New Method 3

Table 1. Housing Project Areas Description

	All		City		Suburb	
	Const.	Unconst.	Const.	Unconst.	Const.	Unconst.
Number of Projects	166	409	84	275	82	134
Area (km2)	1.20	1.09	1.19	0.70	1.22	1.91
Median Construction Yr.	2006	2006	2005	2006	2006	2005
Delivered Houses	298	0	409	0	184	0
House Price in 1 km (R†)	201,022	202,983	214,374	216,286	187,156	177,707
Distance to CBD‡ (km)	32.4	27.8	23.1	21.7	42.0	40.4

Const. refers to constructed projects and unconst. refers to unconstructed projects.
*Calculated from *expected* completion dates using Gauteng National Treasury budget reports.
† The USD averaged to about 7.70 Rands during the 2001-2011 period.
‡Measured as the average minimum distance with respect to Johannesburg and Pretoria CBDs.
City includes projects whose centroids are within 30.4 km of their nearest CBD.
Suburb includes projects whose centroids are further than 30.4 km from their nearest CBD.

Table 2. Dwelling Characteristics at Baseline from 2001 Census

|	Constructed	Unconstructed	All Small Areas
Flush Toilet	0.64	0.33	0.78
Piped Water in Home	0.14	0.16	0.41
Electricity for Cooking	0.34	0.34	0.70
Electricity for Heating	0.29	0.34	0.67
Electricity for Lighting	0.57	0.48	0.79
Number of Rooms	2.64	2.83	3.57
Household Size	3.38	3.32	3.46
N	1,072	1,126	8,380

"Constructed" and "Unconstructed" include census small-areas with over 30%
area overlap with constructed and unconstructed projects respectively.
"All" includes all small areas.

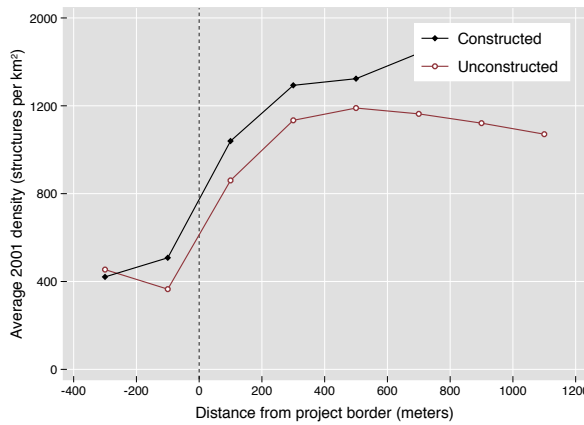**Figure 1.** Pre-Period Housing Densities in Constructed and Unconstructed projects
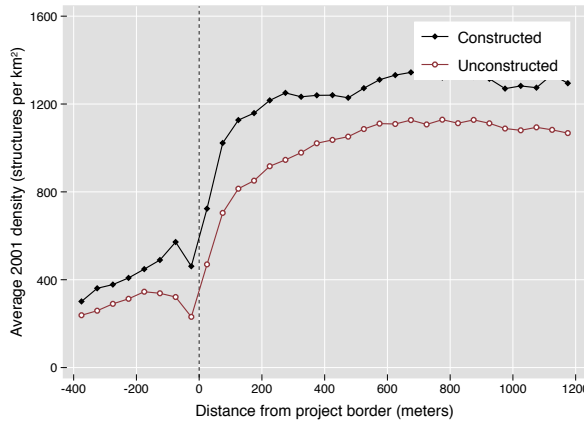
(a) pre-period formal housing density
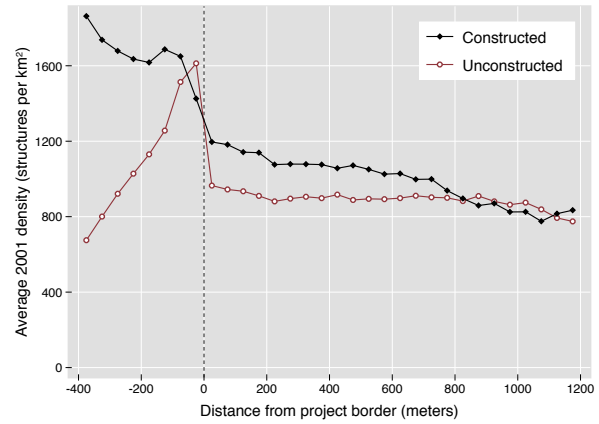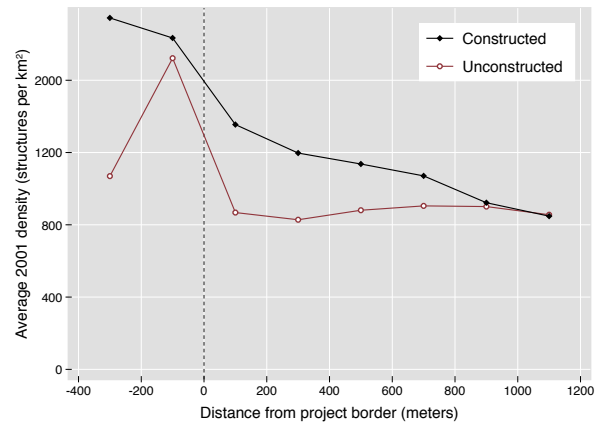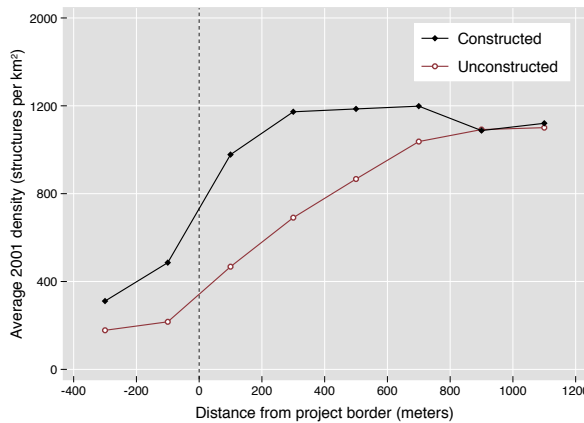
(b) pre-period informal housing density

