

Rutgers University, Center for Urban Policy Research

Residential Demographic Multipliers

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Estimates of the Occupants of New Housing

**(Residents, School-Age Children, Public School-Age Children)
by State, Housing Type, Housing Size, and Housing Price**

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DESCRIPTION, DEFINITION, AND ORGANIZATION OF RESIDENTIAL DEMOGRAPHIC MULTIPLIERS

The national, state, and District of Columbia residential demographic multipliers are derived from the 2000 U.S. Census 5-Percent Public Use Microdata Sample (PUMS). The demographic multipliers include the following data fields and organization:

1. **Household Size (HS)**: Total persons per housing unit.
2. **Age distribution of the household members** organized into the following age categories: 0–4, 5–13, 14–17, 18–24, 25–44, 45–64, 65–74, 75+.
3. **Total school-age children (SAC)** or number of persons in the household of school age, defined as those 5 to 17 years old. (The SAC is the same as the combined number of household members in the 5–13 and 14–17 age categories.)
4. **Total public school-age children (PSAC)**, or the SAC who attend public schools.
5. **The SAC and PSAC by grade group** organized as follows: kindergarten (K)–grade 2, grades 3–6, grades 7–9, grades 10–12, and grade 9 by itself. The above data permit the analyst to tabulate the SAC and PSAC by differing school levels (e.g., K–6, 7–12, and 9–12).

The demographic fields shown above are differentiated by **housing type, housing size, housing price, and housing tenure**—four variables that have been found by Rutgers University to be associated with statistically significant differences in the HS, SAC, and PSAC. The multipliers are calculated for **new housing**, here defined as units enumerated in the 2000 census and built from 1990–2000.

The housing or structure types include the following: **single-family detached**; **single-family attached**, sometimes referred to as townhouses or townhomes; **larger (5-or-more-unit) multifamily buildings**, such as garden apartments or stacked flats; **smaller multifamily structures (2 to 4 units)**, such as a starter two-family home; and **mobile homes**. As the 2000 census, the source for the residential multipliers, does not have information on the stories in a housing structure (this was last available in the 1980 census), multiplier presentations cannot disaggregate multifamily housing into garden, mid-rise, and high-rise categories.

Housing-unit size is measured by the number of bedrooms, and data are presented for housing units ranging from **1 to 5 bedrooms**. There is an association between housing type and number of bedrooms, and the demographic multiplier tables present the common configurations for each housing type. For instance, demographic data are shown for 1- through 3-bedroom multifamily units and not for 4- to 5-bedroom units of this type because multifamily housing tends to be built with fewer rather than more bedrooms. The opposite is the case for single-family detached homes; in this instance, data are presented for 2- to 5-bedroom units as opposed to 1-bedroom units because detached housing is typically built with more rather than fewer bedrooms.

Housing is additionally classified by tenure: **ownership** or **rental**. According to the census, “A housing unit is owner-occupied if the owner or co-owner lives in the unit even if it is mortgaged or not fully paid for. . . . All occupied housing units that are not owner-occupied, whether they are rented for cash rent or occupied without payment of cash rent, are classified as renter-occupied.”

There is a further differentiation of the demographic profiles by housing value or rent. The census definitions for “value” and “rent” are shown on the Definitions page; with regard to the latter, the current study indicates the “gross rent” (rent with utilities) rather than the “contract rent.”

Values and gross rents reported in the 2000 census are updated to 2005 using a residential price inflation index available from the Federal Housing Finance Board. A separate price index is applied for the nation, for each of the 50 states, and for the District of Columbia.

The demographic profiles by 2005 housing values and gross rents are organized following a four-tiered classification: all **value or rent housing**, and then housing arrayed by **terciles (thirds) of value or rent** (units at the 1st–33rd percentile of value or rent; units at the 33rd through 66th percentile of value or rent; and units at the 67th–100th percentile of value or rent.)

