Cost-of-Living Indexes During a Stay-in-Place Order

By Rachel Soloveichik[*]

Abstract

Major spending categories like full service restaurant meals, live entertainment, and personal services are generally unavailable during a stay-in-place order. As a result, the price data needed to accurately calculate inflation during the Covid-19 pandemic is inherently unobservable. The standard methodology used by the Bureau of Labor Statistics (BLS) assigns a modest inflation rate to those unavailable products (BLS 2018). In contrast, price measurement theory suggests that unavailable products likely have a high 'true' inflation rate (Diewert and Fox 2020) (Diewert et al. 2019) (Diewert 2003). This gap between the price data actually observable and the price data needed to accurately calculate inflation creates uncertainty in the 'true' cost-of-living index.

This paper uses previous research on the value of urban amenities (Glaeser, Kolko, and Saez 2001) to calculate a plausible lower bound on the 'true' cost-of-living increase associated with a hypothetical long-term nationwide stay-in-place order. The paper then collects data on the actual stay-in-place orders implemented by each region of the United States and calculates the actual effect of each stay-in-place order on regional inflation. In the first quarter of 2020, the average American spent 10 percent of their time under a regional stay-in-place order and endured 'true' inflation that was at least 2.8 percent higher than the published CPI. This faster inflation rate reinforces the 1.7 percent decline in real consumption calculated using the standard methodology for measuring aggregate economic statistics (BEA 2020). In other words, current economic statistics may capture less than half of the 'true' decline in real consumption in the early stages of the Covid-19 pandemic.

JEL Codes: E31, I18, K32

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Introduction

In the short-term, the Covid-19 pandemic reduced the consumer price index (CPI) published by the Bureau of Labor Statistics (BLS). To begin, large price decreases during the Covid-19 pandemic are both common and well reported. For example, airline ticket prices plunged in early March (Sampson 2020). On the other hand, large price increases during emergencies are discouraged by both local laws and social norms (Tarrant 2015). In aggregate, the published CPI showed a modest decrease in March (BLS 2020b).

However, the published CPI may not match a 'true' cost-of-living index during the Covid-19 pandemic. One major issue is that the methodology for imputing missing prices relies on the standard assumption that products with unobservable price data have similar inflation rates to comparable products with observable price data (Gomes 2018). During normal economic times, the standard assumption appears to be quite accurate, and therefore the published CPI tracks closely with a 'true' cost-of-living index that is consistent with price measurement theory (Bradley 2003). Under a full stay-in-place order, approximately one-quarter of the normal consumer spending basket is unavailable and therefore has no price data for analysts to collect. Price measurement theory (Diewert and Fox 2020) (Diewert et al. 2019) (Diewert 2003) suggests that the 'true' inflation rate for those unavailable products is quite high. As a result, the standard assumption does not necessarily hold and the published CPI may underestimate 'true' growth in cost of living according to price measurement theory.

This paper is divided into five sections. Section 1 briefly reviews the pre-existing national accounting literature on measuring prices when products are unavailable in a certain time period. Section 2 discusses the specific goods and services that are typically unavailable during the Covid-19 pandemic. Section 3 then uses pre-existing research on urban amenities to estimate a lower bound on 'true' inflation suffered by each region due to the Covid-19 pandemic. Appendix A shows preliminary estimates of how a full shutdown of nonessential businesses impacts each of the individual commodities tracked by the Bureau of Economic Analysis (BEA) in its published table 'Personal Consumption Expenditures by Type of Product' (2.4.5U). Finally, Appendix B shows preliminary estimates of the time spent under stay-in-place orders for each metropolitan statistical area and nonmetropolitan area tracked by BEA in its published regional accounts. In turn, these shutdown times are then used to estimate the 'true' inflation rate for each region during the first quarter of 2020.

1. Brief Review of National Accounting Theory

The published CPI typically uses a matched model technique to measure price changes over time. In other words, analysts define a specific product and track prices for that exact product in the exact same store over time (BLS 2018). This matched model technique implicitly controls for all aspects of product availability and quality, which are constant for the exact same product and the exact same store over time. In cases where the matched model technique is not possible, analysts uses a variety of econometric techniques to impute the price change that might have been observed if it were possible to compare prices for the exact same product in the exact same store over time. National accountants have been discussing this price index methodology for decades, and there is a rich economic literature discussing possible differences between the CPI and 'true' prices (Shapiro and Wilcox 1996), (Gordon 2009), and (Reinsdorf and Triplett 2009). This paper draws on that economic literature to model how Covid-19 might create a wedge between the published CPI and 'true' prices.

Previous Research on Unavailable Goods and Services

Countries rarely experience the withdrawal of popular product categories from the market, and so there are few national accounting papers studying this phenomenon. However, the introduction of new product categories is common and typically studied under the term 'new goods' (Hausman 1999), (Hausman 1997), (Petrin 2002), (Goolsbee and Petrin 2004), (Berndt et al. 1996), (Nordhaus 1996), (Diewert and Feenstra 2019), and (Diewert et al. 2019). From a theoretical perspective, the new 'true' price increase associated with the unavailability of a product category should be the exact converse of the 'true' price decrease associated with the introduction of a product category or retail channel. In other words, the 'new goods' literature can be used to study unavailable goods and services.

Conceptually, the withdrawal of a retail channel is similar to the withdrawal of a product category. The only difference is that the physical product is still available, but the unique services associated with a particular retail channel are not. For example, consumers may still be able to buy clothing online or at department stores like Walmart, but they cannot benefit from the broad selection and expert fashion advice available at a specialty clothing store. Just like product categories, there is little research on the sudden withdrawal of popular retail channels. But the introduction of new retail channels is common and typically studied under the term ‘outlet substitution bias’ (Reinsdorf 1993), (Hausman and Liebtag 2009), and (Greenlees and Mclelland 2008).

This draft paper is being written in May 2020, and so focuses on how the Covid-19 pandemic increased the ‘true’ cost of living in the first quarter of 2020. Hopefully, a solution to Covid-19 will be discovered soon, and all the unavailable goods and services can be restored quickly. If that happens, then price increases imputed for the temporarily unavailable products should be reversed and the ‘true’ cost of living will once again fall to the inflation rate calculated using the standard methodology. It is also possible that some nonessential goods and services will only become available after they are modified to ensure safety. If these modifications are captured by the standard methodology, then the published CPI should rise to match the ‘true’ cost of living estimated in this paper. However, it may be the case that some products will remain unavailable in the long-term and so ‘true’ cost of living will diverge from the published CPI over the long term.

Consumer utility depends jointly on current market purchases, household inventories of previously purchased goods, and home production (Becker 1965). In many cases, household inventories of previously purchased goods and home production can partially substitute for products that are currently unavailable in the market sector. Researchers who are focused on the dynamic problem of measuring consumer utility throughout the Covid-19 pandemic may need to model both household inventories and home production carefully. However, this paper focuses on the narrower problem of measuring the cost of purchasing a market basket of fixed quality in a static world. This cost is often referred to as a ‘cost-of-living index’ and it is the cost already studied in the ‘new goods literature’, the ‘outlet substitution bias’ literature, and other price index research. As a result, the cost-of-living index presented in this paper should be comparable to other estimates in the theoretical literature.

Neither the ‘new goods’ literature nor the ‘outlet substitution bias’ literature studies quality change directly. Even when measures of quality are used in procedures to impute prices for unavailable products, those imputations are always based on quality-adjusted prices for similar products (BLS 2019). In contrast, the unavailable products studied in this paper are generally so different from available products that such an imputation would not be economically meaningful. For example, in-person restaurant dining is a different experience than at-home consumption of take-out food. Hence, the price a restaurant charges for their take-out meals is not necessarily a valid proxy for the consumer welfare loss associated with a missing in-person dining experience. Accordingly, this paper does not attempt to impute prices for unavailable products based on quality adjusted prices for close substitutes.

Other Potential Price Impacts from the Covid-19 Pandemic

The phrase 'cost-of-living' in the price measurement literature only refers to the cost of purchasing a market basket, which provides a given level of utility over time. This paper is focused on the theoretical problem of imputing prices for unavailable goods and services in the early stages of the Covid-19 pandemic. Other price researchers have studied the more practical problems of constructing a market basket during the Covid-19 pandemic (Cavallo 2020) (Tanzi 2020) (Diewert and Fox 2020) and measuring prices when in-person data collection is not possible (BLS 2020a). These practical problems are definitely important for price measurement, but they are not directly related to the theoretical problem of unavailable goods and services studied in this paper.

