

Spending Patterns of Home Buyers: Appliances, Furnishings and Property Alterations

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Home buying typically generates a wave of activity as people who purchase homes spend money on improving their homes, installing new appliances, buying furnishings, and other items. Pre-pandemic consumer spending data from 2017-2019 show that home buyers outspend otherwise similar homeowners who do not move. During the first year after closing on the house, a typical buyer of a newly built single-family detached home tends to spend on average \$9,250 more than a similar non-moving homeowner. Likewise, a buyer of an existing single-family detached home tends to spend over \$5,240 more than a similar non-moving homeowner, as a result of a home purchase. While a boost to spending lasts only one year in case of a new home purchase, it tends to persist for existing home purchases, mostly as a result of elevated remodeling spending.

This article updates a previous study based on 2012-2014 data. The earlier data, collected during the housing lull, showed lower spending by homeowners overall. But the tendency of home buyers to outspend non-moving owners on appliances, furnishings, and home improvements was similar.

The Data

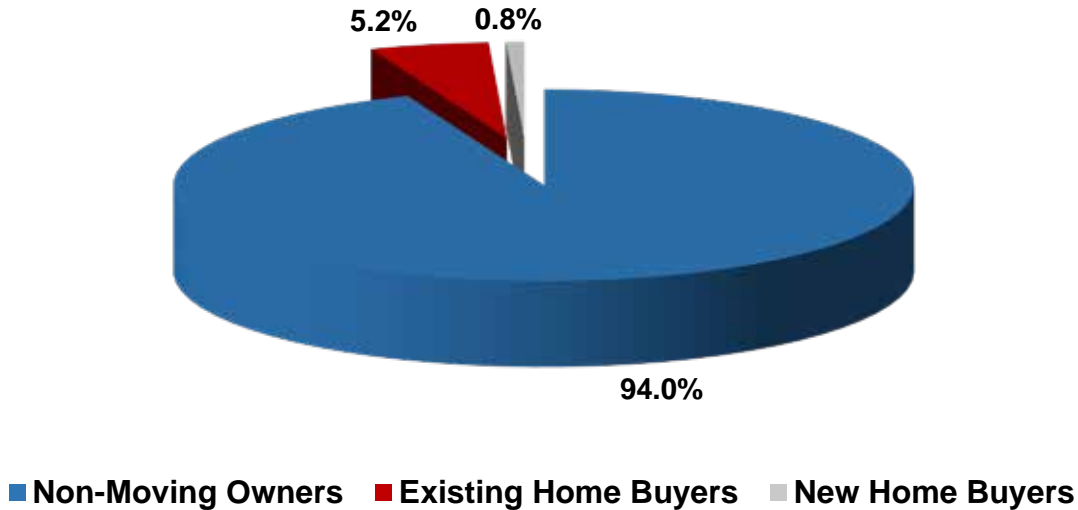
The standard source of data on consumer spending in the United States is the Consumer Expenditure Survey (CES) conducted by the US Bureau of Labor Statistics (BLS). The CES does not only detail consumer expenditures, it also allows relating this spending to household characteristics such as income, socio-demographic characteristics, and, what is essential in this analysis, whether these households recently purchased homes. Compared to some other government household surveys, the CES sample is not particularly large - it collects spending data from 6,000 to 8,000 households every quarter – nor is it specifically designed to capture home buyers.

In order to create a meaningful sample of home buyers, this study merges 13 quarters of CES spending data, from the first quarter of 2017 through the first quarter of 2020. This time frame deliberately excludes the pandemic years when consumer spending turned highly volatile and was later affected by the unprecedented global supply chain issues. To expand the universe of new home buyers, all homes that were built in 2016 or later are defined as new homes.

The created sample roughly reflects the national share of home buyers as captured in the 2019 American Housing Survey (AHS). According to the AHS, less than 1% of all single family detached homeowners bought a new home in 2018-2019 (with the new homes category including

units built in 2016-2019) and 5.2% bought an existing house (see Figure 1). To analyze spending pooled over several years, all expenditures and income are inflated to 2020 dollars using the Consumer Price Index (CPI).

