

Data Notes for “Revisiting 1916 (Part II): The Economics of Population Density”

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To investigate the relationship between population density and income, a data set was created with the following variables by Census Tract (CT) for NYC:

- FAR = total building area of each CT divided by total lot area beneath the buildings.
- Total residential building area for each CT
- Median Household income for each CT
- Population Density is total population of the CT divided by area of CT (i.e., people per acre).

Sources

- Building areas and lot area from PLUTO file from the NYC Dept of City Planning (as of 2014).
- Median Household income, population, and CT area from the 2010 Census.

Descriptive Statistics (with outliers removed)

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. sum FAR popdenpera area_acres medianHHInc if FAR<20 & medianHHInc>0
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Variable	Obs	Mean	Std. Dev.	Min	Max
FAR	2,108	1.70343	1.838916	.0025961	16.85772
Popdensity	2,108	77.63733	55.52223	0	343.6401
area_acres	2,108	81.15334	141.6818	10.28023	2668.169
medianHHInc	2,107	54849.74	26344.5	8694	250000

Regression Results: Dep Var: ln(Pop. Density)

Variable	eq1	eq2	eq3
lnFAR	0.7100	0.9228	
	0.00	0.00	
lnMedHHInc	-0.4039	-0.2754	-0.2827
	0.00	0.00	0.00
lnResidArea			0.7355
			0.00
lnCTLandArea			-1.0098
			0.00
_cons	8.2951	6.8705	11.5634
	0.00	0.00	0.00
N	2105	2105	2101
r2	0.506	0.614	0.840
r2_a	0.505	0.604	0.836
PUMA FEs	No	Yes	Yes

legend: b/p

Equations 2 & 3 include PUMA neighborhood fixed effect dummies, where each PUMAs comprise several census tracts. Standard errors are clustered by PUMAs. The F-stats for the PUMA FEs are jointly statistically significant at greater than the 99% level.

For the regressions that include the neighborhood fixed effects, the elasticity of density with respect to income is around -0.28, suggesting a doubling of income leads to a 28% drop in density in a CT, *cet. par.*

Wages of Bricklayers

This graph gives the real wages of New York City bricklayers from 1874 to 1946. Annual wages (dollars per hour) were listed in a 1947 issue of *Engineering News Record*. The wage values were then divided by the CPI (from <http://measuringworth.com>). The wages were adjusted so that 1880 was assigned a value of 100. By 1914 (before zoning was implemented), the real wages of bricklayers were at an index value of 226.