Figure 2. Pre-Period Housing Densities in Constructed and Unconstructed Projects: City versus Suburb
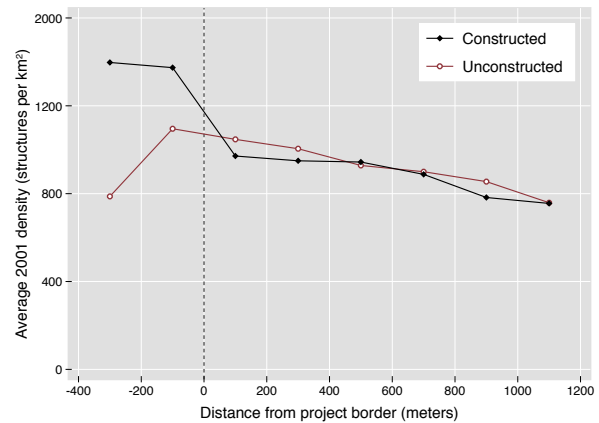

(a) City: formal density
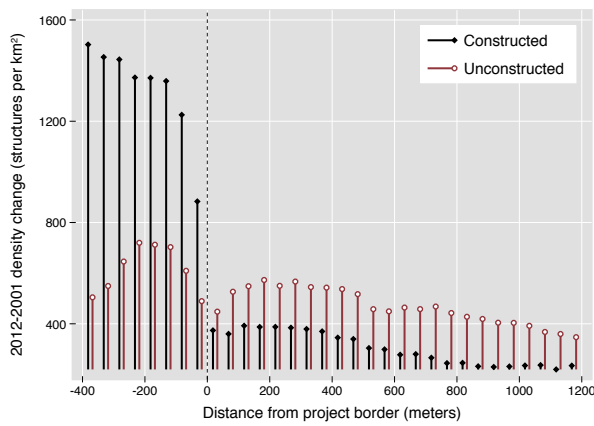
(b) City: informal density
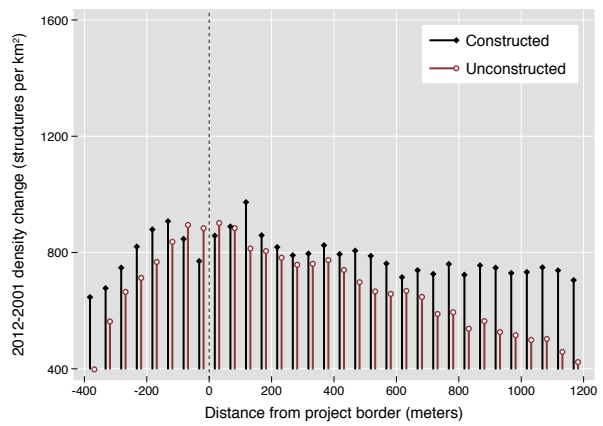
(c) Suburb: formal density

(d) Suburb: informal density

City includes areas within 30.4 km of a CBD and Suburb includes areas over 30.4 km away from a CBD.

