



Finance
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Commissioner

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FY 2020

RPIE 2017 Income and Expense Distributions

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Special Thanks to the Property Modeling and Research Group

For Assessment Roll Published January 2019



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RPIE 2017

Citywide by Property Type

Income, Expense, and Year-Year Change Distribution

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Property Type	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
INDUSTRIAL	2,466	Income	\$10.00	\$13.82	\$18.36	\$17.55
		Income % change	-0.06%	2.60%	10.00%	3.60%
		Expense	\$1.52	\$2.76	\$4.72	\$4.47
		Expense % change	-16.61%	0.49%	20.59%	5.75%
LOFTS	241	Income	\$22.38	\$32.39	\$46.01	\$37.42
		Income % change	-3.77%	2.61%	7.77%	1.38%
		Expense	\$6.36	\$10.37	\$14.99	\$11.58
		Expense % change	-13.28%	1.88%	15.66%	2.72%
OFFICE	2,424	Income	\$22.42	\$36.72	\$58.69	\$56.26
		Income % change	-1.42%	2.11%	7.34%	2.12%
		Expense	\$4.72	\$9.22	\$17.16	\$16.02
		Expense % change	-11.15%	1.44%	14.30%	1.80%
RENTAL APARTMENTS	13,225	Income	\$14.47	\$19.37	\$34.59	\$26.93
		Income % change	-0.26%	2.21%	5.08%	1.85%
		Expense	\$6.81	\$8.83	\$12.30	\$10.49
		Expense % change	-6.81%	2.04%	11.34%	1.96%
RETAIL	8,465	Income	\$21.18	\$33.85	\$56.71	\$56.96
		Income % change	-1.10%	2.18%	7.22%	1.96%
		Expense	\$3.72	\$7.10	\$13.10	\$12.10
		Expense % change	-13.21%	1.20%	17.08%	3.93%

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 2017

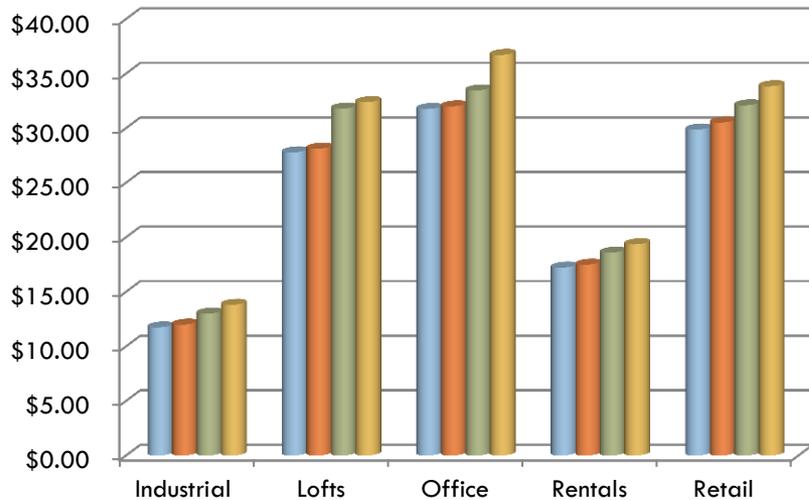
Rental Apartments with greater than 10 units

