

Changes in the Affordability of Housing in Canadian and American Cities, 2006–2016

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Executive Summary

By bringing together workers, capital, businesses, and ideas in a compact geographic market, cities promote improved productivity performance, and thereby faster economic growth and higher real incomes for workers. The affordability of housing in a city can aid or hinder this synthesis. As demand for labour grows in the most productive metropolitan areas, workers' willingness to relocate in pursuit of better opportunities in the job market becomes central not only to their own fortunes, but also to overall economic efficiency and industrial competitiveness. An important factor conditioning labour mobility is the affordability of housing, which varies greatly among regions and cities. In particular, if the expected productivity and wage gains associated with the geographical mobility of labour are blunted—partially or fully—by higher housing costs, overall standards of living can suffer.

This publication provides a better understanding of how housing affordability has evolved in metropolitan areas, comparing how shelter costs, as a share of income, have changed between 2006 and 2016 for 396 Canadian and American metropolitan areas. Specifically, we identify the growth in the share of median gross incomes dedicated to shelter costs, per bedroom, in each metropolitan area, for those two years.

According to this measure of changes in affordability, shelter costs fell as a share of median incomes in the vast majority (312) of the full sample of Canadian and US metropolitan areas over this period. The overall decline averaged 7.3% (8.7% when weighted by population). However, most of the urban regions that showed improved housing affordability were in the United States, with all but three Canadian locations (out of 52) exhibiting increases in per-bedroom shelter costs as a share of incomes. In fact, shelter costs as a share of income increased by 7.2% across the full sample of Canadian cities over this period (7.6% when weighted by population).

We also explore the relationship between changes in affordability and population growth. We find that a majority of metropolitan areas was able to combine improved affordability with a growing population. Here too, however, Canada differs from the United States, with 46 of 52 Canadian cities combining growing populations with reduced affordability; this includes the country's six metropolitan areas with more than one million inhabitants. However, for both the American and Canadian samples, the statistical relationship between the percentage change in population and the percentage change in the share of income dedicated to shelter between 2006 and 2016 is weak; this suggests that decreasing housing affordability is not an inevitable consequence of an increase in housing demand generated by a growing population.

We finish by decomposing the data in our measure of affordability to separate out changes in median incomes and shelter costs and glean preliminary insights into what is driving the divergence between Canadian and American metropolitan areas. We find that nominal median household income actually grew faster in our sample of Canadian cities than in US cities. However, shelter costs per bedroom grew significantly faster in Canadian locations than in the US locations in our sample. Hence, the decline in housing affordability in Canada relative to the United States reflects a more rapid increase in shelter costs—rather than a slower growth of median incomes—in Canadian cities compared to the majority of their American counterparts.

Our findings suggest several areas for future research. One is the identification of the factors that contributed to the much faster growth of shelter costs in Canadian cities relative to US cities. Our study identifies candidate regions for case studies examining the factors influencing changes in shelter costs. A second is the extent to which the eroding affordability of housing in Canadian cities affected the geographic mobility of Canadian workers.

Introduction

Cities play an out-sized role in regional, national, and international economies. By bringing together businesses, workers, physical capital, and ideas, large agglomerations increasingly drive overall economic growth and productivity (United Nations, 2011), especially in highly urbanized countries such as Canada and the United States. Economic and technological changes contribute to associated changes in the demand for workers across geographic locations. The geographic mobility of labour is therefore an important factor influencing the competitiveness and resiliency of national economies. In this regard, changes in the affordability of housing in response to changes in employment conditions in individual metropolitan areas can affect the geographic mobility of labour. In particular, to the extent that housing becomes significantly less affordable with inflows of labour, the phenomenon will hamper the access of workers to higher-paying, higher-quality jobs, as well as the ability of businesses to attract and retain the employees that they need to be competitive.

This study examines the relationship between changes in housing affordability and rates of population growth for a large sample of Canadian and American metropolitan areas over the latest decade of comparable data: 2006 to 2016. The study thereby provides some indirect insight into whether differences exist across urban governments in the two countries in how they manage local economic growth as it affects housing affordability. It also offers a perspective on whether observed differences in the productivity growth of the two countries might be influenced by differences in the mobility of labour, which, in turn, are linked to the behaviour of housing markets in each country.

The study proceeds as follows. In the next section, we briefly discuss the important role played by urban agglomerations in regional and national economies and how changes in housing affordability condition the contribution that individual urban economies make to the national economy. The third section outlines how we measure changes in housing affordability, as well as some conceptual issues surrounding the measurement. The fourth section provides data on changes in our measure of housing affordability for a sample of 52 Canadian and 344 US metropolitan areas between the two census years 2006 and 2016. It also considers how the measured changes in affordability are related to changes in population growth and whether the relationship differs when comparing Canadian to American metropolitan areas. Section five identifies the components of the observed changes in affordability in order to understand the differences in observed changes in affordability as described in section 4. Concluding comments are provided in the final section.

Cities and the Economy

The literature on urban economics and economic geography highlights the growing importance of cities as the locus for innovation and entrepreneurship.¹ It also identifies the adverse influence that decreasing housing affordability can have on the ability of cities to contribute to productivity growth and, therefore, to higher household incomes at both the local and national levels.

By allowing creative professionals and entrepreneurs to work in relatively close physical proximity, urban clusters facilitate the development, early introduction, and faster adoption of new technology.² Furthermore, since cities differ in their rates of total-factor-productivity growth (Hsieh and Moretti, 2019), the growth of a country's total factor productivity will increase as workers in locations characterized by relatively slow productivity growth relocate to urban areas characterized by faster growth.³ A likely consequence of this reallocation of labour will be faster growth of household incomes, since salary and wage increases are tied to productivity increases.

Since relative incomes should be rising in locations that are enjoying above-average productivity performance, market forces should encourage efficiency-promoting geographic reallocations of labour, other things held constant. However, increasing housing costs can be an important factor limiting the extent to which workers move from one location to another (Glaeser, Ponzetto and Tobio, 2011). Specifically, increased shelter costs, at some point, might more than offset the anticipated increase in nominal incomes that workers would gain by moving from locations characterized by slow productivity growth to those characterized by fast productivity growth. The elasticity of housing supply in a location ultimately conditions how quickly shelter costs will rise as additional workers relocate to that location.⁴ Differences in housing-supply elasticities, in turn, also reflect differences across locations in regulatory restrictions on new housing supply (Glaeser, Gyourko and Saks, 2006).

1. See, for example, Engel, Berbegal-Mirabent, and Pique, 2018.

2. This phenomenon contributes to what is characterized in the literature as “agglomeration economies”. For a discussion of agglomeration economies, see Krugman, 1991; Ellison, Glaeser, and Kerr, 2010; and Meusburger, Funke, and Wunder, 2009.

3. Total factor productivity is defined as real output divided by a weighted average of all inputs used to produce that output, where the weights are the shares of total expenditure on each input. As an empirical matter, total-factor-productivity growth essentially reflects technological change.

4. The elasticity of housing supply can be thought of as the responsiveness of the stock of housing units to increases in the average price paid for a unit of housing. Glaeser, Gyourko, and Saks (2006) provide evidence for US cities showing significant differences in elasticities of housing supply.

To the extent that labour mobility is discouraged by substantial increases in the cost of housing amid inward migration, the resulting “misallocation” of labour can be quite costly. For example, Hsieh and Moretti (2019) estimate that restrictions reducing the supply elasticity of housing lowered aggregate real economic growth in the United States by 36% over the period from 1964 to 2009, by discouraging the reallocation of labour from low-productivity to high-productivity locations. In short, policies that reduce the elasticity of housing supply have profound economic implications both for local economies and their residents, as well as the national economy.

Housing Costs and Housing Affordability

The elasticity of housing supply conditions the response of housing prices to changes in the demand for housing. In particular, as long as the supply of housing is not perfectly elastic—that is, the quantity supplied cannot be increased indefinitely without higher average prices being paid—the unit cost of housing can be expected to increase with a growing population or increased household formation.⁵ In this regard, it is important to distinguish between changes in housing costs and changes in housing affordability. In particular, if median household income (presumably related to productivity growth) grows faster than housing cost, housing affordability will improve, at least for the median household in the specific location. In other words, housing affordability improves if the share of income spent on a given “quality” of housing declines for the “typical” household in a location. Therefore, the public-policy goal of improving housing affordability is conceptually distinct from, but obviously related to, the goal of increasing the elasticity of the supply of housing, since affordability can also be improved by policies that encourage faster productivity growth and, therefore, higher household incomes.

The most widely used measure of housing affordability in a given location is the median cost of housing shelter (whether owned or rented) relative to median household income (World Economic Forum, 2019). Most studies measure housing affordability as a ratio of the cost of housing shelter (sometimes adjusted for housing “quality”) to income before all government taxes and transfers.⁶ However, it is also argued that housing affordability should be measured as shelter costs relative to disposable income, where the latter is the income that households have to spend on shelter after net taxes are deducted from gross incomes, as well as spending on a basket of necessities such as food are also subtracted from gross income.⁷ The Canada Mortgage and Housing Corporation (CMHC, 2019), as well as Herbert, Hermann, and McCue (2018) show that for metropolitan areas

5. With a perfectly elastic housing supply curve, housing prices will remain unchanged even if the number of separate households as a share of the total population increases. However, if the housing supply curve is upward sloping, the demand effect of a growing population on housing prices will likely be larger than it would otherwise be if, as has been the case in recent years, the number of separate households as a share of the population increases.

6. The latter is typically referred to as “gross income”. For examples, see Demographia, 2019; RBC, 2019; and National Association of Realtors, 2019.

7. The Canada Mortgage and Housing Corporation (CMHC) (2019) discusses both approaches to estimating housing affordability.

overall, the burden of the housing costs calculated is not significantly different using either measure, although the ratios can differ substantially for specific income groups. They also note that the trend over time in the two measures for US cities is quite similar.

The observation that the two standard measures of housing affordability provide broadly similar information across cities at a point in time, as well as changes in affordability over time, is drawn primarily from comparisons of metropolitan areas within countries, as opposed to across countries. Therefore, phenomena such as diverging personal income-tax rates across countries might weaken this observation when comparing housing affordability in metropolitan areas in different countries over time. In fact, the census data we use in this study to measure income does not provide estimates of pre- and post-tax disposable incomes for the median household in Canadian and American metropolitan areas. This avoids a debate on what makes up spending on necessities in Canadian and US sample locations, although we cannot avoid the risk that, because Canada generally has higher personal- and sales-tax rates than the United States (with each country exhibiting important internal variations), using our measure of gross median household income as the denominator in our affordability index will result in a more favourable picture of housing affordability in Canadian locations compared to those in the United States.

Adjusting for housing quality also raises difficult conceptual issues and brings some empirical constraints. For example, it might be argued that shorter commuting times and lower costs to commute to more central city workplaces make distance from the centre of cities an important factor in the quality of housing when comparing affordability across locations.⁸ While this consideration is undoubtedly relevant, it is beyond the scope of this study to “monetize” the average commuting time for our sample of metropolitan areas.

Housing quality in any location is also arguably related to factors such as the size of the “typical” housing unit, its access to green spaces, public transportation, and other amenities, as well as the average age of the housing stock. Unfortunately, available data do not allow us to adjust for all of these potentially relevant factors. Census agency data from both countries do provide estimates of the average number of bedrooms per dwelling unit, which we use as a proxy to standardize for at least one of the aforementioned attributes of housing quality, the size of the typical housing unit in a location.

In light of the conceptual and practical considerations discussed above, our chosen measure of housing affordability is defined algebraically as:

$$\text{Housing Affordability} = (\text{median monthly shelter costs} \div \text{average number of bedrooms}) \\ \div \text{median monthly income}$$

8. Sisson, Andrews, and Bazeley (2019) cite studies examining household expenditures at varying income levels that show that, as household costs decrease, the share of income spent on transportation increases as a multiple of the decrease in housing costs.

The 2006–2016 percentage change in our measure of housing affordability⁹ is one of the major variables of interest in our analysis. The second important variable is the 2006–2016 percentage change in metro-area population. All data are from Statistics Canada and the US Census Bureau, and are referenced in Appendix 1.

Drawing upon these two variables, our data analysis summarized in the next section focuses on the following issues:

- 1 Does housing affordability necessarily worsen with increases in population?
- 2 Does the relationship between changes in housing affordability and changes in population systematically differ between Canadian and US metropolitan areas?
- 3 Is any identified difference between the Canadian and US relationship primarily the result of changes in shelter costs compared to changes in median income?

Before discussing our data analysis, it is important to note explicitly that we do not directly identify the structural factors that contribute to differences in the relationship between changes in housing affordability and population growth (as a proxy for increases or decreases in housing demand) observed across our sample of locations. As noted above, a number of studies highlight the importance of government regulations and related land-use restrictions as major factors reducing the elasticity of housing supply.¹⁰ Other sources identify variation in endogenous construction costs across locations related to differences over time in the supply of construction workers or to economies of scale associated with the density of housing construction activity (World Economic Forum, 2019). Identification and evaluation of structural variables contributing to our main findings is the subject of future research.

9. The 2006 Canadian census only includes median shelter-cost estimates by tenure. For this reason, we produced “constructed” median monthly shelter-cost estimates for both years, which represent the weighted average of median monthly housing costs for both owner and renter households—where the weights are the share each represents in a metropolitan area’s total household count. The precise methodology underlying the estimation of monthly shelter costs, as well as Canadian and US definitions of metropolitan areas used in this study are discussed in **Appendix 1 (p. 15)**.

10. See, for example, Glaeser and Gyourko, 2018; Green, Filipowicz, Lafleur, and Herzog, 2016; and Hsieh and Moretti, 2019.

Changes in Housing Affordability and Population Growth in Canadian and American Metropolitan Areas

By way of background, the table shown in Appendix 2 (p. 19) identifies the full sample of metropolitan areas in our study. The locations are rank ordered by our affordability measure (least to most affordable) calculated for 2016, the latest year of available data for the United States and Canada. Perhaps unsurprisingly, the least affordable locations in the United States are large coastal metropolitan areas, notably Los Angeles, Miami, New York, and the San Francisco Bay Area. Also unsurprising, Toronto and Vancouver are the least affordable Canadian metropolitan areas in our sample, followed by Montreal. Among the 60 cities in our sample with more than one million inhabitants, Toronto, Vancouver, and Montreal rank in the top (least affordable) half of the distribution.

Since our main focus is on the change in affordability between 2006 and 2016 relative to the change in population, Appendix 3 (p. 28) below reports the data underlying our affordability calculations, as well as the calculated percentage change in affordability and the percentage change in population between those two years for our sample of metropolitan areas.¹¹ The cities are listed in Appendix 3 from those experiencing the largest decline to the largest increase in affordability between 2006 and 2016. It also reports the associated percentage changes in each of the components that make up the affordability index.

Table 1 summarizes the average percentage change in the affordability index and the average percentage change in population for our entire sample of locations, as well as separately for US and Canadian locations. Across the entire sample of metropolitan areas, the unweighted average change in the affordability index is –7.3%. The change is –8.7% when the percentage change for each location is weighted by that location's share of the total sample's population.¹² Hence, for our sample of metropolitan areas, housing affordability increased, on average, between 2006 and 2016. Furthermore, this phenomenon was fairly widespread, as the vast majority (312) of the sample metropolitan areas experienced improved affordability.

11. The sample reported in Appendix 3 and table 1 excludes Los Angeles, which, as result of a fundamental change in its Metropolitan Statistical Area (MSA) between 2006 and 2016 (including a code change), is not a comparable observation.