Early in the Covid-19 pandemic, there were many anecdotal reports of individual stores not having food, cleaning supplies, or other essential goods available (Zumbach 2020). However, it is common for individual products to be out of stock at one store even in normal times. For example, one study used BLS data to estimate that 4.3 percent of grocery store products were missing when BLS data collectors visited (Matsa 2011). Shoppers can generally compensate for partial product unavailability by selecting a close substitute or visiting another store (Andersen 1996). As a result, a slight decrease in the variety of products available for purchase in one particular retailer is unlikely to change the aggregate cost-of-living index much. For simplicity, this paper does not study changes in the availability of essential goods and services during the Covid-19 pandemic.[1]

Similarly, there are many anecdotal reports about businesses changing their service model during the Covid-19 pandemic (Bhattarai 2020). A portion of these service model changes may be captured in the quality adjustments that are already part of the published CPI (BLS 2019), but some important quality changes could be missed. For example, cable television no longer shows live reality shows because in-person filming is potentially dangerous to its participants. Despite the value that viewers place on live reality shows, the standard methodology does not adjust measured cable prices for their

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[1] Rationing or other quantity restrictions are a type of unavailability. Previous drafts of this paper studied the possibility that emergency medical care could be rationed if hospitals were overwhelmed. Fortunately, hospitals have not been as overwhelmed as early epidemiology models predicted (Swoyer, Tan, and Glenn 2020).

disappearance.[2] However, measuring quality consistently for all goods and services potentially impacted by the Covid-19 pandemic would be a difficult empirical project. For simplicity, this paper does not study how quality adjustment might change measured consumer prices.

2. The Effect of Unavailable Products on a Cost-of-Living Index

Sometime in March of 2020, most cities or states issued special laws or executive orders closing in-person businesses that provide non-essential goods or services (Gershman 2020). However, most states allowed nonessential workers to work remotely and allowed home delivery of nonessential goods because the risk of Covid-19 transmission from those channels was believed to be low (Naftulin 2020). The exact list of nonessential goods and services varies from state to state, but a typical list of restricted businesses include dine-in restaurants, movie theaters, live entertainment, clothing stores, hair salons, elective medical care, and more. (Gershman 2020). Compliance with the early closure orders was generally high (Meyer 2020), so this paper assumes that virtually all of nonessential workers either stopped work or worked remotely. Similarly, nonessential goods and services are assumed to be completely unavailable during the early stages of the Covid-19 pandemic.

Which Goods and Services are Unavailable?

Most stay-in-place orders are written by public health officials or lawyers, so they do not use the same coding system that economic surveys do. This paper focuses on consumer prices, and does not study the impact of stay-in-place orders on government output tracked by BEA in Table 3.16 'Government Current Expenditures by Function', household output tracked by BEA in satellite accounts (Bridgman et al. 2012), or leisure activity not tracked by BEA. This preliminary draft uses the industry literature and the author's best judgment[3] to match the unavailable goods and services into the commodity codes used by BEA in its published table 'Personal Consumption Expenditures by Type of Product' (2.4.5U).

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[2] Live sporting events are generally shown on ESPN and other specialized sports channels. This paper treats those sports channels as unavailable during the pandemic because virtually all sports leagues canceled their events (Sherman 2020). Alternatively, one could treat those sports channels as having their quality fall to near zero.
[3]The specific surveys used include the 2018 Annual Survey of Retail, the 2012 Economic Census, and other surveys conducted by the Census Bureau.

Appendix A shows preliminary estimates of unavailability by commodity for every good and service tracked by BEA in NIPA Table 2.4.5U. The most important result from Appendix A is that unavailability is common. Under a nationwide stay-in-place order, approximately 16 percent of consumer goods and 30 percent of consumer services are not available.[4] The next important result in Appendix A is that many commodities have unavailability shares between zero and one. These fractional shares occur because BEA's commodity codes are often broad baskets that cover different items or different retail channels. For example, dental care (line 171) covers both emergency extractions, which were available under stay-in-place orders, and routine cleanings, which were not available under stay-in-place orders. Alternatively, clothing (lines 105-107) is typically available at general department stores and online retailers, but it is not available at specialty clothing stores. Finally, cable television (line 215) covers both prerecorded shows, which are not immediately affected by the stay-in-place order, and live sporting events, which are forbidden under a stay-in-place order. This preliminary paper focuses on the mean level of unavailability shown in Appendix A rather than the distribution of unavailability across either narrow commodity lines or broader commodity groups.

The unavailability shares shown in Appendix A do not necessarily predict sales reductions during the Covid-19 pandemic. One major issue is that the demand curve for one commodity is often related to the availability, price, and quality of other commodities. For example, the demand for food-at-home has risen with the closure of dine-in restaurants. Another major issue is that the Covid-19 pandemic has changed so many parts of life that previously estimated demand curves might not apply any more. For example, individuals who lose their job may cut back on discretionary spending categories that are not directly related to Covid-19. Those indirect effects are not directly related to the problem of price measurement, so they are not studied in this paper.

3. Regional Price Levels As a Proxy for the 'True' Cost of Living During the Covid-19 Pandemic

This paper uses regional price differences as a proxy for the cost-of-living increase associated with stay-in-place orders. There is a rich economic literature showing that wealthy urban areas have better jobs, superior restaurants, fancier nonessential stores and other desirable amenities (Glaeser, Kolko, and Saez

[4] These unavailability shares are weighted by personal consumption expenditures for each commodity line.

2001), (Couture et al. 2020) and (Gales and Pierson 2019). These region-specific advantages are normally sufficient to compensate for the higher prices in wealthy urban areas (Aten and D'Souza 2008). In other words, quality-adjusted prices do not necessarily vary across regions once region-specific advantages are controlled for. However, wealthy urban areas have neither desirable goods and services, nor better jobs during a stay-in-place order.[5] Hence, the quality-adjusted price increase[6] in wealthy urban areas must be at least as large as the difference in price between one's current location and prices in a poor area.

Any cost-of-living changes calculated using regional price differences are an approximation only. One major issue is that regional price indexes measure long-term differences in prices across regions and therefore may not accurately reflect the short-term consumer welfare cost of stay-in-place orders.[7] Another issue is that poor rural areas are not perfect proxies for wealthy urban areas during a shut-down. On the one hand, wealthy urban areas may retain a few advantages during the Covid-19 pandemic. For example, urban grocery stores generally offer a wider variety of food choices (Fan et al. 2018). On the other hand, even poor rural areas have some nonessential services in normal times and residents of those areas likely derive consumer welfare from those nonessential services. As a result, price differences across regions are likely a reasonable lower bound on the consumer welfare loss associated with unavailable goods and services.

San Francisco illustrates that stay-in-place orders can raise the 'true' cost of living dramatically. The most recently published data (Figueroa and Aten 2019) shows a regional price level of 128 in the San Francisco metropolitan area. In comparison, the cheapest area (Beckley, West Virginia) has a price level of only 75.3.[8] This paper assumes that San Francisco normally has enough region-specific advantages to

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[5]Wage differences for nonessential workers are irrelevant during the Covid-19 pandemic because both individuals working from home and individuals temporarily not working can be located anywhere in the country. It may be true that some essential workers in wealthy urban areas earn higher salaries (Florida 2019), but those workers are a small enough share of the workforce that they can be ignored for simplicity.

[6]During the Covid-19 pandemic, some landlords have reduced rents and many regions have temporarily delayed evictions (O'Connell 2020). These rent changes could be seen as compensation for the quality-adjusted price increase studied in this paper. However, the two rent changes described are in scope for the standard methodology (BLS 2020a) and are therefore assumed to be already part of the published CPI.

[7]Depending on the exact commodity studied, consumer welfare costs could grow or shrink over time. For example, routine medical care can generally be postponed a few weeks without serious health consequences, but postponing medical care for too long can cause serious complications. Conversely, people who normally eat at restaurants might find home cooking difficult at first and then learn better techniques over time.