Figure 3. Housing Densities in Constructed and Unconstructed projects

(a) formal housing density change

(b) informal housing density change

Table 3. Effect of Housing Projects on Socio-demographics

	(1) Age	(2) P.O.B. not Gauteng	(3) Unemployed	(4) Years of Education	(5) Monthly Income
project × post × constr	-0.882[a]	0.158[a]	-0.010	-0.294[b]	-2166.459[a]
	(0.180)	(0.040)	(0.012)	(0.115)	(283.929)
project × post	1.024[a]	-0.146[a]	-0.103[a]	1.234[a]	506.486[a]
	(0.118)	(0.034)	(0.008)	(0.081)	(133.594)
project × constr	-0.643[b]	-0.105[a]	0.027[c]	-0.314[b]	103.146
	(0.267)	(0.032)	(0.016)	(0.144)	(365.579)
project	-1.463[a]	0.234[a]	0.102[a]	-1.019[a]	-1058.301[a]
	(0.207)	(0.025)	(0.009)	(0.106)	(211.967)
spillover × post × constr	0.048	0.059[a]	-0.059[a]	0.229[a]	-931.979[a]
	(0.144)	(0.015)	(0.008)	(0.062)	(271.755)
spillover × post	1.205[a]	-0.001	-0.069[a]	0.985[a]	2677.392[a]
	(0.120)	(0.012)	(0.006)	(0.051)	(243.813)
spillover × constr	-0.459[b]	-0.034[b]	0.057[a]	-0.355[a]	-377.203
	(0.203)	(0.013)	(0.014)	(0.091)	(306.782)
p-val, h_0: project=spill.	0.000	0.001	0.000	0.000	0.000
Mean Outcome 2001	27.22	0.40	0.46	8.25	2,457.85
Mean Outcome 2011	28.30	0.43	0.33	9.69	4,565.28
R^2	0.498	0.603	0.379	0.577	0.498
# projects	625	625	625	625	625
N project areas	6,241	6,241	6,240	6,240	6,240
N spillover areas	10,633	10,628	10,625	10,628	10,623
N	16,874	16,869	16,865	16,868	16,863

Standard errors clustered at the project level in parenthesis. [c] $p<0.10$, [b] $p<0.05$, [a] $p<0.01$
P.O.B. means "place of birth." Monthly income is in Rands.

Table 4. Census Household-level Post × Constructed Coefficients: City Versus Suburb

	(1) Age	(2) P.O.B. not Gauteng	(3) Unemployed	(4) Years of Education	(5) Monthly Income
City × proj	-1.042[a]	0.034	-0.012	-0.327[b]	-2893.211[a]
	(0.216)	(0.021)	(0.015)	(0.135)	(420.768)
City × spill	-0.123	0.040[a]	-0.060[a]	0.178[b]	-1121.299[a]
	(0.175)	(0.014)	(0.010)	(0.070)	(362.114)
Suburb × proj	-0.676[b]	0.327[a]	-0.006	-0.230	-1144.856[a]
	(0.299)	(0.069)	(0.020)	(0.203)	(265.512)
Suburb × spill	0.314	0.097[a]	-0.058[a]	0.340[a]	-466.524
	(0.236)	(0.031)	(0.014)	(0.118)	(316.535)
p-val, h_0 City: proj = spill	0.000	0.733	0.001	0.000	0.000
p-val, h_0 Suburb: proj = spill	0.000	0.000	0.003	0.000	0.011
R^2	0.499	0.618	0.380	0.578	0.501
N City proj areas	3,634	3,634	3,633	3,633	3,633
N City spill areas	6,995	6,991	6,990	6,991	6,989
N Suburb proj areas	2,607	2,607	2,607	2,607	2,607
N Suburb spill areas	3,638	3,637	3,635	3,637	3,634

All difference-in-differences controls are included in the specification while only the interaction terms for Post × Constructed are shown. Standard errors clustered at the project level in parenthesis.
[c] $p<0.10$, [b] $p<0.05$, [a] $p<0.01$. P.O.B. means "place of birth." Monthly income is in Rands.

