

**Homeownership, Labor Supply, and Neighborhood Quality**  
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**Appendix for Online Publication**

**A. Appendix Tables and Figures**

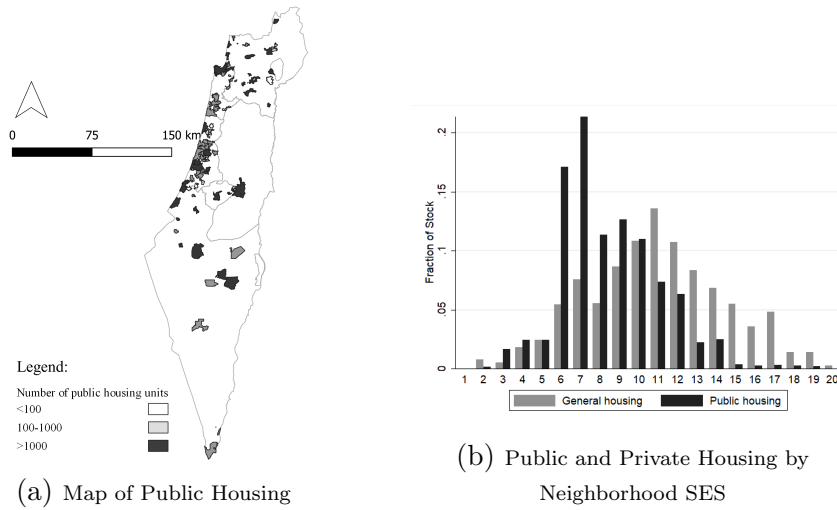
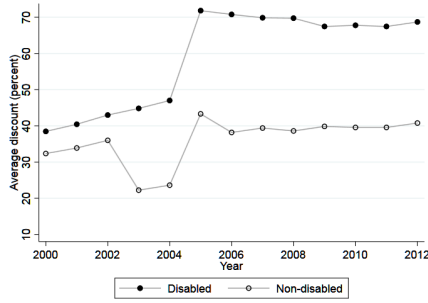


Figure A1. Geographic Distribution of Public Housing, 2000

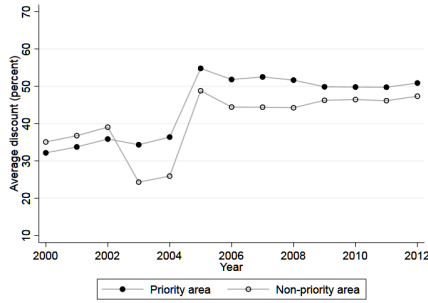
*Note:* Panel (a) reflects only localities with more than 5000 residents. The SES grade in Panel (b) is scaled from 1 (lowest) to 20 (highest). Areas of SES level 1 are almost exclusively Arab localities and are excluded from the sample.



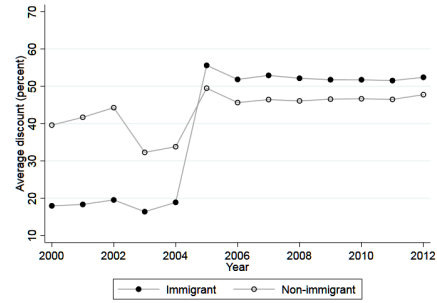
(a) By Disability Status



(b) By Marital Status



(c) By Geographic Priority Area



(d) By Recent Immigrant Status

Figure A2. 2005 Increase in Discounts – Additional Sub-Groups

*Note:* Figure shows the average discount faced in each year by public housing tenant characteristics that affect discount size. Panel (a) shows average discounts by disability status of a family member. Panel (b) shows average discounts by marital status. Panel (c) shows average discounts by geographic priority area. Panel (d) shows average discounts by recent (post-1989) immigrant status. Discount determination rules are summarized in Appendix Table C1. The “Buy Your Home” sale was in place from 2000-2004; the “This is My Home” sale was in place from 2005-2008; the “My Own Apartment” sale was in place from 2009-2012.

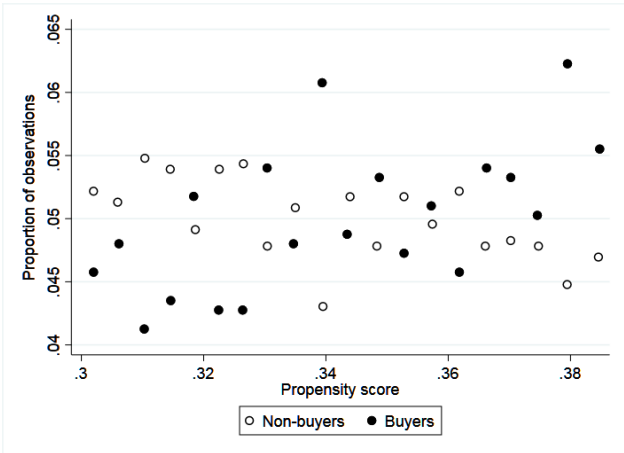


Figure A3. Propensity Scores of Buyers and Non-Buyers  
25th to 75th Percentile Common Support Sample

Note: Graph shows the proportion of observations of buyers and non-buyers at each propensity score. The sample includes observations between the 25th and 75th percentiles of propensity scores.

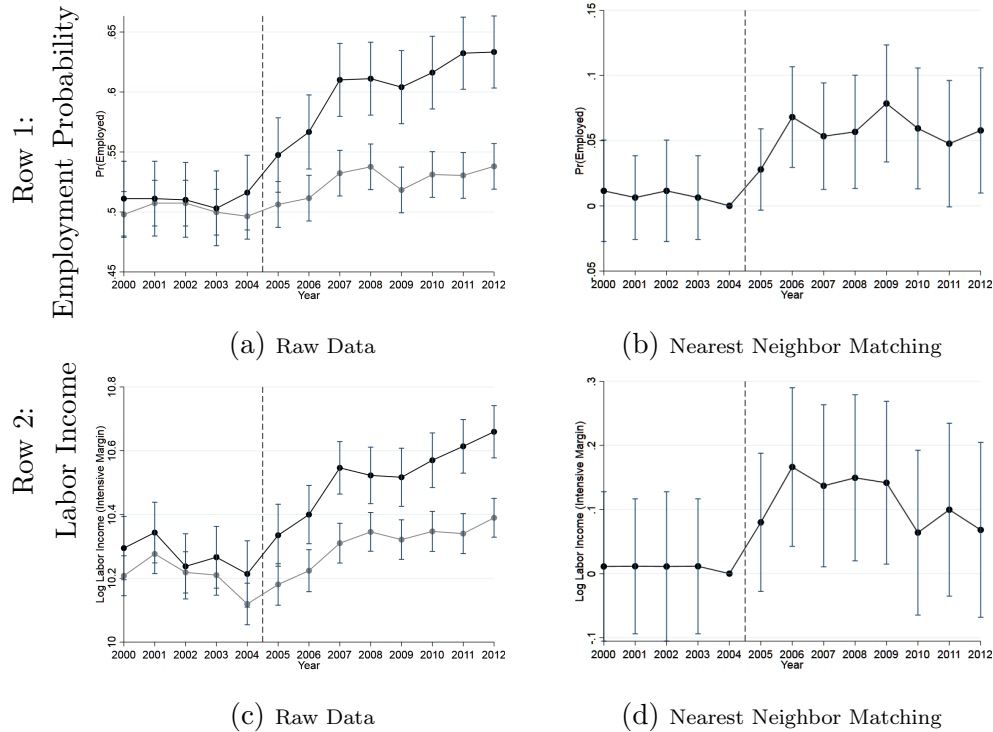


Figure A4. Labor Supply Effects: Raw Data and Matching

*Note:* Points in panels (a) and (c) represent coefficients on group times year interactions, where groups are buyers or non-buyers, in separate regressions predicting the indicated outcome and including year effects and time varying demographic controls. Points in panels (b) and (d) represent coefficients on treatment X year interactions, where treatment is defined as becoming a homeowner during the “This is My Home” sale period (2005-2008), in regressions predicting the indicated outcome, and including matched set effects, year effects, and time-varying demographic controls, as described in Section III.B of the text. Sample includes all households in the 25th-75th percentile propensity score common support; propensity scores are predicted using ex-ante demographics. Standard errors are clustered at the household level. Error bars represent 95% confidence intervals.

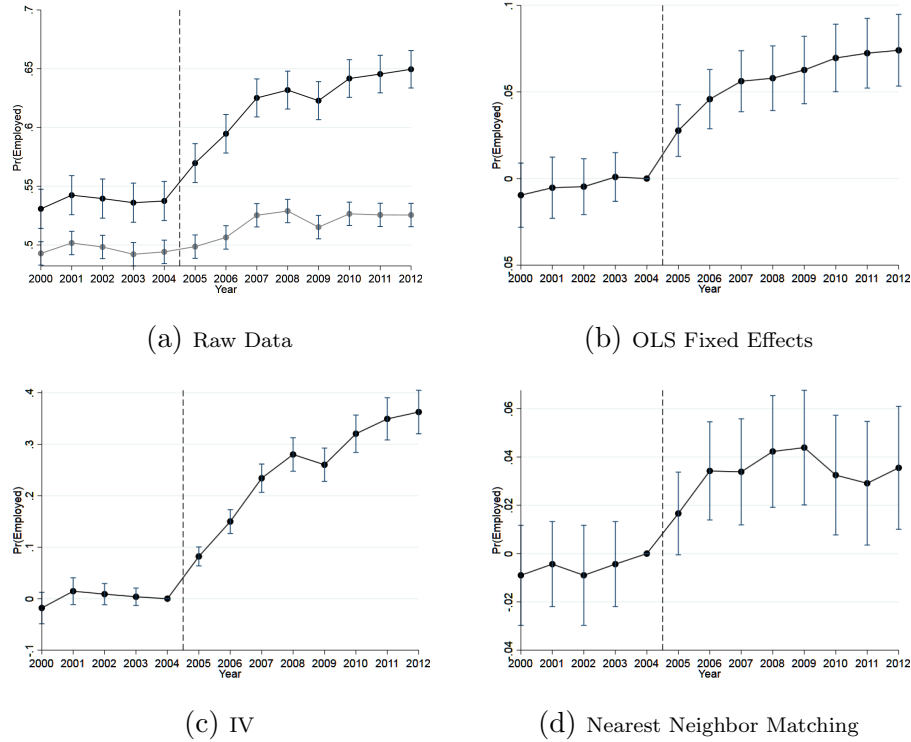


Figure A5. Employment Probability Effects: Four Methods of Comparison  
10th-90th Percentile Common Support