12. In all cases, the population weights are calculated using 2016 population data.

Table 1: Summary of changes in space-adjusted shelter costs as a share of income, and population (%) in Canada and the United States, 2006–2016

	Number of metropolitan areas	Sample population (2016)	2006–2016 change in adjusted median per-bedroom shelter costs (nominal)		2006–2016 change in population	
			Simple average	Population-weighted average	Simple average	Population-weighted average
Canada	52	26,465,398	7.2%	7.6%	12.7%	15.1%
United States	344	257,201,189	–9.5%	–10.5%	10.8%	12.2%
Full sample	396	283,666,587	–7.3%	–8.7%	11.0%	12.3%

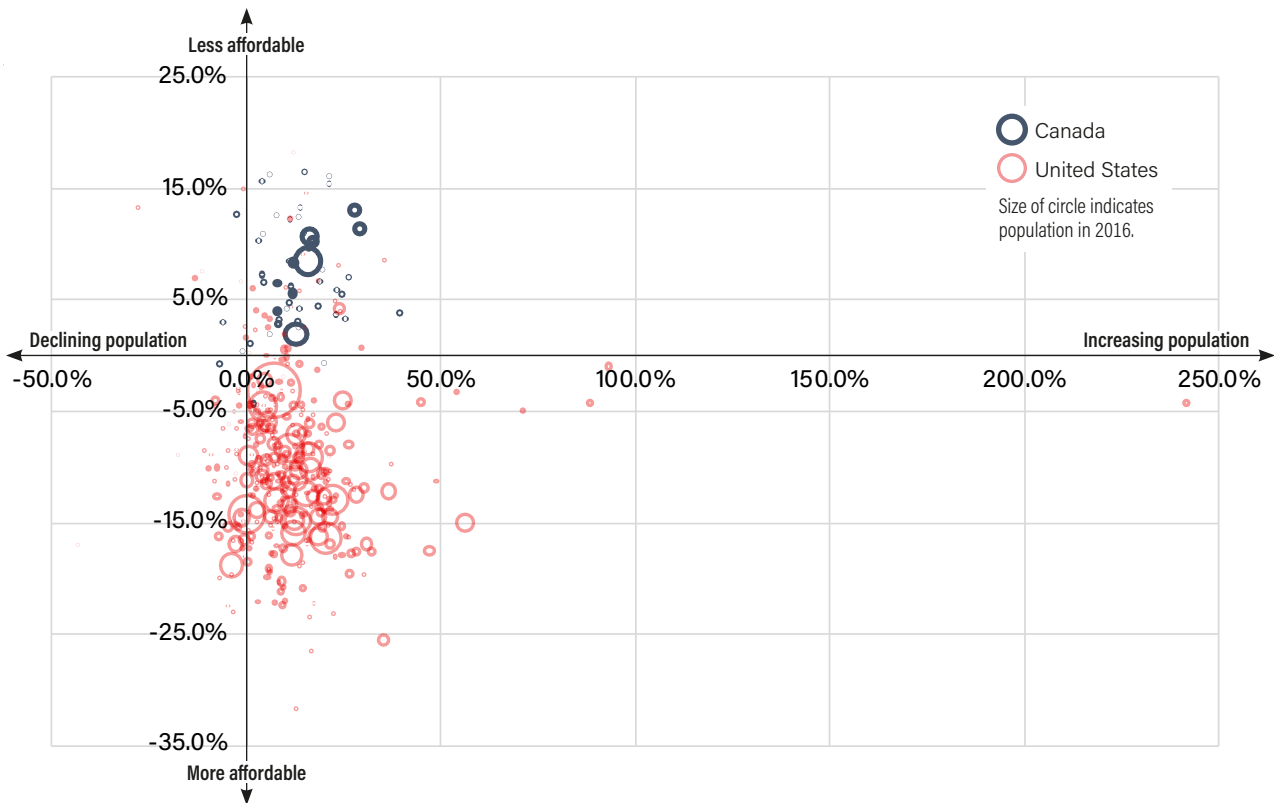
It should be emphasized that improved affordability does not mean absolutely lower shelter costs. In fact, shelter costs increased in most metropolitan areas in our sample, likely contributing to perceptions of “unaffordable” housing, especially in large North American cities.

Canadian and American metropolitan areas, however, show a substantial difference in the behaviour of the affordability index. Specifically, for the 52 Canadian metropolitan areas in the sample, the share of income dedicated to shelter increased in all but three locations (Windsor, Cape Breton, and Kelowna). The simple average increase in the affordability index across Canadian cities is 7.2% between 2006 and 2016. The average increase is 7.6% when each location’s percentage change is weighted by its share of the total Canadian sample’s population. By contrast, the simple average change in the affordability index across the sample’s 344 US metropolitan areas is –9.5%, while the weighted average change is –10.5%. Thus overall, metropolitan areas in the two countries exhibit a significant difference in the trend of housing affordability over the 2006-to-2016 period, with the typical American city enjoying improved affordability and most Canadian cities experiencing deteriorating affordability.

While the change in affordability differs substantially when comparing Canadian to American cities, changes in population are relatively comparable. Population increased in all but four Canadian metropolitan areas over the period examined. The simple average percentage growth is 12.7 between 2006 and 2016 and increases to 15.1% when the growth rate of each location is weighted by the location’s share of the total sample Canadian population. Conversely, the simple population growth rate for US metropolitan areas was 10.8%, while the growth rate was 12.2% on a weighted average basis.

To explore the relationship between the percentage change in affordability and the percentage growth in population, we plot the two variables for our sample of metropolitan areas along two axes (figure 1). The percentage change in population is measured along the horizontal axis, while the percentage change in affordability is measured along the vertical axis. As shown in the figure, locating cities with respect to these two axes

Figure 1: Plot of changes in space-adjusted shelter costs as a share of income and population (%), 2006–2016



results in four quadrants based on positive or negative percentage changes in population and positive or negative percentage changes in the affordability ratio. Specifically, cities in the top-right quadrant experienced positive population growth combined with increased shelter costs as a share of income. The bottom-right quadrant includes cities with increasing populations and falling shelter costs as a share of income. Cities in the bottom-left quadrant had shrinking populations combined with declining ratios of shelter costs to income, while only 10 (relatively small) cities were located in the top-left quadrant indicating a higher shelter-cost index value along with a declining population.

The data points plotted in figure 1 tend to cluster around the vertical axis both above and below the horizontal axis, thereby suggesting that there is, at best, a weak statistical relationship between the percentage change in population and the percentage change in the affordability index. Indeed, the Pearson correlation coefficient between the percentage change in population growth and the percentage change in the affordability index is only .0341 for the entire sample. The correlation coefficient is .0052 for the US sample and increases to .1766 for the Canadian sample. Hence, the estimated correlation coefficients also underscore the statistically weak relationship between the two variables of interest.

At least two caveats should be mentioned about the preceding findings relating changes in affordability to changes in population. First, we have not held constant other factors that might have influenced changes in the affordability index, either positively

or negatively. Were these other factors included explicitly in our analysis, the observed relationship between the change in affordability and the change in population might be different from the relationship identified in figure 1. Second, there is likely a two-way relationship between the two variables. That is, while increases in population might contribute to cost increases in the affordability index, increases in the latter might well contribute to decreases in the former. The consequence is likely to be a downward bias in the estimated correlation coefficient between the two variables. In short, while the true overall relationship between the percentage change in affordability and the percentage change in population might not be precisely identified above, there is no reason to think that any resulting bias systematically favours the US results. Alternatively put, there is no reason to think that population growth, *per se*, as a proxy for increased housing demand, should have had a stronger influence on housing affordability in Canada than in the United States.

Importantly, the data summarized in figure 1 suggest that significantly worsening housing affordability is not an inevitable outcome of faster population growth across North American cities. Nevertheless, it is interesting that the vast majority of Canadian cities (46 of 52) are located in the top right quadrant of figure 1 (growing population, growing share of income dedicated to shelter costs), while the vast majority of US cities (259 of 344) are located in the bottom-right quadrant (growing population, decreasing share of income dedicated to shelter costs).¹³ This relationship also characterizes Canada's largest metropolitan areas, with all six of Canada's urban regions with over one million inhabitants exhibiting an increase in the share of income dedicated to shelter costs, while 47 of the 53 one-million-plus population metropolitan areas in the United States combined population growth with a reduction in the share of income dedicated to shelter costs between 2006 and 2016.

13. A growing population in conjunction with improving housing affordability might be explained by the supply curve of housing shifting to the right, that is, increasing, over time. An outward shift in the housing supply curve could arise from a number of factors including an easing of regulations that lowers the cost of constructing homes.

The Effects of Changes in Median Incomes and Shelter Costs

The findings in the previous section raise important questions about the diverging trajectories of changes in housing affordability in Canadian and US metropolitan areas between 2006 and 2016. Although a full exploration of the observed differences is beyond the scope of this essay, the data used to produce the affordability index variable provide some preliminary insights. Specifically, the separate changes in the numerator and denominator of the affordability index between 2006 and 2016 identify whether a location's improvement or deterioration in affordability was primarily driven by changing shelter costs or changing median income. Of greatest interest to this study, a decomposition of the change in the affordability index into the changes in the numerator and the denominator provides insight into the observed divergence in housing affordability over time in American and Canadian cities.

Table 2 summarizes by country the data on shelter cost and income change reported in table 1. In the US portion of the sample, nominal median household income increased by 19.3% from 2006 to 2016 (both as a simple average across cities, as well as by a share of population-weighted average), while shelter costs increased by only 7.8% across cities using a simple average and by 6.7% when using an average weighted by share of population. For the Canadian sample of locations, the simple average of nominal income grew by 30.2% and by 29.4% when each location's growth in income is weighted by its 2016 population. Over the sample period, nominal shelter costs grew by 39.8% (simple average across locations) and by 39.3% when the growth rate is weighted by a location's population share.

Table 2: Summary of changes in median incomes and shelter costs (%) in Canada and the United States, 2006–2016

	2006–2016 change in nominal median income		2006–2016 change in median per-bedroom shelter costs (nominal)	
	Simple average	Population-weighted average	Simple average	Population-weighted average
Canada	30.2%	29.4%	39.8%	39.3%
United States	19.3%	19.3%	7.8%	6.7%

The decomposition of changes in our housing affordability index into changes in shelter costs and changes in household income therefore indicates that improving housing affordability in the United States relative to Canada over the 2006-to-2016 period primarily reflects faster growth in shelter costs in Canada—and not relatively faster growth of income in the United States. Indeed, gross median household income over our sample period grew faster in Canada than in the United States.

It should be noted that name changes suggest possible changes in the geographical compositions of 67 US Metropolitan Statistical Areas (MSAs) and two Canadian Census Metropolitan Areas (CMAs) between the 2006 and 2016 census years. The composition of the two Canadian CMAs definitely changed. However, the American naming convention allows for the possibility that the changes reflect a reordering of included counties rather than the addition of a county. There is no *a priori* reason to believe that the changes in the geographical compositions of the affected MSAs/CMAs should alter the relationship between the change in affordability and the change in population discussed earlier. Indeed, the simple correlation coefficient between the percentage change in affordability and the percentage change in population for the remaining sample of locations after dropping those MSAs and CMAs whose names changed between 2006 and 2016 (.0371) is virtually identical to the correlation coefficient for the full sample of locations (.0341). Furthermore, the vast majority of US locations in the truncated sample (211 of 333) still fall into the quadrant of figure 1 characterized by a growing population with improving housing affordability.

Nonetheless, we thought it prudent to replicate table 3 using the truncated sample of locations; that is, we deleted the 67 US MSAs and the 2 Canadian CMAs whose naming and/or geographical compositions changed between the two sample years and then recalculated the simple and weighted average percentage changes in median income and median per-bedroom shelter cost for the remaining US and Canadian locations. The results are reported in table 3. The results in tables 2 and 3 are similar, for the most part. The only notable difference is that the percentage change in shelter costs in the truncated US sample is a bit more than 5 percentage points higher than

Table 3: Summary of changes in median incomes and shelter costs (%) in a truncated sample of cities in Canada and the United States, 2006–2016

	2006–2016 change in nominal median income		2006–2016 change in adjusted median per-bedroom shelter costs (nominal)	
	Simple average	Population-weighted average	Simple average	Population-weighted average
Canada	30.3%	29.5%	39.7%	39.3%
United States	21.5%	19.6%	13.1%	8.1%

in the full US sample. However, the broad conclusion drawn from the full sample remains unchanged. Namely, housing affordability in Canada relative to the United States declined because shelter costs in Canada increased at a substantially faster rate than in the United States.

Obviously, the decomposition analysis described above demands an explanation of why shelter costs in Canada increased at a much faster rate than in the United States. As noted earlier, an examination of this phenomenon is left to future research. However, the detailed identification of changes in shelter costs and household income for our relatively large sample of Canadian and American cities helps identify locations that might make interesting case studies which, in turn, might provide useful insight into possible explanations.

Concluding Comments

Changing housing affordability, particularly decreases in affordability, is a prominent public-policy issue in many US and Canadian cities. As a direct matter, higher shelter costs relative to household income can reduce the average family's standard of living, as less income is available to be spent on other goods and services and on non-work pursuits, including leisure time. As an indirect, yet very important matter, changing housing affordability can affect labour mobility and, in turn, influence a nation's overall productivity growth. Specifically, decreasing affordability in relatively high productivity locations can discourage inflows of labour from lower productivity locations, which will suppress the country's overall growth in productivity over time.

That housing affordability generally improved in the United States over the sample period, while labour mobility in the United States seems to have decreased in recent years (Bunker, 2016) appears contradictory. However, as Frey (2019) discusses, there are other factors at work that affect the rate at which workers relocate geographically and some factors are discouraging labour mobility. For example, an aging labour force discourages relocation, since older workers are less likely than younger workers to change their job locations. The growth of dual working households also is discouraging job relocation, since it is more difficult for two working persons in a household to find new employment in the same city than it is for a single person. Lastly, improved affordability gives no indication of whether shelter costs are considered sufficiently affordable to a large enough number of would-be residents to prompt their decision to move. It may well be that affordability has not yet improved to a point that enables larger-scale geographic relocation. In this context, it seems plausible that improved housing affordability mitigated—without erasing—the factors discouraging labour mobility in recent years, at least in the United States, although a full assessment of this possibility is beyond the scope of this study.

Over the sample period from 2006 to 2016, housing affordability declined in Canadian metropolitan areas, both absolutely and relative to the average change in affordability in American metropolitan areas. This was the case specifically for large Canadian cities such as Toronto, Vancouver, and Montreal. Since it is large urban agglomerations that are the locus of innovation (section 2 above), our findings should be a source of concern for Canadian policy makers for reasons discussed earlier in this report.

The main factor conditioning the absolute and relative decline in housing affordability in Canadian cities is a much faster rate of growth of median shelter costs in Canadian metropolitan areas compared to their US counterparts. This factor more

than offset the faster growth of median household income in our sample of Canadian locations. Identification of the main contributors to the rapid increases in shelter costs observed for Canada compared to the United States is one important task for future research. Another worthy topic for future research is an evaluation of whether labour mobility in Canada has decreased significantly relative to labour mobility in the United States and whether the observed differences are related to changes in housing affordability in Canada relative to the United States.

Appendix 1: Components of the Shelter Cost Variable

Data definitions

United States

The data for monthly housing costs are developed from a distribution of “Selected Monthly Owner Costs” for owner-occupied units and “Gross Rent” for renter-occupied units. The owner-occupied categories are further separated into those with a mortgage and those without a mortgage. Selected monthly owner costs are the sum of payments for mortgages, deeds of trust, contracts to purchase, or similar debts on the property (including payments for the first mortgage, second mortgages, home equity loans, and other junior mortgages), real estate taxes, fire, hazard and flood insurance on the property, utilities (electricity, gas and water and sewer) and fuels. It also includes, where appropriate, the monthly condominium fee for condominiums and personal property taxes, site rent, registration fees, and license fees for mobile homes. Gross rent is the contract rent plus the estimated average monthly cost of utilities and fuels if these are paid by the renter (or paid for the renter by someone else). Gross rent is intended to eliminate differentials that result from varying practices with respect to the inclusion of utilities and fuels as part of the rental payment. The estimated costs of water and sewer and fuels are converted to monthly figures.

Source: US Census (2017). *American Community Survey and Puerto Rico Community Survey: 2016 Subject Definitions*. <https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2016_ACSSubjectDefinitions.pdf>, as of February 7, 2020.

Canada

Shelter cost refers to the average monthly total of all shelter expenses paid by households that own or rent their dwelling. Shelter costs for owner households include, where applicable, mortgage payments, property taxes and condominium fees, along with the costs of electricity, heat, water and other municipal services. For renter households, shelter costs include, where applicable, the rent and the costs of electricity, heat, water and other municipal services.

