Real Estate Forefront

Emerging Developments in the NYC Marketplace, #14

How Public School Test Scores Impact New York City's Real Estate Values

Quantifying the Relationship

December 2010

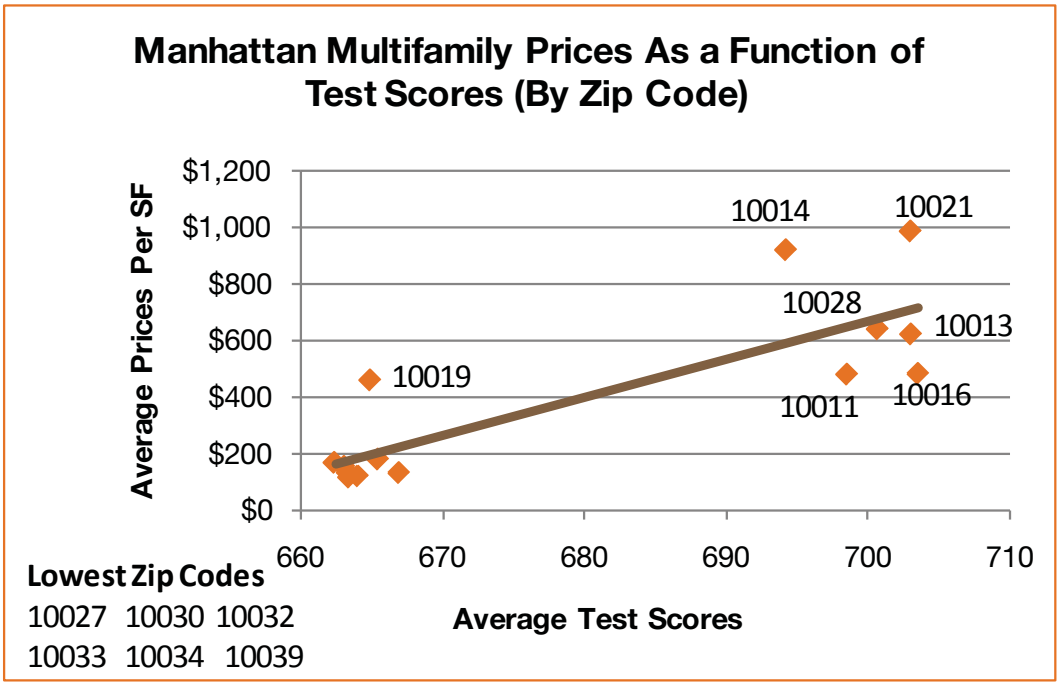
EASTERN CONSOLIDATED™

Real estate investment services

Anyone who lives in New York City knows that neighborhoods with good elementary schools command higher real estate values. Quantifying this relationship has never been easy, but with the recent abundance of test score data, the impact on real estate prices from higher test scores can be determined and the results are compelling.

Eastern Consolidated compared the average prices for multifamily properties sold in 2009 and 2010 for Manhattan, Brooklyn and Queens to average test scores for elementary grades 3rd through 5th for both years. Both the average test score data, from the New York City Department of Education, and the multifamily sales data were averaged by zip code. The prices of multifamily properties were used because these prices are directly related to the properties' rent rolls and serve as an accurate measure of property value.