Figure 1. Composition of Single-Family Detached Homeowners, 2019



Source: American Housing Survey, 2019

Expenditure Levels

Table 1 highlights some of the differences in spending behavior among the three groups of single family detached homeowners: buyers of new homes, buyers of existing homes and non-moving owners. The numbers in the table are average annual spending on various appliances, furnishings and property alterations¹. During the first year after closing on the house home buyers tend to spend on these items considerably more compared to non-moving owners. Buyers of new homes spend most, \$21,306, outspending non-movers 4 times. Buyers of existing homes spend \$10,924, twice as much as non-moving owners. Nevertheless, in the aggregate, most of the demand for appliances, furnishings, and remodeling projects in a given year is generated by non-moving homeowners, because they outnumber home buyers by such a wide margin.

¹ It is important to keep in mind that the averages reported in Table 1 are averages for all households in the group regardless whether they purchased a certain item/service or not. Thus, these averages are considerably lower than the expenditure by those households that actually purchased the item. The less frequently an item is purchased, the greater the difference between the average for all households in the group and the average of those purchasing.

Table 1. Single-Family Detached Home Owners' Average Annual Spending on Various Items, in \$2020

	1st Year After Buying Home		Non-Moving Owners	1st Year After Buying Home		Non-Moving Owners	
	Built 2016 or later	Built Before 2016		Built 2016 or later	Built Before 2016		
A. Furnishings				C. Appliances			
Sofas	\$859	\$612	\$148	Cooking stove, range, or oven	\$204	\$127	\$60
Living room chairs and tables	\$309	\$184	\$74	Microwave oven	\$20	\$32	\$17
Other living/family/recreation room furn.	\$354	\$145	\$49	Refrigerator or home freezer	\$465	\$291	\$121
All dining room and kitchen furniture	\$460	\$207	\$40	Built-in dishwasher	\$91	\$65	\$38
Bedroom furn. (incl. mattresses/springs)	\$718	\$611	\$204	Clothes washer/dryer	\$541	\$331	\$100
Infants furniture & equipment	\$170	\$36	\$18	Small electrical kitchen appliances	\$117	\$46	\$40
Patio/porch/outdoor furniture & equipment.	\$412	\$162	\$69	Electric floor cleaning equipment	\$102	\$44	\$28
Office furniture for home use	\$62	\$32	\$9	Electric personal care appliances	\$22	\$12	\$12
China, dinnerware, glassware, etc	\$53	\$25	\$18	Other household appliances	\$54	\$41	\$31
Non-electric cookware	\$32	\$13	\$14	Lawnmowers / other yard equipment	\$482	\$262	\$120
Bedroom/ bathroom and other linens	\$215	\$98	\$64	Power tools	\$86	\$73	\$43
Lamps and other decorative items	\$347	\$168	\$71	Non-power tools	\$7	\$32	\$10
Non-permanent floor coverings	\$156	\$115	\$35	Window air conditioners	\$0	\$8	\$6
Curtains and drapes	\$241	\$46	\$14	Portable cooling & heating equipment	\$19	\$19	\$10
Blinds, Shades, Other Window coverings	\$516	\$130	\$24	Television, all types	\$629	\$250	\$99
Other furnishings	\$218	\$81	\$52	DVD players, VCRs, DVRs, video cameras	\$11	\$5	\$6
Total furnishings	\$5,122	\$2,665	\$904	Stereos, radios, speakers, and sound comp	\$84	\$30	\$21
B. Property Alterations & Repairs				Other sound and video equipment	\$42	\$17	\$12
Building an addition or a new structure incl. porch	\$1,003	\$253	\$283	Musical instruments, supplies, accessories	\$262	\$33	\$37
Finishing a basement/attic or enclosing a porch	\$1,739	\$275	\$69	Gen. sports equipment (incl shoes)	\$74	\$56	\$46
Remodeling one or more rooms	\$118	\$1,774	\$677	Health and exercise equipment	\$27	\$79	\$36
Landscaping	\$3,167	\$335	\$192	Hunting/fishing/camping equipment	\$87	\$111	\$69
Building outdoorpatios/walks/fences/pools/driveways	\$4,070	\$512	\$250	Winter sports equipment	\$4	\$11	\$8
Outdoor repairs	\$181	\$72	\$93	Water sports equipment	\$5	\$8	\$9
Painting or wallpapering	\$125	\$408	\$147	Bicycles	\$90	\$30	\$31
Plastering or paneling	\$1	\$37	\$13	Playground equipment	\$54	\$13	\$4
Plumbing/water heating	\$241	\$205	\$148	Computer hardware/systems	\$359	\$169	\$172
Electrical work	\$282	\$98	\$52	Computer software/accessories	\$39	\$24	\$30
Heating or air conditioning jobs	\$60	\$293	\$237	Telephones and accessories	\$125	\$156	\$124
Flooring, incl. carpeting, wood, vinyl, tile	\$227	\$581	\$114	Satellite dishes	\$10	\$1	\$1
Insulation	\$4	\$34	\$10	Other appliances	\$143	\$123	\$101
Roofing, gutters, or downspouts	\$88	\$307	\$235	Total appliances	\$4,254	\$2,499	\$1,442
Siding	\$6	\$15	\$39	Total alterations, repairs, appliances and furnishings	\$21,306	\$10,924	\$5,312
Window panes, screens, storm doors, awnings	\$142	\$227	\$163				
Masonry, brick or stucco work	\$62	\$44	\$14				
Other improvements or repairs	\$415	\$292	\$231				
Total alterations, repairs	\$11,930	\$5,761	\$2,966				