Table 5. Triple Difference Estimates

	(1) Total Housing	(2) Formal Housing	(3) Informal Housing	(4) Backyard Housing	(5) Non-Bkyrd Housing
-400m to 0m	443.59[b]	704.93[a]	-261.33	539.28[a]	-800.61[a]
	(177.26)	(96.55)	(163.77)	(135.58)	(155.79)
0m to 400m	-58.89	48.18	-107.07	-13.25	-93.82
	(102.45)	(55.74)	(94.36)	(79.84)	(81.83)
Mean dep. var.	2,449.01	1,125.16	1,323.85	640.63	683.22
# Projects	633	633	633	633	633
R^2	0.105	0.145	0.080	0.108	0.080
N	573,372	573,372	573,372	573,372	573,372

Standard errors clustered at the project level in parenthesis. [c] $p<0.10$, [b] $p<0.05$, [a] $p<0.01$

(a) Total Houses

(b) Formal Houses

(c) Informal Houses

(d) Backyard Informal Houses

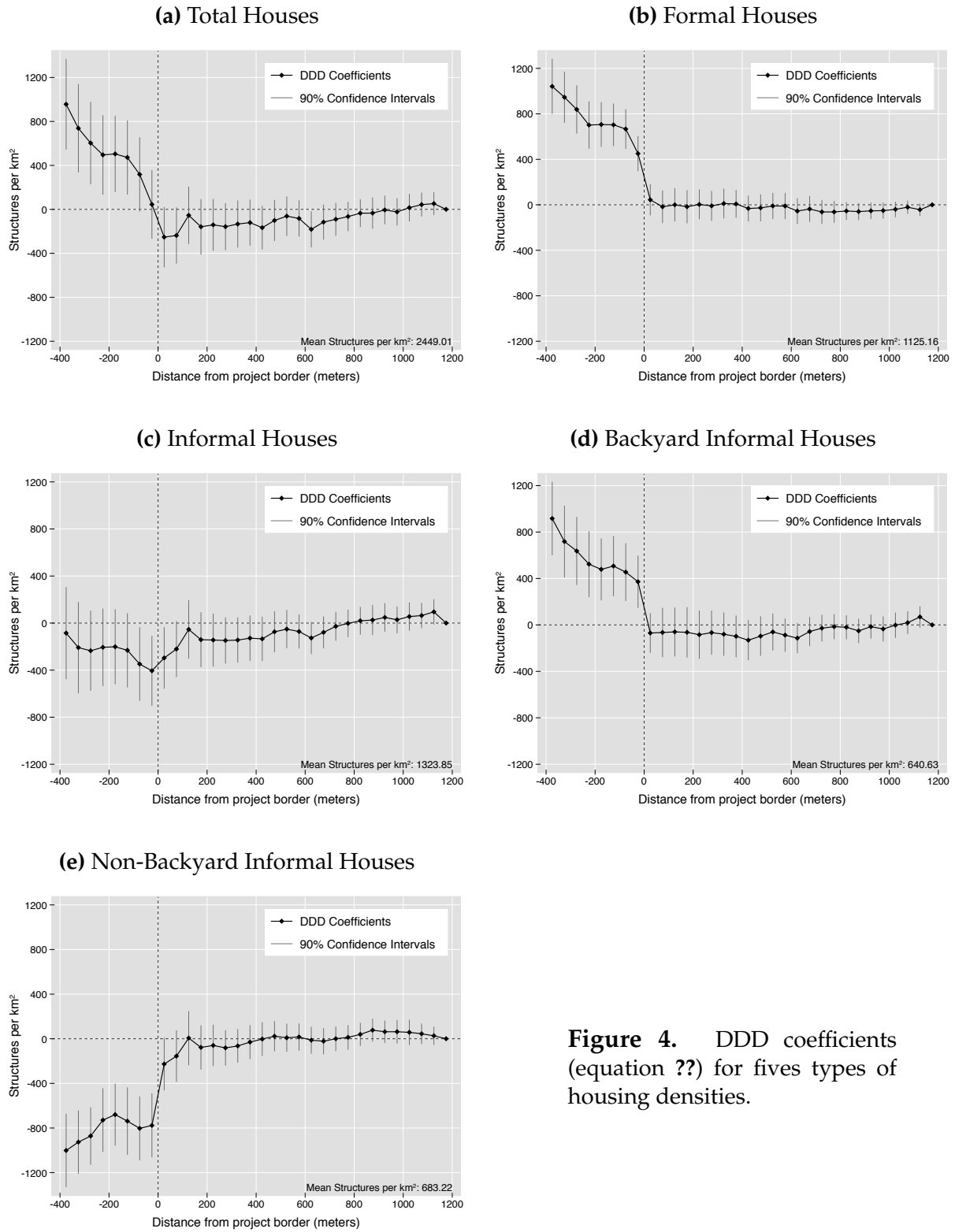**(e)** Non-Backyard Informal Houses

Figure 4. DDD coefficients (equation **??**) for fives types of housing densities.

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(a) Total Houses

(b) Formal Houses

(c) Informal Houses

(d) Backyard Informal Houses
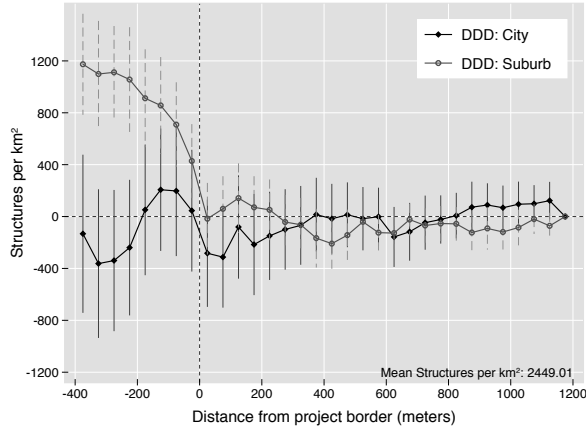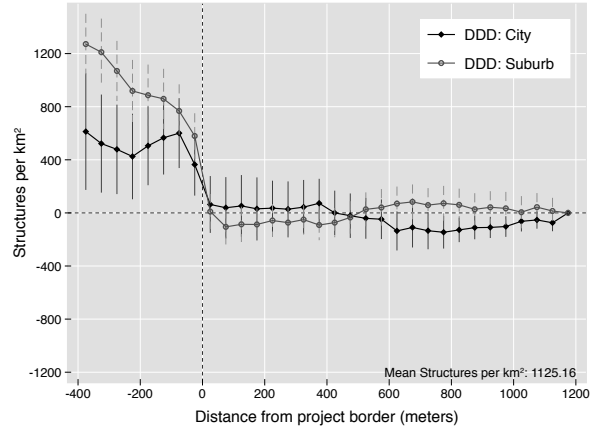

(e) Non-Backyard Informal Houses

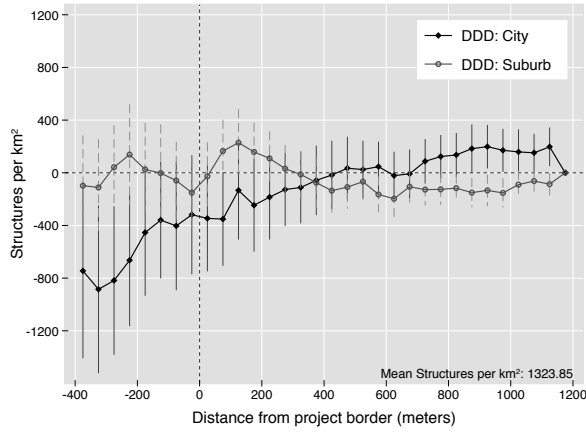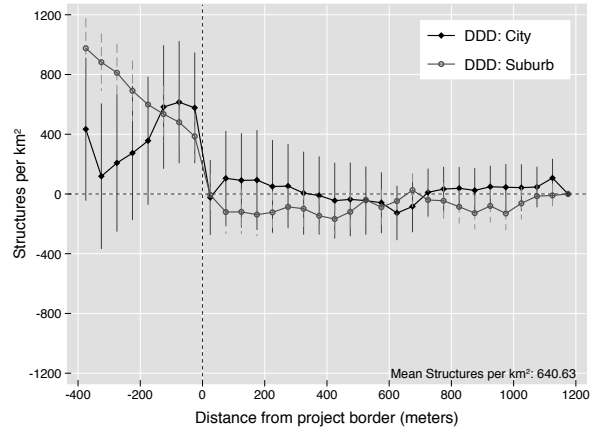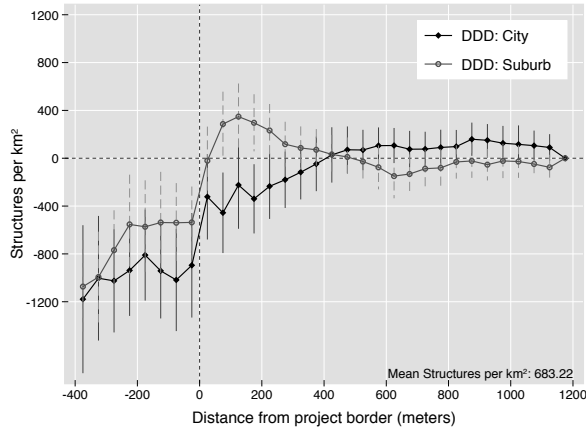**Figure 5.** DDD coefficients (equation **??**) for fives types of housing densities.