**DEFINITIONS OF DATA CONTAINED IN THE U.S. CENSUS OF POPULATION AND HOUSING
PUBLIC USE MICRODATA SAMPLE (PUMS) 2000 AND OTHER MULTIPLIER TERMS**

TERMS	DEFINITION/COMMENT
<p>Bedrooms (BR)</p> <p>Housing Categories (Structure Type)</p>	<p>The number of rooms that would be listed as bedrooms if the house, apartment, or mobile home were listed on the market for sale or rent even if these rooms are currently used for other purposes.</p> <p>Single-family, detached. This is a 1-unit structure detached from any other house; that is, with open space on all four sides. Such structures are considered detached if they have an adjoining shed or garage.</p> <p>Single-family attached. This is a 1-unit structure that has one or more walls extending from ground to roof separating it from adjoining structures. In row houses (sometimes called townhouses), double houses, or houses attached to nonresidential structures, each house is a separate, attached structure if the dividing or common wall goes from ground to roof.</p> <p>2-4 units. These are units in structures containing 2, 3, or 4 housing units.</p> <p>5+ units. These are units in structures containing 5 or more housing units.</p> <p>Mobile home. Both occupied and vacant mobile homes to which no permanent rooms have been added are counted in this category. Mobile homes used only for business purposes or for extra sleeping space, and mobile homes for sale on a dealer's lot, at the factory, or in storage, are not counted in the housing inventory. In 1990, the category was "mobile home or trailer."</p>
<p>Household Size</p>	<p>The total number of persons in a housing unit.</p>
<p>Housing Tenure (Ownership or Rental)</p>	<p>A housing unit is owner-occupied if the owner or co-owner lives in the unit even if it is mortgaged or not fully paid for. All occupied housing units that are not owner-occupied, whether they are rented for cash rent or occupied without payment of cash rent, are classified as renter-occupied.</p>
<p>Housing Unit</p>	<p>A housing unit may be a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy as separate living quarters).</p>
<p>Housing Value (Rent)</p>	<p>Housing value is the census respondent's estimate of how much the property would sell for if it were for sale. In the current study, the value of a rented unit in a 1- to 4-unit structure is estimated to be 100 times the monthly gross rent, and all such units are included with owner-occupied units in calculating the multipliers. The housing value and rents indicated by the 2000 census were updated to 2005 using a residential price inflation index (available from the Federal Housing Finance Board) for the nation, for each state, and for the District of Columbia. Housing value or rent is categorized into a four-tier classification: all value (or rent) housing, and then housing units arrayed by terciles (thirds) of value (or rent).</p>
<p>Housing Rent (Contract Rent)</p>	<p>Contract rent is the monthly rent agreed to or contracted for, regardless of any furnishings, utilities, fees, meals, or services that may be included.</p>
<p>Housing Rent (Gross Rent)</p>	<p>Gross rent is the contract rent plus the estimated average monthly cost of utilities (electric, gas, water and sewer) and fuels (oil, coal, kerosene, wood, and the like) if these are paid by the renter (or paid for the renter by someone else). In the current study, the monthly gross rents are indicated in the demographic table.</p>
<p>Insufficient Sample</p>	<p>This notation in a table means that fewer than 600 weighted observations were counted for a housing type/bedroom/value combination or for an entire housing type/bedroom combination.</p>
<p>Public School-Age Children (PSAC)</p>	<p>The school-age children attending public school.</p>
<p>Residential Demographic Multipliers</p>	<p>Multipliers show the population associated with different housing categories as well as housing differentiated by housing value, housing size (bedrooms), and housing tenure.</p>
<p>School-Age Children (SAC)</p>	<p>The household members of elementary and secondary school age, defined here as those 5 through 17 years of age.</p>