[8] Slightly over half of this difference is due to much higher apartment rental prices in wealthy urban areas, but prices for goods and nonhousing services may also be higher in wealthy urban areas. Readers should note that the spending by tourists and other nonresidents is included in the data used to calculate regional price statistics. Hence, the value that nonresidents derive from visiting wealthy urban areas is implicitly included in Appendix B.

compensate for its higher price level. During the Covid-19 pandemic almost all of San Francisco's region-specific advantages are not available. Hence, the paper calculates that quality-adjusted prices in San Francisco must have risen at least 40 percent (1-75.3/128) during the Covid-19 pandemic.

Measuring Regional Inflation Rates During a Stay-In-Place Order

Easy measurement is the main advantage to using regional price differences as a proxy. BEA already publishes regional price statistics for every major metropolitan statistical area and nonmetropolitan areas by state (Figueroa and Aten 2019).   Appendix B shows regional price levels, total personal income, and total population for the most recent year available. Given those published statistics, it is straightforward to calculate a lower bound on quality-adjusted prices during the Covid-19 pandemic for every region of the United States. On average, a hypothetical long-term nationwide stay-in-place order would raise quality-adjusted prices in the United States by at least 26 percent. This is a large increase in 'true' living costs and therefore has the potential to change measured growth.

The easy measurement technique developed in this paper represents a distinct improvement over the pre-existing price measurement literature. Previous price measurement papers have mainly focused on studying individual products, and so they generally use measurement techniques that are difficult to apply to broad stay-in-place orders. The basic problem is simple: past public health interventions were generally restricted to high risk groups like travelers or individuals with known symptoms (Tognotti 2013). Because public health authorities almost never ordered complete lockdowns of entire regions before the Covid-19 pandemic, there is neither previous epidemiological research estimating its impact on disease transmission (Stone 2020) nor previous economic research estimating its impact on either consumer welfare or cost-of-living indexes. Recent research has tried using surveys to ask respondents about the consumer welfare loss associated with various potential stay-in-place orders (Andersson et al. 2020).   But price index theory has not yet fully worked out a procedure to translate reported willingness-to-accept into empirical price indexes. As a result, the pre-existing price index theory cannot feasibly calculate a 'true' cost of living index during a stay-in-place order.

One might argue that this method double-counts the closure of nonessential businesses. After all, the nominal income loss suffered by employees at nonessential businesses is already tracked in the published GDP numbers. Accordingly, it seems duplicative to also count the decline in quality-adjusted prices caused by the disappearance of local jobs.[9] However, both BLS and BEA have a general practice of including work-related expenses in consumer expenditures and GDP. For example, the personal consumption expenditures shown in Appendix A include commuting costs, business outfits and other work-related expenses. As a result, the 'true' cost-of-living increase calculated in this paper is consistent with other published economic statistics.

Measuring 'True' Growth in Cost of Living in The First Quarter of 2020

This section uses the exact timing of stay-in-place orders issued by city or state governments[10] to quantify the regional impact of Covid-19 in the first quarter of 2020. Many businesses closed voluntarily before government stay-in-place orders were implemented (Takashi 2020), and many consumers stopped visiting open businesses due to their own health concerns (Molla 2020). As a result, government orders are not a perfect proxy for unavailable goods and services. Nevertheless, government orders do appear to increase social distancing (Dave et al. 2020), and governments typically imposed stay-in-place orders earlier in regions where the population is more concerned about Covid-19 (Allcot et al. 2020). Accordingly, this preliminary paper uses published government orders as a proxy for regional unavailability of nonessential goods and services.

Appendix B shows preliminary estimates of closure time for every region tracked by BEA in the regional statistics. The most important result from Appendix B is that government closures were common. By March 31st of 2020, almost 90 percent of the American population was living in a region where nonessential goods and services were unavailable. However, there is variation in the timing of government closures. San Francisco was the first region to close and it was quickly followed by the rest of California. New York City and most other regions closed the following week. Finally, a few regions stayed open until after the first quarter ended on March 31. The paper calculates an aggregate effect of Covid-19 closures by summing the separate regional effects shown in Appendix B.

[9] Only a portion of the higher prices in wealthy urban areas can be explained by better jobs. The portion explained by better leisure goods and services is definitely not double-counted.

[10] The actual closure orders are more complex than shown in Appendix B. A few regions closed different industries on different days. Other regions closed businesses midway through a day. Many metropolitan statistical areas were therefore exposed to multiple closure orders. The paper used expert judgment to pick a single average closure date.

Based on Appendix B, the paper calculates that the typical region implemented a stay-in-place order 9 days before the end of March, approximately ten percent of the first quarter of 2020.[11] The previous section calculated that unavailable goods and services raised the 'true' cost of living by at least 26 percent for the time period that they are unavailable. Hence, the paper calculates that 'true' growth in living costs was at least 2.8 percent above the inflation rate calculated using the standard methodology. In comparison, the standard methodology for measuring aggregate economic statistics shows a 1.7 percent decline in real consumption (BEA 2020). As a result, even the current economic statistics capture less than half of the 'true' decline in real consumer purchases in the early stages of the Covid-19 pandemic.

Regional price differences are a lower bound on the 'true' cost-of-living increase associated with a stay-in-place order. In normal times, even poor rural areas have some nonessential jobs, restaurants, stores, and other amenities that are unavailable during the Covid-19 pandemic. Furthermore, standard sorting models suggest that residents of wealthy urban areas derive higher than average utility from nonessential goods and services (Florida 2018), and therefore suffer a larger than average consumer welfare loss from unavailable goods and services. In contrast to this paper, Diewert and Fox (2020) suggest that prison might be a reasonable proxy for extreme stay-in-place orders. However, prisons are generally much less pleasant places to stay than private residences, and so willingness-to-pay to avoid prison probably represents an upper bound on the 'true' cost-of-living increase associated with stay-in-place orders. In order to be conservative, this paper focuses its discussion on the lower bound estimate of inflation during the Covid-19 pandemic.

Conclusion and Plans for Future Research

This paper used existing research on price index theory to demonstrate that the standard methodology for measuring consumer prices underestimates the 'true' growth in cost of living during the Covid-19 pandemic. The paper then used existing research on urban amenities to calculate a plausible lower bound on the inflation rate associated with stay-in-place orders. Based on BEA's published regional price statistics, the paper calculates that the actual stay-in-place implemented in first quarter of 2020 raised the 'true' cost of living by at least 2.8 percent. Over the same time period, the

[11] The 9 day number is the same regardless of whether regions are weighted by population or income.

standard methodology for measuring aggregate economic statistics shows a 1.7 percent decline in real consumption (BEA 2020). In other words, the 'true' decline in real consumer purchases in the first quarter of 2020 was at least double the decline measured using the standard methodology.

This paper draft does not yet have full data beyond the first quarter of 2020. However, the general methodology to calculate regional inflation rates during the Covid-19 pandemic can easily be applied to the second quarter of 2020 and beyond once full data on the length of regional closure orders and reopening procedures are available. Just like the regional inflation rates calculated for the first quarter, those numbers are a lower bound on the 'true' increase in living costs. Nevertheless, the estimated inflation rates can still provide useful information on how the Covid-19 pandemic changed real consumer purchases in the United States.

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Appendix A: Estimates of Unavailability by Commodity Line[12]

Table Line	% Unavailable	Commodity name	2019 Spending (Millions of $'s)
7	0	New domestic autos	44,231
8	0	New foreign autos	14,239
9	0	New light trucks	228,767
12	0	Net transactions in used autos	25,886
13	0	Used auto margin	29,260
14	0	Employee reimbursement	-1,735
16	0	Net transactions in used trucks	79,231
17	0	Used truck margin	32,167
19	2	Tires	32,941
20	2	Accessories and parts	46,205
23	67	Furniture	130,043
24	34	Clocks, lamps, lighting fixtures, and other household decorative items	44,022
25	40	Carpets and other floor coverings	23,388
26	20	Window coverings	22,800
28	12	Major household appliances	49,233
29	15	Small electric household appliances	9,379
31	27	Dishes and flatware	19,699
32	27	Nonelectric cookware and tableware	22,607
34	3	Tools, hardware, and supplies	28,141
35	2	Outdoor equipment and supplies	4,372
39	6	Televisions	33,405
40	3	Other video equipment	15,773
41	6	Audio equipment	21,974
43	4	Audio discs, tapes, vinyl, and permanent digital downloads	2,474
44	9	Video discs, tapes, and permanent digital downloads	14,004
45	1	Photographic equipment	5,733
47	1	Personal computers/tablets and peripheral equipment	53,956
48	1	Computer software and accessories	96,944
49	0	Calculators, typewriters, and other information processing equipment	777
50	63	Sporting equipment, supplies, guns, and ammunition (part of 80)	77,918
52	96	Motorcycles	12,429
53	47	Bicycles and accessories	6,124
55	83	Pleasure boats	15,522
56	0	Pleasure aircraft	1,589
57	0	Other recreational vehicles	29,858

[12] In order to save space, Appendix A only lists the narrowest commodity groups tracked in Table 2.4.5U. Availability shares for broader commodity groups can be calculated by aggregating the narrow lines.