*Note:* Points on the graphs in panels (b), (c), and (d) represent coefficients on treatment times year interactions, where treatment is defined as becoming a homeowner during the “This is My Home” sale period (2005-2008), in regressions predicting employment and including an indicator for being an ever-buyer, year effects, and time-varying demographic controls. Points on the graph in panel (a) represent coefficients on group times year interactions, where groups are buyers or non-buyers, in separate regressions predicting employment and including year effects and time varying demographic controls. Sample includes all households in the 10th to 90th percentile propensity score common support, where propensity scores are predicted using ex-ante demographics. The “This is My Home” sale event began in 2005. In panel (c), buying is instrumented with discounts, as described in Section III.B of the text. Standard errors are clustered at the household level. Error bars represent 95% confidence intervals.

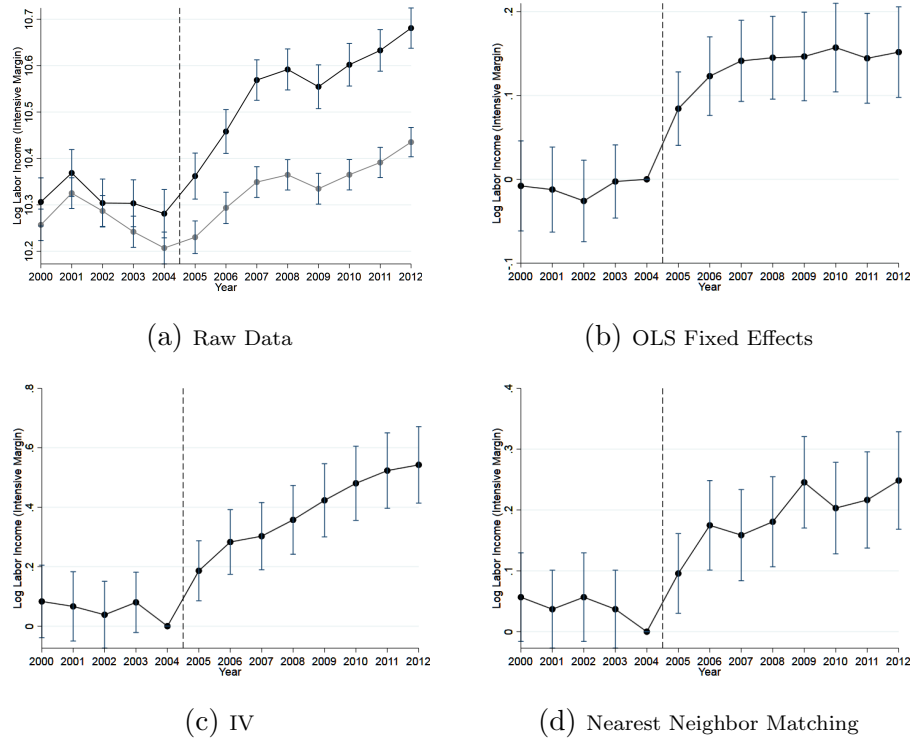


Figure A6. Labor Income Effects: Four Methods of Comparison  
10th-90th Percentile Common Support

*Note:* Points on the graphs in panels (b), (c), and (d) represent coefficients on treatment times year interactions, where treatment is defined as becoming a homeowner during the “This is My Home” sale period (2005-2008), in regressions predicting log labor income and including an indicator for being an ever-buyer, year effects, and time-varying demographic controls. Points on the graph in panel (a) represent coefficients on group times year interactions, where groups are buyers or non-buyers, in separate regressions predicting log labor income and including year effects and time varying demographic controls. Sample includes all households in the 10th to 90th percentile propensity score common support, where propensity scores are predicted using ex-ante demographics. The “This is My Home” sale event began in 2005. In panel (c), buying is instrumented with discounts, as described in Section III.B of the text. Standard errors are clustered at the household level. Error bars represent 95% confidence intervals.

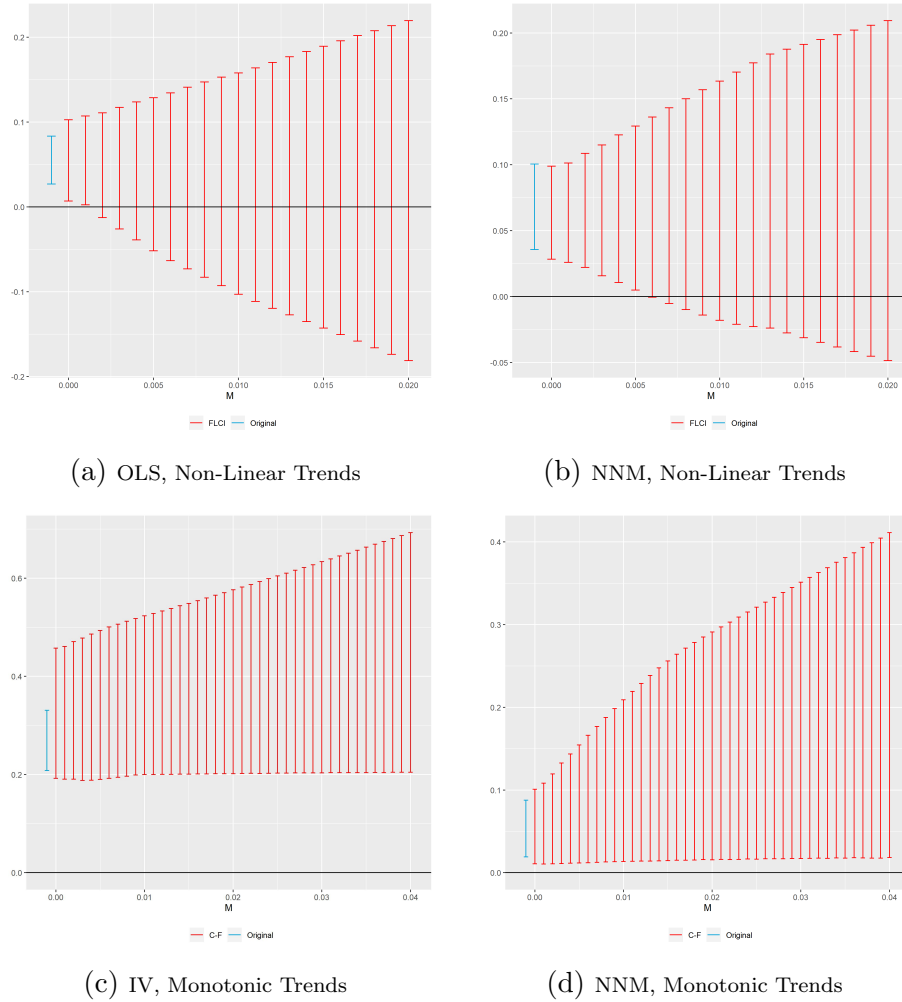


Figure A7. Robustness to Non-linear Differential Pre-treatment Trends  
OLS, IV, and NNM-1 Long-Term Employment Effects

*Note:* Graphs present robust confidence intervals for the 2007 treatment coefficient under alternative assumptions regarding differential pre-treatment trends across treatment and control groups, following Rambachan and Roth (2019). The blue CI reflects the original CI under the parallel trends assumption. The first red CI is robust under the assumption of differential but linear pre-treatment trends. Subsequent CIs are robust allowing for increasing degrees of non-linearity,  $M$ , of differential pre-treatment trends. All panels allow for non-linearity in differential trends. Panels A7c and A7d allow specifically for monotonically decreasing trends, according to the direction of pre-treatment coefficients observed.

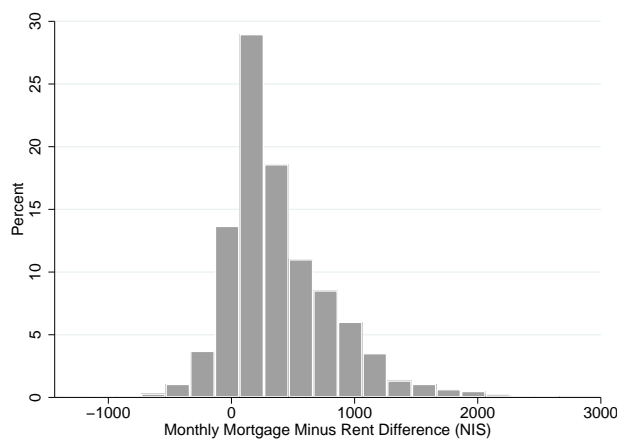


Figure A8. Distribution of Monthly Mortgage-minus-Rent Difference (NIS)

*Note:* Histogram shows distribution of the difference between estimated monthly mortgage payments and observed (prior) monthly rents for public housing households who bought their units in the "This is My Home" sale period, 2005-2008. 4.6 NIS were worth \$1 USD in 2005.