Source: Statistics Canada (2019). *Dictionary, Census of Population*, s.v. Shelter cost. <<https://www12.statcan.gc.ca/census-recensement/2016/ref/dict/households-menage033-eng.cfm>>, as of February 7, 2020.

US Census Bureau's definition of a Metropolitan Statistical Area (MSA)

[A Metropolitan Statistical Area] consists of one or more counties that contain a city of 50,000 or more inhabitants *or* contain a Census Bureau-defined urbanized area (UA) and have a total population of at least 100,000 (75,000 in New England). Counties containing the principal concentration of population—the largest city and surrounding densely settled area—are components of the MSA. Additional counties qualify to be included by meeting a specified level of commuting to counties containing the population concentration and by meeting certain other requirements of metropolitan character, such as a specified minimum population density or a percentage of the population that is urban. MSAs in New England are defined in terms of cities and towns, following rules concerning commuting and population density.

Source: US Census (2018). Chapter 13: Metropolitan Areas. *Geographic Areas Reference Manual*. <<https://www2.census.gov/geo/pdfs/reference/GARM/Ch13GARM.pdf>>: 13-1–13-2.

Statistics Canada's Definitions of CMAs and CAs

A census metropolitan area (CMA) or a census agglomeration (CA) is formed by one or more adjacent municipalities centred on a population centre (known as the core). A CMA must have a total population of at least 100,000 of which 50,000 or more must live in the core. A CA must have a core population of at least 10,000. To be included in the CMA or CA, other adjacent municipalities must have a high degree of integration with the core, as measured by commuting flows derived from previous census place of work data.

If the population of the core of a CA declines below 10,000, the CA is retired. However, once an area becomes a CMA, it is retained as a CMA even if its total population declines below 100,000 or the population of its core falls below 50,000. Small population centres with a population count of less than 10,000 are called fringe. All areas inside the CMA or CA that are not population centres are rural areas.

When a CA has a core of at least 50,000, it is subdivided into census tracts. Census tracts are maintained for the CA even if the population of the core subsequently falls below 50,000. All CMAs are divided into census tracts.

Source: Statistics Canada (2018). *Illustrated Glossary, Census year 2011*, s.v. CMA and CA: Detailed definition. <<https://www150.statcan.gc.ca/n1/pub/92-195-x/2011001/geo/cma-rmr/def-eng.htm>>.

Data adjustments

In order to ensure comparability both between countries and between years, two data adjustments were required.

- 1 Median shelter costs in the 2006 Canadian census were only reported by dwelling tenure (renter or owner-occupied). To adjust for this difference in reporting, we produced an average of renter- and owner-occupied median shelter costs, weighted by each tenure group's share of the total CMA household count. We then applied the same adjustment to both years in both countries.
- 2 An adjustment was made to produce an average number of bedrooms for each metropolitan area. Canadian census data for 2016, and US data for both 2006 and 2016, did not include averages by metropolitan area, presenting instead the number of households by each bedroom number category (for example, 1bd, 2bd, 3bd). To produce an average for the years and countries affected, we summed the product of each bedroom number category by the number of households in each category, and then divided this sum by the total number of households in each metropolitan area.

Appendix 2: Total sample of metropolitan areas ranked by per-bedroom shelter costs as a share of income (2016)

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number of bedrooms	Median monthly income (\$USD or \$CAD)	Per-bedroom shelter costs as a share of income
Los Angeles-Long Beach-Anaheim, CA	31080	13,310,447	1,647	2.4	5,496	12.58%
Miami-Fort Lauderdale-West Palm Beach, FL	33100	6,066,387	1,248	2.4	4,280	12.02%
New York-Newark-Jersey City, NY-NJ-PA	35620	20,153,634	1,683	2.4	5,991	11.77%
Santa Cruz-Watsonville, CA	42100	274,673	1,837	2.5	6,468	11.52%
San Diego-Carlsbad, CA	41740	3,317,749	1,725	2.6	5,902	11.31%
Atlantic City-Hammonton, NJ	12100	270,991	1,364	2.7	4,732	10.75%
Salinas, CA	41500	435,232	1,439	2.5	5,323	10.67%
Vineland-Bridgeton, NJ	47220	153,797	1,114	2.6	4,093	10.59%
Laredo, TX	29700	271,193	810	2.6	2,972	10.31%
San Francisco-Oakland-Hayward, CA	41860	4,679,166	2,028	2.5	8,056	10.20%
Santa Rosa, CA	42220	503,070	1,621	2.6	6,161	10.19%
Missoula, MT	33540	116,130	1,004	2.6	3,879	10.10%
Napa, CA	34900	142,166	1,670	2.7	6,256	10.05%
Chico, CA	17020	226,864	975	2.6	3,765	10.02%
Redding, CA	39820	179,631	1,014	2.6	3,894	9.89%
Riverside-San Bernardino-Ontario, CA	40140	4,527,837	1,357	2.8	4,853	9.84%
New Haven-Milford, CT	35300	856,875	1,370	2.5	5,515	9.76%
Fresno, CA	23420	979,915	1,077	2.7	4,060	9.65%
Eugene, OR	21660	369,519	1,000	2.6	3,981	9.65%
San Luis Obispo-Paso Robles-Arroyo Grande, CA	42020	282,887	1,495	2.6	5,880	9.65%
Oxnard-Thousand Oaks-Ventura, CA	37100	849,738	1,832	2.9	6,678	9.51%
College Station-Bryan, TX	17780	254,716	898	2.7	3,519	9.42%
Springfield, MA	44140	630,283	1,105	2.6	4,571	9.35%
Sacramento—Roseville—Arden-Arcade, CA	40900	2,296,418	1,381	2.8	5,338	9.31%
Boston-Cambridge-Newton, MA-NH	14460	4,794,447	1,656	2.6	6,865	9.30%
Providence-Warwick, RI-MA	39300	1,614,750	1,218	2.5	5,162	9.30%
Medford, OR	32780	216,527	994	2.6	4,047	9.28%
Bellingham, WA	13380	216,800	1,156	2.7	4,701	9.22%
San Jose-Sunnyvale-Santa Clara, CA	41940	1,978,816	2,274	2.7	9,170	9.22%
Bridgeport-Stamford-Norwalk, CT	14860	944,177	1,923	2.8	7,510	9.21%
Vallejo-Fairfield, CA	46700	440,207	1,600	2.8	6,158	9.20%
Modesto, CA	33700	541,560	1,189	2.9	4,525	9.16%
Kingston, NY	28740	179,225	1,253	2.6	5,233	9.16%
Yuba City, CA	49700	171,926	1,057	2.7	4,231	9.12%
Bakersfield, CA	12540	884,788	1,053	2.8	4,159	9.11%

Metropolitan Area	GeoID	Population (2016)	Median monthly shelter costs (2016 \$)	Average number of bedrooms	Median monthly income (\$USD or \$CAD)	Per-bedroom shelter costs as a share of income
Visalia-Porterville, CA	47300	460,437	970	2.8	3,823	9.09%
Fairbanks, AK	21820	100,605	1,375	2.4	6,444	9.08%
Stockton-Lodi, CA	44700	733,709	1,289	2.9	4,960	9.06%
Burlington-South Burlington, VT	15540	217,411	1,320	2.6	5,531	9.04%
Orlando-Kissimmee-Sanford, FL	36740	2,441,257	1,103	2.8	4,365	9.03%
Lewiston-Auburn, ME	30340	107,319	935	2.5	4,090	9.00%
Seattle-Tacoma-Bellevue, WA	42660	3,798,902	1,555	2.6	6,551	8.99%
Tampa-St. Petersburg-Clearwater, FL	45300	3,032,171	964	2.5	4,260	8.98%
Las Vegas-Henderson-Paradise, NV	29820	2,155,664	1,088	2.7	4,532	8.93%
Wilmington, NC	48900	282,573	1,049	2.8	4,180	8.90%
New Orleans-Metairie, LA	35380	1,268,883	959	2.7	4,067	8.89%
Naples-Immokalee-Marco Island, FL	34940	365,136	1,162	2.6	5,102	8.85%
Champaign-Urbana, IL	16580	239,872	895	2.4	4,214	8.85%
Ithaca, NY	27060	104,871	1,043	2.5	4,696	8.82%
Gainesville, FL	23540	281,796	865	2.6	3,773	8.82%
Port St. Lucie, FL	38940	465,208	937	2.6	4,062	8.79%
Corvallis, OR	18700	89,385	1,127	2.8	4,622	8.79%
Portland-Vancouver-Hillsboro, OR-WA	38900	2,425,325	1,355	2.7	5,723	8.79%
Panama City, FL	37460	200,893	896	2.6	3,962	8.75%
Madera, CA	31460	154,697	1,078	2.9	4,305	8.73%
Chicago-Naperville-Elgin, IL-IN-WI	16980	9,512,968	1,267	2.6	5,502	8.72%
Hinesville, GA	25980	82,687	959	2.9	3,853	8.72%
Columbus, GA-AL	17980	307,816	861	2.8	3,618	8.65%
Trenton, NJ	45940	371,023	1,529	2.7	6,471	8.61%
Portland-South Portland, ME	38860	529,657	1,186	2.6	5,285	8.59%
Jacksonville, NC	27340	187,136	940	2.8	3,929	8.57%
Bloomington, IN	14020	166,336	827	2.7	3,641	8.54%
Toronto, ON	535	5,928,040	1505	2.7	6,531	8.53%
Worcester, MA-CT	49340	935,781	1,281	2.7	5,647	8.53%
Vancouver, BC	933	2,463,431	1289	2.5	6,055	8.51%
Austin-Round Rock, TX	12420	2,056,405	1,342	2.7	5,917	8.51%
Merced, CA	32900	268,672	981	2.9	3,978	8.51%
Milwaukee-Waukesha-West Allis, WI	33340	1,572,482	1,073	2.6	4,836	8.49%
Tucson, AZ	46060	1,016,206	876	2.6	3,963	8.49%
Hartford-West Hartford-East Hartford, CT	25540	1,206,836	1,344	2.6	6,047	8.47%
Greenville, NC	24780	177,220	847	2.6	3,881	8.46%
Manchester-Nashua, NH	31700	407,761	1,438	2.7	6,355	8.42%
Virginia Beach-Norfolk-Newport News, VA-NC	47260	1,725,937	1,243	2.9	5,150	8.40%

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number of bedrooms	Median monthly income (\$USD or \$CAD)	Per-bedroom shelter costs as a share of income
Fayetteville, NC	22180	380,389	888	2.8	3,774	8.39%
Cape Coral-Fort Myers, FL	15980	722,336	952	2.6	4,409	8.38%
Athens-Clarke County, GA	12020	206,360	844	2.8	3,597	8.37%
Reno, NV	39900	457,387	1,081	2.7	4,838	8.36%
Boulder, CO	14500	322,226	1,463	2.8	6,218	8.36%
Olympia-Tumwater, WA	36500	275,222	1,236	2.7	5,482	8.34%
Denver-Aurora-Lakewood, CO	19740	2,853,077	1,383	2.8	5,994	8.33%
Flagstaff, AZ	22380	140,908	982	2.6	4,591	8.33%
Ames, IA	11180	97,090	991	2.7	4,448	8.31%
Bend-Redmond, OR	13460	181,307	1,184	2.8	5,156	8.31%
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	37980	6,070,500	1,272	2.8	5,500	8.31%
Ocean City, NJ	36140	94,430	1,260	2.9	5,212	8.28%
Barnstable Town, MA	12700	214,276	1,311	2.8	5,658	8.28%
El Paso, TX	21340	842,114	808	2.8	3,510	8.27%
Yuma, AZ	49740	205,631	726	2.4	3,627	8.27%
Longview, WA	31020	105,160	945	2.7	4,220	8.26%
Tallahassee, FL	45220	380,110	954	2.7	4,221	8.23%
Durham-Chapel Hill, NC	20500	559,535	1,047	2.7	4,682	8.22%
Valdosta, GA	46660	144,504	753	2.8	3,311	8.21%
Macon-Bibb County, GA	31420	226,998	758	2.8	3,331	8.21%
Las Cruces, NM	29740	214,207	704	2.7	3,125	8.20%
Punta Gorda, FL	39460	178,465	783	2.6	3,683	8.19%
Deltona-Daytona Beach-Ormond Beach, FL	19660	637,674	841	2.7	3,841	8.18%
Mount Vernon-Anacortes, WA	34580	123,681	1,091	2.6	5,082	8.18%
Savannah, GA	42340	384,024	1,070	2.8	4,711	8.18%
Pueblo, CO	39380	165,123	862	2.8	3,723	8.15%
Hanford-Corcoran, CA	25260	149,785	1,001	2.8	4,436	8.14%
Anchorage, AK	11260	402,557	1,492	2.7	6,850	8.12%
Rocky Mount, NC	40580	147,323	714	2.7	3,248	8.11%
Montréal, QC	462	4,098,927	1002	2.4	5,149	8.11%
Bremerton-Silverdale, WA	14740	264,811	1,284	2.7	5,764	8.11%
Grand Junction, CO	24300	150,083	934	2.8	4,071	8.10%
Madison, WI	31540	648,929	1,206	2.6	5,708	8.10%
Ann Arbor, MI	11460	364,709	1,189	2.7	5,467	8.10%
Phoenix-Mesa-Scottsdale, AZ	38060	4,661,537	1,079	2.8	4,840	8.08%
Charleston-North Charleston, SC	16700	761,155	1,107	2.9	4,805	8.03%
Lubbock, TX	31180	313,910	871	2.7	4,056	8.01%
Lawrence, KS	29940	119,440	1,025	2.7	4,695	8.00%

Metropolitan Area	GeoID	Population (2016)	Median monthly shelter costs (2016 \$)	Average number of bedrooms	Median monthly income (\$USD or \$CAD)	Per-bedroom shelter costs as a share of income
Myrtle Beach-Conway-North Myrtle Beach, SC-NC	34820	449,295	845	2.7	3,899	7.99%
Houston-The Woodlands-Sugar Land, TX	26420	6,772,470	1,126	2.7	5,142	7.97%
Memphis, TN-MS-AR	32820	1,346,437	929	2.8	4,151	7.97%
Salem, OR	41420	418,139	1,009	2.7	4,659	7.96%
Greensboro-High Point, NC	24660	756,139	827	2.7	3,845	7.95%
Norwich-New London, CT	35980	269,801	1,263	2.7	5,892	7.95%
Santa Fe, NM	42140	148,651	979	2.6	4,822	7.94%
Dallas-Fort Worth-Arlington, TX	19100	7,232,599	1,153	2.7	5,318	7.92%
Washington-Arlington-Alexandria, DC-VA-MD-WV	47900	6,133,552	1,800	2.8	7,987	7.92%
Racine, WI	39540	195,140	1,004	2.7	4,642	7.90%
Grand Forks, ND-MN	24220	102,743	836	2.6	4,056	7.88%
Wenatchee, WA	48300	117,665	962	2.8	4,353	7.88%
Waco, TX	47380	264,869	836	2.7	3,883	7.88%
Corpus Christi, TX	18580	452,790	905	2.6	4,481	7.87%
Lakeland-Winter Haven, FL	29460	666,149	804	2.6	3,863	7.87%
San Angelo, TX	41660	120,189	812	2.5	4,091	7.83%
Midland, TX	33260	168,323	1,053	2.5	5,435	7.81%
El Centro, CA	20940	180,883	901	2.8	4,091	7.80%
San Antonio-New Braunfels, TX	41700	2,429,609	990	2.7	4,675	7.78%
Fort Collins, CO	22660	339,993	1,238	2.9	5,539	7.77%
Ocala, FL	36100	349,020	663	2.6	3,282	7.77%
Shreveport-Bossier City, LA	43340	441,767	716	2.7	3,370	7.77%
Albuquerque, NM	10740	913,924	901	2.7	4,246	7.77%
Baltimore-Columbia-Towson, MD	12580	2,798,886	1,409	2.8	6,399	7.76%
Pittsfield, MA	38340	126,903	1,001	2.7	4,868	7.75%
Bangor, ME	12620	151,806	787	2.6	3,944	7.74%
Iowa City, IA	26980	168,828	1,043	2.8	4,815	7.74%
Burlington, NC	15500	159,688	783	2.7	3,758	7.70%
Allentown-Bethlehem-Easton, PA-NJ	10900	835,652	1,147	2.8	5,252	7.70%
Jacksonville, FL	27260	1,478,212	1,033	2.8	4,737	7.69%
Victoria, BC	935	367,770	1126	2.5	5,857	7.69%
Kankakee, IL	28100	110,008	940	2.7	4,576	7.66%
Hagerstown-Martinsburg, MD-WV	25180	263,817	1,028	2.9	4,655	7.66%
Chattanooga, TN-GA	16860	551,200	800	2.7	3,878	7.65%
Glens Falls, NY	24020	126,367	924	2.7	4,535	7.65%
Dover, DE	20100	174,827	1,002	2.9	4,512	7.64%
Flint, MI	22420	408,615	754	2.7	3,663	7.62%
Wichita Falls, TX	48660	150,734	739	2.6	3,746	7.62%