58	48	Recreational books	22,673
59	84	Musical instruments	6,595
62	75	Jewelry	63,828
63	68	Watches	13,878
65	5	Therapeutic medical equipment	33,809
66	4	Corrective eyeglasses and contact lenses	39,074
67	49	Educational books	11,814
68	64	Luggage and similar personal items	31,239
69	1	Telephone and related communication equipment	30,563
75	1	Cereals	54,930
76	3	Bakery products	93,188
78	3	Beef and veal	48,848
79	3	Pork	35,639
80	3	Other meats	35,510
81	3	Poultry	57,817
82	1	Fish and seafood	15,468
84	1	Fresh milk	25,292
85	1	Processed dairy products	51,890
86	1	Eggs	13,213
87	1	Fats and oils	23,803
89	1	Fruit (fresh)	41,481
90	1	Vegetables (fresh)	50,416
91	1	Processed fruits and vegetables	30,942
92	2	Sugar and sweets	48,679
93	4	Food products, not elsewhere classified	159,534
95	1	Coffee, tea, and other beverage materials	16,722
96	4	Mineral waters, soft drinks, and vegetable juices	83,233
98	6	Spirits	32,295
99	6	Wine	46,099
100	7	Beer	66,753
101	0	Food produced and consumed on farms	438
104	78	Women's and girls' clothing	184,336
105	65	Men's and boys' clothing	105,470
106	52	Children's and infants' clothing	18,818
108	53	Clothing materials	4,302
109	0	Standard clothing issued to military personnel	418
110	68	Shoes and other footwear	85,597
113	1	Gasoline and other motor fuel	309,827
114	1	Lubricants and fluids	7,623
116	1	Fuel oil	18,521
117	1	Other fuels	1,723
121	1	Prescription drugs	467,948
122	1	Nonprescription drugs	75,142
123	9	Other medical products	6,575
125	19	Games, toys, and hobbies	71,000
126	1	Pets and related products	70,425

127	1	Flowers, seeds, and potted plants	34,794
128	1	Film and photographic supplies	1,713
130	3	Household cleaning products	39,366
131	6	Household paper products	40,294
132	38	Household linens	41,857
133	53	Sewing items	1,756
134	14	Miscellaneous household products	23,624
136	8	Hair, dental, shaving, and miscellaneous personal care products except electrical products	77,652
137	45	Cosmetic / perfumes / bath / nail preparations and implements	55,331
138	15	Electric appliances for personal care	9,731
139	11	Tobacco	100,785
141	6	Newspapers and periodicals	53,852
142	22	Stationery and miscellaneous printed materials	26,794
145	16	Government employees' expenditures abroad	11,067
146	16	Private employees' expenditures abroad	1,490
147	16	Less: Personal remittances in kind to nonresidents	1,889
153	0	Tenant-occupied mobile homes	14,017
154	0	Tenant-occupied stationary homes	594,477
155	0	Tenant landlord durables	9,381
157	0	Owner-occupied mobile homes	28,564
158	0	Owner-occupied stationary homes	1,654,700
159	0	Rental value of farm dwellings	20,148
160	0	Group housing	2,126
163	0	Water supply and sewage maintenance	76,549
164	0	Garbage and trash collection	28,773
166	0	Electricity	189,070
167	0	Natural gas	52,563
170	66	Physician services	577,173
171	71	Dental services	136,742
173	66	Home health care	116,737
174	45	Medical laboratories	37,803
176	66	Specialty outpatient care facilities and health and allied services	169,068
177	66	All other professional medical services	64,863
180	30	Nonprofit hospitals' services to households	789,673
181	30	Proprietary hospitals	136,267
182	30	Government hospitals	233,812
184	0	Nonprofit nursing homes' services to households	61,497
185	0	Proprietary and government nursing homes	146,450
188	0	Motor vehicle maintenance and repair	196,203
191	0	Auto leasing	31,148
192	0	Truck leasing	35,114
193	0	Motor vehicle rental	20,488
194	0	Parking fees and tolls	28,598
197	0	Railway transportation	1,347
199	0	Intercity buses	1,124

200	0	Taxicabs and ride sharing services	10,553
201	0	Intracity mass transit	21,108
202	0	Other road transportation service	20,099
203	0	Air transportation	108,714
204	0	Water transportation	3,768
207	75	Membership clubs and participant sports centers	63,468
208	95	Amusement parks, campgrounds, and related recreational services	69,925
210	95	Motion picture theaters	14,387
211	95	Live entertainment, excluding sports	37,094
212	95	Spectator sports	29,448
213	95	Museums and libraries	10,093
215	20	Cable, satellite, and other live television services	98,636
216	50	Photo processing	2,087
217	50	Photo studios	7,223
218	50	Repair and rental of audio-visual, photographic, and information processing equipment	9,036
220	0	Video streaming and rental	21,256
221	0	Audio streaming and radio services (including satellite radio)	10,004
223	75	Casino gambling	112,572
224	25	Lotteries	30,105
225	75	Pari-mutuel net receipts	4,154
227	47	Veterinary and other services for pets	47,713
228	0	Package tours	14,123
229	0	Maintenance and repair of recreational vehicles and sports equipment	6,562
235	50	Elementary and secondary school lunches	7,235
236	95	Higher education school lunches	18,012
238	50	Meals at limited service eating places	377,033
239	94	Meals at other eating places	314,398
240	97	Meals at drinking places	5,680
241	97	Alcohol in purchased meals	117,428
243	0	Food supplied to civilians	20,721
244	0	Food supplied to military	1,986
246	50	Hotels and motels	118,020
247	95	Housing at schools	38,472
251	0	Commercial banks	141,862
252	0	Other depository institutions and regulated investment companies	151,011
253	0	Pension funds	60,662
255	0	Financial service charges and fees	115,856
258	0	Exchange-listed equities	2,185
259	0	Other direct commissions	5,635
261	0	Over-the-counter equity securities	1,091
262	0	Other imputed commissions	11,744
263	0	Mutual fund sales charges	9,824
264	0	Portfolio management and investment advice services	222,641
265	0	Trust, fiduciary, and custody activities	15,337
267	0	Life insurance	86,172

269	0	Household insurance premiums and premium supplements	22,763
270	0	Less: Household insurance normal losses	11,866
272	0	Medical care and hospitalization	201,935
273	0	Income loss	3,621
274	0	Workers' compensation	34,807
275	0	Net motor vehicle and other transportation insurance	81,735
279	0	Land-line telephone services, local charges	19,077
280	0	Land-line telephone services, long-distance charges	9,393
281	0	Cellular telephone services	133,857
283	0	First-class postal service (by U.S. Postal Service)	5,941
284	0	Other delivery services (by non-U.S. postal facilities)	7,427
285	0	Internet access	72,629
288	50	Proprietary and public higher education	116,354
289	50	Nonprofit private higher education services to households	79,545
291	50	Elementary and secondary schools	37,583
292	50	Day care and nursery schools	15,493
293	50	Commercial and vocational schools	56,749
295	0	Legal services	111,394
297	0	Tax preparation and other related services	26,989
298	0	Employment agency services	1,842
299	0	Other personal business services	11,699
300	0	Labor organization dues	14,663
301	0	Professional association dues	12,826
302	31	Funeral and burial services	26,722
305	95	Hairdressing salons and personal grooming establishments	81,396
306	95	Miscellaneous personal care services	76,832
308	0	Laundry and drycleaning services	12,950
309	0	Clothing repair, rental, and alterations	3,909
310	0	Repair and hire of footwear	407
312	50	Child care	44,479
314	0	Homes for the elderly	32,175
315	50	Residential mental health and substance abuse	14,507
316	50	Individual and family services	64,741
317	50	Vocational rehabilitation services	11,187
318	0	Community food and housing / emergency / other relief services	11,955
319	50	Other social assistance, not elsewere classified	6,525
320	50	Social advocacy and civic and social organizations	19,289
321	50	Religious organizations' services to households	7,609
322	0	Foundations and grantmaking and giving services to households	7,000
324	0	Domestic services	32,514
325	0	Moving, storage, and freight services	19,331
326	0	Repair of furniture, furnishings, and floor coverings	1,441
327	0	Repair of household appliances	7,804
328	0	Other household services	33,646
331	75	Passenger fares for foreign travel	60,762
332	75	U.S. travel outside the United States	128,833