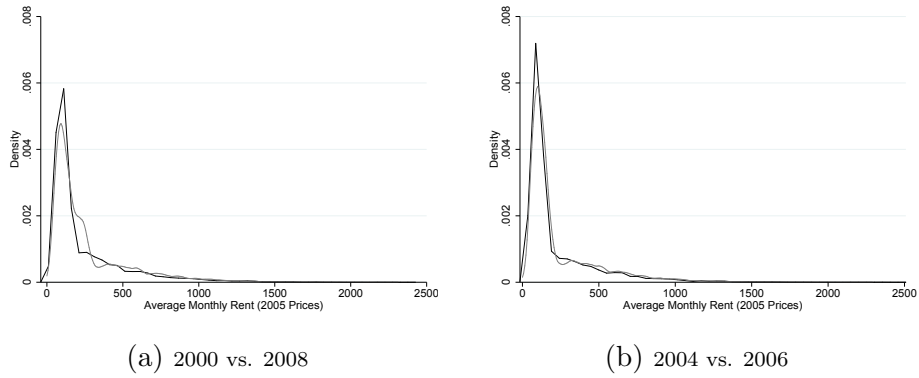


Figure A9. Distribution of Rent Levels, by Year

*Note:* Kernel density plots show the distribution of monthly net (after discount) rent levels for all sample households. The gray curve reflects the later year in each panel. Panel (a) shows the distributions at the beginning and end of the period spanning the “This is My Home” sale event that we study. Panel (b) shows the distributions just before and just after the November 2005 change in rent determination and housing value assessments. All values shown are in 2005 NIS, where \$1 USD=4.6 NIS in 2005.

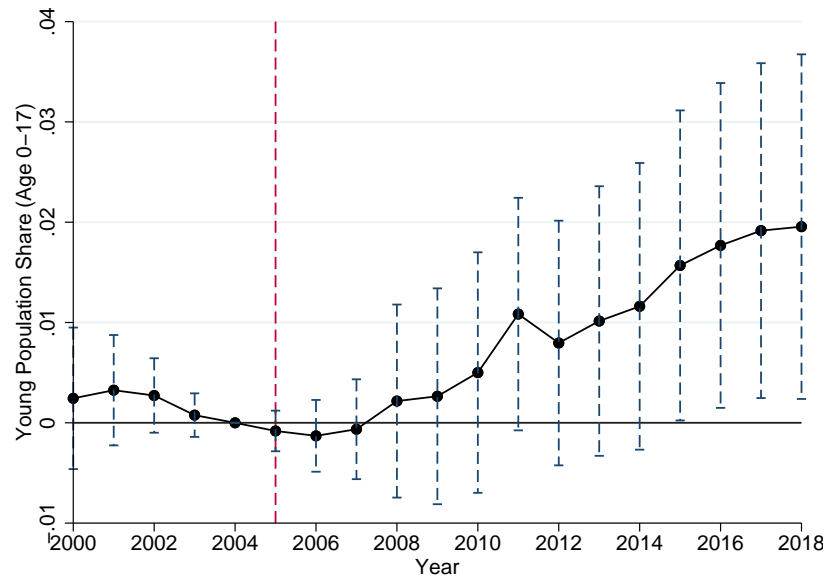


Figure A10. Within-Town Difference-in-Differences Effect on Young Population Share in Neighborhood

*Note:* Points on the graphs represent coefficients on treatment times year interactions, where treatment is defined as SAs with above-75th percentile increases in homeownership rates and control SAs have below 25th percentile increases in homeownership rates. The sample includes only SAs with high initial public housing shares, and only towns with both treated and control SAs. The “This is My Home” sale event began in 2005. The y-axis measures share of local population aged 0-17. Regressions include year effects and town effects. Standard errors are clustered at the SA level. Error bars represent 95% confidence intervals.

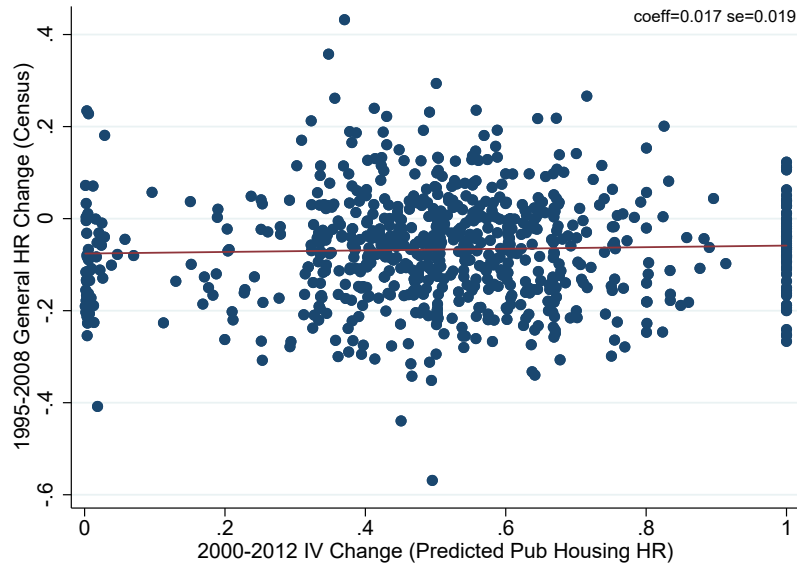


Figure A11. Orthogonality of Instrument to Change in General Homeownership Rates

*Note:* Points on the graph represent a scatter plot at the statistical area level of the 1995-2008 change in general (non-public) housing stock homeownership rates, as measured by the Israeli Census, against the 2000-2012 change in the IV-predicted public housing homeownership rate. 1995 and 2008 are the Census years closest to the years spanning our sample. The slope coefficient and standard error of the best fit linear prediction are shown in the upper right hand corner.

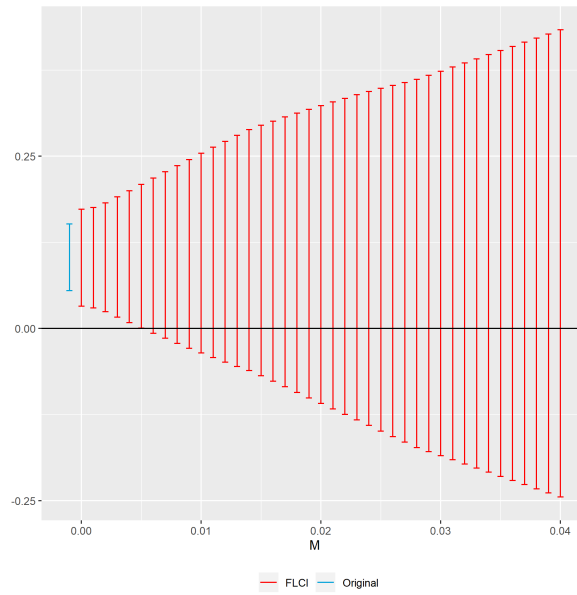


Figure A12. Robustness to Non-linear Differential Pre-treatment Trends  
OLS Price Difference-in-Differences Effect

*Note:* Graph presents robust confidence intervals for the 2007 treatment coefficient under alternative assumptions regarding differential pre-treatment trends across treatment and control groups, following Rambachan and Roth (2019). The blue CI reflects the original CI under the parallel trends assumption. The first red CI is robust under the assumption of differential but linear pre-treatment trends. Subsequent CIs are robust allowing for increasing degrees of non-linearity,  $M$ , of differential pre-treatment trends.

Table A1— Probability of Becoming a Homeowner  
during “This is My Home,” as a Function of Discounts

Dependent Variable:	Bought during “This is My Home” Sale, 2005-2008					
	(1)	(2)	(3)	(4)	(5)	(6)
Discount <sub>t</sub>	1.212 (0.086)	0.681 (0.108)	0.709 (0.109)	-0.267 (0.350)	-0.245 (0.331)	-0.347 (0.330)
Discount <sub>t</sub> <sup>2</sup>				2.704 (0.889)	2.170 (0.836)	2.440 (0.834)
Discount <sub>t</sub> <sup>3</sup>				-2.375 (0.636)	-2.035 (0.597)	-2.206 (0.597)
Tenure (Cts.)		0.043 (0.002)			0.014 (0.001)	
0-5 Yrs. Tenure			-1.408 (0.090)			-0.444 (0.023)
6-10 Yrs. Tenure			-1.167 (0.063)			-0.389 (0.020)
11-15 Yrs. Tenure			-1.054 (0.055)			-0.356 (0.018)
16-20 Yrs. Tenure			-0.856 (0.051)			-0.303 (0.017)
21-25 Yrs. Tenure			-0.661 (0.045)			-0.243 (0.016)
Disabled		-0.103 (0.055)	-0.112 (0.055)		-0.023 (0.016)	-0.024 (0.016)
Married		0.234 (0.049)	0.224 (0.049)		0.064 (0.014)	0.057 (0.014)
Num. Children		0.052 (0.019)	0.062 (0.019)		0.017 (0.006)	0.020 (0.006)
HH age		0.005 (0.003)	0.002 (0.003)		0.001 (0.001)	-0.000 (0.001)
Apt Characteristics		Yes	Yes		Yes	Yes
Geo FE		Yes	Yes		Yes	Yes
Model	Probit	Probit	Probit	Non-Par	Non-Par	Non-Par
Num. Households	3,633	3,633	3,633	3,633	3,633	3,633

Notes: Table presents probit and flexible non-parametric estimates of entry in to homeownership as a function of sale discounts, scaled as a rate between 0 and 1. Regressions are at the household-year level and the dependent variable is an indicator for buying during the “This is My Home” Sale between 2005 and 2008. Regressions in columns (2), (3), (5), and (6) include geographic area fixed effects and controls for regional unemployment, household demographics, and apartment characteristics. The omitted tenure group is tenure>25yrs. Sample includes buyers in the “This is My Home” sale event and never-buyer public housing tenants. Standard errors are clustered at the household level.