Does not include outlier filers and /or partial year filers

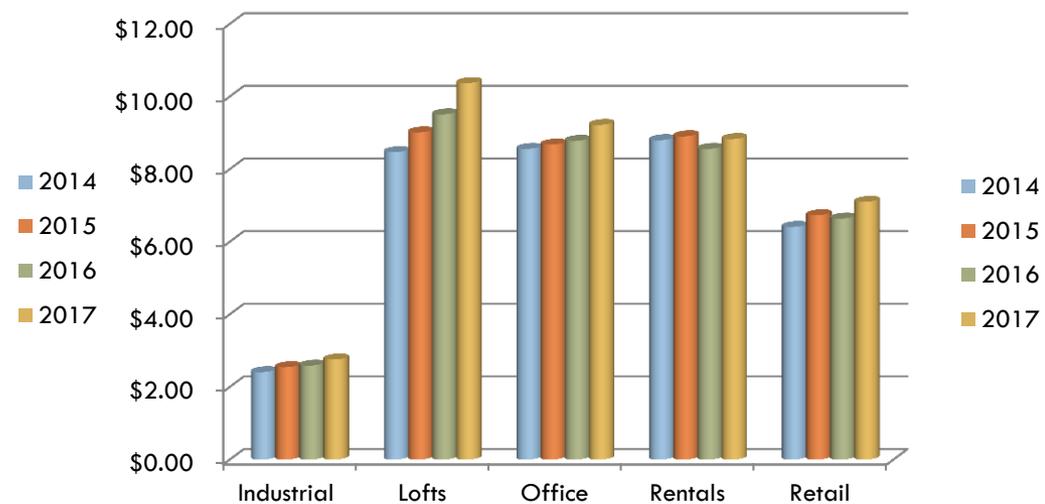
RPIE 2014 - 2017

Citywide by Property Type

Median Income Per Square Foot



Median Expense Per Square Foot



Number of Filings

Number of Filings	2014	2015	2016	2017
Industrial	2,692	2,689	2,591	2,466
Lofts	288	281	254	241
Office	2,390	2,498	2,502	2,424
Rentals	12,966	13,073	13,202	13,225
Retail	8,188	8,661	8,600	8,465

Does not include outlier filers and /or partial year filers

RPIE 2017

Citywide by Borough

Income, Expense, and Year-Year Change Distribution

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Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
MANHATTAN	8638	Income	\$27.16	\$44.02	\$61.36	\$63.45
		Income % change	-1.16%	2.14%	5.89%	1.65%
		Expense	\$8.94	\$12.65	\$18.12	\$17.37
		Expense % change	-8.55%	2.26%	13.33%	2.60%
BRONX	4376	Income	\$12.36	\$15.03	\$20.74	\$21.08
		Income % change	-0.45%	2.12%	5.56%	2.09%
		Expense	\$5.36	\$7.10	\$9.10	\$7.97
		Expense % change	-7.77%	1.59%	11.67%	2.88%
BROOKLYN	7155	Income	\$13.76	\$18.31	\$28.28	\$24.88
		Income % change	0.00%	2.43%	6.28%	2.39%
		Expense	\$3.90	\$6.32	\$8.93	\$7.46
		Expense % change	-10.17%	1.46%	14.14%	3.06%
QUEENS	5793	Income	\$16.46	\$22.35	\$34.41	\$32.20
		Income % change	0.00%	2.34%	6.41%	2.38%
		Expense	\$3.54	\$6.50	\$9.86	\$8.56
		Expense % change	-10.65%	1.18%	14.65%	3.50%
STATEN ISLAND	859	Income	\$13.16	\$20.23	\$31.39	\$25.74
		Income % change	-1.97%	1.05%	6.15%	1.30%
		Expense	\$2.80	\$5.31	\$8.48	\$6.82
		Expense % change	-16.01%	0.00%	14.92%	1.25%

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

Income and Expense % changes based on information filed in RPIE 2017 and RPIE 2016

Rental Apartments with greater than 10 units

Does not include outlier filers and /or partial year filers

RPIE 2017

Industrial Properties by Borough

Income, Expenses, and Year-Year Change Distribution

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Major Building Category	Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
INDUSTRIAL	Manhattan	32	Income	\$22.28	\$32.08	\$54.97	\$119.26
			Income % Change	-2.16%	0.18%	9.23%	2.36%
			Expense	\$2.18	\$6.89	\$11.71	\$52.83
			Expense % change	-29.45%	-1.56%	11.52%	-8.68%
	Bronx	312	Income	\$8.48	\$12.02	\$15.24	\$15.85
			Income % Change	-0.96%	2.00%	10.37%	2.43%
			Expense	\$1.36	\$2.44	\$4.02	\$3.18
			Expense % change	-24.52%	-0.95%	14.17%	-0.01%
	Brooklyn	1026	Income	\$9.96	\$13.71	\$18.02	\$15.95
			Income % Change	0.00%	2.81%	10.00%	3.79%
			Expense	\$1.50	\$2.86	\$4.93	\$3.85
			Expense % change	-15.44%	0.75%	20.59%	5.59%
	Queens	998	Income	\$10.91	\$14.97	\$19.37	\$17.00
			Income % Change	0.00%	2.85%	9.73%	3.75%
			Expense	\$1.60	\$2.79	\$4.77	\$4.12
			Expense % change	-15.30%	1.46%	23.17%	8.19%
Staten Island	98	Income	\$7.98	\$11.05	\$13.60	\$12.13	
		Income % Change	-3.39%	0.09%	12.19%	4.31%	
		Expense	\$1.41	\$2.18	\$3.77	\$2.85	
		Expense % change	-21.39%	0.00%	20.10%	5.57%	