333	75	U.S. student expenditures	9,321
335	75	Less:Foreign travel in the United States	168,310
336	75	Less:Medical expenditures of foreigners	4,187
337	75	Less: Expenditures of foreign students in the United States	46,549
341	65	Outpatient services, gross output	98,475
342	30	Nonprofit hospitals, gross output	835,546
343	0	Nonprofit nursing homes, gross output	69,305
344	90	Recreation services, gross output	57,785
345	50	Education services, gross output	204,094
346	35	Social services, gross output	168,216
347	50	Religious organizations, gross output	97,718
348	0	Foundations and grantmaking and giving establishments, gross output	46,251
349	0	Social advocacy establishments, gross output	27,106
350	50	Civic and social organizations, gross output	15,596
351	50	Professional advocacy, gross output	52,172
354	65	Less: Outpatient services to households	83,936
355	30	Less: Nonprofit hospitals services to households	789,673
356	0	Less: Nonprofit nursing homes services to households	61,497
357	90	Less: Recreation services to households	26,538
358	50	Less: Education services to households	126,405
359	35	Less: Social services to households	72,945
360	50	Less: Religious organizations' services to households	7,609
361	0	Less: Foundations and grantmaking and giving services to households	7,000
362	0	Less: Services of social advocacy establishments to households	2,450
363	50	Less: Civic and social organizations' services to households	8,921
364	50	Less: Professional advocacy services to households	39,946

Appendix B: Selected Data for Every Region in the United States

Region Name	Price Level for 2017 (U.S. = 100)	Nominal Personal Income in 2017 ($'s in Thousands)	Population in 2017	Days under stay-in-place
Abilene, TX	91.2	6,967,607	170,516	1
Akron, OH	90.4	33,346,841	704,367	15
Albany, GA	82.7	5,409,425	148,113	10
Albany-Lebanon, OR	94.6	5,107,152	124,977	8
Albany-Schenectady-Troy, NY	100.6	49,632,513	882,130	9
Albuquerque, NM	95.7	37,168,752	912,897	8
Alexandria, LA	87.7	6,482,090	153,604	9
Allentown-Bethlehem-Easton, PA-NJ	100.6	42,940,245	838,081	7
Altoona, PA	91.1	5,439,427	123,175	0
Amarillo, TX	93.3	11,687,486	264,955	2
Ames, IA	92	5,112,937	123,736	0
Anchorage, AK	107.9	23,274,975	400,647	10
Ann Arbor, MI	101.7	20,944,911	369,208	13
Anniston-Oxford, AL	84.8	4,095,935	114,664	5
Appleton, WI	90.5	11,635,733	236,058	8
Asheville, NC	92.6	19,696,720	455,255	9
Athens-Clarke County, GA	91.1	8,126,567	208,997	13
Atlanta-Sandy Springs-Alpharetta, GA	96.8	295,294,501	5,874,249	9
Atlantic City-Hammonton, NJ	102	12,397,367	266,328	12
Auburn-Opelika, AL	84.4	5,889,666	161,641	5
Augusta-Richmond County, GA-SC	88.6	24,301,614	600,006	4
Austin-Round Rock-Georgetown, TX	100.5	117,458,116	2,115,230	8
Bakersfield, CA	96	34,196,499	888,988	13
Baltimore-Columbia-Towson, MD	107.2	166,712,892	2,798,587	9
Bangor, ME	96.3	6,044,013	151,190	0
Barnstable Town, MA	104.7	15,109,606	213,482	8
Baton Rouge, LA	92.6	39,158,059	853,762	9
Battle Creek, MI	89	5,187,262	134,358	13
Bay City, MI	85.9	4,187,549	104,189	13
Beaumont-Port Arthur, TX	89.6	17,035,245	398,686	5
Beckley, WV	75.3	4,327,543	118,639	11
Bellingham, WA	98.8	10,355,271	221,650	11
Bend, OR	100.2	9,906,980	186,807	8
Billings, MT	97.3	8,889,336	179,372	11
Binghamton, NY	96.3	10,437,731	241,609	9
Birmingham-Hoover, AL	88.8	52,786,758	1,085,750	8
Bismarck, ND	93	6,976,961	128,001	13
Blacksburg-Christiansburg, VA	88.5	6,129,292	166,907	8
Bloomington, IL	92.3	8,166,372	172,845	11
Bloomington, IN	92.5	6,713,796	167,513	11
Bloomsburg-Berwick, PA	93.5	3,666,836	83,924	0
Boise City, ID	94.2	31,287,639	710,080	7
Boston-Cambridge-Newton, MA-NH	111.8	362,272,886	4,844,597	8
Boulder, CO	108.7	22,457,556	324,073	8

Bowling Green, KY	85.2	6,274,681	174,962	14
Bremerton-Silverdale-Port Orchard, WA	107.2	14,082,667	266,550	11
Bridgeport-Stamford-Norwalk, CT	119.1	106,392,305	943,457	8
Brownsville-Harlingen, TX	83.6	11,606,636	423,181	7
Brunswick, GA	86.2	4,598,165	117,728	0
Buffalo-Cheektowaga, NY	94.9	55,216,894	1,129,660	9
Burlington, NC	89.1	6,237,219	163,529	9
Burlington-South Burlington, VT	105	12,135,868	218,881	11
California-Lexington Park, MD	98.8	6,120,472	112,413	9
Canton-Massillon, OH	87.3	17,149,910	399,418	15
Cape Coral-Fort Myers, FL	96.7	36,140,942	739,506	0
Cape Girardeau, MO-IL	82.4	4,057,266	96,873	0
Carbondale-Marion, IL	81.9	5,332,144	137,490	11
Carson City, NV	96.1	2,624,755	54,608	14
Casper, WY	96.3	4,992,181	79,556	0
Cedar Rapids, IA	89.1	13,454,170	270,594	0
Chambersburg-Waynesboro, PA	94.8	6,834,280	154,487	0
Champaign-Urbana, IL	93.1	9,887,895	226,560	11
Charleston, WV	86.2	10,916,568	264,183	11
Charleston-North Charleston, SC	96.2	37,800,241	775,089	11
Charlotte-Concord-Gastonia, NC-SC	93.8	127,596,524	2,549,741	9
Charlottesville, VA	98.2	13,708,201	216,559	8
Chattanooga, TN-GA	89.4	24,577,673	556,081	9
Cheyenne, WY	96.8	4,898,034	98,460	0
Chicago-Naperville-Elgin, IL-IN-WI	103.4	552,339,301	9,520,784	11
Chico, CA	98.7	9,776,376	229,207	13
Cincinnati, OH-KY-IN	90	113,937,980	2,202,597	15
Clarksville, TN-KY	90.2	11,790,763	299,059	0
Cleveland, TN	83.1	4,524,685	122,082	0
Cleveland-Elyria, OH	90.2	105,828,387	2,058,549	15
Coeur d'Alene, ID	94.5	6,792,188	157,485	7
College Station-Bryan, TX	93.3	9,723,678	258,825	8
Colorado Springs, CO	99.6	33,883,990	725,438	6
Columbia, MO	90.3	9,265,632	206,288	7
Columbia, SC	91.7	36,098,903	825,110	9
Columbus, GA-AL	89	12,447,463	315,872	0
Columbus, IN	88.2	3,955,556	82,429	11
Columbus, OH	92.3	102,744,546	2,082,475	15
Corpus Christi, TX	93.8	18,152,655	428,237	6
Corvallis, OR	100.6	4,076,498	91,567	8
Crestview-Fort Walton Beach-Destin, FL	94.3	13,543,565	271,959	0
Cumberland, MD-WV	86.7	3,779,218	98,566	9
Dallas-Fort Worth-Arlington, TX	100.2	391,942,594	7,340,943	9
Dalton, GA	83.2	5,033,165	143,872	0
Danville, IL	78.9	2,913,571	77,776	11
Daphne-Fairhope-Foley, AL	90.8	9,352,917	212,619	5