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number of bedrooms	Median monthly income (\$USD or \$CAD)	Per-bedroom shelter costs as a share of income
Rochester, NY	40380	1,078,879	950	2.7	4,595	7.61%
Columbus, OH	18140	2,041,520	1,040	2.7	5,025	7.61%
Yakima, WA	49420	249,636	831	2.7	4,080	7.59%
Prescott, AZ	39140	225,562	834	2.6	4,202	7.59%
Rapid City, SD	39660	143,367	894	2.8	4,258	7.58%
Tyler, TX	46340	225,290	901	2.7	4,381	7.57%
Coeur d'Alene, ID	17660	154,311	935	2.9	4,314	7.56%
Albany-Schenectady-Troy, NY	10580	881,839	1,114	2.7	5,488	7.56%
Tuscaloosa, AL	46220	239,593	811	2.8	3,841	7.55%
Mobile, AL	33660	414,836	807	2.8	3,812	7.55%
Rockford, IL	40420	339,376	862	2.7	4,194	7.54%
Great Falls, MT	24500	81,755	766	2.7	3,762	7.53%
Battle Creek, MI	12980	134,386	743	2.6	3,825	7.53%
Goldsboro, NC	24140	124,150	750	2.9	3,476	7.53%
Brunswick, GA	15260	115,737	808	2.8	3,835	7.52%
Cleveland, TN	17420	123,861	754	2.7	3,740	7.49%
State College, PA	44300	161,464	989	2.6	5,022	7.49%
Palm Bay-Melbourne-Titusville, FL	37340	579,130	883	2.8	4,265	7.49%
Janesville-Beloit, WI	27500	161,620	860	2.7	4,227	7.48%
Cleveland-Elyria, OH	17460	2,055,612	894	2.8	4,344	7.46%
Williamsport, PA	48700	115,248	834	2.7	4,088	7.46%
McAllen-Edinburg-Mission, TX	32580	849,843	608	2.7	3,015	7.45%
Albany, GA	10500	152,506	715	2.8	3,389	7.44%
Brownsville-Harlingen, TX	15180	422,135	585	2.5	3,088	7.44%
Spokane-Spokane Valley, WA	44060	556,264	925	2.8	4,413	7.43%
Asheville, NC	11700	452,319	802	2.6	4,212	7.43%
Duluth, MN-WI	20260	279,227	794	2.5	4,275	7.42%
Toledo, OH	45780	605,221	817	2.7	4,069	7.42%
Lansing-East Lansing, MI	29620	475,099	893	2.7	4,441	7.39%
Salisbury, MD-DE	41540	400,200	965	2.9	4,562	7.39%
Lexington-Fayette, KY	30460	506,751	920	2.8	4,481	7.38%
Richmond, VA	40060	1,282,066	1,139	2.9	5,244	7.38%
Muncie, IN	34620	115,603	666	2.6	3,420	7.37%
Omaha-Council Bluffs, NE-IA	36540	924,495	1,056	2.8	5,187	7.37%
Hot Springs, AR	26300	97,477	670	2.6	3,569	7.36%
Colorado Springs, CO	17820	712,327	1,186	3.0	5,304	7.36%
Akron, OH	10420	702,221	868	2.7	4,300	7.35%
Sebastian-Vero Beach, FL	42680	151,563	792	2.6	4,089	7.34%

Metropolitan Area	GeoID	Population (2016)	Median monthly shelter costs (2016 \$)	Average number of bedrooms	Median monthly income (\$USD or \$CAD)	Per-bedroom shelter costs as a share of income
Nashville-Davidson—Murfreesboro—Franklin, TN	34980	1,865,535	1,018	2.8	5,003	7.34%
Longview, TX	30980	217,446	742	2.7	3,814	7.33%
Detroit-Warren-Dearborn, MI	19820	4,297,617	949	2.8	4,679	7.33%
Auburn-Opelika, AL	12220	158,991	830	2.8	4,005	7.33%
Elmira, NY	21300	86,322	821	2.6	4,272	7.33%
Clarksville, TN-KY	17300	282,075	888	2.8	4,281	7.33%
Greeley, CO	24540	294,932	1,187	3.1	5,283	7.32%
Atlanta-Sandy Springs-Roswell, GA	12060	5,790,210	1,140	3.0	5,218	7.31%
Montgomery, AL	33860	376,163	845	2.9	3,939	7.30%
Pensacola-Ferry Pass-Brent, FL	37860	485,684	866	2.8	4,208	7.30%
Indianapolis-Carmel-Anderson, IN	26900	2,001,737	948	2.7	4,729	7.30%
Gulfport-Biloxi-Pascagoula, MS	25060	391,266	774	2.7	3,870	7.29%
Tulsa, OK	46140	987,958	857	2.7	4,302	7.28%
Springfield, IL	44100	208,892	873	2.7	4,483	7.27%
Minneapolis-St. Paul-Bloomington, MN-WI	33460	3,551,036	1,232	2.8	6,103	7.27%
Scranton--Wilkes-Barre--Hazleton, PA	42540	555,225	780	2.7	3,952	7.26%
Killeen-Temple, TX	28660	435,887	907	2.9	4,350	7.25%
St. Louis, MO-IL	41180	2,807,954	984	2.7	4,982	7.24%
Sherbrooke, QC	433	212,105	811	2.5	4,479	7.24%
Eau Claire, WI	20740	166,614	853	2.8	4,255	7.22%
Hattiesburg, MS	25620	148,803	775	2.8	3,897	7.22%
Fargo, ND-MN	22020	238,124	975	2.7	5,001	7.21%
Cincinnati, OH-KY-IN	17140	2,161,441	989	2.7	5,022	7.21%
Jackson, TN	27180	129,527	728	2.9	3,531	7.19%
Oklahoma City, OK	36420	1,373,211	896	2.7	4,589	7.19%
Louisville/Jefferson County, KY-IN	31140	1,283,297	891	2.7	4,546	7.19%
Charlottesville, VA	16820	229,467	1,080	2.9	5,210	7.18%
Springfield, MO	44180	456,434	760	2.8	3,778	7.18%
Reading, PA	39740	414,812	1,047	3.0	4,941	7.17%
Dayton, OH	19380	800,683	844	2.7	4,286	7.17%
Lancaster, PA	29540	538,500	1,034	2.8	5,111	7.16%
Bowling Green, KY	14540	174,560	757	2.8	3,804	7.16%
Billings, MT	13740	169,736	1,015	2.9	4,836	7.15%
York-Hanover, PA	49620	443,744	1,091	2.9	5,205	7.15%
Little Rock-North Little Rock-Conway, AR	30780	734,381	844	2.8	4,292	7.15%
Monroe, LA	33740	179,470	603	2.7	3,167	7.15%
Barrie, ON	568	197,059	1443	3.0	6,732	7.14%
Lawton, OK	30020	127,762	821	2.7	4,248	7.14%

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number of bedrooms	Median monthly income (\$USD or \$CAD)	Per-bedroom shelter costs as a share of income
Winston-Salem, NC	49180	662,079	776	2.7	3,976	7.13%
Lincoln, NE	30700	326,591	940	2.7	4,945	7.13%
St. George, UT	41100	160,245	992	3.0	4,588	7.12%
Columbia, SC	17900	816,450	898	2.9	4,354	7.11%
Fayetteville-Springdale-Rogers, AR-MO	22220	527,153	838	2.7	4,321	7.11%
Niles-Benton Harbor, MI	35660	154,010	770	2.8	3,924	7.10%
Davenport-Moline-Rock Island, IA-IL	19340	383,352	832	2.7	4,383	7.09%
Kansas City, MO-KS	28140	2,104,115	1,020	2.8	5,115	7.08%
Charlotte-Concord-Gastonia, NC-SC	16740	2,474,314	1,013	2.9	4,998	7.07%
North Bay, ON	575	70,378	1057	2.8	5,350	7.06%
La Crosse-Onalaska, WI-MN	29100	136,936	899	2.7	4,643	7.04%
Granby, QC	450	85,056	822	2.5	4,677	7.03%
London, ON	555	494,069	1024	2.7	5,395	7.03%
Kelowna, BC	915	194,882	1165	2.8	5,927	7.02%
Boise City, ID	14260	690,214	941	2.9	4,597	7.02%
Halifax, NS	205	403,390	1097	2.7	5,794	7.01%
Augusta-Richmond County, GA-SC	12260	595,147	828	2.9	4,045	7.01%
Peterborough, ON	529	121,721	1058	2.8	5,398	7.00%
St. Joseph, MO-KS	41140	127,528	767	2.7	4,101	6.98%
Baton Rouge, LA	12940	835,175	839	2.8	4,374	6.97%
Texarkana, TX-AR	45500	149,721	658	2.7	3,543	6.97%
Roanoke, VA	40220	312,576	832	2.8	4,213	6.97%
Harrisburg-Carlisle, PA	25420	568,033	985	2.8	5,122	6.96%
Gainesville, GA	23580	196,637	937	2.9	4,576	6.96%
Des Moines-West Des Moines, IA	19780	634,725	1,049	2.8	5,475	6.96%
Buffalo-Cheektowaga-Niagara Falls, NY	15380	1,132,804	853	2.7	4,457	6.96%
Oshkosh-Neenah, WI	36780	169,886	895	2.7	4,730	6.96%
Kalamazoo-Portage, MI	28020	336,877	832	2.8	4,337	6.95%
Chilliwack, BC	930	101,512	1064	2.8	5,467	6.95%
Winchester, VA-WV	49020	138,878	1,019	2.9	5,080	6.94%
Pine Bluff, AR	38220	94,071	562	2.6	3,090	6.94%
Amarillo, TX	11100	263,491	832	2.6	4,540	6.93%
Muskegon, MI	34740	173,408	702	2.8	3,689	6.92%
Johnson City, TN	27740	200,449	628	2.7	3,412	6.90%
Sheboygan, WI	43100	115,427	834	2.7	4,505	6.89%
Springfield, OH	44220	134,786	721	2.7	3,901	6.88%
Birmingham-Hoover, AL	13820	1,147,417	852	2.8	4,352	6.88%
Odessa, TX	36220	157,462	802	2.6	4,438	6.88%

Metropolitan Area	GeoID	Population (2016)	Median monthly shelter costs (2016 \$)	Average number of bedrooms	Median monthly income (\$USD or \$CAD)	Per-bedroom shelter costs as a share of income
Jonesboro, AR	27860	129,858	634	2.7	3,476	6.87%
Jackson, MI	27100	158,460	781	2.7	4,167	6.86%
Sherman-Denison, TX	43300	128,235	794	2.7	4,341	6.86%
Sumter, SC	44940	107,396	677	2.9	3,385	6.85%
Guelph, ON	550	151,984	1299	2.8	6,769	6.85%
Kingston, ON	521	161,175	1137	2.8	5,933	6.84%
Wichita, KS	48620	645,447	851	2.8	4,472	6.84%
Kitchener - Cambridge - Waterloo, ON	541	523,894	1231	2.8	6,436	6.83%
Syracuse, NY	45060	656,510	893	2.8	4,725	6.83%
Kokomo, IN	29020	82,568	705	2.7	3,809	6.83%
Nanaimo, BC	938	104,936	964	2.7	5,237	6.82%
Green Bay, WI	24580	318,236	890	2.7	4,834	6.82%
Altoona, PA	11020	124,650	681	2.8	3,620	6.82%
Harrisonburg, VA	25500	132,822	838	2.9	4,281	6.82%
Fort Smith, AR-OK	22900	281,227	616	2.6	3,414	6.81%
Terre Haute, IN	45460	169,518	676	2.5	3,913	6.81%
Belleville, QC	522	103,472	1016	2.8	5,325	6.81%
Abbotsford - Mission, BC	932	180,518	1211	2.9	6,133	6.81%
Evansville, IN-KY	21780	315,948	750	2.6	4,180	6.81%
Morgantown, WV	34060	138,380	685	2.4	4,177	6.81%
Québec, QC	421	800,296	927	2.5	5,447	6.81%
Columbia, MO	17860	176,594	852	2.9	4,396	6.79%
Hickory-Lenoir-Morganton, NC	25860	364,187	654	2.7	3,548	6.77%
Hamilton, ON	537	747,545	1192	2.8	6,289	6.77%
Jackson, MS	27140	580,178	820	2.9	4,219	6.77%
Cheyenne, WY	16940	98,136	1,033	2.9	5,185	6.76%
Brantford, ON	543	134,203	1085	2.8	5,730	6.76%
St. Cloud, MN	41060	195,644	915	2.9	4,718	6.76%
Abilene, TX	10180	170,860	711	2.6	4,001	6.76%
Rome, GA	40660	96,560	769	2.7	4,155	6.76%
Erie, PA	21500	276,207	754	2.7	4,080	6.76%
Kennewick-Richland, WA	28420	283,846	989	2.9	5,085	6.74%
Lebanon, PA	30140	138,863	889	2.8	4,771	6.72%
Winnipeg, MB	602	778,489	1030	2.6	5,900	6.72%
Saginaw, MI	40980	192,326	709	2.8	3,821	6.70%
Canton-Massillon, OH	15940	401,281	789	2.8	4,234	6.70%
Knoxville, TN	28940	869,076	764	2.7	4,155	6.69%
Fond du Lac, WI	22540	102,144	899	2.8	4,859	6.69%

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number of bedrooms	Median monthly income (\$USD or \$CAD)	Per-bedroom shelter costs as a share of income
Drummondville, QC	447	96,118	759	2.6	4,372	6.67%
Joplin, MO	27900	177,805	688	2.7	3,823	6.67%
Salt Lake City, UT	41620	1,186,187	1,192	3.1	5,683	6.67%
Ottawa - Gatineau, ON/QC	505	1,323,783	1229	2.7	6,838	6.66%
Elizabethtown-Fort Knox, KY	21060	150,447	823	2.9	4,328	6.65%
Oshawa, ON	532	379,848	1424	3.0	7,141	6.65%
Raleigh, NC	39580	1,302,946	1,151	2.9	5,974	6.65%
St. Catharines - Niagara, ON	539	406,074	977	2.8	5,250	6.64%
Lafayette, LA	29180	491,528	684	2.7	3,784	6.63%
Pocatello, ID	38540	84,377	798	3.0	4,036	6.63%
Greenville-Anderson-Mauldin, SC	24860	884,975	780	2.8	4,220	6.61%
Binghamton, NY	13780	244,094	772	2.7	4,280	6.60%
Pittsburgh, PA	38300	2,342,299	827	2.7	4,672	6.59%
Huntington-Ashland, WV-KY-OH	26580	359,588	633	2.7	3,535	6.58%
Bay City, MI	13020	104,747	686	2.8	3,730	6.58%
Mansfield, OH	31900	121,107	670	2.8	3,673	6.57%
Moncton, NB	305	144,810	929	2.7	5,239	6.57%
Decatur, IL	19500	106,550	674	2.7	3,850	6.54%
Casper, WY	16220	81,039	919	2.8	4,956	6.53%
Beaumont-Port Arthur, TX	13140	409,901	715	2.7	4,114	6.52%
Spartanburg, SC	43900	329,136	705	2.8	3,880	6.52%
Red Deer, AB	830	100,418	1352	2.9	7,150	6.52%
Topeka, KS	45820	233,068	819	2.7	4,712	6.52%
Greater Sudbury, ON	580	164,689	1051	2.7	5,974	6.52%
Blacksburg-Christiansburg-Radford, VA	13980	183,411	779	2.8	4,246	6.52%
Dothan, AL	20020	147,834	631	2.8	3,420	6.51%
South Bend-Mishawaka, IN-MI	43780	320,740	726	2.7	4,093	6.50%
Cumberland, MD-WV	19060	99,541	681	2.7	3,817	6.49%
Morristown, TN	34100	117,320	673	2.8	3,696	6.48%
Appleton, WI	11540	234,079	963	2.8	5,325	6.47%
Trois-Rivières, QC	442	156,042	727	2.6	4,321	6.47%
Utica-Rome, NY	46540	293,803	777	2.7	4,378	6.46%
Alexandria, LA	10780	154,789	617	2.7	3,511	6.45%
Lima, OH	30620	103,742	703	2.8	3,966	6.44%
Peoria, IL	37900	376,044	830	2.7	4,758	6.41%
Charleston, WV	16620	219,579	595	2.7	3,474	6.41%
Victoria, TX	47020	100,227	774	2.6	4,602	6.40%
Charlottetown, PE	105	69,325	915	2.7	5,297	6.40%