Table 6. Triple Difference Estimates

	(1) Total Housing	(2) Formal Housing	(3) Informal Housing	(4) Backyard Housing	(5) Non-Bkyrd Housing
City -400m to 0m	23.23	599.74[a]	-576.51[b]	486.33[b]	-1062.84[a]
	(258.31)	(139.00)	(254.56)	(217.52)	(217.80)
City 0m to 400m	-104.08	113.97	-218.05	64.05	-282.10[b]
	(160.95)	(86.38)	(149.61)	(122.29)	(120.18)
Suburb -400m to 0m	871.08[a]	784.99[a]	86.09	620.93[a]	-534.84[b]
	(183.64)	(125.11)	(172.75)	(106.82)	(210.83)
Suburb 0m to 400m	110.02	-66.66	176.68[c]	-30.64	207.31[b]
	(115.93)	(72.68)	(95.19)	(66.64)	(103.69)
Mean dep. var.	2,449.01	1,125.16	1,323.85	640.63	683.22
# Projects City	404	404	404	404	404
# Projects Suburb	248	248	248	248	248
R^2	0.154	0.162	0.120	0.141	0.095
N	573,372	573,372	573,372	573,372	573,372

"Near" is within 32 km from the CBD and "Far" is greater than 32km from the CBD.
Standard errors clustered at the project level in parenthesis. [c] $p<0.10$, [b] $p<0.05$, [a] $p<0.01$
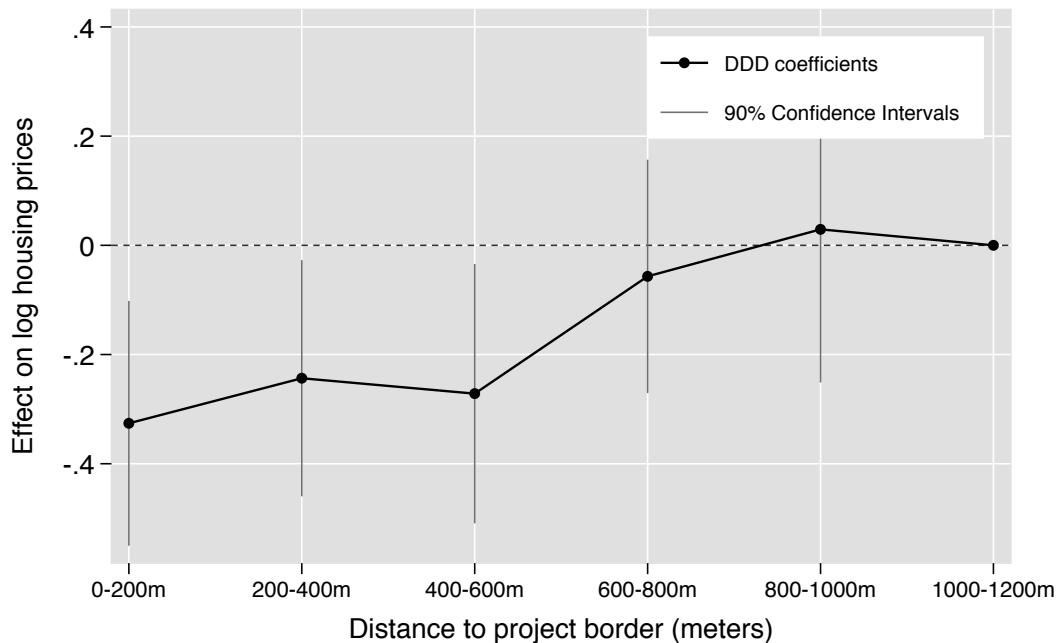
Figure 6. Price Estimates over Distance from Project