Davenport-Moline-Rock Island, IA-IL	89.1	18,059,747	381,854	11
Dayton-Kettering, OH	89	36,770,689	803,713	15
Decatur, AL	83.2	5,627,400	151,888	5
Decatur, IL	85.4	4,793,880	105,533	11
Deltona-Daytona Beach-Ormond Beach, FL	95.3	26,679,424	648,117	0
Denver-Aurora-Lakewood, CO	106.3	175,325,511	2,892,979	8
Des Moines-West Des Moines, IA	93.5	35,319,931	682,085	0
Detroit-Warren-Dearborn, MI	95.8	219,365,974	4,321,704	13
Dothan, AL	83.8	5,797,729	147,923	5
Dover, DE	93.3	7,135,135	176,445	8
Dubuque, IA	90.3	4,485,869	97,009	0
Duluth, MN-WI	89.3	12,676,101	289,175	4
Durham-Chapel Hill, NC	95.2	32,018,021	625,865	9
East Stroudsburg, PA	96.9	6,789,664	168,089	9
Eau Claire, WI	90.1	7,566,094	167,436	8
El Centro, CA	89.4	6,634,190	181,574	13
Elizabethtown-Fort Knox, KY	84.9	6,160,042	150,531	14
Elkhart-Goshen, IN	89.4	9,286,181	204,310	11
Elmira, NY	95.7	3,627,943	84,874	9
El Paso, TX	89.1	28,927,444	845,145	8
Enid, OK	90.7	2,612,964	61,492	7
Erie, PA	92.7	11,587,938	273,892	7
Eugene-Springfield, OR	97.8	16,512,047	375,617	8
Evansville, IN-KY	88.8	14,310,394	314,960	11
Fairbanks, AK	106.9	5,382,588	99,725	4
Fargo, ND-MN	91.7	12,235,224	241,619	13
Farmington, NM	90.9	4,265,534	126,902	8
Fayetteville, NC	89.2	18,243,302	517,609	9
Fayetteville-Springdale-Rogers, AR	89.4	32,295,738	515,633	0
Flagstaff, AZ	98.9	6,584,279	141,107	1
Flint, MI	90.2	16,054,031	407,673	13
Florence, SC	86.1	7,943,148	205,546	8
Florence-Muscle Shoals, AL	83.8	5,314,526	147,100	5
Fond du Lac, WI	86.3	4,729,842	102,371	8
Fort Collins, CO	102.3	17,714,530	343,993	6
Fort Smith, AR-OK	84	9,111,482	249,960	0
Fort Wayne, IN	89.1	17,883,573	405,987	11
Fresno, CA	95.7	40,583,060	986,542	13
Gadsden, AL	82.3	3,658,631	102,937	5
Gainesville, FL	94.2	13,310,855	324,991	0
Gainesville, GA	88.5	8,347,634	199,439	0
Gettysburg, PA	96.2	4,813,310	102,367	0
Glens Falls, NY	97.2	5,670,464	125,917	9
Goldsboro, NC	86.8	4,598,543	123,257	9
Grand Forks, ND-MN	91.2	4,943,960	102,277	13
Grand Island, NE	84.8	3,191,443	75,652	4

Grand Junction, CO	93.9	6,395,255	151,406	6
Grand Rapids-Kentwood, MI	92.7	51,056,825	1,063,926	13
Grants Pass, OR	92.6	3,393,827	86,653	8
Great Falls, MT	93.1	3,695,959	81,604	11
Greeley, CO	99.2	13,484,839	305,274	6
Green Bay, WI	90.1	15,753,400	319,786	8
Greensboro-High Point, NC	89.7	31,837,816	763,486	9
Greenville, NC	87.9	7,122,044	178,617	9
Greenville-Anderson, SC	89.9	38,189,958	895,422	8
Gulfport-Biloxi, MS	88.6	14,730,604	412,946	0
Hagerstown-Martinsburg, MD-WV	100.3	11,926,830	283,004	9
Hammond, LA	86.2	4,958,676	132,322	9
Hanford-Corcoran, CA	93.9	5,137,941	149,696	13
Harrisburg-Carlisle, PA	96.9	28,547,475	571,101	2
Harrisonburg, VA	88.6	5,163,276	134,220	8
Hartford-East Hartford-Middletown, CT	101.8	74,169,244	1,206,719	8
Hattiesburg, MS	81.7	6,218,355	167,764	0
Hickory-Lenoir-Morganton, NC	86.7	13,989,716	367,004	9
Hilton Head Island-Bluffton, SC	94.8	10,819,864	214,890	8
Hinesville, GA	89.3	2,602,511	80,518	0
Homosassa Springs, FL	87	5,327,715	145,512	0
Hot Springs, AR	86	3,802,782	98,444	0
Houma-Thibodaux, LA	90.2	8,732,516	209,893	9
Houston-The Woodlands-Sugar Land, TX	101.7	369,310,576	6,905,695	7
Huntington-Ashland, WV-KY-OH	85.6	13,716,169	361,897	11
Huntsville, AL	89.9	21,621,268	455,741	5
Idaho Falls, ID	91.6	6,363,267	145,792	7
Indianapolis-Carmel-Anderson, IN	92	105,838,229	2,026,723	11
Iowa City, IA	94.3	8,713,868	171,470	0
Ithaca, NY	107	4,462,964	102,678	9
Jackson, MI	88.7	6,035,203	158,690	13
Jackson, MS	90.2	25,195,571	599,401	0
Jackson, TN	82.2	6,876,327	178,304	0
Jacksonville, FL	95.4	71,976,123	1,504,841	0
Jacksonville, NC	92.5	8,735,704	194,838	9
Janesville-Beloit, WI	90.2	6,848,101	162,320	8
Jefferson City, MO	81.1	6,393,676	151,298	4
Johnson City, TN	87.3	7,805,861	201,844	0
Johnstown, PA	86.7	5,418,137	133,054	0
Jonesboro, AR	82.4	4,633,788	131,158	0
Joplin, MO	86.7	6,929,259	178,330	0
Kahului-Wailuku-Lahaina, HI	107.3	7,878,703	166,491	7
Kalamazoo-Portage, MI	90.5	12,275,693	263,001	13
Kankakee, IL	95	4,377,733	110,544	11
Kansas City, MO-KS	93.1	110,016,377	2,127,259	8
Kennewick-Richland, WA	96.6	12,513,028	290,570	11