Table A2— IV First Stage Estimates for Labor Supply Regressions

	Dependent Variable: $I\{\text{Homeowner}\} \times I\{\text{year} \geq 2005\}$			
	(1)	(2)	(3)	(4)
$I\{\text{year} \geq 2005\} \times \text{Discount IV}$	0.770 (0.031)	0.834 (0.015)	0.812 (0.038)	0.925 (0.018)
Observations	32,697	118,323	20,567	74,137
R-squared	0.463	0.481	0.472	0.522
Num. Clusters	3,633	13,147	2,855	10,288
1st Stage KP F-Stat	636.2	3129	457.3	2614
2nd Stage Outcome	Employed	Employed	Log(Inc)	Log(Inc)
Common Support PS Pctiles	25th-75th	10th-90th	25th-75th	10th-90th

Notes: An observation in the sample is a household-year for the years 2000-2008 and households living in public housing at the beginning of the period. The sample in columns (1) and (3) includes households in the 25thth-75th percentile common support of propensity to buy their units during the sale period “This is My Home,” while the sample in columns (2) and (4) includes households in the 10th-90th percentile common support. Estimates in each column represent first stage IV results corresponding to the second stages presented in column (2) of Tables 2, and A3. All regressions are fixed effects specifications including year effects, household effects, and controls for number of kids under 18, marital status, years since immigration, having a disabled household member, and the regional unemployment rate. Second stage outcomes are long-term employment (columns 1 and 2) and log labor income (cols 3 and 4). The instrument is constructed as described in Section III.B of the text. Standard errors are clustered by household.

Table A3— Estimates of the Homeownership Effect on Labor Supply  
10th-90th Percentile Common Support

Panel A: Long-Term Employment (Extensive Margin)				
Dependent Variable: Employment	(1) OLS	(2) IV	(3) NNM-1	(4) NNM-3
$I_{\{year \geq 2005\}} \times I_{\{Homeowner\}}$	0.0504 (0.0065)	0.141 (0.021)	0.0367 (0.0081)	0.0285 (0.0122)
Observations	118,323	118,323	61,866	61,506
R-squared	0.656	0.654	0.479	0.456
Num. Clusters	13,147	13,147	6,874	5,073
1st Stage KP F-Stat		1564		

Panel B: Labor Income (Intensive Margin)				
Dependent Variable: Log(Labor Inc.)	(1) OLS	(2) IV	(3) NNM-1	(4) NNM-3
$I_{\{year \geq 2005\}} \times I_{\{Homeowner\}}$	0.160 (0.018)	0.359 (0.052)	0.115 (0.026)	0.0756 (0.0350)
Observations	76,634	76,634	39,866	39,705
R-squared	0.699	0.698	0.535	0.506
Num. Clusters	10,444	10,444	5,591	4,277
1st Stage KP F-Stat		1287		

Notes: An observation in the sample is a household-year, 2000-2008, for households living in public housing at the beginning of the period. The sample includes households in the 10th-90th percentile common support of propensity to buy their units during the sale period “This is My Home” (2005-2008). Regressions are fixed effects specifications of 6-month employment (Panel A) or log income (Panel B) on the interaction of a homeowner indicator with an indicator for after the start of the sale period, and including year effects, household effects, and controls for number of kids under 18, marital status, years since immigration, having a disabled household member, and the regional unemployment rate. In column (2), the homeownership  $\times$  after interaction is instrumented for using sale discounts, as described in Section III.B of the text. Columns (3) and (4) implement nearest neighbor matching estimators with one and three matches, respectively, for each treated household; in these regressions, match group fixed effects replace household fixed effects, and not all control units serve as matches. Standard errors are clustered by household.

Table A4— Placebo vs. Actual Event Dates

Panel A: Placebo Event – 2003				
Dependent Variable:	Employed		Log(Labor Inc)	
	(1)	(2)	(3)	(4)
I{year $\geq$ 2003} x I{Homeowner}	0.0041 (0.0064)	0.0084 (0.0118)	0.0150 (0.0181)	0.0090 (0.0348)
Observations	52,588	14,532	32,659	9,059
R-squared	0.773	0.770	0.783	0.787
Years Included	2001-2004	2001-2004	2001-2004	2001-2004
Common Support PS Pctiles	10th-90th	25th-75th	10th-90th	25th-75th
Panel B: Actual Event – 2005				
Dependent Variable:	Employed		Log(Labor Inc)	
	(1)	(2)	(3)	(4)
I{year $\geq$ 2005} x I{Homeowner}	0.0366 (0.0069)	0.0296 (0.0135)	0.110 (0.020)	0.119 (0.036)
Observations	52,588	14,532	33,239	9,224
R-squared	0.759	0.752	0.806	0.816
Years Included	2003-2006	2003-2006	2003-2006	2003-2006
Common Support PS Pctiles	10th-90th	25th-75th	10th-90th	25th-75th

Notes: An observation in the sample is a household-year for the years indicated in each regression and for households living in public housing at the beginning of the period. The sample includes households in the indicated common support of propensity to buy their units during the sale period “This is My Home.” Regressions in columns (1) and (2) are OLS fixed effects specifications of long-term employment on the interaction of a homeowner indicator with an indicator for after the start of the placebo or actual sale period, including year effects, household effects, and controls for number of kids under 18, marital status, years since immigration, having a disabled household member, and the regional unemployment rate. Regressions in columns (3) and (4) are analogous to those in columns (1) and (2) but with log of labor income as the dependent variable. Long-term employment is defined as employment for at least 6 months. Standard errors are clustered by household.



Table A5— Placebo vs. Actual Event Dates, Shorter Event Windows

Panel A: Placebo Event – 2003				
Dependent Variable:	Employed		Log(Labor Inc)	
	(1)	(2)	(3)	(4)
$I\{\text{year} \geq 2003\} \times I\{\text{Homeowner}\}$	0.0025 (0.0082)	0.0155 (0.0158)	0.0304 (0.0232)	0.0332 (0.0461)
Observations	26,294	7,266	14,968	4,124
R-squared	0.833	0.825	0.825	0.828
Years Included	2002, 2004	2002, 2004	2002, 2004	2002, 2004
Common Support PS Pctiles	10th-90th	25th-75th	10th-90th	25th-75th

Panel B: Actual Event – 2005				
Dependent Variable:	Employed		Log(Labor Inc)	
	(1)	(2)	(3)	(4)
$I\{\text{year} \geq 2005\} \times I\{\text{Homeowner}\}$	0.0289 (0.0076)	0.0210 (0.0145)	0.0769 (0.0223)	0.0737 (0.0386)
Observations	26,294	7,266	15,590	4,286
R-squared	0.860	0.856	0.866	0.886
Years Included	2004-2005	2004-2005	2004-2005	2004-2005
Common Support PS Pctiles	10th-90th	25th-75th	10th-90th	25th-75th

Notes: An observation in the sample is a household-year for the years indicated in each regression and for households living in public housing at the beginning of the period. The sample includes households in the indicated common support of propensity to buy their units during the sale period “This is My Home.” Regressions in columns (1) and (2) are OLS fixed effects specifications of long-term employment on the interaction of a homeowner indicator with an indicator for after the start of the placebo or actual sale period, including year effects, household effects, and controls for number of kids under 18, marital status, years since immigration, having a disabled household member, and the regional unemployment rate. Regressions in columns (3) and (4) are analogous to those in columns (1) and (2) but with log of labor income as the dependent variable. Long-term employment is defined as employment for at least 6 months. Standard errors are clustered by household.

Table A6— Comparison of Public vs. Private Rental Housing Characteristics

Panel A: Private Rentals			
	Mean	SD	SE(Mean)
Number of Rooms	3.1	0.35	0.02
Floor Number	2.3	0.97	0.04
Building Age (Yrs)	17.5	9.08	0.41
Panel B: Public minus Private Difference			
	Mean Diff	SD	SE
Number of Rooms	-0.21	0.44	0.02
Floor Number	0.07	1.06	0.05
Building Age (Yrs)	6.2	9.34	0.42

Notes: Statistics from the 1995 population census (20% sample, CBS) reflect SAs with above median public housing shares in 2000.

Table A7— Hazard Model of Public Housing Sales to Tenants

Dependent Variable:	Sale(t)		
	(1)	(2)	(3)
Discount	0.0199 (0.0004)	0.0139 (0.0005)	0.0112 (0.0005)
Tenure in Public Housing		0.0729 (0.0014)	0.0810 (0.0014)
Household member with disabilities		-0.764 (0.031)	-0.698 (0.032)
Married		0.0333 (0.0244)	0.0307 (0.0247)
Num. Children		0.123 (0.007)	0.509 (0.027)
(Num. Children) <sup>2</sup>			-0.0955 (0.0067)
(Num. Children) <sup>3</sup>			0.00514 (0.0004)
Post 1989 Immigrant		0.468 (0.026)	0.551 (0.026)
Household Head Age		-0.0390 (0.0014)	-0.211 (0.083)
(Household Head Age) <sup>2</sup>			0.0071 (0.0018)
(Household Head Age) <sup>3</sup>			-7.24e-05 (1.30e-05)
Floor of Building	-0.0136 0.0072	-0.0448 (0.0077)	-0.0444 (0.0077)
Year Built	0.2880 (0.0013)	0.0570 (0.0017)	0.0593 (0.0017)
Number of Rooms	0.139 (0.029)	-0.0217 (0.0292)	-0.0400 (0.0292)
Floor Space	0.0084 (0.0014)	0.0165 (0.0014)	0.0178 (0.00142)
Geo FE	Yes	Yes	Yes
Constant	-63.92 (2.640)	-120.0 (3.310)	-124.8 (3.538)
Observations	238,822	238,822	238,822

Notes: Estimates presented are coefficients from a hazard model predicting the sale of public housing units and including geographic area fixed effects. Sample includes buyers in the “This is My Home” sale event and never-buyer public housing tenants. Bootstrapped standard errors are reported.