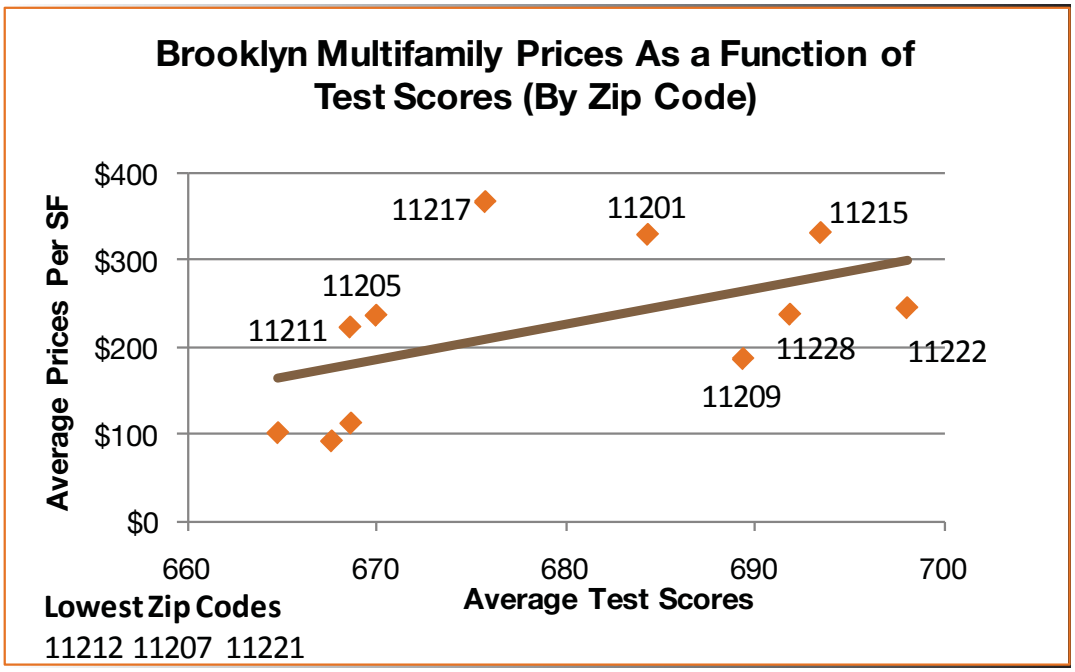
The results by neighborhood showed that most neighborhoods that had high test scores also had high property values such as the Upper East Side (10021, 10028), the West Village (10014, 10011) and Greenwich Village (10013). Still, there were a number of surprises: in a number of neighborhoods, test scores were higher than average when property prices were lower, or the reverse: test scores were low when property prices were high. The schools in Murray Hill (10016) had high test scores but below average property sales values, while Clinton/West Side (10019) had lower test scores but higher prices per square foot.



Source: Eastern Consolidated, New York City Department of Education, the New York Times, CoStar, PropertyShark

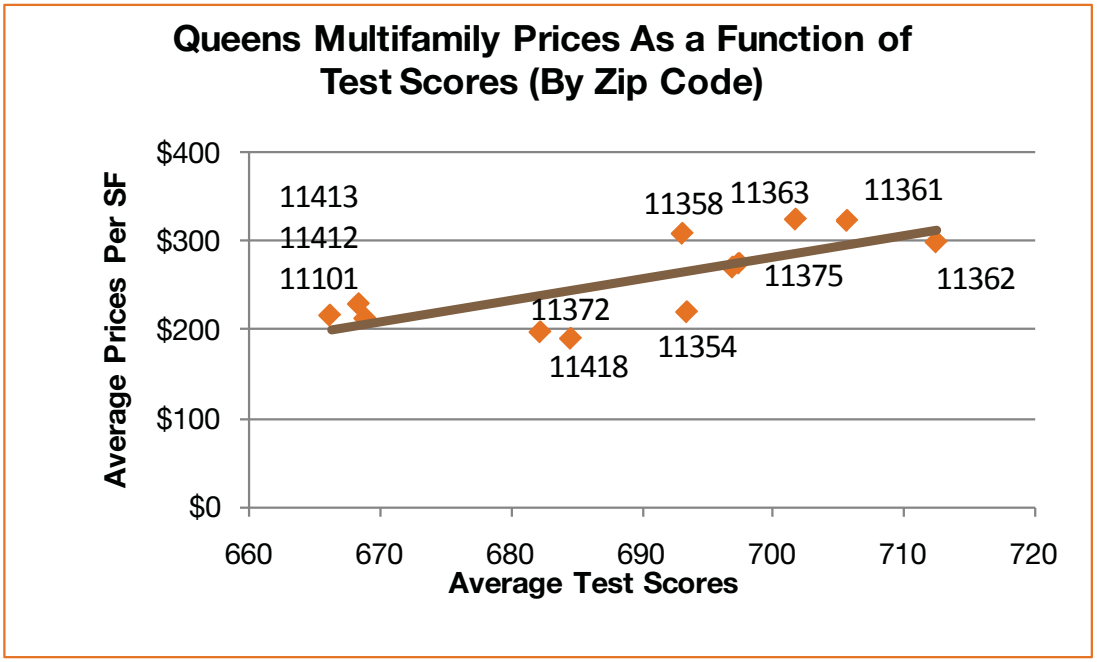
In Brooklyn, zip code 11201 that covers all of Brooklyn Heights, DUMBO and Downtown Brooklyn along with 11215 that covers part of Park Slope, had both high test scores and property values. The other side of Park Slope (11217), however, had similarly priced property values but lower test scores.