Appliances

Total appliance spending is highest for new home buyers, \$4,254, compared with \$2,500 for existing home buyers, and \$1,442 for non-moving owners. According to the detailed list of appliance purchases in Table 1, on average, new home buyers tend to spend most on various types of television. Even though new television sets may not be the most expensive appliance new home buyers invest into, these are unlikely to be included in the price of the new home. As a result, buying television sets for multiple rooms in the new house can add up to the high level of spending, reflecting the high frequency of these purchases by new home buyers rather than a particularly high cost of the item.

The next biggest outlays in the appliance budget of new home buyers are clothes washers/dryers, lawnmowers/other yard equipment, and new refrigerators or home freezers. Coincidentally, new home buyers outspend existing home buyers and non-moving owners on all these big-ticket items.

The high level of spending by new home buyers may seem surprising considering that many new homes come with installed appliances but suggests that these purchases are nevertheless more frequent among these households. The Builder Practices Survey conducted by Home Innovation Research Labs shows that two thirds of new single-family detached homes built in 2019 came with no clothes dryers. At the same time, virtually all new homes came with cooking stoves, ranges, or ovens. This is reflected in Table 1 showing that, on average, new home buyers have lower spending on cooking stoves, ranges and minimal spending on built-in-dishwashers and microwave ovens. Rather, new home buyers spent most on items that are less likely to be included in the price of new homes.

The appliances that consume the largest share of the budget of existing homeowners are clothes washers/dryers, followed by refrigerators/home freezers, lawnmowers, televisions, and computer hardware/systems.

Furnishings

New and existing home buyers spend even more on furnishings than appliances. During the first year after buying home, new home buyers spend \$5,122 on furnishings. This is nearly twice as much as existing home buyers spend and 5.6 times higher, compared to non-moving owners' spending on furnishings. The differences are not only large but also most consistent when comparing expenditures on furnishings. Compared to existing home buyers, new home buyers spend more on every single item the CES counts as furnishings. Existing home buyers, in turn, outspend non-moving owners on all furnishings with the only exception of non-electric cookware, where their annual spending is similar.

The two biggest ticket items for home buyers are sofas and bedroom furnishings, including mattresses and springs. On average, new home buyers spend close to \$860 on sofas and \$718 on bedroom furnishings. The corresponding spending by existing home buyers on these items average just over \$610 during the first year after moving. This is considerably higher than non-moving owners typically spend on sofas (\$148) and bedroom furnishings (\$204) per year.