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

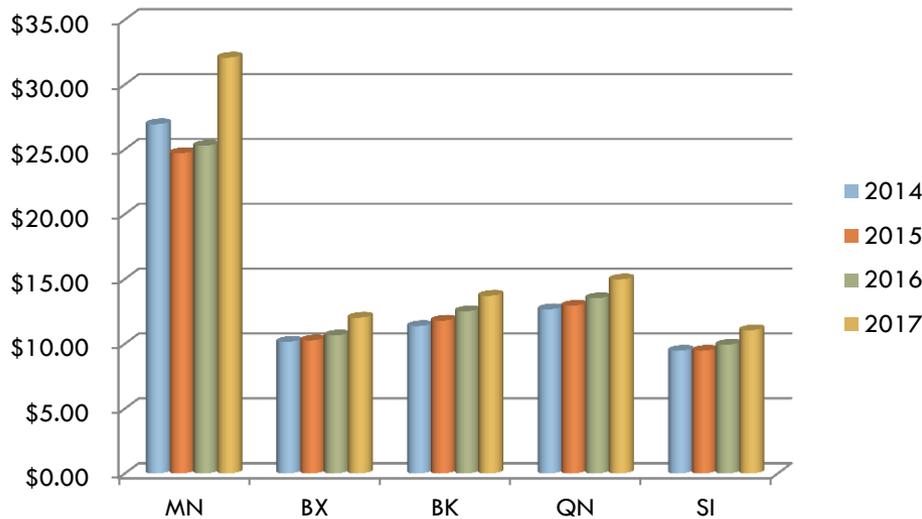
Income and Expense % changes based on information filed in RPIE 2017 and RPIE 2016

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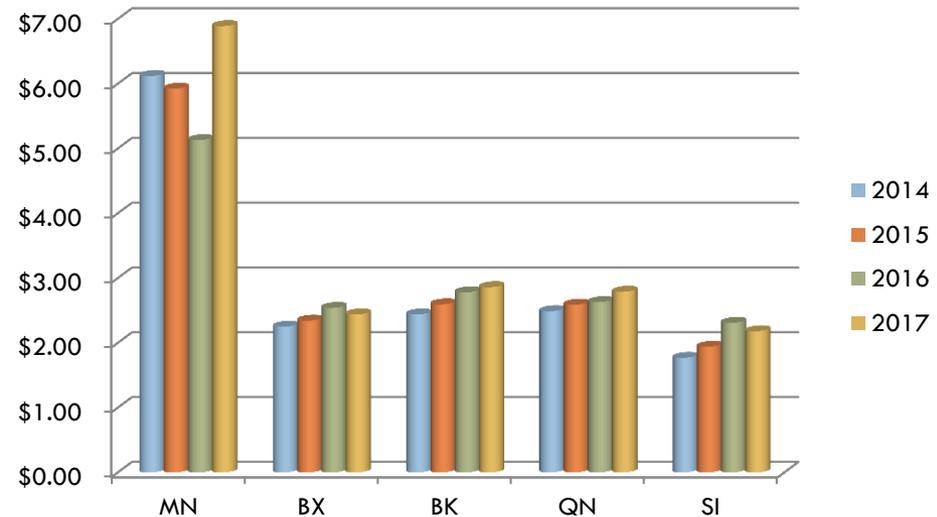
RPIE 2014 - 2017

Industrial Properties by Borough

Median Income Per Square Foot



Median Expense Per Square Foot



Number of Filings

	2014	2015	2016	2017
Manhattan (MN)	48	40	35	32
Bronx (BX)	308	331	333	312
Brooklyn (BK)	1,174	1,152	1,096	1,026
Queens (QN)	1,065	1,067	1,036	998
Staten Island (SI)	97	99	91	98

Does not include outlier filers and /or partial year filers

RPIE 2017

Loft Properties By Borough

Income, Expense, and Year-Year Change Distribution

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Major Building Category	Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
LOFT	Manhattan	212	Income	\$26.78	\$34.96	\$47.92	\$39.56
			Income % Change	-3.78%	2.69%	7.48%	1.28%
			Expense	\$6.86	\$10.68	\$15.14	\$12.02
			Expense % change	-13.62%	1.45%	16.13%	3.30%
	Bronx	1	Income	\$13.24	\$13.24	\$13.24	\$13.24
			Income % Change	3.07%	3.07%	3.07%	3.07%
			Expense	\$7.61	\$7.61	\$7.61	\$7.61
			Expense % change	16.06%	16.06%	16.06%	16.06%
	Brooklyn	24	Income	\$13.96	\$19.21	\$24.45	\$23.84
			Income % Change	-2.88%	3.71%	9.93%	4.50%
			Expense	\$2.62	\$6.55	\$11.36	\$8.99
			Expense % change	-26.48%	2.03%	17.47%	-4.05%
	Queens	4	Income	\$8.81	\$9.83	\$14.53	\$11.67
			Income % Change	-22.38%	-17.39%	-1.95%	-12.16%
			Expense	\$4.46	\$4.96	\$5.42	\$4.94
			Expense % change	6.11%	9.26%	12.24%	9.18%