There were more neighborhoods in Brooklyn that defied the trend. In Williamsburg (11211) and Fort Greene (11205), the average test scores were slightly below the Brooklyn borough average but the average prices for multifamily properties were significantly above average. In contrast, test scores were above average in Greenpoint (11222), Dyker Heights (11228) and Bay Ridge (11209) but the average multifamily property prices were below the borough average.



Source: Eastern Consolidated, New York City Department of Education, the New York Times, CoStar, PropertyShark

In Queens, the neighborhoods where both test scores and property values were highest include Douglaston/Little Neck, Bayside, Forest Hills and Bellerose. Neighborhoods that had high test scores but below average prices included Flushing, Jackson Heights and Richmond Hill.



Source: Eastern Consolidated, New York City Department of Education, the New York Times, CoStar, PropertyShark

Conclusion

It is commonly believed that families will move to a neighborhood that has a "good" elementary school, and in doing so will drive up the real estate values within that neighborhood. The aim of this study was to quantify this relationship between real estate values and elementary test scores.

Elementary test scores were used because New York City's elementary schools have very specific neighborhood boundaries. Most New York City middle schools are district-wide schools and their boundaries are much broader than elementary schools. Most city high schools have virtually no geographic boundaries within the city.

The results tabulated above show that this relationship is pretty strong, especially in Manhattan. The correlations are pretty high across all three boroughs studied, but a number of neighborhoods proved to be exceptions to the rule. Some of the Brooklyn and Queens neighborhoods that defied this trend have a high proportion of foreign-born residents.

A number of conclusions can be drawn from this study, but the most obvious is that people do indeed vote with their feet. Some of the neighborhoods with both high test scores and high property values have suffered overcrowding conditions in their schools over the past few years. Whether or not this overcrowding will impact test scores and/or property values in time will be worth studying in a few years.

Appendix

The chart below shows the raw data. It also shows the difference between each zip code's average test score and the borough average along with the differences in average multifamily prices per square foot by zip code to the borough average. The zip codes that had above average test scores but below average prices per square foot, or the reverse, are labeled "outliers" when either of these differences exceeds a value of 10 in either direction. Manhattan had 6 outlying zip codes out of 28 (21%); Brooklyn had 9 outlier zip codes out of 36 (25%) and Queens had 7 outliers out of 39 observations (18%).

Borough Averages

	Test Scores	Multifamily Prices Per SF
Manhattan	678	$331
Brooklyn	676	$188
Queens	682	$212

Manhattan

		2009 - 2010 Combined Weighted Average		Difference From Borough Average		
Neighborhood	Zip Code	Test Scores	Multifamily Prices per SF	Test Score	Multifamily Prices per SF	Outliers
Chelsea	10001	689	$527	11	$197	
Lower East Side	10002	687	$297	9	-$33	Outlier
Greenwich Village	10003	693	$602	15	$271	
East Village	10009	671	$269	-7	-$62	
West Village	10011	698	$477	21	$146	
Greenwich Village	10013	703	$618	25	$288	
West Village	10014	694	$916	16	$585	
Murray Hill	10016	703	$479	26	$149	
Clinton	10019	665	$456	-13	$126	Outlier
Upper East Side	10021	703	$982	25	$651	
Midtown East	10022	695	$455	17	$125	
Lincoln Square / Upper West Side	10023	692	$547	14	$216	
Upper West Side	10024	698	$470	20	$139	
Morningside Heights / Upper West Side	10025	677	$250	0	-$81	Outlier
Central Harlem	10026	663	$151	-15	-$179	
Harlem	10027	665	$177	-12	-$154	
Upper East Side	10028	701	$636	23	$306	
East Harlem	10029	678	$195	0	-$136	Outlier
Harlem	10030	662	$165	-16	-$165	
Hamilton Heights	10031	670	$128	-8	-$203	
Washington Heights	10032	663	$113	-15	-$217	
Washington Heights	10033	664	$118	-14	-$213	
Inwood	10034	667	$129	-11	-$201	
East Harlem	10035	667	$185	-11	-$146	
Times Square	10036	691	$231	14	-$100	Outlier
City Hall / Downtown	10038	684	$303	6	-$28	Outlier
East Harlem	10039	663	$130	-15	-$201	
Upper East Side	10128	696	$451	18	$121	