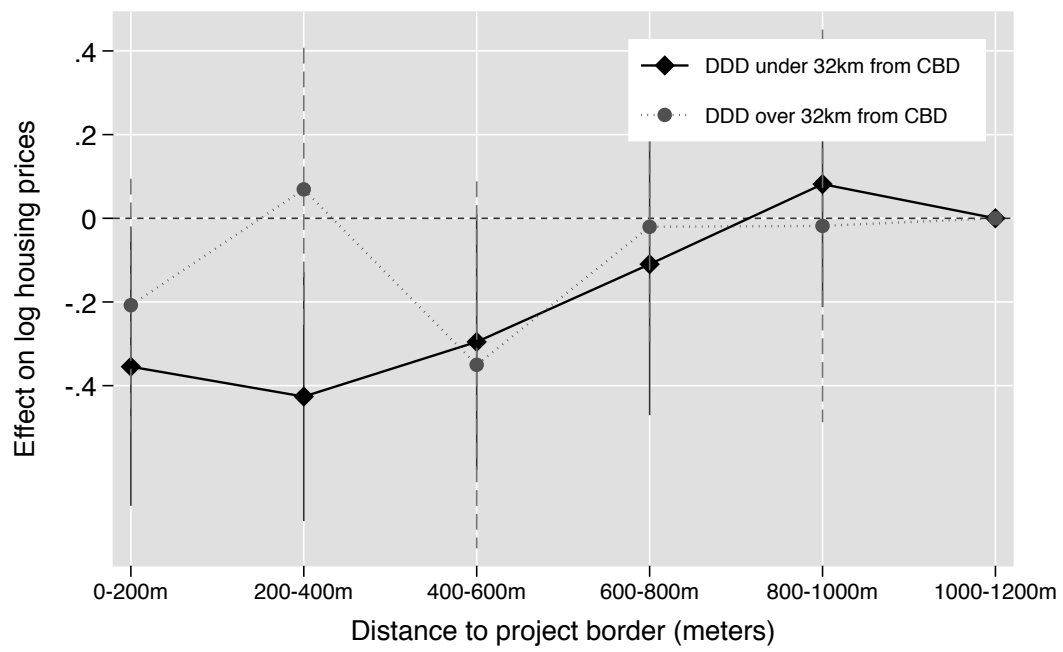**Figure 7.** Price Estimates over Distance from Project Het