Metropolitan Area	GeoID	Population (2016)	Median monthly shelter costs (2016 \$)	Average number of bedrooms	Median monthly income (\$USD or \$CAD)	Per-bedroom shelter costs as a share of income
Calgary, AB	825	1,392,609	1537	2.9	8,299	6.39%
Sioux Falls, SD	43620	256,479	974	2.9	5,328	6.37%
Saskatoon, SK	725	295,095	1276	2.9	6,917	6.36%
Edmonton, AB	835	1,321,426	1451	2.9	7,871	6.36%
Waterloo-Cedar Falls, IA	47940	170,015	783	2.7	4,490	6.35%
Gadsden, AL	23460	102,564	615	2.8	3,429	6.34%
Columbus, IN	18020	81,402	857	2.7	4,925	6.34%
Grand Rapids-Wyoming, MI	24340	1,047,099	910	2.9	5,018	6.33%
Lynchburg, VA	31340	261,167	724	2.8	4,044	6.32%
Florence-Muscle Shoals, AL	22520	146,534	667	2.8	3,774	6.31%
Danville, IL	19180	78,111	630	2.6	3,790	6.30%
Dalton, GA	19140	143,904	619	2.7	3,612	6.28%
Youngstown-Warren-Boardman, OH-PA	49660	544,746	642	2.7	3,748	6.23%
St. John's, NL	1	205,955	1201	2.9	6,646	6.23%
Wausau, WI	48140	135,603	812	2.9	4,565	6.22%
Warner Robins, GA	47580	189,753	898	2.9	4,951	6.22%
Anniston-Oxford-Jacksonville, AL	11500	114,611	594	2.7	3,474	6.22%
Monroe, MI	33780	149,208	919	2.9	5,067	6.21%
Farmington, NM	22140	115,079	726	2.7	4,334	6.21%
Florence, SC	22500	205,976	630	2.9	3,517	6.20%
Logan, UT-ID	30860	135,439	945	3.2	4,785	6.19%
Dubuque, IA	20220	97,003	895	2.9	5,038	6.19%
Owensboro, KY	36980	119,706	750	2.8	4,361	6.19%
Kawartha Lakes, ON	530	75,423	1003	2.9	5,599	6.17%
Regina, SK	705	236,481	1215	2.8	7,037	6.17%
Kingsport-Bristol-Bristol, TN-VA	28700	307,723	572	2.7	3,401	6.17%
Fort Wayne, IN	23060	431,802	740	2.8	4,293	6.14%
Michigan City-La Porte, IN	33140	110,015	755	2.8	4,459	6.13%
Decatur, AL	19460	152,256	640	2.8	3,715	6.10%
Sault Ste. Marie, ON	590	78,159	848	2.7	5,151	6.10%
Cedar Rapids, IA	16300	267,799	931	2.9	5,282	6.09%
Elkhart-Goshen, IN	21140	203,781	766	2.8	4,518	6.08%
Saguenay, QC	408	160,980	810	2.7	4,937	6.08%
Kamloops, BC	925	103,811	1076	2.9	6,111	6.07%
Huntsville, AL	26620	449,720	864	3.0	4,853	6.02%
Rochester, MN	40340	215,884	1,033	3.0	5,840	5.92%
Windsor, ON	559	329,144	908	2.8	5,499	5.90%
Fredericton, NB	320	101,760	917	2.8	5,573	5.87%

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number of bedrooms	Median monthly income (\$USD or \$CAD)	Per-bedroom shelter costs as a share of income
Lethbridge, AB	810	117,394	1105	3.0	6,288	5.86%
Wheeling, WV-OH	48540	142,982	565	2.6	3,678	5.84%
Saint John, NB	310	126,202	866	2.8	5,311	5.82%
Johnstown, PA	27780	134,732	600	2.8	3,675	5.81%
Chatham-Kent, ON	556	102,042	787	2.8	4,849	5.80%
Provo-Orem, UT	39340	602,543	1,165	3.5	5,774	5.79%
Houma-Thibodaux, LA	26380	211,525	655	2.8	4,161	5.72%
Cape Breton, NS	225	98,722	680	2.7	4,410	5.71%
Lake Charles, LA	29340	207,432	604	2.8	3,834	5.61%
Ogden-Clearfield, UT	36260	656,061	1,090	3.4	5,852	5.55%
Jefferson City, MO	27620	148,915	708	2.8	4,586	5.54%
Sioux City, IA-NE-SD	43580	167,947	713	2.7	4,724	5.50%
Thunder Bay, ON	595	121,621	862	2.8	5,706	5.40%
Parkersburg-Vienna, WV	37620	90,554	557	2.7	3,883	5.35%
Bismarck, ND	13900	131,547	836	2.9	5,461	5.33%
Sarnia, ON	562	96,151	875	2.8	5,899	5.29%
Prince George, BC	970	86,622	1030	3.0	6,536	5.25%
Medicine Hat, AB	805	76,522	978	3.0	6,256	5.21%
Idaho Falls, ID	26820	143,776	821	3.2	5,011	5.11%
Wood Buffalo, AB	860	73,320	2442	3.0	16,126	5.05%

Appendix 3: Changes in space-adjusted shelter costs as a share of income, and population (%), 2006–2016

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number. of bedrooms (2016)
Hinesville, GA	25980	82,687	959	2.9
Oshawa, ON	532	379,848	1,424	3.0
Saguenay, QC	408	160,980	810	2.7
Red Deer, AB	830	100,418	1,352	2.9
Prince George, BC	970	86,622	1,030	3.0
Regina, SK	705	236,481	1,215	2.8
Vineland-Bridgeton, NJ	47220	153,797	1,114	2.6
Brunswick, GA	15260	115,737	808	2.8
Charleston, WV	16620	219,579	595	2.7
St. John's, NL	1	205,955	1,201	2.9
Edmonton, ab	835	1,321,426	1,451	2.9
Sault Ste. Marie, ON	590	78,159	848	2.7
Brantford, ON	543	134,203	1,085	2.8
Abbotsford - Mission, BC	932	180,518	1,211	2.9
Champaign-Urbana, IL	16580	239,872	895	2.4
Barrie, ON	568	197,059	1,443	3.0
Calgary, ON	825	1,392,609	1,537	2.9
Moncton, NB	305	144,810	929	2.7
Greater Sudbury, ON	580	164,689	1,051	2.7
Vancouver, BC	933	2,463,431	1,289	2.5
Saint John, NB	310	126,202	866	2.8
Ottawa - Gatineau, ON/QC	505	1,323,783	1,229	2.7
Kitchener - Cambridge - Waterloo, ON	541	523,894	1,231	2.8
Missoula, MT	33540	116,130	1,004	2.6
Midland, TX	33260	168,323	1,053	2.5
Kamloops, BC	925	103,811	1,076	2.9
Medicine Hat, ab	805	76,522	978	3.0
Toronto, ON	535	5,928,040	1,505	2.7
Winnipeg, MB	602	778,489	1,030	2.6
Odessa, TX	36220	157,462	802	2.6
Guelph, ON	550	151,984	1,299	2.8
Morristown, TN	34100	117,320	673	2.8
St. Catharines - Niagara, ON	539	406,074	977	2.8
Saskatoon, SK	725	295,095	1,276	2.9

Median monthly income (2016 \$)	2006–2016 change in per-bedroom shelter costs as a share of income	2006–2016 change in population	2006–2016 change in income (nominal)	2006–2016 change in adjusted median per- bedroom shelter costs (nominal)	2006–2016 change in average number of bedrooms
3,853	18.3%	11.9%	13.1%	33.8%	3.7%
7,141	16.5%	14.9%	18.5%	38.0%	0.0%
4,937	16.3%	6.2%	27.7%	48.4%	0.0%
7,150	16.1%	21.3%	36.1%	58.1%	0.0%
6,536	15.7%	4.1%	29.5%	49.7%	–3.2%
7,037	15.5%	21.3%	51.8%	75.3%	0.0%
4,093	15.0%	–0.7%	3.5%	19.1%	–2.9%
3,835	14.6%	15.5%	0.3%	14.9%	1.5%
3,474	13.3%	–27.9%	13.7%	28.9%	–0.7%
6,646	13.3%	13.7%	50.9%	70.9%	0.0%
7,871	13.1%	27.7%	49.7%	69.3%	3.6%
5,151	12.7%	–2.4%	24.1%	39.9%	0.0%
5,730	12.6%	7.7%	21.4%	36.7%	0.0%
6,133	12.4%	13.5%	35.0%	51.7%	–3.3%
4,214	12.4%	11.2%	12.7%	26.6%	–9.4%
6,732	12.2%	11.3%	22.3%	37.3%	0.0%
8,299	11.4%	29.0%	45.2%	61.7%	0.0%
5,239	11.0%	14.5%	24.7%	38.5%	–3.6%
5,974	11.0%	4.1%	30.4%	44.7%	0.0%
6,055	10.6%	16.4%	31.6%	45.6%	–3.8%
5,311	10.3%	3.1%	29.8%	43.3%	0.0%
6,838	10.2%	17.1%	23.2%	35.8%	0.0%
6,436	9.8%	16.1%	20.7%	32.5%	0.0%
3,879	9.1%	14.5%	22.0%	33.1%	–0.5%
5,435	8.6%	35.3%	43.5%	55.9%	–9.2%
6,111	8.5%	11.8%	36.8%	48.4%	0.0%
6,256	8.5%	11.2%	30.6%	41.7%	0.0%
6,531	8.5%	15.9%	22.2%	32.6%	0.0%
5,900	8.4%	12.1%	38.0%	49.5%	4.0%
4,438	8.1%	23.5%	32.0%	42.6%	0.2%
6,769	7.7%	19.7%	23.1%	32.6%	0.0%
3,696	7.6%	–11.4%	21.4%	30.7%	1.1%
5,250	7.3%	4.0%	18.7%	27.4%	0.0%
6,917	7.1%	26.2%	62.2%	73.7%	3.6%

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number. of bedrooms (2016)
Wilmington, NC	48900	282,573	1,049	2.8
Dover, DE	20100	174,827	1,002	2.9
Fredericton, NB	320	101,760	917	2.8
Altoona, PA	11020	124,650	681	2.8
Peterborough, ON	529	121,721	1,058	2.8
London, ON	555	494,069	1,024	2.7
Victoria, BC	935	367,770	1,126	2.5
Wenatchee, WA	48300	117,665	962	2.8
Kingsport-Bristol-Bristol, TN-VA	28700	307,723	572	2.7
Lethbridge, AB	810	117,394	1,105	3.0
Valdosta, GA	46660	144,504	753	2.8
Québec, QC	421	800,296	927	2.5
Granby, QC	450	85,056	822	2.5
Panama City, FL	37460	200,893	896	2.6
North Bay, ON	575	70,378	1,057	2.8
Charlottetown, PE	105	69,325	915	2.7
Texarkana, TX-AR	45500	149,721	658	2.7
New Orleans-Metairie, LA	35380	1,268,883	959	2.7
Trois-Rivières, QC	442	156,042	727	2.6
Nanaimo, BC	938	104,936	964	2.7
Hagerstown-Martinsburg, MD-WV	25180	263,817	1,028	2.9
Jacksonville, NC	27340	187,136	940	2.8
Hamilton, ON	537	747,545	1,192	2.8
Wood Buffalo, AB	860	73,320	2,442	3.0
Drummondville, QC	447	96,118	759	2.6
Longview, TX	30980	217,446	742	2.7
Columbus, GA-AL	17980	307,816	861	2.8
Chilliwack, BC	930	101,512	1,064	2.8
Sarnia, ON	562	96,151	875	2.8
Belleville, QC	522	103,472	1,016	2.8
Chatham-Kent, ON	556	102,042	787	2.8
Halifax, NS	205	403,390	1,097	2.7
Redding, CA	39820	179,631	1,014	2.6
Jonesboro, AR	27860	129,858	634	2.7
Sherbrooke, QC	433	212,105	811	2.5
Roanoke, VA	40220	312,576	832	2.8
St. Joseph, MO-KS	41140	127,528	767	2.7

Median monthly income (2016 \$)	2006–2016 change in per-bedroom shelter costs as a share of income	2006–2016 change in population	2006–2016 change in income (nominal)	2006–2016 change in adjusted median per- bedroom shelter costs (nominal)	2006–2016 change in average number of bedrooms
4,180	7.0%	–13.4%	13.6%	21.5%	3.0%
4,512	6.7%	18.4%	13.4%	21.1%	0.3%
5,573	6.7%	18.8%	26.5%	34.9%	–3.4%
3,620	6.7%	–1.5%	6.7%	13.8%	1.2%
5,398	6.6%	4.4%	23.1%	31.2%	0.0%
5,395	6.5%	7.9%	15.8%	23.4%	0.0%
5,857	6.2%	11.4%	31.8%	40.0%	0.0%
4,353	6.1%	10.2%	10.1%	16.9%	4.5%
3,401	6.0%	1.7%	16.8%	23.9%	–0.7%
6,288	5.9%	23.3%	42.5%	51.0%	0.0%
3,311	5.9%	13.5%	15.3%	22.0%	–3.2%
5,447	5.6%	11.8%	31.7%	39.1%	4.2%
4,677	5.5%	24.4%	23.6%	30.4%	4.2%
3,962	4.9%	22.9%	5.4%	10.6%	0.4%
5,350	4.7%	11.0%	31.1%	37.3%	0.0%
5,297	4.4%	18.3%	28.8%	34.5%	–3.6%
3,543	4.4%	11.3%	4.9%	9.5%	–0.9%
4,067	4.2%	23.8%	5.0%	9.5%	–1.3%
4,321	4.2%	10.3%	27.7%	33.0%	4.0%
5,237	4.2%	13.6%	32.6%	38.2%	–3.6%
4,655	4.1%	2.5%	8.6%	13.1%	4.6%
3,929	4.0%	24.2%	20.9%	25.8%	1.0%
6,289	4.0%	7.9%	24.6%	29.5%	3.7%
16,126	3.8%	39.3%	60.0%	66.1%	0.0%
4,372	3.7%	23.1%	26.2%	30.9%	4.0%
3,814	3.6%	4.7%	15.0%	19.1%	0.7%
3,618	3.4%	6.0%	9.9%	13.6%	1.5%
5,467	3.3%	25.5%	33.0%	37.4%	0.0%
5,899	3.2%	8.3%	21.8%	25.8%	0.0%
5,325	3.0%	13.1%	23.7%	27.5%	3.7%
4,849	3.0%	–6.0%	14.1%	17.5%	0.0%
5,794	2.8%	8.2%	28.5%	32.1%	3.8%
3,894	2.7%	–0.2%	5.9%	8.7%	–1.4%
3,476	2.5%	14.4%	10.9%	13.7%	–3.1%
4,479	2.5%	13.5%	27.2%	30.4%	4.2%
4,213	2.5%	5.6%	10.3%	13.1%	0.9%
4,101	2.3%	2.4%	18.3%	21.0%	–1.3%