**HAWAII (1--2) ALL PERSONS IN UNIT:
TOTAL PERSONS AND PERSONS BY AGE**

STRUCTURE TYPE /BEDROOMS/ VALUE (2005)/TENURE	TOTAL PERSONS	AGE							
		0-4	5-13	14-17	18-24	25-44	45-64	65-74	75+
5+ Units–Rent, 1 BR									
All Values	1.93	0.18	0.21	0.05	0.18	0.67	0.25	0.20	0.19
Less than \$850	1.95	0.19	0.33	0.05	0.18	0.45	0.17	0.37	0.21
\$850 to \$1,200	1.95	0.21	0.19	0.06	0.20	0.60	0.37	0.16	0.17
More than \$1,200	1.89	0.13	0.11	0.05	0.15	0.97	0.21	0.07	0.19
5+ Units–Rent, 2 BR									
All Values	2.29	0.21	0.27	0.10	0.33	0.91	0.39	0.04	0.06
Less than \$1,250	2.62	0.31	0.46	0.24	0.29	0.78	0.38	0.04	0.12
\$1,250 to \$1,550	2.12	0.18	0.20	0.05	0.45	0.94	0.25	0.03	0.02
More than \$1,550	2.16	0.15	0.14	0.02	0.23	1.01	0.55	0.04	0.03
5+ Units–Rent, 3 BR									
All Values					Insufficient Sample				
Less than \$1,250					Insufficient Sample				
\$1,250 to \$1,900					Insufficient Sample				
More than \$1,900					Insufficient Sample				
2-4 Units, 1 BR									
All Values	2.19	0.27	0.19	0.04	0.37	0.89	0.29	0.08	0.06
Less than \$97,000					Insufficient Sample				
\$97,000 to \$131,000					Insufficient Sample				
More than \$131,000					Insufficient Sample				
2-4 Units, 2 BR									
All Values	2.66	0.29	0.44	0.10	0.19	1.16	0.42	0.04	0.03
Less than \$130,500	3.35	0.52	0.79	0.17	0.16	1.26	0.40	0.05	0.00
\$130,500 to \$173,000	2.12	0.18	0.24	0.03	0.22	1.23	0.23	0.00	0.00
More than \$173,000	2.61	0.18	0.31	0.11	0.18	0.96	0.70	0.06	0.10
2-4 Units, 3 BR									
All Values	2.87	0.35	0.33	0.19	0.32	0.86	0.74	0.03	0.06
Less than \$163,000					Insufficient Sample				
\$163,000 to \$250,000					Insufficient Sample				
More than \$250,000					Insufficient Sample				
Mobile, 2 BR									
All Values					Insufficient Sample				
Less than \$288,500					Insufficient Sample				
\$288,500 to \$423,000					Insufficient Sample				
Highest third					Insufficient Sample				
Mobile, 3 BR									
All Values					Insufficient Sample				
Less than \$211,500					Insufficient Sample				
\$211,500 to \$346,000					Insufficient Sample				
Highest third					Insufficient Sample				
Mobile, 4 BR									
All Values					Insufficient Sample				
Lowest third					Insufficient Sample				
Middle third					Insufficient Sample				
Highest third					Insufficient Sample				