Table 7. Census Household-level Estimates

	(1) Flush Toilet	(2) Water Indoors	(3) Electricity Cooking	(4) Electricity Heating	(5) Electricity Lighting	(6) Number of Rooms	(7) Household Size	(8) Population Density
project × post × constr	0.063	0.078[b]	0.113[b]	0.139[a]	0.023	-0.017	0.071	981.735[c]
	(0.047)	(0.032)	(0.054)	(0.045)	(0.058)	(0.103)	(0.071)	(549.521)
project × post	0.115[a]	0.091[a]	0.280[a]	0.192[a]	0.180[a]	0.330[a]	-0.111[b]	1629.398[a]
	(0.023)	(0.020)	(0.039)	(0.033)	(0.042)	(0.060)	(0.049)	(409.093)
project × constr	0.120[c]	-0.083[c]	-0.056	-0.074	0.013	-0.012	0.146	-1133.733
	(0.063)	(0.047)	(0.055)	(0.050)	(0.065)	(0.165)	(0.099)	(1152.117)
project	-0.365[a]	-0.216[a]	-0.409[a]	-0.359[a]	-0.343[a]	-1.034[a]	-0.399[a]	1410.435[b]
	(0.043)	(0.032)	(0.041)	(0.040)	(0.047)	(0.115)	(0.076)	(559.199)
spillover × post × constr	0.003	0.068[a]	0.043[c]	0.048[b]	0.005	0.043	-0.075[b]	363.159
	(0.020)	(0.022)	(0.022)	(0.023)	(0.016)	(0.052)	(0.033)	(286.662)
spillover × post	0.026	0.106[a]	0.055[a]	0.009	0.031[b]	0.194[a]	-0.230[a]	522.263[b]
	(0.016)	(0.016)	(0.016)	(0.015)	(0.015)	(0.041)	(0.024)	(225.677)
spillover × constr	-0.012	-0.058[c]	-0.045[c]	-0.042[c]	-0.019	-0.183	0.082[c]	-209.966
	(0.031)	(0.031)	(0.025)	(0.025)	(0.025)	(0.128)	(0.045)	(1088.159)
p-val, h_0: project=spill.	0.205	0.732	0.146	0.025	0.740	0.528	0.031	0.305
Mean Outcome 2001	0.75	0.34	0.65	0.62	0.77	3.39	3.56	7,919.84
Mean Outcome 2011	0.80	0.53	0.80	0.71	0.83	3.65	3.22	9,011.34
R^2	0.550	0.450	0.533	0.475	0.509	0.492	0.519	0.459
# projects	625	625	625	625	625	625	625	625
N project areas	6,240	6,240	6,240	6,240	6,240	6,225	6,241	6,241
N spillover areas	10,633	10,633	10,633	10,633	10,633	10,618	10,631	10,635
N	16,873	16,873	16,873	16,873	16,873	16,843	16,872	16,876

All regressions include project Fixed-Effects. Standard errors clustered at the project level in parenthesis. [c] $p<0.10$, [b] $p<0.05$, [a] $p<0.01$

Table 8. Census Household-level Post×Constructed Coefficients: City Versus Suburb and Informal Versus Formal Housing

	Flush Toilet	Water Indoors	Electricity Cooking	Electricity Heating	Electricity Lighting	Number of Rooms	Household Size	Population Density
				Formal Houses				
City × proj	0.113^c	0.017	0.199^a	0.199^a	0.131^c	-0.092	0.142	1286.168
	(0.064)	(0.046)	(0.063)	(0.053)	(0.077)	(0.158)	(0.131)	(817.430)
City × spill	0.010	0.060^b	0.042^b	0.033	0.026	0.019	-0.013	993.856^b
	(0.020)	(0.025)	(0.019)	(0.023)	(0.017)	(0.068)	(0.056)	(410.638)
Suburb × proj	-0.041	0.176^a	-0.048	0.005	-0.145	-0.386^a	-0.085	438.607
	(0.055)	(0.052)	(0.084)	(0.073)	(0.090)	(0.146)	(0.116)	(325.303)
Suburb × spill	-0.029	0.103^b	0.012	0.040	-0.044^c	0.050	-0.136^b	-203.576
	(0.034)	(0.042)	(0.042)	(0.038)	(0.026)	(0.084)	(0.060)	(259.740)
				Informal Houses				
City × proj	0.115^c	0.005	0.216^a	0.206^a	0.136^c	-0.155	-0.070	1363.628^c
	(0.070)	(0.032)	(0.060)	(0.049)	(0.069)	(0.107)	(0.081)	(805.242)
City × spill	0.034	0.050^b	0.055^b	0.041	0.047^b	-0.034	0.018	879.197^b
	(0.026)	(0.021)	(0.025)	(0.026)	(0.021)	(0.073)	(0.051)	(418.109)
Suburb × proj	-0.030	0.057^c	-0.047	0.015	-0.150^b	-0.283^b	-0.247^b	454.468
	(0.054)	(0.034)	(0.065)	(0.057)	(0.067)	(0.128)	(0.115)	(321.999)
Suburb × spill	-0.052	0.058	0.036	0.071^c	-0.009	0.033	-0.099	-197.658
	(0.032)	(0.037)	(0.041)	(0.041)	(0.028)	(0.075)	(0.067)	(263.681)

All difference-in-differences controls are included in the specification while only the interaction terms for Post×Constructed are shown. All regressions include project Fixed-Effects. Standard errors clustered at the project level in parenthesis. ^{c} $p<0.10$,^{b} $p<0.05$,^{a} $p<0.01$