Killeen-Temple, TX	91	18,064,319	443,653	8
Kingsport-Bristol, TN-VA	85.4	11,750,493	306,253	0
Kingston, NY	103.8	8,669,500	178,723	9
Knoxville, TN	88.8	37,321,823	852,673	11
Kokomo, IN	86.4	3,285,555	82,311	11
La Crosse-Onalaska, WI-MN	91.9	6,578,165	136,778	8
Lafayette, LA	87.6	20,502,118	490,107	9
Lafayette-West Lafayette, IN	90.9	8,577,730	228,535	11
Lake Charles, LA	89.6	9,668,869	209,256	9
Lake Havasu City-Kingman, AZ	91.2	6,574,242	207,114	1
Lakeland-Winter Haven, FL	93	23,723,273	685,830	0
Lancaster, PA	99.8	27,031,379	541,054	5
Lansing-East Lansing, MI	92.1	21,942,006	548,812	13
Laredo, TX	88.4	8,261,470	273,982	4
Las Cruces, NM	89.7	7,597,698	216,186	8
Las Vegas-Henderson-Paradise, NV	97.5	98,439,211	2,183,310	14
Lawrence, KS	91.5	5,054,290	120,629	8
Lawton, OK	89.5	5,054,333	127,589	7
Lebanon, PA	95.8	6,447,129	139,566	1
Lewiston, ID-WA	91	2,752,378	62,881	7
Lewiston-Auburn, ME	94.9	4,259,690	107,569	0
Lexington-Fayette, KY	91.2	23,783,859	512,732	14
Lima, OH	85.6	4,196,097	103,069	15
Lincoln, NE	91.5	15,755,684	331,179	7
Little Rock-North Little Rock-Conway, AR	90.6	32,398,653	737,991	0
Logan, UT-ID	91.9	5,145,071	138,052	4
Longview, TX	91.2	11,270,199	285,134	5
Longview, WA	93.7	4,601,607	106,900	11
Los Angeles-Long Beach-Anaheim, CA	117.1	806,547,539	13,298,709	13
Louisville/Jefferson County, KY-IN	90.9	60,704,406	1,260,391	14
Lubbock, TX	93.3	12,795,311	316,588	3
Lynchburg, VA	89.5	10,142,865	261,954	8
Macon-Bibb County, GA	86.7	9,025,569	229,081	0
Madera, CA	94.3	5,933,946	155,904	13
Madison, WI	96.8	37,111,247	654,577	8
Manchester-Nashua, NH	108.4	24,089,099	413,157	5
Manhattan, KS	91.3	5,817,725	131,587	3
Mankato, MN	90.3	4,529,513	100,945	4
Mansfield, OH	86	4,564,417	120,543	15
McAllen-Edinburg-Mission, TX	84	21,845,363	858,323	5
Medford, OR	96.7	9,653,010	216,761	8
Memphis, TN-MS-AR	91.1	59,806,264	1,339,290	7
Merced, CA	93.8	10,320,877	271,340	13
Miami-Fort Lauderdale-Pompano Beach, FL	108.4	334,597,043	6,149,687	8
Michigan City-La Porte, IN	83.7	4,458,143	109,911	11
Midland, MI	91	4,847,268	83,245	13

Midland, TX	100.3	18,564,171	170,948	0
Milwaukee-Waukesha, WI	95.5	85,397,956	1,575,151	9
Minneapolis-St. Paul-Bloomington, MN-WI	102.2	215,263,552	3,577,765	4
Missoula, MT	95.6	5,549,745	117,863	11
Mobile, AL	86.8	15,821,495	431,047	5
Modesto, CA	98.1	23,094,445	545,267	13
Monroe, LA	85.2	7,896,114	203,898	9
Monroe, MI	92.8	6,806,075	149,592	13
Montgomery, AL	89.1	15,557,315	374,042	5
Morgantown, WV	90.7	5,691,282	139,739	11
Morristown, TN	80.3	4,832,342	140,967	0
Mount Vernon-Anacortes, WA	98.6	6,316,247	126,026	11
Muncie, IN	86	4,120,845	115,389	11
Muskegon, MI	87.1	6,461,284	173,656	13
Myrtle Beach-Conway-North Myrtle Beach, SC-NC	91.9	17,407,041	463,386	8
Napa, CA	123.6	9,797,716	140,386	14
Naples-Marco Island, FL	101.7	32,428,403	372,345	0
Nashville-Davidson--Murfreesboro--Franklin, TN	95.3	103,882,532	1,875,736	13
New Bern, NC	83.5	5,193,736	125,010	9
New Haven-Milford, CT	110.8	45,981,789	857,794	8
New Orleans-Metairie, LA	95.2	63,267,329	1,270,465	12
New York-Newark-Jersey City, NY-NJ-PA	122.3	1,409,827,684	19,325,698	9
Niles, MI	88.3	7,046,806	154,362	13
North Port-Sarasota-Bradenton, FL	99.9	43,260,349	805,139	0
Norwich-New London, CT	101.8	15,144,163	267,826	8
Ocala, FL	90.5	12,634,266	353,717	0
Ocean City, NJ	104.5	5,402,435	93,184	12
Odessa, TX	95.8	6,687,437	157,173	0
Ogden-Clearfield, UT	94.5	27,776,744	664,589	4
Oklahoma City, OK	91.4	63,561,386	1,383,249	7
Olympia-Lacey-Tumwater, WA	107.1	13,683,817	280,289	11
Omaha-Council Bluffs, NE-IA	92.5	51,485,749	932,217	13
Orlando-Kissimmee-Sanford, FL	98.3	104,909,584	2,512,917	6
Oshkosh-Neenah, WI	90.2	7,859,570	170,375	8
Owensboro, KY	88	4,743,650	118,543	14
Oxnard-Thousand Oaks-Ventura, CA	117.1	49,994,234	850,802	15
Palm Bay-Melbourne-Titusville, FL	95.9	25,513,929	588,265	1
Panama City, FL	93.9	7,637,747	184,046	0
Parkersburg-Vienna, WV	87.9	3,544,962	90,873	11
Pensacola-Ferry Pass-Brent, FL	92.3	20,268,694	487,327	0
Peoria, IL	89.4	18,657,019	406,905	11
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	105.4	371,354,629	6,078,451	15
Phoenix-Mesa-Chandler, AZ	97.7	210,503,331	4,761,694	1
Pine Bluff, AR	82.8	3,020,818	90,923	0
Pittsburgh, PA	94	126,933,158	2,330,283	9
Pittsfield, MA	97.7	6,847,305	126,485	8

Pocatello, ID	88.6	3,440,825	93,289	7
Portland-South Portland, ME	102.3	29,229,661	532,280	0
Portland-Vancouver-Hillsboro, OR-WA	101.7	132,683,509	2,456,462	8
Port St. Lucie, FL	97	24,522,711	473,192	0
Poughkeepsie-Newburgh-Middletown, NY	(NA)	34,779,113	673,253	9
Prescott Valley-Prescott, AZ	96.1	8,753,027	228,055	1
Providence-Warwick, RI-MA	99.7	84,324,547	1,617,057	12
Provo-Orem, UT	96.9	23,969,840	617,751	4
Pueblo, CO	91.2	6,247,636	166,426	6
Punta Gorda, FL	95.5	7,237,457	181,537	0
Racine, WI	93.3	9,291,789	195,949	8
Raleigh-Cary, NC	96.2	69,678,276	1,334,342	9
Rapid City, SD	90.1	6,617,799	138,203	0
Reading, PA	96.5	19,795,515	417,524	5
Redding, CA	96.5	7,985,961	179,539	13
Reno, NV	98.8	25,890,156	461,336	14
Richmond, VA	96.1	70,179,218	1,269,478	8
Riverside-San Bernardino-Ontario, CA	107.2	177,428,094	4,570,427	13
Roanoke, VA	90.1	14,130,719	313,488	8
Rochester, MN	93.3	11,320,741	217,828	4
Rochester, NY	98.2	53,177,211	1,071,589	9
Rockford, IL	88.5	14,247,623	338,252	11
Rocky Mount, NC	84.5	5,542,645	146,769	9
Rome, GA	80.9	3,605,099	97,427	8
Sacramento-Roseville-Folsom, CA	102	125,324,628	2,320,381	13
Saginaw, MI	87.8	7,158,836	191,996	13
St. Cloud, MN	91	8,851,230	198,106	4
St. George, UT	95	6,105,133	165,859	4
St. Joseph, MO-KS	85.9	4,802,388	126,598	8
St. Louis, MO-IL	91.4	148,554,261	2,805,850	9
Salem, OR	96.3	17,343,161	424,968	8
Salinas, CA	108.5	23,511,124	435,477	13
Salisbury, MD-DE	88.5	18,878,866	404,067	9
Salt Lake City, UT	99.1	59,114,954	1,205,238	4
San Angelo, TX	93.4	5,289,508	120,501	0
San Antonio-New Braunfels, TX	94.4	111,030,910	2,474,274	8
San Diego-Chula Vista-Carlsbad, CA	116	193,199,828	3,325,468	13
San Francisco-Oakland-Berkeley, CA	128	436,388,051	4,710,693	16
San Jose-Sunnyvale-Santa Clara, CA	130.9	196,747,512	1,993,582	13
San Luis Obispo-Paso Robles, CA	107.4	15,735,750	282,838	14
Santa Cruz-Watsonville, CA	127.6	17,854,678	275,105	15
Santa Fe, NM	98.7	8,269,830	149,617	8
Santa Maria-Santa Barbara, CA	109.6	26,572,680	445,606	13
Santa Rosa-Petaluma, CA	123.5	30,280,366	503,246	13
Savannah, GA	93.9	17,290,550	386,337	8
Scranton--Wilkes-Barre, PA	92.5	24,395,784	555,645	5