A home purchase, especially when it is a new home, has a particularly large effect on expenditures on window coverings (blinds, shades), as well as curtains and drapes. During the first year after moving, new home buyers spend \$516 on window coverings outspending non-moving owners and existing home buyers 22 and 4 times, respectively.

The differences in spending patterns are similarly large when comparing spending on dining room and kitchen furniture. New homebuyers outspend non-moving owners 11 times over (\$460 compared to \$40), while existing home buyers (with an average annual spending on dining room and kitchen furniture of \$207) outspend non-moving owners 5 times.

Property Repairs and Alterations

The most deceptively surprising result of this analysis is that new home buyers outspend existing home buyers and non-moving owners on property alterations and repairs. New home buyers spend close to \$12,000 on these projects during the first year after moving, while buyers of existing homes spend less than half of that amount (\$5,760). Non-moving owners spend even less on property alterations and repairs - under \$3,000 in a typical year. The puzzle is easily solved by going over the list of the specific types of remodeling projects that homeowners engage into.

New home buyers spend over \$4,000 on building outdoor patios, walks, fences, pools, driveways and additional \$3,167 on landscaping. In comparison, existing home buyers spend \$512 on outdoor features and \$335 on landscaping. The corresponding average spending by non-moving owners are \$250 and \$192 per year.

New home buyers also significantly outspend existing home buyers and non-moving owners when it comes to finishing a basement, attic, enclosing a porch (\$1,740 vs \$275 and \$69) or building an addition or a new structure, including a porch (\$1,003 vs \$253 and \$283).

At the same time, existing home buyers spend more than new home buyers on remodeling rooms, painting, wallpapering, plastering, flooring, roofing, insulation, siding, window panes, screens, storm doors, and HVAC work.

Statistical Analysis

Table 1 clearly illustrates that there are substantial differences in how much home buyers and non-moving homeowners spend on appliances, furnishings and property alterations. However, these differences in spending patterns cannot be fully attributed to a home purchase. Home buyers and non-moving owners might have different income, education, tastes, preferences, and other socio-demographic characteristics that could potentially explain differences in their spending behavior. Table 2 demonstrates that there are indeed differences between home buyers and non-moving owners. Home buyers tend to be larger households with children, and on average wealthier, better educated and concentrated in urban areas. Any of these factors could potentially contribute to higher spending on appliances, furnishings and remodeling.

Table 2. Characteristics of Single-Family Detached Homeowners

Household Characteristics	"New" Home Buyers	"Old" Home Buyers	Non-Moving Owners
Number of Cases	309	2,699	37,770
Household Size	2.9	2.9	2.6
Household Income	136,503	110,873	106,547
	Percent		
Region of Residence			
Northeast	5.3	13.6	17.0
Midwest	10.2	23.5	22.8
South	49.8	37.4	37.2
West	34.8	25.5	23.0
Rural vs. Urban			
Urban	95.5	94.0	92.0
Rural	4.5	6.0	8.0
Education of Respondent			
Less than High School	4.9	5.9	7.2
High School	10.0	18.4	21.7
Some College	27.2	31.4	30.2
College Graduate or more	57.9	44.1	40.9
Minority			
White Non-Hispanic	73.8	73.0	78.4
Minority	26.2	27.1	21.6
Family Type			
Husband and Wife Only	38.8	29.5	42.9
HW, Child under 17	42.7	32.6	21.3
Other	18.5	37.9	35.8

To control for the impact of household characteristics on expenditures, a statistical model was used². The analysis confirmed that household characteristics influence spending levels on furnishings, appliances, and remodeling. It also proved that a home purchase alters spending behavior of homeowners and that otherwise similar homeowners spend more across all three categories during the first year after buying home compared to non-moving owners.