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number. of bedrooms (2016)
Casper, WY	16220	81,039	919	2.8
Kingston, ON	521	161,175	1,137	2.8
Montréal, QC	462	4,098,927	1,002	2.4
Yuma, AZ	49740	205,631	726	2.4
Atlantic City-Hammonton, NJ	12100	270,991	1,364	2.7
Kawartha Lakes, ON	530	75,423	1,003	2.9
Corvallis, OR	18700	89,385	1,127	2.8
College Station-Bryan, TX	17780	254,716	898	2.7
Chattanooga, TN-GA	16860	551,200	800	2.7
Visalia-Porterville, CA	47300	460,437	970	2.8
Thunder Bay, ON	595	121,621	862	2.8
Kankakee, IL	28100	110,008	940	2.7
Chico, CA	17020	226,864	975	2.6
Ocala, FL	36100	349,020	663	2.6
Grand Forks, ND-MN	24220	102,743	836	2.6
Eugene, OR	21660	369,519	1,000	2.6
Kelowna, BC	915	194,882	1,165	2.8
Las Cruces, NM	29740	214,207	704	2.7
Cape Breton, NS	225	98,722	680	2.7
Shreveport-Bossier City, LA	43340	441,767	716	2.7
Lafayette, LA	29180	491,528	684	2.7
Clarksville, TN-KY	17300	282,075	888	2.8
Lebanon, PA	30140	138,863	889	2.8
Duluth, MN-WI	20260	279,227	794	2.5
Virginia Beach-Norfolk-Newport News, VA-NC	47260	1,725,937	1,243	2.9
Beaumont-Port Arthur, TX	13140	409,901	715	2.7
Fayetteville, NC	22180	380,389	888	2.8
Springfield, IL	44100	208,892	873	2.7
Montgomery, AL	33860	376,163	845	2.9
Williamsport, PA	48700	115,248	834	2.7
New York-Newark-Jersey City, NY-NJ-PA	35620	20,153,634	1,683	2.4
Goldsboro, NC	24140	124,150	750	2.9
Kingston, NY	28740	179,225	1,253	2.6
Burlington, NC	15500	159,688	783	2.7
Great Falls, MT	24500	81,755	766	2.7
Bowling Green, KY	14540	174,560	757	2.8
Lima, OH	30620	103,742	703	2.8

Median monthly income (2016 \$)	2006–2016 change in per-bedroom shelter costs as a share of income	2006–2016 change in population	2006–2016 change in income (nominal)	2006–2016 change in adjusted median per-bedroom shelter costs (nominal)	2006–2016 change in average number of bedrooms
4,956	2.1%	15.1%	29.8%	32.4%	0.5%
5,933	2.0%	5.8%	28.2%	30.7%	3.7%
5,149	1.9%	12.7%	28.8%	31.3%	0.0%
3,627	1.9%	9.6%	16.2%	18.4%	3.1%
4,732	1.6%	–0.2%	8.7%	10.5%	2.1%
5,599	1.1%	1.2%	26.9%	28.2%	0.0%
4,622	0.9%	13.1%	16.2%	17.3%	2.6%
3,519	0.7%	29.5%	16.8%	17.6%	6.3%
3,878	0.7%	10.5%	13.3%	14.0%	–0.2%
3,823	0.6%	9.7%	9.4%	10.0%	2.8%
5,706	0.4%	–1.0%	27.5%	28.1%	3.7%
4,576	0.3%	0.8%	8.7%	9.0%	–2.4%
3,765	0.0%	5.1%	10.5%	10.5%	3.1%
3,282	–0.1%	10.4%	–1.7%	–1.8%	–0.7%
4,056	–0.1%	7.2%	19.5%	19.4%	–0.7%
3,981	–0.4%	9.4%	13.4%	13.0%	0.7%
5,927	–0.7%	20.1%	41.4%	40.4%	0.0%
3,125	–0.7%	10.5%	10.4%	9.6%	2.0%
4,410	–0.7%	–6.8%	30.8%	29.8%	–3.6%
3,370	–0.8%	13.8%	10.3%	9.4%	2.9%
3,784	–1.0%	93.2%	9.9%	8.9%	2.3%
4,281	–1.2%	18.1%	19.6%	18.1%	2.9%
4,771	–1.9%	9.4%	16.4%	14.2%	0.4%
4,275	–1.9%	1.3%	15.9%	13.7%	–2.2%
5,150	–2.2%	4.8%	16.7%	14.1%	0.8%
4,114	–2.3%	8.2%	21.6%	18.8%	1.7%
3,774	–2.4%	11.4%	11.0%	8.4%	–0.9%
4,483	–2.6%	1.8%	11.2%	8.3%	1.2%
3,939	–2.7%	3.8%	10.1%	7.1%	2.8%
4,088	–3.0%	–2.1%	26.1%	22.4%	0.2%
5,991	–3.1%	7.1%	21.3%	17.5%	–0.9%
3,476	–3.1%	9.0%	9.3%	5.9%	1.8%
5,233	–3.2%	–1.9%	19.1%	15.3%	–0.3%
3,758	–3.2%	11.9%	10.2%	6.7%	1.0%
3,762	–3.2%	3.0%	13.2%	9.5%	–3.6%
3,804	–3.2%	54.0%	8.6%	5.0%	2.4%
3,966	–3.3%	–1.9%	7.9%	4.3%	–1.5%

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number. of bedrooms (2016)
Johnson City, TN	27740	200,449	628	2.7
Lancaster, PA	29540	538,500	1,034	2.8
York-Hanover, PA	49620	443,744	1,091	2.9
San Antonio-New Braunfels, TX	41700	2,429,609	990	2.7
Eau Claire, WI	20740	166,614	853	2.8
Springfield, MA	44140	630,283	1,105	2.6
Laredo, TX	29700	271,193	810	2.6
Winston-Salem, NC	49180	662,079	776	2.7
Salisbury, MD-DE	41540	400,200	965	2.9
Myrtle Beach-Conway-North Myrtle Beach, SC-NC	34820	449,295	845	2.7
Windsor, ON	559	329,144	908	2.8
Huntington-Ashland, WV-KY-OH	26580	359,588	633	2.7
Owensboro, KY	36980	119,706	750	2.8
Davenport-Moline-Rock Island, IA-IL	19340	383,352	832	2.7
Florence-Muscle Shoals, AL	22520	146,534	667	2.8
Trenton, NJ	45940	371,023	1,529	2.7
Little Rock-North Little Rock-Conway, AR	30780	734,381	844	2.8
Asheville, NC	11700	452,319	802	2.6
Fort Smith, AR-OK	22900	281,227	616	2.6
Ithaca, NY	27060	104,871	1,043	2.5
Albany, GA	10500	152,506	715	2.8
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	37980	6,070,500	1,272	2.8
Pine Bluff, AR	38220	94,071	562	2.6
Monroe, LA	33740	179,470	603	2.7
Billings, MT	13740	169,736	1,015	2.9
Burlington-South Burlington, VT	15540	217,411	1,320	2.6
Gulfport-Biloxi-Pascagoula, MS	25060	391,266	774	2.7
Pittsfield, MA	38340	126,903	1,001	2.7
Mobile, AL	33660	414,836	807	2.8
Cleveland, TN	17420	123,861	754	2.7
Harrisonburg, VA	25500	132,822	838	2.9
Pensacola-Ferry Pass-Brent, FL	37860	485,684	866	2.8
Houma-Thibodaux, LA	26380	211,525	655	2.8
Fairbanks, AK	21820	100,605	1,375	2.4
Tyler, TX	46340	225,290	901	2.7
Lawrence, KS	29940	119,440	1,025	2.7
Binghamton, NY	13780	244,094	772	2.7

Median monthly income (2016 \$)	2006–2016 change in per-bedroom shelter costs as a share of income	2006–2016 change in population	2006–2016 change in income (nominal)	2006–2016 change in adjusted median per- bedroom shelter costs (nominal)	2006–2016 change in average number of bedrooms
3,412	–3.6%	4.9%	19.7%	15.4%	–0.9%
5,111	–3.7%	8.9%	17.8%	13.5%	–1.7%
5,205	–3.8%	6.6%	19.1%	14.6%	2.8%
4,675	–4.0%	24.7%	24.6%	19.7%	1.5%
4,255	–4.0%	7.5%	9.3%	4.9%	0.5%
4,571	–4.0%	–8.1%	16.3%	11.6%	–1.7%
2,972	–4.0%	17.2%	8.0%	3.6%	–0.9%
3,976	–4.1%	45.0%	6.7%	2.3%	1.7%
4,562	–4.2%	241.6%	19.3%	14.3%	0.4%
3,899	–4.3%	88.4%	14.6%	9.8%	2.7%
5,499	–4.3%	1.8%	10.8%	6.0%	3.7%
3,535	–4.3%	26.0%	22.8%	17.5%	2.2%
4,361	–4.4%	7.2%	28.9%	23.3%	2.1%
4,383	–4.4%	0.9%	16.5%	11.4%	0.0%
3,774	–4.4%	2.7%	20.8%	15.5%	0.0%
6,471	–4.4%	0.9%	18.9%	13.6%	–2.1%
4,292	–4.4%	12.2%	15.1%	10.0%	0.4%
4,212	–4.4%	14.2%	23.8%	18.3%	–3.4%
3,414	–4.4%	–1.9%	15.7%	10.5%	0.3%
4,696	–4.4%	4.4%	23.8%	18.2%	–4.2%
3,389	–4.5%	–7.6%	14.5%	9.3%	0.6%
5,500	–4.6%	4.2%	18.7%	13.3%	–0.6%
3,090	–4.8%	–8.8%	5.0%	0.0%	–0.7%
3,167	–4.8%	6.2%	7.7%	2.5%	–2.2%
4,836	–4.8%	14.5%	32.4%	26.0%	4.4%
5,531	–4.9%	5.6%	22.9%	16.9%	–2.4%
3,870	–4.9%	71.1%	8.0%	2.7%	4.3%
4,868	–5.0%	–3.2%	22.8%	16.7%	–1.5%
3,812	–5.0%	2.6%	18.2%	12.3%	–0.7%
3,740	–5.3%	14.1%	24.8%	18.2%	0.4%
4,281	–5.3%	17.1%	24.3%	17.6%	1.8%
4,208	–5.5%	10.4%	12.0%	5.8%	0.3%
4,161	–5.6%	4.2%	16.5%	10.0%	3.4%
6,444	–5.7%	16.0%	31.4%	24.0%	–5.6%
4,381	–5.7%	15.7%	27.9%	20.7%	0.1%
4,695	–5.7%	6.5%	20.2%	13.3%	–1.0%
4,280	–5.9%	–1.4%	20.0%	12.9%	–1.2%

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number. of bedrooms (2016)
Baltimore-Columbia-Towson, MD	12580	2,798,886	1,409	2.8
Orlando-Kissimmee-Sanford, FL	36740	2,441,257	1,103	2.8
New Haven-Milford, CT	35300	856,875	1,370	2.5
Reading, PA	39740	414,812	1,047	3.0
Columbia, SC	17900	816,450	898	2.9
Danville, IL	19180	78,111	630	2.6
Grand Junction, CO	24300	150,083	934	2.8
Bridgeport-Stamford-Norwalk, CT	14860	944,177	1,923	2.8
Huntsville, AL	26620	449,720	864	3.0
Battle Creek, MI	12980	134,386	743	2.6
Scranton--Wilkes-Barre--Hazleton, PA	42540	555,225	780	2.7
Bloomington, IN	14020	166,336	827	2.7
Oxnard-Thousand Oaks-Ventura, CA	37100	849,738	1,832	2.9
Allentown-Bethlehem-Easton, PA-NJ	10900	835,652	1,147	2.8
Hartford-West Hartford-East Hartford, CT	25540	1,206,836	1,344	2.6
Lynchburg, VA	31340	261,167	724	2.8
El Paso, TX	21340	842,114	808	2.8
Springfield, MO	44180	456,434	760	2.8
Lexington-Fayette, KY	30460	506,751	920	2.8
Cumberland, MD-WV	19060	99,541	681	2.7
Rapid City, SD	39660	143,367	894	2.8
San Diego-Carlsbad, CA	41740	3,317,749	1,725	2.6
Napa, CA	34900	142,166	1,670	2.7
Racine, WI	39540	195,140	1,004	2.7
Rocky Mount, NC	40580	147,323	714	2.7
Albany-Schenectady-Troy, NY	10580	881,839	1,114	2.7
Dothan, AL	20020	147,834	631	2.8
Richmond, VA	40060	1,282,066	1,139	2.9
Macon-Bibb County, GA	31420	226,998	758	2.8
Charleston-North Charleston, SC	16700	761,155	1,107	2.9
Lakeland-Winter Haven, FL	29460	666,149	804	2.6
Harrisburg-Carlisle, PA	25420	568,033	985	2.8
Dalton, GA	19140	143,904	619	2.7
Tallahassee, FL	45220	380,110	954	2.7
Boulder, CO	14500	322,226	1,463	2.8
Miami-Fort Lauderdale-West Palm Beach, FL	33100	6,066,387	1,248	2.4
Jacksonville, FL	27260	1,478,212	1,033	2.8

Median monthly income (2016 \$)	2006–2016 change in per-bedroom shelter costs as a share of income	2006–2016 change in population	2006–2016 change in income (nominal)	2006–2016 change in adjusted median per-bedroom shelter costs (nominal)	2006–2016 change in average number of bedrooms
6,399	–6.0%	5.3%	25.9%	18.4%	0.4%
4,365	–6.0%	23.0%	7.1%	0.6%	1.3%
5,515	–6.1%	1.4%	16.4%	9.4%	–1.3%
4,941	–6.1%	3.4%	18.5%	11.3%	3.8%
4,354	–6.1%	16.4%	13.7%	6.7%	3.3%
3,790	–6.2%	–4.7%	15.7%	8.5%	1.8%
4,071	–6.2%	11.8%	14.7%	7.5%	3.0%
7,510	–6.3%	4.9%	17.5%	10.2%	–1.8%
4,853	–6.3%	19.4%	15.7%	8.4%	1.6%
3,825	–6.5%	–2.6%	5.7%	–1.2%	–4.5%
3,952	–6.5%	0.9%	18.8%	11.0%	–0.3%
3,641	–6.5%	–5.9%	17.1%	9.4%	4.5%
6,678	–6.6%	6.3%	11.1%	3.8%	–1.6%
5,252	–6.6%	4.4%	22.5%	14.4%	–0.4%
6,047	–6.6%	1.5%	17.5%	9.7%	–1.2%
4,044	–6.8%	7.2%	14.9%	7.1%	1.1%
3,510	–6.9%	14.4%	31.2%	22.2%	2.1%
3,778	–6.9%	12.6%	16.3%	8.3%	1.9%
4,481	–7.0%	15.8%	18.1%	9.9%	1.5%
3,817	–7.0%	–0.2%	32.7%	23.4%	2.2%
4,258	–7.0%	20.7%	15.6%	7.5%	0.3%
5,902	–7.0%	12.8%	18.9%	10.5%	0.1%
6,256	–7.2%	6.5%	12.7%	4.5%	1.5%
4,642	–7.2%	–0.5%	9.7%	1.8%	–0.5%
3,248	–7.4%	0.7%	8.5%	0.4%	–1.6%
5,488	–7.4%	3.6%	23.8%	14.6%	–1.2%
3,420	–7.4%	6.9%	20.1%	11.1%	0.4%
5,244	–7.9%	7.2%	17.8%	8.5%	1.0%
3,331	–8.0%	2.6%	8.0%	–0.6%	2.0%
4,805	–8.0%	26.2%	24.2%	14.3%	1.4%
3,863	–8.0%	18.6%	12.6%	3.6%	1.4%
5,122	–8.1%	8.1%	19.7%	10.1%	0.4%
3,612	–8.1%	7.1%	6.7%	–2.0%	–1.3%
4,221	–8.1%	12.5%	18.1%	8.5%	1.3%
6,218	–8.2%	14.1%	20.8%	11.0%	–0.8%
4,280	–8.2%	11.0%	10.1%	1.0%	0.7%
4,737	–8.4%	15.8%	14.3%	4.7%	2.2%