Seattle-Tacoma-Bellevue, WA	111.8	271,575,069	3,884,469	11
Sebastian-Vero Beach, FL	91.8	11,133,656	154,314	0
Sebring-Avon Park, FL	83.2	3,425,904	104,060	0
Sheboygan, WI	89.8	5,844,985	115,235	8
Sherman-Denison, TX	91.9	5,335,477	131,214	0
Shreveport-Bossier City, LA	88.7	17,538,748	400,357	9
Sierra Vista-Douglas, AZ	89	4,895,203	124,990	1
Sioux City, IA-NE-SD	88.5	6,878,449	143,127	0
Sioux Falls, SD	91.6	14,927,674	260,521	0
South Bend-Mishawaka, IN-MI	87.9	14,665,803	321,447	11
Spartanburg, SC	88.4	12,812,008	306,632	0
Spokane-Spokane Valley, WA	94.8	24,229,248	550,595	11
Springfield, IL	89.9	9,633,687	209,175	11
Springfield, MA	97.2	35,054,755	700,293	8
Springfield, MO	87	18,633,452	462,300	6
Springfield, OH	86.7	5,282,966	134,649	15
State College, PA	102.8	7,224,437	162,250	4
Staunton, VA	84.8	5,199,161	121,984	8
Stockton, CA	99.5	31,475,861	742,516	13
Sumter, SC	86.2	5,025,970	140,514	8
Syracuse, NY	97.1	31,256,367	651,048	9
Tallahassee, FL	93.3	15,570,591	383,467	7
Tampa-St. Petersburg-Clearwater, FL	98.9	140,073,159	3,091,225	6
Terre Haute, IN	86.4	6,876,722	186,925	11
Texarkana, TX-AR	87.2	5,482,014	150,254	5
The Villages, FL	92.9	5,509,132	124,933	0
Toledo, OH	87.7	28,786,541	644,462	15
Topeka, KS	88.6	10,202,267	233,153	6
Trenton-Princeton, NJ	111.6	24,282,260	368,602	12
Tucson, AZ	95.1	43,291,870	1,027,502	1
Tulsa, OK	90.4	50,705,092	991,610	7
Tuscaloosa, AL	88.3	9,135,950	251,018	7
Twin Falls, ID 2/	91	4,132,141	109,037	7
Tyler, TX	94	11,835,720	227,460	5
Urban Honolulu, HI	124.7	56,274,893	986,429	9
Utica-Rome, NY	93.5	12,509,125	292,336	9
Valdosta, GA	81.3	5,032,900	145,403	8
Vallejo, CA	120	21,467,887	443,877	13
Victoria, TX	93.7	4,331,739	99,651	0
Vineland-Bridgeton, NJ	98.8	5,861,990	151,748	12
Virginia Beach-Norfolk-Newport News, VA-NC	97.6	85,397,443	1,761,305	8
Visalia, CA	93.9	18,069,207	463,097	13
Waco, TX	91.3	10,522,336	268,550	9
Walla Walla, WA	95.4	2,679,511	60,652	11
Warner Robins, GA	88.3	7,293,904	180,019	0
Washington-Arlington-Alexandria, DC-VA-MD-WV	118.4	430,564,944	6,213,246	15

Waterloo-Cedar Falls, IA	90.1	7,390,946	169,553	0
Watertown-Fort Drum, NY	99	5,141,615	113,063	9
Wausau-Weston, WI	90.3	7,711,998	163,181	8
Weirton-Steubenville, WV-OH	83.9	4,546,694	118,181	11
Wenatchee, WA	96.4	5,700,404	118,646	11
Wheeling, WV-OH	85.5	6,441,832	141,228	11
Wichita, KS	89.3	31,128,209	637,636	7
Wichita Falls, TX	89	6,258,027	151,180	2
Williamsport, PA	92.8	4,738,005	113,930	0
Wilmington, NC	92.8	12,142,264	289,425	9
Winchester, VA-WV	92.1	6,394,742	138,107	8
Winston-Salem, NC	88.7	28,874,233	666,746	9
Worcester, MA-CT	103.6	50,199,671	942,303	8
Yakima, WA	92.7	10,482,682	250,377	13
York-Hanover, PA	96.6	21,321,290	445,722	5
Youngstown-Warren-Boardman, OH-PA	86.6	21,943,522	541,875	15
Yuba City, CA	96.6	7,148,530	173,213	14
Yuma, AZ	90.5	7,351,746	209,756	1
Nonmetropolitan Alabama	81.6	40,776,823	1,181,722	5
Nonmetropolitan Alaska	98.6	13,357,712	239,414	4
Nonmetropolitan Arizona	86.3	11,659,320	348,658	1
Nonmetropolitan Arkansas	82.7	37,169,677	1,115,215	0
Nonmetropolitan California	97.2	38,905,376	835,869	13
Nonmetropolitan Colorado	95.9	35,245,222	706,313	6
Nonmetropolitan Connecticut	103.9	11,154,561	181,710	8
Nonmetropolitan Delaware	N/A	0	0	N/A
Nonmetropolitan District of Columbia	N/A	0	0	N/A
Nonmetropolitan Florida	90.5	24,719,747	689,885	0
Nonmetropolitan Georgia	83.9	60,021,689	1,786,271	0
Nonmetropolitan Hawaii	100.5	11,535,892	271,283	7
Nonmetropolitan Idaho	90.6	18,135,037	449,359	7
Nonmetropolitan Illinois	84.6	58,875,067	1,445,705	11
Nonmetropolitan Indiana	84.3	58,448,714	1,463,618	11
Nonmetropolitan Iowa	86.9	56,034,965	1,231,754	0
Nonmetropolitan Kansas	85.5	37,279,017	899,281	2
Nonmetropolitan Kentucky	84.6	62,173,421	1,810,740	14
Nonmetropolitan Louisiana	82.8	27,022,894	747,154	9
Nonmetropolitan Maine	95.4	22,640,099	544,024	0
Nonmetropolitan Maryland	90.3	7,896,063	150,971	9
Nonmetropolitan Massachusetts	98.5	2,871,827	28,591	8
Nonmetropolitan Michigan	86.9	69,887,957	1,800,582	13
Nonmetropolitan Minnesota	87.6	56,464,096	1,244,204	4
Nonmetropolitan Mississippi	82.2	53,243,320	1,556,341	0
Nonmetropolitan Missouri	83.4	53,852,253	1,537,076	0
Nonmetropolitan Montana	93	29,582,839	674,251	11
Nonmetropolitan Nebraska	86.1	31,123,102	675,391	0

Nonmetropolitan Nevada	94.7	12,494,404	273,151	14
Nonmetropolitan New Hampshire	101.4	26,926,844	499,908	5
Nonmetropolitan New Jersey	N/A	0	0	N/A
Nonmetropolitan New Mexico	88.5	25,431,216	687,793	8
Nonmetropolitan New York	95.7	56,744,757	1,371,249	9
Nonmetropolitan North Carolina	84.6	72,154,889	1,981,228	9
Nonmetropolitan North Dakota	88.5	19,720,559	378,666	13
Nonmetropolitan Ohio	84.4	92,028,417	2,316,053	15
Nonmetropolitan Oklahoma	85.2	48,333,833	1,327,366	7
Nonmetropolitan Oregon	93	26,504,463	669,109	8
Nonmetropolitan Pennsylvania	91.4	58,762,751	1,460,866	0
Nonmetropolitan Rhode Island	N/A	0	0	N/A
Nonmetropolitan South Carolina	82.6	25,456,218	739,282	8
Nonmetropolitan South Dakota	85.4	20,146,876	459,315	0
Nonmetropolitan Tennessee	84.1	51,161,846	1,468,733	0
Nonmetropolitan Texas	87.4	118,919,210	3,098,696	0
Nonmetropolitan Utah	94.1	14,903,673	325,117	4
Nonmetropolitan Vermont	99.9	20,324,745	405,644	7
Nonmetropolitan Virginia	87.4	39,769,162	1,057,841	8
Nonmetropolitan Washington	95.3	32,917,540	759,872	11
Nonmetropolitan West Virginia	85.9	22,708,363	647,484	11
Nonmetropolitan Wisconsin	87.7	64,214,967	1,468,997	8
Nonmetropolitan Wyoming	94.1	22,748,377	400,918	0