342	5,367	5,362
Bronx (BX)	2,600	2,652	2,564	2,675
Brooklyn (BK)	3,175	3,222	3,267	3,288
Queens (QN)	1,585	1,643	1,769	1,773
Staten Island (SI)	103	107	106	104

Does not include outlier filers and /or partial year filers

RPIE 2016

Retail Properties By Borough

Income, Expenses, and Year-to-Year Change Distribution

Major Building Category	Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
RETAIL	Manhattan	2010	Income	\$39.69	\$60.30	\$106.77	\$110.38
			Income % Change	-1.34%	3.25%	9.17%	2.23%
			Expense	\$7.90	\$13.67	\$22.15	\$23.33
			Expense % change	-14.04%	0.49%	15.94%	2.80%
	Bronx	1136	Income	\$17.48	\$26.02	\$39.02	\$32.95
			Income % Change	-1.13%	2.31%	8.02%	2.57%
			Expense	\$3.90	\$6.51	\$10.00	\$8.36
			Expense % change	-15.21%	1.13%	20.27%	4.25%
	Brooklyn	2368	Income	\$17.11	\$25.75	\$38.18	\$34.15
			Income % Change	-1.19%	2.00%	7.23%	1.58%
			Expense	\$2.99	\$5.36	\$9.00	\$7.96
			Expense % change	-17.68%	1.15%	17.28%	2.44%
	Queens	2592	Income	\$19.68	\$29.61	\$44.98	\$38.31
			Income % Change	-0.84%	2.15%	7.62%	2.14%
			Expense	\$3.45	\$5.99	\$10.18	\$8.48
			Expense % change	-15.51%	0.91%	17.65%	2.79%
Staten Island	494	Income	\$14.60	\$22.37	\$33.48	\$28.12	
		Income % Change	-0.58%	1.76%	7.85%	1.86%	
		Expense	\$2.92	\$5.20	\$8.54	\$7.06	
		Expense % change	-19.45%	0.00%	20.83%	3.48%	

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

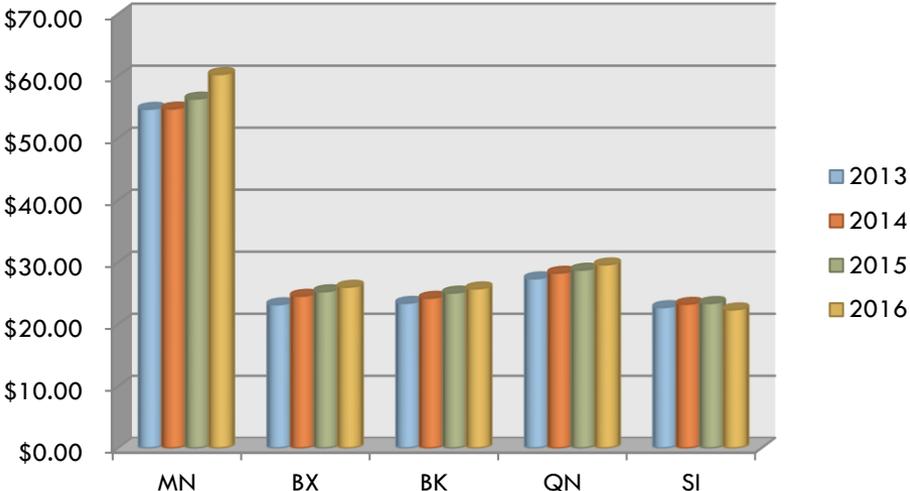
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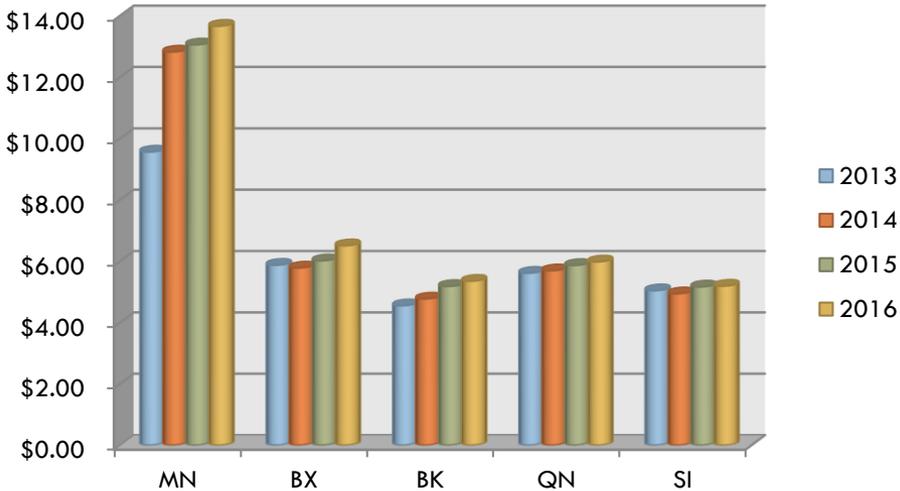
RPIE 2013 - 2016