**HAWAII (2--1) ALL SCHOOL CHILDREN:
SCHOOL-AGE CHILDREN (SAC)**

STRUCTURE TYPE /BEDROOMS/ VALUE (2005)/TENURE	TOTAL SAC	GRADE				
		K-2	3-6	7-9	10-12	Gr. 9 Only
Single-Family Detached, 2 BR						
All Values	0.60	0.16	0.21	0.09	0.14	0.03
Less than \$173,000	0.53	0.18	0.18	0.08	0.09	0.03
\$173,000 to \$346,000	0.73	0.17	0.27	0.09	0.20	0.04
More than \$346,000	0.41	0.11	0.11	0.09	0.10	0.00
Single-Family Detached, 3 BR						
All Values	0.77	0.17	0.28	0.17	0.16	0.05
Less than \$288,500	0.98	0.17	0.36	0.24	0.20	0.08
\$288,500 to \$423,000	0.71	0.16	0.26	0.15	0.14	0.03
More than \$423,000	0.63	0.16	0.20	0.13	0.14	0.04
Single-Family Detached, 4 BR						
All Values	1.12	0.31	0.33	0.25	0.22	0.10
Less than \$352,500	1.27	0.31	0.41	0.34	0.22	0.12
\$352,500 to \$538,500	1.17	0.36	0.30	0.23	0.29	0.09
More than \$538,500	0.89	0.27	0.30	0.20	0.14	0.10
Single-Family Detached, 5 BR						
All Values	0.85	0.18	0.16	0.23	0.29	0.09
Less than \$538,500	1.11	0.17	0.17	0.41	0.37	0.16
\$538,500 to \$961,500	0.68	0.16	0.14	0.14	0.24	0.07
More than \$961,500				Insufficient Sample		
Single-Family Attached, 2 BR						
All Values	0.41	0.13	0.14	0.13	0.01	0.01
Less than \$158,500			Insufficient Sample			
\$158,500 to \$211,500			Insufficient Sample			
More than \$211,500			Insufficient Sample			
Single-Family Attached, 3 BR						
All Values	1.23	0.34	0.34	0.26	0.29	0.14
Less than \$183,000			Insufficient Sample			
\$183,000 to \$288,500			Insufficient Sample			
More than \$288,500			Insufficient Sample			
Single-Family Attached, 4 BR						
All Values			Insufficient Sample			
Less than \$288,500			Insufficient Sample			
\$288,500 to \$538,500			Insufficient Sample			
More than \$538,500			Insufficient Sample			
5+ Units-Own, 1 BR						
All Values	0.28	0.07	0.11	0.08	0.02	0.02
Less than \$173,000			Insufficient Sample			
\$173,000 to \$250,000	0.41	0.06	0.19	0.13	0.02	0.04
More than \$250,000	0.03	0.03	0.00	0.00	0.00	0.00
5+ Units-Own, 2 BR						
All Values	0.29	0.13	0.05	0.04	0.07	0.02
Less than \$211,500	0.43	0.23	0.06	0.06	0.08	0.04
\$211,500 to \$288,500	0.31	0.12	0.05	0.06	0.08	0.02
More than \$288,500	0.13	0.04	0.04	0.00	0.04	0.00
5+ Units-Own, 3 BR						
All Values	0.23	0.06	0.05	0.05	0.08	0.03
Less than \$288,500			Insufficient Sample			
\$288,500 to \$346,000			Insufficient Sample			
More than \$346,000			Insufficient Sample			