Table A8— OLS and IV Price Estimates – Neighborhood Fixed Effects  
Shorter Estimation Window, 2000-2008

Panel A: Statistical Area Level						
	Dependent Variable: $\ln(\text{Price})$					
	OLS (1)	OLS (2)	OLS (3)	IV (4)	IV (5)	IV (6)
Homeownership Rate $_{t-2}$	0.089 (0.023)	0.393 (0.067)	0.024 (0.022)	0.082 (0.025)	0.330 (0.068)	0.028 (0.024)
N	170,208	94,081	76,127	170,208	94,081	76,127
1st Stage KP F-Stat				752.75	188.78	614.16
Public Housing Share	All	High	Low	All	High	Low

Panel B: Block Level						
	Dependent Variable: $\ln(\text{Price})$					
	OLS (1)	OLS (2)	OLS (3)	IV (4)	IV (5)	IV (6)
Homeownership Rate $_{t-2}$	0.098 (0.026)	0.480 (0.144)	0.020 (0.022)	0.090 (0.026)	0.421 (0.120)	0.021 (0.024)
N	154,907	67,837	87,070	154,907	67,837	87,070
1st Stage KP F-Stat				590.85	86.85	508.91
Public Housing Share	All	High	Low	All	High	Low

Notes: An observation in the sample is a transaction (sale) of an always-private house in the years 2000-2008. The sample includes neighborhoods that had public housing in 2000; columns (2) and (5) include only neighborhoods with an above-median share of public housing in 2000, and columns (3) and (6) include only neighborhoods with a below-median share of public housing in 2000. All regressions are fixed effects specifications of log transaction price on (two quarter lagged) homeownership rate that include neighborhood effects, year effects, and quarter (season) effects, as well as building starts in the neighborhood and hedonic characteristics of the transacted house: floor space, a series of indicators for number of rooms, an indicator for a multi-unit dwelling, floor, and building age. Homeownership rate is scaled from 0 to 1. In columns (3)-(6), the homeownership rate is instrumented for using sale discounts, as described in Section IV.A of the text. Standard errors are clustered by the geographic area at which fixed effects are included (noted in the table).

Table A9— OLS and IV Price Estimates – Flexible Geographic Controls  
Shorter Estimation Window, 2000-2008

Panel A: Buffer Zone Centered on Each Private Transaction						
	Dependent Variable: $\ln(\text{Price})$					
	OLS (1)	OLS (2)	OLS (3)	IV (4)	IV (5)	IV (6)
Homeownership Rate $_{t-2}$	0.055 (0.015)	0.145 (0.028)	0.023 (0.010)	0.050 (0.015)	0.120 (0.024)	0.024 (0.011)
N	82,240	41,072	41,168	82,240	41,072	41,168
1st Stage KP F-Stat				2385	3720	1895
Public Housing Share	All	High	Low	All	High	Low
Panel B: Statistical Area Level (Centroid Polynomial)						
	Dependent Variable: $\ln(\text{Price})$					
	OLS (1)	OLS (2)	OLS (3)	IV (4)	IV (5)	IV (6)
Homeownership Rate $_{t-2}$	0.085 (0.025)	0.171 (0.055)	0.051 (0.026)	0.077 (0.028)	0.151 (0.056)	0.045 (0.030)
N	170,215	94,085	76,130	170,215	94,085	76,130
1st Stage KP F-Stat				659	1678	476.2
Public Housing Share	All	High	Low	All	High	Low
Panel C: Block Level (Centroid Polynomial)						
	Dependent Variable: $\ln(\text{Price})$					
	OLS (1)	OLS (2)	OLS (3)	IV (4)	IV (5)	IV (6)
Homeownership Rate $_{t-2}$	0.092 (0.028)	0.149 (0.059)	0.029 (0.026)	0.089 (0.034)	0.116 (0.060)	0.013 (0.032)
N	154,937	67,853	87,084	154,937	67,853	87,084
1st Stage KP F-Stat				916.8	1373	878.8
Public Housing Share	All	High	Low	All	High	Low

Notes: An observation in the sample is a transaction (sale) of an always-private house in the years 2000-2008. The sample includes neighborhoods that had public housing in 2000; columns (2) and (5) include only neighborhoods with an above-median share of public housing in 2000, and columns (3) and (6) include only neighborhoods with a below-median share of public housing in 2000. All regressions predict log transaction price and include (two quarter lagged) homeownership rate, polynomial controls in latitude and longitude of the neighborhood centroid, locality effects, year effects, and quarter (season) effects, as well as building starts in the neighborhood and hedonic characteristics of the transacted house: floor space, a series of indicators for number of rooms, an indicator for a multi-unit dwelling, floor, and building age. Homeownership rate is scaled from 0 to 1. In columns (3)-(6), the homeownership rate is instrumented for using sale discounts, as described in Section IV.A of the text. Standard errors are clustered by Town (panel A), Statistical Area (panel B), Block (panel C).

Table A10— OLS and IV Price Estimates – Excluding TLV and JLM

Dependent Variable: $\ln(\text{Price})$	Statistical Area		Block	
	OLS (1)	IV (2)	OLS (3)	IV (4)
Homeownership Rate $_{t-2}$	0.416 (0.069)	0.390 (0.065)	0.499 (0.121)	0.455 (0.101)
Observations	148,116	148,116	108,001	108,001
R-Sq	0.820		0.818	
R-Sq Within	0.213	0.213	0.198	0.198
1st Stage KP F-Stat		463.10		239.62
Public Housing Share	High	High	High	High

Notes: An observation in the sample is a transaction (sale) of an always-private house in the years 2000-2012. The sample includes neighborhoods that had public housing in 2000; all columns include only neighborhoods with an above-median share of public housing in 2000 and are thus analogous to columns (2) and (5) of Table 4. All regressions are fixed effects specifications of log transaction price on (two quarter lagged) homeownership rate that include neighborhood effects, year effects, and quarter (season) effects, as well as building starts in the neighborhood (cols 1-2 only) and hedonic characteristics of the transacted house: floor space, a series of indicators for number of rooms, an indicator for a multi-unit dwelling, floor, and building age. Homeownership rate is scaled from 0 to 1. In columns (2) and (4), the homeownership rate is instrumented for using sale discounts, as described in Section IV.A of the text. Standard errors are clustered by the geographic area at which fixed effects are included (indicated).

Table A11— OLS and IV Price Estimates – Alternative Lag Structures

Dependent Variable: $\ln(\text{Price})$	OLS (1)	IV (2)
Homeownership Rate $_t$	0.439 (0.070)	0.405 (0.065)
Homeownership Rate $_{t-1}$	0.427 (0.070)	0.385 (0.065)
Homeownership Rate $_{t-2}$	0.407 (0.068)	0.367 (0.063)
Homeownership Rate $_{t-3}$	0.387 (0.068)	0.350 (0.065)
Homeownership Rate $_{t-4}$	0.380 (0.067)	0.336 (0.064)
Homeownership Rate $_{t-5}$	0.331 (0.064)	0.286 (0.062)
Homeownership Rate $_{t-6}$	0.279 (0.061)	0.230 (0.060)

Notes: An observation in the sample is a transaction (sale) of an always-private house in the years 2000-2012. The sample includes neighborhoods that had an above-median share of public housing in 2000; column (1) presents OLS estimates, and column (2) presents IV estimates in which the homeownership rate is instrumented for using sale discounts, as described in Section IV.A of the text. All regressions are fixed effects specifications of log transaction price on (two quarter lagged) homeownership rate that include neighborhood effects, year effects, and quarter (season) effects, as well as building starts in the neighborhood and hedonic characteristics of the transacted house: floor space, a series of indicators for number of rooms, an indicator for a multi-unit dwelling, floor, and building age. Standard errors are clustered by Statistical Area.

Table A12— Reduced Form Correlations  
of Market Access Measures with Instrument

Dependent Variable:	Peripherality Rating (1)	Peripherality Rating (2)	Distance from Tel Aviv (km) (3)	Market Access (4)
$\Delta$ HR, IV Prediction	0.124 (0.122)	0.079 (0.117)	-0.303 (0.210)	0.008 (0.124)
N	1,022	1,951	994	1,022
N Clusters	929	929	901	929
R-Sq	0.867	0.870	0.999	0.842
Geo FE	Sub-district	Sub-district	Town	Sub-district
Year of Access Measure	2015	2004, 2015	2015	2015

Notes: An observation in the sample is a Statistical Area in columns (1), (3), and (4), and a Statistical Area-year (2004, 2015) in column (2). The sample includes neighborhoods that had public housing in 2000. All regressions are fixed effects specifications of the indicated market access measure on the IV-predicted 12-year change in homeownership rate and sub-district fixed effects. Market access measure reflects 2015 access and varies at the locality level; the peripherality rating is measured in 2004 and 2015, varying at the locality level. Distance from Tel Aviv is measured at the Statistical Area level. Standard errors are clustered by Statistical Area.