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number. of bedrooms (2016)
Niles-Benton Harbor, MI	35660	154,010	770	2.8
Decatur, IL	19500	106,550	674	2.7
Boise City, ID	14260	690,214	941	2.9
Victoria, TX	47020	100,227	774	2.6
Cheyenne, WY	16940	98,136	1,033	2.9
Fresno, CA	23420	979,915	1,077	2.7
Glens Falls, NY	24020	126,367	924	2.7
Lawton, OK	30020	127,762	821	2.7
Kokomo, IN	29020	82,568	705	2.7
Augusta-Richmond County, GA-SC	12260	595,147	828	2.9
Anniston-Oxford-Jacksonville, AL	11500	114,611	594	2.7
Farmington, NM	22140	115,079	726	2.7
Greensboro-High Point, NC	24660	756,139	827	2.7
St. Louis, MO-IL	41180	2,807,954	984	2.7
Columbus, IN	18020	81,402	857	2.7
Joplin, MO	27900	177,805	688	2.7
Bangor, ME	12620	151,806	787	2.6
Ames, IA	11180	97,090	991	2.7
Washington-Arlington-Alexandria, DC-VA-MD-WV	47900	6,133,552	1,800	2.8
Bakersfield, CA	12540	884,788	1,053	2.8
Tucson, AZ	46060	1,016,206	876	2.6
Baton Rouge, LA	12940	835,175	839	2.8
Waterloo-Cedar Falls, IA	47940	170,015	783	2.7
Portland-South Portland, ME	38860	529,657	1,186	2.6
Birmingham-Hoover, AL	13820	1,147,417	852	2.8
Longview, WA	31020	105,160	945	2.7
Lewiston-Auburn, ME	30340	107,319	935	2.5
Abilene, TX	10180	170,860	711	2.6
Manchester-Nashua, NH	31700	407,761	1,438	2.7
Elizabethtown-Fort Knox, KY	21060	150,447	823	2.9
Yakima, WA	49420	249,636	831	2.7
Omaha-Council Bluffs, NE-IA	36540	924,495	1,056	2.8
San Angelo, TX	41660	120,189	812	2.5
Springfield, OH	44220	134,786	721	2.7
Bremerton-Silverdale, WA	14740	264,811	1,284	2.7
Florence, SC	22500	205,976	630	2.9
Flint, MI	22420	408,615	754	2.7

Median monthly income (2016 \$)	2006–2016 change in per-bedroom shelter costs as a share of income	2006–2016 change in population	2006–2016 change in income (nominal)	2006–2016 change in adjusted median per-bedroom shelter costs (nominal)	2006–2016 change in average number of bedrooms
3,924	–8.4%	–4.8%	12.4%	2.9%	4.3%
3,850	–8.5%	–2.5%	12.7%	3.1%	2.0%
4,597	–8.5%	21.5%	10.7%	1.3%	–0.3%
4,602	–8.5%	–10.9%	24.5%	13.9%	1.1%
5,185	–8.6%	14.9%	22.2%	11.7%	3.6%
4,060	–8.6%	9.9%	14.0%	4.2%	3.2%
4,535	–8.8%	–2.4%	18.4%	8.0%	–2.0%
4,248	–8.8%	17.0%	28.8%	17.5%	3.4%
3,809	–8.8%	–17.6%	5.8%	–3.6%	–2.1%
4,045	–8.9%	13.8%	16.3%	6.0%	2.7%
3,474	–8.9%	1.5%	15.0%	4.8%	1.8%
4,334	–8.9%	–9.0%	28.3%	16.9%	1.4%
3,845	–8.9%	10.3%	11.1%	1.1%	0.1%
4,982	–9.0%	0.5%	20.1%	9.3%	0.6%
4,925	–9.0%	9.3%	18.6%	7.9%	–2.3%
3,823	–9.0%	5.5%	30.5%	18.8%	0.7%
3,944	–9.1%	3.1%	20.6%	9.6%	0.2%
4,448	–9.1%	21.1%	23.2%	12.0%	0.7%
7,987	–9.1%	16.0%	21.4%	10.3%	–0.5%
4,159	–9.1%	13.4%	15.8%	5.2%	2.1%
3,963	–9.1%	7.4%	10.6%	0.5%	2.3%
4,374	–9.2%	9.2%	22.4%	11.1%	–0.2%
4,490	–9.3%	4.7%	23.0%	11.5%	1.2%
5,285	–9.3%	3.1%	24.1%	12.5%	–0.6%
4,352	–9.3%	5.3%	17.3%	6.3%	1.8%
4,220	–9.4%	5.3%	15.8%	4.9%	–1.4%
4,090	–9.6%	–0.2%	29.3%	16.9%	–0.4%
4,001	–9.7%	7.8%	20.7%	9.0%	–0.1%
6,355	–9.8%	1.2%	14.9%	3.7%	–0.4%
4,328	–9.8%	37.3%	25.0%	12.7%	3.5%
4,080	–9.8%	7.1%	25.8%	13.5%	1.3%
5,187	–9.9%	12.6%	20.6%	8.6%	0.7%
4,091	–10.0%	14.1%	39.5%	25.6%	–1.4%
3,901	–10.0%	–5.0%	10.0%	–1.0%	–1.1%
5,764	–10.0%	10.1%	25.2%	12.6%	1.3%
3,517	–10.0%	3.6%	11.2%	0.1%	2.9%
3,663	–10.0%	–7.5%	5.2%	–5.4%	–1.1%

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number. of bedrooms (2016)
Evansville, IN-KY	21780	315,948	750	2.6
Decatur, AL	19460	152,256	640	2.8
Seattle-Tacoma-Bellevue, WA	42660	3,798,902	1,555	2.6
Hickory-Lenoir-Morganton, NC	25860	364,187	654	2.7
Portland-Vancouver-Hillsboro, OR-WA	38900	2,425,325	1,355	2.7
Jefferson City, MO	27620	148,915	708	2.8
Rochester, NY	40380	1,078,879	950	2.7
Bend-Redmond, OR	13460	181,307	1,184	2.8
Lubbock, TX	31180	313,910	871	2.7
Durham-Chapel Hill, NC	20500	559,535	1,047	2.7
Peoria, IL	37900	376,044	830	2.7
Elmira, NY	21300	86,322	821	2.6
Fond du Lac, WI	22540	102,144	899	2.8
Greenville, NC	24780	177,220	847	2.6
Worcester, MA-CT	49340	935,781	1,281	2.7
Morgantown, WV	34060	138,380	685	2.4
Wichita, KS	48620	645,447	851	2.8
Milwaukee-Waukesha-West Allis, WI	33340	1,572,482	1,073	2.6
Hot Springs, AR	26300	97,477	670	2.6
Waco, TX	47380	264,869	836	2.7
Wausau, WI	48140	135,603	812	2.9
Salinas, CA	41500	435,232	1,439	2.5
Riverside-San Bernardino-Ontario, CA	40140	4,527,837	1,357	2.8
Iowa City, IA	26980	168,828	1,043	2.8
Albuquerque, NM	10740	913,924	901	2.7
Wheeling, WV-OH	48540	142,982	565	2.6
Dubuque, IA	20220	97,003	895	2.9
Providence-Warwick, RI-MA	39300	1,614,750	1,218	2.5
Kansas City, MO-KS	28140	2,104,115	1,020	2.8
Santa Fe, NM	42140	148,651	979	2.6
Athens-Clarke County, GA	12020	206,360	844	2.8
Johnstown, PA	27780	134,732	600	2.8
Fayetteville-Springdale-Rogers, AR-MO	22220	527,153	838	2.7
Warner Robins, GA	47580	189,753	898	2.9
Tuscaloosa, AL	46220	239,593	811	2.8
Lansing-East Lansing, MI	29620	475,099	893	2.7
Tulsa, OK	46140	987,958	857	2.7

Median monthly income (2016 \$)	2006–2016 change in per-bedroom shelter costs as a share of income	2006–2016 change in population	2006–2016 change in income (nominal)	2006–2016 change in adjusted median per- bedroom shelter costs (nominal)	2006–2016 change in average number of bedrooms
4,180	–10.1%	–9.8%	16.3%	4.6%	1.0%
3,715	–10.1%	1.8%	14.0%	2.5%	1.4%
6,551	–10.2%	16.4%	29.6%	16.4%	0.4%
3,548	–10.2%	1.2%	8.6%	–2.5%	–0.7%
5,723	–10.3%	13.5%	30.9%	17.4%	0.1%
4,586	–10.3%	3.4%	20.6%	8.2%	–2.0%
4,595	–10.3%	4.2%	15.5%	3.6%	–0.9%
5,156	–10.3%	21.6%	22.2%	9.6%	0.3%
4,056	–10.4%	20.5%	29.4%	16.0%	2.5%
4,682	–10.4%	20.5%	20.7%	8.1%	3.1%
4,758	–10.5%	1.5%	20.8%	8.2%	–0.3%
4,272	–10.5%	–2.6%	29.2%	15.6%	–3.0%
4,859	–10.6%	2.9%	20.1%	7.4%	–1.7%
3,881	–10.6%	8.1%	26.6%	13.2%	–1.3%
5,647	–10.6%	19.2%	14.9%	2.7%	–0.4%
4,177	–10.6%	19.6%	43.2%	28.0%	–7.6%
4,472	–10.7%	9.1%	18.7%	6.0%	2.5%
4,836	–10.8%	4.1%	15.4%	3.0%	–0.3%
3,569	–10.8%	2.4%	27.1%	13.3%	–0.6%
3,883	–10.9%	17.1%	27.8%	14.0%	2.8%
4,565	–10.9%	4.1%	8.6%	–3.2%	–0.2%
5,323	–10.9%	6.1%	16.0%	3.4%	–3.1%
4,853	–11.0%	12.5%	9.4%	–2.7%	1.5%
4,815	–11.1%	21.0%	25.1%	11.3%	3.3%
4,246	–11.1%	12.1%	13.7%	1.1%	2.4%
3,678	–11.1%	–3.0%	35.7%	20.7%	2.8%
5,038	–11.1%	5.0%	33.1%	18.3%	3.2%
5,162	–11.2%	0.1%	19.6%	6.2%	–2.6%
5,115	–11.2%	7.0%	17.2%	4.1%	0.6%
4,822	–11.2%	4.4%	14.7%	1.9%	–1.5%
3,597	–11.2%	8.1%	17.3%	4.2%	4.4%
3,675	–11.2%	–8.3%	28.2%	13.8%	0.3%
4,321	–11.2%	25.7%	22.7%	8.9%	1.1%
4,951	–11.2%	48.8%	22.2%	8.5%	1.0%
3,841	–11.3%	20.5%	29.8%	15.2%	2.2%
4,441	–11.3%	4.6%	9.5%	–2.9%	0.4%
4,302	–11.4%	10.1%	23.9%	9.9%	1.9%

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number. of bedrooms (2016)
Wichita Falls, TX	48660	150,734	739	2.6
Louisville/Jefferson County, KY-IN	31140	1,283,297	891	2.7
Barnstable Town, MA	12700	214,276	1,311	2.8
St. George, UT	41100	160,245	992	3.0
Knoxville, TN	28940	869,076	764	2.7
Sumter, SC	44940	107,396	677	2.9
Hanford-Corcoran, CA	25260	149,785	1,001	2.8
Norwich-New London, CT	35980	269,801	1,263	2.7
Colorado Springs, CO	17820	712,327	1,186	3.0
Olympia-Tumwater, WA	36500	275,222	1,236	2.7
Medford, OR	32780	216,527	994	2.6
Fargo, ND-MN	22020	238,124	975	2.7
San Jose-Sunnyvale-Santa Clara, CA	41940	1,978,816	2,274	2.7
La Crosse-Onalaska, WI-MN	29100	136,936	899	2.7
Austin-Round Rock, TX	12420	2,056,405	1,342	2.7
Lake Charles, LA	29340	207,432	604	2.8
Punta Gorda, FL	39460	178,465	783	2.6
Phoenix-Mesa-Scottsdale, AZ	38060	4,661,537	1,079	2.8
Flagstaff, AZ	22380	140,908	982	2.6
Terre Haute, IN	45460	169,518	676	2.5
Nashville-Davidson--Murfreesboro--Franklin, TN	34980	1,865,535	1,018	2.8
Oshkosh-Neenah, WI	36780	169,886	895	2.7
Topeka, KS	45820	233,068	819	2.7
Fort Collins, CO	22660	339,993	1,238	2.9
Oklahoma City, OK	36420	1,373,211	896	2.7
Toledo, OH	45780	605,221	817	2.7
Rochester, MN	40340	215,884	1,033	3.0
Indianapolis-Carmel-Anderson, IN	26900	2,001,737	948	2.7
Sioux Falls, SD	43620	256,479	974	2.9
Amarillo, TX	11100	263,491	832	2.6
Houston-The Woodlands-Sugar Land, TX	26420	6,772,470	1,126	2.7
Killeen-Temple, TX	28660	435,887	907	2.9
Boston-Cambridge-Newton, MA-NH	14460	4,794,447	1,656	2.6
Anchorage, AK	11260	402,557	1,492	2.7
Salem, OR	41420	418,139	1,009	2.7
Charlottesville, VA	16820	229,467	1,080	2.9
Sacramento--Roseville--Arden-Arcade, CA	40900	2,296,418	1,381	2.8

Median monthly income (2016 \$)	2006–2016 change in per-bedroom shelter costs as a share of income	2006–2016 change in population	2006–2016 change in income (nominal)	2006–2016 change in adjusted median per-bedroom shelter costs (nominal)	2006–2016 change in average number of bedrooms
3,746	–11.4%	2.9%	21.5%	7.7%	0.5%
4,546	–11.5%	5.1%	20.9%	7.0%	0.0%
5,658	–11.5%	–4.7%	19.2%	5.5%	–1.2%
4,588	–11.6%	26.9%	19.7%	5.8%	4.3%
4,155	–11.8%	30.1%	15.1%	1.5%	0.0%
3,385	–11.8%	2.8%	14.5%	1.0%	1.9%
4,436	–11.8%	2.5%	23.3%	8.7%	–0.5%
5,892	–11.9%	2.5%	18.4%	4.3%	–0.7%
5,304	–11.9%	18.6%	19.0%	4.8%	2.5%
5,482	–12.0%	17.3%	24.3%	9.4%	0.9%
4,047	–12.0%	9.9%	19.6%	5.2%	4.3%
5,001	–12.0%	27.6%	29.9%	14.3%	0.5%
9,170	–12.0%	10.9%	36.5%	20.0%	–0.5%
4,643	–12.0%	6.0%	23.4%	8.5%	2.8%
5,917	–12.1%	36.5%	34.3%	18.0%	0.4%
3,834	–12.2%	9.2%	14.7%	0.8%	4.1%
3,683	–12.3%	15.6%	0.1%	–12.3%	2.9%
4,840	–12.5%	15.4%	12.0%	–2.0%	1.2%
4,591	–12.5%	12.8%	26.6%	10.8%	–1.4%
3,913	–12.5%	1.1%	28.1%	12.1%	–2.9%
5,003	–12.5%	28.2%	25.9%	10.1%	1.2%
4,730	–12.5%	5.8%	15.7%	1.2%	1.1%
4,712	–12.5%	1.7%	27.6%	11.6%	–0.6%
5,539	–12.5%	23.1%	23.7%	8.2%	–0.4%
4,589	–12.6%	17.0%	31.0%	14.5%	2.4%
4,069	–12.6%	–7.4%	8.4%	–5.3%	0.1%
5,840	–12.6%	20.2%	16.4%	1.7%	2.0%
4,729	–12.7%	19.9%	11.6%	–2.5%	1.1%
5,328	–12.9%	21.3%	24.6%	8.5%	2.7%
4,540	–12.9%	9.3%	33.0%	15.9%	3.3%
5,142	–12.9%	22.2%	22.8%	7.0%	2.7%
4,350	–12.9%	22.5%	23.0%	7.1%	4.0%
6,865	–13.0%	7.6%	28.4%	11.7%	–0.3%
6,850	–13.1%	12.1%	31.5%	14.2%	2.3%
4,659	–13.2%	8.7%	23.4%	7.1%	0.0%
5,210	–13.4%	21.3%	23.4%	6.9%	3.4%
5,338	–13.4%	11.1%	12.5%	–2.6%	0.6%