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

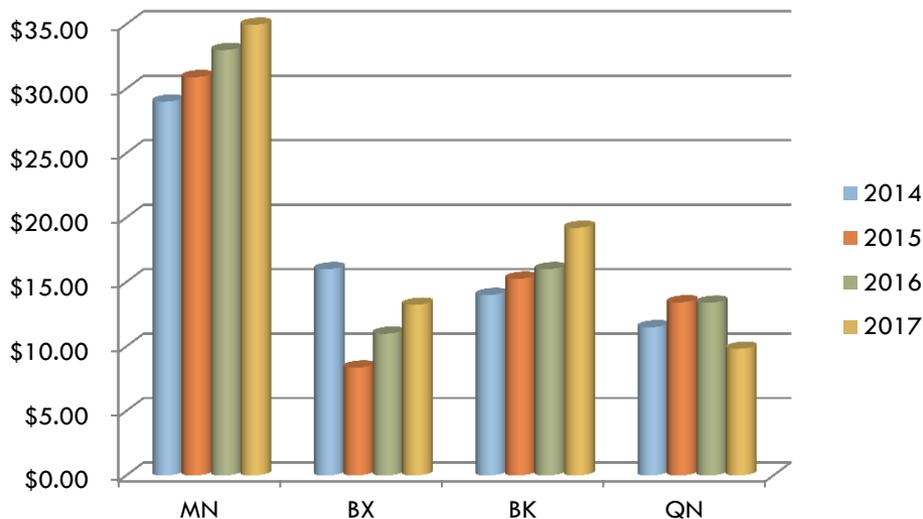
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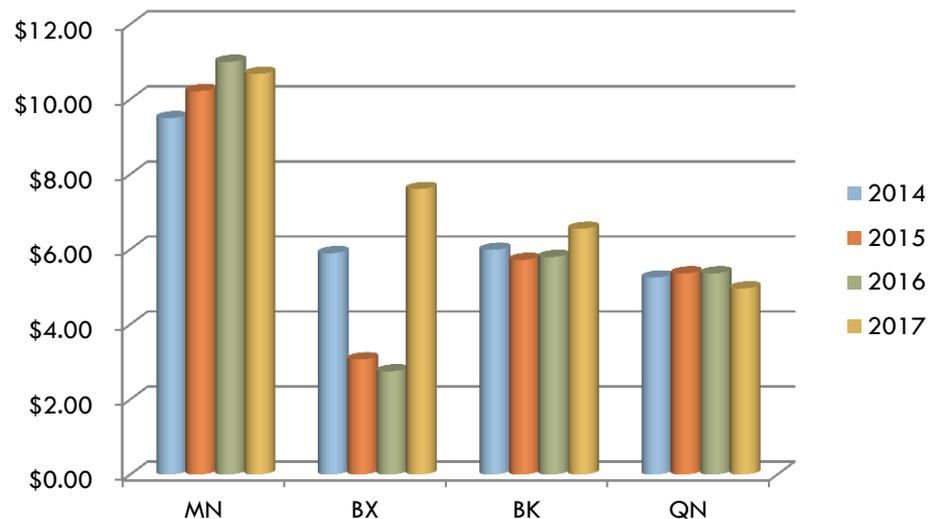
RPIE 2014 - 2017

Loft Properties by Borough

Median Income Per Square Foot



Median Expense Per Square Foot



Number of Filings

	2014	2015	2016	2017
Manhattan (MN)	248	240	219	212
Bronx (BX)	1	2	2	1
Brooklyn (BK)	33	30	27	24
Queens (QN)	6	9	6	4

Does not include outlier filers and /or partial year filers

RPIE 2017

Office Properties by Borough

Income, Expenses, and Year-Year Change Distribution

10

Major Building Category	Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
OFFICE	Manhattan	971	Income	\$41.94	\$57.47	\$81.06	\$81.95
			Income % Change	-1.69%	2.56%	7.44%	2.25%
			Expense	\$10.22	\$16.70	\$24.86	\$24.41
			Expense % change	-7.39%	2.28%	11.63%	2.53%
	Bronx	172	Income	\$17.38	\$25.13	\$36.66	\$34.73
			Income % Change	-4.40%	0.76%	5.40%	0.57%
			Expense	\$2.74	\$5.58	\$8.98	\$7.94
			Expense % change	-16.46%	0.00%	14.87%	0.19%
	Brooklyn	577	Income	\$17.95	\$25.93	\$37.34	\$33.32
			Income % Change	-1.08%	2.02%	8.23%	2.61%
			Expense	\$3.15	\$5.69	\$9.72	\$8.79
			Expense % change	-13.21%	1.30%	17.71%	2.54%
Queens	520	Income	\$20.63	\$30.31	\$45.36	\$50.94	
		Income % Change	-0.32%	2.12%	6.72%	1.89%	
		Expense	\$4.16	\$7.22	\$11.97	\$14.06	
		Expense % change	-13.85%	0.96%	15.69%	1.29%	
Staten Island	184	Income	\$15.99	\$24.10	\$34.12	\$27.73	
		Income % Change	-2.30%	0.88%	6.97%	2.02%	
		Expense	\$3.05	\$5.80	\$9.20	\$7.53	
		Expense % change	-24.44%	-0.13%	13.16%	-1.47%	