Table A13— Within-Town Difference-in-Differences Estimates  
with Market Access-by-Year Interaction Controls

Panel A: Statistical Area Level				
Dependent Variable: $\ln(p)$	(1) OLS	(2) IV	(3) OLS	(4) IV
$I_{\{year \geq 2005\}} \times I_{\{>p50 \text{ HRchg}\}}$	0.064 (0.014)	0.059 (0.014)		
$I_{\{year \geq 2005\}} \times I_{\{>p75 \text{ HRchg}\}}$			0.066 (0.017)	0.066 (0.019)
Observations	87,287	87,287	25,906	25,906
R-squared	0.736	0.735	0.756	0.737

Panel B: Block Level				
Dependent Variable: $\ln(p)$	(1) OLS	(2) IV	(3) OLS	(4) IV
$I_{\{year \geq 2005\}} \times I_{\{>p50 \text{ HRchg}\}}$	0.089 (0.016)	0.074 (0.017)		
$I_{\{year \geq 2005\}} \times I_{\{>p75 \text{ HRchg}\}}$			0.147 (0.032)	0.125 (0.032)
Observations	67,904	67,904	25,400	25,400
R-squared	0.764	0.763	0.776	0.801

Notes: An observation in the sample is a transaction (sale) of an always-private house in the years 2000-2008, the years just before and after the beginning of the “This is My Home” sale event. The sample includes only neighborhoods that had above-median public housing in 2000 and only towns that include neighborhoods with both large and small homeownership changes. In the first row of each panel, a large increase is defined as above-median (relative to below-median). In the second row, a large increase is defined as above 75th percentile (relative to below 25th percentile). All regressions are fixed effects specifications of log transaction price that include town effects, year effects, and quarter (season) effects, as well as the main effect of Large Change, a series of distance to Tel Aviv times year dummy interactions, a series of labor market accessibility times year dummy interactions, building starts in the neighborhood, and hedonic characteristics of the transacted house: floor space, a series of indicators for number of rooms, an indicator for a multi-unit dwelling, floor, and building age. In columns (2) and (4), treatment status (large increase in homeownership rate) is determined using the sale-discount predicted homeownership rate, as described in Section IV.A of the text. Standard errors are clustered by neighborhood.

Table A14— OLS and IV Price Estimates – Flexible Geographic Controls  
with Distance-to-TLV-Year Interaction Controls

Panel A: Buffer Zone Centered on Each Private Transaction						
Dependent Variable: $\ln(\text{Price})$	OLS (1)	OLS (2)	OLS (3)	IV (4)	IV (5)	IV (6)
Homeownership Rate $_{t-2}$	0.055 (0.013)	0.135 (0.024)	0.023 (0.009)	0.055 (0.013)	0.117 (0.022)	0.023 (0.010)
N	140,675	75,666	65,009	140,675	75,666	65,009
1st Stage KP F-Stat				3135.44	5428.34	2470.79
Public Housing Share	All	High	Low	All	High	Low
Panel B: Statistical Area Level (Centroid Polynomial)						
Dependent Variable: $\ln(\text{Price})$	OLS (1)	OLS (2)	OLS (3)	IV (4)	IV (5)	IV (6)
Homeownership Rate $_{t-2}$	0.064 (0.021)	0.179 (0.046)	0.013 (0.022)	0.068 (0.025)	0.173 (0.045)	0.016 (0.024)
N	280,508	161,798	118,710	280,508	161,798	118,710
1st Stage KP F-Stat				704.51	2327.00	516.77
Public Housing Share	All	High	Low	All	High	Low
Panel C: Block Level (Centroid Polynomial)						
Dependent Variable: $\ln(\text{Price})$	OLS (1)	OLS (2)	OLS (3)	IV (4)	IV (5)	IV (6)
Homeownership Rate $_{t-2}$	0.065 (0.024)	0.167 (0.043)	0.008 (0.023)	0.067 (0.029)	0.169 (0.045)	-0.004 (0.028)
N	258,847	118,997	139,850	258,847	118,997	139,850
1st Stage KP F-Stat				1758.10	2787.55	1330.31
Public Housing Share	All	High	Low	All	High	Low

Notes: An observation in the sample is a transaction (sale) of an always-private house in the years 2000-2012. The sample includes neighborhoods that had public housing in 2000; columns (2) and (5) include only neighborhoods with an above-median share of public housing in 2000, and columns (3) and (6) include only neighborhoods with a below-median share of public housing in 2000. All regressions predict log transaction price and include (two quarter lagged) homeownership rate, polynomial controls in latitude and longitude of the neighborhood centroid, locality effects, year effects, and quarter (season) effects, as well as a series of distance to Tel Aviv times year dummy interactions, building starts in the neighborhood, and hedonic characteristics of the transacted house: floor space, a series of indicators for number of rooms, an indicator for a multi-unit dwelling, floor, and building age. Homeownership rate is scaled from 0 to 1. In columns (3)-(6), the homeownership rate is instrumented for using sale discounts, as described in Section IV.A of the text. Standard errors are clustered by Town (panel A), Statistical Area (panel B), Block (panel C).

## B. Israeli Public Housing and Privatization

As in many European countries, public housing in Israel comprised a large share of the total housing stock following World War II and establishment of the Israeli state in 1948. Public housing was not initially targeted at low earning-ability households but, rather, absorbed mass migrations that required State housing solutions because of their sheer size relative to the population.<sup>38</sup> Housing was allocated throughout the country to a diverse set of households, comprising a quarter of the general housing stock in the 1960s, and creating a public housing landscape that looked quite different from the concentrations of urban poverty and social problems typical of the modern U.S. experience.<sup>39</sup>

Since then and until 2000, the State steadily privatized public housing through sales to tenants at moderate discounts – up to 25% of the market price. In accordance with economic theory on the potential benefits of homeownership, an expressed goal of the policy was to incentivize residents' cooperation with neighborhood renewal plans, especially in the 1980s (Weinstein (2014)). Remaining available units were increasingly allocated to disadvantaged populations (Carmon (2001)). In 2000, at the beginning of the research period, these units were still located in a wide range of neighborhoods around the country, as can be seen in the map in Figure A1a. Although public housing was of course disproportionately located in low SES neighborhoods, it existed at fairly high rates in average and even above average SES neighborhoods (Figure A1b). Thus, where public housing remained by 2000, one should imagine pockets of relatively poor housing and tenants within neighborhoods that may be more or less poor as a whole.

In late 1998, a law was passed granting discounts up to 85% of market value for tenants who satisfied certain criteria.<sup>40,41</sup> But rather than implementing the law, as passed, the government instated new sales terms at budget meetings, changing discounts suddenly and meaningfully in a way that could not be anticipated by tenants (Arbel, Ben-Shahar and Gabriel (2014)).<sup>42</sup>

The terms of the implemented sales were not announced ex-ante and varied across households in ways that were quasi-random with respect to unobservables likely to affect labor market and neighborhood outcomes. The formula that determined discount sizes depended at times on region, marital status, number of children, type of rental contract, and disability, and it always depended on tenure

<sup>38</sup>For example, the nation's population more than doubled between 1948 and 1952, to 1.63 million from 806,000, primarily due to immigration from Europe, the Middle East, and North Africa. In the mid-1950s and early 1960s, there were several waves from Africa and the former Soviet Union that comprised 10% of the population within 3-4 years; the largest influx from the former Soviet Union added another 7% to the population in two years alone, from 1991-92.

<sup>39</sup>David Ben Gurion, the first Prime Minister of Israel, expressed the goal of distributing the population throughout the country "quickly and evenly" (Weinstein (2014)).

<sup>40</sup>Public housing law (purchasing rights), October 1998.

<sup>41</sup>Tenants opting not to buy their units under this plan could remain in their units as renters.

<sup>42</sup>Arbel, Ben-Shahar and Gabriel (2014) show, using standard time series tests, that the pattern of discounts over time follows a random walk.

in public housing.<sup>43</sup> While some of these factors are likely endogenously related to outcomes – and we control for them in our IV specifications – there are discontinuities in discount size across margins of these variables that are plausibly exogenous to outcomes. For example, discounts jump at the 2-3 child margin and at 6 and 12 years of tenure in public housing, although families on either side of these margins are otherwise arguably identical with respect to unobservables that could affect outcomes. Because each discontinuity of this sort, on its own, is not sufficiently powerful as an instrument, we use the union of them by residualizing the discount for smooth changes in the potentially endogenous determinants.

We take advantage first of the timing of discount changes, focusing on changes in outcomes when discounts rise. Figure 1a illustrates the substantial increase in discounts faced by many public housing tenants in 2005, when the “Buy Your Home” sale period ended and the “This is my Home” sale period began, shifting the distribution of discounts to the right. The modal discount during the “Buy Your Home” period, 2000-2004, was 7.5%. In 2005, the modal discount suddenly and unexpectedly increased to 85%, while the median discount rose from 17% to 50% (Appendix Table C2).<sup>44</sup>

Two additional features of the period we study (1998-2012) are helpful relative to previous privatizations: (1) there were essentially no simultaneous or trailing new additions to the public housing stock, which would move ownership rates in the opposite direction, and (2) price discounts were larger (during parts of the period) and more clearly announced to the general population of tenants. As before, tenants who chose not to buy their units remained eligible to stay in their units as renters.

<sup>43</sup>Details on the formulas and discounts by period are presented in Appendix Table C1.

<sup>44</sup>We don’t conduct analogous analyses of the first and third sale periods, “Buy Your Home” and “My Own Apartment” because we don’t have data from before the first period, and because there was no significant increase in discounts and buying between the second and third periods.