**HAWAII (2--2) ALL SCHOOL CHILDREN:
SCHOOL-AGE CHILDREN (SAC)**

STRUCTURE TYPE /BEDROOMS/ VALUE (2005)/TENURE	TOTAL SAC	GRADE				
		K-2	3-6	7-9	10-12	Gr. 9 Only
5+ Units-Rent, 1 BR						
All Values	0.26	0.09	0.09	0.04	0.04	0.01
Less than \$850	0.38	0.16	0.13	0.04	0.05	0.00
\$850 to \$1,200	0.25	0.04	0.12	0.05	0.04	0.02
More than \$1,200	0.16	0.07	0.02	0.04	0.03	0.03
5+ Units-Rent, 2 BR						
All Values	0.37	0.10	0.12	0.11	0.04	0.06
Less than \$1,250	0.70	0.13	0.20	0.29	0.09	0.15
\$1,250 to \$1,550	0.25	0.12	0.08	0.02	0.03	0.02
More than \$1,550	0.16	0.05	0.07	0.04	0.00	0.02
5+ Units-Rent, 3 BR						
All Values			Insufficient Sample			
Less than \$1,250			Insufficient Sample			
\$1,250 to \$1,900			Insufficient Sample			
More than \$1,900			Insufficient Sample			
2-4 Units, 1 BR						
All Values	0.23	0.10	0.05	0.06	0.01	0.03
Less than \$97,000			Insufficient Sample			
\$97,000 to \$131,000			Insufficient Sample			
More than \$131,000			Insufficient Sample			
2-4 Units, 2 BR						
All Values	0.54	0.15	0.21	0.12	0.06	0.03
Less than \$130,500	0.96	0.17	0.47	0.19	0.12	0.04
\$130,500 to \$173,000	0.27	0.12	0.06	0.09	0.01	0.02
More than \$173,000	0.42	0.16	0.11	0.09	0.06	0.05
2-4 Units, 3 BR						
All Values	0.52	0.08	0.12	0.18	0.14	0.05
Less than \$163,000			Insufficient Sample			
\$163,000 to \$250,000			Insufficient Sample			
More than \$250,000			Insufficient Sample			
Mobile, 2 BR						
All Values			Insufficient Sample			
Less than \$288,500			Insufficient Sample			
\$288,500 to \$423,000			Insufficient Sample			
Highest third			Insufficient Sample			
Mobile, 3 BR						
All Values			Insufficient Sample			
Less than \$211,500			Insufficient Sample			
\$211,500 to \$346,000			Insufficient Sample			
Highest third			Insufficient Sample			
Mobile, 4 BR						
All Values			Insufficient Sample			
Lowest third			Insufficient Sample			
Middle third			Insufficient Sample			
Highest third			Insufficient Sample			

**HAWAII (3--1) ALL PUBLIC SCHOOL CHILDREN:
SCHOOL-AGE CHILDREN IN PUBLIC SCHOOL (PSAC)**

STRUCTURE TYPE /BEDROOMS/ VALUE (2005)/TENURE	TOTAL PSAC	PUBLIC SCHOOL GRADE				
		K-2	3-6	7-9	10-12	Gr. 9 Only
Single-Family Detached, 2 BR						
All Values	0.54	0.15	0.19	0.08	0.12	0.02
Less than \$173,000	0.51	0.17	0.18	0.08	0.09	0.03
\$173,000 to \$346,000	0.66	0.16	0.26	0.08	0.16	0.02
More than \$346,000	0.32	0.10	0.08	0.07	0.07	0.00
Single-Family Detached, 3 BR						
All Values	0.62	0.14	0.22	0.13	0.13	0.04
Less than \$288,500	0.84	0.17	0.31	0.18	0.18	0.06
\$288,500 to \$423,000	0.62	0.14	0.22	0.13	0.12	0.03
More than \$423,000	0.40	0.10	0.14	0.07	0.10	0.02
Single-Family Detached, 4 BR						
All Values	0.89	0.23	0.27	0.21	0.18	0.09
Less than \$352,500	1.13	0.26	0.38	0.31	0.18	0.10
\$352,500 to \$538,500	0.98	0.27	0.24	0.20	0.27	0.08
More than \$538,500	0.54	0.15	0.19	0.12	0.08	0.09
Single-Family Detached, 5 BR						
All Values	0.70	0.14	0.15	0.18	0.23	0.06
Less than \$538,500	1.01	0.14	0.17	0.36	0.35	0.10
\$538,500 to \$961,500	0.59	0.16	0.14	0.10	0.19	0.05
More than \$961,500				Insufficient Sample		
Single-Family Attached, 2 BR						
All Values	0.39	0.13	0.14	0.11	0.01	0.01
Less than \$158,500			Insufficient Sample			
\$158,500 to \$211,500			Insufficient Sample			
More than \$211,500			Insufficient Sample			
Single-Family Attached, 3 BR						
All Values	1.07	0.32	0.30	0.21	0.25	0.09
Less than \$183,000			Insufficient Sample			
\$183,000 to \$288,500			Insufficient Sample			
More than \$288,500			Insufficient Sample			
Single-Family Attached, 4 BR						
All Values			Insufficient Sample			
Less than \$288,500			Insufficient Sample			
\$288,500 to \$538,500			Insufficient Sample			
More than \$538,500			Insufficient Sample			
5+ Units–Own, 1 BR						
All Values	0.24	0.05	0.09	0.08	0.02	0.02
Less than \$173,000			Insufficient Sample			
\$173,000 to \$250,000	0.34	0.03	0.16	0.13	0.02	0.04
More than \$250,000	0.03	0.03	0.00	0.00	0.00	0.00
5+ Units–Own, 2 BR						
All Values	0.21	0.08	0.04	0.03	0.06	0.01
Less than \$211,500	0.33	0.19	0.04	0.04	0.05	0.02
\$211,500 to \$288,500	0.24	0.07	0.05	0.05	0.08	0.02
More than \$288,500	0.07	0.00	0.02	0.00	0.04	0.00
5+ Units–Own, 3 BR						
All Values	0.17	0.06	0.05	0.03	0.03	0.03
Less than \$288,500			Insufficient Sample			
\$288,500 to \$346,000			Insufficient Sample			
More than \$346,000			Insufficient Sample			