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

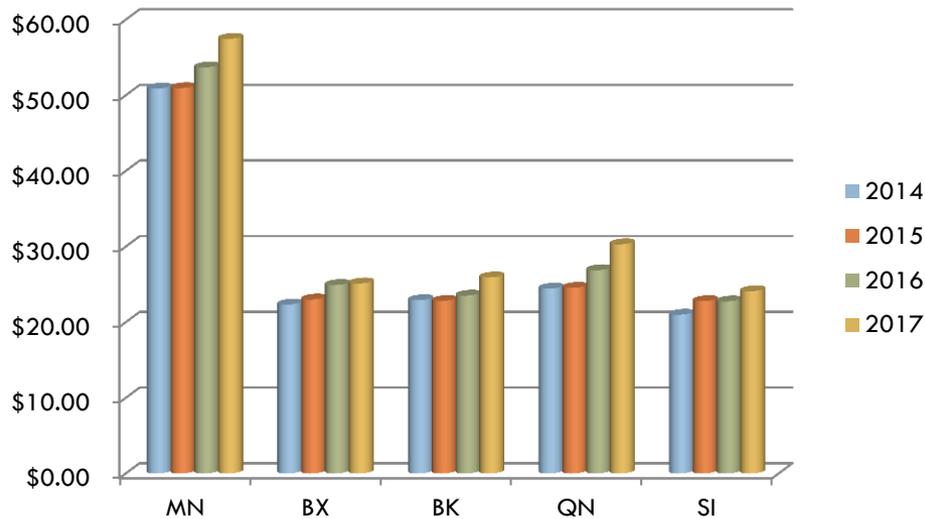
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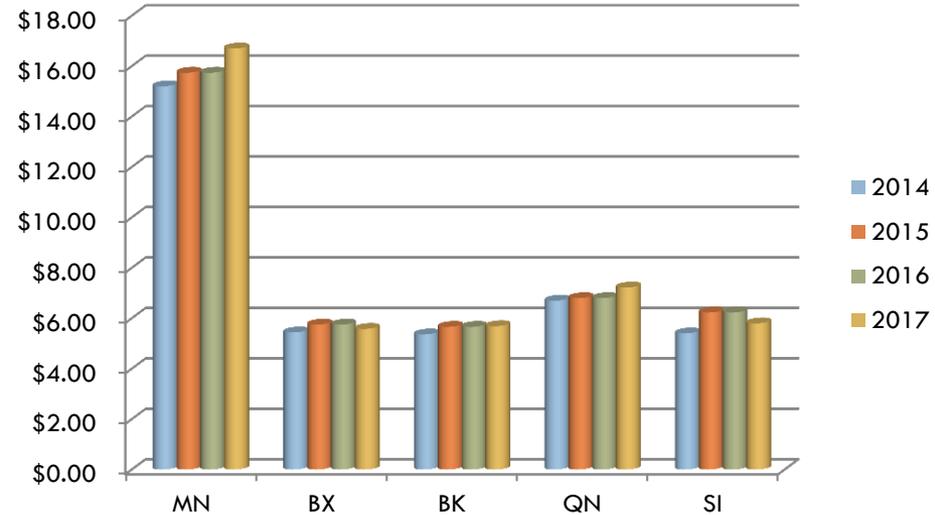
RPIE 2014 - 2017

Office Properties by Borough

Median Income Per Square Foot



Median Expense Per Square Foot



Number of Filings

	2014	2015	2016	2017
Manhattan (MN)	946	969	973	971
Bronx (BX)	171	182	186	172
Brooklyn (BK)	533	571	587	577
Queens (QN)	553	581	572	520
Staten Island (SI)	187	195	184	184