² The particular technique is called Tobit regression analysis. This technique was selected because there was a large number of zero expenditures in the sample corresponding to households that reported no spending on either appliances, furnishings, or remodeling projects. In such cases, the traditional regression analysis (OLS) is known to produce biased estimates. To capture the effects of the CES sample design, the Tobit regressions were run within the balanced repeated replication (BRR) framework where target statistics are repeatedly re-estimated using half-sample replicate weights.

The statistical analysis also shows that a spike in new home buyers spending on property alterations lasts only one year. By the second year, new home buyers tend to spend less on remodeling projects than non-moving owners. In case of existing home purchases, the remodeling spending stays elevated for the next two years as buyers of older homes continue their additional property alteration and repair projects.

The higher level of spending on furnishings also tends to persist for two years after households move into a new or existing home. Spending on appliances, however, tend to come back to normal levels by the second year after moving.

To illustrate the impact that a home purchase has on spending and to control for differences in socio-economic characteristics of home buyers, the statistical estimates can be used to predict spending levels of identical households that differ in only one way: one household buys a home and the other stays put in a house they already own. Table 3 presents estimates for households that have socio-demographic characteristics typical of a new home buyer. The first column shows predicted spending levels of this “typical” new home buyer that buys a new home, and the second column contains estimates for an identical homeowner that stays put. The last column captures differences in spending levels attributed to the purchase of a new house, controlling for differences in the household characteristics shown in Table 2.

The differences on furnishings exceed \$2,900 during the first year after closing on a new house. A typical new home buyer that actually buys a new home is also estimated to spend \$1,870 more on appliances during the first year. In case of property repairs and alterations the differences are largest, \$4,450 but go away after the first year. Overall, during the first year after purchasing a new home, a typical new home buyer tends to boost spending on appliances, furnishings, and property alterations by additional \$9,247 as a result of buying a new home.

Table 3. Spending of a "Typical" New Home Buyer

	If Buying a New Home	If not Moving	Difference
Appliances			
1st Year	\$4,138	\$2,268	\$1,870
Furnishings			
1st Year	\$4,729	\$1,802	\$2,927
2nd Year	\$2,809	\$1,802	\$1,008
Property Repairs and Alterations			
1st Year	\$9,288	\$4,838	\$4,450
2nd Year	\$3,002	\$4,838	-\$1,836
Total: Alterations, Appliances, Furnishings			
1st Year	\$18,155	\$8,908	\$9,247
2nd Year	\$8,079	\$8,908	-\$828

Table 4 presents results of a similar comparison for homeowners with characteristics typical of an existing home buyer. Over the two years after the move, the “typical” buyers of an existing home tend to increase their spending on remodeling, furnishings, and appliances by \$7,200, compared to otherwise identical homeowners that do not move. Remodeling projects account for two thirds of this extra spending and mostly occur during the first year after closing on the house. The additional spending on furnishings also tend to persist beyond the first year.

Table 4. Spending of a "Typical" Old Home Buyer

	If Buying an Old Home	If not Moving	Difference
Appliances			
1st Year	\$2,799	\$2,032	\$768
Furnishings			
1st Year	\$2,988	\$1,628	\$1,361
2nd Year	\$1,812	\$1,628	\$184
Property Repairs and Alterations			
1st Year	\$7,391	\$4,282	\$3,109
2nd Year	\$6,048	\$4,282	\$1,765
Total: Alterations, Appliances, Furnishings			
1st Year	\$13,179	\$7,942	\$5,238
2nd Year	\$7,860	\$5,910	\$1,950

A legitimate question is whether a higher level of spending on furnishings, appliances and property alterations is achieved by home buyers by economizing and cutting their spending on other items, such as entertainment, apparel, transportations, travel, food at home, restaurants meals, etc. The identical statistical model was used to test this hypothesis. The statistical analysis showed that while income and socio-demographic characteristics help explain household spending on other items, a home purchase does not suppress spending on entertainment, apparel, transportation (including spending on new and used cars and trucks), food at home and restaurant meals. Overall, a home purchase does not have a significant effect on other spending outside of the added property alterations, appliances, and furnishings. Thus, homebuyers do not in general seem to pay for the three considered categories by economizing in other areas of spending.