**HAWAII (3--2) ALL PUBLIC SCHOOL CHILDREN:
SCHOOL-AGE CHILDREN IN PUBLIC SCHOOL (PSAC)**

STRUCTURE TYPE /BEDROOMS/ VALUE (2005)/TENURE	TOTAL PSAC	<u>PUBLIC SCHOOL GRADE</u>				
		K-2	3-6	7-9	10-12	Gr. 9 Only
5+ Units–Rent, 1 BR						
All Values	0.23	0.07	0.08	0.04	0.04	0.01
Less than \$850	0.32	0.14	0.09	0.04	0.05	0.00
\$850 to \$1,200	0.23	0.02	0.12	0.05	0.04	0.02
More than \$1,200	0.16	0.07	0.02	0.04	0.03	0.03
5+ Units–Rent, 2 BR						
All Values	0.34	0.09	0.10	0.10	0.04	0.06
Less than \$1,250	0.63	0.10	0.18	0.26	0.09	0.15
\$1,250 to \$1,550	0.25	0.12	0.08	0.02	0.03	0.02
More than \$1,550	0.14	0.05	0.05	0.03	0.00	0.01
5+ Units–Rent, 3 BR						
All Values		Insufficient Sample				
Less than \$1,250		Insufficient Sample				
\$1,250 to \$1,900		Insufficient Sample				
More than \$1,900		Insufficient Sample				
2-4 Units, 1 BR						
All Values	0.18	0.08	0.05	0.03	0.01	0.01
Less than \$97,000		Insufficient Sample				
\$97,000 to \$131,000		Insufficient Sample				
More than \$131,000		Insufficient Sample				
2-4 Units, 2 BR						
All Values	0.50	0.12	0.19	0.12	0.06	0.03
Less than \$130,500	0.96	0.17	0.47	0.19	0.12	0.04
\$130,500 to \$173,000	0.19	0.09	0.00	0.09	0.01	0.02
More than \$173,000	0.39	0.13	0.11	0.09	0.06	0.05
2-4 Units, 3 BR						
All Values	0.35	0.08	0.12	0.11	0.04	0.05
Less than \$163,000		Insufficient Sample				
\$163,000 to \$250,000		Insufficient Sample				
More than \$250,000		Insufficient Sample				
Mobile, 2 BR						
All Values		Insufficient Sample				
Less than \$288,500		Insufficient Sample				
\$288,500 to \$423,000		Insufficient Sample				
Highest third		Insufficient Sample				
Mobile, 3 BR						
All Values		Insufficient Sample				
Less than \$211,500		Insufficient Sample				
\$211,500 to \$346,000		Insufficient Sample				
Highest third		Insufficient Sample				
Mobile, 4 BR						
All Values		Insufficient Sample				
Lowest third		Insufficient Sample				
Middle third		Insufficient Sample				
Highest third		Insufficient Sample				