Does not include outlier filers and /or partial year filers

RPIE 2017

Rental Apartments By Borough

Income, Expense, and Year-Year Change Distribution

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Major Building Category	Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
RENTAL APARTMENTS	Manhattan	5423	Income	\$22.27	\$37.94	\$50.88	\$39.84
			Income % Change	-1.00%	1.87%	5.03%	1.42%
			Expense	\$9.12	\$12.07	\$16.12	\$13.64
			Expense % change	-8.25%	2.20%	12.71%	1.62%
	Bronx	2747	Income	\$12.00	\$13.91	\$16.16	\$14.87
			Income % Change	-0.27%	2.17%	5.06%	1.88%
			Expense	\$6.24	\$7.45	\$9.04	\$8.09
			Expense % change	-4.96%	2.11%	9.86%	2.45%
	Brooklyn	3210	Income	\$13.39	\$16.16	\$20.77	\$18.96
			Income % Change	0.25%	2.60%	5.34%	2.26%
			Expense	\$5.82	\$7.38	\$9.46	\$8.27
			Expense % change	-6.58%	1.74%	11.20%	2.12%
	Queens	1732	Income	\$16.77	\$19.64	\$23.33	\$21.05
			Income % Change	0.59%	2.55%	4.97%	2.53%
			Expense	\$6.24	\$7.93	\$10.06	\$8.71
			Expense % change	-6.14%	2.09%	10.83%	2.09%
Staten Island	113	Income	\$13.43	\$16.14	\$19.30	\$16.97	
		Income % Change	-0.77%	1.39%	3.25%	-0.60%	
		Expense	\$5.31	\$7.00	\$8.69	\$7.51	
		Expense % change	-8.20%	0.18%	7.49%	-0.20%	

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

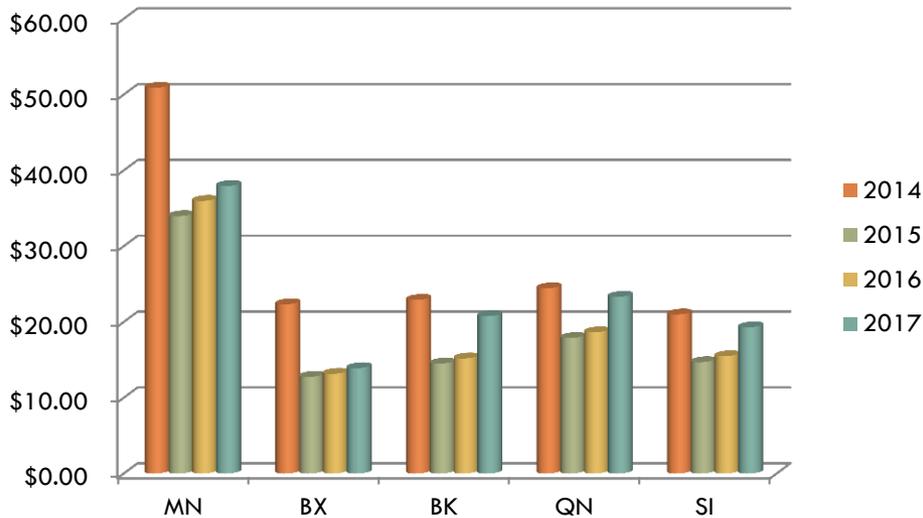
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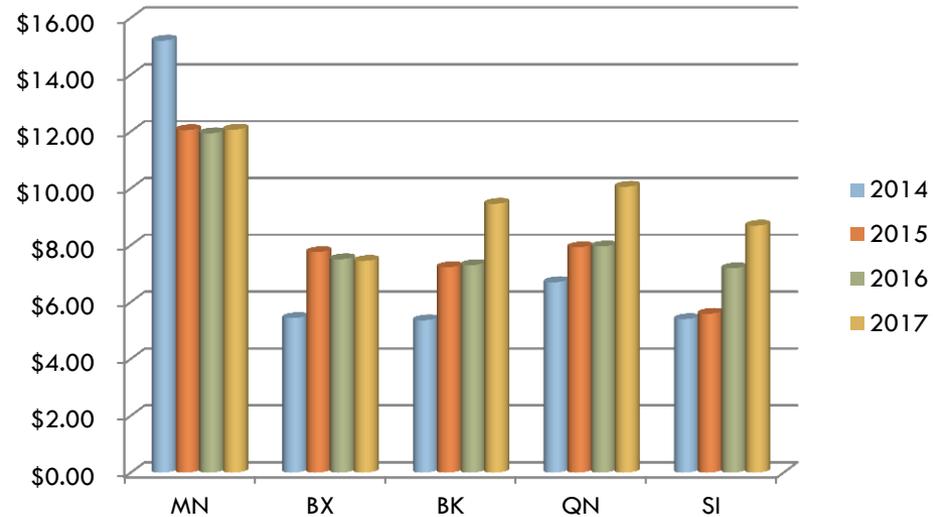
RPIE 2014 - 2017