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number. of bedrooms (2016)
Hattiesburg, MS	25620	148,803	775	2.8
Bellingham, WA	13380	216,800	1,156	2.7
Port St. Lucie, FL	38940	465,208	937	2.6
Santa Rosa, CA	42220	503,070	1,621	2.6
Spartanburg, SC	43900	329,136	705	2.8
Cincinnati, OH-KY-IN	17140	2,161,441	989	2.7
Savannah, GA	42340	384,024	1,070	2.8
Salt Lake City, UT	41620	1,186,187	1,192	3.1
Des Moines-West Des Moines, IA	19780	634,725	1,049	2.8
Sheboygan, WI	43100	115,427	834	2.7
Gainesville, FL	23540	281,796	865	2.6
Chicago-Naperville-Elgin, IL-IN-WI	16980	9,512,968	1,267	2.6
Erie, PA	21500	276,207	754	2.7
Lincoln, NE	30700	326,591	940	2.7
Las Vegas-Henderson-Paradise, NV	29820	2,155,664	1,088	2.7
Pocatello, ID	38540	84,377	798	3.0
Memphis, TN-MS-AR	32820	1,346,437	929	2.8
Columbus, OH	18140	2,041,520	1,040	2.7
Pittsburgh, PA	38300	2,342,299	827	2.7
Palm Bay-Melbourne-Titusville, FL	37340	579,130	883	2.8
St. Cloud, MN	41060	195,644	915	2.9
Tampa-St. Petersburg-Clearwater, FL	45300	3,032,171	964	2.5
Gadsden, AL	23460	102,564	615	2.8
Columbia, MO	17860	176,594	852	2.9
Ocean City, NJ	36140	94,430	1,260	2.9
Atlanta-Sandy Springs-Roswell, GA	12060	5,790,210	1,140	3.0
Pueblo, CO	39380	165,123	862	2.8
Alexandria, LA	10780	154,789	617	2.7
Charlotte-Concord-Gastonia, NC-SC	16740	2,474,314	1,013	2.9
Sherman-Denison, TX	43300	128,235	794	2.7
Yuba City, CA	49700	171,926	1,057	2.7
Rockford, IL	40420	339,376	862	2.7
Logan, UT-ID	30860	135,439	945	3.2
Spokane-Spokane Valley, WA	44060	556,264	925	2.8
Santa Cruz-Watsonville, CA	42100	274,673	1,837	2.5
Canton-Massillon, OH	15940	401,281	789	2.8
Dayton, OH	19380	800,683	844	2.7

Median monthly income (2016 \$)	2006–2016 change in per-bedroom shelter costs as a share of income	2006–2016 change in population	2006–2016 change in income (nominal)	2006–2016 change in adjusted median per- bedroom shelter costs (nominal)	2006–2016 change in average number of bedrooms
3,897	–13.5%	9.6%	34.1%	16.0%	2.4%
4,701	–13.5%	16.6%	28.8%	11.4%	5.1%
4,062	–13.6%	18.6%	4.3%	–9.9%	2.3%
6,161	–13.7%	7.7%	21.6%	4.9%	–0.3%
3,880	–13.8%	21.4%	17.3%	1.1%	–0.4%
5,022	–13.9%	2.7%	19.8%	3.1%	0.2%
4,711	–13.9%	20.0%	31.7%	13.4%	2.3%
5,683	–13.9%	11.2%	27.3%	9.5%	2.4%
5,475	–14.0%	19.2%	23.1%	5.8%	1.6%
4,505	–14.0%	0.6%	16.6%	0.2%	–3.5%
3,773	–14.2%	15.1%	22.1%	4.8%	0.8%
5,502	–14.2%	0.1%	15.8%	–0.7%	–0.2%
4,080	–14.3%	–1.3%	23.5%	5.9%	–1.2%
4,945	–14.3%	14.4%	22.3%	4.9%	1.6%
4,532	–14.4%	21.3%	1.6%	–13.1%	0.0%
4,036	–14.5%	–3.3%	29.7%	10.9%	–0.7%
4,151	–14.5%	6.2%	18.3%	1.2%	0.7%
5,025	–14.5%	18.3%	20.8%	3.3%	–0.4%
4,672	–14.5%	–1.2%	29.6%	10.8%	1.1%
4,265	–14.6%	8.4%	10.5%	–5.7%	0.9%
4,718	–14.6%	7.0%	16.8%	–0.3%	1.2%
4,260	–14.8%	12.4%	16.9%	–0.5%	2.1%
3,429	–14.9%	–0.8%	30.4%	11.0%	3.5%
4,396	–14.9%	12.3%	25.4%	6.8%	1.1%
5,212	–14.9%	–3.4%	25.0%	6.4%	2.6%
5,218	–14.9%	12.8%	12.7%	–4.1%	2.0%
3,723	–14.9%	8.0%	21.3%	3.2%	1.8%
3,511	–14.9%	2.6%	20.5%	2.5%	–0.3%
4,998	–14.9%	56.3%	19.1%	1.3%	1.7%
4,341	–15.0%	8.2%	20.2%	2.2%	1.2%
4,231	–15.2%	6.3%	12.1%	–4.9%	0.0%
4,194	–15.2%	–2.5%	10.7%	–6.1%	1.0%
4,785	–15.2%	21.1%	35.0%	14.4%	–0.3%
4,413	–15.3%	24.5%	24.9%	5.8%	3.4%
6,468	–15.4%	10.0%	24.8%	5.6%	0.9%
4,234	–15.4%	–2.2%	20.8%	2.2%	1.3%
4,286	–15.4%	–4.6%	15.2%	–2.6%	0.4%

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number. of bedrooms (2016)
Madison, WI	31540	648,929	1,206	2.6
Mount Vernon-Anacortes, WA	34580	123,681	1,091	2.6
Muncie, IN	34620	115,603	666	2.6
San Francisco-Oakland-Hayward, CA	41860	4,679,166	2,028	2.5
Fort Wayne, IN	23060	431,802	740	2.8
Youngstown-Warren-Boardman, OH-PA	49660	544,746	642	2.7
Denver-Aurora-Lakewood, CO	19740	2,853,077	1,383	2.8
Syracuse, NY	45060	656,510	893	2.8
Kennewick-Richland, WA	28420	283,846	989	2.9
Dallas-Fort Worth-Arlington, TX	19100	7,232,599	1,153	2.7
Auburn-Opelika, AL	12220	158,991	830	2.8
Naples-Immokalee-Marco Island, FL	34940	365,136	1,162	2.6
Buffalo-Cheektowaga-Niagara Falls, NY	15380	1,132,804	853	2.7
Bay City, MI	13020	104,747	686	2.8
Winchester, VA-WV	49020	138,878	1,019	2.9
Rome, GA	40660	96,560	769	2.7
Muskegon, MI	34740	173,408	702	2.8
Janesville-Beloit, WI	27500	161,620	860	2.7
Jackson, TN	27180	129,527	728	2.9
Raleigh, NC	39580	1,302,946	1,151	2.9
McAllen-Edinburg-Mission, TX	32580	849,843	608	2.7
Cleveland-Elyria, OH	17460	2,055,612	894	2.8
Parkersburg-Vienna, WV	37620	90,554	557	2.7
Appleton, WI	11540	234,079	963	2.8
South Bend-Mishawaka, IN-MI	43780	320,740	726	2.7
Utica-Rome, NY	46540	293,803	777	2.7
Jackson, MS	27140	580,178	820	2.9
Greenville-Anderson-Mauldin, SC	24860	884,975	780	2.8
Ogden-Clearfield, UT	36260	656,061	1,090	3.4
Deltona-Daytona Beach-Ormond Beach, FL	19660	637,674	841	2.7
Provo-Orem, UT	39340	602,543	1,165	3.5
Green Bay, WI	24580	318,236	890	2.7
Vallejo-Fairfield, CA	46700	440,207	1,600	2.8
Minneapolis-St. Paul-Bloomington, MN-WI	33460	3,551,036	1,232	2.8
Greeley, CO	24540	294,932	1,187	3.1
Blacksburg-Christiansburg-Radford, VA	13980	183,411	779	2.8
Michigan City-La Porte, IN	33140	110,015	755	2.8

Median monthly income (2016 \$)	2006–2016 change in per-bedroom shelter costs as a share of income	2006–2016 change in population	2006–2016 change in income (nominal)	2006–2016 change in adjusted median per-bedroom shelter costs (nominal)	2006–2016 change in average number of bedrooms
5,708	–15.5%	19.5%	21.1%	2.4%	0.4%
5,082	–15.5%	6.9%	26.5%	6.9%	0.5%
3,420	–15.7%	0.6%	18.9%	0.3%	1.8%
8,056	–15.9%	11.9%	37.2%	15.3%	–0.4%
4,293	–16.1%	5.6%	11.8%	–6.1%	1.5%
3,748	–16.2%	–7.2%	12.4%	–5.8%	0.3%
5,994	–16.2%	18.5%	30.8%	9.6%	0.7%
4,725	–16.2%	1.0%	26.4%	5.9%	0.7%
5,085	–16.2%	25.6%	24.6%	4.4%	2.8%
5,318	–16.3%	20.4%	22.7%	2.7%	1.5%
4,005	–16.3%	26.4%	25.2%	4.7%	5.9%
5,102	–16.5%	16.0%	9.6%	–8.6%	2.1%
4,457	–16.6%	–0.4%	24.9%	4.2%	–0.4%
3,730	–16.6%	–3.4%	7.1%	–10.6%	3.6%
5,080	–16.6%	15.3%	28.9%	7.6%	3.2%
4,155	–16.6%	1.3%	31.6%	9.7%	2.8%
3,689	–16.6%	–1.0%	8.3%	–9.7%	–0.4%
4,227	–16.7%	1.6%	9.8%	–8.5%	2.5%
3,531	–16.9%	15.6%	15.5%	–3.9%	0.3%
5,974	–16.9%	30.9%	27.7%	6.1%	2.5%
3,015	–16.9%	21.3%	26.2%	4.9%	4.7%
4,344	–16.9%	–2.8%	13.5%	–5.7%	–0.5%
3,883	–16.9%	–43.3%	27.0%	5.5%	–2.1%
5,325	–17.0%	7.7%	24.8%	3.6%	–0.6%
4,093	–17.3%	0.9%	12.2%	–7.2%	–0.6%
4,378	–17.3%	–1.2%	30.5%	8.0%	0.4%
4,219	–17.3%	9.5%	20.6%	–0.3%	3.7%
4,220	–17.5%	47.0%	23.3%	1.7%	2.0%
5,852	–17.6%	32.3%	25.8%	3.7%	3.3%
3,841	–17.6%	28.4%	12.7%	–7.1%	3.9%
5,774	–17.7%	27.0%	37.0%	12.7%	3.4%
4,834	–17.8%	6.4%	17.6%	–3.3%	0.0%
6,158	–17.8%	6.9%	20.1%	–1.3%	–2.5%
6,103	–17.8%	11.8%	17.7%	–3.3%	0.3%
5,283	–18.0%	24.5%	20.7%	–1.0%	3.8%
4,246	–18.1%	22.8%	39.6%	14.4%	2.2%
4,459	–18.1%	–0.4%	13.7%	–6.8%	2.2%

Metropolitan Area	GeolD	Population (2016)	Median monthly shelter costs (2016 \$)	Average number. of bedrooms (2016)
Akron, OH	10420	702,221	868	2.7
State College, PA	44300	161,464	989	2.6
Detroit-Warren-Dearborn, MI	19820	4,297,617	949	2.8
Gainesville, GA	23580	196,637	937	2.9
Modesto, CA	33700	541,560	1,189	2.9
Madera, CA	31460	154,697	1,078	2.9
Ann Arbor, MI	11460	364,709	1,189	2.7
Cape Coral-Fort Myers, FL	15980	722,336	952	2.6
Bismarck, ND	13900	131,547	836	2.9
Monroe, MI	33780	149,208	919	2.9
Kalamazoo-Portage, MI	28020	336,877	832	2.8
Saginaw, MI	40980	192,326	709	2.8
Stockton-Lodi, CA	44700	733,709	1,289	2.9
Prescott, AZ	39140	225,562	834	2.6
Merced, CA	32900	268,672	981	2.9
Reno, NV	39900	457,387	1,081	2.7
Brownsville-Harlingen, TX	15180	422,135	585	2.5
San Luis Obispo-Paso Robles-Arroyo Grande, CA	42020	282,887	1,495	2.6
Elkhart-Goshen, IN	21140	203,781	766	2.8
Cedar Rapids, IA	16300	267,799	931	2.9
Coeur d'Alene, ID	17660	154,311	935	2.9
Corpus Christi, TX	18580	452,790	905	2.6
Mansfield, OH	31900	121,107	670	2.8
Jackson, MI	27100	158,460	781	2.7
Idaho Falls, ID	26820	143,776	821	3.2
Sioux City, IA-NE-SD	43580	167,947	713	2.7
Grand Rapids-Wyoming, MI	24340	1,047,099	910	2.9
Sebastian-Vero Beach, FL	42680	151,563	792	2.6
El Centro, CA	20940	180,883	901	2.8

Median monthly income (2016 \$)	2006–2016 change in per-bedroom shelter costs as a share of income	2006–2016 change in population	2006–2016 change in income (nominal)	2006–2016 change in adjusted median per-bedroom shelter costs (nominal)	2006–2016 change in average number of bedrooms
4,300	–18.5%	0.2%	15.9%	–5.6%	0.2%
5,022	–18.6%	14.6%	47.4%	20.0%	1.1%
4,679	–18.8%	–3.8%	8.0%	–12.4%	–0.3%
4,576	–18.9%	13.5%	22.9%	–0.3%	0.0%
4,525	–19.1%	5.7%	11.8%	–9.5%	1.6%
4,305	–19.2%	5.7%	32.2%	6.8%	1.2%
5,467	–19.4%	6.0%	15.5%	–7.0%	0.6%
4,409	–19.6%	26.4%	9.0%	–12.4%	2.7%
5,461	–19.6%	30.1%	38.0%	11.0%	1.6%
5,067	–19.6%	–3.8%	11.7%	–10.3%	1.4%
4,337	–19.9%	5.4%	19.2%	–4.5%	3.0%
3,821	–20.0%	–6.8%	19.5%	–4.4%	0.9%
4,960	–20.2%	9.0%	14.6%	–8.6%	2.2%
4,202	–20.4%	8.4%	24.0%	–1.2%	2.5%
3,978	–20.8%	9.4%	18.0%	–6.6%	2.6%
4,838	–20.9%	14.6%	11.0%	–12.2%	2.0%
3,088	–21.2%	8.9%	33.9%	5.6%	–0.4%
5,880	–22.0%	10.1%	40.5%	9.6%	4.5%
4,518	–22.0%	2.9%	16.1%	–9.5%	1.1%
5,282	–22.2%	7.4%	37.7%	7.2%	5.3%
4,314	–22.3%	17.3%	28.3%	–0.3%	0.5%
4,481	–22.3%	9.3%	44.9%	12.6%	2.2%
3,673	–22.5%	–4.6%	14.8%	–11.0%	1.9%
4,167	–23.0%	–3.3%	16.5%	–10.2%	–0.3%
5,011	–23.2%	22.5%	34.5%	3.3%	3.7%
4,724	–23.5%	16.1%	32.3%	1.2%	–1.1%
5,018	–25.5%	35.3%	29.2%	–3.7%	2.8%
4,089	–26.5%	16.5%	12.3%	–17.4%	0.8%
4,091	–31.7%	12.8%	32.4%	–9.6%	5.6%

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