Brooklyn

Neighborhood	Zip Code	2009 - 2010 Combined Weighted Average		Difference From Borough Average		Outliers
		Test Scores	Multifamily Prices per SF	Test Score	Multifamily Prices per SF	
Brooklyn Heights / Downtown / DUMBO	11201	684	$331	8	$142	
East Flatbush	11203	674	$146	-2	-$43	
Bensonhurst	11204	685	$228	9	$39	
Fort Greene	11205	670	$238	-6	$50	Outlier
Williamsburg	11206	671	$165	-5	-$24	
East New York	11207	668	$94	-8	-$94	
East New York	11208	671	$122	-5	-$67	
Bay Ridge	11209	689	$188	14	$0	
Flatbush	11210	674	$113	-2	-$75	
Williamsburg	11211	669	$225	-7	$36	Outlier
Brownsville	11212	665	$104	-11	-$85	
Crown Heights / Brower Park	11213	671	$112	-5	-$76	
Bensonhurst	11214	686	$217	10	$28	
Park Slope/ Windsor Terrace	11215	693	$333	18	$144	
Bedford Stuyvesant	11216	671	$147	-5	-$41	
Park Slope / Boerum Hill	11217	676	$368	0	$180	Outlier
Kensington / Parkville / Windsor Terrace	11218	682	$171	6	-$18	Outlier
Borough Park	11219	687	$210	11	$22	
Sunset Park	11220	671	$212	-5	$24	Outlier
Bushwick	11221	669	$115	-7	-$74	
Greenpoint	11222	698	$247	22	$58	
Gravesend	11223	683	$269	7	$81	
Coney Island	11224	668	$155	-8	-$33	
Crown Heights	11225	673	$179	-2	-$10	
Flatbush	11226	673	$104	-3	-$84	
Dyker Heights	11228	692	$239	16	$51	
Sheepshead Bay / Gerritsen Beach	11229	689	$237	13	$48	
Midwood	11230	687	$179	11	-$10	Outlier
Red Hook / Carroll Gardens	11231	679	$190	4	$1	
Sunset Park / Greenwood	11232	679	$158	3	-$31	Outlier
Industry City	11233	671	$114	-5	-$74	
Flatlands	11234	688	$228	12	$40	
Sheepshead Bay	11235	688	$171	12	-$17	Outlier
Canarsie	11236	672	$212	-4	$24	Outlier
Bushwick	11237	672	$143	-4	-$46	
Prospect Heights	11238	671	$198	-5	$10	