Rental Properties by Borough

Median Income Per Square Foot



Median Expense Per Square Foot



Number of Filings

	2014	2015	2016	2017
Manhattan (MN)	5,342	5,367	5,362	5,423
Bronx (BX)	2,652	2,564	2,675	2,747
Brooklyn (BK)	3,222	3,267	3,288	3,210
Queens (QN)	1,643	1,769	1,773	1,732
Staten Island (SI)	107	106	104	113

Does not include outlier filers and /or partial year filers

RPIE 2017

Retail Properties By Borough

Income, Expenses, and Year-Year Change Distribution

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Major Building Category	Borough	Count	Variable	25th Pctl	50th Pctl	75th Pctl	Mean
RETAIL	Manhattan	2000	Income	\$43.36	\$64.13	\$113.08	\$120.12
			Income % Change	-1.73%	3.00%	8.12%	2.02%
			Expense	\$8.24	\$14.39	\$22.79	\$24.06
			Expense % change	-9.44%	2.62%	16.61%	5.41%
	Bronx	1144	Income	\$18.50	\$27.75	\$42.19	\$35.38
			Income % Change	-0.86%	2.15%	7.66%	2.72%
			Expense	\$3.78	\$6.59	\$10.69	\$8.98
			Expense % change	-12.96%	0.95%	18.41%	5.10%
	Brooklyn	2318	Income	\$18.36	\$27.18	\$40.85	\$34.93
			Income % Change	-0.77%	2.00%	7.02%	1.86%
			Expense	\$3.06	\$5.38	\$9.15	\$7.60
			Expense % change	-15.27%	1.00%	17.38%	3.43%
	Queens	2539	Income	\$21.17	\$31.81	\$50.13	\$41.97
			Income % Change	-1.00%	2.00%	6.77%	1.87%
			Expense	\$3.29	\$6.22	\$10.74	\$9.09
			Expense % change	-13.81%	0.46%	16.21%	3.07%
Staten Island	464	Income	\$15.52	\$24.80	\$34.55	\$29.96	
		Income % Change	-1.96%	1.15%	6.16%	0.85%	
		Expense	\$2.99	\$5.38	\$8.96	\$7.20	
		Expense % change	-17.60%	0.00%	17.56%	1.77%	

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

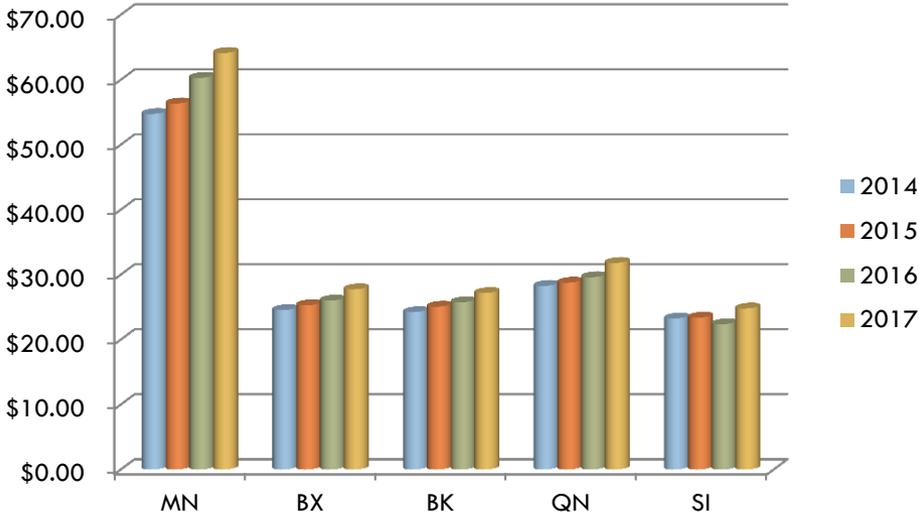
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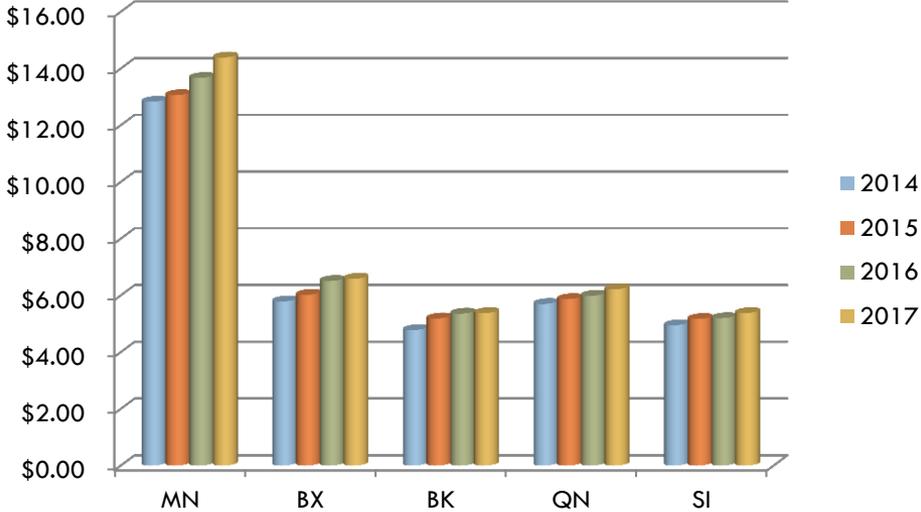
RPIE 2014 - 2017