Retail Properties by Borough

Median Income Per Square Foot



Median Expense Per Square Foot



Number of Filings

	2013	2014	2015	2016
Manhattan (MN)	1,017	1,968	2,005	2,010
Bronx (BX)	1,059	1,119	1,217	1,136
Brooklyn (BK)	1,828	2,141	2,325	2,368
Queens (QN)	2,198	2,511	2,643	2,592
Staten Island (SI)	417	449	471	494

Does not include outlier filers and /or partial year filers

Guideline Income, Expense, and Cap Rate Distributions

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Major Building Categories	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
INDUSTRIAL	Income	\$13.42	\$16.27	\$18.52	\$17.06
	Expense	\$2.18	\$2.76	\$3.35	\$2.96
	Cap Rate	14.81%	14.78%	17.75%	14.57%
LOFTS	Income	\$25.72	\$36.75	\$52.33	\$38.17
	Expense	\$6.38	\$9.99	\$12.91	\$10.22
	Cap Rate	13.15%	12.80%	12.69%	13.15%
OFFICES	Income	\$26.74	\$34.30	\$51.75	\$42.60
	Expense	\$6.07	\$8.09	\$14.26	\$10.71
	Cap Rate	15.21%	15.06%	14.20%	14.42%
RENTAL APARTMENTS	Income	\$15.47	\$20.02	\$33.38	\$26.60
	Expense	\$7.59	\$9.44	\$12.50	\$10.50
	Cap Rate	13.97%	13.03%	12.50%	13.35%
RETAIL	Income	\$27.72	\$35.23	\$50.29	\$45.33
	Expense	\$5.41	\$6.24	\$7.65	\$7.14
	Cap Rate	15.34%	14.77%	14.02%	13.50%

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

Cap Rate = Loaded Cap Rate

FY19 Capitalization Rate Methodology

Tax Class 2

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- Capitalization Rate based on Ellwood formula

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



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



Capitalization Rate based on earnings

- 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

FY19 Capitalization Rate Methodology Tax Class 2

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- R_o and $\Delta_n^{(an)}$ are *not* estimated for each property but are guideline curves that reflect median relationships with income
- R_o 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 that were purchased between 1986-2016 and sold from 2013-2017.

FY19 Capitalization Rate Methodology Tax Class 2

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

- For FY19: - the median Capitalization Rate R_0 is centered on 5.00%*

Guidelines Rates

Variable	25 th Pctl	50 th Pctl	75 th Pctl	Mean
R_0	2.87%	5.00%	6.77%	5.36%
Δ	2.35%	2.90%	3.90%	3.13%

- FY19 versus FY18 Capitalization Rate *

Citywide

Variable	25th Pctl	50th Pctl	75th Pctl	Mean
Cap Rate FY19	6.55%	7.66%	8.86%	8.04%
Cap Rate FY18	6.70%	7.10%	8.14%	7.63%
Cap Rate FY19-FY18	-0.15%	0.85%	0.62%	0.41%

*Does not include effective tax rate portion of Capitalization Rate

FY19 Capitalization Rate Formulas and Example Tax Class 2

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- Capitalization Rate used reflects earnings-based return

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

$$R_o = \exp (-1.026413985 * \ln(\text{income psf}))$$

$$\Delta_n^{(a_n)} = -0.025572 + 0.018699 * \ln(\text{income psf})$$

Example: income psf = **\$18.20***

$$R_o = \exp (-1.026413985 * \ln(18.20)) * 100 = 5.089\%$$

$$\Delta_n^{(a_n)} = (-0.025572 + 0.018699 * \ln(18.20)) * 100 = 2.868\%$$

$$Y_o = 5.089\% + 2.868\% = **7.957%**$$

* FY19 Guidelines Post-1973 Rental Elevator Building Outer Borough

FY19 Capitalization Rate Methodology Tax Class 4

Major Building Category	Flat Cap Rate Adjustment to FY18
OFFICE-MANHATTAN CLASS A/B/TROPHY AND DOWNTOWN BROOKLYN CLASS A	-0.10%
OFFICE-MANHATTAN SOUTH OF 110 TH STREET NOT CLASS A/B/TROPHY	-0.10%
OFFICE-MANHATTAN NORTH OF 110 TH STREET AND OUTER BOROUGHES	0.02%
RETAIL-MANHATTAN SOUTH OF 125 TH STREET AND DOWNTOWN BROOKLYN	0.35%
RETAIL-MANHATTAN NORTH OF 125 TH STREET AND OUTER BOROUGHES	0.26%
INDUSTRIAL	0.22%
GARAGE	0.22%
LOFT	0.22%

- Capitalization Rate are given a flat rate adjustment from FY18