Queens

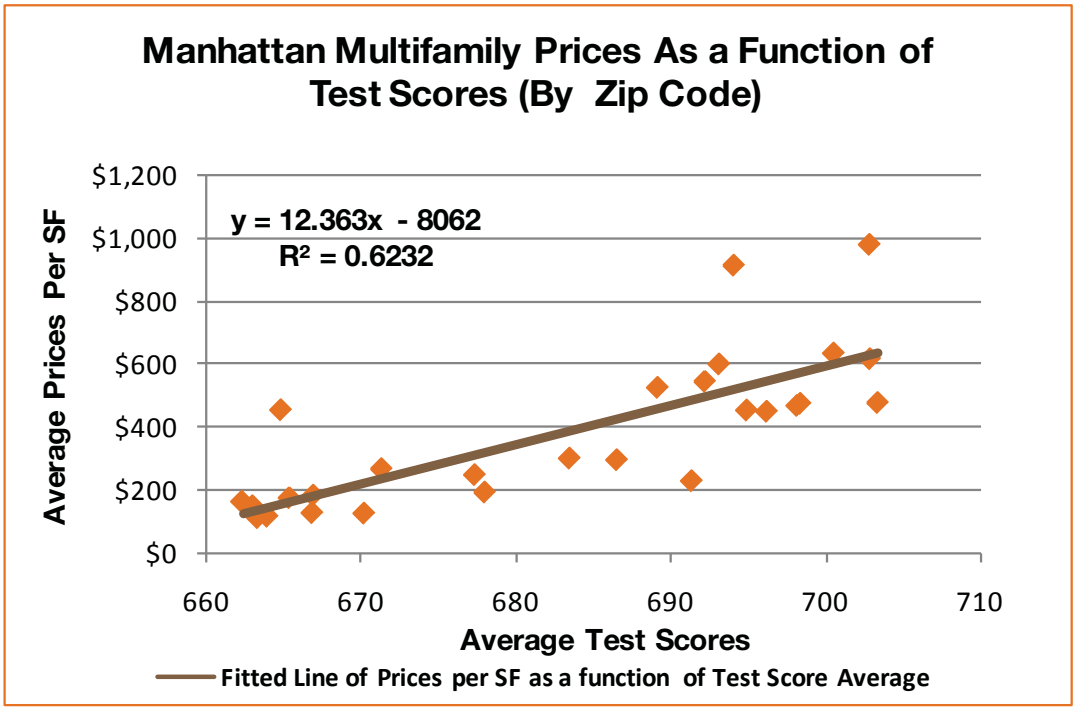
Neighborhood	Zip Code	2009 - 2010 Combined Weighted Average		Difference From Borough Average		Outliers
		Test Scores	Multifamily Prices per SF	Test Score	Multifamily Prices per SF	
Glen Oaks	11004	691	$259	16	$71	
Long Island City / Hunts Point	11101	666	$216	-15	$4	Outlier
Astoria	11102	674	$243	-8	$31	Outlier
Astoria	11103	683	$233	2	$21	
Sunnyside	11104	687	$221	6	$9	
Ditmars	11105	685	$257	4	$45	
Astoria	11106	680	$197	-2	-$15	
Flushing	11354	693	$220	12	$8	
Flushing	11355	688	$322	6	$110	
College Point	11356	686	$235	5	$23	
Whitestone	11357	689	$289	7	$77	
Murray Hill / Auburndale	11358	693	$308	12	$96	
Bayside	11361	706	$323	24	$111	
Douglaston / Little Neck	11362	712	$299	31	$87	
Douglaston / Little Neck	11363	702	$324	20	$112	
Flushing	11367	683	$251	1	$39	
Corona	11368	677	$220	-4	$8	
East Elmhurst	11369	672	$232	-10	$20	Outlier
Jackson Heights	11372	682	$197	1	-$15	Outlier
Elmhurst	11373	683	$277	2	$65	
Rego Park	11374	689	$309	7	$97	
Forest Hills	11375	697	$270	15	$58	
Maspeth	11378	685	$244	4	$32	
Middle Village	11379	693	$272	11	$59	
Glendale / Ridgewood	11385	677	$148	-4	-$64	
Cambria Heights	11411	673	$186	-9	-$26	
St. Albans	11412	669	$213	-13	$1	Outlier
Springfield Gardens	11413	668	$229	-13	$17	Outlier
Howard Beach	11414	686	$220	5	$8	
Kew Gardens	11415	689	$217	7	$5	
Ozone Park	11416	684	$207	3	-$5	
Ozone Park	11417	686	$204	4	-$8	
Richmond Hill	11418	685	$190	3	-$22	Outlier
South Ozone Park	11420	685	$213	3	$1	
Woodhaven	11421	686	$205	4	-$7	
Hollis	11423	679	$185	-2	-$27	
Bellerose	11426	697	$275	16	$63	
Queens Village	11428	679	$201	-3	-$11	
Jamaica	11432	678	$206	-4	-$6	

Source: Eastern Consolidated, New York City Department of Education, the New York Times, CoStar, PropertyShark

In Manhattan especially, the prices of multifamily properties varied significantly by zip code and these prices were highly correlated to test scores: 76%. The correlation coefficients were lower in Queens (64%) and Brooklyn (56%) but still noteworthy. The closer the correlation coefficient is to 100%, the more predictive the relationship is between the two variables.