**C. Public Housing Sale Discount Rules**

Table C1— Sale Discount Determination Rules by Sale Event

Sale period name	Dates	General description	Discounts Increase With	Discount formula
Buy your home I (Kne Beitcha I)	5.2000-8.2003	Discounts determined by disability and public housing tenure as of Jan 2000, with four tenure groups: (1) tenure $\geq$ 12 years; (2) tenure in [7,12]; (3) tenure in [2,7]; (4) tenure $<$ 2 years.	Public housing tenure, disability.	Tenure $<$ 2: No special discount. Tenure $\in$ [2,7]: 7.5% of the price Tenure $\in$ [7,12]: Discount effective at tenure of 12 years: 12*3% (4% for disabled) Tenure $\geq$ 12: (tenure(2000)*3% (4% if disabled))+additional discount per year following 2000.
Buy your home II (Kne Beitcha II)	9.2003-12.2004	Same as above, but with additional variation by geographic priority area. Discount for priority area "A" higher than for "B" and "C".	Public housing tenure, disability, geographic area.	
This is my home I (Kan Beiti I)	1.2005-8.2005	Discount formula changes, and discounts rise substantially. Discount eligibility requires tenure of at least 4 years, with a substantial increase in discount for those with tenure of at least 12 years. Discounts granted only for geographic priority areas "A" and "B".	Tenure, marital status, number of children, disability, rent discount level, type of housing assistance certificate.	Tenure $<$ 4: 0% Tenure $>$ 4, by RDG and CG within family type, tenure $\geq$ 12 get doubled discounts (first two entries in each row): Single (25%, 10%, 12.5%, 5%) Married (50%, 30%, 25%, 15%) Married, 1 child (70%, 50%, 35%, 25%) Married, 2+ children (85%, 60%, 42.5%, 30%) Family with disabled member (85%, 60%, 42.5%, 30%)
This is my home II (Kan Beiti II)	9.2005-12.2006	Formula for geographic priority areas "A" and "B" remains the same. Priority areas "C" households with tenure of at least 6 years newly eligible, though for lower discounts. Discounts depend also on rent-discount group (RDG), type of housing assistance certificate (CG), disability, and wheelchair confinement.	Tenure, marital status, number of children, disability rating, rent discount group, type of housing assistance certificate, geographic location.	Tenure $\geq$ 12 get doubled discounts (first two entries in each row): Family type* - Priority areas "A" + "B": Single (25%, 10%, 12.5%, 5%) Couple (50%, 30%, 25%, 15%) Family with 1 child (70%, 50%, 35%, 25%) Couple with 2+ children (85%, 60%, 42.5%, 30%) Fam. w/ wheelchair-disabled (85%, 60%, 42.5%, 30%) Fam. w/ non-wheelchair disabled (additional 10% for any of the types above, not exceeding wheelchair amount)  Family type* - Priority area "C": Single (15%, 10%, 7.5%, 5%) Couple (40%, 15%, 20%, 7.5%) Family with 1 child (70%, 20%, 35%, 10%) Couple with 2+ children (85%, 25%, 42.5%, 12.5%) Fam. w/disabled member (85%, 60%, 42.5%, 30%) Fam. w/non-wheelchair disabled (Receive additional 10% on any category above, not exceeding wheelchair amount)
This is my home III (Kan Beiti III)	2.2007-8.2008	Minimum required tenure reduced to 2 years in areas "A" and "B" and 3 years in area "C". Formula otherwise continued to depend on the same parameters (family type, rent discount group, type of housing certificate, disability rating).	Tenure, marital status, number of children, disability, confinement to wheelchair, rent discount group, type of housing assistance certificate, geographic location.	Tenure $\geq$ 12 get doubled discounts (first two entries in each row): Family type* - Priority areas "A" + "B": Single (25%, 13%, 12.5%, 5%) Couple (46%, 28%, 23%, 14%) Family with 1 child (69%, 49%, 35%, 25%) Couple with 2+ children (92%, 65%, 46%, 32%) Fam. w/ wheelchair disabled (85%, 60%, 42.5%, 30%) Fam. w/ non-wheelchair disabled (Receive additional 10% for any of the types above, not exceeding wheelchair amount)  Family type* - Priority area "C": Single (20%, 13%, 10%, 5%) Couple (40%, 15%, 20%, 7.5%) Family with 1 child (60%, 17%, 30%, 8.5%) Couple with 2+ children (80%, 23.5%, 40%, 12%) Fam. w/ disabled member: (80%, 60%, 42.5%, 30%) Fam. w/ non-wheelchair-disabled: (Receive additional 10% for any of the types above, not exceeding wheelchair amount)
My own apartment (Dira misheli)	9.2008-12.2010	Minimum tenure for discount raised to 5 years, with discounts a step function of tenure. Additional discount increments granted based on family type, disability, rent discount group (RDG), type of housing assistance certificate (CG), and geographic priority area.	Tenure, marital status, number of children, disability, confinement to wheelchair, rent discount group, type of housing assistance certificate, geographic location.	Tenure-based step function; percentage points per year (non-wheelchair disabled get additional 25pp): 0-5: 0.5pp/yr; 6-15: 0.75pp/yr; 16-25: 1pp/yr; 26-30: 1.4pp/yr; 31-35: 2pp/yr Then add discount points for family type and region**: Priority areas "A" and "B": Single: 25% (CG=1), 12.5% (CG=2) Couple: 45% (CG=1), 23% (CG=2) Family with 1 child: 55% (CG=1), 28% (CG=2) Family with 2+ children: 65% (CG=1), 33% (CG=2) Fam. w/ wheelchair-disabled: 85% (CG=1), 42.5% (CG=2)  Priority area "C": Single: 20% (CG=1), 10% (CG=2) Couple: 40% (CG=1), 20% (CG=2) Family with 1 child: 50% (CG=1), 25% (CG=2) Family with 2+ children: 60% (CG=1), 30% (CG=2) Fam. w/ wheelchair-disabled: 80% (CG=1), 40% (CG=2)

Notes: Formulas are based Ministry of Housing memos. \* Numbers in parentheses are ordered as follows: Rent Discount Group (RDG)=1 and Certificate Group (CG)=0, RDG=0 and CG=0, RDG=1 and CG=1, RDG=0 and CG=1. \*\* Households with no rent discount are eligible for 30% of the amounts listed.

Table C2— Empirical Discount Rates by Sale Period

Sale Name	Years (Approx.)	Discount				
		Mean	Min	Max	Median	Mode
Buy Your Home I	2000-2002	36.5	0	95	7.5	7.5
Buy Your Home II	2003-2004	30.0	0	95	17	7.5
This is My Home I&II	2005-2006	52.5	0	85	50	85
This is My Home III	2007-2008	52.0	5	92	46	80
My Own Apartment	2009-2012	52.5	4.7	90	51.8	80

Notes: Discount statistics reflect the balanced sample of tenants analyzed in Section III of the text. Years correspond approximately to cutoffs of sale event periods, which often occurred mid-year.

## D. Public Housing Rent Discount Rules and Evaluation of Work Incentives

Table D1— Rent Discount Determination Rules

Pre November 2005	Post November 2005
<p>Discounts determined by income and family type. Discount is a percentage of assessed market rent (indexed to CPI) as follows:</p> <p>(1) <i>Discount Center Rent (DCR)</i>: 90% discount; granted to households that either (a) have income only from NII subsistence allowances (mostly: high disability rating, alimony, full income support), or (b) fulfill their earning capacity but earn less than 125% of the maximum allowed income for income support (<i>MaxAllowedInc</i>).</p> <p>(2) <i>Social Rent</i>: 68-83% discount. Granted to families with special needs (e.g. single parents or many children) who fulfill their earning capacity.</p> <p>(3) <i>Full market rent</i>: Those who either (a) have <math>AGI &gt; MaxAllowedInc</math> or (b) do not fulfill their earning capacity and are not eligible for <i>Social Rent</i>. Last mark to market was in the early 1980s.</p>	<p>Discount determined by income, family type, and pre-Nov 2005 discount. Discount is a percentage of assessed market rent (indexed to CPI) as follows:</p> <p>(1) <i>High discount</i>, 91.5%: Those who (a) have income only from NII subsistence allowances or (b) had previous entitlement to DCR.</p> <p>(2) <i>Regular discount</i>: For those who fulfill earning capacity and <math>AGI &lt; MaxAllowedInc</math>, tenants divided into incumbent vs. new. (a) Incumbents: pre-Nov 2005 rent plus additional 50 NIS+CPI per year, up to a max increase of NIS 350+ CPI or the difference between the old and new full market rent. (b) New tenants: rent = <math>0.085 * MktRent + 0.915 * (AGI - MaxIncSupportAllowance) / (MaxAllowedInc - MaxIncSupportAllowance)</math></p> <p>(3) “<i>Full Market Rent</i>”: New tenants who (a) do not fulfill earning capacity or (b) have <math>AGI &gt; MaxAllowedInc</math> have no discount. Incumbents have a one-time increase not larger than NIS 350 (CPI-indexed) and thus never get to full market rent.</p>

Notes:  $AGI$  – income considered by the Ministry of Housing for rent discount determination – is the 3 month average (pre-discount request) of labor income, NII allowances of the main tenant and spouse, and 1/3 of of income of other cohabitating adults. Pre-Nov2005, incomes were meant to be examined every year; post-Nov2005, incomes were to be examined every two years. Note that new tenants post Nov 2005, for whom the discount formula in (2)b of the right panel is relevant, are excluded from our labor supply analysis because we use a balanced panel across years. *MaxAllowedInc* is the income threshold above which non-disabled, non single-parent tenants were supposed to pay full market rent in the old system, though if they were found to be earning less than that income and not fulfilling their earning capacity, they would also have to pay full market rent. This threshold amount is 125% of the maximum allowed income for receipt of NII income support (varies by family type). *MaxIncSupportAllowance* is the maximum NII income support benefit granted (varies by family type). The following qualify as “full” NII subsistence allowances: (1) full income support or partial support plus another allowance, (2) high disability benefits (rating 75% or more), (3) special old age or holocaust survivor allowance, and (4) [Pre-Nov2005 only] single mother alimony allowance. To “fulfill earning capacity” according to the MoH, a household had to have either (1) at least one family member working full time at at least minimum wage, (2) have earnings below minimum wage but an NII-documented partial inability to work. Sources for the table are MoH memos (Ministry of Construction and Housing (2002, 2011)), email exchanges with the MoH, and Mei Ami (2005).



*A. Evaluating Work Incentives in Public Housing*

The evidence on labor supply strongly supports the notion that these new homeowners, relative to similar non-buyers, increase their labor supply on both the extensive and intensive margins. Because many social programs worldwide disincentivize work by conditioning benefit receipt on non-employment or low income, one question that naturally arises is whether these changes in labor market behavior may have occurred due to buyers' new freedom from public housing rules rather than to homeownership, per se. This section evaluates this possibility by examining both the official public housing rules and the de facto benefit receipt and rent level outcomes for households who increased their labor supply.