Retail Properties by Borough

Median Income Per Square Foot



Median Expense Per Square Foot



Number of Filings

	2014	2015	2016	2017
Manhattan (MN)	1,968	2,005	2,010	2,000
Bronx (BX)	1,119	1,217	1,136	1,144
Brooklyn (BK)	2,141	2,325	2,368	2,318
Queens (QN)	2,511	2,643	2,592	2,539
Staten Island (SI)	449	471	494	464

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	\$14.43	\$17.70	\$19.37	\$18.00
	Expense	\$2.18	\$2.93	\$3.62	\$3.18
	Cap Rate	14.23%	14.26%	14.32%	14.08%
LOFTS	Income	\$27.94	\$41.83	\$53.53	\$41.59
	Expense	\$7.03	\$10.86	\$13.99	\$11.04
	Cap Rate	12.17%	12.30%	12.74%	12.64%
OFFICE	Income	\$27.76	\$34.51	\$48.08	\$42.45
	Expense	\$5.69	\$8.05	\$12.12	\$10.15
	Cap Rate	14.54%	14.99%	15.03%	14.53%
RENTAL APARTMENTS	Income	\$16.07	\$21.31	\$36.01	\$28.17
	Expense	\$7.39	\$9.36	\$12.64	\$10.56
	Cap Rate	12.38%	13.02%	13.98%	13.34%
RETAIL	Income	\$27.50	\$35.77	\$51.20	\$46.24
	Expense	\$4.83	\$6.93	\$10.09	\$8.60
	Cap Rate	14.40%	14.81%	15.38%	14.45%

Notes:

Income = Gross Income per square foot

Expense = Total Expense per square foot

FY20 Capitalization Rate Methodology

Tax Class 2

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- 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



- 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

FY20 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 1986-2017 and sold from 2014-2018.

FY20 Capitalization Rate Methodology Tax Class 2

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

- For FY20: - the median Capitalization Rate R_o is centered on 4.30%*

Guidelines Rates

Variable	25th Pctl	50th Pctl	75th Pctl	Mean
Ro	2.51%	4.30%	5.75%	4.31%
Δ	2.46%	3.00%	4.00%	3.24%

- FY20 versus FY19 Capitalization Rate *

Citywide

Variable	25th Pctl	50th Pctl	75th Pctl	Mean
Cap Rate FY20	6.70%	7.30%	8.21%	7.62%
Cap Rate FY19	6.55%	7.66%	8.86%	8.04%
Cap Rate FY20-FY19	0.15%	-0.36%	-0.65%	-0.42%

*Does not include effective tax rate portion of Capitalization Rate

FY20 Capitalization Rate Formulas and Example Tax Class 2

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- Capitalization Rate used reflects earnings-based return

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

$$R_o = \exp(-1.028412947 * \ln(\text{income psf}))$$

$$\Delta_n^{(a_n)} = -0.028181 + 0.019022 * \ln(\text{income psf})$$

Example: income psf = **\$19.02***

$$R_o = \exp(-1.028412947 * \ln(19.02)) * 100 = 4.836\%$$

$$\Delta_n^{(a_n)} = (-0.028181 + 0.019022 * \ln(19.02)) * 100 = 2.785\%$$

$$Y_o = 5.060\% + 2.951\% = **7.620\%**$$

* FY20 Guidelines Post-1973 Rental Elevator Building Outer Borough

FY20 Capitalization Rate Methodology Tax Class 4

Major Building Category	Flat Cap Rate Adjustment from FY19
OFFICE – MANHATTAN SOUTH OF 110 th STREET AND DOWNTOWN BROOKLYN CLASS A	0.29%
OFFICE – MANHATTAN NORTH OF 110TH STREET AND OUTER BOROUGHES	-0.15%
RETAIL – MANHATTAN SOUTH OF 125TH STREET AND DOWNTOWN BROOKLYN	-0.12%
RETAIL – MANHATTAN NORTH OF 125TH STREET AND OUTER BOROUGHES	0.07%
INDUSTRIAL	-0.50%
GARAGE	-0.50%
LOFTS	-0.50%

- Capitalization Rate are given a flat rate adjustment from FY19