Using a simple regression analysis in the charts below, we were able to plot the linear relationship between prices for multifamily properties and test scores. The regression includes a fitted line and its corresponding equation that shows the estimated relationship of multifamily prices per square foot as a function of average test scores. The New York State tests administered to all public school students starting in 3rd grade are scored on a raw scale of approximately 600 to 780.

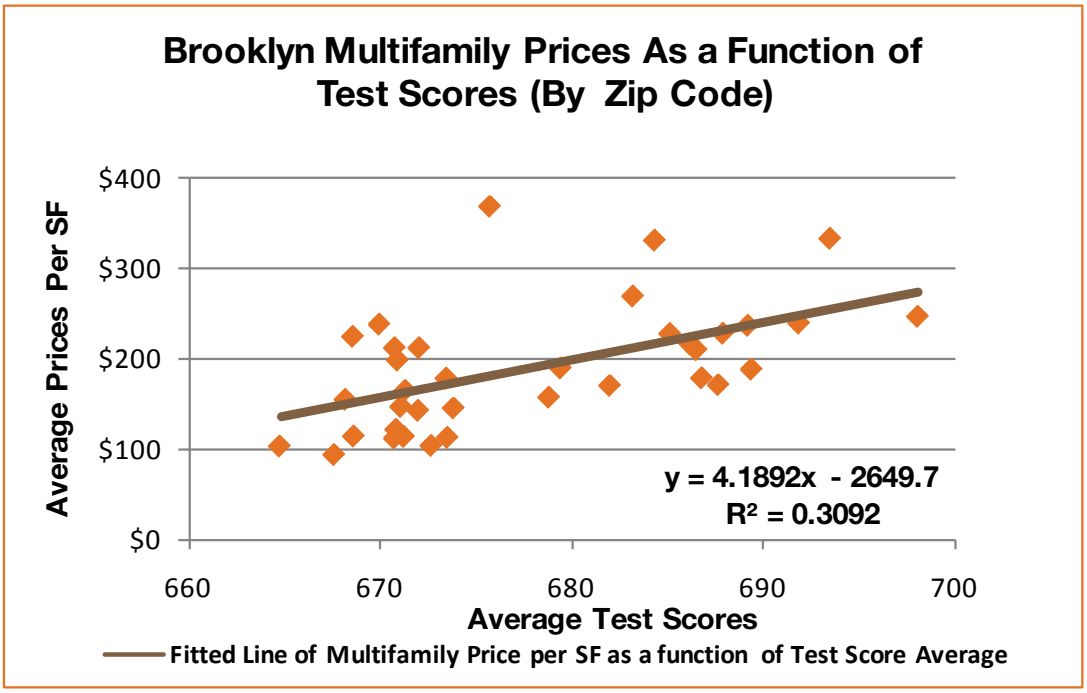
The Manhattan results predict that for every 10 points higher on an area's test score, the average price per square foot for a multifamily property increases by $112 or 34%.