PUBLIC HOUSING RULES AND RENT SETTING. — Tenants are not removed from public housing in Israel except in extreme cases, such as non-payment of rent for an extended period. This fact is known and acknowledged by public sector economists and practitioners, including those at the Ministries of Finance and of Housing.<sup>45</sup> In addition, not once in the many pages of rules on public housing rent and discount eligibility is there a statement that a tenant could lose his eligibility to remain in his unit. Tenants would thus not realistically fear losing their public housing if they were to work more. Nevertheless, these tenants do pay monthly rent to their public housing administrator (company), so to understand the incentives faced, we must evaluate the official determinants of public housing rent.<sup>46</sup>

Rent determination during the research period was based officially on a “market rent” and a set of conditions that determine the size of the discount a household receives from this market rent. Market rents were assessed once in the 1980s and then again in 2005, when assessed values rose, and we refer to these simply as “benchmark rents,” since they were in fact subsidized – below market both before and after the updated assessments. The remainder of this section discusses the conditions for receiving either the maximum discount, which was 91.5%, a smaller discount, or no discount at all, such that the household would pay the benchmark rent. There are two challenges in inferring from the official rules the incentives tenants faced: first, the rules are complex, and second, the Ministry of Housing has acknowledged that the rules were not enforced with the frequency or stringency delineated. For these reasons, we provide an empirical assessment in Section III.E to clarify the reality on the ground.

For determination of rent discounts, tenants are divided into two groups: those

<sup>45</sup>In Israel, the legal environment makes it exceedingly difficult to evict tenants even from non-public rental housing. Evictions from public housing are extraordinarily rare, and tenants would be aware of that.

<sup>46</sup>This section is based on several official documents from the Ministry of Housing and the Knesset Research Center (Ministry of Construction and Housing (2002, 2011); Mei Ami (2005)), in addition to numerous email exchanges, phone conversations, and in-person meetings with members of the Ministry of Housing, the Ministry of Finance, and Amidar.

who receive the maximum discount automatically due to their status with the National Insurance Institute (NII), and those who have to pass both an income test and an employment test in order to receive a discount. The first group consists of households having either a member with a disability rating of at least 75% or a member who receives the maximum income support benefit.<sup>47,48</sup> The second group consists of households with lower or no disability ratings or income support; households in this group could get some discount so long as they both “fulfill their earning capacity” and have income no higher than 125% of the maximum income threshold for income support. These thresholds are relatively high: the income threshold for a single parent with two children was 150% of the minimum monthly wage in 2003 (National Insurance Institute of Israel (2004)). Importantly, a “low” income is not enough to qualify households for a rent discount; in addition, they must “fulfill their earning capacity,” either by having a full-time job at minimum or higher wage or by indicating official inability to work (receiving disability, income support, holocaust survivor allowance, or alimony from the NII). In other words, tenants who did not qualify for welfare were actually *required* to work in order to receive rent discounts.

As of 2005, 67% of tenants received the maximum rent discount, 16% received a smaller discount, and the remaining 17% paid the benchmark rent. The Ministry of Housing has indicated that, pre-2005, sub-maximum discounts were mostly between 68-83%, but it has not provided the full discount schedule for discounts between 0% and 90%.

In November 2005, market values were re-assessed for the first time in 20 years, and a set of rules was determined for how rents would adjust to the new, higher market rates.<sup>49</sup> For those who were highly disabled and welfare-dependent, rent would not adjust to the new market rates.<sup>50</sup> More able, higher earning tenants who received some rent discount, though not the maximal one, could experience *annual* rent increases of 50 NIS per month (\$11 USD). Average family labor income for public housing tenants who worked at least one hour during the year, meanwhile, was \$950 per month and average welfare income was \$330 per month. As with the rules above, these adjustments to benchmark would primarily affect tenant incentives on the intensive margin, since tenants in the affected portion of the distribution would have had to pass an employment test. During the years studied, 50 NIS constituted between 2 and 3 hours of work at minimum wage. At the high end, the most able, highest earning tenants could experience one large

<sup>47</sup>Of course, receipt of income support, or welfare payments, requires its own income and employment tests – candidates have to have income below some threshold and prove either having a job, undertaking a bona fide job search, or having a job with low pay.

<sup>48</sup>A number of conditions could disqualify a tenant from receiving the maximum discount, though even then he could receive a smaller discount: owning a car or house, not making proper use of the apartment, living in an apartment that is “too large” and having refused two offers to trade, non-cooperation with the public housing inspector, and not filling out the annual discount request form.

<sup>49</sup>Note that only incumbent tenants that have been in public housing since at least 2000 are in our analysis since we have a balanced panel. Thus, rules relevant to tenants entering public housing post November 2005 are not relevant for us.

<sup>50</sup>A complete description of the rules pre- and post-2005 is presented in Appendix D.

upward rent adjustment to the new benchmark of at most 350 NIS (\$78 USD). Of course, as was the case before 2006, if the tenant was found not to be fulfilling his maximum earning capacity, he could also lose eligibility for a discount.

The implication of these rent determination rules is that disincentives to work on the extensive margin were non-existent, and disincentives to increase earnings existed but were weak. Those with a highly disabled household member would not see rent increases under any circumstances, while those without would have to experience very substantial increases in household income to experience modest increases in rent; net income would rise after about 2.5 hours of additional minimum wage work per month. In practice, as we describe in the next section, the loose implementation of the rules likely weakened any existing disincentives further.

RENT INCREASES IN PUBLIC HOUSING DATA. — Because we observe actual rents paid by tenants, we can empirically assess the extent to which rent determination was likely to affect labor supply decisions. In doing so, we consider absolute rent levels, the significance of rent paid relative to both labor income and income from all sources, year-to-year changes in monthly rents over the period, and the extent to which rent seems to increase for a given household when labor income rises.

Figure A9 presents kernel density plots of the rent distribution for all sample households in several different years of the sample. Panel A9a shows the distribution in the first year of the sample and the last year of the “This is My Home” sale period, and panel A9b shows the years around the November 2005 change in the rent rules. The vast majority of households pay near-zero rent: the distributions peak in all years just above 0, between 50 and 150 NIS (\$11-32 USD). 85-90% of the sample in all years has a monthly rent below 500 NIS (\$109 USD). The highest rents seen with any frequency reach 1,500 NIS per month, or \$326 USD. These amounts are exceedingly small even relative to the low incomes of public housing households, which average \$950 USD per month *before* transfers.<sup>51</sup> There is a slight rightward shift of the distribution over the whole period from 2000 to 2008 (panel A9a), and the distribution only barely changes just after the new benchmarks and associated adjustment rules were announced in November 2005 (panel A9b).<sup>52</sup>

To understand the labor supply incentives tenants faced, we next examine how rents increased with income and how this relationship may have changed over time. Since households with a disabled member received the maximum discount regardless of employment or earnings, we take a conservative approach and first consider non-disabled households who in theory face stronger disincentives. For this group, a 1,000 NIS (\$217) increase in monthly income generated on average a 2.5 NIS (\$0.54) monthly rent increase. The elasticity of rent with respect

<sup>51</sup>Welfare payments average another \$330/mo but of course negatively covary with labor income.

<sup>52</sup>In addition, 2006 is early enough such that buyers have not yet attrited from the sample of rent payers in meaningful numbers.

to income increased somewhat over time, as can be seen in Figure 4a, which presents the differential log rent-log labor income relationship in each year. Next consider a typical public housing family with 3 or more children. For this group, the same 1,000 NIS (\$217) increase in monthly income generated on average a 1.9 NIS (\$0.41) monthly rent increase. The cross-year average elasticity of rent with respect to income for this typical family type was 6.6%. Figure 4b shows a graph analogous to that next to it, again indicating a nearly perfectly linear and relatively flat pattern over time, suggesting a slow and stable strengthening of the relationship between incomes and rents for both instructive groups. Importantly, there is no sharp change in this relationship in 2005, when the “This is My Home” sale period began.

The empirical evidence suggests that work disincentives from the system of public housing rent determination were extremely weak. Rent levels were low in both absolute terms and relative to income, rents increased only slightly with income, and the rent-income gradient did not change sharply in the event window. Neither the rent determination rules nor their de facto implementation seemed to discourage employment or earnings in any meaningful way.

### E. Summary of 2003 Income Support Changes

For the purposes of understanding labor supply incentives, the most relevant set of changes from the 2002-2003 NII reform were those related to income support benefits.<sup>53</sup> Income support receipt depends on both an employment test and an earnings test. The employment test requires beneficiaries to prove that they are either unable to work (generally, disabled), engaging in a bona fide effort to find a job, or employed with low income. The earnings test requires that earnings are below some threshold that varies by marital status and number of kids; the threshold for a single parent with two children in 2003 after the change, for example, was approximately 150% of the minimum wage.

The employment test rules changed in 2002-2003 in two ways: (1) check-in frequency at the Employment Bureau would now be determined by law, rather than by Employment Bureau branch discretion,<sup>54</sup> (2) mothers of kids aged 2-7 and widows with children newly had to check in at the Employment Bureau to pass the employment test.

Three types of changes were made to the earnings test rules: (1) the earnings disregard was reduced for most families from \$263 USD in 2002 to \$108 USD in 2003, (2) the maximum income thresholds were reduced somewhat, and (3) the slope of the phase-out was reduced to 0.675 (in some cases from 100%, in others from 0.7-0.8) for singles and married couples with no kids, and to 0.625 (from 0.90, implied) for a married couple with at least two kids.

Finally, maximum benefit amounts were reduced for eligibles, for example to

<sup>53</sup>A complete description of the reform can be found in National Insurance Institute of Israel (2004).

<sup>54</sup>It is unclear whether de-facto check-in frequency changed.

39.0% of the minimum wage from 49.5% of the minimum wage for a married couple with at least two kids, or to 33.5% of minimum wage from 37.5% of minimum wage for a single adult with a child. All changes applied to both buyers and non-buyers.