Source: Eastern Consolidated, New York City Department of Education, the New York Times, CoStar, PropertyShark

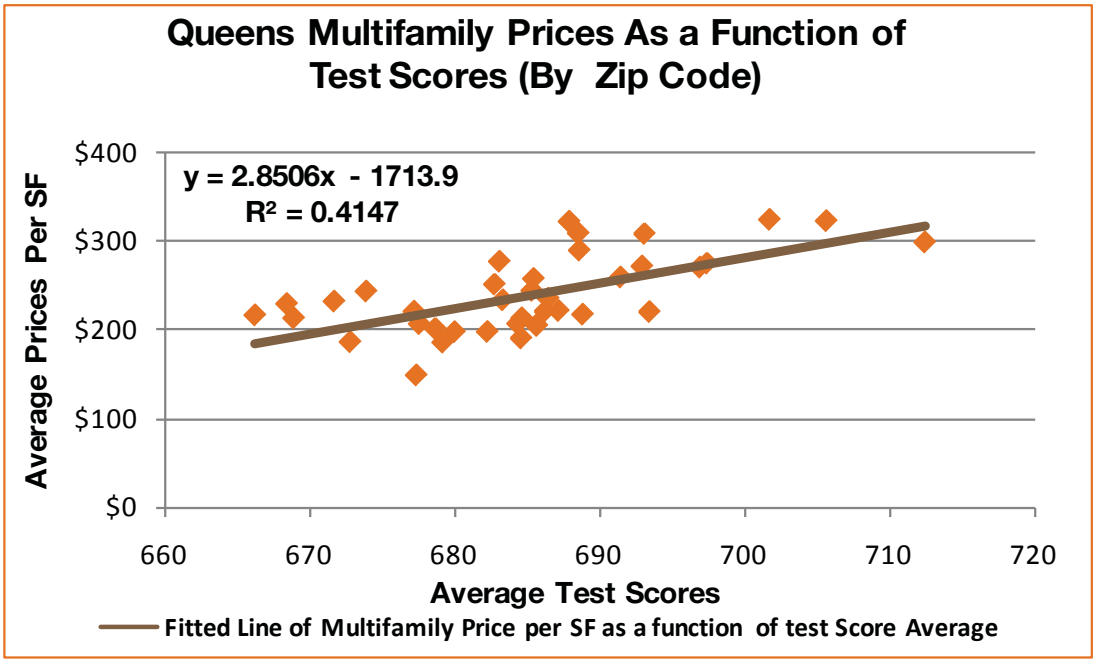
The "R^2" measurement shown in the chart equals the square of the correlation coefficient, and provides another measure of how well the y-variables, in this case average prices per square foot, are likely to be predicted by the model. The better the line fits the data, the closer the R^2 is to 1.

For Brooklyn, prices per square foot for multifamily properties did not vary as sharply by zip code as they did in Manhattan; moreover, test scores varied less than in Manhattan and Queens. Still, a 10 point increase in test score average yields an increase in property price of $35 per square foot, or 18% as per the chart below.



Source: Eastern Consolidated, New York City Department of Education, the New York Times, CoStar, PropertyShark

In Queens, prices per square foot for multifamily properties did not vary as sharply by zip code, but test scores did. It should be noted that test scores in Queens were on average higher than either Manhattan or Brooklyn. As per the Queens chart below, a 10 point increase in test score average yields an increase in property price of $46 per square foot or 22%.



Source: Eastern Consolidated, New York City Department of Education, the New York Times, CoStar, PropertyShark

[1] Charter schools and city-wide gifted schools were not included in this analysis. Neighborhoods that had either insufficient multifamily data or no elementary school were not included. Sales that were deemed a foreclosure sale or "distressed" were not included.

EASTERN CONSOLIDATED™

Real estate investment services

FOR ADDITIONAL INFORMATION CONTACT:

Barbara Byrne Denham
Chief Economist
Eastern Consolidated
355 Lexington Avenue
New York, NY 10017
T: 646.658.7363
F: 212.499.7718
bdenham@easternconsolidated.com

ABOUT EASTERN CONSOLIDATED

Founded in 1981, Eastern Consolidated is one of the country's preeminent full-service real estate investment services firms, combining an unrivaled expertise in the greater New York marketplace with a worldwide roster of institutional and private investor clients. Over the years, it has been responsible for the acquisition, disposition and finance of all types of properties, including office and apartment buildings, lofts, factories, hotels, shopping centers, commercial and residential development sites, taxpayers, parking garages and lots, retail condominiums and air rights transfers. Visit us at www.easternconsolidated.com.

Copyright © 2009 by Eastern Consolidated. All rights reserved.